SNYDER CIVIL
Engineering, LLC



TOWN OF RIDGEFIELD
Ridgefield, Connecticut

RIDGEFIELD HIGH AND MIDDLE SCHOOL INTERCONNECTION

Ridgefield, Connecticut

CONTRACT SPECIFICATIONS

JANUARY 2026

PREPARED BY:
SNYDER CIVIL ENGINEERING, LLC - PORTLAND, CONNECTICUT

RFD-001

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L E G A L N O T I C E

The **Town of Ridgefield** invites all interested parties to submit sealed bids on the following:

BID DUE DATE: February 17, 2026

BID DUE TIME: 1 1 :00 a.m. EST

BID ITEM: Ridgefield High and Middle School Interconnection

BID NUMBER: 26-06

Terms and conditions as well as the description of items being bid are stated in the specifications. The project described in the Contract Documents involves connecting the Ridgefield High School and Middle School campus to Aquarion Water Company's Ridgefield Main System. This interconnection will include the installation of a new water main beginning at the intersection of Craigmoor Road and extending along North Salem Road to the school campus. On the campus property, a meter pit will be installed and connected to the existing campus water system. In addition to the interconnection, the project will include the installation of a new fill line for the fire pump house water storage tank, along with related infrastructure improvements.

Any contract or contracts awarded under this invitation for bids are expected to be funded in part by a loan from the State of Connecticut Drinking Water State Revolving Fund. Neither the State of Connecticut nor any of its Departments, agencies, or employees is or will be a party to this invitation for bids or any resulting contract. This procurement will be subject to the requirements contained in subsections (h), (j) and (o) of Section 22a-482-4 of the RCSA. A copy of these Regulations is included in the Document 00005 – SRF Special Project Procedures, Attachment F. The Town of Ridgefield reserves the right to waive any informality or to reject any or all bids.

Drawings and Specifications may be obtained at the following address:

Town of Ridgefield
David McFate
400 Main Street
Ridgefield, CT. 06877
203 - 431 – 2720

TOWN OF RIDGEFIELD
CONNECTICUT

BOARD OF SELECTMEN

INSTRUCTIONS TO BIDDERS

1. Bids will be submitted in a sealed envelope plainly marked with bid number to identify this particular proposal. The Town of Ridgefield will also accept electronic submission of bids via email. Bids submitted by email must be sent to purchasing@ridgefieldct.gov. The time stamp of the hand delivery or email shall be on or before the bid due date. Only one method of submission is necessary.

2. Withdrawals of or amendments to bids received later than the time and date specified for bid opening will not be considered.

3. The Board of Selectmen of the Town of Ridgefield reserves the right to accept or reject any or all options, bids or proposals; to waive any technicality in any bid or part thereof, and to accept any bid deemed to be in the best interest of the Town of Ridgefield, Connecticut.

4. Bidders may be present at the opening of bids.

5. Bids may be held by the Town of Ridgefield for a period not to exceed sixty (60) days from the opening of bids for the purpose of reviewing the bids and investigating the qualifications of bidders prior to the awarding of the contract.

6. **Insurance requirements:** must be submitted with the bid. This includes any Hold Harmless requirements as well as Certificates of Insurance for the full amounts specified. **Unauthorized changes** to these forms, i.e. adding, striking out and/or changing any words, language or limits **will cause the bidder to be disqualified**.

    a. **Please Note**: Prior to the start of work, the Town of Ridgefield and/ or the Board of Education shall be endorsed on the Contractor's policies of insurance as additional insured. The Contractor shall obtain a policy of insurance, with minimum limits of liability as specified containing an endorsement that covers this agreement to indemnify, defend and hold harmless the Town/City and/or Board of Education or any of their officers, employees, agents, servants and volunteers. The Contractor shall obtain an

endorsement to said insurance policy stating that the Contractor's insurance is primary and any insurance obtained, or self insurance provided, by the Town of Ridgefield and/or Board of Education is excess. The Contractor's insurance carrier will waive all rights of subrogation against the Town of Ridgefield and/or Board of Education, and all of their respective officers, employees, agents, servants and volunteers. The Contractor shall furnish a copy of the insurance policy that meets all of the above requirements before any work or use of the property commences. Failure to do so will result in disqualification of the Bid. There will no exceptions.

7. **Permits:** It is the Contractor's responsibility to obtain any necessary permits prior to the start of construction. All work shall be completed in compliance with the latest edition of the prevailing fire prevention and building codes in effect in the State of Connecticut, the latest edition of the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Town of Ridgefield Road Construction Standards, or as set forth in these specifications. Any local (Town of Ridgefield) permits will have the permit fee waived.

8. **Emergency Work:** The Contractor shall file with the Engineer a telephone number of a person authorized by him who may he contacted regarding emergency work at the job site that may be required during non-working hours for reasons of public safety. The person shall be readily available and have full authority to deal with any emergency that may occur.

9. **Sales Tax:** In accordance with the provisions of Special Act No. 77-98, as amended, and Section 12-412(a) of the Connecticut General Statutes, sales of tangible personal property and services to the Town are not subject to the Connecticut Sales and Use Tax, and such tax shall not be included as part of the bid.

10. **Contractor's Qualification Statement:** The Contractor's Qualification Statement must be filled out as part of the bid package and the experience and references listed therein will be one to the determining factors in the awarding of the bid.

11. **Hold Harmless Agreement:** In order for the bid to be considered valid, the Contractor **must** sign the enclosed hold harmless agreement. Bids submitted without the signed hold harmless agreement will be rejected.

12. **Prevailing Wage Rates:** This project **is** subject to the State of Connecticut prevailing wage rate requirements.

13. **SBE/MBE and Contract Compliance Requirements:** This project **is not** subject to State of Connecticut SBE/MBE set aside and contract compliance requirements.

14. **Time of Completion:** All work must be completed between May 2026 and March 2027. Contractor must ensure sufficient staffing and scheduling to complete the project within this timeframe. No extensions will be granted unless approved in writing due to documented unforeseen conditions.

15. **Site Inspection:** Bidders are encouraged to familiarize themselves with the work site prior to bidding. Requests for site access shall be directed to Jacob Muller, via email dpssuper@ridgefieldct.gov. General bidding and technical questions shall be directed to David McFate, Purchasing and Finance Manager, via email purchasing@ridgefieldct.gov. The Pre-Bid Site Inspection will take place at 700 North Salem Road, Ridgefield, CT, 06877. Bidders are instructed to utilize the Ridgefield Highschool rear entrance located off of Ridgebury Road.

16. **Bid Schedule:**

Pre-Bid Site Inspection	January 22, 2026, at 10:00AM
RFI Requests Due	February 3, 2026 by 4:00PM
RFI Responses Released	February 10, 2026 by 4:00PM
Bid Due Date	February 17, 2026 at 11:00AM

18. **Bid Submissions:** Refer to Document 00300 – Bid Form, Article 7 – Attachments to this Bid, for documents to be attached and made a condition of the bid.

19. **Requests for Information:** Questions or requests for information must be submitted in writing. All questions or requests for information shall be submitted to David McFate, Purchasing and Finance Manager, at purchasing@ridgefieldct.gov. Deadline for Questions/RFI shall be February 3, 2026, 4:00PM.

Supplemental Information for Bidders and General Contract Provisions

1. PREPARATION OF PROPOSALS

Proposals must be made upon forms contained herein or as directed elsewhere. 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 addresses 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, bid number, 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 Director, Town Hall, 400 Main Street, Ridgefield, CT 06877.

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.

2. SUBMISSION OF PROPOSALS

Descriptive literature containing complete specifications must accompany each bid. If a bidder wishes to furnish additional information, more sheets may be added.

3. INCURRING COSTS

The Town of Ridgefield 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.

4. FAMILIARITY WITH THE WORK

Each bidder is considered to have examined the work to fully acquaint him 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. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

5. CONSIDERATION OF PRIOR SERVICE

Previous performance, quality of service and merchandise will be considered.

6. ADDENDA AND INTERPRETATIONS & ALTERNATE PROPOSALS

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 Director. 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 to the Town of Ridgefield, Purchasing Director, 400 Main Street, Ridgefield, Connecticut 06877, and to be given consideration, must be received at least seven (7) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any 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 five (5) 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 Ridgefield. 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 your 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:

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

The Bidder shall hold the Town of Ridgefield, 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 Ridgefield or himself because of the unauthorized use of such articles.

7. 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.

8. 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.

9. SAMPLES

Samples of articles, when required shall be furnished free of cost of any sort to the Town of Ridgefield. 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.

10. 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. The successful agent/broker shall not withdraw, cancel or modify their proposal.

11. 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.

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

13. 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.

14. 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.

15. 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. Time of delivery shall be stated as the number of calendar days following receipt of the Purchase Order by the Bidder to receipt of the goods or services by the Town of Ridgefield. Prices quoted must include delivery to the Town of Ridgefield 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.

16. PAYMENT

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 Ridgefield
Office of the Town Engineer
66 Prospect Street
Ridgefield, CT 06877

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 Ridgefield for the work as described herein.

The bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Ridgefield, 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 Ridgefield 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.

17. 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.

18. 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.

19. 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.

20. AWARD

The Town of Ridgefield 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 Ridgefield reserves the right:

a. To award bids received on the basis of individual items, or groups of items, or on the entire list of items.
b. To reject any or all bids, or any part thereof.
c. To waive any informality in the bids.
d. To accept the bid that is in the best interest of the Town of Ridgefield. The Purchasing Agent's decision shall be final.

If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of this document, is the lowest price with all other factors considered.

21. INSURANCE

Insurance requirements are detailed under the attached “Insurance Requirements.”

22. GUARANTEE

The bidder shall unconditionally guarantee for a period of one (1) year, except as specifically noted within these documents, 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.

23. 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.

24. 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 Non-Segregated Facilities and a Certification Regarding Equal Employment Opportunity shall be considered a part of this contract.

25. BID SECURITY

A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% of Bidder's maximum Bid price and in the form of a certified check or a Bid bond (DOCUMENT 00310, BID BOND) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

26. MECHANICS LIEN WAIVERS

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

APPENDIX A - INSURANCE REQUIREMENTS

Each bidder shall carry and maintain the following insurance coverage during the period of the contract : The Certificate of Insurance for the Limits of Liability stated below should be submitted with your bid to the Purchasing Department at Town Hall. **Bidders may not perform any work until all insurance requirements are met.**

1. **Comprehensive General Liability Insurance** as will protect him, the Town, and any subcontractor performing work covered by this Contract, from claims for damages for personal injury, including accidental or wrongful death, as well as claims for property damages, which may arise from operations under this Contract whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. Liability insurance shall include premises and operations, products, contractual, owners, and contractors protective. The minimum amounts of such insurance shall be as follows:

    - Bodily Injury Liability and Property Damage Liability:
      $1,000,000 each occurrence.

    - **The Town shall be named as an Additional Insured**
      This **MUST** be stated explicitly on the Certificate or you will be **disqualified**

2. **Worker's Compensation Insurance and Employer's Liability** for all of his employees, employed at the site and in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all employees of the later unless such employees are covered by the protection afforded by the Contractor.

    - Worker's Compensation: Statutory Limits
    - Employer Liability:
        - Bodily Injury (Each Accident): $100,000
        - Disease (Per Policy): $500,000
        - Disease (Per Employee): $100,000

3. **Comprehensive Auto Liability Insurance**:

    - Bodily Injury Insurance and Property Damage Insurance covering the operation of all Motor Vehicles owned, hired and/or non-owned by the Contractor, or used by the Contractor in the Prosecution of the work under the Contract, shall be in the minimum of **$1,000,000 each occurrence.**

4. **Owner's Protective Liability Insurance**:

    The Contractor shall purchase and maintain a separate Owner's Protective Liability policy, issued to Owner at the expense of Contractor, including Owner and Engineer as named insured. This insurance shall provide coverage for not less than the following amounts:

    - Bodily Injury (Each Occurrence): $1,000,000
    - Property Damage (Each Occurrence): $500,000

    All policies relating to this Contract shall be so written so that the Town shall be notified of cancellation or change at least thirty (30) days prior to the effective date for each policy and type of coverage except for nonpayment which shall be ten (10) days prior to the cancellation. Renewal certificate covering the renewal of all policies expiring during the life of the Contract shall be filed with the Town not less than ten (10) days before the expiration of such policies. Failure to due so will result in work stoppage and possible contract cancellation.

CONTRACTOR'S QUALIFICATION STATEMENT

List below references for similar projects, including all information requested. This page must be completed and submitted with the bid.

1. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____Completed _____

Contact: Name _____Telephone _____

2. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____Completed _____

Contact: Name _____Telephone _____

3. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____Completed _____

Contact: Name _____Telephone _____

4. Client: _____

Project Address: _____

Approximate Value: _____ Date: Started _____Completed _____

Contact: Name _____Telephone _____

Company: _____ *Bid Title:* _____

Street: _____ *Bid No.:* _____

City, State: _____*Telephone No.:* _____

CONTRACTOR'S LIST OF SUBCONTRACTORS

List below the subcontractors intended to be utilized for this project. This page must be completed and submitted with the bid.

General Contractor: _____ Bid Number: _____

Address: _____

Phone Number: _____

Firm	Address	Point of Contact Name	Point of Contact Number	Type of Work Performed

GENERAL CONDITIONS

1. CONTRACTOR'S UNDERSTANDING:

It is understood and agreed that the Contractor has, by careful examination, satisfied himself as to the nature and location of the work, the conformation of the ground, the character quality and quantity of materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract. No verbal agreement or conversation with any officer, agent or employee of the Owner, either before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

2. DEFINITIONS:

OWNER:	The word "Owner" when it appears in the Contract Documents shall mean The Town of Ridgefield, Connecticut.
ENGINEER:	The word "Engineer" when it appears in the contract Documents shall mean: Jacob Muller, Director of Public Works, or his specifically designated Agent.
CONTRACTOR:	The word "Contractor" when it appears in the Contract Documents shall mean the party to whom the Contract has been awarded.

3. MATERIALS, APPLIANCES AND EMPLOYEES:

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work. Unless otherwise specified, all materials shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times endorse strict discipline and good order among his employees, and shall not employ on the work any unfit person or any one not skilled in the work assigned to him.

4. PROTECTION OF WORK AND PROPERTY:

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect the Owner's property from injury or loss arising in connection with this Contract. He shall make good any such damage, injury or loss, except such as may be directly due to errors in the Contract Documents or caused by agents or employees of the Owner. He shall adequately protect adjacent property as provided by law and the Contract Documents. He shall provide and maintain all passageways, guard fences, lights and other facilities for protection required by public authority or local conditions.

In an emergency affecting the safety of life or of the work or of adjoining property, the Contractor, without special instruction or authorization from the Engineer, is hereby permitted to act at his discretion, to prevent such threatened loss or injury, and he shall so act, without appeal, it so instructed or authorized. Any compensation claimed by the Contractor on account of emergency work, shall be determined by agreement or arbitration.

5. CHANGES IN THE WORK:

The Owner, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change.

In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency, endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Engineer, and no claim for an addition to the Contract Sum shall be valid unless so ordered.

The value of any such extra work or change shall be determined in one or more of the following ways:

(a) By estimate and acceptance in a lump sum.
(b) By unit prices named in the Contract subsequently agreed upon.
(c) By cost and percentage or by cost and a fixed fee.

If none of the above methods is agreed upon, the Contractor, provided he receives an order as above, shall proceed with the work. In such case, and also under case (c), he shall keep and present in such form as the Engineer may

direct, a correct account of the net cost of labor and materials, together with vouchers. In any case, the Engineer shall certify to the amount, including reasonable allowance for overhead and profit, due to the Contractor. A maximum mark-up of 15% on labor and material costs, and 5% on costs incurred by a subcontractor will be allowed. Pending final determination of value, payments on account of changes shall be made on the Engineer's estimate.

6. CLAIMS FOR EXTRA COST:

If the Contractor claims that any instructions by drawings or otherwise involve extra cost under this Contract, he shall give the Engineer written notice thereof within a reasonable time after the receipt of such instructions and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure shall then be as provided for changes in the work. No such claim shall be valid unless so made.

7. SUSPENSION OF WORK:

The Owner may at any time suspend the work, or any part thereof by giving 24 hours notice to the Contractor in writing. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the owner to the Contractor to do so. The Owner shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this contract as a result of such suspension.

8. THE OWNER'S RIGHT TO DO WORK:

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner, after three days written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor.

9. PAYMENTS WITHHELD:

The Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to such extent as may be necessary to protect him from loss on account of the following:

(a) Defective work not remedied.
(b) Claims filed or reasonable evidence indicating probable filing of claims.
(c) Failure of the Contractor to make payments properly to subcontractors or for material or labor.
(d) A reasonable doubt that the Contract can be completed for the balance then unpaid.
(e) Damage to another Contractor.

When the above grounds are removed, payment shall be made for amount withheld because of them.

10. CONTRACTOR'S LIABILITY INSURANCE:

The Contractor shall maintain such insurance as will protect him from claims under workmen's compensation acts and from any other claims for damages for personal injury, including death, which may arise from operations under this Contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them. Certificates of such insurance shall be filed with the engineer, if he so requires and shall be subject to his approval for adequacy of protection.

11. INDEMNITY:

The Contractor shall indemnify and save harmless the Owner from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered against him, by reason of any act or omission of the said Contractor, his agents or employees, in the execution of the work or in the guarding of it.

The Contractor shall, and is hereby authorized to maintain and pay for such insurance, issued in the name of the Owner, as will protect the Owner from his contingent liability under this Contract, and the Owner's right to force against the Contractor any provision of this article shall be contingent upon the full compliance by the Owner with the terms of such insurance policy or policies, a copy of which shall be deposited with the Owner.

12. DAMAGES:

Any claim for damage arising under this Contract shall be made in writing to the party liable within a reasonable time of the first observance of such damage and not later than the time of final payment, except as expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement or arbitration.

Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Section 21, plus any extensions thereof allowed in accordance with Section 22 of this document. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $1,200.00 for each day that expires after the time specified in Section 21F for Substantial Completion until the Work is substantially complete.

13. ASSIGNMENT:

Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due to or to become due to him hereunder, without the previous written consent of the Engineer.

14. ENGINEER'S STATUS:

The Engineer shall have general supervision and direction of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the Contract. He shall also have authority to reject all work and materials which do not conform to the Contract, to direct the application of forces to any portion of the work, as in his judgment is required, and to order the force increased or diminished, and to decide questions which arise in the execution of the work.

15. METHOD OF PAYMENT:

At the end of each calendar month, the Contractor shall submit to the Engineer a requisition for payment which requisition shall be based upon the actual amount of the work performed during the previous month. The requisition may include materials stored on the site but not installed. The Engineer shall, within ten (10) days, check the requisition against his review of the work which has been done and submit it to the Owner, a written statement as to the validity of the requisition. The Owner shall then pay to the Contractor one **hundred percent (100%)** of the amount stated in the Engineer's report. **No payment shall be made until the Contractor has satisfied all prevailing wage reporting requirements if prevailing wages are a part of this contract.**

In the event that this contract is subject to the State of Connecticut SBE/MBE set aside and contract compliance requirements, the Contractor's attention is directed to Appendix "B", State of Connecticut SBE/MBE requirements regarding the withholding of 2% of the State Funded portion of the contract value each month if the contract value exceeds $500,000, pending the review and approval of the Contractor's Affirmative Action Plan by CHRO.

16. FINAL PAYMENT:

When the Contract has been completed, the Contractor shall notify the Engineer in writing. Upon receipt of this notification, the Engineer shall proceed to make final measurements of the work done under the provisions of this Contract. The Engineer shall then submit to the Owner a written statement setting forth these final measurements and the amount due the Contractor consistent with the unit prices and lump sum bid in the Proposal. The Owner shall within sixty (60) days pay to the Contractor this sum except that he may deduct any moneys which are to be retained under the terms of the Contract for repairs or otherwise.

17. ORDER OF THE WORK:

The order of the work shall be subject to the approval of the Engineer in all cases. The Contractor may be required to submit a work schedule in writing to the Engineer for his approval.

18. (OMITTED)

19. PROTECTION TO PUBLIC:

The Contractor shall conduct the work in such a manner as to offer minimum disturbance to the traveling public. He shall not close off traffic without specific permission of the Engineer and shall provide flagmen if such becomes necessary, in the opinion of the Engineer. Proper barricades, lights, and other protective devices shall be supplied at the Contractor's expense and properly maintained during the entire course of the work.

20. GUARANTEE:

The Contractor guarantees that the work to be done under this Contract and the materials furnished by him and used in the construction of the project are free from defects or flaws. The guarantee is for a term of one (1) year from and after the date upon which the final estimate of the Engineer is formally approved by the party of the first part It is hereby agreed and understood that this guarantee shall not include any repairs made necessary by any cause or causes other than defective materials furnished by or defective work done by the Contractor.

21. RATE OF PROGRESS AND TIME OF COMPLETION:

The Contractor shall commence work within seven (7) days after receipt of the Notice to Proceed and, unless an extension of time shall be made in the manner herein provided, shall progress therewith to final completion within ***ninety (90) consecutive calendar days*** after receipt of the Notice to Proceed.

22. EXTENSION OF TIME:

The Contractor expressly covenants and agrees that, in undertaking to complete the work within the time specified, he has taken into consideration and made allowance for all of the ordinary delays and hindrances incident to such work, whether growing out of delays in securing materials, workmen, or otherwise. Should the Contractor, however, be substantially delayed in the prosecution and completion of the work by any changes, additions, or omissions therein ordered in writing by the engineer, or by fire, lightning, earthquake, tornado, cyclone, riot, insurrection of war, or by the abandonment of the work by the workmen engaged therein, through no fault of the Contractor, or by the discharge of all or any material number of workmen in consequence of difficulties arising between the Contractor and such workmen, or by the neglect, delay, or de default it of any other contractor of the town, then the Contractor may, within five (5) days after the occurrence of the delay for which

he claims allowance, notify the Engineer in writing, and thereupon, and otherwise, the Contractor shall be allowed such additional time for the completion of the work, as the Engineer in his discretion shall award in writing, and his decision shall he final and conclusive upon the parties. Such additional time shall be the sole and exclusive remedy for any delay claimed by the Contractor.

23. SALES TAX:

In accordance with the provisions of Special Act No. 77-98, as amended, and Section 12-412(a) of the Connecticut General Statutes, sales of tangible personal property and services to the Town are not subject to the Connecticut Sales and Use Tax, and such tax shall not be included as part of the bid.

24. Termination of the Contract:

If the Owner fails to make payment thereon for a period of 30 days, the Contractor may, upon seven additional days written notice to the Owner, terminate the Contract and recover from the Owner payment for work executed and for proven loss with respect to materials, equipment tools, and construction equipment and machinery, including reasonable overhead, profit and damages applicable to the project.

If the contractor defaults or persistently fails or neglects to carry out the work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor and without prejudice to any other remedy the Owner may have, may make good such deficiencies and may deduct the cost thereof, including compensation for the Engineer's services and expenses made necessary thereby, from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and upon certification by the Engineer that sufficient cause exists to justify such action, the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. It the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Engineer's services and expenses made necessary thereby, such excess shall be paid to the Contractor, but if such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner.

HOLD HARMLESS AGREEMENT

The undersigned covenants and agrees to and shall at all times indemnify, protect and save harmless the Town of Ridgefield from and against all costs or expenses resulting from any and all losses, damages, detriments, claims, demands, cost and charges including attorneys fees the Town of Ridgefield may directly or indirectly suffer, sustain or be subjected to by reason or on account of the work to be performed pursuant to this Contract or any activities in connection with said Contract whether such losses and damages be suffered or sustained by the Town of Ridgefield directly or by its employees, licenses or invitees or be suffered or sustained by other persons or corporations who may seek to hold the Town of Ridgefield liable therefore.

The Contractor shall comply with the Provisions of the Immigration Reform and Control Act of 1986 effective and enforceable as of June 6, 1987 which Act makes unlawful the hiring for employment or subcontracting individuals failing to provide documentation of legal eligibility to work in the United States. The Contractor shall hold the Town of Ridgefield harmless for the failure of the Contractor to comply with the provisions of said Act.

IN WITNESS WHEREOF, the parties hereto have set their hand and seal this on the_____ day of_____

Signed, Sealed and Delivered in the Presence of:

Signed:

_____ _____

Notary Public

FRACKING WASTE ORDANINCE NOTICE

On January 9, 2019, The Town of Ridgefield approved and adopted an Ordinance prohibiting the storage, disposal or use of fracking waste on Town of Ridgefield land and/or projects. The complete Ordinance can be viewed at the Town Clerk's Office located at 400 Main Street, Ridgefield, CT or on the town website at the following link;
https://ecode360.com/RI2176/laws/LF1067113.pdf#search=fracking

Bidders shall follow this Ordinance in preparation and submission of their bid.

1.) No materials containing natural gas or oil waste shall be utilized in providing and retaining services to construct or maintain publicly owned and/or maintained road or real property with the Town of Ridgefield.

2.) No materials containing natural gas or oil waste shall be utilized in the purchase or acquisition of materials to construct or maintain publicly owned and/or maintained road or real property with the Town of Ridgefield.

3.) We_____hereby submit a bid for materials, equipment and/or labor for the Town of Ridgefield. The bid is for bid documents titled _____. We hereby certify under penalty of perjury that no natural gas waste or oil waste will be used by the undersigned bidder or any contractor, sub-contractor, agent or vendor agent in connection with the bid; nor will the undersigned bidder or any sub-contractor, agent or vendor agent thereof apply any natural gas waste or oil waste to any road or real property within the Town of Ridgefield as a result of the submittal of this bid if selected.

4.) The successful bidder shall submit certificates of origin for project materials, fill and other.

Signed and sealed in
the presence of:

_____

Contractor

By_____

Date_____

IN WITNESS WHEREOF, the parties hereto have set their hand and seal this day on the_____ day of_____

Signed, Seated and Delivered in the Presence of:

Signed:

_____ _____

Notary Public

DOCUMENT 00005

SRF PROJECT SPECIFIC REQUIREMENTS

PART 1 GENERAL

1.01 DESCRIPTION

A. This Project involves CT Drinking Water State Revolving Fund (DWSRF) funding and is subject to the additional requirements set forth in this document and in the following attachments:

1. Attachment A – DAS Update Statement
2. Attachment B – Executive Order No. 3
3. Attachment C – Executive Order No. 17
4. Attachment D – Executive Order No. 16
5. Attachment E – Executive Order 12549
6. Attachment F – Clean Water Memorandum and Subcontractor Verification Form
7. Attachment G – State Prevailing Wage Documents
8. Attachment H – Federal Prevailing Wage Documents
9. Attachment I – AIS Guidance Document
10. Attachment J – De Minimis Final Utilization, Certification and Tracking Forms (OMITTED)
11. Attachment K – Interim Guidance for MBE and WBE's Requirements
12. Attachment L – Required Connecticut General Statutes (Section 4a – 60)
13. Attachment M – Executive Order 11246 (DELETED)
14. Attachment N – Federal Regulation 2 CFR 200.216
15. Attachment O – Project Signage Requirements
16. Attachment P – CERT-141 Template
17. Attachment Q – (DELETED)
18. Attachment R – Build America, Buy America Memorandum – Act Implementation Procedures for EPA Office of Water Federal Financial Assistance Programs
19. Attachment S – Clean Air Act
20. Attachment T – Executive Order 11738
21. Attachment U – Age Discrimination Act of 1975
22. Attachment V – Title VI of the Civil Rights Act of 1964
23. Attachment W – Federal Water Pollution Control Act Amendments of 1972
24. Attachment X – Rehabilitation Act of 1973
25. Attachment Y – Executive Order 11914
26. Attachment Z – Executive Order 12250

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 PREVAILING WAGE RATES

A. The Project is subject to State and Federal Prevailing Wage Rates and the Davis-Bacon Act. Refer to the following documents for additional information:
   1. Attachment G – State Prevailing Wage Documents
   2. Attachment H – Federal Prevailing Wage Documents

3.02 AMERICAN IRON AND STEEL

A. The Project is subject to the use of American Iron and Steel (AIS) requirements. Refer to the following documents for additional information:
   1. Attachment I – Guidance Document
   2. Attachment J – De Minimis Final Utilization, Certification and Tracking Forms

3.03 BUILD AMERICA, BUY AMERICA

A. The Project is subject to the use of Build America, Buy America (BABA) requirements. Refer to the following documents for additional information:

   1. Attachment R – Build America, Buy America Memorandum – Act Implementation Procedures for EPA Office of Water Federal Financial Assistance Programs

B. The Contractor acknowledges to and for the benefit of the Town of Ridgefield (Owner) and the CT Drinking Water State Revolving Fund (DWSRF) that it understands the goods and services under this Agreement are being funded with federal monies and have statutory requirements commonly known as "Build America, Buy America;" that requires all of the iron and steel, manufactured products, and construction materials used in the project to be produced in the United States ("Build America, Buy America Requirements") including iron and steel, manufactured products, and construction materials provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and Funding Authority (a) the Contractor has reviewed and understands the Build America, Buy America Requirements, (b) all of the iron and steel, manufactured products, and construction materials used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirements, unless a waiver of the requirements is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Build America, Buy America Requirements, as may be requested by the Owner or the Funding Authority.

   Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Funding Authority to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner or Funding Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Funding Authority or any damages owed to the Funding Authority by the Owner).

If the Contractor has no direct contractual privity with the Funding Authority, as a lender or awardee to the Owner for the funding of its project, the Owner and the Contractor agree that the Funding Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Funding Authority

The Engineer has made a preliminary effort to pre-qualify a majority of materials and products noted in the specification as BABA compliant based on input from the equipment manufacturers and vendors. The specifications may note specific makes and models of equipment for use in bidding. In the event that a specified make or model does not meet the requirements for BABA, the characteristics and qualities of the product shall be considered as a basis of comparison for review and approval by the Engineer and Owner. The Contractor is responsible for meeting the BABA requirements including De-Minimis waivers for this project based on the furnished materials for the project.

3.04 MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MBE/WBE)

A. Bidders on this work are required to comply with 40 CFR Part 33.240 of the United States Environmental Protection Agency's policy on the increased utilization of Minority Business Enterprise's (MBE's) and Women Business Enterprise's (WBE's). Refer to the following document for additional information:

1. Attachment K – Interim Guidance for MBE and WBE's Requirements

B. The Owner is a State agency for, among other things, purposes of complying with Conn. Gen. Stat. §4a-60g, entitled "Set-aside Program for Small Contractors and Minority Business Enterprises.

C. The Bidder shall be prepared to make good faith efforts to observe the Owner's required Contract provisions regarding use of minority and women businesses for this project. The Contractor is encouraged to take affirmative steps to assure that minority business enterprises (MBE) and woman business enterprises (WBE) (as such terms are defined below) are utilized to the maximum extent practicable.

The Contract participation rates prescribed by State of Connecticut agencies are 3% of the total Contract Price for MBEs and 5% of the total Contract price for WBEs. To constitute a MBE or a WBE for the purpose of meeting these agency thresholds, an enterprise must be formally certified as such by, at least, one of the following entities: the Connecticut Department of Administrative Services, the Connecticut Department of Transportation, the federal Environmental Protection Agency, the federal Small Business Administration OR other states as evidenced by the appropriate state certificate. Such certification must specify the DBE specification. In the event the certificate from a state other than Connecticut does not contain the applicable designation, the certificate should be presented to the Owner for review and consideration.

In addition to the MBE and WBE participation rates set forth above, the Owner encourages the Bidder to establish and work towards a goal of additional MBE participation of 3% of the Contract Price for MBEs (for a total MBE participation goal of 6% of the Contract Price).

3.05 REPORTING AND RECOVERING ARCHAEOLOGICAL FINDS

A. Should the Contractor or Engineer discover evidence of remains, such as stone masonry building foundations, bones or other items of archaeological significance, Contractor shall report these findings to (1) Owner, (2) Local Historical Society, (3) State Historic Preservation Office (860) 500-2329, and (4) Resident Project Representative, and shall exercise the utmost care to ensure that these areas remain undisturbed. Contractor shall allow recovery of such finds by the authorities, shall not remove such artifacts under penalty of law, and shall prevent constriction or private vehicles from crossing over these areas. In addition, when directed by the Engineer, cover these areas with 1-ft common fill to the limits directed by the Engineer. Be advised that graves and any associated human remains are protected by Connecticut State law (C.G.S. Section 10-388 and 10-390). Any possible human skeletal remains must be reported to the State Archaeologist (860) 486- 5248 and the State's Chief Medical Examiner (860) 679-3980 immediately upon discovery. If the State Archaeologist is unavailable, please contact the State Historic Preservation Office at the number above for immediate assistance.

3.06 STATE EQUAL OPPORTUNITY EMPLOYMENT

A. Bidders on this work are required to comply with the Connecticut General Statutes (CGS) Section 4a-60 regarding nondiscrimination and affirmative action provisions in contracts of the state and equal employment opportunity. Refer to the following documents for additional information:
   1. Attachment L – Required Connecticut General Statutes (Section 4a – 60)
   2. Attachment M – Executive Order 11246

3.07 DEBARMENT AND SUSPENSION

A. Bidders on this work are subject to debarment and/or suspension from programs involving federal financial benefits. Refer to the following document for additional information:
   1. Attachment E – Executive Order 12549

3.08 TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT

A. This Project is subject to the prohibition of certain telecommunication and video surveillance services or equipment. Refer to the following document for additional information:
   1. Attachment N - Federal Regulation 2 CFR 200.216

3.09 CONTRACTOR PRE-QUALIFICATION

A. The Bidder shall hold a current DAS Contractor Prequalification Certificate in the State of Connecticut according to C.G.S§ 4a-100, C.G.S. §4b-101 and C.G.S.§4b-91. Bidders shall submit with their Bids their DAS Contractor Prequalification Certificate along with a current Update Bid Statement. Any Bid submitted without a copy of the DAS Prequalification Certificate and an Update Bid Statement shall be invalid.

As to proposed Subcontractors whose subcontract value is equal to or greater than $500,000, the apparent low Bidder shall submit to the Owner, no later than fourteen (14) days after Bid opening, a current DAS Contractor Prequalification Certificate in an appropriate work classification along with an Update Bid Statement for each such Subcontractor. Bidders do not need to include Subcontractor Prequalification Certificates and Update Bid Statements with their Bids.

The Successful Bidder and each of its Subcontractors having subcontracts in value equal to or greater than $500,000 shall maintain and keep current their respective DAS Contractor Prequalification Certificates at all times during the term of the Contract and any warranty period set forth in the Contract Documents.

3.10 PROJECT SIGNAGE REQUIREMENTS

A. Bidders on this work are responsible for abiding to the project signage requirements which apply to the construction phase of the project. The requirement is intended to enhance public awareness of the DWSRF; refer to the following document for additional information:
   1. Attachment O – Project Signage Requirements

3.11 SITE AND PROJECT RECORDS ACCESS

A. The municipality shall insure that the Commissioner and his or her duly authorized agents shall have access to the project work whenever it is in preparation or progress. The municipality shall provide proper facilities for access and inspection. The municipality shall allow any authorized agent of the state to have access to any books, documents, plans, reports, papers, and other records of the contractor which are pertinent to the project for the purpose of making audit, examination, excerpts, copies and transcriptions. The municipality shall insure that a party to a subagreement shall provide access to the project work, sites, documents, and records (RCSA 22a-482-4(p)4).

3.12 TAX EXEMPTION

A. This project is exempt from sales tax under Connecticut General Statute 12-412 (126). Included in the below attachment is CERT-141; Aquarion Water Company will provide the finalized CERT-141 during the project.
   1. Attachment P – CERT-141 Template

END OF SECTION

DOCUMENT 00011

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this section consists of special project procedures during construction including:

1. Contract and Specification Revisions for 2025
2. Construction Sequence
3. Site Specific Safety Plan
4. Contractor's Emergency Service
5. Schedules
6. Cash Flow Projection And Schedule
7. Road Opening Permits
8. Separation of Water Lines from Sewers
9. Pipe Locations
10. Layout of Water Main and Appurtenances
11. Fire Service Connections
12. Protection of Underground Facilities and Damages Thereto
13. Disposal of Excavated Pipe and Construction Debris
14. Groundwater Conditions
15. Pavement Schedule
16. Traffic Control
17. Contractor Furnished Materials
18. Pre-Construction and Post-Construction Videos

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 CONTRACT AND SPECIFICATION REVISIONS FOR 2025

A. Various aspects of the Contract and Standard Specifications have been revised for the 2025 Construction Season. The Contractor is solely responsible for reviewing the documents and familiarizing themselves with the requirements. Change Orders will not be granted for the Contractor’s failure to notice or understand changes to the Contract.

3.02 CONSTRUCTION SEQUENCE

A. A Suggested Construction Sequence has been provided on the Contract Drawings. It shall be the Contractor's responsibility to submit a final construction sequence to the Engineer and Owner for approval prior to the start of Construction. During the course of construction, the Contractor shall coordinate with the Owner regarding requirements within the sequence of construction.

B. Unless specifically approved in writing by the Owner, no pipe or fittings will be released for delivery to the site until the Contractor has excavated the test pits shown on the Contract Drawings and the preconstruction video has been submitted.

C. No sawcutting or milling of the trench will be permitted until the new water main alignment has been marked in the field, a walkthrough has been conducted with the Owner's project manager, and the field marked out alignment has been approved by the Owner. Sawcutting or milling of the trench is performed solely at the Contractor's own risk. If field conditions require changes in alignment where the sawcut or milled trench is no longer usable and/or the trench needs to be sawcut or milled wider or for a new alignment, the sawcuting or milling will be at the Contractor's expense without any cost to the Owner.

D. Milling or zipping of the trench to remove pavement in advance of the water main installation will not be permitted unless specifically approved in writing by the Owner and state or municipality. If the state or municipality requires the Contractor to pave the milled or zipped trench prior to installing pipe, the Contractor is responsible for the cost of furnishing and placing temporary pavement.

3.03 SITE SPECIFIC SAFETY PLAN

A. The Contractor shall submit a Site Specific Health and Safety plan for the project. Refer to Section 01350.

3.04 CONTRACTOR'S EMERGENCY SERVICE

A. Any contractor whose place of business is located beyond the vicinity of the site of work and who does not maintain local headquarters 24 hours a day must make satisfactory arrangements with the Owner to service emergencies or complaints which may occur at night, over the weekend, or when the job is shut down.
   1. If he does not, the Owner may make arrangements, and the cost will be charged to the Contractor.
   2. Before the final estimate is certified for payment, the Contractor shall make similar arrangements to cover the guarantee period.

3.05 SCHEDULES

A. No work shall be performed on Saturdays, Sundays, or Holidays unless authorized in writing by Aquarion Water Company.

B. No work will be performed on the day before or the day after a holiday or long weekend which involves a holiday on any highway, roadway, or property under the control of the municipality or state department of transportation and unless authorized in writing by Aquarion Water Company.

3.06 CASH FLOW PROJECTION AND SCHEDULE

A. An updated Cash Flow Projection and Construction Schedule must be submitted with each Application for Payment. Applications for Payment will not be processed without accurately updated versions of each.

3.07 ROAD OPENING PERMITS

A. Prior to starting work, the Contractor is to furnish copies of all permits obtained for the project to the Owner and Engineer.

B. All work must meet the requirements of the municipality or state and is subject to the conditions of the applicable Permits. The Contractor's attention is directed to the Contract Drawings and general notes for specifics.

C. CBYD / Digsafe must be notified by the Contractor at least 72 hours prior to the start of work for the purpose of identifying the location of underground utilities. A CBYD / Digsafe number is to be obtained prior to the commencement of work.

3.08 SEPARATION OF WATER LINES FROM SEWERS

A. Parallel Installation: Water mains shall in general be laid at least 10 feet horizontally from any existing sewer. The distance shall be measured edge to edge.
   1. In cases where it is not practical to maintain a ten-foot separation, it is permitted to install a water main closer to a sewer, provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.

B. Crossings: Water mains and services crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer.
   1. At the crossing, one full length of water pipe shall be located so both joints will be as far from the sewer as possible.

C. Sewer Manholes: No water pipe shall pass through or come in contact with any part of a sewer manhole.

3.09 PIPE LOCATIONS

A. New water main appurtenances installed under this Contract will be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in location and grade as may be found desirable to avoid interference with existing structures and/or underground facilities or to avoid unsatisfactory locations, all as he may see fit as in the best interests of the Owner.

B. Where the dimensions and locations of existing structures are of critical importance in the installation or connections of new work, the Contractor shall verify such dimensions and locations in the field before the fabrication of any material or equipment that is dependent on the correctness of such information.

3.10 LAYOUT OF WATER MAINS AND APPURTENANCES

A. Unless directed otherwise by AWC, the Contractor is required to utilize the services of a licensed Land Surveyor or Professional Engineer to layout water main and appurtenances. Refer to Section 01050 for more detailed information.

B. After completion of the water main layout and the Call-Before-You-Dig markout, the Contractor will notify the Owner and Engineer in writing to schedule a walk-through to review and accept the alignment.

C. During the course of the work, the Contractor shall markout the installed locations of new water mains, water services, valves, air vents, blow-offs, and curb boxes. The Contractor shall maintain such markouts until the Transfer of Title has been issued.

3.11 FIRE SERVICE CONNECTIONS

A. The Contractor is advised that there may be fire service connections within the project limits. Any work which results in the loss of service to a fire connection shall be coordinated a minimum of 5 business days in advance of the proposed work with the property owner and local fire department. The Contractor shall verify that the property owner and facilities manager are aware and in acceptance of the work and shall recommend to the property owner / manager that a sprinkler technician be provided by the property owner to verify operation of the fire protection system after completion of the work.

B. The Contractor is advised that the lack of information regarding the existence of a fire service connection does not definitively indicate that no fire service exists. Any structure which meets any of the following criteria shall be assumed to have a fire service until verified by physically observing the mechanicals of the structure.

1. Apartment Building or Complex
2. Medical Facility
3. Restaurant
4. Commercial Building
5. Religious Building
6. Community / Activities Centers
7. Industrial Buildings and Storage Facilities
8. Any other building which is high occupancy or could be reasonably assumed to possess a fire service connection

3.12 PROTECTION OF UNDERGROUND FACILITIES AND DAMAGES THERETO

A. The location of existing underground services and utilities shown on the drawings is based on available records. It is not warranted that all existing utilities and services are shown or that shown locations are correct. The Contractor shall be responsible for having the utility companies locate their respective utilities on the ground prior to excavating.

B. The Contractor shall notify CBYD / Digsafe at least 72 hours prior to the start of work for the purpose of identifying the location of underground utilities. A CBYD / Digsafe number shall be obtained prior to the commencement of work.

C. The Contractor shall notify all utility companies of his operations sufficiently in advance of construction and take all measures necessary to avoid damage or undue interruption to the utilities' normal services.

D. Where indicated on the Drawings, directed, or permitted at the Contractor's request, the Contractor shall dig test pits to locate the various underground facilities.

1. Size of test pit and method of payment shall be as specified in Section 01025 of these Specifications.

E. The Contractor shall pay, at no additional expense to the Owner, all costs associated with:
1. Protecting and supporting underground facilities.
2. Repairing, replacing, or relocating underground facilities which are damaged by the Contractor's operations.
3. Temporarily or permanently relocating underground facilities for the Contractor's convenience.

F. The Contractor shall take all prudent steps to make himself aware of the physical condition of the existing underground facilities expected to be encountered.

1. Claims by the Contractor for repair of damages alleged to be the result of the physical condition or faulty installation workmanship of the existing underground facilities, outside of the specified trench width, will in general not be considered by the Owner for extra work payment.
2. For such underground facilities within the specified trench width, claims will be considered if, in the opinion of the Engineer, such damage was unavoidable.

3.13 DISPOSAL OF EXCAVATED PIPE AND CONSTRUCTION DEBRIS

A. All excavated pipe and construction debris shall be disposed legally by the Contractor at no expense to the Owner.

3.14 GROUNDWATER CONDITIONS

A. The Contractor may encounter groundwater at some locations during construction. It is the Contractors responsibility to perform all work related to dewatering at no additional cost to the Owner. Refer to Section 02240 for dewatering requirements.

3.15 PAVEMENT SCHEDULE

A. Trench Pavement shall be installed as shown on the Drawings or as required by municipality or state where work is performed.

B. The Contractor is responsible for the installation of temporary hot-mix trench pavement as soon as practicable, but not later than the last day of the work week. If required by the Town or State, temporary hot-mix trench pavement shall be placed on a daily basis. Temporary trench shall be as shown on the Trench Paving Details. Top of temporary pavement shall be flush with existing pavement. The Contractor shall maintain all temporary trench pavements for the duration of the contract.

C. Generally, paved roadways are to be swept clean on a daily basis during all phases of construction including, but not limited to sawcutting operations, pipe installation, milling, and placement of pavement. The Owner reserves the right to require additional sweeping or cleaning of the roadway at more frequent intervals at no additional cost to the Owner.

3.16 TRAFFIC CONTROL

A. In general, the Contract Documents shall outline the required traffic control, however, prior to the start of construction, the Contractor shall familiarize himself and adhere to the scheduling requirements of the municipality or state where work is being performed. It is the Contractor's responsibility to arrange for the details directly with the Police Department or flagging subcontractor, as well as receive final approval from the Owner regarding the level of traffic control effort required.

B. If required for permitting, the Contractor shall submit a formal traffic plan with schedules to the municipality or state where work is being performed for review prior to the start of construction. All costs associated with the preparation and submittal of the traffic plan shall be included in the unit price bid for the various pipe laying items as outlined in Section 01025 -Measurement and Payment.

3.17 CONTRACTOR TO FURNISH ALL MATERIALS

A. The Contractor shall furnish all materials and the cost of materials shall be included into their bid item unit price for the relevant item.

B. Note: References may be made in Aquarion’s Standard Technical Specifications for Owner Furnished Materials, however all materials shall be furnished by the Contractor for this project. Aquarion or Ridgefield will not furnish any materials for the project, except item specifically noted on the Contract Drawings.

3.18 PRE-CONSTRUCTION AND POST-CONSTRUCTION VIDEOS

A. Pre-construction video of the water main route and adjacent private properties shall be completed prior to the start of construction and a copy provided to the Owner and Engineer.

B. Post-construction video of the completed and restored project area shall show the final restored condition along the water main route and adjacent properties. Post-Construction video must be submitted to the Owner and Engineer prior to issuance of the final application for payment and closeout paperwork.

END OF SECTION

DOCUMENT 00300

BID FORM

Project Name: _____

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ARTICLE 1 - BID RECIPIENT

1.01 This Bid Is Submitted To:

Town of Ridgefield
Purchasing and Finance
400 Main Street, Ridgefield, CT 06877
Attn: David McFate

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Invitation for Bid and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____

EJCDC No. C-410 (2002 Edition)
Prepared by the Engineers' Joint Contract Documents Committee
and endorsed by the Associated General Contractors of America
and the Construction Specifications Institute.

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Federal, State, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in paragraph 4.02 of the Supplementary Conditions, and (2) reports and drawings of a Hazard Environmental Condition, if any, which has been identified in paragraph 4.06 of the Supplementary Conditions.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by the Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

K. Bidder will submit written evidence of its authority to do business in the State where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4 - FURTHER REPRESENTATIONS

4.01 Bidder further represents that:

A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

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and the Construction Specifications Institute.

D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) detailed on the electronic bid form available on the Owner's electronic procurement site.

A. Unit Prices have been computed in accordance with paragraph 11.03.A of the General Conditions.

B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the work within the Contract Times.

ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of the Bid:

A. Proposal on company letterhead
B. Insurance certificates
C. Completed Document HH, Hold Harmless Agreement
D. Completed Document Q, Contractor's Qualification Statement
E. Completed Document SC, Contractor's List of Subcontractors
F. Completed Document 00300, Bid Form
G. Required Bid Security in the form of a Bid Bond (Document 00310) or Certified Check (Circle type of security provided)
H. Completed Document 00330, Non-collusive Bidding Certification
I. Copy of Department of Administrative Services (DAS) Pre-qualification Statement
J. Completed Section 00005, Attachment A (DAS Update Statement)

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with the initial capitol letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – SCHEDULE OF VALUES

9.01 Within 7 days of a request by the Owner, Bidder shall provide a Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

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ARTICLE 10 - BID SUBMITTAL

10.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ SEAL, if required by State

(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____

By: _____ SEAL, if required by State

(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____

State of Incorporation: _____

Type (General Business, Profession, Service, Limited Liability): _____

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____ CORPORATE SEAL, if required by State

Attest _____

(Signature of Corporate Secretary)

Date of Qualification to do business in the State of _____* is ___/___/_____

* The date of qualification shall be the state in which the work under this contract is to be completed.

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A Joint Venture

Name of Joint Venture: _____

First Joint Venture Name: _____ SEAL, if required by State

By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Second Joint Venture Name: _____ SEAL, if required by State

By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is party to the venture should be in the manner indicated above.)

Bidder's Business address: _____

_____

Business Phone No. (_____)_____

Business FAX No. (_____)_____

Business E-Mail Address _____

State Contractor License No. _____. (If applicable)

Employer's Tax ID No. _____

Phone and FAX Numbers, and Address for receipt of official communications, if different from Business contact information:

_____

_____

9.02 Bid submitted on _____
Date

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and endorsed by the Associated General Contractors of America
and the Construction Specifications Institute.

TOWN OF RIDGEFIELD
BID PROPOSAL FORM

RIDGEFIELD HIGH AND MIDDLE SCHOOL INTERCONNECTION
RIDGEFIELD, CT

BASIS OF BID

Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

ITEM NO.	DESCRIPTION AND UNIT PRICE	ESTIMATED QUANTITY	UNIT	EXTENDED TOTAL
2	6-Inch Ductile Iron Water Main and Appurtenances			
	_____ Dollars ($) Per Linear Foot	600	LF	$ _____
3	8-Inch Ductile Iron Water Main and Appurtenances			
	_____ Dollars ($) Per Linear Foot	1000	LF	$ _____
12	6-Inch Gate Valve			
	_____ Dollars ($) Per Each	4	EA	$ _____
13	8-Inch Gate Valve			
	_____ Dollars ($) Per Each	1	EA	$ _____
17	Tapping Sleeve and Valve for 6-Inch Hole			
	_____ Dollars ($) Per Each	1	EA	$ _____
24	Hydrant Assembly			
	_____ Dollars ($) Per Each	2	EA	$ _____
25	2-Inch Blow-Off / Air Vent			
	_____ Dollars ($) Per Each	4	EA	$ _____
31	Additional Backfill Material			
	_____ Dollars ($) Per Cubic Yard	90	CY	$ _____
32	Rock Excavation			
	_____ Dollars ($) Per Cubic Yard	120	CY	$ _____
34	Test Pits and Additional Excavation			
	_____ Dollars ($) Per Cubic Yard	50	CY	$ _____
35	Silt Fence			
	_____ Dollars ($) Per Linear Foot	400	LF	$ _____

36	Silt Sack			
		4	EA	$
	Dollars ($) Per Each			
37	Temporary Trench Pavement (Local Road)			
		1500	LF	$
	Dollars ($) Per Linear Foot			
38	Temporary Trench Pavement (State Road)			
		1000	LF	$
	Dollars ($) Per Linear Foot			
39	Overdepth Temporary Pavement			
		10	TON	$
	Dollars ($) Per Ton			
40	Cold Milling of Pavement			
		2100	SY	$
	Dollars ($) Per Square Yard			
41	Permanent Bituminous Concrete Pavement Restoration (Local Road)			
		100	TON	$
	Dollars ($) Per Ton			
42	Permanent Bituminous Concrete Pavement Restoration (State Road)			
		200	TON	$
	Dollars ($) Per Ton			
44	Bituminous Lip Curbing			
		50	LF	$
	Dollars ($) Per Linear Foot			
45	Concrete Curbing			
		20	LF	$
	Dollars ($) Per Linear Foot			
47	Permanent Concrete Driveway and Sidewalk Restoration			
		30	SY	$
	Dollars ($) Per Square Yard			
48	Loam and Seed			
		400	SY	$
	Dollars ($) Per Square Yard			

RIDGEFIELD HIGH AND MIDDLE SCHOOL INTERCONNECTION
RIDGEFIELD, CT

52	Traffic Control (Uniformed Police)			
		1	ALL	$
	Dollars ($25,000.00) Allowance			
53	Traffic Control (Certified Flagger)			
		1	ALL	$
	Dollars ($5,000.00) Allowance			
54	Compaction Testing			
		1	ALL	$
	Dollars ($5,000.00) Allowance			
56	Additional Piping Materials			
		1	LS	$
	Dollars ($) Lump Sum			
57	Permits			
		1	ALL	$
	Dollars ($5,000.00) Allowance			
225	Meter Chamber and Appurtenances			
		1	LS	$
	Dollars ($) Lump Sum			
226	Fire Pump House Water Storage Tank Fill Line and Improvements			
		1	LS	$
	Dollars ($) Lump Sum			

TOTAL AMOUNT OF OF BID BASED ON ENGINEER'S ESTIMATE OF QUANTITIES: (ITEMS 2, 3, 12, 13, 17, 24, 25, 31, 32, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 47, 48, 52, 53, 54, 56, 57, 225 AND 226 INCLUSIVE) - BASIS OF AWARD

$

Amount in Written Words

A. Unit prices have been computed in accordance with paragraph 11.03A of the General Conditions

B. Bidder acknowledges that estimated quantities are not guaranteed, and are soley for the purpose of comparison of Bids, and final paymnet for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

DOCUMENT 00310

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Town of Ridgefield
400 Main Street
Ridgefield, CT 06877

BID
Bid Due Date: See LEGAL NOTICE
Project (Brief Description Including Location):

BOND
Bond Number:
Date (Not later than Bid due date):
Penal sum _____ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER	SURETY
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature and Title	Signature and Title (Attach Power of Attorney)
Attest: _____	Attest: _____
Signature and Title	Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Surety's liability.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2. All Bids are rejected by Owner, or

3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

DOCUMENT 00330

AFFIDAVIT OF NON-COLLUSION AND INDEPENDENT PRICE DETERMINATION

STATE OF _____

ss. at _____

COUNTY OF _____

This Affidavit is made to the Town of Ridgefield by the undersigned ("Bidder") in connection with The Bid ("Bid") submitted by Bidder in response to the Town of Ridgefield's competitive bid solicitation process.

_____ hereby deposes and says:

1. THAT all representations made by Bidder and contained in the Bid are true, accurate and complete;

2. THAT neither Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest has (i) in any way colluded , conspired, connived, or agreed, directly or indirectly, with any other bidder, firm or person to submit, or to refrain from submitting, a competing bid in connection with this bid submission, or (ii) in any manner, directly or indirectly, sought by agreement or collusion of communication or conference with any other bidder, firm or person to fix the price or prices in the Bid or any bid of any other bidder or to fix any overhead, profit or cost element of said Bid or an other bid or bidder, or (iii) sought in any way to secure through collusion, conspiracy, connivance, or agreement any advantage against Town of Ridgefield or any person interested in the proposed Contract;

3. THAT the Bid has been determined independently by Bidder, its team members or representatives, without consultation, communication or agreement for the purpose of restricting competition, and is not tainted by any collusion or conspiracy by any parties in interest, including Bidder;

4. THAT the Bid has not been disclosed by Bidder to any other bidder, potential bidder and will not be disclosed by Bidder, prior to bid opening , directly or indirectly to any other Bidder or potential bidder;

5. THAT no person acting for or employed by the Town of Ridgefield is now or will hereafter be directly or indirectly interested therein or in any portion of the profits thereof in any manner which is contrary to law or is unethical. And that no person acting for or employed by the Town of Ridgefield is now or will hereafter benefit financially directly or indirectly from bidder's award of the proposed Contract or participation in the bidding process;

6. THAT bidder has submitted only the Bid and has not directly or indirectly used a related company, agent, employee, officer, partner, representative or nominee to submit any other bid;

The undersigned, who is responsible for determining the prices being offered in the Bid, has read the foregoing and the same is true and correct to the best of his or her knowledge, information and belief;

IN WITNESS WHEREOF, the undersigned has executed this Affidavit as of this

_____ day of _____, 20___.

BIDDER:

_____
Printed Name of Bidder

By:_____
Signature of Bidder

_____
Print Name and Title of Authorized Signatory

Subscribed and sworn to before me,
The undersigned, this _____ day of
_____, 20____.

_____
Commissioner of the Superior Court
Notary Public
My Commission Expires:_____

Notice Concerning Legal Action

Any person who knowingly makes a false statement of otherwise executes a document he/she knows to be false, with the intent to mislead a municipality is in violation of Connecticut General Statute 53a-157b, Making a False Statement, and shall be subject to penalty.

DOCUMENT 00430

NOTICE OF AWARD

Dated _____

Project: **Ridgefield High and Middle School Interconnection**	Owner: **Town of Ridgefield**	Owner's Contract No.:
Contract:		Engineer's Project No.:

Bidder:

Bidder's Address:

You are notified that your Bid dated _____ for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for the Ridgefield High and Middle School Interconnection, Ridgefield, Connecticut.

The Contract Price of your Contract based on the Total Amount of Base Bid is _____
_____Dollars and _____ Zero Cents ($_____)

4 copies of each of the proposed Contract Documents (except Drawings) will be delivered separately by the Engineer.

2 sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within [10] days of the date you receive this Notice of Award.

1. Deliver to the Engineer 4 fully executed counterparts of the Contract Documents.

2. Deliver to the Engineer with the executed Contract Documents, the Contract Security and Insurance as specified in the Instructions to Bidders (Article 20), General Conditions (Paragraph 5.01), and Supplementary Conditions (Article 5).

3. Other conditions precedent:
   Within 7 days of this Notice of Award, the Successful Bidder must submit to the Owner and Engineer a Schedule of Values as described in Section 00300, Article 9 and a Cash Flow Schedule projecting the value of work to be completed each month throughout the project and a Site Specific Health and Safety Plan.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Town of Ridgefield
Owner

By:_____
Authorized Signature, David McFate

Purchasing and Finance Manager
Title

Copy to Engineer

EJCDC No. C-510 (2002 Edition)
Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

DOCUMENT 00500

FORM OF AGREEMENT

EJCDC
FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR FOR
CONSTRUCTION CONTRACT (STIPULATED PRICE)
FUNDING AGENCY EDITION

THIS AGREEMENT is by and between Town of Ridgefield (Owner)

and _____ (Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described:

The Town of Ridgefield proposes to interconnect the campus consisting of the Ridgefield High and Middle Schools, to Aquarion Water Company's Ridgefield Main System. The interconnection will consist of two portions of work: a new water main installed from the intersection of Craigmoor Road along North Salem Road to the school campus and a meter pit installed on the campus property with a connection to the existing water system within the campus.

Additionally, the Town of Ridgefield proposes to install a Fire Pump House Water Storage Tank Fill line which consists of a new water main installed on campus property from the new water main interconnection. This portion of work will be included in the scope of the project but will not be eligible or considered for CTDWSRF funding.

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by Snyder Civil Engineering, LLC who is to act as Owner's representative, assumes all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 180 days after the date when the Contract Time commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 270 days after the date when the Contract Time commence to run.

EJCDC C-521 Suggested Form of Agreement Between Owner and Contractor for Construction Contract (Stipulated Price)
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4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $1,200.00 for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion until the Work is substantially complete.

ARTICLE 5 - CONTRACT PRICE

A.For all Work, at the prices stated in the Contractor's Bid as referenced in Document 00430 Notice of Award.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

B. Each application for payment shall be accompanied by an Updated Cash Flow Projection, estimating the future monthly payments to the Contractor for the remainder of the project.

6.02 Progress Payments

A. Owner shall make monthly progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment, which shall be submitted to the Owner on the first work day of each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:

a. 95 percent of Work completed (with the balance being retainage); and

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage

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6.03 Final Payment

A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay Contractor as provided in Paragraph 14.07 of the General Conditions the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages.

ARTICLE 7 – INTEREST - Omitted

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

E. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

F. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

G. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

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ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement

2. Performance Bond

3. Payment Bond

4. Other bonds (pages _____ to_____, inclusive)

   a. _____(pages _____ to_____, inclusive)

   b. _____(pages _____ to_____, inclusive)

   c. _____(pages _____ to_____, inclusive)

5. General Conditions

7. Technical Specifications as listed in the table of contents of the Project Manual.

8. Drawings entitled,
   Ridgefield High School Water Main Extension consisting of sheets labeled Cover through 7
   Ridgefield High and Middle School Interconnection consisting of sheets labeled Cover through 5

9. Addenda (numbers ___ to ___ inclusive).

10. Exhibits to this Agreement (enumerated as follows):

    a. Notice of Award

    b. Contractor's Bid

    c. Documentation submitted by Contractor prior to Notice of Award

11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

    a. Notice to Proceed

    b. Application for Payment

    c. Work Change Directives

    d. Change Order(s)

    e. Certificate of Substantial Completion

    f. Waiver of Liens
    g. Certificate of Final Payment and Completion of Work

    h. Transfer of Title

EJCDC C-521 Suggested Form of Agreement Between Owner and Contractor for Construction Contract (Stipulated Price)
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B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 SRF Project Requirements

A. This Project is funded wholly or in part by DWSRF (Drinking Water State Revolving Funds) The use of these funds are subject to special requirements as outlined in these Contract Documents or otherwise required by DWSRF administration. The Contractor shall be subject to and abide by all DWSRF requirements.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in four copies. One counterpart each has been delivered to Owner, Contractor, Engineer, and Agency. All portions of the Contract Documents have been signed, initialed, or identified by Owner and Contractor or identified by Engineer on their behalf.

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This Agreement will be effective _____, _____ (which is the Effective Date of the Agreement). This Agreement shall not be effective unless and until Agency's designated representative concurs.

OWNER:

Town of Ridgefield

By: _____

Name: _____

Title: _____

[CORPORATE SEAL]

Attest: _____

Title: _____

Designated Representatives:

Name: _____

Title: _____

Address for giving notices:

Town of Ridgefield

400 Main Street

Ridgefield, CT 06877

Phone: _____

Email: _____

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Owner-Contractor Agreement.)

CONTRACTOR:

_____

By: _____

Name: _____

Title: _____

[CORPORATE SEAL]

Attest: _____

Title: _____

Designated Representatives:

Name: _____

Title: _____

Address for giving notices:

_____

_____

_____

Phone: _____

Email: _____

License No.: _____
(Where applicable)

Agent for service or process: _____

_____

(If Contractor is a corporation or a partnership, attach evidence of authority to sign.)

Agency Concurrence:
As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency: _____

Date: _____

By: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00600

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Town of Ridgefield
400 Main Street
Ridgefield, CT 06877

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Bond Number:
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

Signature: _____ (Seal)
Name and Title:

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

Signature: _____ (Seal)
Name and Title:

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

EJCDC No. C-615 (2002 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to Owner, this obligation shall be null and void if Contractor:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.

4. Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the addresses described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with Contractor:

1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to Surety and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.

5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.

6. When a Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at Surety's expense take the following actions:

6.1. Send an answer to that Claimant, with a copy to Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.

8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.

9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker: Owner's Representative (engineer or other party):

DOCUMENT 00610

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

Town of Ridgefield
400 Main Street
Ridgefield, CT 06877

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Bond Number:
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company:

Signature: _____ (Seal)
Name and Title:

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

Attest: _____
Signature and Title

CONTRACTOR AS PRINCIPAL
Company:

Signature: _____ (Seal)
Name and Title:

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title
(Attach Power of Attorney)

Attest: _____
Signature and Title:

EJCDC No. C-610 (2002 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

2. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.

3. If there is no Owner Default, Surety's obligation under this Bond shall arise after:

3.1. Owner has notified Contractor and Surety, at the addresses described in Paragraph 10 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and

3.2. Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 3.1; and

3.3. Owner has agreed to pay the Balance of the Contract Price to:

1. Surety in accordance with the terms of the Contract;

2. Another contractor selected pursuant to Paragraph 4.3 to perform the Contract.

4. When Owner has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:

4.1. Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and Contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or

2. Deny liability in whole or in part and notify Owner citing reasons therefor.

5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 4.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.

6. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To a limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

6.1. The responsibilities of Contractor for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions or failure to act of Surety under Paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

7. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

8. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.

12.2. Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3. Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or comply with the other terms thereof.

FOR INFORMATION ONLY – Name, Address and Telephone
Surety Agency or Broker
Owner’s Representative (engineer or other party)

DOCUMENT 00650

NOTICE TO PROCEED

Dated _____

Project: **Ridgefield High and Middle School Interconnection**	Owner: **Town of Ridgefield**	Owner's Contract No.: **N/A**
Contract:		Engineer's Project No.:

Contractor:

Contractor's Address: [send Certified Mail, Return Receipt Requested]

You are notified that the Contract Times under the above contract will commence to run on _____. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the date of Substantial Completion is_____, and the date of readiness for final payment is _____.

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

	Town of Ridgefield
Contractor	Owner
Received by:	Given by:
	Authorized Signature
Title	Title
Date	Date

Copy to Engineer

EJCDC No. C-550 (2002 Edition)
Prepared by the Engineers' Joint Contract Documents Committee
and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by

ACEC
American Council of Engineering Companies

The Associated General Contractors of America
AGC
Skill Responsibility Integrity

ASCE American Society of Civil Engineers

National Society of Professional Engineers
Professional Engineers in Private Practice

AMERICAN COUNCIL OF ENGINEERING COMPANIES

_____

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

_____

AMERICAN SOCIETY OF CIVIL ENGINEERS

_____

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by

CSI

CONSTRUCTION SPECIFICATIONS INSTITUTE

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www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

Associated General Contractors of America
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308
(703) 548-3118
www.agc.org

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

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

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

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

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

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

6. *Bidder*—The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

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

11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

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12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*—See Paragraph 11.01 for definition.

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

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

19. *Engineer*—The individual or entity named as such in the Agreement.

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

21. *General Requirements*—Sections of Division 1 of the Specifications.

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

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

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

25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

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

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27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*—Polychlorinated biphenyls.

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

32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

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

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

36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

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

38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

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

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

42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.

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

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

49. *Unit Price Work*—Work to be paid for on the basis of unit prices.

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

51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

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addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

a. does not conform to the Contract Documents; or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

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

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

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

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

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

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

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

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

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2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

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

2. a preliminary Schedule of Submittals; and

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

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of

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the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

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

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

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

3.02 *Reference Standards*

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

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

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

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1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation , (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

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

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

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

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

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3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the

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Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

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

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

4.02 *Subsurface and Physical Conditions*

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

1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

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

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

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

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

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

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

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

C. *Possible Price and Times Adjustments:*

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

   a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

   b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

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

   a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

   b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

   c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other

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professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

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

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

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

a. reviewing and checking all such information and data;

b. locating all Underground Facilities shown or indicated in the Contract Documents;

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

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

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

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Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

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

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

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

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

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

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

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such

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notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

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

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

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

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

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

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of

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insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

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

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

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

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

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

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

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

B. The policies of insurance required by this Paragraph 5.04 shall:

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1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

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

3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

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

6. include completed operations coverage:

    a. Such insurance shall remain in effect for two years after final payment.

    b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

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

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1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

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

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

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

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

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

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

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property

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insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

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

5.07 *Waiver of Rights*

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

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

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

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

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery

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against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

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

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

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

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ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

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

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

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

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

6.03 *Services, Materials, and Equipment*

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

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6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and

3) it has a proven record of performance and availability of responsive service.

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

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2. *Substitute Items:*

   a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

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

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

   d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

      1) shall certify that the proposed substitute item will:

         a) perform adequately the functions and achieve the results called for by the general design,

         b) be similar in substance to that specified, and

         c) be suited to the same use as that specified;

      2) will state:

         a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

         b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

         c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

      3) will identify:

         a) all variations of the proposed substitute item from that specified, and

         b) available engineering, sales, maintenance, repair, and replacement services; and

      4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

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

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

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

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will

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be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

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

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

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

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

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents

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for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

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

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

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

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

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

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

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

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

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

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

6.12 *Record Documents*

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

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

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

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any

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other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide

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and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

   a. Submit number of Samples specified in the Specifications.

   b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

   a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

   b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

   c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

   d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

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

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in

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the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

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

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

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

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

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

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is

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not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

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

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

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

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

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

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

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

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

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

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

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

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

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

7.02 *Coordination*

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

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

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

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

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ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

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

8.03 *Furnish Data*

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

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws

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and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

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

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

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9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

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

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations

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on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of,

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and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

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

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

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

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

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

10.04 *Notification to Surety*

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

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

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

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part;

2. approve the Claim; or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

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D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

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

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

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

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with

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the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

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

5. Supplemental costs including the following:

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

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

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

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

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

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

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

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

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i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

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

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

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

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

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

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

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

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

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

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

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

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

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

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

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

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

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

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

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

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

12.01 *Change of Contract Price*

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

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

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

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

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

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

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

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

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

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

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a

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deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

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

12.03 *Delays*

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

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

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E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

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

13.03 *Tests and Inspections*

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

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

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

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

3. as otherwise specifically provided in the Contract Documents.

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

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in

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the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

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

13.04 *Uncovering Work*

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

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

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

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13.06 *Correction or Removal of Defective Work*

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

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect

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to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the

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Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

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

14.02 *Progress Payments*

A. *Applications for Payments:*

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

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

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

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to

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recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

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

    a. the Work has progressed to the point indicated;

    b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and

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

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

    a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

    b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work, or

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

    d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

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

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

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

    d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

    a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

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

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

    d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

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3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

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

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

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14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

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

14.06 *Final Inspection*

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

14.07 *Final Payment*

A. *Application for Payment:*

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

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2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

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

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without

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terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

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

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

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

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

15.02 *Owner May Terminate for Cause*

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

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

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's repeated disregard of the authority of Engineer; or

4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

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B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

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

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

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

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

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

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

4. reasonable expenses directly attributable to termination.

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

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

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C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

2. agrees with the other party to submit the Claim to another dispute resolution process; or

3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

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

17.03 *Cumulative Remedies*

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

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

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17.05 *Controlling Law*

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

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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DOCUMENT 00905

CHANGE ORDER

Change Order No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:	**CHANGE IN CONTRACT TIMES:**
Original Contract Price:	Original Contract Times: ☐ Working days ☐ Calendar days
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No._____ to No._____:	[Increase] [Decrease] from previously approved Change Orders No._____ to No._____:
	Substantial completion (days): _____
$_____	Ready for final payment (days): _____
Contract Price prior to this Change Order:	Contract Times prior to this Change Order:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order:	[Increase] [Decrease] of this Change Order:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
Contract Price incorporating this Change Order:	Contract Times with all approved Change Orders:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable): _____ Date: _____

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

Change Order
Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Contractor for approval. After approval by the Contractor, all copies should be sent to the Owner for approval. The Owner will distribute executed copies after approval by all parties

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

DOCUMENT 00945

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

☐ All Work under the Contract Documents: ☐ The following specified portions:

_____

_____

_____

_____
Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [revised tentative] [definitive] list of items to be completed or corrected, is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

_____

_____

Contractor's Amended Responsibilities:

_____

_____

The following documents are attached to and made part of this Certificate:

_____

_____

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

_____ _____
Executed by Engineer Date

_____ _____
Accepted by Contractor Date

_____ _____
Accepted by Owner Date

Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

DOCUMENT 00950

WAIVER OF LIENS

Contract No.: Agreement Date: _____

Owner: The Town of Ridgefield

Project Name: _____

Completion Date per Agreement and Change Orders: _____

The undersigned Contractor hereby swears under penalty of perjury that (1) all previous progress payments received from the Owner on account of Work performed under the Contract referred to above have been applied by the undersigned to discharge, in full, all obligations of the undersigned incurred in connection with Work covered by prior Estimates for Partial Payment under said Contract, being Estimates Number 1 through _____ inclusive; and (2) all labor, materials and equipment incorporated in said Project or otherwise listed in or covered by these Estimates for Partial Payment are free and clear of all liens claims, security interests and encumbrances, except those listed below by obligee, nature and amount of obligation and covered by appropriate Bond or Bonds, as listed beside each obligation and attached to and made a part of this certification.

Obligation	Bond

_____ _____

Date Contractor

_____

Signed by Officer of Corporation

_____

Title

COUNTY OF _____

STATE OF _____

Before me on this _____ day of _____, _____ personally appeared _____ known to me, who being duly sworn, did depose and save that he is the _____ (Officer) of the Contractor above mentioned; that he executed the above statement on behalf of said Contractor and that all of the statements contained therein are true, correct and complete.

_____

NOTARY PUBLIC

_____

My Commission Expires

END OF DOCUMENT

DOCUMENT 00960

CERTIFICATE OF FINAL PAYMENT AND COMPLETION OF WORK

Agreement Date: _____

Owner: Town of Ridgefield

Project Name: _____

Completion Date per Agreement and Change Orders: _____

FINAL CERTIFICATION OF CONTRACTOR

Contractor: _____

Address: _____

City, State Zip Code: _____

agrees to accept $ _____ as full and final payment for all work completed under this Contract dated _____ with the Town of Ridgefield for the project.

I certify that all construction has been carried out in substantial compliance with the Contract Documents, and that all labor, equipment, materials and Subcontractors have been or will be paid in accordance with the requirements of the Laws of the State of Connecticut.

_____ _____

Date Contractor

_____

Signed by Officer of Corporation

_____

Title

END OF DOCUMENT

DOCUMENT 00965

TRANSFER OF TITLE

_____, (CONTRACTOR), a corporation, or a partnership, or an individual, having a principal place of business in _____ hereby transfers and conveys to the Town of Ridgefield (OWNER), title to the following material(s) delivered and stored at the designated storage area(s) at

_____

upon the receipt of $ _____, which amount is to be included in the Application and Certification for Payment No. _____.

Therefore, upon the receipt of the sum of $ _____* paid by the OWNER, the CONTRACTOR waives all of its statutory lien rights regarding the following material. The storage, transportation, protection and ultimate installation of this material remain the responsibilities of the CONTRACTOR.

In witness whereof, the CONTRACTOR has caused this instrument to be executed this

_____ day of _____ 20_____ by its duly authorized representative.

_____ _____
Name Title

_____
Signature

*Amount subject to reductions in accordance with Document 00800 Supplementary Conditions, SC-14.02B and the terms of the Contract between the OWNER and CONTRACTOR.

Title to the following material is being transferred by this document:

County of _____

_____ then personally appeared and acknowledged the foregoing instrument to be the free act and deed of _____ before me.

Sworn to me this _____ day of _____ 20_____.

_____
NOTARY PUBLIC

My Commission Expires: _____

END OF DOCUMENT

Section 00005 – Attachment A

DAS Update Statement

State of Connecticut
Department of Administrative Services (DAS) Contractor Prequalification

Update Statement

(Statement to be included with the bid)

Connecticut General Statute §4a-100 and Connecticut General Statute §4b-91

Each bid submitted for a contract shall include a copy of a prequalification certificate issued by the Commissioner of Administrative Services. The bid shall also be accompanied by an **update statement** in such form as the Commissioner of Administrative Services prescribes. The form for such **update statement** shall provide space for information regarding all projects completed by the bidder since the date the bidder's prequalification certificate was issued or renewed, all projects the bidder currently has under contract, including the percentage of work on such projects not completed, the names and qualifications of the personnel who will have supervisory responsibility for the performance of the contract, any significant changes in the bidder's financial position or corporate structure since the date the certificate was issued or renewed, any change in the contractor's qualification status and such other relevant information as the Commissioner of Administrative Services prescribes.

Name of Project that company is bidding on:		
Project Number:		
Name of Company:		
FEIN:		
Company Address:		
Prequalification Contact:		**Telephone Number:**
Date of Prequalification with the DAS:	**Single Limit:**	**Aggregate Work Capacity (AWC):**
		*** Remaining Aggregate Work Capacity:**

* This amount equals your company's AWC minus the Total **$** Amount of Work Remaining.

Please list all of your company's BONDED PROJECTS (BOTH PUBLIC AND PRIVATE) WHICH WERE 100% COMPLETED SINCE THE DATE YOUR PREQUALIFICATION WAS ISSUED OR RENEWED: (Please add additional page(s) if required)

Name of Project	Owner of Project	Date Project Completed	Total Contract Amount

Please list all of your company's BONDED PROJECTS (BOTH PUBLIC AND PRIVATE) CURRENTLY UNDER CONTRACT:
(Please add additional page(s) if required. Please total the Work Remaining column)

Name of Project	Owner of Project	Total Contract Amount	% Complete	Work Remaining ($)
		Total $ Amount of Work Remaining →		

Please list the names and titles of the personnel who will have supervisory responsibility for the performance of the contract being bid on:
(Please add additional page(s) if required)

Individual Name	Title of Individual

Have there been any changes in your company's financial condition or business organization, which might affect your company's ability to successfully complete this contract?
Yes ☐ No ☐
If yes, please explain:

I certify under penalty of law that all of the information contained in this Update (Bid) Statement is true and accurate to the best of my knowledge as of the date below.

_____ _____

Signature **Date**

It is the responsibility of the Awarding Authority to determine if any of the information provided above will impact the contractor's performance on this project.
The DAS' Contractor Prequalification Program can be reached at (860) 713-5280

Section 00005 – Attachment B

Executive Order No. 3

STATE OF CONNECTICUT

BY HIS EXCELLENCY

THOMAS J. MESKILL

GOVERNOR

EXECUTIVE ORDER NO. THREE

WHEREAS, sections 4-61d(b) and 4-114a of the 1969 supplement to the general statutes require nondiscrimination clauses in state contracts and subcontracts for construction on public buildings, other public works and goods and services, and

WHEREAS, section 4-61e(c) of the 1969 supplement to the general statutes requires the labor department to encourage and enforce compliance with this policy by both employers and labor unions, and to promote equal employment opportunities, and

WHEREAS, the government of this state recognizes the duty and desirability of its leadership in providing equal employment opportunity, by implementing these laws,

NOW, THEREFORE, I, THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under section twelve of article fourth of the constitution of the state, as supplemented by section 3-1 of the general statutes, do hereby ORDER and DIRECT, as follows, by this Executive Order:

I

The labor commissioner shall be responsible for the administration of this Order and shall adopt such regulations as he deems necessary and appropriate to achieve the purposes of this Order. Upon the promulgation of this Order, the commissioner of finance and control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the labor commissioner for violation of or noncompliance with this Order or state or federal laws concerning nondiscrimination, notwithstanding that the labor commissioner is not a party to such contract or subcontract.

II

Each contractor having a contract containing the provisions prescribed in section 4-114a of the1969 supplement to the general statutes, shall file, and shall cause each of his subcontractors to file, compliance reports with the contracting agency or the labor commissioner, as may be directed such reports shall be filed within such times and shall contain such information as to employment policies and statistics of the contractor and each subcontractor, and shall be in such form as the labor commissioner may prescribe. Bidders or prospective contractors or subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order or any preceding similar Order, and in that event to submit on behalf of themselves and their proposed subcontractors compliance reports prior to or as an initial part of their bid or negotiation of a contract.

III

Whenever the contractor or subcontractor has a collective bargaining agreement or other contract or understanding with a labor organization or employment agency as defined in section 31-122 of the general statutes, the compliance report shall identify the said organization or agency and the contracting agency or the labor commissioner may require a compliance report to be filed with the contracting agency or the labor commissioner, as may be directed, by such organization or agency, signed by an authorized officer or agent of such organization or agency, with supporting information, to the effect that the signer's practices and policies, including but not limited to matters concerning personnel, training, apprenticeship, membership, grievance and representation, and upgrading, do not discriminate on grounds of race, color, re1igious creed, age, sex or national origin, or ancestry of any individual, and that the signer will either affirmatively

cooperate in the implementation of the policy and provisions of this Order, or that it consents and agrees that recruitment, employment and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the Order.

IV

The labor commissioner may by regulation exempt certain classes of contracts, subcontracts or purchase orders from the implementation of this Order, for standard commercial supplies or raw materials, for less than specified amounts of money or numbers of workers or for subcontractors below a specified tier. The labor commissioner may also provide by regulation for the exemption of facilities of a contractor which are in all respects separate and distinct from activities of the contractor related to the performance of the state contract, provided only that such exemption will not interfere with or impede the implementation of this Order, and provided further, that in the absence of such an exemption, all facilities shall be covered by the provisions of this Order.

V

Each contracting agency shall be primarily responsible for obtaining compliance with the regulations of the labor commissioner with respect to contracts entered into by such agency or its contractors. All contracting agencies shall comply with the regulations of the labor commissioner in discharging their primary responsibility for securing compliance with the provisions of contracts and otherwise with the terms of this Order and of the regulations of the labor commissioner issued pursuant to this Order. They are directed to cooperate with the labor commissioner and to furnish the labor commissioner such information and assistance as he may require in the performance of his functions under this Order. They are further directed to appoint or designate from among the personnel of each agency, compliance officers, whose duty shall be to seek compliance with the objectives of this Order by conference, conciliation, mediation, or persuasion.

VI

The labor commissioner may investigate the employment practices and procedures of any state contractor or subcontractor and the practices and policies of any labor organization or employment agency hereinabove described, relating to employment under the state contract, as concerns nondiscrimination by such organization or agency as hereinabove described, or the labor commissioner may initiate such investigation by the appropriate contract agency, to determine whether or not the contractual provisions hereinabove specified or statutes of the state respecting them have been violated. Such investigation shall be conducted in accordance with the procedures established by the labor commissioner and the investigating agency shall report to the labor commissioner any action taken or recommended.

VII

The labor commissioner shall receive and investigate or cause to be investigated complaints by employees or prospective employees of a state contractor or subcontractor or members or applicants for membership or apprenticeship or training in a labor organization or employment agency hereinabove described, which allege discrimination contrary to the contractual provisions specified hereinabove or state statutes requiring nondiscrimination in employment opportunity. If this investigation is conducted for the labor commissioner by a contracting agency, that agency shall report to the labor commissioner what action has been taken or is recommended with regard to such complaints

VIII

The labor commissioner shall use his best efforts, directly and through contracting agencies, other interested federal, state and local agencies, contractors and all other available instrumentalities, including the commission on human rights and opportunities, the executive committee on human rights and opportunities, and the apprenticeship council under its mandate to provide advice and counsel to the labor commissioner in providing equal employment opportunities to all apprentices and to provide training, employment and upgrading opportunities for disadvantaged workers, in accordance with section 31-51(d) of the l969 supplement to the general statutes, to cause any labor organization or any employment agency whose members are engaged in work under government contracts or referring workers or providing or supervising apprenticeship or training for or in the course of work under a state contract or subcontract to cooperate in the implementation of the purposes of this Order. The labor commissioner shall in appropriate cases notify the commission on human rights and opportunities or other appropriate state or federal

agencies whenever it has reason to believe that the practices of any such organization or agency violate equal employment opportunity requirements of state or federal law.

IX

The labor commissioner or any agency officer or employee in the executive branch designated by regulation of the labor commissioner may hold such hearings, public of private, as the labor commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

X

(a) The labor commissioner may hold or cause to be held hearings, prior to imposing ordering or recommending the imposition of penalties and sanctions under this Order. No order for disbarment of any contractor from further state contracts shall be made without affording the contractor an opportunity for a hearing. In accordance with such regulations as the labor commissioner may adopt, the commissioner or the appropriate contracting agency may

(1) Publish or cause to be published the names of contractors or labor organizations or employment agencies as hereinabove described which it has concluded have complied or failed to comply with the provisions of this Order or the regulations of the labor commissioner in implementing this Order.

(2) Recommend to the commission on human rights and opportunities that in cases in which there is substantial or material violation or threat thereof of the contractual provision or related state statutes concerned herein, appropriate proceedings be brought to enforce them, including proceedings by the commission on its own motion under chapter 563 of the general statutes and the enjoining, within the limitations of applicable law, of organizations, individuals or groups who prevent directly or indirectly or seek to prevent directly or indirectly compliance with the provisions of this Order.

(3) Recommend that criminal proceedings be brought under chapter 939 of the general statutes.

(4) Cancel, terminate, suspend or cause to be cancelled, terminated, or suspended in accordance with law any contract or any portion or portions thereof for failure of the contractor or subcontractor to comply with the nondiscrimination provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for fixture compliance approved by the contracting agency.

(5) Provide that any contracting agency shall refrain from entering into any further contracts or extensions or modifications of existing contracts with any contractor until he has satisfied the labor commissioner that he has established and will carry out personnel and employment policies compliant with this Order.

(6) Under regulations prescribed by the labor commissioner each contracting agency shall make reasonable efforts within a reasonable period of time to secure compliance with the contract provisions of this Order by methods of conference conciliation, mediation or persuasion, before other proceedings shall be instituted under this Order or before a state contract shall be cancelled or terminated in whole or in part for failure of the contractor or subcontractor to comply with the contract provisions of state statute and this Order.

(b) Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the labor commissioner or pursuant to his regulations shall promptly notify *him* of such action. Whenever the labor commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency and other interested federal, state and local agencies of the action recommended. The state and local agency or agencies shall take such action and shall report the results thereof to the labor commissioner within such time as he shall specify.

XI

If the labor commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order, or submits a program, for compliance acceptable to the labor commissioner, or if the labor commissioner so authorizes, to the contracting agency.

XII

Whenever a contracting agency cancels or terminates a contract, or a contractor has been disbarred from, further government contracts because of noncompliance with the contract provisions with regard to nondiscrimination, the labor commissioner or the contracting agency shall rescind such disbarment, upon the satisfaction of the labor commissioner that the contractor has purged himself of such noncompliance and will thenceforth carry out personnel and employment policies of nondiscrimination in compliance with the provision of this order.

XIII

The labor commissioner may delegate to any officer, agency or employee in the executive branch any function or duty of the labor commissioner under this Order except authority to promulgate regulations of a general nature.

XIV

This Executive Order supplements the Executive Order issued on September 28, 1967. All regulations, orders, instructions, designations and other directives issued heretofore in these premises, including those issued by the heads of various departments or agencies under or pursuant to prior order or statute, shall remain in full force and effect, unless and until revoked or superceded by appropriate authority, to the extent that they are not inconsistent with this Order.

This Order shall become effective thirty days after the date of this Order.

Dated at Hartford, Connecticut, this 16th day of June, 1971.

Thomas J. Meskill, GOVERNOR

Filed this ____ day of June, 1971.

SECRETARY OF THE STATE (DEPUTY)

Content Last Modified on 4/12/2004 2:53:55 PM

Section 00005 – Attachment C



Executive Order No. 17

STATE OF CONNECTICUT

BY HIS EXCELLENCY

THOMAS J. MESKILL

GOVERNOR

EXECUTIVE ORDER NO. SEVENTEEN

WHEREAS, Section 31-237 of the General Statutes of Connecticut as amended requires the maintaining of the established free services of the Connecticut State Employment Service to both employers and prospective employees and

WHEREAS, Section 31-5 of the General Statutes of Connecticut requires that no compensation or fee shall be charged or received directly or indirectly for the services of the Connecticut State Employment Service and

WHEREAS, large numbers of our citizens who have served in the Armed Forces of our nation are returning to civilian life in our state and seeking employment in civilian occupations and

WHEREAS, we owe a duty as well as gratitude to these returning veterans including the duty to find suitable employment for them and

WHEREAS, many of our handicapped citizens are fully capable of employment and are entitled to be placed in suitable employment and

WHEREAS, many of the citizens of our state who are unemployed are unaware of the job openings and employment opportunities which do in fact exist in our state and

WHEREAS, notwithstanding the free services of the Connecticut State Employment Service, many of our Connecticut employers do not use its free services or do not avail themselves fully of all of the services offered,

NOW, THEREFORE, I THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under the fourth article of the Constitution of the State and in accordance with Section 3-1 of the General Statutes, do hereby ORDER and DIRECT, as follows, by this Executive Order:

I

The Labor Commissioner shall be responsible for the administration of this Order and shall do all acts necessary and appropriate to achieve its purpose. Upon promulgation of this Order, the Commissioner of Finance and Control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the Labor Commissioner for violation of or noncompliance with this Order, notwithstanding that the Labor Commissioner is not a party to such contract or subcontract.

II

Every contractor and subcontractor having a contract with the State or any of its agencies, boards, commissions, or departments, every individual partnership, corporation, or business entity having business with the state or who or which seeks to do business with the state, and every bidder or prospective bidder who submits a bid or replies to an invitation to bid on any state contract shall list all employment openings with the office of the Connecticut State Employment Service in the area where the work is to be performed or where the services are to be rendered.

III

All state contracts shall contain a clause which shall be a condition of the contract that the contractor and any subcontractor holding a contract directly under the contractor shall list all employment openings with

the Connecticut State Employment Service. The Labor Commissioner may allow exceptions to listings of employment openings which the contractor proposes to fill from within its organizations from employees on the rolls of the contractor on the date of publication of the invitation to bid or the date on which the public announcement was published or promulgated advising of the program concerned.

IV

Each contracting agency of the state shall be primarily responsible for obtaining compliance with this Executive Order. Each contracting agency shall appoint or designate from among its personnel one or more persons who shall be responsible for compliance with the objectives of the Order.

V

The Labor Commissioner shall be and is hereby empowered to insect the books, records, payroll and personnel data of each individual or business entity subject to this Executive Order and may hold hearings or conferences, formal or informal, in pursuance of the duties and responsibilities hereunto delegated to the Labor Commissioner.

VI

The Labor Commissioner or any agency officer or employee in the executive branch designated by regulation of the Labor Commissioner may hold such hearings, public or private, as the Labor Commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

VII

a. The Labor Commissioner may hold or cause to be held hearings, prior to imposing, ordering, or recommending the imposition of penalties and sanctions under this Order. In accordance herewith, the Commissioner or the appropriate contracting agency may suspend, cancel, terminate, or cause to be suspended, cancelled, or terminated in accordance with law any contract or any portion or portions thereof for failure of the contractor or subcontractor to comply with the listing provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for future compliance approved by the contracting agency.
b. Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the Labor Commissioner, shall promptly notify him of such action. Whenever the Labor Commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency of the action recommended. The agency shall report the results to the Labor Commissioner promptly.

VIII

If the Labor Commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order.

This Order shall become effective sixty days after the date of this Order.

Dated at Hartford, Connecticut, this 15th day of February, 1973.

Thomas J. Meskill, GOVERNOR

Filed this 15th day of February, 1973.

SECRETARY OF THE STATE (DEPUTY)

Content Last Modified on 4/12/2004 2:52:54 PM

Section 00005 – Attachment D



Executive Order No. 16

The Executive Office of Governor John G. Rowland

State of Connecticut

By His Excellency

John G. Rowland

Governor

Executive Order No. Sixteen

WHEREAS, the State of Connecticut recognizes that workplace violence is a growing problem that must be addressed; and

WHEREAS, the State is committed to providing its employees a reasonably safe and healthy working environment, free from intimidation, harassment, threats, and /or violent acts; and

WHEREAS, violence or the threat of violence by or against any employee of the State of Connecticut or member of the public in the workplace is unacceptable and will subject the perpetrator to serious disciplinary action up to and including discharge and criminal penalties.

NOW, THEREFORE, I, John G. Rowland, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the Constitution and by the statutes of this state, do hereby ORDER and DIRECT:

1. That all state agency personnel, contractors, subcontractors, and vendors comply with the following **Violence in the Workplace Prevention Policy**:

   The State of Connecticut adopts a statewide zero tolerance policy for workplace violence.

   Therefore, except as may be required as a condition of employment¾

   - No employee shall bring into any state worksite any weapon or dangerous instrument as defined herein.
   - No employee shall use, attempt to use, or threaten to use any such weapon or dangerous instrument in a state worksite.
   - No employee shall cause or threaten to cause death or physical injury to any individual in a state worksite.

   Weapon means any firearm, including a BB gun, whether loaded or unloaded, any knife (excluding a small pen or pocket knife), including a switchblade or other knife having an automatic spring release device, a stiletto, any police baton or nightstick or any martial arts weapon or electronic defense weapon.

   Dangerous instrument means any instrument, article, or substance that, under the circumstances, is capable of causing death or serious physical injury.

   Violation of the above reasonable work rules shall subject the employee to disciplinary action up to and including discharge.

2. That each agency must prominently post this policy and that all managers and supervisors must clearly communicate this policy to all state employees

3. That all managers and supervisors are expected to enforce this policy fairly and uniformly.

4. That any employee who feels subjected to or witnesses violent, threatening, harassing, or intimidating behavior in the workplace immediately report the incident or statement to their supervisor, manager, or human resources office.

5. That any employee who believes that there is a serious threat to their safety or the safety of others that requires immediate attention notify proper law enforcement authorities and his or her manager or supervisor
6. That any manager or supervisor receiving such a report shall immediately contact their human resources office to evaluate, investigate and take appropriate action.
7. That all parties must cooperate fully when questioned regarding violations of this policy.
8. That all parties be advised that any weapon or dangerous instrument at the worksite will be confiscated and that there is no reasonable expectation of privacy with respect to such items in the workplace.
9. That this order applies to all state employees in the executive branch.
10. That each agency will monitor the effective implementation of this policy.
11. That this order shall take effect immediately.

Dated in Hartford, Connecticut, this fourth day of August, 1999.

JOHN G. ROWLAND, Governor

Filed this 4th day of August, 1999.

SUSAN BYSIEWICZ, Secretary of the State

Content Last Modified on 4/12/2004 2:34:16 PM

Section 00005 – Attachment E

Executive Order No. 12549

Executive Orders

Executive Order 12549--Debarment and suspension

Source: The provisions of Executive Order 12549 of Feb. 18, 1986, appear at 51 FR 6370, 3 CFR, 1986 Comp., p. 189, unless otherwise noted.

By the authority vested in me as President by the Constitution and laws of the United States of America, and in order to curb fraud, waste, and abuse in Federal programs, increase agency accountability, and ensure consistency among agency regulations concerning debarment and suspension of participants in Federal programs, it is hereby ordered that:

Section 1. (a) To the extent permitted by law and subject to the limitations in Section 1(c), Executive departments and agencies shall participate in a system for debarment and suspension from programs and activities involving Federal financial and nonfinancial assistance and benefits. Debarment or suspension of a participant in a program by one agency shall have government-wide effect.
(b) Activities covered by this Order include but are not limited to: grants, cooperative agreements, contracts of assistance, loans, and loan guarantees.
(c) This Order does not cover procurement programs and activities, direct Federal statutory entitlements or mandatory awards, direct awards to foreign governments or public international organizations, benefits to an individual as a personal entitlement, or Federal employment.

Sec. 2. To the extent permitted by law, Executive departments and agencies shall:
(a) Follow government-wide criteria and government-wide minimum due process procedures when they act to debar or suspend participants in affected programs.
(b) Send to the agency designated pursuant to Section 5 identifying information concerning debarred and suspended participants in affected programs, participants who have agreed to exclusion from participation, and participants declared ineligible under applicable law, including Executive Orders. This information shall be included in the list to be maintained pursuant to Section 5.
(c) Not allow a party to participate in any affected program if any Executive department or agency has debarred, suspended, or otherwise excluded (to the extent specified in the exclusion agreement) that party from participation in an affected program. An agency may grant an exception permitting a debarred, suspended, or excluded party to participate in a

particular transaction upon a written determination by the agency head or authorized designee stating the reason(s) for deviating from this Presidential policy. However, I intend that exceptions to this policy should be granted only infrequently.

Sec. 3. Executive departments and agencies shall issue regulations governing their implementation of this Order that shall be consistent with the guidelines issued under Section 6. Proposed regulations shall be submitted to the Office of Management and Budget for review within four months of the date of the guidelines issued under Section 6. The Director of the Office of Management and Budget may return for reconsideration proposed regulations that the Director believes are inconsistent with the guidelines. Final regulations shall be published within twelve months of the date of the guidelines.

Sec. 4. There is hereby constituted the Interagency Committee on Debarment and Suspension, which shall monitor implementation of this Order. The Committee shall consist of representatives of agencies designated by the Director of the Office of Management and Budget.

Sec. 5. The Director of the Office of Management and Budget shall designate a Federal agency to perform the following functions: maintain a current list of all individuals and organizations excluded from program participation under this Order, periodically distribute the list to Federal agencies, and study the feasibility of automating the list; coordinate with the lead agency responsible for government-wide debarment and suspension of contractors; chair the Interagency Committee established by Section 4; and report periodically to the Director on implementation of this Order, with the first report due within two years of the date of the Order.

Sec. 6. The Director of the Office of Management and Budget is authorized to issue guidelines to Executive departments and agencies that govern which programs and activities are covered by this Order, prescribe government-wide criteria and government-wide minimum due process procedures, and set forth other related details for the effective administration of the guidelines.

Sec. 7. The Director of the Office of Management and Budget shall report to the President within three years of the date of this Order on Federal agency compliance with the Order, including the number of exceptions made under Section 2(c), and shall make recommendations as are appropriate further to curb fraud, waste, and abuse.

Section 00005 – Attachment F

1. Connecticut Regulations for Clean Water Fund
2. Disadvantage Business Enterprise (DBE) - Subcontractor Verification Form
3. Clean Water Fund Memorandum

Sec. 22a-482-4. Administrative program elements

(a) **Allowable Grant Costs.** Those costs associated with the planning, design and construction of pollution abatement facilities eligible for state grant assistance are as follows:

(1) costs of salaries, benefits, and expendable materials the municipality incurs for the project, except as provided for in subdivision (b) (8) of this section;

(2) costs under construction contracts;

(3) professional and consultant services;

(4) engineering report costs directly related to the pollution abatement facility;

(5) sewer system evaluation;

(6) project feasibility and related engineering reports;

(7) costs of complying with the Connecticut Environmental Policy Act, section 22a-1a to 22a-1h of the General Statutes, including costs of public notices and hearings;

(8) preparation of construction drawings, specifications, estimates and construction contract documents;

(9) reasonable landscaping;

(10) materials acquired, consumed, or expended specifically for the project;

(11) shop equipment installed at the pollution abatement facility necessary to the operation of the facility;

(12) a reasonable inventory of laboratory chemicals and supplies necessary to initiate plant operations;

(13) development and preparation of a preliminary and final plan of operation and an operation and maintenance manual;

(14) start-up services for new pollution abatement facilities;

(15) project identification signs;

(16) costs of complying with the procurement requirements of this section;

(17) the costs of technical services for assessing the merits of or negotiating the settlement of a claim by or against the municipality provided;

(A) a formal grant amendment is executed specifically covering the costs before they are incurred;

(B) the costs are not incurred to prepare documentation that should be prepared by the contractor to support a claim against the municipality; and

(C) the Commissioner determines that there is a significant state interest in the issues involved in the claim;

(18) change orders and the costs of meritorious contractor claims for increased costs, provided the costs are not caused by the municipality's mismanagement or vicarious liability for the improper action of others. Settlements, arbitration awards, and court judgments which resolve contractor claims shall be reviewed by the Commissioner and shall be allowable only to the extent they are not caused by municipality mismanagement, are reasonable, and do not attempt to pass on to the State of Connecticut the costs of events that were the responsibility of the municipality, contractor or others;

(19) costs necessary to mitigate only direct, adverse, or physical impacts resulting from the building of the pollution abatement facility;

(20) the cost of groundwater monitoring facilities necessary to determine the possibility

of groundwater deterioration, depletion or modification resulting from the project;

(21) for individual and small community systems, allowable costs which include:

(A) the cost of major rehabilitation, upgrading, enlarging and installing small and onsite systems, but in the case of privately owned systems, only for principal residences;

(B) conveyance pipes from the property line to an offsite treatment unit which serves a cluster of buildings;

(C) treatment and treatment residue disposal portions of toilets with composting tanks, oil flush mechanisms, or similar in-house devices;

(D) treatment or pumping units from the incoming flange, when located on private property, and conveyance pipes, if any, to the collector sewer; and

(E) the cost of restoring individual system building sites to their original condition;

(22) necessary safety equipment applicable to federal, state and local requirements;

(23) a portion of the costs of collection system maintenance equipment, as determined by the Commissioner;

(24) the cost of mobile equipment necessary for the operation of the overall pollution abatement facility, transmission of wastewater or sludge, or for the maintenance of equipment. These items include:

(A) portable stand-by generators;

(B) large portable emergency pumps to provide "pump-around" capability in the event of a pump station failure or pipeline breaks; and

(C) sludge or septic tank trucks, trailers, and other vehicles having as their sole purpose the transportation of liquid or dewatered wastes from the collector point (including individual or on-site systems) to the pollution abatement facility or disposal site;

(25) replacement parts identified and approved in advance by the Commissioner as necessary to assure uninterrupted operation of the pollution abatement facility, provided they are critical parts or major system components which are:

(A) not immediately available or whose procurement involves an extended "lead-time";

(B) identified as critical by the equipment supplier(s); or

(C) critical but not included in the inventory provided by the equipment supplier(s);

(26) allowable costs for infiltration/inflow which include:

(A) the cost of sewer system and pollution abatement facility capacity adequate to transport and treat nonexcessive infiltration/inflow; and

(B) the costs of sewer system rehabilitation necessary to eliminate excessive infiltration/inflow as determined in a sewer system evaluation survey under section 22a-482-3 (g);

(27) the costs of royalties for the use of rights in a patented process or product with the prior approval of the Commissioner;

(28) the cost of legal and engineering services incurred by the municipality in deciding procurement protests and defending their decisions in protest appeals with the prior approval of the Commissioner;

(29) the cost of the services of the prime engineer required under subdivision (p) (10) of this section during the first year following initiation of operation of the pollution abatement facility; and

(30) the costs of municipal employees attending training workshops or seminars that are

necessary to provide instruction in administrative, fiscal or contracting procedures required to complete the construction of the pollution abatement facility, if approved in advance by the Commissioner.

(b) **Unallowable Grant Project Costs.** Costs which are not necessary for the construction of a pollution abatement facility are unallowable. Such costs include, but are not limited to:

(1) basin or areawide planning not directly related to the project;

(2) bonus payments not legally required for completion of construction before a contractual completion date;

(3) personal injury compensation or damage arising out of the project whether determined by arbitration, negotiation, or otherwise;

(4) unallowable costs for small and onsite systems which include:

(A) modification to physical structure of homes or commercial establishments;

(B) conveyance pipes from the house to the treatment unit located on user's property; and

(C) wastewater generating fixtures such as commodes, sinks, tubs and drains;

(5) fines and penalties due to violations of, or failure to comply with, federal, state, or local laws and regulations;

(6) costs outside the scope of the approved project;

(7) approval, preparation, issuance and sale of bonds or other forms of indebtedness required to finance the project, and the interest on them;

(8) ordinary operating expenses of local government, such as salaries and expenses of a mayor, city council members, or city attorney, except as provided in subdivision (h) (13) of this section;

(9) the costs of acquisition (including associated level, administrative, and engineering) of sewer rights-of-way, pollution abatement facility sites (including small systems sites), sanitary landfill sites and sludge disposal sites, except as provided in subsection (c) of this section;

(10) costs for which payment has been or will be received under any federal assistance program;

(11) the cost of vehicles used primarily for transportation, such as pickup trucks;

(12) costs of equipment or materials acquired in violation of the procurement provisions of this section;

(13) the cost of furnishings including draperies, furniture and office equipment;

(14) the cost of ordinary site and building maintenance equipment, such as lawn mowers, snowblowers and vacuum cleaners;

(15) costs of monitoring equipment used by industry for sampling and analysis of industrial discharges to a municipal pollution abatement facility;

(16) construction of privately-owned pollution abatement facilities, including pretreatment facilities, except for individual systems;

(17) preparation of applications, including a plan of study and permits required by federal, state or local laws and regulations;

(18) administrative, engineering and legal activities associated with the establishment of special departments, agencies, commissions, regions, districts or other units of

government;

(19) the cost of a pollution abatement facility or any part thereof that would provide capacity for new habitation or other establishments to be located on environmentally sensitive land such as wetlands, floodplains, or prime agricultural lands;

(20) the costs of legal services of defending or negotiating the settlement of a claim by or against the municipality; and

(21) all incremental costs of delay due to the award of any significant subagreements for construction more than 12 months after the construction grant award.

(c) **Allowable Grant Project Costs, If Approved.**

(1) The cost (including associated legal, administrative and engineering costs) of land acquired in fee simple or by lease or easement that will be an integral part of the treatment process or that will be used for the ultimate disposal of residues resulting from such treatment provided the Commissioner approves it in the grant agreement. These costs include:

(A) the cost of a reasonable amount of land, considering irregularities in application patterns, and the need for buffer areas, berms, and dikes;

(B) the cost of land acquired for a soil absorption system for a group of two or more homes:

(C) the cost of land acquired for composting or temporary storage of compost residues which result from wastewater treatment;

(D) the cost of land acquired for storage of treated wastewater in land treatment systems before land application; and

(E) the cost paid by the municipality for eligible land in excess of just compensation based on the appraised value, the municipality's record of negotiation or a condemnation proceeding, as determined by the Commissioner, shall be unallowable.

(2) The cost associated with the preparation of the pollution abatement facility site before, during and, to the extent agreed on in the grant agreement, after building. These costs include:

(A) the cost of demolition of existing structures on the pollution abatement facilities site (including rights-of-way), if building cannot be undertaken without such demolition;

(B) the cost of removal, relocation or replacement of utilities, for which the municipality is legally obligated to pay under section 22a-470 of the General Statutes; and

(C) the cost of restoring streets and rights-of-way to their original condition. The need for such restoration shall result directly from the construction and is generally limited to repaving the width of trench.

(3) The cost of acquiring all or part of existing publicly or privately owned pollution abatement facilities, provided all of the following criteria are met:

(A) the acquisition, in and of itself, considered apart from any upgrade, expansion or rehabilitation, provides new pollution control benefits;

(B) the acquired pollution abatement facility was not built with previous federal or state financial assistance; and

(C) the primary purpose of the acquisition is not the reduction, elimination, or redistribution of public or private debt.

(d) **Allowable Loan Project Costs:**

(1) all costs allowable for grant participation under subsections (a) and (c) of this section;

(2) all costs necessary to complete the project including land, legal, rights-of-way, interest and claim settlements;

(3) all costs associated with incremental capacity for growth; and

(4) those costs a reasonable business person would incur when operating his or her own business necessary to construct the project.

(e) **Unallowable Loan Project Costs:**

(1) costs associated with improvements to municipal or private property not related to pollution control;

(2) costs associated with the liability of other contractors and subcontractors; and

(3) costs associated with waste, fraud or abuse.

(f) **Required Provisions for Architectural/Engineering Contracts.**

(1) Subagreement Enforcement.

(A) Commissioner's Authority. At a municipality's request the Commissioner may provide technical and legal assistance in the administration and enforcement of any subagreement related to a pollution abatement facility for which state financial assistance was made and intervene in any civil action involving the enforcement of such subagreements, including subagreement disputes which are the subject of either arbitration or court action. Any assistance to be provided is at the discretion of the Commissioner and in a manner determined by him or her to best serve the public interest. Factors which the Commissioner may consider in determining whether to provide assistance include:

(i) available department resources;

(ii) planned or ongoing enforcement action;

(iii) the municipality's demonstration of good faith in attempting to resolve the contract matters at issue;

(iv) the municipality's adequate documentation of the need for assistance; and

(v) the state's interest in the contract matters at issue.

(B) Municipality Request. The municipality's request for technical or legal assistance should be submitted in writing and be accompanied by documentation adequate to inform the Commissioner of the nature and necessity of the requested assistance.

(C) Privity of Subagreement. The Commissioner's technical or legal involvement in any subagreement dispute will not make the Commissioner a party to any subagreement entered into by the municipality.

(D) Municipality Responsibility. The provision of technical or legal assistance under this section in no way releases the municipality from its obligations under sections 22a-482-1 to 22a-482-4, inclusive, or affects the Commissioner's right to take remedial action against a municipality that fails to carry out those obligations.

(2) Subagreement Provisions.

(A) Each subagreement shall include provisions defining a sound and complete agreement, including the:

(i) nature, scope, and extent of work to be performed;

(ii) time frame for performance;

(iii) total cost of the subagreement; and

(iv) payment provisions.

(B) All subagreements awarded in excess of $10,000 shall contain provisions requiring compliance with state and federal equal employment opportunity laws and regulations.

(3) Model Subagreement Clauses. Municipalities shall include subparagraphs (A) to (L), inclusive, of this subdivision or their equivalent in all subagreements for architectural or engineering services. (Municipalities may substitute other terms for "municipality" and "engineer" in their subagreements.)

(A) Supersession. The municipality and the engineer agree that this and other appropriate clauses in this section, or their equivalent, apply to the state grant eligible work to be performed under this subagreement and that these clauses supersede any conflicting provisions of this subagreement.

(B) Privity of Subagreement. This subagreement is expected to be funded in part with funds from the State of Connecticut, Department of Environmental Protection (DEP). Neither the state nor any of its departments, agencies, or employees is or will be a party to this subagreement or any lower tier subagreement. This subagreement is subject to sections 22a-482-1 to 22a-482-4 of the Regulations of Connecticut State Agencies in effect on the date of the grant award for the project.

(C) Changes to Subagreement.

(i) The municipality may at any time, by written order, make changes within the general scope of this subagreement in the services or work to be performed. If such changes cause an increase or decrease in the engineer's cost or time required to perform any services under this agreement, whether or not changed by any order, an equitable adjustment shall be made and this subagreement shall be modified in writing. The engineer must assert any claim for adjustment under this clause in writing within 30 days from the date of receipt by the engineer of the notification of change, unless the municipality grants additional time before the date of final payment.

(ii) No services for which additional compensation will be charged by the engineer shall be furnished without the written authorization of the municipality.

(iii) In the event that there is a modification of the Commissioner's requirements relating to the services to be performed under this agreement after the date of execution of this agreement, the increased or decreased cost of performance of the services provided for in the agreement shall be reflected in an appropriate modification of this agreement.

(D) Termination of Subagreement.

(i) This subagreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this subagreement through no fault of the terminating party. However, no termination may be effected unless the other party is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(ii) This subagreement may be terminated in whole or in part in writing by the municipality for its convenience, provided that the engineer is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(iii) If termination for default is effected by the municipality, an equitable adjustment in

the price provided for in this subagreement shall be made, but no amount shall be allowed for anticipated profit on unperformed services or other work and any payment due to the engineer at the time of termination may be adjusted to cover any additional costs to the municipality because of the engineer's default. If termination for default is effected by the engineer; or if termination for convenience is effected by the municipality; the equitable adjustment shall include a reasonable profit for services or other work performed. The equitable adjustment for any termination shall provide for payment to the engineer for services rendered and expenses incurred prior to the termination, in addition to termination and settlement costs reasonably incurred by the engineer relating to commitments which had become firm prior to the termination.

(iv) Upon receipt of a termination action pursuant to subparagraphs (D) (i) or (D) (ii) of this subdivision, the engineer shall promptly discontinue all services affected (unless the notice directs otherwise) and deliver or otherwise make available to the municipality all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the engineer in performing this subagreement, whether completed or in process.

(v) Upon termination under subparagraphs (D) (i) or (D) (ii) of this subdivision, the municipality may take over the work and may award another party a subagreement to complete the work under this subagreement.

(vi) If, after termination for failure of the engineer to fulfill contractual obligations, it is determined that the engineer had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the municipality. In such event, adjustment of the price provided for in this subagreement shall be made as provided in subparagraph (D) (iii) of this subdivision.

(E) Remedies. Except as may be otherwise provided in this subagreement, all claims, counter-claims, disputes, and other matters in question between the municipality and the engineer arising out of or relating to this subagreement, or the breach thereof, will be decided by arbitration, if the parties mutually agree, or in a court of competent jurisdiction within the district in which the municipality is located.

(F) Price Reduction for Defective Cost or Pricing Data (This clause is applicable if the amount of the agreement exceeds $100,000). The engineer warrants that cost and pricing data submitted for evaluation with respect to negotiation of prices for negotiated subagreements and lower tier subagreements is based on current, accurate, and complete data supported by books and records. If the municipality or Commissioner determines that any price, including profit, negotiated in connection with this subagreement, any lower tier subagreement, or any amendment thereunder was increased by any significant sums because the data provided was incomplete, inaccurate, or not current at the time of submission, then such price, cost or profit shall be reduced accordingly, and the subagreement shall be modified in writing to reflect such reduction.

(NOTE– Since the subagreement is subject to reduction under this clause by reason of defective cost or pricing data submitted in connection with certain subcontractors, the engineer may wish to include a clause in each such subcontract requiring the subcontractor to appropriately indemnify the engineer. It is also expected that any subcontractor subject to such indemnification will generally require substantially similar indemnification for

defective cost or pricing data required to be submitted by lower tier subcontractors.)

(G) Audit; Access to Records.

(i) The engineer shall maintain books, records, documents, and other evidence directly pertinent to performance on grant work under this agreement in accordance with generally accepted accounting principles and practices consistently applied. The engineer shall also maintain the financial information and data used by the engineer in the preparation or support of the cost submission required for any negotiated subagreement or change order in effect on the date of execution of this agreement and a copy of the cost summary shall be submitted to the municipality. The municipality and Commissioner or any of his or her duly authorized representatives shall have access to all such books, records, documents, and other evidence for inspection, audit, and copying during normal business hours. The engineer will provide proper facilities for such access and inspection.

(ii) The engineer agrees to include subparagraphs (G) (i) to (G) (v) of this subdivision, inclusive, in all his contracts and all lower tier subcontracts directly related to project performance that are in excess of $10,000, and to make subparagraphs (G) (i) to (G) (v) of this subdivision, inclusive, applicable to all change orders directly related to project performance.

(iii) Audits conducted under this subparagraph shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit department and shall meet the requirements of section 7-396a of the General Statutes.

(iv) The engineer agrees to the disclosure of all information and reports resulting from access to records under subparagraphs (G) (i) and (G) (ii) of this subdivision to any of the parties referred to in subparagraph (G) (i) of this subdivision, provided that the engineer is afforded the opportunity for an audit exit conference and an opportunity to comment and submit any supporting documentation on the pertinent portions of the draft audit report and that the final audit report will include written comments of reasonable length, if any, of the engineer.

(v) The engineer shall maintain and make available records under subparagraphs (G) (i) and (G) (ii) of this subdivision during performance on grant funded work under this agreement and until three (3) years from the date of final grant payment for the project. In addition, those records which relate to any dispute appeal arising under a grant agreement, to litigation, to the settlement of claims arising out of such performance, or to costs or items to which an audit exception has been taken, shall be maintained and made available until three (3) years after the date of resolution of such appeal, litigation, claim, or exception.

(H) Covenant Against Contingent Fees. The engineer warrants that no person or selling agency has been employed or retained to solicit or secure this subagreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by the engineer for the purpose of securing business. For breach or violation of this warranty the municipality shall have the right to annul this agreement without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

(I) Gratuities.

(i) If the municipality finds after a notice and hearing that the engineer, or any of the

engineer's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the municipality or the state, in an attempt to secure a subagreement or favorable treatment in awarding, amending, or making any determinations related to the performance of this agreement, the municipality may, by written notice to the engineer, terminate this agreement. The municipality may also pursue other rights and remedies that the law or this subagreement provides. However, the existence of the facts on which the municipality bases such findings shall be in issue and may be reviewed in proceedings under subparagraph (E) of this subdivision.

(ii) In the event this subagreement is terminated as provided in subparagraph (I) (i) of this subdivision the municipality may pursue the same remedies against the engineer as it could pursue in the event of a breach of the subagreement by the engineer and, as a penalty, in addition to any other damages to which it may be entitled by law, may pursue exemplary damages in an amount (as determined by the municipality) which shall be not less than three, nor more than ten times the costs the engineer incurs in providing any such gratuities to any such officer or employee.

(J) Responsibility of the Engineer.

(i) The engineer shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, drawings, specifications, reports, and other services furnished by the engineer under this subagreement. The engineer shall, without additional compensation, correct or revise any errors, omissions, or other deficiencies in his designs, drawings, specifications, reports, and other services.

(ii) The engineer shall perform the professional services necessary to accomplish the work required to be performed under this subagreement, in accordance with this subagreement and applicable requirements of the Commissioner in effect on the date of execution of the assistance agreement for this project.

(iii) Approval by the municipality or the Commissioner of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not, in any way, relieve the engineer of responsibility for the technical adequacy of his work. Neither the municipality's nor Commissioner's review, approval, acceptance, or payment for any of the services shall be construed as a waiver of any rights under this subagreement or of any cause of action arising out of the performance of this subagreement.

(iv) The engineer shall be and shall remain liable, in accordance with applicable law, for all damages to the municipality or the state caused by the engineer's negligent performance of any of the services furnished under this subagreement, except for errors, omissions, or other deficiencies to the extent attributable to the municipality, municipality-furnished data, or any third party. The engineer shall not be responsible for any time delays in the project caused by circumstances beyond the engineer's control.

(v) The engineer's obligations under this subparagraph are in addition to the engineer's other expressed or implied warranties under this subagreement or state law and in no way diminish any other rights that the municipality may have against the engineer for faulty materials, equipment, or work.

(K) Payment.

(i) Payment shall be made in accordance with the payment schedule incorporated in this subagreement, as soon as practicable, upon submission of statements requesting payment

by the engineer to the municipality. If no such payment schedule is incorporated in this subagreement, the payment provisions of subparagraph (K) (ii) of this subdivision shall apply.

(ii) The engineer may request monthly progress payments and the municipality shall make them, as soon as practicable, upon submission of statements requesting payment by the engineer to the municipality. When such progress payments are made, the municipality may withhold up to ten (10) percent of the vouchered amount until satisfactory completion by the engineer of work and services within a step called for under this subagreement. When the municipality determines that the work under this subagreement, or any specified task hereunder, is substantially complete and that the amount of retained percentages is in excess of the amount considered by the municipality to be adequate for its protection, it shall release to the engineer such excess amount.

(iii) No payment request made under subparagraph (K) (i) or (K) (ii) of this subdivision shall exceed the estimated amount and value of the work and services performed by the engineer under this subagreement. The engineer shall prepare the estimates of work performed and shall supplement them with such supporting data as the municipality may require.

(iv) Upon satisfactory completion of the work performed under this subagreement, as a condition precedent to final payment under this subagreement or to settlement upon termination of the subagreement, the engineer shall execute and deliver to the municipality a release of all claims against the municipality arising under or by virtue of this subagreement, other than such claims, if any, as may be specifically exempted by the engineer from the operation of the release in stated amounts to be set forth therein.

(L) Copyrights and Rights in Data.

(i) The engineer agrees that any plans, drawings, designs, specifications, computer programs (which are substantially financed by state funds), technical reports, operating manuals, and other work submitted with an engineering report, with a design or for construction with financing assistance, or which are specified to be delivered under this subagreement, or which are developed or produced and paid for under this subagreement (referred to in subparagraph (L) (ii) of this subdivision as "subject data"), and including all raw data obtained or generated by the engineer during the course of his work under this subagreement, are subject to certain rights in the United States. These rights include the right to use, duplicate, and disclose such subject data, in whole or in part, in any manner for any purpose whatsoever, and to have others do so. If the material is copyrightable, the engineer may copyright it, subject to the rights of the state described herein, but the municipality and the state reserve a royalty-free, nonexclusive, and irrevocable license to reproduce, publish, and use such materials, in whole or in part, and to authorize others to do so. The engineer shall include appropriate provisions to achieve the purpose of this condition in all subcontracts expected to produce copyrightable subject data; and

(ii) all such subject data furnished by the engineer pursuant to this subagreement are instruments of his services in respect to the project. It is understood that the engineer does not represent such subject data to be suitable for reuse on any other project or for any other purpose. If the municipality reuses the subject data without the engineer's specific written verification or adaptation, such reuse will be at the risk of the municipality without liability

to the engineer. Any such verification or adaptation will entitle the engineer to further compensation at rates agreed upon by the municipality and the engineer.

(g) **Required Provisions for Construction Contracts.** Municipalities must include, when appropriate, subdivisions (1) to (14), inclusive, of this subsection, or their equivalent, in each subagreement and may substitute other terms for "grantee" and "contractor" in their subagreements.

(1) Supersession. The municipality and the contractor agree that the following general provisions, or their equivalent, apply to eligible work to be performed under this contract and that these provisions supersede any conflicting provisions of this contract.

(2) Privity of Contract. This contract is expected to be funded in part by the State of Connecticut. Neither the state, nor any of its departments, agencies, or employees is or will be a party to this contract or any lower tier subcontract. This contract is subject to sections 22a-482-1 to 22a-482-4, inclusive, of the Regulations of Connecticut State Agencies.

(3) Changes for Contracts for Construction.

(A) The municipality may, at any time, without notice to any surety, by written order designated or indicated to be a change order, make any change in the work within the general scope of the subagreement, including but not limited to changes:

(i) in the specifications (including drawings and designs);

(ii) in the time, method, or manner of performance of the work;

(iii) in the municipality-furnished facilities, equipment, materials, services, or site; or

(iv) directing acceleration in the performance of the work.

(B) A change order shall also be any other written or oral order (including direction, instruction, interpretation or determination) from the municipality which causes any change, provided the contractor gives the municipality written notice stating the date, circumstances, and source of the order and that the contractor regards the order as a change order.

(C) Except as provided in subdivision (3) of this subsection, no order, statement, or conduct of the municipality shall be treated as a change under subdivision (3) of this subsection or entitle the contractor to an equitable adjustment.

(D) If any change under subdivision (3) of this subsection causes an increase or decrease in the contractor's cost or the time required to perform any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the subagreement modified in writing. However, for claims based on defective specifications, no claim for any change under subparagraph (B) of this subdivision shall be allowed for any costs incurred more than 20 days before the contractor gives written notice as required in subparagraph (B) of this subdivision. In the case of defective specifications for which the municipality is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the contractor in attempting to comply with those defective specifications.

(E) If the contractor intends to assert a claim for an equitable adjustment under this clause, he shall, within thirty (30) days after receipt of a written change order under subparagraph (A) of this subdivision, or the furnishing of a written notice under subparagraph (B) of this subdivision, submit to the grantee a written statement setting forth the general nature and monetary extent of such claim. The municipality may extend the 30-day period. The statement of claim may be included in the notice under subparagraph (B)

of this subdivision.

(F) No claim by the contractor for an equitable adjustment shall be allowed if made after final payment under this contract.

(4) Changes for Contracts for Supplies.

(A) The municipality may at any time, by a written order and without notice to the sureties, make changes within the general scope of this subagreement in any one or more of the following:

(i) drawings, designs, or specifications, where the supplies to be furnished are to be specially manufactured for the municipality;

(ii) method of shipment or packing; and (iii) place of delivery.

(B) If any change causes an increase or decrease in the cost or the time required to perform any part of the work under this subagreement, whether or not changed by any such order, an equitable adjustment shall be made in the subagreement price or delivery schedule, or both, and the subagreement shall be modified in writing. Any claim by the contractor or adjustment under this clause shall be asserted within thirty (30) days from the date of receipt by the contractor of the notification of change. lf the municipality decides that the facts justify such action, the municipality may receive and act upon any such claim asserted at any time before final payment under this subagreement. Where the cost of property is made obsolete or excessive as a result of a change is included in the contractor's claim for adjustment, the grantee shall have the right to prescribe the manner of disposition of such property. Nothing in this subdivision shall excuse the contractor from proceeding with the subagreement as changed.

(5) Differing Site Conditions.

(A) The contractor shall promptly, and before such conditions are disturbed, notify the municipality in writing of:

(i) subsurface or latent physical conditions at the site differing materially from those indicated in this subagreement; or

(ii) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this subagreement. The municipality shall promptly investigate the conditions and, if it finds that conditions are materially different and will cause an increase or decrease in the contractor's cost or the time required to perform any part of the work under this subagreement, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the subagreement modified in writing.

(B) No claim of the contractor under this subdivision shall be allowed unless the contractor has given notice required in subparagraph (A) of this subdivision. However, the municipality may extend the prescribed time.

(C) No claim by the contractor for an equitable adjustment shall be allowed if asserted after final payment under this subagreement.

(6) Suspension of Work.

(A) The municipality may order the contractor, in writing, to suspend, delay, or interrupt all or any part of the work for such period of time as the municipality may determine to be appropriate for the convenience of the municipality.

(B) If the performance of all or any part of the work is suspended, delayed, or interrupted

for an unreasonable period of time by an act of the municipality in administration of the contract, (or if no time is specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing. However, no adjustment shall be made under this subdivision for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the contractor, or for which an equitable adjustment is provided for, or excluded, under any other provision of the contract.

(C) No claim under this subdivision shall be allowed for any costs incurred more than twenty (20) days before the contractor notified the municipality in writing of the act or failure to act involved (this requirement does not apply to a claim resulting from a suspension order), and unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay, or interruption, but not later than the date of final payment under the contract.

(7) Termination.

(A) This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this subagreement through no fault of the terminating party, provided that no termination may be effected unless the other party is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(B) This contract may be terminated in whole or in part in writing by the municipality for its convenience, provided that the contractor is given not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate and an opportunity for consultation with the terminating party prior to termination.

(C) If termination for default is effected by the municipality, an equitable adjustment in the price provided for in this contract shall be made but no amount shall be allowed for anticipated profit on unperformed services or other work, and any payment due to the contractor at the time of termination may be adjusted to cover any additional costs to the municipality because of the contractor's default. If termination for default is effected by the contractor, or if termination for convenience is effected by the municipality, the equitable adjustment shall include a reasonable profit for services or other work performed. The equitable adjustment for any termination shall provide for payment to the contractor for services rendered and expenses incurred prior to the termination in addition to termination settlement costs reasonably incurred by the contractor relating to commitments which had become firm prior to the termination.

(D) Upon receipt of a termination action pursuant to subparagraphs (A) or (B) of this subdivision, the contractor shall promptly discontinue all services affected (unless the notice directs otherwise), and deliver or otherwise make available to the municipality all data, drawings, specifications, reports, estimates, summaries and such other information and materials as may have been accumulated by the contractor in performing this contract whether completed or in process.

(E) Upon termination under subparagraphs (A) or (B) of this subdivision the municipality

may take over the work and may award another party a contract to complete the work under this contract.

(F) If, after termination for failure of the contractor to fulfill contractual obligations, it is determined that the contractor had not failed to fulfill contractual obligations, the termination shall be deemed to have been for the convenience of the municipality. In such event, adjustment of the price provided for in this contract shall be made as provided in subparagraph (C) of this subdivision.

(8) Remedies. Except as may be otherwise provided in this contract, all claims, counter-claims, disputes, and other matters in question between the municipality and the contractor arising out of or relating to this contract or the breach thereof will be decided by arbitration, if the parties mutually agree, or in a court of competent jurisdiction within the district in which the municipality is located.

(9) Price Reduction for Defective Cost or Pricing Data.

NOTE– This subdivision is applicable to any contract negotiated between the municipality and its contractor in excess of $500,000; negotiated change orders in excess of $500,000 or 10 percent of the contract, whichever is less, affecting the price of a formally advertised, competitively awarded, fixed price contract; or any lower tier subcontract or purchase order in excess of $500,000 or 10 percent of the assistance agreement, whichever is less, under a contract other than a formally advertised, competitively awarded, fixed price subagreement. This subdivision is not applicable for contracts to the extent that they are awarded on the basis of effective price competition.

The contractor and subcontractor, where appropriate, warrant that cost and pricing data submitted for evaluation with respect to negotiation of prices for negotiated contracts, lower tier subcontracts and change orders is based on current, accurate, and complete data supported by their books and records. If the municipality or the Commissioner determines that any price (including profit) negotiated in connection with this contract, any lower tier subcontract, or any amendment thereunder was increased by any significant sums because the data provided was incomplete, inaccurate, or not current at the time of submission, then such price, cost, or profit shall be reduced accordingly, and the contract shall be modified in writing to reflect such reduction. Failure to agree on a reduction shall be subject to subdivision (8) of this subsection.

NOTE– Since the contract is subject to reduction under this subdivision by reason of defective cost or pricing data submitted in connection with lower tier subcontracts, the contractor may wish to include a clause in each lower tier subcontract requiring the lower tier subcontractor to appropriately indemnify the contractor. It is also expected that any lower tier subcontractor subject to such indemnification will generally require substantially similar indemnification for defective cost or pricing data required to be submitted by lower tier subcontractors.

(10) Audit; Access to Records.

(A) The contractor shall maintain books, records, documents, and other evidence directly pertinent to performance on grant work under this contract in accordance with generally accepted accounting principles and practices consistently applied. The contractor shall also maintain the financial information and data used by the contractor in the preparation or support of the cost submission required under section 22a-482-4 (i) (6) for any negotiated

contract or change order and a copy of the cost summary submitted to the municipality. The municipality and the Commissioner or any of his or her authorized representatives shall have access to all such books, records, documents, and other evidence for the purpose of inspection, audit and copying during normal business hours. The contractor will provide proper facilities for such access and inspection.

(B) If this is a formally advertised, competitively awarded, fixed price contract, the contractor agrees to make subparagraphs (A) to (F), inclusive, of this subdivision applicable to all negotiated change orders and contract amendments affecting the contract price. In the case of all other types of prime contracts, the contractor agrees to include subparagraphs (A) to (F), inclusive, of this subdivision in all his subcontracts in excess of $10,000 and to subparagraphs (A) through (F), inclusive, of this subdivision applicable to all change orders directly related to project performance.

(C) Audits conducted under this subdivision shall be in accordance with generally accepted auditing standards and established procedures and guidelines of the reviewing or audit departments and shall meet the requirements of section 7-396a of the General Statutes.

(D) The contractor agrees to disclose all information and reports resulting from access to records under subparagraphs (A) and (B) of this subdivision to any of the parties referred to in subparagraph (A) of this subdivision.

(E) Records under subparagraphs (A) and (B) of this subdivision shall be maintained and made available during performance on assisted work under this contract and until three years from the date of final state payment for the project. In addition, those records which relate to any dispute appeal arising under a grant assistance agreement, to litigation, to the settlement of claims arising out of such performance, or to costs or items to which an audit exception has been taken, shall be maintained and made available until three years after the date of resolution of such appeal, litigation, claim, or exception.

(F) This right of access provision (with respect to financial records) applies to:

(i) negotiated prime subagreements:

(ii) negotiated change orders or contract amendments in excess of $10,000 affecting the price of any formally advertised, competitively awarded, fixed price contract; and

(iii) subcontracts or purchase orders under any contract other than a formally advertised, competitively awarded, fixed price contract. However, this right of access does not apply to a prime contract, lower tier subcontract, or purchase order awarded after effective price competition, except with respect to records pertaining directly to contract performance, (excluding any financial records of the contractor), if there is any indication that fraud, gross abuse, or corrupt practices may be involved or if the contract is terminated for default or for convenience.

(11) Covenant Against Contingent Fees. The contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the contractor for the purpose of securing business. For breach or violation of this warranty the grantee shall have the right to annul this agreement without liability or, at its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

(12) Gratuities.

(A) If the municipality finds, after a notice and hearing, that the contractor, or any of the contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the municipality or the state, in an attempt to secure a contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this agreement, the municipality may, by written notice to the contractor, terminate this agreement. The municipality may also pursue other rights and remedies that the law or this agreement provides. However, the existence of the facts on which the municipality bases such findings shall be in issue and may be reviewed in proceedings under subdivision (8) of this subsection.

(B) In the event this contract is terminated, as provided in subparagraph (A) of this subdivision, the municipality may pursue the same remedies against the contractor as it could pursue in the event of a breach of the contract by the contractor and, as a penalty, in addition to any other damages to which it may be entitled by law, may pursue exemplary damages in an amount (as determined by the grantee) which shall be not less than three nor more than ten times the costs the contractor incurs in providing any such gratuities to any such officer or employee.

(13) Responsibility of the Contractor.

(A) The contractor agrees to perform all work under this agreement in accordance with this agreement's designs, drawings, and specifications.

(B) The contractor warrants and guarantees for a period of one (1) year from the date of substantial completion of the system that the completed system is free from all defects due to faulty materials, equipment or workmanship; and the contractor shall promptly make whatever adjustments or corrections necessary to cure such defects, including repairs of any damage to other parts of the system resulting from such defects. The municipality shall give notice to the contractor of observed defects with reasonable promptness. In the event that the contractor fails to make adjustments, repairs, corrections or other work that may be made necessary by such defect, the municipality may do so and charge the contractor the cost incurred. The performance bond shall remain in full force and effect through the guarantee period.

(C) The contractor's obligations under this subdivision are in addition to the contractor's other express or implied warranties under this agreement or state law and in no way diminish any other rights that the municipality may have against the contractor for faulty material, equipment, or work.

(14) Final Payment. Upon satisfactory completion of the work performed under this agreement, as a condition before final payment under this agreement, or as a termination settlement under this agreement, the contractor shall execute and deliver to the municipality a release of all claims against the municipality arising under or by virtue of this agreement, except claims which are specifically exempted by the contractor to be set forth therein. Unless otherwise provided in this agreement or by state law or otherwise expressly agreed to by the parties to this agreement, final payment under this agreement or settlement upon termination of this agreement shall not constitute a waiver of the municipality's claims against the contractor or his sureties under this agreement or applicable performance and payment bonds.

(h) **Procurement Requirements—General.**

(1) Applicability. This subsection defines the responsibilities of the state and the municipality and the minimum procurement standards for each municipality's procurement system.

(2) Municipality Responsibility.

(A) The municipality is responsible for the settlement and satisfactory completion, in accordance with sound business judgment and good administrative practice, of all contractual and administrative issues arising out of subagreements entered into under the assistance agreement. This includes issuance of invitations for bids or requests for proposals, selection of contractors, award of subagreements, settlement of protests, claims, disputes and other related procurement matters.

(B) The municipality shall maintain a subagreement administration system to assure that contractors perform in accordance with the terms, conditions and specifications of their subagreements.

(C) The municipality shall review its proposed procurement actions to avoid purchasing unnecessary or duplicative items.

(D) The municipality shall consider consolidating its procurement or dividing it into parts to obtain a more economical purchase.

(E) Where appropriate, the municipality shall make an analysis of lease versus purchase alternatives in its procurement actions.

(F) A municipality may request technical assistance from the Commissioner for the administration and enforcement of any subagreement awarded under this section. However, such assistance does not relieve the municipality of its responsibilities under this section, 22a-482-4.

(G) A municipality may use innovative procurement methods or procedures only if it receives the Commissioner's prior written approval.

(3) Municipality Reporting Requirements. The municipality shall request, in writing, the Commissioner's authorization to award each construction subagreement which has an aggregate value over $10,000. The request shall include:

(A) name, address, telephone number and employee identification number of the construction contractor;

(B) amount of the award;

(C) estimated starting and completion dates;

(D) project number, name and site location of the project; and

(E) copy of the tabulations of bids or offers and the name of each bidder or offeror.

(4) Copies of Contract Documents. The municipality shall promptly submit to the Commissioner copies of any prime contract or modification thereof, and revisions to plans and specifications.

(5) Limitations on Subagreement Award.

(A) The municipality shall award subagreements only to responsible contractors that possess the potential ability to perform successfully under the terms and conditions of a proposed procurement. A responsible contractor is one that has:

(i) financial resources, technical qualifications, experience, an organization and facilities adequate to carry out the project, or a demonstrated ability to obtain these;

(ii) resources to meet the completion schedule contained in the subagreement;

(iii) a satisfactory performance record for completion of subagreements;

(iv) accounting and auditing procedures adequate to control property, funds and assets; and

(v) demonstrated compliance or willingness to comply with the civil rights, equal employment opportunity, labor laws and other statutory requirements.

(B) The municipality shall not make awards to contractors who have been suspended or debarred by a Connecticut state agency.

(6) Violations. The municipality shall refer violations of law to the local or state officials having the proper jurisdiction.

(7) Competition.

(A) The municipality shall conduct all procurement transactions in a manner that provides maximum open and free competition.

(B) Procurement practices shall not unduly restrict or eliminate competition. Examples of practices considered to be unduly restrictive include:

(i) noncompetitive practices between firms;

(ii) organizational conflicts of interest;

(iii) unnecessary experience and bonding requirements;

(iv) local laws, ordinances, regulations or procedures which give local bidders or proposers preference over other bidders or proposers in evaluating bids or proposals; and

(v) placing unreasonable requirements on firms in order for them to qualify to do business.

(C) The municipality may use a prequalification list(s) of persons, firms or products if it:

(i) updates its prequalified list(s) at least every six months;

(ii) reviews and acts on each request for prequalification made more than thirty (30) days before the closing date for receipt of proposals or bid opening; and

(iii) gives adequate public notice of its prequalification procedures in accordance with the public notice procedures.

(D) A municipality may not use a prequalified list(s) of persons or firms if the procedure unnecessarily restricts competition.

(8) Profit.

(A) Municipalities shall assure that only fair and reasonable profits are paid to contractors awarded subagreements under state assistance agreements.

(B) The municipality shall negotiate profit as a separate element of price for each subagreement in which there is no price competition or where price is based on cost analysis.

(C) Where the municipality receives two or more bids, profit included in a formally advertised, competitively bid, fixed price subagreement shall be considered reasonable.

(D) Off-the-shelf or catalog supplies are exempt from this subparagraph.

(9) Use of Small, Minority, and Women's Businesses. The municipality shall take affirmative steps to assure that small, minority, and women's businesses are used to the maximum extent practicable. The Commissioner may impose goals as conditions of financial assistance.

(10) Privity of Subagreement. The state shall not be a party to any subagreement nor to

any solicitation or request for proposals.

(11) Documentation.

(A) Procurement records and files for procurements in excess of $10,000 shall include the following:

(i) the basis for contractor selection;

(ii) written justification for selection of the procurement method;

(iii) written justification for use of any specification which does not provide for maximum free and open competition;

(iv) written justification for the type of subagreement; and

(v) the basis for award cost or price, including a copy of the cost or price analysis made and documentation of negotiations; and

(B) The municipality shall state the reasons in writing for rejecting any or all bids and the justification for procurements on a noncompetitively negotiated basis and make them available for public inspection.

(12) Specifications.

(A) Nonrestrictive Specifications.

(i) No specification for bids or statement of work shall be written in such a manner as to contain proprietary, exclusionary or discriminatory requirements, other than those based upon performance, unless such requirements are necessary to test or demonstrate a specific thing or to provide for necessary interchangeability of parts and equipment, or at least two brand names or trade names of comparable quality or utility are listed and are followed by the words "or equal." If brand or trade names are specified, the municipality shall be prepared to identify to the Commissioner, or in any protest action, the salient requirements (relating to the minimum needs of the project) which shall be met by any offeror. The single base bid method of solicitation for equipment and parts for determination of a low, responsive bidder may not be utilized. With regard to materials, if a single material is specified, the municipality shall be prepared to substantiate the basis for the selection of the material.

(ii) Project specifications shall, to the extent practicable, provide for maximum use of structures, machines, products, materials, construction methods, and equipment which are readily available through competitive procurement or through standard or proven production techniques, methods, and processes.

(B) Sole Source Restriction. A specification shall not require the use of structures, materials, equipment, or processes which are known to be available only from a sole source, unless the Commissioner determines, in advance, that the municipality's engineer has adequately justified, in writing, that the proposed use meets the particular project's minimum needs or the Commissioner determines that use of a single source is necessary to promote innovation.

(C) Experience Clause Restriction. The general use of experience clauses requiring equipment manufacturers to have a record of satisfactory operation for a specified period of time or of bonds or deposits to guarantee replacement in the event of failure is restricted to special cases where the municipality's engineer adequately justifies any such requirement in writing. Where such justification has been made, submission of a bond or deposit shall be permitted instead of a specified experience period. The period of time for which the bond

or deposit is required should not exceed the experience period specified.

(13) Force Account Work.

(A) The municipality shall receive the Commissioner's prior written approval for use of the force account method for any planning, design work or construction work, unless the grant agreement stipulates the force account method.

(B) The Commissioner may approve the force account method upon the municipality's demonstration that it possesses the necessary competence required to accomplish such work and that the work can be accomplished more economically by use of the force account method or emergency circumstances dictate its use.

(C) Use of the force account method for construction work shall generally be limited to minor portions of a project.

(14) Code of Conduct.

(A) The municipality shall maintain a written code or standard of conduct which shall govern the performance of its officers, employees, or agents engaged in the award and administration of subagreements supported by state funds. No employee, officer or agent of the municipality shall participate in the selection, award or administration of a subagreement supported by state funds if a conflict of interest, real or apparent, would be involved.

(B) Such a conflict would arise when:

(i) any employee, officer or agent of the municipality, any member of the immediate families, or their partners, have a financial or other interest in the firm selected for award; or

(ii) an organization which may receive or has been awarded a subagreement employs, or is about to employ, any person under subparagraph (B) (i) of this subdivision.

(C) The municipality's officers, employees or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors or other parties to subagreements.

(D) Municipalities may set minimum rules where the financial interest is not substantial or the gift is an unsolicited item of nominal value.

(E) To the extent permitted by state or local law or regulations, the municipality's code of conduct shall provide for penalties, sanctions or other disciplinary actions for violations of the code by the municipality's officers, employees or agents or by contractors or their agents.

(15) Payment to Consultants.

(A) For all state assistance agreements, the state shall limit its participation in the salary rate (excluding overhead) paid to individual consultants retained by a municipality or by a municipality's contractors or subcontractors to the maximum daily rate for a GS-18 federal employee. (Municipality's may, however, pay contractors and subcontractors more than this amount.) This limitation applies to consultation services of designated individuals with specialized skills who are paid at a daily or hourly rate. The rate does not include transportation and subsistence costs for travel performed; municipalities shall pay these costs in accordance with their normal travel reimbursement practices.

(B) Subagreements with firms for services which are awarded using these procurement requirements are not affected by this limitation.

(16) Cost and Price Considerations.

(A) The municipality shall conduct a cost analysis of all negotiated change orders and all negotiated subagreements estimated to exceed $10,000.

(B) The municipality shall conduct a price analysis of all formally advertised procurements estimated to exceed $10,000, if there are fewer than three bidders.

(C) For negotiated procurement, contractors and subcontractors shall submit cost or pricing data in support of their proposals to the municipality.

(17) Small Purchases.

(A) Small Purchase Procurement. If the aggregate amount involved in any one procurement transaction does not exceed $10,000, including estimated handling and freight charges, overhead and profit, the municipality may use small purchase procedures.

(B) Small Purchase Procedures. Small purchase procedures are relatively simple procurement methods that are sound and appropriate for procurement of services, supplies or other property costing in the aggregate not more than $10,000.

(C) Requirements for Competition.

(i) Municipalities shall not divide a procurement into smaller parts to avoid the dollar limitation for competitive procurement.

(ii) Municipalities shall obtain price or rate quotations from an adequate number of qualified sources.

(18) Negotiation and Award of Subagreements.

(A) Unless the request for proposals states that an award may be based on initial offers alone, the municipality shall conduct meaningful negotiations with the best qualified offerors with acceptable proposals within the competitive range, and permit revisions to obtain best and final offers. The best qualified offerors shall have equal opportunities to negotiate or revise their proposals. During negotiations, the municipality shall not disclose the identity of competing offerors or any information from competing proposals.

(B) The municipality shall award the subagreement to the responsible offeror whose proposal is determined in writing to be the most advantageous to the municipality, taking into consideration price and other evaluation criteria set forth in the request for proposals.

(C) The municipality shall promptly notify unsuccessful offerors that their proposals were rejected.

(D) The municipality shall document its procurement file to indicate how proposals were evaluated, what factors were used to determine the best qualified offerors within the competitive range, and what factors were used to determine the subagreement award.

(19) Optional Selection Procedure for Negotiation and Award of Subagreements for Architectural and Engineering Services.

(A) The municipality may evaluate and select an architect or engineer using the procedures in this subdivision in place of the procedures in "Negotiation and Award of Subagreements" in subdivision (18) of this subsection.

(B) The municipality may use responses from requests for statements of qualifications to determine the most technically qualified architects or engineers.

(C) After selecting and ranking the most qualified architects or engineers, the municipality shall request technical proposals from those architects or engineers and inform them of the evaluation criteria the municipality will use to rank the proposals.

(D) The municipality shall then select and determine, in writing, the best technical proposal.

(E) After selecting the best proposal, the municipality shall attempt to negotiate fair and reasonable compensation with that offeror.

(F) If the municipality and the offeror of the best proposal cannot agree on the amount of compensation, the municipality shall formally terminate negotiations with that offeror. The municipality shall then negotiate with the offeror with the next best proposal. This process shall continue until the municipality reaches agreement on compensation with an offeror with an acceptable proposal. Once the municipality terminates negotiations with an offeror, the municipality cannot go back and renegotiate with that offeror.

(20) Noncompetitive Negotiation Procurement Method. Noncompetitive negotiation may be used only when the award of a subagreement is not feasible under small purchase, formal advertising, or competitive negotiation procedures. The municipality may award a noncompetitively negotiated subagreement only under the following circumstances:

(A) the item is available only from a single source;

(B) a public exigency or emergency exists and the urgency for the requirement will not permit a delay incident to competitive procurement; or

(C) after solicitation from a number of sources, competition is determined to be inadequate.

(21) Use of the Same Architect or Engineer During Construction.

(A) If the municipality is satisfied with the qualifications and performance of the architect or engineer who provided any or all of the planning or design services for the project, it may wish to retain that firm or individual during construction of the project. The municipality may do so without further public notice and evaluation of qualifications provided that it received financial assistance for the planning and/or design services and selected the architect or engineer in accordance with these procurement regulations.

(B) However, if the municipality uses the procedures in subparagraph (A) of this subdivision to retain an architect or engineer, any construction subagreements between the architect or engineer and the municipality shall meet the procurement provisions of subdivision (i) (5) of this section.

(22) Negotiation of Subagreements.

(A) Formal advertising, with adequate purchase descriptions, sealed bids, and public openings shall be the required method of procurement unless negotiation under subparagraph (B) of this subdivision is necessary to accomplish sound procurement.

(B) All negotiated procurement shall be conducted in a manner to provide to the maximum practicable extent open and free competition appropriate to the type of project work to be performed. The municipality is authorized to negotiate subagreements if any of the following conditions exist:

(i) public exigency will not permit the delay incident to formally advertised procurement (e.g. an emergency procurement); or

(ii) the aggregate amount involved does not exceed $10,000; or

(iii) the material or service to be procured is available from only one person or entity. If the procurement is expected to aggregate more than $10,000, the municipality shall document its file with a justification of the need for noncompetitive procurement, and

provide such documentation to the Commissioner on request; or

(iv) the procurement is for personal or professional services (including architectural or engineering services) or for any service that a university or other educational institution may render; or

(v) no responsive, responsible bids at acceptable price levels have been received after formal advertising and the Commissioner's prior written approval has been obtained; or

(vi) the procurement is for materials or services where the price is established by law; or

(vii) the procurement is for technical items or equipment requiring standardization and interchangeability of parts with existing equipment; or

(viii) the procurement is for experimental, developmental or research services.

(23) Enforcement. If the Commissioner determines that the municipality has failed to comply with any of the provisions of this subsection, he or she may impose any of the following sanctions:

(A) the grant may be terminated or annulled under subsection (t) of this section; or

(B) project costs directly related to the noncompliance may be disallowed; or

(C) payment otherwise due to the municipality of up to 10 percent may be withheld; or

(D) project work may be suspended under subdivision (g) (6) of this section; or

(E) a noncomplying municipality may be found nonresponsible or ineligible for future state funding assistance or a noncomplying contractor may be found nonresponsible or ineligible for approval for future contract awards under state grants; or

(F) an injunction may be entered or other equitable relief afforded by a court of appropriate jurisdiction; or

(G) such other administrative or judicial action may be instituted if it is legally available and appropriate.

(24) Contract Enforcement and Commissioner Authority. At the request of a municipality, the Commissioner is authorized to provide technical and legal assistance in the administration and enforcement of any contract related to pollution abatement facilities for which a state grant was made and to intervene in any civil action involving the enforcement of such contracts, including contract disputes which are the subject of either arbitration or court action in accordance with the requirements of subdivision (f) (1) of this section.

(i) Architectural/Engineering Procurement Requirements.

(1) Type of Contract (Subagreement).

(A) General. Cost-plus-percentage-of-cost and percentage-of-construction-cost contracts are prohibited. Cost reimbursement, fixed price, or per diem contracts or combinations of these may be negotiated for architectural or engineering services. A fixed price contract is generally used only when the scope and extent of work to be performed is clearly defined. In most other cases, a cost reimbursement type of contract is more appropriate. A per diem contract may be used if no other type of contract is appropriate. An incentive fee may be used if the municipality submits an adequate independent cost estimate and price comparison.

(B) Cost Reimbursement Contract. Each cost reimbursement contract shall clearly establish a cost ceiling which the engineer may not exceed without formally amending the

contract and a fixed dollar profit which may not be increased except in the case of a contract amendment to increase the scope of work.

(C) Fixed Price Contract. An acceptable fixed price contract is one which establishes a guaranteed maximum price which may not be increased unless a contract amendment increases the scope of work.

(D) Compensation Procedures. If, under either a cost reimbursement or fixed price contract, the municipality desires to use a multiplier type of compensation, all of the following must apply:

(i) the multiplier and the portions of the multiplier allocable to overhead and allocable to profit have been specifically negotiated;

(ii) the portion of the multiplier allocable to overhead includes only allowable items of cost under the cost principles;

(iii) the portions of the multiplier allocable to profit and allocable to overhead have been separately identified in the contract; and

(iv) the fixed price contract includes a guaranteed maximum price for completion of the specifically defined scope of work; and the cost reimbursement contract includes a fixed dollar profit which may not be increased except in the case of a contract amendment which increases the scope of work.

(E) Per Diem Contracts. A per diem agreement may be utilized only after a determination that a fixed price or cost reimbursement type contract is not appropriate. Per diem agreements should be used only to a limited extent, e.g., where the first task under the planning agreement involves establishing the scope and cost of succeeding planning tasks or for incidental services such as expert testimony or intermittent professional or testing services. (Resident engineer and resident inspection services should generally be compensated at cost plus fixed fee). Cost and profit included in the per diem rate must be specifically negotiated and displayed separately in the engineer's proposal.

The contract must clearly establish a price ceiling which may not be exceeded without formally amending the contract.

(2) Public Notice. Adequate public notice must be given of the requirement for architectural or engineering services for all subagreements.

(A) Public Announcement. A notice of request for qualifications should be published in professional journals, newspapers, or publications of general circulation over a reasonable area and, in addition, if desired, through posted public notices or written notification directed to interested persons, firms, or professional organizations inviting the submission of statements of qualifications. The announcement must clearly state the deadline and place for submission of qualification statements.

(B) Exceptions. Public notice is not required under the following circumstances:

(i) for design or construction phases of a grant funded project if the municipality is satisfied with the qualifications and performance of any engineer who performed all or any part of the planning or design work and the engineer has the capacity to perform the subsequent steps; and

(ii) the municipality desires the same engineer to provide architectural or engineering services for the subsequent steps or for subsequent segments of design work in one project, if a single pollution abatement facility is segmented into two or more construction projects.

If the design work is accordingly segmented so that the initial contract for preparation of construction drawings and specifications does not cover the entire pollution abatement facility to be built under one grant then the municipality may use the same engineering firm that was selected for the initial segment of design work for subsequent segments.

(3) Evaluation of Qualifications.

(A) The municipality shall review the qualifications of firms which responded to the announcement or were on the prequalified list and shall uniformly evaluate the firms.

(B) Qualifications shall be evaluated through an objective process (e.g., the appointment of a board or committee which, to the extent practicable, should include persons with technical skills).

(C) Criteria which should be considered in the evaluation of candidates for submission of proposals should include:

(i) specialized experience and technical competence of the candidate or firm and its personnel (including a joint venture, association or professional subcontractor) considering the type of services required and the complexity of the project;

(ii) past record of performance on contracts with the municipality, other government agencies or public bodies, and with private industry, including such factors as control of costs, quality of work, and ability to meet schedules;

(iii) the candidate's capacity to perform the work (including any specialized services) within the time limitations, considering the firm's current and planned workload;

(iv) the candidate's familiarity with the types of problems applicable to the project; and

(v) avoidance of personal and organizational conflicts of interest.

(4) Solicitation and Evaluation of Proposals.

(A) Solicitation of Professional Services Proposals.

(i) Requests for professional services proposals shall be sent to no fewer than three candidates who either responded to the public announcement or were selected from the prequalified list, unless, after good faith effort to solicit qualifications, fewer than three qualified candidates respond, in which case all qualified candidates shall be provided requests for proposals.

(ii) Requests for professional services proposals shall be in writing and must contain the information necessary to enable a prospective offeror to prepare a proposal properly. The request for proposals shall include a solicitation statement and shall inform offerors of the evaluation criteria.

(iii) Submission deadline. Requests for proposals shall clearly state the deadline and place for submission.

(B) Evaluation of Proposals.

(i) All proposals submitted in response to the request for professional services proposals shall be uniformly evaluated. The municipality shall also evaluate the candidates' proposed method of accomplishing the work required.

(ii) Proposals shall be evaluated through an objective process (e.g., the appointment of a board or committee) which, to the extent practicable, should include persons with technical skills. Oral (including telephone) or written interviews should be conducted with top rated proposers and information derived therefrom shall be treated on a confidential basis.

(iii) Municipalities shall base their determinations of qualified offerors and acceptable

proposals solely on the evaluation criteria stated in the request for proposals.

(5) Negotiation.

(A) Municipalities are responsible for negotiation of their contracts for architectural or engineering services. Contract procurement, including negotiation, may be performed by the municipality directly or by another person or firm retained for that purpose. Contract negotiations may include the services of technical, legal, audit, or other specialists to the extent appropriate.

(B) Negotiations may be conducted in accordance with state or local requirements, as long as they meet the minimum requirements as set forth in this subdivision.

(C) The object of negotiations with any candidate shall be to reach agreement on the provisions of the proposed contract. The municipality and the candidate shall discuss, at a minimum:

(i) the scope and extent of work and other essential requirements;

(ii) identification of the personnel and facilities necessary to accomplish the work within the required time including, where needed, employment of additional personnel, subcontracting, joint venture, etc;

(iii) provisions of the required technical services in accordance with regulations and criteria established for the project; and

(iv) a fair and reasonable price for the required work, to be determined in accordance with the cost and profit considerations.

(6) Cost and Price Considerations.

(A) The candidate(s) selected for negotiation shall submit to the municipality for review sufficient cost and pricing data to enable the municipality to ascertain the necessity and reasonableness of costs and amounts proposed and the allowability and eligibility of costs proposed.

(B) The municipality shall submit the following to the Commissioner for review:

(i) documentation of the public notice of need for architectural or engineering services and selection procedures;

(ii) the cost and pricing data the selected engineer submitted;

(iii) a certification of review and acceptance of the selected engineer's cost and price; and

(iv) a copy of the proposed subagreement.

(C) The Commissioner shall review the complete subagreement procurement procedure and approve the municipality's compliance with appropriate procedures before the municipality awards the subagreement.

(D) Cost Review.

(i) The municipality shall review proposed subagreement costs.

(ii) At a minimum, proposed subagreement costs shall be presented on EPA form 5700-41 on which the selected engineer shall certify that the proposed costs reflect complete, current, and accurate cost and pricing data applicable to the date of anticipated subagreement award.

(iii) In addition to the specific elements of cost, the estimated amount of profit shall be set forth separately in the cost summary for fixed price contracts and a maximum total dollar amount of profit shall be set forth separately in the cost summary for cost reimbursement

contracts.

(iv) The municipality may require more detailed cost data than the form requires in order to substantiate the reasonableness of proposed subagreement costs. The Commissioner may require more detailed documentation only when the selected engineer is unable to certify that the cost and pricing data used are complete, current, and accurate. The Commissioner may, on a selected basis, perform a pre-award cost analysis on any subagreement. A provisional overhead rate should be agreed upon before contract award.

(v) The engineer shall have an accounting system which accounts for costs in accordance with generally accepted accounting principles. This system shall provide for the identification, accumulation, and segregation of allowable and unallowable project costs among projects. Allowable project costs shall be determined by the Commissioner. The engineer shall propose and account for costs in a manner consistent with his normal accounting procedures.

(vi) Subagreements awarded on the basis of a review of a cost element summary and a certification of complete, current, and accurate cost and pricing data shall be subject to downward renegotiation or recoupment of funds where the Commissioner determines that such certification was not based on complete, current, and accurate cost and pricing data or was not based on allowable costs at the time of award.

(7) Profit. The objective of negotiations shall be the exercise of sound judgment and good administrative practice including the determination of a fair and reasonable profit based on the firm's assumption of risk and input to total performance and not merely the application of a predetermined percentage factor. For the purpose of subagreements under state grants, profit is defined as the net proceeds obtained by deducting all allowable costs (direct and indirect) from the price. (This definition of profit may vary from the firm's definition of profit for other purposes.) Profit on a subagreement and each amendment to a subagreement under a grant should be sufficient to attract engineers who possess the talent and skills necessary for the accomplishment of project objectives and to stimulate efficient and expeditious completion of the project. Where cost review is performed, the municipality should review the estimate of profit as it reviews all other elements of price.

(8) Award of Subagreement.

(A) The municipality shall obtain the written approval of the Commissioner prior to the award of any subagreement or amendment.

(B) The municipality shall promptly notify unsuccessful candidates.

(9) Required Solicitation and Subagreement Provisions.

(A) Required solicitation statement. Requests for qualifications or proposals must include the following statement, as well as the proposed terms of the subagreement.

Any contract awarded under this request for qualifications or professional proposals is expected to be funded in part by the State of Connecticut, Department of Environmental Protection. This procurement will be subject to requirements contained in subsections (h), (i) and (o) of this section. The State of Connecticut will not be a party to this request for qualifications or professional proposals or any resulting contract.

(B) Content of subagreement. Each subagreement shall adequately define the scope and extent of project work; the time for performance and completion of the contract work including, where appropriate, dates for completion of significant project tasks; personnel

and facilities necessary to accomplish the work within the required time; the extent of subcontracting and consultant agreements; and payment provisions. If any of these elements cannot be defined adequately for later tasks or steps at the time of contract execution, the contract should not include the subsequent tasks or steps at that time.

(10) Subagreement Payments. The municipality shall make payment to the engineer in accordance with the payment schedule incorporated in the engineering agreement. Any retainage is at the option of the municipality. No payment request made by the engineer under the agreement may exceed the estimated amount and value of the work and services performed.

(11) Subcontracts under Subagreements. Neither award and execution of subcontracts under a prime contract for architectural or engineering services nor the procurement and negotiation procedures used by the engineer in awarding such subcontracts are required to comply with any of the provisions, selection procedures, policies or principles set forth herein.

(j) **Construction Contract Procurement Requirements.** (This section applies to construction contracts in excess of $10,000 awarded by municipalities for any construction projects.)

(1) Type of Contract. Each contract shall be a fixed price (lump sum or unit price or a combination of the two) contract, unless the Commissioner gives advance written approval for the municipality to use some other acceptable type of contract. The cost-plus-percentage-of-cost contract shall not be used in any event.

(2) Formal Advertising. Each contract shall be awarded after formal advertising, unless negotitations are permitted in accordance with subdivision (18) of subsection (h) of this section. Formal advertising shall be in accordance with the following:

(A) Adequate Public Notice. The municipality will cause adequate notice to be given of the solicitation by publication in newspapers or journals of general circulation beyond the municipality's locality (statewide, generally), inviting bids on the project work and stating the method by which bidding documents may be obtained or examined. Where the estimated cost of construction is 10 million dollars or more, the municipality shall publish the notice in trade journals of nationwide distribution. The municipality may solicit bids directly from bidders if it maintains a bidders list.

(B) Adequate Time for Preparing Bids. Adequate time, generally not less than 30 days, shall be allowed between the date when public notice is first published and the date by which bids must be submitted. Bidding documents including specifications and drawings shall be available to prospective bidders from the date when such notice is first published.

(C) Adequate Bidding Documents. The municipality shall prepare a reasonable number of bidding documents, invitations for bids and shall furnish them upon request on a first-come, first-serve basis. The municipality shall maintain a complete set of bidding documents and shall make them available for inspection and copying by any party. The bidding documents shall include:

(i) a complete statement of the work to be performed, including necessary drawings and specifications, and the required completion schedule;

(ii) the terms and conditions of the contract to be awarded;

(iii) a clear explanation of the method of bidding, the method of evaluation of bid prices,

and the basis and method for award of the contract;

(iv) responsibility requirements or criteria which will be employed in evaluating bidders;

(v) the following statement:

Any contract or contracts awarded under this invitation for bids are expected to be funded in part by the State of Connecticut, Department of Environmental Protection. Neither the State of Connecticut nor any of its departments, agencies or employees is or will be a party to this invitation for bids or any resulting contract. This procurement will be subject to the requirements contained in subsections (h), (j) and (o) of this section;

(vi) a copy of subsections (h), (j) and (o) of this section; and

(vii) the prevailing State Wage Determination, as applicable.

(D) Sealed Bids. The municipality shall provide for bidding by sealed bid and for the safeguarding of bids received until public opening.

(E) Addenda to Bidding Documents. If a municipality desires to amend any part of the bidding documents (including drawings and specifications) during the period when bids are being prepared, the addenda shall be communicated in writing to all firms which have obtained bidding documents at least five (5) working days prior to the bid opening.

(F) Bid Modifications. A firm which has submitted a bid shall be allowed to modify or withdraw its bid before the time of bid opening.

(G) Public Opening of Bids. The municipality shall provide for a public opening of bids at the place, date and time announced in the bidding documents.

(H) Award to the Low, Responsive, Responsible Bidder.

(i) After bids are opened, the municipality shall evaluate them in accordance with the methods and criteria set forth in the bidding documents.

(ii) The municipality may reserve the right to reject all bids. Unless all bids are rejected for good cause, award shall be made to the low, responsive, responsible bidder.

(iii) If the municipality intends to make the award to a firm which did not submit the lowest bid, it shall prepare a written statement before any award, explaining why each lower bidder was deemed nonresponsible or nonresponsive. The municipality shall retain such statement in its files and forward a copy to the Commissioner for review.

(iv) Local laws, ordinances, regulations or procedures which are designed or which operate to give local bidders preference over other bidders shall not be employed in evaluating bids.

(v) If an unresolved procurement review issue or a protest relates only to award of a subcontract or procurement of an item under the prime contract and resolution of that issue or protest is unduly delaying performance of the prime contract, the Commissioner may authorize award and performance of the prime contract before resolution of the issue or protest, if the Commissioner determines that resolution of the protest will not affect the placement of the prime contract bidders and will not materially affect initial performance of the prime contract; and that award of the prime contract is in the state's best interest, will not materially affect the resolution of the protest, and is not barred by state or local law.

(vi) The municipality shall not reject a bid as nonresponsive for failure to list or otherwise indicate the selection of a subcontractor(s) or equipment, unless the municipality has unambiguously stated in the solicitation documents that such failure to list shall render a bid nonresponsive and shall cause rejection of a bid.

(k) **Negotiation of Contract Amendments (Change Orders).**

(1) The municipality is responsible for the negotiation of construction contract change orders. This function may be performed by the municipality directly or, if authorized, by its engineer. During negotiations with the contractor the municipality shall:

(A) make certain that the contractor has a clear understanding of the scope and extent of work and other essential requirements;

(B) assure that the contractor demonstrates that he will make available or will obtain the necessary personnel, equipment and materials to accomplish the work within the required time; and

(C) assure a fair and reasonable price for the required work.

(2) The contract price or time may be changed only by a change order. When negotiations are required, they shall be conducted in accordance with subdivisions (3) and (4) of this subsection as appropriate. The value of any work covered by a change order, or of any claim for increase or decrease in the contract price, shall be determined by the method set forth in subparagraphs (A) to (C) of this subdivision, whichever is most advantageous to the municipality.

(A) Unit prices.

(i) Original bid items. Unit prices previously approved are acceptable for pricing changes of original bid items. However, when changes in quantities exceed 15 percent of the original bid quantity and the total dollar change of that bid item is significant, the municipality shall review the unit price to determine if a new unit price should be negotiated.

(ii) New items. Unit prices of new items shall be negotiated.

(B) Lump Sums shall be negotiated.

(C) Cost reimbursement. The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work plus an amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

(3) For each change order not in excess of $100,000 the contractor shall submit sufficient cost and pricing data to the municipality to enable the municipality to determine the necessity and reasonableness of costs and amounts proposed, and the allowability and eligibility of costs proposed.

(4) For each change order in excess of $100,000, the contractor shall submit to the municipality for review sufficient cost and pricing data as described in subparagraphs (A) to (E) of this subdivision to enable the municipality to ascertain the necessity and reasonableness of costs and amounts proposed, and the allowability and eligibility of costs proposed.

(A) The contractor shall certify that proposed costs reflect complete, current, and accurate cost and pricing data applicable to the date of the change order.

(B) In addition to the specific elements of cost, the estimated amount of profit shall be set forth separately in the cost summary for fixed price change orders and a specific total dollar amount of profit will be set forth separately in the cost summary for cost reimbursement change orders.

(C) The municipality may require more detailed cost data in order to substantiate the reasonableness of proposed change order costs. The Commissioner may, on a selected basis, perform a detailed cost analysis on any change order.

(D) For costs under cost reimbursement change orders, the contractor shall have an accounting system which accounts for such costs in accordance with generally accepted accounting principles. This system shall provide for the identification, accumulation and segregation of allowable and unallowable change orders. Allowable change order costs shall be determined in accordance with subsections (a), (b), (c), (d) and (e) of this section. The contractor shall propose and account for such costs in a manner consistent with his normal accounting procedures.

(E) Change orders awarded on the basis of review of a cost element summary and a certification of complete, current, and accurate cost and pricing data shall be subject to downward renegotiation and recoupment of funds where a subsequent audit substantiates that such certification was not based on complete, current and accurate cost and pricing data.

(5) Review by Commissioner. The municipality shall submit, before the execution of any change order in excess of $100,000, to the Commissioner for review and approval:

(A) the cost and pricing data the contractor submitted;

(B) a certification of review and acceptance of the contractor's cost or price; and

(C) a copy of the proposed change order.

(6) Profit. The objective of negotiations shall be the exercise of sound business judgment and good administrative practice, including the determination of a fair and reasonable profit based on the contractor's assumption of risk and input to total performance, and not merely the application of a predetermined percentage factor. For the purpose of negotiated change orders to construction contracts profit is defined as the net proceeds obtained by deducting all allowable costs (direct and indirect) from the price. The municipality should review the estimate of profit as it reviews all other elements of price.

(7) Related Work. Related work shall not be split into two amendments or change orders merely to keep it under $100,000 and thereby avoid the requirements of subdivision (4) of this subsection. For change orders which include both additive and deductive items:

(A) if any single item (additive or deductive) exceeds $100,000 the requirements of subdivision (4) of this subsection shall be applicable;

(B) if no single additive or deductive item has a value of $100,000 but the total price of the change order is over $100,000, the requirements of subdivision (4) of this subsection shall be applicable; and

(C) if the total of additive items of work in the change order exceeds $100,000, or the total of deductive items of work in the change order exceeds $100,000, and the net price of the change order is less than $100,000, the requirements of subdivision (4) of this subsection shall be applicable.

(*l*) **Subcontracts under Construction Contracts.**

(1) The award or execution of subcontracts by a prime contractor under a construction contract awarded to the prime contractor by the municipality and the procurement and negotiation procedures used by prime contractors in awarding or executing subcontracts are not required to comply with any of the provisions, selection procedures, policies or principles set forth in subsection (h) or (j) of this section, except those specifically stated in this section. In addition, the bid protest procedures in subsection (o) of this section are not available to parties executing subcontracts with prime contractors, except as specifically

provided in subsection (o) of this section.

(2) The award or execution of subcontracts by a prime contractor under a formally advertised, competitively bid, fixed price construction contract awarded to the prime contractor by the municipality, and the procurement and negotiation procedures used by such prime contractors in awarding or executing such subcontracts shall comply with any municipality procurement system, state, small, minority and women's business policy (section 22a-482-4 (h) (9)), negotiation of contract amendments (section 22a-482-4 (k)), and subdivisions (8) and (9) of section 22a-482-4 (g).

(m) **Progress Payments to Contractors.**

(1) Except as state law otherwise provides, municipalities shall make prompt progress payments to prime contractors and prime contractors should make prompt progress payments to subcontractors and suppliers for eligible construction, material, and equipment costs, including those of undelivered, specifically manufactured equipment, incurred under a contract under this program. The Clean Water Fund shall only be obligated to pay the municipality amounts that the municipality is actually going to pay contractors.

(2) Conditions of Progress Payments. For purposes of this subsection, progress payments are defined as follows:

(A) payments for work in place; or

(B) payments for materials or equipment which have been delivered to the construction site, or which are stockpiled in the vicinity of the construction site, in accordance with the terms of the contract, when conditional or final acceptance is made by or for the municipality. The municipality shall assure that items for which progress payments have been made are adequately insured and are protected through appropriate security measures. Costs of such insurance and security are allowable costs; or

(C) payments for undelivered, specifically manufactured items or equipment (excluding off-the-shelf or catalog items) as work on them progresses. Such payments shall be made if provisions therefor are included in the bid and contract documents. Such provisions may be included at the option of the municipality only when all of the following conditions exist:

(i) the equipment is so designated in the project specifications;

(ii) the equipment to be specifically manufactured for the project could not be readily utilized on, nor diverted to, another job; and

(iii) a fabrication period of more than 6 months is anticipated.

(3) Protection of Progress Payments Made for Specifically Manufactured Equipment. The municipality shall assure protection of the state's interest in progress payments made for items or equipment referred to in subparagraph (2) (C) of this subsection. The protection shall be acceptable to the municipality and shall take the form of:

(A) securities negotiable without recourse, condition or restrictions, a progress payment bond, or an irrevocable letter of credit provided to the municipality through the prime contractor by the subcontractor or supplier; and

(B) for items or equipment in excess of $200,000 in value which are manufactured in a jurisdiction in which the Uniform Commercial Code is applicable, the creation and perfection of a security interest under the Uniform Commercial Code which is reasonably adequate to protect the interests of the municipality.

(4) Limitations on Progress Payments for Specifically Manufactured Equipment.

(A) Progress payments made for specifically manufactured equipment or items shall be limited to the following:

(i) a first payment upon submission by the prime contractor of shop drawings for the equipment or items in an amount not exceeding 15 percent of the contract or item price plus appropriate and allowable higher tier costs; and

(ii) subsequent to the municipality's release or approval for manufacture, additional payments not more frequently than monthly thereafter up to 75 percent of the contract or item price plus appropriate and allowable higher tier costs. However, payment may also be made in accordance with the contract and grant terms and conditions for ancillary onsite work before delivery of the specifically manufactured equipment or items.

(B) In no case may progress payments for undelivered equipment or items under subparagraphs (A) (i) or (A) (ii) of this subdivision be made in an amount greater than 75 percent of the cumulative incurred costs allocable to contract performance with respect to the equipment or items. Submission of a request for any such progress payments shall be accompanied by a certification furnished by the fabricator of the equipment or item that the amount of progress payment claimed constitutes not more than 75 percent of cumulative incurred costs allocable to contract performance and, in addition, in the case of the first progress payment request, a certification that the amount claimed does not exceed 15 percent of the contract or item price quoted by the fabricator.

(C) As used in this subsection, the term "costs allocable to contract performance" with respect to undelivered equipment or items includes all expenses of contract performance which are reasonable, allocable to the contract, consistent with sound and generally accepted accounting principles and practices consistently applied and which are not excluded by the contract.

(5) Enforcement. A subcontractor or supplier which is determined by the Commissioner to have frustrated the intent of the provisions regarding progress payments for major equipment or specifically manufactured equipment through intentional forfeiture of its bond or failure to deliver the equipment may be determined nonresponsible and ineligible for further work under state funded projects.

(6) Contract Provisions. Where applicable, appropriate provisions regarding progress payments shall be included in each contract and subcontract.

(7) Implementation. The foregoing progress payments policy should be implemented in invitations for bids for projects funded by the Clean Water Fund. If provision for progress payments is made after contract award, it shall be for consideration that the municipality deems adequate.

(n) **Retention from Progress Payments.**

(1) The municipality may retain a portion of the amount otherwise due the contractor. The amount the municipality retains shall be limited to the following:

(A) withholding of not more than 5 percent of the payment claimed until work is 50 percent complete;

(B) when work is 50 percent complete, reduction of the withholding to 2 percent of the dollar value of all work satisfactorily completed to date, provided that the contractor is making satisfactory progress and there is no specific cause for greater withholding;

(C) when the work is substantially complete (operational or beneficial occupancy), the

withheld amount shall be further reduced below 2 percent to only that amount necessary to assure completion;

(D) the municipality may reinstate up to 5 percent withholding if the municipality determines, at its discretion, that the contractor is not making satisfactory progress or there is other specific cause for such withholding; and

(E) the municipality may accept securities, negotiable without recourse, condition or restrictions, a release of retainage bond, or an irrevocable letter of credit provided by the contractor instead of all or part of the cash retainage.

(2) The requirements set out in subdivision (1) of this subsection shall be implemented with respect to all construction projects. Appropriate provision to assure compliance with these requirements shall be included in the bid documents for such projects initially or by addendum before the bid submission date and as a special condition in the funding agreement or in an amendment which is issued by the Commissioner.

(3) A municipality which delays disbursement to contractors of funds will be required to credit to the Clean Water Fund all interest earned on those funds and will be responsible for any and all tax law violations which occur as a result of their actions.

(o) **Protests.**

(1) General. A protest based upon an alleged violation of the procurement requirements may be filed against a municipality's procurement action by a party with an adversely affected direct financial interest. Any such protest must be received by the municipality within the time period in subparagraph (2) (A) of this subsection. The municipality is responsible for resolution of the protest before taking the protested action, in accordance with subdivision (4) of this subsection, except as otherwise provided by subdivision (9) of this subsection or subparagraph (j) (2) (H) (v).

(2) Time Limitations.

(A) A protest under subdivision (4) of this subsection should be made as early as possible during the procurement process to avoid disruption of, or unnecessary delay to, the procurement process. A protest authorized by subdivision (4) of this subsection shall be received by the municipality within one week after the basis for the protest is known or should have been known, whichever is earlier.

(i) In the case of an alleged violation of the specification requirements of subdivision (h) (12) of this section (e.g., that a product fails to qualify as an "or equal"), a protest need not be filed prior to the opening of bids. The municipality may resolve the issue before receipt of bids or proposals through a written or other formal determination, after notice and opportunity to comment is afforded to any party with a direct financial interest.

(ii) When an alleged violation of the specification requirements of subdivision (h) (12) of this section first arises subsequent to the receipt of bids or proposals, the municipality shall make a determination on the protest, if the protest was received by the municipality within one week of the time that the municipality's written or other formal notice is first received.

(B) A protest authorized under this subsection shall be filed in a court of competent jurisdiction within the locality of the municipality within one week after the complainant has received the municipality's determination.

(C) If a protest is mailed, the complaining party bears the risk of nondelivery within the

required time period. All documents transmitted in accordance with this section shall be mailed (by certified mail return receipt requested) or otherwise delivered in a manner which will objectively establish the date of receipt. Initiation of protest actions under subdivisions (4) or (5) of this subsection may be made by brief telegraphic notice accompanied by prompt mailing or other delivery of a more detailed statement of the basis for the protest. Telephone protests will not be considered.

(3) Other Initial Requirements.

(A) The initial protest document shall briefly state the basis for the protest and should:

(i) refer to the specific portions of sections 22a-482-1 to 22a-482-4 which allegedly prohibit the procurement action;

(ii) specifically request a determination pursuant to this section;

(iii) identify the specific procurement document(s) or portion(s) of them in issue; and

(iv) include the name, telephone number, and address of the person representing the protesting party.

(B) The party filing the protest shall concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest which may be adversely affected by the determination of the protest (all bidders or proposers who appear to have a substantial and reasonable prospect of receiving an award if the protest is denied or sustained) and to the Commissioner.

(4) Municipality Determination.

(A) The municipality is responsible for the initial resolution of protests based upon alleged violations of the procurement requirements.

(B) When the municipality receives a timely written protest, it must defer the protested procurement action in accordance with subdivision (7) of this subsection; and:

(i) afford the complaining party and interested parties an opportunity to present arguments in support of their views in writing or at a conference or other suitable meeting (such as a city council meeting);

(ii) inform the complainant and other interested parties of the procedures which the municipality will observe for resolution of the protest;

(iii) obtain an appropriate extension of the period for acceptance of the bid and bid bond(s) of each interested party, where applicable (failure to agree to a suitable extension of such bid and bid bond(s) by the party which initiated the protest shall be cause for summary dismissal of the protest by the municipality or the Commissioner); and

(iv) promptly deliver (by certified mail, return receipt requested, or by personal delivery) its written determination of the protest to the complaining party and to each other participating party.

(C) The municipality's determination shall be accompanied by a legal opinion addressing issues arising under state or local law, if any and, when construction is involved, by an engineering report, if appropriate.

(D) The municipality should decide the protest as promptly as possible, generally within 3 weeks after receipt of a protest, unless extenuating circumstances require a longer period of time for proper resolution of the protest.

(5) Procedures.

(A) Where resolution of an issue properly raised with respect to a procurement

requirement necessitates prior or collateral resolution of a legal issue arising under state or local law and such law is not clearly established in published legal decisions of the state or other relevant jurisdiction, the municipality may rely upon:

(i) an opinion of the municipality's legal counsel adequately addressing the issue; or

(ii) the established or consistent practice of the municipality, to the extent appropriate; or

(iii) the law of other local jurisdictions as established in published legal decisions; or

(iv) if none of the foregoing adequately resolve the issue, published decisions of the Comptroller General of the United States (U.S. General Accounting Office) or of the federal or state courts addressing federal or state requirements comparable to procurement requirements of this section.

(B) A party who submits a document subsequent to initiation of a protest proceeding shall simultaneously furnish each of the other parties with a copy of such document.

(C) The procedures established herein are not intended to preclude informal resolution or voluntary withdrawal of protests. A complainant may withdraw its appeal at any time and the protest proceedings shall thereupon be terminated.

(D) A protest may be dismissed for failure to comply with procedural requirements set forth in this section.

(6) Burden of Proof.

(A) In protest proceedings, if the municipality proposes to award a formally advertised, competitively bid, fixed price contract to a party who has submitted the apparent lowest price, the party initiating the protest will bear the burden of proof.

(B) In protest proceedings:

(i) if the municipality proposes to award a formally advertised, competitively bid, fixed price contract to a bidder other than the bidder which submitted the apparent lowest price, the municipality shall bear the burden of proving that its determination concerning responsiveness is in accordance with Section 22a-482-1 to 22a-482-4; and

(ii) if the basis for the municipality's determination is a finding of nonresponsibility, the municipality shall establish and substantiate the basis for its determination and shall adequately establish that such determination has been made in good faith.

(7) Deferral of Procurement Action. Upon receipt of a protest, the municipality shall defer the protested procurement action (for example, defer the issuance of solicitations, contract award, or issuance of notice to proceed under a contract) until ten days after delivery of its determination to the participating parties. The municipality may receive or open bids at its own risk, if it considers this to be in its best interest. When the Commissioner has received a written protest, he or she shall notify the municipality promptly to defer its protested procurement action until notified of the formal or informal resolution of the protest.

(8) Enforcement. Noncompliance with the procurement provisions by the municipality shall be cause for enforcement action in accordance with one or more of the provisions of subdivision (h) (23) of this section.

(9) Limitation. A protest may not be filed with respect to the following:

(A) issues not arising under the procurement provisions; or

(B) issues relating to the selection of a consulting engineer, provided that a protest may

be filed only with respect to the mandatory procedural requirements of subsection (i) of this section; or

(C) issues primarily determined by local law or ordinance and as to which the Commissioner, upon review, determines that there is no contravening state requirement and that the municipality's action has a rational basis; or

(D) provisions of state regulations applicable to direct state contracts unless such provisions are explicitly referred to or incorporated in section 22a-482; or

(E) basic project design determinations; or

(F) award of subcontracts or issuance of purchase orders under formally advertised, competitively bid, lump sum construction contracts. However, protests may be made to alleged violations of the following:

(i) specification requirements of subdivision (h) (12) of this section; or

(ii) provisions applicable to the procurement procedures, negotiation or award of subcontracts or issuance of purchase orders under subsection (1) of this section.

(p) **Funding Assistance Conditions.** Financing for pollution abatement facilities shall be subject to the following conditions:

(1) Municipality Responsibilities.

(A) Review or approval of engineering reports, plans and specifications or other documents by the Commissioner is for administrative purposes only and does not relieve the municipality of its responsibility to properly plan, design, build and effectively operate and maintain the pollution abatement facilities described in the funding assistance agreement as required under law, regulations, permits, and good management practices. The Commissioner is not responsible for increased building costs resulting from defects in the plans, design drawings and specifications or other subagreement documents.

(B) By its acceptance of financing, the municipality agrees to complete the pollution abatement facilities in accordance with the engineering report, plans and specifications and related documents approved by the Commissioner and to maintain and operate the pollution abatement facilities to meet the enforceable requirements of the permit issued pursuant to section 22a-430 of the Connecticut General Statutes for the design life of the pollution abatement facilities. The Commissioner may seek specific enforcement or recovery of funds from the municipality, or take other appropriate action if he or she determines that the municipality has failed to make good faith efforts to meet its obligations under the grant/loan agreement.

(C) The municipality agrees to pay the non-state costs of the pollution abatement facilities construction associated with the project and commits itself to complete the construction of the operable pollution abatement facilities and the complete pollution abatement facilities of which the project is a part.

(2) Nondiscrimination. All contracts are subject to the Governor's Executive Order No. Three and to the guidelines and rules issued by the State Labor Commission to implement Executive Order No. Three.

(3) Wage Rates. Contracts involving construction work are subject to the appropriate state wage rates issued by the State Labor Commissioner and federal wage rates issued by the United States Department of Labor.

(4) Access. The municipality shall insure that the Commissioner and his or her duly

authorized agents shall have access to the project work whenever it is in preparation or progress. The municipality shall provide proper facilities for access and inspection. The municipality shall allow any authorized agent of the state to have access to any books, documents, plans, reports, papers, and other records of the contractor which are pertinent to the project for the purpose of making audit, examination, excerpts, copies and transcriptions. The municipality shall insure that a party to a subagreement shall provide access to the project work, sites, documents, and records.

(5) Project Changes.

(A) Minor changes in the project work that are consistent with the objectives of the project and within the scope of the funding agreement do not require the execution of a formal amendment before the municipality's implementation of the change. However, if such changes increase the costs of the project, the amount of the funding provided by the funding agreement may only be increased by a formal amendment.

(B) The municipality shall receive from the Commissioner a formal amendment before implementing changes which:

(i) alter the project performance standards; or

(ii) alter the type of treatment facilities provided by the project; or

(iii) delay or accelerate the project schedule; or

(iv) substantially alter the engineering report, design drawings and specifications, or the location, size, capacity, or quality of any major part of the project.

(6) Operation and Maintenance.

(A) The municipality shall make provisions satisfactory to the Commissioner for assuring economical and effective operation and maintenance of the pollution abatement facilities in accordance with a plan of operation approved by the Commissioner.

(B) The Commissioner shall not pay more than 50 percent of the grant share of any project unless the municipality has an approved final plan of operation and shall not pay more than 90 percent of the grant share of any project unless the municipality has an approved operation and maintenance manual.

(7) Adoption of User Charge System and Sewer Use Ordinance.

The municipality shall adopt the sewer use ordinance and implement the user charge system developed under subsections (e) and (f) of 22a-482-3 and approved by the Commissioner before the pollution abatement facilities are placed in operation. Further, the municipality shall implement the user charge system and sewer use ordinance for the useful life of the pollution abatement facilities.

(8) Value Engineering.

The municipality shall comply with the applicable requirements of section 22a-482-3 (d) for value engineering.

(9) Project Initiation and Completion.

(A) The municipality shall expeditiously initiate and complete the project in accordance with the project schedule contained in the funding agreement.

(B) The municipality shall initiate procurement action for building the project promptly after the award of financing. The Commissioner may annul or terminate the funding agreement if the municipality has not awarded the subagreements and issued a notice to proceed, where one is required, for building all significant elements of the project within

twelve (12) months of the closing. Failure to promptly award all subagreement(s) for building the project shall result in a limitation on allowable grant costs.

(10) Municipality Responsibility for Project Performance.

(A) The municipality shall select the engineer or engineering firm principally responsible for either supervising construction or providing architectural and engineering services during construction as the prime engineer to provide the following services during the first year following the initiation of operation:

(i) direct the operation of the project and revise the operation and maintenance manual for the project as necessary to accommodate actual operating experience;

(ii) train or provide for training of operating personnel, including the preparation of curricula and training material for operating personnel; and

(iii) advise the municipality whether the project is capable of meeting the project performance standards.

(B) On the date one year after the initiation of operation of the project the municipality shall certify to the Commissioner whether the project is capable of meeting the project performance standards. If the project does not meet the project performance standards, the municipality shall submit the following:

(i) a corrective action report which includes an analysis of the cause of the project's inability to meet the performance standards (including infiltration/inflow reduction) and estimates of the nature, scope and cost of the corrective action necessary to bring the project into compliance. Such corrective action report shall be prepared at other than state expense;

(ii) the schedule for undertaking, in a timely manner, the corrective action necessary to bring the project into compliance; and

(iii) the scheduled date for certifying to the Commissioner that the project is capable of meeting the project performance standards.

(C) Corrective action necessary to bring a project into compliance with the project performance standards shall be undertaken by the municipality at other than state expense.

(D) Nothing in this section shall be construed to prohibit a municipality from requiring more assurances, guarantees, or indemnity or other contractual requirements from any party performing project work.

(11) Final Inspection. The municipality shall notify the Commissioner of the completion of project construction and the Commissioner shall cause final inspection to be made within 60 days of receipt of the notice. When final inspection is completed and the Commissioner determines that the treatment works have been satisfactorily constructed, in accordance with the funding assistance agreement, the municipality may make a request for final payment under subdivision (s) (5) of this section.

(q) **Financial Assistance Agreement Amendments.**

(1) Agreements may be amended for project changes in accordance with this subsection. No agreement may be amended to increase the amount of assistance unless the funds are available for obligation. A formal amendment shall be effected only by a written amendment to the agreement.

(2) For financial assistance awarded under Sections 22a-482-1 to 22a-482-4, an amendment to increase the amount may be made for:

(A) change orders, claims and arbitration settlements; or

(B) revised bid documents; or

(C) project changes required by the Commissioner; or

(D) increased costs on architectual/engineering agreements.

(r) **Enforcement.** If the Commissioner determines that the municipality has failed to comply with any provision of these regulations, he or she may impose any of the following:

(1) the grant portion of the financing may be withheld under subdivisions (t) (3) or (t) (4) of this section.

(2) grant project costs directly related to the noncompliance may be disallowed; or

(3) project work may be suspended; or

(4) a noncomplying municipality may be found nonresponsible or ineligible for future state assistance; or

(5) an injunction may be entered or other equitable relief afforded by a court of appropriate jurisdiction; or

(6) such other administrative or judicial action may be instituted as is legally available and appropriate.

(s) **Grant and Loan Payments.** The municipality shall be paid the allowable project costs incurred within the scope of an approved project and which are currently due and payable from the municipality (i.e. not including withheld or deferred amounts), up to the amount set forth in the agreement and any amendments thereto. Payments for engineering services shall be made in accordance with subsection (f) of this section and payments for construction contracts shall be made in accordance with subsections (m) and (n) of this section. All allowable costs incurred before initiation of construction of the project shall be claimed in the application for assistance for that project before the award of the assistance or no subsequent payment shall be made for the costs.

(1) Initial Request for Payment. Upon award of financial assistance, the municipality may request payment for the unpaid share of allowable project costs incurred before the award. Payment for such costs shall be made in accordance with the negotiated payment schedule included in the agreement.

(2) Interim Requests for Payment. The municipality may submit requests for payments for allowable costs in accordance with the negotiated payment schedule included in the agreement. Generally, payments shall be made within 13 days after receipt of a request for payment.

(3) Adjustment. At any time before final payment under the agreement, the Commissioner may cause any request(s) for payment to be reviewed or audited and make appropriate adjustment.

(4) Refunds, Rebates, Credits, etc. The state share of any refunds, rebates, credits or other amounts (including any interest) that accrue to or are received by the municipality for the project, and that are properly allocable to costs which the municipality has received funding assistance shall be credited to the current state allotment. Reasonable expenses incurred by the municipality for the purpose of securing such refunds, rebates, credits, or other amounts shall be allowable when approved by the Commissioner.

(5) Final Payment. After completion of final inspection under subdivision (p) (11) of this section, receipt and approval of the request for payment which the municipality designates as the "final payment request," and the municipality is deemed in compliance

with all applicable requirements of the funding agreement, the Commissioner shall pay to the municipality any balance of the share of allowable project costs which has not already been paid. The municipality must submit the final payment request within six (6) months of the scheduled completion.

(6) Assignment and Release. By its acceptance of final payment, the municipality agrees to assign to the state the state share of refunds, rebates, credits or other amounts, including any interest, properly allocable to costs for which the municipality has been paid by the state under the assistance agreement. The municipality thereby also releases and discharges the state, its officers, agents and employees from all liabilities, obligations, and claims arising out of the project work subject only to exceptions previously specified in writing between the Commissioner and the municipality.

(7) Audit Upon Completion of the Project. The municipality shall certify to the state that the project has been completed in accordance with the final plans and specifications approved by the Commissioner. The municipality shall within 90 days of such certification, prepare an audit of the project performed by an independent public accountant meeting the requirements of section 7-394a and 7-396a of the Connecticut General Statutes. Such audit shall be performed in accordance with generally accepted accounting principles and shall identify any expenditures made by the municipality not in conformance with the agreement. The municipality further agrees that the auditors of Public Accounts of the state shall have access to all records and accounts of the municipality concerning the project. To provide such access the municipality agrees that it shall preserve all its records and accounts concerning the project for a period of 3 years after the date such audit is delivered to the state.

(t) **Administrative Changes.**

(1) Transfer of Agreements; Change of Name Agreements. Transfer of an agreement and change of name agreements require the prior written approval of the Commissioner. The municipality may not approve any transfer of an agreement without the concurrence of the Commissioner. The Commissioner shall prepare the necessary transfer documents upon receipt of appropriate information and documents submitted by the municipality.

(2) Suspension of Work (Stop Work Orders). Work on a project or on a portion or phase of a project for which funding assistance has been awarded may be ordered stopped by the Commissioner.

(A) Use of Stop-Work Orders. Work stoppage may be required for good cause such as default by the municipality, failure to comply with the terms and conditions of the funding agreement, realignment of programs, lack of adequate funding, or advancements in the state of the art. Inasmuch as stop-work orders may result in increased costs to the state by reason of standby costs, such orders will be issued only after a review by the Commissioner. Generally, use of a stop-work order shall be limited to those situations where it is advisable to suspend work on the project or a portion or phase of the project for important program or agency considerations and a supplemental agreement providing for such suspension is not feasible. Although a stop-work order may be used pending a decision to terminate by mutual agreement or for other cause, it shall not be used in lieu of the issuance of a termination notice after a decision to terminate has been made.

(B) Contents of stop-work orders should be discussed with the municipality and should

be appropriately modified in light of such discussions. Stop-work orders should include a clear description of the work to be suspended, instructions as to the issuance of further orders by the municipality for materials or services, guidance as to action to be taken on subagreements, and other suggestions to the municipality for minimizing costs.

(C) Issuance of Stop-Work Order. After appropriate review of the proposed action has occurred, the Commissioner may, by written order to the municipality, require the municipality to stop all or any part of the project work for a period of not more than forty-five (45) days after the order is delivered to the municipality, and for any further period to which the parties may agree. The Commissioner shall prepare the necessary documents for the stop-work order. Any such order shall be specifically identified as a stop-work order issued pursuant to this subdivision.

(D) Effect of Stop-Work Order.

(i) Upon receipt of a stop-work order, the municipality shall forthwith comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within the suspension period or within any extension of that period to which the parties shall have agreed, the state shall either cancel the stop-work order, in full or in part, terminate the work covered by such order as provided in subdivision (t) (3) of this section or authorize resumption of work.

(ii) If a stop-work order is cancelled or the period of the order or any extension thereof expires, the municipality shall promptly resume the previously suspended work. An equitable adjustment shall be made in the grant period, the project period, the grant amount, the funding assistance amount, or all of these, and the funding assistance instrument shall be amended accordingly if the stop-work order results in an increase in the time required for, or an increase in the municipality's cost properly allocable to, the performance of any part of the project and the municipality asserts a written claim for such adjustment within sixty (60) days after the end of the period of work stoppage.

(iii) If a stop-work order is not cancelled and the grant-related project work covered by such order is within the scope of a subsequently-issued termination order, the reasonable cost resulting from the stop-work order shall be allowed in arriving at the termination settlement.

(iv) Costs incurred by the municipality, its contractors, subcontractors, or representatives, after a stop-work order is delivered, or within any extension of the stop-work period to which the parties shall have agreed, with respect to the project work suspended by such order or agreement which are not authorized by this section or specifically authorized in writing by the Commissioner, shall not be allowable costs.

(3) Termination of Funding Agreements. A funding agreement may be terminated in whole or in part by the Commissioner in circumstances where good cause can be demonstrated.

(A) Termination Agreement. The parties may enter into an agreement to terminate the funding agreement at any time pursuant to terms which are consistent with these regulations. The agreement shall establish the effective date of termination of the project, the basis for settlement of termination costs, the amount and date of payment of any sums due either party, and the schedule of repayment of all sums borrowed from the Clean Water Fund by the municipality. The Commissioner shall prepare the necessary termination documents.

(B) Project Termination by Municipality. A municipality may not unilaterally terminate the project work except for good cause. The municipality shall promptly give written notice to the Commissioner of any complete or partial termination of the project work by the municipality. If the Commissioner determines that there is good cause for the termination of all or any portion of a project, he or she may enter into a termination agreement or unilaterally terminate, effective with the date of cessation of the project work by the municipality. If the Commissioner determines that a municipality has ceased work on the project without good cause, he or she may unilaterally terminate or annual the agreement.

(C) Termination by Commissioner.

(i) Notice of Intent to Terminate. The Commissioner shall give not less than ten (10) days written notice to the municipality of intent to terminate a funding agreement in whole or in part.

(ii) Termination Action. The municipality shall be afforded an opportunity for consultation prior to any termination. After the Commissioner has been informed of any expressed views of the municipality and concurs in the proposed termination, the Commissioner may, in writing, terminate the agreement in whole or in part.

(iii) Basis for Termination. An agreement may be terminated by the Commissioner for good cause subject to negotiation and payment of appropriate termination settlement costs.

(D) Effect of Termination. Upon termination, the municipality shall refund or credit to the state any funds paid or owed to the municipality and allocable to the terminated project work, except such portion thereof as may be required to meet commitments which had become firm prior to the effective date of termination and are otherwise allowable. The municipality shall not make any new commitment without state approval. The municipality shall reduce the amount of outstanding commitments insofar as possible and report to the Commissioner the uncommitted balance of funds awarded under the funding agreement.

(4) Annulment of Agreement.

The Commissioner may annul the funding agreement if he or she determines that there has been no substantial performance of the project work without good cause, there is convincing evidence the funding assistance was obtained by fraud, or there is convincing evidence of gross abuse or corrupt practices in the administration of the project. In addition to such remedies as may be available to the state under state or local law, all funds previously paid to the municipality shall be returned or credited to the state and no further payments shall be made to the municipality.

(5) Deviations. The Commissioner is authorized to approve deviations from requirements of Sections 22a-482-1 to 22a-482-4, when he or she determines that such deviations are essential to effect necessary actions or where special circumstances make such deviations in the best interest of the state.

(A) Request for Deviation. A request for a deviation shall be submitted in writing to the Commissioner as far in advance as the exigencies of the situation will permit. Each request for a deviation shall contain at a minimum:

(i) the name of the municipality, the project identification number, and the dollar value, if appropriate;

(ii) identification of the section of Sections 22a-482-1 to 22a-482-4 from which a deviation is sought;

(iii) an adequate description of the deviation and the circumstances in which it shall be used, including all appropriate justification for the deviation request; and

(iv) a statement as to whether the same or a similiar deviation has been requested previously and, if so, circumstances of the previous request.

(B) Approval of Deviation. Deviations may be approved only by the Commissioner. A copy of each such written approval shall be retained in the official state project file.

(Effective March 5, 1992)

Disadvantage Business Enterprise (DBE)

Subcontractor Verification Form

Prime Contractor Company Name: _____

Contract Name/Number: _____

Contract Bid Amount: $_____

Note to prime contractor: You are required to complete this form listing each DBE (MBE or WBE) subcontractor to be employed in work eligible for the Drinking Water State Revolving Fund within the table below. Please submit an original of this completed form, along with each subcontractor's current, valid DBE certificate, to the municipality within 14 days of bid opening.

Name of proposed subcontractor/vendor	Type (MBE or WBE)	Type of Product or Service * (see below)	Contact Name, Address, Phone # of Subcontractor or Vendor	Dollar amount of proposed subcontract	MBE % of Contract towards goal	WBE % of Contract towards goal
* Type of Product or Service:	1 - Construction		2 - Supplies	3 - Services	4 - Equipment	

The completion and submission of this form does not constitute a contractual agreement between the general contractor and the named subcontractor, but is solely for documenting proposed compliance with DBE participation under the Department of Public Health's (DPH) Drinking Water State Revolving Fund (DWSRF).

Prime Contractor Authorized Signature	Date

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Clean Water Fund Memorandum (2019-003)

Disadvantaged Business Enterprise (DBE) Subcontractor Participation on Clean Water Fund (CWF) Projects for Construction Projects

I. PURPOSE

The municipality, through its prime contractor must make specified good faith efforts to attain the DBE goals as specified in this document in Section III. This is an administrative condition of the U.S. Environmental Protection Agency (EPA) Grant which funds CWF projects.

This memorandum supersedes the **Clean Water Fund Memorandum (2016-003)**

II. GOVERNING STATUTE OR REGULATION

General Compliance (Federal), 40 CFR, Part 33: The municipality, through its prime contractor must comply with the requirements of EPA's Program for Utilization of DBEs.

III. EPA REQUIREMENTS

The following clause shall be included in all construction contract documents and amendments for goods and services to be funded under the CWF:

The requirement for DBE subcontractor participation, expressed as a percentage of the total eligible contract amount, shall be a minimum of 8.0 percent with the following makeup:

Minority Business Enterprise (MBE): 3.0 percent
Woman Business Enterprise (WBE): 5.0 percent

Failure to meet or exceed the required percentage or submit acceptable documentation of the six good faith efforts may render a bid non-responsive and may cause the bid to be rejected.

IV. THE SIX GOOD FAITH EFFORTS AS SPECIFICALLY DEFINED BY EPA

The Six Good Faith Efforts are required methods employed by all Connecticut Department of Energy and Environmental Protection (DEEP) CWF recipients to ensure that all DBEs have the opportunity to compete for procurements funded by DEEP financial assistance dollars. The prime contractor is expected to employ the six good faith efforts throughout the entire project to insure that the DBE percentages are maintained or exceeded in the event that one DBE subcontractor needs to be substituted for another.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

5. Use the services and assistance of the Small Business Administration (SBA) (Federal) and the Minority Business Development Agency of the Department of Commerce.

6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.

The prime contractor's certification as a DBE has no effect on this requirement. Therefore, if the prime contractor is a DBE, the Six Good Faith Efforts defined above must be employed in the procurement of subcontracts to be secured to achieve the MBE 3.0% and WBE 5.0% participation.

V. CERTIFICATION

A DBE must be certified at the time that the subcontract for their services is executed. A business that is pending new certification, recertification, or whose certification has expired **cannot** be counted toward the goals.

In the case where a subcontractor DBE is certified as both a MBE and a WBE (a woman who is also a member of a minority class):

1. The prime contractor may count the entire value of the subcontract as either a MBE or a WBE.

2. The prime contractor may choose to split the subcontract between the MBE and the WBE categories to fulfill both goals. If the prime contractor chooses this route:
   a. They must indicate the dollars to be apportioned to the categories either on the face of the copy of the fully executed subcontract submitted to the Connecticut Department of Energy and Environmental Protection (DEEP) or by some other written method.
   b. The certification submitted to DEEP must indicate that the principal of the subcontractor is both a woman and a minority.
   c. For a certification that only identifies the subcontractor as a DBE, additional documentation is required as proof of dual status. In the case of Connecticut Department of Transportation (CTDOT), the detailed information page within their online database suffices as proof.

VI. ACCEPTABLE CERTIFICATION OPTIONS

1. **Connecticut Department of Administrative Services (DAS)** - DEEP will continue to accept DAS certification until such time as other State entities are identified whose certification processes meet the EPA criteria. DAS will only certify Connecticut based firms that meet the criteria under Connecticut General Statute 4a-60g.

2. **CTDOT** - Companies that desire to do business with CTDOT as well as the DEEP should seek CTDOT certification which will be accepted by the DEEP. DBE firms are advised that the certification process can take 90 days to complete. CTDOT will certify both in state as well as out of state firms.

3. **EPA** - In the event an entity cannot be certified by CTDOT as a DBE, that entity should seek certification with EPA. Such entities must provide EPA with evidence from CTDOT denying certification.

4. **SBA** - Certification is available to companies under the Woman Owned Small Business (WOSB) program and the SBA 8(a) Business Development Program (www.sba.gov/8abd/) which has a net worth ceiling of $250,000 for initial applicants.

5. **Other states certification** - Prime contractors may utilize certification from other states. Such certification must specify the DBE designation. Where there is no DBE certification option within a state, the instance must be presented to the DEEP Financial Administrator assigned to the project for consideration on a per case basis.

VII. DBE COMPLIANCE PROCESS

1. Within fourteen (14) calendar days after bid opening the prime contractor (apparent low bidder) shall complete and submit two copies of the DEEP Subcontractor Verification Form along with the DBE certification for each subcontractor to the municipality. The municipality must then submit one copy of these documents to DEEP as part of the authorization to award request.

2. Once DEEP authorizes the municipality to award the contract, the prime contractor is required to submit two copies of the executed DBE subcontracts to the municipality who submits one copy to the DEEP Financial Administrator.

3. No payment requests will be processed by DEEP until the executed copies of the subcontracts and the DBE certifications are on file in the DEEP office.

4. Should the prime contractor not meet the goals, documentation of good faith efforts will be required to be submitted to the DEEP Municipal Facilities Wastewater Engineer for consideration that the good faith effort was extensive enough to warrant the acceptance of a lower goal for the specific contract in question.

5. In the event that a DBE subcontractor is substituted for another during the project, two copies of the executed subcontract along with the corresponding DBE certification for the substitute are submitted to the municipality who forwards one copy of each to the DEEP Financial Administrator.

6. If additional construction costs are approved by DEEP, the prime contractor employs the good faith efforts defined above to meet the goals for the new total eligible contract amount.

VIII. DAS PREQUALIFICATION CERTIFICATION FOR DBE SUBCONTRACTORS

At time that the prime contractor submits copies of the executed DBE subcontracts to the municipality, two copies of the current DAS Prequalification Certificate for each DBE subcontractor whose subcontract value is equal to or greater than $500,000 must also be submitted. In turn, the municipality is required to submit one copy of each DBE Prequalification Certification to the DEEP Financial Administrator. Suppliers of material or products who do not do installation or construction work are not subject to the DAS Construction Contractor prequalification requirement.

IX. SUBMISSION OF THIS FORM

This form is to be signed by the contractor or the contractor's authorized representative. The form is then submitted to the municipality's representative for signature. The municipality includes the form as part of the authorization to award request to DEEP.

I hereby verify that I have read and understand the DBE requirements in this memorandum and will procure subcontracts whose percentages will meet or exceed the minimums listed above.

Contract Name _____

Name of Prime Contractor _____
Name and Title of Authorized Officer _____
Authorized Signature _____ **Date** _____

Town Official and Title _____
Authorized Signature _____ **Date** _____

X. DEFINITIONS

CGS: Connecticut General Statutes

CTDOT: Connecticut Department of Transportation

CWF: Clean Water Fund

DAS: Connecticut Department of Administrative Services

DBE: Disadvantaged Business Enterprise

DEEP: Connecticut Department of Energy and Environmental Protection

EPA: Environmental Protection Agency (Federal)

MBE: Minority Business Enterprise

SBA: Small Business Administration (Federal)

WBE: Woman Business Enterprise

WOSB: Woman Owned Small Business (Federal program - SBA)

June 19, 2019
Date

Denise Ruzicka, Director
Water Planning and Management Division
Bureau of Water Protection & Land Reuse

Section 00005 – Attachment G

1. State Prevailing Wage Chart (Town Specific)
2. State Prevailing Wage Poster
3. Contractors Wage Certification Form
4. Worker Training Requirements for Public Works Projects – Section 31-53b
5. CT DOL – Contracting Agency Certification Form
6. OSHA 10-Hour Construction Safety and Health Course Requirements
7. Masonry Contractor Notice
8. Connecticut General Statute 31-55a
9. CT DOL – Occupational Classifications Information Bulletin
10. CT DOL – Wage and Workplace Standards Division - Footnotes



Opportunity ⋆ Guidance ⋆ Support

CONNECTICUT DEPARTMENT OF LABOR

THIS IS A PUBLIC WORKS PROJECT

Covered by the

PREVAILING WAGE LAW

CT General Statutes Section 31-53

If you have QUESTIONS regarding your wages
CALL (860) 263-6790

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

Construction Manager at Risk/General Contractor/Prime Contractor

I,_____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this _____ day of _____,_____.

_____
Notary Public

Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53
Certified Payrolls with a statement of compliance
shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:			SUBCONTRACTOR NAME & ADDRESS	WORKER'S COMPENSATION INSURANCE CARRIER
				POLICY #
PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS		EFFECTIVE DATE: EXPIRATION DATE:

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S HOURS WORKED EACH DAY	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

12/9/2013 *IF REQUIRED

WWS-CP1

*SEE REVERSE SIDE

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care _____ 4) Disability_____

2) Pension or retirement _____ 5) Vacation, holiday_____

3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____of _____, (hereafter known as

Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such person is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

_____ _____ _____

(Signature) (Title) Submitted on (Date)

*****THIS IS A PUBLIC DOCUMENT*****
*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:

Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S HOURS WORKED EACH DAY	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
												$ Base Rate	1. $ 2. $ 3. $							
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												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

*IF REQUIRED

NOTICE: THIS PAGE MUST BE ACCOMPANIED BY A COVER PAGE (FORM # WWS-CP1)

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine
Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

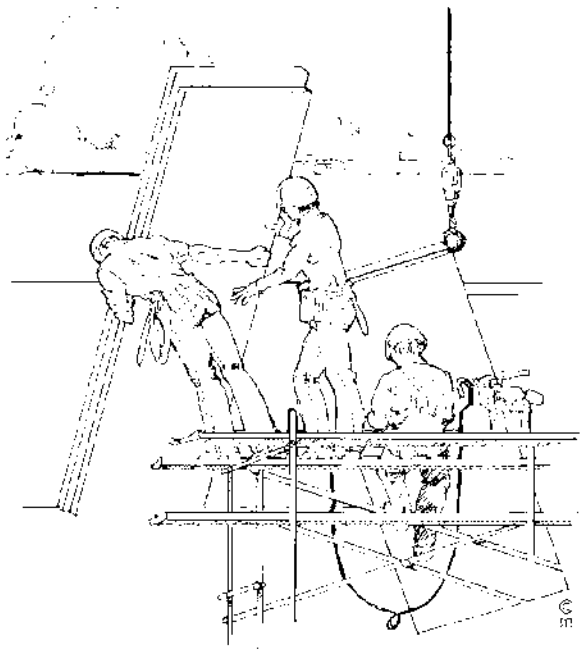
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached "Contracting Agency Certification Form" to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

✎ Inquiries can be directed to (860) 263-6790.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with

_____, located at _____,
project name and number address

shall be $_____, which includes all work, regardless of whether such project

consists of one or more contracts.

CONTRACTOR INFORMATION

Name:_____

Address:_____
Authorized Representative:_____
Approximate Starting Date: _____

Approximate Completion Date:_____

_____ _____
Signature Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007,* where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;

(3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

(5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;

(11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;

(12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and

(15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.

(16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

STATUTE 31-55a

- SPECIAL NOTICE -

To: All State and Political Subdivisions,Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the ***contractor's*** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.

- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

Building Rates

County	Town	Classification	Hourly	Hourly
Fairfield	Redding	17g) Euclids and Semi-Trailer	$36.44	32.68 + a
Fairfield	Redding	17h) Heavy Duty Trailer up to 40 tons	$37.39	32.68 + a
Fairfield	Redding	17i) Snorkle Truck	$36.54	32.68 + a
Fairfield	Redding	17j) Swivel Dump and Tack Truck	$36.39	32.68 + a
Fairfield	Redding	18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	$53.76	33.44 + a
Fairfield	Redding	19) Theatrical Stage Journeyman	$25.76	7.34
Fairfield	Ridgefield	1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
Fairfield	Ridgefield	1c) Asbestos Worker/Heat and Frost Insulator	$48.81	34.05
Fairfield	Ridgefield	2) Boilermaker	$48.21	30.01
Fairfield	Ridgefield	3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	$42.61	35.92 + a
Fairfield	Ridgefield	3b) Tile Setter	$40.00	32.75
Fairfield	Ridgefield	3c) Tile and Stone Finishers	$33.00	27.43
Fairfield	Ridgefield	3d) Marble & Terrazzo Finishers	$34.20	26.23
Fairfield	Ridgefield	3e) Plasterer	$44.52	29.63
Fairfield	Ridgefield	3f) Terrazzo Mechanics & Marble Setters	$40.60	34.93
Fairfield	Ridgefield	------LABORERS------		
Fairfield	Ridgefield	4) Group 1: General laborers, carpenter tenders, concrete specialists, wrecking laborers and fire watchers.	$35.70	28.85
Fairfield	Ridgefield	4) Group 1a: Acetylene Burners (Hours worked with a torch)	$36.70	28.85
Fairfield	Ridgefield	4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman (Person running mixer and spraying fireproof only).	$35.95	28.85
Fairfield	Ridgefield	4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	$36.20	28.85
Fairfield	Ridgefield	4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80.	$36.70	28.85
Fairfield	Ridgefield	4d) Group 5: Air track operator, sand blaster and hydraulic drills.	$36.45	28.85
Fairfield	Ridgefield	4e) Group 6: Blasters, nuclear and toxic waste removal.	$38.70	28.85
Fairfield	Ridgefield	4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	$38.70	28.85
Fairfield	Ridgefield	4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	$36.20	28.85
Fairfield	Ridgefield	4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	$35.70	28.85

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly	Hourly
Fairfield	Ridgefield	4i) Group 10: Traffic Control Signalman	$21.42	28.85
Fairfield	Ridgefield	4j) Group 11: Toxic Waste Removers A or B With PPE	$38.70	28.85
Fairfield	Ridgefield	5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	$42.03	29.19
Fairfield	Ridgefield	5a) Millwrights	$43.25	29.13
Fairfield	Ridgefield	5b) Carpenter - Welder	$42.53	29.19
Fairfield	Ridgefield	5c) Carpenter: Working with creosote lumber or acid	$43.03	29.19
Fairfield	Ridgefield	6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	$47.40	35.32+3% of gross wage
Fairfield	Ridgefield	7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	$66.72	38.435+a+b
Fairfield	Ridgefield	-----OUTSIDE LINE CONSTRUCTION----		
Fairfield	Ridgefield	Groundman	$30.87	13.91
Fairfield	Ridgefield	Linemen/Cable Splicer	$56.12	32.85
Fairfield	Ridgefield	8) Glazier (Trade License required: FG-1,2)	$43.13	26.50+ a
Fairfield	Ridgefield	9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	$45.25	43.62 + a
Fairfield	Ridgefield	----OPERATORS----		
Fairfield	Ridgefield	Group 1: Crane Handling or Erecting Structural Steel or Stone; Hoisting Engineer (2 drums or over). (Trade License Required)	$58.19	29.80 + a
Fairfield	Ridgefield	Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and Over	$53.33	29.80 + a
Fairfield	Ridgefield	Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	$57.78	29.80 + a
Fairfield	Ridgefield	Group 2a: Cranes (under 100 ton rated capacity).	$56.79	29.80 + a
Fairfield	Ridgefield	Group 2b: Excavator over 2 cubic yards; Pile Driver ($3.00 premium when operator controls hammer)	$52.92	29.80 + a
Fairfield	Ridgefield	Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Finegrade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	$51.92	29.80 + a
Fairfield	Ridgefield	Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper); Goldhofer.	$51.42	29.80 + a
Fairfield	Ridgefield	Group 5: Specialty Railroad Equipment; Asphalt Spreader, Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24 mandrel).	$50.63	29.80 + a
Fairfield	Ridgefield	Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	$50.63	29.80 + a
Fairfield	Ridgefield	Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	$50.22	29.80 + a
Fairfield	Ridgefield	Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under mandrel).	$49.77	29.80 + a

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly	Hourly
Fairfield	Ridgefield	Group 8: Mechanic; Grease Truck Operator; Hydroblaster; Barrier Mover; Power Stone Spreader; Welding; Work Boat Under 26 ft.; Transfer Machine; Rigger Foreman.	$49.25	29.80 + a
Fairfield	Ridgefield	Group 9: Front End Loader (under 3 cubic yards); Skid Steer Loader regardless of attachments; (Bobcat or Similar); Forklift, Power Chipper; Landscape Equipment (including Hydroseeder); Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).	$48.67	29.80 + a
Fairfield	Ridgefield	Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	$45.96	29.80 + a
Fairfield	Ridgefield	Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	$45.96	29.80 + a
Fairfield	Ridgefield	Group 12: Wellpoint Operator.	$45.87	29.80 + a
Fairfield	Ridgefield	Group 13: Compressor Battery Operator.	$45.12	29.80 + a
Fairfield	Ridgefield	Group 14: Elevator Operator; Tow Motor Operator (solid tire no rough terrain).	$43.60	29.80 + a
Fairfield	Ridgefield	Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	$43.06	29.80 + a
Fairfield	Ridgefield	Group 16: Maintenance Engineer.	$42.20	29.80 + a
Fairfield	Ridgefield	Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator; Portable Grout Plant Operator; Portable Water Filtration Plant Operator.	$47.91	29.80 + a
Fairfield	Ridgefield	Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (Minimum for any job requiring a CDL license); Rigger; Signalman.	$44.70	29.80 + a
Fairfield	Ridgefield	Surveyor: Chief of Party	$48.16	29.80 + a
Fairfield	Ridgefield	Surveyor: Assistant Chief of Party	$44.41	29.80 + a
Fairfield	Ridgefield	Surveyor: Instrument Man	$42.73	29.80 + a
Fairfield	Ridgefield	Surveyor: Rodman or Chainman	$36.78	29.80 + a
Fairfield	Ridgefield	------PAINTERS (Including Drywall Finishing)------		
Fairfield	Ridgefield	10a) Brush and Roller	$39.57	26.50
Fairfield	Ridgefield	10b) Taping Only/Drywall Finishing	$40.32	26.50
Fairfield	Ridgefield	10c) Paperhanger and Red Label	$40.07	26.50
Fairfield	Ridgefield	10d) Spray	$42.57	26.50
Fairfield	Ridgefield	10e) Spray Helper	$40.57	26.50
Fairfield	Ridgefield	10f) Blast	$44.57	26.50
Fairfield	Ridgefield	10g) Blast Helper	$40.57	26.50
Fairfield	Ridgefield	11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	$50.58	36.30
Fairfield	Ridgefield	12) Well Digger, Pile Testing Machine	$37.26	24.05 + a
Fairfield	Ridgefield	Roofer: Cole Tar Pitch	$46.00	24.74 + a

As of: July 1, 2025

Building Rates

County	Town	Classification	Hourly	Hourly
Fairfield	Ridgefield	Roofer: Slate, Tile, Composition, Shingles, Singly Ply and Damp/Waterproofing	$44.50	24.74 + a
Fairfield	Ridgefield	15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	$55.29	47.42
Fairfield	Ridgefield	16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	$50.58	36.30
Fairfield	Ridgefield	------TRUCK DRIVERS------		
Fairfield	Ridgefield	17) Block Truck	$37.48	32.68 + a
Fairfield	Ridgefield	17a) 2 Axle	$36.16	32.68 + a
Fairfield	Ridgefield	17ab) Helpers	$34.66	32.68 + a
Fairfield	Ridgefield	17b) 3 Axle, 2 Axle Mixer	$36.27	32.68 + a
Fairfield	Ridgefield	17c) 3 Axle Mixer	$36.33	32.68 + a
Fairfield	Ridgefield	17d) 4 Axle	$36.39	32.68 + a
Fairfield	Ridgefield	17e) 4 Axle Mixer	$37.19	32.68 + a
Fairfield	Ridgefield	17ef) 5 Axle	$36.39	32.68 + a
Fairfield	Ridgefield	17eg) 5 Axle Mixer	$37.19	32.68 + a
Fairfield	Ridgefield	17f) Heavy Duty Trailer (40 Tons and Over)	$38.66	32.68 + a
Fairfield	Ridgefield	17g) Euclids and Semi-Trailer	$36.44	32.68 + a
Fairfield	Ridgefield	17h) Heavy Duty Trailer up to 40 tons	$37.39	32.68 + a
Fairfield	Ridgefield	17i) Snorkle Truck	$36.54	32.68 + a
Fairfield	Ridgefield	17j) Swivel Dump and Tack Truck	$36.39	32.68 + a
Fairfield	Ridgefield	18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	$53.76	33.44 + a
Fairfield	Ridgefield	19) Theatrical Stage Journeyman	$25.76	7.34
Fairfield	Shelton	1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
Fairfield	Shelton	1c) Asbestos Worker/Heat and Frost Insulator	$48.81	34.05
Fairfield	Shelton	2) Boilermaker	$48.21	30.01
Fairfield	Shelton	3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	$42.61	34.89 + a
Fairfield	Shelton	3b) Tile Setter	$40.00	32.75
Fairfield	Shelton	3c) Tile and Stone Finishers	$33.00	27.43
Fairfield	Shelton	3d) Marble & Terrazzo Finishers	$34.20	26.23

As of: July 1, 2025

Information Bulletin
Occupational Classifications

The Connecticut Department of Labor has the responsibility to properly determine *"job classification"* on prevailing wage projects covered under C.G.S. Section 31-53(d).

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.

Below are additional clarifications of specific job duties performed for certain classifications:

- ***ASBESTOS WORKERS***

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- ***ASBESTOS INSULATOR***

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- ***BOILERMAKERS***

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- ***BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS***

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- ***CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS***

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **LABORER, CLEANING**

• The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **DELIVERY PERSONNEL**

• If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

• An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

- ***ELECTRICIANS***

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ****License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.***

- ***ELEVATOR CONSTRUCTORS***

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ****License required by Connecticut General Statutes: R-1,2,5,6.***

- ***FORK LIFT OPERATOR***

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- ***GLAZIERS***

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

- ***IRONWORKERS***

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

- ***INSULATOR***

• Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

- ***LABORERS***

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- ***PAINTERS***

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- ***LEAD PAINT REMOVAL***

• Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

• Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- ***PLUMBERS AND PIPEFITTERS***

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- ***POWER EQUIPMENT OPERATORS***

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ****License required, crane operators only, per Connecticut General Statutes.***

- ***ROOFERS***

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be relaid.)

- ***SHEETMETAL WORKERS***

Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

- ***SPRINKLER FITTERS***

Installation, alteration, maintenance and repair of fire protection sprinkler systems. ****License required per Connecticut General Statutes: F-1,2,3,4.***

- ***TILE MARBLE AND TERRAZZO FINISHERS***

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are requires to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ****License required, drivers only, per Connecticut General Statutes.***

For example:

• Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
• Hauling material off site is not covered provided they are not dumping it at a location outlined above.
• Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

➢ *Any questions regarding the proper classification should be directed to:*
Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6790.

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

⇨ Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Section 00005 – Attachment H

1. Davis Bacon Wage Rates
2. Davis Bacon Employee Rights Poster
3. Davis Bacon Federal Prevailing Wage Requirements
4. WH437 Payroll Form
5. Labor Standards Interview Form

"General Decision Number: CT20250020 07/18/2025

Superseded General Decision Number: CT20240020

State: Connecticut

Construction Type: Building

County: Fairfield County in Connecticut.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/17/2025

2	01/31/2025
3	02/07/2025
4	03/14/2025
5	03/28/2025
6	04/25/2025
7	05/30/2025
8	06/06/2025
9	07/18/2025

ASBE0033-002 06/01/2024

	Rates	Fringes
HEAT & FROST INSULATOR (Includes Duct, Pipe and Mechanical Systems)	$ 47.60	33.30

BRCT0001-006 01/06/2025

	Rates	Fringes
BRICKLAYER	$ 42.61	35.92

BRCT0001-007 01/06/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 42.61	35.92

CARP0326-024 05/05/2025

	Rates	Fringes
FLOOR LAYER: Carpet Only	$ 42.03	29.19

CARP0326-025 05/05/2025

	Rates	Fringes
FLOOR LAYER: Hardwood Floors Only	$ 42.03	29.19

CARP0326-026 05/05/2025

	Rates	Fringes
METAL BUILDING ERECTOR (Metal Siding / Wall Panels)	$ 42.03	29.19

CARP0326-027 05/05/2025

	Rates	Fringes
CARPENTER (Scaffold Builder)	$ 42.03	29.19

CARP0326-028 05/05/2025

	Rates	Fringes
CARPENTER (Includes Acoustical Ceiling Installation, Drywall Hanging, Form Work, and Metal Stud Installation)	$ 42.03	29.19

CARP0326-029 05/05/2025

	Rates	Fringes
SOFT FLOOR LAYER	$ 42.03	29.19

CARP0326-030 05/05/2025

	Rates	Fringes
FLOOR LAYER: Vinyl Flooring Only	$ 42.03	29.19

CARP1121-006 01/06/2025

	Rates	Fringes
MILLWRIGHT	$ 43.25	29.13

ELEC0003-006 04/18/2024

	Rates	Fringes
ELECTRICIAN (Includes Low Voltage and Installation of Alarms and Sound and Communication Systems)	$ 44.00	69.17%+12.31

ELEC0488-003 06/01/2025

	Rates	Fringes
ELECTRICIAN (HVAC/Temperature Controls Installation)	$ 47.40	3%+35.32

ELEV0091-002 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC	$ 66.72	38.435+a+b

FOOTNOTE:
a.Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

ENGI0478-004 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Backhoe/Excavator/Trackhoe)	$ 51.92	29.80

PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

ENGI0478-005 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Bulldozer)		
Finegrade (Slopes, Shaping, laser or GPS, etc.)	$ 51.92	29.80
Rough Grade Dozer	$ 50.22	29.80

PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

ENGI0478-012 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Crane under 100 ton rated capacity))	$ 56.79	29.80

PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

ENGI0478-016 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Loader - 7 cubic yards or over)	$ 53.33	29.80

PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

IRON0424-001 06/03/2024

	Rates	Fringes
IRONWORKER (Reinforcing, Structural, Ornamental)	$ 45.25	41.27

LABO0230-002 04/06/2025

	Rates	Fringes
LABORER (Common and General)	$ 35.70	28.85
LABORER (Mason Tender-Cement/Concrete)	$ 35.70	28.85

PAIN0011-014 06/01/2023

	Rates	Fringes
GLAZIER	$ 41.18	24.55

PAIN0011-021 06/01/2024

	Rates	Fringes
PAINTER (Brush and Roller)	$ 38.07	25.70

PAIN0011-023 06/01/2024

	Rates	Fringes
DRYWALL FINISHER/TAPER	$ 38.82	25.70

PLUM0777-001 06/01/2025

	Rates	Fringes
PLUMBER	$ 50.58	35.85

PLUM0777-003 06/01/2025

	Rates	Fringes
PIPEFITTER	$ 50.58	35.85

PLUM0777-009 06/01/2025

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only)	$ 50.58	35.85

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* ROOF0009-001 06/01/2025

	Rates	Fringes
ROOFER		
Composition	$ 45.15	23.31
Slate and Tile	$ 45.65	23.31

SHEE0038-006 07/01/2023

	Rates	Fringes
SHEET METAL WORKER (Metal Flashing and HVAC Duct Installation Only)	$ 50.60	45.61

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* SHEE0040-001 07/01/2025

	Rates	Fringes
SHEET METAL WORKER (Including HVAC Unit Installation)	$ 44.70	44.50

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* SHEE0040-008 07/01/2025

	Rates	Fringes

SHEET METAL WORKER (Metal Roofs Installation).....$ 44.70 44.50

TEAM0191-001 04/07/2024

	Rates	Fringes
TRUCK DRIVER (Dump Truck).....	$ 33.39	32.36

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* UAVG-CT-0001 01/01/2025

	Rates	Fringes
LABORER: Common or General.....	$ 33.81	25.18

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers.

0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

"General Decision Number: CT20250013 06/13/2025

Superseded General Decision Number: CT20240013

State: Connecticut

Construction Type: Heavy

County: Fairfield County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/17/2025
2	04/25/2025

3	05/09/2025
4	05/30/2025
5	06/06/2025
6	06/13/2025

BRCT0001-011 01/06/2025

	Rates	Fringes
BRICKLAYER	$ 43.14	34.74

BRCT0001-012 01/06/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 43.14	34.74

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* CARP0326-019 05/05/2025

	Rates	Fringes
CARPENTER		
CARPENTER, PILEDRIVER	$ 42.03	29.19
DIVER TENDER	$ 42.03	29.19
DIVER	$ 50.49	29.19

CARP1121-006 01/06/2025

	Rates	Fringes
MILLWRIGHT	$ 43.25	29.13

ELEC0003-004 04/18/2024

Darien, Greenwich, New Canaan, Stamford and the portion of Norwalk lying West of Five Mile River

	Rates	Fringes
ELECTRICIAN	$ 44.00	69.17%+12.31

ELEC0488-006 06/01/2025

Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield, Monroe, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stratford, Trumball, Weston, Westport and Wilton Townships

	Rates	Fringes
ELECTRICIAN	$ 47.40	3%+35.32

ENGI0478-001 04/06/2025

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 58.19	29.80
GROUP 2	$ 57.78	29.80
GROUP 3	$ 56.79	29.80
GROUP 4	$ 51.92	29.80
GROUP 5	$ 50.63	29.80
GROUP 6	$ 50.22	29.80

GROUP	7	$ 49.25	29.80
GROUP	8	$ 49.25	29.80
GROUP	9	$ 48.67	29.80
GROUP	10	$ 45.96	29.80
GROUP	11	$ 45.96	29.80
GROUP	12	$ 45.87	29.80
GROUP	13	$ 47.91	29.80
GROUP	14	$ 45.12	29.80
GROUP	15	$ 44.70	29.80
GROUP	16	$ 43.60	29.80
GROUP	17	$ 43.06	29.80
GROUP	18	$ 42.20	29.80
GROUP	19	$ 53.33	29.80
GROUP	20	$ 52.92	29.80
GROUP	21	$ 51.92	29.80

Hazardous waste premium $3.00 per hour over classified rate.

Crane with boom, including jib, 150 feet - $1.50 extra.
Crane with boom, including jib, 200 feet - $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over)

GROUP 2: Cranes (100 ton capacity & over) Bauer Drill/Caisson

GROUP 3: Cranes (under 100 ton rated capacity)

GROUP 4: Trenching machines, lighter derrick, concrete finishing machine, CMI machine or similar, Koehring Loader (skooper).

GROUP 5: Specialty railroad equipment, asphalt spreader, asphalt reclaiming machine, line grider, concrete pumps, drills with self contained power units, boring machine, post hole digger, auger, pounder, well digger, milling machine (over 24' mandrel), side boom, combination hoe and loader, directional driller

GROUP 6: Front end loader (3 cu. yds. up to 7 cu. yards), bulldozer (Rough grade dozer) .

GROUP 7: Asphalt roller, concrete saws and cutters (ride on types), Vermeer concrete cutter, stump grinder, scraper, snooper, skidder, milling machine (24"" and under Mandrel).

GROUP 8: Mechanic, grease truck operator, hydoblaster, barrier mover, power stone spreader, welder, work boat

under 26 ft. transfer machine.

GROUP 9: Front end loader (under 3 cubic yards), skid steer loader (regardless of attachments), bobcat or similar, forklift, power chipper, landscape equipment (including hydroseeder), Vacuum Exacavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).

GROUP 10: Vibratory hammer,ice machine, diesel & air, hammer, etc.

GROUP 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.

GROUP 12: Wellpoint operator.

GROUP 13: Portable asphalt plant operator, portable concrete plant operator, portable crusher plant operator, portable grout plant operator, portable water filtration plant operator.

GROUP 14: Compressor battery operator.

GROUP 15: Power Safety boat, Vacuum truck, Zim mixer, Sweeper; (Minimum for any job requiring a CDL license) .

GROUP 16: Elevator operator, tow motor operator (solid tire no rough terrain).

GROUP 17: Generator operator, compressor operator, pump operator,welding machine operator; Heater operator.

GROUP 18: Maintenance engineer.

GROUP 19: Front end loader(7 cubic yards or over); work boat 26 ft. and over.

GROUP 20: Excavator over 2 cubic yards; pile driver($3.00 premium when operator
controls hammer).

GROUP 21: Excavator, gradall, master mechanic, hoisting engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power or operaing), rubber tire excavator (drott 1085
similar), grader operator, bulldozer finegrade (slopes shaping, laser or GPS, ect.)

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* ENGI0478-007 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver	$ 50.63	29.80
Asphalt Roller	$ 49.77	29.80
Asphalt Spreader	$ 50.63	29.80
Backhoe/Excavator 2 cubic yards and over	$ 52.92	29.80
Backhoe/Excavator under 2 cubic yards	$ 51.92	29.80
Bulldozer (Rough Grade Dozer)	$ 50.22	29.80
Bulldozer Fine		

Grade(includes slopes, shaping, laser or gps)	$ 51.92	29.80
Crane handling or erecting structural steel or stone	$ 58.19	29.80
Cranes (100 ton capacity & over)	$ 57.78	29.80
Cranes (under 100 ton rated capacity)	$ 56.79	29.80
Drills with self contained power units; Directional driller	$ 50.63	29.80
Earth Roller	$ 45.96	29.80
Forklift	$ 48.67	29.80
Front End Loader (3 cubic yards up to 7 cubic yards)	$ 50.22	29.80
Front End Loader (7 cubic yards or over)	$ 53.33	29.80
Front End Loader (under 3 cubic yards)	$ 48.67	29.80
Grader/Blade	$ 51.92	29.80
Maintenance Engineer/Oiler	$ 42.20	29.80
Mechanic	$ 49.25	29.80
Rubber Tire Backhoe/Excavator	$ 51.92	29.80

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

b. Crane with boom, including jib, 150 feet - $1.50 extra .
Crane with boom, including jib, 200 feet- $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra.

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

IRON0015-005 06/03/2024

	Rates	Fringes
IRONWORKER, REINFORCING	$ 45.25	41.27

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0146-002 04/06/2025

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form Movers and Strippers	$ 36.96	28.85

Form Erectors	$ 37.29	28.85
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	$ 36.96	28.85
Laborers Topside, Cage Tenders, Bellman	$ 36.85	28.85
Miners	$ 37.93	28.85
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen	$ 36.96	28.85
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders	$ 37.93	28.85
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster	$ 44.42	28.85
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	$ 44.22	28.85
Change House Attendants, Powder Watchmen, Top on Iron Bolt	$ 42.24	28.85
Mucking Machine Operator	$ 45.01	28.85

a. PAID HOLIDAYS: On tunnel work only: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

LABO0146-003 04/06/2025

	Rates	Fringes
LABORERS		
GROUP 1	$ 35.70	28.85
GROUP 2	$ 35.95	28.85
GROUP 3	$ 36.20	28.85
GROUP 4	$ 38.70	28.85
GROUP 5	$ 37.45	28.85
GROUP 6	$ 37.70	28.85
GROUP 7	$ 21.42	28.85
GROUP 8:	$ 36.70	28.85
GROUP 9	$ 38.70	28.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), concrete specialist

GROUP 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators and powdermen.

GROUP 3: Pipelayers, Jackhammer/Pavement breaker (handheld),

mason
tenders/catch basin builders, asphalt rakers, air track operators, block paver and curb setter

GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

GROUP 6: Toxic waste remover

GROUP 7: Traffic control signalman

GROUP 8: Acetylene burner (Hours worked with a torch)

GROUP 9: Toxic Waste Removers A or B
With PPE

(On a site designated as a SuperFund Site by the U.S. Army Corps of Engineers and is deemed a HAZ-MAT site, and applies to employees required to wear OSHA leval A or B even if the PPE is not worn.)

PAIN0011-013 06/01/2021

	Rates	Fringes
PAINTER		
Brush and Roller	$ 36.42	22.90
Spray Only	$ 39.42	22.90
Steel Only	$ 38.42	22.90

TEAM0064-001 04/07/2024

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix	$ 33.27	32.36
2 Axle	$ 33.16	32.36
3 Axle Ready Mix	$ 33.33	32.36
3 Axle	$ 33.27	32.36
4 Axle Ready Mix	$ 33.44	32.36
4 Axle	$ 33.39	32.36
Heavy Duty Trailer 40 tons and over	$ 35.66	32.36
Heavy Duty Trailer up to 40 tons	$ 34.39	32.36
Snorkle Truck	$ 33.54	32.36
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids)	$ 33.44	32.36

Hazardous waste removal work receives additional $1.25 per hour.

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

TEAM0064-006 04/07/2024

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	$ 33.39	32.36

Hazardous waste removal work receives additional $1.25 per hour.

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

SUCT2002-008 12/16/2008

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	$ 28.62	10.84

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications

and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

"General Decision Number: CT20250001 06/13/2025

Superseded General Decision Number: CT20240001

State: Connecticut

Construction Type: Highway

Counties: Fairfield, Litchfield, Middlesex, New Haven, Tolland and Windham Counties in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025

1	01/17/2025
2	03/28/2025
3	04/25/2025
4	05/09/2025
5	05/30/2025
6	06/06/2025
7	06/13/2025

BRCT0001-004 01/06/2025

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS AND STONE MASONS	$ 43.14	34.74

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* CARP0326-003 05/05/2025

LITCHFIELD COUNTY
Harwinton, Plymouth, Thomaston, Watertown
MIDDLESEX COUNTY
NEW HAVEN COUNTY
Beacon Falls, Bethany, Branford, Cheshire, East Haven, Guilford, Hamden. Madison, Meriden, Middlebury, Naugatuck, New Haven, North Branford, North Haven, Orange (east of Orange Center Road and north of Route 1, and north of Route 1 and east of the Oyster River), Prospect, Southbury, Wallingford, Waterbury, West Haven, Wolcott, Woodbridge
TOLLAND COUNTY
Andover, Columbia, Coventry, Hebron, Mansfield, Union, Willington
WINDHAM COUNTY

	Rates	Fringes
Carpenters:		
CARPENTERS, PILEDRIVERS	$ 42.03	29.19
DIVER TENDERS	$ 42.03	29.19
DIVERS	$ 50.49	29.19

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* CARP0326-014 05/05/2025

	Rates	Fringes
Carpenters: (TOLLAND COUNTY Bolton, Ellington, Somers, Tolland, Vernon)		
CARPENTERS, PILEDRIVERS	$ 42.03	29.19
DIVER TENDERS	$ 42.03	29.19
DIVERS	$ 50.49	29.19

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* CARP0326-017 05/05/2025

	Rates	Fringes
Carpenters:		
CARPENTERS, PILEDRIVERS	$ 42.03	29.19
DIVER TENDERS	$ 42.03	29.19
DIVERS	$ 50.49	29.19

FAIRFIELD COUNTY
Bethel, Bridgeport, Brookfield, Danbury, Darien, Easton, Fairfield, Greenwich, Monroe, New Canaan, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman,

Stamford, Stratford, Trumbull, Weston, Westport, Wilton;
LITCHFIELD COUNTY
Barkhamstead, Bethlehem, Bridgewater, Canaan, Colebrook, Cornwall, Goshen, Kent, Litchfield, Morris, New Hartford, New Milford, Norfolk, North Canaan, Roxbury, Salisbury, Sharon, Torrington, Warren, Washington, Winchester, Woodbury;
NEW HAVEN COUNTY
Ansonia, Derby, Milford, Orange (west of Orange Center Road and south of Route 1 and west of the Oyster River), Oxford, Seymour;

CARP1121-006 01/06/2025

	Rates	Fringes
MILLWRIGHT	$ 43.25	29.13

ELEC0003-007 04/18/2024

Fairfield County (Darien, Greenwich, New Canaan, Stamford)

	Rates	Fringes
ELECTRICIAN	$ 44.00	67.15%+12.31

ELEC0035-001 06/01/2024

	Rates	Fringes
Electricians: MIDDLESEX COUNTY (Cromwell, Middlefield, Middleton and Portland); TOLLAND COUNTY; WINDHAM COUNTY	$ 45.75	3%+33.97

ELEC0090-002 06/01/2025

	Rates	Fringes
Electricians:	$ 46.48	3%+36.66

LITCHFIELD COUNTY
Plymouth Township;
MIIDDLESEX COUNTY
Chester, Clinton, Deep River, Durham, East Haddam, East Hampton, Essex, Haddam, Killingworth, Old Saybrook, Westbrook;
NEW HAVEN COUNTY
All Townships excluding Beacon Falls, Middlebury,Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott.

ELEC0488-002 06/01/2025

	Rates	Fringes
Electricians	$ 47.40	3%+35.32

FAIRFIELD COUNTY
Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield, Monroe, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stratford, Trumbull, Weston, Westport and Wilton.
LITCHFIELD COUNTY
Except Plymouth;
NEW HAVEN COUNTY
Beacon Falls, Middlebury, Milford, Naugatuck, Oxford,

Prospect, Seymour, Southbury, Waterbury and Wolcott

ENGI0478-001 04/06/2025

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 58.19	29.80
GROUP 2	$ 57.78	29.80
GROUP 3	$ 56.79	29.80
GROUP 4	$ 51.92	29.80
GROUP 5	$ 50.63	29.80
GROUP 6	$ 50.22	29.80
GROUP 7	$ 49.25	29.80
GROUP 8	$ 49.25	29.80
GROUP 9	$ 48.67	29.80
GROUP 10	$ 45.96	29.80
GROUP 11	$ 45.96	29.80
GROUP 12	$ 45.87	29.80
GROUP 13	$ 47.91	29.80
GROUP 14	$ 45.12	29.80
GROUP 15	$ 44.70	29.80
GROUP 16	$ 43.60	29.80
GROUP 17	$ 43.06	29.80
GROUP 18	$ 42.20	29.80
GROUP 19	$ 53.33	29.80
GROUP 20	$ 52.92	29.80
GROUP 21	$ 51.92	29.80

Hazardous waste premium $3.00 per hour over classified rate.

Crane with boom, including jib, 150 feet - $1.50 extra.
Crane with boom, including jib, 200 feet - $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over)

GROUP 2: Cranes (100 ton capacity & over) Bauer Drill/Caisson

GROUP 3: Cranes (under 100 ton rated capacity)

GROUP 4: Trenching machines, lighter derrick, concrete finishing machine, CMI machine or similar, Koehring Loader (skooper).

GROUP 5: Specialty railroad equipment, asphalt spreader, asphalt reclaiming machine, line grider, concrete pumps, drills with self contained power units, boring machine,

post hole digger, auger, pounder, well digger, milling machine (over 24' mandrel), side boom, combination hoe and loader, directional driller

GROUP 6: Front end loader (3 cu. yds. up to 7 cu. yards), bulldozer (Rough grade dozer) .

GROUP 7: Asphalt roller, concrete saws and cutters (ride on types), Vermeer concrete cutter, stump grinder, scraper, snooper, skidder, milling machine (24"" and under Mandrel).

GROUP 8: Mechanic, grease truck operator, hydoblaster, barrier mover, power stone spreader, welder, work boat under 26 ft. transfer machine.

GROUP 9: Front end loader (under 3 cubic yards), skid steer loader (regardless of attachments), bobcat or similar, forklift, power chipper, landscape equipment (including hydroseeder), Vacuum Exacavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).

GROUP 10: Vibratory hammer,ice machine, diesel & air, hammer, etc.

GROUP 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.

GROUP 12: Wellpoint operator.

GROUP 13: Portable asphalt plant operator, portable concrete plant operator, portable crusher plant operator, portable grout plant operator, portable water filtration plant operator.

GROUP 14: Compressor battery operator.

GROUP 15: Power Safety boat, Vacuum truck, Zim mixer, Sweeper; (Minimum for any job requiring a CDL license) .

GROUP 16: Elevator operator, tow motor operator (solid tire no rough terrain).

GROUP 17: Generator operator, compressor operator, pump operator,welding machine operator; Heater operator.

GROUP 18: Maintenance engineer.

GROUP 19: Front end loader(7 cubic yards or over); work boat 26 ft. and over.

GROUP 20: Excavator over 2 cubic yards; pile driver($3.00 premium when operator
controls hammer).

GROUP 21: Excavator, gradall, master mechanic, hoisting engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power or operaing), rubber tire excavator (drott 1085
similar), grader operator, bulldozer finegrade (slopes shaping, laser or GPS, ect.)

IRON0015-002 06/03/2024

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection)	$ 45.25	41.27

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0146-001 04/06/2025

	Rates	Fringes
Laborers:		
GROUP 1	$ 35.70	28.85
GROUP 2	$ 35.95	28.85
GROUP 3	$ 36.20	28.85
GROUP 4	$ 38.70	28.85
GROUP 5	$ 37.45	28.85
GROUP 6	$ 37.70	28.85
GROUP 7	$ 21.42	28.85
GROUP 8:	$ 36.70	28.85
GROUP 9:	$ 38.70	28.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), concrete specialist

GROUP 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators and powdermen.

GROUP 3: Pipelayers, Jackhammer/Pavement breaker (handheld), mason tenders/catch basin builders, asphalt rakers, air track operators, block paver and curb setter

GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

GROUP 6: Toxic waste remover

GROUP 7: Traffic control signalman

GROUP 8: Acetylene burner (Hours worked with a torch)

GROUP 9: Toxic Waste Removers A or B With PPE

(On a site designated as a SuperFund Site by the U.S. Army Corps of Engineers and is deemed a HAZ-MAT site, and applies to employees required to wear OSHA leval A or B even if the PPE is not worn.)

LABO0146-002 04/06/2025

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form		

Movers and Strippers	$ 36.96	28.85
Form Erectors	$ 37.29	28.85
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	$ 36.96	28.85
Laborers Topside, Cage Tenders, Bellman	$ 36.85	28.85
Miners	$ 37.93	28.85
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen	$ 36.96	28.85
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders	$ 37.93	28.85
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster	$ 44.42	28.85
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	$ 44.22	28.85
Change House Attendants, Powder Watchmen, Top on Iron Bolt	$ 42.24	28.85
Mucking Machine Operator	$ 45.01	28.85

a. PAID HOLIDAYS: On tunnel work only: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

PAIN0011-001 06/01/2024

	Rates	Fringes
Painters:		
Blast and Spray	$ 41.07	25.70
Brush and Roll	$ 38.07	25.70
Tanks, Towers, Swing	$ 40.07	25.70

PAIN0011-003 06/01/2024

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, Water, etc.) Spray	$ 57.85	25.85

TEAM0251-002 04/07/2024

	Rates	Fringes

Truck drivers:

2 Axle Ready Mix	$ 33.27	32.36
2 Axle	$ 32.16	32.36
3 Axle Ready Mix	$ 33.33	32.36
3 Axle	$ 33.27	32.36
4 Axle Ready Mix	$ 33.44	32.36
4 Axle	$ 33.39	32.36
Heavy Duty Trailer 40 tons and over	$ 35.66	32.36
Heavy Duty Trailer up to 40 tons	$ 34.39	32.36
Snorkle Truck	$ 33.54	32.36
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids)	$ 33.44	32.36

Hazardous waste removal work receives additional $1.25 per hour.

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage

determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment

data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

"General Decision Number: CT20250007 07/18/2025

Superseded General Decision Number: CT20240007

State: Connecticut

Construction Type: Residential

County: Fairfield County in Connecticut.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/17/2025

2	01/31/2025
3	04/25/2025
4	05/30/2025
5	06/06/2025
6	07/18/2025

CARP0326-018 05/05/2025

	Rates	Fringes
CARPENTER	$ 42.03	29.19

ELEC0003-004 04/18/2024

Darien, Greenwich, New Canaan, Stamford and the portion of Norwalk lying West of Five Mile River

	Rates	Fringes
ELECTRICIAN	$ 44.00	69.17%+12.31

ELEC0488-006 06/01/2025

Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield, Monroe, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stratford, Trumball, Weston, Westport and Wilton Townships

	Rates	Fringes
ELECTRICIAN	$ 47.40	3%+35.32

ENGI0478-006 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Backhoe/Excavator 2 cubic yards and over	$ 51.92	29.80
Backhoe/Excavator under 2 cubic yards; Rubber Tire Backhoe/Excavator	$ 52.92	29.80
Bulldozer (Rough Grade Dozer)	$ 50.22	29.80
Bulldozer Fine Grade	$ 51.92	29.80
Combination Hoe and Loader	$ 50.63	29.80
Loader (3 cubic yards up to 7 cubic yards)	$ 50.22	29.80
Loader (7 cubic yards or over)	$ 53.33	29.80
Loader (under 3 cubic yards)	$ 48.67	29.80

a. PAID HOLIDAYS: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday.

PAIN0011-012 06/01/2023

	Rates	Fringes
GLAZIER	$ 41.18	24.55

a. PAID HOLIDAYS: Labor Day and Christmas Day.

PAIN0011-016 06/01/2024

	Rates	Fringes
PAINTER: Brush and Roller	$ 38.07	25.70

PLUM0777-005 06/01/2025

	Rates	Fringes
PLUMBER/PIPEFITTER (Including HVAC Pipe Installation)	$ 50.58	35.85

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* ROOF0012-003 01/01/2025

	Rates	Fringes
ROOFER: Slate & Tile Roof	$ 44.50	24.80

a. PAID HOLIDAYS: July 4th, Labor Day and Christmas Day provided the employee is employed 15 days prior to the holiday.

SFCT0676-002 01/01/2025

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinklers)	$ 49.98	33.44

a. PAID HOLIDAYS: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

SHEE0038-003 07/01/2023

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct Installation	$ 34.95	22.70

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* SUCT2002-002 12/16/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 17.89	0.00
LABORERS		
Common or General	$ 13.13 **	4.24
Landscape	$ 14.96 **	4.63
ROOFER, Excludes Slate, and Tile Roofs	$ 23.39	7.87

WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

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Union prevailing wage rates are updated to reflect all changes

over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

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?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination

b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
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On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

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Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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Wage and Hour Division
U.S. Department of Labor
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Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

EMPLOYEE RIGHTS

UNDER THE DAVIS-BACON ACT

FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.

WHD
WAGE AND HOUR DIVISION
UNITED STATES DEPARTMENT OF LABOR

1-866-487-9243
TTY: 1-877-889-5627
www.dol.gov/whd

WH1321 REV 10/17

Davis-Bacon Federal Prevailing Wage Requirements and Construction Contract Language for DWSRF Projects
Revised 10/20/2016

Wage Rate Requirements Under the FY 2016 Appropriations Act

Preamble

With respect to the Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides sub grants or loans to eligible entities within the State. Typically, the sub recipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring sub recipients' compliance with the wage rate requirements set forth herein, those sub recipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the sub recipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring sub recipients' compliance with the wage rate requirements set forth herein, those sub recipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

I. Requirements Under The Consolidated Appropriations Act, 2016 (P.L. 114-113) For Sub recipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the Consolidated Appropriations Act, 2016 (P.L. 114-113) with respect to State recipients and sub recipients that are governmental entities. If a sub recipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. If a State recipient needs guidance, the recipient may contact **Valerie Marshall** (marshall.valerie@epa.gov or 617-918-1674) of EPA Region 1 for guidance. The recipient or sub recipient may also obtain additional guidance from DOL's web site at http://www.dol.gov/whd/

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the Consolidated Appropriations Act, 2016, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a sub recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the sub recipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Sub recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the sub recipient shall monitor www.wdol.gov weekly to ensure that the wage determination contained in the solicitation remains current. The sub recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the sub recipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the sub recipient.

(ii) If the sub recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the sub recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6 (c)(3)(iv). The sub recipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the sub recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the sub recipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(c) Sub recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a sub recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the sub recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the sub recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The sub recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the sub recipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the Consolidated Appropriations Act, 2016, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii) (A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the

contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The sub recipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the

provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines

may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics

shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing hat the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or

subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the sub recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The sub recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at http://www.dol.gov/whd/america2.htm.

II. Requirements Under The Consolidated Appropriations Act, 2016 (P.L. 114-113) For Sub recipients That Are Not Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2016 Consolidated Appropriations Act with respect to sub recipients that are not governmental entities. If a sub recipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. If a State recipient needs guidance, the recipient may contact **Valerie Marshall** (marshall.valerie@epa.gov or 617-918-1674), EPA Grants Management Office for guidance. The recipient or sub recipient may also obtain additional guidance from DOL's web site at http://www.dol.gov/whd/

Under these terms and conditions, the sub recipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.

1. Applicability of the Davis-Bacon (DB) prevailing wage requirements.

Under the FY2016 Consolidated Appropriations Act, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a sub recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the sub recipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Sub recipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Sub recipient obtains its proposed wage determination, it must submit the wage determination to the DWSRF Program email at DPH.CTDWSRF@ct.gov for approval and inform your Project Engineer prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official.)

(b) Sub recipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the sub recipient shall monitor www.wdol.gov on a

weekly basis to ensure that the wage determination contained in the solicitation remains current. The sub recipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the sub recipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the sub recipient.

(ii) If the sub recipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the sub recipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The sub recipient shall monitor www.wdol.gov on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the sub recipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the sub recipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

(d) Sub recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(e) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a sub recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the sub recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the sub recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The sub recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the sub recipient(s) shall insert in full in any contract in excess of $2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY2016 Consolidated Appropriations Act,

the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.
Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

(ii) (A) The sub recipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a

reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the sub recipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the and the sub recipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The sub recipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be

withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the sub recipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll

information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them

available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractors registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed

pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may by appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Sub recipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000.

(a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum

of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification

(a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The sub recipient shall establish and follow an interview schedule based on its assessment

of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicated that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately conduct interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence."

(c) The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the sub recipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB . In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments there under by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The sub recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at http://www.dol.gov/whd/america2.htm.

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 3729 OF TITLE 31 OF THE UNITED STATES CODE.

LABOR STANDARDS INTERVIEW

CONTRACT NUMBER	EMPLOYEE INFORMATION		
	LAST NAME	FIRST NAME	MI
NAME OF PRIME CONTRACTOR			
	STREET ADDRESS		
NAME OF EMPLOYER			
	CITY	STATE	ZIP CODE
SUPERVISOR'S NAME			
LAST NAME / FIRST NAME / MI	WORK CLASSIFICATION	WAGE RATE	

ACTION	CHECK BELOW YES	NO
Do you work over 8 hours per day?		
Do you work over 40 hours per week?		
Are you paid at least time and a half for overtime hours?		
Are you receiving any cash payments for fringe benefits required by the posted wage determination decision?		

WHAT DEDUCTIONS OTHER THAN TAXES AND SOCIAL SECURITY ARE MADE FROM YOUR PAY?

	TOOLS YOU USE	
HOW MANY HOURS DID YOU WORK ON YOUR LAST WORK DAY BEFORE THIS INTERVIEW?		
DATE OF LAST WORK DAY BEFORE INTERVIEW *(YYMMDD)*		
DATE YOU BEGAN WORK ON THIS PROJECT *(YYMMDD)*		

THE ABOVE IS CORRECT TO THE BEST OF MY KNOWLEDGE

EMPLOYEE'S SIGNATURE	DATE *(YYMMDD)*

INTERVIEWER	SIGNATURE	TYPED OR PRINTED NAME	DATE *(YYMMDD)*

INTERVIEWER'S COMMENTS

WORK EMPLOYEE WAS DOING WHEN INTERVIEWED	ACTION *(If explanation is needed, use comments section)*	YES	NO
	IS EMPLOYEE PROPERLY CLASSIFIED AND PAID?		
	ARE WAGE RATES AND POSTERS DISPLAYED?		

FOR USE BY PAYROLL CHECKER

IS ABOVE INFORMATION IN AGREEMENT WITH PAYROLL DATA?

☐ YES ☐ NO

COMMENTS

CHECKER

LAST NAME	FIRST NAME	MI	JOB TITLE

SIGNATURE	DATE *(YYMMDD)*

Section 00005 – Attachment I

American Iron and Steel (AIS) - Memorandum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 20 2014

OFFICE OF WATER

MEMORANDUM

SUBJECT: Implementation of American Iron and Steel provisions of P.L. 113-76, Consolidated Appropriations Act, 2014

FROM: For Andrew D. Sawyers, Director
Office of Wastewater Management (4201M)

Peter C. Grevatt, Director
Office of Ground Water and Drinking Water (4601M)

TO: Water Management Division Directors
Regions I - X

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel (AIS)" requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Federal Fiscal Year 2014.

Section 436 also sets forth certain circumstances under which EPA may waive the AIS requirement. Furthermore, the Act specifically exempts projects where engineering plans and specifications were approved by a State agency prior to January 17, 2014.

The approach described below explains how EPA will implement the AIS requirement. The first section is in the form of questions and answers that address the types of projects that must comply with the AIS requirement, the types of products covered by the AIS requirement, and compliance. The second section is a step-by-step process for requesting waivers and the circumstances under which waivers may be granted.

Implementation

The Act states:

Sec. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j–12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term ‘‘iron and steel products’’ means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the ‘‘Administrator’’) finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out

the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

The following questions and answers provide guidance for implementing and complying with the AIS requirements:

Project Coverage

1) What classes of projects are covered by the AIS requirement?

All treatment works projects funded by a CWSRF assistance agreement, and all public water system projects funded by a DWSRF assistance agreement, from the date of enactment through the end of Federal Fiscal Year 2014, are covered. The AIS requirements apply to the entirety of the project, no matter when construction begins or ends. Additionally, the AIS requirements apply to all parts of the project, no matter the source of funding.

2) Does the AIS requirement apply to nonpoint source projects or national estuary projects?

No. Congress did not include an AIS requirement for nonpoint source and national estuary projects unless the project can also be classified as a 'treatment works' as defined by section 212 of the Clean Water Act.

3) Are any projects for the construction, alteration, maintenance, or repair of a public water system or treatment works excluded from the AIS requirement?

Any project, whether a treatment works project or a public water system project, for which engineering plans and specifications were approved by the responsible state agency prior to January 17, 2014, is excluded from the AIS requirements.

4) What if the project does not have approved engineering plans and specifications but has signed an assistance agreement with a CWSRF or DWSRF program prior to January 17, 2014?

The AIS requirements do not apply to any project for which an assistance agreement was signed prior to January 17, 2014.

5) What if the project does not have approved engineering plans and specifications, but bids were advertised prior to January 17, 2014 and an assistance agreement was signed after January 17, 2014?

If the project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the approval date for purposes of the exemption in section 436(f).

6) What if the assistance agreement that was signed prior to January 17, 2014, only funded a part of the overall project, where the remainder of the project will be funded later with another SRF loan?

If the original assistance agreement funded any construction of the project, the date of the original assistance agreement counts for purposes of the exemption. If the original assistance agreement was only for planning and design, the date of that assistance agreement will count for purposes of the exemption only if there is a written commitment or expectation on the part of the assistance recipient to fund the remainder of the project with SRF funds.

7) What if the assistance agreement that was signed prior to January 17, 2014, funded the first phase of a multi-phase project, where the remaining phases will be funded by SRF assistance in the future?

In such a case, the phases of the project will be considered a single project if all construction necessary to complete the building or work, regardless of the number of contracts or assistance agreements involved, are closely related in purpose, time and place. However, there are many situations in which major construction activities are clearly undertaken in phases that are distinct in purpose, time, or place. In the case of distinct phases, projects with engineering plans and specifications approval or assistance agreements signed prior to January 17, 2014 would be excluded from AIS requirements while those approved/signed on January 17, 2014, or later would be covered by the AIS requirements.

8) What if a project has split funding from a non-SRF source?

Many States intend to fund projects with "split" funding, from the SRF program and from State or other programs. Based on the Act language in section 436, which requires that American iron and steel products be used in any project for the construction, alteration, maintenance, or repair of a public water system or treatment works receiving SRF funding between and including January 17, 2014 and September 30, 2014, any project that is funded in whole or in part with such funds must comply with the AIS requirement. A "project" consists of all construction necessary to complete the building or work regardless of the number of contracts or assistance agreements involved so long as all contracts and assistance agreements awarded are closely related in purpose, time and place. This precludes the intentional splitting of SRF projects into separate and smaller contracts or assistance agreements to avoid AIS coverage on some portion of a larger

project, particularly where the activities are integrally and proximately related to the whole. However, there are many situations in which major construction activities are clearly undertaken in separate phases that are distinct in purpose, time, or place, in which case, separate contracts or assistance agreement for SRF and State or other funding would carry separate requirements.

9) What about refinancing?

If a project began construction, financed from a non-SRF source, prior to January 17, 2014, but is refinanced through an SRF assistance agreement executed on or after January 17, 2014 and prior to October 1, 2014, AIS requirements will apply to all construction that occurs on or after January 17, 2014, through completion of construction, unless, as is likely, engineering plans and specifications were approved by a responsible state agency prior to January 17, 2014. There is no retroactive application of the AIS requirements where a refinancing occurs for a project that has completed construction prior to January 17, 2014.

10) Do the AIS requirements apply to any other EPA programs, besides the SRF program, such as the Tribal Set-aside grants or grants to the Territories and DC?

No, the AIS requirement only applies to funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j–12)

Covered Iron and Steel Products

11) What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

Lined or unlined pipes or fittings;
Manhole Covers;
Municipal Castings (defined in more detail below);
Hydrants;
Tanks;
Flanges;
Pipe clamps and restraints;
Valves;
Structural steel (defined in more detail below);
Reinforced precast concrete; and
Construction materials (defined in more detail below).

12) What does the term 'primarily iron or steel' mean?

'Primarily iron or steel' places constraints on the list of products above. For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs.

13) Can you provide an example of how to perform a cost determination?

For example, the iron portion of a fire hydrant would likely be the bonnet, body and shoe, and the cost then would include the pouring and casting to create those components. The other material costs would include non-iron and steel internal workings of the fire hydrant (i.e., stem, coupling, valve, seals, etc). However, the assembly of the internal workings into the hydrant body would not be included in this cost calculation. If one of the listed products is not made primarily of iron or steel, United States (US) provenance is not required. An exception to this definition is reinforced precast concrete, which is addressed in a later question.

14) If a product is composed of more than 50% iron or steel, but is not listed in the above list of items, must the item be produced in the US? Alternatively, must the iron or steel in such a product be produced in the US?

The answer to both question is no. Only items on the above list must be produced in the US. Additionally, the iron or steel in a non-listed item can be sourced from outside the US.

15) What is the definition of steel?

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel and other specialty steels.

16) What does 'produced in the United States' mean?

Production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the

material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

17) Are the raw materials used in the production of iron or steel required to come from US sources?

No. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

18) If an above listed item is primarily made of iron or steel, but is only at the construction site temporarily, must such an item be produced in the US?

No. Only the above listed products made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

19) What is the definition of 'municipal castings'?

Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are:

Access Hatches;
Ballast Screen;
Benches (Iron or Steel);
Bollards;
Cast Bases;
Cast Iron Hinged Hatches, Square and Rectangular;
Cast Iron Riser Rings;
Catch Basin Inlet;
Cleanout/Monument Boxes;
Construction Covers and Frames;
Curb and Corner Guards;
Curb Openings;
Detectable Warning Plates;
Downspout Shoes (Boot, Inlet);
Drainage Grates, Frames and Curb Inlets;
Inlets;
Junction Boxes;
Lampposts;
Manhole Covers, Rings and Frames, Risers;

Meter Boxes;
Service Boxes;
Steel Hinged Hatches, Square and Rectangular;
Steel Riser Rings;
Trash receptacles;
Tree Grates;
Tree Guards;
Trench Grates; and
Valve Boxes, Covers and Risers.

20) What is 'structural steel'?

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

21) What is a 'construction material' for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel". This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

22) What is not considered a 'construction material' for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are not considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and

data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

23) If the iron or steel is produced in the US, may other steps in the manufacturing process take place outside of the US, such as assembly?

No. Production in the US of the iron or steel used in a listed product requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

24) What processes must occur in the US to be compliant with the AIS requirement for reinforced precast concrete?

While reinforced precast concrete may not be at least 50% iron or steel, in this particular case, the reinforcing bar and wire must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the US. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered to be a construction material and must be produced in the US.

Compliance

25) How should an assistance recipient document compliance with the AIS requirement?

In order to ensure compliance with the AIS requirement, specific AIS contract language must be included in each contract, starting with the assistance agreement, all the way down to the purchase agreements. Sample language for assistance agreements and contracts can be found in Appendix 3 and 4.

EPA recommends the use of a step certification process, similar to one used by the Federal Highway Administration. The step certification process is a method to ensure that producers adhere to the AIS requirement and assistance recipients can verify that products comply with the AIS requirement. The process also establishes accountability and better enables States to take enforcement actions against violators.

Step certification creates a paper trail which documents the location of the manufacturing process involved with the production of steel and iron materials. A step certification is a process under which each handler (supplier, fabricator, manufacturer,

processor, etc) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin. A certification can be quite simple. Typically, it includes the name of the manufacturer, the location of the manufacturing facility where the product or process took place (not its headquarters), a description of the product or item being delivered, and a signature by a manufacturer's responsible party. Attached, as Appendix 5, are sample certifications. These certifications should be collected and maintained by assistance recipients.

Alternatively, the final manufacturer that delivers the iron or steel product to the worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the US. While this type of certification may be acceptable, it may not provide the same degree of assurance. Additional documentation may be needed if the certification is lacking important information. Step certification is the best practice.

26) How should a State ensure assistance recipients are complying with the AIS requirement?

In order to ensure compliance with the AIS requirement, States SRF programs must include specific AIS contract language in the assistance agreement. Sample language for assistance agreements can be found in Appendix 3.

States should also, as a best practice, conduct site visits of projects during construction and review documentation demonstrating proof of compliance which the assistance recipient has gathered.

27) What happens if a State or EPA finds a non-compliant iron and/or steel product permanently incorporated in the project?

If a potentially non-compliant product is identified, the State should notify the assistance recipient of the apparent unauthorized use of the non-domestic component, including a proposed corrective action, and should be given the opportunity to reply. If unauthorized use is confirmed, the State can take one or more of the following actions: request a waiver where appropriate; require the removal of the non-domestic item; or withhold payment for all or part of the project. Only EPA can issue waivers to authorize the use of a non-domestic item. EPA may use remedies available to it under the Clean Water Act, the Safe Drinking Water Act, and 40 CFR part 31 grant regulations, in the event of a violation of a grant term and condition.

It is recommended that the State work collaboratively with EPA to determine the appropriate corrective action, especially in cases where the State is the one who identifies the item in noncompliance or there is a disagreement with the assistance recipient.

If fraud, waste, abuse, or any violation of the law is suspected, the Office of Inspector General (OIG) should be contacted immediately. The OIG can be reached at 1-

888-546-8740 or OIG_Hotline@epa.gov. More information can be found at this website: http://www.epa.gov/oig/hotline.htm.

28) How do international trade agreements affect the implementation of the AIS requirements?

The AIS provision applies in a manner consistent with United States obligations under international agreements. Typically, these obligations only apply to direct procurement by the entities that are signatories to such agreements. In general, SRF assistance recipients are not signatories to such agreements, so these agreements have no impact on this AIS provision. In the few instances where such an agreement applies to a municipality, that municipality is under the obligation to determine its applicability and requirements and document the actions taken to comply for the State.

Waiver Process

The statute permits EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the US in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the US will increase the cost of the overall project by more than 25 percent.

In order to implement the AIS requirements, EPA has developed an approach to allow for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework described below will allow States, on behalf of the assistance recipients, to apply for waivers of the AIS requirement directly to EPA Headquarters. Only waiver requests received from states will be considered. Pursuant to the Act, EPA has the responsibility to make findings as to the issuance of waivers to the AIS requirements.

Definitions

The following terms are critical to the interpretation and implementation of the AIS requirements and apply to the process described in this memorandum:

Reasonably Available Quantity: The quantity of iron or steel products is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design.

Satisfactory Quality: The quality of iron or steel products, as specified in the project plans and designs.

Assistance Recipient: A borrower or grantee that receives funding from a State CWSRF or DWSRF program.

Step-By-Step Waiver Process

Application by Assistance Recipient

Each local entity that receives SRF water infrastructure financial assistance is required by section 436 of the Act to use American made iron and steel products in the construction of its project. However, the recipient may request a waiver. Until a waiver is granted by EPA, the AIS requirement stands, except as noted above with respect to municipalities covered by international agreements.

The waiver process begins with the SRF assistance recipient. In order to fulfill the AIS requirement, the assistance recipient must in good faith design the project (where applicable) and solicit bids for construction with American made iron and steel products. It is essential that the assistance recipient include the AIS terms in any request for proposals or solicitations for bids, and in all contracts (see Appendix 3 for sample construction contract language). The assistance recipient may receive a waiver at any point before, during, or after the bid process, if one or more of three conditions is met:

1. Applying the American Iron and Steel requirements of the Act would be inconsistent with the public interest;
2. Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Proper and sufficient documentation must be provided by the assistance recipient. A checklist detailing the types of information required for a waiver to be processed is attached as Appendix 1.

Additionally, it is strongly encouraged that assistance recipients hold pre-bid conferences with potential bidders. A pre-bid conference can help to identify iron and steel products needed to complete the project as described in the plans and specifications that may not be available from domestic sources. It may also identify the need to seek a waiver prior to bid, and can help inform the recipient on compliance options.

In order to apply for a project waiver, the assistance recipient should email the request in the form of a Word document (.doc) to the State SRF program. It is strongly recommended that the State designate a single person for all AIS communications. The State SRF designee will review the application for the waiver and determine whether the necessary information has been included. Once the waiver application is complete, the State designee will forward the application to either of two email addresses. For CWSRF waiver requests, please send the application to: cwsrfwaiver@epa.gov. For DWSRF waiver requests, please send the application to: dwsrfwaiver@epa.gov.

Evaluation by EPA

After receiving an application for waiver of the AIS requirements, EPA Headquarters will publish the request on its website for 15 days and receive informal comment. EPA Headquarters will then use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

In the event that EPA finds that adequate documentation and justification has been submitted, the Administrator may grant a waiver to the assistance recipient. EPA will notify the State designee that a waiver request has been approved or denied as soon as such a decision has been made. Granting such a waiver is a three-step process:

1. Posting – After receiving an application for a waiver, EPA is required to publish the application and all material submitted with the application on EPA's website for 15 days. During that period, the public will have the opportunity to review the request and provide informal comment to EPA. The website can be found at: http://water.epa.gov/grants_funding/aisrequirement.cfm

2. Evaluation – After receiving an application for waiver of the AIS requirements, EPA Headquarters will use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

3. Signature of waiver approval by the Administrator or another agency official with delegated authority – As soon as the waiver is signed and dated, EPA will notify the State SRF program, and post the signed waiver on our website. The assistance recipient should keep a copy of the signed waiver in its project files.

Public Interest Waivers

EPA has the authority to issue public interest waivers. Evaluation of a public interest waiver request may be more complicated than that of other waiver requests so they may take more time than other waiver requests for a decision to be made. An example of a public interest waiver that might be issued could be for a community that has standardized on a particular type or manufacturer of a valve because of its performance to meet their specifications. Switching to an alternative valve may require staff to be trained on the new equipment and additional spare parts would need to be purchased and stocked, existing valves may need to be unnecessarily replaced, and portions of the system may need to be redesigned. Therefore, requiring the community to install an alternative valve would be inconsistent with public interest.

EPA also has the authority to issue a public interest waiver that covers categories of products that might apply to all projects.

EPA reserves the right to issue national waivers that may apply to particular classes of assistance recipients, particular classes of projects, or particular categories of iron or steel products. EPA may develop national or (US geographic) regional categorical waivers through the identification of similar circumstances in the detailed justifications presented to EPA in a waiver request or requests. EPA may issue a national waiver based on policy decisions regarding the public's interest or a determination that a particular item is not produced domestically in reasonably available quantities or of a sufficient quality. In such cases, EPA may determine it is necessary to issue a national waiver.

If you have any questions concerning the contents of this memorandum, you may contact us, or have your staff contact Jordan Dorfman, Attorney-Advisor, State Revolving Fund Branch, Municipal Support Division, at dorfman.jordan@epa.gov or (202) 564-0614 or Kiri Anderer, Environmental Engineer, Infrastructure Branch, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

Attachments

Appendix 1: Information Checklist for Waiver Request

The purpose of this checklist is to help ensure that all appropriate and necessary information is submitted to EPA. EPA recommends that States review this checklist carefully and provide all appropriate information to EPA. This checklist is for informational purposes only and does not need to be included as part of a waiver application.

Items	✓	Notes
General • Waiver request includes the following information: — Description of the foreign and domestic construction materials — Unit of measure — Quantity — Price — Time of delivery or availability — Location of the construction project — Name and address of the proposed supplier — A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor		
Cost Waiver Requests • Waiver request includes the following information: — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products — Relevant excerpts from the bid documents used by the contractors to complete the comparison — Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers		
Availability Waiver Requests • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: — Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials — Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. — Project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials • Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought • Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?		

Appendix 2: HQ Review Checklist for Waiver Request

Instructions: To be completed by EPA. Review all waiver requests using the questions in the checklist, and mark the appropriate box as Yes, No or N/A. Marks that fall inside the shaded boxes may be grounds for denying the waiver. If none of your review markings fall into a shaded box, the waiver is eligible for approval if it indicates that one or more of the following conditions applies to the domestic product for which the waiver is sought:

1. The iron and/or steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality.
2. The inclusion of iron and/or steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Review Items	Yes	No	N/A	Comments
Cost Waiver Requests • Does the waiver request include the following information? — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products				
— Relevant excerpts from the bid documents used by the contractors to complete the comparison				
— A sufficient number of bid documents or pricing information from domestic sources to constitute a reasonable survey of the market				
• Does the Total Domestic Project exceed the Total Foreign Project Cost by more than 25%?				
Availability Waiver Requests • Does the waiver request include supporting documentation sufficient to show the availability, quantity, and/or quality of the iron and/or steel product for which the waiver is requested? — Supplier information or other documentation indicating availability/delivery date for materials — Project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of materials				
• Does supporting documentation provide sufficient evidence that the contractors made a reasonable effort to locate domestic suppliers of materials, such as a description of the process for identifying suppliers and a list of contacted suppliers?				
• Based on the materials delivery/availability date indicated in the supporting documentation, will the materials be unavailable when they are needed according to the project schedule? (By item, list schedule date and domestic delivery quote date or other relevant information)				
• Is EPA aware of any other evidence indicating the non-availability of the materials for which the waiver is requested? Examples include: — Multiple waiver requests for the materials described in this waiver request, for comparable projects in the same State — Multiple waiver requests for the materials described in this waiver request, for comparable projects in other States — Correspondence with construction trade associations indicating the non-availability of the materials				
• Are the available domestic materials indicated in the bid documents of inadequate quality compared those required by the project plans, specifications, and/or permits?				

Appendix 3: Example Loan Agreement Language

ALL ASSISTANCE AGREEMENT MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN SRF ASSISTANCE AGREEMENTS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE LAW:

Comply with all federal requirements applicable to the Loan (including those imposed by the 2014 Appropriations Act and related SRF Policy Guidelines) which the Participant understands includes, among other, requirements that all of the iron and steel products used in the Project are to be produced in the United States ("American Iron and Steel Requirement") unless (i) the Participant has requested and obtained a waiver from the Agency pertaining to the Project or (ii) the Finance Authority has otherwise advised the Participant in writing that the American Iron and Steel Requirement is not applicable to the Project.

Comply with all record keeping and reporting requirements under the Clean Water Act/Safe Drinking Water Act, including any reports required by a Federal agency or the Finance Authority such as performance indicators of program deliverables, information on costs and project progress. The Participant understands that (i) each contract and subcontract related to the Project is subject to audit by appropriate federal and state entities and (ii) failure to comply with the Clean Water Act/Safe Drinking Water Act and this Agreement may be a default hereunder that results in a repayment of the Loan in advance of the maturity of the Bonds and/or other remedial actions.

Appendix 4: Sample Construction Contract Language

ALL CONTRACTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN ALL CONTRACTS IN PROJECTS THAT USE SRF FUNDS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE OR LOCAL LAW:

The Contractor acknowledges to and for the benefit of the City of _____ ("Purchaser") and the _____ (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Appendix 5: Sample Certifications

The following information is provided as a sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

Section 00005 – Attachment J (OMITTED)

1. AIS – De Minimis Waiver Final Utilization and Certification Form
2. AIS – De Minimis Waiver On-Going Tracking Form

Section 00005 – Attachment K

Interim Guidance for MBE and WBE's Requirements

INTERIM GUIDANCE FOR MINORITY BUSINESS ENTERPRISE AND WOMEN'S BUSINESS ENTERPRISE REQUIREMENT OF 40 CFR §33.240

I. PURPOSE

This interim guidance is for Regions to assist States, EPA assistance recipients, prime contractors, consultants, minority business owners and women's business owners in complying with EPA's Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) requirements in the Agency's procurement regulations, 40 C.F.R. Part 33. This guidance provides suggestions for carrying out the affirmative steps required by Office of Management and Budget Circular A-102, Attachment O, section 9 and included in EPA procurement regulations. Also included is a description of activities to be undertaken by EPA or delegated States, as well as suggestions for MBE/WBEs to take in pursuing opportunities for work in EPA-funded projects.

II. DEFINITIONS

A. Minority Business Enterprise (MBE) [same as definition to be in final 40 C.F.R. 33.005]: A minority business enterprise is a business which is

1. certified as a minority business enterprise by a State or Federal agency, or
2. an independent business concern which is at least 51 percent owned and controlled (as defined below) by minority group member(s). A minority group member is an individual who is a citizen of the United States and one of the following:
   a. Black American
   b. Hispanic American (with origins from Puerto Rico, Mexico, Cuba, South or Central America)
   c. Native American (American Indian, Eskimo, Aleut, native Hawaiian)
   d. Asian-Pacific American (with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, Taiwan or the Indian Subcontinent)

B. Women's Business Enterprise (WBE) [same as definition to be in final 40 C.F.R. 33.005]: A women's business enterprise is a business which is

1. certified as such by a State or Federal agency; or
2. an independent business concern which is at least 51 percent owned by a woman or women who also control and operate it. Determination of whether a business is at least 51 percent owned by a woman or women shall be made without regard to community property laws. For example, an otherwise qualified WBE which is 51 percent owned by a married woman in a community property state will not be disqualified because her husband has a 50 percent interest in her share. Similarly, a business which is 51 percent owned by a married man and 49 percent owned by an unmarried woman will not become a qualified WBE by virtue of his wife's 50 percent interest in his share of the business.

C. Ownership and control

1. The minority or woman ownership's interest in the firm must be real, substantial and continuing. Such interest may include:
   a. risk of loss/share of profit commensurate with the proportional ownership; and

b. receipt of the customary incidents of ownership, such as salary and/or intangible benefits.

2. A minority or woman owner must have and exercise the authority to independently control the business. The minority or woman owner need not be continually present to be deemed in control. Characteristics of control may include:
   a. authority to sign bids and contracts,
   b. making decisions in price negotiations,
   c. incurring liabilities for the firm,
   d. making final staffing decisions,
   e. policy-making; and
   f. making general company management decisions.
3. Only those firms performing a useful business function according to custom and practice in the industry are qualified as MBE's or WBE's. A merely as a passive conduit of funds to some other, non-minority firm where such activity is unnecessary to accomplish the project does not constitute a "useful business function according to custom and practice in the industry."

D. Recipient – A party receiving federal financial assistance under an EPA program pursuant to a grant or cooperative agreement.

E. Project – The scope of work from which a cooperative agreement, grant or grant amendment is awarded.

F. Bidder – A party seeking to obtain a contract with a recipient through a competitive, advertise, sealed bid process.

G. Offeror – A party seeking to obtain a contract with a recipient through a negotiated procurement process.

IV. EPA RESPONSIBILITIES

A. Headquarters.
1. The officer in charge of the assistance program (program office) has primary responsibility for implementation of the MBE/WBE program, in cooperation with the Office of Small and Disadvantaged Business Utilization (OSDBU).
2. OSDBU is responsible for serving as the Agency focal point for inquiries on the MBE/WBE program, providing explanation of the program and guidance to MBEs and WBEs interested in working on EPA funded projects.

B. Regional Responsibilities
1. Provide guidance and advice to recipients as requested.
2. Maintain lists* of those MBE and WBE firms which have participated in EPA funded projects. The Region may also add MBEs and WBEs requesting to be included on source lists. Such lists are for information purposes only, and shall carry a clear and prominent statement that the firms listed are neither endorsed nor guaranteed by EPA as bona fide, MBE//WBEs. It is not necessary to be on any list in order to qualify as a bona fide MBE/WBE.
3. Monitor recipients for compliance with MBE/WBE requirements and for determining levels of MBE/WBE participation.

*Lists are available for review at the offices of the Owner, Engineer and DEP.

V. RECIPIENT RESPONSIBILITIES

A. The recipient shall take affirmative steps to contract with MBEs and WBEs and ensure that its contractors and consultants take affirmative steps to contract with MBEs and WBEs during all phases of work funded or to be funded under an EPA assistance agreement. The recipient's affirmative steps as defined in EPA procurement regulations are the following:

1. When feasible, dividing the total work to be contracted into smaller tasks in the solicitation documents to permit MBE/WBE participation.
2. Including qualified MBEs and WBEs on solicitation lists by drawing from the source lists of EPA Regional Offices and appropriate minority/women's business associations and agencies.
3. Assuring that MBEs and WBEs are solicited whenever they are potential sources of services and supplies, for example, by:
    a. Holding pre-bid conferences, with interested MBEs and WBEs in attendance when possible, to highlight the requirements of this program to prospective bidders,
    b. Including this MBE//WBE interim guidance in request for proposals (RFP) and invitations for bids (IFB),
    c. Publishing announcements of MBE/WBE opportunities for wok in EPA funded projects,
    d. Developing a source list of MBE/WBEs and providing its list to prospective bidders/offerors.
        1. The recipient may wish to engage an MBE/WBE liaison to compile the list.
        2. The recipient may wish to use available lists such as those of the EPA Regional Office, adjacent municipalities, appropriate minority/women associations and agencies, and available industry associations. Names of these agencies with address and phone number should also be included on the recipient source list.
    e. Providing necessary and appropriate liaison services between MBE/WBEs and prospective bidders/offerors. (Liaison services should not be delegated to consultants where a potential for conflict of interest exists).
4. When project requirements permit, establishing delivery schedules which encourage participation of MBE/WBEs.
5. Using the services and assistance of the Small Business Administration (SBA), the Minority Business Development Agency (MBDA), and other federal, State and local agencies when appropriate.

B. Unless otherwise provided in the specifications, compliance with the MBE/WBE requirements in the regulations is a matter of bidder/offeror responsibility.

C. The recipient is responsible for monitoring work in progress to insure that MBE and WBE subcontractors and joint ventures are actually participating in the performance of the subcontract or joint venture contract and to insure that the consultant/contractor is fulfilling its obligations with respect to MBE/WBE requirements under the contract.

D. As part of the documentation required under 40 C.F.R. 33.250, the recipient shall maintain and update records of MBE/WBE participation and supply data to the Region or delegated State when requested. Such records may include:

1. name of MBE/WBEs being utilized;
2. work designated to be performed by MBE/WBE;
3. dollar value of that work;
4. portion of project being performed by MBEs and WBEs

VI. BIDDER AND OFFEROR RESPONSIBILITIES

A. Affirmative Steps: Activities during preparation of bids and offers. Bidders/offerors shall take affirmative steps in compliance with the regulations, prior to submission of bids or closing date for recipient of initial offers, to encourage participation in projects by MBEs and WBEs. Such efforts include:

1. When feasible, segmenting total work requirements to permit maximum MBE/WBE participation.
2. Assuring that MBEs and WBEs are solicited whenever they are potential sources of goods or services. This step may include:
   a. Sending letters or making other personal contacts with MBEs and WBEs (e.g., those whose names appear on lists prepared by EPA or the recipient and other MBE/WBEs known to the bidder offeror). MBEs and WBEs should be contacted when other potential subcontractors are contacted, within reasonable time prior to bid submission or closing date for receipt of initial offers. Those letters or other contacts should communicate the following:
      1. Specific description of the work to be subcontracted,
      2. How and where to obtain a copy of plans and specifications or other detailed information needed to prepare a detailed price quotation,
      3. date the quotation is due to the bidder/offeror,
      4. name, address, and phone number of the person in the bidder/offeror's firm whom the prospective MBE/WBE subcontractor should contract for additional information.
   b. Sending letters or making other personal contacts with local, State, federal and private agencies and MBE/WBE associations relevant to the project. Such contacts should provide the same information provided in the direct contacts to MBE and WBE firms.
3. Where feasible, establishing delivery schedules which will encourage participation by MBEs and WBEs.

B. Bidders/offerors must demonstrate compliance with MBE/WBE requirements in order to be deemed responsible. Demonstration of compliance may include the following information, however the recipient may specify other methods of demonstrating compliance:

1. Names, addresses and phone numbers of MBE/WBEs expected to perform work;
2. Work to be performed by the MBE and WBEs;
3. Aggregate dollar amount of work to be performed by MBEs and WBEs, showing aggregate to MBEs and aggregate to WBEs separately;
4. Description of contacts to MBE and WBE organizations, agencies and associations which service MBEs/WBEs, including names of organizations, agencies and associations and dates of contacts;
5. Description of contacts to MBEs and WBEs, including number of contacts, fields, (i.e., equipment or material supplier, excavators,

transport services, electrical subcontractors, plumbers, etc.) and date of contacts.

C. Successful bidders/offerors should take reasonable affirmative steps to subcontract with MBEs and WBEs whenever additional subcontracting opportunities arise during the performance of the contract.

VII. MBE AND WBE RESPONSIBILITIES

MBEs and WBEs are responsible for promoting themselves and taking the initiative to obtain contracts and subcontracts, and for encouraging joint venture arrangements. MBEs/WBEs interested in working on EPA funded projects are strongly encouraged to take the following steps:

A. Submit information to take the recipients to identify status as a MBE/WBE.

B. Become certified as MBE/WBE under available State or federal agency procedures.

C. Contact federal, State, and local MBE/WBE liaison offices to obtain information on potential jobs.

D. Provide capability statements to State agencies, recipients, consulting engineers, and contractors stating type(s) of work performed by the firm, size of job that the firm could handle, bonding information, and nay special skills.

E. Make every effort to establish contacts and relationships with contractors for potential future business, including attending pre-bid conferences and subscribing to industry and trade journals.

F. Contact EPA Regional offices or appropriate State offices to obtain information on planned EPA-funded projects.

G. Respond promptly to solicitation requests.

VIII. REMEDIES FOR NONCOMPLIANCE

A. Protests. A bidder/offeror for EPA funded work or MBE/WBE with an adversely affected direct financial interest may file a bid protest with the recipient pursuant to EPA procurement regulations (40 C.F.R. 33.1106 et. seq.). These procedures are available to protest alleged violation of federal MBE/WBE requirements and may not be used to enforce local or State MBE/WBE requirements.

B. Upon a finding by EPA that a recipient, bidder/offeror, consultant, contractor or subcontractor has not complied with the MBE/WBE requirements of EPA regulations, EPA my invoke any and all sanctions and remedies specified in EPA regulations.

IX. STATE OR LOCAL LAW

Nothing in this program prevents a State or recipient from applying more stringent MBE/WBE requirements or procurement obligations which pertain to bid responsiveness or percentage of MBE and WBE participation.

Section 00005 – Attachment L

Required Connecticut General Statutes (Section 4a – 60)

The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes and shall be set forth in all Subcontracts:

(a) The successful Contractor agrees to the following provisions: (1) Contractor agrees and warrants that in the performance of this Agreement Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including but not limited to blindness, unless it is shown by Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or the State of Connecticut (the "State"); and Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, intellectual disability, mental disability or physical disability, including but not limited to blindness, unless it is shown by Contractor that such disability prevents performance of the work involved; (2) Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Connecticut Commission on Human Rights and Opportunities (the "Commission"); (3) Contractor agrees to provide each labor union or representative of workers with which Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which Contractor has a contract or understanding, a notice to be provided by the Commission advising the labor union, workers' representative and vendor of Contractor's commitments under C.G.S. §4a-60, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) Contractor agrees to comply with each provision of C.G.S. §4a-60, and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e, 46a-68f and 46a-86; and (5) the Contractor agrees to provide the Commission with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of C.G.S. §4a-60 and §46a-56; (6) Except as provided in section 10a-151i.

(b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.

The following subsections are set forth herein as required by section 4a-60a of the Connecticut General statutes and shall be set forth in all Subcontracts:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor

union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56; and (4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.

Executive Orders of the Governor

This Contract and all Subcontracts are subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated august 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of this Contract as if they had been fully set forth in it. This provision shall be set forth and incorporated in all Subcontracts.

STATE AND LOCAL PROVISIONS

Federal, State and Local Government Provisions included herein, have been selected from those to which specific references have been made elsewhere in the Contract Documents. Each and every other provision of law or clause required by law to be inserted in this Contract shall be deemed to be also inserted herein in accordance with paragraph 3.01D of the General Conditions.

Education, Welfare, and Public Health Tax (Sales and Use Tax)

The CONTRACTOR's attention is called to Regulation 12-426-18 as amended, promulgated by the Sales and Use Tax Division of the State Department of Revenue Services, which provided for the exemption of the sales and use tax on the purchase of such materials and supplies as are to be physically incorporated in and become a permanent part of the project being performed under this contract. The CONTRACTOR may avail himself of the savings of this tax and shall take this exemption into account in calculating his bid for this work. The CONTRACTOR or Subcontractor shall furnish his suppliers with a completed certificate using the Department of Revenue Services CERT-141 Form attached in Section 00720.A2.

Section 00005 – Attachment M

Executive Order 11246 (DELETED)

Section 00005 – Attachment N

Federal Regulation 2 CFR 200.216

This content is from the eCFR and is authoritative but unofficial.

Title 2 —Federal Financial Assistance
Subtitle A —Office of Management and Budget Guidance for Federal Financial Assistance
Chapter II —Office of Management and Budget Guidance
Part 200 —Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
Subpart C —Pre-Federal Award Requirements and Contents of Federal Awards

Authority: 31 U.S.C. 503; 31 U.S.C. 6101-6106; 31 U.S.C. 6307; 31 U.S.C. 7501-7507.
Source: 89 FR 30136, Apr. 22, 2024, unless otherwise noted.

§ 200.216 Prohibition on certain telecommunications and video surveillance equipment or services.

(a) Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:

(1) Procure or obtain covered telecommunications equipment or services;

(2) Extend or renew a contract to procure or obtain covered telecommunications equipment or services; or

(3) Enter into a contract (or extend or renew a contract) to procure or obtain covered telecommunications equipment or services.

(b) As described in section 889 of Public Law 115-232, "covered telecommunications equipment or services" means any of the following:

(1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);

(2) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);

(3) Telecommunications or video surveillance services provided by such entities or using such equipment;

(4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country;

(c) For the purposes of this section, "covered telecommunications equipment or services" also include systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(d) In implementing the prohibition under section 889 of Public Law 115-232, heads of executive agencies administering loan, grant, or subsidy programs must prioritize available funding and technical support to assist affected businesses, institutions, and organizations as is reasonably necessary for those affected entities to transition from covered telecommunications equipment or services, to procure replacement equipment or services, and to ensure that communications service to users and customers is sustained.

(e) When the recipient or subrecipient accepts a loan or grant, it is certifying that it will comply with the prohibition on covered telecommunications equipment and services in this section. The recipient or subrecipient is not required to certify that funds will not be expended on covered telecommunications equipment or services beyond the certification provided upon accepting the loan or grant and those provided upon submitting payment requests and financial reports.

(f) For additional information, see section 889 of Public Law 115-232 and § 200.471.

Section 00005 – Attachment O

1. CT DPH – DWSRF Project Signage Guidelines
2. Certificate of Compliance - Project Signage

Department of Public Health
Drinking Water State Revolving Fund
Project Signage Guidelines

DWSRF Project Sign Requirement

Project signage requirements apply to the construction phase of all public water system (PWS) drinking water projects with a total project cost (planning, design and construction) of $100,000 or more that are receiving funding (wholly or partly) from the Drinking Water State Revolving Fund (DWSRF). This requirement is intended to enhance the public awareness of the DWSRF and the positive impacts and benefits of the funding being provided by the State of Connecticut and the United States Environmental Protection Agency (EPA) to Connecticut's communities for public drinking water improvements. These projects have direct and tangible benefits to Connecticut's residents, businesses and visitors that are often taken for granted or go unnoticed. Awareness of the DWSRF funding is important to help gain public support for the DWSRF and communicate the importance of its role in lowering the overall cost to communities of maintaining safe and reliable public drinking water infrastructure. Connecticut's DWSRF Program has developed these guidelines to clarify these requirements and assist the PWS in complying with them. These guidelines are also consistent with the memorandum that EPA issued to all State Revolving Fund programs (Clean Water and Drinking Water) on June 3, 2015 which outlines project signage expectations for projects funded in whole or in part with federal capitalization grants received by states.

Traditional construction projects typically require that a physical sign (i.e. standard project sign) be erected at, or near, the project site where it can be seen by a broad audience. However, there may be instances where a DWSRF-funded project is located in an area where standard signage is unlikely to be seen by a broad audience, is not cost-effective or presents other unique challenges. Also some projects may be spread across many locations (i.e. water meter replacements) and do not have a defined location. In these instances where the provision of standard signage at the project site is not practical, this guidance provides an alternative option that PWSs can consider to satisfy state and federal signage requirements. **Any alternative that does not involve the erection of a standard project sign at, or near, the project site requires advance approval of the Department of Public Health's (DPH) Drinking Water State Revolving Fund program prior to implementation.**

DWSRF funded projects with a total project cost (planning, design and construction) less than $100,000 **are not required** to comply with any signage requirements. Costs associated with complying with this signage requirement are eligible for DWSRF funding.

Translations per EPA Order 1000.32

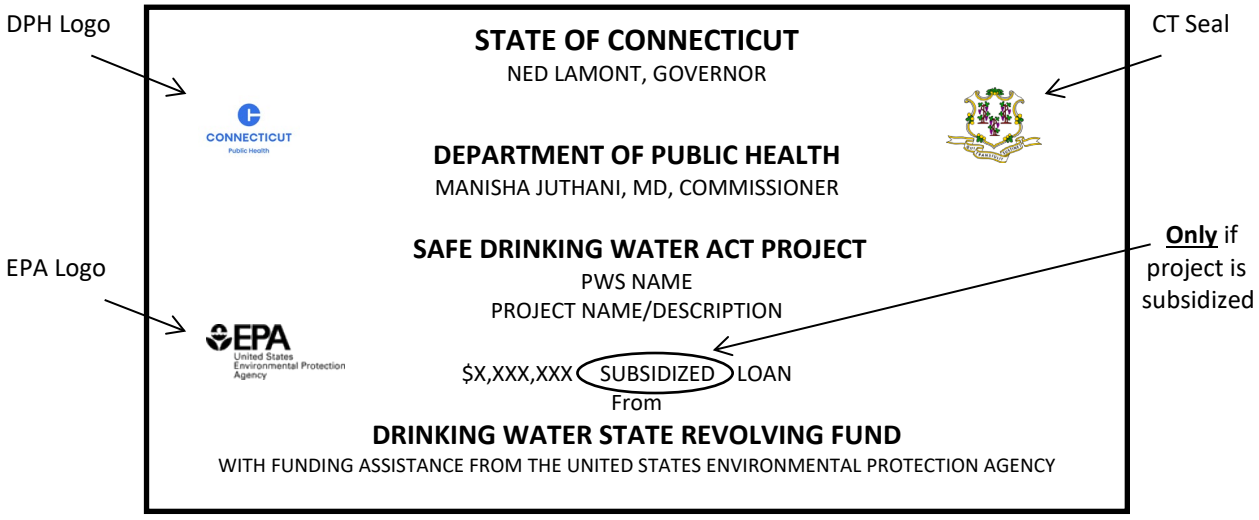
PWSs must ensure that limited English proficient individuals have meaningful access to activities receiving federal funding, consistent with United States Environmental Protection Agency Order 1000.32. In this regard, to increase public awareness of projects serving communities where English is not the predominant language, PWSs are encouraged to translate the language used (excluding logos) into the appropriate non-English language(s). The cost of such translation is eligible for DWSRF funding provided the costs are reasonable.

Option 1: Standard Signage

In general, large projects with a total construction cost of $1,000,000 (one million dollars) or more that involve significant expansion or construction of a new or replacement facility are required to publicize through standard signage. Signs should be erected near a major road or thoroughfare to effectively publicize the upgrades. There may be instances where the project is located in a remote area or on a dead end street which would be unlikely to provide the intended exposure of the sign to a broad audience. In these cases, the sign may be located away from the project site if there is another reasonable alternative. For example, a community may elect to place a sign advertising a project located at a remote reservoir (intake or pipeline

project) on a major roadway near the treatment plant that will receive water from the new facility. **The project sign shall be erected prior to the start of any construction work**, and shall be in accordance with the specifications and project sign detail shown in Figure 1. The sign shall be furnished, erected, and maintained by the Contractor at a location designated by the Project Owner's engineer/representative. The names of the Commissioner of the DPH and the Governor of the State of Connecticut as shown on the sign shall be kept current, and shall be revised with 30 days of such notice to the Contractor that a change has occurred, at no cost to the Owner. No additional information shall be placed on the project sign beyond that shown in the project sign detail unless advance approval is obtained from the DWS. If the owner wishes to erect a supplemental sign with additional detail regarding the project or its sponsors, that sign shall be placed in a manner that the project sign is not obscured from public view. **The sign shall not be removed until the project is completed.**

Figure 1 – DWSRF Standard Project Sign



Sign Specifications:

Sign: ¾" min. thickness exterior plywood (A-B) or APA high density overlay plywood (HDO)
Sign Dimensions: 4' high x 8' wide
Sign Face Background: White outdoor enamel paint (min. 3 coats)
Lettering Color: Black
Logos/State Seal: EPA logo, DPH logo and CT State seal stickers will be provided by DPH for the sign, placement should be generally in the locations shown in Figure 1. The project owner's utility logo may be included in the remaining open corner.
Sign Positioning: Upright on posts clearly visible to public and project site visitors
Fasteners: Rustproof

If the DWSRF will not fund the entire project, such as when a water main project includes sewer work that is not eligible for DWSRF funding, the sign shall either:

1. Not include the non-drinking water portion in the "Project Name/Description"; or
2. Above the amount of the loan add the following: "FUNDED IN PART BY A".

After the signage has been erected a Certificate of Compliance – DWSRF Project Signage form must be completed and sent electronically to the DWSRF mailbox to document compliance with this requirement.

Connecticut Department of Public Health
Drinking Water State Revolving Fund
Project Signage Guidelines

Option 2: Signage Posted on Website and/or Distributed to Customers

Smaller projects costing more than $100,000 but less than $1,000,000, projects located in remote areas, and projects without a defined project location may need a more cost-effective or practical method of complying with the signage requirement. The following alternative option may be considered in those instances.

PWS can include a single-page pamphlet within water and sewer bills, provide a pamphlet as a separate mailing or hand deliver the pamphlet to customers. The use of a pamphlet should be combined with posting information on the PWS's or municipality's website (if available). This approach would effectively publicize the project to those individuals directly benefitting from the project as well as potentially reach other members of the community that have access to the website. The website information should be posted in an area of the website that receives high traffic volume (Example: "News" section). **Pamphlets and website posting shall be performed prior to the start of any construction work and website postings should remain active until the project is completed.**

Pamphlets and website postings must minimally include the following information:

- Name of facility, project and community
- State SRF administering the program
- Project is wholly or partially funded with EPA funding
- Brief description of the project
- Brief listing of water quality benefits to be achieved

PWSs are further encouraged to provide details of the interest rate and financial savings that the community achieved by taking advantage of SRF funds as well as the environmental and public health benefits to the community.

The following language is an example of information that a PWS may use for pamphlets and web postings.

> **[***Date***]**
> **[***Name of PWS***] Receives Drinking Water State Revolving Fund [**add "***Subsidized***"** (if applicable)**] Loan**
>
> Construction of upgrades and improvements to the [***insert name of facility***] were financed [***insert "in part" or "in whole"***] by the Drinking Water State Revolving Fund (DWSRF) in the amount of [***insert amount of DWSRF funding***]. The DWSRF program is administered by the Department of Public Health (DPH) with joint funding from the U.S. Environmental Protection Agency and the State of Connecticut. This project will [***insert description of project***] and will provide water quality benefits [***insert details specifying environmental and/or public health benefits of the project***] for community residents and businesses in and near [***insert name of town or city and, if appropriate, neighborhood***]. DWSRF programs operate around the country to provide states and communities a low-cost financing alternative to maintain and improve the infrastructure that protects our valuable public drinking water resources nationwide. For more information on the DWSRF please visit the DPH's DWSRF website.

PWSs that choose this option for signage compliance must receive advance approval from the DPH Drinking Water State Revolving Fund program prior to implementation. Requests for approval may be sent electronically to the DWSRF mailbox at DPH.CTDWSRF@ct.gov. After the signage has been distributed to customers and posted to the PWS's website a Certificate of Compliance – DWSRF Project Signage form must be completed and sent electronically to the DWSRF mailbox to document compliance with this requirement.

Department of Public Health
Drinking Water State Revolving Fund

Certification of Compliance – Project Signage

PWS Name: _____

PWS ID: _____

Town: _____

DWSRF Project Name: _____

DWS Project Number: _____

Project Signage Details:

The above referenced construction project that received funding from the Drinking Water State Revolving Fund has complied with the Connecticut Department of Public Health – Drinking Water State Revolving Fund's Project Signage Guidelines dated 3/7/2025 in the manner identified below:

Check all that apply. Fill in or attach, as appropriate, the applicable requested information.

- ☐ Option 1: Standard Signage – physical sign erected at or near the project location
  a. Date sign was erected: _____
  b. Attach photo of sign
- ☐ Option 2: Mail or hand delivery to customers
  a. Date distributed to customers
  b. Method of delivery (check all that apply):
     - ☐ Hand delivery
     - ☐ Mail delivery
     - ☐ Other (specify): _____
  c. Attach copy of pamphlet
- ☐ Option 2: Signage posted on website
  a. Date sign was posted: _____
  b. URL Address of website:

     _____
     _

Certification:

I hereby certify that the information provided above is true and correct to the best of my knowledge.

Name (please print): _____

Title: _____

Signature: _____

Date: _____

Section 00005 – Attachment P



CERT-141 Template

Department of Revenue Services
State of Connecticut
450 Columbus Blvd Ste 1
Hartford CT 06103-1837

(Rev. 03/09)

CERT-141

Contractor's Exempt Purchase Certificate

General Purpose: Contractors for the repair, alteration, improvement, remodeling, or construction of real property use this certificate to purchase materials and supplies to be installed or placed in a project being performed under contract with an exempt entity. The materials and supplies, including tangible personal property that remains tangible personal property after its installation or placement, must remain in the project after its completion. If the tangible personal property is not used in the manner described above, a contractor who claimed an exemption owes use tax on the total price of the tangible personal property.

Wherever the term contractor is used in this certificate, it includes subcontractors of the contractor performing a contract with an exempt entity.

Exempt entity means any person entitled to make purchases of tangible personal property exempt from sales and use taxes under the statutory authority listed in the instructions.

Name of exempt entity	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID Number

Address of project

Type of exempt entity (See instructions.)

❒ Connecticut state government: Enter the exemption number. _____ ❒ Connecticut municipality

❒ Charitable or religious organization: Enter the exemption number if any. _____ ❒ Federal government

❒ Other (Explain.) _____

Name of purchaser	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID Number

Name of seller	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID Number

Provide a written description of each item purchased. Attach additional sheets if necessary.

Check one box: ❒ Blanket certificate ❒ Certificate for one purchase only

Declaration by Purchaser: The item(s) described above are tangible personal property to be installed or placed in a project being performed under contract with the exempt entity identified above and will remain in the project after its completion. I declare that the purchaser named above is a contractor under contract with the exempt entity or a subcontractor of the contractor. I acknowledge that the purchaser will be liable for Connecticut use tax, plus applicable penalty and interest as of the date of purchase, on the total purchase price of the property if any of the requirements for the exemption are not present or are not met.

I declare under penalty of law that I have examined this document (including any accompanying schedules and statements) and, to the best of my knowledge and belief, it is true, complete, and correct. I understand the penalty for willfully delivering a false return or document to the Department of Revenue Services (DRS) is a fine of not more than $5,000 or imprisonment for not more than five years, or both.

_____
Name of purchaser

By: _____ _____ _____
Authorized signature Title Date

Statutory and Regulatory Authority

- Conn. Agencies Regs. §12-426-18;
- Conn. Gen. Stat. §12-412(1) and (2), the United States, the State of Connecticut, or any political subdivisions or agencies of the State of Connecticut; for example state or municipal schools, universities, police, municipal fire departments, and state or municipal libraries. Only Connecticut state agencies have been issued an exemption number that can be entered on this form;
- Conn. Gen. Stat. §12-412(5), nonprofit charitable hospitals, nonprofit nursing homes, nonprofit rest homes and nonprofit residential care homes; and an acute care, for-profit hospital, in operation as of May 12, 2004;
- Conn. Gen. Stat. §12-412(8), Internal Revenue Code §501(c)(3) or (13) organizations exempt from federal income tax. Only charitable or religious organizations that applied to the Department of Revenue Services (DRS) prior to 7/1/95 were issued a Connecticut exemption permit number that can be entered on this form. Other charitable or religious organizations have not been issued a permit number and will leave that space blank;
- Conn. Gen. Stat. § 12-412(84), for purchases with regard to the Connecticut Technology Park;
- Conn. Gen. Stat. § 12-412(90), water companies;
- Conn. Gen. Stat. § 12-412(92), the Connecticut Resources Recovery Authority;
- Conn. Gen. Stat. § 12-412(93), tourism districts;
- Conn. Gen. Stat. § 12-412(95), solid waste-to-energy facilities;
- Conn. Gen. Stat. §7-273mm, municipal or regional resource recovery authorities; and
- Conn. Gen. Stat. § 16-344, the Metropolitan Transportation Authority or subsidiary in connection with the New Haven commuter railroad service.

Instructions for the Purchaser: Use this certificate for purchases of tangible personal property to be installed or placed in a project being performed under a contract with an exempt entity that will remain in the project after its completion. To qualify for the exemption from sales and use taxes, you must present this certificate to the retailer at the time of the purchase of the qualifying tangible personal property. For at least six years from the date it is issued, keep a copy of this certificate and records that substantiate the information entered on this certificate including records to support the contractor's use of this certificate and to show the disposition of all materials or supplies purchased.

If you are unable to designate the exact amount of materials or supplies to be installed or placed in a project being performed under contract with an exempt entity, you must estimate the amount of the purchases. You will be held strictly accountable for any use tax due the state on the purchases in the event of any use other than the permanent installation or placement of the purchases in the exempt project identified in this certificate.

Contractors are the consumers of all the tools, supplies, and equipment used in fulfilling a construction contract that are not installed or placed in the exempt job even if they are used up during the job.

Instructions for the Seller: Acceptance of this certificate, when properly completed, relieves the seller from the burden of proving that tangible personal property is not subject to sales and use taxes when the tangible personal property will be installed or placed in a project being performed under a contract with an exempt entity and will remain in the project after its completion. The certificate is valid only if taken in good faith from a contractor under contract with an exempt entity. The good faith of the seller will be questioned if the seller knows of, or should know of, facts that suggest the contractor does not intend to install or place the property in a project being performed under contract with an exempt entity.

Keep this certificate and bills or invoices to the purchaser for at least six years from the date of purchase. The bills, invoices, or records covering the purchase made under this certificate must be marked to indicate an exempt purchase was made. The words "Exempt under CERT-141" satisfy the requirement.

This certificate may be used for individual purchases, in which case the box marked "Certificate for One Purchase Only" must be checked. This certificate may also be used for a continuing line of exempt purchases for the project identified in this certificate, in which case the box marked "Blanket Certificate" must be checked. A blanket certificate remains in effect for three years unless the purchaser revokes it in writing before the period expires.

For More Information: Call DRS at 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) or 860-297-5962 (from anywhere). **TTY, TDD, and Text Telephone users** only may transmit inquiries anytime by calling 860-297-4911. Visit the DRS website at **www.ct.gov/DRS** to preview and download forms and publications.

Section 00005 – Attachment Q

(Deleted)

Section 00005 – Attachment R

Build America, Buy America Memorandum - Act Implementation Procedures for EPA Office of Water Federal Financial Assistance Programs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

November 3, 2022

MEMORANDUM

SUBJECT: Build America, Buy America Act Implementation Procedures for EPA Office of Water Federal Financial Assistance Programs

FROM: Radhika Fox
Assistant Administrator

TO: EPA Regional Water Division Directors, Regions I – X
EPA Office of Water Office Directors

OVERVIEW

The Biden-Harris Administration recognized the Nation's critical need for infrastructure investment, championing the Bipartisan Infrastructure Law (BIL), which Congress passed on November 15, 2021 (also known as the Infrastructure Investment and Jobs Act (IIJA)). The BIL will provide an unprecedented level of federal investment in water and wastewater infrastructure in communities across America.

In Title IX of the IIJA, Congress passed the Build America, Buy America (BABA) Act, which establishes strong and permanent domestic sourcing requirements across all Federal financial assistance programs for infrastructure. The U.S. Environmental Protection Agency (EPA) Office of Water is honored to help lead the implementation of these provisions and is proud of its near decade of successful implementation of the American Iron and Steel (AIS) provisions for its flagship water infrastructure programs.

This is a transformational opportunity to build a resilient supply chain and manufacturing base for critical products here in the United States that will spur investment in good-paying American manufacturing jobs and businesses. EPA's efforts to implement BABA will help cultivate the domestic manufacturing base for a wide range of products commonly used across the water sector but not currently made domestically. This will take time, and flexibility will be important to ensure that EPA can leverage critical water investments on time and on budget to protect public health and improve water quality.

IMPLEMENTATION

Recognizing the opportunity and need for BABA implementation guidance, the Made in America Office (MIAO) of the Office of Management and Budget (OMB) published Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure (OMB Guidance M-22-11) on April 18, 2022. The guidance provides government-wide implementation direction for all Federal financial assistance programs for infrastructure. Despite the extensive guidance developed by MIAO, EPA's Office of Water infrastructure investment programs have received many questions that were not addressed in OMB Guidance M-22-11 or that require further clarification for EPA water infrastructure programs. The following questions and answers serve to supplement OMB Guidance M-22-11 with implementation procedures specific to EPA's relevant water infrastructure programs.

Section 70914(a) of the IIJA states when a Buy America preference under BABA applies: "Not later than… [May 14, 2022], the head of each Federal agency shall ensure that none of the funds made available for a Federal financial assistance program for infrastructure…may be obligated for a project unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States." Therefore, Federal financial infrastructure investments obligated on or after May 14, 2022, must comply with the BABA requirements. Absent a waiver, all iron, steel, manufactured products, and construction materials permanently incorporated into an infrastructure project subject to the BABA requirements must be produced in the United States. For many of EPA's Office of Water infrastructure investment programs, the vast majority of products permanently incorporated into construction, maintenance, or repair projects must comply with the BABA requirements, with the exception of select construction materials (cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives), which are specifically excepted by the BABA statute.

EPA's Office of Water implements many infrastructure investment programs subject to BABA requirements, including the following:

- Alaska Native Villages and Rural Communities Water Grant Program (ANV) (and any associated Interagency Agreements with the Indian Health Service)
- Clean Water and Drinking Water State Revolving Fund Programs (CW and DWSRF)
- Clean Water and Drinking Water Grants to U.S. Territories and the District of Columbia
- Clean Water Indian and Drinking Water Tribal Infrastructure Grant Set-aside (and any associated Interagency Agreements with the Indian Health Service)
- Coastal Wetlands Planning, Protection and Restoration Act, (CWPPRA) Programs
- Congressionally Directed Spending/Community Project Funding (also known as Community Grants)
- Geographic Programs[1]
- Gulf Hypoxia Program
- National Estuaries Program (CWA Section 320)

[1] Geographic Programs include: Great Lakes Restoration Initiative, Chesapeake Bay, San Francisco Bay, Puget Sound, Long Island Sound, Gulf of Mexico, South Florida, Lake Champlain, Lake Pontchartrain, Southern New England Estuaries, Columbia River Basin, Pacific Northwest

- 319 Nonpoint Source Management Program Implementation
- Reducing Lead in Drinking Water Grant Program (SDWA §1459B)
- Assistance for Small and Disadvantaged Communities Grants: Small, Underserved, and Disadvantaged Community Grant Program (SUDC), Emerging Contaminants in Small or Disadvantaged Communities (EC-SDC) and Drinking Water Infrastructure Resilience & Sustainability (SDWA §1459A)
- Sewer Overflow and Stormwater Reuse Municipal Grants (OSG)
- USMCA Implementing Legislation (Section 821 and Title IX, USMCA Supplemental Appropriations, 2020)
- U.S.-Mexico Border Water Infrastructure Program
- Voluntary School and Child Care Program Lead Testing and Remediation Grant Program (SDWA 1464(d))
- Water Infrastructure Finance and Innovation Act (WIFIA)

The questions and answers in this document apply to the implementation of BABA requirements for the Office of Water infrastructure programs listed above unless superseded by regulation, statute, or other applicable guidance. For many of the programs listed above which did not have domestic preference requirements prior to BABA, additional implementation details are pending or may be developed after the issuance of these procedures. In addition, EPA notes that more direction will be helpful to inform the determination and definition of domestic content in manufactured goods. Supplemental guidance on these and other issues, from either OMB or EPA, may be forthcoming. These implementation procedures may also apply to additional, unlisted EPA programs which may be required to apply BABA subsequent to publication of this memorandum (e.g., future funding programs which have been authorized, but not yet appropriated).

For more information on the BABA requirements, visit the EPA Office of Water's dedicated website – https://www.epa.gov/cwsrf/build-america-buy-america-baba – or contact your funding authority (such as your grants officer, portfolio manager, or state contact). For information on approved waivers, visit https://www.epa.gov/cwsrf/build-america-buy-america-baba-approved-waivers. You may also email questions to BABA-OW@epa.gov.

This Implementation Procedures document is organized to provide responses to questions in the following topic areas:

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QUESTIONS AND ANSWERS

SECTION 1: GENERAL

- Q1.1: Will EPA provide documentation for BABA for bid solicitations and suggested contract language? Will EPA provide suggested language for Assistance Agreements?

    - A1.1: See Appendix 1, which includes suggested language for construction contracts which addresses the BABA requirements. In addition to the language suggested in Appendix 1, EPA also recommends that assistance recipients prepare contract bid solicitation documents with a statement for the consulting engineers and construction firms as follows: "By signing payment application and recommending payment, Contractor certifies they have reviewed documentation for all products and materials submitted for payment, and the certifications are sufficient to demonstrate compliance with Build America, Buy America Act requirements." In most cases, the assistance recipient's representatives assume the responsibility for their clients to conduct due diligence on compliance with applicable domestic preference requirements.

      All Federal Financial infrastructure assistance agreements subject to BABA must have a clause requiring compliance with the requirements. See Appendix 2 for example assistance agreement language.

- Q1.2: Would federally-financed infrastructure projects outside of the United States need to comply with the BABA requirements?

    - A1.2: No. According to the OMB Guidance (M-22-11), a "project" is defined as "…any activity related to the construction, alteration, maintenance, or repair of infrastructure in the United States." Therefore, the BABA requirements are not implicated for infrastructure projects occurring outside of the United States, such as projects funded through the United States-Mexico-Canada Agreement with infrastructure activities occurring in Mexico or Canada (that is, outside the United States).
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- Q1.3: If most of the project is BABA compliant, and a small portion is not, can an assistance recipient self-fund (i.e., paying with non-federal dollars) the non-compliant products?

    - A1.3: Any project that is funded in whole or in part with federal assistance must comply with the BABA requirements, unless the requirements are otherwise waived. All iron, steel, manufactured products, and construction materials used in a project must meet the BABA requirements unless waived. Absent a waiver, there is no "small portion" or product that does not need to satisfy the BABA requirements unless the requirements are waived (or specifically excluded as is the case for cement and cementitious materials; aggregates such as stone, sand, or gravel; aggregate binding agents or additives; or non-permanent products). An assistance recipient may request a waiver or inquire as to whether a broad waiver, such as a *de minimis* waiver, might apply.

- Q1.4: How do international trade agreements affect the implementation of the BABA requirements?

    - A1.4: The BABA requirements apply in a manner consistent with United States obligations under international trade agreements. Typically, these obligations only apply to direct procurement by the entities that are signatories to these trade agreements. In general, assistance recipients are not signatories to such agreements, so these trade agreements have no impact on BABA implementation. In the few instances where such an agreement applies to a municipality, that municipality is responsible for determining its applicability and requirements and communicating with the funding authority (such as EPA and/or a state) on the actions taken to comply with BABA.

SECTION 2: PRODUCT COVERAGE

- Q2.1: For products made of iron and steel, what is the difference between predominantly and primarily iron and steel?

    - A2.1: EPA considers the terms "predominantly" and "primarily" to be interchangeable, such that a product is considered predominantly (or primarily) iron and steel if it contains greater than 50 percent iron and steel by material cost.

- Q2.2: What is the definition of construction materials (with examples)?

    - A2.2: From OMB Guidance M-22-11: "construction materials" include an article, material, or supply (other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; aggregate binding agents or additives; or non-permanent products) that is or consists primarily of:
        - non-ferrous metals,
        - plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables), (including optic glass),
        - lumber, and
        - drywall.

      For example, a plate of glass would be a construction material under BABA, but a framed window that incorporates the glass into a frame would be a manufactured product. Another common construction material for water infrastructure projects would be polyvinyl chloride (PVC) pipe and fittings. However, if PVC components are incorporated into a more complex product such as instrumentation and control equipment or a water treatment unit, those items would be manufactured products.

- Q2.3: What are manufactured products (with examples)?

    - A2.3: From OMB Guidance M-22-11: "…all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total

cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation…"

The manufactured products category would cover the majority of potential water infrastructure products, including complex products made up of a variety of material types and components. For water infrastructure projects, common manufactured products would include, but not be limited to, pumps, motors, blowers, aerators, generators, instrumentation and control systems, gauges, meters, measurement equipment, treatment equipment, dewatering equipment, actuators, and many other mechanical and electrical items.

- Q2.4: Which category will valves fall under for BABA? Will it differ from the American Iron and Steel (AIS) requirements?

    - A2.4: For programs that are subject to BABA and AIS (SRF, WIFIA, and Community Project Funding), projects using valves should classify them as iron and steel products under BABA as long as their material cost is made up of more than 50 percent iron and/or steel. Valves with 50 percent or less iron and/or steel by material cost would be considered manufactured products under the BABA requirements.

      In accordance with OMB Guidance M-22-11, an article, material, or supply should be classified into only one of the three categories: iron and steel, manufactured products, or construction materials. Under the AIS requirements, all valves made primarily of iron and steel (that is, those with iron and/or steel material cost greater than 50 percent) must comply with the AIS requirements. For BABA, EPA interprets Section IV of OMB Guidance M-22-11 to mean that iron and steel products are those items that are primarily iron and steel, the same as for the AIS requirements.

- Q2.5: Does EPA have a list of products to be classified as "Iron and Steel" under BABA?

    - A2.5: Although this list is not comprehensive, the following products were classified as AIS products if made primarily (more than 50 percent) of iron and/or steel by materials cost (for programs subject to both AIS and BABA, this list would be equivalent for "iron and steel" items or products under either requirement):

Products likely made "primarily" of iron and steel to be classified as Iron and Steel under BABA		
Lined and Unlined Pipe	Lined and Unlined Fittings	Tanks
Flanges	Pipe Clamps and Restraints	Structural Steel
Valves	Hydrants	Pre-Cast, Iron/Steel Reinforced Concrete (of all types, regardless of iron/steel content percentage)
Manhole Covers and other Municipal Castings	Access Hatches	Ballast Screens
Iron or Steel Benches	Bollards	Cast Bases
Cast Iron Hinged Hatches	Cast Iron Riser Rings	Catch Basin Inlets
Cleanout/Monument Boxes	Construction Covers and Frames	Curb and Corner Guards

Products likely made "primarily" of iron and steel to be classified as Iron and Steel under BABA		
Curb Boxes	Curb Openings	Curb Stops
Detectable Warning Plates	Downspout Shoes	Drainage Grates
Drainage Grate Frames and Curb Inlets	Inlets	Junction Boxes
Lampposts	Manhole Rings and Frames	Manhole Risers
Meter Boxes	Service Boxes	Steel Hinged Hatches
Steel Riser Rings	Trash Receptacles	Tree Grates
Tree Guards	Trench Grates	Valve Boxes
Valve Box Covers and Risers	Access Ramps	Aeration Pipes and Fittings (separate from aeration/blowers)
Angles	Backflow Preventers/Double Check Valves	Baffle Curtains
Iron or Steel Bar	Bathroom Stalls	Beam Clamps
Cable Hanging Systems	Clarifier Tanks	Coiled Steel
Column Piping	Concrete Reinforcing Bar, Wire, and Fibers	Condensate Sediment Traps
Corrugated Pipe	Couplings	Decking
Digestor Covers	Dome Structures	Door Hardware
Doors	Ductwork	Expansion Joints
Expansion Tanks (diaphragm, surge, and hydropneumatics)	Fasteners	Fencing and Fence Tubing
Fire Escapes	Flanged Pipe	Flap Gates
Framing	Gate Valves	Generic Hanging Brackets
Grating	Ground Testing Boxes	Ground Test Wells
Guardrails	HVAC Registers, Diffusers, and Grilles	Joists
Knife Gates	Ladders	Lifting Hooks, J-bar, Connectors within, and Anchors for Concrete
Lockers	Man Baskets and Material Platforms	Manhole Steps
Mud Valves	Municipal Casting Junctions	Non-mechanical (aka stationary) Louvers and Dampers
Overhead Rolling Doors/ Uplifting Doors (manual open, no motor)	Pipe Connectors	Pipe Hangers
Pipe Pilings (any type of steel piling)	Pipe Spool (pipe, flanges, connectors, etc.)	Pipe Supports
Pitless Adaptors	Pre-fab Steel Buildings/Sheds (simple structure, unfurnished)	Pre-stressed Concrete Cylinder Pipe (PCCP)
Railings	Reduced Pressure Zone (RPZ) Valves	Roofing
Service Saddles	Sheet Piling	Sinks (not part of eyewash systems)
Solenoid Valves	Stairs	Static Mixers
Stationary Screens	Surface Drains	Tapping Sleeves
Telescoping Valves	Tipping Buckets	Trusses
Tubing	Valve Stem Extensions	Valve Stems (excluding handwheels and actuators)
Wall Panels	Wall Sleeves/Floor Sleeves	Welding Rods
Well Casing	Well Screens	Wire
Wire Cloth	Wire Rod	Wire Rope and Cables

Q2.6: Does EPA have a list of products that could be made "primarily" of iron and steel but would be classified as "manufactured products" under BABA?

A2.6: Although this list is not comprehensive, the following products would be considered "manufactured products" under the BABA requirements, even if the item might be composed primarily of iron and steel by materials cost (Note: These items are not subject to the AIS requirements.):

Products likely made "primarily" of iron and steel to be classified as Manufactured Products under BABA		
Actuator Superstructures/ Support Structures	Aeration Nozzles and Injectors	Aerators
Analytical Instrumentation	Analyzers (e.g., ozone, oxygen)	Automated Water Fill Stations
Blowers/Aeration Equipment	Boilers, Boiler Systems	Chemical Feed Systems (e.g., polymer, coagulant, treatment chemicals)
Chemical Injection Quills	Chemical Injectors	Clarifier Mechanisms/Arms
Compressors	Controls and Switches	Conveyors
Cranes	Desiccant Air Dryer Tanks	Dewatering Equipment
Dewatering Roll-offs	Disinfection Systems	Drives (e.g., variable frequency drives)
Electric/Pneumatic/Manual Accessories Used to Operate Valves (such as electric valve actuators)	Electrical Cabinetry and Housings (such as electrical boxes/enclosures)	Electrical Conduit
Electrical Junction Boxes	Electronic Door Locks	Elevator Systems (hydraulic, etc.,)
Emergency Life Systems (including eyewash stations, emergency safety showers, fire extinguishers, fire suppression systems including sprinklers /piping/valves, first aid, etc.)	Exhaust Fans	Fall Protection Anchor Points
Fiberglass Tank w/Appurtenances	Filters (and appurtenances, including underdrains, backwash systems)	Flocculators
Fluidized Bed Incinerators	Galvanized Anodes/Cathodic Protection	Gear Reducers
Generators	Geothermal Systems	Grinders
Heat Exchangers	HVAC (excluding ductwork)	HVAC Dampers (if appurtenances to aerators/blowers)
HVAC Louvers (mechanical)	Intake and Exhaust Grates (if appurtenances to aerators/blowers)	Instrumentation
Laboratory Equipment	Ladder Fall Prevention Systems	Ladder Safety Posts
Lighting Fixtures	Lightning and Grounding Rods	Mechanical or Actuated Louvers/Dampers
Membrane Bioreactor Systems	Membrane Filtration Systems	Metal Office Furniture (fixed)
Meters (including flow, wholesale, water, and service connection)	Motorized Doors (unit)	Motorized Mixers
Motorized Screens (such as traveling screens)	Motors	Pelton Wheels
Pipeline Flash Reactors (similar to injectors)	Plate Settlers	Precast Concrete without Iron/Steel Reinforcement

Products likely made "primarily" of iron and steel to be classified as Manufactured Products under BABA		
Furnished Pre-fab Buildings (such as furnished with pumps, mechanics inside)	Presses (including belt presses)	Pressure Gauges
Pump Cans/Barrels and Strainers	Pumps	Mechanical Rakes
Safety Climb Cable	Sampling Stations (unless also act as hydrant)	Scrubbers
Sensors	Sequencing Batch Reactors (SBR)	Steel Shelving (fixed)
Slide and Sluice Gates	Spray Header Units	Steel Cabinets (fixed interior/furniture)
Supervisory Control and Data Acquisition (SCADA) Systems	Tracer Wire	Valve Manual Gears, Actuators, Handles
Voltage Transformer	Water Electrostatic Precipitators (WESP)	Water Heaters
Weir Gates		

- Q2.7: Is asphalt paving a covered product under BABA?

    - A2.7: No. EPA interprets Section 70917(c) of the IIJA to exclude asphalt from BABA requirements. Asphalt paving is a type of concrete composed of an aggregate material mixed with a binder (bitumen). EPA considers asphalt concrete to be excluded by section 70917(c) due to its similarities with cement and cementitious materials.

SECTION 3: CO-FUNDING

- Q3.1: If projects are co-funded with funding mechanisms that don't require BABA, must the entire project comply with BABA?

    - A3.1: Yes. Any project that is funded in whole or in part with federal assistance must comply with the BABA requirements, unless the requirements are otherwise waived. A "project" consists of all construction necessary to complete the building or work regardless of the number of contracts or assistance agreements involved so long as all the contracts and assistance agreements awarded are closely related in purpose, time, and place. This precludes the intentional splitting of projects into separate and smaller contracts or assistance agreements to avoid BABA's applicability on some portions of a larger project, particularly where the activities are integrally and proximately related to the whole. However, there are many situations in which major construction activities are clearly undertaken in separate phases that are distinct in purpose, time, or place, in which case, separate contracts or assistance agreements would carry separate requirements.

- Q3.2: How will project requirements be determined for co-funded projects subject to potentially different general applicability/programmatic waiver conditions (such as different adjustment period waivers)?

    - A3.2: OMB Guidance M-22-11 addresses cases with project co-funding from separate programs. EPA would apply the guidance's "cognizant" program determination to projects that are co-funded with different general applicability/programmatic waivers. For instance, if a project were co-funded between WIFIA and SRF and the majority of the Federal funding for the project is from WIFIA, then WIFIA would be the "cognizant" program for application and determination of waivers. In that case, any conditions from an applicable WIFIA waiver would apply.

SECTION 4: WAIVERS

- Q4.1: Who may apply for a waiver and how do you apply?

    - A4.1: Assistance recipients and their authorized representatives may apply for a project-specific waiver. EPA does not accept waiver requests from suppliers, distributors, or manufacturers unless the assistance recipient endorses and submits the request on its own behalf to the funding authority. In the case where multiple programs are providing federal funds to the project, the assistance recipient should submit the waiver request to the cognizant program, the one providing the greatest amount of federal funds for the project. For information on applying for cost waivers, see questions 4.4 and 4.5. For information on the SRF program roles and responsibilities, see question 7.6.

      Project-specific waiver requests should generally include: (1) a brief summary of the project, (2) a description and explanation of the need for the waiver for the product(s) in question, (3) a brief summary of the due diligence conducted in search of domestic alternatives (which could include correspondence between assistance recipient and supplier/distributors), (4) the quantity and materials of the product(s) in question, (5) all engineering specifications and project design considerations relevant to the product(s) in question, (6) the approximate unit cost of items (both foreign and domestic) in addition to an estimated cost of the materials and overall project, (7) the date any products will be needed on site in order to avoid significant project schedule disruptions, and (8) any other pertinent information relevant to EPA's consideration of the waiver (e.g., if relevant for SRF projects: whether the project is designated as an equivalency project, the date the plans and specifications were submitted to the state, the date of construction initiation, expected date of project completion, any special considerations such as local zoning and building ordinances, seismic requirements, or noise or odor control requirements).

      In the case of indirect federal assistance, such as the SRF programs, the state authority reviews and conveys the waiver request to EPA. States should submit waiver requests to the appropriate program waiver request inbox. For SRF projects, please use CWSRFWaiver@epa.gov or DWSRFWaiver@epa.gov.

- Q4.2: Can an assistance recipient request a waiver based on a specification written for a specific brand or model of product (that is, a specification that names a branded item or model)?

    - A4.2: In most cases, performance-based specifications are expected and required for the majority of infrastructure projects funded by EPA's financial assistance programs. In rare cases where "branded" or product-specific sourcing may be included in project specifications, it is suggested that the specifications include the item in question (that is, not simply a catalog page, but also materials of construction, sizing, quantities, and applicable engineering performance design characteristics for the project, etc.) in addition to the standard phrase "or equal." For the purposes of product alternative market research, EPA will evaluate the BABA requirements based on performance-based engineering specifications for the product(s) in question. If the project's specifications do not include performance-based specifications, or at least an "or equal" designation, EPA will base its research on an "or equal" designation using best professional judgment to the extent practicable.

- Q4.3: If a manufactured product is not readily available domestically, will EPA provide short-term "limited availability" product waivers?

    - A4.3: EPA will address the unavailability of domestic products through the waiver process, including potential national short-term waivers for specific products, if appropriate. To the extent practicable and with the intent to maximize domestic market and supply chain development, EPA intends to address issues of broad product unavailability with targeted, time-limited, and conditional waivers, as prescribed in OMB Guidance M-22-11. EPA will follow its robust and thorough product research processes (those put into place for the AIS requirements for the SRF and WIFIA programs and expanded for the new BABA requirements) to identify and determine those products for which proposed national/general applicability waivers may be appropriate.

- Q4.4: What information is needed when applying for a cost waiver under BABA?

    - A4.4: As part of the cost waiver request, the assistance recipient must demonstrate that implementation of the BABA requirements will increase the overall project cost more than 25 percent. Depending on the circumstances of the overall project cost increases, documentation to justify the cost waiver can vary but may include itemized cost estimates or bid tabulations comparing project costs with and without BABA implementation. Assistance recipients should begin assessing the potential cost impacts of the BABA requirements during the design phase of a project.

- Q4.5: Can administrative costs associated with tracking and verification of certifications be considered when determining if the cost of a project increases by 25 percent or more?

    - A4.5: Yes. Section 70914(b)(3) of the IIJA states that a waiver may be provided if the overall cost of the project increases by more than 25 percent due to the "inclusion of iron, steel, manufactured products, or construction materials produced in the United States." EPA interprets this to mean that the "inclusion" of the BABA-covered products could encompass

reasonable administrative costs associated with complying with the BABA requirements, such as staff, contractor, and technological resources to collect and track BABA compliance documentation.

- Q4.6: How can assistance recipients and construction contractors address product delivery delays?

    - A4.6: Assistance recipients should reasonably plan for material procurement to account for known potential supply chain issues or extended lead times and shall notify the funding authority well in advance of the issues so that prompt attention can be given to explore options. Where extended lead times for compliant products are impacting project schedules and may significantly impact construction progress, timely communication with the funding agency is important. For products that are unavailable within a reasonable timeframe to meet the objectives and schedule of a project, EPA may consider a non-availability waiver with adequate justification. An assistance recipient would need to apply for the waiver and contact its funding authority (such as EPA and/or a state) to initiate the waiver process.

SECTION 5: DOCUMENTING COMPLIANCE

- Q5.1: Who will be responsible for BABA enforcement?

    - A5.1: Responsibility for BABA implementation applies at all levels, from manufacturers to suppliers and distributors, construction contractors, assistance recipients, and funding authorities.

      The manufacturers have responsibility to provide adequate and accurate documentation of the products manufactured. If suppliers and distributors are involved, they are responsible for passing along compliance documentation for products supplied to projects that are subject to the BABA requirements.

      The assistance recipient and their representatives are primarily responsible for ensuring the documentation collected for products used on the project is sufficient to document compliance with the BABA requirements.

      The funding authority is responsible for providing oversight and guidance as needed to ensure the proper implementation of the requirements. The Uniform Grants Guidance (UGG) (Title 2 of the Code of Federal Regulations (CFR) Part 200) applies to many Federal financial assistance agreements that will include BABA requirements. The general provisions of 2 CFR Part 200 determine the responsible party for the grant funding authority.

      For information on SRF program roles and responsibilities, see question 7.6.

      At all levels, where fraud, waste, abuse, or any violation of the law is suspected, the Office of Inspector General (OIG) should be contacted immediately. The OIG can be reached at 1-888-546-8740 or OIG_Hotline@epa.gov. More information can be found at this website: http://www.epa.gov/oig/hotline.htm.

- Q5.2: When will the BABA requirements be assessed for compliance? Do assistance recipients need to have waivers for potential non-domestic products before assistance agreements are in place, at the time products are procured or products are incorporated into the project (i.e., used)?

    - A5.2: Compliance is assessed where the domestic product is used (or installed) at the project site. Proper compliance documentation, whether it is a BABA certification letter or a waiver, should accompany a product prior to its "use", in accordance with Section 70914(a) of IIJA. This may occur prior to assistance agreements being in place but is not necessary. Additionally, communication of BABA requirements through appropriate Terms and Conditions in financial assistance agreements and in project solicitation and contract documents is key in ensuring all parties involved are informed of the requirements for the project before construction is underway.

- Q5.3: How can product compliance with the BABA requirements be demonstrated?

    - A5.3: Assistance recipients and their representatives should ensure that the products delivered to the construction site are accompanied by proper documentation that demonstrate compliance with the law and be made available to the funding authority upon request. The documentation may be received and maintained in hard copy, electronically, or could be embedded in construction management software. The use of a signed certification letter for the project is the most direct and effective form of compliance documentation for ensuring products used on site are BABA-compliant prior to their installation; however, other forms of documentation are also acceptable as long as collectively, the following can be demonstrated:

        (1) Documentation linked to the project. For example, this can be in the form of the project name, project location, contract number, or project number.
        (2) Documentation linked to the product used on the project. For example, description of product(s) (simple explanation sufficient to identify the product(s)), or an attached (or electronic link to) purchase order, invoice, or bill of lading.
        (3) Documentation includes statement attesting that the products supplied to the assistance recipient are compliant with BABA requirement. Reference to the Infrastructure Investment and Jobs Act ("IIJA") or the Bipartisan Infrastructure Law (BIL) are also acceptable. For iron and steel items under BABA, references to the American Iron and Steel (AIS) requirements are also acceptable and reciprocal with BABA for such items.
        (4) Documentation that manufacturing occurred in the United States, which could include, for example, the location(s) of manufacturing for each manufacturing step that is being certified. It is acceptable for manufactured products to note a single point of manufacturing, documenting that the final point of manufacturing is in the United States. Note that each BABA category may require different determinations for compliance.
        (5) Signature of company representative (on company letterhead and signature can be electronic). The signatory of the certifying statement affirms their knowledge of the manufacturing processes for the referenced product(s) and attests that the product meets the BABA requirements.

In addition to compliance documentation, assistance recipients or their representatives should also conduct a visual inspection of the product when it arrives to the project site, especially for iron and steel products which are often stamped with the country of origin. (Note: A country of origin stamp alone is not sufficient verification of compliance with BABA and assistance receipts should not rely on it to ensure compliance.)

EPA may develop alternative procedures for demonstrating compliance. Additional project- or program-specific instructions may be developed on a case-by-case basis in order to meet individual circumstances.

- Q5.4: Will EPA provide a form or template for tracking and documenting compliance?

    - A5.4: EPA does not require a specified format for tracking or documenting compliance. Assistance recipients are free to develop any system (from simple to complex software) for tracking items used on the project and the accompanying compliance documentation, e.g., certification letters, applicable waivers, if it helps with implementation and compliance. Elements that may help with keeping track of compliance may include: product description, quantity required/used, product category (i.e., iron and steel, manufactured product, or construction material), status of obtaining certification letter, product cost, and whether the item might qualify as *de minimis*, or qualify under another applicable waiver.

- Q5.5: If a manufacturer claims to comply with the Buy American Act, does it also comply with BABA?

    - A5.5: No. With the exception of the AIS requirements – which EPA interprets to be equivalent to the "iron and steel" requirements under BABA – EPA does not have an interpretation about the comparability of other domestic preference requirements relative to BABA. Any products that are to be certified as compliant with BABA should include a specific reference to the BABA requirements and appropriate attestation from a responsible manufacturing company official. See Question 5.3 for EPA's recommendations for BABA certification letters.

- Q5.6: How will assistance recipients manage certification letters for hundreds, possibly thousands of products?

    - A5.6: EPA recognizes that the new BABA requirements will cover most products used in typical water and wastewater infrastructure projects, and that the number of items which may require certification at large and/or complex projects may reach several hundred. EPA is concerned about the potential administrative burden that this would place on assistance recipients. EPA recommends that projects with a high number of potentially covered products meet with their funding authority about potential compliance strategies to minimize burden and streamline compliance activity. Assistance recipients should prepare contract bid solicitation documents with a statement for the consulting engineers and construction firms as follows: "By signing payment application and recommending payment, Contractor certifies they have reviewed documentation for all products and materials submitted for payment, and the documentation is sufficient to demonstrate compliance with Build America,

Buy America Act requirements." In most cases, the assistance recipient's representatives may assume the responsibility for their clients to conduct due diligence on compliance with applicable domestic preference requirements.

- Q5.7: Who is responsible for documenting the 55 percent content requirement for manufactured products under BABA? What if the final manufacturer cannot trace or verify domestic origin for all components?

    - A5.7: The manufacturer who signs a certification letter is responsible for documenting compliance with any of the three categories of products (iron and steel, manufactured products, or construction materials). For manufactured products, BABA requires that greater than 55 percent of the total cost of all components of the manufactured product be from domestic sources. EPA recommends that the certification letter for manufactured products document whether the item passes the content test in the final product along with a statement attesting to compliance with the BABA requirements for manufactured products.

- Q5.8: How do final product fabricators document compliance when the final step of manufacturing may be simply assembling components?

    - A5.8: It is acceptable, in many cases, especially for highly complex manufactured products that utilize many sub-components, for the final point of assembly to certify without using a "step certification" process. Multiple certifications (i.e., step certifications) or a singular certification can be used for a product, as long as the certifying official is willing to attest to the product's compliance with BABA requirements at all stages of manufacturing.

- Q5.9: Will Material Test Reports be acceptable in lieu of a BABA certification for iron and steel?

    - A5.9: Material Test Reports (MTRs, commonly referred to as "Mill Certifications" or "Mill Certs") provide the chemical composition of steel and iron from a mill or foundry. If an MTR accompanies the delivery of steel or iron to a project site with an invoice or bill of lading, EPA will consider it sufficient to demonstrate compliance (equivalent to a certification letter) as long as the MTR includes a manufacturer representative's signature in addition to the location (city and state) of the mill/foundry. It is common for MTRs to be the first letter in a "step certification" if the product is further fabricated or painted, etc., by another manufacturer.

- Q5.10: Can a manufacturer use a fillable certification letter for products?

    - A5.10: EPA recommends that certifications be signed by representatives of the manufacturing entity. EPA does not oppose manufacturers using forms to internally develop letters within their company, thereby providing signed, non-manipulable certification letters to suppliers, distributors, and/or assistance recipients. A fillable form that can be changed by someone outside of the manufacturer after signature does not demonstrate compliance and may create compliance concerns for the manufacturer or assistance recipient.

- Q5.11: Are product certifications from suppliers and distributors allowed?

    - A5.11: EPA recommends that representatives of product manufacturers certify compliance and discourages suppliers and distributors from creating certification letters. EPA does not rule out the possibility that a third-party certification process, such as a certification by a distributor, may be viable. However, EPA is currently not aware of a system or proposed system that meets the EPA's recommendations for documentation of product certification.

- Q5.12: How long should assistance recipients keep compliance documentation?

    - A5.12: Assistance recipients should apply recordkeeping requirements for the project according to the procedures dictated by the funding authority. For most EPA grant programs, this is prescribed in the UGG at 2 CFR 200.334-200.338; e.g., the SRF programs require a minimum of three years. Other funding programs may require longer documentation retention periods.

SECTION 6: PROGRAMS WITH AMERICAN IRON AND STEEL REQUIREMENTS

- Q6.1: Does BABA supersede the American Iron and Steel (AIS) Requirements?

    - A6.1: The BABA requirements for items considered "iron and steel" are equivalent to those for covered iron and steel products under the AIS requirements in the Clean Water Act and the Safe Drinking Water Act. These requirements apply to the CWSRF, DWSRF, WIFIA, and Water infrastructure Community Grants. BABA includes a "Savings Provision" (Section 70917(b)) that states that BABA does not affect existing domestic content procurement preferences for infrastructure projects funded by Federal financial assistance programs that meet the requirements of section 70914. EPA views the AIS requirements as meeting the "iron and steel" product requirements of BABA Section 70914, as they both include the key requirement that items made of iron and steel be wholly manufactured in the United States from the point of melting and/or pouring the iron or steel components through final manufacturing step. Because of the "Savings Provision" of Section 70917, the AIS requirements satisfy the "iron and steel" requirements of BABA. For the programs that have AIS requirements, EPA intends to implement BABA requirements the same way for iron and steel items as it has done for AIS products.

- Q6.2: For iron and steel products, does a manufacturer need to demonstrate compliance from initial melting through the finished product?

    - A6.2: For iron and steel products, the BABA requirements are the same as the existing AIS requirements, in that all of the iron and steel in a covered product (that is, the product is comprised of more than 50 percent iron and steel by material cost) must be melted and poured in the United States and all subsequent manufacturing processes (such as grinding, rolling, bending, reheating, and casting) must occur in the United States.

Q6.3: Will EPA apply the same manufacturing standards for BABA iron and steel products as for the American Iron and Steel (AIS) requirements?

- A6.3: Yes. For AIS, EPA did not require raw materials used in the production of steel or iron to be domestically sourced. For BABA, EPA interprets the requirements to be the same. Hence, like AIS, raw materials in the production of iron and steel subject to BABA requirements would not need to be domestically sourced. The key step for both AIS and BABA domestic iron and/or steel production is the melting/pouring (that is, the location of the furnace), which must be in the United States.

- Q6.4: Will the certification process be similar to the process established for the American Iron and Steel requirements?

  - A6.4: EPA expects the certification process for the BABA requirements to be very similar to that established for the AIS requirements. For iron and steel products, the process should remain the same for AIS and BABA. EPA recommends for manufactured products and for construction materials that certification letters include direct reference to the product/material content requirements under BABA, in addition to an affirmative statement verifying that the product meets the BABA requirements.

- Q6.5: Will duplicate certification letters be required for AIS and BABA for iron/steel products?

  - A6.5: No. Compliance with BABA requirements will be sufficient to demonstrate compliance with AIS requirements for iron and steel products. If a project is subject to BABA, the only demonstration of compliance necessary is with the BABA requirements, of which the iron and steel requirements are equivalent to those of the AIS statutory requirements: the iron or steel in a product made primarily or predominantly of iron and steel (comprising more than 50 percent iron and steel by material cost) must be melted and/or poured in the United States and all subsequent manufacturing processes must occur in the United States.

SECTION 7: PROGRAM-SPECIFIC ISSUES

- Q7.1.: How do the BABA requirements apply to Community Grants?

  - A7.1: The Community Project Funding/Congressionally Directed Spending grants for the construction of drinking water, wastewater, and stormwater infrastructure and for water quality protection are subject to the requirements specified in the explanatory statement accompanying the Consolidated Appropriations Act (Explanatory Statement for Division G of P.L. 117-13, the Consolidated Appropriations Act of 2022). The explanatory statement asserts: "Applicable Federal requirements that would apply to a Clean Water State Revolving Fund or Drinking Water State Revolving Fund project grant recipient shall apply to a grantee receiving a CPF grant under this section." Therefore, the federally funded Community Project Funding/Congressionally Directed Spending grants are subject to the same requirements that apply to CWSRF or DWSRF projects, including BABA and AIS requirements. See also A1.2.

- Q7.2: Should SRF projects covered by the BABA SRF Projects Design Planning Adjustment Period Waiver follow the same procedures for demonstrating compliance as outlined for American Iron and Steel requirements?

    - A7.2: Yes. The SRF Design Planning Adjustment Period waiver does not waive the iron and steel requirements under BABA. The SRF programs have existing domestic preference requirements for SRF projects under CWA Section 608 and SDWA Section 1452(a)(4) (AIS requirements) to use iron and steel products that are produced in the United States. Sections 70917(a) and (b) of BIL explain the application of BABA to existing domestic preference requirements. Specifically, the savings provision in Section 70917(b) states that existing domestic preference requirements that meet BABA requirements are not affected by BABA. The statutory AIS requirements were existing at the time BABA became law and satisfy the BABA iron and steel requirements. Therefore, the statutory AIS requirements that have previously applied to SRF-funded projects will continue to do so, and compliance with AIS requirements will satisfy the BABA iron and steel requirements. Demonstration of compliance for iron and steel products will follow the AIS implementation policies for projects subject to the waiver.

- Q7.3: For SRF programs, is BABA considered a federal cross-cutting authority? (i.e., do "equivalency" rules apply?)

    - A7.3: Yes, BABA is considered a federal cross-cutting requirement that applies to SRF assistance equivalent to the federal capitalization grant (i.e., "equivalency" projects). EPA's SRF regulations at 40 CFR 35.3145 and 35.3575 require states and recipients of SRF funds equivalent to the amount of the federal capitalization grant to comply with federal cross-cutting requirements. Section 70914 of the IIJA, which states when a Buy America preference applies, explains that "none of the funds made available for a Federal financial assistance program for infrastructure…may be obligated for a project unless all of the iron, steel, manufactured products, and construction materials used in the project are produced in the United States." Therefore, BABA only applies to projects funded in an amount equivalent to the federal capitalization grant and not to those projects receiving funds in excess of the capitalization grant (i.e., "non-equivalency" projects). (Note: The AIS requirements continue to apply for all SRF projects, including non-equivalency projects, and all WIFIA and Community Grant projects, because equivalency does not apply.)

- Q7.4: Do the BABA requirements apply to Drinking Water State Revolving Fund set-asides?

    - A7.4: Due to requirements related to the deposit of funds in the DWSRF program, almost all of the funds used to conduct set-aside activities are Federal dollars. Therefore, Federal cross-cutting requirements must be applied to all set-aside activities. However, in the case of most set-aside activities, the cross-cutting requirements will not be implicated because of the nature of the activities conducted under the set-asides. Because the BABA requirements only apply to infrastructure, and infrastructure typically is not an eligible set-aside expenditure (with one potential exception being loans for incentive-based source water protection

measures under the Local Assistance and Other State Programs Set-Aside), the BABA requirements will not apply to most set-aside activities.

- Q7.5: What if an SRF project is refinanced using Federal financial assistance on or after May 14, 2022?

    - A7.5: If an SRF project began construction, financed from another funding source, prior to May 14, 2022, but is refinanced through an assistance agreement executed on or after that date, BABA requirements will apply to all construction that occurs on or after May 14, 2022, through completion of construction, unless a waiver applies. There is no retroactive application of the BABA requirements where a refinancing occurs for an SRF project that has completed construction prior to May 14, 2022. (Note: If SRF funding is used for the refinancing, the AIS requirements may still apply depending on the timing of construction.)

- Q7.6: What are the roles and responsibilities for SRF programs for BABA implementation?

    - A7.6: Implementation of the BABA requirements for the State Revolving Fund programs will continue the roles and responsibilities from the successful AIS implementation process.

      As with AIS, it is both the assistance recipient's and the state's responsibility to ensure compliance with the BABA requirements. The state is the recipient of a federal capitalization grant and must comply with all grant conditions, including a condition requiring adherence to BABA requirements.

      Consequently, states are strongly advised to conduct site visits of projects during construction and review documentation demonstrating the assistance recipient's proof of compliance. In EPA's experience, most states conduct periodic site visits and arrange timely meetings with funded projects. Observed best practices typically include a meeting early in the process (sometimes before bid and usually prior to commencing construction) and at least one project site visit during the construction process. Assistance recipients must maintain documentation of compliance with the BABA requirements, as explained in question 5.3. The documents must be kept by the assistance recipient and should be reviewed by the state during project reviews.

      The state's role in the waiver process is to review any waiver requests submitted to the state to ensure that all necessary information has been provided by the assistance recipient prior to forwarding the request to EPA. If a state finds the request lacking, the state should work with the assistance recipient to help obtain complete information. Question 4.1 explains the information needed by EPA to expediently review a waiver request.

      In order to implement the BABA requirements, EPA has developed an approach for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework described below will allow states, on behalf of the assistance recipients, to apply for waivers of the BABA requirements directly to EPA Headquarters. Only waiver requests received and/or endorsed from states will be considered. Pursuant to BABA, EPA has the responsibility to make findings as to the issuance of waivers to the BABA requirements.

Step-by-step SRF Waiver Process

The waiver process begins with the assistance recipient. To fulfill the BABA requirements, the assistance recipient must in good faith design the project (where applicable) and solicit bids for construction with American-made iron and steel, manufactured goods, and construction materials. It is essential that the assistance recipient include the BABA terms in any request for proposals or solicitations for bids, and in all contracts (see Appendix 2 for sample construction contract language). The assistance recipient may receive a waiver at any point before, during, or after the bid process, if one or more of three statutory conditions is demonstrated to EPA and approved.

To apply for a project-specific waiver, the assistance recipient should email the request in the form of a Word document (.doc) or editable PDF (.pdf) to the funding program. It is strongly recommended that each state identify a person or persons for BABA communications. The state designee(s) will review the application for the waiver and determine whether the necessary information has been included (Note: More information may be provided in the future regarding what information is required to be included in waiver requests). Once the waiver application is complete, the designee will forward the application to CWSRFWaiver@epa.gov or DWSRFWaiver@epa.gov.

Evaluation by EPA

After receiving an application for waiver of the BABA requirements and ensuring sufficient information was provided, EPA will publish the request on its website for 15 days and receive public comment. EPA will then determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver.

In the event that EPA finds that adequate documentation and justification has been submitted, the Administrator may grant a waiver to the assistance recipient. EPA will notify the state designee whether a waiver request has been approved or not approved as soon as such a decision has been made. Granting such a waiver is a four-step process:

1. Research – After receiving an application for a waiver, EPA will perform market research to determine whether the iron, steel, manufactured goods, or construction materials are available domestically.

2. Posting – After research, if no domestic product has been identified, EPA is required to publish the application and all material submitted with the application on EPA's website for 15 days. During that period, the public will have the opportunity to review the request and provide informal comment to EPA. The website can be found at: https://www.epa.gov/cwsrf/build-america-buy-america-baba-waivers-open-public-comment.

3. Evaluation – After receiving an application for waiver of the BABA requirements, EPA will determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver to determine whether or not to grant the waiver.

3. Signature of waiver approval by the Administrator or another agency official with delegated authority – As soon as the waiver is signed and dated, EPA will notify the State SRF program and post the signed waiver on the Agency's website. The assistance recipient should keep a copy of the signed waiver in its project files.

(Note: Additional steps may be required in the future regarding the waiver process depending on additional guidance from OMB)

APPENDIX 1

Example Build America, Buy America (BABA) Act Construction Contract Language

ALL CONSTRUCTION CONTRACTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE BABA REQUIREMENTS. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN A PROJECT'S CONSTRUCTION CONTRACT. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE OR LOCAL LAW:

The Contractor acknowledges to and for the benefit of the _____ ("Owner") and the _____ (the "Funding Authority") that it understands the goods and services under this Agreement are being funded with federal monies and have statutory requirements commonly known as "Build America, Buy America;" that requires all of the iron and steel, manufactured products, and construction materials used in the project to be produced in the United States ("Build America, Buy America Requirements") including iron and steel, manufactured products, and construction materials provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and Funding Authority (a) the Contractor has reviewed and understands the Build America, Buy America Requirements, (b) all of the iron and steel, manufactured products, and construction materials used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirements, unless a waiver of the requirements is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Build America, Buy America Requirements, as may be requested by the Owner or the Funding Authority. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Funding Authority to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner or Funding Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Funding Authority or any damages owed to the Funding Authority by the Owner). If the Contractor has no direct contractual privity with the Funding Authority, as a lender or awardee to the Owner for the funding of its project, the Owner and the Contractor agree that the Funding Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Funding Authority.

APPENDIX 2

Example Build America, Buy America (BABA) Act Assistance Agreement Language

ALL FEDERAL FINANCIAL INFRASTRUCTURE ASSISTANCE AGREEMENTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE BABA REQUIREMENTS. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN AN ASSISTANCE AGREEMENT (E.G., SRF LOAN AGREEMENT). EPA MAKES NO CLAIMS REGARDING THE LEGAL SUFFICIENCY OF THIS CLAUSE WITH RESPECT TO STATE LAW:

Comply with all federal requirements applicable to the assistance received (including those imposed by the Infrastructure Investment and Jobs Act ("IIJA"), Public Law No. 117-58) which the Participant understands includes, but is not limited to, the following requirements: that all of the iron and steel, manufactured products, and construction materials used in the Project are to be produced in the United States ("Build America, Buy America Requirements") unless (i) the Participant has requested and obtained a waiver from the cognizant Agency[1] pertaining to the Project or the Project is otherwise covered by a general applicability waiver; or (ii) all of the contributing Agencies have otherwise advised the Participant in writing that the Build America, Buy America Requirements are not applicable to the Project.

Comply with all record keeping and reporting requirements under all applicable legal authorities, including any reports required by the funding authority (such as EPA and/or a state), such as performance indicators of program deliverables, information on costs and project progress. The Participant understands that (i) each contract and subcontract related to the Project is subject to audit by appropriate federal and state entities and (ii) failure to comply with the applicable legal requirements and this Agreement may result in a default hereunder that results in a repayment of the assistance agreement in advance of the maturity of the Bonds, termination and/or repayment of grants, cooperative agreements, direct assistance or other types of financial assistance, and/or other remedial actions.

[1] From OMB Guidance M-22-11: To avoid a need for duplicative waiver requests from entities that receive funding for one infrastructure project through multiple Federal agencies, the Federal agency contributing the greatest amount of Federal funds for the project should be considered the "Cognizant Agency for Made in America" and should take responsibility for coordinating with the other Federal awarding agencies. Such coordination will provide uniform waiver criteria and adjudication processes, minimize duplicative efforts among Federal agencies, and reduce burdens on recipients. The Cognizant Agency for Made in America shall be responsible for consulting with the other Federal awarding agencies, publicizing the proposed joint waiver, and submitting the proposed joint waiver for review to MIAO.

Connecticut Drinking Water State Revolving Fund
Build America, Buy America (BABA) - De Minimis Waiver On-Going Tracking Form

The Bipartisan Infrastructure Law (BIL) (aka Infrastructure Investment and Jobs Act (IIJA)) (Public Law 117-58) included a new requirement for the use of domestic products in DWSRF-funded projects. Under the authority of Section 70914(b)(1), the EPA has issued a public interest waiver for BABA De Minimis components. The assistance recipient wishing to use this waiver should consult with their contractor(s) to maintain an itemized list of components covered under the De Minimis waiver.

THIS VERSION OF THE "BABA DE MINIMIS WAIVER FORM" IS TO BE USED TO TRACK ITEMS AS THE PROJECT PROGRESSES. THE FINAL REPORTED AMOUNT MUST BE ON THE "FINAL UTILIZATION AND CERTIFICATION FORM".

PWS Name: _____ PWSID: _____

Project Name: _____ Loan agrmnt #: _____

NOTE: This De Minimis waiver is only applicable to projects which are required to follow BABA. If the project is only required to follow American Iron & Steel (AIS), use that form. Must have sufficient documentation to support all costs included in this calculation.

The total amount used for BABA de minimis components cumulatively may comprise no more than a total of 5 percent of the total cost of the project.

Total Cost of Project: _____ 5% Limit: _____

*** Category** is only one of the following: "Iron & Steel"; "Manufactured Product"; OR "Construction Material"

Manufacturer & Component Description	Category *	Part/ Model#	Quantity (if appl)	Cost per Unit (if applicable)	Component Total Cost	How is Cost Documented?

Use additional sheets as necessary

Running Total BABA De Minimis Cost of Components: _____

If approaching the 5% limit, contact DWS immediately

For final reporting, use the "Final Utilization and Certification" Form.

Connecticut Drinking Water State Revolving Fund

Build America, Buy America (BABA) - De Minimis Waiver Final Utilization & Certification Form

The Bipartisan Infrastructure Law (BIL) (aka Infrastructure Investment and Jobs Act (IIJA)) (Public Law 117-58) included a new requirement for the use of domestic products in DWSRF-funded projects. Under the authority of Section 70914(b)(1), the EPA has issued a public interest waiver for BABA De Minimis components. The assistance recipient wishing to use this waiver should consult with their contractor(s) to maintain an itemized list of components covered under the De Minimis waiver. At the conclusion of the project, this form must be completed and retained in the assistance recipient's project files and a copy provided to the DPH-DWSRF unit. **It is strongly recommended that you maintain a list as the project progresses (see "on-Going Tracking Form").**

PWS Name: _____ PWSID: _____

Project Name: _____ Loan agrmnt #: _____

NOTE: This De Minimis waiver is only applicable to projects which are required to follow BABA. If the project is only required to follow American Iron & Steel (AIS), use that form. Must have sufficient documentation to support all costs included in this calculation.

The total amount used for BABA de minimis components cumulatively may comprise no more than a total of 5 percent of the total cost of the project.

Total Cost of Project: _____ 5% Limit: _____

*** Category** is only one of the following: "Iron & Steel"; "Manufactured Product"; OR "Construction Material"

Manufacturer & Component Description	Category *	Part/ Model#	Quantity (if appl)	Cost per Unit (if applicable)	Component Total Cost	How is Cost Documented?

Use additional sheets as necessary

Final Total BABA De Minimis Cost of Components:: _____

If approaching the 5% limit, contact DWS immediately

Completed by:

Name: _____ Title: _____

Signature: _____ Date: _____

Section 00005 – Attachment S

Clean Air Act

This content is from the eCFR and is authoritative but unofficial.

Title 2 —Federal Financial Assistance
Subtitle B —Federal Agency Regulations for Grants and Agreements
Chapter XV —Environmental Protection Agency
Part 1532 —Nonprocurement Debarment and Suspension

Authority: 33 U.S.C. 1251 *et seq.;* 42 U.S.C. 7401 *et seq.;* Sec. 2455, Pub. L. 103-355, 108 Stat. 3327 (31 U.S.C. 6101 note); E.O. 11738 (3 CFR, 1973 Comp., p. 799); E.O. 12549 (3 CFR, 1986 Comp., p. 189); E.O. 12689 (3 CFR, 1989 Comp., p. 235).
Source: 72 FR 2422, Jan. 19, 2007, unless otherwise noted.

Subpart J Statutory Disqualification and Reinstatement Under the Clean Air Act and Clean Water Act

§ 1532.1100 What does this subpart do?
§ 1532.1105 Does this subpart apply to me?
§ 1532.1110 How will a CAA or CWA conviction affect my eligibility to participate in Federal contracts, subcontracts, assistance, loans and other benefits?
§ 1532.1115 Can the EPA extend a CAA or CWA disqualification to other facilities?
§ 1532.1120 What is the purpose of CAA or CWA disqualification?
§ 1532.1125 How do award officials and others know if I am disqualified?
§ 1532.1130 How does disqualification under the CAA or CWA differ from a Federal discretionary suspension or debarment action?
§ 1532.1135 Does CAA or CWA disqualification mean that I must remain ineligible?
§ 1532.1140 Can an exception be made to allow me to receive an award even though I may be disqualified?
§ 1532.1200 How will I know if I am disqualified under the CAA or CWA?
§ 1532.1205 What procedures must I follow to have my procurement and nonprocurement eligibility reinstated under the CAA or CWA?
§ 1532.1210 Will anyone else provide information to the EPA debarring official concerning my reinstatement request?
§ 1532.1215 What happens if I disagree with the information provided by others to the EPA debarring official on my reinstatement request?
§ 1532.1220 What will the EPA debarring official consider in making a decision on my reinstatement request?
§ 1532.1225 When will the EPA debarring official make a decision on my reinstatement request?
§ 1532.1230 How will the EPA debarring official notify me of the reinstatement decision?
§ 1532.1300 Can I resolve my eligibility status under terms of an administrative agreement without having to submit a formal reinstatement request?
§ 1532.1305 What are the consequences if I mislead the EPA in seeking reinstatement or fail to comply with my administrative agreement?
§ 1532.1400 How may I appeal a decision denying my request for reinstatement?

§ 1532.1500 If I am reinstated, when will my name be removed from the EPLS?
§ 1532.1600 What definitions apply specifically to actions under this subpart?

Subpart J—Statutory Disqualification and Reinstatement Under the Clean Air Act and Clean Water Act

§ 1532.1100 What does this subpart do?

This subpart explains how the EPA administers section 306 of the Clean Air Act (CAA) (42 U.S.C. 7606) and section 508 of the Clean Water Act (CWA) (33 U.S.C. 1368), which disqualify persons convicted for certain offenses under those statutes (see § 1532.1105), from eligibility to receive certain contracts, subcontracts, assistance, loans and other benefits (see coverage under the Federal Acquisition Regulation (FAR), 48 CFR part 9, subpart 9.4 and subparts A through I of 2 CFR part 180). It also explains: the procedures for seeking reinstatement of a person's eligibility under the CAA or CWA; the criteria and standards that apply to EPA's decision-making process; and requirements of award officials and others involved in Federal procurement and nonprocurement activities in carrying out their responsibilities under the CAA and CWA.

§ 1532.1105 Does this subpart apply to me?

(a) Portions of this subpart apply to you if you are convicted, or likely to be convicted, of any offense under section 7413(c) of the CAA or section 1319(c) of the CWA.

(b) Portions of this subpart apply to you if you are the EPA debarring official, a Federal procurement or nonprocurement award official, a participant in a Federal procurement or nonprocurement program that is precluded from entering into a covered transaction with a person disqualified under the CAA or CWA, or if you are a Federal department or agency anticipating issuing an exception to a person otherwise disqualified under the CAA or CWA.

§ 1532.1110 How will a CAA or CWA conviction affect my eligibility to participate in Federal contracts, subcontracts, assistance, loans and other benefits?

If you are convicted of any offense described in § 1532.1105, you are automatically disqualified from eligibility to receive any contract, subcontract, assistance, sub-assistance, loan or other nonprocurement benefit or transaction that is prohibited by a Federal department or agency under the Governmentwide debarment and suspension system (i.e. covered transactions under subpart A through I of 2 CFR part 180, or prohibited awards under 48 CFR part 9, subpart 9.4), if you:

(a) Will perform any part of the transaction or award at the facility giving rise to your conviction (called the violating facility); and

(b) You own, lease or supervise the violating facility.

§ 1532.1115 Can the EPA extend a CAA or CWA disqualification to other facilities?

The CAA specifically authorizes the EPA to extend a CAA disqualification to other facilities that are owned or operated by the convicted person. The EPA also has authority under subparts A through I of 2 CFR part 180, or under 48 CFR part 9, subpart 9.4, to take discretionary suspension and debarment actions on the basis of misconduct leading to a CAA or CWA conviction, or for activities that the EPA debarring official believes were designed to improperly circumvent a CAA or CWA disqualification.

§ 1532.1120 What is the purpose of CAA or CWA disqualification?

As provided for in Executive Order 11738 (3 CFR, 1973 Comp., p. 799), the purpose of CAA and CWA disqualification is to enforce the Federal Government's policy of undertaking Federal procurement and nonprocurement activities in a manner that improves and enhances environmental quality by promoting effective enforcement of the CAA or CWA.

§ 1532.1125 How do award officials and others know if I am disqualified?

If you are convicted under these statutes, the EPA enters your name and address and that of the violating facility into the Excluded Parties List System (EPLS) as soon as possible after the EPA learns of your conviction. In addition, the EPA enters other information describing the nature of your disqualification. Federal award officials and others who administer Federal programs consult the EPLS before entering into or approving procurement and nonprocurement transactions. Anyone may access the EPLS through the internet, currently at *http://www.epls.gov*.

§ 1532.1130 How does disqualification under the CAA or CWA differ from a Federal discretionary suspension or debarment action?

(a) CAA and CWA disqualifications are exclusions mandated by statute. In contrast, suspensions and debarments imposed under subparts A through I of 2 CFR part 180 or under 48 CFR part 9, subpart 9.4, are exclusions imposed at the discretion of Federal suspending or debarring officials. This means that if you are convicted of violating the CAA or CWA provisions described under § 1532.1105, ordinarily your name and that of the violating facility is placed into the EPLS before you receive a confirmation notice of the listing, or have the opportunity to discuss the disqualification with, or seek reinstatement from, the EPA.

(b) CAA or CWA disqualification applies to both the person convicted of the offense, and to the violating facility during performance of an award or covered transaction under the Federal procurement and nonprocurement suspension and debarment system. It is the EPA's policy to carry out CAA and CWA disqualifications in a manner which integrates the disqualifications into the Governmentwide suspension and debarment system. Whenever the EPA determines that the risk presented to Federal procurement and nonprocurement activities on the basis of the misconduct which gives rise to a person's CAA or CWA conviction exceeds the coverage afforded by mandatory disqualification, the EPA may use its discretionary authority to suspend or debar a person under subparts A through I of 2 CFR part 180, or under 48 CFR part 9, subpart 9.4.

§ 1532.1135 Does CAA or CWA disqualification mean that I must remain ineligible?

You must remain ineligible until the EPA debarring official certifies that the condition giving rise to your conviction has been corrected. If you desire to have your disqualification terminated, you must submit a written request for reinstatement to the EPA debarring official and support your request with persuasive documentation. For information about the process for reinstatement see §§ 1532.1205 and 1532.1300.

§ 1532.1140 Can an exception be made to allow me to receive an award even though I may be disqualified?

(a) After consulting with the EPA debarring official, the head of any Federal department or agency (or designee) may exempt any particular award or a class of awards with that department or agency from CAA or CWA disqualification. In the event an exemption is granted, the exemption must:

(1) Be in writing; and

(2) State why the exemption is in the paramount interests of the United States.

(b) In the event an exemption is granted, the exempting department or agency must send a copy of the exemption decision to the EPA debarring official for inclusion in the official record.

§ 1532.1200 How will I know if I am disqualified under the CAA or CWA?

There may be several ways that you learn about your disqualification. You are legally on notice by the statutes that a criminal conviction the CAA or CWA automatically disqualifies you. As a practical matter, you may learn about your disqualification from your defense counsel, a Federal contract or award official, or from someone else who sees your name in the EPLS. As a courtesy, the EPA will attempt to notify you and the owner, lessor or supervisor of the violating facility that your names have been entered into the EPLS. The EPA will inform you of the procedures for seeking reinstatement and give you the name of a person you can contact to discuss your reinstatement request.

§ 1532.1205 What procedures must I follow to have my procurement and nonprocurement eligibility reinstated under the CAA or CWA?

(a) You must submit a written request for reinstatement to the EPA debarring official stating what you believe the conditions were that led to your conviction, and how those conditions have been corrected, relieved or addressed. Your request must include documentation sufficient to support all material assertions you make. The debarring official must determine that all the technical and non-technical causes, conditions and consequences of your actions have been sufficiently addressed so that the Government can confidently conduct future business activities with you, and that your future operations will be conducted in compliance with the CAA and CWA.

(b) You may begin the reinstatement process by having informal discussions with the EPA representative named in your notification of listing. Having informal dialogue with that person will make you aware of the EPA concerns that must be addressed. The EPA representative is not required to negotiate conditions for your reinstatement. However, beginning the reinstatement process with informal dialogue increases the chance of achieving a favorable outcome, and avoids unnecessary delay that may result from an incomplete or inadequate reinstatement request. It may also allow you to resolve your disqualification by reaching an agreement with the EPA debarring official under informal procedures. Using your informal option first does not prevent you from submitting a formal reinstatement request with the debarring official at any time.

§ 1532.1210 Will anyone else provide information to the EPA debarring official concerning my reinstatement request?

If you request reinstatement under § 1532.1205, the EPA debarring official may obtain review and comment on your request by anyone who may have information about, or an official interest in, the matter. For example, the debarring official may consult with the EPA Regional offices, the Department of Justice or other Federal agencies, or state, tribal or local governments. The EPA debarring official will make sure that you have an opportunity to address important allegations or information contained in the administrative record before making a final decision on your request for reinstatement.

§ 1532.1215 What happens if I disagree with the information provided by others to the EPA debarring official on my reinstatement request?

(a) If your reinstatement request is based on factual information (as opposed to a legal matter or discretionary conclusion) that is different from the information provided by others or otherwise contained in the administrative record, the debarring official will decide whether those facts are genuinely in dispute, and material to making a decision. If so, a fact-finding proceeding will be conducted in accordance with 2 CFR 180.830 through 180.840, and the debarring official will consider the findings when making a decision on your reinstatement request.

(b) If the basis for your disagreement with the information contained in the administrative record relates to a legal issue or discretionary conclusion, or is not a genuine dispute over a material fact, you will not have a fact-finding proceeding. However, the debarring official will allow you ample opportunity to support your position for the record and present matters in opposition to your continued disqualification. A summary of any information you provide orally, if not already recorded, should also be submitted to the debarring official in writing to assure that it is preserved for the debarring official's consideration and the administrative record.

§ 1532.1220 What will the EPA debarring official consider in making a decision on my reinstatement request?

(a) The EPA debarring official will consider all information and arguments contained in the administrative record in support of, or in opposition to, your request for reinstatement, including any findings of material fact.

(b) The debarring official will also consider any mitigating or aggravating factors that may relate to your conviction or the circumstances surrounding it, including any of those factors that appear in 2 CFR 180.860 that may apply to your situation.

(c) Finally, if disqualification applies to a business entity, the debarring official will consider any corporate or business attitude, policies, practices and procedures that contributed to the events leading to conviction, or that may have been implemented since the date of the misconduct or conviction. You can obtain any current policy directives issued by the EPA that apply to CAA or CWA disqualification or reinstatement by contacting the Office of the EPA Debarring Official, U.S. EPA, Office of Grants and Debarment (3901R), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

§ 1532.1225 When will the EPA debarring official make a decision on my reinstatement request?

(a) The EPA debarring official will make a decision regarding your reinstatement request under § 1532.1205(a), when the administrative record is complete, and he or she can determine whether the condition giving rise to the CAA or CWA conviction has been corrected-usually within 45 days of closing the administrative record.

(b) A reinstatement request is not officially before the debarring official while you are having informal discussions under § 1532.1205(b).

§ 1532.1230 How will the EPA debarring official notify me of the reinstatement decision?

The EPA debarring official will notify you of the reinstatement decision in writing, using the same methods for communicating debarment or suspension action notices under 2 CFR 180.615.

§ 1532.1300 Can I resolve my eligibility status under terms of an administrative agreement without having to submit a formal reinstatement request?

(a) The EPA debarring official may, at any time, resolve your CAA or CWA eligibility status under the terms of an administrative agreement. Ordinarily, the debarring official will not make an offer to you for reinstatement until after the administrative record for decision is complete, or contains enough information to enable him or her to make an informed decision in the matter.

(b) Any resolution of your eligibility status under the CAA or CWA resulting from an administrative agreement must include a certification that the condition giving rise to the conviction has been corrected.

(c) The EPA debarring official may enter into an administrative agreement to resolve CAA or CWA disqualification issues as part of a comprehensive criminal plea, civil or administrative agreement when it is in the best interest of the United States to do so.

§ 1532.1305 What are the consequences if I mislead the EPA in seeking reinstatement or fail to comply with my administrative agreement?

(a) Any certification of correction issued by the EPA debarring official whether the certification results from a reinstatement decision under §§ 1532.1205(a) and 1532.1230, or from an administrative agreement under §§ 1532.1205(b) and 1532.1300, is conditioned upon the accuracy of the information, representations or assurances made during development of the administrative record.

(b) If the EPA debarring official finds that he or she has certified correction of the condition giving rise to a CAA or CWA conviction or violation on the basis of a false, misleading, incomplete or inaccurate information; or if a person fails to comply with material condition of an administrative agreement, the EPA debarring official may take suspension or debarment action against the person(s) responsible for the misinformation or noncompliance with the agreement as appropriate. If anyone provides false, inaccurate, incomplete or misleading information to EPA in an attempt to obtain reinstatement, the EPA debarring official will refer the matter to the EPA Office of Inspector General for potential criminal or civil action.

§ 1532.1400 How may I appeal a decision denying my request for reinstatement?

(a) If the EPA debarring official denies your request for reinstatement under the CAA or CWA, you can ask for review of the debarring official's decision in two ways:

(1) You may ask the debarring official to reconsider the decision for material errors of fact or law that you believe will change the outcome of the matter; and/ or

(2) You may request the Director, Office of Grants and Debarment (OGD Director), to review the debarring official's denial within 30 days of your receipt of the debarring official's decision under § 1532.1230 or paragraph (a)(1) of this section. However, the OGD Director can reverse the debarring official's decision denying reinstatement only where the OGD Director finds that there is a clear error of material fact or law, or where the OGD Director finds that the debarring official's decision was arbitrary, capricious, or an abuse of discretion.

(b) A request for review under this section must be in writing and state the specific findings you believe to be in error and include the reasons or legal bases for your position.

(c) A review under this section is solely within the discretion of the OGD Director.

(d) The OGD Director must notify you of his or her decision under this section, in writing, using the notice procedures at 2 CFR 180.615 and 180.975.

§ 1532.1500 If I am reinstated, when will my name be removed from the EPLS?

If your eligibility for procurement and nonprocurement participation is restored under the CAA or CWA, whether by decision, appeal, or by administrative agreement, the EPA will remove your name and that of the violating facility from the EPLS, generally within 5 working days of your reinstatement.

§ 1532.1600 What definitions apply specifically to actions under this subpart?

In addition to definitions under subpart A through I of 2 CFR part 180 that apply to this part as a whole, the following two definitions apply specifically to CAA and CWA disqualifications under this subpart:

(a) Person means an individual, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, or any interstate body.

(b) Violating facility means any building, plant, installation, structure, mine, vessel, floating craft, location or site of operations that gives rise to a CAA or CWA conviction, and is a location at which or from which a Federal contract, subcontract, loan, assistance award or other covered transactions may be performed. If a site of operations giving rise to a CAA or CWA conviction contains or includes more than one building, plant, installation, structure, mine, vessel, floating craft, or other operational element, the entire location or site of operation is regarded as the violating facility unless otherwise limited by the EPA.

Section 00005 – Attachment T



Executive Order 11738

NATIONAL ARCHIVES

Executive Orders

Executive Order 11738--Providing for administration of the Clean Air Act and the Federal Water Pollution Control Act with respect to Federal contracts, grants, or loans

Source: The provisions of Executive Order 11738 of Sept. 10, 1973, appear at 38 FR 25161, 3 CFR, 1971-1975 Comp., p. 799, unless otherwise noted.

By virtue of the authority vested in me by the provisions of the Clean Air Act, as added by the Clean Air Amendments of 1970 (Public Law 91-604), and the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq*.), particularly section 508 of that Act as added by the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500), it is hereby ordered as follows:

Section 1. *Policy.* It is the policy of the Federal Government to improve and enhance environmental quality. In furtherance of that policy, the program prescribed in this Order is instituted to assure that each Federal agency empowered to enter into contracts for the procurement of goods, materials, or services and each Federal agency empowered to extend Federal assistance by way of grant, loan, or contract shall undertake such procurement and assistance activities in a manner that will result in effective enforcement of the Clean Air Act (hereinafter referred to as "the Air Act") and the Federal Water Pollution Control Act (hereinafter referred to as "the Water Act").

Sec. 2. *Designation of Facilities.* (a) The Administrator of the Environmental Protection Agency (hereinafter referred to as "the Administrator") shall be responsible for the attainment of the purposes and objectives of this Order.
(b) In carrying out his responsibilities under this Order, the Administrator shall, in conformity with all applicable requirements of law, designate facilities which have given rise to a conviction for an offense under section 113(c)(1) of the Air Act or section 309(c) of the Water Act. The Administrator shall, from time to time, publish and circulate to all Federal agencies lists of those facilities, together with the names and addresses of the persons who have been convicted of such offenses. Whenever the Administrator determines that the condition which gave rise to a conviction has been corrected, he shall promptly remove the facility and the name and address of the person concerned from the list.

Sec. 3. *Contracts, Grants, or Loans.* (a) Except as provided in section 8 of this Order, no Federal agency shall enter into any contract for the procurement of goods, materials, or services which is to be performed in whole or in part in a facility then designated by the Administrator pursuant to section 2.
(b) Except as provided in section 8 of this Order, no Federal agency authorized to extend Federal assistance by way of grant, loan, or contract shall extend such assistance in any case in which it is to be used to support any activity or program involving the use of a facility then designated by the Administrator pursuant to section 2.

Sec. 4. *Procurement, Grant, and Loan Regulations.* The Federal Procurement Regulations, the Armed Services Procurement Regulations, and, to the extent necessary, any supplemental or comparable regulations issued by any agency of the Executive Branch shall, following consultation with the Administrator, be amended to require, as a condition of entering into, renewing, or extending any contract for the procurement of goods, materials, or services or extending any assistance by way of grant, loan, or contract, inclusion of a provision requiring compliance with the Air Act, the Water Act, and standards issued pursuant thereto in the facilities in which the contract is to be performed, or which are involved in the activity or program to receive assistance.

Sec. 5. *Rules and Regulations.* The Administrator shall issue such rules, regulations, standards, and guidelines as he may deem necessary or appropriate to carry out the purposes of this Order.

Sec. 6. *Cooperation and Assistance.* The head of each Federal agency shall take such steps as may be necessary to insure that all officers and employees of his agency whose duties entail compliance or comparable functions with respect to contracts, grants, and loans are familiar with the provisions of this Order. In addition to any other appropriate action, such officers and employees shall report promptly any condition in a facility which may involve noncompliance with the Air Act or the Water Act or any rules, regulations, standards, or guidelines issued pursuant to this Order to the head of the agency, who shall transmit such reports to the Administrator.

Sec. 7. *Enforcement.* The Administrator may recommend to the Department of Justice or other appropriate agency that legal proceedings be brought or other appropriate action be taken whenever he becomes aware of a breach of any provision required, under the amendments issued pursuant to section 4 of this Order, to be included in a contract or other agreement.

Sec. 8. *Exemptions--Reports to Congress.* **(a) Upon a determination that the paramount interest of the United States so requires--**

(1) The head of a Federal agency may exempt any contract, grant, or loan, and, following consultation with the Administrator, any class of contracts, grants or loans from the provisions of this Order. In any such case, the head of the Federal agency granting such exemption shall (A) promptly notify the Administrator of such exemption and the justification therefore; (B) review the necessity for each such exemption annually; and (C) report to the Administrator annually all such exemptions in effect. Exemptions granted pursuant to this section shall be for a period not to exceed one year. Additional exemptions may be granted for periods not to exceed one year upon the making of a new determination by the head of the Federal agency concerned.

(2) The Administrator may, by rule or regulation, exempt any or all Federal agencies from any or all of the provisions of this Order with respect to any class or classes of contracts, grants, or loans, which (A) involve less than specified dollar amounts, or (B) have a minimal potential impact upon the environment, or (C) involve persons who are not prime contractors or direct recipients of Federal assistance by way of contracts, grants, or loans.

(b) Federal agencies shall reconsider any exemption granted under subsection (a) whenever requested to do so by the Administrator.

(c) The Administrator shall annually notify the President and the Congress of all exemptions granted, or in effect, under this Order during the preceding year.

Sec. 9. *Related Actions.* The imposition of any sanction or penalty under or pursuant to this Order shall not relieve any person of any legal duty to comply with any provisions of the Air Act or the Water Act.

Sec. 10. *Applicability.* This Order shall not apply to contracts, grants, or loans involving the use of facilities located outside the United States.

Sec. 11. *Uniformity.* Rules, regulations, standards, and guidelines issued pursuant to this order and section 508 of the Water Act shall, to the maximum extent feasible, be uniform with regulations issued pursuant to this order, Executive Order No. 11602 of June 29, 1971, and section 306 of the Air Act.

Sec. 12. *Order Superseded.* Executive Order No. 11602 of June 29, 1971, is hereby superseded.

The U.S. National Archives and Records Administration
1-86-NARA-NARA or 1-866-272-6272

Section 00005 – Attachment U

Age Discrimination Act of 1975

U.S. DEPARTMENT OF LABOR

Office of the Assistant Secretary for Administration & Management

Age Discrimination Act of 1975

(42 U.S.C. Sections 6101-6107)

Section 6101. Statement of purpose

It is the purpose of this chapter to prohibit discrimination on the basis of age in programs or activities receiving Federal financial assistance.

Section 6102. Prohibition of discrimination

Pursuant to regulations prescribed under section 6103 of this title, and except as provided by section 6103(b) of this title and section 6103(c) of this title, no person in the United States shall, on the basis of age, be excluded from participation, in be denied the benefits of, or be subjected to discrimination under, any program or activity receiving Federal financial assistance.

Section 6103. Regulations

(a) Publication in Federal Register of proposed general regulations, final general regulations, and anti-discrimination regulations; effective date.

(1) Not later than one year after the transmission of the report required by section 6106(b) of this title, or two and one-half years after November 28, 1975, whichever occurs first, the Secretary of Health and Human Services shall publish in the Federal Register proposed general regulations to carry out the provisions of section 6102 of this title.

(2)(A) The Secretary shall not publish such proposed general regulations until the expiration of a period comprised of--

(i) the forty-five day period specified in section 6016(e) of this title, and

(ii) an additional forty-five day period, immediately following the period described in clause (i), during which any committee of the Congress having jurisdiction over the subject matter involved may conduct hearings with respect to the report which the Commission is required to transmit under section 6106(d) of this title, and with respect to the comments and recommendations submitted by Federal departments and agencies under section 6106(e) of this title.

(B) The forty-five day period specified in subparagraph (A)(ii) shall include only days during which both Houses of the Congress are in session.

(3) Not later than ninety days after the Secretary publishes proposed regulations under paragraph (1), the Secretary shall publish in the Federal Register final general regulations to carry out the provisions of section 6106(e) of this title, after taking into consideration any comments received by the Secretary with respect to the regulations proposed under paragraph (1).

(4) Not later than ninety days after the Secretary publishes final general regulations under paragraph (a)(3), the head of each federal department or agency which extends Federal financial assistance to any program or activity by way of grant, entitlement, loan, or contract other than a contract of insurance or guaranty, shall transmit to the Secretary and publish in the Federal Register proposed regulations to carry out the provisions of section 6102 of this title and to provide appropriate investigative, conciliation, and enforcement procedures. Such regulations shall be consistent with the final general regulations issued by the Secretary, and shall not become effective until approved by the Secretary.

(5) Notwithstanding any other provision of this section, no regulations issued pursuant to this section shall be effective before July 1, 1979.

(b) Nonviolative actions; program or activity exemption.

(1) it shall not be a violation of any provision of this chapter, or of any regulation issued under this chapter, for any person to take any action otherwise prohibited by the provisions of section 6102 of this title if, in the program or activity involved--

(A) Such action reasonably takes into account age as a factor necessary to the normal operation or the achievement of any statutory objective of such program or activity; or

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(B) the differentiation made by such action is based upon reasonable factors other than age.

(2) The provisions of this chapter shall not apply to any program or activity established under authority of any law which (A) provides any benefits or assistance to persons based upon the age of such persons; or (B) establishes criteria for participation in age-related terms or describes intended beneficiaries or target groups in such terms.

(c) Employment practices and labor-management joint apprenticeship training program exemptions; Age Discrimination in Employment Act unaffected.

(1) Except with respect to any program or activity receiving Federal financial assistance for public service employment under the Workforce Investment Act of 1998 (29 USC 9201 *et seq*.), nothing in this chapter shall be construed to authorize action under this chapter by any Federal department or agency with respect to any employment practice of any employer, employment agency, or labor organization, or with respect to any labor-management joint apprenticeship training program.

(2) Nothing in this chapter shall be construed to amend or modify the Age Discrimination in Employment Act of 1967(29 U.S.C. §§ 621-634) as amended, or to affect the rights of responsibilities of any person or party pursuant to such Act.

Section 6104. Enforcement

(a) Methods of achieving compliance with regulations.

The head of any Federal department or agency who prescribes regulations under section 6103 of this title, may seek to achieve compliance with any regulation--

(1) by terminating, or refusing to grant or to continue, assistance under the program or activity involved to any recipient with respect to whom there has been an express finding on the record, after reasonable notice and opportunity for hearing, of a failure to comply with any such regulation; or

(2) by any other means authorized by law.

(b) Limitations on termination of, or on refusal to grant or to continue, assistance; disbursement of withheld funds to achiever agencies.

Any termination of, or refusal to grant or to continue, assistance under subsection (a)(1) of this section shall be limited to the particular political entity or other recipient with respect to which a finding has been made under subsection (a)(1) of this section. Any such termination or refusal shall be limited to its effect to the particular program or activity, or part of such program or activity, with respect to which such finding has been made. No such termination or refusal shall be based in whole or in part on any finding with respect to any program or activity which does not receive Federal financial assistance. Whenever the head of any Federal department or agency who prescribes regulations under section 6103 of this title withholds funds pursuant to the subsection (a) of this section, he may, in accordance with regulations he shall prescribe, disburse the funds so withheld directly to any public or nonprofit private organization or agency, or State or political s ubdivision thereof, which demonstrates the ability to achieve the goals of the Federal statute authorizing the program or activity while complying with regulations issued under section 6103 of this title.

(c) Advice as to failure to comply with regulation; determination that compliance cannot be secured by voluntary means

No action may be taken under subsection (a) of this title until the head of the Federal department or agency involved has advised the appropriate person of the failure to comply with the regulation involved and has determined that compliance cannot be secured by voluntary means.

(d) Report to congressional committees

In the case of any action taken under subsection (a) of this section, the head of the Federal department or agency involved shall transmit a written report of the circumstances and grounds of such action to the committees of the House of Representative and the Senate having legislative jurisdiction over the program or activity involved. No such action shall take effect until thirty days after the transmission of any such report.

(e) Injunctions; notice of violations; costs; conditions of actions

(1) When any interested person brings an action in any United States district court for the district in which the defendant is found or transacts business to enjoin a violation of this Act by any program or activity receiving Federal financial assistance, such interested person shall give notice by registered mail not less than 30 days prior to the commencement of that action to the Secretary of

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Health and Human Services, the Attorney General of the United States, and the person against whom the action is directed. Such interested person may elect, by a demand for such relief in his complaint, to recover reasonable attorney's fees, in which case the court shall award the costs of suit, including a reasonable attorney's fee, to the prevailing plaintiff.

(2) The notice referred to in paragraph (1) shall state the nature of the alleged violation, the relief to be requested, the court in which the action will be brought, and whether or not attorney's fees are being demanded in the event the plaintiff prevails. No action described in paragraph (1) shall be brought (A) if at the time the action is brought the same alleged violation by the same defendant is the subject of a pending action in any court of the United States; or (B) if administrative remedies have not been exhausted.

(f) Exhaustion of administrative remedies

With respect to actions brought for relief based on an alleged violation of the provisions of this chapter, administrative remedies shall be deemed exhausted upon the expiration of 180 days from the filing of an administrative complaint during which time the Federal department or agency makes no finding with regard to the complaint, or upon the day that the Federal department or agency issues a finding in favor of the recipient of financial assistance, whichever occurs first.

Section 6105. Judicial review

(a) Revisions of other laws

Any action by any Federal Department or agency under section 6104 of this title shall be subject to such judicial review as any otherwise be provided by law for similar action taken by any such department or agency on other grounds.

(b) Provisions of Chapter 7 of Title 5; reviewable agency discretion

In the case of any action by any Federal department or agency under section 6104 of this title which is not otherwise subject to judicial review, any person aggrieved (including any State or political subdivision thereof and any agency of either) may obtain judicial review of such action in accordance with the provisions of chapter 7 of Title 5. For purposes of this subsection, any such action shall not be purposes of this subsection, any such action shall not be considered committed to unreviewable agency discretion within the meaning of section 701(a)(2) of such title.

Section 6106. Study of discrimination based on age

(a) Study by Commission on Civil Rights

The Commission on Civil Rights shall (1) undertake a study of unreasonable discrimination based on age in programs and activities receiving Federal financial assistance; and (2) identify with particularity any such federally assisted program or activity in which there is found evidence of persons who are otherwise qualified being, on the basis of age, excluding from particpation in, denied the benefits of, or subjected to discrimination under such program or activity.

(b) Public hearings

As part of the study required by this section, the Commission shall conduct public hearings to elicity the views of interested parties, including Federal departments and agencies, on issues relating to age discrimination in programs and activities receiving Federal financial assistance, and particularly with respect to the reasonableness of distinguishing, on the basis of age, among potential participants in, or beneficiaries of, specific federally assisted programs.

(c) Publication of results of analyses, research and studies by independent experts; services of voluntary or uncompensated personnel

The Commission is authorized to obtain through grant or contract, analyses, research and studies by independent experts of issues relating to age discrimination and to publish the results thereof. For purposes of the study required by this section, the Commission may accept and utilize the services of voluntary or uncompensated personnel, without regard to the provisions of section 1975d(b) of this title.

(d) Report to President and Congress; copies to affected Federal departments and agencies; information and technical assistance

Not later than two years after November 28, 1975, the Commission shall transmit a report of its findings and its recommendations for statutory changes (if any) and administrative action, including suggested general regulations, to the Congress and to the President and shall provide a copy of its report to the head of each Federal department and agency with respect to which the Commission makes findings or recommendations. The Commission is authorized to provide, upon request, information and technical assistance regarding its findings and recommendations to Congress, to the President, and to the heads of Federal departments and agencies for a ninety-day period following the transmittal of its report.

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(e) Comments and recommenations of Federal departments and agencies; submission to President and Congressional committees

Not later than forty-five working days after receiving a copy of the report required by subsection (d) of this section, each Federal department or agency with respect to which the Commission makes findings or recommendations shall submit its comments and recommendations regarding such report to the President and to the Committee on Labor and Human Resources of the Senate and the Committee on Education and Labor of the House of Representatives.

(f) Cooperation of Federal departments and agencies with Commission

The head of each Federal department or agency shall cooperate in all respects with the Commission with respect to the study required by subsection (a) of this section, and shall provide to the Commission such data, reports, and documents in connection with the subject matter of such study as the Commission may request.

(g) Authorization of appropriations

There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this section.

§ 6106a. Reports to the Secretary and Congress

(a) Reports to Secretary

Not later than December 31 of each year (beginning in 1979), the head of each Federal department or agency shall submit to the Secretary of Health and Human Services a report (1) describing in detail the steps taken during the preceding fiscal year by such department or agency to carry out the provisions of section 6102 of this title; and (2) containing specific data about program participants or beneficiaries, by age, sufficient to permit analysis of how well the department or agency is carrying out the provisions of section 6102 of this title.

(b) Reports to Congress

Not later than March 31 of each year (beginning in 1980), the Secretary of Health and Human Services shall compile the reports made pursuant to subsection (a) of this section and shall submit them to the Congress, together with an evaluation of the performance of each department or agency with respect to carrying out the provisions of section 6102 of this title.

§ 6107. Definitions

For the purposes of this chapter--

(1) the term "Commission" means the Commission on Civil Rights;

(2) the term "Secretary" means the Secretary of Health and Human Services;

(3) the term "Federal department or agency" means any agency as defined in section 551 of Title 5 and includes the United States Postal Service and the Postal Rate Commission; and

(4)the term "program or activity" means all of the operations of --

(A)(i) a department, agency, special purpose district, or other instrumentality of a State or of a local government; or

(ii) the entity of such State or local government that distributes such assistance and each such department or agency (and each other State or local government entity) to which the assistance is extended, in the case of assistance to a State or local government;

(B)(i) a college, university, or other postsecondary institution, or a public system of higher education; or

(ii) a local educational agency (as defined in section 8801 of Title 20), system of vocational education, or other school system;

"(C)(i) an entity, partnership, or other private organization, or an entire sole proprietorship --

"(I) if assistance is extended to such corporation, partnership, private organization, or sole proprietorship as a whole; or

"(II) which is principally engaged in the business of providing education, health care, housing, social services, or parks and recreation; or

"(ii) the entire plant or other comparable, geographically separate facility to which Federal financial assistance is extended, in the case of any other corporation, partnership, private organization, or sole proprietorship; or

"(D) any other entity which is established by two or more of the entities described in paragraph (A), (B) or (C);

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any part of which is extended Federal financial assistance.

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Office of the Assistant Secretary for Administration & Management

An agency within the U.S. Department of Labor

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Section 00005 – Attachment V

Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964

Table of Contents

- Overview of Title VI
- Title VI Regulations & Statutes
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On August 22, 2024, the U.S. District Court for the Western District of Louisiana issued a permanent injunction, available at https://perma.cc/24VN-QS9Y, enjoining the United States Department of Justice ("DOJ") from imposing or enforcing its disparate impact requirements under Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d ("Title VI") in the state of Louisiana. Specifically, DOJ is enjoined from "enforcing the Title VI disparate-impact requirements contained in 40 C.F.R. § 7.35(b), (c) and 28 C.F.R. § 42.104(b)(2) against any entity in the State of Louisiana, or requiring compliance with those requirements as a condition of past, existing, or future awards of financial assistance to any entity in the State of Louisiana." DOJ is fully complying with the court's order. Unless continued litigation results in changes to the court's order, DOJ will not impose or enforce its Title VI disparate impact requirements in Louisiana.

All DOJ guidance documents, including those here, are valid and apply to Louisiana except to the extent they explain legal obligations arising under the DOJ or EPA Title VI disparate impact regulatory provisions. All recipients of DOJ financial assistance (including those in the state of Louisiana) have a continuing obligation to comply with Title VI, which prohibits discrimination against or otherwise excluding individuals on the basis of race, color, or national origin, all other Title VI implementing regulations, and all grant terms and conditions. Recipients must continue to comply with all other applicable nondiscrimination laws and their corresponding implementing regulations.

Disclaimer: Pursuant to Executive Order 14168, issued January 20, 2025, references in documents on this webpage to "gender" should instead be read to reference "sex" consistent with the Executive Order. Any documents on this webpage should be read consistently with Executive Order 14168.

Overview of Title VI

Title VI, 42 U.S.C. § 2000d et seq., was enacted as part of the landmark Civil Rights Act of 1964. It prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance. As President John F. Kennedy said in 1963:

> Simple justice requires that public funds, to which all taxpayers of all races [colors, and national origins] contribute, not be spent in any fashion which encourages, entrenches, subsidizes or results in racial [color or national origin] discrimination.

If a recipient of federal assistance is found to have discriminated and voluntary compliance cannot be achieved, the federal agency providing the assistance should either initiate fund termination proceedings or refer the matter to the Department of Justice for appropriate legal action. Aggrieved individuals may file administrative complaints with the federal agency that provides funds to a recipient, or the individuals may file suit for appropriate relief in federal court. Title VI itself prohibits intentional discrimination. However, most funding agencies have regulations implementing Title VI that prohibit recipient practices that have the effect of discrimination on the basis of race, color, or national origin.

Regulations and Statutes

- Title VI Statute, 42 U.S.C §§ 2000d - 2000d-7 (HTML or PDF)
- Department of Justice's Title VI Regulations (28 C.F.R. § 42.101 et seq.) (HTML or PDF)
- Department of Justice's Title VI Coordination Regulations (28 C.F.R. § 42.401 et seq.) (HTML or PDF)
- Department of Justice's Guidelines for the Enforcement of Title VI (28 C.F.R. § 50.3) (HTML or PDF)
- Rulemaking actions to incorporate the Civil Rights Restoration Act's definitions of "program or activity" and "program" into regulations implementing Title VI, Section 504, and the Age Discrimination Act:
- Twenty-two agencies' Notice of Proposed Rulemaking, published December 6, 2000 (65 FR 76460) (HTML or PDF)
- Twenty-two agencies' Final Rule, published August 26, 2003 (68 FR 51332) (HTML or PDF)
- Department of Education's Notice of Proposed Rulemaking (also includes amendments to Title IX regulations), published May 5, 2000 (65 FR 26464) (HTML or PDF)
- Department of Education's Final Rule (also includes amendments to Title IX regulations), published November 13, 2000 (65 FR 68049) (HTML or PDF)
- Department of Health and Human Services' Notice of Proposed Rulemaking (also includes amendments to Title IX regulations), published October 26, 2000 (65 FR 64194) (HTML or PDF)

Title VI Materials

Executive Order 12250 authorizes the Department of Justice (the Department) to provide issue guidance and technical assistance to individuals and entities that have rights or responsibilities under Title VI of the Civil

Rights Act of 1964. The guidance documents included below provide informal non-binding guidance to assist you in understanding the Act and the Department's regulations.

The guidance documents are not intended to be a final agency action, have no legally binding effect, and have no force or effect of law. The guidance documents may be rescinded or modified in the Department's complete discretion, in accordance with applicable laws. The Department's guidance documents do not establish legally enforceable responsibilities beyond what is required by the terms of the applicable statutes, regulations, or binding judicial precedent. For more information, see "Memorandum for All Components: Prohibition of Improper Guidance Documents," from Attorney General Jefferson B. Sessions III, November 16, 2017.

- In September 2023, as part of President Biden's National Strategy to Counter Antisemitism, eight federal agencies issued Fact Sheets clarifying that Title VI of the Civil Rights Act of 1964 prohibits certain forms of antisemitic, Islamophobic, and related forms of discrimination in federally funded programs and activities.
  - Department of Agriculture
  - Department of Health and Human Services
  - Department of Transportation
  - Department of Labor
  - Department of Housing and Urban Development
  - Department of the Interior
  - Department of Homeland Security
  - Department of the Treasury
- Joint Letter from the Departments of Justice and Homeland Security to State and Local Emergency Managers (PDF) - October 4, 2018
- Tips & Tools for Reaching Limited English Proficient Communities in Emergency Preparedness, Response, and Recovery
- Ensuring Effective Emergency Preparedness, Response, and Recovery for Individuals with Access and Functional Needs: A Checklist for Emergency Managers
- Federal Agencies Issue Joint Guidance to Help Emergency Preparedness, Response and Recovery Providers Complys with Title VI of the Civil Rights Act
  - Agencias Federales Emiten Directrices Conjuntas Para Ayudar A Los Proveedores De Preparación, Respuesta Y Recuperación Frente A Emergencias A Cumplir Con El Título Vi De La Ley De Derechos Civiles
  - 联邦政府机构签发联合指导，以帮助应急准备、响应和恢复的提供商遵守民权法案第 VI 章的各项规定
  - 聯邦政府機構簽發聯合指導，以幫助應急準備、回應和恢復的提供商遵守民權法案第 VI 章的各項規定
  - Các Cơ Quan Liên Bang Ban Hành Hướng DẫN Liên BỘ Giúp Các Đơn VỊ Cung CẤp ChuẨn BỊ SẴn Sàng, Ứng Phó Và PhỤc HỒi KhẨn CẤp Tuân ThỦ Theo Tiêu ĐỀ Vi CỦa ĐẠo LuẬt Dân QuyỀn
  - 연방정부 부처들, '비상 대비, 대응, 복구 서비스 제공자들'이 시민의 권리법 제6장을 준수할 수 있도록 돕기 위해 공동 안내서 발행

  - Nagpalabas Ang Mga Pederal Na Ahensiya Ng Pinagsamang Gabay Para Tulungan Ang Mga Tagapaglaan Ng Paghahanda Sa Emerhensiya, Tugon At Pag-Recover Na Sumunod Sa Title Vi Ng Civil Rights Act
  - Федеральные Власти Выпустили Совместное Руководство, Чтобы Помочь Организациям, Предоставляющим Услуги Подготовки К Чрезвычайным Ситуациям, Реагированию И Восстановлению, В Вопросах Соблюдении Раздела Vi Закона О Гражданских Правах
  - Ajans Federal Yo Pibliye Yon Gid Kolaboratif Pou Ede Òganizasyon K Ap Bay Sèvis Preparasyon, Repons Ak Retablisman Nan Yon Ka Ijans Respekte Tit Vi Nan Lwa Ki Rele Civil Rights Act
  - Les Agences Fédérales Publient Un Guide Commun Pour Aider Les Intervenants De Protection Civile, D'urgence Et De Reconstruction A Etre Conformes Au Titre Vi De La Loi Sur Les Droits Civils
  - وكالات فيدرالية تصدر دليل توجيهي مشترك لمساعدة مقدمي خدمات الاستعداد للطوارئ والاستجابة لها والتعافي منها للامتثال للباب السادس من قانون الحقوق المدنية

- Fact Sheets: Confronting Discrimination Based on National Origin and Immigration Status, Office for Civil Rights at the Department of Education and Educational Opportunities Section of the Civil Rights Division – August 19, 2021
  - English | العربية (Arabic) | 简体字 (Chinese - Simplified) | 簡體字 (Chinese – Traditional) | Kreyòl ayisyen (Haitian Creole) | Soomaali (Somali) | Español (Spanish) | Tiếng Việt (Vietnamese) | فارسی (Farsi) | پښتو (Pashto)
- Title VI and Coverage of Religiously Identifiable Groups, Assistant Attorney General Thomas Perez Letter to The Office of Civil Rights at the Department of Education (PDF) - September 2010
- Letter from Assistant Attorney General Kim to federal agencies regarding nondiscrimination on the basis of race, color, or national origin: hurricane-related issues (December 12, 2005) (PDF)

Title VI LEP Materials

Disclaimer: On March 1, 2025, an Executive Order "Designating English as the Official Language of the United States" revoked Executive Order 13166 and directed the Attorney General to rescind any policy guidance documents issued pursuant to EO 13166 and provide updated guidance consistent with applicable law. The Department is currently reviewing guidance documents for compliance with the new Executive Order. The new Executive Order does not "require[] or direct[] any change in the services provided by any agency."

- Rescission and Notice of Intent to Issue the Rescission of Title VI Guidance in the Federal Register
- Law Enforcement Language Access Initiative
- State Courts and Language Access
- LEP.gov - Federal Interagency Language Access Website

Updated March 24, 2025

Civil Rights Division

U.S. Department of Justice

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Civil Rights Division

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Section 00005 – Attachment W

Federal Water Pollution Control Act
Amendments of 1972

Section 13 of the Federal Water Pollution Control Act Amendments of 1972

Pursuant to a permanent injunction issued by the U.S. District Court for the Western District of Louisiana on August 22, 2024, EPA will not impose or enforce any disparate-impact or cumulative-impact-analysis requirements under Title VI against any entity in the State of Louisiana. Click here for additional and updated information <https://epa.gov/external-civil-rights/notice-compliance-permanent-injunction-louisiana-v-epa-et-al>**.**

Section 13 provides:

No person in the United States shall on the ground of sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance under this Act, the Federal Water Pollution Control Act, or the Environmental Financing Act. This section shall be enforced through agency provisions and rules similar to those already established, with respect to racial and other discrimination, under Title VI of the Civil Rights Act of 1964. However, this remedy is not exclusive and will not prejudice or cut off any other legal remedies available to a discriminate.

Section 13 of the Federal Water Pollution Control Act Amendments of 1972 (PDF) <https://www.govinfo.gov/content/pkg/uscode-2021-title33/pdf/uscode-2021-title33-chap26-subchapi-sec1251.pdf> is published in the United States Code at 33 U.S.C. §1251.

The nondiscrimination provisions of Section 13 also apply to recipients of financial assistance under the Environmental Financing Act, which is published in the United States Code at 33 U.S.C. §1281. <https://www.govinfo.gov/content/pkg/uscode-2021-title33/pdf/uscode-2021-title33-chap26-subchapii-sec1281.pdf> (PDF)

EPA's Section 13 implementing regulations are published in the Code of Federal Regulations at 40 C.F.R. Part 7 (PDF) <https://www.gpo.gov/fdsys/pkg/cfr-2014-title40-vol1/pdf/cfr-2014-title40-vol1-part7.pdf> (Nondiscrimination in Programs Receiving Federal Assistance From the Environmental Protection Agency.)

EPA's Civil Rights regulations (40 C.F.R. Part 7) (PDF) <https://www.gpo.gov/fdsys/pkg/cfr-2014-title40-vol1/pdf/cfr-2014-title40-vol1-part7.pdf> (Nondiscrimination in Programs Receiving Federal Assistance from the Environmental Protection Agency) implement not only Title VI of the Civil Rights Act of 1964, as amended, but also section 504 of the Rehabilitation Act of 1973, as amended, and Section 13 of the [Clean Water Act] Federal Water Pollution Control Act Amendments of 1972, Public Law 93-500.

Last updated on December 20, 2024

Section 00005 – Attachment X

Rehabilitation Act of 1973

U.S. DEPARTMENT OF LABOR

Office of the Assistant Secretary for Administration & Management

Section 504, Rehabilitation Act of 1973

Section 794. Nondiscrimination under Federal grants and programs; promulgation of rules and regulations

(a) Promulgation of rules and regulations

No otherwise qualified individual with a disability in the United States, as defined in section 705 (20) of this title, shall, solely by reason of his or her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance or under any program or activity conducted by any Executive agency or by the United States Postal Service. The head of each such agency shall promulgate such regulations as may be necessary to carry out the amendments to this section made by the Rehabilitation, Comprehensive Services, and Development Disabilities Act of 1978. Copies of any proposed regulations shall be submitted to appropriate authorizing committees of the Congress, and such regulation may take effect no earlier than the thirtieth day after the date of which such regulation is so submitted to such committees. See also 29 CFR Part 32 and 29 CFR Part 37.

(b) "Program or activity" defined

For the purposes of this section, the term "program or activity" means all of the operations of --

(1)(A) a department, agency, special purpose district, or other instrumentality of a State or of a local government; or

(B) the entity of such State or local government that distributes such assistance and each such department or agency (and each other State or local government entity) to which the assistance is extended, in the case of assistance to a State or local government;

(2)(A) a college, university, or other postsecondary institution, or a public system of higher education; or

(B) a local educational agency (as defined in section 8801 of Title 20), system of vocational education, or other school system;

(3)(A) an entire corporation, partnership, or other private organization, or an entire sole proprietorship --

(i) if assistance is extended to such corporation, partnership, private organization, or sole proprietorship as a whole; or

(ii) which is principally engaged in the business of providing education, health care, housing, social services, or parks and recreation; or

(B) the entire plant or other comparable, geographically separate facility to which Federal financial assistance is extended, in the case of any other corporation, partnership, private organization, or sole proprietorship; or

(4) any other entity which is established by two or more of the entities described in paragraph (l), (2) or (3); any part of which is extended Federal financial assistance.

(c) Significant structural alterations by small providers

Small providers are not required by subsection (a) to make significant structural alterations to their existing facilities for the purpose of assuring program accessibility, if alternative means of providing the services is available. The terms used in this subsection shall be construed with reference to the regulations existing on March 22, 1988.

(d) Standards used in determining violation of section

The standards used to determine whether this section has been violated in a complaint alleging employment discrimination under this section shall be the standards applied under title I of the Americans with Disabilities Act of 1990 (42 U.S.C. 12111 et seq.) and the provisions of sections 501 through 504, and 510, of the Americans with Disabilities Act of 1990 (42 U.S.C. 12201-12204 and 12210), as such sections related to employment.

Section 794a. Remedies and attorney fees

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(a)(1) The remedies, procedures, and rights set forth in section 717 of the Civil Rights Act of 1964 (42 U.S.C. 2000e-16), including the application of sections 706(f) through 706 (k) [42 U.S.C. 2000e-5(f) through k)] shall be available, with respect to any complaint under section 791 of this title, to any employee or applicant for employment aggrieved by the final disposition of such complaint, or by the failure to take final action on such complaint. In fashioning an equitable or affirmative action remedy under such section, a court may take into account the reasonableness of the cost of any necessary work place accommodation, and the availability of alternative therefor or other appropriate relief in order to achieve an equitable and appropriate remedy.

(2) The remedies, procedures, and rights set forth in title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq)shall be available to any person aggrieved by any act or failure to act by any recipient of Federal assistance or Federal provider of such assistant under section 794 of this title.

(b) In any action or proceeding to enforce or charge a violation of a provision of this subchapter, the court, in its discretion, may allow the prevailing party, other than the United States, a reasonable attorney's fee as part of the costs.

Office of the Assistant Secretary for Administration & Management

An agency within the U.S. Department of Labor

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Section 00005 – Attachment Y



Executive Order 11914

The American Presidency Project

(https://www.presidency.ucsb.edu/)



GERALD R. FORD (/PEOPLE/PRESIDENT/GERALD-R-FORD)

Executive Order 11914—Nondiscrimination With Respect to the Handicapped in Federally Assisted Programs

April 28, 1976

By virtue of the authority vested in me by the Constitution and statutes of the United States of America, including section 301 of title 3 of the United States Code, and as President of the United States, and in order to provide for consistent implementation within the Federal Government of section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), it is hereby ordered as follows:

SECTION 1. The Secretary of Health, Education, and Welfare shall coordinate the Implementation of section 504 of the Rehabilitation Act of 1973, as amended, hereinafter referred to as section 504, by all Federal departments and agencies empowered to extend Federal financial assistance to any program or activity. The Secretary shall establish standards for determining who are handicapped individuals and guidelines for determining what are discriminatory practices, within the meaning of section 504. The Secretary shall assist Federal departments and agencies to coordinate their programs and activities and shall consult with such departments and agencies, as necessary so that consistent policies, practices, and procedures are adopted with respect to the enforcement of section 504.

SEC. 2. In order to implement the provisions of section 504, each Federal department and agency empowered to provide Federal financial assistance shall issue rules, regulations, and directives, consistent with the standards and procedures established by the Secretary of Health, Education, and Welfare.

SEC. 3. (a) Whenever the appropriate department or agency determines, upon all the information available to it, that any recipient of, or applicant for, Federal financial assistance is in noncompliance with the requirements adopted pursuant to this order, steps to secure voluntary compliance shall be carried out in accordance with standards and procedures established pursuant to this order.

(b) If voluntary compliance cannot be secured by informal means, compliance with section 504 may be effected by the suspension or termination of, or refusal to award or continue, Federal financial assistance or by other appropriate means authorized by law, in accordance with standards and procedures established pursuant to this order.

(c) No such suspension or termination of, or refusal to award or continue, Federal financial assistance shall become effective unless there has been an express finding, after opportunity for a hearing, of a failure by the recipient of, or applicant for, Federal financial assistance to comply with the requirements adopted pursuant to this order; however, such suspension or termination of, or refusal to award or continue, Federal financial assistance shall be limited in its effect to the particular program or activity or part thereof with respect to which there has been such a finding of noncompliance.

SEC. 4. Each Federal department and agency shall furnish the Secretary of Health, Education, and Welfare such reports and information as the Secretary requests and shall cooperate with the Secretary in the implementation of section 504.

SEC. 5. The Secretary of Health, Education, and Welfare may adopt rules and regulations and issue orders which he deems are necessary to carry out his responsibilities under this order. The Secretary shall ensure that such rules, regulations, and orders are not inconsistent with, or duplicative of, other Federal Government policies relating to the handicapped, including those policies adopted in accordance with sections 501, 502, and 503 of the Rehabilitation Act of 1973, as amended, or the Architectural Barriers Act of 1968 (42 U.S.C. 4151 et seq.)

GERALD R. FORD

The White House,

April 28, 1976.

Gerald R. Ford, Executive Order 11914—Nondiscrimination With Respect to the Handicapped in Federally Assisted Programs Online by Gerhard Peters and John T. Woolley, The American Presidency Project
https://www.presidency.ucsb.edu/node/268669

Section 00005 – Attachment Z

Executive Order 12250

NATIONAL ARCHIVES

Executive Orders

Executive Order 12250--Leadership and Coordination of Nondiscrimination Laws

Source: The provisions of Executive Order 12250 of Nov. 2, 1980, appear at 45 FR 72995, 3 CFR, 1980 Comp., p. 298, unless otherwise noted.

By the authority vested in me as President by the Constitution and statutes of the United States of America, including section 602 of the Civil Rights Act of 1964 (42 U.S.C. 2000d-1), Section 902 of the Education Amendments of 1972 (20 U.S.C. 1682), and Section 301 of Title 3 of the United States Code, and in order to provide, under the leadership of the Attorney General, for the consistent and effective implementation of various laws prohibiting discriminatory practices in Federal programs and programs receiving Federal financial assistance, it is hereby ordered as follows:

1-1. *Delegation of Function.*

1-101. The function vested in the President by Section 602 of the Civil Rights Act of 1964 (42 U.S.C. 2000d-1), relating to the approval of rules, regulations, and orders of general applicability, is hereby delegated to the Attorney General.

1-102. The function vested in the President by Section 902 of the Education Amendments of 1972 (20 U.S.C. 1682), relating to the approval of rules, regulations, and orders of general applicability, is hereby delegated to the Attorney General.

1-2. *Coordination of Nondiscrimination Provisions.*

1-201. The Attorney General shall coordinate the implementation and enforcement by Executive agencies of various nondiscrimination provisions of the following laws:
(a) Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d *et seq.*).
(b) Title IX of the Education Amendments of 1972 (20 U.S.C. 1681 *et seq.*).
(c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794).
(d) Any other provision of Federal statutory law which provides, in whole or in part, that no person in the United States shall, on the ground of race, color, national origin, handicap, religion, or sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance.

1-202. In furtherance of the Attorney General's responsibility for the coordination of the implementation and enforcement of the nondiscrimination provisions of laws covered by this Order, the Attorney General shall review the existing and proposed rules, regulations, and orders of general applicability of the Executive agencies in order to identify those which are inadequate, unclear or unnecessarily inconsistent.

1-203. The Attorney General shall develop standards and procedures for taking enforcement actions and for conducting investigations and compliance reviews.

1-204. The Attorney General shall issue guidelines for establishing reasonable time limits on efforts to secure voluntary compliance, on the initiation of sanctions, and for referral to the Department of Justice for enforcement where there is noncompliance.

1-205. The Attorney General shall establish and implement a schedule for the review of the agencies' regulations which implement the various nondiscrimination laws covered by this Order.

1-206. The Attorney General shall establish guidelines and standards for the development of consistent and effective recordkeeping and reporting requirements by Executive agencies; for the sharing and exchange by agencies of compliance records, findings, and supporting documentation; for the development of comprehensive employee training programs; for the development of effective information programs; and for the development of cooperative programs with State and local agencies, including sharing of information, deferring of enforcement activities, and providing technical assistance.

1-207. The Attorney General shall initiate cooperative programs between and among agencies, including the development of sample memoranda of understanding, designed to improve the coordination of the laws covered by this Order.

1-3. *Implementation by the Attorney General.*

1-301. In consultation with the affected agencies, the Attorney General shall promptly prepare a plan for the implementation of this Order. This plan shall be submitted to the Director of the Office of Management and Budget.

1-302. The Attorney General shall periodically evaluate the implementation of the nondiscrimination provisions of the laws covered by this Order, and advise the heads of the agencies concerned on the results of such evaluations as to recommendations for needed improvement in implementation or enforcement.

1-303. The Attorney General shall carry out his functions under this Order, including the issuance of such regulations as he deems necessary, in consultation with affected agencies.

1-304. The Attorney General shall annually report to the President through the Director of the Office of Management and Budget on the progress in achieving the purposes of this Order. This report shall include any recommendations for changes in the implementation or enforcement of the nondiscrimination provisions of the laws covered by this Order.

1-305. The Attorney General shall chair the Interagency Coordinating Council established by Section 507 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794c).

1-4. *Agency Implementation.*

1-401. Each Executive agency shall cooperate with the Attorney General in the performance of the Attorney General's functions under this Order and shall, unless prohibited by law, furnish such reports and information as the Attorney General may request.

1-402. Each Executive agency responsible for implementing a nondiscrimination provision of a law covered by this Order shall issue appropriate implementing directives (whether in the nature of regulations or policy guidance). To the extent permitted by law, they shall be consistent with the

requirements prescribed by the Attorney General pursuant to this Order and shall be subject to the approval of the Attorney General, who may require that some or all of them be submitted for approval before taking effect.

1-403. Within 60 days after a date set by the Attorney General, Executive agencies shall submit to the Attorney General their plans for implementing their responsibilities under this Order.

1-5. *General Provisions.*

1-501. Executive Order No. 11764 is revoked. The present regulations of the Attorney General relating to the coordination of enforcement of Title VI of the Civil Rights Act of 1964 shall continue in effect until revoked or modified (28 CFR 42.401 to 42.415).

1-502. Executive Order No. 11914 is revoked. The present regulations of the Secretary of Health and Human Services relating to the coordination of the implementation of Section 504 of the Rehabilitation Act of 1973, as amended, shall be deemed to have been issued by the Attorney General pursuant to this Order and shall continue in effect until revoked or modified by the Attorney General.

1-503. Nothing in this Order shall vest the Attorney General with the authority to coordinate the implementation and enforcement by Executive agencies of statutory provisions relating to equal employment.

1-504. Existing agency regulations implementing the nondiscrimination provisions of laws covered by this Order shall continue in effect until revoked or modified.

The U.S. National Archives and Records Administration
1-86-NARA-NARA or 1-866-272-6272

AQUARION
Water Company

Stewards of the Environment™

PROJECT MANUAL

RIDGEFIELD HIGH AND MIDDLE SCHOOL INTERCONNECTION PROJECT

Ridgefield, CT

PREPARED BY:

Snyder Civil Engineering, LLC
Ridgefield, CT

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of this Contract generally consists of the installation of water main and required appurtenances as shown on the Contract Drawings and outlined in these specifications.

B. Furnishing, assembling, and removing temporary facilities, if required to complete the project as shown on the Contract Drawings.

C. The Contractor shall be responsible for furnishing all materials and appurtenances required to complete the project as shown on the Contract Drawings, with the exception of piping materials.

D. All work within the Town/ State jurisdiction shall not commence until approval is received by the Contractor from the Town/ State in which the work under this contract is being performed.

1.02 CONTRACT

A. Construct the Work under a unit item contract as presented in Section 00300 Bid Form.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01013

FACILITY INTERFERENCE WITH PROPOSED WORK

PART 1 GENERAL

1.01 LOCATION OF UNDERGROUND FACILITIES

A. Facilities and other underground locations shown on the Drawings are from the best sources available to the Owner at the time of this Contract preparation and are furnished only for information and convenience of the Contractor and are not guaranteed.

1. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface locations of existing pipes, structures or other underground phenomena actually encountered during construction shall be the same as those shown on the Drawings.
2. It is further agreed and understood that the Contractor shall not use or be entitled to use any of the information made available to him on the plans or obtained in any examination made by him as a basis of any claim or demand against the Owner or the Engineer, because of any variance between the information made available and the subsurface locations of natural phenomena, existing pipes or other structures as actually encountered during the construction work, except as may otherwise be provided for this Section.
3. In general, main line facilities only are shown and not individual connections from main line to buildings.
4. The presence of a structure along a proposed pipeline generally indicates that there will be a corresponding connection to it from whatever main line facilities are in the street.
5. The Contractor shall take all necessary steps, including field inspections and consultations with the Utility Owner and Property Owners, to insure that the most up to date information and accurate information available is used to mark the field location of the facilities, including service connections, prior to construction.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 PIPE LOCATIONS

A. Pipelines and structures installed under this Contract will be located substantially as indicated on the Drawings. The Engineer reserves the right to make such modifications in location and grade as may be found desirable to avoid interference with existing structures and/or facilities or to avoid unsatisfactory locations, all as he may see fit as in the best interests of the Owner.
   1. Contract unit prices shall apply.

B. The locations of pipes, valves, hydrants and any other appurtenances or items included in the work shall not be modified without the written approval of the Engineer.

1.04 PROTECTION OF UNDERGROUND FACILITIES AND DAMAGES THERETO

A. The Contractor shall notify "Call Before You Dig / Dig Safe" of his operations at least 72 hours prior to construction on any portion of the project.
   1. The Contractor shall notify all utility companies of his operations sufficiently in advance of construction and take all measures necessary to avoid damage or undue interruption to the utilities' normal services.
   2. Utility poles shall be supported by the Contractor as designated on the Contract Drawings, Specifications, or as directed by the utilities' owner and all costs shall be included in the contract unit prices with no additional cost to the Aquarion Water Company.
   3. Utility Poles shall be supported unless the owner of the utility pole states in writing that bracing is not necessary.
   4. No additional compensation shall be allowed because of damage to facilities due to test pit excavation.

1.05 CONDITION OF EXISTING FACILITIES

A. In general, poor physical condition of existing facilities shall not be an acceptable basis for claiming additional compensation.
   1. Further, protection or repair of existing facilities outside of the Trench Width shall not be considered as a valid basis for additional compensation.
   2. The Contractor shall take all prudent steps to make himself aware of the physical condition of the existing facilities expected to be encountered, and to adjust his operations accordingly.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 INTERFERENCE AND RELOCATION OF FACILITIES

A. INTERFERENCE BY UTILITIES

1. Interference shall be considered to exist when the facility intrudes within the Trench Width for various depths to invert as tabulated on the Drawings.

3.02 INTERFERENCE COSTS AND CLAIMS

A. Claims for the costs of protecting, repairing and/or replacing facilities which interfere will only be considered when the Engineer determines that:
   1. The facility is not shown on the Drawings.
   2. The facility is shown but the facility is found in a location substantially different from the location shown.
   3. The Contractor has necessarily incurred additional cost because of the interference.
   4. In general, claims will not be considered for cross trench service connections which are not shown on the Drawings or incorrectly shown.

B. It is routine and customary in work of this kind to encounter subsurface or other conditions which require changes in pipe line grade, alignment and/or relocation of facilities or other adjustments which may necessitate rescheduling of the Contractor's work.
   1. The Engineer in general will not approve claims for delay because of changes in alignment or rescheduling of construction.

C. Where facilities are shown on the Drawings to interfere, the Contractor is required to maintain facilities in operation in their existing locations.
   1. Such interferences and the protection and repair of such facilities shall not constitute the basis of an approvable claim.
   2. The cost to maintain such facilities in operation in their existing location shall be included by the Contractor in his bid.

3.03 RELOCATION OF FACILITIES

A. Relocation of facilities is required:
   1. Where indicated on the Drawings.
   2. When a 6-inch or less vertical and horizontal separation cannot be achieved between the existing facility and the new pipe line.
   3. To comply with minimum water/sewer separation.
   4. Relocation may be avoided in certain cases by line and grade adjustments.

B. Existing facilities shall not be disturbed until the facility owner and the Engineer agree to the arrangements and the Engineer requests the relocation to proceed in writing.
   1. If the owners of the facilities permit, and the Engineer so requests, the Contractor shall do the whole or any portion of the relocation work.
   2. Relocation of facilities will generally be by new pipe and appurtenances, approved and furnished by the facility owner, except where it is feasible in the opinion of the Engineer and facility owner to utilize existing materials.

3. If so requested by the facility owner, the Engineer may direct the Contractor to furnish the material.
4. All removed materials remain the property of the facility owner.

3.04 RELOCATION COSTS AND CLAIMS

A. All costs of temporary relocations for the Contractor's convenience shall be borne by the Contractor.

B. Relocation costs for all facilities specified on the Drawings to be relocated shall be the responsibility of the Contractor and be included in the Contractor's bid prices, including those specifically for facility relocations, if such are included.

C. Relocation costs for publicly owned facilities not specified on the Drawings to be relocated, but directed to be relocated by the Engineer in writing, shall be paid in accordance with General Conditions Par. 4.04, B.

D. Relocation costs for privately owned utilities for which relocation is required by the work of this Contract, will not be approved by the Engineer for payment as Extra Work.

E. Exceptions as determined by the Engineer shall be paid in accordance with General Conditions Par. 4.04, B.

3.05 PRIVATE FACILITY COMPANY CLAIM DISTINCTIONS

A. Claims against the Owner by the Contractor for the cost of delays or damage repair sustained by the Contractor because of damage to or interferences between privately owned public facilities and the proposed work will not be considered valid for additional compensation.
1. Claims involving privately owned facilities must be settled between the Contractor and the facility owner.

B. The Owner reserves the right to exercise, or not to exercise, any rights he may have to require relocation of privately owned public facilities at the facility company's expense in case of interferences.
1. If the Owner does not exercise such rights, no claims against the Owner for not exercising such rights shall be approved by the Engineer.

3.06 FACILITY SERVICE CONNECTIONS AND WORK

A. The Contractor shall make all arrangements with the facility companies for temporary and permanent services and relocations required under this Contract, subject to the conditions described elsewhere in these Specifications.
1. Facility companies in the area of work, and/or expected to provide service to the work, shall be arranged for and if required paid for at no additional expense to the Owner.

END OF SECTION

SECTION 01019

DRAWINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contract Drawings may be modified by addenda and shall be issued for construction purposes.
   1. These Drawings may be supplemented or superseded by such additional general and detail drawings as may be necessary and desirable as the work progresses.
   2. The Drawings issued for construction at that time or after the signing of the Contract Documents shall become the Contract Drawings.

B. Dimensions:
   1. Except where noted, the Drawings are made to scale, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the work, and in no case by scaling the prints.
   2. The Contractor shall study and compare all Drawings and verify all figures before laying out or constructing the work and shall be responsible for any and all errors in the Contract work which might have been avoided thereby.
   3. The Contractor shall take all measurements of existing established conditions notwithstanding the figured dimensions on the Drawings.
   4. When figured dimensions are not in agreement with the Contractor's measurements, the Engineer shall be immediately notified and the Engineer will promptly adjust the same.
   5. Whether or not an error is believed to exist, deviations from the Drawings and the dimensions given thereon shall be made only after approval in writing is obtained from the Engineer.

C. Diagrammatic Drawings:
   1. Plans or Drawings where the work is shown diagrammatically indicate approved working systems. Every piece of material, fittings, fixtures or small equipment is not shown, nor every difficulty or interference that may be encountered to carry out the true intent and purpose of the Contract Documents.
   2. All necessary parts to make complete, approved working systems or installation shall be included as if detailed on these Drawings.
   3. The location of pipe lines and appurtenances shown on the Drawings, unless exactly dimensioned, shall be considered as approximate only.
   4. The Contractor shall adjust the position of the pipe lines and appurtenances in accordance with good working practices to meet interferences, provide proper clearance and provide proper access space for operation and maintenance.

D. Typical Details:
   1. Where shown on the Drawings, typical details shall apply to each and every item of the Contract work where such items are incorporated and the detail is applicable.
   2. Unless noted otherwise, such typical details shall be applicable in full.

E. Copies of Drawings Furnished:
   1. Copies of the Contract Drawings and Specifications are available for download at the Owner's electronic procurement site.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 EXISTING AND ADJACENT CONDITIONS

A. Wherever existing conditions or construction not required as part of the work of the Contract are shown, they are so shown as a source of information only. The Engineer, while believing such information is substantially correct, assumes no responsibility thereof.

   1. Before starting any work that might be affected by such existing construction or conditions, the Contractor shall have made himself familiar with all conditions affecting the nature and manner of performing the work, and shall not be entitled to any extra compensation for any work or expense arising from or caused by his neglect to have verified all existing conditions and requirements.

3.02 DISCREPANCIES

A. If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of the Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall report it to ENGINEER in writing at once. Contractor shall not proceed with the Work affected thereby, except in an emergency, until an amendment or supplement to the Contract Documents has been issued; provided, however, that Contractor shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless Contractor knew or reasonably should have known thereof. Any work performed after such discovery without the approval of the Engineer, shall be at the risk and expense of the Contractor.

B. In the event that a conflict between the Contract Drawings and Specifications is discovered, the stricter requirement will govern, as directed by the Engineer.

END OF SECTION

SECTION 01021

CASH ALLOWANCES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: To provide adequate budget and bonding to cover items not precisely determined by the Owner prior to bidding, allow within the proposed Contract Sum the amounts described below.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 01025 Measurement and Payment.

1.03 TYPICAL CASH ALLOWANCES

A. Typical cash allowances will be the following items. The amount of the allowance will be designated on the bid form under its respective item.
   1. Traffic Control (Uniformed Police)
   2. Traffic Control (Certified Flagger)
   3. Compaction Testing
   4. Additional Piping Materials
   5. Repairing Sewer Services
   6. Permits

B. Stated allowances shall be paid as specified in Section 01025, Measurement and Payment.
   1. The requirement for competitive bids is waived.
   2. The dollar amount stated is only approximate.
   3. Whether the approved expenses are more or less, the Contractor shall be reimbursed by the Owner the actual approved costs as billed.
   4. The Contractor is not permitted to charge any markup.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. The purpose of this Section is to define the method of measurement and payment for each of the unit prices or lump sums listed in the Bid Proposal. If no bid item appears in the Bid Proposal for any of the following described items, no work of that description is anticipated on the project.

1. The Contractor shall thoroughly review the work required for each payment item.
2. The Contractor shall have included in his various bid items, an amount to cover costs for additional work which may be necessary, to construct the water mains in the close proximity of underground facilities, services, poles and other facilities which may exist.
3. The discovery of an underground facility during the construction, not shown on the Contract Drawings shall not constitute automatic initiation of a change order. Changes in pipe line, grade and length for the avoidance of interference with underground utilities or obstructions shall be measured and paid for under the contract bid items. The additional work to cross or pass this underground facility must be substantial for consideration for additional payment.
    a. The word "substantial" as used above shall mean that an additional amount of work is required, beyond the work that is normally required in the crossing or paralleling of an underground facility.
    b. Change Orders for construction of horizontal or vertical offsets to avoid an underground utility or obstruction not shown on the Contract Drawings will not be considered.

B. Work shall be measured and paid for using quantities as specified in this section. In the event that a discrepancy is noted in the Bid Form, this section shall govern. It is the responsibility of the bidder to notify the Owner if any discrepancy is found.

C. The Contractor shall be aware that any information provided from subsurface investigations including, but not limited to test pits and borings performed during design are for general informational purposes only and will not be grounds for the Contractor making any claims for additional compensation.

1.02 RELATED WORK

A. Documents affecting the work of this Section include General Conditions, Supplementary Conditions, and all Divisions of these Specifications.

1.03 TRENCH PAYMENT LIMITS

A. The measurements for trench payment limits shall be used for the volume of computing excavation below grade.

1. Trench limits in earth and rock shall be measured within vertical lines. The measured lines shall not exceed a width shown in the Typical Trench Detail in the Aquarion Water Company Standard Details.

2. Grade shall be measured vertically from the surface of the existing ground to a maximum point of four (4) inches below the bottom of the pipe, for trenches in earth.
   a. In trenches where rock is encountered, grade shall be six (6) inches below the bottom of the pipe.
3. In paved roadways the trench width at the roadway surface shall not exceed a width of six (6) feet.
4. If the Owner orders additional excavation below normal grade to remove unsuitable material, the removal of the unsuitable material and the replacement with suitable material will be considered for payment under Item No. 31, Additional Backfill Material.

B. Access Pits For Cleaning and Lining Projects:

1. Generally, the excavations shall be limited to the actual dimensions required to access the water main and to operate the cleaning, lining, and Closed Circuit Television (CCTV) equipment.
2. For bidding purposes, the Support Services Contractor shall assume minimum access pit dimensions of 10 feet in length by 7 feet in width by 6 feet in depth below ground surface. No additional payment shall be made for access pits of larger dimensions.
3. The Support Services Contractor will be responsible for coordinating final location and dimensions of access pits with the Owner's Cleaning and Lining Contractor.

1.04 EARTH EXCAVATION FOR PIPELINE TRENCHES

A. Earth excavation for pipeline trenches from the existing ground surface to pipe sub-grade shall not be paid for separately, and all costs for this excavation shall be included in the unit prices paid for the various pipe laying items.

B. When geotechnical information, including but not limited to boring logs, is provided on the Contract Drawings or in the Contract Documents, it is for general informational purposes only. The Contractor shall not have any grounds for claims due to field conditions differing from the provided geotechnical information.

1.05 NIGHT WORK

A. Night work for connections, water main installation, taps, water services, etc. shall be performed at no additional cost to the Owner.

1.06 ADDITIONAL EXCAVATION

A. Additional excavation directed or approved by the Engineer that is not included under other Items of this Contract shall be paid for under Item 34: Test Pits and Additional Excavation. Unauthorized excavation, excavation to remove unsuitable material below the vertical payment limits, excavation performed for the Contractor's convenience, excavation performed for work included under other Items of this Contract, or excavation unusable due to the Contractor's activities will not be eligible for payment under this item. Refer to Item 34 for work included for payment under this Item.

B. Additional excavation shall include but not necessarily be limited to scheduled excavations performed with the intent of installing pipe fittings, valves, tapping sleeves, making connections to water mains or appurtenances, and water service connections where the work could not be completed due to unforeseen circumstances. The Contractor shall be compensated under Item 34 and will not have any grounds for compensation where excavations were performed for work that could not be completed regardless of crew size, number of crews or subcontractors onsite.

C. Additional Access Pits for Cleaning and Lining Projects:
   1. Excavation of additional access pits directed or approved by the Engineer to remove unforeseen obstructions such as pipe fittings or blockages that cannot be extracted through the pipeline by the Cleaning and Lining Contractor's equipment shall be paid for under Item 223 Access Pits.

1.07 TRENCH BRACING AND SUPPORT

A. All costs for furnishing, installing and removing sheeting, bracing or the use of a steel support box shall be included in the various pipe laying items.

1.08 PIPE BEDDING

A. All costs for stockpiling, loading, hauling, placing and compacting pipe bedding shall be included in the various pipe-laying items.

1.09 SURPLUS MATERIAL

A. All costs for stockpiling, loading, hauling and legal disposing of surplus material shall be included in the various pipe laying items.

1.10 DEWATERING

A. All costs for furnishing, installing and operating a dewatering system regardless of number of pumps, power supply / supplies, and duration of pumping required for complete dewatering of the trench shall be included in the various pipe laying items. The Contractor shall comply with any environmental Permits for the project relating to handling and disposal of trench water at no additional cost to the Owner.

1.11 EXCESS EXCAVATED MATERIAL

A. All costs for transporting, placing and compacting excess material obtained within this Contract shall be included in the various pipe laying items.

1.12 CRUSHED STONE BEDDING, BANK-RUN SAND AND GRAVEL

A. There will be no separate measurement or payment for furnishing and placing, crushed stone bedding, bank run sand and gravel. The cost of such materials and work shall be included in the unit price for the various pipe laying items.

1.13 PRESSURE/LEAKAGE TESTING

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the performance of the pressure/leakage tests of the water main and its appurtenances. The costs associated with pressure/leakage testing shall be included in the unit price for the various pipe-laying items.

1.14 REMOVING AND STACKING OF HYDRANTS & GATE VALVES

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the removal of and stacking of the designated hydrant(s) or gate valves locations determined by the Owner. The cost for this item shall be included in the unit price for the various pipe-laying items.

1.15 CAPPING AND ABANDONMENT (IN-PLACE) OF OLD MAINS

A. No separate payment shall be made for labor, materials, tools and equipment necessary for or incidental to the capping of and abandonment (in-place) of the water mains and valves including closing valves, removing valve boxes and pavement replacement. The cost for this item shall be included in the unit price for the various pipe-laying items.

1.16 REMOVAL OF DEBRIS AND WATER FOR CLEANING PROCESS (CLEANING AND LINING PROJECTS)

A. All costs for cleaning, removal and onsite disposal of debris, tuberculation, water, and excess lining materials from the cleaning and lining process shall be covered under the applicable cleaning and lining billing items.

1.17 RESTORATION OF DAMAGED AREAS

A. All costs for restoration of damaged areas, including but not necessarily limited, to existing sidewalks, curbs, aprons and driveways, shrubs, trees, stone walls, ornamental fencing, Belgian block curbs, aprons and driveways, and lawns, shall be included in the unit price for the various pipe-laying items. All damaged areas shall be restored to pre-construction conditions.

B. All public or private monuments, iron pipes or other types of property line and geodetic markers damaged or disturbed by operations under this Contract shall be reset by a licensed land surveyor, all at no additional cost to the Owner. All other work under this Section, shall not be paid separately, but shall be considered incidental to the work and included in the unit price and lump sum items.

1.18 UNIFORMED POLICE OFFICERS

A. Measurement and payment for traffic persons shall be at hourly rate for the Police Department of the Owner as billed to the Contractor. The allowance in Section 00300, "Bid Form", is approximate. If the uniformed police traffic control expenses are greater or less, the Contractor shall be reimbursed for and limited to the actual cost billed for properly ordered and approved traffic control.

B. The Police Department will generally bill the Contractor weekly, and the Contractor shall pay the Police Department bills within a ten (10) working day period for uniformed Police Officers provided on the job site. The billing shall include a weekly statement outlining the days worked, hours worked, location of the work and rate for all officers providing service during that billing period. The Police Chief must sign all bills.

C. Traffic persons ordered by the Contractor for his convenience or unforeseen problems which are not part of the original project shall be paid at his own expense.

D. The Contractor is responsible for contacting the Police Department in regards to scheduling requirements.

E. Uniformed Police Officers required for purposes other than public safety and/or control of traffic shall not be eligible for reimbursement of payment. No payment will be made for overtime traffic persons unless emergency conditions exist. If the Contractor elects to work more than eight (8) hours in one day, or more than forty (40) hours in one week, he shall assume all such costs and will not be reimbursed under any bid item. However, if the Owner approves emergency overtime, the Owner shall pay the Police Department directly for services rendered.

1.19 TRAFFIC REGULATION

A. Except for the payment of uniformed police officers as outlined in 1.18, there shall be no separate measurement or payment for the work performed under Section 01570 -Traffic Regulation. All costs for furnishing lighted barricades, variable message boards, and traffic protection devices and for labor, equipment and services involved in the erecting, maintaining, moving, adjusting, relocating and storing of signs, flashers, lights, barricades, traffic cones, traffic delineators and other devices furnished by the Contractor, as well as the cost of all labor and equipment involved in the maintenance of traffic lanes and detours ordered or included in the approved scheme for maintenance of traffic shall be included in the unit price bid for the various pipe laying items.

1.20 MEASUREMENT OF QUANTITIES

A. The quantities of the various items of work performed shall be determined, for purposes of progress and final payment, by the Contractor and reviewed by the Engineer.

B. The method of measurements to be used in the determination of quantities of the work of this Contract shall be as specified in this Section.

1. Area Measurements
    a. Unless otherwise specified, measurement for area computations shall be made along the surface and taken to the nearest half (1/2) foot.
2. Linear Measurements
    a. All items such as pipe, service tubing, pavement and curbing, etc., shall be made along the horizontal axis of the item, at the surface, and taken to the nearest foot.
3. Volume Measurements - In figuring volumes the following shall apply:
    a. Test Pits: Measurements shall be taken to the lines and grade actually excavated.
    b. Rock and Boulder: Only boulders greater than one half (1/2) cubic yard in volume and rock as defined in Section 02227, shall be measured for payment. Measurements shall be taken to the lines and grades as specified, in the trench payment limits in this Section.
    c. Measurements for payment of concrete shall the lengths, widths, and depths measured in place within the established payment limits. Concrete load tickets shall serve as backup only to document the concrete plants, concrete types, mixtures, dates and times. The quantity on the concrete load ticket shall not serve as basis for payment of concrete.
4. Lump Sum: The term "lump sum" when used as a unit of payment, shall mean complete payment for the work described in the Contract Documents.
5. Per Each: The term "per each" when used as a unit of payment, shall mean complete payment for each unit furnished and installed, completed and accepted, as described in the Contract Documents.

6. Ton: When used as a pavement payment item, shall be determined by the following method:

   a. Pavement shall be calculated by measurements of the surface area, within the payment limits, by square yards, times the depth of the pavement, times a factor of 0.056, for a conversion to ton basis.
   b. A five (5) percent service factor shall be allowed if a comparison between measurements and delivery slips indicate that additional thickness was placed. If a comparison between delivery slips and measurements indicate less material was placed, the slip quantity shall be used for payment. The Contractor shall submit to the Engineer, one (1) copy of the certified weight slips for all bituminous concrete used in the Work.
   c. Where pavement restoration takes place on more than one street or across more than one of the Owner's project numbers, the load tickets must be broken out by the street name or the Owner's specific project number at the Asphalt Plant. If load tickets are not broken out by street or Owner's project number, the tonnage will be paid using the calculation in 1.20.B.6.a.

1.21 BITUMINOUS CONCRETE PAVEMENT

A. MEASUREMENT

1. Temporary Trench Pavement shall be measured by the actual linear feet installed along the horizontal axis of the pipe as identified in the specifications and on the Drawings. It is the Contractor's responsibility to place temporary trench pavement to the full width of the pavement disturbed at no additional cost to the Owner.
   a. Included in this item shall be the adjustment of all castings, if required to finished grade within the trench. The use of riser or grading rings will not be acceptable.

2. No separate measurement shall be made for cutting of existing pavement, cutting of edges, tack coating, backfilling, compaction, preparation of subgrade; furnishing and installing additional gravel base course; or disposal of materials.

3. No separate measurement shall be made for furnishing and installing reflectorized pavement markings; and the removal and resetting manhole frames, gate boxes, catch basins and private utility castings.

4. Any damages outside the planned limit of permanent pavement restoration shall be the Contractor's responsibility to repair or replace to the requirements of the Town/ State. The Contractor shall be responsible for any additional restoration due to an escalation of paving requirements caused by the Contractor's damages, for example, a change in restoration requirements from trench restoration only, to paving a full lane. Damages include, but are not limited to:

a. Excessive trench width
b. Undermined pavement from inadequately supported trenches
c. Scratching or marring of pavement by equipment
d. Inadequate sawcutting
e. Other conditions reasonably in the Contractor's control for prevention, at the Owner's discretion

5. The Contractor shall place the minimum depth of temporary pavement as required by the Contract Documents. When the Town or Municipality requires temporary pavement be placed to match the depth of the existing pavement thickness and the existing pavement is found to be greater than the specified thickness (+ one half inch), the additional pavement placed beyond the specified thickness shall be measured by the ton. The tonnage of pavement required shall be measured as specified in Item 1.20 of this section and included for payment under Item 39 – Overdepth Temporary Pavement. The tonnage shall be calculated based on the average daily pavement thickness.

6. No separate measurement or payment shall be made for the removal of existing pavement, including bituminous or concrete road base. The removal of any pavement or concrete road base of any thickness shall be included for payment under the various pipe laying items.

7. No separate measurement or payment shall be made for pavement used for temporary transitions around road plates, raised structures, or transitions between milled and existing portions or roadways, driveways, or entrances.

B. DEFINITIONS OF TEMPORARY AND PERMANENT PAVEMENT

1. Unless specified otherwise with specific reference to this section, the definitions of temporary and permanent pavement shall be defined as the following. It is the intent of all projects that temporary pavement be placed to the full permanent depth required, with permanent pavement restoration consisting of a pavement structure placed after a mill and overlay of the road surface, full depth temporary trench patch inclusive, is performed.

a. Temporary Pavement in Town Roads:
Temporary Pavement in town roads shall be covered under: Temporary Trench Pavement (Item No. 37) – Pavement placed along the trench and disturbed areas to the full depth required for permanent installation by the municipality in which work is being performed. For example, in town roads where 4" of pavement thickness is required, temporary trench pavement shall be a minimum of 4" in thickness. Pavement placed to a thickness less than what is required for a permanent installation will be considered for the Contractor's convenience and will not be paid for separately.

b. Temporary Trench Pavement State Roads:
Temporary Trench Pavement (Item No. 37) and Full Depth State Road Temporary Pavement (Item No. 38) – Unless specifically stated otherwise in writing, temporary pavement on State Roads is comprised of the steps below:

i. Prior to placement of the 4-inch thick temporary pavement in excavations within the limits of the State Right-of-Way under Item No. 37, the Contractor must furnish the processed gravel required to provide a full-depth pavement subbase when the Contractor returns to place the full-depth temporary pavement under Item No. 38. For example: If the final trench pavement detail shows a 10-inch thick processed gravel base below 9 inches of bituminous concrete pavement, the Contractor must furnish processed gravel to a total thickness of 15 inches below the 4-inch temporary pavement. There will be no additional measurement or payment for the additional thickness of processed gravel required to make up the difference between the temporary pavement placement under Item No. 37 and the full-depth pavement placement under Item No. 38.

ii. Following placement of the processed gravel, the Contractor shall place 4 inches of temporary pavement to be paid for under Item No. 37.

iii. When directed by the Owner and State, the Contractor shall prepare the trench as shown in the details provided in the Contract Drawings or as directed by the State and place a minimum of 9 inches of temporary pavement as paid for under Item No. 38.

iv. The Contractor will not be eligible for payment under Item No. 38 if pavement is placed to a thickness less than 9 inches. Any thickness less than what is required for a permanent installation under Item No. 38 will be considered for the Contractor's convenience and will not be paid for.

c. Permanent Pavement Restoration (Item Nos. 41 and 42) – Pavement structure placed for final restoration, typically after a mill and overlay, to produce a final wearing course over the restoration limits.

d. Work not performed to the requirements of the state or municipality's requirements will not be eligible for payment.

2. In the event that the state or municipality directs the Contractor to place a temporary pavement thickness that is less than the thickness specified above in the "Definitions of Temporary and Permanent Pavement," the Contractor must do the following prior to proceeding:

1. Immediately notify the Owner's Onsite Representative.
2. Immediately notify the Owner and Engineer in writing.
3. Receive written correspondence from the State or Municipality directing the Contractor to install temporary pavement at a depth less than specified above in paragraph 1. Any written correspondence from the State or Municipality must be forwarded to the Owner.

4. The Contractor must obtain permission from the Owner in writing. The responsibility of full depth pavement replacement and settlement must be addressed at this time. Any pavement replacement less than full depth is to be done in a manner that does not affect the schedule and final acceptance of the road surface by the authority having jurisdiction.

a. After receiving written permission from the Owner to install temporary pavement at a different thickness than specified, payment will be at a prorated quantity based on the specified thickness defined in the “Definitions of Temporary and Permanent Pavement.” Payment is calculated as (New Thickness) / (Specified Thickness) X (Unit Price Bid) X (Trench Length).

b. For example: On a Town Road project where 4 inches of Temporary Pavement is called for, the Municipality directs the Contractor to place 2 inches of temporary pavement over the 100 linear foot trench. After all written notifications to the Owner have taken place, the Owner directs (in writing) the Contractor to place temporary pavement to the new 2-inch thickness. If the Contractor’s unit price bid is $10 per linear foot, payment is calculated as follows: (2 inches / 4 inches) X $10 X 100 l.f. = $500.

c. The Contractor will not be paid for any temporary pavement that is placed to a thickness less than that defined in the “Definitions of Temporary and Permanent Pavement,” without written direction from the Owner.

1.22 DUST CONTROL

A. MEASUREMENT

1. All costs for furnishing, stockpiling, hauling, placing and spread materials required for dust control (i.e. calcium chloride, water) shall be included in the various pipe-laying items.

1.23 PAYMENT

ITEM NO.	DESCRIPTION
1.	4-Inch Ductile Iron Water Main and Appurtenances
2.	6-Inch Ductile Iron Water Main and Appurtenances
3.	8-Inch Ductile Iron Water Main and Appurtenances
4.	12-Inch Ductile Iron Water Main and Appurtenances
5.	16-Inch Ductile Iron Water Main and Appurtenances
6.	4-Inch HDPE Water Main and Appurtenances
7.	6-Inch HDPE Water Main and Appurtenances
8.	8-Inch HDPE Water Main and Appurtenances
9.	12-Inch HDPE Water Main and Appurtenances
10.	16-Inch HDPE Water Main and Appurtenances
11.	4-Inch Gate Valve

12. 6-Inch Gate Valve
13. 8-Inch Gate Valve
14. 12-Inch Gate Valve
15. 16-Inch Butterfly Valve
16. Tapping Sleeve and Valve for 4-Inch Hole
17. Tapping Sleeve and Valve for 6-Inch Hole
18. Tapping Sleeve and Valve for 8-Inch Hole
19. Tapping Sleeve and Valve for 12-Inch Hole
20. 4-Inch Insertion Valve
21. 6-Inch Insertion Valve
22. 8-Inch Insertion Valve
23. 12-Inch Insertion Valve
24. Hydrant Assembly
25. 2-Inch Blow-Off / Air Vent
26. 1-Inch Water Service Connection and Appurtenances
27. 2-Inch Water Service Connection and Appurtenances
28. 1-Inch Water Service Tubing
29. 2-Inch Water Service Tubing
30. Customer Side Water Services
31. Additional Backfill Material
32. Rock Excavation
33. Controlled Low-Strength Material
34. Test Pits and Additional Excavation
35. Silt Fence
36. Silt Sack
37. Temporary Trench Pavement
38. Full-Depth State Road Temporary Pavement
39. Overdepth Temporary Pavement
40. Cold Milling of Pavement
41. Permanent Bituminous Concrete Pavement Restoration (Town Road)
42. Permanent Bituminous Concrete Pavement Restoration (State Road)
43. Permanent Concrete Pavement Restoration
44. Bituminous Lip Curbing
45. Concrete Curbing
46. Permanent Bituminous Concrete Driveway and Sidewalk Restoration
47. Permanent Concrete Driveway and Sidewalk Restoration
48. Loam and Seed
49. Live Sod
50. Replace Traffic Loop Detectors
51. Temporary Water Service
52. Traffic Control (Uniformed Police)
53. Traffic Control (Certified Flagger)
54. Compaction Testing
55. Repair Sewer Service
56. Additional Piping Materials
57. Permits
58. Install New Meter Pit
59. Meter Relocation
60. Temporary Blow-Off On Existing Main
201. Cleaning and Epoxy Lining Water Main 4-inch through 8-inch
202. Cleaning and Epoxy Lining Water Main 10-inch and 12-inch

203. Cleaning and Epoxy Lining Water Main 16-inch
204. Cleaning and Epoxy Lining Water Main Larger than 16-inch
205. Cleaning and Cement Lining Water Main 4-inch through 8-inch
206. Cleaning and Cement Lining Water Main 10-inch and 12-inch
207. Cleaning and Cement Lining Water Main 16-inch
208. Cleaning and Cement Lining Water Main Larger than 16-inch
209. Cleaning and Structural Lining Water Main 4-inch through 8-inch
210. Cleaning and Structural Lining Water Main 10-inch and 12-inch
211. Cleaning and Structural Lining Water Main 16-inch
212. Cleaning and Structural Lining Water Main Larger than 16-inch
221. Support Services for Cleaning and Lining
222. Support Services for Temporary Water Service
223. Access Pits
224. Replace Concrete Thrust Blocks (Clean and Line Projects)

Item No. 1 through No. 5: 4-Inch, 6-Inch, 8-Inch, 12-Inch and 16-Inch Ductile Iron Water Main and Appurtenances

Payment shall be made at the unit price bid per linear foot under Bid Item No. 1 through No. 5 on the Bid Form.

Payment shall be full compensation for installing ductile iron water main and appurtenances of the sizes indicated on the Contract Drawings including excavation, removal and disposal of unsuitable material, removal and disposal of existing water mains, laying of the pipe, installation of fittings, and appurtenances, furnishing and installing pipe bedding, furnishing and installing processed gravel subbase for roadway, backfilling and compacting, dewatering, environmental controls for dewatering (including settling basins, dirt bags, and / or other controls), installation of transition couplings, installation of MEGALUG joint restraints, installation of fittings, installation of additional joint restraint on existing pipe joints, connections to, capping, and abandoning of existing water mains, closing of predetermined valves and removal of gate boxes, removal and stacking of hydrants, dust control, traffic control including detour plans, field layout of new water mains, sheeting and bracing, hydrostatic pressure testing and preconstruction video recording all as required by the Contract Documents.

Item No. 6 through No. 10: 4-Inch, 6-Inch, 8-Inch, 12-Inch and 16-Inch HDPE Water Main and Appurtenances

Payment shall be made at the unit price bid per linear foot under Bid Item No. 6 through No. 10 on the Bid Form.

Payment shall be full compensation for installing HDPE water main and appurtenances of the sizes indicated on the Contract Drawings including excavation, tracer wire with bonding and connections, removal and disposal of unsuitable material, removal and disposal of existing water mains, butt and electrofusion fusing equipment, material and labor to perform fuses, laying of the pipe, installation of fittings, and appurtenances, furnishing and installing pipe bedding, furnishing and installing processed gravel subbase for roadway, backfilling and compacting, dewatering, environmental controls for dewatering (including settling basins, dirt bags, and / or other controls), installation of transition couplings, installation of mechanical joint restraints, installation of fittings, installation of additional joint restraint on existing pipe joints, connections to and

capping and abandoning of existing water mains, closing of predetermined valves and removal of gate boxes, removal and stacking of hydrants, dust control, traffic control including detour plans, field layout of new water mains, sheeting and bracing, hydrostatic pressure testing and preconstruction video recording all as required by the Contract Documents.

Item No. 11 through No. 14: 4-Inch, 6-Inch, 8-Inch, and 12-Inch Gate Valves

Payment shall be made at the unit price bid per each under Bid Item No. 11 through No. 14 in the Bid Form.

Payment shall be full compensation for installing the gate valve, mechanical joint restraints, hardware, excavation, setting of the valve, valve box, bedding, backfilling and compacting, dewatering, and testing, all as required by the Contract Documents.

Item No. 15: 16-Inch Butterfly Valves

Payment shall be made at the unit price bid per each under Bid Item No. 15 in the Bid Form.

Payment shall be full compensation for installing the butterfly valve, mechanical joint restraints, hardware, excavation, setting of the valve, valve box, bedding, backfilling and compacting, dewatering, and testing, all as required by the Contract Documents.

Item No. 16 through No. 19: Tapping Sleeve and Valve for 4-Inch, 6-Inch, 8-Inch, and 12-Inch Holes

Payment shall be made at the unit price bid per each under Bid Item No. 16 through No. 19 in the Bid Form.

Payment shall be full compensation for installing the tapping sleeve and valve including the tapping sleeve, tapping valve, hardware, excavation, setting of the sleeve and valve, pressure testing the sleeve, supporting of the pipe, sleeve and valve during tapping, tapping the pipe, valve box, bedding, backfilling and compacting, pavement cutting, removal and replacement of curbing (other than bituminous or cast-in-place), dewatering, and testing, all as required by the Contract Documents.

Item No. 20 through No. 23: 4-Inch, 6-Inch, 8-Inch, and 12-Inch Insertion Valves

Payment shall be made at the unit price bid per each under Bid Item No. 20 through No. 23 in the Bid Form.

Payment shall be full compensation for furnishing and installing insertion valves including the TEAM Insert Valve, excavation, setting of the valve, supporting of the pipe and valve during tapping / cutting, specialty equipment, valve box, bedding, backfilling and compacting, pavement cutting, dewatering, and testing, all as required by the Contract Documents.

Item No. 24: Hydrant Assembly

Payment shall be made at the unit price bid per each hydrant assembly under Bid Item No. 24 in the Bid Form.

Aquarion Water Company shall furnish Hydrants. Payment shall be full compensation for installing the hydrant including hydrant, hydrant lateral, hydrant valve, tee, mechanical joint restraints, pipe restraint, painting, excavation, dewatering, shoring, bedding, setting of the hydrant, furnishing and installing hydrant extension (if required), thrust blocking, crushed stone, backfilling and compacting, restoration of public and private property to original condition, protection of property, pavement cutting, removal and replacement of curbing (other than bituminous or cast-in-place), removal and disposal, and testing, all as required by the Contract Documents.

Item No. 25: 2-Inch Blow-Off / Air Vent

Payment shall be made at the unit price bid per each under Bid Item No. 25 in the Bid Form.

Payment shall be full compensation for installing of tapped tee, blow-off valve with riser pipe, tile and road box, excavation, dewatering, shoring, bedding, backfilling and compacting, restoration of public and private property to original condition, protection of property, loam and seeding, pavement cutting, removal and replacement of curbing (other than bituminous or cast-in-place), removal and disposal, and testing all as required by the Contract Documents. Also included under this item is the excavation and tapping of the existing or previously installed water main and installation of saddle, corporation stop, tapping of water main, and installation of complete blow-off assembly and appurtenances.

Item No. 26 and No. 27: 1-Inch and 2-Inch Water Service Connections and Appurtenances

Payment shall be made at the unit price bid per each under Bid Items No. 26 and No. 27 in the Bid Form.
Payment shall be full compensation for installing corporation stops, pressure or non-pressure taps, curb stops with box, excavation, dewatering, shoring, bedding, fittings, service clamps, couplings, special connections, saddles (if required), backfilling and compacting, restoration of public and private property to original condition, protection of property, pavement cutting, removal and disposal, and testing all as required by the Contract Documents. All work associated with shutdown of abandoned corporation stops and existing services shall be incorporated into the unit price of these items.

Items No. 28 and No. 29: 1-Inch and 2-Inch Water Service Tubing

Payment shall be made at the unit price bid per linear foot under Bid Items No. 28 and No. 29 in the Bid Form.

Payment shall be full compensation for scheduling and coordination, installation of tubing, excavation, dewatering, shoring, connections to corporation and curb stops, sand bedding, backfilling, and compacting, restoration of public and private property to original condition, protection of property, pavement cutting, removal and replacement of curbing (other than bituminous or cast-in-place), removal and disposal of unsuitable material, and testing all as required by the Contract Documents.

Item No. 30: Customer Side Water Services

Payment shall be made at the unit price bid per linear foot under Bid Item No. 30 in the Bid Form.

Payment will be full compensation for scheduling and coordination, installation of tubing, excavation, dewatering, shoring, connections to existing meter pit, connections to curb stop and existing water service line, sand bedding, backfilling, and compacting, loam and seed, restoration of public and private property to original condition, protection of property, pavement cutting, removal and replacement of curbing (other than bituminous or cast-in-place), removal and disposal, and testing all as required by the Contract Documents.

Item No. 31: Additional Backfill Material

Payment shall be made at the unit price bid per cubic yard under Bid Item No. 31 in the Bid Form.

Payment shall be full compensation for furnishing, placing and compacting additional backfill material from outside sources to replace unsuitable material as required by the Contract Documents. Additional backfill material shall be defined as the material required to replenish a daily deficit of backfill material generated by the removal of unsuitable material from the trench, if encountered. Pipe, pipe bedding, gravel road base and pavement shall not be included for payment under Additional Backfill Material; however, the volume of existing suitable trench material removed for installation of pipe, pipe bedding, gravel road base, and pavement shall be deducted from the actual volume of unsuitable material removed from the trench. The additional backfill material (ABM) shall be calculated by the following:

$$ABM = UM - \frac{(Nominal\ Pipe\ Dia. + 1.3' + PT + GBT)\ x\ Trench\ Width\ x\ Length\ of\ Trench)}{27}$$

ABM	Additional Backfill Material (CY)
UM	Volume of Unsuitable Material hauled offsite this workday (CY)
PT	Pavement Thickness (feet)
GBT	Gravel Road Base Thickness (feet)

Example: For 100 feet of 8” pipe installed with a trench box at an average cover of 4’-6”, a pavement thickness of 4”, and gravel road base thickness of 12”. On this workday, 90 CY was removed from the site as unsuitable backfill material.

$$ABM = 90\ CY - \frac{\left(\frac{8"}{12} + 1.3' + \frac{4"}{12} + \frac{12"}{12}\right) x\ 6' x\ 100'}{27} = 90\ CY - 73.3\ CY = \ 16.7\ CY$$

16.7 CY would be measured for payment under Additional Backfill Material.

Item No. 32: Rock Excavation

Payment shall be made at the unit price bid per cubic yard under Bid Item No. 32 in the Bid Form.

Payment shall be full compensation for the hammering, excavation, transportation, disposal of the excavated rock and/or boulders. The unit price per cubic yard shall include furnishing, installing and compaction of the refill material, all as required by the Contract Documents. Rock excavation by blasting will not be permitted.

Item No. 33: Controlled Low-Strength Material

Payment shall be made at the unit price bid per cubic yard as measured in place under Bid Item No. 33 in the Bid Form.

Payment shall be full compensation for the furnishing and placing controlled low-strength material including containing / damming, protection during setting including bridging, clean-up and all other work as required by the Contract Documents.

Item No. 34: Test Pits and Additional Excavation

Payment shall be made at the unit price bid per cubic yard under Bid Item No. 34 in the Bid Form.

Payment shall be full compensation for performing test pits and additional excavation as directed or approved by the Engineer, including excavation, furnishing and installing processed gravel subbase for roadway backfilling and compacting, dewatering, environmental controls for dewatering (including settling basins, dirt bags, and / or other controls), temporary pavement restoration, surface restoration, dust control, traffic control including detour plans, sheeting and bracing all as required by the Contract Documents.

Item No. 35: Silt Fence

Payment shall be made at the unit price bid per linear foot under Bid Item No. 35 in the Bid Form.

Payment shall be full compensation for furnishing and placing silt fence including excavation, hay-bales, oak posts, silt fence, maintenance, and the removal and proper disposal of the silt fence at the completion of all work. Where straw wattles (or mulch socks) are permitted by the Engineer, their installation shall be paid for under this item.

Item No. 36: Silt Sack

Payment shall be made at the unit price bid per each under Bid Item No. 36 in the Bid Form.

Payment shall be full compensation for furnishing, installing and maintain the silt sacks, and the removal and proper disposal of the silt sacks after the completion of all work.

Item No. 37: Temporary Trench Pavement

Payment shall be made at the unit price per linear foot as measured along the centerline of the pipe under Bid Item No.37 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing and compacting the bituminous concrete pavement within town or state roads as required by the Contract Documents. The price shall include the cost of sawcutting existing pavement to provide a square, straight, clean edge for the new bituminous pavement, the cost of the bituminous material, placement and maintenance of the construction to include additional materials and labor required due to settlement and/or maintenance over a winter shut down, tack coat, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, etc.as required by the Contract Documents. Temporary Pavement for test pits shall be included under the Test Pit item. Temporary pavement that is not placed against, square, clean, sawcut and tack coated edges will not be eligible for payment.

Item No. 38: Full-Depth State Road Temporary Pavement

Payment shall be made at the unit price per linear foot as measured along the centerline of the pipe under Bid Item No. 38 in the Bid Form.

Payment shall be full compensation for all preparatory work including, but not limited to full-depth sawcutting, removal of temporary and disposal of pavement, removal and disposal of existing pavement, removal and disposal of concrete road base, removal and disposal of processed gravel, regrading and compaction of processed gravel base, furnishing, placing and compacting the bituminous concrete pavement within state roads as required by the Contract Documents. The price shall include the cost of sawcutting existing pavement along both edges of the trench for the entire length to provide square, straight, clean edges for the new bituminous pavement, the cost of the bituminous material placement and maintenance of the construction to include additional materials and labor required due to settlement and/or maintenance over a winter shut down, tack coat, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, etc. as required by the Contract Documents. Temporary Pavement for test pits shall be included under the Test Pit item. Temporary pavement that is not placed to a thickness of at least 9 inches after compaction or temporary pavement that is not placed against, square, clean, sawcut and tack coated edges will not be eligible for payment.

Item No. 39: Overdepth Temporary Pavement

Payment shall be made at the unit price per Ton under Bid Item No. 39 on the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing and compacting the bituminous concrete pavement within town roads as required by the Contract Documents. The price shall include the cost of sawcutting existing pavement to provide a square, straight, clean edge for the new bituminous pavement, the cost of the bituminous material placement and maintenance of the construction to include additional materials and labor required due to settlement and/or maintenance over a winter shut down, tack coat, cutting or keying of the pavement,

removal and resetting all manhole frames, gate boxes, curbs, catch basins, etc. as required by the Contract Documents. Temporary Pavement for test pits shall be included under the Test Pit item. Temporary pavement that is not placed against, square, clean, sawcut and tack coated edges will not be eligible for payment.

Item No. 40: Cold Milling of Pavement

Payment shall be made at the unit price per square yard bid under Bid Item No. 40 in the Bid Form.

Payment shall be full compensation for all labor, tools and materials required for cold milling of bituminous concrete including layout of milling limits, preparatory work, milling of bituminous concrete, saw cutting along limits of milling, mechanical removal of asphalt around structures, hauling and disposal of millings as required by the Contract Documents.

Item No. 41: Permanent Bituminous Concrete Pavement Restoration (Town Road)

Payment shall be made at the unit price per ton bid under Bid Item No. 41 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing and compacting the bituminous concrete pavement in town roads as required by the Contract Documents. The price shall include the cost of the bituminous material, placement, tack coat, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, application of hot seal between pavement joints, etc.; and the repair of reflectorized pavement markings, as required by the Contract Documents.

Item No. 42: Permanent Bituminous Concrete Pavement Restoration (State Road)

Payment shall be made at the unit price per ton bid under Bid Item No. 42 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing and compacting the bituminous concrete pavement in state roads as required by the Contract Documents. The price shall include the cost of the bituminous material, placement, tack coat, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, application of hot seal between pavement joints, etc.; and the repair of reflectorized pavement markings, as required by the Contract Documents.

Item No. 43: Permanent Concrete Pavement Restoration

Payment shall be made at the unit price bid per cubic yard as measured in place under Bid Item No. 43 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing and installing reinforcing dowels, wire mesh, furnish and placing and the concrete pavement, and furnishing and placing road plates for protection of concrete as required by the Contract Documents. The price shall include removal and disposal of temporary pavement, preparation of subgrade, the cost of the steel reinforcement, concrete, formwork, placement, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, etc.; and the repair of reflectorized pavement markings, as required by the Contract Documents.

Item No. 44: Bituminous Lip Curbing

Payment shall be made at the unit price per linear foot bid under Bid Item No. 44 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing and placing the bituminous lip curbing as required by the Contract Documents. The price shall include the cost of the bituminous material, placement, tack coat and cutting or keying of the pavement as required by the Contract Documents.

Item No. 45: Concrete Curbing

Payment shall be made at the unit price per linear foot bid under Bid Item No. 45 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing and placing the concrete curbing as required by the Contract Documents. The price shall include the cost of the concrete, saw cutting, excavation, furnishing, placing, and compacting suitable gravel base, assembly of formwork, furnishing and placing concrete, finishing concrete curbing, and backfilling curbing. Replacement of bituminous concrete at faces of curbing as required by the Contract Documents.

Item No. 46: Permanent Bituminous Concrete Driveway and Sidewalk Restoration

Payment shall be made at the unit price per square yard bid under Bid Item No. 46 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing and compacting the bituminous concrete pavement as required by the Contract Documents. The price shall include the cost of the bituminous material, placement, tack coat, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, application of hot seal between pavement joints, etc.; and the repair of reflectorized pavement markings, as required by the Contract Documents.

Item No. 47: Permanent Concrete Driveway and Sidewalk Restoration

Payment shall be made at the unit price bid per square yard as measured in place under Bid Item No. 47 in the Bid Form.

Payment shall be full compensation for all preparatory work and furnishing, placing the cementitious concrete pavement as required by the Contract Documents. The price shall include the cost of the concrete, material placement, installation of ADA Compliant Ramps where required by the municipality of state, cutting or keying of the pavement, removal and resetting all manhole frames, gate boxes, curbs, catch basins, etc.; and the repair of reflectorized pavement markings, as required by the Contract Documents.

Item No. 48: Loam and Seed

Payment shall be made at the unit price per square yard bid under Bid Item No. 48 in the Bid Form.

Payment shall be full compensation for furnishing and installing loam and seed as required to restore areas directly disturbed by the water main, water service, and hydrant installations. Payment made under this section shall be considered as full compensation for furnishing all labor, materials, equipment and services to reproduce grassed lawn in areas disturbed by construction operations no greater than 10 feet in either direction, from the centerline of the pipe. All areas disturbed as a result of the Contractors operations which are outside the standard width shall be at the Contractor's expense. Topsoil furnished from offsite sources and treated, spread, seeded and fertilized shall be included for payment under this unit price bid item.

Item No. 49: Live Sod

Payment shall be made at the unit price per square yard bid under Bid Item No. 49 in the Bid Form.

Payment shall be full compensation for furnishing and installing live sod as required to restore areas directly disturbed by the water main, water service, or hydrant installations. Payment made under this section shall be considered as full compensation for furnishing all labor, materials, equipment and services to reproduce grassed lawn in areas disturbed by construction operations no greater than 10 feet in either direction, from the centerline of the pipe.
All areas disturbed as a result of the Contractors operations which are outside the standard width shall be at the Contractor's expense. The topsoil and sod shall be furnished from offsite sources, treated, spread, and fertilized shall be included for payment under this unit price bid item.

Item No. 50: Replace Traffic Loop Detectors

Payment shall be made at the unit price per each under the item Bid Item No. 50 in the Bid Form.

Payment shall be full compensation for the replacement of traffic loop detectors including removal of existing loop detectors, sawcutting, furnishing and installing new loop detectors, coordination with local and state traffic agency and any other work required.

Item No. 51: Temporary Water Service

Payment shall be made at the lump sum price bid under Bid Item No. 51 in the Bid Form.

The Contractor shall furnish and install all materials required for the Temporary Water Main. Payment shall include furnishing and installing temporary and permanent pavement, cutting trenches, connections to new and existing water mains, temporary hydrants, valves, disinfection and testing of temporary water mains and service pipe, providing any tools requested by Aquarion Water Company or the local Fire Department for the operation of temporary hydrants, making emergency repairs, and all incidental work associated with furnishing, installing and maintaining temporary water mains and service connections. Individual above ground connections to houses shall not be separately measured for payment, but shall be considered incidental to the installation of the temporary water main. Payment for temporary water main shall only be made after the installation of a temporary water main in accordance with the specification and drawings, the completion of disinfection and bacteriological testing, and the transfer of all existing service connections.

Item No. 52: Traffic Control (Uniformed Police)

Payment shall be made as a direct reimbursement to the stated allowance noted under Bid Item No. 52 in the Bid Form.

The Police Department will generally bill the Contractor weekly, and the Contractor shall pay the Police Department bills within a ten (10) working day period for uniformed Police Officers provided on the job site. The billing shall include a weekly statement outlining the days worked, hours worked, location of the work and rate for all officers providing service during that billing period. All bills must be signed by the Police Chief. The Contractor will be paid by the Owner for bills paid to the Police Department, based on the signed weekly statements submitted to the Owner. The Contractor shall submit paid bills from the Police Department, stamped and signed as paid, to the Engineer, with the Contractor's Application for Payment.
Uniformed Police Officers required for purposes other than public safety and/or control of traffic shall not be eligible for payment.

Item No. 53: Traffic Control (Certified Flagger)

Payment shall be made as a direct reimbursement to the stated allowance noted under Bid Item No. 53 in the Bid Form.

The flagging subcontractor will generally bill the Contractor weekly, and the Contractor shall pay the subcontractor bills within a ten (10) working day period for certified flaggers provided on the job site. The billing shall include a weekly statement outlining the days worked, hours worked, location of the work and rate for all flaggers providing service during that billing period. The Contractor will be paid by the Owner for bills paid to the flagging subcontractor, based on the signed weekly statements submitted to the Owner. The Contractor shall submit paid bills stamped and signed as paid, to the Engineer, with the Contractor's Application for Payment.

Item No. 54: Compaction Testing

Payment shall be made as a direct reimbursement to the stated allowance noted under Bid Item No. 54 in the Bid Form.

Payment shall be direct reimbursement for compaction testing if required by the municipality or state in which road work is being performed.

Item No. 55: Repair Sewer Services

Payment shall be made to the stated allowance per each under Bid Item No. 55 in the Bid Form at the rate of $200 per each.

Payment shall be full compensation for repairing mismarked sewer services including furnishing and installing pipe, couplings, labor and equipment required to repair sewer services that are damaged during the installation of the water main.

Item No. 56: Additional Piping Materials

Payment shall be made as a direct reimbursement to the stated allowance noted under Bid Item No. 56 in the Bid Form.

Payment shall be full compensation for the furnishing and installing of additional fittings and other piping materials determined to be required in the field but not noted on the plans. Payment shall only be made for materials as ordered and verified by the Owner's on-site representative. The Owner's onsite representative shall submit a monthly list of additional piping materials installed for verification for payment. The Contractor shall submit paid invoices from the piping materials supplier, stamped and signed as paid to the Engineer, with the Contractor's Application for Payment. The Contractor will not be eligible for payment under this Item without furnishing copies of paid vendor invoices for the materials utilized in the work. Contractor generated spreadsheets will not be considered as sufficient backup for payment under this item.

Item No. 57: Permits

Payment shall be made as a direct reimbursement to the stated allowance noted under Bid Item No. 57 in the Bid Form.

Payment shall direct reimbursement for fees obtaining all permit required to perform the work including but not limited to state and municipal road opening permits and local trade permits. Fees reimbursed shall only be those specifically required by the state or municipality and paid for by the Contractor. Payment will only be reimbursed with receipt / proof of payment.

Item 58: Install New Meter Pit

Payment will be made at the unit price bid per each under Bid Item No. 58 in the Bid Form.

Payment will be full compensation for installing the meter pit, excavation, dewatering, shoring, cutting of existing water service, installation of the meter pit, bedding, fittings, service clamps, couplings, special connections, backfilling and compacting, restoration of public and private property to original condition, and protection of property, all as required by the Contract Documents. New tubing used to connect to the existing water service tubing will be including for payment under Item 30: Customer Side Water Services. The Owner will furnish all meter pits.

Item 59: Meter Relocation

Payment shall be made at the unit price bid per each under Bid Item No. 59 in the Bid Form.

Payment shall be full compensation for removing the existing meter from its existing location and reinstalling it within the new meter pit including but not limited to: coordination with the homeowner for site access, removing meter and reinstalling in new meter pit, providing temporary or permanent jumpers in meter sets as required, cutting out existing meter horn and replacing with straight pipe, and furnishing all materials for interior work all as required by the Contract Documents. All interior plumbing work shall be performed by a CT P1 licensed plumbing contractor.

Item 60: Temporary Blow-Off On Existing Main

Payment shall be made to the stated allowance per each under Bid Item No. 60 in the Bid Form at the rate of $500 per each.

Payment will be full compensation for furnishing and installing 1-inch corporation stops and tapping of the in-place water main where directed by the Owner's Representative for the purposes of verifying and confirming shutdowns during connections to existing water mains. For all shutdowns, the Contractor must have all tapping equipment and the corporation stop onsite during shutdowns and be prepared to promptly execute the work under this item. Additionally, the Contractor will only be eligible for payment under this Item when there is no available means (existing hydrant, blow-off, air release, etc.) for verifying the shutdown and when specifically directed by the Owner's Representative.

Payment for excavation, bedding, backfilling, compaction, and processed gravel road base shall be paid for under the applicable pipe installation items. The temporary blow-off must be installed in the portion of the existing pipe that will be removed to make the connection. Temporary taps will not be permitted to remain in the in-service portion of the water main.

Item No. 201 through No. 204: Cleaning and Epoxy Lining Water Mains 4-inch through 8-inch, 10-inch through 12-inch, 16-inch, and Larger than 16-inch

Payment shall be made at the Lump Sum bid under Bid Item Nos. 201 through 204 in the Bid Form.

Payment shall be full compensation for the cleaning, furnishing and installing Spray-In-Place-Polymeric (Epoxy) lining within existing water mains complete in place, including all preparatory cleaning, removal and disposal of water and debris from cleaning operation, cleaning and clearing out of individual water service connections, closed circuit television (CCTV) inspection of water main; cleanup; furnishing CCTV video to Owner and Engineer prior to installation of epoxy lining; installation of epoxy lining; testing of epoxy sample testing by independent laboratory; final epoxy inspection; cleaning and epoxy lining of replacement fittings and all closure sections of pipe.

The work of this Pay Item includes all sampling and testing, including providing the necessary apparatus to obtain representative samples, retaining of epoxy lined samples; curing of the sample liner; removal of sample after completion of curing; labeling each sample as specified; and delivery of sample to a state certified, third-party testing laboratory, accepted by the Engineer, to be tested for the parameters specified. The Pay Item also includes the laboratory costs for testing.

Item No. 205 through 208: Cleaning and Cement Lining Water Mains 4-inch through 8-inch, 10-inch through 12-inch, 16-inch, and Larger than 16-inch

Payment shall be made at the Lump Sum bid under Bid Item Nos. 205 through 208 in the Bid Form.

Payment shall be full compensation for the cleaning, furnishing, and installing cement lining within existing water mains complete in place, including all preparatory cleaning, removal and disposal of water and debris from cleaning operation, cleaning and clearing out of individual water service connections, closed circuit television (CCTV) inspection of water main; cleanup; furnishing CCTV video to Owner and Engineer prior to application of water main cement lining; application of cement lining; testing of cement lining sample by independent laboratory; final inspection, post-lining CCTV inspection, furnishing post-lining CCTV video to Owner and Engineer, flow testing and documentation.

The work of this Pay Item includes all sampling and testing, including providing the necessary apparatus to obtain representative samples, retaining of cement lined sample; curing of the sample liner; removal of samples after completion of curing; labeling each sample as specified; and delivery of samples to a state certified, third-party testing laboratory, accepted by the Engineer, to be tested for the parameters specified.

Item No. 209 through No. 212: Cleaning and Structural Lining Water Mains 4-inch through 8-inch, 10-inch through 12-inch, 16-inch, and Larger than 16-inch

Payment shall be made at the Lump Sum bid under Bid Item Nos.209 through 212 in the Bid Form.

Payment shall be full compensation for the cleaning, furnishing and installing structural liners within existing water mains complete in place, including all preparatory cleaning, removal and disposal of water and debris from cleaning operation, closed circuit television (CCTV) inspection of water main; cleanup; furnishing CCTV video to Owner

and Engineer prior to installation of structural liner, furnishing and installing structural liner, furnishing and installing specialty fittings, furnishing and installing transition fittings, and all required testing of liner after completion of installation.

Item No. 221: Support Services for Cleaning And Lining

Payment shall be made at the lump sum bid under bid Item No. 221 in the Bid Form.

Payment shall be full compensation for providing all support services to the Cleaning and Lining (C&L) Contractor including but not limited to the following: Coordinating all phases of work with the C&L Contractor, providing daily onsite personnel and equipment to transport the C&L Contractor's equipment, hoisting equipment into and out of the access pits, maintaining dewatering equipment, maintaining all access pit excavations, trench boxes, shielding, shoring, etc, installing water-tight caps / plugs on open ends of water mains, providing steel road plates to secure excavations at the conclusion of each workday, pinning road plates, ramping road plates with bituminous concrete, maintaining traffic control devices, scheduling of uniformed police officers or flaggers, coordinating water main shutdowns with the Owner, sequencing of work to place water main sections back into service, excavation, backfilling, and compacting at water services as necessary for C&L Contractor to clear water services of debris after cleaning operations, and all other incidental work not specifically called out under other items of this Contract, but necessary for the completion of the project.

Item No. 222: Support Services for Temporary Water Service

Payment shall be made at the lump sum price bid under Bid Item No. 222 in the Bid Form.

The Contractor shall furnish all labor, tools, and equipment to provide support services to the Cleaning and Lining (C&L) Contractor. The C&L Contractor shall furnish al temporary water main piping, appurtenances, and temporary water service tubing. The Support Services Contractor shall perform all sawcutting of trenches, excavation work, backfilling, temporary pavement, connections to existing water mains (including furnishing and installing taps on existing water mains), temporary water service connections, making emergency repairs, and all incidental work associated with maintaining temporary water mains and service connections. Payment shall also include excavation, removal of temporary water main, reconnection of water services after the water main is placed back into service, furnishing, placing, and compacting backfill material, furnishing, placing, and compacting processed gravel road base, installation of temporary pavement, placement of loam and grass seed, restoration of public and private property to preconstruction condition. Payment for Support Services for Temporary Water Service shall be made at the following intervals, 50% after the temporary water main has been placed into service and all water service have been transferred, 25% after the temporary water main has been taken out of service, and 25% after the temporary water main and services have been removed and all temporary pavement, loam and seed have been placed.

Item No. 223: Access Pits

Payment shall be made at the unit price bid per each under Bid Item No. 223 in the Bid Form.

Payment shall be full compensation for excavating access pits as shown on the Contract Drawings or as directed or approved by the Engineer, including sawcutting of pavement, excavation, furnishing and installing trench boxes, sheeting or shoring, furnishing dewatering equipment, dewatering operations, environmental controls for dewatering (including settling basins, dirt bags, and / or other controls), removal and disposal of excavated materials, cutting and removal of pipe sections, removal and disposal or storage of valves, removal and disposal or storage of tees, removal and disposal or storage of designated fittings shown on the Contract Drawings, removal and disposal of thrust blocks, installation of replacement pipe sections, installation of new gate valves, installation of new tees, installation of new pipe fittings, installation of mechanical joint restraints, installation of MJ solid sleeves or restrained couplings as directed by the Engineer, furnishing and installing processed gravel subbase for roadway backfilling and temporary pavement restoration, surface restoration, dust control, traffic control including detour plans, all as required by the Contract Documents.

Item No. 224: Replace Concrete Thrust Blocks (Clean and Line Projects)

Payment shall be made at the unit price bid per cubic foot as measured in place under Bid Item No. 224 in the Bid Form.

Payment shall be full compensation for replacing thrust blocks, thrust collars, anchor blocks, and pipe cradles that were removed during the course of the work. Included under this Item is all preparatory work including, but not limited to excavation to undisturbed soil, assembly of formwork, furnishing and placing reinforcing steel, furnishing and installing threaded rods, furnishing in installing friction clamps or wedge action restraints, furnishing and placing concrete. Minimum sizing for thrust blocks is noted in the Owner's latest revision of the Standard Details.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01026

SCHEDULE OF VALUES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 GENERAL

A. Schedule of Values: For accounting purposes for the Engineer's convenience and as an aid in determining progress payments and price additions or deductions for Contract modifications, the Contractor shall furnish to the Engineer a schedule of values which shall be approved.

1. The schedule of values shall apportion the total amount of the Contract price(s) for each separate item among the main features or costs that form the completed Work.
2. The price breakdown shall be in sufficient detail to permit an analysis of all material, labor, equipment, subcontract and overhead costs, as well as profit, and shall cover all work involved for the properly completed item and feature listed.
3. Any amount claimed for subcontracts shall be supported by a similar schedule of values with the total amount shown by this price under the Contract price stated in the bid form.
4. A projected monthly breakdown shall be included showing the breakdown by month of labor, materials, benefits, equipment and traffic control through the projected completion date.

1.04 SUBMITTALS

A. Prior to first application for payment, submit a proposed Schedule of Values to the Engineer.

1. Meet with the Engineer and determine additional data, if any, required to be submitted.
2. Secure the Engineer's approval of the Schedule of Values prior to submitting first application for payment.
3. Updated Schedule of Values and Cash Flow Projection shall be submitted to the Engineer with each application for payment. Applications for Payment that do not contain updated Schedules of Values and Cash Flow Projects will not be processed for payment.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01027

APPLICATION FOR PAYMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Comply with procedures described in this Section when applying for progress payment and final payment under this Contract.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

B. Progress payments are described in the General Conditions.

C. Payments upon Substantial Completion and Completion of the Work are described in the General Conditions.

D. Section 01026 - Schedule of Values

1.03 QUALITY ASSURANCE

A. Prior to start of construction, secure the Engineer's approval of the Schedule of Values required to be submitted under Section 01026, Schedule of Values.
   1. Base requests for payment on the approved Schedule of Values.
   2. The Contractor shall not modify the Schedule of Values on applications for payment.
   3. If the installed quantity of an item exceeds the quantity listed in the schedule of values, the Contractor shall submit a change order proposal to the Owner and Engineer. A change order for an increase in the quantity of an item must be approved by the Owner prior to being invoiced in an application for payment.

B. An updated Cash Flow Projection and Schedule must be submitted with each Application for Payment. Applications for Payment will not be processed without satisfactorily updated versions of each. Cash flow projections must be submitted using the Owner’s template located in Appendix G – Electronic Forms.

1.04 SUBMITTALS

A. Informal Submittal: Unless otherwise directed by the Engineer;
   1. Make an informal submittal of Request for Payment by filling in, with erasable pencil, pertinent portions of AIA Document G702, "Application and Certificate for Payment", plus continuation sheet or sheets.

2. Make this preliminary submittal to the Engineer no later than the 22nd of each month.
3. Revise the informal submittal of Request for Payment as agreed, between both parties, initialing all copies.

B Formal Submittal: Unless otherwise directed by the Engineer;

1. Make formal submittal of Request for Payment by filling in the agreed data, by typewriter or neat lettering in ink, on AIA Document G702, "Application and Certificate for Payment", plus continuation sheet or sheets. Include an updated Cash Flow Projection and Schedule with each submission.
2. Sign and notarize the Application and Certificate for Payment.
3. Submit the signed and notarized Application and Certificate for Payment to the Owner's Representative no later than the 5th day of each month.
4. The Contractor shall be aware that Applications and Certificates for Payment will not be processed without updated Cash Flow Projections and Schedules.
5. The Engineer shall compare the formal submittal with the approved informal submittal and when approved, shall sign the Application and Certificate of Payment, will make required copies and will distribute:
   a. One copy to Contractor
   b. One copy to Owner
   c. One copy to Engineer's file.
6. Unless specifically approved by the Owner in writing, the first payment application will not be processed until the test pits indicated on the Contract Drawings have been completed and the required information obtained and reported to the Engineer.

PART 2 PRODUCTS (Not Applicable).

PART 3 EXECUTION (Not Applicable).

END OF SECTION

SECTION 01028

CHANGE ORDERS

PART 1 GENERAL

1.01 DESCRIPTION

A. All executed change orders submitted to the Engineer for review and processing must be prepared as specified here-in using Document 00905, calculation sheet(s) and all other supporting documentation necessary for evaluation. Failure to comply with these instructions will result in delays in processing the change order.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these specifications.

B. This section supplements Article 21, Changes in Work, in the Construction Contract.

C. Section 00905 – Change Order

D. Section 01026 - Schedule of Values

E. Section 01027 – Application for Payment

1.03 QUALITY ASSURANCE

A. During bidding, the Contractor shall submit a list of construction equipment, identifying major pieces of equipment to be utilized on the project. The list shall include the Contractor's designation, if any, the manufacturer, model, year of manufacture, serial number, size and horsepower of equipment. The Contractor shall also provide for approval a proposed bluebook equipment rental rate development that separately lists for each piece of equipment the monthly rental rate, area adjustment factor, depreciation factor, estimated operating cost per hour and total hourly rate. This list shall be updated periodically during the course of the project or as requested by the Owner or Engineer. In the event the Contractor fails or is unable to provide appropriate rate information the Engineer may develop equipment rental rates for use on change orders.

B. When a situation is encountered where the Contactor believes a change order is warranted, the Contractor shall provide email notification to the Owner and Engineer with a description of work and photographs prior to proceeding with such work. Change orders will not be considered without prior email notification as stated above.

1.04 SUBMITTALS

A. Payment of Change Orders: Payment of change orders shall be made in accordance with one of the following three methods:

1. Existing unit prices as set forth in the contract; or
2. Agreed upon lump sum or unit prices; or
3. Time and materials

B. Payment for work for which there is a unit price in the contract:

Where the contract contains a unit price for work and the Engineer orders a change for work of the same kind as other work contained in the contract and is performed under similar physical conditions, the Contractor shall accept full and final payment at the contract unit price(s) for the acceptable quantities. Under certain circumstances where the unit prices exceed the cost to perform the work as laid out in paragraphs C and D, the unit prices may be subject to revaluation and adjustment by the Owner.

C. Payment for work or materials for which no price is contained in the contract:

If the Engineer directs, the Contractor shall submit promptly in writing to the Engineer an offer to do the required work on a lump sum or unit price basis, as specified by the Engineer. The stated price, either lump sum or unit price, shall be divided so as to show that it is the sum of:

1. The estimated cost of Labor, plus
2. Direct Labor Cost, plus
3. Material and Freight Costs, plus
4. Equipment Costs, plus
5. An amount not to exceed 7½% of the sum of items 1 through 4 for overhead and profit, plus (if applicable),
6. In the case of work done by a subcontractor an amount not to exceed 5%, for the general contractor of the sum of the cost (not including subcontractor's overhead and profit) of items 1 through 4 for his overhead and profit (less, if applicable),
7. Credits for work deleted from the contract, including actual costs of the deleted work plus the percentage of overhead, profit, bonds and insurance attributable to such credit amount.

D. Payment for work on a time and materials basis:

Unless an agreed lump sum and/or unit price is obtained as noted above and is so stated in the change price, the Contractor shall accept as full payment for which no agreement is contained in contract, an amount equal to:

1. The estimated cost of Labor, plus
2. The Direct Labor Costs, plus
3. Equipment Costs, plus
4. Material and Freight Costs, plus

5. An amount not to exceed 7½% of the sum of items 1 through 4 for overhead and profit, plus, if applicable,
6. In the case of work done by a subcontractor an amount not to exceed 5%, for the general contractor of the sum of the cost (not including subcontractor's overhead and profit) of items 1 through 4 for his overhead and profit (less, if applicable),
7. Credit for work deleted from the Contract, including actual costs of the deleted work plus the percentage of overhead, profit, bonds and insurance attributable to such credit amount.

E. Explanation of items 1 through 7 as outlined in "C" and "D" above:

1. Labor - Only those workers employed on the project who are doing the extra work, including the foreman in charge, are allowable. General foremen, superintendents, or other supervisory personnel are considered to be included in the overhead markup as provided in items 5 and/or 6. Hourly labor rates in excess of those as listed in the contract wage rates require documentation. As a minimum, an explanation and the appropriate copy of the certified payroll are required.

2. Direct Labor Costs - These costs are limited to those which are required in the contract document. Coverage in excess of the contract provisions, secured by the contractor/subcontractor(s) at his option, are ineligible. Following award and prior to execution of a construction contract, the Contractor shall submit for review by the Owner, documentation to establish the markup percentage(s).

   The documented direct labor markup for this contract may be adjusted on an annual basis as measured from the date the contract is executed. The contract agreement will provide for the establishment of the Direct Labor Cost percentage.

3. Material and Freight - Only those materials required as a result of the change order and reasonable freight charges for delivery of same are allowable.

4. Equipment - Only the equipment required as a result of the change order is allowable. Equipment rental rates shall be governed by the current EquipmentWatch, division of Intertec Publishing [Formerly Nielson/Dataquest] Rental Rate Bluebook for Construction Equipment (the "Bluebook"). In determining the rental rate the following shall apply:

   a. For equipment already on the project - the monthly prorated rental rate by the hourly use shall be applicable;

b. For equipment not on the project the daily rate, the weekly rate, or monthly rate will prevail, whichever will prove to be most cost effective. Small tools and manual equipment are examples of costs not allowable under this item. These costs are considered to be included in the overhead markup as provided in items 5 and/or 6.

(1 Month (Normal Use) = 176 hours)

5.& 6. Overhead and Profit - All other costs not previously mentioned are considered to be included in this item, be it for the general contractor or subcontractor(s).

7. Credits - Work deleted, material and equipment removed from the contract, stored and/or returned shall be credited to the cost of the change order, less documented costs.

This change order will be prepared in such manner as to clearly separate Eligible and Ineligible Costs (as applicable to state-funded projects).

F. The Contractor shall furnish itemized statements of the cost of the work ordered and shall give the Engineer access to all accounts, bills and vouchers relating thereto; and unless the Contractor shall furnish such itemized statements, and access to all accounts, bills and vouchers, he shall not be entitled to payment for any items of extra work for which such information is sought by the Engineer.

G. The Contractor shall submit to the Owner the complete change order package with cover sheet and all supporting documentation no later than ten (10) business days after notification as stated in Section B. Change orders submitted after ten (10) business days after the completion of work will not be processed for payment.

H. Change Order requests shall only be paid to the Contractor for work actually performed. The Contractor shall not have grounds for charging time to a project beyond actual time the full crew departs the site.

I. The Contractor shall be aware that the Owner will not review or consider change orders for claims due to mismarked or unmarked utilities. The Contractor shall notify and bill the utility company owning the unmarked or mismarked utility directly. Notification must be made in accordance with the Contractor's CBYD / Dig Safe Ticket.

Example:

Utility Owner Details

The Public Utility owners listed below have been requested to mark out the location of their facilities. Please note they may contact you directly to clarify any aspects of your ticket.

Check List	Phone	After Hours	Status	Response Date
AQUARION WATER CO OF CT WESTPORT	8007789140	8007329678	Notification Sent	Y/N
CABLEVISION OF CONNECTICUT	800-778-9140	800-778-9140	Notification Sent	Y/N

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

Example Calculation Sheet

1. Labor

Foreman	10 hours @	$10.00/hour	$100.00
Engineer	10 hours @	8.80/hour	85.00
Operator	10 hours @	9.50/hour	95.00
Laborers	24 hours @	7.00/hour	168.00
			$448.00

2. Direct Labor Cost (use the agreed upon Direct Labor Cost)

*(7½)% of $448.	
*(used for example purposes only)	$ 33.60

3. Materials & Freight

150 1.f. of 12" pipe @ $2.00/1.f.	$ 300.00
15 v.f. precast SMH	700.00
Freight (slip#____enclosed)	25.00
	$1,025.00

4. Equipment

1 Backhoe	10 hours @	$ 25.00/hour	$ 250.00
1 Truck-crane	10 hours @	50.00/hour	500.00
			$750.00
TOTAL (items 1 through 4):			**$2,256.60**

5. (7½ %) markup for Overhead, Profit

(7½ %) of $2,256.60	$ 169.25

6. (5 %) markup on subcontractor's cost for general contractor (if subcontractor is involved)

(5 %) of $2,256.60	$ 112.83

7. Credits (deductibles) -$323.00

TOTAL COST: $2,215.68

Reminder: Provide support documentation as necessary i.e. vouchers, correspondence, calculation, photographs, reports**.**

END OF SECTION

SECTION 01050

FIELD ENGINEERING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide such field engineering services as are required for proper completion of the work including, but not necessarily limited to:
   1. Establishing and maintaining lines and levels.
   2. Layout of new water main.
   3. Structural design of shores, forms and similar items provided by the Contractor as part of his means and methods of construction.

1.02 RELATED WORK

A. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

B. Additional requirements for field engineering may also be described in other Sections of these Specifications.

1.03 QUALITY ASSURANCE

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

B. Unless otherwise permitted by the Engineer, the layout for the water main shall be performed using an electronic instrument (total station) by personnel under the direction of a land surveyor or professional engineer licensed in the state where work is being performed under this contract.

1.04 PROCEDURES

A. In addition to procedures directed by the Contractor for proper performance of the Contractor's responsibilities:
   1. Locate and protect control points before starting work on the site.
   2. Preserve permanent reference points during progress of the work.
   3. Verification of all reference points.
      a. If a discrepancy is found, promptly notify the Engineer.
   4. Promptly advise the Engineer when a reference point is lost or destroyed, or requires relocation because of other changes in the Work.
      a. Upon direction of the Engineer, require the Field Engineer to replace reference stakes or markers.
      b. Locate such replacements according to the original survey control.

1.05 SURVEY REQUIREMENTS

A. In projects where elevation work is critical, the Contractor shall establish a minimum of two permanent benchmarks on site; referenced to data established by survey control points.

B. Contractor to establish and maintain control lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Accurate field layout of the new water main including, but not necessarily limited to the locations of the following in accordance with the Contract Drawings and Detailed Specifications:
      - Centerline of pipe (a minimum of every 200 LF)
      - Valves
      - Horizontal and vertical elbows
      - Reducers
      - Connections to existing water mains
      - Hydrants
      - PC, PT and PI of curved alignments.
   2. Site improvements, including pavements, stakes for grading, fill and topsoil placement, utility locations, slopes, and invert elevations.
   3. Grid or axis for structures.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01092

ABBREVIATIONS & DEFINITIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. Listing of Abbreviations: The listing of abbreviations in this Specification Section represent the Standard Organization named.

B. Related Work
1. Documents affecting work of this section include, but are not necessarily limited to Sections in Division 1 of these Specifications.
2. All related Specification Sections shall be used in conjunction with this Section.

1.02 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the Standard, except when more stringent requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids.

1.03 LISTING OF STANDARD ORGANIZATIONS AND THEIR ABBREVIATIONS

AA	Aluminum Association
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Institute
ADC	Air Diffusion Council
AGA	American Gas Association
AGCA	Associated General Contractors of America
AHDGA	American Hot Dip Galvanizers Association
AI	Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Constructors
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	American Plywood Association
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society of Testing and Materials
AWC	Aquarion Water Company
AWPA	American Wood Preservers Association

AWS	American Welding Society
AWWA	American Water Works Association
BIA	Brick Institute of America
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EJCDC	Engineers Joint Contract Documents Committee
EPA	Environmental Protection Agency
FM	Factory Mutual
Fed. Spec.	Federal Specification
HI	Hydraulic Institute
IEEE	Institute of Electrical and Electronics Engineers
ISA	Instrument Society of America
ISO	International Standards Organization
MIA	Masonry Institute of America
MIL.	Military Specification
MSS	Manufacturers Standardization Society of the Valve and Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NCMA	National Concrete Masonry Association
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NRCA	National Roofing Contractors Association
NSPC	National Standard Plumbing Code
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PPI	Plastic Pipe Institute
PS	Product Standards of the National Bureau of Standards
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
TPI	Truss Plate Institute
UL	Underwriters Laboratories

1.04 DEFINITIONS

A. Contractor - The person, firm or corporation working on infrastructure to be owned and/or maintained by the Aquarion Water Company (AWC).

B. "Directed", "Permitted", "Required", or words of like effect, shall mean that the direction, permission or the requirements of the AWC is intended. The words "approved", "acceptable", "satisfactory", or word of like import, shall mean approved, acceptable or satisfactory to the AWC.

Where indicated in these specifications that the Contractor is "required" or "directed" by the AWC, or in words of like import, to perform some action, provide some material or equipment or provide information, the cost of such actions or provisions shall be borne by the Contractor and paid for as part of the prices bid, unless otherwise specifically provided for in these specifications.

C. Drawings - The part of the approved project showing the characteristics and scope of the work to be performed and which have been prepared or approved by the AWC. The term "Drawings" is used interchangeably with the terms "Plans" and "Plates.".

E. Engineer - The person, firm or corporation named as a consultant by the AWC.

F. Final Completion - That date as certified by the Engineer when all work on the entire project has been fully completed, including all work on the punch list, with the possible exception of final paving.

G. Owner - A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed. The Aquarion Water Company will act as Owner.

H. Plans - The approved Drawings, or exact reproductions thereof, which show the scope, character, dimensions and details of the work and which have been prepared by the Contractor's Engineer.

I. Project - The undertaking to be performed as provided in the Contract Documents.

J. Resident Observer or Project Representative - The authorized representative of the AWC who is assigned to the Project or any part thereof.

K. Shall - Must, obligation to complete the specified task or directive.

L. Shop Drawings - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the work shall be fabricated or installed.

M. Specifications - A part of the Technical Specifications consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

M. Special Conditions - Revisions or additions to the Conditions or Specifications applicable to an individual Project.

N. Subcontractor - An individual, firm or corporation having a direct Contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

O. Substantial Completion - That date as certified by the Owner when the construction of the Project or a specified part thereof, is sufficiently completed, in accordance with the Technical Specifications, so that the Project or specified part can be utilized for the purposes for which it is intended.

P. Supplier - Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

Q. Surety - The Corporate Body which is bound with and for the Contractor, and which engages to be responsible for his payment of all debts pertaining to, and for his acceptable performance of the Work for which he has contracted, as more particularly set forth in the Performance Payment Bond.

R. Work - All labor necessary to produce the construction required by the approved Drawings and Technical Specifications, and all materials and equipment incorporated or to be incorporated in the Project.

S. Work on (at) the Project - Work to be performed at the Project, including the transportation of materials and supplies to or from the location of the Project by employees of the Contractor and any Subcontractor.

T. Written Notice - Any notice to any party of the Agreement relative to any part of his Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the Work.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01140

SPECIAL PROVISIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this section consists of special provisions during construction including:

1. Water for Construction Purposes
2. Occupying Private Property
3. Existing Utility Locations
4. Coordination of Work
5. Time For Completion of Contract
6. Maintenance of Trench Surface
7. Compliance With Permits
8. Connections to Existing Water Systems
9. Protection of Aquifers
10. Contractor's Representative

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 WATER FOR CONSTRUCTION PURPOSES

A. In locations where water is in sufficient supply, the Contractor may be allowed to use water without charge for construction purposes. The express approval of the Owner shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use. The Contractor shall coordinate with the owner to obtain a meter and backflow device (hydrant rig). The meter and backflow device shall be installed at the location directed by the Owner. If directed by the Owner, the Contractor shall provide at no charge a backflow preventer and meter for use. All materials must meet the requirements of the Owner.

3.02 OCCUPYING PRIVATE PROPERTY

A. The Contractor shall not enter upon nor occupy with men, equipment or materials and property outside of the public highways or Owner's easements, except with the written consent of the property owner or property owner's agent.

3.03 EXISTING UTILITY LOCATIONS – CONTRACTOR'S RESPONSIBILITY

A. The Contractor shall coordinate all work involving utilities and shall satisfy himself as to the existing conditions of the areas in which he is to perform his work. He shall conduct and arrange his work so as not to impede or interfere with the work of other contractors working in the same or adjacent areas.

3.04 COORDINATION OF WORK

A. The General Contractor shall be responsible for coordinating his own work as well as that of any subcontractors. He shall be responsible for notification of the Engineer when each phase of work is expected to begin and the approximate completion date.

3.05 TIME FOR COMPLETION OF CONTRACT

A. The time for completion of the contract is stipulated in the Form of General Bid. The Bidder shall base his bid on completing the proposed work by the completion date stipulated in Section 00650 Notice To Proceed.

3.06 MAINTENANCE OF TRENCH SURFACE

A. After backfilling and compacting the trench, the Contractor shall be responsible for keeping the ground surface dry and passable at all times until the surface has been restored to original condition.

3.07 COMPLIANCE WITH PERMITS

A. The Contractor shall perform all work in conformance with the requirements of permits required by the jurisdiction in which the work under this contract is to take place.

3.08 CONNECTIONS TO EXISTING WATER SYSTEMS

A. The Contractor shall provide the Owner a minimum ten (10) days notice in advance of performing work requiring operation of valves. The Owner will schedule field personnel to assist the Contractor by locating and operating valves required for draining or admitting water to the various sections of the water mains as required to perform the proposed work. The Contractor shall not have any grounds for claims due to scheduling conflicts with the Owner's personnel. No damages shall be claimed by the Contractor for delays in dewatering pipelines nor shall any damages be claimed because of water leaking through closed valves after dewatering is completed.

B. Connections to the existing distribution system shall be made with the mains under pressure unless the lines can be temporarily taken out of service as approved by the Owner

C. The Contractor will be required to make test excavations to ascertain that the proposed position of the connections will be clear of joints, fittings, or other obstructions.

D. If any failure occurs in connection to existing mains, service shall be restored in the shortest possible time, the Contractor working around the clock, if necessary. He shall cooperate with the Owner in notifying the customers or supplying emergency water. If required by the Owner, the Contractor shall make connections to the water mains during night hours, on Sunday or at other times of off-peak demand of water.

3.09 PORTECTION OF AQUIFER

A. The Contractor's attention is directed to the fact that the construction area may be located within a water supply watershed. The Contractor shall take extra precautions to ensure that no pollutants enter the groundwater table from the construction area. The Contractor shall not store fuels or other hazardous materials or potential contaminants on the construction site. In the event of a spill, the Contractor shall immediately notify the Owner and Engineer.

3.10 CONTRACTOR'S REPRESENTATIVE

A. The Contractor shall designate a representative who will be available to respond to emergency calls by the Owner at any time; day, night, on weekends and holidays should such a situation arise.

END OF SECTION

SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section specifies requirements for project meetings including but not limited to Pre-Construction Conference and Progress Meetings.

B. It shall be the responsibility of the Contractor to coordinate work between all subcontractors, sections, and trades required for the proper completion of the Work.

1.02 PRE-CONSTRUCTION CONFERENCE

A. After the bids have been opened but prior to the start of the construction there will be a pre-construction conference to discuss the phasing and scheduling of the Project. The specific time and place of the conference shall be arranged by the Engineer after the Contract has been awarded.

B. This pre-construction conference is intended to establish lines of communication between the parties involved, review responsibilities and personnel assignments, establish project schedules, discuss proposed performance methods, and coordinate Work to be performed by subcontractors.

C. Authorized representatives of the Owner, Engineer and their consultants, the Contractor, its Superintendent and Site Foreman, and all others invited by the Contractor, shall attend the pre-construction conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

D. Discuss items of significance at the pre-construction conference that could affect progress including at least the following:

1. Tentative construction schedule
2. Critical Work sequencing
3. Designation of responsible personnel
4. Procedures for processing field decisions and Change Orders
5. Procedures for processing Applications for Payment
6. Review of Davis Bacon and other federal requirements
7. Distribution of Contract Documents
8. Submittal of Shop Drawings, Product Data and Samples
9. Preparation of record documents
10. Use of the premises
11. Office, work and storage, and laydown areas
12. Equipment deliveries
13. Construction safety procedures
14. Environmental health and safety procedures

15. First aid
16. Security
17. Housekeeping
18. Working hours
19. Traffic Control
20. Emergency Vehicle Access to and around work site
21. Environmental protection measures for construction site

1.03 PROGRESS MEETINGS

A. During the course of the Project, the Contractor shall attend weekly progress meetings as scheduled by the Owner. The Owner, based on work progress and activities, may adjust the progress meetings to twice per month or other. The attendance of subcontractors may be required during the progress of the Work. The Contractor's delegate to the meeting shall be prepared and authorized to discuss the following items:

1. Progress of Work/Critical Work Sequencing in relation to Contract Schedule.
2. Proposed Work activities for forthcoming period.
3. Resources committed to Contract.
4. Coordination of Work with others.
5. Status of procurement of equipment and materials.
6. Status of Submittals.
7. Outstanding actions, decisions, or approvals that affect Work activities.
8. Site access and/or security issues
9. Hazards and risks
10. Housekeeping
11. Quality issues
12. Potential Claims
13. Change Orders
14. Costs, budget, and payment requests

B. The Contractor shall revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized and the revised schedule shall be submitted to the Engineer and Owner.

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION

Not used.

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The Contractor shall provide the Engineer with submittals as required by the contract documents.

1.02 RELATED WORK

A. Divisions 1 – 16 of these specifications that require submittals.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.01 GENERAL

A. As required by the General Conditions, Contractor shall submit a schedule of shop and working drawing submittals.

B. The Contractor shall submit the shop and working drawing submittals either electronically or hard copy.

3.02 ELECTRONIC SUBMITTALS

A. In accordance with the accepted schedule, the Contractor shall submit promptly to the Engineer by email, one electronic copy in Portable Document Format (PDF) of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.

B. Each electronic copy of the shop or working drawing shall be accompanied by the Engineer's standard shop drawing transmittal form, included as Exhibit 1 of this section (use only for electronic submittals), on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure. A fillable PDF version of this form will be provided by the Owner for completion. Submittals and submittal cover sheets shall be legibly written, with preference to type written work. Any cover sheets or submittals determined to illegible will be rejected without review.

C. The Contractor shall receive a shop drawing memorandum with the Engineer's approval or comments via email.

3.03 HARD COPY SUBMITTALS

A. In general, the Engineer will accept and prefer electronic copies of the submittals. However if requested by the Engineer, the Contractor shall submit promptly to the Engineer, by mail the Engineer's Office, six (6) copies each of shop or working drawings required as noted in the specifications, of equipment, structural details and materials fabricated especially for this Contract.

B. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names of the Owner, Project, Contractor and building, equipment or structure.

3.04 SHOP AND WORKING DRAWINGS

A. Shop and working drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish of shop coat, grease fittings, etc., depending on the subject of the drawings. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for this Contract.

B. All shop and working drawings shall be submitted to the Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. All shop and working drawings shall be prepared on standard size, 24-inch by 36-inch sheets, except those, which are made by changing existing standard shop or working drawings. All drawings shall be clearly marked with the names of the Owner, Project, Contractor and building, equipment or structure to which the drawing applies, and shall be suitably numbered. Each shipment of drawings shall be accompanied by the Engineer's (if applicable) standard shop drawing transmittal form on which is a list of the drawings, descriptions and numbers and the names mentioned above.

C. Only drawings that have been prepared, checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Contract Documents in all respects. Shop drawings shall be reviewed and marked with the date, checker's name and indication of the Contractor's approval, and only then shall be submitted to the Engineer. Shop drawings unsatisfactory to the Contractor shall be returned directly to their source for correction, without submittal to the Engineer. Shop drawings submitted to the Engineer without the Contractor's approval stamp and signature will be rejected. Any deviation from the Contract Documents indicated on the shop drawings must be identified on the drawings and in a separate submittal to the Engineer, as required under subsection 6.17 Shop Drawings and Samples; C. Submittal Procedures, Paragraph 3 of the General Conditions.

D. The Contractor shall be responsible for the prompt submittal and resubmittal, as necessary, of all shop and working drawings so that there will be no delay in the work due to the absence of such drawings.

E. The Engineer will review the shop and working drawings as to their general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Corrections of comments made on the drawings during the review do not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. The review of the shop drawings is general and shall not relieve the Contractor of the responsibility for details of design, dimensions, code compliance, etc., necessary for interfacing with other components, proper fitting and construction of the work required by the Contract and for achieving the specified performance. The Engineer will review submittals two times: once upon original submission and a second time if the Engineer requires a revision or corrections. The Contractor shall reimburse the Owner amounts charged to the Owner by the Engineer for performing any review of a submittal for the third time or greater.

F. With few exceptions, shop drawings will be reviewed and returned to the Contractor within 30 days of submittal.

G. No material or equipment shall be purchased or fabricated especially for this Contract nor shall the Contractor proceed with any portion of the work, the design and details of which are dependent upon the design and details of equipment or other features for which review is required, until the required shop and working drawings have been submitted and reviewed by the Engineer as to their general conformance and compliance with the project and its Contract Documents. All materials and work involved in the construction shall then be as represented by said drawings.

H. Two copies of the shop and working drawings and/or catalog cuts will be returned to the Contractor. The Contractor shall furnish additional copies of such drawings or catalog cuts when he needs more than two copies or when so requested.

3.05 SAMPLES

A. Samples specified in individual Sections include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.

B. The number of samples submitted shall be as specified. Submittal and processing of samples shall follow the procedures outlined for shop and working drawings unless the specifications call for a field submittal or mock-up.

C. Acceptance of samples will be acknowledged via a copy of the transmittal noting status. When samples are not acceptable, prompt resubmittal will be required.

END OF SECTION

EXHIBIT 1 TO SECTION 01330 SUBMITTALS

SHOP DRAWING TRANSMITTAL FORM

SHOP DRAWING / SUBMITTAL FORM

PROJECT NAME:
LOCATION:
AWC JOB NO.:

ENGINEER:
JOB NO.:

CONTRACTOR:
JOB NO.:

ITEM DESCRIPTION:
SPEC SECTION NO.:
MANUFACTURER:
VENDOR:

CONTRACTOR'S REVIEW AND APPROVAL:

I certify that all items submitted with this form have been reviewed by the Contractor, are in conformance with the requirements of the Contract Documents, except where noted, and are approved by the Contractor for use on this project.

SIGNATURE: _____ DATE: _____

TITLE: _____

(ENGINEERING FIRM USE ONLY)

- ☐ Approved
- ☐ Approved as Noted
- ☐ Revise and Resubmit
- ☐ Not Approved

Shop Drawing / Submittal review is solely for general conformance with the design concept of the project and materials specified in the Contract Documents. The review and/or approval of this submittal is for general compliance and shall not be construed as a warranty or guarantee by the Owner or Engineer. The Contractor is solely responsible for all means and methods of construction and confirmation of dimensions and measurements for the ordering and fabrication of materials.

Reviewed By: _____

Date : _____

AQUARION Water Company
Stewards of the Environment™

AQUARION WATER COMPANY
600 LINDLEY STREET
BRIDGEPORT, CT 06606

SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 SUMMARY

A. To assure adequate planning and execution of the work so that the Work is completed within the number of calendar days allowed in the Contract, and to assist the Engineer in appraising the reasonableness of the proposed schedule and in evaluating progress of the Work, prepare and maintain the schedules and reports described in this Section.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Construction period: Contract Agreement

B. Definitions:
   1. "Day", as used throughout the Contract unless otherwise stated, means "calendar day".

1.03 QUALITY ASSURANCE

A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data and in preparing and issuing periodic reports as required by this Specification.

B. Perform data preparation, analysis, charting and updating in accordance with standards approved by the Engineer.

C. Reliance upon the approved schedule:
   1. The construction schedule as approved by the Engineer shall be an integral part of the Contract and shall establish interim completion dates for the various activities under the Contract.

   2. Should any activity not be completed within 15 days after the stated scheduled date, the Engineer may request the reason for the delay in schedule from the Contractor. The Contractor shall supply the requested information and the steps which he intends to take to get back on schedule.

   3. It is expressly understood and agreed that failure by the Engineer to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Preliminary Analysis: Within ten (10) calendar days after the Contractor has received the Owner's Notice to Proceed, submit four (4) prints of a preliminary construction schedule to Owner and Engineer.

C. Construction Schedule: Within thirty (30) calendar days after the Contractor has received the Owner's Notice to Proceed submit a Critical Path Method (CPM) network and a computer generated print out of a construction schedule prepared in accordance with Part 2 of this Section to Owner and Engineer.

D. Cash Flow Projection Summary: The Contractor shall submit an updated Cash Flow Projection Summary showing the breakdown of cash flows for the project with each Application for Payment. Applications for Payment will not be processed without an updated Cash Flow Projection Summary.

D. Periodic Reports: See paragraph 2.02-B of this Section.

PART 2 PRODUCTS

2.01 CONSTRUCTION ANALYSIS

A. The Contractor shall provide a detailed work schedule, projected at least a month in advance. The implementation of the work schedule and the coordination required shall constitute the basic agenda of the coordination and planning meetings.

B. The order of new construction shall be discussed with the Engineer well in advance of the contemplated construction and the intended schedule shall meet with his approval. The Contractor, prior to starting work, shall submit to the Engineer a written description of the methods he plans to use in doing the work, including any necessary plans depicting the proposed details as well as a schedule of expected dates for beginning and completing the various buildings, structures and appurtenances which make up the work. Work shall not commence on a given portion of the project until the schedule for that portion (and preferably the entire schedule) has been approved by the Engineer. The Contractor shall be required to update this schedule periodically as necessary.

2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. This schedule shall include a Critical Path Network and a computer generated print out. The schedule shall account for all subcontracts in addition to the work of the Contractor.

B. The network shall be provided in the form of a time scaled schedule. The computer printout shall include as a minimum, the earliest starting, earliest finish, latest starting, latest finish dates, and the total float for each activity. The Contractor shall update (monitor) and run the schedule at least monthly and shall submit to the Engineer both the network and computer printout, both in duplicate, at the same time the pay estimate is prepared. The schedule shall contain all of the items of the periodic estimate and pay schedule.

PART 3 EXECUTION

3.01 SCHEDULE AND UPDATES

A. The monthly schedule update (monitoring) shall include the following items.

1. Network: Activities that are completed or in process are to be identified on the network by contrasting heavy lines. Each activity and work done should be proportional to the percentage of progress achieved to date.
2. Computer printout: The percentage progress status of each activity shall be shown on the computer printout. The percentage progress status will be used to support the Contractor's periodic pay estimate. Actual start and completion dates are to be included in the computer printout. All activities started and in process should be flagged in the computer printout.
3. The Engineer reserves the right to modify any schedule as required to meet the prevailing conditions. Review of the work schedules by the Engineer shall not relieve the Contractor of responsibilities regarding specified project completion times and liquidated damages.
4. Along with the Application for Payment and updated schedule, the Contractor shall submit an updated Cash Flow Projection Summary.

END OF SECTION

SECTION 01350

HEALTH & SAFETY PLAN

PART 1 GENERAL

1.01 SUMMARY

A. The work of this section consists of:

1. Furnish all labor, equipment and materials and perform all operations in connection with monitoring air quality, decontaminating equipment and providing worker health and safety protection for all Contractor personnel.

2. Develop a site specific Health and Safety Plan (HASP) specifically addressing the potential hazards that may be encountered. This plan shall meet all OSHA and Owner Contractor Safety Manual requirements. The plan shall be submitted at the time the contract is awarded.

3. Review the requirements and data presented and supplement the program with any additional measures deemed necessary to fully comply with regulatory requirements and adequately protect personnel on the site.

4. The Health and Safety Plan shall be kept onsite throughout the course of the work, for verification that the Contractor is performing in accordance with the plan.

1.02 REFERENCES

A. OSHA Regulation 29 CFR 1910.120

1.03 DEFINITIONS

A. Site Safety Official (SSO) - The individual who is responsible to the Contractor and has the authority and knowledge necessary to implement the site safety and health plan and verify compliance with applicable safety and health requirements.

1.04 SUBMITTALS

A. Informational Submittals

1. Submit the following within seven (7) days after the Notice of Award.

a. Site-specific HASP including the Emergency Response Plan for review, including provisions for decontamination and a contingency plan for unforeseen emergencies. The Engineer's review is only to determine if the HASP meets basic regulatory requirements and the minimum requirements of this section. The review will not determine the adequacy of the HASP to address all potential hazards, as that remains the sole responsibility of the Contractor.

b. Current certification of employee's health and safety training and certification of employee's baseline medical exam status.

c. Certification of additional required health and safety training for supervisors.

d. Qualifications and experience of the SSO for approval.

2. Submit minutes of weekly safety meetings at periodic progress meetings.

1.05 CONTRACTOR'S RESPONSIBILITIES

A. The Contractor is solely responsible for the health and safety of workers employed by the Contractor, any subcontractor and anyone directly or indirectly employed by any of them.

B. Work under this contract is not being performed on an "Uncontrolled Hazardous Waste Site," as defined in 29 CFR 1910.120. Develop and follow a site specific Health & Safety Plan (HASP) in accordance with the requirements of 29 CFR 1910.120 and paragraph 1.6.

C. Establish emergency routes of travel.

D. Train all workers assigned to areas where contaminated media are likely to be encountered in accordance with 29 CFR 1910.120.

E. In areas where contaminated media are likely to be encountered, monitor air quality in and around work area using appropriate air monitoring equipment, as indicated in Part 2. Record all readings and maintain record on site. Stop work and/or upgrade respiratory protection or personal protective equipment levels if action levels established in the HASP are exceeded. Ensure that degree and type of respiratory protection provided is consistent with the monitored concentrations and individual chemical parameters. Lawfully dispose of all contaminated clothing and equipment that cannot be decontaminated.

F. At all times, prevent oil or other hazardous substances from entering the ground, sewers, drainage areas and piping systems.

G. All personnel employed by the Contractor and any Subcontractors must have completed an OSHA 10-hour Construction Safety Course within the last three calendar years.

1.06 HEALTH & SAFETY PLAN (HASP) REQUIREMENTS

A. The following items shall be addressed in the HASP:

1. Contractors Safety Manual requirements;
2. safety and health hazard assessment;
3. procedures for emergency medical treatment and first aid;
4. map indicating route to hospital for emergency medical care;
5. equipment decontamination procedures;
6. chemical hazards (including hydrofluosilicic acid);
7. air monitoring procedures and action levels;
8. personal protective equipment and decontamination;
9. physical hazard evaluation and abatement including, but not limited to:
    a. equipment operation;
    b. confined space entry;
    c. slips and falls;
    d. building collapse;
    e. falling debris;
    f. encountering unmarked utilities;
    g. cold and heat stress;
    h. hot work (cutting and welding);
    i. excavation entry;
    j. trench box and shoring system inspection
    k. ladder safety and inspection

l. work zone safety

m. air monitoring equipment

10. training requirements;

11. recordkeeping requirements;

12. emergency response plan that includes:

a. names of three (3) Emergency Response Contractors, experienced in the removal and disposal of oils and hazardous chemicals, that the Contractor intends to use in the event of an emergency;

b. evacuation routes and procedures;

c. emergency alerting and response procedures.

1.07 CONTINGENCY MEASURES & NOTIFICATIONS

A. In the event that potentially hazardous materials are encountered during the work under this contract, the responsibilities of the Contractor and the Engineer are described herein.

B. The procedures and protocols to be used by the SSO in defining materials that are potentially hazardous include screening with a photo-ionization detector, odor, visual appearance of a material, pH testing for acidic materials, and obvious oil or chemical contaminated materials.

C. Upon encountering suspected hazardous buried objects or materials as described above, cover the excavation immediately if no imminent danger, as defined by the SSO, is present. If there is an imminent danger, as defined by the SSO, Evacuate the area immediately. The SSO shall then notify the Engineer and the Owner of the situation.

D. Establish, properly barricade, and mark the area as an exclusion zone under the direction of the SSO. The SSO shall establish the exclusion zone boundaries based upon air quality monitoring using a photo-ionization detector and other equipment as appropriate. The exclusion zone shall be established at a minimum 50-foot radius around the location where the potentially hazardous material is encountered. Work within the exclusion zone shall be discontinued until the hazardous condition has been remediated and testing indicates that a hazard does not exist. Other activities of the site, outside the limits of the exclusion zone shall continue. Ambient air quality monitoring shall be performed by the SSO to demonstrate that ambient air quality in other portions of the site is not adversely impacted by the exclusion zone condition.

E. Notify the Engineer and the Owner regarding the presence of potentially hazardous materials. The Owner may direct the Contractor to notify regulators and to obtain necessary regulatory approvals for remediation.

F. Mobilize the appropriate equipment and personnel to sample and test the hazardous material within the exclusion zone to determine the remedial action required, subject to the Engineer's direction. The Contractor may be directed to remove and legally dispose of the material. Compensation for the removal and disposal of hazardous material will be as a Change in Work and Change in Contract Price in accordance with the General Conditions, if not covered under a specific bid item.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

SECTION 01385

PRE AND POST-CONSTRUCTION VIDEO RECORDING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: The Contractor shall provide all labor, materials, tools and equipment necessary to furnish video recordings of the following:
   1. Pre-Construction video recording showing the condition of all areas of the site prior to mobilization to the site and start of the project.
   2. Post-Construction video recording showing the condition of the site at the completion of the project, site restoration and demobilization from the site.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and all Divisions of these Specifications.

1.03 QUALITY ASSURANCE

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

B. Use video recording equipment that can produce continuous, clear video.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 VIDEO RECORDING

A. Equipment
   1. The equipment employed in the video recording shall be sufficient to provide a clear, full color and detailed visual description of the site along with a detailed narrative description of physical conditions and location.

B. Area Included
   1. The area included in the video recording shall include the actual location of the work, the adjacent property and all other areas which could reasonably be anticipated to be affected by the work.
   2. Particular attention should be paid to the existing condition of private property immediately adjacent to the work.

3. Post-construction videos shall include all areas disturbed by the project plus the area immediately beyond the limits of disturbance.

C. Documentation

1. The video recordings shall be conducted at a slow walking pace and shall record the physical conditions in the area described above.
2. The narrative description shall be recorded simultaneously and shall supplement the visual description particularly with regard to location.
3. Post-construction and pre-construction videos are to follow the same general format for pace, locations, and narrative to allow for ease of comparison between pre and post-construction conditions.
4. Contractor shall furnish three (3) complete copies of each video recording to the Engineer prior to the start of the work for pre-construction videos and prior to issuance of the final Application for Payment for post-construction videos.

D. Personnel

1. All personnel employed by the Contractor in video recording shall be experienced in all aspects of the process, including recognition of important physical conditions in and around the site of the Work.

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included:
1. Provide such testing and inspecting as are specified to be furnished by the Contractor in this Section and/or elsewhere in the Contract Documents.
2. Cooperate with any testing agency that may be independently selected by Owner and all others responsible for testing and inspecting the Work.

B. Related Work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 through Division 3 of these Specifications.
2. Requirements for testing are described in various Sections of these Specifications.
3. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require such testing to be performed under current pertinent standards for testing.

1.02 QUALITY ASSURANCE

A. All testing laboratories will be submitted to Engineer for approval in accordance with ASTM E329.

B. Testing, when required, will be in accordance with all pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials.

C. When work is performed in the state right of way the nuclear density gauge used shall be certified within the same calendar year as the work is being performed.

1.03 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610.

B. Promptly process and distribute required copies of test reports and related instructions to assure necessary re-testing and replacement of materials with the least possible delay in progress of the work.

PART 2 PRODUCTS

2.01 PAYMENT FOR TESTING

A. The Contractor shall pay for compaction testing of the backfilled material and be reimbursed by the Owner within the allowance set out in the contract. If test results indicate work does not conform to specification requirements, the Contractor shall remove or correct the defective Work by re-compacting where appropriate, or by replacing as necessary and approved by the Engineer, to bring the work into compliance, at no additional cost to the Owner. Additional charges incurred due to the non-conforming test results shall be paid for by the Contractor and will not be reimbursed by the Owner. All backfill materials, and materials under structures and buildings shall be field tested for compliance with the requirements of this specification.

2.02 CODE COMPLIANCE TESTING

A. Inspections and tests required by codes or ordinances, or by a plan approval authority, and by which are made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor.

2.03 CONTRACTOR'S CONVENIENCE TESTING

A. Inspecting and testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

PART 3 EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY

A. Representatives of the testing laboratory shall have access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

3.02 TAKING SPECIMENS

A. All specimens and samples for testing, unless otherwise provided in the Contract Documents, shall be taken by the testing personnel. All sampling equipment and personnel will be provided by the testing laboratory. All deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

3.03 SCHEDULE FOR TESTING

A. Establishing schedule: By advance discussion with the testing laboratory determine the time required for the laboratory to perform its test and to issue each of its findings. Submit schedule to Engineer for approval.

B. Revising schedule: When changes of construction schedule are necessary during construction, coordinate all such changes with the testing laboratory as required.

C. Adherence to schedule: When the testing laboratory is requested to test, but is prevented from testing or taking specimens due to incompleteness of the work, all extra charges for testing attributable to the delay may be back charged to the Contractor.

END OF SECTION

SECTION 01505

MOBILIZATION

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Includes: The transportation and storage of all equipment and materials necessary to the Work and the field offices.

B. RELATED WORK

1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 through Division 3 of these Specifications.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 STORAGE AREA

A. It shall be the Contractor's sole responsibility to procure and maintain a suitable storage area for tools, materials and equipment necessary to perform the work.

1. The storage area obtained by the Contractor shall not obstruct or interfere with pedestrian or vehicular movement, and shall not occupy any space within the public right-of-way, except with specific permission from the Owner.
2. The Contractor shall provide to the Engineer and Owner copies of the written agreement stating the terms of the property rental with signatures from both the Contractor and property owner.
3. The storage area shall be kept neat at all times.
4. The Owner shall not be a party to negotiations related to acquisition of areas for storage or cleanup of the same (unless the storage area is on Owner's property), but reserves the right to inspect such area(s) for compliance with Town regulatory requirements.
5. Contractor shall not use storage area for bulk storage of hazardous materials (e.g., gasoline, solvents, oil).

3.02 EQUIPMENT

A. Contractor shall transport all equipment to the site, assemble the equipment as needed to proceed with the work and maintain the equipment as needed during the work.

END OF SECTION

SECTION 01510

TEMPORARY FACILITIES

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this Section shall consist of providing the following temporary facilities:
   1. Water
   2. Sanitary Facilities
   3. Drainage

PART 2 PRODUCTS

2.01 TEMPORARY WATER

A. Drinking water shall be provided by the Contractor for his personnel and the personnel of his sub-contractors.
   1. Drinking water shall be tested and approved by the State Agency as "safe drinking water suitable for human consumption".
   2. Contractor shall furnish water for construction.

2.02 TEMPORARY SANITARY FACILITIES

A. Sanitary conveniences, properly screened from public observation, for the use of all persons employed on the work and beginning with the first man engaged in preliminary operations, shall be provided and maintained by the Contractor in sufficient numbers through the completion of the work.
   1. Contractor shall be diligent in maintaining sanitary facilities; pumping weekly, or more often as required to protect soil and water quality.

B. Contractor shall provide a suitable means for washing / disinfecting hands.

2.03 TEMPORARY DRAINAGE

A. Temporary drainage, as necessary shall be provided by the Contractor to keep the working area dry.

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01545

PROTECTION OF PROPERTY

PART 1 – GENERAL

Not Used.

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 HAULING, HANDLING AND STORAGE OF MATERIALS

A. The Contractor shall, at his own expense, handle and haul all materials furnished by him and shall remove any of his surplus materials at the completion of the work.

B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by him that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.

C. All excavated materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

E. Unless specifically authorized in writing by the authority having jurisdiction, the Contractor is not permitted to store any materials, equipment, tools or vehicles within roadways, rights-of-way or easements. The Owner reserves the right to order the Contractor to remove or relocate stored materials at the Contractor's sole expense. Additionally, the Owner has the right to postpone delivery of Owner furnished materials until the Contractor has provided written documentation that a suitable staging area has been secured.

3.02 EASEMENTS

A. As indicated on the drawings, the work is located in easements obtained by the Owner. The Contractor has no rights outside of the easements unless they are obtained from the property owner.

B. Contractor shall schedule work so that it will cause minimum inconvenience and nuisance to abutting property owners, over the shortest possible time.

C. Easements shall be kept clean; no rubbish or discarded construction materials shall be allowed to accumulate. Storage of excess construction materials, including soil, ledge, equipment, or machinery on easements will not be allowed.

D. Restoration of fences, shrubs, trees and grass shall be completed promptly following completion of the work in an easement, to minimize disruption and inconvenience to property owners.

E. Unless approved by the Engineer, the use of easements for ease of access to and egress from other areas of the project will not be permitted.

3.03 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe means for completely covering all open excavations and for accommodating travel when work is not in progress.

B. Bridges provided for access to private property during construction shall be removed when no longer required.

C. The length of open trench will be controlled by the particular surrounding conditions but shall always be confined to the limits prescribed by the Engineer.

D. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, then special construction procedures shall be taken, such as limiting the length of trench and prohibiting stocking excavated material in the street.

E. All street excavations shall be completely closed at the end of each work day. Backfilling or use of steel plates of adequate strength to carry traffic shall be used.

3.04 MAINTENANCE OF TRAFFIC

A. Unless permission to close the street is received in writing from the proper authority, all excavated materials and equipment shall be placed so that vehicular and pedestrian traffic may be safely maintained at all times.

B. Should the Chief of Police deem it necessary, uniformed officers will be assigned to direct traffic. The Contractor shall make all arrangements in obtaining uniformed officers or certified flaggers required.

C. The Contractor shall at his own expense, as directed by the Police Traffic Control/Safety Officer, provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices not specifically covered in a bid item, to protect the work from traffic, pedestrians, and animals. He shall provide sufficient temporary lighting such as lanterns/flashers (electric battery operated) or other approved illuminated traffic signs and devices to afford adequate protection to the traveling public, at no additional cost to the Owner.

D. The Contractor shall furnish all construction signs that are deemed necessary by and in accordance with Part VI of the Manual on Uniform Traffic Control Devices as published by the U.S. Department of Transportation. In addition, the Contractor may be required to furnish up to 128 square feet of additional special construction warning signs. Size and exact wording of signs shall be determined by the Engineer during construction.

E. The intent of policing is to ensure public safety by direction of traffic. Police officers or flaggers are not to serve as watchmen to protect the Contractor's equipment and materials.

F. Nothing contained herein shall be construed as relieving the Contractor of any of his responsibilities for protection of persons and property under the terms of the Contract.

3.05 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.

3.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

A. All existing buildings, utilities, pipes, poles, wires fences, curbings, property line markers and other structures which the Engineer decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.

B. The Contractor shall determine the location of all underground structures and utilities (including existing water services, drain lines, electrical lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.

C. On paved or concrete surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with steel tracks, treads, or wheels which are shaped so as to cut or otherwise damage surfaces.

D. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun. Suitable materials and methods shall be used for such restoration.

E. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

3.07 MAINTENANCE OF FLOW

A. The Contractor shall at his own cost, provide for the flow of sewers and drains interrupted during the progress of the work, and shall immediately cart away and dispose of all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

B. All existing drainage facilities including, but not limited to; brooks, streams, canals, channels, ditches, culverts, catch basins and drainage piping shall be adequately safeguarded so as not to impede drainage or to cause siltation of downstream areas in any manner whatsoever. If the Contractor damages or impairs any of the aforesaid drainage facilities, he shall repair the same within the same day.

C. At the conclusion of the work, the Contractor shall remove all silt in drainage structures caused by his operations as described in Section 01700, CONTRACT CLOSEOUT.

3.08 REJECTED MATERIALS AND DEFECTIVE WORK

A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor, and shall not be made use of elsewhere in the work.

B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.

C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

3.09 SANITARY REGULATIONS

A. Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committing of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Engineer. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

3.10 SAFETY AND HEALTH REGULATIONS

A. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the State Occupational Safety and Health (OSHA). Contractors shall be familiar with the requirements of these regulations and are solely responsible for execution of all work in conformance with all applicable Federal, State, and Local regulations and guidelines.

3.11 SITE INVESTIGATION

A. The Contractor acknowledges that he has satisfied himself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint himself with available information will not relieve him from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner assumes no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

3.12 HANGERS, PADS, AND SUPPORTS

A. Unless otherwise indicated, hangers and supports shall be by the trade providing the supported item.

B. Except where detailed or specified, design of hangers and supports shall be the responsibility of the Contractor. All parts of such hangers or supports shall be designed in accordance with accepted engineering practice, using a factor of safety of at least 2½.

C. When proprietary hangers, etc., are supplied, satisfactory evidence of the strength of such items shall be furnished.

D. Hangers for items hung from steel and concrete shall be centered on the vertical center of gravity of the beam.

E. Locations and sizes of openings, sleeves, concrete pads, steel frames, and other equipment supports are indicated on the drawings for bidding purposes only. Final sizes and locations of such items shall be obtained from the shop drawings.

3.13 SLEEVES, HOLES, HANGERS, INSERTS, ETC.

A. Except where holes and openings are dimensioned, and hangers, inserts, and supports are fully called for on the architectural and structural drawings (or reference is made thereon to drawings containing such information) to accommodate mechanical or electrical items, they shall be by the mechanical or electrical trade concerned.

B. Sleeves, inserts, anchors, etc., supplied under the mechanical and electrical contracts in sufficient time to so permit, shall be set in concrete, masonry, etc., or fastened to steel deck, etc., by the respective architectural or structural trade. Where not supplied in sufficient time, installation of such items shall be the responsibility of the mechanical or electrical trade involved.

C. Nothing shall be suspended from the steel roof deck and no fastenings made to it, except with the prior permission of the Engineer. Request for permission shall be accompanied by full details of the hanger or fastener, including the weight of the item to be suspended.

D. Nailers and other wood members attached to steel or masonry, for which fasteners are not indicated on the design drawings or in the specification, shall be fastened with the equivalent of ½-inch diameter bolts at 3 feet o.c.

E. Openings for mechanical and electrical items in finished areas of the building shall be closed off with near escutcheon plates or similar closures. These closures shall be by the mechanical or electrical trade involved.

3.14 ROOF PROTECTION

Where work must be performed over completed roofing, the roofing shall be protected by 2 layers of ½-inch thick plywood, laid with joints in the second layer offset 1/2 sheet width and length from joints in the first layer. No material shall be stored or work performed on areas of roof which are not so protected.

3.15 WEATHER PROTECTION

The Contractor shall install weather protection and shall furnish adequate heat in the area so protected during the months of November through March.

3.16 ELECTRIC SERVICE

A. The Contractor shall if required by the contract, make all necessary applications and arrangements and pay for all fees and charges for electrical energy for power and light necessary for the proper completion of this contract during its entire progress. The Contractor shall provide and pay for all temporary wiring, switches, connections, and meters.

B. There shall be sufficient electric lighting so that all work may be done in a workmanlike manner where there is not sufficient daylight.

3.17 HAZARDOUS WASTE

Should the Contractor, while performing work under this contract, uncover hazardous materials, as defined in Connecticut Remediation Standard Regulations, he shall immediately notify the Engineer. The Contractor is not, and has no authority to act as, a handler, generator, operator or disposer of hazardous or toxic substances found or identified at the site, and the Owner shall undertake all such functions.

END OF SECTION

SECTION 01567

ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.01 DESCRIPTION

A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.

B. The requirements set forth in this section of the specifications apply to cross-country areas, river and stream crossings, and construction in and adjacent to wetlands, unless otherwise specifically stated.

C. All work under this Contract shall be in accordance with the requirements of the State and Local inland wetlands and water course commissions and any conditional requirements applied.

D. Prior to commencement of work, the Contractor shall meet with representatives of the Engineer to develop mutual understandings relative to compliance of the environmental protection program.

1.02 RELATED WORK

A. Section 01300, SUBMITTALS

B. Section 02160, SUPPORT OF EXCAVATION

C. Section 02222, EARTHWORK FOR WATER DISTRIBUTION SYSTEMS

C. Section 02240, SITE DRAINAGE AND DEWATERING

D. Section 02930, LOAM AND SEED

E. Section 02931, LIVE SOD

1.03 SUBMITTALS

A. The Contractor shall submit for approval six sets of details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands or across areas designated as wetlands.

PART 2 - PRODUCTS

2.01 SILT FENCE

A. The silt fence shall consist of a 3-foot wide continuous length sediment control fabric, stitched to a mesh backing, and stapled to preweathered oak posts installed as shown on the drawings. The oak posts shall be 1-1/4-inches by 1-1/4-inches (Minimum Dimension) by 48-inches and shall be tapered. The bottom edge of the silt fence shall be buried as shown on the drawings.

B. The silt fence shall be Silt Fence PPDM3611, as manufactured by U.S. Silt & Site Supply/Getsco, Concord, NH, or approved equal.

C. Silt fence properties:

Physical Properties	**Test Method**	**Minimum Value**
Grab Strength, lbs.	ASTM-D-4632	124
Grab Elongation, %	ASTM-D-4632	15
Mullen burst, psi	ASTM-D-3786	300
Puncture, lbs.	ASTM-D-4833	65
Trapezoidal Tear, lbs.	ASTM-D-4833	65
UV Resistance2, %3	ASTM-D-4355	80@500 hrs.
AOS, US Sieve No.	ASTM-D-4751	30
Flow Rate, gal/min/sq ft	ASTM-D-4491	10
Permittivity, (1/sec) gal/min/sq ft	ASTM-D-4491	0.05 sec^{-1}

2.02 STRAW BALES

A. Straw bales shall consist of certified seed free stems of agricultural grain and cereal crops and shall be free of grasses and legumes. Standard bales shall be 14-inches high, 18- inches wide and 36- to 40-inches long tied with polypropylene twine and weigh within 5 percent of 7 lbs. per cubic ft.

2.03 STRAW WATTLES

A. Straw Wattles shall consist of a 100% biodegradable exterior jute or coir netting with 100% wheat straw interior filling as manufactured by Granite Environmental, Inc., Sebastian, Florida (Phone: 888-703-9889; website: www.GraniteEnvironmental.com), or approved equal.

2.04 SILT CURTAIN

A. The silt curtain shall be a Type-1-Silt-Barrier consisting of 18-ounce vinyl fabric skirt with a 6-inch marine quality floatation device. The skirt shall be ballasted to hang vertical in the water column by a minimum 3/16-inch galvanized chain. The silt curtain shall extend into the water as shown on the drawings. If necessary, join adjacent ends of the silt curtain by connecting the reinforcing grommets and shackling ballast lines.

PART 3- EXECUTION

3.01 NOTIFICATION AND STOPPAGE OF WORK

The Engineer will notify the Contractor in writing of any non-compliance with the requirements of the Inland Wetlands and Water Course Commission. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken. No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

3.02 AREA OF CONSTRUCTION ACTIVITY

A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

3.03 PROTECTION OF WATER RESOURCES

A. The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.

B. Special measures should be taken to insure against spillage of any pollutants into public waters.

3.04 CONSTRUCTION IN AREAS DESIGNATED AS WETLANDS ON THE DRAWINGS

A. Insofar as possible, the Contractor shall make every effort to minimize disturbance within areas designated as wetlands. Total easement widths shall be limited to the widths shown.

B. The Contractor shall perform his work in such a way that these areas are left in the condition existing prior to construction.

C. The elevations of areas designated as wetlands shall not be unduly disturbed by the Contractor's operations outside of the trench limits. If such disturbance does occur, the Contractor shall take all measures necessary to return these areas to the elevations which existed prior to construction.

D. In areas designated as wetlands, the Contractor shall carefully remove and stockpile the top 24 inches of soil. This topsoil material shall be used as backfill for the trench excavation top layer. The elevation of the trench shall be restored to the preconstruction elevations wherever disturbed by the Contractor's operation.

E. The Contractor shall use a trench box, sheeting or bracing to support the excavation in areas designated as wetlands.

F. Excavated materials shall not be permanently placed or temporarily stored in areas designated as wetlands. Temporary storage areas for excavated material shall be as required by the Engineer.

G. The use of a temporary gravel roadway to construct the pipeline in the wetlands area is not acceptable. The Contractor will be required to utilize timber or rubber matting to support his equipment in these areas. The timber or rubber matting shall be constructed in such a way that it is capable of supporting all equipment necessary to install the pipeline. The timber or rubber matting shall be constructed of materials and placed in such a way that when removed the material below the matting will not be unduly disturbed, mixed or compacted so as to adversely affect recovery of the existing plant life.

H. Bentonite dams shall be placed in wetlands to prevent drainage. Locations for dams are as indicated on the drawings or as required by the Engineer.

I. During construction, easements within wetlands shall be lined with a continuous straw/hay bale/siltation fence barrier or line of straw wattles (aka compost filter tube, silt/filter sock).

3.05 PROTECTING AND MINIMIZING EXPOSED AREAS

A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, temporary vegetation, mulching or other protective measures shall be provided as specified.

B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to insure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Engineer.

3.06 LOCATION OF STORAGE AREAS

A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.

B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of baled hay or straw around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

C. There shall be no storage of equipment or materials in areas designated as wetlands.

D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

E. Storage areas in cross-country locations shall be restored to pre-construction conditions with the planting of native species of trees and shrubs.

3.07 PROTECTION OF LANDSCAPE

A. The Contractor shall not deface, injure, or destroy trees or shrubs nor remove or cut them without written authority from the Owner. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorages unless specifically authorized by the Engineer. Excavating machinery and cranes shall be of suitable type and be operated with care to prevent injury to trees which are not to be removed, particularly overhanging branches and limbs. The Contractor shall, in any event, be responsible for any damage resulting from such use.

B. Branches, limbs, and roots shall not be cut except by permission of the Engineer. All cutting shall be smoothly and neatly done without splitting or crushing. When there is unavoidable injury to branches, limbs and trunks of trees, the injured portions shall be neatly trimmed and covered with an application of grafting wax or tree healing paint as directed.

C. Where, in the opinion of the Engineer, trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment or by his blasting or other operations, the Engineer may require the Contractor to adequately protect such trees by placing boards, planks, poles or fencing around them. Any trees or landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the expense of the Contractor. The Engineer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of under the provisions of Section 02222, EARTHWORK FOR WATER DISTRIBUTION SYSTEMS.

D. Cultivated hedges, shrubs, and plants which could be injured by the Contractor's operations shall be protected by suitable means or shall be dug up, balled and temporarily replanted and maintained. After construction operations have been substantially completed, they shall be replanted in their original positions and cared for until growth is re-established. If cultivated hedges, shrubs, and plants are injured to such a degree as to affect their growth or diminish their beauty or usefulness, they shall be replaced by items of a kind and quality at least equal to that existing at the start of the work.

3.08 CLEARING AND GRUBBING

A. The Contractor shall clear and grub only on the Owner's land or the Owner's easements, and only the area required for construction operations, as approved by the Engineer. Removal of mature trees (4 inches or greater DBH) will not be allowed on temporary easements.

B. The Contractor shall not remove trees in the Owner's temporary easements without permission of the Engineer.

3.09 DISCHARGE OF DEWATERING OPERATIONS

A. Any water that is pumped and discharged from the trench and/or excavation as part of the Contractor's water handling shall be filtered by an approved method prior to its discharge into a receiving water or drainage system.

B. Under no circumstances shall the Contractor discharge water to the areas designated as wetlands. When constructing in a wetlands area, the Contractor shall discharge water from dewatering operations directly to the nearest drainage system, stream, or waterway after filtering by an approved method.

C. The pumped water shall be filtered through filter fabric and baled hay/ straw, a vegetative filter strip or a vegetated channel to trap sediment occurring as a result of the construction operations. The vegetated channel shall be constructed such that the discharge flow rate shall not exceed a velocity of more than 1 foot per second. Accumulated sediment shall be cleared from the channel periodically.

3.10 DUST CONTROL

A. During the progress of work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of water as necessary, so as to minimize the creation and dispersion of dust.
   1. If the Owner decides that it is necessary to use calcium chloride for more effective dust control, then the Contractor shall furnish and apply the material as directed.
   2. Calcium chloride shall be commercial grade, furnished in 100-pound, 5-ply bags, stored under weatherproof cover and stacked alternately for ventilation.
   3. Application for dust control shall be at the rate of about 1/2 pound per square yard per application.

   4. Calcium chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

3.11 SEPARATION AND REPLACEMENT OF TOPSOIL

A. Topsoil shall be carefully removed from cross-country areas where excavations are to be made, and separately stored to be used again as directed. The topsoil shall be stored in an area acceptable to the Engineer and adequate measures shall be employed to prevent erosion of said material.

3.12 BALED HAY OR STRAW

A. To trap sediment and to prevent sediment from clogging drainage systems, baled hay or straw shall be used where shown on the drawings. Care shall be taken to keep the bales from breaking apart. The bales should be securely staked to prevent overturning, flotation, or displacement. All deposited sediment shall be removed periodically. Hay bales shall not be placed within a waterway during construction of the pipeline crossing.

3.13 ERECTION AND MAINTENANCE OF SILT FENCE

A. Where indicated on the drawings or where required by the Engineer, the Contractor shall erect and maintain a temporary silt fence. In areas designated as wetlands, the Contractor shall line the limits of the construction easement with a silt fence. The silt fence shall be used specifically to contain sediment from runoff water and to minimize environmental damage caused by construction.

3.14 SURFACE RESTORATION OF CROSS COUNTRY AREAS

A. Plantings detailed on the drawings or as otherwise specified shall be installed when construction of the pipeline has been completed within the areas designated. A one-year guarantee of maintenance will be required on these plantings to ensure that they establish in the area.

3.15 CATCH BASIN PROTECTION (SILT SACKS)

A. Siltsacks shall be securely installed under the catch basin grate. All deposited sediment shall be removed periodically and at times prior to predicted precipitation to allow free drainage flow. Siltsacks shall be placed in all drainage system catch basins indicated on the drawings or within the work area as follows:
    1. Remove Catch Basin Grate and place sack in opening leaving approximately six inches of the sack outside the frame. Replace the grate to hold the sack in place.
    2. Siltsack is to be inspected every 2-3 weeks and after every major storm event.
    3. When the yellow restraint cord is no longer visible, Siltsack is full and should be emptied.
    4. To remove or empty Siltsack:
        a. Place a piece of 1-Inch diameter rebar through each of the lifting loops on each side of the sack.
        b. Use heavy equipment to lift and carry Siltsack to an approved area for dumping.
        c. Place Siltsack on the ground within dumping area.
        d. With heavy equipment, lift Siltsack by emptying straps.
        e. This will turn the Siltsack inside out emptying the bag.
        f. The bag can be disposed of or reused.

B. Prior to working in areas where catch basins are to be protected, each catch basin sump shall be cleaned of all debris and protected. The contractor shall properly dispose of all debris at no additional cost to the Owner.

3.16 STRAW WATTLES

A. The wattles will be placed in a shallow trench (2-3 inches deep) and staked in the ground using wooden stakes driven at 4-foot intervals. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.

END OF SECTION

SECTION 01570

TRAFFIC REGULATION

PART 1 GENERAL

1.01 DESCRIPTION

A. The work under this Section shall consist of maintaining and protecting traffic in the project area as shown on drawings, included in Contract Documents or as otherwise required to the satisfaction of the applicable Local Regulatory Agencies, and the Owner.

1. Unless otherwise specified within the Contract Documents, the Contractor must maintain pedestrian and vehicular traffic and permit access to businesses, factories, residences, and intersecting streets.

PART 2 PRODUCTS

2.01 TRAFFIC SIGNS

A. The Contractor shall furnish light(s) and maintain traffic signs as may be directed, or may be necessary for the safe regulation, or convenience of traffic.

1. Said signs shall be as shown or noted on the Contract Drawings or elsewhere herein, or if not specified, they shall be adequate for the regulation, safety, and convenience of traffic and in conformance with the applicable requirements of the State/Federal Manual on Uniform Traffic Control Devices.

2.02 BARRICADES

A. Suitably lighted barriers or barricades shall be furnished by the Contractor and put up and maintained at all times during the night or daytime, around all open ditches, trenches, excavation, or other work potentially dangerous to traffic.

1. Such barricades shall be as shown on the Contract Drawings, or if not shown, shall be constructed of 2 inch by 8-inch rough lumber, securely supported, braced and at least 3 feet high above the ground.
2. Barricades shall be placed on all sides and throughout the entire length and breadth of all open ditches, trenches, excavations, or other work which must be barred to the general public.
3. Barricades shall be properly painted to the satisfaction of the Local Regulatory Agency in order to retain a high degree of visibility to vehicular and pedestrian traffic.

2.03 FLASHERS

A. The Contractor shall furnish and securely fasten flashing units to signs, barricades, and other objects in such numbers and for such lengths of time as are required for the maintenance and protection of traffic.

1. The flashers shall be in operation during all hours between sunset and sunrise, and during periods of low visibility.

2. Suitably lighted barricades shall be defined as barricades lit by flashers in accordance with this Section or other lighting methods approved by the Local Regulatory Agency in lieu thereof.
3. Flashers shall be placed along the entire length of the barricades at an interval no greater than 8 feet, center to center. Flashers shall be power operated, lens directed, enclosed light units which shall provide intermittent light from 70 to 120 flashers per minute, with the period of light emittance occurring not less than 25 percent of each on-off cycle, regardless of temperature.
4. The emitted light shall be yellow in color and the area of light on at least one face of the unit shall be not less than 12 square inches. The discernible light shall be bright enough to be conspicuously visible during the hours of darkness at a minimum distance of 800 feet from the unit under normal atmospheric conditions.
5. For units which beam light in one or more directions, the foregoing specifications shall apply 10 degrees or more to the side and 5 degrees or more above and below the photometric axis.

2.04 TEMPORARY BRIDGING

A. The Contractor shall include in his bid, bridging for trenches at all street and driveway crossings in such manner as the Local Regulatory Agency may direct for the accommodation and safety of the traveling public, to provide facilities for access to private driveways for vehicular use, and to prevent blocking of intersecting traffic.
   1. He shall erect suitable barriers around the excavation to prevent accidents to the public and shall place and maintain, during the night, sufficient lights on or near the work.
   2. A space of 20 feet must be left so that free access may be had at all times to fire hydrants and proper precautions shall be taken so that the entrances to fire hydrants and fire stations shall not be blocked or obstructed.

2.05 DETOURS

A. Temporary detours shall be constructed on the site as proposed by the Contractor and approved by the Applicable State and/or Local Authorities required by the Contract Drawings or specified elsewhere herein.
   1. Detours shall not have grades in excess of 10% anywhere along their lanes unless otherwise shown on the Contract Drawings. Detours shall be smooth riding.
   2. Suitable barricades shall be installed continuously along both sides of a detour where:
      a. The adjacent side slope is steeper than 1 on 6 inches.
      b. The Contractor's operations or equipment may operate within 20 feet of the detour.
      c. Other unsafe conditions requiring them for the protection of traffic along the line of detour.

2.06 MISCELLANEOUS

A. The Contractor may be required to employ traffic persons and take other such reasonable means or precautions as the Local Regulatory Agency may direct, or as may be needed to prevent damage or injury to persons, vehicles, or other property, and to minimize the inconveniences and danger to the public by his construction operations.

PART 3 EXECUTION

3.01 CONTROL OF TRAFFIC

A. It shall be the sole responsibility of the Contractor to keep the Local Regulatory Agencies (including but not limited to the Police and Fire Departments) pre-warned at least 72 hours in advance of changes in traffic patterns due to reduction of pavement widths or closing of streets.

B. The Contractor shall supply, install, maintain, adjust, move, relocate, and store all signs, suitably lighted barricades, traffic cones, and traffic delineators, as necessary to carry out the traffic routing plan and maintain vehicular and pedestrian traffic.
   1. All of this work shall meet with the requirements of the Local Regulatory Agencies.
   2. The Contractor shall maintain, relocate and operate barricades and flashers throughout the life of this Contract.

C. Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in these Specifications, the Owner immediately, and without notice, may furnish, install and maintain barricades or lights.
   1. The cost thereof shall be borne by the Contractor and may be deducted from any amount due or to become due to the Contractor under this Contract.

3.02 ACCESS TO PROPERTY AND UTILITIES

A. The Contractor shall arrange his operations to provide access to properties along the street including temporary bridges to driveways, and provide access to fire hydrants, manholes, gate boxes, or other utilities.
   1. Whenever any trench obstructs traffic in or to any public street, private driveway, or property entrance, the Contractor shall take such steps as required to maintain necessary traffic and access including temporary bridging if required.
   2. The Contractor shall confine his occupancy of public or traveled ways to the smallest space compatible with the efficient and safe performance of the work contemplated by the Contract.

3. If the Contractor's operations or occupancy of any public street or highway, or the uneven surfaces over any trenches being maintained by the Contractor, interfere with the removal or sanding of snow or ice by the public authorities or adjoining land owners, in an ordinary manner with regular highway equipment, the Contractor shall be required to perform such services for the public authorities or adjoining owners without charge.
4. If the Contractor fails to do so, he shall reimburse the said authorities or adjoining owners or the Owner for any additional cost to them for doing such work occasioned by conditions arising from the Contractor's operations, occupancy, or trench surfaces, together with any damage to the equipment of said parties by those conditions or claims of any parties for damage or injury or less by reason of failure to remove snow or ice or to sand icy spots under these conditions.
5. The Contractor shall observe and obey all local and state laws, ordinances, regulations and permits in relation to the obstruction of streets and highways, keeping passageways open and protecting traffic where there may be danger from blasting or other construction activities.

B. The Contractor shall be held responsible for any damages that the Engineer, Owner, Governmental units, or their heirs or assigns may have to pay as a consequence of the Contractor's failure to protect the public from injury, and the same may be deducted from any payments that are due or may become due to the Contractor under this Contract.

END OF SECTION

SECTION 01572

TRAFFICMEN

PART 1 - GENERAL

1.01 WORK INCLUDED

A. This Section covers the provisions for furnishing trafficmen for traffic control and maintenance of traffic as described in Section 01570 TRAFFIC REGULATION.

B. Trafficmen will either by Uniformed Police Officers or Certified Flaggers as specified by the Owner or required by the Town or State.

1.02 DESCRIPTION

A. The Contractor shall coordinate with the local jurisdiction's Traffic Control Officer and / or Police Chief to determine the number of trafficmen deemed necessary to provide for public safety and to maintain a smooth flow of traffic through the construction area(s) affected.

1.03 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in this Division of these Specifications.

1. Section 01545, Protection of Property
2. Section 01570, Traffic Regulation

PART 2 - PRODUCTS

2.01 CERTIFIED FLAGGERS

A. Any flagger determined by the Engineer to be ineffective in controlling traffic may be removed at the discretion of the Engineer. If a flagger is directed to be removed, the Contractor shall immediately comply with the directive from the Engineer and shall suspend operations as necessary until a qualified replacement can be provided. Such a suspension of operations shall not be considered as a basis for a claim or an extension of time.

B. Flaggers used during the performance of the Work shall possess a current certificate of satisfactory completion from a Department-approved flagger training program within the previous two years. All flaggers shall carry their approved flagging training program certification card with them while performing flagging duties. Flagger certifications shall remain valid for the duration of the project or the flagger shall be removed from the project.

C. Each flagger shall be equipped with the following: high visibility clothing, signaling, and safety devices as required by the Department of Transportation of the state where work is being performed.

D. Compensation for flaggers will be paid on an hourly basis for only the actual time spent flagging and payment will be made under Item 53, Traffic Control (Certified Flagger). No allowance or additional payment will be made for required training, equipment, travel time, transportation, or any administrative charges associated with the costs of flaggers.

E. If the Contractor elects to employ his own Certified Flaggers, the Contractor shall provide proof of current certification and the reimbursement shall be at the prevailing wage rate with no markup.

F. Flagger rates shall be established and provided to the Owner at the start of the project.

2.02 UNIFORMED OFFICERS

A. Contractor shall provide the Traffic Control Officer with a minimum of 24 hours notice indicating the time of day, street location and confirm number of officers required for traffic control.

B. Contractor shall give the Traffic Control Officer a minimum of 2 hours prior cancellation notice should Contractor determine that due to weather or conditions beyond his control he would not need the scheduled officers.

C. Contractor shall pay for officer(s) at the prevailing rate established by the local police department should officers not be needed and the Contractor fails to cancel the officers as noted in 2.01.B above.

D. Where the Owner is paying directly for Traffic Officers and the Contractor cancels scheduled officers, the Contractor shall be responsible for payment of the wages for cancellations if not cancelled in accordance with 2.02.B and 2.02.C above.

PART 3 - EXECUTION

3.01 OPERATION

A. Contractor shall provide barricades, barrier fences, traffic signs, and other traffic control devices as required by the Owner’s trafficmen, or as required by the Engineer, to protect the work area from traffic, pedestrians, and animals.

B. Contractor shall relocate barricades, signs and other devices as necessary as the work progresses as required by the trafficmen or the Engineer.

END OF SECTION

SECTION 01610

PRODUCT HANDLING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Protect products scheduled for use in the Work by means including, but not necessarily limited to, those described in this Section.

1.02 QUALITY ASSURANCE

A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.

1.03 MANUFACTURER'S RECOMMENDATIONS

A. Comply with manufacturers' recommendations on product handling, storage and protection.

1.04 PACKAGING

A. Deliver products to the job site in their manufacturer's original container, with labels intact and legible.
   1. Maintain packaged materials with seals unbroken and labels intact until time of use.
   2. Promptly remove damaged material and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the Owner.

B. The Owner may reject as non-complying such material and products that do not bear identification satisfactory to the Owner as to manufacturer, grade, quality and other pertinent information.

1.05 PROTECTION

A. Mechanical equipment subject to damage by the atmosphere if stored outdoors, shall be stored in a building with a controlled environment. The building may be a temporary structure on the site or a building off the site.

B. PVC and HDPE pipe shall be covered to protect it from UV degradation.

C. The Contractor shall be responsible for securing the staging and project area to prevent stored materials from being stolen or damaged. The use of fences, locking storage containers, trailers or other means shall be employed by the Contractor at no additional cost to the Owner.

1.06 REPAIRS AND REPLACEMENTS

A. In event of damage, promptly make replacements and repairs to the approval of the Owner at no additional cost to the Owner.

B. The Contractor shall promptly replace any materials that are stolen or lost at no additional cost to the Owner.

B. Additional time required to secure replacements and to make repairs will not be considered by the Owner to justify an extension in the Contract Time of Completion.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01640

OWNER FURNISHED MATERIALS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: The Owner will furnish and directly pay for all pipe, fittings, valves and accessories, required for the replacement of the water mains as shown on the Contract Drawings. A list of owner furnished materials is included in Appendix F of these Contract Documents. It shall be the responsibility of the Contractor to coordinate delivery of the materials with the Owner and the Owner's supplier and take special care to protect and not damage materials furnished by the Owner for use in the work by means including, but not necessarily limited to, those described in this Section.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications
   1. Section 01310 Construction Schedules
   2. Section 01610 Product Handling

1.03 COORDINATION

A. The Contractor shall be responsible for coordinating delivery of and accepting delivery of materials with the Owner and Owner's suppliers for all material deliveries.

B. The Contractor shall be aware that delivery and pickup schedules may change without prior notice. The Contractor shall be prepared to make trips to the Owner's suppliers to obtain or return materials and to the site for delivery and pickup of materials as required at no additional cost to the Owner.

C. For delivery and pickup of materials, the Contractor shall supply all equipment required to unload and load the material suppliers' trucks at no additional cost to Owner.

D. It shall be the Contractor's sole responsibility to, on a daily basis, inventory materials required for their planned work and notify the onsite representative and Owner if the materials required are not onsite. If materials are not onsite at the time the Contractor plans to perform the work, the Contractor shall obtain the materials from their other sources and be reimbursed in accordance with the applicable allowance Item under Section 01025 Measurement and Payment. Claims for downtime due to materials not being onsite, for rescheduling work or to pick up materials from the Owner's or outside vendors will not be considered. The Contractor is not permitted to request delivery or transportation of materials by the Owner or Owner's representatives.

1.04 STORAGE AND PROTECTION OF MATERIALS

A. Upon delivery of the materials to the jobsite, materials shall be jointly inspected by the Contractor and the Owner's representative, and upon acceptance by the Contractor it shall become the Contractor's responsibility to unload, store, and protect Owner furnished materials, and to make good any damage to or loss of materials until the materials are incorporated and accepted in the work. Materials not used at the end of the job shall be stored at a designated storage area. The Contractor shall assist in loading any unused materials to the material suppliers' trucks or deliver unused parts to the Owner's yard if requested at no additional cost to the Aquarion Water Company.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this Section consists of procedures and requirements for contract closeout, such as cleaning, restoration of project site to original condition, inspections and guarantees.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 CLEANING UP

A. During its progress, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.

B. Where material or debris has washed or flowed into or been placed in water-courses, ditches, gutters, drains, catch basins, or elsewhere as a result of the Contractor's operations, such material or debris shall be entirely removed and legally disposed of during progress of the work, and the ditches, channels, drains, etc., kept in a neat, clean and functioning condition.

C. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operation in a neat and satisfactory condition.

D. Unless otherwise specifically directed or permitted in writing by the Owner and Engineer, the Contractor shall perform the following tasks:

1. Tear down and remove all temporary water mains, services, buildings and structures built by him.
2. Remove all temporary works, tools, and machinery or other construction equipment furnished by him.
3. Remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around privies, houses, and other buildings used by him.
   a. Subsequent to disinfection, remove or suitably neutralize disinfectant residuals from treated area(s).
4. Remove all rubbish from any grounds which he has occupied.

5. Leave roads and all parts of premises and adjacent property affected by his operations in a neat and satisfactory condition.

3.02 RESTORATION

A. The Contractor shall restore or replace, when and as directed by the Engineer, any public or private property damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of operations.
   1. To this end, the Contractor shall do as required all necessary highway or driveway, walk, and landscaping work.
   2. Suitable materials, equipment and methods shall be used for such restoration, or as required in other divisions of this Specification.

B. In restoring the disturbed areas the Contractor shall:
   1. Replace any loam that has been removed during the excavation to a depth of 2 inches or to match existing; whichever is greater.
   2. Remove from the property and legally dispose of in an approved fashion all trees, brush and other items that the Contractor has cut in order to prosecute his work.
   3. Remove from the property upon completion of the work thereon, all excess materials of construction such as stone, pipe, concrete block, gravel, etc., that the Contractor may have stockpiled for use during the course of the work.
   4. Leave the land in a smooth, even condition. All ruts, holes or other undesirable grading conditions which resulted from work under this Contract shall be filled and the area so graded to eliminate ponding.
   5. All drainage course(s) shall be restored to their pre-existing condition or better.
   6. Reset all public or private monuments, iron pipes or other types of property line and geodetic markers damaged or disturbed by operations under this Contract. This work shall be done by a licensed land surveyor at no additional cost.
   7. Repair, reset or replace as directed all pipes, walls, utilities, fences, railings, stone walls, etc., and ornamental or utilitarian domestic accessories, such as, but not limited to, arbors, fireplaces, sheds and incinerators, or other surfaces, structures, or property which may have been damaged, either directly or indirectly by his operations under this Contract.
   8. Restore to a condition at least equal to that in which they were found immediately prior to the beginning of construction all sidewalks, gutters, driveways and curbs which have been damaged by the Contractor's operations.

3.03 FINAL INSPECTION

A. At completion of all work, the Owner and Engineer, along with the General Contractor and each of the subcontractors shall conduct a final inspection jointly for "punch list" purposes and to determine the exact status of the project before final acceptance.

3.04 GUARANTEES

A. The Contractor shall take notice of special guarantees required in the technical Sections of these Specifications.

1. If, in the opinion of the Owner, any item requires excessive maintenance during guarantee periods, the item shall be considered defective and the Contractor shall correct the defects.
2. All defects so corrected shall be at the expense of the Contractor.

END OF SECTION

SECTION 02160

SUPPORT OF EXCAVATION

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide excavation support as required to comply with all applicable Federal, State, and Local regulations.
   1. In general this work shall consist of furnishing and placing timber and/or steel sheeting and shoring of the types and dimensions required for proper excavation support.
   2. The Contractor is solely responsible for ensuring shoring is properly installed to protect any persons entering, working in, or existing excavations.

1.02 DEFINITIONS

A. Shoring shall mean the use of a steel trench box, steel sheeting, or timber sheeting braced as required.

B. Timber sheeting shall mean the use of tongue and groove wood sheeting or steel soldier beams with wood lagging braced as required.

C. Steel sheeting shall mean the use of steel sheet pilings with interlocking joints, braced by steel members as required.

1.03 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02240 Site Drainage and Dewatering
   3. Section 02611 Ductile Iron Pipe and Fittings
   4. Section 02612 HDPE Pipe and Fittings
   5. Section 02645 Hydrants
   6. Section 02660 Service Connections

B. As established in the General Conditions of the Contract, the Contractor is solely responsible for means and methods of construction and for the sequence and procedures to be used.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. The Contractor shall not perform excavations in unstable ground and shall employ a positive means of containing the unstable ground behind shoring, before excavation may proceed.

B. Employ a qualified Engineer, properly permitted to provide such services at the location of the work, to design the shoring system and to inspect and report on the quality of its construction.

C. Comply with all pertinent requirements of governmental agencies having jurisdiction.

D. Comply with all of Aquarion Water Company's safety standards and directives.

E. The Contractor and its agents shall fully indemnify and hold harmless the Owner and Owner's Engineers, Representatives, Employees, and Agents from and against any and all claims whether directly or indirectly arising out of or relating to or in connection with the work.

1.05 STANDARDS

A. The following Standards form a part of this Specification as referenced:
   1. ASTM A328, Specification for Steel Sheet Piling
   2. Code of Federal Regulations (CFR), 29 CFR Part 1926 Subpart P - Excavations, OSHA Standards - Excavation.

1.06 SUBMITTALS

A. Submit shoring design to Engineer for record purposes only.

PART 2 PRODUCTS

2.01 DESIGN

A. Design a shoring system which will safely and adequately prevent collapse of adjacent materials and which will permit construction of the Work to the arrangement shown on the Drawings.

B. All shoring systems shall be designed so as to support all vertical and lateral loads and other surcharge loads imposed on the system during construction, including earth pressures, utility loads and other surcharged loads in order to provide safe and expeditious construction of the permanent structures and prevent movement and/or damage to adjacent soil, buildings, structures and utilities.

C. Secure all needed approvals, including those of governmental agencies having jurisdiction and of adjacent property owners if required, at no additional cost to the Owner.

2.02 MATERIALS

A Material shall include, but not necessarily be limited to sheet piling, soldier piles, lagging, bracing members such as wales, struts, shores and tieback anchors.

B. Lumber for timber sheeting and shoring:
1. Shall be sound Spruce, Douglas Fir, white or yellow Lodgepole, Ponderosa pine, or western hemlock plank, planed on one side and either tongue and grooved or splined.

C. Steel sheeting:
1. Shall be of approved section and quality, either new or secondhand, conforming to the requirements of ASTM A328.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

A. Construct and install the shoring system in strict accordance with the design engineer's requirements.
1. When using soldier piles and lagging, where boulders or cobbles are encountered, soldier piles shall be installed in pre-augered holes over the full depth as required to prevent misalignment and damage.
2. Vibration monitoring during installation and extraction of braced excavation shall be provided wherever the excavation is within 100 feet of existing structures.

3.03 SHEETING LEFT IN PLACE

A. Sheeting left in place, for the purpose of preventing injury to structures, utilities or other property, shall be cut-off three (3) feet below finished grade.
1. The right of the Engineer to order sheeting left in place shall not be construed as creating any obligation on his part to issue such orders. His failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise growing out of a failure, on the part of the Contractor, to leave in place sufficient sheeting to prevent movement of the ground.

3.04 SHEETING REMOVED

A. All sheeting not left in place shall be carefully removed in such manner as to not endanger the construction or other structures, utilities, or property.
   1. All voids left or caused by withdrawal shall be immediately refilled with approved material, and compacted with tools especially adapted to that purpose.
   2. Vibratory extraction methods shall be used only when it can be demonstrated that settling of pipe and structures will not occur. If such settling occurs, it shall be corrected at the Contractor's expense.

3.05 TRENCH BOX OR SHIELD

A. Use of a trench box or shield shall not relieve the Contractor of any liability for damages to persons or property growing out of a failure of the Contractor to leave in place sufficient sheeting and bracing to prevent the caving or moving of the ground or disturbance of the completed work.
   1. Care shall be taken, when a trench box or shield is moved ahead, so as not to pull apart the joints of pipe already placed or leave voids around the pipe wall. At no time shall the portable box or shield be allowed to be positioned below the spring line of the pipe.
   2. The width of the trench box or shield shall be such that a minimum 6-inch horizontal clearance is maintained between the pipe and shield at all times
   3. If the pipe has moved, it shall be reset to the proper line and grade.
   4. Any voids between the trench box or shield and the undisturbed trench wall within the pipe zone (bottom of trench to top of cover material) shall be filled with crushed stone, bank run gravel, or approved material, immediately after the box or shield is positioned.
   5. Additional excavation, backfilling, or surface restoration required as a result of trench box or shield use will be at the Contractor’s expense with no additional cost to the Owner.

B. The Contractor is responsible for maintaining trench ingress and egress in compliance with all applicable governmental agencies having jurisdiction.

END OF SECTION

SECTION 02222

EARTHWORK FOR WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: Provide all earthwork as required by the Contract Documents.

B. In general, the work of this Section shall include but not necessarily be limited to, excavation, trenching, filling, backfilling, compaction and grading for water distribution systems.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 02160 Support of Excavation
2. Section 02227 Rock Removal
3. Section 02240 Site Drainage and Dewatering
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02930 Loam and Seed

1.03 SITE INVESTIGATION

A. The grades and other site information have been compiled by field surveys.
   1. The Contractor acknowledges that he has satisfied himself as to the nature and location of the work.
   2. Failure by the Contractor to acquaint himself with all available information concerning the site will not relieve him from the responsibility, for estimating properly, the difficulty or cost of successfully performing the work.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.05 PROTECTION OF PROPERTY AND UTILITIES

A. Extreme care shall be exercised to prevent damage to existing trees, shrubs, utilities, walls, sidewalks, fences and private property.
   1. Any damage to these items as a result of work performed by the Contractor

shall be repaired by the Contractor at his own expense.

2. Existing property boundary markers, control points and datum elevation markers or bench marks shall be preserved.
    a. All such items which are displaced or destroyed by the Contractor shall be replaced by a registered Engineer or Land Surveyor, as required, with all expenses paid by the Contractor.

B. Utility agencies shall be contacted and advised of proposed work prior to the start of work by the Contractor.
1. Notify Call Before You Dig / Dig Safe.
2. Obtain information from the proper sources and authorities concerning locations of all utilities within the scope of this work.
3. If and when encountered, utilities shall be supported and protected, and the Engineer shall be notified.
    a. Ample time shall be allowed for entrance and taking such measures as may be required for the continuance of such services by the utility owner.
4. Rules and regulations governing the respective utilities shall be observed. The Contractor's responsibilities with respect to utility locations, protection, interferences and relocations shall be as further specified in Section 01013.

1.06 REFERENCE STANDARDS

A. The Contractor shall comply with the provisions of the following agencies as they apply to this project.
1. Associated General Contractors of America, Inc. (AGCA) "Manual of Accident Prevention in Construction."
2. Occupational Safety and Health Administration, United States Department of Labor Requirements
3. ANSI "Safety Regulations for Construction and Demolition".
4. American Society for Testing & Materials (ASTM)
5. American Water Works Association Standards
6. State Highway Department Specifications

1.07 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Testing and Samples:
1. Test reports on backfill materials, moisture density tests, in place density tests (ASTM D 1557 and D 1556).
2. Representative backfill and bedding samples and gradation tests (ASTM D 422).
3. Tests shall be in conformance with paragraph 3.16; compaction requirements and testing as specified herein.

1.08 TRAFFIC

A. While excavating and backfilling is in progress, traffic shall be maintained in a manner as specified in Section 01570 Traffic Regulation.

PART 2 PRODUCTS

2.01 GENERAL

A. Except as specified for pipe bedding, pipe cover, roadway subbase, and refill for rock and unsuitable materials, backfill materials may be as follows:
   1. Suitable materials for trench backfill shall be the material excavated during the course of construction, but excluding debris, pieces of pavement, frozen materials, organic matter, silt, top soil, ledge excavation and rocks over six inches in largest dimension.
   2. Gradation of material shall be generally as specified for gravel borrow except that maximum size of stone shall be 6 inches.
   3. The suitability of existing material for use as backfill will be determined by the Engineer.
   4. All unsuitable materials shall be disposed of as per paragraph 3.15.

B. In addition to the requirements of CT DOT Form 819 or current CT DOT standard, the following conditions apply:

   1. Reclaimed Material, including but not limited to, Reclaimed Concrete Aggregate, Reclaimed Miscellaneous Aggregate, and Reclaimed Waste is not approved for use on the Owner's property or easements granted to the Owner.
   2. Reclaimed / Recycled processed material may be used by the Contractor within the limits of paved roadways on Aquarion Pipeline projects provided the following requirements are met:
      a. The reclaimed / recycled processed material meets the approval of the Town or State having jurisdiction over the roadway and approval is provided in writing by such agency to the Owner and Engineer.
      b. Sieve analysis demonstrating that the material meets the requirements under CT DOT M.05.01 for processed aggregate base or the applicable gradations under CT DOT M.02 where specifically required by the Owner and agency having jurisdiction over the paved roadway.
      c. Proctor test results with moisture-density curve.
      d. Environmental test report documenting that the proposed processed material meets the minimum testing requirements of CT DOT Form 819 or current CT DOT Standard.
      e. Any additional testing as required by the agency having jurisdiction over the paved roadway.

2.02 PIPE BEDDING AND COVER MATERIAL

A. Ductile Iron Pipe:
   1. Bank Run Gravel shall be a granular material, well graded from fine to coarse, with gradation as specified in paragraph 2.04 of this specification section, obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted.
   2. It shall not contain vegetation, masses of roots, or individual roots.
   3. It shall be free from loam and other organic matter, clay, and other fine or harmful substances.

4. Bank Run Gravel shall conform to requirements as specified in paragraph 2.04 herein.

B. HDPE Pipe
1. Shall consist of clean inert, hard, durable grains of quartz or other hard durable rock free from loam or clay, surface coatings and deleterious materials.
2. Shall meet the requirements as specified in paragraph 2.07 herein.
3. The maximum particle size shall be 3/4 inch.

C. Water Service Tubing (PE / HDPE and Copper):
1. Sand shall consist of clean inert, hard, durable grains of quartz or other hard durable rock free from loam or clay, surface coatings and deleterious materials.
2. The allowable amount of material passing a No. 200 sieve as determined by AASHTO shall not exceed 10 percent by weight.
3. The maximum particle size shall be 3/8 inch.

2.03 CONCRETE SAND

A. Concrete sand shall meet ASTM C-33 for fine aggregate.

2.04 BANK RUN GRAVEL

A. Bank run gravel shall consist of sound, tough, durable particles of crushed or uncrushed material free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces, mud, loam, organic matter, clay, or other deleterious material.

Sieve Size	Percent Passing by Weight
2 inch	100
1-1/2 inch	90-100
1 inch	20-55
¾ inch	0-15
3/8 inch	0-5

2.05 PROCESSED AGGREGATE BASE

A. Shall meet the requirements of the jurisdiction where the work under this Contract is being performed and shall be the product resulting from the deliberate mechanical crushing of rock and gravel. Processed aggregate shall not contain stones larger than 2-1/2 inches and shall meet the following gradation:

Sieve Size	Percent Passing by Weight
2-1/2 inch	100
2 inch	95-100
3/4 inch	50-75
1/4 inch	25-45
No. 40	5-20
No. 100	2-12

2.06 CLEAN BACKFILL

A. Shall meet the requirements of the jurisdiction in which the work under this Contract is being performed, be of a quality satisfactory to the Owner's Representative, and shall be free from larger or frozen lumps, wood and other extraneous material. Clean backfill material shall be free from stones larger than 6 inches in size.

2.07 CRUSHED STONE

A. Shall consist of durable crushed stone or durable crushed gravel stone, washed, free from ice and snow, stone dust, sand, clay, loam, or other deleterious material. The crushed stone shall be uniformly blended and conform to the following:

Sieve Size	Percent Passing by Weight
1 inch	100
3/4 inch	90-100
1/2 inch	20-55
3/8 inch	0-15
No. 4	0-5

2.08 NATIVE MATERIAL

A. Native material is acceptable for backfill material as long as it meets the requirements of the Owner and the Jurisdiction in which the work under this Contract is being performed. Native material shall consist of natural material that is excavated from the trench or another portion of the job consisting of sound, tough and durable particles of soil and stone, free of clay, loam, or organic matter.

2.09 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

B. Shall meet the applicable requirements of M.03.02 of CTDOT Form 819, batched at a concrete plant, flowable and requires no vibrating for consolidation. The finished product must be excavatable without the use of power tools, and meet the following specifications:

1.	Portland Cement	Meeting AASHTO M85
2.	Fly Ash	Meeting AASHTO M 295
3.	Sand	Meeting M 03.01
4.	Aggregates	Meeting M 03.01
5.	Water	Meeting M.03.01
6.	Air Entraining Admixtures	Meeting AASHTO M 154
7.	Compressive Strength	28 day = 30 - 80 psi 90 day = 100 psi (Or as required by the Town, State, or Utility)
7.	Slump	10-12 inches

PART 3 EXECUTION

3.01 TEST PIT EXCAVATION

A. The Contractor shall perform test pit excavations where shown on the drawings and at other locations as approved and directed by AWC's project manager.

B. Test pits shall be adequately sized to safely obtain the necessary information.

C. The Contractor shall obtain and record the following information from test pits unless otherwise directed by the Engineer:
   1. Horizontal location of the utility.
   2. Vertical depth of the utility.
   3. Dimensions of the utility.
   4. Type or material the pipe is constructed.
   5. Outside diameter of water mains, especially for mains which will be tapped or connected to.

D. Test Pits shall be construed to be required at connection locations, any locations where potential conflicts may exist, or the information listed in 3.01C governs the exact materials required to perform the work. Failure to perform test pits adequately in advance of scheduled work resulting in down time or additional work shall not be grounds for a change order.

3.02 TRENCH EXCAVATION

A. The Contractor shall make all excavation in earth and in rock, necessary or incidental to the proposed construction under the terms of this Contract and as herein specified or indicated on the Drawings.
   1. All trench excavation shall be accomplished by open cut method.
   2. All excavation shall be made in such manner and to such widths as will give ample room for properly installing, constructing and inspecting pipe lines and structures they are to contain.
   3. The width of trenches shall be sufficient to allow thorough compacting of the refill adjacent to the lower quarters of the pipe, but shall in no case be less than the AASHTO minimum trench width of 1.5 X Pipe Diameter + 12". At pipe joints such additional width and depth shall be excavated as is necessary to give ample room for properly making and inspecting the pipe joint.
   4. Bracing and support of all trench excavation shall meet all requirements of Local and State ordinances and OSHA regulations.
      a. Sheeting and bracing, or the use of a steel support box shall be used where required to maintain a safe working condition and provide protection from collapse of the trench walls.
   5. During excavations, material determined by the Engineer to be suitable for backfilling, shall be placed a sufficient distance from the banks of the trench to avoid slides or cave-ins. Unsuitable material shall be disposed of as specified in paragraph 3.15 and replaced with surplus suitable material and gravel borrow to the extent necessary.
   6. Should conditions make it impractical or unsafe to place material along the trench, it shall be hauled and stored at a location provided by the Contractor. When required, it shall be re-handled and used in backfilling the trench. No additional compensation will be made for re-handling this material.

7. Pipe trenches shall be backfilled as soon as practical after the pipes have been laid, jointed and inspected by the Engineer. The extent of excavation open at any one time shall be no more than 50 linear feet of trench during working hours and no more than 20 linear feet during non-working hours.

3.03 EXCAVATION CLASSIFICATION

A. Earth excavation shall comprise all materials not classified as rock excavation and shall include clay, silt, sand, muck, gravel, hardpan, loose shale, pavement, pavement bases, loose stone in masses and boulders measuring less than one cubic yard in volume.

B. Rock: See Section 02227 Rock Removal.

3.04 TRENCH EXCAVATION IN PAVED ROADWAYS

A. When excavating trenches in roadways having an improved pavement, the Contractor shall cut the pavement twice; once prior to excavation and again prior to permanent resurfacing.
   1. The first cut may be made using a water cooled abrasive saw, pneumatic chisel or a wheel cutter attached to a front end loader.
   2. The second and final cut shall be made with a water cooled abrasive saw.
   3. In all cases a trial section shall be cut to indicate the performance of the equipment to be used.
   4. Pavement removed shall not be mixed with other excavated materials, but shall be disposed of away from the site of the work before the remainder of the excavation is made.
   5. Existing pavement and base course to remain shall be protected by the Contractor. All existing pavements and base courses which are to remain and have been damaged, shall be restored or replaced by Contractor to match existing pavements, base courses and grades, at no additional expense to the Owner.

3.05 UNSUITABLE MATERIAL

A. The determination of unsuitable material shall be at the sole discretion of the Owner, Engineer, or Owner's Representative. Material disposed of by the Contractor without prior agreement of classification as unsuitable material will not be eligible for payment.

B. For unsuitable material to be eligible for payment, the following shall occur:

   1. The Contractor shall notify the Owner's onsite representative immediately that material has been encountered that they believe is unsuitable for backfill.
   2. The Engineer and Owner shall review the material with the Contractor on-site.
   3. If the material is deemed unsuitable the Contractor and Engineer shall jointly measure the unsuitable material in place for record in calculation of Additional Backfill Material as specified in Item 31.

C. The definition of unsuitable backfill material, in addition to the requirements set forth in Item 2.01 of this Section, shall generally be defined as earth material not suitable for compaction, regardless of the required lift thickness to achieve adequate compaction. The Engineer may request sieve analysis and proctor testing be performed on the material for further analysis. Replacement material furnished for the purpose of reducing the number of lifts required to achieve sufficient compaction or material made unsuitable by the Contractor's operations such as working in inclement weather or failure to suitably dewater an excavation will not be measured for payment.

D. The quantity of Additional Backfill Material shall be calculated utilizing the formula and parameters provided in Item 31 of Section 01025.

E. Payment width limits shall be the same as specified for trench excavation, unless an additional width of trench is ordered by the Engineer.

F. Any excavation in excess of the amount ordered by the Engineer shall be backfilled and compacted with an approved granular material, at the Contractors expense.

3.06 ROCK REMOVAL

A. See Specification Section 02227.

3.07 DEWATERING

A. See Specification Section 02240.

3.08 BACKFILLING AND COMPACTING

A. Backfill shall be placed in uniform layers. Each layer shall be thoroughly compacted by tamping or vibrating with mechanical compacting equipment.
   1. Care shall be taken to compact the backfill materials throughout the full width of the excavation and beneath all pipes and structures.
   2. The backfilling of trenches shall proceed as soon as the laying of the pipe (s) or installation of the structures will allow.
   3. Pipe bedding shall be placed to the limits as indicated in the Aquarion Water Company's Standard Details included in Appendix A.
   4. After a pipe has been placed and bedded, the trench shall be filled to the centerline of the pipe with pipe bedding and compacted.
      a. Material under and around the pipe shall be carefully and thoroughly compacted and tamped with approved compacting equipment.
   5. From the centerline of the pipe to a point 12 inches above the top of the pipe, the fill shall be pipe bedding.

B. Placement of Backfill Above the Pipe Bedding
   1. For the portion of the trench twelve (12) inches above the pipe, backfill shall be suitable material from the excavation or, if ordered by the Engineer, shall be bank run, processed gravel or crushed stone.
      a. This backfill shall be placed in layers twelve (12) inches deep in loose measure, and each layer shall be thoroughly compacted.

b. This backfill shall be placed up to the bottom of materials specified to be placed for surfacing requirements.

C. Roadway Trench

1. The following additions shall apply specifically to trenches within roadways:

a. The top twelve (12) inches, or greater if specified by the jurisdiction in which the work under this Contract is being performed, of trench refill (roadway sub-base) shall be comprised of processed gravel furnished, placed, graded and compacted by the Contractor. This material shall be placed during the backfilling operation.

b. The Contractor shall fine grade the surface, apply dust control treatment and maintain the surface in a condition which will allow safe vehicular traffic until resurfacing is placed.

2. The length of unsurfaced trench shall not exceed the requirements of jurisdiction in which the work under this Contract is being performed, under no circumstances shall be greater than 500 linear feet, and shall be maintained to the Owner's satisfaction, in a condition to allow safe vehicular traffic.

a. If the trench is not maintained in a satisfactory condition, the allowable length of unsurfaced trench shall be reduced accordingly.

3.09 TRENCH SIZE

A. Trenches shall be excavated to the necessary width and depth for proper laying of pipe and placement of concrete and other materials and shall have vertical sides to the dimensions shown in the Standard Details.

1. Widths of trenches shall be as shown on the drawings.
2. The depth of trench shall be a minimum 4 inches below the pipe barrel in earth or 6 inches below the pipe barrel in rock, or as shown in the Standard Details.

3.10 STRIPPING TOPSOIL

A. Topsoil shall be carefully stripped and separately stored to be used again for topsoiling and seeding on off-pavement areas within which excavations are to be made.

3.11 EXCAVATION NEAR EXISTING STRUCTURES AND UTILITIES

A. It is called to the attention of the Contractor that there are utilities and other underground pipes along the course of the work. Information shown on the Drawings as to the location of said utilities and pipes is from the best available sources, but no guarantee is implied, nor is it to be assumed that such information is accurate or complete. The Contractor shall expect to encounter and cross utility lines in the course of the work.

B. The Contractor shall exercise special care during his operations to avoid injury to all such underground utilities and structures.

1. When necessary, the Contractor shall cooperate with, and consult with representatives of the Owner and the utility companies in order to avoid damage to the utilities.
2. The Contractor shall arrange for or furnish and erect suitable supports and shoring or other means of protection where required to protect the utilities, all at no additional cost to the Owner.
3. Hand methods of excavating shall be used around buried utilities and is included in the work to be performed under this Contract, at no additional cost to the Owner.
4. Interference between the proposed work and existing utilities, relocation of existing utilities, repair or damage to existing utilities, and protection and support of existing utilities during construction of the proposed work shall be as specified in Section 01013.

3.12 PROTECTION OF PROPERTY

A. The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the line of work, and be responsible for and repair any and all damage and injury thereto, arising out of or in consequence of any act or omission by the Contractor.
   1. All existing pipes, culverts, poles, wires, fences, mailboxes, stone walls, curbs, bounds, etc., shall be temporarily removed, supported in place or otherwise protected from injury, and shall be restored to at least as good condition as that in which they were found immediately prior to the start of work.
   2. Lawns, shrubs, bushes, planting beds and decorative trees disturbed or damaged shall be restored to a condition equal to that found prior to the start of construction, either by temporary transplant or replacement in kind, except as otherwise indicated on the Drawings.

3.13 SAFETY AND ACCOMMODATION

A. The Contractor shall provide, at his own expense, suitable bridges over trenches where required for the accommodation and safety of the traveling public, and provide facilities for access to private driveways for vehicular use.
   1. He shall erect suitable barriers around the excavation to prevent accidents to the public and shall place and maintain during the night, sufficient lights on or near the work.
   2. A space of twenty (20) feet shall be left so that free access may be had at all times to fire hydrants and proper precautions shall be taken so that the entrances to fire hydrants and fire stations shall not be blocked or obstructed.

3.14 COMPACTION REQUIREMENTS AND TESTING

A. All backfill materials shall be thoroughly compacted by rolling, tamping or vibrating with approved mechanical or pneumatic compacting equipment so that pipe, structures, paving and other construction will not settle at the time of construction or in the future. The responsibility for thorough compaction is that of the Contractor irrespective of methods of backfill and depth of backfill layers placed.

B. All percentages of compaction specified herein shall be of the maximum dry density at the optimum moisture content as established by Method D of AASHTO

Standard Tl 80 (ASTM D1557) (Modified Proctor) and verified by AASHTO Standard T147 (ASTM D 1556). When the term "thoroughly compacted" is used in these specifications, it shall mean compaction to at least 95% of the maximum density of the soils at optimum moisture content.

C. The following numbers and types of soil tests shall be made where required by the Owner or directed by the Engineer. These tests shall be made by qualified personnel of an independent testing laboratory, acceptable to the Engineer and paid by the Contractor. Three copies of all test results shall be delivered to the Engineer.

1. Particle-Size analysis of Soils and Backfill Materials in accordance with ASTM D422. A total of 5 satisfactory tests.
2. Moisture-Density Relationship of soil in accordance with ASTM D1557, Method D. A total of 5 satisfactory tests.
3. In-Place Density Tests of materials in accordance with ASTM D1556. One in-place density test shall be performed at a minimum of every 300 linear feet, or as directed by the Engineer. Compaction tests shall be taken at random on compaction layers below and at finished surfaces.
4. Failed tests shall be repeated at the Contractor's expense.

D. The Owner reserves the right to have additional compaction tests performed by an independent laboratory with testing costs borne by the Owner, except that failed tests shall be repeated at the Contractor's expense.

E. If any of the field density test results fail to meet the density as specified herein for the earthwork involved, then the Contractor shall remove all of the earthwork in that portion of the work involved as determined by the Engineer, and shall replace it in accordance with these Specifications to the required density. After the work is replaced, additional field density tests will be made by an independent testing laboratory retained by the Owner, and the Contractor shall reimburse the Owner for all costs for such additional testing.

1. Compaction shall be to the following densities:

Fill and Backfill Location	Modified Proctor Density (Percent)
Under structures and pipes	95
Beside structure foundation walls	95
Top two feet under pavements	95
Under pavements below top two feet	95
Trenches through unpaved areas	90
In embankment	90

F. Puddling and jetting of the backfill shall not be permitted except in special cases approved by the Engineer.

3.15 TRENCH EXCAVATION IN FILL

A. Where the existing ground surface does not permit at least 4.5 feet of cover over the finished pipe, and where indicated on the Drawings, the Contractor shall place and compact suitable fill material to the depth necessary to provide the 4.5 foot minimum cover, including loam to a minimum top width of 6 feet, or as otherwise

shown on the Drawings.

1. Minimum side slopes shall be two horizontal to one vertical.
2. Fill material shall be from surplus suitable material or gravel borrow, and be clean, dry, and capable of satisfactory compaction, all as approved by the Engineer, and shall be placed in layers not exceeding 12 inches thick and compacted.
3. The trench shall be excavated in the compacted fill and the remainder of the work shall be in accordance with other portions of these Specifications.

3.16 DISPOSAL OF SURPLUS AND UNSUITABLE EXCAVATED MATERIAL

A. All surplus excavated material and any material unsuitable for use shall be disposed of in disposal areas provided by the Contractor.
   1. It is the Contractor's responsibility to dispose of unsuitable excavated material in an approved manner.
   2. The Contractor shall not dispose of surplus materials on wetlands or other areas prohibited by the Corps of Engineers or the State environmental governing body, or any other local authority having jurisdiction.

3.17 DUST CONTROL

A. The Contractor shall perform dust control operations as specified in Section 01567.

3.18 CLEAN-UP

A. Sweeping of debris related to water main installation shall take place on a daily basis where directed by the Town, State, Owner, or Owner’s Representative.

B. All paved roadways affected by the construction shall have their full width swept clean (paved edge to paved edge) using methods which control the dust.

C. On a daily basis, where pavement sawcutting takes place, the roadway shall be swept clean of all material expelled during the sawcutting process.

D. The Contractor shall remove all surplus materials (earth, pipe, fittings, storage and office trailers, barricades, etc.), from the construction site.

E. Before the Contractor may proceed to another roadway, clean-up of the previous roadway must be complete.

END OF SECTION

SECTION 02227

ROCK REMOVAL

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Remove all rock encountered while excavating for structures, roadways, or utility trenches as required by the Contract Documents. Rock removal shall be accomplished by mechanical methods.

B. The use of explosives for removal of rock will not be permitted without written approval from the Owner and the State or Municipality in which the work under this Contract is being performed. When considering the use of explosives for rock removal, the Owner or Owner's Representative shall require the Contractor to thoroughly demonstrate that all other means of rock removal have been exhausted. Any additional time or downtime required for the Owner's or Owner's Representative's review of the Contractor's blasting proposal shall be at no additional cost to the Owner.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 through Division 3 of these Specifications.
   1. Section 02240 Site Drainage and Dewatering
   2. Section 02222 Earthwork for Water Distribution Systems

1.03 DEFINITIONS

A. Rock shall be classified as sound bed rock or large boulders for which successful removal requires wedging, chipping or mechanical hammering for its removal. Concrete shall be classified as rock.

B. The following types of material shall not be counted or permitted for payment as rock excavation

   1. Boulders less than one half (1/2) cubic yard which can be removed with an excavator without mechanical hammering.
   2. Loose, weathered, or deteriorated rock which can be removed with an excavator without mechanical hammering.
   3. Rock, stone masonry, concrete walls, or similar structures.
   4. Previously blasted, fractured, or shot rock.
   5. Concrete, asphalt, brick, or stone pavements, curbs, or walkways.

1.04 STANDARDS

A. All handling of explosives and blasting shall follow all applicable local, state, and federal laws.

1.05 QUALITY ASSURANCE

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

B. Comply with all pertinent requirements of governmental agencies having jurisdiction.

1.06 SUBMITTALS

A. Provide detailed submittals of the following:
   1. Submit information detailing the proposed blasting company, proposed pre-blast and post-blast survey company, and the proposed seismic monitoring company.
   2. Submit plans for proposed pre-blast survey (Record purposes only).
   3. Provide detailed submittals on all chemicals to be used in the blasting and included all Materials Safety Data Sheets (MSDS).

PART 2 PRODUCTS

2.01 DETONATORS

A. Detonators and detonation cord shall be contaminant free.

PART 3 EXECUTION

3.01 NOTIFICATION

A. When rock is encountered, it shall be uncovered and the Engineer notified.
   1. The Contractor shall provide the Engineer with cross sections of the rock surface or a profile of the rock where trenches are concerned.
   2. The Engineer shall be present when the cross sections or profiles are taken.
   3. The average end area method shall be used in computing the volumes wherever practicable.

3.02 LIMITS OF EXCAVATION IN ROCK

A. Excavation in rock shall be performed, so that no projection shall come within vertical planes twelve (12) inches outside of the structure being built or twelve (12) inches below the bottom of the structure base slab and footings.

B. In trenches, the rock shall be removed to the limits shown on the typical trench detail.
   1. Where excavation is carried beyond the above determined limits, the additional space shall be refilled at the Contractor's expense with concrete or other specified materials.

3.03 ROCK REMOVAL BY MECHANICAL METHOD

A. Excavate and remove rock by mechanical method.
   1. Use pneumatic or hydraulically powered jack-hammer or drill holes and use expansive tools, wedges, and mechanical disintegration compound to fracture rock.
B. Cut away rock at bottom of excavation to form level bearing.
C. Excavate to 6 inches below invert elevation of pipe and to the limits shown on the typical trench detail.
D. Remove excavated materials from the site in accordance with paragraph 3.04.
E. Replacement fill material and backfilling shall be as specified in Section 02222.

3.04 ROCK REMOVAL BY EXPLOSIVES METHOD

A. Pre-Blast and Post-Blast Surveys: Prior to any blasting and at the completion of blasting operations, the Contractor shall submit pre-blast and post-blast surveys.
   1. The survey shall satisfy the insurance requirements of the Contractor and be acceptable to the Contractor's insurance carrier, as well as provide data to assess damages to personal property and real estate due to blasting operations.
   2. The surveys shall be complete as warranted by the nature of the work.
   3. Pre-Blast surveys shall be submitted to the Owner prior to scheduling any blasting operations.
   4. The Contractor shall be present during the Pre-Blast and Post-Blast surveys.
   5. The Pre-Blast and Post-Blast surveys shall be conducted at the Contractor’s expense and at no additional cost to the Owner.

B. Take all precautions necessary to warn and/or protect any individuals exposed to his operations. Such precautions shall include but not be restricted to the following:
   1. Present written certificate of insurance showing evidence that his insurance includes coverage for blasting operations, before doing any blasting work.
   2. Make necessary arrangements as may be required by the applicable Federal, State, County or Municipal codes, rules, regulations and laws, and shall be responsible for compliance.
   3. Obtain a permit from the local authorities to perform blasting operations.
      a. The Engineer shall be notified in writing that such permit has been obtained.
   4. Schedules for blasting shall be thoroughly coordinated with the proper authorities Federal, State and Local.
      a. No blasting shall be done unless the Contractor has notified all

concerned parties that he may blast.

b. The Contractor shall also notify any commercial installation in the immediate area whose operations or instrumentation may be affected by blasting, at least twenty-four (24) hours prior to blasting operations.

5. Seismographic recordings shall be made of all blasting operations on the project by a qualified testing agency hired and coordinated by the Contractor.
   a. A copy of these recordings shall be delivered to the Engineer for record purposes.
   b. Seismic monitoring shall be conducted at the Contractor's expense and at no additional cost to the Owner.
6. Blasting shall only be performed by persons who are licensed to use explosives.
7. The Contractor shall keep an accurate record of each blast and submit a copy to the Engineer. The record shall show the date, time, exact stationing of the blast, the depth and number of drill holes, and kind and quantity of explosive used, and any other data required for a complete record.
8. The Contractor shall be fully responsible for damages caused by his blasting operations.
9. If rock below the limits of excavation is shattered by blasting, caused by holes drilled to deep, too heavy a charge of explosives or any other circumstance due to blasting, the shattered rock shall be removed, and the void refilled with gravel borrow at the expense of the Contractor.
   a. Gravel borrow shall be as specified in Section 02222 Earthwork for Water Distribution Systems.

3.05 DISPOSAL AND REPLACING OF ROCK

A. Remove and dispose of all pieces of rock which are not suitable for use in other parts of the Work.
   1. Rock disposed of by hauling away to spoil areas shall be replaced by surplus excavation obtained elsewhere on the site, insofar as it is available.

B. No fragments of rock larger than twelve (12) inches shall be used in backfilling.

C. Be responsible for obtaining spoil locations and the removal of all excess rock from the site.

END OF SECTION

SECTION 02240

SITE DRAINAGE AND DEWATERING

PART 1 GENERAL

1.01 WORK INCLUDED

This section specifies designing, furnishing, installing, maintaining, operating and removing temporary dewatering systems as required to lower and control water levels and hydrostatic pressures during construction; disposing of pumped water; constructing, maintaining, observing and, except where indicated or required to remain in place, removing of equipment and instrumentation for control of the system.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 through Division 3 of these Specifications.

1. Section 01567, ENVIRONMENTAL PROTECTION
2. Section 02160, SUPPORT OF EXCAVATION
3. Section 02222, EARTHWORK FOR WATER DISTRIBUTION SYSTEMS

1.03 SYSTEM DESCRIPTION

A. Dewatering includes lowering the water table and intercepting seepage which would otherwise emerge from the slopes or bottom of the excavation; increasing the stability of excavated slopes; preventing loss of material from beneath the slopes or bottom of the excavation; reducing lateral loads on sheeting and bracing; improving the excavation and hauling characteristics of sandy soil; preventing rupture or heaving of the bottom of any excavation; and disposing of pumped water.

1. Normal dewatering is defined as using conventional pumps installed in open excavations, ditches, or sumps. The quantity or type of pumps, number or type of power supplies, and use of settling basins, sediment / dirt bags, silt sacks, settling tanks, disposal of pumped water, etc. or duration of use does not change the definition of normal dewatering to special dewatering.

2. Special dewatering is defined as an engineered system using single or two stage wellpoints, deep wells, or eductor and ejector systems installed in drilled holes or jetted in place.

1.04 QUALITY ASSURANCE

A. The Contractor is responsible for the adequacy of the dewatering systems. He shall retain the services of a Professional Engineer registered in the state where the project is located, experienced in dewatering systems, to independently evaluate the boring logs and any other soils information available to determine those areas that will require special dewatering techniques and to design the required system. The Contractor's Professional Engineer shall provide sufficient on-site inspection and supervision to assure that the dewatering is carried out in accordance with his design.

B. The dewatering systems shall be capable of effectively reducing the hydrostatic pressure and lowering the groundwater levels to a minimum of 2 feet below excavation bottom, unless otherwise required by the Engineer, so that all excavation bottoms are firm and dry.

C. The dewatering system shall be capable of maintaining a dry and stable subgrade until the structures, pipes and appurtenances to be built therein have been completed to the extent that they will not be floated or otherwise damaged.

D. The dewatering system and excavation support (see Section 02160) shall be designed so that lowering of the groundwater level within the work area does not adversely affect structures, utilities or wells outside of the work area.

E. Where special dewatering is used, the Contractor shall obtain at his expense the services of a registered professional engineer to investigate, design and monitor the dewatering system. The Contractor shall also furnish materials and install at least two observation wells at each excavation area. The location of the wells shall be determined in the field by the Contractor’s engineer.

1.05 SUBMITTALS: IN ACCORDANCE WITH REQUIREMENTS OF GENERAL SPECIFICATIONS, SUBMIT THE FOLLOWING

A. At least two weeks prior to installing his dewatering system, Contractor shall submit the attached Certificate of Design completed and signed by Contractor, identifying the engineer responsible for design of the dewatering system. He shall also submit a schedule showing the timing of installation and operation of the dewatering system.

B. The Contractor shall submit to the Engineer for record purposes only, the following items bearing the Contractor's Engineer's stamp and signature, and identifying the codes and specifications followed in the design.

1. Plans and description of the dewatering system, including the number, location and depth of wells, wellpoints or sumps; designs of filters to prevent pumping of fine soil; method and location for filtering and disposal of pumped water; and flow capacity of proposed system.

2. Locations of observation wells.

C. The Contractor shall submit records of pump operation and groundwater elevations as required by the Owner's Engineer.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 DEWATERING OPERATIONS

A. All water pumped or drained from the work shall be disposed of in a manner which will not result in undue interference with other work or damage to adjacent properties, pavements and other surfaces, buildings, structures and utilities. Suitable temporary pipes, flumes or channels shall be provided for water that may flow along or across the site of the work. All disposal of pumped water shall conform to the provisions of Section 01567 ENVIRONMENTAL PROTECTION.

B. Dewatering facilities shall be located where they will not interfere with utilities and construction work to be done by others.

C. Dewatering procedures to be used shall be as described below:

1. Crushed stone shall encapsulate the suction end of the pump to aid in minimizing the amount of silt discharged.

2. For dewatering operations with relatively minor flows, pump discharges shall be directed into haybale sedimentation traps lined with filter fabric. Water is to be filtered through the haybales and filter fabric prior to being allowed to seep out into its natural water course.

3. For dewatering operations with larger flows, pump discharges shall be into a steel dewatering basin. Steel baffle plates shall be used to slow water velocities to increase the contact time and allow adequate settlement of sediment prior to discharge into waterways.

4. Where indicated on the contract drawings or in conditions of excess silt suspended in the discharge water, silt control bags are to be utilized in catchbasins.

D. The Contractor shall be responsible for repair of any damage caused by his dewatering operations, at no cost to the Owner.

3.02 SPECIAL DEWATERING

A. If conventional dewatering methods are inadequate to ensure dry and stable conditions for structural foundations, the Contractor shall be required to use special dewatering as necessary.

B. Special dewatering techniques may consist of one or two stage wellpoint systems, deep wells, or eductor and ejector type systems. The Contractor shall utilize a system which provides proper construction conditions and prevents settlement at time of installation and upon backfilling.

C. In areas requiring special dewatering, the Contractor shall lower the groundwater level to a minimum of 2 feet below the bottom of the final excavation grade prior to any installation and maintain that groundwater level until the excavation has been backfilled. The groundwater levels shall be monitored by the Contractor's engineer to ensure conformance with the requirements of these specifications. Construction will not be allowed until the Owner's Engineer is satisfied that the above provisions are met.

3.03 NOISE LEVEL REQUIREMENTS

A. All primary dewatering equipment shall be electrically operated and shall run on commercial power. Standby equipment shall be independent of commercial power and shall provide dewatering upon primary pump or power failure.

B. All equipment utilized by the Contractor shall conform to the regulations of the Federal, State, and Local regulations.

END OF SECTION

CERTIFICATE OF DESIGN

Re: Contract Between:

OWNER: _____
(Name)

and
CONTRACTOR: _____
(Name)

on
CONTRACT: _____
(Number)

Date: _____

Title: _____

Contractor hereby certifies that _____:
(Engineer)

1. Is licensed or registered to perform professional engineering work in the state of _____;
(Location of Project)

2. Is qualified to design the _____
(Item)
specified in Section _____ of subject contract;

3. Has designed _____ before;
(Item)

4. Has prepared the design in full compliance with the applications and requirements of Section _____ of subject contract including all applicable laws, regulations, rules, and codes; and

5. The work has been signed and sealed pursuant to applicable state law.

FOR: _____
(Contractor)

BY: _____
(Signature)

_____
(Name and Title)

Dated: _____

Document5

SECTION 02511

TEMPORARY WATER SERVICE

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall furnish, install, maintain, protect, make repairs if damaged and remove temporary by-pass piping and temporary water services to all customers who will be out of service during the work of this Contract.

1.01 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 through Division 3 of these Specifications.

1. Section 02222 Earthwork for Water Distribution System
2. Section 02675 Disinfection of Water Mains

1.02 QUALITY ASSURANCE

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

B. Prior to commencing work, the Contractor shall submit for approval complete details including type and proposed location of all by-pass piping, connections to existing mains and/or hydrants and temporary control valves with service connections along with a proposed schedule.

C. Coordinate the work of this Section with the work of other related Sections.

D. All pipe materials that come in contact with water shall be NSF approved for use with potable water.

E. All work shall be scheduled to minimize water service interruption time.

F. The Contractor shall designate qualified personnel to be “on-call” 24 hours a day, seven days per week, for making emergency repairs to the temporary by-pass system. An emergency phone number where “on call” personnel may be contacted shall be provided to the Owner. Emergency repairs shall be performed at no additional cost to the Owner.

1.03 INSPECTION, TESTS AND ACCEPTANCE

A. All piping and materials shall be furnished by the Contractor for use as temporary service pipes and shall be clean, watertight and adequate to withstand existing system pressures and all other conditions of use and shall be approved by the Engineer. The Contractor shall submit a plan for the temporary by-pass system to the Engineer for approval showing the size and configuration of the piping, hydrants and appurtenances.

B. Prior to placing the temporary by-pass piping into service, the Contractor shall flush, chlorinate, and test piping in accordance with the requirements of AWWA C651, latest revision. Samples to confirm proper disinfection will be taken and tested by the Contractor. All tests shall be made in accordance with the methods prescribed by the above mentioned AWWA Standard, and the acceptance or rejection shall be based on the test results.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 PIPE

A. The temporary service pipe, connections, and branches shall be of the highest quality and shall be fully adequate to withstand the pressures and all conditions of use. The temporary service shall be made of fused-joint HDPE or PVC suitable for above-ground use. The installation shall be watertight.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.

3.03 PIPE HANDLING

A. Handling:

1. The Contractor shall take care not to damage pipe by impact, bending, compression, or abrasion during handling, and installation. Joint ends of pipe especially shall be kept clean.
2. Pipe shall be stored a minimum 4 inches above ground at a height no greater than 5 feet, and with even support for the pipe barrel.
3. Only nylon-protected slings shall be used for handling the pipe. No hooks or bare cables shall be permitted.
4. Gaskets shall be shipped in cartons and stored in a clean area, away from grease, oil, heat, direct sunlight and ozone producing electric motors.

3.04 INSTALLATION

A. Pipe:

1. Temporary by-pass piping shall be installed as shown on the Contract Drawings.
2. All temporary by-pass piping shall be installed within street lines and easements.
3. By-pass piping shall be installed as to not obstruct sidewalks, streets, or driveways unless adequate precautions are taken to allow pedestrian and vehicular traffic to safely and easily cross the piping at all times.
4. The by-pass piping may be temporarily buried or bridged underneath the sidewalks, streets, or driveways.
5. Water for by-pass service shall be obtained from the existing water mains and/or hydrants. A control valve shall be installed at each connection to the existing main. Connection to fire hydrants shall be made in such a manner that would permit use of the fire hydrant for firefighting purposes while the temporary by-pass is operational.
6. When assembly of the bypass piping is not in progress, including lunch time, the open ends of the pipe shall be closed by a watertight plug.
7. When cutting of pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe.

B. Service Connections:

1. The Contractor shall provide temporary pipe and fittings to connect the existing water services for each customer as required to by-pass the pipe being taken out of service.
2. If an interruption of water service is required, the Contractor shall provide customers a minimum notice of 24 hours in advance of the interruption.
3. Each temporary service line shall include a flexible “whip” hose and a shut off valve. All temporary piping shall meet the requirements of AWWA C602, Section 4.6, latest revision.
4. In general, connections shall be made to exterior hose bibs; however, the Contractor shall make provisions for alternate style connections as needed.

C. Temporary Hydrant Connections:

1. A temporary hydrant shall be included in the bypass system for each hydrant put out of service. The hydrant outlet thread pitch and size shall match that of the existing hydrants in the area. The temporary hydrant shall be in the close vicinity of the hydrant to be put out of service and shall be fed by a minimum of 4-inch diameter line. All temporary hydrants shall be suitably restrained and anchored to resist thrusts and forces encountered during the hydrant operation. Additionally, the local fire department shall be trained in the operation of the temporary hydrants.

D. Caps and Plugs:

1. All caps and plugs must have a 2-inch NPT threaded tap.
2. Where caps and plugs may be removed during the course of the work, the Contractor must install caps and plugs with NPT corporation stops, ball valves, or curb stops to allow for bleeding off of any accumulated pressure per Paragraph 3.05 A.8 of Section 02611.

E. Thrust Blocking for Fittings:

1. As specified in Section 02650, Thrust Blocks and Joint Restraints.

F. Couplings:

1. Contractor shall provide all adapters and fittings such as transition couplings, as determined in the field, necessary to complete all tie-ins, whether or not specifically stated in the Specifications or on the Contract Drawings.

3.05 DISINFECTING

A. Comply with the pertinent sections of Section 02675, Disinfection of Water Mains.

END OF SECTION

SECTION 02513

BITUMINOUS CONCRETE PAVEMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide bituminous concrete pavement and appurtenant items as required by the Contract Documents.
   1. In general, the Contractor shall provide all labor, equipment, and materials, and perform all operations in connection with the installation of bituminous concrete pavement, curbs, pavement markings, calcium chloride, final grade adjustments of valve boxes, manhole and catch basin castings, and preparation of the trench.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems

1.03 STANDARDS

A. All paving shall comply with all applicable state highway standards, hereinafter called Standard Specifications, as referenced.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 GRAVEL SUBBASE

A. Shall be as specified in Section 02222, Earthwork for Water Distribution Systems.

2.02 BITUMINOUS CONCRETE PAVEMENT

A. Courses:
1. Shall be of the types and minimum thicknesses shown on the Contract Drawings. Thickness shall match the existing pavement thickness where required by the Town or State.

2.03 ASPHALT TACK COAT

A. Shall consist of either emulsified asphalt, grade RS-1 conforming to the requirements of the State/Town where work is being performed.

2.04 TRAFFIC LOOPS

A. All required materials including, but not limited to wire, tubing, and sealant material shall meet the requirements of the Standard Specifications of the Town and or State having jurisdiction over the roadway.

2.05 PAVEMENT MARKING PAINT

A. Shall be High Heat Rapid Drying Traffic Marking Material conforming to the requirements of the State/Town where work is being performed.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINAL PREPARATION OF SUBGRADES

A. Gravel Subbase:
1. Minimum compacted depth shall be shown on the Contract Drawings.
2. Spread and compacted in layers not exceeding 6 inches in depth, compacted measurement.
3. All layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by the standard AASHTO Test Designation T99 Compaction Test Method C at optimum moisture content.

4. In State Roads, the Contractor must furnish the processed gravel required to provide a full-depth pavement subbase when the Contractor returns to place the full-depth temporary pavement. For example: If the final trench pavement detail shows a 10-inch thick processed gravel base below 9 inches of bituminous concrete pavement, the Contractor must furnish processed gravel to a total thickness of 15 inches below the 4-inch temporary pavement.

3.03 GENERAL

A. All bituminous concrete pavement thickness referred to in this Section shall be compacted thickness.

B. Trench Pavement shall be installed as shown on the Drawings or as required by municipality or state where work is performed.

C. The Contractor is responsible for the installation of temporary hot-mix trench pavement as soon as practicable, but not later than the last day of the work week. If required by the Town or State, temporary hot-mix trench pavement shall be placed on a daily basis. Temporary trench shall be as shown in the Trench Paving Details on the Contract Drawings. Top of temporary pavement shall be flush with existing pavement. The Contractor shall maintain all temporary trench pavements for the duration of the contract.

1. When trench settlement is deemed to be unacceptable. Any settled areas shall be repaired to the requirements of the governing state or municipality at no additional cost to the Owner.

B. No bituminous concrete pavement shall be placed when the air temperature is below forty (40) degrees Fahrenheit, or when the material on which the mix is to be placed contains frost.

C. The finished bituminous concrete surface (temporary and permanent) shall be level with the adjacent pavement and consistent with the slope of the road.

D. Maintain bituminous concrete under this Contract during the guarantee period of one (1) year for town roads and driveways and three (3) years for state roads.

3.04 COLD MILLING OF PAVEMENT

A. After the temporary pavement has sufficient time to settle, after one winter season, or at the direction of the Town or State, the bituminous concrete pavement surface shall be removed by cold planning to the nominal depth and width shown on the Contract Drawings.

B. Any bituminous concrete that cannot be removed by cold planning equipment shall be removed by other approved means. Care shall be taken to avoid

damaging existing structures such as catch basins, valve boxes, manholes, or other castings present within the roadway. Existing structures damaged by the Contractor during milling shall be repaired to the Utility Owner, Town, or State's satisfaction at the Contractor's expense.

C. The Contractor shall utilize a self-propelled milling machine with sufficient power, traction and stability to remove the specified depth of bituminous concrete surface, while automatically maintaining uniform profile, cross slope, and controlling grade elevation.

D. The milling machine shall use a ski or matching shoe to accurately control profile grades (within ± 1/8-inch tolerance) along the edge of the machine in relation to the existing pavement or an independent grade line.

E. The machine shall be equipped with an integral loading system to immediately remove material being cut from the surface of the roadway and discharge cuttings into a truck, all in one operation. All milling machinery shall be equipped with dust-control devices to prevent any dust produced in the cutting operation from escaping into the air.

F. Final milled surface shall be thoroughly swept and be free of broken pavement, dust or gravel.

G. In the event the milled surface is opened to traffic, the Contractor shall provide temporary ramps at all structures, entrances, exits and transitions between milled and un-milled pavement as required by the Town or State at no additional cost to the Owner. Ramps shall be maintained by the Contractor until placement of final pavement. Immediately prior to placement of final pavement, temporary ramps shall be removed, and the area toughly swept clean.

3.05 PLACEMENT OF BITUMINOUS CONCRETE PAVEMENT

A. Temporary Pavement (Town Roads):

1. Pavement shall be as specified in this Section and be of the type required by the municipality.
2. Unless specifically authorized in writing by the authority having jurisdiction, "cold-mix (cold patch)" bituminous concrete will not be acceptable for use and is not eligible for payment.
3. Temporary pavement in Town Roads shall be placed to the full depth to match the thickness of the existing pavement, but in no case shall be less than 4 inches in thickness.
4. Compacted thicknesses shall be as shown in the trench paving details on the Contract Drawings.

B. Temporary Pavement (State Roads):

1. Temporary Pavement in State Roads shall generally consist of a two-step process:
   a. Temporary pavement 4-inch thickness: Placed immediately after completion of pipe installation, backfilling and processed gravel road base placement. The Contractor must install a sufficient depth of processed gravel to account for the difference between the temporary 4-inch thick pavement and the full-depth temporary pavement.
   b. Full-depth temporary pavement placement: Placed after a settlement period or at the direction of the state to a minimum of 9 inches thickness or greater if shown on the Contract Drawings or directed by the State.
2. Prior to placing full-depth temporary pavement, the Contractor must sawcut the road a minimum of 1 foot beyond the edges of the trench, or as directed by the State, to the full depth of the pavement and concrete road base.
3. The 4-inch thick temporary pavement, the surrounding existing pavement, concrete road base, and processed gravel shall be removed to a minimum of 9 inches below road grade or to the depth shown on the Contract Drawings if greater than 9 inches.
4. Full-depth temporary pavement must be of the types / classes noted in the Contract Drawings and shall be placed in a minimum of three evenly distributed lifts.
5. The processed gravel base and all lifts of pavement are subject to compaction testing as specified in Paragraph 3.02 and in CT DOT Form 819 or current standard.

C. Permanent Pavement Town Roads and Driveways:

1. Base Course:
   a. Pavement compacted thickness shall be as shown on the Contract Drawings or required by the Town.
   b. Placed with a self- propelled spreader.
   c. Compaction shall be accomplished with a self-propelled roller, with a weight of approximately 285 pounds per inch of roller width.
   d. Base course pavement shall be maintained by the Contractor until permanent top course pavement is placed.
2. Top Course:
   a. Base course pavement shall remain in place.
   b. The base course shall be swept clean of all foreign matter and loose material.
   c. Depressions in the base course resurfacing shall have a leveling course applied before the top course paving begins.
   d. The surface receiving the top course shall be completely dry prior to the application of the tack coat.
   e. An approved tack coat shall be applied at the rate of 0.25

gallons per square yard. The contact surface of the curbing, castings and other structures shall be painted with the tack coat.

f. All castings (frames and covers, valve boxes), shall be raised to finish grade before the top course is applied.

g. The equipment used for spreading and finishing shall be a mechanical self-powered paver capable of spreading and finishing the mixture true to line, grade, width and crown by means of fully automated controls for both longitudinal and transverse slope.

h. Top course pavement compacted thickness shall be as shown on the Contract Drawings or required by the Town.

l Compaction shall be accomplished with a self-propelled roller with a weight of approximately 285 pounds per inch of roller width.

D. PERMANENT PAVEMENT (STATE ROADS):

1. Base Courses:
   a. The vertical faces of the adjoining existing pavement shall be coated with rapid setting Type-I (RS-1) emulsion
   b. Pavement compacted thickness shall be as shown on the Contract Drawings or required by the State.
   c. Placed with a self-propelled spreader.
   d. Compaction shall be accomplished with a self-propelled roller, with a weight of approximately 285 pounds per inch of roller width.
   e. Base course pavement shall be maintained by the Contractor until binder course pavement is placed.
2. Binder Courses:
   a. Pavement compacted thickness shall be as shown on the Contract Drawings or required by the State.
   b. Placed with a self-propelled spreader.
   c. Compaction shall be accomplished with a self-propelled roller, with a weight of approximately 285 pounds per inch of roller width.
   d. Base course pavement shall be maintained by the Contractor until permanent top course pavement is placed.
3. Top Course:
   a. Binder course pavement shall remain in place.
   b. The binder course shall be swept clean of all foreign matter and loose material.
   c. Depressions in the binder course resurfacing shall have a leveling course applied before the top course paving begins.
   d. All castings (frames and covers, valve boxes), shall be raised to finish grade before the top course is applied.
   e. The equipment used for spreading and finishing shall be a mechanical self-powered paver capable of spreading and

finishing the mixture true to line, grade, width and crown by means of fully automated controls for both longitudinal and transverse slope.

f. Top course pavement compacted thickness shall be as shown on the Contract Drawings or specified by the State.

g. Compaction shall be accomplished with a self-propelled roller with a weight of approximately 285 pounds per inch of roller width.

3.06 CASTING ADJUSTMENTS

A. Where bituminous concrete pavement is to be applied, manhole and catch basin frames and valve boxes are to be adjusted to the grade of the new pavement.

1. A neat line shall be cut in the pavement around the existing frames and valve boxes.
2. The material; gravel, pavement and concrete collar (if applicable) shall be removed down to six (6) inches below the frame.
3. The frame shall be freed from its existing grout bed and shimmed with steel shims of the appropriate thickness, at a minimum of four (4) alternate locations, so as to insure that the frame will not rock. The frame shall then be set into a full bed of grout, and a concrete collar placed around the frame, up to within two (2) inches of finish grade.
4. The frame shall be protected from damage from traffic until the concrete has taken a firm set.

3.07 DUST CONTROL TREATMENT

A. Calcium chloride shall be applied only upon direction of the Engineer.

1. The roadway shall be swept clean and calcium chloride spread at a uniform rate over the prepared gravel trench surface.

3.08 TRAFFIC LOOPS

A. Prior to the start of construction, and prior to excavation in the vicinity of intersections containing traffic signal lights, the Contractor shall notify the appropriate jurisdiction so the jurisdiction can make adjustments to the traffic control equipment to maintain signal operation.

B. The Contractor shall be responsible for the replacement of traffic loops, visible or not visible, that were damaged during the course of his work. The Contractor shall coordinate the replacement of traffic loops with the Town or State having jurisdiction over the roadway in which the work under the Contract is being performed.

3.09 PAVEMENT MARKINGS

A. The Contractor shall replace all pavement markings, removed or covered over, in carrying out the work, and as required by the Engineer, no sooner than 48 hours after completion of permanent pavement. The markings shall meet the requirements of the jurisdiction in which the work under this Contract is being performed.

B. When required by the Owner, Engineer, or the jurisdiction in which the work under this Contract is being performed, the Contractor shall provide painted or plastic temporary markings on temporary pavement at no additional cost to the Owner.

END OF SECTION

SECTION 02514

CONCRETE PAVEMENT

PART 1 GENERAL

1.01 DESCRIPTION

A. Provide concrete pavement and appurtenant items as required by the Contract Documents.
   1. In general the Contractor shall provide all labor, equipment, and materials, and perform all operations in connection with the installation of concrete pavement including, but not limited to removal of temporary pavement; saw cutting; preparation and final compaction of subgrade; installation of steel reinforcement; protection and adjusting of valve boxes, manholes, and catch basins; furnishing recessed and pinned road plates until concrete has cured.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02513 Bituminous Concrete Pavement

1.03 STANDARDS

A. All concrete pavement, steel reinforcement and processed gravel base shall comply with all applicable state highway standards, hereinafter called Standard Specifications, as referenced.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 GRAVEL SUBBASE

A. Shall be as specified in Section 02222, Earthwork for Water Distribution Systems.

2.02 STEEL REINFOREMENT

A. Dowels:
1. Shall meet the requirements of the Town or State Standard Specifications.
2. Shall be of the size and length as shown on the Contract Drawings.

B. Wire Fabric:
1. Wire fabric shall be installed as required by the Town or State and at the location shown on the Contract Drawings.

2.03 CONCRETE

A. Shall meet the requirements of the Town or State Standard Specifications for compressive strength, proportions, admixtures, and aggregates and shall be prepared in accordance with Section 03300 Cast In Place Concrete.

2.04 STEEL PLATES

A. Shall be meet the requirements of the Town or State Standard Specifications and be suitable for accepting loads exerted by vehicle traffic. Steel pins of sufficient length to secure the plates against movement shall be supplied.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FINAL PREPARATION OF SUBGRADES

A. Temporary pavement shall be removed from the trench where concrete pavement is to be placed.

B. The subgrade shall be formed to the required line, grade and cross-section and properly compacted.

C. Gravel Subbase:
   1. Minimum compacted depth shall be shown on the Contract Drawings.
   2. Spread and compacted in layers not exceeding 6 inches in depth, compacted measurement.
   3. All layers shall be compacted to not less than 95 percent of the maximum dry density of the material as determined by the standard AASHTO Test Designation T99 Compaction Test Method C at optimum moisture content.

3.03 PLACING CONCRETE PAVEMENT

A. Construction methods for work under this section shall conform to the requirements of the Town or State Standard Specifications.

B. Dowels shall be installed at the spacing and locations shown on the Contract Drawings or as directed by the Engineer.

C. Where required, wire mesh shall be set in place.

D. Concrete pavement shall match in kind to existing concrete pavement thickness, 8-inch minimum, or as shown in the Contract Drawings.

E. Joints will not usually be required in the construction of the base. When called for, joints shall be formed of the type and in the location as shown on the plans or as directed

F. Joints shall also be formed around all objects that project through the base, also between the base and curbs, concrete gutters, etc., when ordered.

G. When no transverse joints are to be installed, the operation of placing and spreading shall be continuous during any working period. At the end of any working period, a bulkhead of steel or a two (2) inch plank conforming to the cross section of the base course shall be placed at right angles to the centerline and perpendicular to the surface; and the concrete shall be finished to it

H. When work is resumed, the bulkhead shall be removed and the surface roughened and wetted before concrete is placed against it.

I. Steel plates shall be used to protect the newly placed concrete pavement until sufficient strength has been obtained as required by the Town or State. Steel plates shall be recessed and pinned in place to the surrounding pavement surface to provide a smooth transition for traffic.

END OF SECTION

SECTION 02515

CURBING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included:
   1. The Contractor shall furnish all labor, materials, tools, and equipment necessary for the installation of bituminous concrete lip curbing in those areas where the existing bituminous concrete lip curbing must be removed for installation of the water main or water services, at the locations shown on the Contract Drawings or as required by the Town or State.
   2. The Contractor shall furnish all labor, materials, tools, and equipment necessary to furnish and install concrete curbing in those areas where the existing concrete curbing must be removed for installation of the water main or water services, at the locations shown on the Contract Drawings or as required by the Town or State.

B. Curbing which does not have to be removed of the installation of water mains or water services, but is damaged by the Contractor's operations, shall be replaced at the Contractor's expense.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02513 Bituminous Concrete Pavement
   3. Section 02516 Remove and Reset Existing Curb
   4. Section 03300 Cast-In-Place Concrete

PART 2 PRODUCTS

2.01 BITUMINOUS LIP CURBING

A. Shall be machine formed. Curbing mix shall conform to the requirements of the Town and State.

2.02 CONCRETE CURBING

A. Concrete mix shall have a minimum 28-day compressive strength of 4,000 psi and an entrained air content of 5 to 7 percent. Aggregates and admixtures shall conform to the requirement of the Town and State in which the work under this Contract is being performed. Curbing, whether cast-in place or slip formed shall conform to the requirements of the Town and State.

B. Steel reinforcement, where required, shall be as shown on the Contract Drawings.

2.03 GRAVEL

A. Gravel shall conform to the requirements of the applicable state highway department standard specifications.

PART 3 EXECUTION

3.01 BITUMINOUS CONCRETE LIP CURBING

A. Bituminous concrete lip curbing shall be installed where directed by the Engineer.

B. Prior to the arrival of the mixture to the jobsite, the surface of the pavement where the curbing is to be constructed shall be cleaned of all loose and foreign material. The surface, which shall be perfectly dry and clean at the time the mix is placed, shall be coated with an RC-2 or other approved tack coat just prior to placing the mixture.

C. An approved curbing machine shall be utilized in placing the curbing. Upon arrival to the site, the mixture shall be transferred form the truck to the hopper of the curbing machine, and the mixture shall be kept clean and free from dirt and foreign materials at all times.

C. The surface of the curbing shall be tested with a ten (10) foot straightedge and any variation from a true line exceeding one-quarter (1/4) of an inch shall be satisfactorily corrected. The only compaction required shall be that obtained by the approved mechanical curbing machine.

D. Where machine work is impractical, the Engineer may permit hand laid curbing to be constructed.

E. After the completion of curbing, traffic shall be kept at a safe distance for a period of not less than twenty-four (24) hours and until the curbing has set sufficiently to prevent injury to the work.

F. Where curbing is installed, the curbing shall be backed up with suitable backfill material and all disturbed areas topsoiled and restored per the requirements

3.02 CONCRETE CURBING

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

B. Concrete shall be placed only on a moist base. Concrete shall not be placed on a soft, muddy or frozen base. The concrete curbing shall be constructed in sections having a uniform length of approximately 10 feet, unless otherwise directed, so arranged that a joint in the curbing shall come opposite a joint in the adjoining concrete pavement slab (where applicable) and be similar to it. The length of these sections may be varied slightly where necessary for closure, but no sections less than 6 feet in length will be permitted. Sections of adjacent curbing shall be separated by an approved method at the time of placing the concrete.

C. Forms shall be so constructed that the form for exposed faces may be removed before the concrete has taken final set in order to permit correction of surface irregularities.

D. Concrete curbing shall be cured and protected in conformity with the requirements of the State Specifications for concrete pavement.

E. After concrete has set sufficiently, the grading shall be completed, as directed by the Engineer, by refilling to the required elevation with approved Gravel material which shall be placed in layers of not over 6 inches in depth and compacted until firm and solid.

END OF SECTION

SECTION 02516

REMOVE AND RESET EXISTING CURBING

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: The Contractor shall furnish all labor, materials, tools, and equipment necessary for removing the existing curb(s), edging, curb corners and curb inlets of every type and cross section and resetting them in accordance with these specifications and in conformity with the lines and grades shown on the Drawings.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02513 Bituminous Concrete Pavement
   3. Section 02515 Curbing
   4. Section 03300 Cast-In-Place Concrete

PART 2 PRODUCTS

2.01 CURBING

A. Curb, edging, curb inlets and curb corners shall be of the same type and material as was removed or damaged during the course of work.

2.02 GRAVEL

A. Gravel shall conform to the requirements of the applicable state highway department standard specifications.

PART 3 EXECUTION

3.01 REMOVAL OF EXISTING CURB

A. A trench of sufficient width or depth shall be excavated so that the existing curb, edging, curb corners and curb inlets can be removed without damage.

B. The Contractor shall protect all curb or edging and keep it in satisfactory condition until the acceptance of the entire contract. The Contractor shall replace any existing curb, edging, curb corners and curb inlets that is to be reset, which is lost or damaged as a result of his operations, or because of his failure to store and protect it in a manner that would eliminate its loss or damage.

C. The length of any section of curb or edging, shall be altered by cutting in order to fit closures as necessary. The ends of all stones shall be square with the planes of the top and face so that when the stones are placed end-to-end as closely as possible no space shall show in the joint at the top and face of more than 3/4 inches for the full width of the top and for 8 inches down on the face.

D. The Contractor shall accept and hold entire responsibility for the removal, handling, stacking at a convenient location for the Owner and the Contractor, and protection of all curbing and corners until final removal from the site or the resetting of the curb. Any curbing damaged through lack of protection or carelessness by the Contractor shall be replaced at the Contractors expense.

E. Any curb or curb corners not damaged through lack of protection or carelessness by the Contractor but deemed by the Engineer as unsatisfactory for relaying or stacking will be discarded. The Contractor is responsible for proper disposal of the granite without additional compensation. The Owner reserves the right to claim the portions of the damaged granite deemed useful.

3.02 EXCAVATING TRENCH AND PREPARING FOUNDATION

A. The trench for the curb shall be excavated to a width of 18 inches. The subgrade of the trench shall be a depth below the proposed finished grade of the curb equal to 6 inches plus the depth of the curbstone. The trench for the curb corner shall extend 6 inches beyond the front and back of curb corner to the full depth of foundation.

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

3.03 SETTING CURB AND EDGING

A. All spaces under the curb, curb corners or edging shall be filled with gravel thoroughly compacted so that the curb, curb corners or edging will be completely supported throughout their length.

3.04 FILLING ABOUT TRENCH

A. After the curb, curb corners, curb inlets and edging are set, the space between it and the wall of the trench shall be filled with gravel thoroughly tamped to the depth directed, care shall be taken to not affect the line or grade of the curb, curb corners, curb inlets and edging.

3.05 POINTING

A. The joints between curbstones or edging shall be carefully filled with cement mortar and neatly pointed on the top and front exposed portions. After pointing, the curbstones or edging shall be satisfactorily cleaned of all excess mortar that may have been forced out of the joints.

3.06 TRANSITION CURB FOR WHEELCHAIR RAMPS

A. Transitions from normal curb settings to wheelchair ramps or driveways shall be accomplished with transition curb. Transitions shall be of the same type of curb and similar to that abutting and, if on a curve, of the same radius.

END OF SECTION

SECTION 02611

DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: The Owner will generally furnish piping materials. The Contractor shall install pipe and fittings as required by the Contract Documents. The Contractor shall furnish and install additional piping materials as directed by the Engineer as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02160 Support of Excavation
2. Section 02222 Earthwork for Water Distribution System
3. Section 02240 Site Drainage and Dewatering
4. Section 02640 Buried Valves and Appurtenances
5. Section 02645 Hydrants
6. Section 02650 Joint Restraints
7. Section 02675 Disinfection of Water Mains
8. Section 02676 Testing Piping Systems

1.03 QUALITY ASSURANCE

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

B. All ductile iron pipe and fittings shall be of domestic manufacture.

C. Coordinate the work of this Section with the work of other related Sections.

D. All pipe materials and lubricants in contact with water shall be NSF approved for use with potable water.

E. Materials shall be selected from the List of Approved Materials provided in Appendix D.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All pipe delivered to the job site shall be accompanied by test reports certifying that the pipe conforms to "AWWA Standard AWWA C151 for Ductile Iron Pipe, for Water and Other Liquids".

B. All tests shall be made in accordance with the methods prescribed by the above mentioned AWWA Standard, and the acceptance or rejection shall be based on the test results.

C. Pipe which does not conform to the requirements of this contract shall be immediately removed from the site by the Contractor and replaced with pipe which does conform.

1.05 STANDARDS

A. The following American Water Works Association (AWWA) standards form a part of this specification as referenced:

1. AWWA C104 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C110 Ductile-Iron and Gray-Iron Fittings, 3 In. through 48 In. for Water and Other Liquids.
3. AWWA C111 Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
4. AWWA C150 Thickness Design of Ductile-Iron Pipe.
5. AWWA C151 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand- Lined Molds, for Water and Other Liquids.
6. AWWA C153 Ductile-Iron Compact Fittings, 3 In. through 12 In., for Water and Other Liquids.
7. AWWA C600 Installation of Ductile Iron Water main and Their Appurtenances.

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

PART 2 PRODUCTS

2.01 PIPE

A. Ductile Iron Pipe (Buried Service):
1. All pipe shall conform to the requirements of Section # 1 under Appendix D – List of Approved Materials.
2. Joints:
   a. Mechanical meeting the requirements of ANSI / AWWA C111 / A21.11.
   b. Push-on meeting the requirements of ANSI / AWWA C111 / A21.11.
3. Gaskets: Conform to ANSI / AWWA C111 / A21.11.
4. Lining: Conforming to ANSI / AWWA C104 / A21.4.
5. Thickness of cement-mortar lining:
   a. 1/8 inch for pipes 12 inches and smaller.
   b. 3/16 inch for pipe 16 inches and larger.
6. Cement-mortar lining to be seal coated per AWWA C104.
7. Accessories: Pipe shall be provided with all necessary accessories to make-up the joint (glands, tee head bolts, hex nuts, etc.). A minimum of two brass wedges shall be supplied for every joint.
8. Polyethylene Encasement will conform to the requirements of Section #31 under Appendix D – List of Approved Materials.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.

B. Where applicable and where the work under this Contract is being performed ahead of proposed state, municipal or other utility work, the Contractor shall install the water main at the required depths and locations to avoid conflict with proposed utilities or structures. Any potential conflicts shall immediately be brought to the attention of the Engineer and Owner.

3.03 GENERAL

A. Earthwork:
1. Trench, backfill and compact for the work of this Section in strict accordance with the pertinent provisions of Section 02222, Earthwork for Water Distribution Systems.

2. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.
3. Control of ground and surface water shall be in strict accordance with Section 02240, Site Drainage and Dewatering.

3.04 PIPE HANDLING

A. Handling:
1. The Contractor shall take care not to damage pipe by impact, bending, compression, or abrasion during handling, and installation. Joint ends of pipe especially shall be kept clean.
2. Pipe shall be stored a minimum 4 inches above ground at a height no greater than 5 feet, and with even support for the pipe barrel.
3. Only nylon-protected slings shall be used for handling the pipe. No hooks or bare cables shall be permitted.
4. Gaskets shall be shipped in cartons and stored in a clean area, away from grease, oil, heat, direct sunlight and ozone producing electric motors.

3.05 INSTALLATION

A. Pipe:
1. Installation and jointing of ductile iron pipe shall be in accordance with AWWA C600 Sections 9b and 9c, latest revision, as applicable.
2. In general, jointing of ductile iron push-on pipe and fittings shall be done as follows.
3. The last 8 inches of the outside of the spigot end of the pipe and the inside of the bell end of pipe shall be thoroughly cleaned.
4. The joint surfaces and the gasket shall be painted with a lubricant, provided by the pipe manufacturer, just prior to making up the joint. The spigot end shall then be gently pushed home into the bell.
5. The position of the gasket shall be checked to insure that the joint has been properly made and is watertight.
6. Deflection of joints shall not exceed 75% of the manufacturer's allowable deflection.
7. When laying is not in progress, including lunch time, the open ends of the pipe shall be closed by a watertight plug.
8. Prior to exposing the end of previously installed pipe, an air vent or blow-off on the segment of pipe being installed shall be checked to confirm the absence of air or water pressure. If pressurized air or water are encountered, the Contractor must contact the Owner to verify the division valve between the new work and existing water main is closed. The remaining pressure shall then be bled off at the air vent / blow-off before exposing the end of the pipe.
9. When cutting of pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe.
   a. Cut ends of pipe to be used with a push-on type bell shall be beveled to conform to the manufactured spigot end.
   b. Cement lining shall be inspected for damage and shall be re-mortared as required to ensure a continuous lining.

B. Polyethylene Encasement
   1. Unless specifically noted otherwise, all Ductile Iron Pipe, Valves, and Fittings are to be encased in Polyethylene.
   2. Polyethylene encasement installation must conform to the requirements of AWWA C105/A21.5 and follow the installation guidelines under Method A.

C. Caps and Plugs:
   1. All caps and plugs must have a 2-inch NPT threaded tap.
   2. Where caps and plugs may be removed during the course of the work, the Contractor must install caps and plugs with NPT corporation stops, ball valves, or curb stops to allow for bleeding off of any accumulated pressure per Paragraph 3.05 A.8 of this Section.

D. Thrust Blocking for Fittings:
   1. Shall be as specified in Section 02650, Thrust Blocks and Joint Restraints.

E. Couplings:
   1. Prior to scheduling connections to existing water mains the Contractor is to excavate test pits at all locations of all connection points to existing water mains to document the outer diameter and type of the existing pipe. For each connection location, the Contractor shall prepare a test pit report and a proposed materials list that includes the pipe type, pipe outer diameter and proposed coupling to be utilized in the connection and submit to the Engineer for review and approval.
   2. Where the outer diameters of existing water mains fall within the outer diameter of ranges of MJ Solid Sleeves, The Contractor must use a long pattern MJ solid sleeve for the connection.
   3. Where connections are being made to existing pipes outside the ranges of MJ solid sleeves, the Contractor shall use an approved restrained coupling with the appropriate outer diameter range (See Appendix D for and approved list of materials).
   4. The use of couplings other than long pattern MJ solid sleeves for connections to Ductile Iron pipe is not permitted.

3.06 SPECIAL CONDITIONS

A. Under no conditions shall ductile iron pipe be installed within 5 feet of gas lines without written permission from the Engineer at the discretion of the Owner.

3.07 DISINFECTING

A. Comply with the pertinent sections of Section 02675, Disinfection of Water Mains.

3.08 TESTING

A. Comply with the pertinent sections of Section 02676, Testing Piping Systems.

END OF SECTION

SECTION 02612

HDPE PIPE AND FITTINGS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: The Owner will generally furnish HDPE piping materials. The Contractor will provide all qualified labor, tools, and equipment to install pipe and fittings as required by the Contract Documents. The Contractor is to furnish and install additional piping materials as directed by the Engineer or as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02160 Support of Excavation
2. Section 02222 Earthwork for Water Distribution System
3. Section 02240 Site Drainage and Dewatering
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Joint Restraints
8. Section 02675 Disinfection of Water Mains
9. Section 02676 Testing Piping Systems

1.03 QUALITY ASSURANCE

A. All pipe and fittings shall be inspected and tested at the factory as required by the standard specifications to which material is manufactured. The Contractor shall furnish in duplicate to the Engineer sworn certificates providing evidence of such tests.

B. The Owner reserves the right to have any or all pipe, fittings, and special castings inspected and/or tested by and independent service at either the manufacturer's plant or elsewhere. Such inspection and/or tests shall be at the Owner's expense.

C. Deflections in horizontal alignment will not be permitted at joints without written consent of the Engineer. If approved, deflections shall not exceed one-half the manufacturer's recommendation.

D. When requested by the Engineer, the Contractor shall ensure that a qualified representative of the manufacturer shall be present at the jobsite for the first day of pipe laying, to assure that proper procedures are followed.

E. The Engineer shall be notified in advance when the location of an existing pipeline conflicts with the proposed location of the Work.

F. Pipe and fittings of the same type shall be products of a single manufacturer.

G. All piping shall be of the type and size shown on the drawings and described in this section of the Specifications. Pipe shall be provided with blue stripes co-extruded into the outside surface of the pipe.

H. All pipe and materials in contact with water shall be NSF approved for use with potable water.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All pipe delivered to the job site shall be accompanied by test reports certifying that the pipe conforms to "AWWA Standard AWWA C906 for “HDPE Pipe, for Water Distribution and Transmission".

B. All tests shall be made in accordance with the methods prescribed by the above mentioned AWWA Standard, and the acceptance or rejection shall be based on the test results.

C. Pipe which does not conform to the requirements of this contract shall be immediately removed from the site by the Contractor and replaced with pipe which does conform.

1.05 STANDARDS

A. The following standards form a part of this specification as referenced:
American Water Works Association (AWWA)

1. AWWA C906 HDPE Pipe, for Water Distribution and Transmission. American Society for Testing and Materials (ASTM)

2. ASTM D 3350. Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

3. ASTM F 714 Standard Specification for Polyethylene Plastic Pipe Based on Outside Diameter.

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

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
1. Materials list of items proposed to be provided under this Section.

2. Manufacturer's scale drawings or catalog cuts including descriptive literature and complete characteristics, specifications, and code requirements, Shop drawings shall be submitted for the HDPE pressure pipe, type of joints, fittings, and couplings, in accordance with the specifications.

C. Pipe Fusion Work Plan: Prior to the start of a new HDPE project, the Contractor must submit a work plan that includes:
1. Proof of the Fusion Technician's certification within the last 5 calendar years or as directed by the Engineer.
2. The make, model, and technical specifications of the fusion machine to be used.
3. Proof of machine calibration.
4. Calculation of fusion parameters (pressure, temperature, ext.) as shown on the Sample HDPE Fusion Pressure Calibration Form.
5. Proposed fusion procedure (fusion steps and location: at the side of the trench, laydown area)
6. Proposed locations of specialty couplings (type, manufacturer catalog cuts).
7. Environmental conditions management (use of a tent for protection during rain or to achieve allowable air temperature during cold weather).
8. Finished pipe segment testing parameters and procedures.

PART 2 PRODUCTS

2.01 PIPE

A. High Density Polyethylene Pipe (HDPE):
1. All pipe and fittings shall be as Specified in Section # 28 and Section # 29 of Appendix D – List of Approved Materials.
2. All Polyethylene fittings shall have a pressure rating equal to or higher than the pressure rating of the pipe.
3. Pipe shall be homogeneous throughout; free from voids, cracks, and other defects; as uniform as commercially practicable in color, density, and other physical properties.
4. Pipe surfaces shall be free from nicks, scratches, and other blemishes. The joining surfaces of pipe shall be free from gouges and other imperfections that could cause leakage at joints.
5. Joints:
   a. Shall be butt fused unless otherwise noted on the Drawings.
   b. Mechanical joint adaptors with heavy duty backup ring kits should be provided at mechanical joints.
   c. HDPE MJ adapters shall have ANSI Class 150 316 stainless steel stiffener inserts.
6. Fittings:
   a. Butt-Fused fittings, unless noted otherwise, shall be DR-9 rated at 200 psi and be fused directly onto HDPE pipe with electrofusion as an option.

7. Electrofusion Fittings:
   a. Electrofusion fittings shall be made from HDPE pipe resin meeting ASTM D3350 with a minimum cell classification of 445574C. Electrofusion fittings shall meet the manufacturing standard of ASTM F1055. Electrofusion fittings shall have the same pressure rating as the pipe or high unless otherwise specified.

8. Mechanical Joints and Gaskets:
   a. Mechanical joint gaskets shall conform to ANSI / AWWA C111 / A21.11.

B. Tracer Wire:

1. Tracer wire shall meet the requirements of Section # 30 in Appendix D – List of Approved Materials. Tracer wire shall be installed under the entire length of the pipe and all fittings. At sections where it is necessary to splice tracer wire together, such as tees or intersections and for service lines, tracer wire may be spliced together using splice caps and waterproof seals. Twisting tracer wire is not an acceptable method for splicing. Waterproof, twist on wire connectors approved for direct burial will be allowed to splice tracer wire together.

2. Tracer wire shall be continuous under all fittings. At termination endpoints, tracer wire shall be brought to the surface either through a gate or blow-off box, or wrapped around the valve or blow-off box and brought through the box via drill hole. Tracer wire shall be coiled at least 1'-2' and near the surface.

C. Detectable Marking System for HDPE Pipe Projects

1. All HDPE Pipe must be specifically marked with detectable warning tape conforming to the requirements of Section # 32 under Appendix D – List of Approved Materials. Detectable Warning Tape is to be installed in strict accordance to the manufacturer's instructions.

2. Extended Range Ball Markers, conforming to the requirements of Section 32 under Appendix D – List of Approved Materials, must be installed at all water service taps. Ball Markers are to be installed in strict accordance to the manufacturer's instructions.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.

B. The proposed drainage and proposed water main shall be adequately staked out in advance of the installation so as to allow the water main and sleeve pipe to be installed to the proper elevation and location. Conflicts with the proposed drainage will not be permitted.

3.03 GENERAL

A. Earthwork:
1. Trench, backfill and compact for the work of this Section in strict accordance with the pertinent provisions of Section 02222, Earthwork for Water Distribution Systems.
2. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.
3. Control of ground and surface water shall be in strict accordance with Section 02240, Site Drainage and Dewatering.

3.04 DELIVERY, STORAGE AND HANDLING

A. Pipes and fittings shall be carefully handled when loading and unloading. Pipes shall be lifted by hoists or lowered on skidways in such a manner as to avoid shock.

B. HDPE pipe shall be protected from exposure to sunlight (unless restrained in racks) to prevent bowing of the pipe due to expansion and contraction. Such protection shall consist of canvas covering, or other material, as recommended by the manufacturer. Plastic sheets, which may allow excessive temperatures to develop where the pipe is stored, shall not be used.

C. Pipe shall be stored a minimum 4 inches above ground at a height no greater than 5 feet, and with even support for the pipe barrel.

D. Only nylon-protected slings shall be used for handling the pipe. No hooks or bare cables shall be permitted.

3.05 INSPECTION

A. Each length of pipe and each fitting shall be carefully inspected prior to being lowered into the trench. All materials not meeting the requirements of these specifications, or otherwise found defective or unsatisfactory by the Engineer, shall be rejected and immediately marked and removed from the jobsite by the Contractor.

B. Bedding, sub-bedding, and other trench conditions shall be carefully inspected prior to laying pipe. All conditions shall be made available to the Engineer for inspection.

3.06 INSTALLATION

A. Pipe:

1. Pipe interiors, fitting interiors, and joint surfaces shall be thoroughly cleaned prior to installation. Pipes and fittings shall be maintained clean. For HDPE pipe, a clean cotton cloth shall be employed for cleaning; polyester-type materials shall not be used as they may melt during fusion procedures. Installation and jointing of ductile iron pipe shall be in accordance with AWWA C600 Sections 9b and 9c, latest revision, as applicable.
2. Pipes shall be installed in the locations and to the required lines and grades shown on the drawings and provided in these Specifications, using an approved method of control.
3. Excavations shall be maintained free from water during the progress of Work. No pipes shall be laid in water, nor shall there be any joints made up in water.
4. If any defective pipe is discovered after being placed, removal and replacement with sound pipe will be required at no additional cost to the Owner.

B. HDPE Pipe Jointing:

1. Prior to the start of construction, a site meeting is to be held with the fusion machine's factory representative to have the fusion machine calibrated in the presence of the Owner's Representative, the Contractor, and the Fusion Technician. Proof of machine's calibration must be submitted to the Owner before fusion operations are permitted to begin.
2. HDPE pipe should be joined by butt-fusion methods, having a completely uniform and monolithic pipe interior according to the fusion joining procedures as instructed by the manufacturer.
3. Each individual performing fusion joining shall have had at least one year of experience in the use of the fusion procedure.
4. Inspection of joints shall be performed by a person qualified by training or experience to evaluate the acceptability of HDPE joints made under the applicable joining procedures.
5. The pipe sections shall be joined at ground level to a length recommended by the manufacturer, such that when pulling the pipe into position alongside the trench, maximum allowable stress is not exceeded. Use appropriate materials and equipment, as recommended by the HDPE pipe manufacturer, when pulling butt-fused pipe sections alongside the trench, to prevent pipe damage.

C. Tees, Elbows, Caps, and Reducers:

1. Shall be of HDPE and shall be butt-fused directly onto HDPE pipe, with electrofusion as an option.

D. Valves:

1. All valves used in HDPE water mains shall be gate valves. The use of butterfly valves on HDPE water mains will not be permitted.

2. Upon delivery of valves to the site, the Contractor must test fit the MJ Adapters, backup rings, HDPE accessory kit and T-bolts on the valves to ensure clearance with the valve bodies. If the longer T-bolts for HDPE cannot be installed, the Contractor shall immediately notify the Engineer and material supplier to coordinate valve replacement. Claims for downtime due to improper T-bolt to valve body clearances will not be considered.
3. Modification of materials, such as trimming bolts or enlarging bolt holes will not be accepted.

E. Electrofusion Fittings:
1. At locations where a butt fusion machine cannot be utilized and with specific approval of the Engineer, the Contractor is to make connections on HDPE pipe utilizing electrofusion couplings.
2. Electrofusion couplings must be installed in strict accordance with the manufacturer's instructions.
3. There will not be any additional payment related to the Owner permitting the use of or rejecting the use of electrofusion fittings.

F. Connections to push-on joint water mains:
1. When connecting to water mains containing push-on joints, whether new installation or existing, the Contractor shall provide restraint against the pullout forces generated by the HDPE pipe. One of the two following methods shall be utilized. Restraint locations and types shall be as directed by the Engineer.

a. Thrust Wall: The Contractor shall construct a thrust wall as shown on the attached detail. Prior to placing concrete, an HDPE anchor shall be fused onto the new HDPE pipe at the location of the center of the thrust wall. Concrete used for the thrust wall shall be as specified in Section 02650 and Section 03300. The thrust wall shall be of the dimensions directed by the Engineer and shall be suitably sized to resist forces imposed on it by the HDPE pipe.

b. Bell Restraint: The Contractor shall restrain all joints within a minimum of 60 feet of the connection point between HDPE pipe and push-on joint pipe as shown on the attached detail or as directed by the Engineer. Joint restraints shall be as specified in Section 02650 and shall be installed in accordance with the manufacturer's instructions.

3.07 TESTING

A. Comply with the pertinent sections of Section 02676, Testing Piping Systems.

B. After completion of all water service and water main connections and prior to final restoration (pavement or surface), the Contractor must test the underground marking system in the presence of the Owner's Utility Operations Representatives to demonstrate proper functionality.

1. The tracer wire will be tested for traceability from all access points along the water main.
2. The marker tape is to be continually traced for the entire length of the project and up to connection points at existing water mains.
3. Ball markers must be detected for all water services.
4. Any marking system(s) found to not be functioning to the satisfaction of the Owner's Utility Operations personnel, must be replaced by the Contractor at no additional cost to the Owner.

3.08 DISINFECTING

A. Comply with the pertinent sections of Section 02675, Disinfection of Water Mains.

END OF SECTION

AQUARION Water Company

HDPE FUSION PRESSURE CALIBRATION FORM

Contractor: _____

Project Name: _____ Street Name: _____ Fusion Technician: _____

Town: _____ Date: _____ Certification Number: _____

Project No. _____ Calibrated By: _____ Inspector: _____

Machine: _____

Pipe Size: _____ Inch DIPS

Wall Thickness: _____ DR/SDR

Interfacial Pressure: _____ psi

Gauge Pressure: _____ psi

Gauge Pressure = ((OD - T) x T x PI x IFP)/TEPA + DRAG

Where:

OD = Outside diameter

T = Wall thickness

PI = 3.1416

DR = Dimensional ratio

IFP = Manufacturers recommended interfacial pressure

TEPA = Total effective piston area

DRAG = Force required to move pipe

Notes

On-site for Calibration

Name	Signature	Date

SECTION 02640

BURIED VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: The Owner will generally furnish piping materials. The Contractor shall install valves, valve boxes, and valve accessories, as required by the Contract Documents. The Contractor shall furnish and install additional piping materials as directed by the Engineer as required by the Contract Documents.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications
   1. Section 02160 Support of Excavation
   2. Section 02222 Earthwork for Water Distribution Systems
   1. Section 02240 Site Drainage and Dewatering
   2. Section 02611 Ductile Iron Pipe and Fittings
   3. Section 02612 HDPE Pipe and Fittings

1.02 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
   3. An exploded view diagram with a materials list.

1.03 STANDARDS

A. The following American Water Works Association (AWWA) standards form a part of this specification as referenced:
   1. AWWA C509 Resilient-Seated Gate Valves for Water Supply Service.
   2. AWWA C504 Rubber-Seated Butterfly Valves.

PART 2 PRODUCTS

2.01 VALVES

A. Resilient Seated Gate Valves: Shall be used on all HDPE water mains, on ductile iron water mains less than sixteen (16) inches in diameter and on all hydrant branches.
   1. Gate valves shall meet the requirements listed under Section # 2, Gate Valves, in Appendix D – List of Approved Materials.

B. Butterfly Valves: Shall be used on all water mains sixteen (16) inches in diameter and larger.
   1. Butterfly valves shall meet the requirements listed under Section # 3, Gate Valves, in Appendix D – List of Approved Materials.

C. Insertion Valves: Shall be installed where indicated on the Contract Drawings:
   1. Insertion valves shall meet the requirements listed under Section # 25, Insertion Valves, in Appendix D – List of Approved Materials.

D. Air Vent and Blow-Off Valves:
   1. Air Vent and Blow-Off Valves shall meet the requirements listed under Section # 17, Air Vent and Blow-Off Assemblies, in Appendix D – List of Approved Materials. Air Vents and Blow-Off Valves shall be Quarter Turn positive stopping No-Lead brass 2-inch diameter angle offset ball valves with 2-inch Female Iron Pipe (FIP) and 2-inch Male Iron Pipe (MIP) Outlet.

2.02 VALVE BOXES

A. Valve boxes shall be provided for each buried valve. Valve boxes shall be as listed under Section # 4 Valve Boxes of Appendix D.

2.03 TAPPING SLEEVES

A. Tapping Sleeves shall meet the requirements listed under Section # 10, Tapping Sleeves under Appendix D – List of Approved Materials

PART 3 EXECUTION

3.01 HANDLING AND INSPECTION

A. Care shall be taken to prevent damage to valves, and appurtenances during handling and installation. All materials shall be carefully inspected for defects in workmanship and materials.

B. All operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves which do not operate easily or are otherwise defective shall be replaced by Contractor's.

C. Upon delivery of and prior to installation of all valves, the Contractor shall confirm that the opening direction of each valve matches the direction specified in Appendix B. If any valves are found to have the wrong opening direction after installation, the Contractor shall cover all associated costs required to reconfigure or replace the valve including any costs to temporarily serve customers, re-disinfection and retesting of water mains as required by the Owner.

D. Insertion valves shall only be assembled or prepared for installation by qualified personnel.

3.02 INSTALLATION

A. General:
   1. Construction methods for the work under this Section shall conform to the applicable portions of Section 02611, Buried Ductile Iron Pipe and Fittings, details as shown on the Contract Drawings, manufacturer's recommended installation procedures, and procedures specified herein.
   2. Under no circumstance are valves permitted to backfilled with an open end. All valves that are left in place during construction must have an appropriately sized gasketed mechanical joint plug installed on the open end. Whether for temporary or permanent purposes, mechanical joint plugs must have all bolts installed and fully tightened.
   3. When installing a valve for at the start of a new water main segment to be installed under this Contract, the Contractor shall place a red 2” x 4” timber inside of the valve box with a securely fastened, waterproof tag noting, “Do Not Operate.” The timber must be of sufficient length to be no greater than 6 inches below the top of the valve box, but not interfere with the setting of the valve box cover.

B. Valves and Appurtenances:
   1. Valves shall be set and aligned plumb, supported by a flat stone or solid concrete block, with the trench bottom being firmly compacted.
   2. Valve boxes shall be set centered and plumb over the operating nuts of all, direct burial valves. The top of each valve box shall be set to finished grade with at least 10 inches of overlap remaining between the upper sections for future vertical adjustment. Minimum overlap for lower, extension pieces shall be 6 inches.

C. Insertion Valves:
   1. Shall only be installed by personnel qualified in installing the specific brand of insertion valve.
   2. Pipe shall be thoroughly cleaned prior to installation.
   3. All components of the insertion valve shall be installed in strict accordance with the manufacturer’s instructions.
   4. Valve shall be installed plumb on the existing water main, all bolts securely fastened, and the valve shall be evenly supported on a concrete block with the trench bottom being firmly compacted.
   5. No leakage shall be present upon completion of valve installation.

6. Proper operation of insertion valve shall be confirmed prior to backfilling of trench.
7. Valve boxes shall be set centered and plumb over the operating nuts of all, direct burial valves. The top of each valve box shall be set to finished grade with at least 10 inches of overlap remaining between the upper sections for future vertical adjustment. Minimum overlap for lower, extension pieces shall be 6 inches.

D. Tapping Sleeves:
1. The Contractor shall be responsible for accurately measuring the outer diameter of the pipe being tapped and furnishing the tapping sleeve of proper diameter range.
2. Tapping sleeve shall be installed in strict accordance with the manufacturer's instructions.
3. Prior to tapping, the pipe surface, tapping sleeve, and valve shall be disinfected with a sodium hypochlorite solution.
4. After installing the tapping sleeve and valve, and before tapping the main, the tapping sleeve and valve shall be given a hydrostatic pressure test at 150 psi for 15 minutes.
5. The tap shall be made with a tapping machine specifically designed for the purposes of tapping water mains.
6. The tapping sleeve and valve shall be adequately supported with a concrete block prior to backfilling.
7. Valve boxes shall be installed as specified in the valve section of this specification.

END OF SECTION

SECTION 02645

HYDRANTS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Installing hydrants as required by these Specifications.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02611 Ductile Iron Pipe and Fittings
   3. Section 02612 HDPE Pipe and Fittings
   4. Section 02640 Buried Valves and Appurtenances
   5. Section 02650 Thrust Blocks and Joint Restraints

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed, to insure compliance with the specified requirements.

1.04 STANDARDS

A. The following American Water Works Association (AWWA) Standards form a part of this specification as referenced:
   1. AWWA C502 Dry-Barrel Fire Hydrants.

PART 2 PRODUCTS

2.01 HYDRANTS

A. Hydrants shall be as specified under Section # 15 Fire Hydrants in the List of Approved Materials in Appendix D of this document.

B. Direction of Operation and paint color shall be as noted in Appendix B of this document.

C. Hydrants shall conform to AWC’s requirements listed on the Hydrant Specification Sheet found in the Appendices of this document. Caps shall have retainer chains and rubber gaskets.

D. Upon delivery of and prior to installation of all hydrants, the Contractor shall confirm that the opening direction, thread type, and color of each hydrant matches the direction specified in Appendix B. If any hydrants are found to have the wrong opening direction after installation, the Contractor shall cover all associated costs required to reconfigure or replace the hydrant as required and directed by the Owner.

2.02 HYDRANT EXTENSION

A. Extension Kit: Are subject to approval by the Owner and Engineer if required. Shall be used to meet grade on site shall be furnished by the Contractor:
   1. Shall be provided by the hydrant manufacturer.
   2. Length shall be as needed to meet finish grade.
   3. Shall be installed by the Contractor when and where directed by the Owner or Engineer at no additional cost of the Owner.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and condition under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure fit of items.

3.03 PROPOSED HYDRANT LOCATIONS

A. All new hydrant locations shown on the Contract Drawings shall be subject to field location approval by the Owner or the Engineer.

3.04 INSTALLATION

A. Hydrants:
   1. Trench, backfill and compact for the work of this Section in strict accordance with pertinent provisions of Section 02222, Earthwork for Water Distribution Systems.
   2. The hydrant drainage pit shall be approximately three (3) feet in diameter and filled with compacted crushed stone. While backfilling, place additional crushed stone to at least six (6) inches above the hydrant drain ports.
   3. After being thoroughly cleaned, all iron work set below ground that is not already shop coated, shall be painted with two coats of asphalt varnish as specified in AWWA C504.
   4. Thrust blocking, bearing on undisturbed earth, shall be placed behind the shoe of the hydrants, taking care not to block the drain outlets.
   5. The hydrant shall be set plumb and to the proper grade and shall remain properly supported until it is backfilled.

6. All iron work left above ground that is not already shop coated, shall be shop painted with two coats of paint of quality and color to correspond to the present standard of the Owner.
7. After the hydrant has been set, it shall be tagged with an out of service ring, or entirely draped with an out of service bag and remain covered until the water distribution system has been accepted and put into service.

END OF SECTION

SECTION 02650

JOINT RESTRAINTS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Install thrust blocks and joint restraints for water mains as required by the Contract Documents. Joint restraints shall be furnished by the Aquarion Water Company.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1. Section 02160 Support of Excavation
2. Section 02200 Earthwork for Water Distribution Systems
3. Section 02240 Site Drainage and Dewatering
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02612 HDPE Pipe and Fittings

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed, to insure compliance with the specified requirements.

PART 2 PRODUCTS

2.01 CONCRETE

A. Concrete shall be as specified in Section 03300, Cast-In-Place Concrete.
   1. Minimum concrete strength shall be 3,000 psi after 28 days.

2.02 JOINT RESTRAINTS

A. Mechanical joint restraint and push-on joint restraint shall be as specified under Section # 7 MJ and Tyton Joint Restraint in the List of Approved Materials in Appendix D of this document.

B. Post installed joint restraints on Ductile Iron Pipe shall be Megalug 1100 HD Series as manufactured by EBAA Iron Sales Inc., Eastland, Texas or an approved equal.
   1. Glands and bell harness rings shall be split type and be manufactured of ductile iron conforming to ASTM A536.

2. The wedges shall be Ductile Iron, heat treated to a minimum hardness of 370 BHN
3. A sufficient number of rods shall be used to connect each restraint to one another.
4. Shall employ twist-off nuts.

C. Post installed joint restraints on Cast Iron Pipe shall be Megalug 1600 TD Series as manufactured by EBAA Iron Sales Inc., Eastland, Texas or an approved equal.
1. The restraint shall be manufactured of ductile iron conforming to ASTM A536.
2. A split ring shall be utilized behind the pipe bell.
3. A split, serrated ring, with a sufficient number of heat treated Tru-Dual® inserts shall be used to grip the spigot, plain end pipe.
4. A sufficient number of bolts shall be used to connect the bell ring and the gripping ring.

2.03 OTHER MATERIALS

A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Engineer.

PART 3 EXECUTION

3.01 JOINT RESTRAINTS

A. Mechanical joint restraint devices shall be installed at all fittings in accordance with the manufacturer's written instructions.
B. Push-on joint restraint devices shall be installed per the requirements of the Contract Drawings and in accordance with the manufacturer’s written instructions.
C. Existing joints within the specified distances of new fittings or cut and caps shall be retrofitted with joint restraints to the lengths shown on the Contract Drawings or as directed by the Engineer. Joint restraints shall be installed in accordance with the manufacturer’s written instructions.

3.02 THRUST BLOCKS

A. Generally, joint restraint shall be achieved with retainer glands, harnesses, or locking gaskets. Concrete thrust blocks shall be provided where directed by the Engineer or specifically noted on the Contract Drawings.
1. The backs of thrust blocks shall be placed against undisturbed earth and the sides shall be formed.
2. The joint shall be wrapped in polyethylene wrap prior to placing concrete.
3. Concrete shall not be placed over bolts or nuts.
4. Area of the thrust block in contact with the fitting shall bear on the body of the fitting, not on the fitting joints

END OF SECTION

SECTION 02660

SERVICE CONNECTIONS

PART 1 GENERAL

1.01 SUMMARY

A. Work included: Install potable water service connections including but not limited to service tubing, corporation stops/curb stops, curb boxes and service saddles.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
   1. Section 02222 Earthwork for Water Distribution Systems
   2. Section 02611 Ductile Iron Pipe and Fittings
   3. Section 02612 HDPE Pipe and Fittings
   4. Section 02640 Buried Valves and Appurtenances

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed, to ensure compliance with the specified requirements.

1.04 STANDARDS

A. The following Standards form a part of these Specifications as referenced:
   1. AWWA C800 Underground Service Line Valves and Fittings.
   2. AWWA C901 Polyethylene Pressure Pipe and Tubing, 1/2 Inch Through 3 Inch, For Water Service.

1.05 QUALITY ASSURANCE

A. Codes and Standards
   1. Plumbing Code Compliance: Comply with applicable portions of National Standard Plumbing Code pertaining to selection and installation of potable water system materials and products.
   2. Comply with applicable Town and State Health Department requirements.

B. Compliance
   1. The Owner may require an affidavit from the manufacturer or vendor that the products furnished comply with all applicable provisions of AWWA C800 and AWWA C901.

PART 2 PRODUCTS

2.01 GENERAL

A. All materials shall be of domestic manufacture.

B. The Owner has standardized on the following products listed in this Section for service connections.

2.02 SERVICE TUBING

A. Copper Water Tubing
   1. Conform to the specifications under Section # 23, Copper Tubing in Appendix D – List of Approved Materials.
   2. Size: As indicated on the Drawings, as required to match existing tubing size, or as directed by the Engineer.
   3. Type K annealed (soft).
   4. Seamless.

B. Polyethylene Water Tubing
   1. Conform to the provisions of ASTM D-2737 and AWWA C901-08.
   2. Size: Copper Tubing Size (CTS) Diameter as indicated on the Drawings, as required to match existing tubing size, or as directed by the Engineer.
   3. Shall only be used where specifically directed by the Owner.
   4. Have a minimum 200 psi pressure rating.
   5. Seamless.
   6. Blue in color.

2.03 CORPORATION STOPS

A. Corporation Stop: Shall be as specified under Section # 20, Service Brass in Appendix D – List of Approved Materials.
   1. Comply with AWWA C800, Underground Service Line Valves and Fittings.
   2. Cast alloy brass body, no lead.

2.04 CURB STOPS

A. Curb Stops shall be as specified under Section # 20, Service Brass in Appendix D – List of Approved Materials.
   1. Comply with AWWA C800, Underground Service Line Valves and Fittings.
   2. Cast alloy brass body, no lead.
   3. Quarter turn check.

2.05 CURB BOXES

A. Shall be as specified under Section # 6, Service (Curb) Boxes in Appendix D – List of Approved Materials.

2.06 SERVICE SADDLE

A. Water Services on Ductile Iron Pipe: Service saddles shall be used on all corporations larger than one (1) inch installed in water mains twelve (12) inches or less in diameter.

1. Shall be as specified under Section # 14, Service Saddles in Appendix D – List of Approved Materials.

B. Water Services on HDPE Pipe: Service saddles for HDPE pipe shall be Electrofusion type and used on all HDPE water mains.
   1. Shall be as listed in Section # 29 in Appendix D of this document.
   2. Shall have straps to securely fasten the saddle to the pipe.
   3. Have IPS outlet sized to accept a corporation stop of equal size to the water service being installed.
   4. Meet all applicable parts of ANSI/AWWA C800 and C901.

2.07 METER PIT

A. Meter pits shall be as specified in Section # 18 Meter Pits, in Appendix D – List of Approved Materials.

2.08 COUPLINGS

A. Use approved couplings as noted in Appendix D – List of Approved Materials.

B. Unless specifically approved in writing by the Owner, couplings are only approved for use on the customer side of the curb stop.

C. Barbed fittings are not approved for use.

PART 3 EXECUTION

3.01 INSPECTION

A. Service tubing which does not conform to the requirements of this specification shall be immediately removed from the site by the Contractor.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.
B. Where applicable and where the work under this Contract is being performed ahead of proposed state, municipal or other utility work, the Contractor shall install water services at the required depths and locations to avoid conflict with proposed utilities or structures. Any potential conflicts shall immediately be brought to the attention of the Engineer and Owner.
C. Prior to sawcutting or excavating, the Contractor shall determine the location of the existing water service; including the curb box. Prior to tapping water mains for water services, the Contractor shall confirm the location of the existing curb box, water service line, corporation stop, and confirm that the located water service serves premise. The Contractor shall not be eligible for payment of any kind for tapping water mains or transferring water services that are not actively serving a premise.

3.03 HANDLING PIPE

A. The Contractor shall take care not to damage pipe by impact, bending, compression, or abrasion during handling, and installation. Any pipe which, in the opinion of the Engineer is damaged, will not be permitted to be used. Joint ends of pipe especially, shall be kept clean.

3.04 SERVICE LOCATIONS AND SHUT-DOWNS

A. All new service locations shown on the Contract Drawings shall be subject to field location approval by the Engineer and/or Owner.

B. The Contractor must document the types and locations of any landscape features, decorative edging, pavers, walkways, lawn decorations, etc. that may be impacted by the work. The Contractor must coordinate the temporary relocation and storage of any landscaping features with the property owner. The Contractor is responsible for the removal, protection, and storage at the location designated by the property owner, and reinstallation of any landscape features that may be disturbed. Any landscape features that are damaged or lost must be replaced by the Contractor at the Contractor's expense.

C. Where a water service must by shut-down, it shall be the Contractor's responsibility to contact the party owning the service to arrange a shut-down schedule prior to doing any work.
   1. All such schedules must be approved prior to shut-down.
   2. Shut-down time shall be kept to a minimum so as to keep service off for the shortest possible time.

3.05 LEAD SERVICES

A. When a previously unknown lead water service is encountered, the Contractor shall follow the following procedure:
   1. The Contractor must notify the Owner's onsite representative of the presence of the lead line as soon as it is identified. The Owner's Representative will ensure a lead service information packet is provided to the customer or left hanging on the door at this time. The Owner's onsite representative shall report any discovery of lead by the end of each work day to the Owner's project manager.
   2. If a lead service line is damaged during excavation it must be replaced entirely on the water company side, not repaired. If a damaged line cannot be replaced immediately, the Owner's project manager shall be contacted for instruction.

B. When a lead water service is to be replaced, the Contractor shall follow the following procedure:
   1. Company side lead service lines are to be replaced in their entirety (no repairs or partial replacements) from corporation to curb box.
   2. The Contractor shall verify customer communication has occurred (as described in the first step of section a) before work begins.
   3. The Contractor must notify the Owner's onsite representative of the type of customer side service line material identified when tying in. The Owner's onsite representative will report this information to the Owner's project manager by the end of the business day in which this work is being performed.

3.06 INSTALLATION OF TUBING

A. Service Tubing
   1. Where directed by the Engineer, the Contractor shall install new services including 1-inch and 2-inch tubing.
   2. For services outside the paved areas, trench excavation shall be utilized, with tubing being carefully laid in the bottom of the trench, backfill placed and compaction completed.
      a. Care shall be taken to insure against kinks or crushed areas.
   3. Backfill around and to one (1) foot over the tubing shall not contain stones greater than one (1) inch in diameter. At no additional cost to the Owner, the Contractor shall furnish and place sand around the service tubing, if the excavated does not meet this requirement.
   4. For services to be installed beneath paved surfaces, a pneumatic drive device such as "Hole Hog" or equal, trenchless method, shall be utilized to drive the new service beneath the pavement.
   5. Service tubing between the corporation stop and the curb stop shall be one (1) piece.
   6. Tubing shall be connected to the curb stop and comp. joints tightened.
   7. Threaded caps shall be installed over the outlet ends of curb stops, to be left for future connections.

3.07 APPURTENANCES

A. Corporation Stops
   1. Provide the necessary tap, sized for the fitting.

B. Curb Stops and Boxes
   1. Install curb stops where shown on the Drawings.
   2. Place valve box over stop, taking care that it is installed plumb.
   3. Wrap the base of the curb box with filter fabric to prevent soil from entering around the box.
   4. Curb stops shall be key checked after adjustment to final grade.
      a. If curb stop is not centered in the box, the box shall be removed and reset over the curb stop.

C. Meter Pits
   1. Install Meter Pits where shown on the drawings
   2. Place meter plumb
   3. Provide crushed stone base below meter pit.
   4. Set frame to finished grade.

D. Couplings

   1. Where new water services are connected to existing customer side water service tubing that differs from the standard 1-inch or 2-inch Copper tubing, the Contractor shall use an approved compression style coupling to make the final connection.
   2. Barbed fittings are not permitted for use in water service connections.

3. The Contractor shall measure the outer diameter of the existing tubing and utilize the appropriately sized compression coupling that matches the outer diameter of the tubing encountered. Confirmation that the appropriate coupling is onsite is required before the Contractor is authorized to disrupt service. If the appropriate coupling is not available and the excavation must be backfilled, the Contractor will be paid under the Test Pit Item.
4. Where polyethylene tubing (CTS, IPS, Well Line, etc.) are encountered, appropriately sized stiffener inserts must be used in all connections.
5. Shaving, heating, or stretching of existing service tubing to make the connection is not permitted.

END OF SECTION

SECTION 02661

METER PIT/ METER INSTALLATIONS

PART 1 GENERAL

1.01 SUMMARY

A. Work included: Install meter pits including but not limited to service tubing, curb stops and curb boxes.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.
   1. Provide verification of P1 licensed plumber performing interior piping work.
   2. Materials list of items proposed to be provided under this Section.
   3. Manufacturer's specifications and other data needed, to ensure compliance with the specified requirements.

1.04 STANDARDS

A. The following Standards form a part of these Specifications as referenced:
   1. AWWA C800 Underground Service Line Valves and Fittings.

1.05 QUALITY ASSURANCE

A. Codes and Standards
   1. Plumbing Code Compliance: Comply with applicable portions of National Standard Plumbing Code pertaining to selection and installation of potable water system materials and products.
   2. Comply with applicable Town and State Health Department requirements.

B. Compliance
   1. The Owner may require an affidavit from the manufacturer or vendor that the products furnished comply with all applicable provisions of AWWA C800.

C. Contractor Licenses
   1. The meter pit installation contractor shall possess a P7 license as issued by the State of Connecticut. The Contractor removing the interior house meter, resetting it within the meter pit and installing a meter spacer within the home shall possess a P1 license as issued by the State of Connecticut and shall be an “On Staff” employee of the installation Contractor.

PART 2 PRODUCTS

2.01 GENERAL

A. All materials shall be of domestic manufacture.

B. AWC will provide all meter pit assemblies to the installation Contractor.

C. The Contractor shall provide all jumpers and interior piping materials for removal of existing meters.

2.02 INTERIOR PIPING

A. Rigid Copper Piping
1. Conform to the provisions of ASTM B-88.
2. Size: As required to match existing piping size.
3. Type L rigid copper.

2.03 METER SPACERS

A. Meter spacers shall be fabricated from lead free materials and shall be installed within the space of the relocated meter. New gaskets shall be provided at time of installation. Meter spacers shall be fabricated from an approved supplier of AWC.

2.07 PART 3 EXECUTION

3.01 INSPECTION

A. Service tubing which does not conform to the requirements of this specification shall be immediately removed from the site by the Contractor.

3.02 FIELD MEASUREMENTS

A. Make necessary measurements in the field to assure precise fit of the items.

3.03 HANDLING PIPE

A. The Contractor shall take care not to damage pipe by impact, bending, compression, or abrasion during handling, and installation. Any pipe which, in the opinion of the Engineer, is damaged will not be permitted to be used. Joint ends of pipe shall be kept clean.

3.04 SERVICE LOCATIONS AND SHUT-DOWNS

A. All service locations shown on the Contract Drawings shall be subject to field location approval by the Engineer and/or Owner.

B. Water services shall be shut down for installation of the meter pit and / or removal of an interior meter. Where a water service must be shut-down, it shall be the Contractor's responsibility to contact the party owning the service to arrange a shut-down schedule prior to performing any work.
   1. All such schedules must be approved prior to shut-down.
   2. Shut-down time shall be kept to a minimum so as to keep service off for the shortest possible time.

3.05 INSTALLATION OF METER PITS

1. Where directed by the Engineer, the Contractor shall install new meter pits including 1-inch and 2-inch tubing connections within the current service line.
2. For services outside the paved areas, trench excavation shall be utilized, with tubing being carefully laid in the bottom of the trench, backfill placed and compaction completed. Care shall be taken to insure against kinks or crushed areas.
3. The Contractor shall furnish and place sand around the service tubing to one (1) foot over the tubing.
4. All meter pits shall be installed with the service line at 4ft. of buried cover. Should the service line be of greater or less depth, the Contractor shall adjust the depth by offsetting the service line connections.
5. H-20 Meter Pits may be required in high vehicle traffic areas or as designated by the Engineer.

3.06 REMOVAL / RESETTING OF INTERIOR METERS

A. At the time which water meters are relocated to the new meter pits, the Contractor shall cut out the existing meter horn within the home and replace with a straight piece of rigid copper piping. Where the existing piping does not allow for piping to be replaced either due to pipe material or condition, the Contractor may be permitted to install a jumper within the meter horn, at the sole discretion of the Engineer.

3.07 APPURTENANCES

A. Meter Pits
   1. Install Meter Pits where shown on the drawings.
   2. Place meter pit plumb.
   3. Provide crushed stone base below meter pit.
   4. Set frame to finished grade.

END OF SECTION

SECTION 02675

DISINFECTION OF WATER MAINS

PART 1 GENERAL

1.01 The Aquarion Water Company provides disinfection for new permanent water mains. However, for temporary water mains, the Contractor shall perform disinfection as outlined herein.

1.02 DESCRIPTION

A. Work Included: Disinfecting water mains and their appurtenances, as required by the Contract Documents.

B. The Contractor shall schedule and sequence the water main installation to provide for filling and disinfection of water main segments no greater than 1,200 feet in length.

C. There are three (3) methods for disinfection:
1. Tablet Method
2. Slug Method
3. Continuous Feed Method

NOTE: AWC reserves the right to change or select the type of disinfection method.

D. The procedure for disinfecting water mains, as described in this section, generally consists of the following steps:

1. Filling the new water mains with chlorinated water.
2. Disinfecting the new water mains with chlorine solution.
3. Flushing the chlorinated water from the new water mains.
4. Taking samples for bacteriological analysis.
5. Testing the samples at a state certified laboratory.
6. Pressure testing of the new water mains.

NOTE: The operation of valves shall only be made by AWC Personnel. The Contractor shall coordinate and schedule activities requiring the operation of valves a minimum of 48-hours in advance.

1.03 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02511 Temporary Water Service
2. Section 02611 Ductile Iron Pipe and Fittings
3. Section 02612 HDPE Pipe and Fittings

1.04 SUBMITTALS

A. The Contractor shall prepare a plan for disinfecting water mains and their appurtenances that describes the proposed schedule, the location of all sampling and flushing points, and the overall procedure for disinfecting. The plan shall also present the proposed chemicals to be employed, the strength of the chemicals and the equipment employed to apply them. The plan shall be submitted to the Engineer for review not less than two weeks prior to start of construction if selecting method 1 or not less than two weeks prior to the proposed time for disinfecting the water mains if selecting methods 2 or 3.

B. Copies of all test results, as specified herein, shall be submitted directly to the Engineer from the laboratory that conducted the tests.

1.05 STANDARDS

A. The following standards are referenced, in part, in this specification:
   1. Specific sections, or portions thereof, of AWWA C651 (latest revision) Disinfecting Water Mains, as further described herein.

1.06 COST OF DISINFECTING WATER MAINS

A. All costs associated with disinfecting water mains, including water, chemicals and bacteriological analysis of samples, as further described in this Section, shall be paid for by the Contractor.

PART 2 PRODUCTS

2.01 WATER

A. Water for flushing of water mains, preparation of chlorine solutions and filling of water mains for disinfection shall be potable drinking water.

2.02 CHEMICALS

A. Chlorine for preparation of chlorine solutions for disinfection shall be sodium hypochlorite tablets, sodium hypochlorite solution or calcium hypochlorite and shall conform to the requirements of ANSI/AWWA B300.

B. Adhesive for Tablet Method shall be food grade.

C. Chlorine solutions or any chlorinated water shall be neutralized prior to disposal using sodium bisulfite, sodium sulfite or sodium thiosulfate. Any water disposed shall be discharged over land. Under no circumstances shall water neutralized water be discharged directly into any body of water.

2.03 WATER SAMPLE BOTTLES

A. Sterile water sample bottles shall be obtained from a state certified laboratory.

1. Sterile bottles for bacteriological analyses shall be treated with sodium thiosulfate to neutralize any residual chlorine.
2. Two samples are required at each specified sampling point. One sample shall be analyzed for the presence of coliform bacteria and one sample shall be analyzed for the presence of heterotrophic plate count (HPC) bacteria.

PART 3 EXECUTION

3.01 WATER MAIN DISINFECTING – TABLET METHOD

A. As the pipeline and appurtenances are being constructed, the Contractor shall pack hypochlorite tablets in each section of pipe.

1. Tablets shall be attached to the top of the pipe by means of an approved food grade adhesive.
2. The number of tablets placed in each section of pipe shall be such that when the pipeline is filled with water the chlorine concentration shall be at least 25 mg/l.
3. The pipeline shall be filled with water at such a rate that the water velocity in the new water main is less than 1 foot per second.
4. The water shall stand in the pipeline for a 24-hour retention period following completion of filling.
5. The minimum residual chlorine concentration at the end of the 24-hour holding period shall be 10 mg/l.
6. After the 24-hour retention period, the heavily chlorinated water shall be flushed from the pipeline until the chlorine concentration leaving the main is no higher than that generally in the system or less than 1.0 mg/l.
7. Chlorinated water shall be discharged in a manner that will not adversely affect flora and fauna or drainage courses and shall conform to applicable State regulations for waste discharge.
14. Chlorinated water that is flushed from the mains shall be neutralized by the addition of a dechlorinating agent so that the residual chlorine concentration is zero.

The location of the discharge for the dechlorinated water shall be approved by the Engineer and the Owner.

3.02 WATER MAIN DISINFECTING – SLUG METHOD

A. The slug method shall consist of placing calcium hypochlorite granules in the main during construction; completely filling the main with water to eliminate all air pockets, flushing the main to remove particulates, and slowly flowing a slug of water containing 100 mg/L of free chlorine through the main so that all parts of

the main and its appurtenances will be exposed to the highly chlorinated water for a period of not less than 3 hours.

1. Taps for flushing, chlorination and sampling shall be installed by the Contractor at no additional expense to the Owner.
2. Potable water may be supplied from a temporary backflow-protected connection to the existing distribution system or other supply approved sources. The cross connection control device shall be consistent with the degree of hazard for backflow protection of the active distribution system. The flow shall be at a constant, measured rate into the newly installed water main. In the absence of a meter, approximate the rate by placing a Pitot gauge in the discharge or measuring the time to fill a container of known volume. Flush the new water mains with potable water to remove any contaminants and debris that may have entered the water mains during construction.
3. At a point not more than 10 feet downstream from the beginning of the new main, dose the water entering the new main with chlorine fed at a constant rate such that the water will have not less than 100 mg/L free chlorine.
4. Measure the chlorine concentration at regular intervals to ensure that this concentration is provided.
5. The chlorine shall be applied continuously and for a sufficient period to develop a solid column or "slug" of chlorinated water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hours.
6. The flushing velocity in the new water mains shall not be less than 2.5 feet per second. In the absence of a flow meter, flow rate shall be determined either by placing a pitot gage at the discharge or by measuring the time to fill a container of a known volume.
7. The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, stop the flow, relocate the chlorination equipment to the head of the slug, and as flow is resumed, apply chlorine to restore the free chlorine in the slug to not less than 100 mg/L.
8. Chlorinated water shall be discharged in a manner that will not adversely affect flora and fauna or drainage courses and shall conform to applicable State regulations for waste discharge.
9. Chlorinated water that is flushed from the mains shall be neutralized by the addition of a dechlorinating agent so that the residual chlorine concentration is zero.
10. The location of the discharge for the dechlorinated water shall be approved by the Engineer and the Owner.

3.03 WATER MAIN DISINFECTING – CONTINUOUS FEED METHOD

A. After completion of all water main related construction, except water service connection installation, all water mains, valves, hydrants, hydrant connections and other appurtenances installed under this Contract shall, be disinfected in accordance with AWWA Standard C651, Section 4.4.3 (Continuous Feed Method), as modified herein.

1. Taps for flushing, chlorination and sampling shall be installed by the Contractor at no additional expense to the Owner.
2. Flush the new water mains with potable water to remove any contaminants and debris that may have entered the water mains during construction.
3. The flushing velocity in the new water mains shall not be less than 2.5 feet per second. In the absence of a flow meter, flow rate shall be determined either by placing a pitot gage at the discharge or by measuring the time to fill a container of a known volume.
4. Prepare a chlorine solution that will be continuously fed into the potable water that is used to fill the new water mains.
5. The chlorine solution shall be applied to the new water mains with a chemical feed pump designed to feed chlorine solutions.
6. Completely fill the new water mains with the chlorinated, potable water to remove any air pockets. The point of application shall be no more than 10 feet downstream from the beginning of the new water mains.
7. The chlorine solution shall be of sufficient strength to provide a minimum residual chlorine concentration of 25 milligrams per liter (mg/l) in the filled water mains.
8. New valves and hydrants shall be operated to ensure their proper disinfection.
9. Isolation valves shall be maintained in a closed position to prevent chlorinated water from entering the existing water distribution system.
10. Chlorinated water shall remain in the main for a minimum of 48 hours.
11. The minimum residual chlorine concentration at the end of the 48 hour holding period shall be 10 mg/l.
12. After the 48-hour retention period, chlorinated water shall be flushed from every hydrant branch on the main until the chlorine concentration leaving the main is no higher than that generally in the system or less than 1.0 mg/l.
13. Chlorinated water shall be discharged in a manner that will not adversely affect flora and fauna or drainage courses and shall conform to applicable State regulations for waste discharge.
15. Chlorinated water that is flushed from the mains shall be neutralized by the addition of a dechlorinating agent so that the residual chlorine concentration is zero.
16. The location of the discharge for the dechlorinated water shall be approved by the Engineer and the Owner.

3.04 BACTERIOLOGICAL TESTS

A. A minimum of 24 hours after flushing and before the new water mains are placed in service, the Contractor shall collect water samples for testing of the bacteriological quality of the water.
   1. No hose or fire hydrant shall be used in the collection of samples.
   2. A sampling tap shall consist of a standard corporation stop installed in the main with a PVC gooseneck assembly.
   3. Samples for bacteriological testing shall be collected in sterile bottles treated with sodium thiosulfate and furnished by the state certified laboratory that will perform the tests.
   4. Unless otherwise directed by the Engineer or the Owner, the minimum number of samples for bacteriological analysis shall be as follows:
      a. One sample every 1,200 linear feet of newly installed water mains.
      b. One sample at the end of the newly installed water mains.
      c. One sample at each branch.
   5. One round of sampling shall be conducted on water distribution systems that continuously maintain a chlorine residual.
   6. Two rounds of sampling shall be conducted on water distribution systems that do not continuously maintain a chlorine residual. The second round of sampling shall be conducted a minimum of 24 hours after the first round of samples is taken.

B. All bacteriological tests shall be performed by a state certified laboratory.
   1. Two bacteriological tests shall be performed on all samples:
      a. one coliform bacteria, and
      b. one heterotrophic plate count (HPC) bacteria.
   2. Test results on all samples and a copy of the chain of custody shall be mailed directly to the Engineer and Owner from the laboratory.
   3. The disinfection procedure shall be considered satisfactory only if the results of all tests confirm the following:
      a. the absence of coliform bacteria in all samples taken and
      b. the HPC bacteria are less than 500 colony forming units per milliliter (cfu/ml) in all samples taken (unless the water supplier has established a stricter HPC limit from baseline data for their water distribution system, in which case the results of the HPC bacteria tests shall meet the stricter limit).
   4. The new water mains may be placed in service if the results of the disinfection procedure are satisfactory and the Engineer and Owner have granted their permission.
   5. If the initial disinfection procedure fails to produce satisfactory results, the new water mains shall be flushed and resampled as described above. If the test results from the resampling also fail to produce satisfactory results, the entire disinfection procedure shall be repeated.

END OF SECTION

SECTION 02676

TESTING PIPING SYSTEMS

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included: The Contractor shall provide hydrostatic pressure/ leakage tests as required by the Contract Documents. However, in certain cases, the Owner may elect to perform the hydrostatic pressure/ leakage test.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02611 Ductile Iron Pipe and Fittings
2. Section 02612 HDPE Pipe and Fittings
3. Section 02640 Buried Valves and Appurtenances

1.03 QUALITY ASSURANCE

A. Pressure tests will only be accepted if witnessed by the Owner's representative. Pressure test shall be performed and recorded in accordance with the provided pressure testing template.

B. The Contractor shall perform the hydrostatic pressure test as specified herein. If the Contractor elects to hire a subcontractor, Northeast Pipeline Services LLC. 156 Old Turnpike Rd. Southington, CT 06489. Telephone Number: 860-621-6921 is an Owner approved subcontractor.

C. Pressure gauges shall be liquid filled and have a dial that is a minimum of 4½ inches in diameter. The pressure testing contractor shall arrive at the site with a minimum of two (2) pressure gauges as follows:

1. 0-200 psi gauge in 1 psi maximum increments for 150 psi tests.
2. 0-300 psi gauge in 2 psi maximum increments for 200 psi tests.

1.04 STANDARDS

A. The following American Water Works Association Standard shall form a part of this specification as referenced:

1. AWWA C600 Installation of Ductile Iron Water Mains and Their Appurtenances.
2. AWWA C906-15 Polyethylene Pressure Pipe and Fittings, 4 in Through 65 In. for Waterworks

PART 2 PRODUCTS

2.01 WATER

A. The Owner shall furnish water free, for flushing and testing the water main, if hydrants or other connection points are convenient to the work. Otherwise, the Contractor shall be responsible for securing an acceptable potable water supply at no additional cost to the Owner.

PART 3 EXECUTION

3.01 TESTING OF DUCTILE IRON PIPING SYSTEMS

A. A formal pressure/leakage test shall be required of the Ductile Iron water mains, valves and appurtenances in the system constructed.

1. The pressure/leakage test shall be conducted in accordance with these specifications and the applicable requirements of AWWA C600, Section 4.
2. Where any section of a water main is provided with concrete thrust blocks, the test shall not be made until at least 5 days have elapsed since the concrete was placed.
3. If high-early-strength cement is used in the concrete thrust blocks, the test shall not be made until at least 2 days have elapsed since the concrete was placed.
4. Prior to testing, the pipeline or section thereof, the section to be tested shall be thoroughly flushed, and all air expelled. All air shall be expelled by appropriate methods including the use of corporation stops installed by the Contractor, at no additional cost to the Owner, at high points along the water main.
5. After all the air has been expelled, and the corporation stops closed, the test pressure shall be applied by means of a pump connected to the pipe.
6. The pump, pipe connections, and all necessary apparatus including the gauges, shall be furnished by the Contractor.
7. Unless otherwise specified, the test pressure shall be 150 psi or 150 percent of the working pressure, whichever is greater, but in no case shall the pressure exceed 250 psi.
8. Unless otherwise directed by the Engineer, test pressure within the Torrington, CT system shall be 200 psi.
9. This pressure shall be maintained for 2 hours.
10. Any excessive indicated leakage, as determined by the pressure test, shall be located and repairs made. The total leakage from the pipeline or sections thereof shall not exceed the amount shown in Table 1 of this Specification Section.
11. Should the pipe line or sections thereof not come within the permissible leakage limits, the Contractor (at his own expense) shall be required to excavate and locate the source of leakage and make repairs.
12. After the Contractor has notified the Engineer that repairs have been made, the test shall be repeated until the pipeline or sections thereof are within the allowable leakage.

Table 1

Ductile and Gray Cast Iron Mains
Allowable Leakage per 1000 Ft.

Avg. Test Pressure	Nominal Pipe Diameter (inches}						
(psi)	6	8	10	12	16	20	24
250	0.64	0.85	1.07	1.28	1.71	2.14	2.56
200	0.57	0.76	0.96	1.15	1.53	1.91	2.29
150	0.50	0.66	0.83	0.99	1.32	1.66	1.99
100	0.41	0.54	0.68	0.81	1.08	1.35	1.62

* Leakage allowable based on gallons per hour per 1000 feet of main.

3.02 TESTING OF HDPE PIPING SYSTEMS

A. A formal pressure/leakage test shall be required of the HDPE water mains, valves and appurtenances in the system constructed.

1. The pressure/leakage test shall be conducted in accordance with these specifications and Chapter 2 of the Plastic Pipe Institute PE Pipe Handbook.
2. Where any section of a water main is provided with concrete thrust blocks or concrete thrust walls, the test shall not be made until at least 5 days have elapsed since the concrete was placed.
3. If high-early-strength cement is used in the concrete thrust blocks or concrete thrust walls, the test shall not be made until at least 2 days have elapsed since the concrete was placed.
4. Prior to testing, the pipe line or section thereof, the section to be tested shall be thoroughly flushed, and all air expelled. All air shall be expelled by appropriate methods including the use of corporation stops installed by the Contractor, at no additional cost to the Owner, at high points along the water main.
5. After all the air has been expelled, and the corporation stops closed, the test pressure shall be applied by means of a pump connected to the pipe.
6. The pump, pipe connections, and all necessary apparatus including the gauges, shall be furnished by the Contractor.
7. Test shall be conducted at 1.5 times the system design pressure at the lowest elevation in the section being tested.
8. Test shall be conducted in two phases; an initial expansion phase and a test phase. For the initial expansion phase, the test section shall be pressurized to test pressure and make-up test water shall be added as required to maintain maximum test pressure for Four (4) hours.
9. Upon completion of the expansion phase, test pressure shall be reduced by 10 psi. The resulting pressure shall be considered the target pressure. If the pressure remains steady (within 5% of the target test pressure) for one hour, leakage is not indicated.

10. If leaks are discovered, depressurize the test section before repairing leaks. Leakage at a butt fusion joint may indicate imminent catastrophic rupture. Depressurize the test section immediately if butt fusion leakage is discovered. Leaks at fusion joints require the fusion joint to be cut out and replaced.
11. If the pressure leak test is not completed due to leakage, equipment failure, etc., the test section should be depressurized and repairs made. Allow the test section to remain depressurized for a minimum of eight (8) hours before retesting.
12. Under no circumstances shall the total time under test pressure exceed 8 hours at 1.5 times the system pressure.

END OF SECTION

SECTION 02761

CLEANING OF WATER MAINS

PART 1 GENERAL

1.01 DESCRIPTION

A. Section includes requirements for cleaning of existing water mains of the various sizes shown on the Contract Drawings or as directed by the Owner's Representative.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division One (1) of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02222 Earthwork for Water Distribution System
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Thrust Blocks and Joint Restraints
8. Section 02676 Testing Piping Systems
9. Section 02762 Epoxy Lining of Water Mains
10. Section 02764 Cement Lining of Water Mains
11. Section 02766 Structural Lining of Water Mains

1.03 QUALITY ASSURANCE

A. The following data/ information shall be provided for each lined segment of pipe.

1. Documentation package including
   a. Post cleaning Closed Circuit Television (CCTV) inspection record.
   b. Non-conformance record (remediation actions)

B. Field Quality Control

1. Inspection
   a. Use equipment approved for use in potable water system.
   b. Perform CCTV inspection of proposed lining sections at the Owner's direction.
2. Removal of Test Section
   a. Per direction of the Owner, excavate, cut, and remove test section of pipe not less than 2 feet, nor more than 3 feet in length.
   b. Excavate minimum of 2 feet below pipe to be inspected.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All tests shall be made in accordance with the methods prescribed by the following AWWA Standards, and the acceptance or rejection shall be based on the test results.

1.05 STANDARDS

1. ANSI/AWWA C651 Disinfecting Water Mains

2. ANSI/AWWA M28 Rehabilitation of Water Mains

3. NSF/ANSI 61 Drinking Water System Components

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Contractor shall within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Provide submittals for the cleaning of water mains including the following:
   1. All equipment to be utilized in the work.
   2. Proposed method for disposal of debris and water used for cleaning.
   3. Detailed procedure outlining all phases of work.
   4. List of experienced personnel who will be performing work.
   5. List of past projects where similar work was performed.
   6. Detailed chemical hazard cleanup procedure.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water for cleaning shall be potable.

B. Water-tight plugs or end caps to protect sections of water main when work is not taking place.

1. All water-tight plugs or end caps must have a 2-inch NPT threaded tap.

2. Where caps and plugs may be removed during the course of the work, the Contractor must install caps and plugs with NPT corporation stops, ball valves, or curb stops to allow for bleeding off of any accumulated pressure per Paragraph 3.05 A.8 of Section 02611.

2.02 EQUIPMENT

A. Cleaning

1. Prior to the start of the project, the Contractor must certify that all cleaning and associated support equipment are used only for potable water main projects and provide documentation that equipment has been sanitized.

2. Acceptable cleaning devices include drag cleaning, hydraulic jet, abrasive pig, metal scraping, or power boring type. Use of knocker type devices will not be permitted.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct any conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Field verify length of water main sections, not to exceed 700 linear feet.

3.03 EARTHWORK:

A. Earthwork shall be performed as specified under Section 02230, Support Services for Cleaning and Lining of Water Mains and Section 02222, Earthwork for Water Distribution Systems.

B. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.

C. Removal of water used in the cleaning process shall be in strict accordance with Section 02240, Site Drainage and Dewatering.

3.05 ACCESS OPENINGS

A. Access pits will generally be excavated at locations shown on the Contract Drawings or where required to complete work and as approved by the Owner's Representative.

D. Excavation, sheeting and shoring, dewatering, and backfilling shall be performed by the Support Services Contractor.

E. The Cleaning and Lining Contractor shall be responsible for removal and disposal of all water related to the cleaning and lining process.

F. Coordinate with the Cleaning and Lining Support Services Contractor to ensure access openings in pipe are sufficiently sized to admit and withdraw equipment with minimal delay and without causing damage to existing pipe.

G. After shutdown, dewater pipe and drain low spots. Provide measures as required to prevent water from entering work sections and maintain a dry condition.

H. The Cleaning and Lining Support Services Contractor will remove pipe at access points.

3.06 CLEANING

A. Perform cleaning: AWWA C620 and as specified herein.

1. Cleaning:
   a. Clean interior surfaces of pipe and fittings to be lined by machine where practicable and by hand where access by machine is not possible.
   b. Coordinate with the Cleaning and Lining Support Services Contractor to remove obstructions in pipeline that prohibit passage of cleaning or lining equipment.
   c. Remove all sediment, corrosion products (rust and graphite), biological deposits, chemicals or other deposits, loose and deteriorated remains of old coating materials, oil, grease, debris, salts (chlorides and sulfates), and other foreign matter.
   d. Remove accumulations of water on bottom of interior of pipe.
   e. Handle cleaning water in closed discharge hoses to prevent water and residue from causing damage.
   f. Dispose of residue from cleaning and other construction operations as well as water from dewatering operations legally offsite.
   g. Filter solids-laden water through an approved desilting device.

2. Drying
   a. A polymeric coating will not bond to a wet pipe surface. The Contractor shall ensure that all residual water and debris are removed from the pipe before lining operations commence.
   b. Excess water and any remaining debris may be removed from the pipe by pulling tight-fitting rubber disk squeegees through the pipe.
   c. Oversized foam swabs must be driven through the cleaned and prepared main using filtered, compressed air. Filters must be capable of removing 100 percent of the compressor oil from the air discharge. Filters must be checked and cleaned regularly.
   d. Swabbing of the water main must be repeated until the swabs emerge clean and dry.
   e. Cleaned and prepared pipes may also be air dried using a suitable, oil-free blower or approved vacuum system.

3. Pre-lining Pipe Inspection
   a. Prior to commencing lining operations, CCTV shall be required to show the condition of the pipeline cleaned, prepared, and dried for lining.
   b. If any cleaning or other faults are observed during CCTV inspection, the fault shall be investigated, rectified and re-inspected.
   c. A digital copy of the inspection video shall be provided to the purchaser.

END OF SECTION

SECTION 02762

EPOXY LINING OF WATER MAINS

PART 1 GENERAL

1.01 DESCRIPTION

A. Section includes requirements for application of epoxy lining in existing water mains of the various sizes shown on the Contract Drawings.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02230 Support Services For Cleaning and Lining
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Thrust Blocks and Joint Restraints
8. Section 02676 Testing Piping Systems
9. Section 02761 Cleaning of Water Mains
10. Section 02764 Cement Lining of Water Mains
11. Section 02766 Structural Lining of Water Mains

1.03 QUALITY ASSURANCE

A. The following data/ information shall be provided for each lined segment of pipe.

1. Documentation package including, but not limited to:
    a. Post cleaning inspection record
    b. Post lining inspection record
    c. Non-conformance record (remediation actions)
    d. Spin-up record (Pre-lining/ Post-lining sample dip cards)
    e. Resin lining record sheet
    f. Computerized lining equipment record
2. Lining thickness
3. Winch speed
4. Ground and pipe temperature
5. Epoxy mix temperature

B. Field Quality Control

1. Inspection
    a. Use equipment approved for use in potable water system.
    b. Perform Closed Circuit Television (CCTV) inspection of completed lining sections at the Owner’s direction.

c. Correct defective lining per requirements of the Owner's representative.

2. Removal of Test Section
   a. Per direction of the Owner, coordinate with the Cleaning and Lining Support Services Contractor to excavate, cut, and remove test section of pipe not less than 2 feet, nor more than 3 feet in length.
   b. Excavate minimum of 2 feet below pipe to be inspected.
   c. If thickness is not within requirements specified herein, epoxy lining shall be reapplied per manufacturer's instructions.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All tests shall be made in accordance with the methods prescribed by the following AWWA Standards, and the acceptance or rejection shall be based on the test results.

1.05 STANDARDS

1. AWWA C600 Installation of Ductile Iron Water Main and Their Appurtenances.

2. AWWA C620-19 Standard for Spray-Applied In-Place Epoxy Lining of Water Pipelines, 4 in. (100mm) and Larger

3. ANSI/AWWA C651 Disinfecting Water Mains

4. ANSI/AWWA M28 Rehabilitation of Water Mains

5. NSF/ANSI 61 Drinking Water System Components

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Contractor shall within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
   3. Material Safety Data Sheets for the Lining Material

C. Provide submittals for the cleaning and lining of water mains including the following:
   1. All equipment to be utilized in the work.
   2. Epoxy lining material
   3. Detailed procedure outlining all phases of work.
   4. List of experienced personnel who will be performing work.
   5. List of past projects where similar work was performed.
   6. Detailed chemical hazard cleanup procedure

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver the epoxy lining materials in the manufacturer's original undamaged and unopened containers with labels intact and legible.

B. Protect stored materials from moisture and dirt by storing them in an elevated position.

C. Protect epoxy and associated materials are to be handled in accordance with their respective material safety data sheets.

D. Do not store materials near flame, excessive heat or cold or strong oxidants.

E. Do not use epoxy from broken or previously opened containers.

PART 2 PRODUCTS

2.01 MATERIALS

A. Lining materials shall conform to AWWA C620-19 except as modified herein:

1. When mixed and cured they shall be NSF/ANSI 61 certified for use in potable water pipelines.
2. The solvent free polymeric materials described are two-component, thermosetting, corrosion-resistant materials.
3. The materials shall produce a continuous, cured, smooth lining of consistent uniform thickness, with excellent water resistance and long-term durability.
4. Must be able to be applied over a specified range of temperatures and have excellent adhesion or bonding to the host pipe.
5. The lining components to be used shall have a shelf life of no less than one year.

2.02 EQUIPMENT

A. Lining Application Equipment:

1. Use equipment approved for use by the manufacture of the epoxy lining materials.
2. Equipment shall be centrifugal type capable of applying a multicomponent epoxy to the pipeline interiors of varying diameters.
3. The lining rig shall be computerized, fully automated, and have the capability of lining up to 500 linear feet from a single access point.
4. The control system shall have the capability of monitoring flow characteristics of the lining materials as it flows through the lining machine to provide constant quality control.
5. The system must have alarms in place to stop lining in the event that any abnormalities are detected during the process.

6. Lining Equipment Performance – the spray lining equipment must be able to perform the following.
    a. Mix the epoxy materials in the proportions required for the application as required by the manufacturer
    b. Apply the lining material in a uniform thickness around and along the axial length of the pipe
    c. Be operated by a certified applicator with proper and up-to-date certification

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct any conditions detrimental to timely and proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Field verify length of water main sections, not to exceed 700 linear feet.

3.03 EARTHWORK:

A. Trench, backfill and compaction for the work of this Section in strict accordance with the pertinent provisions of Section 02222, Earthwork for Water Distribution Systems.

B. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.

C. Control of ground and surface water shall be in strict accordance with Section 02240, Site Drainage and Dewatering.

3.04 TEMPORARY WATER SERVICE

A. Install water main and water services in accordance with Section 02511 Temporary Water Service.

3.05 LINING WATER MAIN

A. Lining
    1. The epoxy lining material shall be mixed and applied using the manufacturers approved, documented system, including manufacturer-approved materials, processes, procedures and equipment, and the specially designed spray head that applies the lining
    2. The Contractor must demonstrate to the Owner's Representative that all lining system monitoring and recording equipment is good operating condition. A demonstration of the lining must be performed to ensure the proper spray lining application and record are achieved.

3. Once the application rig, lining material and pipe have been prepared and approved the lining application head and umbilical shall be fully installed into the section to be lined through the access opening.
4. During the spin up process, the polymer material and hardener shall be pumped through the umbilical and through the head to waste until the correct mixture proportions and consistency are achieved and documented.
5. A “dip-card” sample of the mixed epoxy lining material shall be taken to document a quality-control record of the application
6. Lining process shall be continuously monitored and the following recorded continuously or at a maximum interval of 10 seconds between readings.
    a. The volume and flow rate of each lining component / material delivered to the application apparatus, the lining component mix ratio by volume
    b. The temperature of each material within each of the hoses used for delivery.
    c. The elapsed time from the start of lining application to its completion at the end of the segment.
    d. The calendar date and clock time of the start and completion of each lining pass on each of the pipe segments lined.
    e. The rate of travel of the lining spray apparatus.
    f. The calculated lining thickness.
    g. Pipe segment ID.
7. The Contractor shall provide the recorded information in digital format to the Owner and Engineer.
8. After lining has cured hard to the touch, inspection shall be performed. The post lining CCTV inspection camera shall inspect the full circumference of the pipe and axial length and be operated at a speed that permits comprehensive inspection of the lined pipe.

    a. The interior surface of the pipe must be completely covered by the epoxy lining without evidence of uncured product, poor adhesion, poor mixing, or excessive ringing.
    b. Service connections shall have no evidence of blockage and that full coverage has been achieved around the service connections and joint gaps and holes.
    c. Inspection video shall be provided to the owner in digital format.

9. Lining imperfections found during inspection must be corrected in accordance with the manufacturer’s instructions. Common imperfections and causes are listed below:
    a. Uncured Lining – expired materials or malfunction of the spray lining rig.
    b. Collapsed or disbonded lining – inadequate cleaning, preparation and drying of the pipe.
    c. Blisters – poor cleaning, excess moisture, presence of water or ambient temperature, material properties of the polymer, the presence of soluble salts on the pipe wall, or the lining rig.
    d. Incomplete Lining – machine malfunction or excessive friction along the umbilical hose during lining operation.
    e. Ringing – excessive friction along lining hose or insufficient volume of compressed air being supplied to the lining machine.

f. Slumped lining – excessive thickness of applied lining material or overheating of the components
g. Water damage – installing lining through wet areas, standing water, or water flowing into the pipe during or after application and prior to curing
h. Pinholes – should be minimal due to thickness of lining application. Excessive or deep pinholes must be cleaned and overlined
i. Speckled Lining – insufficient pipe cleaning, inadequate removal of corrosion or sediment residue that is stirred up during the lining application process

10. Testing shall be performed by the Contractor in the field. The samples and results will be provided to the Owner and Owner's Representative for acceptance.
11. Lining imperfections shall be corrected as required and at the discretion of the Owner and Engineer

B. Disinfection

1. Before newly lined water main sections are disinfected, perform the following:
    a. Coordinate with the Support Services Contractor to reinstall sections of pipe removed for access or install valves as approved by the Engineer.
2. Pipe is to be filled, chlorinated, flushed and sampled the Owner.

C. Returning Lined Main to Service
1. When disinfection has been completed and the water main is approved for service, the Owner will place water main back into service.
    a. After pipe access points have been closed and before backfilling, the Owner fully recharge main in the presence of the Contractor, Support Services Contractor and Engineer. All access openings, replaced valves, and fittings must be checked for the presences of leaks prior to backfilling. Any visible leaks must be repaired prior to the main being placed back into service.
2. Following approval by the Owner and Engineer:
    a. Backfill access excavations.
    b. Reactivate house connections and remove temporary bypass piping system.

D. Cleaning and Lining Final Report
1. After the completion of work the Contractor shall present a final report detailing the location of the work and a summary of the work performed.
2. The Contractor shall include copies of the computer records provided by the application equipment as well as copies of pre-lining and post-lining CCTV inspections.

E. Final acceptance of all work performed, by the Owner
    1. The Contractor shall provide a warranty for the work performed which is in accordance with the appropriate life span as provided by the lining manufacturer.

END OF SECTION

SECTION 02764

CEMENT LINING OF WATER MAINS

PART 1 GENERAL

1.01 DESCRIPTION

A. Section includes requirements for application of cementitious lining existing cast iron and ductile iron water mains of various sizes shown on the Contract Drawings and Specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02222 Earthwork for Water Distribution System
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Thrust Blocks and Joint Restraints
8. Section 02676 Testing Piping Systems
9. Section 02761 Cleaning of Water Mains
10. Section 02762 Epoxy Lining of Water Mains
11. Section 02766 Structural Lining of Water Mains

1.03 QUALITY ASSURANCE

A. The following data/ information shall be provided for each lined segment of pipe.

1. Documentation package including
    a. Post cleaning inspection record
    b. Post lining inspection record
    c. Nonconformance record (remediation actions)
    d. Spin-up record (Pre-lining/ Post-lining sample dip cards)
    e. Lining record sheet
    f. Lining rig record
2. Lining thickness
3. Winch speed
4. Ground and pipe temperature
5. Cement-mortar mix temperature

B. Field Quality Control

1. Inspection
    a. Use equipment approved for use in potable water system.

b. Perform Closed Circuit Television (CCTV) inspection of completed lining sections at the Owner's direction.
c. Correct defective lining per requirements of the Owner's Representative.

2. Removal of Test Section
a. Per direction of the Owner, Coordinate with the Support Services Contractor to remove test sections of pipe as specified in Section 02230 Support Services for Cleaning and Lining of Water Mains.
b. If thickness is not within requirements specified herein, cement lining shall be reapplied per manufacturer's instructions.

C. Cleaning and Lining

1. Guarantee to restore cleaned and cement-mortar lined water mains to following minimum Hazen-Williams C Factor (C_{hw}) based on nominal pipe diameters with proper allowance being made for bends and fittings following accepted practice:

NOMINAL PIPE DIAMETER	GUARANTEED HAZEN-WILLIAMS C_{hw} FACTOR
3 inch and smaller	90
4 inch	90
6 inch	100
8 inch	110
10 inch	115
12 inch	120
14 inch	125
16 inch	125
20 inch	125
Above 20 inch	130

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All tests shall be made in accordance with the methods prescribed by the following AWWA Standards, and the acceptance or rejection shall be based on the test results.

1.05 STANDARDS

1. AWWA C600 Installation of Ductile Iron Water main and Their Appurtenances.

2. AWWA C602 Cement-Mortar Lining of Water Pipelines in Place, 4 In. and Larger

3. ANSI/AWWA C651 Disinfecting Water Mains

4. ANSI/AWWA M28 Rehabilitation of Water Mains

5. NSF/ANSI 61 Drinking Water System Components

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Contractor shall within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to demonstrate compliance with the specified requirements.

C. Provide submittals for the cleaning and lining of water mains including the following:
   1. All equipment to be utilized in the work.
   2. Proposed method for disposal of debris and water used for cleaning.
   3. Lining material mix data including dry weights of cement; sand; admixture name, type and quantity, if used; volume of water per cubic yard.
   4. Detailed procedure outlining all phases of work.
   5. List of experienced personnel who will be performing work.
   6. List of past projects where similar work was performed.
   7. Detailed chemical hazard cleanup procedure.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver the cement material in the manufacturer’s original undamaged and unopened containers with labels intact and legible.

B. Protect stored materials from moisture and dirt by storing them in an elevated position.

C. Cement and associated materials are to be handled in accordance with their respective material safety data sheets.

D. Do not store materials near flame, excessive heat or cold or strong oxidants.

E. Do not use any cement that has been previously exposed to moisture or has attained initial set.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water for cleaning shall be potable.

B. Lining materials shall conform to AWWA C602 except as modified herein:
   1. Sand
      a. ASTM C144 and kept clean and free of foreign materials during transportation and storage on site.

2. Cement
    a. Type II, manufactured at facility certified for compliance with ANSI/NSF Standard 61, and in sacks bearing NSF approval stamp.
3. Proportions
    a. Proportions of cement and sand in mortar are to be 1 part cement to 1 part sand.
4. Must be able to be applied over a specified range of temperatures and have superior adhesion or bonding to the inner wall of the pipe.
5. The lining components to be used shall have a shelf life of no less than one year.

C. Equipment
1. For placing cement mortar lining:
    a. Applicator head that in one pass centrifugally projects mortar against surface of pipe sections and long radius bends, without injurious rebound, and with sufficient velocity to cause mortar to be densely packed and to adhere in place.
2. Rate of travel of machine and rate of discharge of mortar against wall of pipe: Entirely mechanically controlled to produce a smooth, uniform thickness of lining throughout interior of pipe.
3. Attachment with rotating or drag steel trowels: Follows applicator head and trowels cement mortar lining to a smooth, hard surface of uniform thickness.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 FIELD MEASUREMENTS

A. Field verify length of water main sections, not to exceed 700 linear feet.

3.03 EARTHWORK:

A. Trench, backfill and compaction for the work of this Section in strict accordance with the pertinent provisions of Section 02222, Earthwork for Water Distribution Systems.

B. Shoring for the work of this Section shall be in strict accordance with Section 02160, Support of Excavation.

C. Control of ground and surface water shall be in strict accordance with Section 02240, Site Drainage and Dewatering.

3.04 TEMPORARY WATER SERVICE

A. Install water main and water services in accordance with Section 02511 Temporary Water Service.

3.05 LINING

A. Operation of trowels: Continuous during application of cement mortar and forward movement of applicator head.

1. Machine:
    a. Move ahead of lining so nothing comes in contact with troweled surface until it has attained its final set.
    b. Forward movement and mechanical application of concrete shall be controlled to assure a uniform thickness of mortar lining in accordance with AWWA C602.
2. Lining:
    a. Place lining with machines in one (1) course specified herein.
    b. Thickness of cement mortar lining: Uniform and follow AWWA C602.
    c. Nominal lining thickness for old and new gray Cast Iron and Ductile Iron as Follows:

Pipe Diameter, in.	Lining Thickness, in.	Tolerance, in.
4-10	3/16	-1/16,+1/8
12-20	1/4	-1/16,+1/8
24-36	5/16	-1/16,+1/8
>36	5/16	-1/16,+3/16

    d. All sections found to be outside the specifications indicated under 3.05.2.c must be reported to the Owner and Engineer and be corrected at Owner's direction.
    e. Place cement mortar lining so as not to seal or otherwise reduce effectiveness of existing air vents and blow-offs.
    f. Perform cement mortar lining of sharp bends, fittings, and areas closely adjacent to valves or other points where machine access is impossible or impractical and correct any areas found to be defective by hand defective areas by hand.
    g. Hand mortar work: Equal to machine placed work and use same materials.
        1. If necessary, moisten pipe prior to placement of mortar.
        2. Use steel trowels except where curvature of bends prohibits their use.
        3. Complete handwork in section of pipeline no later than 24 hours after machine work has been completed within the section.
        4. Provide smooth transition from handwork to machine-placed mortar.
    h. Coordinate with the Support Services Contractor to remove elbows, fittings, and pipe that cannot be lined by machine or by hand. Provide new elbows, fittings, and pipe.

i. Final location between new and existing lining or unlined section of pipe will be determined by the Engineer. Feather transitions between newly lined areas and unlined or previously lined areas.
j. Clean and line mains up to valves and sections of pipe removed for access.
k. Remove cleaning debris and lining material from existing service connections on lined main.
    1. Clear service connections that are 2-inch or less in diameter and on pipes less than 24-inch diameter by backflushing with air or water within 2 hours of placing lining.
    2. On pipes 24-inch and larger, temporarily plug or cover service connections prior to lining, and remove plugs or covers after lining.
    3. Special care is to be exercised to avoid damaging the newly installed lining when clearing service connections.
    4. Cleaning method and location will be established for each address when the temporary water services connections are made. With prior approval of the Owner and Engineer, use of the in-house valve may be permitted to clear the service connection if curb stop is inoperable.

l. Immediately after completing lining of each section of pipe between access openings or at the conclusion of the workday, install water-tight caps or plugs with bleeders at each pipe end and coordinate with the Support Services Contractor to cover access openings to prevent circulation of air to maintain moist condition.
m. With the Owner and Engineer's approval, 24 hours after installing lining, fill section between temporary caps or gate valves with system water for curing lining.
n. Cure pipe lining for minimum of 48 hours before recharging and disinfecting.

3. Testing
    a. The Owner may test completed sections to determine Hazen-Williams C Factor.
    b. If Hazen-Williams C Factor (C_{hw}) determined by testing is less than the guaranteed minimum values as specified under Paragraph 1.03 B, the Owner may require the lining to be removed and the lining operation to be replaced.

B. Disinfection
1. Before newly lined water main sections are disinfected, coordinate with the Support Services Contractor to perform the following work:
    a. Reinstall sections of pipe removed for access or install valves as approved at the location shown on the Contract Drawings.
    b. Replace any lead or poured joints exposed within the access pit limits.
    c. Install fittings and mechanical couplings required so that there is no visible leakage.
    d. New pipe, fittings, and valves installed in existing mains: Clean and spray or sway with minimum 1 percent solution of sodium hypochlorite just before installation.
    e. Provide corporation stops in water mains for disinfection.

f. Provide new taps as required for water house connections following Section 02660.
g. Provide means to flush.
h. Replace lined-through valves with new valves.
i. Provide temporary check valves between cleaned and uncleaned pipe for disinfection purposes.

2. Coordinate with the Owner to fill, chlorinate, flush and sample the cleaned and lined mains.
3. Discharge chlorinated water per Section 02675.

B. Returning Lined Main to Service

1. When disinfection has been completed and the water main is approved for service, the Owner will place water main back into service.
   a. After pipe access points have been closed and before backfilling, the Owner fully recharge main in the presence of the Contractor, Support Services Contractor and Engineer. All access openings, replaced valves, and fittings must be checked for the presences of leaks prior to backfilling. Any visible leaks must be repaired prior to the main being placed back into service.
2. Following approval by the Owner and Engineer:
   a. Backfill access excavations.
   b. Reactivate house connections and remove temporary bypass piping system.

C. Cleaning and Lining Final Report

1. After the completion of work the Contractor shall present a final report detailing the location of the work and a summary of the work performed.
2. The Contractor shall include copies of the computer records provided by the application equipment as well as copies of pre-lining and post-lining CCTV inspections.

D. Final acceptance of all work performed, by the Owner

The Contractor shall provide a warranty for the work performed which is in accordance with the appropriate life span as provided by the lining manufacturer.

END OF SECTION

SECTION 02766

STRUCTURAL LINING OF WATER MAINS

PART 1 GENERAL

1.01 DESCRIPTION

A. Section includes requirements for furnishing and installing structural lining for existing water mains of various sizes as shown on the Contract Drawings.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 of these Specifications.

1. Section 02140 Site Drainage and Dewatering
2. Section 02160 Support of Excavation
3. Section 02222 Earthwork for Water Distribution System
4. Section 02611 Ductile Iron Pipe and Fittings
5. Section 02640 Buried Valves and Appurtenances
6. Section 02645 Hydrants
7. Section 02650 Thrust Blocks and Joint Restraints
8. Section 02676 Testing Piping Systems
9. Section 02761 Cleaning of Water Mains
10. Section 02762 Epoxy Lining of Water Mains
11. Section 02764 Cement Lining of Water Mains

1.03 QUALITY ASSURANCE

A. The following data/ information shall be provided for each lined segment of pipe.
   1. Documentation package including
      a. Post cleaning inspection record
      b. Non-conformance record (remediation actions)
   2. Liner specifications, thickness, and pressure rating
   3. Record of each segment length installed
   4. Locations and types of connector fittings used

B. Field Quality Control
   1. Inspection
      a. Use equipment approved for use in potable water system.
      b. Protect liner during handling, storage, and installation.
      c. Perform pre-installation Closed Circuit Television (CCTV) inspection of in the presence of the Owner's Representative to verify existing water main has been prepared as required for the lining installation.
      d. Perform hydrostatic testing after completion of liner installation.
      e. Correct defective lining per requirements of the Owner's representative.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All tests shall be made in accordance with the methods prescribed by the following AWWA Standards, and the acceptance or rejection shall be based on the test results.

1.05 STANDARDS

1. AWWA C600 Installation of Ductile Iron Water main and Their Appurtenances.

2. ANSI/AWWA C651 Disinfecting Water Mains

3. ANSI/AWWA M28 Rehabilitation of Water Mains

4. NSF/ANSI 61 Drinking Water System Components

1.06 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Contractor shall within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. Provide submittals for the structural water main lining components including the following:
   1. Manufacturer’s certifications
   2. Liner Material including fabrication, material properties, pressure, and abrasion ratings
   3. All specialty fittings with dimensions and weights
   4. Termination and connection methods
   5. All specialty gaskets, bolts, and nuts to be incorporated into the work
   6. Manufacturer’s installation instructions
   7. List of all pertinent third-party certifications
   8. Detailed procedure outlining all phases of work.
   9. List of experienced personnel who will be performing work.
   10. List of past projects where similar work was performed.

1.07 DELIVERY, STORAGE AND HANDLING

A. Protect stored materials from moisture and dirt by storing them in an elevated position.

B. Store liner, all materials, and appurtenances in a locked water-tight storage container.

C. Do not store materials near flame, excessive heat or cold or strong oxidants.

PART 2 PRODUCTS

2.01 MATERIALS

A. Water for cleaning, filling, flushing, and testing must be potable.

B. Liner must be NSF approved for use in a potable water system.

C. The liner shall have a three-layer system consisting of a Polyethylene inner layer, reinforced seamless aramid fiber fabric, and an abrasion-resistant Polyethylene outer sheath.

D. Liner must be sized appropriately for the inner diameter of the existing water main being lined.

E. Liner, connectors, and all appurtenances directly related to the liner must be of the same manufacturer and certified for use as a complete system.

F. Liner and connectors shall be manufactured by Primus Line or approved equal. Liner type is specified on the Contract Drawings.

2.02 EQUIPMENT

1. All equipment must be approved for use for the by the manufacturer of the liner being installed.
2. Prior to the start of the project, the Contractor must certify that all equipment to be used in the operation are used only for potable water main projects and provide documentation that all equipment has been sanitized.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which the work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 EARTHWORK:

1. Earthwork shall be as specified in Section 02222 Earthwork for Water Distribution Systems and Section 02230 Support Services for Cleaning and Lining of Water Mains.

3.03 TEMPORARY WATER SERVICE

A. Install water main and water services in accordance with Section 02511 Temporary Water Service.

3.04 ACCESS OPENINGS

A. Coordinate all access openings, locations, and dimensions with the Support Services Contractor.

B. Measure outside diameter of cut pipes to properly determine class of pipe in each cut.

1. Class of pipe will determine proper sized sleeves or couplings to be used in reconnection.
2. Replace exposed lead or poured joints with mechanical joint fittings or couplings at Owner and Engineer's direction.
3. Furnish all fittings necessary to make the connection between the lining system, and existing water main.

3.05 INSTALLATION OF LINING

A. Place lining onto transport reels and at the starting pit of the lining section.

B. Set the winch at the destination pit to pull the pipe from the starting point.

C. An anti-twist device is installed between the rope and the winch to prevent the liner being twisted.

D. Once the liner is pulled through the liner sections, the liner can be inflated with compressed air.

E. Disinfection

1. Before newly lined water main sections are disinfected, perform the following:

    a. Install fittings, adaptor couplings and mechanical couplings required so that there is no visible leakage.
    b. New pipe, fittings, and valves installed in existing mains: Clean and spray or sway with minimum 1 percent solution of sodium hypochlorite just before installation.
    c. Provide new pipe sections between adapter sections and valves to provide a means of disinfection and flushing.
    d. Replace valves where shown on the drawings or directed by the engineer.
2. To disinfect, introduce distribution system water to lined mains.
    a. Testing of water from cleaned and lined water mains: same as for temporary bypass system.
3. Discharge chlorinated water per Section 02675.

F. Returning Lined Main to Service

1. When disinfection has been completed and the water main is approved for service, the main Owner will place water main back into service.
    a. After pipe access points have been closed and before backfilling, fully recharge main and eliminate visible leakage.
2. Following approval by the Owner and Engineer:
    a. Backfill access excavations.
3. After permanent service is restored and temporary bypass piping is removed, restore disturbed areas.

a. Restore surfaces in grassed areas per Section 02930 and 02931 where applicable.
b. Restore surfaces in paved areas per Section 02513.

G. Construction Final Report
1. After the completion of work the contractor shall present a final report detailing the location of the work and a summary of the work performed

H. Final acceptance of all work performed, by the Owner
1. The Contractor shall provide a warranty for the work performed which is in accordance with the appropriate life span as provided by the lining manufacturer.

END OF SECTION

SECTION 02930

LOAM AND SEED

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide loam and seed as required by the Contract Documents.
   1. Generally the Work consists of topsoiling, seeding and fertilizing all disturbed areas of the water main easements.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.	Section 02222	Earthwork for Water Distribution Systems
2.	Section 02645	Hydrants
3.	Section 02660	Service Connections
4.	Section 02931	Live Sod

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

B. If the results of the hydraulic seeding operation (if utilized) are unsatisfactory, the method shall be abandoned and seeding shall be required by the sowing method.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

C. If hydroseeding application is to be used, a written description containing seed analysis, fertilizer and lime addition data is to be submitted for review of the Owner.

1.05 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610.
B. Immediately remove from the site, materials which are not true to name, and do not comply with the specified requirements, and promptly replace with materials meeting the specified requirements.

PART 2 PRODUCTS

2.01 TOPSOIL

A. Topsoil stripped from the site and stored, shall be approved before reuse.
   1. Topsoil from the site shall be treated to conform to the requirements for topsoil furnished from offsite sources.
   2. If the required quantity of suitable topsoil is not available from stripping of the site, or if it is not approved, topsoil from outside sources shall be furnished at no additional cost to the Owner.
   3. Stockpiled topsoil used for this work shall be screened before being spread.
   4. Surplus topsoil not required to fulfill the requirements of the Contract shall be properly disposed of unless otherwise directed by the Owner.

2.02 TOPSOIL FURNISHED FROM OFFSITE SOURCES

A. Topsoil shall be fertile, friable, natural topsoil typical of the locality, and obtained from a well-drained site.
   1. It shall be without admixture of subsoil or slag.
   2. Shall be screened.
   3. Topsoil as delivered to the site shall have an acidity range of pH 5.0 to 6.5 and shall contain not less than 5% organic matter as determined by loss on ignition of moisture-free samples dried at 100 degrees Centigrade.
   4. If required, limestone shall be added to the topsoil to adjust the pH, so that it complies with the required limits.

B. Mechanical Analysis: Topsoil shall meet the following mechanical analysis:

Size	*% Passing*	*% Retained*
1-1/ 4" screen	100	0
1/2" screen	97-100	0-3
No. 100 mesh sleeve	40-60	40-60

2.03 TREATING TOPSOIL WITH LIMESTONE OR ALUMINUM SULFATE

C. When the hydrogen-ion value is below the specified level, add ground limestone at the rate of 2-1/2 lbs. per cubic yard of topsoil to raise pH one full point.

B. The following table shows the amount of limestone needed for various soil reactions on the basis of 1,000 sq. ft. and on the basis of one (1) acre:

pH	*pH Desired*	*Lbs. per 1000 sq. ft.*	*Tons per Acre*
6.0	6.5	0-46	0-1
5.5	6.5	46-92	1-2
5.0	6.5	92-138	2-3

1. Limestone shall be raw, ground agricultural limestone containing not less than 90% calcium carbonate and shall be ground to such fineness that 50% will pass through a 100-mesh sieve and 90% will pass through a 20-mesh sieve.
2. When hydrogen-ion value is above specified level, add aluminum sulfate at the rate of 2-1/2 lbs. per cubic yard of topsoil to lower the pH one full point. Aluminum sulfate shall be unadulterated and delivered in containers with the name of the material, name of the manufacturer, and net weight of contents.

2.04 LIME

A. Lime shall be ground limestone containing not less than 85 percent calcium and magnesium carbonates.
   1. Ground to such fineness that at least 50 percent will pass through a 100-mesh sieve and at least 90 percent shall pass through a 20-mesh sieve.

2.05 GRASS SEED (UPLANDS)

A. General: Provide grass seed which is:
   1. Free from noxious weed seeds, and re-cleaned.
   2. Grade A recent crop seed.
   3. Treated with appropriate fungicide at time of mixing.
   4. Delivered to the site in sealed containers with dealers guaranteed analysis.

B. Proportions by Weight (Level Areas):

1.	Chewing Fescue	60 percent
2.	Red Top	10 percent
3.	Annual Ryegrass	10 percent
4.	Kentucky Blue	20 percent

C. Proportions by Weight (Slopes):

1.	Creeping Red Fescue	50 percent
2.	Perennial Rye Grass	20 percent
3.	Red Clover	10 percent
4.	Winter Rye	15 percent
5.	Ladino Clover	5 percent

D. Requirements:

1. Seed shall be furnished and delivered premixed in the proportions specified above.
2. All seed shall comply with State and Federal seed laws.
3. A certificate of compliance with the specifications shall be submitted by the manufacturer with the shipment of the seed. The certificate shall include the guaranteed percentage of purity, weed content and germination of the seed, net weight and date of shipment.
4. No seed shall be sown until the Contractor has submitted the above mentioned certificate to the Engineer.

2.06. GRASS SEED (WETLANDS)

A. Proportions by Weight

1.	Lurid Sedge	>10%
2.	Fowl Manna Grass	>10%
3.	Fringed Sedge	>10%
4.	Woolgrass	>10%
5.	Other Wetland Seeds	<60%

B. Germination Minimum

1.	Lurid Sedge	80%
2.	Fowl Manna Grass	80%
3.	Fringed Sedge	80%
4.	Wool Grass	80%
5.	Other Wetland Seeds	80%

C. Requirements:

1. Grass seed mixture for the compensatory storage areas shall be a fresh, clean, new crop seed. Seed may be mixed by an approved method on the site or may be mixed by the dealer. All seed shall comply with State and Federal seed laws. If the seed is mixed on the site, each variety shall be delivered in the original containers bearing the dealer's guaranteed analysis. If the seed is mixed by the dealer, the dealer's guaranteed statement of the composition of the mixture and the percentage of purity, weed content, net weight, and germination of each variety shall be provided. No seed shall be sown until the Contractor has submitted the guaranteed statement of the composition to the Engineer.
2. Seed shall be the commercial product of an approved reputable manufacturer and shall be certified to be not more than one (1) year old and shall be composed of the following varieties, the seed mix shall be New England wetmix as manufactured by New England Wetland Plants Inc. Amherst, MA. or approved equal.
3. The application rate shall be one pound per 5,000 square feet. The seed shall be mechanical spread or broadcasted by hand works creating an even distribution. The seed mix shall be sown early spring or late fall for increased germination.

2.07. FERTILIZER

A. Fertilizer shall be furnished in containers plainly marked with the chemical analysis of the product and showing one of the following compositions by weight.

Constituent	*10-6-4*	*8-6-4*	*7-7-7*
Nitrogen	10% min.	8% min.	7% min.
Available Phosphoric Acid	6% min.	6% min.	7% min.
Water Soluble Potash	4% min.	4% min.	7% min.

1. Fertilizer shall be stored so that when used it will be dry and free flowing.

2.08. HYDRAULIC SPRAY MACHINE

A. Shall be designed specifically for seed dissemination.
B. Shall allow materials to be mixed with water in the machine and kept in an agitated state to keep materials uniformly suspended in the water.
C. Shall be designed to provide equal quantities of required materials over a particular spraying area.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 APPLICATION

A. Application of Topsoil
1. Topsoil shall be spread to a compacted depth of:
a. Two (2) inches for cross country areas.
b. Areas to have topsoil applied to them shall be scarified or otherwise roughened, just prior to the application.

B. Seedbed Preparation
1. Grade areas to be seeded to a smooth uniform grade.
2. Roll, scarify, rake and level as necessary to obtain true, even surfaces
3. Meet existing grades.
4. All seeded areas shall slope to drain.
5. All finish grades shall meet approval before grass seed is sown.

C. Application Rates of Limestone, Aluminum Sulfate, Fertilizer and Seed
1. Limestone or Aluminum Sulfate shall be applied and thoroughly incorporated in the layer of loam or topsoil to adjust the acidity of the material.
2. The rate of application of the limestone will be determined by the pH value.
3. Fertilizer shall be applied at the rate of 20 pounds per 1000 square feet.
4. The seed mixture shall be sown at the rate of 5 pounds per 1000 SF.

D. Fertilizing and Liming

1. Fertilizing and liming shall be done when the soil is in a moist condition and at least 24 hours before the sowing of the seed.
2. The fertilizer and lime shall be applied to the soil by means of a mechanical spreader or other approved method capable of maintaining a uniform rate of application.
3. Thoroughly harrowed, raked or otherwise mixed with the soil to a depth of not less than 2 inches.
4. The fertilizer and lime shall not be applied together.

E. Time of Seeding

1. The recommended seeding periods are from April 1 to June 1, and from August 15 to October 1.
2. The Contractor may choose to seed at other times but regardless of the time of seeding he shall be responsible for a full growth of grass.
3. If full growth of grass is not established, the Contractor will be required to reseed the area at no additional cost to the Owner.
4. When directed he shall re-fertilize and reseed areas on the project which do not develop a satisfactory growth of grass.
5. Re-fertilizing and reseeding shall be incidental to the original seeding item requirements.

3.03 SEEDING METHODS

A. Fertilizer, limestone, and mulch material, if required, and seed of the type specified may be placed by one of the following methods, provided an even distribution is obtained.

B. Dry Method

1. Power Equipment: Mechanical seeders, seed drills, landscape seeders, cultipacker seeders, fertilizer spreaders, or other approved mechanical seeding equipment or attachments may be used when seed, limestone, and fertilizer are to be applied in dry form.
2. Manual Equipment - On areas which are inaccessible to power equipment, permission may be given to use hand-operated mechanical equipment when the materials applied are in dry form. The use of hand shovels to spread the materials shall not be allowed.
3. When the dry method is used, limestone and fertilizer shall not be mixed together prior to their application, but shall be worked into the soil together to a depth of at least 2 inches.
4. At least 24 hours shall elapse between the time fertilizer is incorporated into the topsoil and seed is spread.
5. Areas covered with park seed shall be raked, and, rolled with a roller weighing not more than 100 pounds per foot of roller width to firm the soil but not to pack it. The rolling shall be done the same day as the seeding unless otherwise permitted.
6. Areas seeded in the spring after April 15 shall be covered with a 1-inch loose layer of clean wheat or oat straw. The straw shall be kept wet until a catch of grass is established. Loose straw shall be removed from the site.
7. Grass on slopes or banks may be established by another method subject to approval. Special care shall be exercised to prevent erosion or washouts.

C. Hydraulic Method (Hydroseeding)

1. The application of grass seed, fertilizer, limestone, and a suitable mulch, if approved, may be accomplished through the use of an approved spraying machine.
2. The materials shall be mixed with water in the machine and kept in an agitated state in order for the materials to be uniformly suspended in the water.
3. The spraying equipment shall be so designed that when the solution is sprayed over an area, the resulting deposits of limestone, fertilizer, and grass seed shall be equal to the required rates.
4. Prior to the start of work, the Engineer shall be furnished with a certified statement for approval as to the number of pounds of materials to be used per 100 gallons of water. This statement shall also specify the number of square feet of seeding that can be covered with the quantity of solution in the hydroseeder.
5. The hydraulic seeding and fertilizing machine shall be completely flushed and cleaned each day before seeding is started.
6. If the results of the spray operations are unsatisfactory, the Contractor shall be required to abandon this method and apply the materials in accordance with the dry method.
7. When the hydraulic method is used, compaction or rolling shall be required.

D. Side Slopes Application

1. Roadway side slopes shall be seeded utilizing a hydraulic (hydro-seed) application process, to place seed and fertilizer simultaneously.
2. A color agent shall also be within the hydraulic mix.
3. Care shall be taken during the application to prevent coverage of poles, trees, signs, and etc.

3.04 MAINTENANCE

A. The Contractor shall be responsible for the proper care of the seeded areas during the period when the grass is becoming established.

1. This period shall extend for two months after a successful uniform stand of grass is produced.
2. The Contractor shall reseed all areas as necessary to obtain a uniform stand of grass, free from bare spots.
3. Any seeded areas which fail to show a uniform stand of grass shall be reseeded until all areas are covered
4. Any and all additional seeding shall be at the Contractor's expense.
5. If necessary, barricades of brush or other materials and suitable signs shall be placed to protect the seeded areas.
6. Any washout which occurs shall be regraded and reseeded at the Contractor's expense until a good sod is established.

3.05 GUARANTEE PERIOD

A. All seeded areas shall be guaranteed by the Contractor for not less than one (1) full year from the date of substantial completion.

END OF SECTION

SECTION 02931

LIVE SOD

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Furnish and place live sod as required by the Contract Documents.
   1. Generally the Work consists of placing live sod within the limits shown on the Contract Drawings.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Divisions 1 and 2 of these Specifications.

1.	Section 02222	Earthwork for Water Distribution Systems
2.	Section 02645	Hydrants
3.	Section 02660	Service Connections
4.	Section 02930	Loam and Seed

1.03 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
   1. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.

1.05 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610.

B. Immediately remove from the site, materials which are not true to name, and do not comply with the specified requirements, and promptly replace with materials meeting the specified requirements.

PART 2 PRODUCTS

2.01 LIVE SOD

A. Live sod shall meet the requirements of the State, Town and Owner.
1. The Contractor shall furnish and install Sod of similar type and equal to that disturbed during the course of work.
2. Topsoil for Sod Bedding shall be as specified in Section 02930.
3. Stakes for pegging sod shall be made of wood, shall be approximately 1" x 3" and be of sufficient length to securely hold the sod in place.
4. Placement and watering shall meet the requirements of the State, town and Owner.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 APPLICATION

A. Obtaining, handling, and storing Sod
1. Special care shall be taken in the transporting, handling, and placement of Sod.
a. Sod shall be placed within Twenty-Four (24) hours of being harvested unless it is stored by approved methods.
b. Sod shall be kept moist during transportation, storage, and planting.
c. Under no circumstance shall sod be permitted to dry out or freeze.
d. Any sod that, in the opinion of the Owner's representative, appears to be dried out or will be rejected, shall be removed from the site by the Contractor and shall be replaced with no additional cost to the Owner.

B. Sod bed Preparation
1. Sod bed shall be prepared as specified in Section 02930 except topsoil thickness after compaction shall be minimum Four (4) inches in thickness.

C. Placing Sod
1. Sod bedding shall be sufficiently moistened with water prior to placement.
2. Sod shall be laid evenly so that no spaces or voids are present.
3. Joints between sections of sod shall be staggered.
4. When placing sod along slopes, sections of sod shall be placed across the slope such that the long sides of the sod sections parallel the slope contours.
5. Sod shall be sufficiently tamped and rolled to eliminate air gaps.

6. Sod shall be staked where required.
7. Immediately after placement, sod shall thoroughly watered by the Contractor.

3.04 MAINTENANCE

A. The Contractor shall be responsible for the proper care of the sodded areas during the period when the sod is becoming established.
   1. Sod shall be watered by the Contractor as required or as directed by the Owner’s representative. The Contractor shall be responsible for providing all water necessary for maintaining Sod.
   2. This period shall extend for two months after a successful uniform stand of grass is produced.
   3. The Contractor shall replace any areas of sod that do not become established at no additional cost to the Owner.
   4. Any and all additional sodding shall be at the Contractor's expense.
   5. If necessary, barricades or other materials and suitable signs shall be placed to protect the seeded areas.
   6. Any washout which occurs shall be repaired and new sod place at the Contractor's expense until a good, uniform stand of sod is established.

3.05 GUARANTEE PERIOD

A. All areas where sod has been placed shall be guaranteed by the Contractor for not less than one (1) full year from the date of substantial completion.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide cast-in-place concrete as required by the Contract Documents.
   1. In general the Contractor shall furnish all labor, materials, equipment and incidentals necessary to do all concrete work required for thrust blocking, and other miscellaneous items.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions and Sections in Division 1 of these Specifications.

1.	Section 02222	Earthwork for Water Distribution Systems
2.	Section 02611	Ductile Iron Pipe and Fittings
3.	Section 02612	HDPE Pipe and Fittings
4.	Section 02650	Joint Restraints
5.	Section 02514	Concrete Pavement
6.	Section 02515	Curbing

PART 2 PRODUCTS

2.01 CEMENT

A. Cement shall be domestic Portland cement conforming to ASTM Designation Cl50, Type II.

2.02 AGGREGATES

A. General
   1. Provide hard rock aggregate complying with ASTM C-33, with additional attributes as specified in this Section.

B. Fine Aggregates
   1. Shall consist of washed inert natural sand conforming to the requirements of ASTM Specification C-33, and the following detailed requirements.

SIEVE	*PERCENT RETAINED*
No. 4	0-5
16	25-40
50	70-87
100	93-97

C. Coarse Aggregates

1. Provide coarse aggregate consisting of clean, hard, fine grained, sound crushed rock or washed gravel, conforming to the requirements of ASTM Specification C-33.
2. Use aggregates of the largest practicable size for each condition of placement, subject to the following maximum size limitations.
   a. 2 inch for plain concrete.
   b. 1 inch for reinforced sections ten (10) inches and over in thickness.
   c. 3/4 inch for reinforced sections less than ten (10) inches in thickness.
3. Grade combined aggregates within the following limits:

Percentage by Weight Passing Sieve

Sieve Size or Inch	*1-1/2" Aggregate*		*1" Aggregate*		*3/4" Aggregate*	
Size in Inches	*Min.*	*Max.*	*Min.*	*Max.*	*Min.*	*Max.*
1-1/2"	95					
1"	75	90	90	100		
3/4"	55	77	70	90	90	100
3/8"	40	55	45	65	60	80
No. 4	30	40	31	47	40	60
No. 8	22	35	23	40	30	45
No. 30	10	20	10	23	13	23
No. 50	2	8	2	10	5	15
No. 100	0	3	0	3	0	5

2.03 WATER

A. Use only water which is clean and free from deleterious amounts of acid, alkali, salt and organic matter.

2.04 ADMIXTURES

A. Use only a standard brand of admixture for concrete, meeting or exceeding ASTM Specification C494.
   1. All concrete which is exposed to the elements shall be air entrained.
   2. The volume of air entrainment shall not exceed five (5) percent.

PART 3 EXECUTION

3.01 CONCRETE MIXING

A. Class A Concrete
   1. Class A concrete shall have a minimum compressive strength, at 28 days, of 3000 psi, with a maximum water content of 6.4 gal./100 lbs. and a minimum cement content of 520 lbs./cu. yd.

B. Class B Concrete
   1. Class B concrete shall have a minimum compressive strength at 28 days of 2500 psi, with a maximum water content of 7.4 gal./100 lbs. and a minimum cement content of 430 lbs./cu. yd.
   2. Class B concrete may be mixed on site using a 1: 2.5: 5 mix and made with not less than 4.5 bags of cement per cubic yard.

C. Ready Mix Concrete
   1. Ready mix concrete shall comply with ASTM C94.

D. Concrete Admixtures
   1. Air entrainment shall be from 3 to 5 percent.

3.02 PLACEMENT OF CONCRETE

A. Concrete shall be carefully placed to ensure dense, compact concrete.
   1. Thoroughly spaded or vibrated into position without disturbance of pipe lines or other materials.
   2. Placed with as little slump as practicable.
   3. Pipe shall be securely braced, both vertically and horizontally, if it is to be encased, to prevent flotation.
   4. The sides of thrust blocks shall be formed.
   5. Concrete shall not be placed over bolts or nuts so as to prevent the removal of the joint gland. Polyethylene sheeting shall be placed between the pipe and concrete
   6. Backfill shall not be placed on the concrete until the concrete has set firm.
   7. Concrete shall not be placed in water or submerged within 24 hours after placing, nor shall running water be permitted to flow over the surface of fresh concrete within four days after its placing.

END OF SECTION

APPENDIX A

STANDARD DETAILS

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OF CONNECTICUT

AQUARION
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Stewards of the Environment

Standard Details

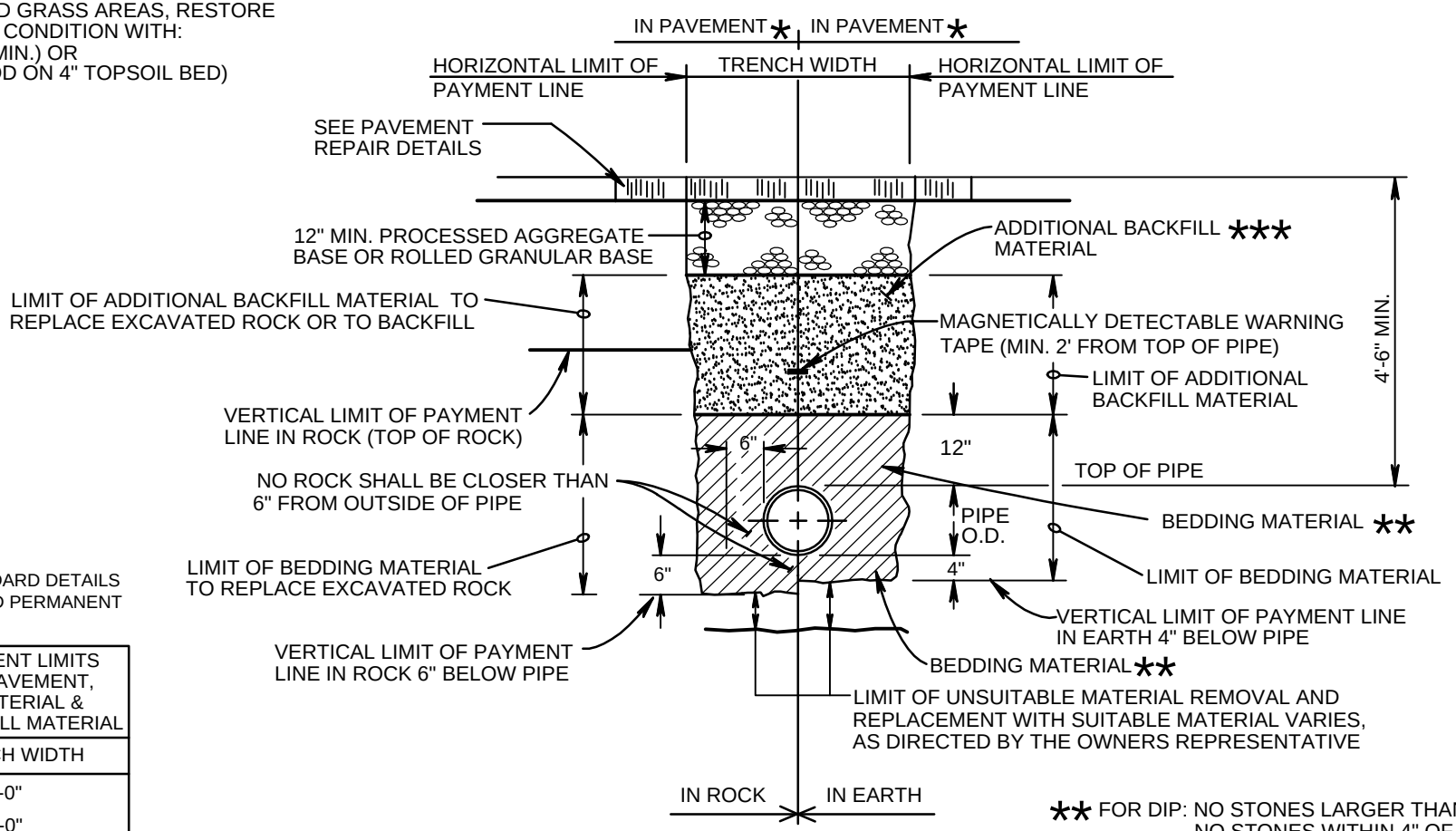
Revised: August 2023

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* IN DISTURBED GRASS AREAS, RESTORE TO ORIGINAL CONDITION WITH:
2" TOPSOIL (MIN.) OR
SOD (LIVE SOD ON 4" TOPSOIL BED)



REFER TO THE STANDARD DETAILS FOR TEMPORARY AND PERMANENT PAVEMENT REPAIR

HORIZONTAL PAYMENT LIMITS FOR TEMPORARY PAVEMENT, ROCK, BEDDING MATERIAL & ADDITIONAL BACKFILL MATERIAL	
PIPE SIZE	TRENCH WIDTH
6"	4'-0"
8"	4'-0"
12"	4'-0"
16"	4'-0"
20"	5'-0"
24"	5'-0"
30"	6'-0"
36"	6'-0"

NOTE: IF TRENCH BOXES ARE USED ADD 2' TO ALL TRENCH WIDTHS

** FOR DIP: NO STONES LARGER THAN 4", NO STONES WITHIN 4" OF PIPE, THOROUGHLY COMPACTED

FOR HDPE: NO STONES LARGER THAN 3/4", NO STONES WITHIN 4" OF PIPE, THOROUGHLY COMPACTED

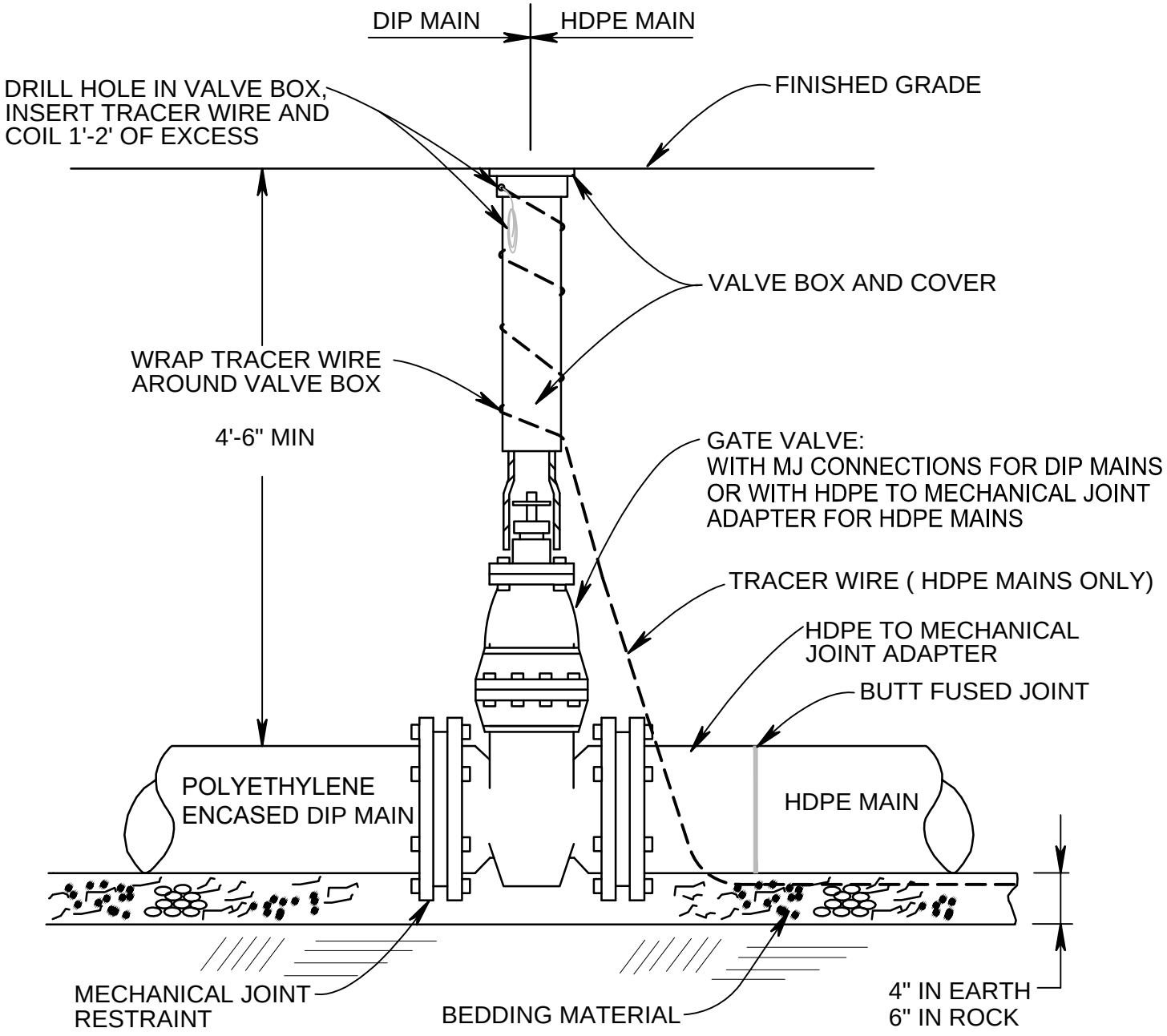
*** (NO STONES LARGER THAN 12") (COMPACTED IN 12" LIFTS)

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TYPICAL TRENCH DETAIL

NOT TO SCALE

SD-1



NOTE: ONLY INSTALLED ON MAINS 12" AND SMALLER

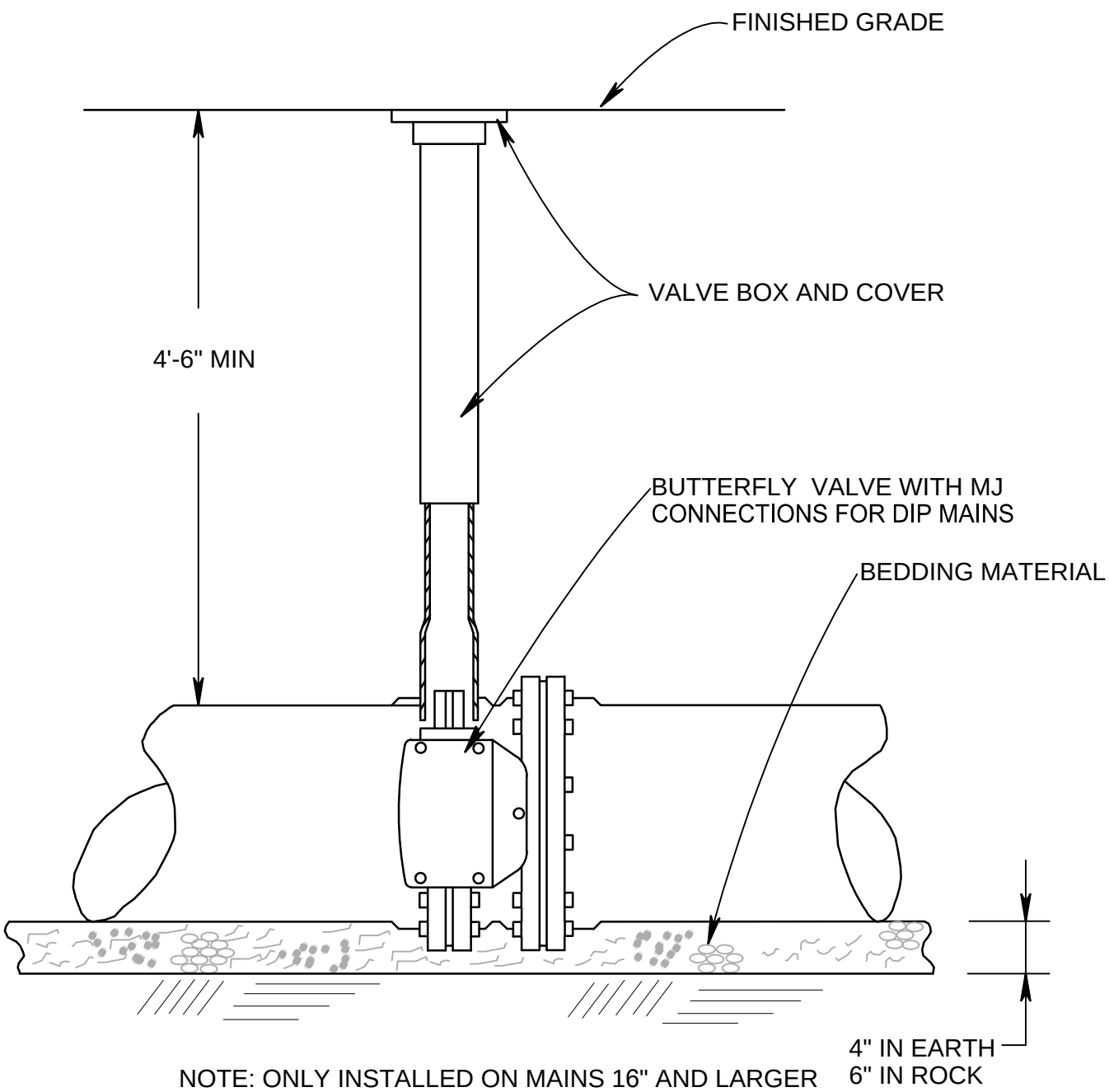
NOTE: FOR CONTINUOUS HDPE MAINS, INSTALL TRACER WIRE UNDER ALL VALVES AND FITTINGS. FOR TERMINATION POINTS, INSTALL TRACER WIRE AROUND VALVE BOXES AS SHOWN ABOVE.

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GATE VALVE

NOT TO SCALE

SD-2

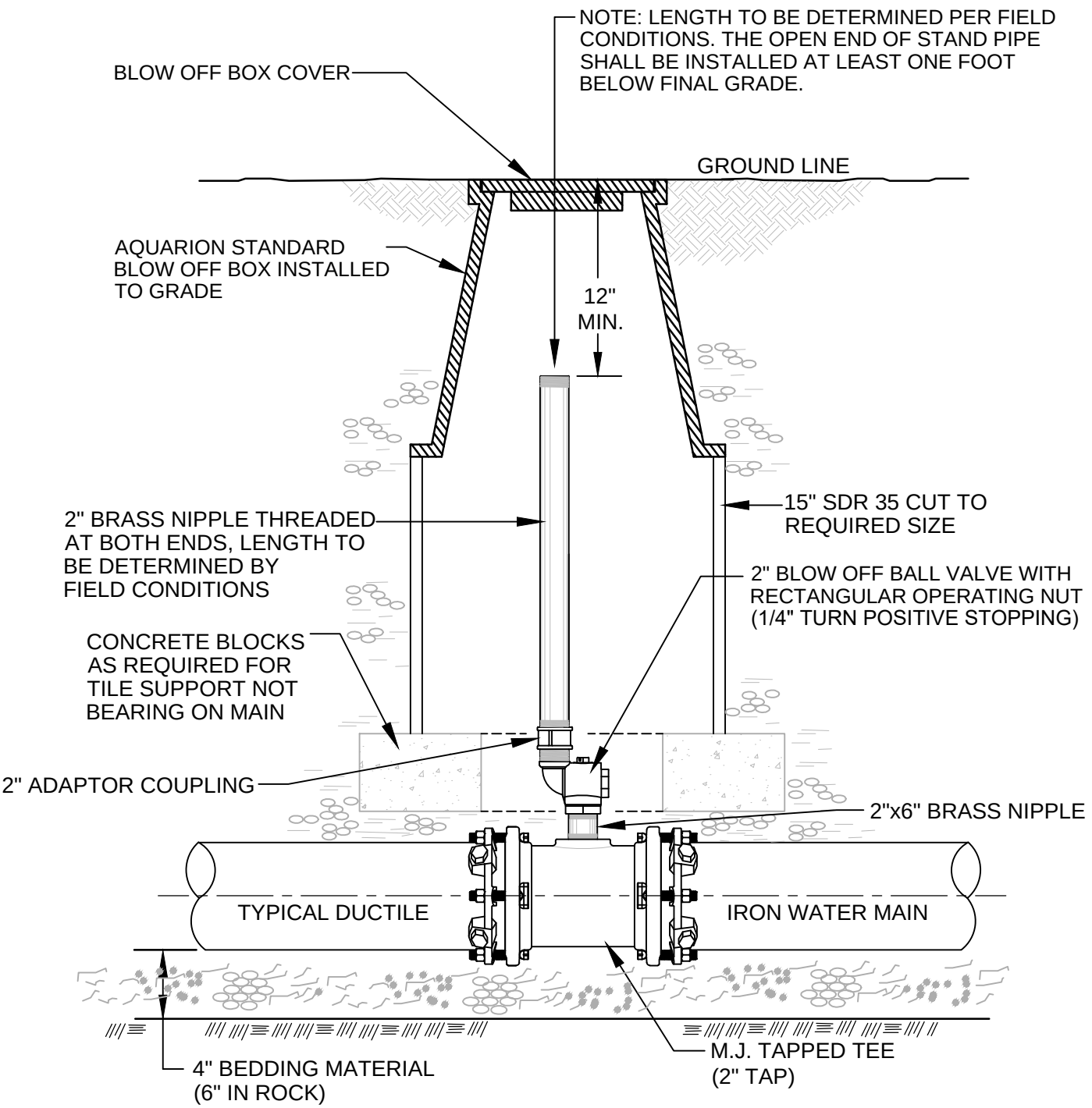


NOTE: ONLY INSTALLED ON MAINS 16" AND LARGER

AQUARION
Water Company
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BUTTERFLY VALVE

SD-3

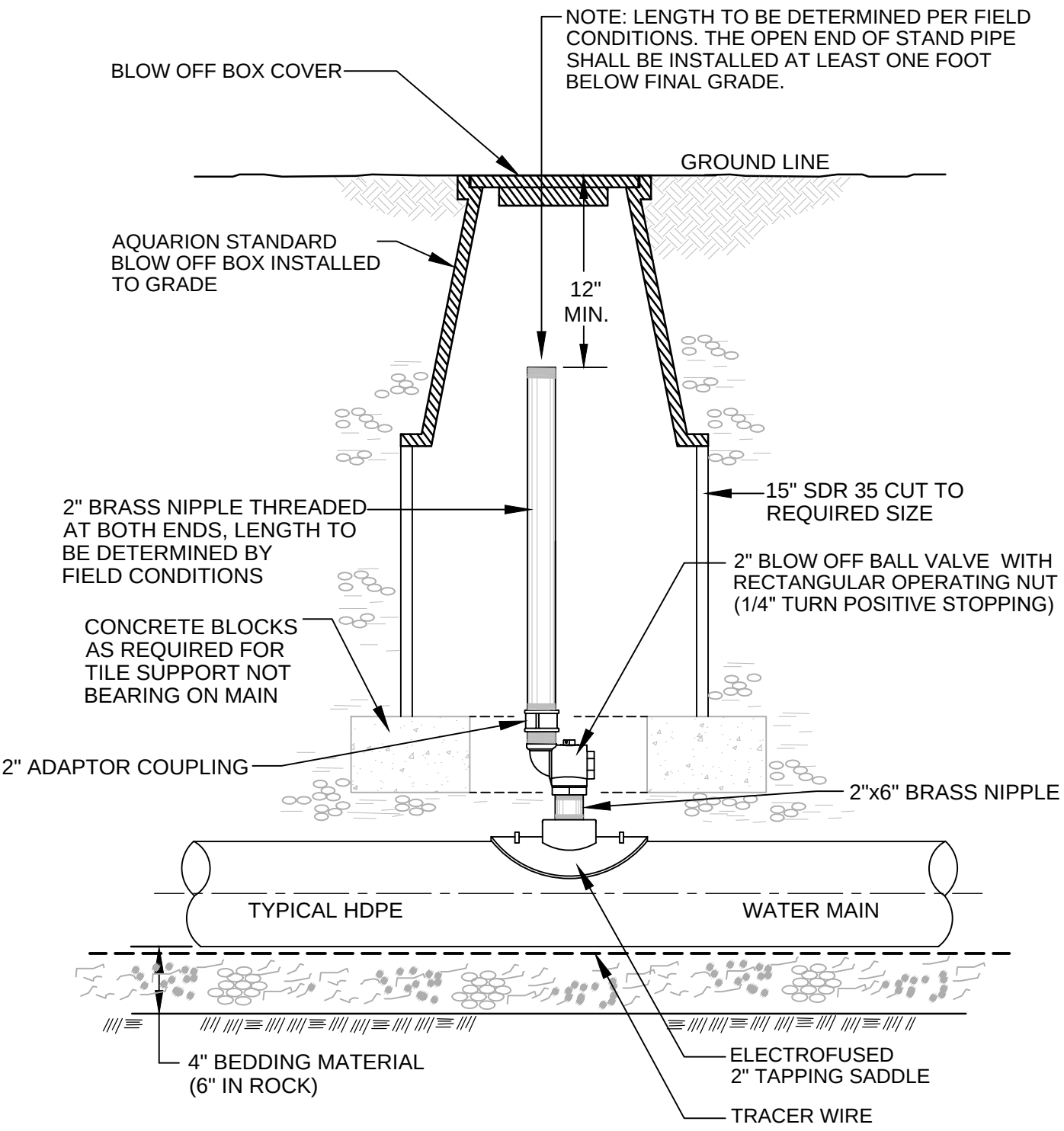


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ON LINE AIR VENT / BLOW-OFF (DIP)

SD-4

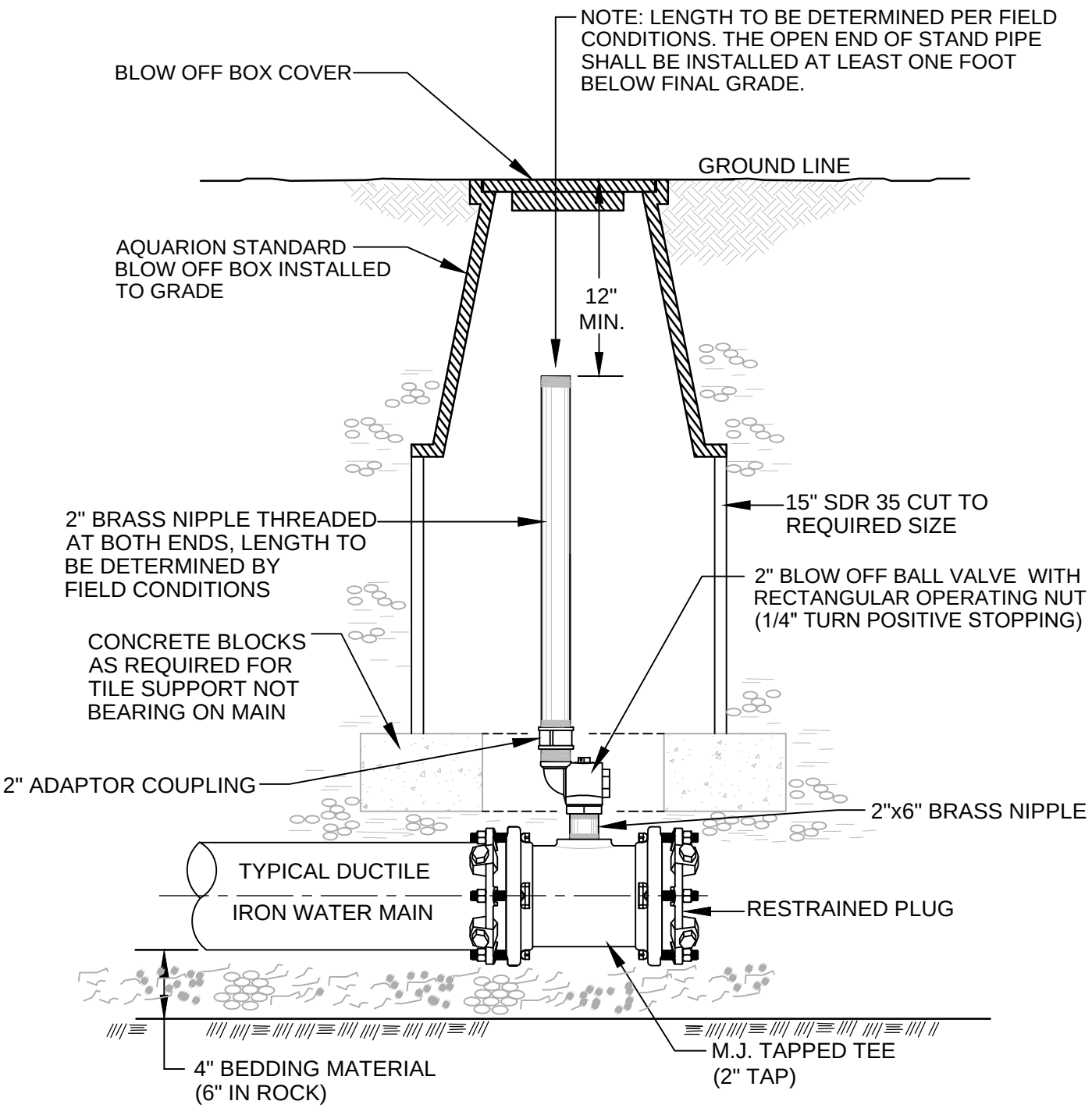


AQUARION Water Company

Stewards of the Environment

ON LINE AIR VENT / BLOW-OFF (HDPE)

SD-5

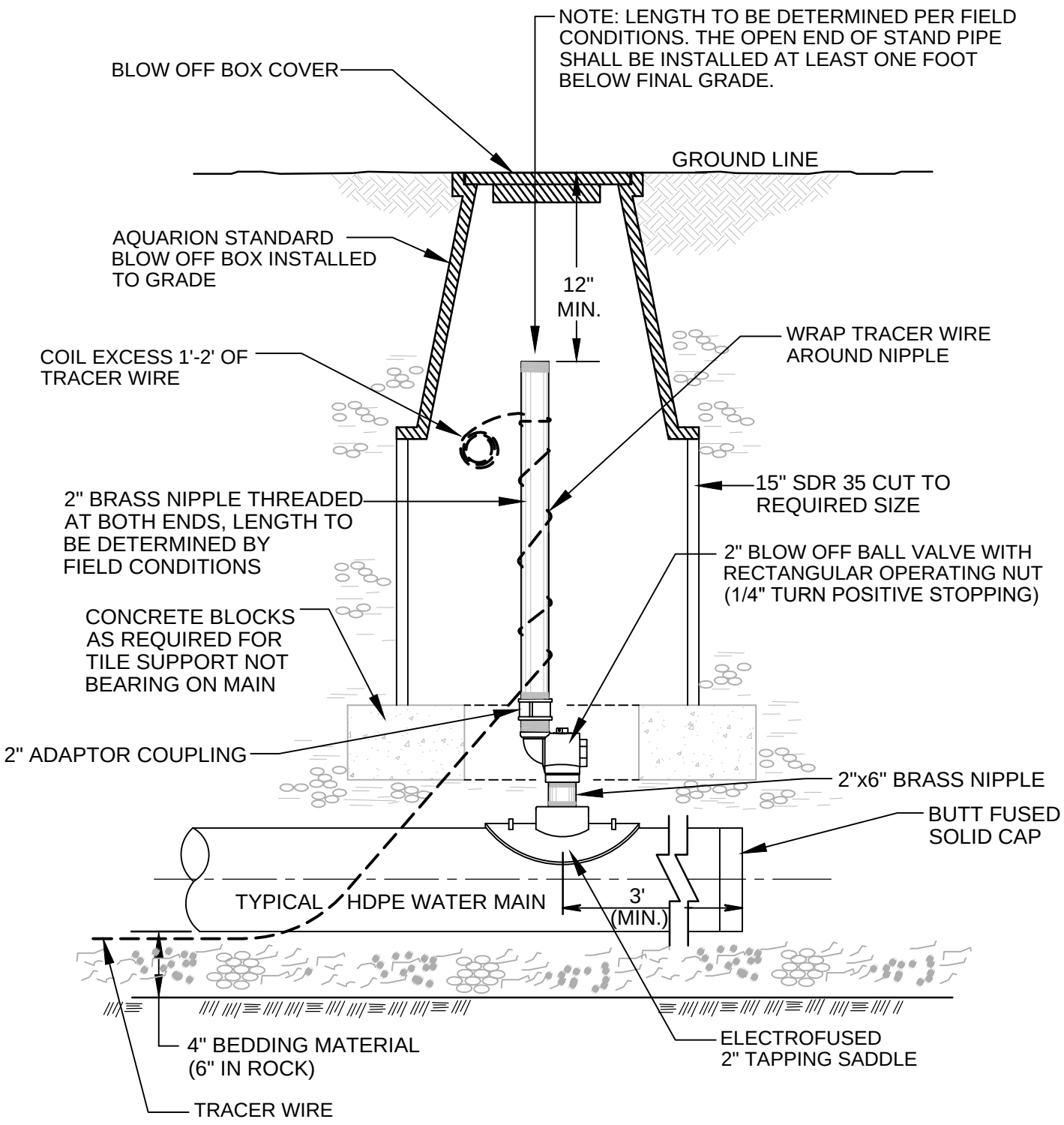


AQUARION Water Company

Stewards of the Environment

BLOW-OFF AT DEAD END (DIP)

SD-6

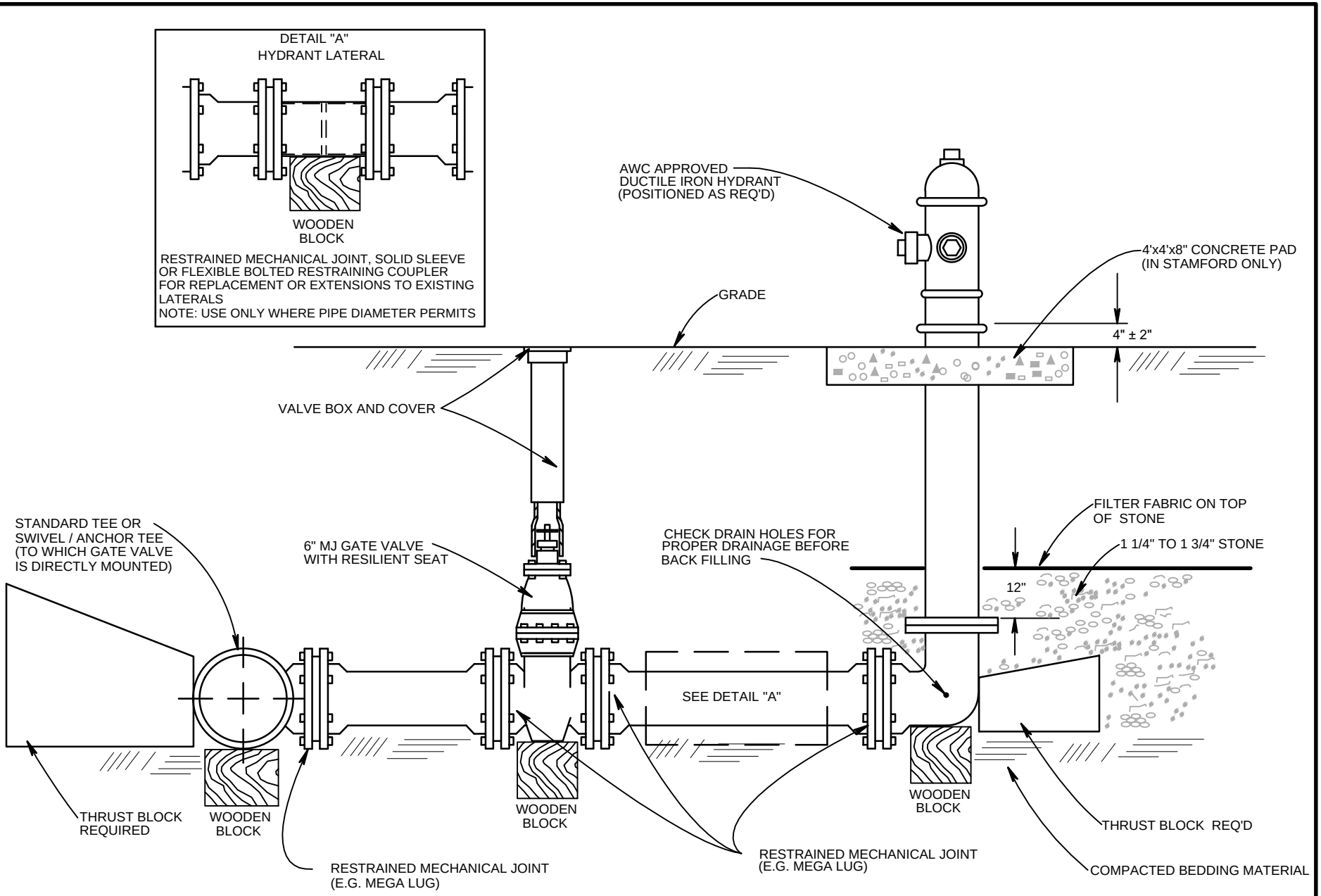


AQUARION
Water Company

Stewards of the Environment

BLOW-OFF AT DEAD END (HDPE)

SD-7

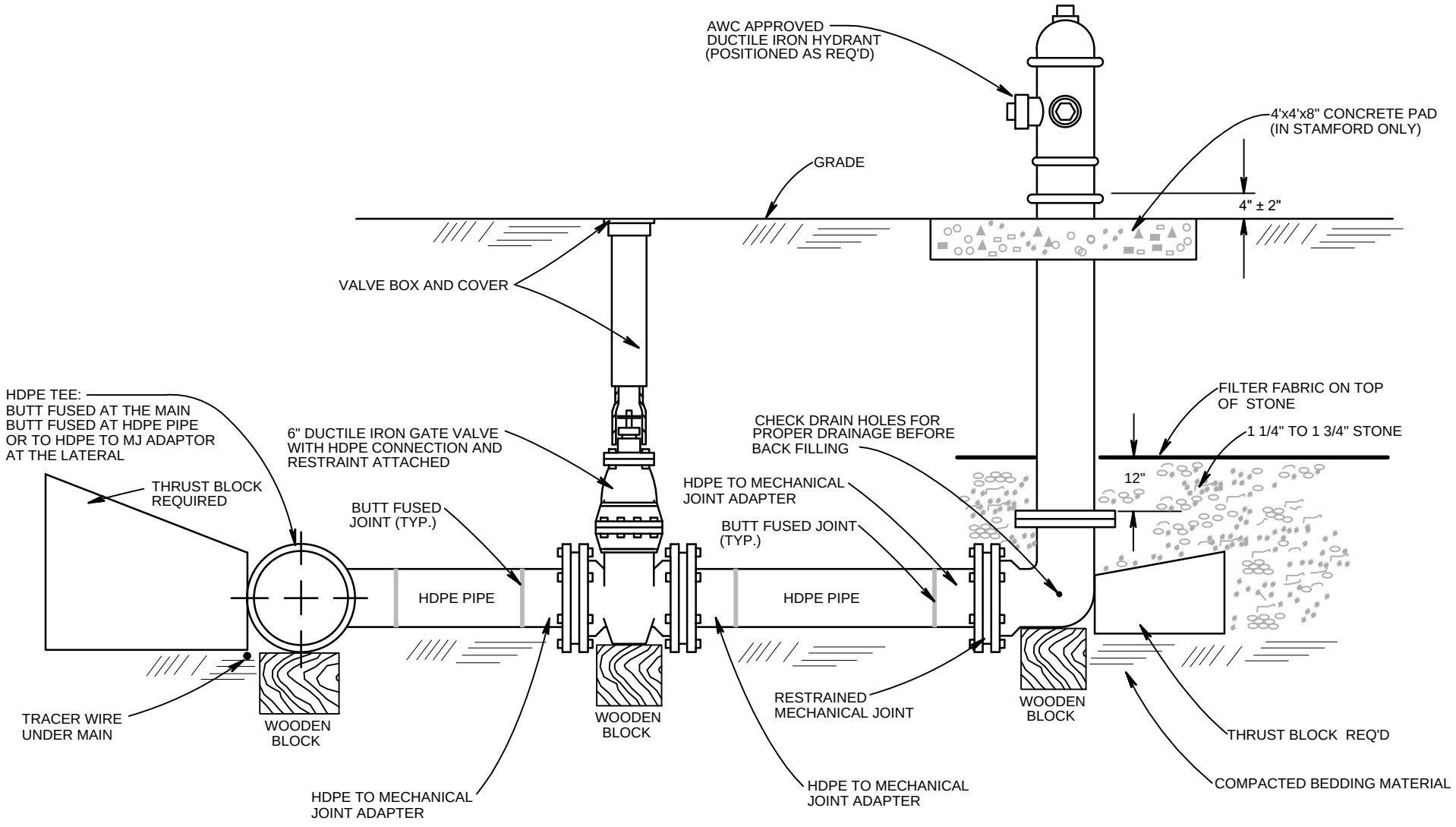


AQUARION
Water Company
Stewards of the Environment

HYDRANT ASSEMBLY (DIP)

NOT TO SCALE

SD-8

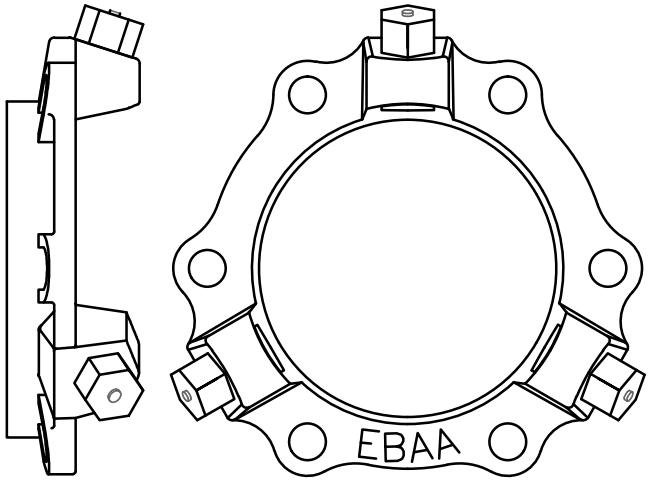


AQUARION
Water Company
Stewards of the Environment

HYDRANT ASSEMBLY (HDPE)

NOT TO SCALE

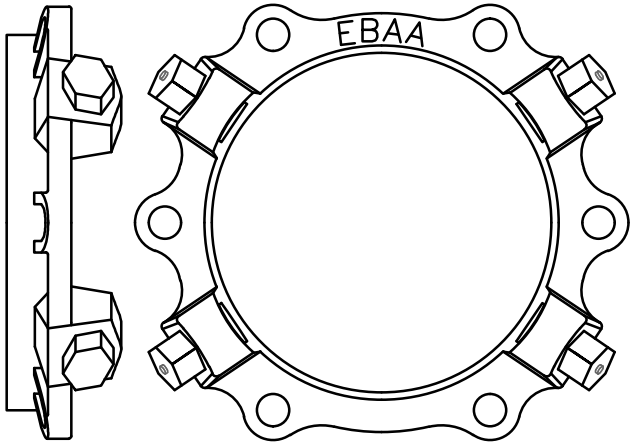
SD-9



6" DIP RESTRAINT

EBAA IRON
1106 MEALUG
350 PSI RATING

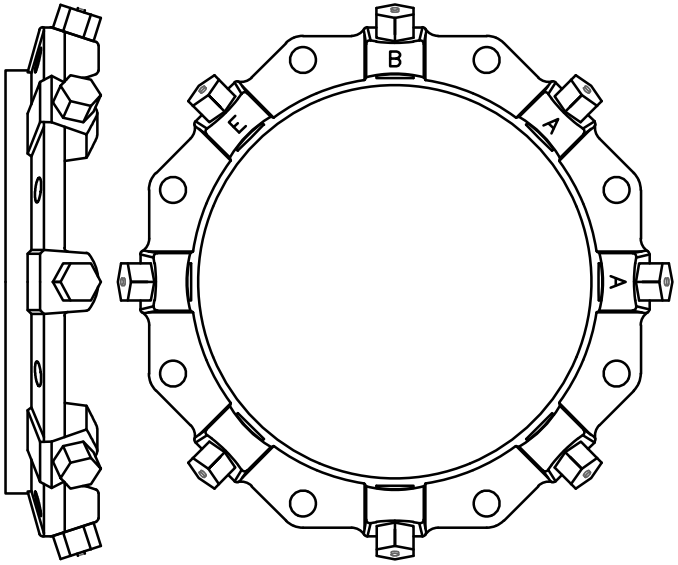
FM RATED 175 PSI
FOR USE ON DUCTILE IRON
PIPE MADE IN THE USA



8" DIP RESTRAINT

EBAA IRON
1108 MEGALUG
350 PSI RATING

FM RATED 175 PSI
FOR USE ON DUCTILE
IRON PIPEMADE IN
THE USA



12" DIP RESTRAINT

EBAA IRON
1112 MEGALUG
350 PSI RATING

FM RATED 175 PSI
FOR USE ON DUCTILE IRON PIPE
MADE IN THE USA

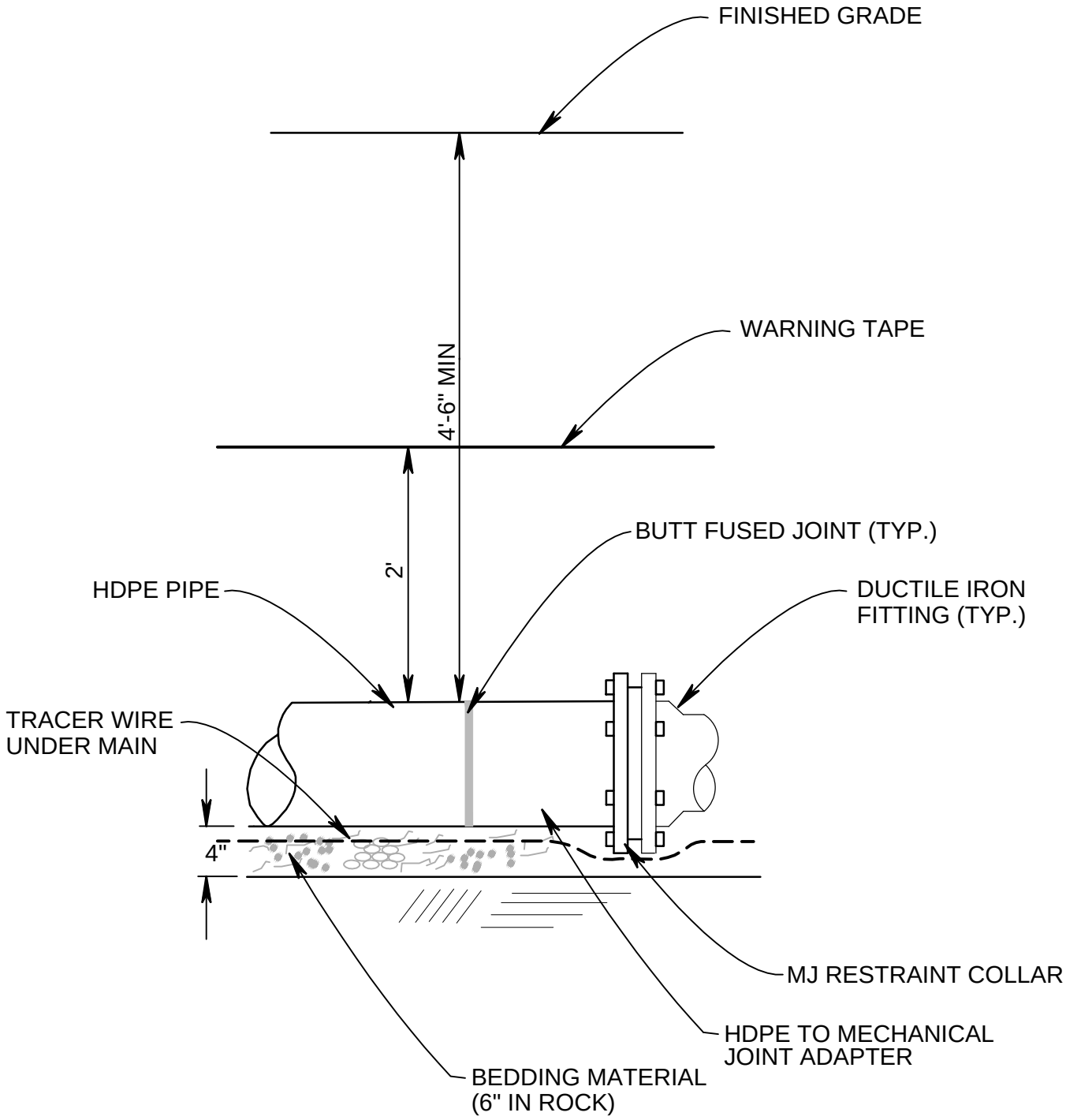
AQUARION
Water Company

Stewards of the Environment

DUCTILE IRON PIPE RESTRAINTS

NOT TO SCALE

SD-10



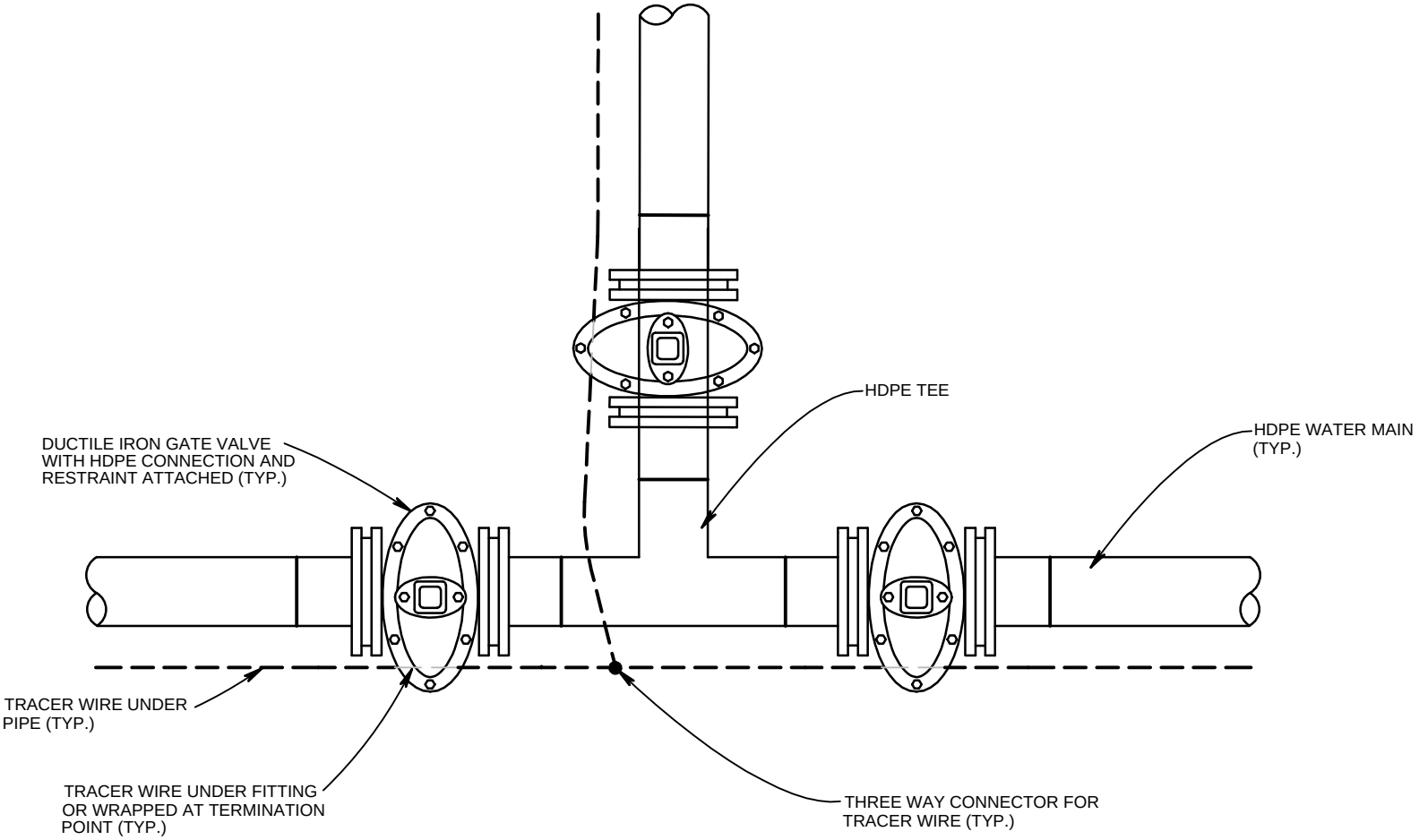
AQUARION
Water Company

Stewards of the Environment

HDPE TO MECHANICAL JOINT ADAPTOR

NOT TO SCALE

SD-11

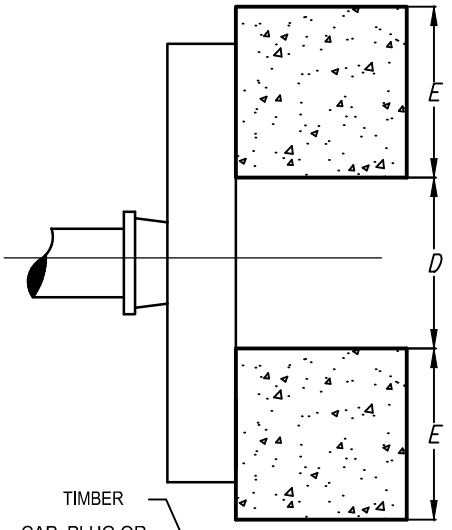


AQUARION
Water Company
Stewards of the Environment

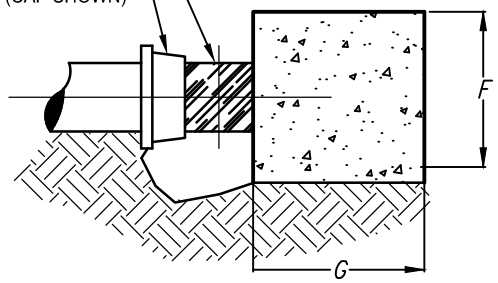
TRACER WIRE

NOT TO SCALE

SD-12



PLAN



ELEVATION

PIPE DIAM. IN	BLOCK DIMENSIONS E IN	F IN	G IN	CONCRETE VOLUME CU. YD.
4	NONE REQUIRED			
6	12	12	12	0.07
8	16	16	16	0.18
10	20	20	20	0.34
12	24	24	24	0.59
16	32	32	32	1.40

PIPE DIAM. IN	TIMBER NO. BEAMS	NOM. SIZE	LENGTH IN	CLEARANCE D IN.
4	NONE REQUIRED			
6	1	6"x6"	34	18
8	1	8"x8"	42	20
10	1	10"x10"	48	22
12	1	12"x12"	56	24
16	2	10"x10"	72	30

NOTES:

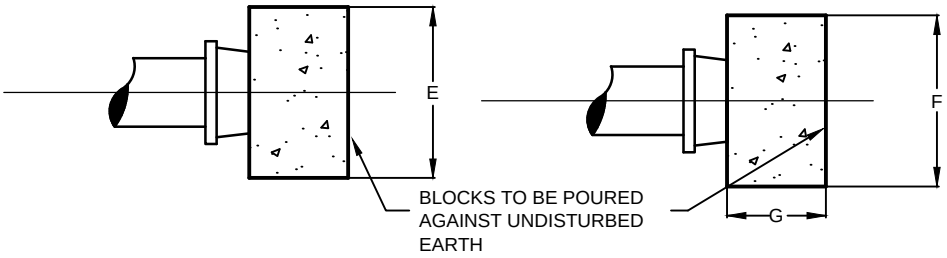
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. TIMBER TO BE DOUGLAS FIR CONSTRUCTION GRADE OR BETTER HORIZONTAL SHEAR 120 psi.
4. PROVIDE TAMPED BACKFILL AND/OR BLOCKING TO SUPPORT TIMBER.

AQUARION
Water Company
Stewards of the Environment

THRUST BLOCKS AT DEAD ENDS

NOT TO SCALE

SD-13



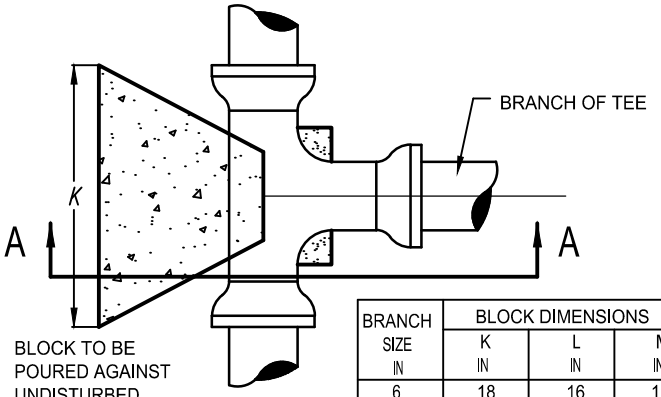
PLAN ELEVATION

NOTES:

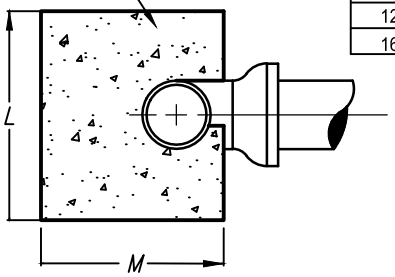
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. FOR USE ON ABANDONED LINES AND DEAD ENDS WHERE NO EXTENSION IS CONTEMPLATED.

PIPE DIAM. IN	BLOCK DIMENSIONS E IN	F IN	G IN	CONCRETE VOLUME CU. YD.
6	20	16	12	0.09
8	28	20	12	0.15
10	30	24	12	0.19
12	42	30	14	0.40
16	52	42	18	0.85

CAPS, PLUGS AND VALVES



PLAN



SECTION AA

BRANCH SIZE IN	BLOCK DIMENSIONS K IN	L IN	M IN	CONCRETE VOLUME CU. YD.
6	18	16	12	0.09
8	30	18	12	1.15
10	42	20	12	0.24
12	50	24	16	0.42
16	60	36	24	1.12

NOTES:

1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.

TEES

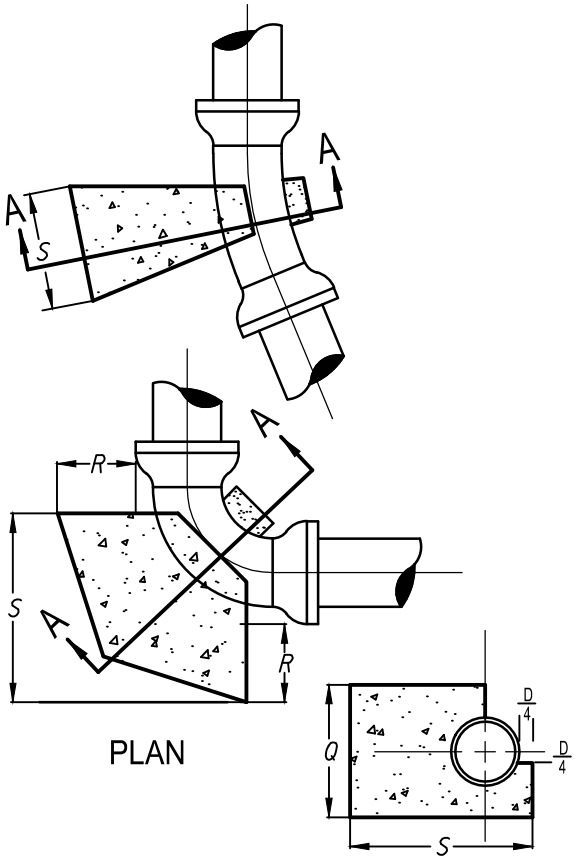
AQUARION Water Company

Stewards of the Environment

THRUST BLOCKS
AT TEES, CAPS, PLUGS & VALVES

NOT TO SCALE

SD-14



PLAN

SECTION AA

PIPE DIAM. IN	BLOCK DIMENSIONS				CONCRETE VOLUME CU. YD.
	BEND	S IN.	Q IN.	R IN.	
16	90	48	48	48	2.37
	45	48	34	20	0.70
	22 1/2	42	20	18	0.32
	11 1/4				SEE NOTE 3
12	90	36	36	36	1.00
	45	36	24	18	0.33
	22 1/2	28	18	12	0.13
	11 1/4				SEE NOTE 3
10	90	30	30	30	0.60
	45	30	20	18	0.23
	22 1/2	22	16	12	0.09
	11 1/4				SEE NOTE 3
8	90	24	24	24	0.30
	45	24	16	12	0.20
	22 1/2	18	12	12	0.11
	11 1/4				SEE NOTE 3
6	90	18	18	18	0.25
	45	18	12	12	0.11
	22 1/2	12	12	12	0.07
	11 1/4				SEE NOTE 3

NOTES:

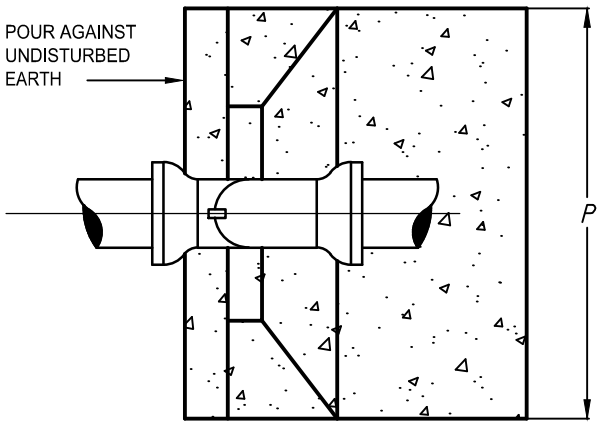
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. SEE SAG VERTICAL (ABOVE)

AQUARION
Water Company
Stewards of the Environment

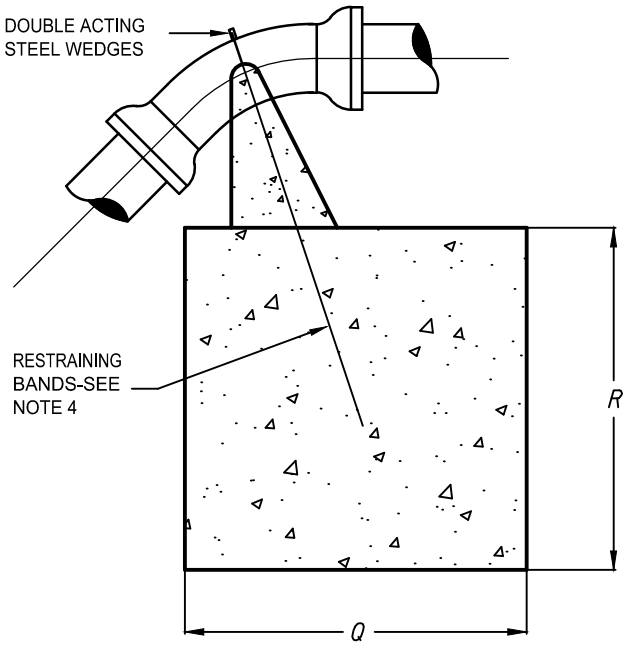
THRUST BLOCKS
AT HORIZONTAL BENDS

NOT TO SCALE

SD-15



PLAN



ELEVATION

PIPE DIAM. IN	BLOCK DIMENSIONS BEND	P IN.	Q IN.	R IN.	CONCRETE VOLUME CU. YD.
16	45	72	60	56	5.2
	22 1/2	60	48	44	2.7
	11 1/4	60	36	36	1.7
12	45	60	48	48	3.0
	22 1/2	42	42	40	1.5
	11 1/4	34	34	34	0.84
10	45	54	42	42	2.0
	22 1/2	36	36	36	1.0
	11 1/4	30	30	30	0.58
8	45	48	36	36	1.3
	22 1/2	32	32	32	0.71
	11 1/4	26	26	26	0.38
6	45	42	30	28	0.76
	22 1/2	26	26	26	0.38
	11 1/4	24	24	24	0.30

NOTES:

1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. WHERE 90° CREST VERTICAL BEND IS REQUIRED APPROVAL MUST FIRST BE OBTAINED FROM THE ENGINEER. A SPECIAL DESIGN WILL BE REQUIRED.
4. 2 - # 6 REINFORCING RODS REQUIRED FOR 16" 45° BEND; 1 - # 6 REINFORCING ROD REQUIRED FOR ALL OTHER BENDS. EXPOSED BARS TO BE PROVIDED WITH PROTECTIVE COATING.

NOTE:

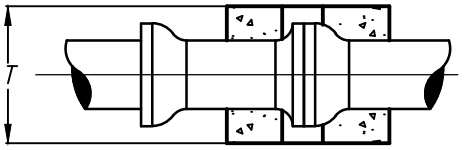
IN ADDITION TO THE CONCRETE THRUST BLOCKS, ALL FITTINGS TO BE TIED TOGETHER WITH 3/4" GALVANIZED THREADED RODS, AND ANY OTHER SPECIALS AS DIRECTED BY THE WATER COMPANY.

AQUARION
Water Company
Stewards of the Environment

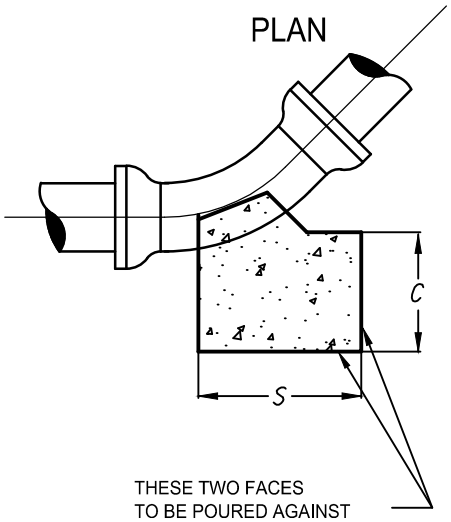
THRUST BLOCKS
AT CREST VERTICAL BENDS

NOT TO SCALE

SD-16



PLAN



THESE TWO FACES
TO BE POURED AGAINST
UNDISTURBED EARTH.

ELEVATION

PIPE DIAM. IN	BLOCK DIMENSIONS BEND	S IN.	T IN.	U IN.	CONCRETE VOLUME CU. YD.
16	90	48	48	48	2.40
	45	48	34	20	0.70
	22 1/2	42	20	18	0.35
	11 1/4				SEE NOTE 3
12	90	36	36	36	1.00
	45	36	24	18	0.34
	22 1/2	28	18	12	0.13
	11 1/4				SEE NOTE 3
10	90	30	30	30	0.60
	45	30	20	18	0.23
	22 1/2	22	16	12	0.10
	11 1/4				SEE NOTE 3
8	90	24	24	24	0.30
	45	24	16	12	0.10
	22 1/2	18	12	12	0.06
	11 1/4				SEE NOTE 3
6	90	18	18	18	0.13
	45	18	12	12	0.06
	22 1/2	12	12	12	0.04
	11 1/4				SEE NOTE 3

NOTES:

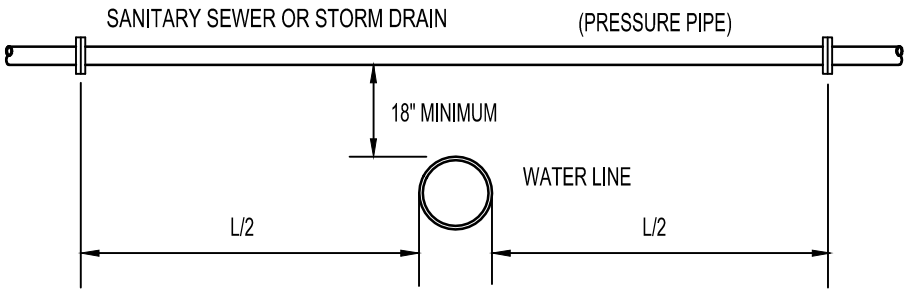
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. BEND TO BE SET AGAINST UNDISTURBED EARTH, BACKFILL TO BE FIRMLY TAMPED, OR BLOCK TO BE FURNISHED AS DIRECTED BY THE ENGINEER.

AQUARION
Water Company
Stewards of the Environment

THRUST BLOCKS
AT SAG VERTICAL BENDS

NOT TO SCALE

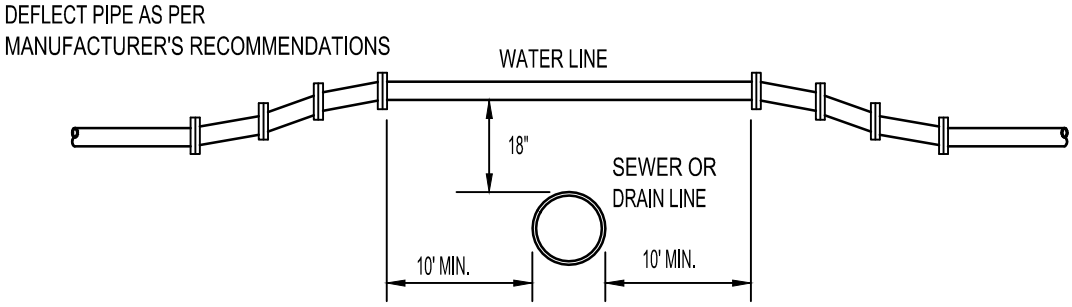
SD-17



NOTE :

WHERE WATER LINE PASSES BENEATH SEWER LINE OR STORM DRAIN, THE JOINTS OF THE PIPE SHALL BE A MIN. OF 10' FROM THE POINT OF CROSSING.

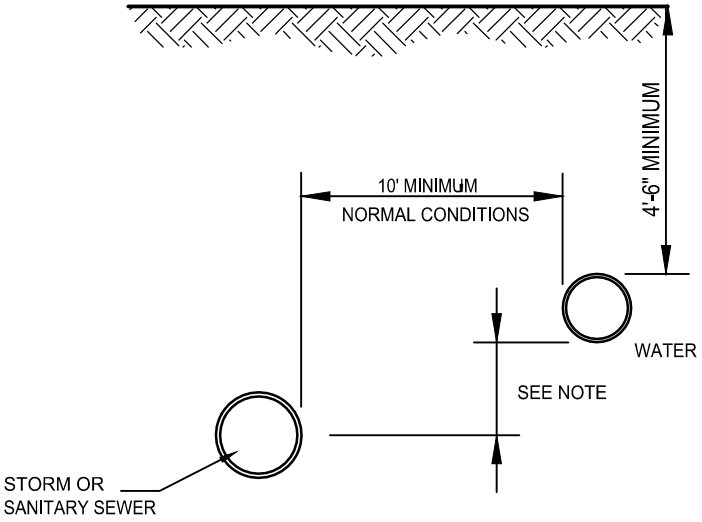
CROSSING OF WATER LINE UNDER SANITARY SEWER OR STORM DRAIN



NOTE :

FOR ANY CONDITIONS OTHER THAN SHOWN ABOVE THE FOLLOWING REQUIREMENTS SHALL BE MET. THE JOINTS OF THE SANITARY SEWER OR STORM DRAIN SHALL BE A MINIMUM OF 10' FROM THE POINT OF CROSSING.

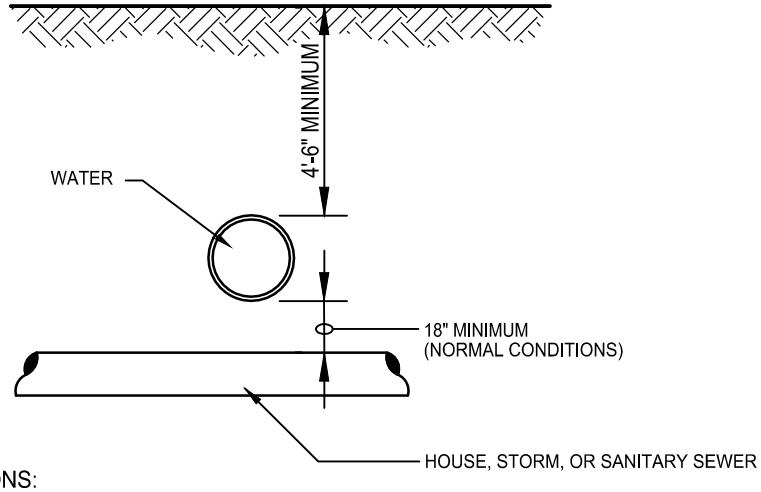
CROSSING OF WATER LINE OVER SANITARY SEWER OR STORM DRAIN



NOTE:

WHERE A 10' HORIZONTAL SEPARATION CANNOT BE OBTAINED DUE TO FIELD CONDITIONS, THE VERTICAL CLEAR DISTANCE SHALL BE A MINIMUM OF 18" HOWEVER, AN EXCEPTION TO THE 10' MINIMUM HORIZONTAL SEPARATION REQUIRES SEPARATE APPROVAL OF THE APPROPRIATE COUNTY HEALTH DEPT.

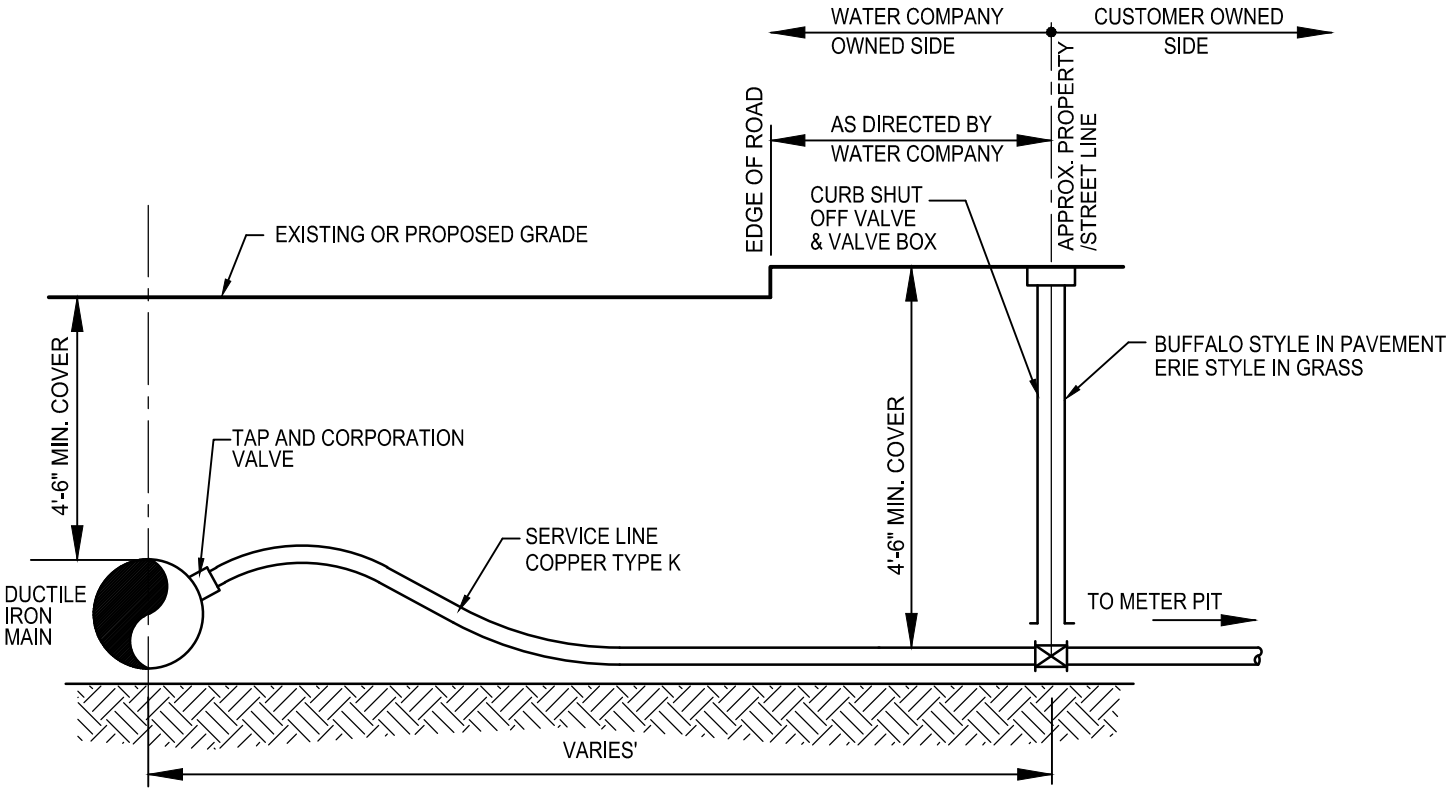
SEPARATION OF WATER MAINS AND SEWERS - PARALLEL INSTALLATION



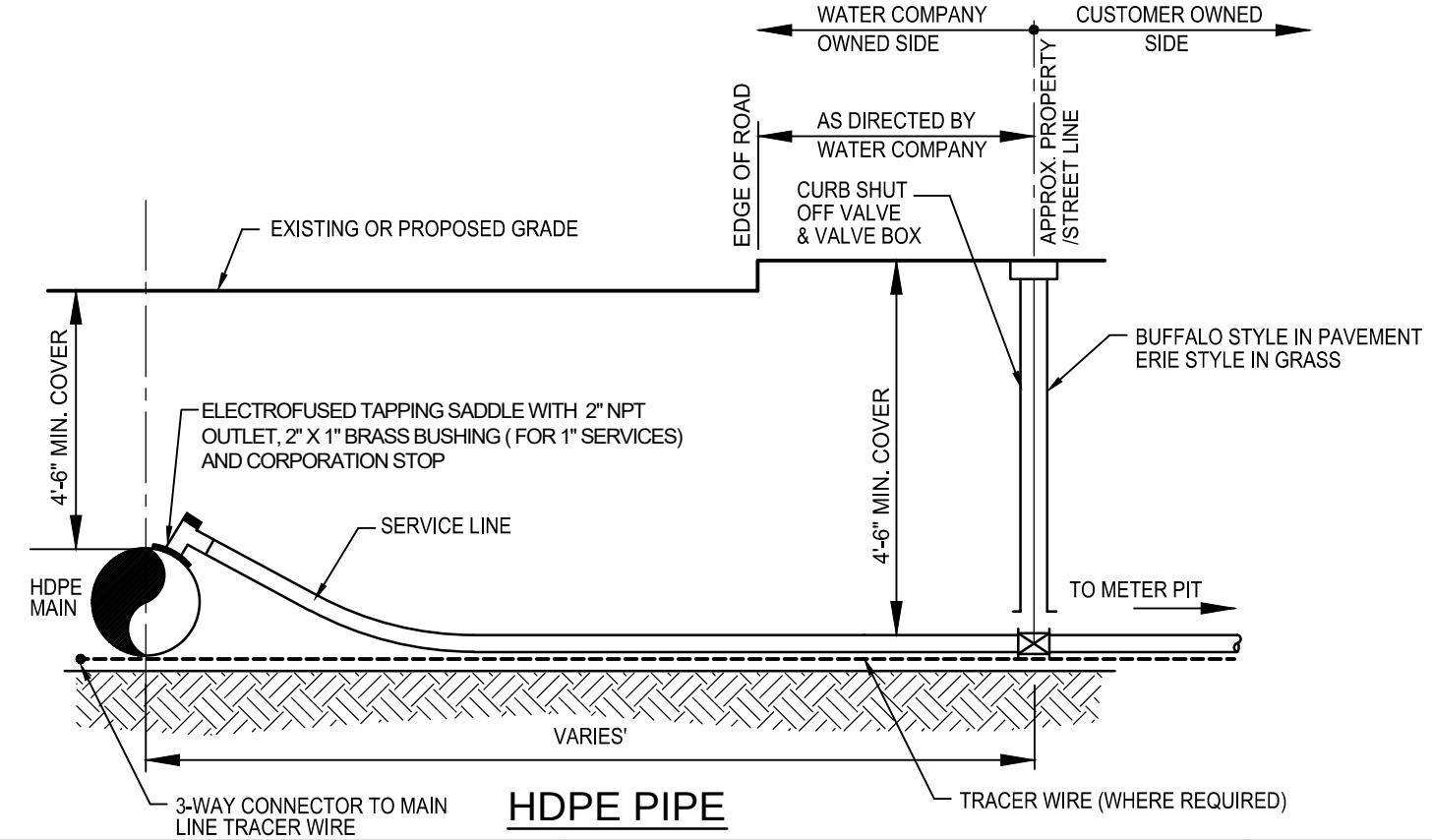
UNUSUAL CONDITIONS:

WATER MAINS PASSING UNDER SEWERS SHALL HAVE A VERTICAL CLEARANCE OF 18" MIN. BETWEEN THE SEWER AND WATER MAIN AND THE SEWER SHALL BE SUPPORTED AS DIRECTED BY THE OWNERS REPRESENTATIVE. TO THE EXTENT FEASIBLE, JOINTS IN THE WATER MAIN SHALL BE KEPT AS FAR AS POSSIBLE FROM THE SEWER. WHERE AN 18" SEPARATION CANNOT BE OBTAINED DUE TO FIELD CONDITIONS, SEPARATE APPROVAL OF THE HEALTH DEPARTMENT SHALL BE REQUIRED.

SEPARATION OF WATER MAINS AND SEWER CROSSINGS



DUCTILE IRON PIPE



HDPE PIPE

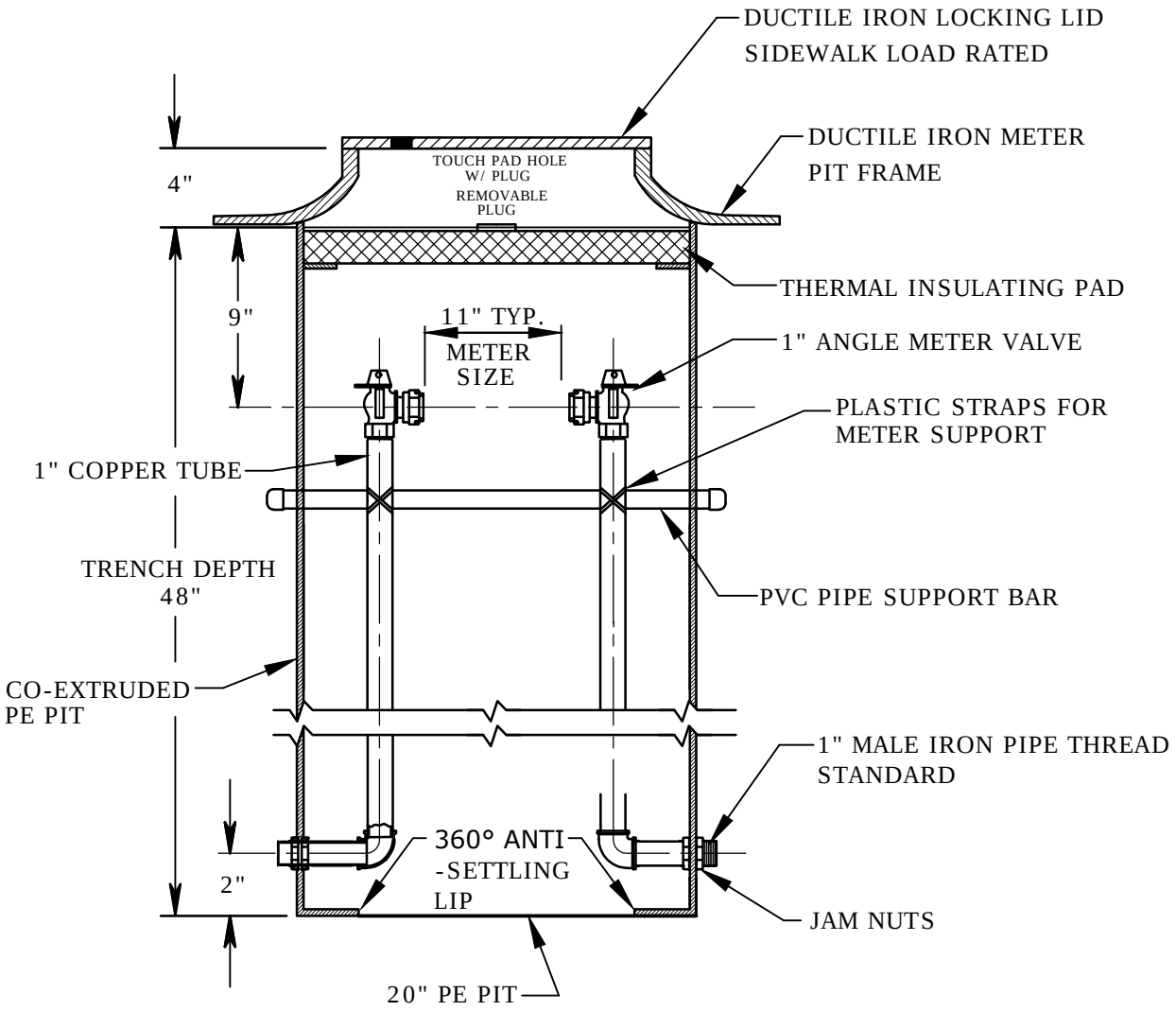
AQUARION
Water Company

Stewards of the Environment

PIPE INSTALLATION
WATER SERVICE LINE

NOT TO SCALE

SD-20



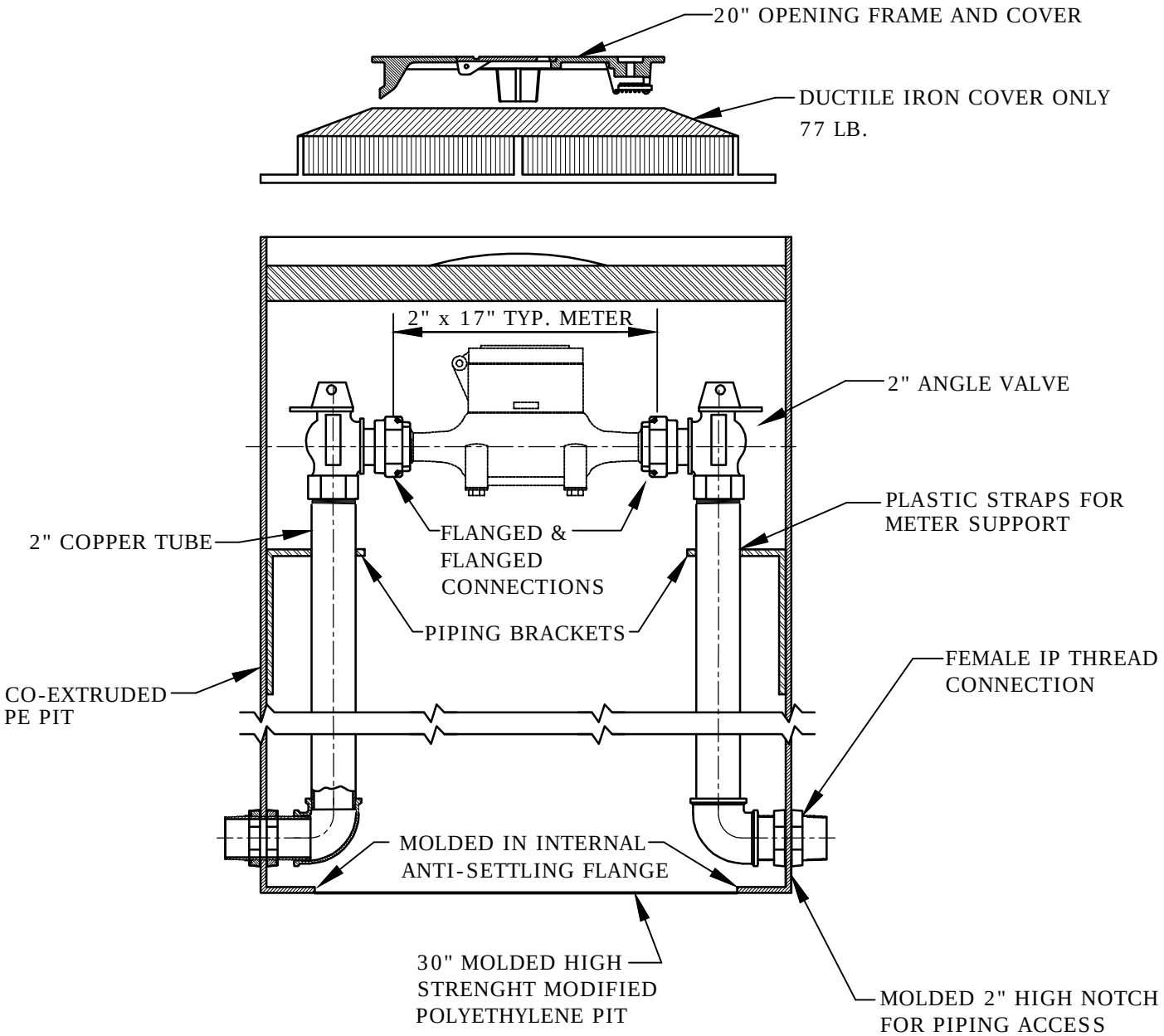
AQUARION
Water Company

Stewards of the Environment

STANDARD 1" METER PIT

NOT TO SCALE

SD-21



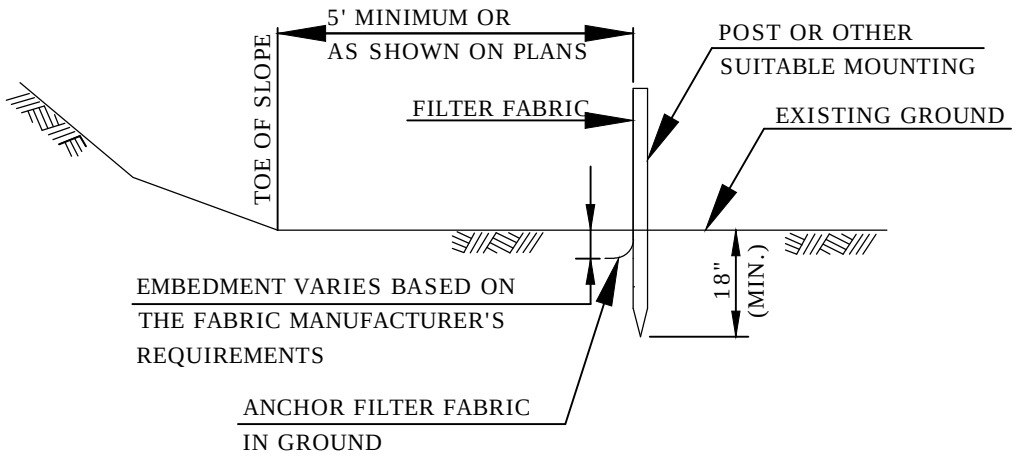
AQUARION
Water Company

Stewards of the Environment

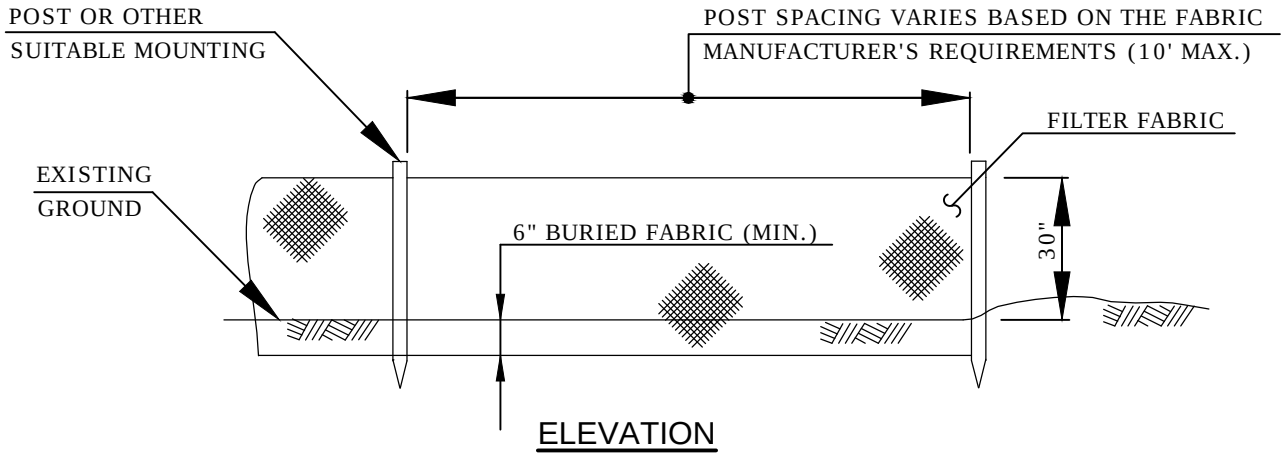
STANDARD 2" METER PIT

NOT TO SCALE

SD-22



SECTION



ELEVATION

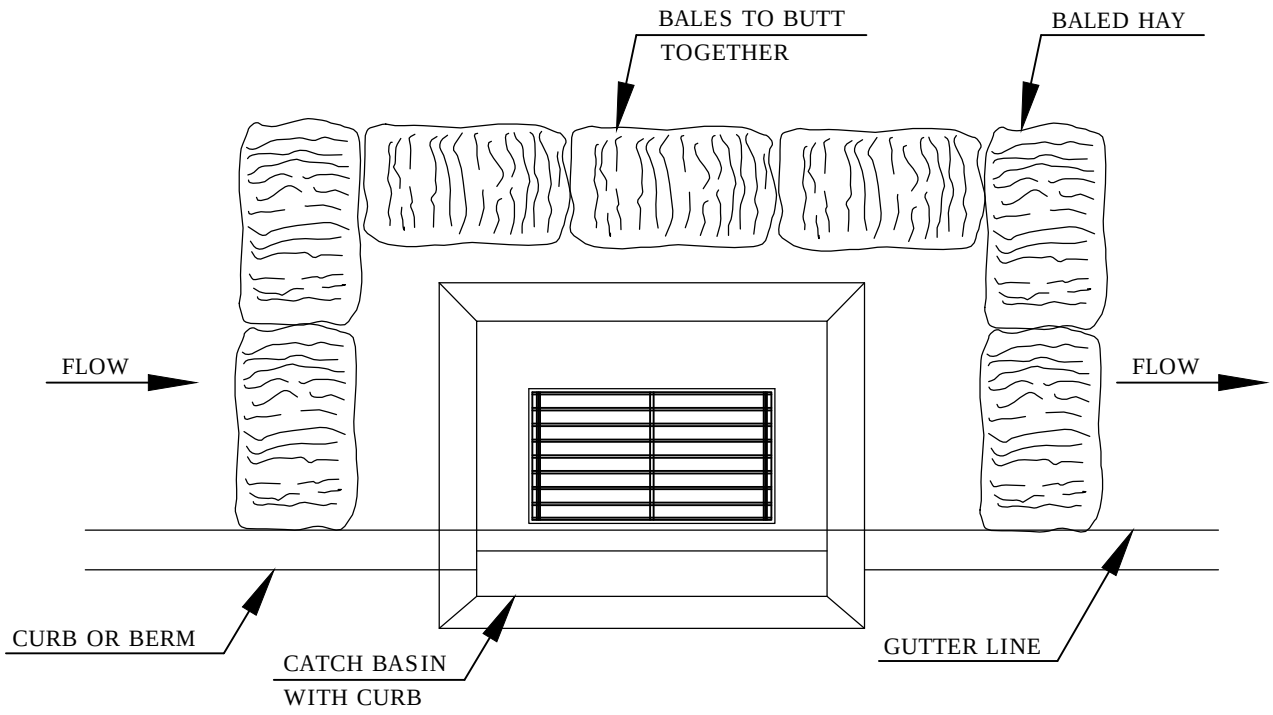
AQUARION
Water Company

Stewards of the Environment

GEOTEXTILE SILT FENCE

NOT TO SCALE

SD-23



ON PAVED SURFACE

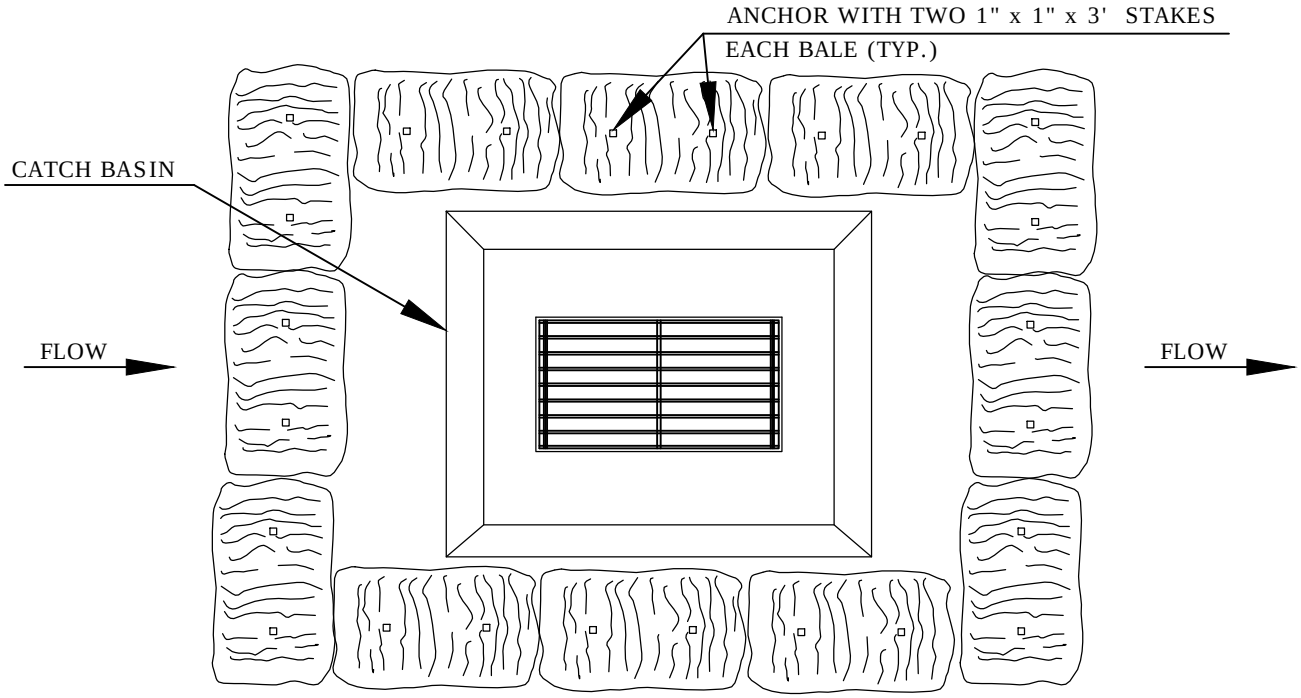
AQUARION
Water Company

Stewards of the Environment

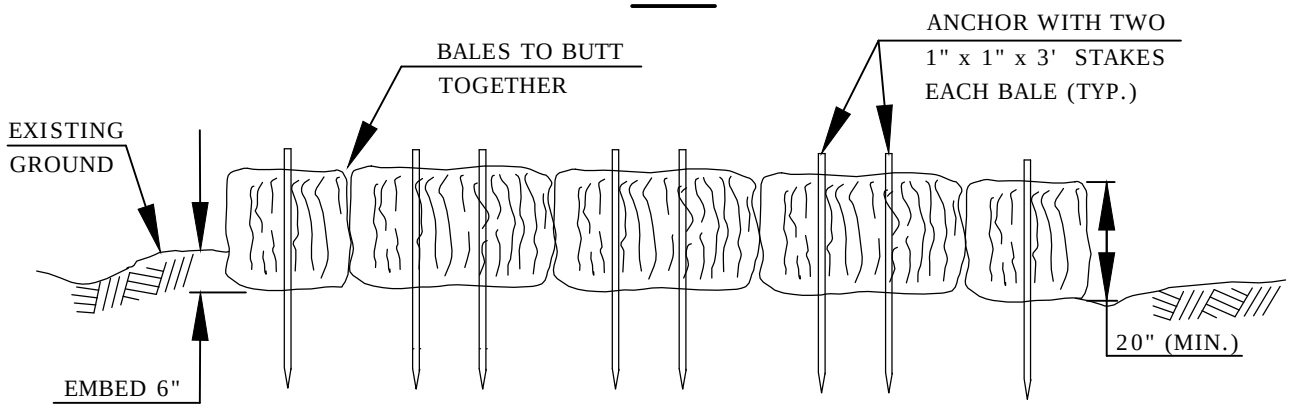
HAYBALES AT TYPE "C" CATCH BASIN

NOT TO SCALE

SD-24



PLAN



ELEVATION

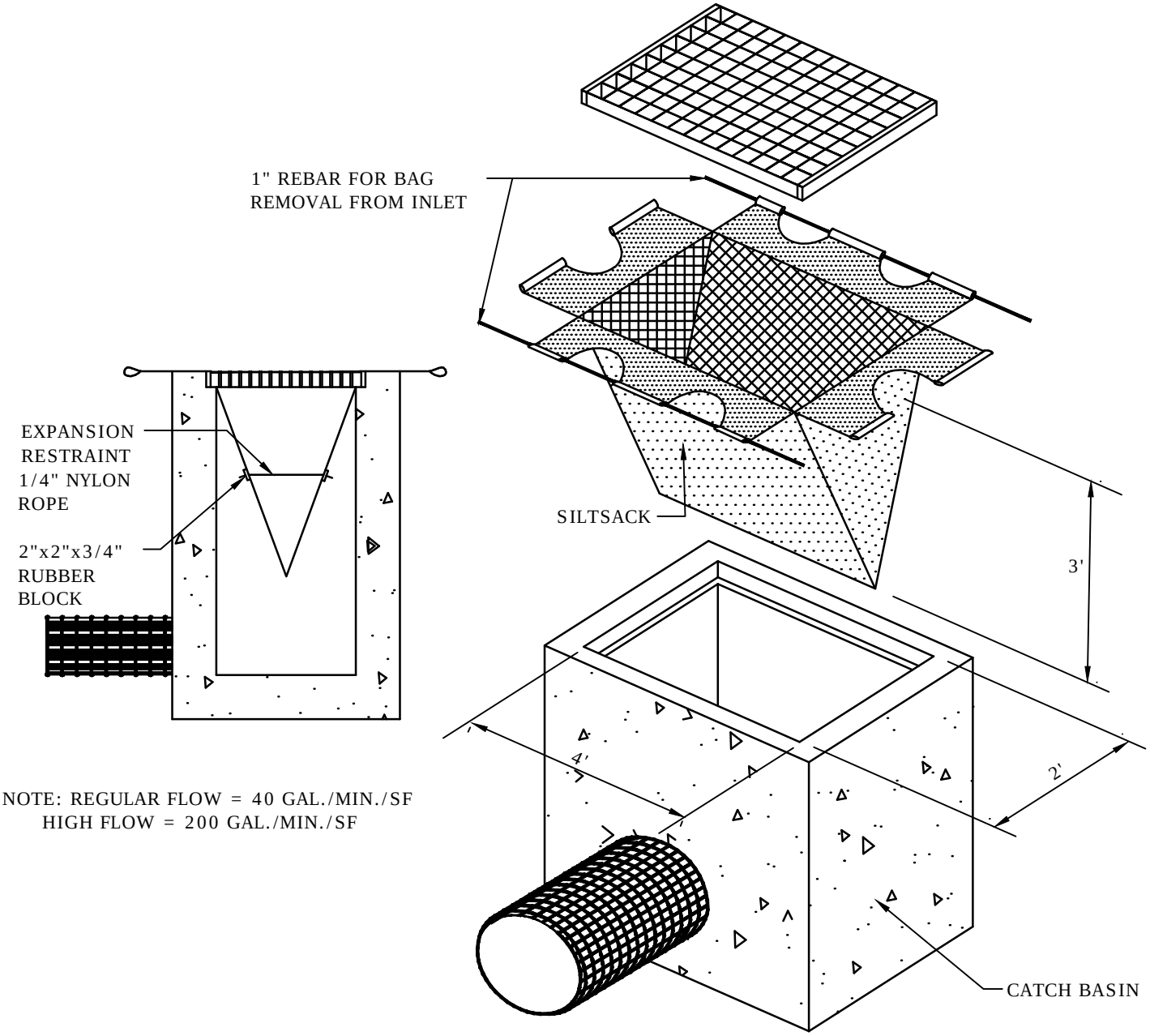
AQUARION
Water Company

Stewards of the Environment

HAYBALES AT TYPE "C-L" CATCH BASIN

NOT TO SCALE

SD-25



NOTE: REGULAR FLOW = 40 GAL./MIN./SF
HIGH FLOW = 200 GAL./MIN./SF

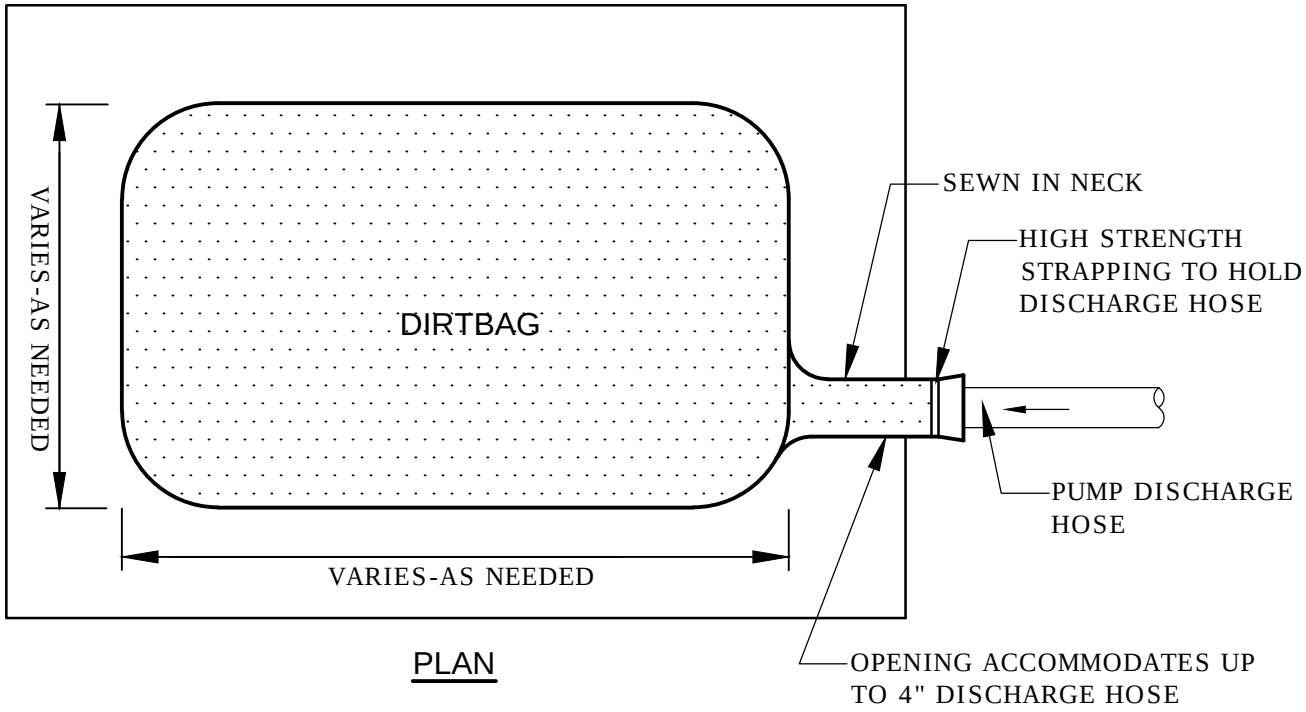
AQUARION
Water Company

Stewards of the Environment

SILT SACK

NOT TO SCALE

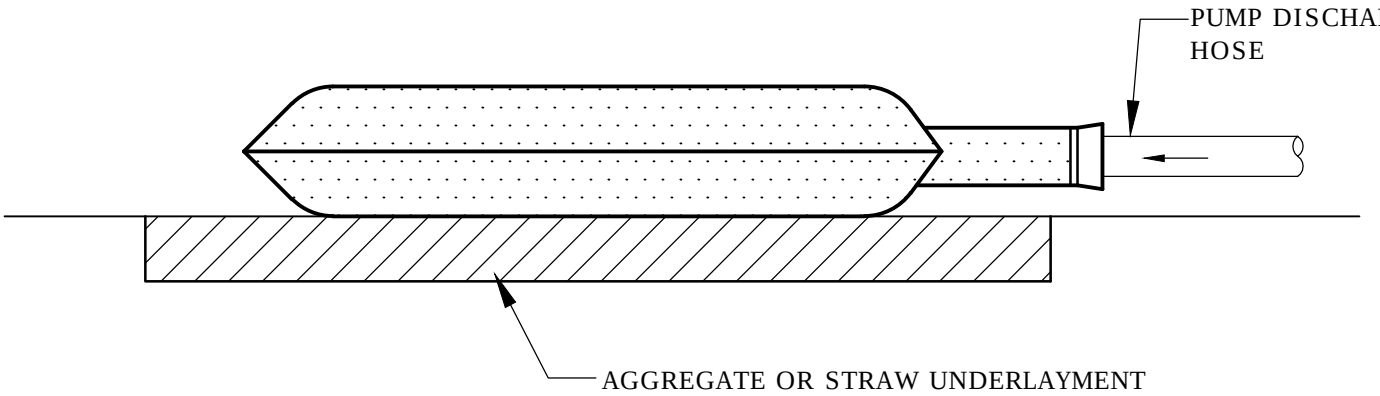
SD-26



PLAN

NOTES:

1) DIRTBAG TO BE PLACED ON AGGREGATE OR STRAW
2) SEAMS TO BE HIGH STRENGTH DOUBLE STITCHED "J" SEAMS



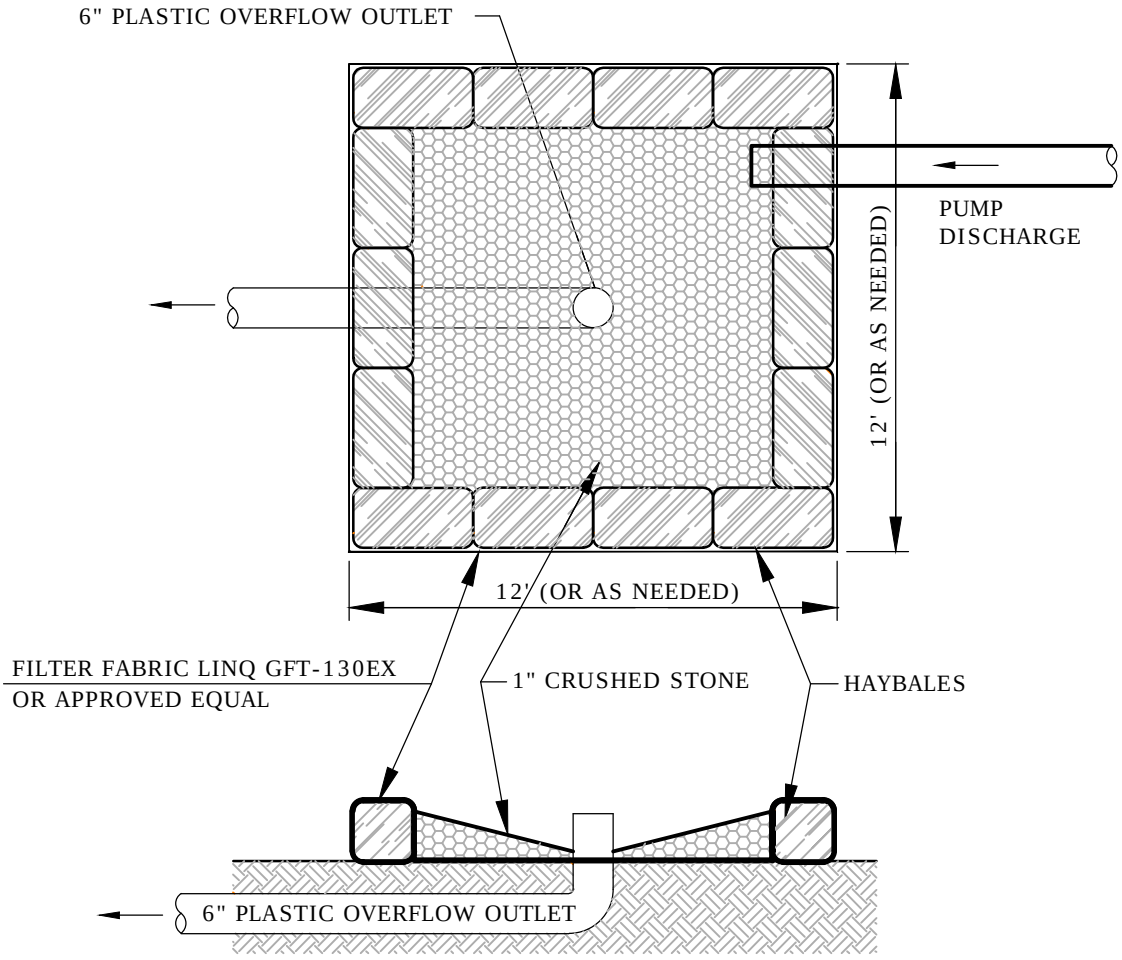
ELEVATION

AQUARION
Water Company
Stewards of the Environment

DIRT BAG

NOT TO SCALE

SD-27



NOTES:

1. 12' x 12' ARE APPROXIMATE DIMENSIONS FOR DEWATERING BASIN. DEPENDING UPON DISCHARGE TO THE BASIN THE DIMENSIONS MAY BE ADJUSTED BY THE OWNERS REPRESENTATIVE.

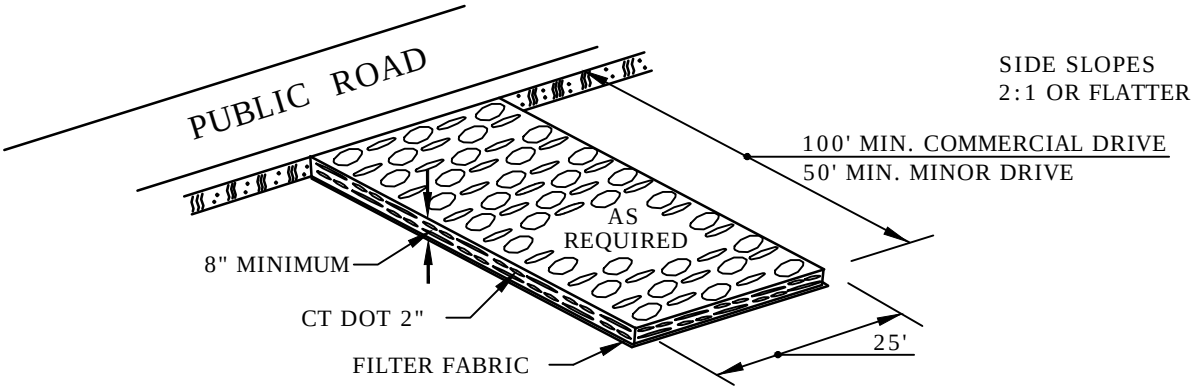
2. ALTERNATE DESIGNS SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO IMPLEMENTATION.

AQUARION
Water Company
Stewards of the Environment

TEMPORARY PUMP DEWATERING DISCHARGE BASIN

NOT TO SCALE

SD-28



GRADATION TABLE

	CONN. DOT 2" CRUSHED GRAVEL	ASTM C-33 NO. 2	ASTM C-33 NO. 3
SQUARE MESH SIEVES	% FINER	% FINER	% FINER
2 1/2 INCHES	100	90-100	100
2 INCHES	95-100	35-70	90-100
1 1/2 INCHES	35-70	0-15	35-70
1 1/4 INCHES	0-25	---	---
1 INCHES	0-10	---	0-15
3/4 INCHES	---	0-5	---
1/2 INCHES	---	---	0-5
3/8 INCHES	---	---	---

SOURCE: U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, STORRS, CONNECTICUT.

AQUARION
Water Company

Stewards of the Environment

CONSTRUCTION ENTRANCE

NOT TO SCALE

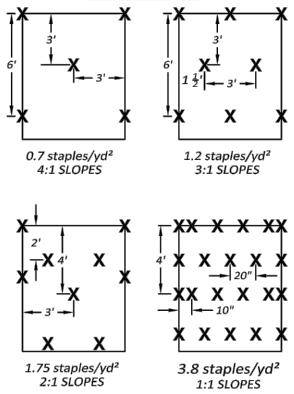
SD-29

Slope Installation Guidelines:

These guidelines are recommendations only. Any questions with the installation should be confirmed with your local distributor.

1. *Dig a 6" by 6" trench both up-slope and down-slope of the area the matting is to be applied. Prepare the slope soil surface (raking, seeding and fertilizing).*
2. *Begin by placing the blanket a minimum of 12" down-slope of the up-slope trench. Secure the blanket at the bottom of the trench with staples placed 12" apart. Backfill and compact the trench. Apply seed, and fold the blanket over soil, secure with a row of staples placed 12" apart across the width of the blanket. (See Diagram A)*
3. *Roll the blanket vertically down the slope. Secure using the appropriate staple pattern below, specified by slope. (See Staple Patterns)*
4. *Parallel blankets must be overlapped by a minimum of 4", and secured with a row of staples placed approximately 3'-0" apart. (See Diagram B)*
5. *Additional vertical blankets can be joined using a minimum 4" overlapping or shingle style (See Diagrams C) in the direction of water flow. Connect the blankets by placing staples approximately 12" apart across the width of the blankets.*
6. *For maximum performance a check slot should be placed at 25'-40' intervals. Place a row of staples 4" apart along the entire width of the slope. A second row should be placed 4" below in a staggered pattern. Then continue with general installation. (See Diagrams D)*
7. *The end of blanket must be secured in a 6" x 6" trench with a row of staples placed at 12" intervals. (Diagram E)*

Staple Patterns:



Specifications and Equivalency:

All product material and performance specifications are available from East Coast Erosion Blankets via the product specification sheet. Utilization of a 11 gauge staple, a minimum 6" long by 1" crown, is recommended. The tightly compressed blankets are wrapped and include a product label, code and installation guide.

In addition to meeting all data available on the specification sheet, equivalent products shall meet the following requirements:

- *The product must be listed with the NTPEP database.*
- *The product must meet the Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC).*
- *The product must meet the Federal Highway Administrations's (FHWA) FP-03 Section 713.17 specification.*

Slope Installation Detail

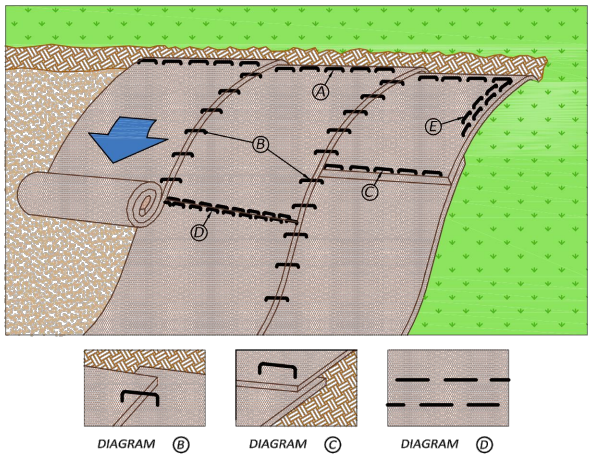
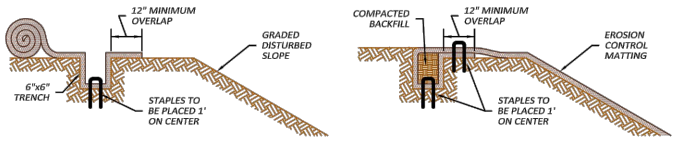
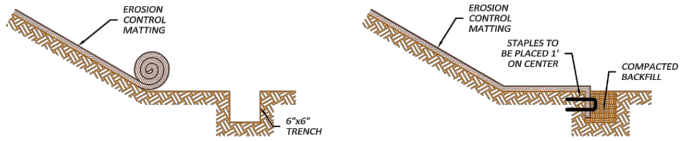


DIAGRAM (B) DIAGRAM (C) DIAGRAM (D)

Up-slope Trench Installation Detail (Diagram A)



Down-slope Trench Installation Detail (Diagram E)



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IECA Corporate Member · ECTC Erosion Control Technology Council · ASTM International · NAHB National Association of Home Builders

EASTCOAST erosion blankets

443 Bricker Road Bernville, PA 19506
*Toll Free: 1-800-582-4005 * Phone: +1-610-488-8496 * Fax: +1-610-488-8494*

DRAWN BY: MR	DRAWING #: EC-SLOPE	REV. # 1	DATE: 1/2/09

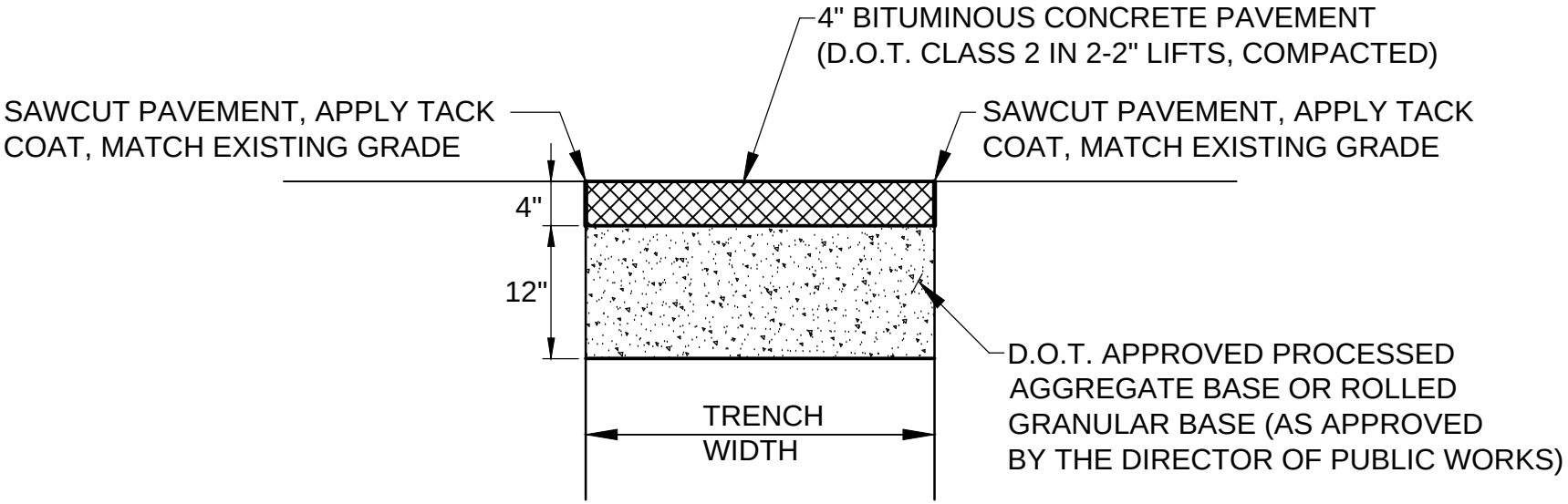
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Stewards of the Environment

EROSION CONTROL BLANKET

NOT TO SCALE

SD-30

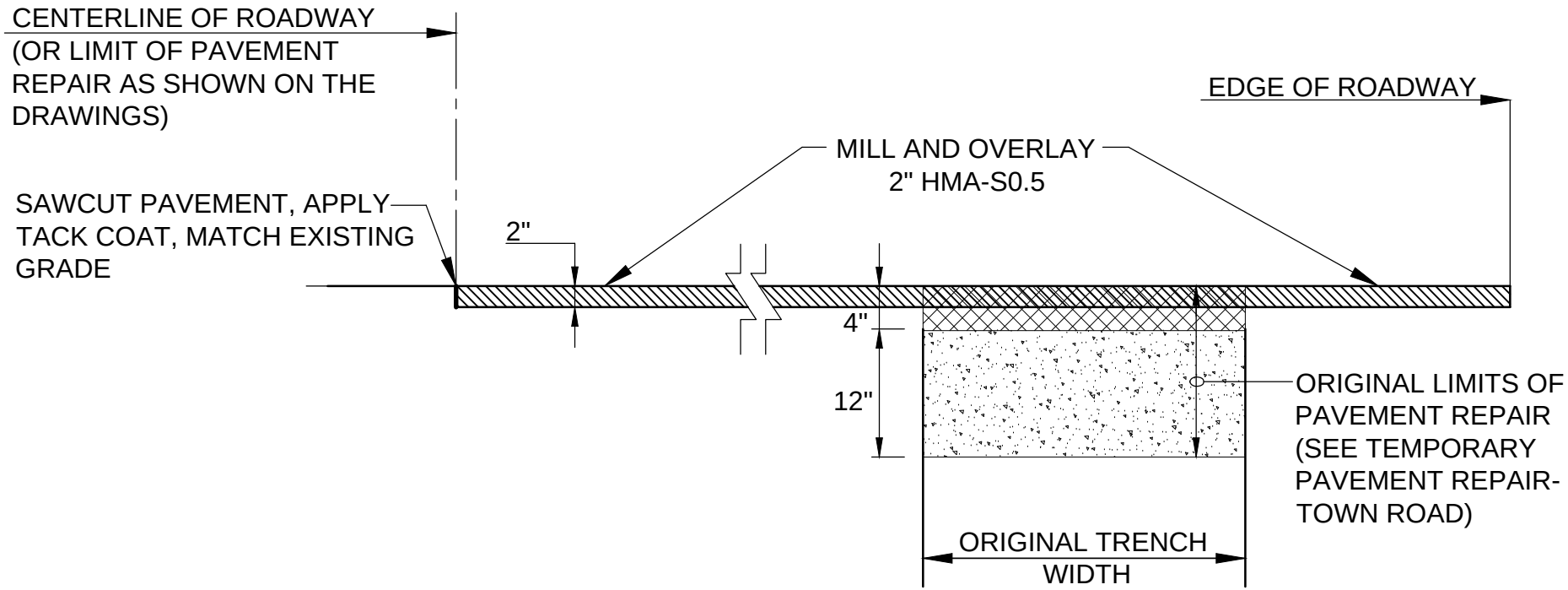


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TEMPORARY PAVEMENT REPAIR TOWN ROAD

NOT TO SCALE

SD-31

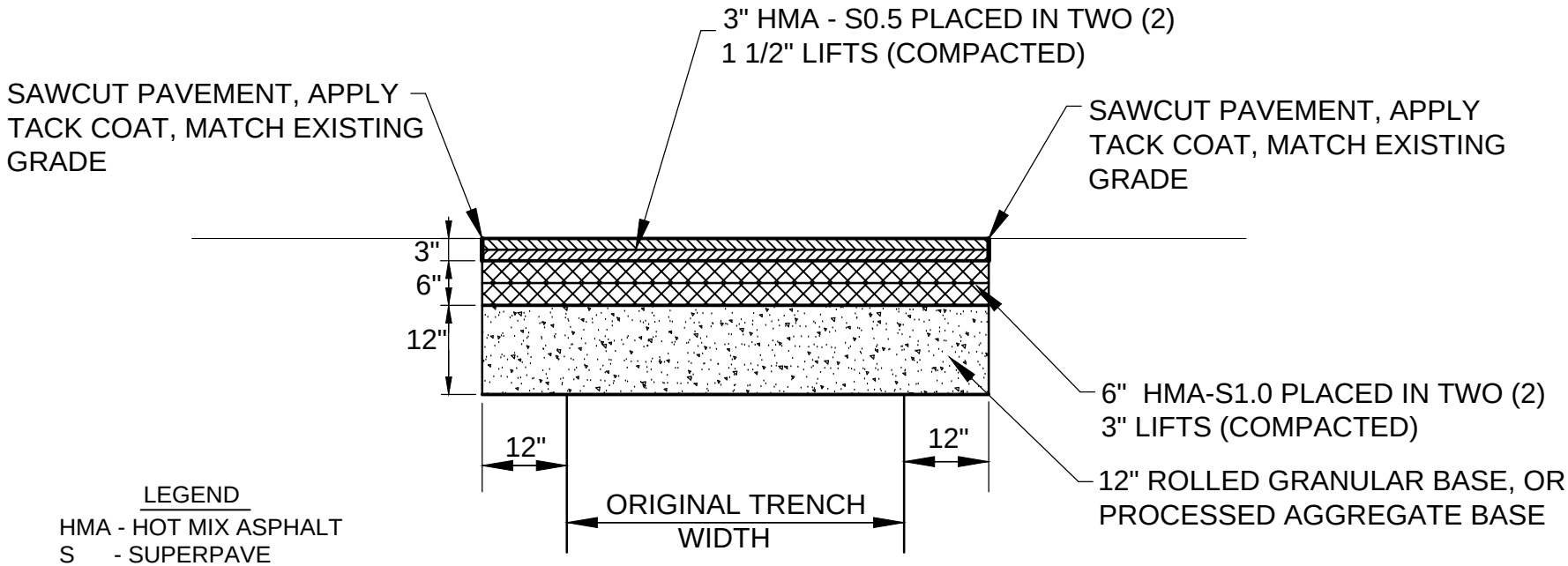


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PERMANENT PAVEMENT REPAIR TOWN ROAD

NOT TO SCALE

SD-32



LEGEND

HMA - HOT MIX ASPHALT
S - SUPERPAVE
.5 - 1/2" STONE SIZE
1.0 - 1 1/2" STONE SIZE

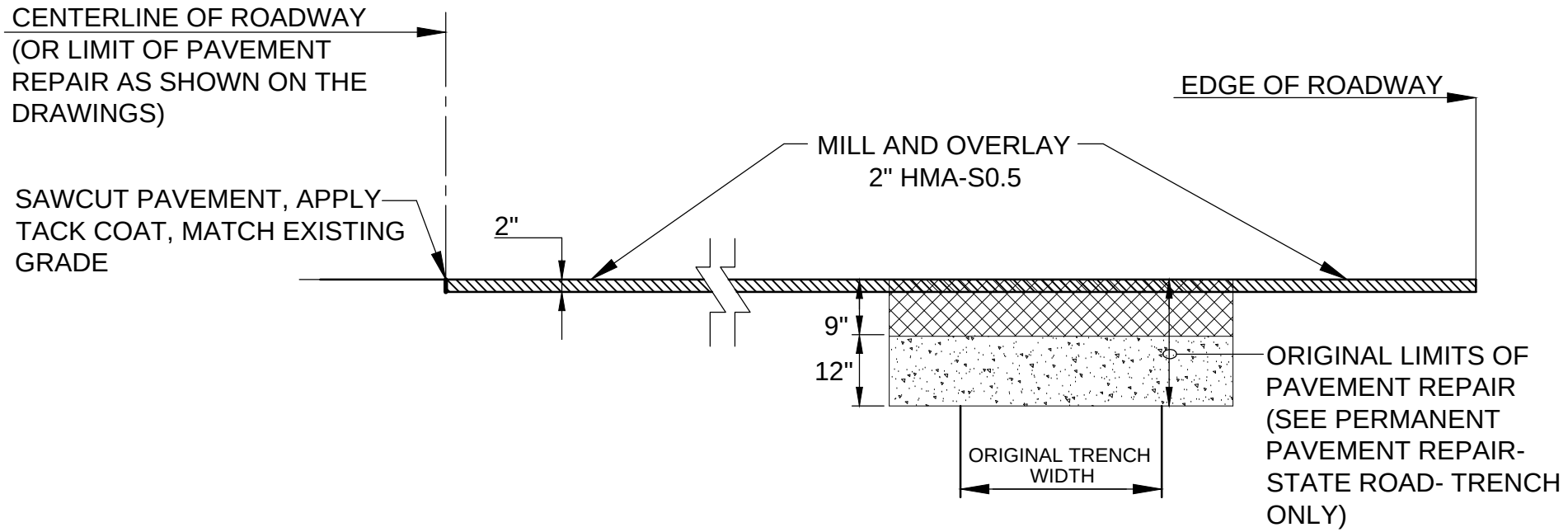
REFER TO CURRENT EDITION OF THE CTDOT STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, FACILITIES, AND INCIDENTAL CONSTRUCTION

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PERMANENT PAVEMENT REPAIR STATE ROAD (TRENCH ONLY)

NOT TO SCALE

SD-33



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PERMANENT PAVEMENT REPAIR STATE ROAD

NOT TO SCALE

SD-34

818 CONSTRUCTION NOTES

1. REMOVAL OF PAVEMENT MARKINGS ALONG STATE ROADWAYS SHALL BE COMPLETED BY A NON-DESTRUCTIVE METHOD IN COMPLIANCE WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION FORM 818 SECTION 12.11 AS REVISED.

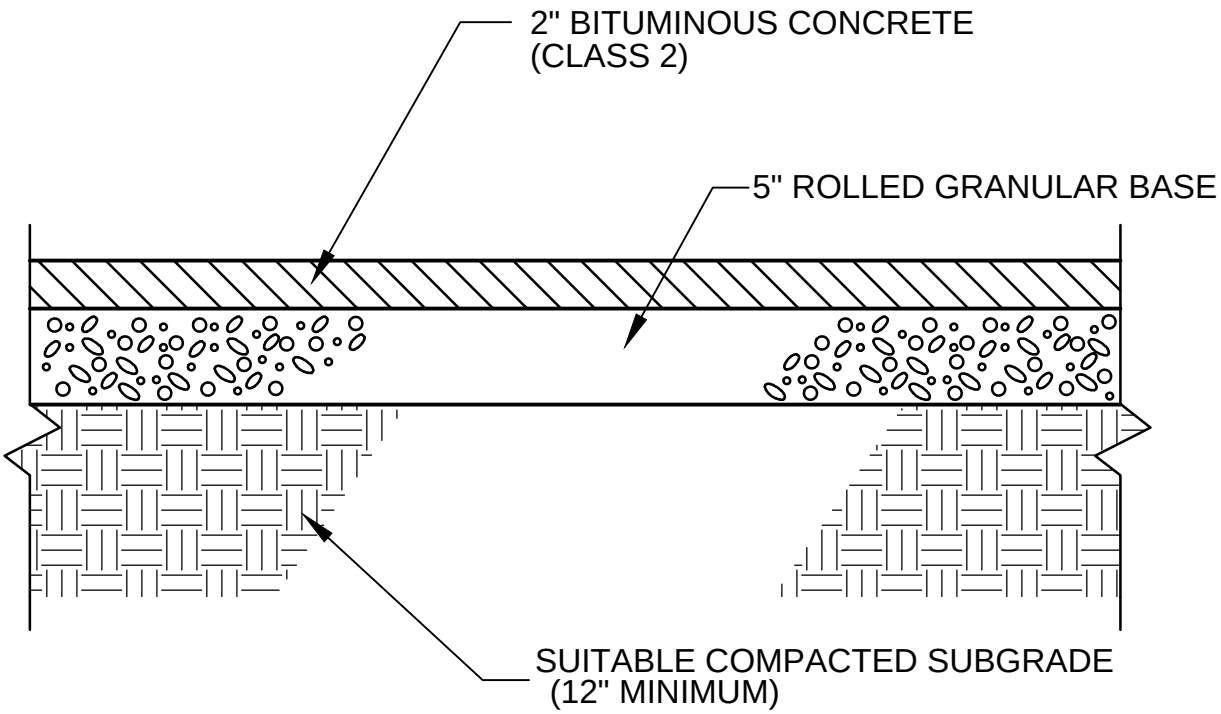
2. NEW PAVEMENT MARKINGS SHALL BE PAINTED WITH EPOXY RESIN PAINT IN COMPLIANCE WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION FORM 818 SECTION 12.10 AS REVISED.

3. NEW SIGN MATERIAL AND SHEETING SHALL BE MADE OF REFLECTIVE MATERIAL IN COMPLIANCE WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION FORM 818 SECTION 12.08 AS REVISED. TYPE 1 REFLECTIVE SHEETING SHALL BE USED FOR SIGNS WITH WHITE BACKGROUND, TYPE 3 REFLECTIVE SHEETING SHALL BE USED FOR SIGNS WITH COLORED BACKGROUND EXCEPT FOR SIGNS WITH RED BACKGROUND THAT SHALL BE TYPE 8 OR 9 REFLECTIVE SHEETING.

4. ALL SIGNS AND PAVEMENT MARKINGS INSTALLED ALONG THE STATE ROAD MUST CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," THE LATEST STATE OF CONNECTICUT CATALOG OF SIGNS AND STANDARD AS REVISED.

5. ANY DAMAGE TO THE EXISTING CURB, SIDEWALK OR ANY OTHER HIGHWAY APPURTENANCES DURING THE DEVELOPMENT OF THE PERMITTED SITE WILL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE DISTRICT PERMIT SECTION AT NO COST TO THE STATE.

6. ALL WORK WITHIN THE STATE RIGHT OF WAY WILL COMPLY WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGE, AND INCIDENTAL CONSTRUCTION FORM 818 WITH THE LATEST SPECIAL PROVISIONS AND TYPICAL STATE STANDARD DETAILS.

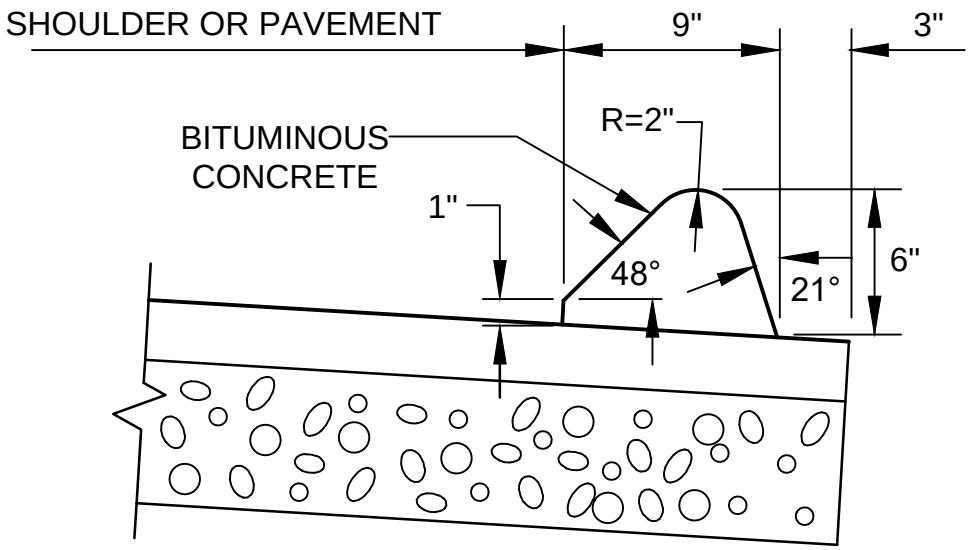


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BITUMINOUS CONCRETE SIDEWALK & DRIVEWAY

NOT TO SCALE

SD-36



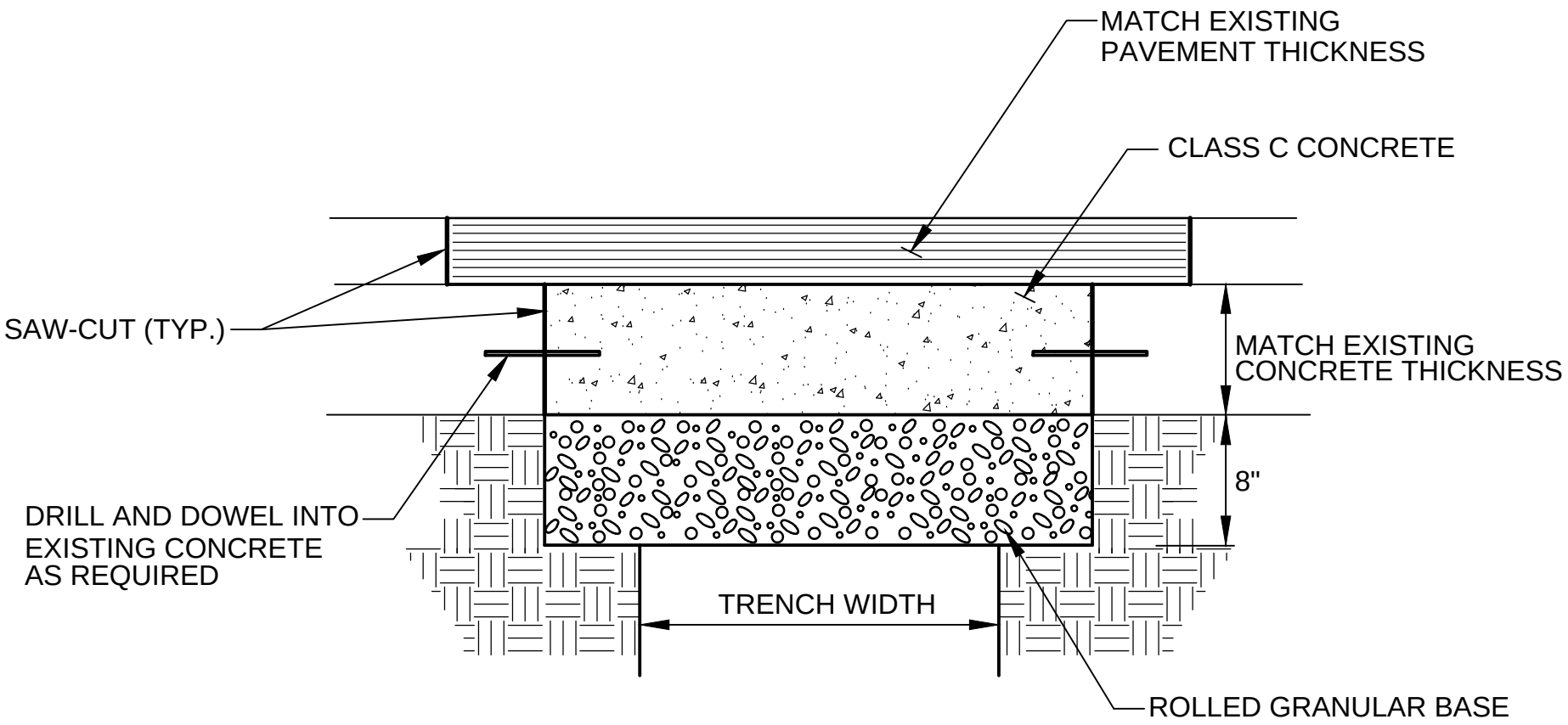
AQUARION
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Stewards of the Environment

BITUMINOUS CONCRETE LIP CURBING

NOT TO SCALE

SD-37

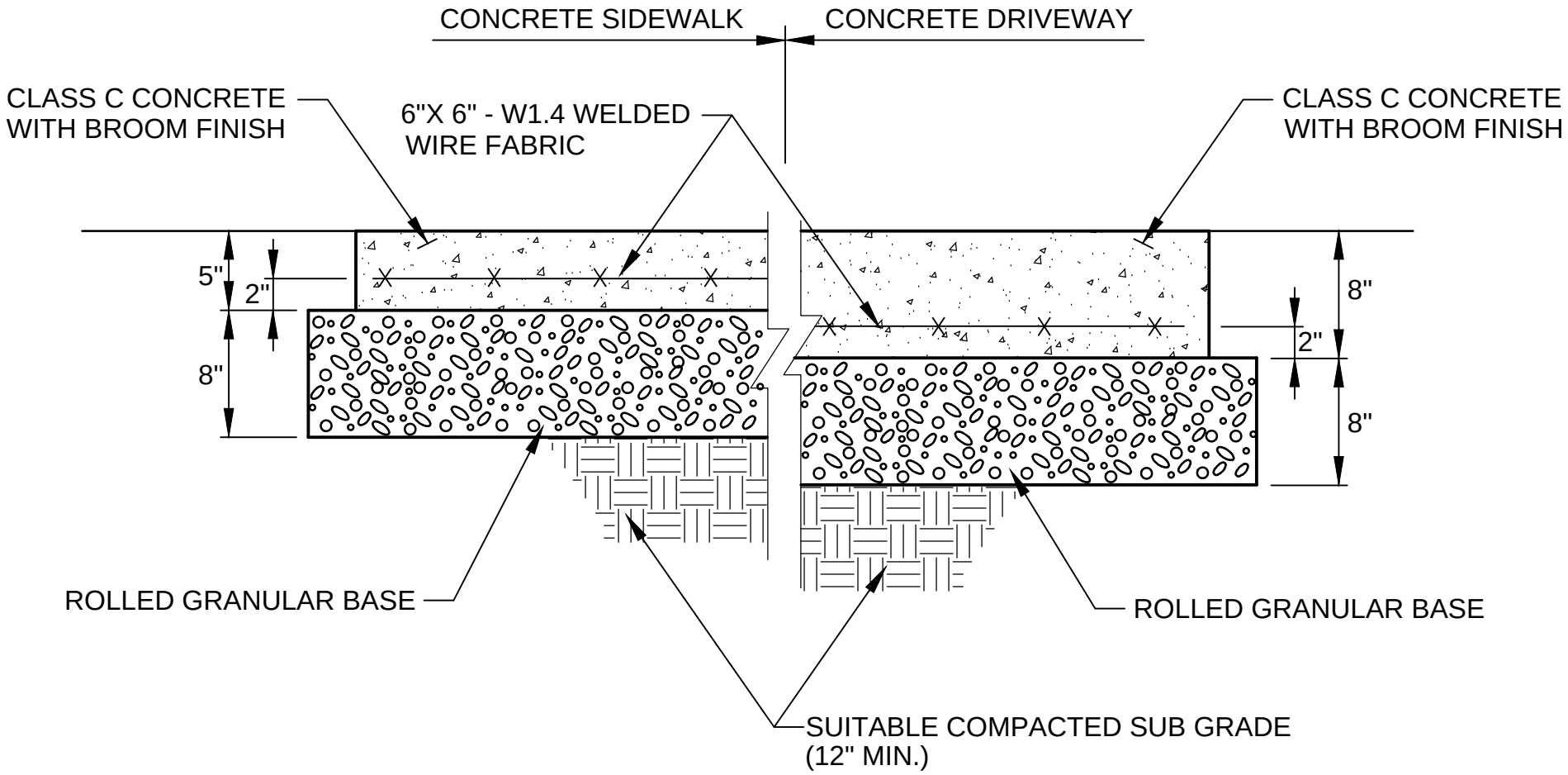


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REINFORCED CONCRETE PAVEMENT

NOT TO SCALE

SD-38

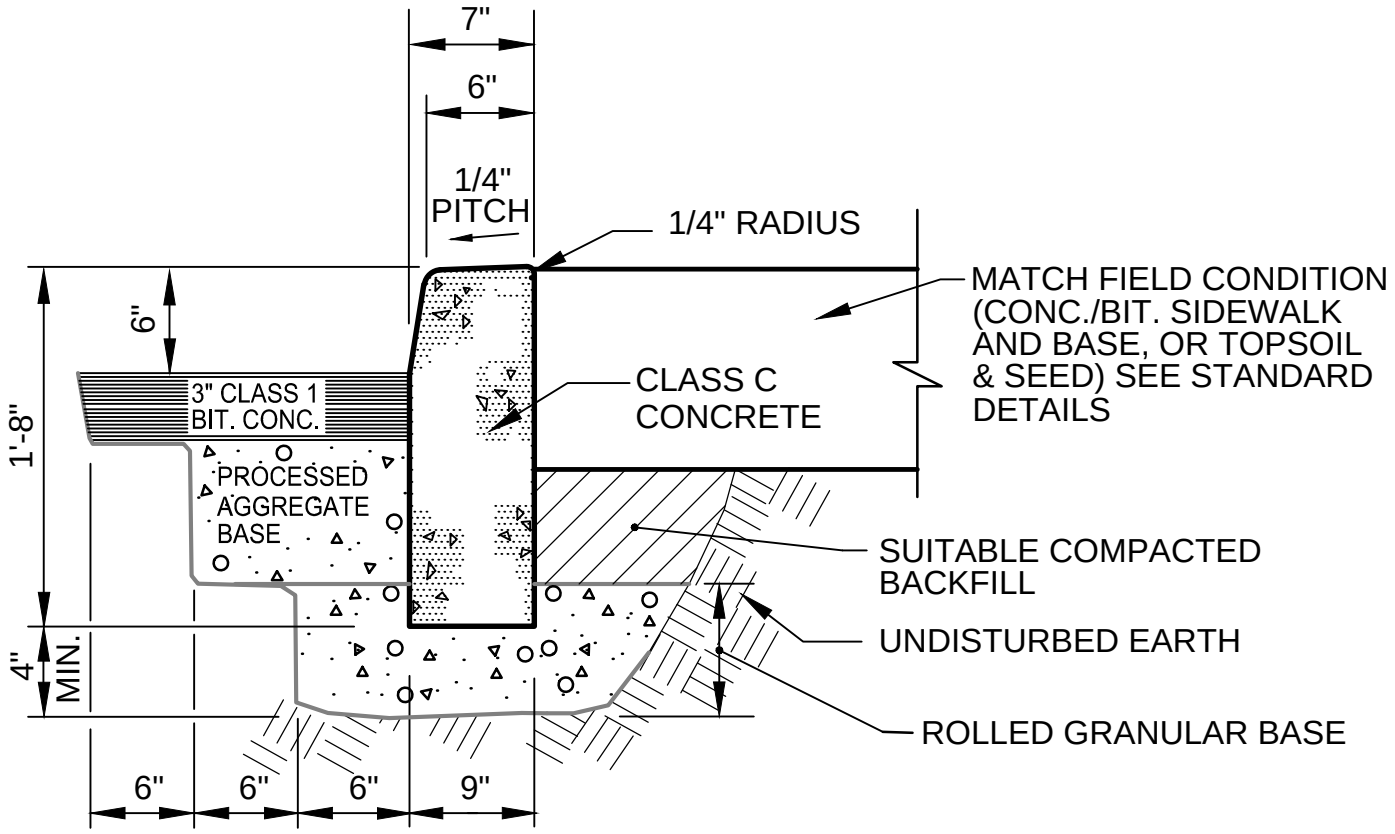


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CONCRETE SIDEWALK AND DRIVEWAY

NOT TO SCALE

SD-39



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CONCRETE CURB

NOT TO SCALE

SD-40

NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.

2. SIGNS (AA), (A), AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.

3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.

4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.

5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).

8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

10 SIGN (P) SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180' (55m)
35	250' (75m)
40	320' (100m)
45	540' (165m)
50	600' (180m)
55	660' (200m)
65	780' (240m)

METRIC CONVERSION CHART (1" = 25mm)

ENGLISH	METRIC	ENGLISH	METRIC	ENGLISH	METRIC
12"	300mm	42"	1050mm	72"	1800mm
18"	450mm	48"	1200mm	78"	1950mm
24"	600mm	54"	1350mm	84"	2100mm
30"	750mm	60"	1500mm	90"	2250mm
36"	900mm	66"	1650mm	96"	2400mm

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
NOTES

CONNECTICUT DEPARTMENT OF TRANSPORTATION
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APPROVED

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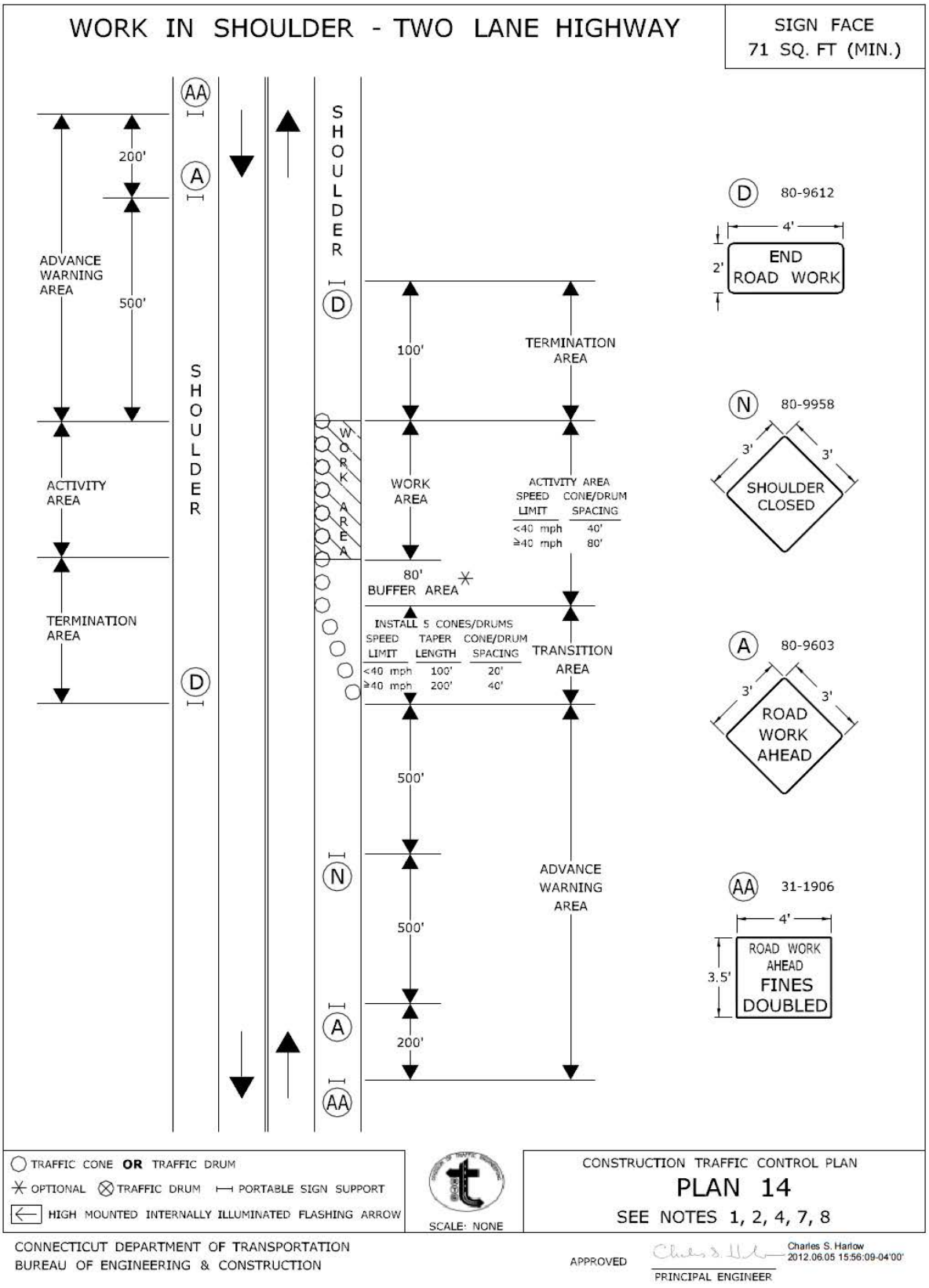
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MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
NOTES FOR TRAFFIC CONTROL PLANS

NOT TO SCALE

SD-41

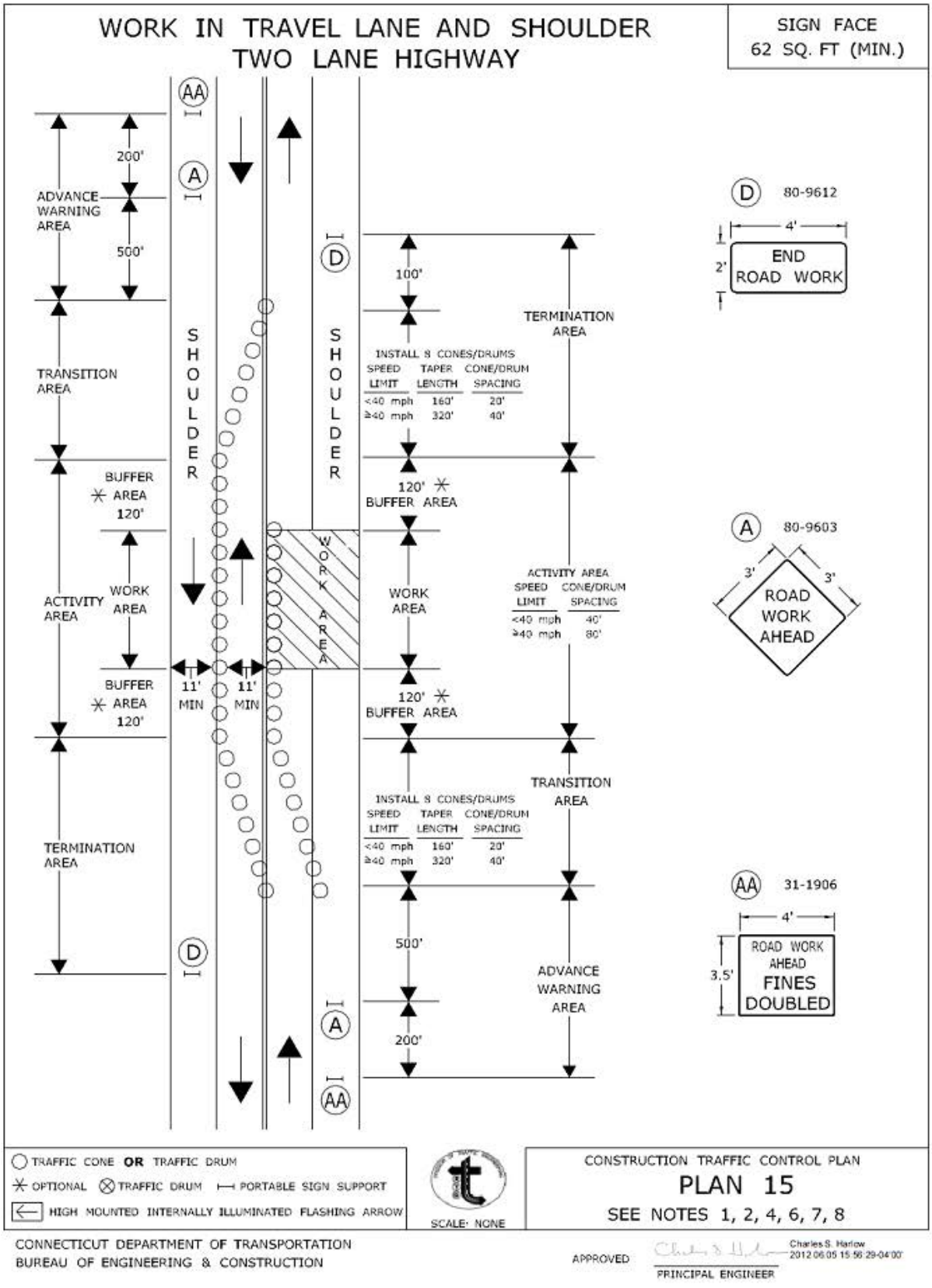


*REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

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Stewards of the Environment

MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN SHOULDER
(TWO LANE HIGHWAY)
NOT TO SCALE

SD-42



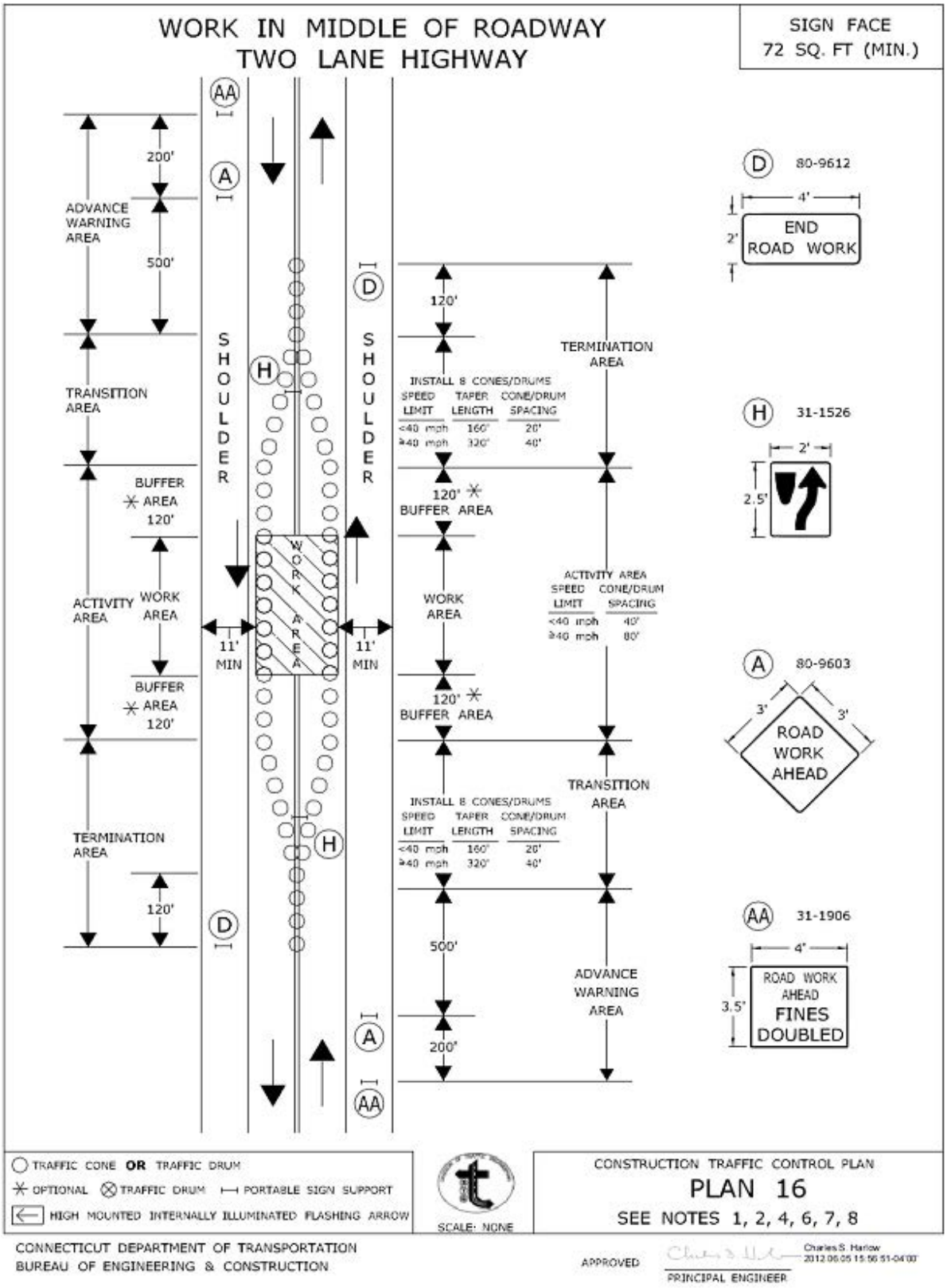
*REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

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MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN TRAVEL LANE AND SHOULDER (TWO LANE HIGHWAY)
NOT TO SCALE

SD-43



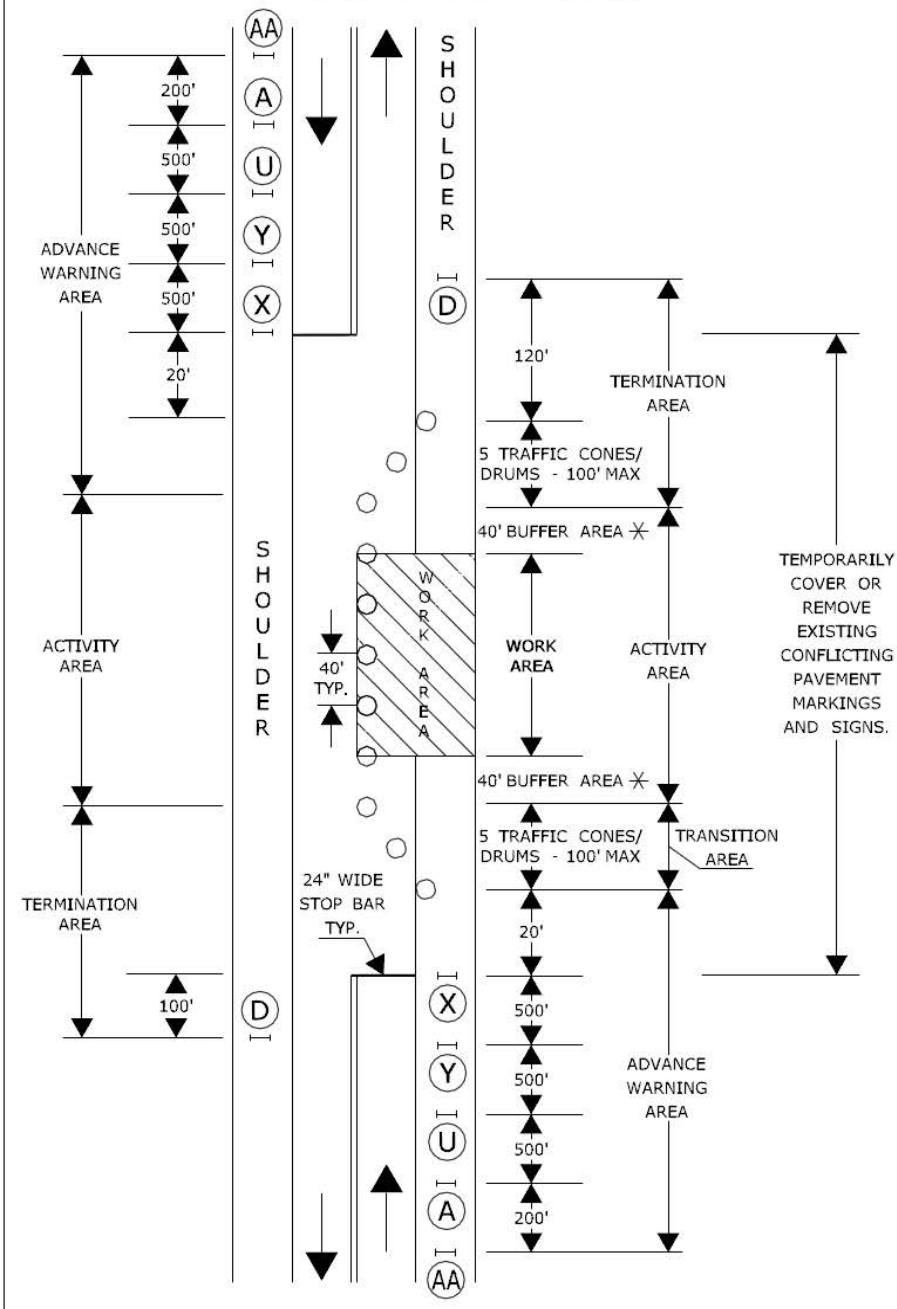
REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

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Stewards of the Environment

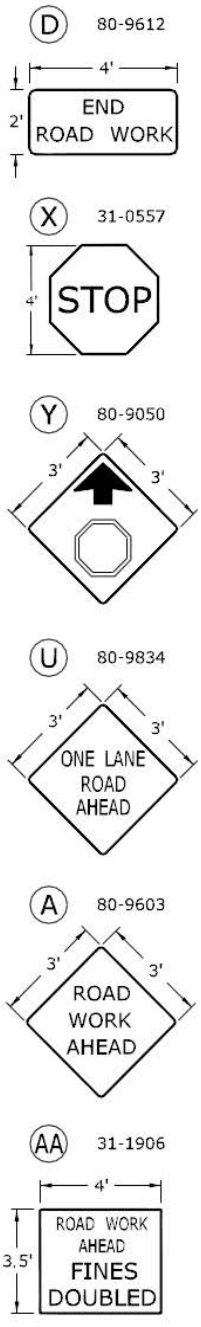
MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN THE MIDDLE OF ROADWAY
(TWO LANE HIGHWAY)
NOT TO SCALE

SD-44

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS
STOP SIGN CONTROL



SIGN FACE
125 SQ. FT (MIN.)



○ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 18
SEE NOTES 1, 2, 4, 7, 8

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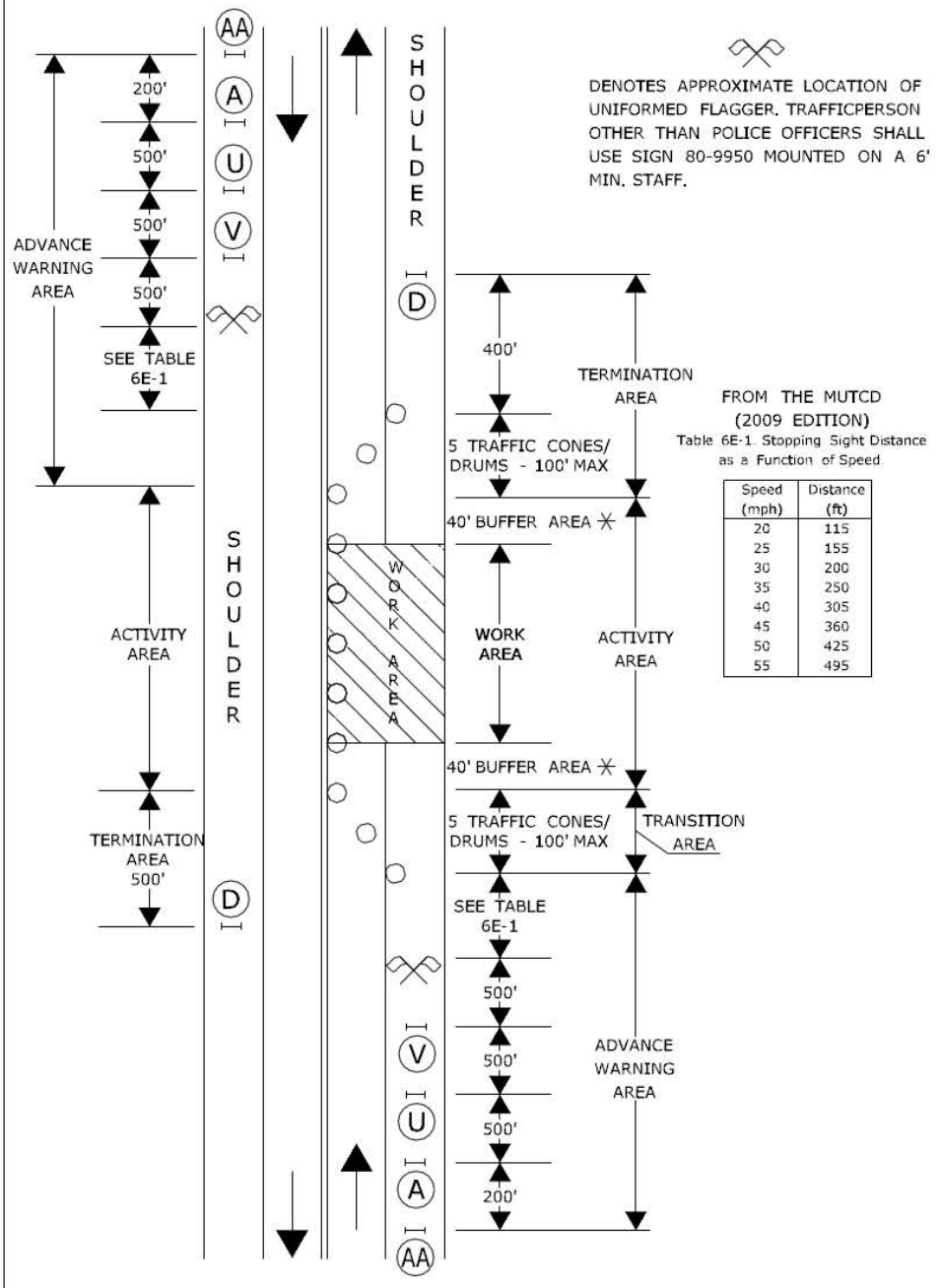
✳ REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

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Stewards of the Environment

MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN TRAVEL LANE AND SHOULDER
(TWO LANE HIGHWAY) ALTERNATING ONE-WAY
TRAFFIC OPERATION - STOP SIGN CONTROL
NOT TO SCALE

SD-45

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

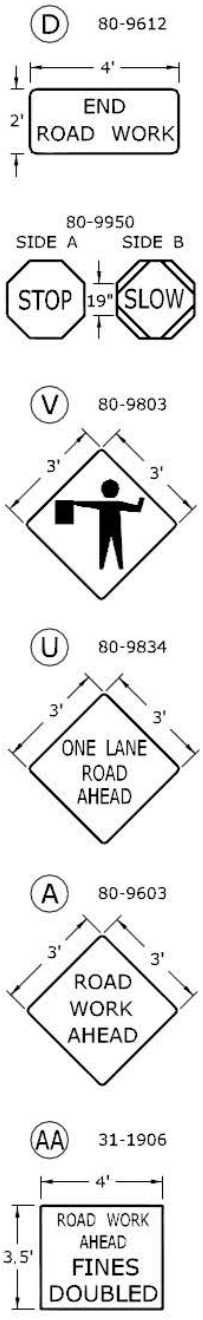


DENOTES APPROXIMATE LOCATION OF UNIFORMED FLAGGER. TRAFFICPERSON OTHER THAN POLICE OFFICERS SHALL USE SIGN 80-9950 MOUNTED ON A 6' MIN. STAFF.

FROM THE MUTCD (2009 EDITION)
Table 6E-1. Stopping Sight Distance as a Function of Speed

Speed (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495

SIGN FACE
108 SQ. FT (MIN.)



○ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
⇐ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 1 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
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✳REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

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MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN TRAVEL LANE AND SHOULDER
(TWO LANE HIGHWAY)
ALTERNATING ONE-WAY TRAFFIC OPERATION
NOT TO SCALE

SD-46

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPROACHING TRAFFIC.



B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.



C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.



◯ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢⊣ PORTABLE SIGN SUPPORT
⟵ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

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*REFER TO SD-41 "NOTES FOR TRAFFIC CONTROL PLANS"

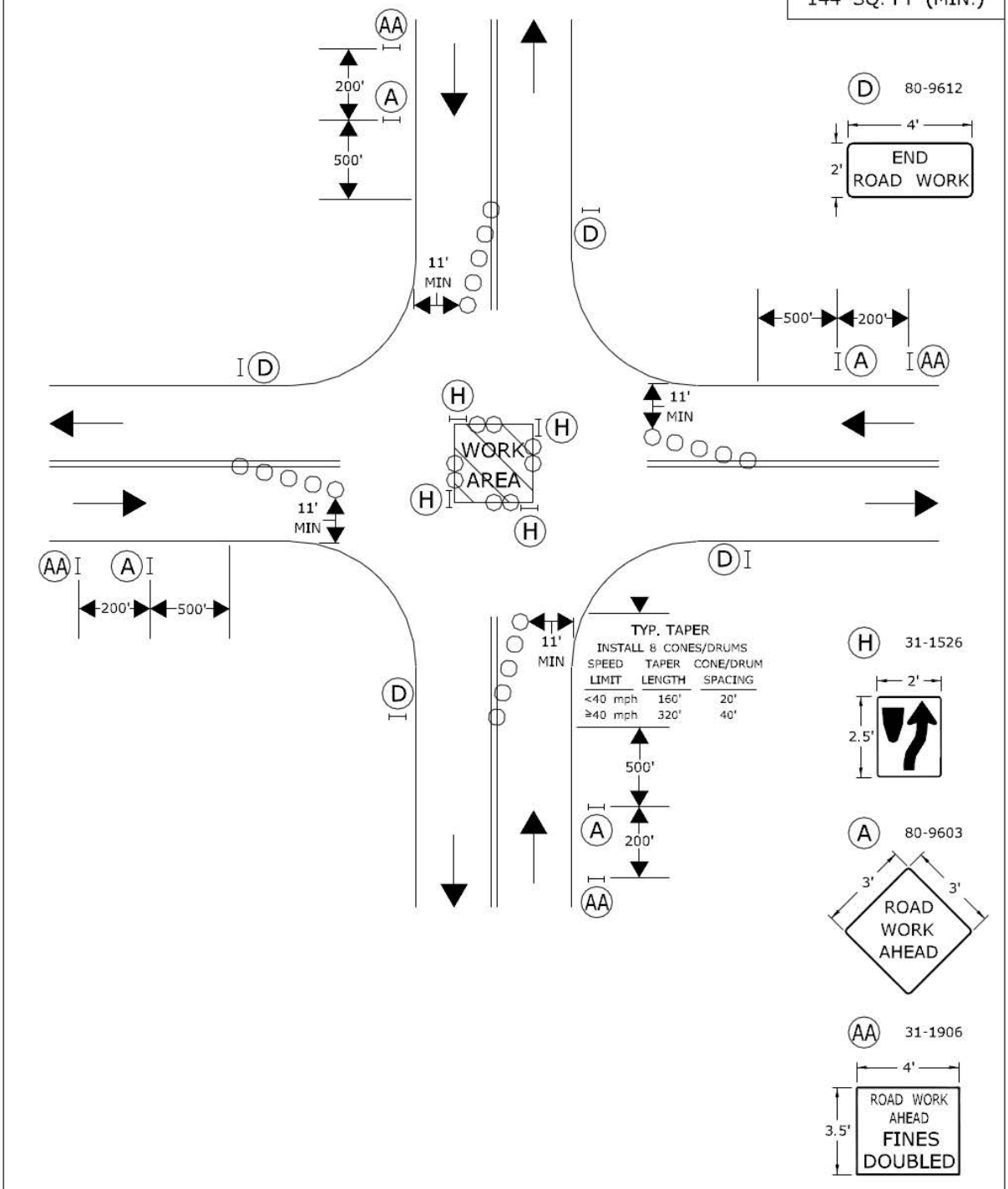
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MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN TRAVEL LANE AND SHOULDER
(TWO LANE HIGHWAY)
ALTERNATING ONE-WAY TRAFFIC OPERATION
NOT TO SCALE

SD-47

WORK IN MIDDLE OF ROADWAY AT INTERSECTION

SIGN FACE
144 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 17
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
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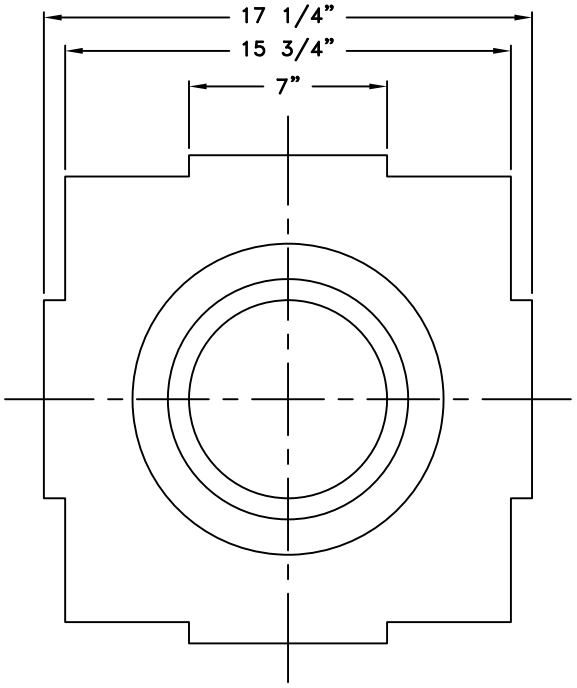
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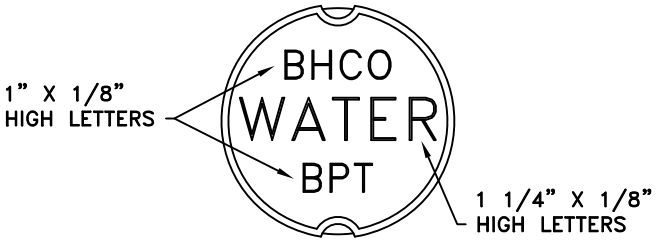
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Water Company
Stewards of the Environment

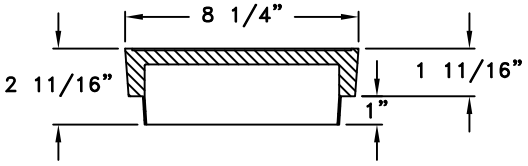
MAINTENANCE AND PROTECTION OF TRAFFIC PLAN
WORK IN THE MIDDLE OF INTERSECTION

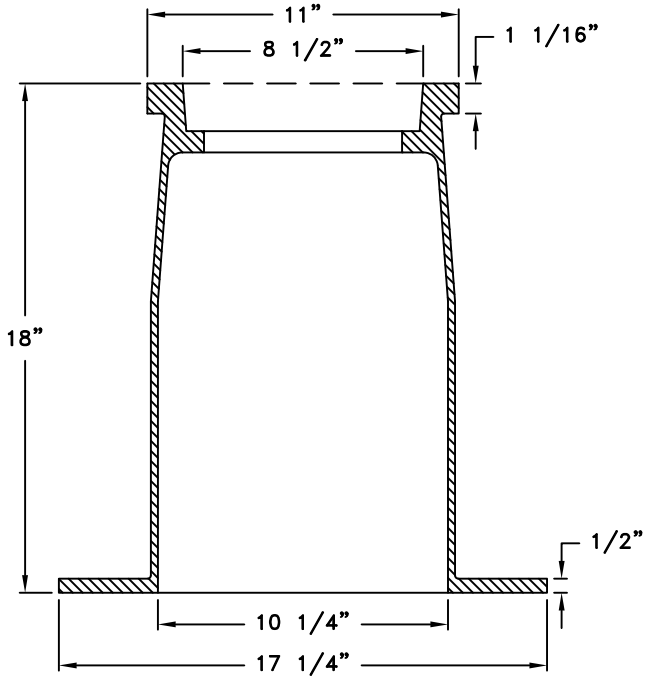
NOT TO SCALE

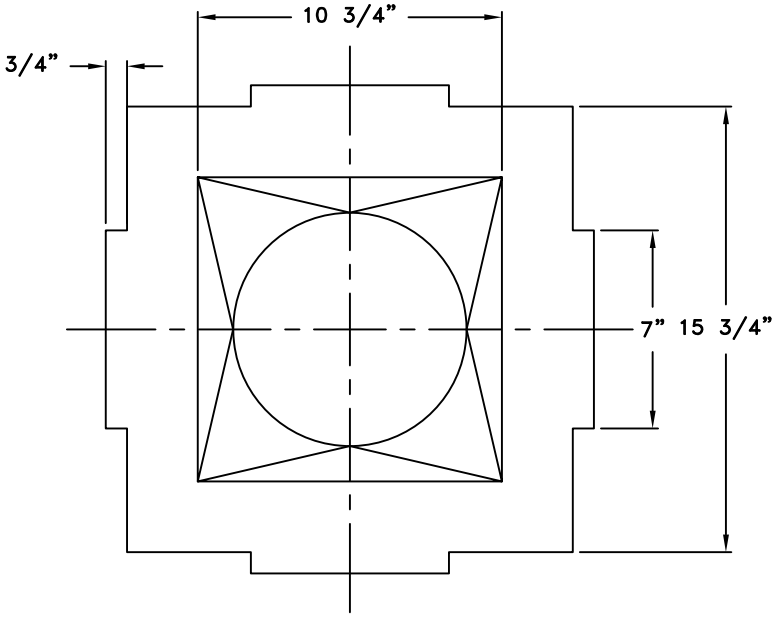
SD-48











MATERIAL: GRAY IRON CASTING
SPECS: ASTM A48, CLASS 30B
CASTING: PAINTED

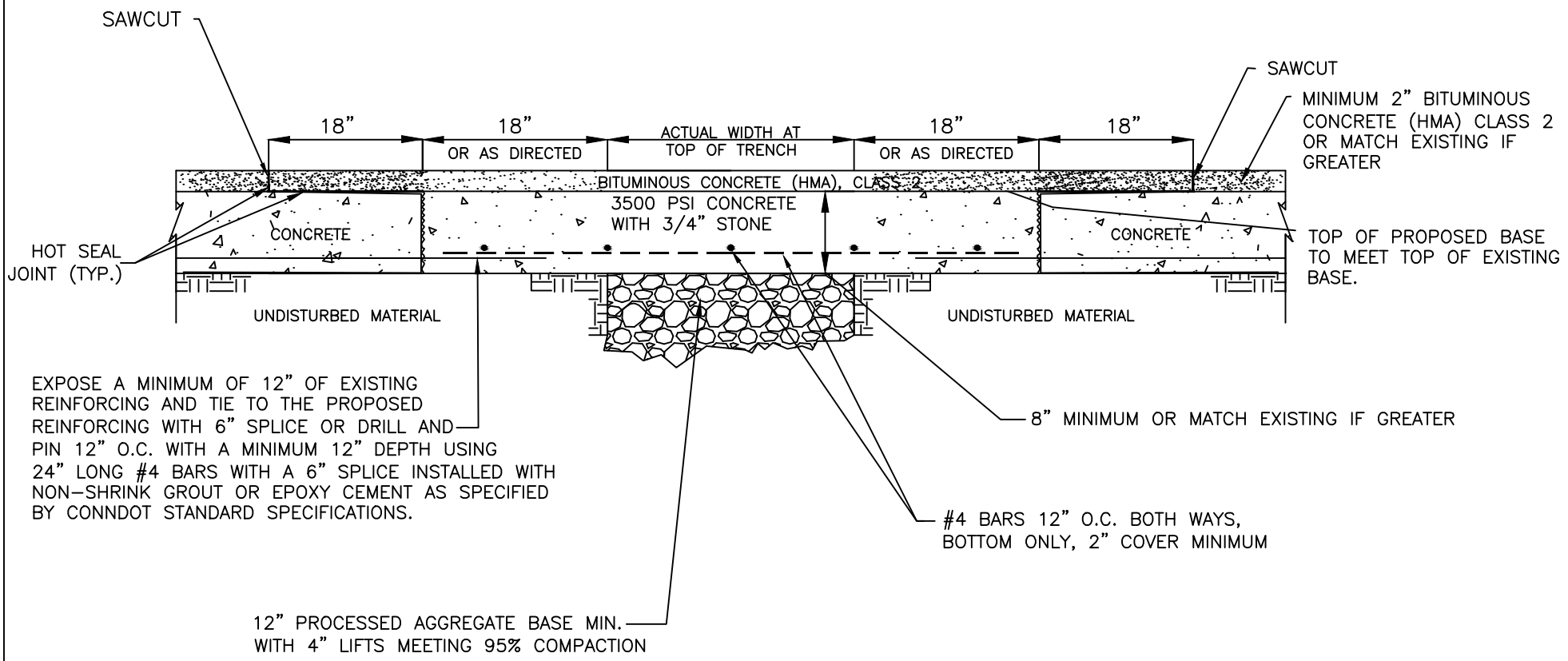
AQUARION Water Company
Stewards of the Environment™

BLOW-OFF BOX

SD-49

03/31/14

SCD No. 406.11



BITUMINOUS CONCRETE (HMA) ON CONCRETE PAVEMENT

NOTE:
PAVING WILL BE CURB TO CURB FOR LENGTH OF PROJECT WHEN ROADWAY HAS BEEN PAVED WITHIN THE LAST 5 YEARS OR HAS A PCI VALUE GREATER THAN OR EQUAL TO 80

STANDARD CONSTRUCTION DETAIL

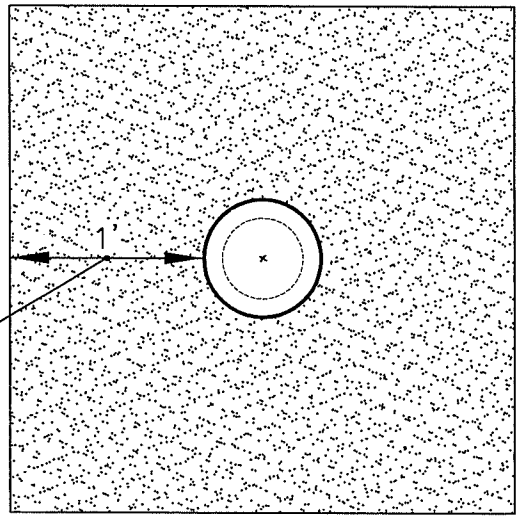
BITUMINOUS CONCRETE (HMA) ON CONCRETE PAVEMENT RECONSTRUCTION

TOWN OF GREENWICH, CONNECTICUT
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

SCALE = N.T.S.

01/09/19

SCD No. 406.09B



KEEP 1' MINIMUM DISTANCE (OR AS DIRECTED) AROUND VALVE FOR SQUARE PERMANENT PAVEMENT AREA

TOP VIEW

WORD "WATER" OR "GAS" ON COVER

TOP OF COVER & VALVE CAN IN PAVEMENT SHALL BE SET $\frac{1}{2}$" ± $\frac{1}{4}$" BELOW FINISHED GRADE UNLESS OTHERWISE DIRECTED.

NEAT SAWCUT EXISTING PAVEMENT AND HOT SEAL JOINT

EXISTING ROAD SECTION

EXISTING ROAD SECTION

12" PROCESSED AGGREGATE BASE MIN. WITH 4" LIFTS MEETING 95% COMPACTION

6" BITUMINOUS CONCRETE (HMA) CLASS 2 (UNLESS OTHERWISE SPECIFIED OR ORDERED)

GRANULAR BEDDING MATERIAL THOROUGHLY COMPACT WITH RAM OR PNEUMATIC TAMPER.

STANDARD CONSTRUCTION DETAIL

PERMANENT PAVEMENT REPAIR FOR UTILITY VALVES

TOWN OF GREENWICH, CONNECTICUT
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS

SCALE = N.T.S.

APPENDIX B

VALVE AND HYDRANT INFORMATION BY TOWN

AQUARION WATER COMPANY

VALVES & HYDRANTS BY TOWN

State	Town	Valve Direction of Opening Distribution System Only	Property Valve Direction of Opening Fire Lines	Manufacturer	Hydrant Thread Spec	Hydrant Direction of Opening	Hydrant Controlling Valve Direction of Opening	Hydrant Color Spec.	Hydrant Thread Specification & Designs
CT	Beacon Falls	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Bethel	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Bridgeport	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Brookfield	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Canaan	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Cornwall	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Danbury	OTR	OTL	Kennedy	DANBURY	OTL	OTR	Valdura Yellow W/Silver Bonnet	DANBURY: Pumper Special 4" NST & Side Nozzles are all NST
CT	Darien	OTL	OTR	Kennedy	DARIEN SPECIAL	OTL	OTL	Valdura Yellow W/Silver Bonnet & Caps	DARIEN: Kennedy K-81
CT	East Granby	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	East Hampton	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Easton	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Fairfield	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Georgetown	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Goshen	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Granby	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Greenwich	OTR	OTL	Kennedy	GREENWICH	OTL	OTR	Valdura Yellow W/Silver Bonnet &	GREENWICH: Kennedy K-81
CT	Groton	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
NH	Hampton	OTL	OTR	Mueller	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
MA	Hingham	OTR	OTL	Mueller	SPEC 2 - NST	OTR	OTR	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
MA	Hull	OTR	OTL	Mueller	SPEC 2 - NST	OTR	OTR	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Kent	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Lebanon	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Litchfield	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
MA	Millbury	OTR	OTL	Mueller	SPEC 2 - NST	OTL	OTR	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Monroe	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	New Canaan	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	New Fairfield	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	New Milford	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Newtown	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Norfolk	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	North Canaan	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
NH	North Hampton	OTL	OTR	Mueller	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Norwalk	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Oxford	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
MA	Oxford	OTL	OTR	Mueller	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Plainville	OTR	OTR	Kennedy	SPEC 2- NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Ridgefield	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
NH	Rye	OTL	OTR	Mueller	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Salisbury	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Seymour	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Sharon	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Shelton	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Sherman	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Simsbury	OTL	OTL	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Southbury	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Stamford	OTR	OTR	Kennedy	STAMFORD -	OTL	OTR	Valdura Yellow	STAMFORD: Pumper 4"x 5.110"x 4 TPI - Nozzles: NST
CT	Stonington	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Stratford	OTR	OTL	Kennedy	SPEC 1 - SPECIAL	OTL	OTR	Valdura Yellow	SPEC 1: Kennedy K-81
CT	Torrington	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Trumbull	OTR	OTL	Kennedy	SPEC 1 - SPECIAL	OTL	OTR	Valdura Yellow	SPEC 1: Kennedy K-81
CT	Washington	OTL	OTR	Kennedy	SPEC 1 - SPECIAL	OTL	OTL	Valdura Yellow	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	West. Suffield	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Weston	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Westport	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Wilton	OTR	OTL	Kennedy	SPEC 2 - NST	OTL	OTR	Valdura Yellow W/Silver Bonnet	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST
CT	Woodbury	OTL	OTR	Kennedy	SPEC 2 - NST	OTL	OTL	Red	SPEC 2 - Pumper (Steamer) & Side Nozzles are all NST

Kennedy Color Specs

Valdura Yellow(02)/Hydrant Yellow
Valdura Silver(04)/Aluminum
Red(01)/Hydrant Red

Revised: 6-28-2024

APPENDIX C

HYDRANT SPECIFICATIONS

AQUARION WATER COMPANY OF CONNECTICUT

HYDRANT SPECIFICATIONS 2016

DARIEN, CT

60560M423AWDARIEN
A423 5-1/4" 5'-0" FOOT BURY OPEN LEFT
VALDURA YELLOW WITH SILVER BONNET & CAPS
HOSE NOZZEL THREAD: 143116-80297
PUMPER NOZZLE THREAD: 143122-40494
1-1/2" PENTAGON OPERATING NUT
D150 SHOE LESS ACC. - S.S. FASTENERS - WITH CHAINS
STENCIL: **AQUARION WATER COMPANY - DARIEN, CT**

GREENWICH, CT

60560M423AWSGREEN
A423 5-1/4" 5'-0" FOOT BURY OPEN LEFT
VALDURA YELLOW WITH SILVER BONNET & CAPS
HOSE NOZZEL THREAD: NST
PUMPER NOZZLE THREAD: 143122-40500
1-1/2" PENTAGON OPERATING NUT
D150 SHOE LESS ACC. - S.S. FASTENERS - WITH CHAINS
STENCIL: **AQUARION WATER COMPANY - GREENWICH, CT**

STRATFORD, CT
TRUMBULL, CT

SPEC1 60560M423AWS1Y
A423 5-1/4" 5'-0" FOOT BURY OPEN LEFT
VALDURA YELLOW
HOSE NOZZEL THREAD: 143116-80307
PUMPER NOZZLE THREAD: 143122-40490
1-1/2" PENTAGON OPERATING NUT
D150 SHOE LESS ACC. - S.S. FASTENERS - WITH CHAINS
STENCIL: **AQUARION WATER COMPANY - SPEC ONE**

AQUARION WATER

CONNECTICUT
MASSACHUSETTS
NEW HAMPSHIRE

SPEC2 60560M423AWS2YS
A423 5-1/4" 5'-0" FOOT BURY OPEN LEFT
VALDURA YELLOW WITH SILVER BONNET - CT
RED - MA (HULL & HINGHAM OPEN RIGHT)
VALDURA YELLOW - NH
HOSE NOZZEL THREAD: NST
PUMPER NOZZLE THREAD: NST
1-1/2" PENTAGON OPERATING NUT
D150 SHOE LESS ACC. - S.S. FASTENERS - WITH CHAINS
STENCIL: **AQUARION WATER COMPANY - SPEC TWO**

NOTE: STANDARD HYDRANT BURY: CT-5'-0", MA-5'-6" NH-5'-6"

APPENDIX D

LIST OF APPROVED MATERIALS

AQUARION WATER COMPANY
LIST OF APPROVED MATERIALS

Material Specification	Approved Manufacturer	Mfg. Part #
Notes:		
Materials Must Be Manufactured in the USA or Canada.		
If an ARRA Project Materials Must Be Manufactured in the USA.		
All Stainless Steel hardware shall be Grade 304 or 316.		
The materials described in this list shall supersede any materials specified elsewhere.		
Revised: June, 2024.		
SECTION #1: DUCTILE IRON PIPE		
ANSI/AWWA C151-09/A21.5, Ductile Iron Pipe	McWane Pipe Company	Class 52 / 54 Tyton Joint
ANSI/AWWA C104-08/A21.4, Cement Mortar	American Cast Iron Pipe Company	Class 52 / 54 Tyton Joint
ANSI/AWWA C111-12/A21.22, Rubber-Gasket	Clow Pipe Company	Class 52 / 54 Tyton Joint
Nitrile Gasket	Griffin Pipe Company	Class 52 / 54 Tyton Joint
Joints for Ductile-Iron Pressure Pipe	United States Pipe & Foundry Company	Class 52 / 54 Tyton Joint
Class 52 / 54 Tyton Joint		
Pipe Shall be marked with Class, Manufacturer, Weight & Date of Manufacture		
SECTION #2: GATE VALVES: DUCTILE IRON		
ANSI/AWWA C509 ULFM	Clow Valve	2639-F6100
250 PSIG Max Working Pressure standard	Kennedy	8571D1
Full body, ductile iron	Mueller	A2362/A2361
Fusion Epoxy Coated	U.S. Valve & Hydrant Company	AUSP02
All hardware shall be Stainless Steel		
Mechanical Joint Connections		
See Table "Valves & Hydrants by Town"		
For HDPE projects, verify compatibility for connections to HDPE MJ Adapters and clearances between T-Bolts and Valve Body		
SECTION #3: BUTTERFLY VALVES		
ANSI/AWWA C504-10 Class 150B for Buried Service Only	Mueller	B3211 Lineseal III
Mechanical Joint Connections	Pratt	Groundhog
Fusion Epoxy Coated Inside & Out	Valmatic	Series 2100
Stainless Steel Shaft Type 304	M&H Valve	Series 4500
With 304 SS Fasteners		
See Table "Valves & Hydrants by Town"		
SECTION #4: VALVE BOXES		
ASTM A-48 Cast with 35B Class Cast Iron	Bibby St. Croix	700 Series
AASHTO H20 Wheel Load	Tyler Union	6855 Series
Type: 2 Piece Slip	Pioneer	S Series
Cover to read: "WATER"		
Top Section 26" with Bottom Flange		
Bottom Section 36"		
SECTION #5: MJ FITTINGS		
ANSI/AWWA C153-11/A21.53-06 and NFPA 3"-16" Listed (EX2111)	Tyler Union	C153 or C110
2" - 24" rated @ 350 psi; 30" - 48" & all fittings with Flanged branches rated @ 250 psi	United States Pipe & Foundry Company	C153 or C110
Asphalt Coating ANSI/AWWA C104-08/A21.4-08 - ANSI/AWWA C153		
Cement Lining ANSI/AWWA C104-08/A21.4-08		
Ductile Iron		
ANSI/AWWA C110-12/A21.10-08 and NFPA 3"-12" up Listed (EX2111)		
2" - 24" rated @ 350 psi; 30" - 48" all fittings with Flanged branches rated @ 250 psi		
Asphalt Coating ANSI/AWWA C104-08/A21.4-08 - ANSI/AWWA C153		
Cement Lining ANSI/AWWA C104-08/A421.4-08		
Ductile Iron		
Ductile Iron tapped tees		
As available Compact C-153 MJ Fittings are preferred over C-110		
SECTION #6: SERVICE (CURB) BOXES		
ASTM A-48 Cast with 358 Class Cast Iron	Bibby	94E
Type: 2 Piece Slip Buffalo Style 94E	Ford	94E
Cover to read: 'WATER'	McDonald	94E
Top Section 24"	Mueller Canada	94E
Bottom Section 39"	Tyler Union	94E
Enlarged Base Required for 2" Services		
SECTION #7: MJ & TYTON JOINT RESTRAINT	EBAA Iron, Inc.	MJ: 1100 Series Megalug
	EBAA Iron, Inc.	Tyton: 1700 Bell Harness
Design		
1. Restraint devices for nominal pipe sizes 3 inch through 48 inch shall consist of multiple gripping		
wedges incorporated into a follower gland meeting the applicable requirement of		
ANSI/AWWA C110/A21.20.		
2. The devices shall be working pressure rating of 350 psi for 3-16 inch and 250 psi for 18-48 inch.		
ratings are for water pressure and must include a minimum safety factor of 2 to 1 in all sizes		
Material		
1. Gland body, wedges, and wedge actuating components shall e cast from grade 65-45 12 ductile		
iron material in accordance with ASTM A536.		
2. Ductile iron gripping wedges shall be heat treated within a range of 370 to 470 BHN.		
3. Three(3) test bars shall be incrementally poured per production shift as per Underwriter's		
Laboratory (U.L.) specifications and ASTM A536. Testing for tensile, yield and elongation shall be done		
in accordance with ASTM E8.		
4. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society,		
on a per ladle basis.		
Traceability		
1. An identification number consisting of year, day, plant and shift &YYDDD (plant designation)		
(shift number), shall be cast into each gland body.		
2. All physical and chemical test results shall be recorded such that they can be accessed via the		
identification number on the casting. These Material Traceability Record (MTR's) are to be made		
available, in hard copy, to the purchaser that requests such documentation and submits his gland		
body identification number.		

3. Production pieces that are too small to accommodate individual numbering, such as fasteners		
, shall be controlled in segregate inventory until such time as all quality control tests		
are passed. These component parts may then be released to a general inventory for final		
assembly and packaging.		
4. All components shall be manufactured and assembled in the United States. The purchaser shall,		
with reasonable notice, have the right to plant visitation at his/her expense.		
Coatings:		
The coating system shall be MEGA-BOND by EBBA Iron, Inc.		
Zinc coating.		
SECTION #8: FIELD LOK GASKETS		
ANSI/AWWA/ C111-12/A21.11 Standard for	McWane Company	Sure Stop 350
Rubber Gasket joints for Ductile Iron	United States Pipe & Foundry Company	Field Lok/Field Lok 350
Pressure Pipe and Fittings		
SECTION #9: MJ ACCESSORY SETS (LESS GLANDS)		
Standard T-Bolts & Anti-Rotation T-Bolts	EBBA Iron, Inc.	ANSI/AWWA C111/A21.11
Corrosion Resistant, High Strength, Low-Alloy Steel in accordance with ANSI/AWWA C111/A21.11	Star Pipe Products	ANSI/AWWA C111/A21.11
	Tyler Union	ANSI/AWWA C111/A21.11
	United States Pipe & Foundry Company	ANSI/AWWA C111/A21.11
MECHANICAL JOINT GASKETS		
ANSI/AWWA C111-12/A21.11		
SECTION #10: TAPPING SLEEVES		
Stainless Steel Type AWWA C223-13 with MJ outlet	Mueller Company SS	H304MJ
The tapping sleeve body and neck shall be made of heavy 18-8 Type 304 stainless steel	Powerseal SS	3490 MJ
	Smith Blair SS	665 MJ
The Flange shall be 18-8 Type 304 stainless steel, AWWA C207 Class D (ANSI 150# drilling)	Total Piping Solutions Inc.	Triple Tap MJ Tapping Sleeve
and recessed to accommodate tapping valves. The bolts shall be 18-8 type 304 stainless steel		
with NC threads and epoxy coated. The nuts shall be 304 stainless steel, fluoropolymer		
includes stainless steel full seal tapping valves when tapping size on size.		
Steel Type AWWA C223-13 with MJ or Flanged Outlet	Powerseal CS	3460/3460MJ
The tapping sleeve shall have a body made of carbon steel per ASTM A283 C. The neck shall be	Smith Blair CS	622/622MU
carbon steel per ASTM A53. The flange shall be carbon steel A36. The flange drilling shall be per	Mueller	
AWWA C111 Ductile Fusion bonded Flexi-Coat epoxy per AWWA C213. Average of 12-mil thick,		
all fasteners must be stainless steel.		
SECTION #11: TAPPING VALVES		
ANSI/AWWA C515 ULFM (4"-12" Valves)	Clow Valve	2639-F6114
250 PSIG Max Working Pressure	Kennedy	8590D DI
Full Body - Ductile Iron	Mueller company	T2362/2361
Fusion Epoxy Coated	U.S. Valve & Hydrant Co.	TUSP02
All hardware shall be Stainless Steel		
MJxFLG Connection		
ANSI/AWWA C515 for 12"-18"Valves Only		
See Table "Valves & Hydrants by Town"		
***NO PAPER GASKET MATERIALS SHOULD BE USED		
SECTION #12: REPAIR CLAMPS		
Certified to NSF/ANSI 61-G	Ford	F1 CC4
The full circle repair clamp shall have an 18-8 Type 304 stainless steel band.	Mueller Company	500/504
Tapped sleeves are to be 1" CC thread	Powerseal	3121/3412AS
All hardware shall be Stainless Steel	Smith Blair	226/238
	Smith Blair	227/239
SECTION #13: CAST BOLT ON COUPLINGS AND END CAPS		
Certified to NSF/ANSI 61-G	Ford	FC2A
Meets applicable AWWA C219 Standards	Powerseal	3501
16" & Up must be Wide Type Band	Mueller	MFC
All hardware shall be Stainless Steel	Smith Blair	411/413/441/442
Hymax Grip: AWWA C219, NSF-61, NSF-372	Krausz	
Extended Range Transition Coupling (Unrestrained Connections Only)	Dresser Utility Solutions	TPS TX3
SECTION #14: SERVICE SADDLES		
Certified to NSF/ASI 61-G	Ford	F202
Meets applicable AWWA C800 Standards	Mueller	DR2A
Double Strapped with CC thread	Powerseal	3413
Fusion Bonded, Epoxy Coated	Smith Blair	313
Ductile Iron Body per ASTM A536	New Hampshire	317 SS
Must have Stainless Steel nuts, bolts and bands		
SECTION #15: FIRE HYDRANTS (CONNECTICUT)		
ANSI/AWWA C502 - ULFM Approved	Kennedy	K81D
5-1/4" Valve Opening	Mueller	Super Centurion 250
6" MJ D-150 Shoe Connection		
Connecticut Town Hydrants Open LEFT (See Table "Valves & Hydrants By Town)		
3 Way Design (Pumper & (2) Hose Nozzles) with Chains		
Hydrant fasteners are to be Stainless Steel		
Upper Section finish to be Factory Painted Coating Only		
Lower barrel to be Stenciled with:		
AQUARION WATER as well as with "SPEC ONE" or "SPEC TWO" and Distributor ID# for		
For Exact Town Spec and Color see Table "Valves & Hydrants by Town"		
SECTION #16: FIRE HYDRANTS (MASSACHUSETTS & NEW HAMPSHIRE)		
ANSI/AWWA C502 - ULFM Approved	Mueller	Super Centurion 250
5-1/4" Valve Opening		
6" MJ D-150 Shoe Connection		
For Direction of Opening see "Hydrants by Town" T-28 Revised 6/1/12		
3 Way Design (Pumper @ (2) Hose Nozzles) with Chains		
Hydrant fasteners are to be Stainless Steel		
Upper Section finish to be Factory Painted Coating Only		
Lower barrel to be Stenciled with:		
AQUARION WATER as well as with "SPEC ONE" or "SPEC TWO" and Distributor ID# for		
For Exact Town Spec and Color see Table "Valves & Hydrants by Town"		

SECTION #17: AIR VENT & BLOW-OFF ASSEMBLIES		
2" Angle Offset Ball Valve, 2" FIP Inlet X 2" MIP Outlet with Rectangular Operating Nut and Quarter Turn Positive Stop	Ford Meter Box Company	BLA18-C16609-001
Ductile Iron tapped tees	Tyler Union	C153
Air Vent / Blow-Off Boxes - Aquarion Standard Blow-Off Box See Appendix A - Aquarion Standard Details SD-49	General Foundries	BHCO BOX
SECTION #18: METER PITS		
1" Meter Pits:	Ford	PS BHC 488-20-48
Depth of bury = 52" as per Standard Detail	Mueller	330RS1854FFBN
Pit Size = 20"	McDonald	80-448WWPP 44 x 24
Meter Size: 1" or can be plumbed to reduce and accommodate 3/4", 5/8" x 3/4" or 5/8" x 1/2" meter		
Pit Material:		
Co-molded wall with insulated middle section. Black exterior with white interior.		
UV degradation protected. Nominal wall thickness (min.) = 1/2".		
Meter Box Cover is Ductile Iron with 15" non-recessed DI lid.		
Solid lids or lids with 1-3/4" hole are available for Reader "Touch Pads"		
Smooth wall interior/exterior. Vertical crush exceeds 20,000 lbs.		
360 degree anti-settling lip and thermal insulating pack internal shelf.		
2" Meter Pits:	Ford	PM BHC 788-36-48
Depth of bury = 52" as per Standard Detail		
Pit Size = 30"		
Meter Size: 2" x 17" typical meter or can be plumbed for 1-1/2" meter		
Pit Material:		
Co-Extruded PE Pit. Black exterior with white interior. UV degradation protected.		
Nominal wall thickness (min.) = 1/2".		
Meter Box Cover is Ductile Iron, 77 lb.		
Smooth wall interior/exterior. Vertical crush exceeds 20,000 lbs.		
Molded-in internal Anti-settling flange		
SECTION #19: BELL JOINT LEAK CLAMPS		
Ductile Iron Per A5TM 536	Ford	FBC
Pressure rated - 150 PSI (water)	Powerseal	3232
Fusion Epoxy Coated	Smith Blair	274
All hardware shall be Stainless Steel		
SECTION #20: SERVICE BRASS		
ANSI/AWWA C800	Cambridge Brass	Compression Type
Compression Joints	Ford	Compression Type
300 PSIG Max Working Pressure	AY McDonald	Compression Type
Corporations & Curb Stops are to be "Ball Type"	Mueller Company	Compression Type
Corporation Thread is to be CC (for DIP)		
Connections to IPS Polyethylene Tubing or Well Line	AY McDonald	Ranger Compression Coupling
	Cambridge Brass	Cambridge Coupling
SECTION #21: PRESSURE REDUCING VALVES & BACKFLOW PREVENTORS	Febco	
	Watts	
	Ames	
	Wilkins	
	Hersey	
	Cla-Val	
SECTION #22: IPS BRASS FITTINGS	Merit	Domestic Only
ANSI/ASME B16.15 & WW-P-460	Mueller Industries	Domestic Only
Fittings must be made from STM B584 Copper Alloy C84400	Lee Brass	Domestic Only
	SA	Domestic Only
SECTION #23: COPPER TUBING	Cambridge Lee	Type K- Soft
Copper Tubing to be Type "K" Soft	Cerro	Type K- Soft
ASTM B88 - USA & Canada Only	Halstead	Type K- Soft
	Howell	Type K- Soft
	Mueller Industries	Type K- Soft
SECTION #24: HYDROSTATIC TESTING	Great Lakes	Type K - Soft
Hydrostatic Testing per AWWA C600-05 Section 5.2, latest revision		
Please refer to Notice on Illegal Use of fire Hydrants		
Tester must be Certified and Comply with all OSHA Regulations		
State of CT DCP Licensing Required (P1, P6 or P7)		
SECTION #25: INSERTION VALVES	Team Industrial Services	Insert Valve
Material must be AWWA Specifications	Advanced Valve Technologies	EZ-2
Installer must be Licensed, Certified and Comply with all OSHA Regulations		
State of CT DCP Licensing Required (P1, P6 or P7)		
See Table "Valves & Hydrants by Town"		
All hardware shall be Stainless Steel		
Prior approval from Aquarion needed before any Contractor installs EZ-2 (Easy Valve)		
SECTION 26: MJ x MJ DI CONNECTOR (Foster Adapters)	Infact Corporation	
Ductile Iron 350PSI USA		

SECTION #27: MISC		
Portland Cement Type I - 94 lbs. Bags	Any	
Inverted Tip Marking Spray Paint - All Colors	Rustoleum	17oz
	Krylon	17oz
	Aervoe	17oz
Underground Marking Tape 2x1000' Detectable to read "WATER" in Blue	Any	
Traffic Cones are to be 28" orange with two (2) reflective bands	Any	
SECTION #28: HDPE PIPE	National Pipe and Plastics	
AWWA C906-15, ASTM D3350, ASTM F2620, ASTM F714, DR11, DIPS, Black with 2 or more Blue Stripes	Performance Pipe	
Resin Code PE4710, minimum cell classification of 445574C	JM Eagle	
	Flying W Plastics	
SECTION #29: HDPE FITTINGS		
Tees, Bends, Reducers, Solid Caps: butt fused directly onto HDPE pipe with electro fusion as an option.	Central Plastics (Georg Fischer)	
For service taps: Electrofused service saddles (2" with a 2" x 1" brass bushing), with IP corp. thread	Integrity Plastics (Div. of Brentwood Ind.)	
Mechanical stainless steel spring loaded saddles are allowable with AWC approval only.	HD Supply	
HDPE to Mechanical Joint Adapters with accessories.	Harrington Corporation	
Restraint rings for HDPE adapters shall be epoxy coated or stainless steel.	Tega	
For air vents/blowoffs: no tapped tees, 2" saddles (with 2" x 1" bushing as needed)	Specified Fittings	
electrofused directly onto HDPE pipe		
For tapping sleeves: electrofused directly onto HDPE pipe (stainless steel with MJ outlet as an option)		
For gate valves: AWWA C509 with HDPE to mechanical joint adapters		
For restraints: 2000 PV Series HDPE Restraints with stainless steel inserts as an option	EBAA Iron, Inc.	2000 PV Series
SECTION #30: TRACER WIRE	Agave Wire	
12 AWG or thicker, insulated copper, UL approved for direct burial		
Waterproof connectors	Dryconn or equal	
SECTION #31: POLYETHYLENE ENCASEMENT	United States Pipe & Foundry Company	V-BIO
SECTION #32: HDPE MARKING DEVICES		
Electronic Marking System (EMS) Caution Tape	3M	7903
Marker Balls	3M	1403-XR Extended Range

SUPPLEMENTARY TECHNICAL SPECIFICATIONS

Revised August 28, 2025

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SECTION 01710

EXISTING CONDITIONS

PART 1 GENERAL

1.01 WORK INCLDUED

A. The Contractor shall comply with the requirements and conditions specified in this Section including, but not necessarily limited to, soil and groundwater conditions, and existing structures, in order to execute the work necessary to properly construct the project as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, Standard General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SOIL AND GROUNDWATER CONDITIONS

A. The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics at the site of the project. The Contractor agrees that they will 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 their part of this Contract, or because of any failure on their part to fully acquaint themselves with all conditions relating to the work.

3.02 EXISTING STRUCTURES

A. All known surface and underground structures, except irrigation system, electric and telephone service connections, and water, gas and sewer service pipes, on or immediately adjacent to the work, are shown on the Contract Drawings. Sewer, drainage, water, and gas pipes, manholes, and similar structures, located in or adjacent to the location of the structures included in this Contract, are shown on the Contract Drawings. This information is shown for the convenience of the Contractor in accordance with the best information available, but is not guaranteed to be correct or complete. The Contractor shall explore the route ahead of trenching and shall uncover all known obstructing pipes sufficiently to determine their location. Necessary changes in location may be made by the Engineer to avoid unanticipated obstructions.

B. Wherever water or gas mains, electric or telephone ducts, or electric or telephone poles are encountered and may be in any way interfered with, the Contractor shall keep the involved utility company fully informed in advance. The Contractor shall cooperate with the utility company in the protection, removal, relocation, and replacement of such structures.

C. The Contractor shall, at their own expense, sustain in their places and protect from direct or indirect injury all utilities, pipes, poles, conduits, walls, buildings, and other structures and property in the vicinity of their work. Such sustaining and protecting shall be done carefully by the Contractor and as required by the party owning or controlling the structure. Before proceeding with such work, the Contractor shall satisfy the Engineer that the methods and procedures to be used have been approved by the party owning said structure. The Contractor shall take all risks attending the presence or proximity of pipes, poles, conduits, walls, buildings, wires, irrigation system or other structures, utilities, and property in the vicinity of their work, and they shall be responsible for all damage and assume all expense for direct or indirect injury caused by their work to any of them or to any person or property by reason of injury to them.

D. Guide rails, posts, guide cables, signs, poles, markers, mailboxes, fences, walls and stone walls, etc., which are temporarily removed to facilitate the work under this Contract, shall be replaced and restored in their original condition to the satisfaction of the Owner or Engineer.

E. The Contractor's attention is called to State of Connecticut Public Act 77-350 and 81-146 which states "No person, public agency or public utility shall engage in excavation without having first ascertained...the location of all underground facilities of public utilities in the area. (The Contractor) ...shall notify the central clearinghouse of such proposed excavation, at least 2 full days, excluding Saturdays, Sundays and holidays...before commencing...(the work)." The Call Before You Dig telephone number is 1-800-922-4455.

F. The Contractor shall, at their own expense, retain the services of a licensed surveyor to replace property markers, on or adjacent to privately owned property, which have been disturbed during the course of construction.

3.03 EXISTING UTILITIES

A. Contractor shall be especially cautious when excavating in the vicinity of existing utilities such as asbestos cement pipe, bituminized fiber (Orangeburg) pipe, clay tile pipe, PVC and Plastic pipe, or other non-metallic pipes as they are difficult to trace and easily damaged; and may not be accurately depicted on the Contract Drawings or other available plans.

END OF SECTION

SECTION 01780

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 DESCRIPTION

A. This section includes procedural requirements for compiling and submitting operation and maintenance data required to complete the project.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 OPERATION AND MAINTENANCE MANUALS

A. The Contractor shall provide the name and address of nearest vendor and all other data pertinent to procurement procedures.

B. The literature shall be clearly marked indicating the precise items, including model or series numbers, options, materials, accessories, etc. and deleting, or otherwise clearly indicating, all manufacturer's data with which this installation is not concerned.

C. The Instruction and/or Operation and Maintenance Manuals shall contain complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly and reassembly; complete listing of all parts of all equipment include part numbers of all replaceable parts; copy of all guarantees and warranties issued; manufacturer's bulletin cuts, and descriptive data, and such other data as required in pertinent sections of these Specifications.

3.02 DELIVERABLES

A. Operations and Maintenance Manuals shall be furnished to the Engineer prior to final payment.

B. Contractor shall furnish a single copy of all literature for all products incorporated in the work that require Instruction and/or Operations and Maintenance Manuals to the Engineer for review and approval.

C. Following approval, the Contractor shall provide to the Engineer five (5) printed copies each of Instruction and/or Operations and Maintenance Manuals for final approval and submittal to the Owner.

D. A single file containing a digital copy of the Operations and Maintenance Manual shall be submitted in PDF format, along with the printed copies.

E. The Contractor shall provide one (1) marked-up copy of plans showing any modifications or field changes to reflect the actual system as placed in operation at the time of start-up.

END OF SECTION

SECTION 01800

FACILITY OPERATIONS

PART 1 GENERAL

1.01 WORK INCLUDED

A. The Contractor shall comply with the requirements specified in this Section including, but not necessarily limited to start-up services, in order to execute the work necessary to properly complete the project as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting work of this Section include, but are not necessarily limited to, Standard General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications. and the following sections:
   1. Section 16000: Electrical Work.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 PROJECT COMPLETION

A. Start-up Services:
   1. The Contractor shall perform an operational test of the equipment and instrumentation furnished and/or installed under this Contract in the presence of the Engineer. The Contractor shall coordinate the start-up with the Owner and the Engineer. Aquarion's Supply Operations, Utility Operations, and System Integrator, if required, shall be kept fully informed of the startup schedule as their assistance and cooperation will be required.

   2. Factory-trained service engineers representing the major equipment and instrumentation manufacturers shall be present to perform pre-start-up and start-up checks; calibrate, adjust or make alterations as required during start-up; retest after making adjustments to verify alterations and adjustments; and instruct the Owner's personnel on proper operating and maintenance procedures. Representatives of the relevant subcontractors shall also be present to assist in making any adjustments.

   3. The Contractor shall assist the representatives of the equipment manufacturers in making all adjustments as required until the equipment is functioning properly as determined by the Engineer.

4. Any additional start-up services, required as a result of the Contractor's failure to properly perform the work, shall be paid for by the Contractor at no additional expense to the Owner.

END OF SECTION

SECTION 02200

SITE PREPARATION

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall furnish all labor, tools, materials, and equipment necessary to do all clearing, grubbing, stripping, and appurtenant work complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
1. Section 01560: Environmental Protection;
2. Section 02210: Test Pits;
3. Section 02220: Selective Demolition;
4. Section 02300: Earthwork;
5. Section 02900: Topsoil, Seeding and Plantings;
6. Section 02931: Live Sod.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SITE PREPARATION

A. Erosion and sedimentation controls shall be installed prior to commencing the work of this Section and be maintained during the entire work of the Contract.

B. Care shall be taken to prevent or reduce to a minimum any damage to any water body from pollution by debris, sedimentation, or other material or from manipulation of equipment and/or materials near such water bodies and on abutting property.

3.02 CLEARING AND GRUBBING

A. In general, clearing and grubbing limits shall not exceed more than 10' from the face of a structure or from any change in grading, unless otherwise permitted by the Engineer. Specific trees within or adjacent to the clearing and grubbing limits may be designated by the Engineer to be saved. The Contractor shall take all necessary precautions to protect said trees so identified and trees located outside of the clearing and grubbing limits, and should said trees be damaged by the Contractor, they shall be replaced at their expense.

B. Stumps within the limits of the structures shall be excavated and disposed of. All cleared and grubbed materials shall be removed from the site.

3.03 STRIPPING TOPSOIL

A. After clearing and grubbing are completed, all topsoil, but in no case less than 4" shall be stripped from all areas to be excavated or filled. The topsoil so stripped shall be stockpiled at a place on the site designated by the Engineer for use in final topsoiling operations.

END OF SECTION

SECTION 02210

TEST PITS

PART 1 GENERAL

1.01 WORK INCLUDED

A. The Contractor shall perform all excavation, backfill, and surface restoration as required for test pits where shown on the Contract Drawings or at locations requested by the Engineer where it may be necessary to locate or examine soils, groundwater, drains, pipes, rock, public utilities, subsurface structures, or any other possible obstacle or condition.

B. Test pits may be dug by the Contractor without being directed to do so in advance of the regular excavation for the purpose of satisfying himself as to the location of underground obstructions or conditions, but excavation and backfill of test pits will not be paid for unless authorized by the Engineer.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:
   1. Section 02300: Earthwork;
   2. Section 02740: Bituminous Concrete Pavement;
   3. Section 02900: Topsoil, Seeding and Plantings.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 COORDINATION WITH UTILITY OWNERS

A. The Contractor shall coordinate the excavation of all test pits with the respective utility owners having facilities in the vicinity of the location of test pits.

B. All utilities shall be informed of the necessity of work under this Section and the Contractor shall give sufficient notice to the respective utility owners to afford reasonable time for coordination.

C. Failure to perform test pits adequately in advance of scheduled work resulting in down time or additional work shall not be grounds for a change order.

3.02 EXCAVATION AND BACKFILL

A. Unless otherwise allowed, the Contractor shall dig test pits in the presence of the Engineer within said test pit areas.

B. Excavation of test pits shall be accomplished by such means as are required to ensure that any underground utilities or structures that may be encountered are not damaged.

C. It shall be the Contractor's responsibility for any damages incurred during the excavation operations. Any such damages shall be repaired by him (if permitted) to the satisfaction of the Responsible Agency at the Contractor's own expense. Where the repair and/or replacement must be done by the Responsible Agency, any and all costs thereof shall be borne by the Contractor.

D. The Contractor shall notify the Engineer and/or utility companies of any conflicts uncovered which may require design revisions, relocations and/or adjustment.

E. No work shall be started within these areas of conflict until so authorized by the Engineer.

F. Test pit excavation and backfill shall comply with the applicable provisions of Section 02300, Earthwork.

G. Hand excavation shall be performed where necessary to prevent damage to the existing utilities.

H. The Contractor shall assist the Engineer in measuring the size, configuration, horizontal and vertical location of all utilities, pipes or other obstacles uncovered in the various test pits dug under this Section. Where measurements are taken for use in ordering materials, the Contractor shall be responsible for obtaining and confirming all measurements and transmitting this information to materials suppliers; and he shall present this information to the Engineer for their record.

I. The Contractor shall obtain and record the following information from test pits unless otherwise directed by the Engineer:
   1. Horizontal location of the utility.
   2. Vertical depth of the utility.
   3. Dimensions of the utility.
   4. Type of pipe or material of construction of the utility.
   5. Outside diameter of water mains, especially for mains which will be tapped or connected to.

3.03 RESTORATION

A. Where existing pavement has been removed for the test pit excavation, the surface shall be restored per Section 02740, Bituminous Concrete Pavement.

B. Where grass has been disturbed for the test pit excavation, the surface shall be restored per Section 02900, Topsoil, Seeding and Plantings.

END OF SECTION

SECTION 02220

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 WORK INCLUDED

A. The work under this Section includes all labor, tools, equipment and materials necessary to perform selective demolition to remove structural, mechanical, and/or electrical items complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
   1. Section 01510: Temporary Facilities;
   2. Section 02300: Earthwork;
   3. Section 02740: Bituminous Concrete Pavement;
   4. Section 02900: Topsoil, Seeding and Plantings;
   5. Section 15100: Piping and Valves.

1.03 STANDARDS

A. The Contractor shall comply with the provisions of the following agencies as they apply to this project and as referenced:
   1. Associated General Contractors of America, Inc. (AGCA) "Manual of Accident Prevention in Construction".
   2. Occupational Safety and Health Administration (OSHA), United States Department of Labor Requirements.
   3. American National Standards Institute (ANSI) "Safety Requirements for Construction and Demolition".

1.04 COORDINATION

A. Owner and Engineer shall be contacted and advised of proposed work prior to the start of work by the Contractor. No demolition work shall proceed without the approval of Owner and Engineer.

B. Demolition shall be done in accordance with the Sequence of Construction included in Section 01320, Construction Schedules. Any deviation from the schedule shall be approved by the Owner and Engineer in advance of any demolition work.

1.05 PROTECTION OF EXISTING FACILITY

A. Contractor shall protect from damage all portions of the existing structure and equipment which are to remain or be salvaged.

1. Any damage to the items which are to remain or be salvaged, resulting from the selective demolition shall be replaced or repaired at Contractor's expense.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 SALVAGING OF EXISTING EQUIPMENT

A. The Owner may, prior to the Contractor removing any equipment, tag any equipment they wish to have returned to them. Any equipment so tagged shall be carefully removed by the Contractor and delivered to a facility selected by Aquarion. Compensation shall be included in the various items related to selective demolition and shall be based on a hauling distance of 20 miles.

B. All other equipment shall become property of the Contractor and shall be properly disposed of by him.

3.02 COORDINATION

A. The Owner shall coordinate disconnection and removal of all existing electric services. The Contractor shall arrange for all equipment to be removed and returned to the Owner of the equipment or disposed of as required.

B. The Owner shall coordinate disconnection and removal of the existing telephone service.

3.03 SELECTIVE DEMOLITION

A. Selective demolition Work shall be as required to install the new facility and appurtenances and/or as directed by the Owner.

B. Disposal of Materials:
1. All debris from the selective demolition shall be removed from the site and disposed of legally.
2. Contractor shall not dispose of demolition materials in wetlands or other areas prohibited by the Corps of Engineers, the State, the local Conservation Commission, or any other government agency having jurisdiction in such matters.

3.04 EXISTING STRUCTURES AND FACILITES

A. All items that are to be temporarily removed or relocated to allow removal and replacement of the specified equipment shall be protected from damage.
1. The Contractor shall reinstall all items in their original location at the completion of the Work unless otherwise instructed by the Owner or Engineer.

2. Items damaged by the Contractor during the course of work shall be replaced with new items at Contractor's expense.

B. Existing piping, both interior and exterior, beyond the limits of demolition shall be protected from damage during excavation, removal, installation of new piping, and backfilling. Any damage shall be repaired by Contractor at his expense, to the satisfaction of the Engineer.

3.05 BACKFILLING AND RESTORATION

A. Backfilling shall be as specified under Section 02300, Earthwork.

B. Pavement restoration shall be as specified under Section 02740, Bituminous Concrete Pavement.

C. Grassed areas shall be restored as specified under Section 02900, Topsoil, Seeding and Planting.

END OF SECTION

SECTION 02613

POLYETHYLENE ENCASEMENT

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall provide all labor, materials, tools, equipment, and incidentals required to furnish and install the polyethylene encasement complete, as specified herein, for all buried ductile iron water main piping and fittings to be installed as shown on the Contract Drawings.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
   1. Section 02300: Earthwork;
   2. Section 15100: Piping and Valves.

1.02 QUALITY ASSURANCE

A. Polyethylene encasement shall conform to the requirements of AWWA C105, latest revision.

1.03 SUBMITTALS

A. Comply with the pertinent provisions of Section 01300, Submittals.

1.04 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 POLYETHYLENE ENCASEMENT

A. Polyethylene encasement shall be manufactured of low-density polyethylene film with a nominal thickness of 8 mils, per AWWA C105, such as V-Bio Enhanced Polyethylene encasement.

B. Contractor shall provide the adhesive tape, plastic string, or any other material capable of holding the polyethylene encasement in place.

PART 3 EXECUTION

3.01 INSTALLATION

A. All buried ductile iron pipe and fittings shall be encased in a polyethylene encasement. Installation shall conform to the requirements of AWWA C105, latest revision. The installation is not intended to be a completely airtight and watertight enclosure. Overlaps shall be secured by the use of adhesive tape, plastic string, or any other material capable of holding the polyethylene encasement in place until backfilling operations are completed.

B. Any rips, punctures, or damage during installation shall be repaired prior to backfilling.

END OF SECTION

SECTION 02900

TOPSOIL, SEEDING AND PLANTINGS

PART 1 GENERAL

1.01 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, tools and equipment necessary to perform all vegetative surface restoration work including the preparation of the topsoil, application of seed, lime, mulching, watering, and all other operations necessary to provide a satisfactory growth of grass at the end of the one year maintenance period.

B. The Contractor shall furnish and install plants of the size and type, and at the locations shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:
1. Section 02200: Site Preparation;
2. Section 02300: Earthwork;
3. Section 02931: Live Sod.

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

1.04 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

B. Seed shall be delivered to the site in unopened containers with manufacturer's label attached.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: The Contractor shall use previously stockpiled topsoil and additional topsoil from outside sources. Topsoil shall be free of stones larger than 1", roots of a size that may be readily raked out, clumps of sod and other debris, but does not have to be screened.

B. Grass Seed: Grass seed shall be of the previous year's crop. It shall meet current standards of the Association of Official Seed Analysts. The seed mix shall be a

high quality Fescue and Bluegrass mix such as “Smart Seed Northeast Mix” by Pennington Seed, Inc. or approved equal.

C. Mulch: Mulch shall be 100% shredded cedar free from rot, leaves, twigs, shavings, debris and any material injurious to plant growth and 90% shall be chips of ¾ inch to 1 inch size. A suitable sample shall be provided to the Engineer for approval.

D. Plantings: The Contractor shall furnish plants of the size and type shown on the Sit Plan or Landscape Plan. Plants larger than specified may be used if approved by the Engineer. Use of such plants shall not increase the Contract price.

All plantings shall be furnished, installed, and maintained in conformance with the pertinent requirements of Section M.13.07 of the State of Connecticut Department of Transportation Form 818 and shall be nursery stock conforming to the Horticultural Standards of the American Association of Nurserymen as to grading, sizes and quality. The botanical and common names of plants required shall conform to the approved list of standardized plant names. Substitution will be permitted only upon written approval by the Engineer.

Plants shall be hardy under climatic conditions similar to those of the project location. Plants shall be typical of their species and variety, with normal habit of growth. Plants shall be sound, healthy, and vigorous, free from insects, pests and diseases, and have a well-developed root system.

Plants shall be subject to inspection and approval at the place of growth or upon delivery for conformity to specification requirements as to quality, size, and variety. Such approval shall not impair the right of inspection during the progress of the work, or the right of rejection. Rejected plants shall be removed immediately from the site.

PART 3 EXECUTION

3.01 TOPSOILING

A. Surfaces which are to be topsoiled shall be properly graded and prepared prior to placement of the topsoil. Topsoil shall be placed to a compacted thickness of 6" on all disturbed surfaces to be seeded.

B. The topsoil shall be lightly compacted by roller, and shall be raked to provide an even, smooth surface at the required slopes and grades immediately before seeding.

3.02 SEEDING

A. On all graded areas to be seeded, the Contractor shall grow an approved stand of grass.

B. Following the sowing of grass seed, the area shall be covered in landscape straw mulch to protect the soil and promote the establishment of a satisfactory growth of grass.

C. The Contractor shall apply lime and fertilizer as required to grow an approved stand of grass.

3.03 GRASS MAINTENANCE

A. Maintenance of grassed areas shall begin immediately following seeding. Seeded areas shall be protected by watering, and replanting, as necessary to obtain an acceptable sod throughout the one (1) year maintenance period.

B. Areas without acceptable sod at the end of the one (1) year period shall be replanted until satisfactory growth is obtained. The Engineer will be the sole judge of acceptance.

3.04 PLANTINGS

A. All planting methods shall be in accordance with the “American Standards for Nursery Stock”, latest edition, as published by the American Nursery and Landscape Association.

B. Plants shall be handled at all times in accordance with the best horticultural practices. Plants shall be dug with firm natural balls of sufficient diameter to encompass fibrous and feeding roots. Balls shall be protected from sun and wind.

C. Plant maintenance will be required for a period of one (1) year and shall consist of cultivating, weeding, watering, pruning, fertilizing, mulching, and other operations necessary to properly maintain plants.

D. Guarantee of new plant material shall be for the same period as maintenance. Replacement of any dead plant or any plant which, in the opinion of the Engineer, is unhealthy or unsightly shall be made as soon as seasonal conditions permit.

E. Planting pits for trees shall be 1 foot greater in diameter than the ball and sufficiently deep to allow for a six inch layer of topsoil beneath the ball.

F. Plants shall be set in the center of the pits or spread in beds. Plants shall be planted plumb and at the same level at which they had been grown. Plants, once set, shall be backfilled with topsoil, compacted and watered.

G. New plantings shall be sprayed immediately after installation with a white-tailed deer repellant. Spraying shall be continued by the contractor as needed for the remainder of the one (1) year maintenance period.

3.05 MULCH

A. Mulch shall be placed to the depth and limits described on the Site Plan or Landscape Plan, or as directed by the Engineer.

END OF SECTION

SECTION 03400

PRECAST CONCRETE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall provide a precast concrete chamber, complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
1. Section 02300: Earthwork;
2. Section 03300: Cast-In-Place Concrete;
3. Section 05500: Miscellaneous Metals;
4. Section 07130: Waterproof Membrane;
5. Section 07210: Rigid Insulation.

1.03 QUALITY ASSURANCE

A. Manufacturer shall be a member of the Precast/Prestressed Concrete Institute and PCI certified.

B. All materials used for concrete shall conform to the requirements of Section M.03, Portland Cement Concrete, and reinforcement shall conform to the requirements of Article M.06.01, Reinforcing Steel, of the Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 818.

C. Precast units not conforming to the dimensions shown on the Contract Drawings or that are cracked, show evidence of honeycomb, or have over 10% of their surface area patched may be subject to rejection, even though meeting other requirements.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

B. The precast concrete structure shall conform to the details shown on the Contract Drawings. Design shall be submitted to the Engineer for approval.

C. Buoyancy and design calculations for the precast concrete structure shall be submitted to the Engineer for approval.

1.05 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 PRECAST CONCRETE CHAMBER

A. The concrete base shall be of approved design and of sufficient strength to withstand the loads to be imposed on it.

B. The precast concrete chamber shall be designed for an AASHTO H-20 loading.

C. Chamber drain, and openings shall be provided as shown on the Contract Drawings or as required.

D. The pertinent provisions of Section 6.01 Concrete for Structures, of the Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 818, shall apply except that the concrete shall contain 5.0% - 8.0% entrained air. Water-absorption of individual cores taken from the precast units shall be not more than 7.0%.

E. Suitable provision shall be made in casting the units for convenient handling of the completed casting, and additional reinforcement steel shall be provided to allow for such handling in the casting yard and during transportation and placement. Each completed unit shall be identified with the name of manufacturer and date of the concrete pour from which it was cast, either by casting this information into an exposed face of the unit or by suitable stencil.

F. Aluminum access hatch(es) as specified under Section 05500, Miscellaneous Metals, shall be cast into the slab top as shown on the Contract Drawings.

G. Davit sleeve as specified under Section 05500, Miscellaneous Metals, shall be cast into the slab top as shown on the Contract Drawings.

2.02 JOINT SEALANT

A. Joint sealant shall be EZ-Stick Premium Butyl Joint Sealant as manufactured by Press-Seal Corporation, or approved equal. The joint sealant shall be butyl-rubber based and shall be permanently flexible and resistant to moisture and deterioration by exposure to dilute chemical solutions.

2.03 PIPE PENETRATION SEALS

A. Flexible Sleeves:
   1. Flexible sleeves shall be Econoseal boot connectors as manufactured by Press-Seal Corporation, Fort Wayne, Indiana, or approved equal. The flexible sleeves shall consist of a rubber gasket and two external take-up clamps. Sleeve shall be sized to match the ductile iron pipe which it is to receive.

2. The rubber gasket element shall be constructed solely of synthetic or natural rubber, and shall meet the requirements of ASTM C923. The sleeve casting mandrel system shall include a precisely-formed opening in the concrete for installation of a replacement sleeve in the event that the cast-in sleeve becomes damaged.
3. The external take-up clamp shall be constructed of Series 300 non-magnetic stainless steel and shall utilize no welds in its construction.
4. The sleeve shall be designed to provide a seal capable of withstanding a hydrostatic pressure of 13 psi and shall accommodate deflection of the pipe up to 7 degrees without loss of seal when properly installed.

B. Modular Seals:
1. Upon approval from AWC, Link-Seals shall be used in the place of flexible sleeves. Link-Seals shall be Model S-316 as manufactured by Trumbull Industries, Inc. All bolts and nuts shall be Type 316 Stainless Steel.

2.04 BEDDING

A. The bedding for the precast concrete chamber shall be 3/4" crushed stone as specified under Section 02300, Earthwork.

PART 3 EXECUTION

3.01 INSTALLATION

A. Chamber:
1. As shown on the Contract Drawings, there shall be a minimum 6" base of crushed stone bedding beneath the precast concrete chamber. The precast base shall be set at the proper grade and aligned.
2. Butyl joint sealant or other approved gasket material shall be provided for all joints. Lifting holes shall be sealed tight with solid rubber plugs driven into the hole and the remaining void filled with cement mortar. The structure shall be free from visible leakage. Any leakage shall be satisfactorily repaired at the Contractor's expense.
3. Waterproof membrane specified under Section 07130, Waterproof Membrane, shall be applied to the exterior of the precast concrete chamber to the limits shown on the Contract Drawings, prior to backfilling.
4. Rigid Insulation specified under Section 07210, Rigid Insulation, shall completely cover the waterproof membrane prior to backfilling. Care shall be taken when backfilling and compacting near the insulation so as not to disturb the insulation.
5. Backfilling shall be as specified under Section 02300, Earthwork.
6. Cast-in-place concrete fill shall be cast only after the precast chamber is set in its final position to insure that the floor slopes properly to the sump. Concrete shall be as specified under Section 03300, Cast-in-Place Concrete.

B. Flexible Sleeves:
1. Installation, including casting procedure and clamping, shall be in strict conformance with the recommendations of the manufacturer. The clamp

shall be tightened over the pipe by torqueing the adjusting screw using a torque-setting wrench available from the connector manufacturer.

2. The void on the interior of the chamber, between the pipe and flexible sleeve, shall be completely and neatly filled with non-shrink grout following complete installation and testing of the piping and backfilling of the chamber.

C. Modular Seals:

1. Installation shall be in strict conformance with the recommendations of the manufacturer. The bolts shall be tightened with a torque-setting wrench. The modular seals shall be installed with the bolt heads on the interior of the chamber to allow for adjustment, tightening or replacement after the chamber has been backfilled.

END OF SECTION

SECTION 05500 MISCELLANEOUS METALS - LADDER

Remove this page and Section 05500 Miscellaneous Metals – Stairs when using this Section

SECTION 05500

MISCELLANEOUS METALS - LADDER

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall supply all labor, tools, materials, and equipment necessary to furnish and install the aluminum access hatches, safety net, davit sleeve, ladder safety posts, aluminum ladders, adjustable pipe supports, expansion bolts, and miscellaneous steel, complete as shown and specified.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:
   1. Section 03300: Cast-In-Place Concrete;
   2. Section 03400: Precast Concrete;
   3. Section 09900: Painting;
   4. Section 15100: Piping and Valves.

1.03 WORK NOT INCLUDED

A. Steel reinforcing shall be specified under Section 03300, Cast-in-Place Concrete.

1.04 QUALITY ASSURANCE

A. General:
   1. Set work accurately into position, plumb, level, true, and free from rack.
   2. Anchor firmly into position.
   3. Where field welding is required, comply with the American Welding Society (AWS) recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for methods to be used in correcting welding work.
   4. Grind exposed welds smooth, and touchup shop prime coats.
   5. Do not cut, weld, or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or screwed field connections.
   6. All anchor bolts, bolts and nuts required to support miscellaneous work shall be furnished and installed as required.

B. Fabrication: Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

C. Warranty:
   1. Manufacturer of the access hatch shall guarantee against defects in material or workmanship for a period of five (5) years.

2. Safety netting shall carry a five (5) year guarantee against defects in material and workmanship.

1.05 SUBMITTALS

A. Submittals shall comply with pertinent provisions of Section 01300, Submittals.

1.06 PRODUCT HANDLING

A. Handling of products shall comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Aluminum Access Hatches: Aluminum access hatches shall be as manufactured by East Jordan Iron Works (EJ), or The Bilco Company, New Haven, Connecticut. No other substitutions will be accepted.

B. Safety Grating: The Contractor shall furnish and install fall protection safety grating in each of the access hatches. The grating panels shall be aluminum with a powder coat finish that is safety yellow in color. The safety grating panel shall be designed to meet the requirements of OSHA standard 29 and be equipped with a hold open device to lock the grating in the open position. Hold open device and all hardware shall be Type 316 stainless steel. The safety grating shall be of the same manufacturer of the access hatch.

C. Davit Sleeve and Cap: Davit sleeve and cap shall be manufactured by DBI SALA. As these items must be compatible with the Owner's existing equipment, no substitutions are allowed.

D. Aluminum Ladders: Ladders shall be as manufactured by Precision Ladders, LLC, Morristown, TN or an approved equal.

E. Ladder Safety Post: Ladder safety post shall be manufactured by The Bilco Company, New Haven, Connecticut or approved equal.

F. Pipe Supports: Pipe stands shall be manufactured by Material Resources or approved equal.

G. Expansion Bolts: Expansion bolts shall be as supplied by HILTI Incorporated, Stamford, Connecticut, or approved equal.

H. Insect Screen: Insect screen shall be manufactured TWP Inc., or approved equal.

2.02 MATERIALS

A. Aluminum Access Hatch:
1. Access hatch shall be constructed of Aluminum, have 1/4" aluminum diamond pattern plate doors, and constructed to withstand AASHTO H-20 loading. Channel frame shall be 1/4" aluminum with an anchor flange around the perimeter and 1 1/2” drain coupling in the bottom of the channel.
2. Access hatch shall be of the dimensions necessary to provide a clear opening shown on the Contract Drawings.
3. The door shall be insulated with 2-inch rigid urethane, covered and protected by an aluminum liner.
4. The door shall be equipped with heavy forged type 316 stainless steel hinges, with stainless steel pins; compression spring operators enclosed in telescopic tubes for smooth, easy and controlled door operation; and automatic hold-open arm with release handle.
5. Snap lock with fixed handle mounted on the underside of one leaf shall be provided. A removable handle for operation of the snap lock from the exterior shall be provided.
6. A recessed padlock hasp covered by a hinged lid flush with the surface shall be provided. Padlock boxout area shall be oversized to accept the AWC Standard Master Padlock (Masterlock Pro Series 6721).
7. A bituminous coating shall be applied to all aluminum surfaces which come in contact with concrete.
8. Hardware shall be stainless steel with factory applied mill finish.

B. Fall Prevention Safety Grating:
1. Safety grating shall be aluminum with a powder coat finish that is safety yellow in color. Hold open device and all hardware shall be stainless steel.
2. Safety net shall meet all applicable OSHA requirements.

C. Davit Sleeve and Cap:
1. Davit sleeve shall be Model No. 8512828 Stainless Steel flush floor mounted sleeve.
2. Sleeve cap shall be Model No. 8510827 Stainless Steel Heavy Duty sleeve cap.

D. Aluminum Ladder:
1. Ladders shall be constructed entirely of aluminum except for fasteners which shall be stainless steel. Aluminum ladders shall comply with OSHA Standards - 29 CFR 1910.23. Aluminum ladders shall have a mill finish.
2. The aluminum rungs shall have serrated safety surface for slip resistance and capable of supporting a minimum load of 250 lbs applied in the middle of the rung.
3. A bituminous coating shall be applied to all aluminum surfaces which come in contact with concrete.
4. Ladders shall be capable of supporting at least two (2) loads of 250 lbs each, concentrated between any two consecutive attachments.

E. Ladder Safety Post:
   1. Ladder safety post shall be constructed of type 304 stainless steel, such as Model LU-3 LadderUp by Bilco.
   2. Tubular post manufactured of high strength square tubing shall lock automatically when fully extended. Safety post shall have controlled upward and downward movement.
   3. Release level shall disengage the post to allow it to be returned to its lowered position.
   4. A pull loop shall be provided at the upper end of the post to facilitate raising the post.
   5. All mounting hardware shall be Type 316 stainless steel.

F. Pipe Supports:
   1. Adjustable stands for supporting the piping and valves shall be Type 304 stainless steel Standon adjustable pipe supports.

G. Expansion Bolts:
   1. Expansion bolts shall be HILTI - Stainless Steel Kwik-Bolts.

H. Insect Screen:
   1. Insect screen shall be Type 316 Stainless Steel with a mesh size of 24 per inch and a wire diameter of 0.0140 inches (#24 mesh).

I. Miscellaneous Fasteners:
   1. Bolts, nuts, washer and other fasteners, unless otherwise shown or specified, shall be stainless steel.

J. Miscellaneous Structural Steel:
   1. Miscellaneous structural steel shall include: steel plates, angles, channels, beams, straps and all other steel shapes as shown on the Contract Drawings. Steel shall conform to ASTM A 36 and shall be fabricated to the dimensions shown on the Contract Drawings or as required.

PART 3 EXECUTION

3.01 INSTALLATION

A. Aluminum Access Hatches: The access hatches shall be cast into the top section of the precast concrete chambers. Installation shall be in accordance with manufacturer's instructions. Channel frame drain coupling shall be connected to a PVC drain pipe.

B. Safety Grating: Safety grating shall be anchored the concrete of the access hatch opening using wedge-style concrete anchors per the manufacturer’s recommendations. Placement of the grating shall not interfere with the operations of the access hatch or infringe upon access to the ladder.

C. Davit Sleeves: Davit sleeves shall be cast into the concrete as shown on Contract Drawings. Top of davit sleeves shall be flush with top surface of the concrete so as not to present a tripping hazard. The sleeve cap shall be installed in the sleeve and tightened in place.

D. Aluminum Ladder: The ladders shall be properly attached to the concrete wall and floor with stainless steel expansion bolts and adjustable mounting brackets spaced as recommended by the manufacturer.

E. Ladder Safety Post: Ladder safety post shall be affixed to the aluminum ladder rungs between the rungs and the chamber wall. Installation shall be in strict accordance with the manufacturer's recommendations.

F. Adjustable Pipe Supports: Pipe supports shall be set in place following installation of the piping and adjusted to provide proper support of pipes and valves. The base plates shall be anchored to the concrete floor using appropriately sized expansion bolts.

G. All anchor bolts, bolts, and nuts required to support miscellaneous work shall be furnished and installed as required.

3.02 FABRICATION

A. Miscellaneous Structural Steel: All welding shall conform to the requirements of the AWS. Steel shall be shop primed with a rust inhibiting primer that is compatible with the field coatings specified in Section 09900, Painting.

END OF SECTION

SECTION 05500 MISCELLANEOUS METALS - STAIRS

Remove this page and Section 05500 Miscellaneous Metals – Ladder when using this Section

SECTION 05500

MISCELLANEOUS METALS - STAIRS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall supply all labor, tools, materials, and equipment necessary to furnish and install the aluminum access hatch, safety net, davit sleeve, aluminum stairway, adjustable pipe supports, expansion bolts, and miscellaneous steel, complete as shown and specified.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
   1. Section 03300: Cast-In-Place Concrete;
   2. Section 03400: Precast Concrete.
   3. Section 09900: Painting;
   4. Section 15100: Piping and Valves;

1.03 WORK NOT INCLUDED

A. Steel reinforcing shall be specified under Section 03300, Cast-in-Place Concrete.

1.04 QUALITY ASSURANCE

A. General:
   1. Set work accurately into position, plumb, level, true, and free from rack.
   2. Anchor firmly into position.
   3. Where field welding is required, comply with the American Welding Society (AWS) recommended procedures of manual-shielded metal-arc welding for appearance and quality of weld and for methods to be used in correcting welding work.
   4. Grind exposed welds smooth, and touchup shop prime coats.
   5. Do not cut, weld, or abrade surfaces which have been hot-dip galvanized after fabrication and which are intended for bolted or screwed field connections.
   6. All anchor bolts, bolts and nuts required to support miscellaneous work shall be furnished and installed as required.

B. Fabrication: Immediately after erection, clean the field welds, bolted connections, and abraded areas of shop priming. Paint the exposed areas with same material used for shop priming.

C. Warranty:
   1. Manufacturer of the access hatch shall guarantee against defects in material or workmanship for a period of five (5) years.

2. Safety netting shall carry a five (5) year guarantee against defects in material and workmanship.

1.05 SUBMITTALS

A. Submittals shall comply with pertinent provisions of Section 01300, Submittals.

1.06 PRODUCT HANDLING

A. Handling of products shall comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Aluminum Access Hatch: Aluminum access hatches shall be as manufactured by East Jordan Iron Works (EJ), or The Bilco Company, New Haven, Connecticut. No other substitutions will be accepted.

B. Safety Grating: The Contractor shall furnish and install fall protection safety grating in each of the access hatches. The grating panels shall be aluminum with a powder coat finish that is safety yellow in color. The safety grating panel shall be designed to meet the requirements of OSHA standard 29 and be equipped with a hold open device to lock the grating in the open position. Hold open device and all hardware shall be Type 316 stainless steel. The safety grating shall be of the same manufacturer of the access hatch.

C. Davit Sleeve and Cap: Davit sleeve and cap shall be manufactured by DBI SALA. As these items must be compatible with the Owner's existing equipment, no substitutions are allowed.

D. Aluminum Stairway: Aluminum stairway shall be manufactured by FS Industries, West Greenwich, Rhode Island or an approved equal.

E. Pipe Supports: Pipe stands shall be manufactured by Material Resources or approved equal.

F. Expansion Bolts: Expansion bolts shall be as supplied by HILTI Incorporated, Stamford, Connecticut, or approved equal.

G. Insect Screen: Insect screen shall be manufactured TWP Inc., or approved equal.

H. Epoxy Grout: Epoxy grout shall be manufactured by Sika or approved equal.

2.02

MATERIALS

A. Aluminum Access Hatch:
   1. Access hatch shall be constructed of Aluminum, have 1/4" aluminum diamond pattern plate doors, and constructed to withstand AASHTO H-20 loading. Channel frame shall be 1/4" aluminum with an anchor flange around the perimeter and 1 1/2” drain coupling in the bottom of the channel.
   2. Access hatch shall be of the dimensions necessary to provide a clear opening shown on the Contract Drawings.
   3. The door shall be insulated with 2-inch rigid urethane, covered and protected by an aluminum liner.
   4. The door shall be equipped with heavy forged type 316 stainless steel hinges, with stainless steel pins; compression spring operators enclosed in telescopic tubes for smooth, easy and controlled door operation; and automatic hold-open arm with release handle.
   5. Snap lock with fixed handle mounted on the underside of one leaf shall be provided. A removable handle for operation of the snap lock from the exterior shall be provided.
   6. A recessed padlock hasp covered by a hinged lid flush with the surface shall be provided. Padlock boxout area shall be oversized to accept the AWC Standard Master Padlock (Masterlock Pro Series 6721).
   7. A bituminous coating shall be applied to all aluminum surfaces which come in contact with concrete.
   8. Hardware shall be stainless steel with factory applied mill finish.
   9. Aluminum handrails shall be installed on the inside of the door leaf as shown on the Contract Drawings.
   10. Double leaf hatch shall be provided with a guide chain on the side opposite the stairway.

B. Fall Prevention Safety Grating:
   1. Safety grating shall be aluminum with a powder coat finish that is safety yellow in color. Hold open device and all hardware shall be stainless steel.
   2. Safety grating shall meet all applicable OSHA requirements.

C. Davit Sleeve and Cap:
   1. Davit sleeve shall be Model No. 8512828 Stainless Steel flush floor mounted sleeve.
   2. Sleeve cap shall be Model No. 8510827 Stainless Steel Heavy Duty sleeve cap.

D. Aluminum Stairway:
   1. The stairway shall be a prefabricated aluminum stair with outboard guard handrails and shall comply with OSHA Standards - 29 CFR 1910.25. Aluminum Ladders shall be constructed entirely of aluminum except for fasteners which shall be stainless steel.
   2. Stairs shall have a nominal 45-degree angle of rise with 10” x 2.6” structural channel stringers. Factory welded 36” tall handrails with 42” high outboard guardrails shall be provided on each side of the stairs.

3. Customizations by the fabricator shall be performed as required to match the dimensions as measured in the field so that no part of the stairway, including the handrails and guardrails, shall conflict with the operation of the access hatch and the distance from the top of the chamber to the first step does not exceed the maximum distance of 12 inches. Riser heights shall be uniform and customized, if necessary, to provide for a step height from the floor to the bottom step equal to that of the riser height.
4. Stair treads shall be heavy duty aluminum I-bar grating with corrugated aluminum nosing for skid-resistance. The aluminum stair shall be capable of supporting a minimum load of 1,000 lbs applied at any point.
5. Risers shall be of the open configuration style.
6. A bituminous coating shall be applied to all aluminum surfaces which come in contact with concrete.

E. Pipe Supports:
1. Adjustable stands for supporting the piping and valves shall be Type 304 stainless steel Standon adjustable pipe supports.

F. Expansion Bolts:
1. Expansion bolts shall be HILTI - Stainless Steel Kwik-Bolts.

G. Insect Screen:
1. Insect screen shall be Type 316 Stainless Steel with a mesh size of 24 per inch and a wire diameter of 0.0140 inches (#24 mesh).

H. Threaded Rods:
1. Threaded rods shall be of stainless steel.

I. Epoxy Grout:
1. Epoxy grout shall be Sika AnchorFix-2.

J. Miscellaneous Fasteners:
1. Bolts, nuts, washer and other fasteners, unless otherwise shown or specified, shall be stainless steel.

K. Miscellaneous Structural Steel:
1. Miscellaneous structural steel shall include: steel plates, angles, channels, beams, straps and all other steel shapes as shown on the Contract Drawings. Steel shall conform to ASTM A 36 and shall be fabricated to the dimensions shown on the Contract Drawings or as required.

PART 3 EXECUTION

3.01 INSTALLATION

A. Aluminum Access Hatches: The access hatches shall be cast into the top section of the precast concrete chambers. Installation shall be in accordance with manufacturer's instructions. Channel frame drain coupling shall be connected to a PVC drain pipe.

B. Safety Grating: Safety grating shall be anchored the concrete of the access hatch opening using wedge-style concrete anchors per the manufacturer's recommendations. Placement of the grating shall not interfere with the operations of the access hatch or infringe upon access to the ladder.

C. Davit Sleeves: Davit sleeves shall be cast into the concrete as shown on Contract Drawings. Top of davit sleeves shall be flush with top surface of the concrete so as not to present a tripping hazard. The sleeve cap shall be installed in the sleeve and tightened in place.

D. Aluminum Stairway: Aluminum stairway shall be assembled and anchored to the floor and wall with stainless steel anchors as recommended by the manufacturer.

E. Adjustable Pipe Supports: Pipe supports shall be set in place following installation of the piping and adjusted to provide proper support of pipes and valves. The base plates shall be anchored to the concrete floor using appropriately sized expansion bolts.

F. Epoxy Grout: Epoxy grout shall be applied as recommended by the manufacturer.

G. All threaded rods, anchor bolts, bolts, and nuts required to support miscellaneous work shall be furnished and installed as required.

3.02 FABRICATION

A. Miscellaneous Structural Steel: All welding shall conform to the requirements of the AWS. Steel shall be shop primed with a rust inhibiting primer that is compatible with the field coatings specified in Section 09900, Painting.

END OF SECTION

SECTION 07130

WATERPROOF MEMBRANE

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall provide all labor, materials, tools, equipment, and incidentals necessary to furnish and apply the waterproof membrane to the precast concrete chamber, complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
1. Section 02300: Earthwork;
2. Section 03400: Precast Concrete;
3. Section 07210: Building Insulation.

1.03 SUBMITTALS

A. Comply with the pertinent provisions of Section 01300, Submittals.

1.04 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Waterproof membrane shall be as manufactured by GCP Applied Technologies or approved equal.

B. Hydraulic water-stop cement shall be as manufactured by Quikrete Companies or approved equal

2.02 MATERIALS

A. Waterproof membrane shall be GCP Applied Technologies Procor 75 Spray Grade membrane consisting of a two component, synthetic rubber, cold vulcanized fluid with a Volatile Organic Compound content of less than 75 g/L. The membrane shall cure to form a resilient, monolithic, fully bonded elastomeric sheet and shall be suitable for below ground installation.

B. Hydraulic water-stop cement shall be a rapid setting, high strength repair material designed to block running water or leaks in cracked concrete surfaces. Cement shall be suitable for use above and below grade.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

B. All surfaces which are to be waterproofed shall be smooth, monolithic, and free of frost, voids, spalled areas, loose substrate and sharp protrusions, dirt, oil, grease, and debris and must contain no other contaminants or any visible coarse aggregate. Exterior concrete surfaces shall be power washed prior to waterproofing. No waterproofing shall be applied in wet weather or when air temperature is below 20°F.

C. If voids exist on the exterior of the precast concrete chamber, hydraulic water-stop cement shall be used to create a smooth surface for application of the waterproofing.

3.02 INSTALLATION

A. Waterproof Membrane:
1. Following placement of the precast concrete chamber, power washing and patching of voids, the exterior of the chamber, to the limits shown on the Contract Drawings, shall be coated with a spray applied waterproofing membrane.
2. The waterproofing membrane shall be spray applied at a minimum DFT of 60 mil in strict accordance with the manufacturer's instructions.
3. Rigid insulation as specified under Section 07210, Building Insulation, shall be installed over the membrane on the outside of precast concrete chamber to the limits shown on the Contract Drawings.
4. Immediately following application of the membrane and insulation, the area shall be backfilled as specified under Section 02300, Earthwork.

B. Hydraulic Water-Stop Cement:
1. Mix with clean water to the ratio recommended by the manufacturer.
2. Cement shall be applied within the recommended time after mixing.
3. Cement shall not be re-tempered with additional water.
4. Start at the top of the crack or void and work down, pressing the cement into place.

5. No cement shall be applied if temperatures are below 40°F or are expected to go below 32°F within a 24-hour period. Use cold water in hot weather or hot water in cold weather to achieve desired mortar temperature.
6. Application of the hydraulic water-stop cement shall be in strict accordance with the manufacturer's provided instructions.

END OF SECTION

SECTION 07210

BUILDING INSULATION

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall provide all labor, materials, tools, equipment, and incidentals necessary to furnish and install all building insulation, complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Sections in Division 1 of these Specifications, and the following sections:
1. Section 02300: Earthwork;
2. Section 03400: Precast Concrete;
3. Section 07130: Waterproof Membrane.

1.03 QUALITY ASSURANCE

A. The insulation shall be installed in strict accordance with the manufacturer's specifications.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

1.05 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 MATERIALS

A. Insulation shall be Styrofoam Brand closed cell, rigid, square edge insulation panels as manufactured by Dow Chemical Company or an approved equal. Rigid insulation, unless otherwise shown or specified, shall be Type SM extruded polystyrene planks with a thermal resistance R-value of 5 per inch of thickness. Thickness of insulation shall be as shown on the Contract Drawings.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Examine the areas and conditions under which work of this Section will be performed
   1. Correct conditions detrimental to timely and proper completion of the Work.
   2. Do not proceed until unsatisfactory conditions are corrected.

3.02 COORDINATION

A. Installation of the insulation shall be coordinated with the application of the waterproof membrane, so as to promptly place the insulation and backfill around the structure.

3.03 INSTALLATION

A. Rigid insulation shall be installed over the waterproof membrane on the outside of precast concrete chamber to the limits shown on the Contract Drawings.

END OF SECTION

SECTION 09900

PAINTING

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall furnish all materials, labor, equipment, tools, and incidentals required to do all the painting necessary to complete the Work in its entirety.

1.02 RELATED WORK

A. It is the intent of this Specification to paint all ductile iron piping within the precast concrete chamber and for the exterior vent piping, and all other work obviously required to be painted, unless otherwise specified. The omission of minor items in the schedule of work shall not relieve the Contractor of their obligation to include such items where they come within the general intent of the Specifications as stated herein.

B. Prior to painting, the Contractor shall remove all rubbish and clean up the meter chamber in an acceptable manner to facilitate painting. Painting shall not be performed until all other work within the meter chamber has been completed, unless otherwise authorized by the Engineer.

1.03 WORK NOT INCLUDED

A. The following items shall not be painted:
   1. Non-ferrous metals, unless otherwise specified and noted;
   2. Packing glands and other adjustable parts and name plates of mechanical equipment;
   3. All aluminum, unless specifically noted otherwise (aluminum surfaces which come into contact with concrete shall be painted with a bituminous coating during fabrication);
   4. Galvanized conduit;
   5. Copper and PVC piping; and
   6. Glossy epoxy coated items.

1.04 QUALITY ASSURANCE

A. Work under this Section shall be performed by an approved painting contractor.

1.05 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

B. The Contractor shall submit the name of the painting contractor and references to the Engineer for approval.

C. The Contractor shall submit a document specifying the type of paint, to be approved by the Engineer.

1.06 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

B. All painting materials shall be delivered to the job site in unopened containers bearing the manufacturer's brand and name.

PART 2 PRODUCTS

2.01 PAINT MATERIALS

A. Acceptable Materials: All paint materials shall be fully equal to those manufactured by Tnemec, Inc. Equivalent products manufactured by Sherwin Williams and Carboline Company will be acceptable.

All paint products shall meet all current USEPA and local requirements for volatile organic compound (VOC) compliance levels.

B. Undercoats: Shop priming shall be done with primers that are guaranteed by the manufacturer to be compatible with the finish paints to be used.

2.02 PAINTING SCHEDULE

A. All colors will be selected by the Engineer and approved by Aquarion.

B. Interior metals including piping and equipment:
1. 2 coats Series N69 Hi Build Epoxoline II @ 4.0 mils DFT per coat

C. Exterior ferrous metals:
1. First Coat: Series N69-1211 Red Primer
2. Second Coat: Series N69 Hi Build Epoxoline II @ 4.0 mils DFT
3. Third Coat: Series 73 Endurashield @ 3.0-4.0 mils DFT

D. Galvanized steel:
1. First Coat: Series N69 Hi Build Epoxoline II @ 4.0 mils DFT (if not shop primed)
2. Second Coat: Series N69 Hi Build Epoxoline II @ 4.0 mils DFT

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. All paint shall be at room temperature before applying and no painting shall be done when the temperature is below 50°F, in dust-laden air, where rain or snow is falling, or until all traces of moisture have completely disappeared from the surfaces to be painted.

B. All surfaces to be painted, as well as the atmosphere in which painting is to be done, shall be kept warm and dry by heating and ventilation, if necessary, until each coat of paint has hardened. Any defective paint shall be scraped off and repainted in accordance with the Engineer's directions.

3.02 SURFACE PREPARATION

A. General: All surfaces to be painted shall be prepared as specified herein and shall be dry and clean before painting.

Mask all machinery name plates and all machined parts not receiving a paint finish. Dripped or splattered paint shall be promptly removed. Lay drop cloths in all areas where painting is being done to adequately protect flooring and other work from all damage during the operation and until the finished job is accepted.

B. Metal Surfaces: All welds, blisters, etc., shall be ground and sanded smooth. All pits and dents shall be filled, and all impervious imperfections shall be corrected so as to provide a smooth surface for painting. All rust, loose scale, oil, grease, and dirt shall be removed by use of approved solvents, wire brushing, or sanding.

C. Tar Coated Pipe: Any pipe scheduled to be painted and having received a coating of a tar or asphalt-compound shall be prepared in accordance with SSPC-SP-6 commercial blast to remove the coating. After the coating has been completely removed, piping shall be coated with a suitable rust inhibiting primer, compatible with the field coating, before any successive coats are applied per the schedule.

3.03 MATERIALS PREPARATION

A. General:
1. Mix and prepare paint materials in strict accordance with the manufacturer’s recommendations as approved by the Engineer.
2. When materials are not in use, store in tightly covered containers.
3. Maintain containers used in storage, mixing and application of paint in a clean condition, free from foreign materials and residue.

B. Stirring:
1. Stir materials before application, producing a mixture of uniform density.
2. Do not stir into the material any film which may have formed on the surface, but remove the film and, if necessary, strain the material before using.

3.04 APPLICATION EQUIPMENT

A. For application of the approved paint, use only such equipment and procedures as is recommended by the manufacturer of the particular paint.

B. Prior to use of application equipment, verify that the proposed equipment is compatible with the material to be applied, and that the integrity of the finish will not be jeopardized by use of the proposed equipment.

3.05 PAINT APPLICATION

A. General:

1. All materials shall be brush painted unless spray painting is specifically approved by the Engineer.
2. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. Materials subject to weathering shall be prime coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.
3. Successive coats of paint shall be tinted so as to make each coat easily distinguishable from each other with the final undercoat tinted to the approximate shade of the finish coat.
4. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with No. 00 sandpaper or equal, to remove defects and provide a smooth, even surface.
5. Before final acceptance of the work all damaged paint surfaces shall be cleaned and repainted as directed by the Engineer.

B. Miscellaneous Surfaces and Procedures:

1. Field Priming: Steel, metal castings, mechanical and electrical equipment, and other metals which are shop primed before delivery at the site will not require a prime coat on the job. All piping and other bare metals to be painted shall receive one coat of primer before exposure to the weather, and this prime coat shall be the first coat as specified in the painting schedule.
2. On metal surfaces, apply each coat of paint at the rate specified by the manufacturer to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built-up to the same film thickness achieved with undiluted material.
3. One gallon of paint as originally furnished by the manufacturer shall not cover a greater area when applied by spray gun than when applied unthinned by brush. Deficiencies in film thickness shall be corrected by the application of additional coats.
4. Equipment which is customarily shipped with a baked-on enamel finish or with a standard factory finish shall not be field painted unless the finish has been damaged in transit or during installation. Surfaces that have been shop painted and have been damaged or where shop coats or coats of paint have deteriorated, shall be properly cleaned and retouched before any successive painting is done on them in the field. All such field painting shall match as nearly as possible the original finish.
5. Equipment shipped with a protective shop prime coat or coats shall be touched up to the satisfaction of the Engineer with primers as recommended by the manufacturer of the finish paint.

3.06 CLEAN-UP

A. The Contractor shall, at all times, keep the premises free from accumulations of waste material and rubbish caused by their employees or work. At the completion

of the painting, they shall remove all of their tools, scaffolding, surplus materials, and all of their rubbish from and about the buildings and shall leave their work "broom clean" unless more exactly specified.

B. The Contractor shall also remove all paint where it has been spilled, splashed, or spattered on all surfaces, including floors, fixtures, equipment, furniture, etc., leaving the work ready for inspection.

C. Following completion of the work, the Contractor shall remove from the site all unused paint, thinner, application materials, cleaning supplies, etc., whether unopened or not. No spare paint is to be left on site.

END OF SECTION

SECTION 11000

MISCELLANEOUS EQUIPMENT

PART 0 MEASUREMENT AND PAYMENT

Payment for furnishing and installing the equipment in this section shall be made at the lump sum price bid under Bid Item No. 70A, 70B and 70C. in the Bid Form.

The Contractor shall supply all labor, tools, materials, and equipment specified in this section as shown on the Contract Drawings and specified herein.

PART 1 GENERAL

1.01 DESCRIPTION

A. The Contractor shall properly install, and adjust, all equipment furnished under this Contract and assist the Owner during testing and start-up of equipment to place the complete system in operation.

1.01 RELATED WORK

A. Documents affecting the work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and Sections in Division 1 through Division 16 of these Specifications.

1. Section 03400 Precast Concrete
2. Section 05500 Miscellaneous Metals - Ladder
3. Section 13400 Instrumentation and Controls
4. Section 16000 Electrical Work

1.02 QUALITY ASSURANCE

A. The instrumentation and equipment shall be as manufactured by reputable companies having long experience in production of such equipment. The equipment furnished shall be designed, constructed, and installed in accordance with the latest and best practice and methods, and shall operate satisfactorily when installed as shown on the Contract Drawings and specified herein.

B. All equipment shall be designed so that, in the event of failure of normal power, the equipment shall resume normal operation, without manual resetting, when normal power is restored, or emergency power is provided.

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

D. The electrical subcontractor shall employ a competent superintendent or foreman who shall be satisfactory to the Owner, and who shall not be changed throughout the project, unless he shall cease to be an employee of the subcontractor.

1.03 INSPECTION, TESTS AND ACCEPTANCE

A. The entire electrical system shall be given a complete operational test after installation is completed by the Contractor in the presence of Aquarion Water Company's representative and the Engineer.

B. The Contractor shall perform an operational test of the equipment furnished and/or installed under this Contract in the presence of the Engineer. Representative of the relevant subcontractors shall also be present to assist in making any adjustments.

PART 2 PRODUCTS

2.01 MISCELLANEOUS EQUIPMENT

A. Anti-Slip Step Covers: The Contractor shall furnish and install anti-slip step covers where shown on the Contract Drawings. The anti-slip tread covers shall be model Hi-Traction Anti-Slip Step Cover as manufactured by Safeguard Technology or approved equal. The step covers shall be furnished with the following options:

a. **Cover Shape and Base Material:** Back Beveled Edge / FRP
b. **Size:** Contractor to verify field conditions prior to ordering. Step Covers shall match the width of the stairs at each of the sites.
c. **Grade / Grit:** Coarse (Industrial) Grade
d. **Color:** Black
e. **Method of Installation:** Installation Over Concrete

B. Safety Grating: The Contractor shall install fall protection safety grating in each of the access hatches in lieu of the safety nets. The grating panels shall be aluminum with a powder coat paint finish that is safety yellow in color. The safety grating panel shall be designed to meet the requirements of OSHA standard 29 and be equipped with a hold open device to lock the grating in the open position. Hold open device and all hardware shall be Type 316 stainless steel. The safety grating shall be of the same manufacturer as the access hatch.

C. Flow Meter: The Contractor shall furnish and install a 3” flow meter where shown on the Contract Drawings. Flow meters shall be Neptune Technology Group, Inc Model HP with remote read register. The Contractor shall consult with the Aquarion Water Company to determine the preferred remote read register type prior to ordering.

The flow meters shall be installed per the recommendations of the manufacturer and per the requirements of the Owner. The flow meters shall be securely fastened to Unistrut supports and not be allowed to bear on the surrounding piping.

D. Strainer: The Contractor shall furnish and install a 3” strainer where shown on the Contract Drawings. The strainer shall be installed per the recommendations of the manufacturer and per the requirements of the Owner. The strainer shall be a 3” strainer as manufactured by Neptune Technology Group, Inc.

E. Bilco PermEntry Basement Entrance (Precast Stairs): Basement Entrance Unit shall be Size F as manufactured by Authorized PermEntry Dealer operating under license from The PermEntry Company. Basement Entrance Unit shall consist of a monolithic precast concrete stairwell including steps.

Precast concrete stairwell component shall be as cast in licensed production forms of The PermEntry Company. Concrete shall be air entrained meeting the standards of ACI 322-722, consolidated by vibration, and cured to minimum of 3500 PSI. Four 1/2" x 12" coil threaded flared tyloop anchors of .340 wire (100,000 PSI) designed with 4:1 safety factor minimum as engineered by The PermEntry Company shall be precast into the concrete stairwell as prepared sleeves for securing stairwell to the foundation wall.

Anchoring hardware for the stairwell shall be four 1/2" diameter coil threaded high tensile steel lag studs as engineered by The PermEntry Company, the length sized to the thickness of the foundation wall, with accompanying 1/2" diameter heavy hex lag nuts. Bearing shall be safely provided by four 2 1/4" x 9/16" x 3/16" hot rolled steel washers. Opening in the foundation wall must not exceed 40" in width; stairwell shall be centered on opening.

Anchored stairwell shall safely withstand a dead load of 145 pounds per cubic foot of concrete plus a uniform live load of 100 pounds per square foot over the entire tread area, 300 pounds per square foot at center of any tread, and active earth pressure of 50 pounds per square foot per foot of depth. Anchored stairwell, designed for an 8" thick minimum unreinforced concrete wall (1500 PSI) or 8" thick minimum concrete block wall, shall be a self-sufficient structure not requiring support from undisturbed earth or fill placed beneath the stairwell.

Stairwell exterior joint sealant shall be pre-formed continuous butyl resin sealant, conforming to Federal Specification SS-S-210A, 1/2" minimum in any cross-sectional dimension. Sealant shall be applied in a single band to the faces of the stairwell where it will about the foundation wall and footing.

Stairwell interior joint sealant shall be a non-shrinking grout consisting of 60% Portland cement and 40% metallic waterproofing mixed with water to a mortar consistency, or in the alternative hydraulic cement equal to Thoro "water plug" or approve equal. Grout shall be applied to fill the interior joints where the stairwell abuts the foundation wall and footing and struck.

F. Check Valve: The Contractor shall furnish and install a check valve where shown on the Contract Drawings. The check valve shall be a hydraulically operated No-Slam Check Valve. The valve shall open when the pressure at the inlet exceeds the discharge pressure and shall open at a gradual rate to prevent sudden opening surges. The valve body and cover shall be constructed of Ductile Iron with the disc retainer being constructed of Cast Iron. The check valve shall have standard bronze trim and be furnished with a Buna-N Rubber Disc. And Nylon reinforced Diaphragm. The stem, nut and spring shall all be constructed of stainless steel. The check valve shall have 300 ANSI rated flanged inlet and outlet connections and be of dimensions as shown in the Contract Drawings. The check valve shall be Model 81-18 as manufactured by CLA-VAL or approved equal.

G. Flanged Ductile Iron Pipe: The spool pieces shall be flanged ductile iron pipe shall be as specified above with the following exceptions: Flanged piping shall be Class 53 with factory applied screwed long hub companion flanges conforming to ANSI B16.1 Class 125. Flanges shall have flat faces and be joined together using full faced gaskets and Type 304 Stainless Steel bolts. Flanged piping, including spool pieces shall have a double cement mortar lining.

Fittings shall be ductile iron and shall conform to AWWA C110 and AWWA C111, or to AWWA C153 for compact fittings. All fittings shall be ductile iron mechanical joint fittings manufactured in the United States or Canada by Tyler Union, U.S. Pipe, or an approved equal.

H. Blind Flanges: shall meet the requirements of the fittings specified in Item 2.01G. Blind Flanges shall have taps as indicated on the Contract Drawings. Gaskets used shall be full-faced SBR material and bolts and hardware shall be Type 316 stainless steel.

I. Backflow Preventer: The Contractor shall furnish and install an RPZ Backflow Preventer where shown on the Contract Drawings. Backflow Preventers shall be 1-1/2” and be constructed of lead-free bronze and shall be furnished with a strainer. The RPZ backflow preventer shall be supplied with the following features: quarter turn ball valve shutoffs with lever handles, check modules, replaceable seats, top mounted test cocks and a pressure differential relief valve. Split Unions and Ball Valves shall be installed on either side of the backflow preventer as shown on the Contract Drawings. RPZ Backflow Preventers shall be Watts Model 009M2-QT 1-1/2”, Zurn Wilkins 975XL or approved equal.

J. Solenoid Valve: Solenoid valves shall be lead-free brass with FNPT connections. Solenoid valves shall match the size indicated on the Contract Drawings and have a minimum pressure rating of 150psi. Solenoid valves shall be normally closed and have a voltage of 120VAC. Solenoid valves shall be ASCO 8221G009, Goulds model M-3V or approved equal. Solenoid valves shall be provided with DIN connectors and cables.

K. Air Gap: The air gap shall be Watts Model 0064662, Zurn Model AG or approved equal.

L. Electronic Water Level Control System: The Contractor shall furnish and install an Electronic Water Level Control System where shown on the Contract Drawings. The system shall consist of the following components and options:

1. (1) Water Level Control System Panel
   a. NEMA 4X Enclosure with Lockable SS Latch and Power Relays
   b. Fill High Alarm, Fill Low Alarm and Temperature Alarm
   c. 110 VAC Standard Input Power
   d. (5) LED Indicators
   e. Press to Test and Audible Alarms with Silence Switch
   f. Temperature Alarm

2. (1) Level Probe / Sensor with 50 FT Cable
   a. 3” Slip Plug Style
   b. 3” Diameter Sensor Head Constructed of ABS
   c. 304 Stainless Steel Probe Material
   d. Probe Lengths:
      - High Alarm (Green) 10-3/8”
      - Fill Stop (Red) 14-7/8”
      - Fill Start (White) 16-3/8”
      - Low Alarm (Brown) 17”
      - Low-Low Alarm (Black) 17”
      - Temperature Probe (Orange) 9 Feet
3. (1) Top of Mount Tank Mounting Assembly

The Electronic Level Control System shall be model Waterline Controls model FPT-50T, model FPT 60 or approved equal.

All equipment furnished by the Contractor for the fire pump house fill line shall comply with all applicable codes and standards, including those approved by the NFPA.

PART 3 EXECUTION (OMITTED)

END OF SECTION

SECTION 13400

INSTRUMENTATION AND CONTROLS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall supply all labor, tools, materials (except Owner furnished materials), and equipment necessary to furnish, install, assist with testing and calibration, and place into operation the instrumentation and controls, complete as shown on the Contract Drawings and specified herein.

1. The Contractor shall properly install, and adjust, all equipment furnished under this Contract and assist the Owner during testing and start-up of equipment to place the complete system in operation.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:

1. Section 15100: Piping and Valves;
2. Section 15400: Plumbing;
3. Section 16000: Electrical Work.

1.03 QUALITY ASSURANCE

A. The instrumentation and equipment shall be as manufactured by reputable concerns having long experience in the production of such equipment. The equipment furnished shall be designed, constructed, and installed in accordance with the latest and best practice and methods, and shall operate satisfactorily when installed as shown on the Contract Drawings and specified.

B. All equipment shall be designed so that, in the event of failure of normal power, the equipment shall resume normal operation, without manual resetting, when normal power is restored or emergency power is provided.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

B. Provide complete equipment specifications, details of construction, wiring, range and dimensions. Submittals consisting of only general sales literature will not be acceptable. Submit detailed information for each instrument or control device, including manufacturer's descriptive literature and a specific data sheet for each device, which shall include the following:

1. Tag number as specified herein and indicated on the Contract Drawings
2. Product name
3. Manufacturer's name and model number
4. Input - output characteristics
5. Range, size and graduations
6. Physical size, enclosure classification and mounting details
7. Materials of construction

C. The Contractor shall furnish Instructions, Operation and Maintenance Manuals for the instrumentation as specified under Section 01780, Operation and Maintenance Data.

1.05 ABBREVIATIONS

A. The following abbreviations will be used in specifications for this Section:

1.	I/O	Input/Output
2.	OIT	Operator Interface Terminal
3.	Telog	Telemetry and Data Logging System

1.06 REFERENCES

A. The following references will be used in specifications for this Section:
1. NEMA ICS 1 - Industrial Control and Systems
2. NEMA ICS 4 - Application Guideline for Terminal Blocks
3. NEMA ICS 6 - Enclosures for Industrial Control Equipment and Systems
4. ANSI/NFPA 70 - National Electric Code

1.07 PRODUCT HANDLING AND LABELING

A. Comply with pertinent provisions of Section 01610, Product Handling.

B. Each component, including components furnished by others shall be tagged per the numbering system specified herein and indicated on the Contract Drawings. A permanent stainless steel tag shall be firmly attached and permanently labeled with the instrument tag number.

PART 2 PRODUCTS

2.01 MATERIALS FURNISHED BY OTHERS

A. Materials furnished by Owner shall be as follows:
   1. Telog
   2. Cellular Antenna
   3. Differential Pressure Transmitters
   4. Pressure Transmitters
   5. Wall Mount Transmitter Supports
   6. Specialty Wire and Cable for Instrumentation

B. Coordination between the Contractor and Owner shall be as specified under Section 01640, Owner Furnished Materials.

2.02 MATERIALS FURNISHED BY CONTRACTOR

A. General:
   1. Control piping shall be as specified under Section 15400, Plumbing.
   2. Wire and Cable Markers shall conform to AWC's labeling convention; see section on Wire Labeling and Numbering in Appendix H, Aquarion Water Company Electrical Standards at the back of this document.
   3. Wire identification shall be as specified under of Section 16000, Electrical Work.

C. Line Pressure and Differential Pressure Transmitter Accessories:
   1. Contractor shall furnish and install accessories for the following Owner Furnished pressure transmitters including suitable shut off valves for connections, testing, and adjustments.
   2. Connections, valves, supports and accessories shall be stainless steel, meeting the requirements of AWC, and be as recommended by the transmitter manufacturer.
   3. Output signals shall be a 4-20 mA signal transmitted to the Telog Panel.

D. Pressure Gauges: Gauges shall be equal to Ashcroft Type 1259 Process Pressure Gauge with a 4-1/2-inch face, thermoplastic case, factory liquid filled (glycerine) and 1/2-inch connection. Gauges shall be calibrated and certified at the factory prior to shipment. Pressure gauges shall be the pressure range such that the system pressure determined by the Owner will fall within the middle third of the gauge range.

E. Temperature Transmitters:
   1. Temperature Transmitters with local indicators shall be furnished and installed at suitable locations to sense ambient temperature and be connected to the Telog Panel in accordance with the manufacturer's recommendations.
   2. Temperature transmitters shall be Model dRTTI as manufactured by DEVAR Inc. or approved equal. Transmitter shall be scaled for 0-150°F.

F. Float Switches:
   1. Float switch shall be operated by a polypropylene float actuating a SPST hermetically sealed reed switch potted in a polypropylene stem, with normally open contacts, reversible to normally closed.
   2. Switch shall be McMaster-Carr Model 50195K85 Vertical Mounted Liquid-level float switch. No substitutions will be accepted.
   3. The switches shall be provided with suitable mounting brackets and shall be installed at the location shown on the Contract Drawings.

G. Limit Switches:
   1. Limit switches shall be SPDT Form C lever arm style switches as manufactured by Omron, Square D, Microswitch, Allen-Bradley, or approved equal.
   2. Limit switches for operation of the lights and ventilation shall be 120 Volts AC, 2 Amp rated.
   3. Limit switches for entry alarms shall be rated for 24VDC.

H. Control Piping: Control piping shall be as specified under Section 15400, Plumbing.

I. Wire and Cable Markers: Markers for wire shall be as noted in Appendix H, AWC Electrical Standards, at the back of this document. Wire identification shall be as specified under Section 16000, Electrical Work.

PART 3 EXECUTION

3.01 WORK TO BE PERFORMED BY OTHERS

A. The Contractor's attention is directed to the fact that certain portions of the work will be performed by other contractors.

B. AWC will furnish a completely assembled Telog Panel. The Contractor shall install the Telog Panel at the location shown on the Contract Drawings.

3.02 CONNECTIONS FOR TRANSMITTERS, SWITCHES AND GAUGES

A. As specified under Section 15400, Plumbing, the Contractor shall furnish and install the taps required for all pressure transmitters and gauges at the locations shown on the Contract Drawings.

B. Wiring from transmitters and other instrumentation to the Owner Furnished Telog Panel shall be wired as specified under Section 16000, Electrical Work.

3.03 INSTALLATION

A. General:
1. Installation of all instrumentation, controls and equipment, including piping sizes and types, wire types and sizes, leveling of equipment, calibration, and all other associated items shall be in strict accordance with manufacturer's instructions and as specified in Section 16000, Electrical Work and Section 15400, Plumbing.
2. Suitable Lamacoid labels shall be provided for all equipment, whether or not furnished by the Contractor, as required by the Engineer.

B. Pressure Transmitters:
1. The Contractor shall install the pressure transmitters at the locations shown on the Contract Drawings, complete with bypass manifold, mounting bracket and accessories provided by AWC and as recommended by the manufacturer.
2. Pressure Transmitters shall be mounted to walls using stainless steel mounting hardware.
3. Stainless Steel control piping for the pressure transmitters shall be installed as specified under Section 15400, Plumbing.

C. Differential Pressure Transmitters:
1. Contractor shall install the differential pressure transmitters at the locations shown on the Contract Drawings and connect them to the Pressure Reducing Valves at the locations recommended by the Valve Manufacturer. Contractor shall install the bypass manifold, and mounting bracket provided by AWC as recommended by the equipment manufacturer.
2. Differential Pressure Transmitters shall be mounted using stainless steel mounting hardware.
3. Stainless steel control piping for the differential pressure transmitters shall be installed as specified under Section 15400, Plumbing.

D. Limit Switches:
1. The limit switch for lights and ventilation operation shall be wired so that whenever the active leaf of the access hatch is opened, activating the limit switch, the lights shall illuminate and the exhaust fan shall operate.
2. Limit switches for unauthorized entry shall be wired to the Owner Furnished Telog Panel as shown on the Contract Drawings and shall send a signal whenever the door or hatch is opened. Limit switches shall be mounted at each leaf of each hatch.

E. Telog Panel:

1. The Owner furnished Telog Panel shall be mounted at the location shown on the Contract Drawings and in accordance with the pertinent sections of Appendix H, AWC Electrical Standards. Contractor shall furnish and install all conduit; complete all conduit connections to the panel; and furnish, install and terminate all wiring, unless otherwise instructed by AWC.
2. The Owner furnished cellular communications antenna shall be mounted as instructed by AWC personnel to provide the most reliable service signal possible. Contractor shall provide all mounting hardware, wrap ties, supports, and antenna mast if required, to properly install the cellular communications antenna.

3.04 INSTRUMENT CALIBRATION

A. Contractor shall assist with instrument calibrations and tests to be performed in the field.

B. Instrument calibration and testing shall be as follows:

1. Once final adjustments are made to all instruments, meters, monitors, control devices, and the like, a performance check shall be made on each.
2. Analog inputs shall be tested at 0%, 25%, 50%, 75% and 100% of scale.
3. All status and alarm switches, and monitoring and control functions shall be checked to insure proper operation.
4. Each device on the Loop\Logic Diagrams shall be checked and approved by the Owner.
5. If any equipment fails an operating test, it shall be readjusted and retested until satisfactory results are obtained.

3.05 PROJECT COMPLETION

A. Start-up and Testing: Following completion of the work under this portion of the Contract, the entire instrumentation system shall be given a complete operational test in the presence of the Owner's representative and the Engineer. The Contractor shall energize and verify correct and satisfactory operation of all components in so far as it pertains to his work, including all inter-equipment wiring. Any malfunctions shall be analyzed and corrected and if in the opinion of the Engineer the malfunctions are sufficient, the testing shall be repeated.

END OF SECTION

SECTION 15100

PIPING AND VALVES

PART 1 GENERAL

1.01 WORK INCLUDED

A. The Contractor shall provide all labor, materials (except Owner furnished materials), tools, equipment, and incidentals required to furnish and install all ductile iron pipe and fittings, valves, pipe couplings and restraints, and appurtenances, assisting with all disinfection, and flushing, perform hydrostatic testing, and appurtenant work, complete as shown on the Contract Drawings and specified herein.
   1. Also included is all work required to connect to the existing water mains as shown on the Contract Drawings and specified herein, including tapping sleeves and valves and
   2. Exterior pipe and fittings for the chamber vent.

B. It is the intent of these Contract Documents to provide that the work and all parts thereof, when fully completed, will be suitable in every way for the purpose for which it is designed

C. All small diameter piping and pipe taps, complete with corporation stops, for piping connections to gauges and all other similar items requiring piping connections shall be as specified under Section 15400, Plumbing.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:
   1. Section 02300: Earthwork;
   2. Section 03300: Cast-In-Place Concrete;
   3. Section 09900: Painting;
   4. Section 15110: Pressure Reducing Valves;
   5. Section 15400: Plumbing.

1.03 QUALITY ASSURANCE

A. Ductile iron pipe shall conform in all respects, except for ends, to ANSI A21.51 (AWWA C151), latest editions. Pipe ends shall conform to ANSI A21.11 (AWWA C111). Affidavit and drawings shall be furnished as specified in Section 6.3 of AWWA C111.

B. Fittings shall be ductile iron and shall conform to ANSI A21.10 (AWWA C110) and ANSI A21.11 (AWWA C111), or to ANSI A 21.53 (AWWA C153) latest edition for compact fittings. Interior pipe flanged fittings shall be ductile iron conforming to ANSI Specification B16.1 Class 125 and shall be suitable for a working pressure of 250 psi.

C. The manufacturer's certifications specified in Sections 5.1.1 and 5.4 of Specification AWWA C151 shall be furnished for ductile iron pipe. A statement shall also be furnished stating that the coating and lining have been installed in accordance with AWWA C104.

D. Each piece of pipe and each fitting shall be plainly marked at the foundry with class number and weight. Pipe that is to be cut in the field shall be ordered as “Gauged Full Length” to ensure uniform fabrication.

E. Butterfly valves shall meet or exceed all strength and performance requirements of AWWA Specification C504, latest revision.

F. Gate valves made from gray iron or ductile iron shall conform to AWWA C509, latest revision. Ductile iron, reduced-wall, gate valves shall conform to AWWA C515, latest revision.

G. All applicable pipe, valves, fittings and associated items shall be certified “lead free” as specified in Section 1417 of the Safe Drinking Water Act (SDWA).

H. All materials in contact with the potable water supply shall be NSF 61 and Annex G (NSF 372) certified.

1.04 SUBMITTALS

A. Comply with pertinent provisions of Section 01300, Submittals.

B. Instructions, installation, operating, and maintenance manuals shall be as specified under Section 01780, Operation and Maintenance Data.

C. Hydrostatic Test Procedure: The Contractor shall submit, for approval, a schedule of his hydrostatic testing procedure with a description of methods and equipment he proposes to use.

1.05 PRODUCT HANDLING

A. Comply with pertinent provisions of Section 01610, Product Handling.

B. The pipe and specials shall be handled and protected during loading, transporting, and unloading operations in such manner as to avoid damage. Pipe and specials shall be unloaded by lifting with hoists or skidding so as to avoid shock or damage. Under no circumstances shall they be dropped nor shall they be permitted to roll against pipe already on the ground. Insofar as practicable, each piece of pipe shall be delivered and unloaded near the place where it is to be installed and where it will not interfere with excavation operations, traffic, or adjacent property owners and may be readily inspected by the Engineer.

C. All damaged pipe and specials will be rejected and such rejected pipe and specials shall be removed from the site. In the event of slight damage to the coating or lining, the Engineer may permit the damage to be repaired on the site.

D. Coating that is damaged during shipment or placement shall be touched up in the field.

PART 2 PRODUCTS

2.01 MATERIALS FURNISHED BY OTHERS

A. Materials furnished by Owner shall be as listed in Appendix G at the back of this document.

B. Upon acceptance by the Contractor it shall become his responsibility to make good any damage to the materials until they are incorporated and accepted into the work.

2.02 MATERIALS FURNISHED BY CONTRACTOR

A. General: In general, all ductile iron pipe and fittings shall be furnished with a bituminous sealcoat, double thickness cement mortar lining in accordance with AWWA C104, latest revision. Exterior surfaces of pipe and fittings which are to be field painted shall be prepared in accordance with SSPC-SP-6 commercial blast and shop coated with a suitable rust inhibiting primer that is compatible with field coatings. Materials used for interior surfaces shall be approved by NSF and the State of Connecticut Department of Public Health for use in a potable drinking water supply.

B. Acceptable Manufacturers:

1. Ductile Iron Pipe: Ductile iron pipe shall be manufactured by Atlantic States Pipe Company, U.S. Pipe Company, Griffin Pipe Company or an approved equal.

2. Ductile Iron Fittings: Ductile iron fittings shall be domestic fittings manufactured by Union Foundry, Griffin Pipe Company, Tyler Pipe or an approved equal.

3. Gate Valves: Gate valves shall be as manufactured by Mueller, Kennedy, or an approved equal.

4. Butterfly Valves: Valves shall be as manufactured by the Henry Pratt Company, Mueller Valves or approved equal. Val Matic valves are not considered “equal” and will not be accepted.

5. Blow Off Valves: Blow Off Valves shall be as manufactured by James Jones. No substitutions will be accepted.

6. Restraint Glands and Harnesses: Restraint glands and restraint harnesses shall be as manufactured by EBAA Iron, Inc., or approved equal.

7. Valve Box: Valve box shall be manufactured by Bibby-Ste Croix, Tyler Union, or approved equal.

8. Tapping Sleeves: Tapping sleeves shall be manufactured by Smith-Blair or an approved equal.

C. Ductile Iron Pipe and Fittings:

1. Interior Ductile Iron Pipe: Interior pipe shall conform to current ANSI Specification A21.15 for centrifugally cast pipe with factory applied screwed long hub companion flanges. Flanges shall be faced and drilled after being threaded to the pipe, be true 90° with the pipe axis, and shall be flush with the end of the pipe. All interior piping shall be ductile iron and of thickness Class 53. Flanges shall be flat face, full thickness ductile iron flanges. Flanges shall conform to ANSI B16.1 Class 125.

2. Exterior Ductile Iron Pipe: Exterior pipe shall be of ductile iron, thickness Class 52. Pipe joints may be either mechanical joint or push-on joint. All exterior piping provided under this project shall be designated as “Gauged Full Length”.

D. Gate Valves:

1. General: Gate valves shall be made from gray iron or ductile iron and conform to AWWA C509 latest revision or be made from ductile iron and conform to AWWA C515 (Standard for Reduced-Wall, Resilient-Seated Gate Valves). Valves shall be AWWA resilient seat gate valves with a pressure rating of 250 psi.

2. Valve body, bonnet, stuffing box, wedge and operating nut or hand wheel shall be constructed of gray iron or ductile iron for AWWA C509 valves or ductile iron for AWWA C515 valves. Valve wedge shall be fully encapsulated in nitrile, SBR or EPDM rubber. All bolts, nuts and washers shall be stainless steel. Valve stem shall be of high strength bronze or stainless steel with a minimum yield strength of 30,000 psi. Stuffing box shall be triple O-ring sealed to allow the upper stem seal to be replaced while the valve is under pressure and fully opened.

3. The valves shall be installed vertically in horizontal pipelines. Valves shall be hydrostatically shell tested at 500 psi at the factory.

4. Interior and exterior steel or cast iron surfaces of valves, except finished or bearing surfaces, shall be coated with a fusion bonded epoxy in accordance with AWWA C550. Materials used for interior surfaces shall be approved by NSF and the State of Connecticut Department of Public Health for use in a public drinking water supply.

   a. Exterior Gate Valves: Exterior gate valves shall be resilient seat, non-rising stem mechanical joint ends and two-inch (2”) operating nut with embossed direction arrow as manufactured by Mueller Company A-2362 Series, Kennedy Valve 8571, or approved equal. Mechanical joint ends shall have restraint glands as specified under Part 2.06.B of

this Section. Valve shall open in the direction stated in Appendix B at the back of this Document.

b. Interior Gate Valves: Interior Gate valves shall be resilient seat, rising stem, outside screw and yoke, iron body valves, such as Kennedy Valve Model 8068A with flanged ends and hand wheel operators and shall open left. All exposed bolts and nuts shall be of type 304 stainless steel.

c. Tapping Valves: Tapping valves shall be as specified for exterior gate valves except as modified herein. Tapping valve shall be Kennedy Valve 8950 Mechanical Joint for Tapping. Valve shall open in the direction stated in Appendix B at the back of this Document.

E. Butterfly Valves:

1. Butterfly valves shall be a product of a manufacturer having units of similar type, size, and service requirements successfully operating in a municipal waterworks project for a period of not less than five (5) years. The manufacturer, if requested by the Engineer, shall furnish torque design calculations.

2. Valves shall be close-grained cast iron with integrally cast hubs for shaft bearings. Discs shall be cast iron, ductile iron, or alloy cast iron, conforming to AWWA C504.

3. Seats shall be natural or synthetic rubber mounted in the valve body. Mating seats shall be bronze, alloy cast iron, 18-8 stainless steel, Nichrome or 500 series monel. Valves shall be designed to provide tight shutoff at differential pressures of 150 psi.

4. The valves shall be equipped with a mechanical stop-limiting device to prevent the disc from rotating through the opened and closed positions. Valve shafts shall be made of 18-8 stainless steel or monel metal securely attached to the valve disc. Diameter of the valve shafts and the connection to the valve disc shall be suitable for service conditions specified. Shaft bearing shall be of the self-lubricating sleeve type. Thrust bearings shall keep the disc centered regardless of valve position. Shaft seals shall be standard split-V type packing, standard “O” ring seals or pull-down packing gland, complying with the requirements of AWWA C504.

5. Interior and exterior steel or cast iron surfaces of valves, except finished or bearing surfaces, shall be coated with a fusion bonded epoxy in accordance with AWWA C550. Materials used for interior surfaces shall be approved by NSF and the State of Connecticut Department of Public Health for use in a public drinking water supply. All exposed nuts and bolts shall be stainless steel.

a. Exterior Butterfly Valves: Exterior butterfly valves shall be of the rubber seated, tight-closing type such as Henry Pratt Groundhog, or Mueller Series B3211 valves. Exterior valves shall be the short laying length

type with mechanical joint ends. Exterior valves shall be provided with 2-inch square operating nuts. Valves shall open in the direction stated in Appendix B at the back of this Document.

b. Interior Butterfly Valves: Interior butterfly valves shall be of the rubber seated, tight-closing type. The valves shall meet or exceed all strength and performance requirements of AWWA Specification C504, latest revision. Valves shall be the short laying length type with flanged ends conforming to ANSI B16.1, Class 125. Valves shall be provided with hand wheel operators with needle type position indicators and shall open left.

6. The valve operator shall conform to AWWA Standard C504 and shall be designed to hold the valve in any intermediate position between fully opened and fully closed without creeping or fluttering.

F. Miscellaneous:

1. Accessories: All bolts, nuts, glands, gaskets, and other jointing materials are included under this Section. Gaskets for flanged joints shall be full faced gaskets of best quality sheet rubber, 1/8" thick and be suitable for the required service. Bolts nuts, washers, and other hardware shall be stainless steel. Bolts and nuts shall have hexagonal heads.

2. Restraint Glands and Harnesses:

a. Exterior Joints: All exterior pipe joints shall be restrained using mechanical joint pipe and fittings with EBAA Iron, Inc. Series 1100 MEGALUG multiple wedging action thrust restraint glands for Ductile Iron Pipe. Push-on joint pipe with EBAA Iron, Inc. Series 1700 restraint harness or locking gaskets such as Sure Stop by McWane Company or Field Lok by US Pipe, will also be allowed. Restraint glands shall be installed in strict accordance with the manufacturer's instructions.
b. Interior Joints: Harnessed Flange adapters shall be EBAA Iron, Inc., Megaflange 2100 Restrained Flange Adapter or approved equal.

3. Valve Boxes: Cast iron valve boxes shall be two-piece slide type with 5-1/4" shafts, Tyler 6850, series bottom Section 36B, top Section 26T with drop lid of the slide type. Covers shall be cast iron and shall have "WATER" cast on them.

4. Blow Off Assembly: Blow Off Assembly shall meet the Detail shown in Appendix A. Blow Off Assemblies shall use E-1998 L/C James Jones Valves with rectangular operating nut.

5. Tapping Sleeves: Tapping Sleeves shall be Model 622 carbon steel epoxy coated tapping sleeves with a flanged outlet. Tapping Sleeves shall meet the requirements of AWWA C223. All hardware shall be stainless steel.

PART 3 EXECUTION

3.01 INSTALLATION

A. Pipe Installation: All pipe installation shall conform to AWWA Standard C600, latest revision, unless otherwise modified by these specifications.

1. All pipe and fittings shall be handled carefully by means of mechanical equipment in such a manner as to prevent them from being damaged. Flanges shall be wire brushed and wiped clean and dry and shall be free from oil or grease. During the installation of pipe, extra care shall be taken to see that no dirt, debris, lumber, tools, clothing, or other illicit materials are allowed to be left in the pipe.

2. The flanges shall be drawn together until the joint is perfectly tight with bolts of a length such that they will not project greater than 1/4" from the nut nor fall short of the nut end when drawn up. No washers shall be used.

3. The grooves in the bells of push-on joint pipe shall be carefully cleaned of all dirt and debris before inserting the gaskets. After applying a thin film of lubricant to the gasket, the spigot end of the pipe is pushed into the bell of the pipe. The joint shall be kept straight while pushing and any deflection made after the joint is home. Joint deflection shall not exceed 75% of the recommended maximum deflection. When the pipe is cut in the field the spigot end shall be beveled with a heavy file or a grinder to remove all sharp edges.

4. On mechanical joints, the follower ring and rubber gasket shall be placed on the plain end of the pipe being laid. The gasket shall be lubricated and then be evenly seated in the socket, the follower ring moved up to the face of the gasket and the bolts inserted and made finger tight. The bolts shall then be tightened with a torque wrench to the required torque.

5. When necessary to cut pipe in the field, the cutting shall be done such that neither the pipe nor the lining shall be damaged and such that a smooth, right angle to axis cut is made. A machine designed for this purpose shall be used for the cutting.

6. The insides of the pipes and specials shall be thoroughly cleaned before laying and shall be kept clean until accepted in the completed work. All pipe and special castings shall be carefully examined for defects and no pipe or special casting shall be laid which is known to be defective. If any such pipe or casting is discovered to be defective after placement, it shall be removed and replaced with a sound pipe or casting by the Contractor at his own expense.

7. Under no circumstance are valves permitted to be backfilled with an open end. All valves that are left in place during construction must have an appropriately sized gasketed mechanical joint plug installed on the open end. Whether for temporary or permanent purposes, mechanical joint plugs must have all bolts installed and fully tightened.

8. Unless specifically noted otherwise, all Ductile Iron Pipe, Valves, and Fittings are to be encased in Polyethylene wrap, as specified under Section 02613, Polyethylene Encasement.

B. Bedding for Ductile Iron Pipe: Bedding material shall be as specified under Section 02300, Earthwork.

C. Valve Installation:

1. All valves shall be installed in a neat and workmanlike manner and in accordance with the manufacturer's instructions. Heavy units shall be handled with suitable mechanical equipment. Valves which are dropped or otherwise mishandled or damaged prior to the Engineer's final certification shall be checked by a representative of the manufacturer, and repaired or replaced, if necessary, at the Contractor's expense.

2. All valves shall be built into their respective pipelines as shown on the Contract Drawings. They shall be cleaned and manually operated before installation.

3. All nuts, bolts, gaskets and other jointing materials shall be supplied by the Contractor.

D. Valve Boxes: Valve boxes shall be set carefully, truly vertical, and accurately centered over the operating nut with the top set at roadway or finished ground surface grade.

E. Pipe Tapping:

1. Contractor shall be responsible for accurately measuring the outer diameter of the pipe being tapped and furnishing the tapping sleeve of proper diameter range. Tapping sleeve shall be installed in strict accordance with the manufacturer’s instructions. Prior to tapping, the pipe surface, tapping sleeve, and valve shall be disinfected with a sodium hypochlorite solution. After installing the tapping sleeve and valve, and before tapping the main, the tapping sleeve and valve shall be given a hydrostatic pressure test at 150 psi for 15 minutes. The tap shall be made with a tapping machine specifically designed for the purposes of tapping water mains. The tapping sleeve and valve shall be adequately supported with a concrete block prior to backfilling. Valve boxes shall be installed as specified in the valve section of this specification.

2. Tapping of the interior piping shall be as specified under Section 15400, Plumbing.

3.02 DISINFECTION AND FLUSHING

A. Disinfection: To facilitate disinfection, the Contractor shall follow proper preventive procedures during construction. The Contractor shall keep the pipe clean and dry. The Contractor shall insure that all packing materials and joint materials are not

contaminated. Precautions shall also be taken to protect pipe interiors, fittings, and valves against contamination.

B. The Owner will disinfect the inlet and outlet mains supplying the new Pressure Reducing Facility and the piping in the new Pressure Reducing Facility in accordance with the procedure outlined in the AWWA Standard for Disinfecting Water Mains, Designation C651 Section 4.4.3 using the continuous feed method.

C. Disinfection shall be verified by the bacteriological testing specified in Designation C651 Section 5.1 of the AWWA Standards. Bacteriological testing shall be performed by the Owner. The Contractor shall provide appropriate assistance to the Owner during disinfection procedures.

D. If the piping does not meet the requirements of the bacteriological test, water required for subsequent disinfections, disinfection and tests shall be provided by the Owner at the Contractor's expense.

E. Flushing: After disinfection, the piping shall be flushed by the Owner until they are satisfied with the water quality. Contractor shall assist the Owner in the flushing of the piping.

3.03 TESTING

A. After successful disinfection and bacteriological testing by Aquarion Water Company, all ductile iron pipe, valves and fittings, shall be given a hydrostatic test by the Contractor at a Test Pressure determined by the Owner. The pressure shall be maintained for at least two (2) hours, during which time the leakage under the test shall not exceed the allowable leakage as tabulated in AWWA C600 Section 5.

B. Prior to making the test, the Contractor shall submit, for approval, a schedule of his testing procedure with a description of methods and equipment he proposes to use. Pressure gauge shall have a dial diameter of 4 inches or greater and shall read in increments of 1 psi. Suitable snubbers shall be provided to control needle vibration.

C. All visible leaks shall be made tight and if the line does not meet the above leakage test, it shall be repaired and retested by the Contractor until the leakage requirement is met. All valves and connections shall be made tight and shall operate properly before the work is accepted. All defective work shall be repaired or replaced at the expense of the Contractor.

D. All costs for performing the hydrostatic test including pumps, gauges, water and other work and materials required are included under this Section. The above hydrostatic tests shall be conducted in the presence of the Engineer.

3.04 START-UP SERVICES

A. The Contractor shall assist the representatives of the equipment manufacturers in making all adjustments as required until the equipment is functioning properly. Any additional start-up services, required as a result of the Contractor's failure to

properly perform the work, shall be paid for by the Contractor at no additional expense to the Owner.

B. The Contractor shall make arrangements for a direct factory representative from the Pressure Reducing Valve manufacturer to perform pre-start-up checks of all equipment related to the Pressure Reducing Valves; operate valves during start-up; make operating adjustments; and instruct Aquarion Water Company personnel in proper operation and maintenance procedures.

END OF SECTION

SECTION 15400

PLUMBING

PART 1 GENERAL

1.01 WORK INCLUDED

A. The work under this section includes furnishing and installation of all plumbing and associated work and all other services required to complete the work under this Section. The work under this section shall include, but is not limited to, copper and stainless steel tubing/piping and fittings, ball valves and specialties, air release valves, drain piping, and appurtenant work, complete as shown on the Contract Drawings and specified herein.

It is the intent of these Contract Documents to provide that the work and all parts thereof, when fully completed, will be suitable in every way for the purpose for which it is designed.

B. All pipe taps, complete with corporation stops or ball valves, for piping connections to gauges, sample lines and all other similar items requiring piping connections, whether or not shown on the Contract Drawings, shall be provided by the Contractor.

C. Also included are all piping, fittings, and valves required if pressure transmitters are to be provided in other sections of these specifications.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:
1. Section 02300: Earthwork;
2. Section 02510: Service Connections;
3. Section 03300: Cast-In-Place Concrete;
4. Section 13400: Instrumentation and Controls;
5. Section 15100: Piping and Valves;

1.03 QUALITY ASSURANCE

A. Copper piping shall conform to ASTM Specification B88, latest revision.

B. Buried valves, corporation stops, curb stops, fittings, saddles, couplings, adaptors, and the like shall conform to AWWA C800, latest revision, insofar as it applies.

C. All applicable pipe, valves, fittings, fixtures, solder and associated items shall be certified “lead free” as specified in Section 1417 of the Safe Drinking Water Act (SDWA).

D. All materials in contact with the potable water supply shall be NSF 61 and Annex G (NSF 372) certified.

1.04 SUBMITTALS

A. Submittals shall comply with pertinent provisions of Section 01300, Submittals.

1.05 PRODUCT HANDLING

A. Handling of products shall comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Copper Piping: Copper piping, flared end valves, fittings and accessories shall be manufactured by Mueller, or an approved equal

B. Copper Fittings and Valves: Solder joint copper fittings, flared end valves, and accessories shall be manufactured by Mueller, or an approved equal. Press joint fittings and valves shall be manufactured by Viega, or an approved equal. Interior ball valves shall be manufactured by Apollo Valves or an approved equal.

C. Stainless Steel Tubing, Fittings and Accessories: Stainless steel tubing, fitting and accessories shall be manufactured by Swagelok Company. Only products by another manufacturer that are labeled as compatible with Swagelok products will be considered an approved equal.

D. Automatic Air Release Vent: Automatic air release vent valves shall be manufactured by Caleffi, Crispin Valve or an approved equal.

E. Flow Limiting Valve: Flow limiting valve shall be manufactured by Griswold Controls or an approved equal.

F. Strainer: Strainer shall be manufactured by Titan Flow Control, Inc. or an approved equal.

G. PVC Piping: PVC piping for the hatch drain lines shall be as manufactured by JM Eagle, Charlotte Pipe or approved equal.

H. Sample Spigot: Sample spigot shall be manufactured by Matco Norca. No substitutions are allowed.

I. Vacuum Breaker: Vacuum breaker shall be manufactured by Watts. No substitutions are allowed.

J. Braided Hose: Braided hose shall be manufactured by Fluidmaster. No substitutions are allowed.

2.02 PIPING, FITTINGS AND VALVES

A. Copper Pipe and Fittings: For all inside installations; pipe shall be Type L, hard tubing and fitting shall be cast bronze or copper solder fittings or press joint fittings. Buried copper piping shall be Type K seamless water tube, ASTM B88. The name or trademark of the manufacturer and the grade shall be stamped at intervals along the length of the pipe.

B. Stainless Steel Tubing and Fittings: Stainless steel seamless tubing shall be Type 316 with a 3/8 inch outside diameter and a wall thickness of 0.035 inches. Fittings shall be compression fittings.

C. Stainless Steel Pipe and Fittings: Stainless steel pipe shall be Type 304 Schedule 40 seamless stainless steel. Pipe shall conform to ASTM A312. Fitting shall be Heavy Pattern 150# threaded stainless steel fittings conforming to ASTM A351 with NPT threads conforming to ASME B1.20.1

D. Corporation Stops: Corporation stops shall be Mueller H-10045, H-15000 or approved equal.

E. Ball Valves:
1. Stainless Steel ball valves shall have stainless steel bodies with stainless steel handles and Teflon seats.
2. Copper ball valves shall have lead free bronze bodies with stainless steel handles and Teflon seats.
3. PVC ball valves shall be True Union PVC body, with reinforced Teflon seat ring.

F. Automatic Air Release Vent: Selection of automatic air release vent valves for control and impulse piping to pressure transmitters is dependent on system pressures.

1. System Pressure Less Than 90 psi: If the system pressure is less than 90 psi, automatic air release vent valves shall be Plumbvent Model NA502640A, low-lead float type air vent, manufactured by Caleffi. Valve shall have a low-lead brass body and EPDM seals suitable for use in a potable water system. Valve shall have a working pressure rating of 150 psi and a maximum discharge pressure rating of 90 psi.

2. System Pressure Greater Than or Equal to 90 psi: If the system pressure is greater than or equal to 90 psi, automatic air release vent valves shall be M Series 1/2” Midget air release valve with a 1/16” orifice manufactured by Crispin Valve. Valve shall conform to AWWA C-512 and have a working pressure rating of 150 psi.

G. Flow Limiting Valve: Flow limiting valve shall be a threaded mini flow control valve as manufactured by Griswold Controls. Body shall be ductile iron with stainless steel cartridge. Valve shall have female NPT end connections. Valve shall maintain a specified flow rate with an accuracy of ±5%. Flow rate shall be determined by the Owner based on the system needs.

H. Strainer: “Y” strainer shall be Model YS55-BZ, bronze body with threaded ends and a 20 mesh Type 304 stainless steel screen. Strainer shall be sized to match the flow limiter.

I. Curb Stops: Curb stops shall be Mueller 300 Ball Curb Valves with Copper Flare nut ends, B-25154N or approved equal.

J. Sample Spigot: Sample spigot shall be Matco Norca FY-691LF with a 1/2” MIP inlet, with a chrome plated Brass C 46400 body.

K. Braided Hose: Braided hose shall be Fluidmaster Pro-series size 3/4" stainless steel washing machine connector. Length of hose as required to meet field conditions.

L. Hose Connection Vacuum Breaker: Shall be a Model No. 8 removable, brass body backflow preventer as manufactured by Watts Regulators or an approved equal.

M. Drain Piping: The drain pipe shall be Schedule 40 solid wall PVC pipe conforming to ASTM D1785. PVC fittings shall be produced in conformance with ASTM F1866. Pipe and fittings shall be designed for solvent cement welded connections.

N. PVC Check Valve: PVC Check Valve shall be Hayward TC Series True Union Ball Check Valve with PVC body and ball and EPDM seals, or approved equal.

PART 3 EXECUTION

3.01 SMALL DIAMETER PIPING

A. Copper Tubing:

1. Copper Tubing with Solder Joint Connections: Shall have all burrs removed from the tubing and fitting before joints are made. Both the inside of the fitting and the outside of the tubing shall be cleaned and polished and a non-corrosive flux shall be evenly distributed across the jointing surfaces by applying the flux and rotating the fitting and tubing together. Joints shall be made by applying heat and solder to the end of the fitting until the solder melts and then passing the flame toward the center of the fitting until the solder is absorbed and appears uniformly around the end of the fitting. Excess solder shall be removed by brushing while the solder is still in a plastic state. A fillet shall be left around the cup of the fitting. All joints shall be allowed to air cool to room temperature.

2. Press-Connect Joints for Copper Tubing: Join copper tube and press-connect fittings with tools recommended by fitting manufacturer. End of the tube shall be cleaned and marked for proper insertion depth prior to making press connection. Measure and mark insertion depth with manufacturer's depth gage. Join copper tube and push-on-joint fittings by inserting tube to measured depth and using the pressing tool to complete the jointing process.

3. Where copper tubing is to be buried, care shall be exercised in the placing and laying of copper tubing to be sure that the pipe does not have kinks or sharp bends and to assure against it being in contact with sharp stones or ledge which would cause damage to the pipe. Copper tubing shall be laid on 6" sand base and covered with 6" of sand before the backfill is placed.

B. Stainless Steel Tubing: Stainless steel tubing and Swagelok fittings and coupling shall be installed in strict accordance with the manufacturer's recommendations. All bends shall be carefully made to prevent distortion of the circular cross-sections as to cause a kink in the tubing. Impulse piping shall maintain a constant pitch from the piping to the transmitter, gauge or other instrumentation.

C. Stainless Steel Pipe: Threaded stainless steel pipe and fittings shall be installed with pipe joint compound suitable for use in a potable water supply. Joint compound shall be applied in strict accordance with the manufacturer's recommendations. Threaded connections shall be made leak tight using the proper tool, so as to avoid marring the pipe or damaging the fittings. Unions, fittings and couplings shall be installed whether or not shown on the Contract Drawings to allow the piping to be disassembled for replacement of valves or other components.

D. All piping shall be properly secured to walls with suitable brackets.

3.02 PIPE TAPPING

A. The Contractor shall tap the pipe and provide corporation stops or ball valves as required for installation of pressure transmitters, gauges and other instrumentation. Taps shall be made with proper equipment for tapping the pipe material required. Taps shall be perfectly plumb to the piping and at the locations shown on the Contract Drawings or as directed by the Engineer.

B. Service saddles shall be used for all taps large than 1-inch.

3.03 DRAIN PIPING

A. The Contractor shall install drain piping as shown on the Contract Drawings and in conformance with ASTM D 2855, Standard Practice for Making Solvent-Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings.

B. Piping shall be braced to the wall as required for proper support of the piping.

3.04 SAMPLE LINE

A. Sample line shall be installed as shown on the Contract Drawings. Pipe shall be tapped or connected at the location determined by the Owner and shall include a suitable ball valve within the chamber and corporation and curb stops for buried piping, if required. Interior sample line shall be installed parallel or to right angles to the walls and ceiling and held securely in place with corrosion resistant brackets and hangers.

3.05 SAMPLE SPIGOT

A. Sample spigot shall be connected to the copper sample line as shown on the Contract Drawings. Braided stainless steel hose shall be of sufficient length to extend above the chamber top enough to comfortably extract a water sample.

B. Sample spigot shall be mounted at the access hatch opening in such a fashion that it is easily reached without need to enter the chamber.

3.06 BLEEDER LINE

A. Bleeder line shall be installed as shown on the Contract Drawings to provide continuous flow through the Facility under all conditions. The bleeder line shall be installed parallel or to right angles to the walls and ceiling and held securely in place with corrosion resistant brackets and hangers. Unions, whether or not shown on the Contract Drawings shall be provided to allow the piping to be disassembled for replacement of valves or other components.

END OF SECTION

SECTION 16000

ELECTRICAL WORK

PART 1 GENERAL

1.01 WORK INCLUDED

A. Under this Section, the Contractor shall provide all plant, labor, materials, services and equipment required to complete all items of power, light and auxiliary electrical systems, indicated on the Contract Drawings by symbols, schedules, diagrams, notes and described in these Specifications or reasonably implied therefrom to include the items in the following general outline of work to be performed:

1. The main electrical service shall be a buried service as shown on the Site Plan, underground to the electrical enclosure. Under this Section, the Contractor shall make all arrangements for obtaining a complete electrical service.
2. Complete electric power and lighting distribution system, including convenience outlets, exhaust blower, sump pump, conduit, cable, wire, accessories and necessary incidentals.
3. Connections to signal and communication equipment and other electrical equipment or electrically operated apparatus as detailed in this and other Sections of these Specifications and as shown on the Contract Drawings.
4. Provide underground conduit for communications as specified herein and as shown on the Site Plan.
5. Temporary construction power and lighting wiring and electric service.

1.02 RELATED WORK

A. Documents affecting work of this Section include but are not necessarily limited to General Conditions, Supplementary Conditions and the Sections in Division 1 of these Specifications, and the following sections:

1. Section 02300: Earthwork;
2. Section 13400: Instrumentation and Controls;
3. Section 15100: Piping and Valves;
4. Section 15110: Pressure Reducing Valves;
5. Section 15400: Plumbing.

1.03 QUALITY ASSURANCE

A. Approved Subcontractors: Work under this Division shall be performed by one of the following Aquarion Pre-Qualified electrical subcontractors:

Power Systems Electrical Contractors
PO Box 1095
Farmington, CT 06034
(860) 676-9004

Electric Energy Systems Corporation
215 Captain Lewis Drive
Southington, CT 06489-1155
(860) 621-9657

Horton Electrical Service.
97 River Road
Canton, CT 06019
(860) 693-6388

Yankee Electric
150 Carter Henry Drive
Fairfield, CT 06824
(203) 259-5499

C.A. Senecal Electric
45 Grosvenor St.
Worcester, MA 01610
(508) 792-2399

Lafleur Electrical Company
6 Elm St.
Auburn, MA 01501
(508) 832-9333

AZ Corporation
46 Norwich Westerly Road
North Stonington, CT 06359

Electrical Contractors, Inc.
3510 Main St.
Hartford, CT 06120
(860) 549-2822

B. Should the Contractor wish to employ an electrical contractor not on the above list, they shall make arrangements to have the proposed electrical contractor approved by AWC prior to awarding them the subcontract. Should the proposed electrical subcontractor fail to meet the approval of AWC, the Contractor shall not seek compensation, nor an extension of the Contract time, as a result.

C. The electrical subcontractor shall employ a competent superintendent or foreman who shall be satisfactory to the Owner, and who shall not be changed throughout the project, unless he shall cease to be an employee of the subcontractor.

1.04 SUBMITTALS

A. Submittals shall comply with pertinent provisions of Section 01300, Submittals.

B. Shop Drawings shall give all construction details, dimensions, operating characteristics, load ratings, electrical ratings, etc., for the equipment and materials included under this Section.

C. Instructions, installation, operating, and maintenance manuals shall be as specified under Section 01780, Operation and Maintenance Data.

1.05 PRODUCT HANDLING

A. Handling of products shall comply with pertinent provisions of Section 01610, Product Handling.

PART 2 PRODUCTS

2.01 GENERAL

A. The Contractor shall furnish and install all electrical apparatus, equipment, and labor, unless an exception is made by the Owner. All conduit and wiring, including fittings, boxes, covers, mounting hardware and accessories, for electrical

equipment and electrically operated apparatus provided and/or installed under this Contract shall be furnished and installed by the Contractor, and he shall be responsible for all wiring connections to this equipment.

B. Panel and starters shall be provided, complete with "as-built" schematic and wiring diagrams. All wires shall be numbered, as shall each terminal strip for all of the associated equipment within panels. All motor starters, circuit breakers, relays, timers and all other components shall be labeled. All wiring to remote associated equipment shall be clearly described on the diagrams with remote equipment manufacturer, terminal numbers, and locations. The Contractor shall furnish and install engraved Lamacoid nameplates for all devices.

C. All materials shall conform to the requirements of the National Board of Fire Underwriters and shall bear applicable Underwriter's Laboratories labels. All electrical equipment shall conform to the requirements of the National Electrical Manufacturer's Association.

D. Temporary electrical service and wiring shall be furnished and maintained for power and lighting for the use of the Contractor during the course of construction, as specified under Section 01510, Temporary Facilities. All temporary wiring shall comply with Article 305 of the National Electrical Code (NEC).

2.02 CONDUIT

A. All conduits within the chamber shall be Schedule 80 PVC conduit installed with brushed on PVC cement. The minimum size of conduit for both power and control wiring shall be 3/4 inch unless otherwise specified by AWC.

B. EMT conduit shall not be permitted.

C. Flexible conduit shall be as specified in Appendix H at the back of this document.

D. All metallic conduits shall utilize bonding bushing bonded to local ground.

E. All underground conduits shall be as determined by the Utility Company or as shown on the Site Plan.

2.03 WIRES, CABLES, AND TERMINATIONS

A. In general, wires and cables shall have copper conductors with 600-volt insulation, Type THHN/THWN, or approved equal. Minimum wire size for power circuits shall be #12 AWG. Minimum wire size for starter and control circuits shall be #16 AWG, unless otherwise specified by AWC. Wire and cable including all control wiring shall have stranded copper conductors. Solid copper conductors shall not be used. Aluminum conductors will not be accepted and shall not be used.

B. No splices shall be made in any wire and cable, except at splice boxes, outlet boxes, and cabinets. Control wiring shall not be spliced.

C. Wiring installed in the electrical enclosures shall be concealed in conduits or raceways.

D. Wiring terminations and splices in cabinets, panels, outlet boxes or equipment shall have sufficient length to make up circuit connections, for extending circuits, or connecting to wiring devices or wire terminations. Minimum wire length shall be 6 inches.

E. Specialty wire and cable required for signal or instrumentation services shall comply with AWC Standards. All field wiring shall be labeled in accordance with AWC Wire Marking Standards included in Appendix H at the back of this document.

F. The number and size of wires is to be coordinated with the electrical equipment specified herein and shown on the Contract Drawings.

2.04 WIRE IDENTIFICATION

A. Wire numbering shall conform to AWC's numbering convention; see Appendix H at the back of this document.

B. Wire tags shall be installed at each terminated end of every conductor, including neutral and ground conductors, with both ends labeled identically. Circuits passing through junction boxes shall be Ty-wrapped into individual groups. Power circuits shall be labeled with the panelboard number and branch circuit number. Control wiring shall be labeled with the AWC Standard Electrical Control Wire Marking.

C. Color coding of multi-conductor control cables shall be as specified in NEMA Standard WC5. Color coding for power and lighting circuits shall be as specified in Appendix H at the back of this document.

D. Wires shall be labeled at each termination point. The labels shall be of a machine-printed type, black with white background, covered by a clear protective layer.

2.05 ELECTRICAL EQUIPMENT

A. Lighting Fixtures: Lighting fixtures within the chamber shall be Vaportite Series VWGL-1 as manufactured by Hubbell Outdoor Lighting consisting of a precision die-cast aluminum electrical enclosure suitable for surface conduit mounting with frosted glass globe, removable cast aluminum guard and 11 watt high power COB (Chips on Board) LED, or approved equal. Fixture shall be UL1598 listed for wet locations.

B. Exhaust Blower: Blower shall be an in-line, centrifugal fan with backward-curved impeller, UV resistant flame-retardant polycarbonate thermoplastic housing and external rotor motor with thermal overload protection, The blower shall have a minimum capacity of 114 cfm against a static pressure of 3/8-inch of water. The blower shall operate off a 120 volt, 60 Hz, power supply. Blower shall be suitable for mounting in a wet location and exhausting air through a 6-inch pipe duct. The in-line blower shall be a Model FR 140 manufactured by Fantech or approved equal.

C. Sump Pump: Sump pump shall be a Zoeller "Mighty-Mate" Model M59 Bronze series submersible pump, or approved equal. Sump pump shall be capable of automatic and manual operation.

D. Convenience Receptacles:

1. Duplex receptacles shall be Leviton Model 16352-W duplex receptacles, or approved equal. Receptacles shall be rated 20 amps at 125 volts.
2. Dedicated receptacles shall be Leviton Model 16251-W single receptacle outlets, or approved equal. Dedicated receptacles shall be rated 15 amps at 125 volts.
3. All receptacles shall be mounted in outlet boxes with weatherproof in use covers.

E. Commercial Meter Pedestal: The commercial meter pedestal shall be as manufactured by Milbank, or approved equal.

1. Commercial meter pedestal shall include a rainproof NEMA Type 3R, Type 304 stainless steel enclosure with mill finish. All doors and covers shall be fully gasketed. Electric Utility Provider and Customer equipment shall be isolated in separate, lockable and sealable, compartments. The customer section shall include a hinged dead front with access to the main and branch circuit breakers and a convenience receptacle mounted to the face of the dead front.
2. Meter socket shall be for commercial service with a lever operated bypass. The device shall bear the UL label and meet all requirements of the Electric Service Provider. Meter socket shall be service entrance rated for the service size intended.
3. The metered load center shall contain the main breakers sized to the service rating provided and branch circuit breakers of the rating and number required to feed all electrical equipment shown or specified. Main and branch circuit breakers shall be provided with a handle lock-off device. Two pole breakers shall be common trip.
4. Branch circuit breakers for control of convenience receptacles, and for other circuits where noted on the Contract Drawings, shall provide for branch circuit overload, short circuit trip, and ground fault circuit interruption. Ground faults shall be detected and interrupted by sensing an imbalance between line and neutral current of 0.005 amp (5 milliamperes).
5. A typewritten load center directory card shall be completely and accurately filled in by the Contractor. The Contractor shall provide a duplicate copy to the Owner.

2.06 MISCELLANEOUS MATERIALS

A. Conduit fittings shall be weatherproof PVC or galvanized steel fittings to match conduit type, with gasketed covers.

B. Outlet and junction boxes shall be weatherproof PVC type FS boxes with conduit connections and gasketed device covers suitable for surface mounting. Bell type boxes shall not be used.

C. Fasteners: Fasteners and hangers shall be installed as required for any and all electrical equipment. Hangers shall be stand-off clamps with a minimum 1/4" offset or Unistrut with strut clamps. Hangers shall be galvanized malleable iron. Stamped conduit hangers are unacceptable and shall not be used. All hardware shall be galvanized or stainless steel.

D. Grounding: All electrical equipment shall be suitably grounded as required by the NEC. All conduits shall have a ground wire sized per Table 250.122 of the NEC.

E. Bonding: All metallic conduits shall be bonded with ground bond bushing clamps or directly “threaded” into enclosures or junction boxes.

F. Nameplates: Furnish and install Lamacoid nameplates as required for all equipment installed.

PART 3 EXECUTION

3.01 CONDUIT INSTALLATION

A. Underground conduits shall be buried to a minimum depth of 24-inches. Excavation and backfill shall be as specified under Section 02300, Earthwork, except that the electrical conduits shall be bedded in a minimum of 6 inches of sand on the sides and bottom of the conduits. The trench shall be backfilled with sand to a minimum of 12 inches above the top of the conduits. A warning tape, as specified in Section 02300, Earthwork, shall be installed on top of the sand backfill, 12 inches above the conduit. Conduit installation shall meet the requirements of the Utility Company having jurisdiction over such.

B. Conduits shall be installed complete with all accessories, fittings, and boxes in an approved and workmanlike manner, so as to provide proper raceways for electrical conductors. Boxes, cabinets, panelboards, or other raceways with concentric and/or eccentric knockouts will not be allowed. Field punched knockouts shall be accepted. Penetration of the top of control boxes shall not be allowed. The use of reducing washers, Ericsons, compression fittings, set screw fittings, or running thread nipples will not be allowed. Myers hubs shall be used on conduits entering boxes, as specified in the AWC Electrical Standards in Appendix H.

C. Exposed conduits shall be installed parallel or to right angles to the walls and ceiling with approved conduit bends or pull boxes where conduits change direction. Exposed conduits shall be held securely in place by approved means. All hangers and other steel parts shall be galvanized. All exposed conduits used in a single run or circuit shall be of the same type and finish.

D. All bends shall be carefully made to prevent distortion of the circular cross-section. Field made bends in conduits shall have an inside radius of not less than nine diameters. Where bends of less than nine diameters are necessary and are approved, standard factory elbows shall be used; however, the conduit size chosen shall permit a cable-bending radius within the factory elbow of at least eight times the cable diameter. No conduit shall have more than three 90° bends or the equivalent thereof between pulling points.

E. All steel conduits where cut shall be reamed carefully to remove burrs. No running thread will be permitted. All threaded ends of conduits shall be coated with an approved joint compound before connections are made. All screwed joints shall be watertight. All conduits shall be bushed at the ends, except when using insulated hubs, Myers hubs or FS type boxes. Bushings shall be installed prior to pulling conductors.

F. All conduits shall be cleaned carefully before and after installation. Inside surfaces of completed conduits shall be free from all imperfections likely to injure the cable.

G. Fittings shall be installed to match the raceway being used. Fittings shall not be used to replace conduit bends and pull boxes, unless space or other problems make the use of fittings necessary. Oversize fittings shall be used whenever large cable is installed in order to maintain the proper bending radius.

H. The final conduit connection to motors, motorized equipment, or vibrating apparatus shall be made by the use of flexible, liquid-tight, conduit with liquid-tight fittings. Flexible conduit shall not be used for any outside service equipment.

I. All conduits shall be grouped neatly together as directed by the Engineer and in no case shall openings or working areas be blocked by conduits.

J. All conduits, regardless of their type shall have an Equipment Grounding Conductor (BOND) sized per the latest issue of the NEC. This includes Liquidtight metallic conduit and conduits used for control and instrumentation.

K. All metallic conduit shall have bond bushing with separate bond to chassis or enclosure it enters.

3.02 WIRING INSTALLATION

A. All cables and wires exterior to the apparatus to which they are connected shall be installed in conduit for their entire length. All wiring shall be installed in accordance with the applicable provisions of the NEC. Conductors shall be continuous from outlet to outlet. No splices shall be made except within outlet or junction boxes. All conductors to be contained within a single conduit shall be drawn in at the same time. Powdered soapstone or other approved compound shall be used as a lubricant in drawing conductors through conduits. A reasonable amount of slack shall be left in each conductor at panelboards, outlet boxes, and other devices to facilitate the making of joints and connections to fixtures and equipment. No cable bend shall have a bending radius of less than eight times its diameter.

B. Separate conduits shall be provided to isolate power, 120 volt control, 24 volt control, communications bus, and category 5. All low voltage (24 vdc only) circuits can share the same conduit.

C. See AWC’s Electrical Standard in Appendix H, for requirements regarding separation of DC control, AC control, UPS, power and communication wires and cables.

3.03 GROUND ELECTRODE SYSTEM INSTALLATION

A. General:
1. The ground electrode system shall consist of all ground electrodes available per NEC such as ground rods and all water piping.
2. The ground electrode system shall be installed to the code. Electric equipment, including motor control and communications equipment, shall be bonded directly to this system as directed by AWC. Ground rods shall be copper-clad steel or galvanized steel rods; the diameter and length shall be per the NEC.
3. Buried equipment ground electrode conductors shall be buried at least 18 inches deep. Loops or taps shall be brought up for connection to equipment or other items to be grounded/bonded.

B. Equipment Grounding:
1. All electrical equipment shall be suitably grounded as required by the NEC.
2. Provide supplementary insulated equipment grounding conductors for all loads; do not rely on the conduit or raceway as the sole ground. Provide conduit grounding bushings for all large feeders.
3. A grounding conductor shall be connected between the panelboard and the grounding system. All panels shall be provided with a grounding bar bonded to the enclosure.

C. Grounding Conductors:
1. All power circuits installed in nonmetallic conduit shall have included therewith an insulated or bare copper ground conductor.
2. The conductor shall be uninsulated where installed in underground conduits. Ground conductor capacity shall be based on the feeder or branch circuit capability and shall be not less than the conductor-ground ratio shown in Table 250.122 of the National Electric Code, latest revision.
3. All control wiring conduits shall have an insulated ground conductor included.
4. The installation of grounding conductors shall be such that they are not exposed to physical damage. All connections shall be firm and tight. Conductors and connectors shall be so arranged and provided that there is no strain upon the connection.

D. Grounding and Bonding Connections:
1. All connections shall be made by exothermic welding or bolted by satisfactory irreversible connectors listed for such use. All connections to equipment shall only be by satisfactorily bolted connectors. Bolted ground connectors shall be suitable for and match the grounding provisions furnished. Large pipe clamps listed for said use shall be used to attach the ground loop to the ductile iron water mains.
2. Where conduits are not effectively grounded by firm contact with a grounded enclosure or as indicated in Part 3.03.B of this Section, grounding bushings shall be provided.
3. Exothermic welding shall be performed with properly sized molds in good condition.

3.04 ELECTRICAL EQUIPMENT

A. Lighting Fixtures: Lighting fixtures shall be installed in strict accordance with the manufacturer's recommendations. Lighting fixtures shall be mounted complete with all required spacers, straps, hangers, outlets, fittings, fastenings, accessories, and other miscellaneous items.

B. Exhaust Blower: The blower shall be mounted to the ceiling of the chamber with a Van Stone Flange, as manufactured by Spears Manufacturing, and 6-inch PVC pipe, as specified under Section 15400, Plumbing. The blower shall be connected to the PVC piping using Fernco flexible couplings with stainless steel bands or an approved equal. Interior piping shall be braced to the wall using stainless steel hardware.

C. Sump Pump: Sump pump shall be installed in strict accordance with the manufacturer's instructions. Sump pump discharge piping shall be as shown on the Site Plan complete with PVC ball valve and check valve.

D. Commercial Meter Pedestal: Shall be fastened to the concrete using stainless steel anchors per the manufacturer recommendations. The surface between the concrete pad and the enclosure shall be sealed with silicone sealant to provide a waterproof installation.

3.05 INSPECTION AND TESTS

A. The entire electrical system shall be given a complete operational test after installation is completed by the Contractor in the presence of Aquarion Water Company's representative and the Engineer.

3.06 START-UP SERVICES

A. Start-up shall be performed in accordance with Section 01800, Facility Operations.

B. The Contractor shall perform an operational test of the equipment furnished and/or installed under this Contract in the presence of the Engineer. Factory-trained service engineers representing the major equipment manufacturers shall be present to perform pre-start-up and start-up checks; calibrate, adjust or make alterations as required during start-up; retest after making adjustments to verify alterations and adjustments; and instruct Aquarion Water Company personnel on proper operating and maintenance procedures. Representative of the relevant subcontractors shall also be present to assist in making any adjustments.

END OF SECTION

DOCUMENT 30000

ADDITIONAL BID ITEMS

PART 0 MEASUREMENT AND PAYMENT

Item No. 225 Meter Chamber Facility and Appurtenances

Payment will be made at the lump sum price under Bid Item No. 225 in the Bid Form.

Payment will be full compensation for furnishing all labor, tools, materials, and equipment to construct the meter chamber facility appurtenances. The lump sum price shall include all excavation, dewatering, rigging, shoring, bedding, fittings, service clamps, couplings, special connections, backfilling and compacting, restoration of public and private property to original condition, and protection of property, all as required by the Contract Documents.

Item No. 226 Fire Pump House Water Storage Tank Fill Line and Appurtenances

Payment will be made at the lump sum price under Bid Item No. 226 in the Bid Form.

Payment will be full compensation for furnishing all labor, tools, materials, and equipment to construct the Fire Pump House Water Storage Tank Fill Line and Appurtenances from the Contract Item Division Line noted on the plan to the clearwell including, in general: 4" gate valve, 4" ductile iron fill line, fill line piping and valves within the vault, electrical work, water level control system, piping and restoration. No payment shall be made under any unit price items for work within the limits of this Item. The lump sum price shall include all excavation, dewatering, rigging, shoring, bedding, fittings, couplings, special connections, backfilling and compacting, restoration of public and private property to original condition, protection of property, furnishing of electrical, control and mechanical equipment, test pits, concrete sidewalk restoration, temporary pavement restoration, permanent pavement restoration and cold milling of pavement, all as required by the Contract Documents.

PART 1 GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Furnish all labor, tools, and equipment necessary to successfully to construct the meter chamber facility, complete as shown on the Contract Drawings and specified herein.
2. Furnish all labor, tools, and equipment necessary to complete the installation of the fire pump house water storage tank fill line and associated improvements, complete as shown on the Contract Drawings and specified herein.

1.02 RELATED WORK

A. Documents affecting the work of this Section include, but are not limited to, General Conditions, the Technical Specifications – Standard for Pipeline Projects and the following Sections in the Supplementary Technical Specifications:

1.	Section 01710	Existing Conditions
2.	Section 01780	Operation and Maintenance Data
3.	Section 01800	Facility Operations
4.	Section 02200	Site Preparation
5.	Section 02210	Test Pits
6.	Section 02220	Selective Demolition
7.	Section 02613	Polyethylene Encasement
8.	Section 02900	Topsoil, Seeding and Plantings
9.	Section 03400	Precast Concrete
10.	Section 05500	Miscellaneous Metals – Stairs
11.	Section 07130	Waterproof Membrane
12.	Section 07210	Building Insulation
13.	Section 09900	Painting
14.	Section 13400	Instrumentation and Controls
15.	Section 15100	Piping and Valves
16.	Section 15400	Plumbing
17.	Section 16000	Electrical Work

1.03 QUALITY ASSURANCE

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

B. Coordinate the work of this Section with the work of other related Sections.

1.04 INSPECTION, TESTS AND ACCEPTANCE

A. All tests shall be made in accordance with the methods prescribed by the above mentioned AWWA Standard, and the acceptance or rejection shall be based on the test results.

1.05 SUBMITTALS

A. Comply with pertinent provisions of Section 01300.

B. Materials list of items proposed to be provided under relevant specification listed in Section 1.02.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION