B01-26

City of Concord, New Hampshire
Purchasing Division

CIP 84

WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET

Prepared by, and in coordination with the

COMMUNITY DEVELOPMENT DEPARTMENT
ENGINEERING SERVICES DIVISION

Proposal Documents
Contract Documents
Specifications

BID DUE DATE/TIME: APRIL 15, 2026 NOT LATER THAN 2:00 PM

NON-MANDATORY PRE-BID MEETING DATE/TIME:
MARCH 26, 2026 AT 10:00 AM

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City of Concord, New Hampshire
PURCHASING DIVISION
COMBINED OPERATIONS & MAINTENANCE FACILITY
311 NORTH STATE STREET
CONCORD, NH 03301
603-230-3664 FAX: 603-230-3656
www.concordnh.gov

INVITATION FOR BIDS

The **Purchasing Division, located at the Combined Operations and Maintenance Facility, 311 North State Street, Concord, New Hampshire 03301**, will receive sealed Bids for B01-26, "CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET" until 2:00 PM on April 15, 2026 at which time and place they will be opened and publicly read. The sealed envelope should be plainly marked:

B01-26
CIP 84
WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET
Concord, NH

Bids may be issued only by the Purchasing Manager, or his/her designee, to authorized firms and are not transferable unless authorized by the Purchasing Manager, or his/her designee.

Plans and specifications may be downloaded at no charge from the City of Concord, New Hampshire FTP site at https://ftp.concordnh.gov; Account: vendor; Password: Concord1. Plans and specifications are not available in hard copy.

Each bid shall be accompanied by a certified check, cash, check drawn by a New Hampshire bank, or bid bond for and subject to conditions provided in the Instruction to Bidders. The amount of such bid deposit shall be ten percent (10%) of the total bid, made payable to the City of Concord, New Hampshire.

A non-mandatory pre-bid informational meeting will be held at 10:00 AM on Thursday, March 26 at the City of Concord, City Hall, 2nd Floor Conference Room, 41 Green Street, Concord, NH 03301.

The successful bidder will be required to furnish a performance bond and a separate payment bond each in the amount of one hundred percent (100%) of the contract price.

Progress Payments: On not later than the last day of every month, the Contractor shall prepare and submit an invoice covering the total quantities of work that have been completed from the

start of the job up to and including the last day of the preceding month together with such supporting evidence as required by the CITY.

Retainage: The CITY shall retain a portion of the progress payments, each month, in accordance with the following procedures:

1. Until work is 50% complete, as determined by the CITY, retainage shall be 10% of the monthly payments claimed. The computed amount of retainage shall be deposited in a non-interest-bearing account established by the CITY.

2. After the work is 50% complete, and provided the Contractor has satisfied the CITY in quality and timeliness of the work, and provided further that there is no specific cause for withholding additional retainage no further amount shall be withheld.

3. Upon substantial completion, the amount of retainage shall be reduced to 2% of the total contract price plus an additional retainage based on the CITY's estimate of the fair value of the punch list items and the cost of completing and/or correcting such items of work, with specified amounts for each incomplete or defective item of work. As these items are completed or corrected, they shall be paid out of the retainage until the entire project is declared completed. The final 2% retainage shall be held, in the non-interest-bearing account, during the two-year warranty period and released only after the CITY has accepted the project.

Liquidated Damages: In the event that the Contractor fails to satisfactorily complete the work contemplated and provided for under this contract, on or before the date of completion **September 25, 2026,** the CITY shall deduct from the payments due the Contractor each month, the sum of **one thousand dollars ($1,000.00) plus engineering charges per day** for each calendar day of delay, which sum is agreed upon not as a penalty, but as fixed and liquidated damages for each day of such delay, to be paid in full and subject to no deduction. If the payments due the Contractor are less than the amount of such liquidated damages said damages shall be deducted from any other monies due or to become due the Contractor or shall be paid by the Contractor's surety.

The CITY reserves the right to reject any or all bids or any part thereof, to waive any formality, informality, information and/or errors in the proposal, to accept the proposal considered to be in the best interest of the CITY, or to purchase on the open market if it is considered in the best interest of the CITY to do so.

Failure to submit all information as detailed on the Bid Submission Checklist and/or submission of an unbalanced bid are sufficient reasons to declare a proposal as non-responsive and subject to disqualification.

All bids are advertised, at the CITY's discretion, in various publications and are posted publicly as detailed below:

Name	Advertising Medium	Address	Phone/Fax	Email and Web Address
City of Concord, NH	Posted on City Website and in City Hall Lobby	311 North State Street, Concord NH 033301	603.230-3664 603.230.3656(fax)	twaterman@concordnh.gov www.concordnh.gov/purchasing
Associated General Contractors	Bid House	48 Grandview Drive, Bow NH 03304	603.225.2701 603.226.3859(fax)	plansroom@agcnh.org www.agcnh.org
Construction Summary of NH	Bid House	734 Chestnut St, Manchester NH 03104	603.627.8856 603.627.4524(fax)	info@constructionsummary.com www.constructionsummary.com
Bid Ocean	Bid House	PO Box 40445, Grand Junction, CO 81501	866.347.9657 877.356.9704(fax)	bids@bidocean.com www.bidocean.com
Dodge Data & Analytics	Bid House	300 American Metro Blvd, Suite 185, Hamilton, NJ 08619	607.898.2053	dodge.bidding@construction.com www.construction.com
New England Construction News - CDC News	Bid House	100 Radnor Rd S-102, State College, PA 16801	1.800.652.0008 1.888.285.3393(fax)	ENR.products@bnpmedia.com www.enr.com

APPROVED:

CITY OF CONCORD, NEW HAMPSHIRE

Tina M. Waterman, Purchasing Manager

Date: March 19, 2026

INSTRUCTIONS TO BIDDERS

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET
CONCORD, NH

1. EXPLANATION TO BIDDERS:

Any explanation regarding the meaning or interpretation of contract drawings, specifications or other contract documents must be requested in writing with sufficient allowance of time for receipt of reply (at least seven (7) calendar days) before the time of the bid opening. Any such explanations or interpretations shall be made in the form of an addendum to the documents and shall be furnished to all bidders who shall submit all addenda with their bids. Oral explanations and interpretations made prior to the bid opening shall not be binding. Requests for explanations should be addressed to:

Tina M. Waterman, Purchasing Manager
Combined Operations & Maintenance Facility
311 North State Street
Concord, NH 03301
(603) 230-3664
(603) 230-3656 (Fax)
twaterman@concordnh.gov

2. PRE-BID MEETING:

A non-mandatory pre-bid informational meeting has been scheduled for **10:00 am Thursday March 26, 2026** at the City of Concord, City Hall, 2nd Floor Conference Room, 41 Green Street, Concord, NH 03301.

3. BIDDERS UNDERSTANDING:

The Contractor acknowledges that they have visited the work site and familiarized themselves with pertinent local conditions such as location, character, accessibility, existing work, and labor conditions.

The City of Concord shall make available to all prospective bidders, previous to the receipt of bids, information that it may have as to the extraordinary site conditions at the work site. Such information shall be given, however, as the best factual information available without the assumption of responsibility for its accuracy or for any conclusions that the contractor might draw there from.

4. QUALIFICATIONS OF BIDDER:

The City of Concord may make such investigations as it deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the City all such information

and data for this purpose as the City may request. The City reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the City that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

5. BID BOND REQUIREMENTS:

Security required shall be submitted with the bid and failure to submit same may be cause for rejection. The bidder, at his/her option, shall furnish a certified check drawn by a New Hampshire bank, cash, or a bid bond as security in the amount required. Security deposited by unsuccessful bidders will be returned as soon as practicable after the opening.

6. CONTRACTS, BONDS, AND INSURANCE:

The successful bidder shall enter into a written Contract with the City of Concord within the time specified by the bid. A performance bond and a separate payment bond in the amount of 100 percent (100%) of the contract price shall be furnished at the time of signing the formal Agreement. The Contractor shall secure and maintain the insurance policies required under this Contract.

7. TIME OF COMPLETION:

The successful Contractor agrees to commence work within a set amount of time after the written Notice to Proceed as agreed upon by the City and the Contractor and that the date of final completion, with such extensions as approved in writing by the City, shall be no later than **Friday September 25, 2026.**

8. BID DUE DATE AND TIME:

Bids are due to the Purchasing Manager at 311 North State St, Concord, NH no later than **2:00 pm Wednesday, April 15, 2026**.

GENERAL TERMS AND CONDITIONS

To view the City of Concord's full terms and conditions for this project please visit https://concordnh.gov/DocumentCenter/View/15425/BID-General-Terms-and-Conditions?bidId=

Unless any exceptions to the City's General Terms and Conditions are expressly stated on the enclosed Specifications Exception Form, the vendor shall accept the City's General Terms and Conditions as written.

ENGINEERING SUPPLEMENTAL TERMS AND CONDITIONS

1. INSPECTION FEES:

The Contractor (or subcontractor if used) shall not be assessed fees for layout or inspection of work by City of Concord personnel, when such layout and/or inspection is required as part of the Specifications for the project. If, however, additional layout and/or re-establishment of bench marks, etc. is required due to negligence or failure of the Contractor to conform to the Specifications and Standards, then charges shall be made to him, and shall not be reimbursable by the City. The Contractor may be assessed the additional expense for inspection work during overtime or weekend hours should these hours be solely at the convenience of the Contractor.

2. OPPORTUNITIES FOR RESIDENTS:

The Contractor covenants and agrees that in the work to be performed under this Contract, the Contractor will take affirmative action to ensure that residents of the City of Concord are given maximum opportunity for employment and that business concerns located in, or owned in substantial party by, residents of the City of Concord are to the greatest extend feasible, awarded contracts.

The City may request, in which case the Contractor shall provide, such information as the Owner shall determine is necessary to ascertain the Contractor's conformance with the provisions of this section.

3. EXTRA WORK:

The Contractor shall do any work incidental to the proper completion of the contract not herein otherwise provided for when and as ordered in writing by the City. The amount of compensation to be paid to the Contractor for extra work as so ordered, shall be determined by the City to be one of the following:

1. By such applicable unit prices, if any, as set forth in the Contract;

2. or if no such unit prices are so set forth, then by unit prices or by a lump sum mutually agreed to by the City and the Contractor; or

3. If no such unit prices are so set forth and if the parties cannot agree upon unit prices or a lump sum, then by the actual net cost in money to the Contractor as approved by the City of the materials and of the wages of applied labor required for such extra work, plus such rental of plant and equipment (other than small tools) required and approved for such extra work, plus ten percent (10%). No extra work will be paid for unless specifically ordered as such by the City in writing.

4. In the case of extra work performed by subcontractors, whether under the specific contract item provided herein, or otherwise approved by the City, the ten percent (10%) added to the reasonable cost of the work will be allowed only to the subcontractor. On such work, an additional five percent (5%) of the reasonable cost (before addition to the ten percent -10%) will be paid to the Contractor for his work in directing the operations of the subcontractor and for any overhead involved.

4. THE CITY ENGINEER TO DECIDE:

The City Engineer shall decide all questions which may arise as to the performance, continuity and acceptability of work to be done and all materials to be furnished under this contract, and shall decide all questions which may arise as to the interpretation of plans and specifications used and as to the fulfillment of this contract on the part of the Contractor and as to defects in the Contractor's work. The order, progress and methods of construction shall at all times be satisfactory to the City Engineer. The contractor shall vie his attention constantly to the faithful prosecution of the work, and shall keep the same under his personal control.

5. TIME AND MANNER OF DOING THE WORK:

Before any work is begun, the Contractor shall discuss fully with the City Engineer the order and manner of doing the work and the operating procedure shall at all items comply with the requirements of City Engineer. Care should be taken to keep private and commercial entrance (i.e. service roads and walkways) interruptions to a minimum and advance notice should be given the occupant when such interruptions are anticipated.

6. GENERAL PROVISIONS:

Whenever the Contractor is not present on any part of the work where it may be desired to give directions, orders may be given by the City Engineer and shall be received and obeyed by the superintendent or foreman who may have charge of the particular work in reference to which orders are given.

7. EXISTING STRUCTURES:

The Contractor shall take full responsibility for maintaining and restoring all existing structures encountered by his construction operations, including but not limited to paving, catch basins, drains, electric lights, utility conduits, utility poles, telephone lines, electric lines, CATV lines,

fire alarm lines, gas mains and any other structures encountered above or below ground. Damage to utilities will be repaired by the respective utility and the Contractor will pay all cost of repairs and/or damage incurred. The Contractor shall receive no additional compensation for maintaining, supporting, protecting, restoring, and relocating if necessary, all electric, CATV, fire alarm, and telephone poles and lines, and gas mains which are encountered in his work.

8. MAINTAIN STREETS PASSABLE:

Unless otherwise specifically permitted by the proper authorities of the City, the Contractor shall at all times maintain the streets passable on which he is conducting his work. The Contractor shall maintain access to all houses, garages, etc., with the least possible interruption and shall conduct his work so that the inconvenience to all property owners adjacent to the work will be at a minimum. All property owners shall be notified in advance if access to their property is to be temporarily interrupted in case of any hardship resulting there from; the Contractor shall make suitable arrangements with the property owner to the satisfaction of the City Engineer.

9. PERMITS:

The Contractor shall secure all necessary permits from the state, city authorities having jurisdiction in the streets or highways and all other necessary building and construction operations requiring permits, and he will be required to repair any damage caused by his operations to any street, highway or existing structure either above or below ground surface.

10. USE OF HIGHWAYS:

The use of state, city and town highways for hauling construction equipment or materials involved in the work will be subject to the rules and regulations of the state highway department, city or town governing such use by contractors and the Contractor shall comply with all such rules and regulations.

11. BARRICADES, DANGER, WARNING AND DETOUR SIGNS:

The Contractor shall provide, erect and maintain all necessary barricades, suitable and sufficient warning lights, danger signals and signs, provide flaggers in numbers as required, and shall take all necessary precautions for the protection of the work and the safety of the public. The Contractor will be required to conduct all operations so as to keep traffic moving steadily and to avoid traffic tie-ups. Highways closed to traffic shall be protected by adequate barricades on which suitable and acceptable warning and detour signs shall be placed and maintained. As a further precaution, the Contractor shall keep, from any city land or easements at the site of work, all persons not directly connected with the work or authorized by the City Engineer to be in the work area.

12. ACCESS TO WORK:

Authorized agents and employees of the city may, at any time and for any purpose, enter upon the work and premises used by the Contractor, and the Contractor shall provide safe and proper

facilities therefore. Other contractors of the Community Development Department, federal, state and city officials and landowners may also, for all the purposes which may be required by their agreements and contracts, enter upon the work and premises used by the Contractor and other contractors of the Community Development Department, state or landowners in regard to their work as determined by the Community Development Department.

13. SITE MANAGEMENT, DUST CONTROL, ETC.:

The Contractor shall maintain the site of the work in a reasonable condition, shall avoid or promptly remove accumulations of dirt, debris, etc., from highways and storage areas, shall control the creation of a dust nuisance in accordance with the City of Concord Code of Ordinances as referenced in the General Terms and Conditions, shall limit noise and vibration, and take such other measures as may be reasonable or proper to avoid undue nuisance to surrounding property owners.

14. LINES AND GRADES:

The Contractor shall keep the City Engineer informed in advance of the items and places at which he intends to do work. It is the responsibility of the Contractor to furnish lines and grades for new construction and to make necessary measurements and minor adjustments. The Contractor shall have no claim for damages or extension of time on account of delays in giving lines and grades or destruction of marks and the consequent necessity for replacement. The Contractor shall be and is required to check all such lines and grades before and during the progress of the work, and the Contractor alone shall be responsible for the proper fit and dimension of all portions of the work.

The work during its progress and at its completion shall conform fully to the established lines and grades and to the directions given to the Contractor as the work progresses, subject to such modifications or additions the City Engineer shall determine to be necessary during the execution of the work.

15. ALL WORK TO BE INSPECTED:

Proper notice shall be given the City Engineer by the Contractor of the times and places he intends to do work. All work is subject to inspection by the City Engineer. Any work which is done contrary to the direction of the City Engineer shall be considered unauthorized. If such unauthorized work is not accepted by the City Engineer, the Contractor shall agree to remove and replace such unauthorized work at his own expense to the satisfaction of the City Engineer when directed to do so.

16. CLEAN UP OR RESTORATION WORK:

The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees or work, or the employees or work of any of his subcontractors.

17. EMERGENCY REPAIRS, ETC.:

If, in the opinion of the City Engineer, at any time while the Contractor is responsible for the work or maintenance thereof, any emergency exists because there are not adequate barricades, lights, signs, etc. to warn and protect the public and/or persons or property in the vicinity of the work, or that the work under construction, or other adjacent streets, ground or structures are in acute danger of damage or injury by reason of inadequate drainage protection or other proper precautions which it is the duty of the Contractor to provide or to have provided; or that a street, road, walk or other premises are unsafe by reason of any settlement of any filling placed by the Contractor, the City Engineer may direct the Contractor or the Contractor's representative to remedy the difficulty immediately to furnish and erect the needed barricades, lights, or signs; to provide and set adequate sheeting, shoring and bracing to provide adequate pumps and drainage facilities; to fill settlements; to smooth roads, streets, walks or grounds; or to perform similar urgently needed services. If the Contractor or his representative is not present or is not immediately available or able to receive such orders or to perform the emergency services needed, or fails to act following such notice, the City Engineer, acting for the City, may cause such defects to be corrected; roads and walks made unsafe etc. by such person(s) or means as it may elect, and the Contractor shall reimburse the city of any expense incurred by it in performing such work. The City may deduct from any sum or sums due or to become due to the Contractor such sum or sums as may be proper to reimburse the City of such expense(s), or may collect the costs of such work by other means.

18. ACT OR FAILURE TO ACT ON PART OF THE CITY ENGINEER DOES NOT REDUCE LIABILITY OF CONTRACTOR:

Given notice, or failure to give notice, or acting as authorized in the preceding sections, or failure to so act on the part of the City Engineer; or any questions as to the adequacy of the notice by the City Engineer, or of his acts or those of the City as provided in those sections shall not in any way relieve the Contractor from any part of his responsibility or liability for performing any and all of the acts and assuming any and all of the risks, duties and liabilities which the Contractor is obligated to perform or assume.

19. TECHNICAL SPECIFICATIONS:

The technical specifications for the project will use the State of New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction (latest version) with Special Provision and technical references as attached to these Contract Documents.

20. UNFORESEEN CONDITIONS:

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract Documents, or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site, the Contractor shall immediately notify the City Engineer in writing before the conditions are disturbed. The City Engineer will promptly investigate the conditions. If it is determined that the conditions materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work, an equitable

adjustment will be negotiated between the City and the Contractor. No claim of the Contractor under this clause shall be allowed unless the Contractor has given the required written notice prior to disturbing the site.

21. WINTER OPERATIONS:

Unless specifically authorized in writing by the City Engineer, the winter shutdown period for roadway paving and major earthwork shall be from November 15th to April 15th. During any winter shutdown, or for trenches left unpaved during winter months, the Contractor assumes full responsibility for winter maintenance within the project limits. This includes, but is not limited to, snow removal, ice control, and trench patching to maintain safe, passable conditions for vehicular and pedestrian traffic. If the Contractor fails to maintain the site, the City reserves the right to perform necessary plowing or patching and deduct all associated costs from the Contractor's future payments.

22. UTILITY INTERRUPTION NOTICE:

The Contractor shall coordinate any planned interruption of municipal water or sewer services with the City of Concord General Services Department and the City Engineer. The Contractor shall provide a minimum of seventy-two (72) hours written notice to the City, and to all affected residents and businesses, prior to any planned shut-down. The notice shall clearly state the date, estimated duration of the outage, and a point of contact for the Contractor. Unplanned emergency interruptions resulting from contractor damage shall be immediately reported to the City Engineer and the appropriate utility owner.

23. POTABLE WATER:

The General Services Department of the City of Concord will supply water service for the project. The contractor shall not use any CITY hydrant without specific authorization from the CITY's representative. All hydrant connections will be made by the authorized CITY representative. All connections to the CITY's water system, outside of the temporary water system, will be made with an approved meter and back-flow prevention device which shall be obtained from the General Services Department. A refundable deposit is required, which can range up to $1,000.00, various fees including usage, monthly rental, set-up, lost or damaged equipment are removed from the deposit when returned.

24. SUBMITTAL REVIEW:

The Contractor shall submit shop drawings, product data, and samples well in advance of the work to the City Engineer for review. The City Engineer shall be permitted a minimum of fourteen (14) calendar days for the review of each submittal. The Contractor's submittals shall consist of shop details, erection, and other working plans showing dimensions, sizes, quality of material, details, and other information necessary for the complete fabrication and installation of the work. Prior to the approval of the drawings, any work done or materials ordered for the work involved shall be at the Contractor's sole risk. The Engineer's approval of the Contractor's

working drawings will not relieve the Contractor from responsibility for errors in dimensions or for incorrect fabrication processes.

25. MAINTENANCE OF TRAFFIC:

A Traffic Control Plan (TCP) shall be submitted to the Engineer for review and will require approval before work can commence. All signage must conform to MUTCD standards, as applicable. Roads and sidewalks shall be open and safe for vehicular and pedestrian traffic at the end of each working day. Variations to the TCP will be dependent on the Contractors schedule and operations. However, the Contractor shall maintain access to properties and driveways throughout construction, to the extent that is possible. The contractor shall also maintain safe pedestrian access throughout construction, to the extent that is possible.

26. PAVEMENT MARKINGS:

Where required by the Contract Documents, permanent pavement markings are to be reviewed with the Engineer prior to placement. Markings not approved shall be removed at the Contractor's own expense, if requested by the Engineer.

27. BOUNDS:

The Contractor shall exercise due care when working around all bounds and other survey monuments that are to remain. Should any damage to a monument result from the actions of the Contractor, it shall be replaced and/or realigned by the Contractor as directed by the Engineer. No further compensation will be due the Contractor for materials, labor, and licensed surveyor costs required to re-establish the monument in its proper orientation.

28. RECORD PLANS:

The Contractor shall electronically submit record plan markups, on a full copy of the Project Plans, to the Engineer upon completion of the project.

29. FINAL INSPECTION AND ACCEPTANCE:

Upon notice from the Contractor of presumptive completion of the entire project, the Engineer will perform an inspection. If all construction provided for and contemplated by the contract is found complete to his satisfaction, this inspection shall constitute the final inspection and the Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of the final inspection.

If, however, the inspection discloses any work in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of such work, and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed. In such event, the Engineer will make the final

acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

30. ADMINISTRATIVE CLOSEOUT AND FINAL PAYMENT:

a) When the project has been accepted and upon submission by the Contractor of all required reports, completed forms and certifications, the Owner will review the final estimate of the quantities of the various classes of work performed. The Contractor may be required to certify that all bills for labor and material used under this contract have been paid.
b) The Contractor shall file with the Owner any claim that the Contractor may have regarding the final estimate at the same time the Contractor submits the final estimate. Failure to do so shall be a waiver of all such claims and shall be considered as acceptance of the final estimate.
c) All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

SCOPE OF WORK

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET
CONCORD, NH

1. PROJECT IDENTIFICATION:

The project name is "CIP 84 WATER MAIN REPLACMENT PROJECT, SCHOOL STREET". The Contract Documents were prepared by the Engineering Services Division, City of Concord, NH. The Contract Documents are dated March 19, 2026.

2. DESCRIPTION OF WORK:

This project consists of the following areas and major components:

SCHOOL STREET

This project consists of the cleaning and cement-mortar lining of nearly 2,600 linear feet of 10-inch cast iron water main. The project limits extend from the intersection of School Street and Westbourne Road to the intersection of School Street and Rum Hill Road.

The proposed work includes the installation and maintenance of a temporary bypass water system to ensure continuous service to residential properties, with the exception of scheduled short-term shutdowns. Work shall be performed in accordance with the 2020 City of Concord Construction Standards and Details to provide a restored hydraulic capacity and extended service life for the existing 1920s-era infrastructure.

The work also includes:

- Hydrant Infrastructure: the replacement of hydrant laterals, resetting existing hydrants, and installing new gate valves and boxes
- Water Service Valves: the replacement of existing water service valves (3/4" and 1") and necessary tie-in piping and fittings
- Restoration: permanent pavement restoration and turf establishment

3. BUDGET:

The engineering cost estimate for this project is approximately $500,000.

UTILITY CONTACTS

Electric: ***Unitil Energy Systems, Inc.***
Chuck Lloyd
Manager – Electrical Operations
(603) 227-4520
lloyd@unitil.com

Telephone: ***Fidium Fiber (formerly Consolidated Communications, Inc.)***
David Kestner
Network Engineer
(603) 431-2119
david.kestner@fidium.com

CATV: ***Comcast/Xfinity***
Keith Marshall
Construction Specialist
(603) 628-2561
keith_marshall@cable.comcast.com

CATV: ***FirstLight Fiber***
Jeff Royal
Network Engineer
(585) 433-9112
(833) 484-0404 (Emergency 24/7)
jroyal@firstlight.com

Natural Gas: ***Liberty Utilities***
Ryan Moulton
Customer Field Service Supervisor – North
(603) 212-6001
ryan.moulton@libertyutilities.com

Fire Alarm: ***Concord Fire Department***
Harold Palmer
Captain/Fire Alarm & Traffic Superintendent
(603) 225-8667
hpalmer@concordnh.gov

Water Billing: ***General Services Division***
Utility Billing
(603) 225-8693
utilitybilling@concordnh.gov

BID SUBMISSION CHECKLIST

In order to be considered responsive, each prospective contractor must submit the following documents, in one (1) original hard copy, as part of the contractor's bid:

1. Bid Form
2. Itemized Bid Sheets-Base Bid
3. 10% Bid Bond
4. W9 Form
5. City of Concord Indemnification Agreement
6. Acknowledgement of the City's Insurance Requirements
7. Qualifications Statement

The successful contractor must submit, prior to contract signing, the following documentation:

1. Payment Bond in the amount of 100% of the contract price;
2. Performance Bond in the amount of 100% of the contract price; and
3. The contractor's insurance certificate (naming the City of Concord as **Additional Insured)** that meets the minimum required types and levels of coverage.

BID FORM

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET
CONCORD, NH

Description of Work to be Performed: Refer to **CONTRACT DOCUMENTS**

SEND TO: Tina M. Waterman
Purchasing Manager
City of Concord
311 North State Street
Concord, NH 03301

In compliance with your Invitation for Bids dated _____, 2026 for the above captioned project, the undersigned hereby proposes to furnish all labor, equipment and materials and perform all work for said project for the not-to-exceed price of:

Base Bid – School Street price of:

_____Dollars $_____
Written Figures

Said work to be done in strict accordance with the plans, specifications and all Contract Documents; and the undersigned agrees that upon written acceptance of this bid, the Contractor will within ten (10) calendar days of receipt of such notice, execute a formal Contract Agreement with the City of Concord, and that the Contractor will provide the necessary payment and performance bonds and certificates of insurance. The undersigned further agrees that, if awarded the Contract, the Contractor will commence the work within a set amount of time after date of the written Notice to Proceed as agreed upon by the City and the Contractor and that they will complete the work no later than **September 25, 2026.**

THE UNDERSIGNED ACKNOWLEDGES:

1. THAT HE/SHE IS AN AUTHORIZED AGENT OF THE VENDOR SUBMITTING THIS BID.

2. THE RECEIPT OF THE FOLLOWING ADDENDA_____.

3. THE FIRM SUBMITTING THIS BID HAS NEVER DEFAULTED ON ANY MUNICIPAL, STATE OR FEDERAL CONTRACT.

4. THE TERMS AND CONDITIONS SET FORTH HEREIN.

COMPANY: _____

SIGNED BY: _____

PRINTED OR TYPED NAME: _____

ADDRESS: _____

TELEPHONE NUMBER: _____FAX NUMBER: _____

E-MAIL: _____

CELL PHONE NUMBER: _____

PRIMARY POINT OF CONTACT: _____

PLEASE FILL OUT, SIGN AND RETURN TO:

City of Concord
Tina M. Waterman, Purchasing Manager
311 North State Street
Concord, NH 03301
603-225-8530
603-230-3656 (Fax)
twaterman@concordnh.gov

Due Date/Time: April 15, 2026 - No Later Than 2:00 PM

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET

CONCORD, NH
ITEMIZED BID SHEETS

BASE BID – SCHOOL STREET

BID ITEM NO.	*EST. QTY.*	*UNITS*	*BID ITEM DESCRIPTION AND UNIT PRICE (IN WORDS)*	*UNIT PRICE IN FIGURES (DOLLARS AND CENTS)*	*BID ITEM TOTAL IN FIGURES (DOLLARS AND CENTS)*
201.21	1	EA	REMOVING SMALL TREES _____ DOLLARS AND _____ CENTS		
203.1	322	CY	COMMON EXCAVATION _____ DOLLARS AND _____ CENTS		
203.2	33	CY	ROCK EXCAVATION _____ DOLLARS AND _____ CENTS		
206.19	24	CY	COMMON STRUCTURE EXCAVATION (EXPLORATORY) _____ DOLLARS AND _____ CENTS		
209.1	33	CY	GRANULAR BACKFILL _____ DOLLARS AND _____ CENTS		
304.3	167	CY	CRUSHED GRAVEL _____ DOLLARS AND _____ CENTS		
304.35	111	CY	CRUSHED GRAVEL FOR DRIVES _____ DOLLARS AND _____ CENTS		
403.12023	68	TN	HBP-3/4" BINDER MIX, HAND METHOD _____ DOLLARS AND _____ CENTS		
403.12043	155	TN	HBP-1/2" SURFACE MIX, HAND METHOD _____ DOLLARS AND _____ CENTS		
403.19	34	TN	HBP - TEMPORARY _____ DOLLARS AND _____ CENTS		
410.22	69	GAL	ASPHALT EMULSION FOR TACK COAT _____ DOLLARS AND _____ CENTS		
417	855	SY	COLD PLANING BITUMINOUS SURFACES _____ DOLLARS AND _____ CENTS		

BID ITEM NO.	*EST. QTY.*	*UNITS*	*BID ITEM DESCRIPTION AND UNIT PRICE (IN WORDS)*	*UNIT PRICE IN FIGURES (DOLLARS AND CENTS)*	*BID ITEM TOTAL IN FIGURES (DOLLARS AND CENTS)*
602.0001	2582	LF	CCTV VIDEO INSPECTION _____DOLLARS AND _____CENTS		
602.71010	2582	LF	CLEAN AND LINE (CEMENT-MORTAR) 10" WATER MAIN _____DOLLARS AND _____CENTS		
608.13	20	SY	3" BITUMINOUS SIDEWALK _____DOLLARS AND _____CENTS		
609.5	220	LF	RESET GRANITE CURB _____DOLLARS AND _____CENTS		
611.05206	25	LF	6" DOUBLE CEMENT LINED DUCTILE IRON WATER PIPE CLASS 52, ZINC COATED _____DOLLARS AND _____CENTS		
611.05208	23	LF	8" DOUBLE CEMENT LINED DUCTILE IRON WATER PIPE CLASS 52, ZINC COATED _____DOLLARS AND _____CENTS		
611.05210	90	LF	10" DOUBLE CEMENT LINED DUCTILE IRON WATER PIPE CLASS 52, ZINC COATED _____DOLLARS AND _____CENTS		
611.05212	5	LF	12" DOUBLE CEMENT LINED DUCTILE IRON WATER PIPE CLASS 52, ZINC COATED _____DOLLARS AND _____CENTS		
611.520075	22	EA	3/4" SERVICE VALVE, ROD, AND BOX _____DOLLARS AND _____CENTS		
611.520100	4	EA	1" SERVICE VALVE, ROD, AND BOX _____DOLLARS AND _____CENTS		
611.520150	1	EA	1.5" SERVICE VALVE, ROD, AND BOX _____DOLLARS AND _____CENTS		
611.7	2110	LB	FITTINGS _____DOLLARS AND _____CENTS		
611.71006	2	EA	6" GATE VALVE WITH BOX _____DOLLARS AND _____CENTS		
611.71008	1	EA	8" GATE VALVE WITH BOX _____DOLLARS AND _____CENTS		

BID ITEM NO.	*EST. QTY.*	*UNITS*	*BID ITEM DESCRIPTION AND UNIT PRICE (IN WORDS)*	*UNIT PRICE IN FIGURES (DOLLARS AND CENTS)*	*BID ITEM TOTAL IN FIGURES (DOLLARS AND CENTS)*
611.71010	3	EA	10" GATE VALVE WITH BOX _____DOLLARS AND _____CENTS		
611.71012	1	EA	12" GATE VALVE WITH BOX _____DOLLARS AND _____CENTS		
611.811	2	EA	RESET HYDRANT _____DOLLARS AND _____CENTS		
611.9512	10	SY	INSULATION BOARD, 2" THICK _____DOLLARS AND _____CENTS		
611.99102	2263	LF	2" TEMP WATER PIPING _____DOLLARS AND _____CENTS		
611.99106	2213	LF	6" TEMP WATER PIPING _____DOLLARS AND _____CENTS		
618.7	400	HR	FLAGGERS _____DOLLARS AND _____CENTS		
619.1	1	U	MAINTENANCE OF TRAFFIC _____DOLLARS AND _____CENTS		
628.2	1861	LF	SAWED BITUMINOUS PAVEMENT _____DOLLARS AND _____CENTS		
632.0118	36	LF	RETROREFLECTIVE PAINT PAVEMENT MARKING, SINGLE SOLID LINE, 18" WIDE _____DOLLARS AND _____CENTS		
632.3118	156	LF	RETROREFLECTIVE THERMOPLASTIC PAVEMENT MARKING, SINGLE SOLID LINE, 18" WIDE _____DOLLARS AND _____CENTS		
646.51	653	SY	TURF ESTABLISHMENT WITH MULCH, TACKIFIERS, AND 6" LOAM _____DOLLARS AND _____CENTS		
692	1	U	MOBILIZATION _____DOLLARS AND _____CENTS		
699	1	$	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL _____DOLLARS AND _____CENTS		

BID ITEM NO.	*EST. QTY.*	*UNITS*	*BID ITEM DESCRIPTION AND UNIT PRICE (IN WORDS)*	*UNIT PRICE IN FIGURES (DOLLARS AND CENTS)*	*BID ITEM TOTAL IN FIGURES (DOLLARS AND CENTS)*
1008.3	1	$	ADDITIONS AND ALTERATIONS AS NEEDED - OBSTRUCTION REMOVAL _____DOLLARS AND _____CENTS		
			PROJECT TOTAL BASE BID PROPOSAL		

Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to *www.irs.gov/FormW9* for instructions and the latest information.

Give form to the requester. Do not send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See *Specific Instructions* on page 3.

1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)

2 Business name/disregarded entity name, if different from above.

3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor ☐ C corporation ☐ S corporation ☐ Partnership ☐ Trust/estate

☐ LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) . . . . .

Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner.

☐ Other (see instructions)

3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions . . . . . ☐

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any)

Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any)

(Applies to accounts maintained outside the United States.)

5 Address (number, street, and apt. or suite no.). See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

___ – ___ – ____

or

Employer identification number

__ – _____

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	**Signature of U.S. person**	**Date**

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9*.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

CITY OF CONCORD, NEW HAMPSHIRE
INDEMNIFICATION AGREEMENT SHALL BE, AND IS HEREBY A PROVISION OF ANY CONTRACT

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT
SCHOOL STREET
CONCORD, NH

Vendor shall defend, indemnify, and hold harmless the City and its officials, agents, and employees (collectively, the "Indemnified Parties") from and against all demands, claims, suits and actions seeking damages, penalties, attorney's fees, costs, expenses, equitable relief, statutory relief or any other relief on account of bodily injury, death, personal injury, property damage, economic injury and any other injury or loss, (collectively, "Liabilities") arising from or relating to this contract, unless the Indemnified Parties were solely negligent.

In addition, Vendor shall defend, indemnify and hold harmless the City for any costs, expenses and liabilities arising out of a claim, charge or determination that Vendor's officers, employees, contractors, subcontractors or agents are employees of the City, including but not limited to claims or charges for benefits, wages, fees, penalties, withholdings, damages or taxes brought in connection with laws governing workers compensation, unemployment compensation, social security, Medicare, state or federal taxation, and/or any other similar obligation associated with an employment relationship.

The indemnification obligations set forth herein shall survive the term of the contract. Vendor must choose defense counsel acceptable to the City and obtain the City's consent to any proposed settlement.

COMPANY _____

TAXPAYER IDENTIFICATION NUMBER _____

AUTHORIZED SIGNATURE _____

DATE _____

ADDRESS _____

TELEPHONE _____

E-MAIL ADDRESS _____

Failure to submit this form with your Bid may result in your Bid being rejected as unresponsive.

QUALIFICATIONS STATEMENT

The undersigned submits answers to the following questions to enable the City of Concord to judge experience and ability in, and facilities for, the work proposed to be done.

1. The work, if awarded to you, will have the resident personal supervision of whom? State his/her name, title, and their special qualifications:

   _____
   _____

2. Describe equipment you propose to furnish. (a) your own; (b) rented:

   a. _____
   _____
   _____

   b. _____
   _____
   _____

3. How many years has your organization been in business as a contractor under the name in which you propose to execute this contract?

   _____

4. Has your present organization ever failed to complete any work awarded to it? If so, state when, where and why**:** _____
   _____
   _____
   _____
   _____

Provide three (3) references (to include name, address, telephone number and point of contact) for contracts that you currently have or have completed with a scope of work similar to that detailed by B01-26:

_____
_____
_____
_____
_____
_____
_____
_____
_____

City of Concord, New Hampshire

B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

INSURANCE REQUIREMENTS FOR ALL CONTRACTORS

Additional Coverage is Required if Checked	**Minimum Limits Required**
Commercial General Liability	
General Aggregate	$2,000,000
Products-Completed Operations Agg.	$2,000,000
Personal and Advertising	$1,000,000
Each Occurrence Injury	$1,000,000
Fire Damage (Any One Fire)	$ 50,000
Medical Expense (Any One Person)	$ 10,000
☐ Occurrence	
☐ Claims Made	
Additional Coverage to Include	
☒ Owners & Contractors' Protective – Limit	$1,000,000
☒ Underground/Explosion and Collapse	$1,000,000
Commercial Automobile Liability	
Combined Single Limit	$1,000,000
☐ Any Auto, Symbol 1	
☐ Include Employees as Insured	
Additional Coverage to include:	
☐ Garage Liability	NA
☐ Garage Keepers Legal Liability	NA
Workers Compensation	
NH Statutory including Employers Liability	
- Each Accident/Disease-Policy Limit/Disease-Each Employee	$100,000/$500,000/$100,000
Commercial Umbrella	
May be substituted for higher limits required above	$1,000,000
☐Follow Form Umbrella on ALL requested Coverage	

THE CITY OF CONCORD MUST BE NAMED AS ADDITIONAL INSURED BY WRITTEN ENDORSEMENT AND WAIVER OF SUBROGATION IN FAVOR OF THE CITY WITH RESPECT TO GENERAL, AUTOMOBILE AND UMBRELLA LIABILITY.

The above listed insurance and coverage limits are acknowledged and will be provided.

_____

Bidder Signature

Finance Department

Purchasing Division

311 North State Street, Concord, NH 03301

(603) 225-8530 (603) 230-3656 – FAX

www.concordnh.gov/Purchasing

Reference: B01-26

If you choose not to bid, please complete the questionnaire below and return it with your response by the bid opening date. Your assistance in helping us to analyze no bid rationale is very much appreciated. Thank you.

NO BID QUESTIONNAIRE

A no bid is submitted in reply to the City of Concord Invitation for Bids (**B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET**) for the following reasons:

_____ Item not supplied by our company.
_____ Bid specification (give reason(s), e.g., too restricted, not clear, etc.,):
_____
_____ Profit margin on municipal bids too low.
_____ Past experience with City of Concord (give specifics, e.g., payment delay, bid process, administrative problems, etc.) _____
_____
_____ Insufficient time allowed to prepare and respond to bid request.
_____ Bid requirement too large_____ or too small _____ for our company.
_____ Priority of other business opportunities limit time/other resources available to deliver or perform according to bid specifications.
_____ Other reason(s), please specify: _____
_____
_____

Company Name and Address: _____
_____
_____

Phone: () _____

_____ _____
(Signature) (Typed/Printed Name & Title)

NOTICE OF AWARD

Dated_____, 2026

TO: _____

ADDRESS: _____

CITY'S PROJECT NO.: B01-26_____

PROJECT: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

CITY'S CONTRACT NO.: B01-26_____

CONTRACT FOR: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

You are notified that your Bid, dated _____, 2026 for the above Contract has been considered. You are the apparent successful bidder and have been awarded a contract for the CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET. All terms, conditions, specifications and prices shall be in accordance with the requirements and provisions of the Contract Documents which are defined in Division 100, entitled "General Provisions", as contained in the Standard Specifications for Road and Bridge Construction of the State of New Hampshire, Department of Transportation, approved and adopted (most current version); the CITY'S bid documents, B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET; and the CONTRACTOR'S bid which was opened and publicly read on **April 15, 2026.**

The Contract Price of your contract shall be the not-to-exceed price of:

_____Dollars ($ _____).

One original of the Agreement accompanies this Notice of Award.

You must comply with the following conditions precedent within ten (10) calendar days of the date of this Notice of Award, which is by _____, 2026. You must deliver to the CITY:

1. One fully executed counterpart of the Agreement.
2. The Contract Security (100 % Payment and Performance Bonds) and Insurance Certificate(s) as specified in the Invitation for Bids and General Terms and Conditions.
3. (List other conditions precedent)

_____

_____

Failure to comply with these conditions within the time specified will entitle the **CITY** to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten (10) calendar days after you comply with these conditions, the **CITY** will return to you one fully signed counterpart of the Agreement, issue a Notice to Proceed and purchase order and return your bid bond security.

CITY OF CONCORD, NEW HAMPSHIRE
(CITY)

BY: _____
(AUTHORIZED SIGNATURE)

Tina M. Waterman, Purchasing Manager
(NAME/TITLE)

Copy: COMMUNITY DEVELOPMENT DEPARTMENT, ENGINEERING SERVICES DIVISION

AGREEMENT

THIS AGREEMENT, made this _____ day of _____2026 by and between The City of Concord, New Hampshire, hereinafter called **"CITY"** and _____ doing business as (an individual,) or (a partnership,) or (a corporation) hereinafter called **"CONTRACTOR".**

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The **CONTRACTOR** will commence and complete the CIP 84 WATER MAIN REPLACMENT PROJECT, SCHOOL STREET. All terms, conditions, specifications and prices shall be in accordance with the requirements and provisions of the Contract Documents which are defined in Division 100, entitled "General Provisions", as contained in the Standard Specifications for Road and Bridge Construction of the State of New Hampshire, Department of Transportation, approved and adopted (most current version), the **CITY'S** bid documents (B01-26) and the **CONTRACTOR'S** bid opened and publicly read on **APRIL 15, 2026**.

2. The **CONTRACTOR** will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the completion of the **PROJECT** as detailed by B01-26.

3. The **CONTRACTOR** will commence the work required by the **CONTRACT DOCUMENTS** within a set amount of time after the date of the **NOTICE TO PROCEED** as agreed upon by the **CITY** and the **CONTRACTOR.** The date of completion for the project shall be no later than **September 25, 2026.**

4. The **CITY** shall pay the **CONTRACTOR** for the performance of the **AGREEMENT**, the amounts determined for the total number of each of the units of work completed at the unit price stated. The number of units contained in the bid documents is approximate only and the final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by this Agreement. The **AGREEMENT** price shall be the not-to-exceed price of:

_____Dollars ($_____)
Written Figures

5. The term **"CONTRACT DOCUMENTS"** means and includes the following:

   (A) B01-26 ISSUED BY THE CITY
   (B) CONTRACTOR'S BID IN RESPONSE TO B01-26
   (C) FORM W-9
   (D) INDEMNIFICATION AGREEMENT
   (E) QUALIFICATIONS STATEMENT

(F) INSURANCE CERTIFICATE
(G) BID BOND
(H) PERFORMANCE AND PAYMENT BONDS
(I) LETTER OF AWARD AND NOTICE OF AWARD
(J) AGREEMENT
(K) NOTICE TO PROCEED
(L) CITY OF CONCORD PURCHASE ORDER
(M) ADDENDA:
No._____, dated _____, 2026
No._____, dated _____, 2026

The contract between the **OWNER** and the **CONTRACTOR** shall consist of (1) the bid documents and any amendments there to and (2) the **CONTRACTOR'S** bid. In the event of a conflict in language between documents (1) and (2) referenced above, the provisions and requirements set forth and referenced in the bid documents shall govern. However, the **OWNER** reserves the right to clarify any contractual relationship in writing with the concurrence of the **CONTRACTOR** and such written clarification shall govern in case of conflict with the applicable requirements contained in the bid documents and the **CONTRACTOR'S** bid. In all other matters, not affected by written clarification, if any, the bid documents shall govern.

6. The **CITY** will pay to the **CONTRACTOR** in the manner and at such times as set forth in the General Terms and Conditions such amounts as required by the **CONTRACT DOCUMENTS**. Retention from progress payments will be in accordance with the General Terms and Conditions.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS HEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in one (1) original.

CITY:
CITY OF CONCORD, NEW HAMPSHIRE

BY _____

Name/Title: Tina M. Waterman, Purchasing Manager

(SEAL)

ATTEST:

_____

Name _____

Title _____

CONTRACTOR

_____

By _____

Name _____
(Please Type)

Address _____

(SEAL)

ATTEST:

_____

Name _____
(Please Type)

_____

NOTICE TO PROCEED

Dated: _____

TO: _____

ADDRESS:

_____

CITY'S PROJECT NO: B01-26

PROJECT: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

CITY'S CONTRACT NO.: B01-26

CONTRACT FOR: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

_____

(Name of Contractor)

You are notified that the Contract Time under the above contract will commence to run upon receipt of this Notice to Proceed. You are to start performing your obligations under the Contract Documents within a set amount of time after the date of the **NOTICE TO PROCEED** as agreed upon by the **CITY** and the **CONTRACTOR**. In accordance with the Agreement, the date of completion is to be not later than **September 25, 2026.**

Before you may start any Work at the site the General Terms and Conditions provides that you must deliver to the CITY:

1. Certificates of insurance which you are required to purchase and maintain in accordance with the Contract Documents.
2. A Payment Bond in the amount of 100% of the contract price.
3. A Performance Bond in the amount of 100% of the contract price.

CITY OF CONCORD, NEW HAMPSHIRE
(CITY)

By: _____
(Authorized Representative)

Tina M. Waterman, Purchasing Manager
(NAME/TITLE)

Copy: Community Development Department, Engineering Services Division

BID BOND

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

Signed, this _____ day of _____, 2026
The Condition of the above obligation is such that whereas the Principal has submitted to the City of Concord, New Hampshire a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the **CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET**.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (Properly completed in accordance with said BID) and shall furnish a BOND for their faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise, the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

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

_____ (L.S.)
Principal

_____
Surety

By: _____

IMPORTANT – Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of New Hampshire.

PAYMENT BOND

Bond No._____

KNOW ALL MEN BY THESE PRESENTS:

That we _____ as Principal, and _____ as Surety, are held and firmly bound unto the City of Concord as Obligee, totaling _____ dollars ($_____) to be paid to the Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has made a contract with the Obligee, bearing the date of _____, 2026 for project **B01-26 CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET.**

NOW the conditions of this obligation are such that the Principal and all subcontractors under said contract shall pay for all labor performed or furnished and for all materials used or employed in said contract and in any and all duly authorized modifications, alterations extensions of time, changes or additions to said contract that hereafter be made, notice to the Surety of such modifications, alterations, extensions of time, changes or additions being hereby waived, the foregoing to include any other purposes required by law, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

IN WITNESS THEREOF, the Principal and Surety have hereto set their hands and seals this _____day of _____, 2026.

PRINCIPAL	SURETY
_____	_____
_____	_____
(Name & Seal)	Attorney-In-Fact (Seal)
_____	
(Title)	
Attest: _____	Attest: _____

The rate for this bond is _____% for the first $_____ for the next $_____. The total rate

for this bond is $_____.

PERFORMANCE BOND

Bond No._____

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal and _____ as Surety, are held and firmly bound unto the City of Concord, Obligee, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrator, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal has made a contract with the Obligee, bearing the date of _____ 2026, for project **B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET.**

NOW, the condition of this obligation is such that if the Principal and Subcontractors under said contract shall well and truly keep and perform all the undertakings, covenants, agreement, terms and conditions, of said contract on its part to be kept and performed during the original term of said contract and any extensions thereof that may be granted by the Obligee, with or without notice to the Surety, and during the life and any guarantee required under the contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms, and conditions of any and all duly authorized modifications, alterations, changes, or additions being hereby waived, then these obligations become null and void; otherwise, it shall remain in full force and virtue.

IN THE EVENT, that the Contract is abandoned by the Principal, or in the event that the Obligee, under the General Terms & Conditions of said Contract terminates the employment of the Principal or the Principal's authority to continue the work, said Surety further agrees that said Surety shall, if requested in writing by the Obligee, take any required steps to complete said Contract.

IN WITNESS THEREOF, the Principal and Surety have hereto set their hands and seals this _____day of _____, 2026.

PRINCIPAL	SURETY
_____	_____
_____	_____
(Name & Seal)	Attorney-In-Fact (Seal)
_____	
(Title)	
Attest: _____	Attest: _____

The rate for this bond is _____% for the first $_____ for the next $_____. The total rate for this bond is $_____.

CONTRACTORS AFFIDAVIT

STATE OF _____

COUNTY OF_____

Before me, the undersigned, a _____
(Notary Public, Justice of Peace, Alderman)

in and for said County and State personally appeared, _____
(Individual, Partner or duly authorized representative of

_____ who being duly sworn according to law deposes and
corporate contractor)
says that the cost of all the Work, and outstanding claims and indebtedness of whatever nature

arising out of the performance of the contract
between_____
(Owner)
_____of _____
(Contractor)
dated_____.

for the construction of the
_____

and necessary appurtenant installations have been paid in full.

_____
(Individual, Partner, or duly authorized representative of corporate contractor)

Sworn to and subscribed before me

This ____day of _____, 2026.

_____

CONTRACTORS RELEASE

KNOW ALL MEN BY THESE PRESENTS that

_____
(Contractor)

of _____, County of _____

and State of _____ do _____hereby acknowledge that

_____
(Contractor)

has _____ this day had, and received of and from_____
(Owner)

the sum of One Dollar and other valuable considerations in full and complete satisfaction and payment of all sums of money owed, payable and belonging to

_____
(Contractor)

by means whatsoever, for on account of a Contract Agreement between

_____
(Owner)

and

_____
(Contractor)

dated_____ for **B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET.**

NOW THEREFORE, the said

_____
(Contractor)

(for myself, my heirs, executors and administrators) (for itself, its successors and assigns) does by these presents remise, release, quit-claim and forever discharge _____
(Owner)

_____, of and from all claims and demands, arising from on in connection with the said contract dated _____, and of and from all, and all manner of action and actions, cause and causes of action and actions, suits debts, dues, duties, sum and sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, agreements, promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in law or equity, or otherwise, against

_____
(Owner)

its successors and assigns, which (I, my heirs, executors, or administrators) (it, its successors and assigns) ever had, now have or which (I, my heirs, executors, or administrators) (it, its successors

and assigns) hereafter can, shall or may have, for, upon or by reason of any matter, cause or thing whatsoever; from the beginning of recorded time to the date of these presents.

IN WITNESS WHEREOF,

_____

_____
(Contractor)

has caused these presents to be duly executed this ___ day of _____ 2026.

Signed, Sealed and Delivered in the presence of:

_____ _____(seal)
(Individual – Contractor)

_____(seal)
(Partnership – Contractor)

(seal)_____ By _____
(Partner)

Attested:

_____
(Corporation)

_____ By_____
(Secretary) (President or Vice President)

(Corp. Seal)

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: **B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET**

DATE OF ISSUANCE: _____

CITY: City of Concord

CITY's Contract No. **B01-26**

CONTRACTOR: _____ ENGINEER: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To:

_____
CITY (Authorized Signature)

And To:

_____
Contractor (Authorized Signature)

The Work to which this Certificate applies has been inspected by authorized representatives of CITY, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on:

_____

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of the CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above Substantial Completion.

CHANGE ORDER

Change Order No. _____

PROJECT: **B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET**

DATE OF ISSUANCE: _____ EFFECTIVE DATE: _____

CITY: City of Concord

CITY's Contract No. **B01-26**

CONTRACTOR: _____ ENGINEER: _____

You are directed to make the following changes in the Contract Documents.

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:	**CHANGE IN CONTRACT TIMES:**
Original Contract Price: **$**_____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____ days or dates
Net changes from previous Change Orders No.__to No.__: **$**_____	Net change from previous Change Orders No.__to No.__: _____ days
Contract Price prior to this Change Order: **$**_____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for payment: _____ days or dates
Net Increase (decrease) of this Change Order: **$**_____	Net increase (decrease) of this Change Order: _____ days
Contract Price with all approved Change Orders: **$**_____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____ days or dates

RECOMMENDED: APPROVED: ACCEPTED:

By: _____ By: _____ By: _____
ENGINEER (Authorized Signature) CITY (Authorized Signature) CONTRACTOR (Authorized Signature)

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 Contract Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating change order items to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed, 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 may be used.

B. COMPLETING THE CHANGE ORDER FORM

ENGINEER initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by CONTRACTOR, or requests from CITY, or both.

Once ENGINEER has completed and signed the form, all copies should be sent to CONTRACTOR for approval. After approval by CONTRACTOR, all copies should be sent to CITY for approval. ENGINEER should make distribution of executed copies after approval by CITY.

If a change only applies to Contract Price or to Contract Times, cross out the part of the tabulation that does not apply.

WORK CHANGE DIRECTIVE

Work Change Directive No. ____

PROJECT: **B01-26, CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET**

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

CITY City of Concord

CITY's Contract No. B01-26

CONTRACTOR _____ ENGINEER: _____

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Times any claim for a Change Order based thereon will involve one or more of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:

☐ Unit Prices

☐ Lump Sum

☐ Other _____

Estimated increase (decrease) in Contract Price:
$_____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Method of determining change in Contract Times:

☐ Contractor's records

☐ Engineer's records

☐ Other _____

Estimated increase (decrease) in Contract Times:
Substantial Completion: _____ days
Ready for final payment: _____days.

If the change involves an increase, the estimated times are not to be exceeded without further authorization.

RECOMMENDED:

_____
ENGINEER

By: _____
(Authorized Signature)

AUTHORIZED:

_____
CITY OF CONCORD

By: _____
(Authorized Signature)

WORK CHANGE DIRECTIVE

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed for use in situations involving changes in the Work which, if not processed expeditiously, might delay the Project. These changes are often initiated in the field and may affect the Contract Price or the Contract Times. This is not a Change Order, but only a directive to proceed with Work that may be included in a subsequent Change Order.

For supplemental instructions and minor changes not involving a possible change in the Contract Price or the Contract Times a Field Order may be used.

B. COMPLETING THE WORK CHANGE DIRECTIVE FORM

ENGINEER initiates the form, including a description of the items involved and attachments.

Based in conversations between ENGINEER and CONTRACTOR, ENGINEER completes the following:

> METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT PRICE: Mark the method to be used in determining the final cost of Work involved and the estimated net effect on the Contract Price. If the change involves an increase in the Contract Price and the estimated amount is approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the estimated price or Contractor may stop the changed Work when the estimated price is reached. If the Work Change Directive is not likely to change the Contract Price, the space for estimated increase (decrease) should be marked “Not Applicable”.
>
> METHOD OF DETERMINING CHANGE, IF ANY, IN CONTRACT TIMES: Mark the method to be used in determining the change in Contract Times and the estimated increase or decrease in Contract Times, If the change involves an increase in the contract Times and the estimated times are approached before the additional or changed Work is completed, another Work Change Directive must be issued to change the times or CONTRACTOR may stop the changed Work when the estimated times are reached. If the Work Change Directive is not likely to change the Contract Times, the space for estimated increase (decrease) should be marked “Not Applicable”.

Once ENGINEER has completed and signed the form, all copies should be sent to the CITY for authorization
because ENGINEER alone does not have authority to authorize changes in Price or Times. Once authorized by the
CITY, a copy should be sent by ENGINEER to CONTRACTOR. Price and Times may only be changed by
Change Order signed by the CITY and CONTRACTOR with ENGINEER’s recommendation.

Once the Work covered by this directive is completed or final cost and times are determined, CONTRACTOR should submit documentation for inclusion in a Change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIMES. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

CONSENT OF SURETY COMPANY
TO
FINAL PAYMENT

OWNER'S CONTRACT NO.: B01-26 ENGINEER' PROJECT NO.: _____
AGREEMENT DATE: _____
BOND NUMBER: _____

CONTRACT TITLE: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

To: _____ (Owner)
_____
_____

From: _____ (Contractor)
_____
_____

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the _____(Surety) on the bond of _____ ____
(Contractor) hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of its obligations to the _____ ____
_____ (Owner) as set forth in the said Surety Company's Bond.

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand this _____ day of _____, 2026.

_____
Surety Company

_____
Signature of Authorized Representative

_____
Name & Title

Attest: (Seal)

Note: Power of Attorney should be attached in instances where same applies.

CONTRACTOR'S FINAL LIEN WAIVER

OWNER'S CONTRACT NO.: B01-26 ENGINEER PROJECT NO.: _____
AGREEMENT DATE: _____

CONTRACT TITLE: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

To: _____ (Owner)
_____
_____

APPLICATION FOR FINAL PAYMENT

The undersigned hereby certifies that the amount owed set forth below constitutes the entire value of all work performed and services rendered by, through or under the undersigned with respect to the project not heretofore paid for up to and including the period covered by the above Application for Final Payment; that all work covered by such Application has been incorporated into the project and title thereto has passed to the Owner free and clear of all liens, claims, security, interests or encumbrances; and that no work covered by such Application has been acquired subject to an agreement under which any interest therein or an encumbrance thereon is retained by the seller or any other person. In consideration of payment of the requisition, the undersigned hereby releases the Owner from all claims of lien which the undersigned has regarding the Project.

The undersigned, in order to induce the Owner to pay the requisition, hereby represents that it has paid or will pay from the proceeds of the requisition all sums due to those parties who have performed work or provided materials to the undersigned in connection with the Project, and that it will on request of the Owner provide written evidence of the discharge by the undersigned of its obligations to such parties.

Executed under seal as of this _____ day of _____, 2026.

Amount Owed to Contractor by Owner as Final Payment:
$_____ (total value of project including change orders)

Amount Unpaid From Previous Application for Payment:
$_____

CONTRACTOR'S FINAL LIEN WAIVER

From: _____ (Contractor)

_____

_____

_____

Authorized Representative Signature

_____

Name and Title (printed)

NOTARY:

Then personally appeared the above named _____ and acknowledged the foregoing to be the free act and deed of the above-named Contractor, before me.

Subscribed and sworn to on the _____ day of _____, 2026.

Notary Public:_____

My Commission Expires:_____

CERTIFICATE OF FINAL COMPLETION OF WORK

OWNER'S CONTRACT NO.: B01-26 ENGINEER' PROJECT NO.: _____
AGREEMENT DATE: _____

CONTRACT TITLE: CIP 84 WATER MAIN CLEANING & LINING PROJECT, SCHOOL STREET

FINAL COMPLETION DATE PER AGREEMENT AND CHANGE ORDERS: _____
ACTUAL DATE OF FINAL COMPLETION: _____

FINAL CERTIFICATION OF CONTRACTOR

I hereby certify that the Work as identified in the Final Payment Request dated _____ for the above-noted construction Contract represents full compensation for the actual value of work completed. Additionally, all work completed conforms to the terms of the Agreement and authorized changes.

_____ _____
CONTRACTOR Date

_____
Authorized Representative's Signature

_____
Name & Title

FINAL CERTIFICATION OF ENGINEER

I have reviewed the Contractor's Final Payment Request dated _____ and hereby certify that to the best of my knowledge, the cost of the work identified on the Final Payment Request represents full compensation for the actual value of work completed and that the work has been completed in accordance with the terms of the Agreement and authorized changes.

_____ _____
ENGINEER Date

_____
Authorized Representative's Signature

_____
Name & Title

CERTIFICATE OF FINAL COMPLETION OF WORK

FINAL ACCEPTANCE OF OWNER

I, as representative of the Owner, accept the above Final Certifications and authorize Final Payment in the amount of $_____ and direct the Contractor's attention to the General Conditions. The guaranty for all Work completed subsequent to the date of Substantial Completion, expires _____year from the date of this Final Acceptance.

At a meeting of the_____ (Town Council/Selectmen/Alderman), the Owner, _____ (Name of the community) has accepted the constructed project.

_____ _____

OWNER Date

_____

Authorized Representative's Signature

_____

Name & Title

END OF SECTION

TECHNICAL REFERENCES

All work performed in the City of Concord, New Hampshire shall conform to the requirements of the latest edition of the following standards:

A. City of Concord, Construction Standards (latest edition);

B. Standard specifications and drawings for Road and Bridge Construction of the New Hampshire Department of Transportation (latest edition);

C. Construction standards for Sanitary Sewer and Water Supply Systems of the New Hampshire Department of Environmental Services, Water Supply and Pollution Control Division;

D. Manual on Uniform Traffic Control Devices for streets and highways, published by the United States Department of Transportation, Federal Highway Administration;

E. Requirements of the Community Development Department, Engineering Services Division's - Street Excavation Permit;

F. Subdivision and Site Plan Regulations, and Municipal Code of Ordinances of the City of Concord, New Hampshire;

G. International Building Code (I.B.C.), latest edition;

H. American Water Works Standards, latest edition;

I. Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) provided by the U.S. Access Board;

SHOULD CONFLICTING REQUIREMENTS BE FOUND AMONG THESE STANDARDS, THE MORE STRINGENT SHALL GOVERN.

SPECIAL PROVISIONS

S P E C I A L P R O V I S I O N

AMENDMENT TO SECTION 304 – AGGREGATE BASE COURSE

Item 304.3 – Crushed Gravel

Amend 4.1 to read:

4.1 Roadbed base course materials of sand, gravel, crushed gravel, crushed aggregate for shoulders, crushed stone (fine gradation), and crushed stone (coarse gradation) shall be measured by the cubic yard of compacted material placed within limits shown on plan using average lengths, widths and depths of area to be filled.

Amend 5.1 to read:

5.1 Roadbed base course materials of sand, gravel, crushed gravel, crushed stone (fine gradation), and crushed stone (coarse gradation) will be paid for at the contract unit price per cubic yard complete in place.

Amend pay items and units:

304.3	Crushed Gravel	Cubic Yard

S P E C I A L P R O V I S I O N

SECTION 602 – CEMENT-MORTAR WATER PIPE LINING

Description

1.1 This work shall consist of various repair methods for providing cement mortar lining for unlined cast iron water pipe as specified in the plans. The work shall include above grade temporary main bypass and continuous customer water service; removal of roadway surface materials; excavation; shoring; cutting of water main; dewatering access pits; temporary plating of access pits; cleaning and CCTV inspecting the existing pipe; preparation, lining and CCTV inspection of the lined pipe; disinfection and testing; replacing fittings, pipe and appurtenances; reconnection to the municipal potable water system; backfilling of access pits with compacted soils; roadway and driveway pavement restoration and all other incidental and related work..

Materials

2.1 Cementitious Mortar Portland Cement, pozzolanic material and sand for pipe linings shall conform to the latest version of AWWA C602: Cement-Mortar Lining of Water Pipelines (4 inches and larger in place). The cement mortar shall be proportioned by volume (1-part Portland Cement to from 1 to 1 1/2 parts of screened sand by volume), and shall be mixed and of proper consistency to provide a dense, homogenous pipe lining which shall adhere firmly to the pipe surfaces. Cement-mortar shall have a compressive strength of not less than 5,000 pounds per square inch at 28 days. No mortar that has attained its initial set shall be used for lining.

2.1.1. Portland Cement. The cement shall conform to Type 2, A.S.T.M. designation C-150/C150M with latest amendment and It shall be entirely free of lumps and the residue on a standard No. 200 sieve shall not exceed 10 percent by weight.

2.1.2. Sand. Sand shall be washed, cleaned, free from organic matter, well graded and thoroughly dried, preferably in a rotary kiln, before being passed through a 16-mesh screen. All material that does not pass the 16-mesh screen shall be excluded from the mortar. The sand should be tested well in advance of the start of the operations.

2.1.3. Water. Water shall be clean, free from injurious ingredients and shall be obtained from the City of Concord water supply.

2.1.4. Slump. shall be as indicated in Figure 1 below:

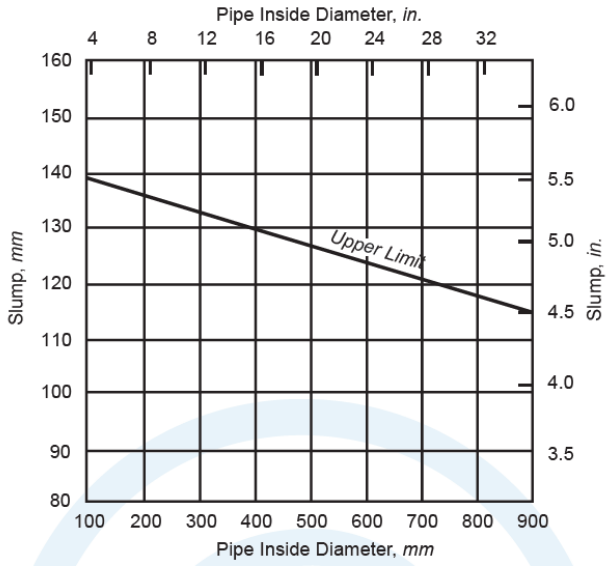

Figure 1 Nominal slumps of cement-mortar mixes for application of linings using pump feed

Construction Requirements

3.1 General Installation Guidelines. A general list of installation guidelines applicable pipe rehabilitation processes is provided below:

3.1.1 Submit engineering design calculations and shop drawings for the pipe rehabilitation for documentation in accordance with Section 105.02 of the Standard Specifications.

3.1.2 Prior to installing any type of pipe lining, the Contractor shall submit a detailed plan to the Engineer, for each liner installation for documentation. Dependent on rehabilitation type, the plan shall include all associated information such as: the proposed mix design, strength, and nominal thickness for all lining materials, including test results; the proposed material for the bulkheads; the proposed bulkhead construction; the proposed procedure and equipment needed for the liner installation; the details of the bracing and de-watering systems, and provisions for air release.

3.1.3 Installation shall be compliant with all environmental regulations and ASTM and AWWA specifications.

3.2 Temporary Water System. The contractor shall maintain service usage throughout the duration of the project by constructing and maintaining an above ground temporary bypass system and connections to all customers in the impacted area, See Special Provision 611.3.2 for more detail. In the event that a property will be out of service, the maximum amount of time of service disruption shall be 8 hours for any property serviced by the pipe segment being rehabilitated. A public notification process shall be implemented, and as a minimum, require the Contractor to be responsible for contacting each home, apartment unit or business connected to the pipe segment and informing of the service restoration schedule. The Contractor shall provide the following;

3.2.1. Advance written notice of service outage/restoration schedule and a local telephone number of the Contractor for resident inquiry to be delivered to each property serviced 72 hours prior to the planned service interruption.

3.2.2. Personal contact with any homeowner, tenant or business which will not have service restored within the time prescribed in the written notice.

3.3 Excavation and Backfilling. The Contractor shall excavate for access pits and pipe openings; provide sheeting, bracing, and bridging necessary to prevent collapse of the travel way into the excavations immediately upon completion of excavation.

3.3.1. Shoring shall conform to all OSHA regulations. Rock or ledge shall be excavated by drilling or splitting; the use of explosives shall not be permitted.

3.3.2. Select backfill material in short lifts shall be placed uniformly across the pit in order to haunch pipe(s) or fittings and compacted to top of pipe. Above the pipe crown, backfill materials of optimal moisture content shall be placed and compacted in one vertical foot lifts to pavement subgrade.

3.4 Pipe Openings. The City of Concord will make all required dry main shutdowns; all bypass, shoring and dewatering equipment must be in place before shutdowns are made.

3.4.1. If efforts of the City fail to completely shut off the flow of water into the main to be cleaned and lined, the City shall determine which main line valves or laterals are leaking by and may instruct the Contractor to replace them under contract items.

3.4.2. Prior to cutting or disjointing operations, all equipment and tools necessary for the proper and expeditious performance of this work must be assembled at the immediate job site. Cutting of pipe shall be done in a neat and workmanlike manner without damage to the pipe. Unless otherwise authorized, cutting shall be done by means of an approved type of power-operated, pipe-cutting machine with cut being made in true alignment. Locations of pipe openings, methods and other details for making pipe openings shall be subject to the approval of the Engineer.

3.5 Access Hole Covers. The Contractor shall provide steel plating to cover access holes. The plating shall be of sufficient size and thickness to permit normal traffic to pass over covered access holes. The Contractor shall be responsible for properly securing the plates to the road surface and shall place a cold patch ramp at plate edges to give traffic a smooth transition from the existing roadway. All plating shall be secure and quiet.

3.6 Dewatering. Before starting cleaning and lining, the Contractor shall dewater all pipe lines and access pits, drain all low spots, and take all precautions to prevent any water from entering the main section being worked on.

3.6.1. The Contractor shall insert bulkheads at the terminals of dewatered sections, all openings for pipe cleaning shall be protected from wash and rainwater entry at all times.

3.6.2. The Contractor shall provide all work to determine the existence and location of any obstructions which would prevent the passage of cleaning and lining equipment and to locate and remove any obstructions prior to proceeding with the cleaning of pipe lines.

3.7 Cleaning. All rust, tubercles, deposits, loose materials and all other foreign materials shall be removed from the interior of the pipe lines by use of mechanical scraping cleaning devices or other approved methods.

3.7.1. The Contractor shall pass the machine through the mains as many times as may be necessary and to employ such other supplementary means as may be required to clean the pipe surfaces and to remove all foreign matter, rust and dust from the pipe surfaces.

3.7.2. It shall be the responsibility of the Contractor to employ approved methods and to do all work necessary to obtain clean pipe surfaces and to ensure the satisfactory bonding of the cement-mortar lining to the pipe surfaces.

3.7.3. The Contractor shall be responsible for locating and restarting the cleaning unit if it should become lodged in the pipe.

3.7.4. Branch connections and service connections shall be back flushed to remove all sediment, loose and foreign material which have entered the branch lines during cleaning operations. Precautionary measures shall be provided to protect valves and other appurtenances against the entrance of dirt, sediment and other foreign materials and any other damage.

3.7.5. All damage to valves, pipes or other pipe line appurtenances and fittings as a result of the Contractor's operations shall be repaired or replaced by the Contractor in a manner satisfactory to the Engineer, at no additional expense to the City.

3.7.6. The Contractor shall not discharge cleaning flush-water, debris, rust, or tubercles directly into the City's sanitary sewer system or drainage system is strictly prohibited. The Contractor shall capture, extract, and transport all removed materials to the City of Concord Wastewater Treatment Plant (WWTP), or another designated and approved disposal facility, at no additional cost to the City.

3.8 Pre-lining Inspection. After the cleaning operations, the Contractor shall make an examination of the interior of the pipes by experienced personnel trained in CCTV video inspection to determine whether the pipes have been sufficiently cleaned so as to assure the proper bonding and placing of the cement-mortar lining and to determine whether any repairs to the pipes are required prior to the lining.

3.8.1. The Contractor shall provide such facilities as may be required for inspection of pipes by the Owner. Provide a copy of each video and report log to the Engineer, video inspection equipment must meet the following requirements:

a. The CCTV camera and all equipment introduced into the water main must be sterilized in accordance with the latest version of AWWA C651 prior to insertion to prevent contamination.

b. Any pipe found to be damaged will need to be repaired or replaced at the Contractor's expense. Any repairs will be done at the approval of the Engineer. The Engineer shall be notified as soon as practicable of any visual defects that are found and all video recordings of these areas of concern shall be made available within 24 hours. The final report shall be submitted to the Engineer within 10 days of inspection.

c. The video camera shall be able to verify the quality of the pipe installation and not be limited by poor lighting, waterflow, or pipe length. The camera should have the following qualities:

    i. Provide its own light source or have a separate light source capable of producing images acceptable to the Engineer.

    ii. Be able to move remotely inside the entire pipe length.

    iii. Be able to pan and tilt to enable full view of joints.

    iv. Shall be a color, pan-and-tilt unit with adequate illumination.

    v. Have a remote monitor and a recording apparatus to view and record the condition of the installed pipe.

    vi. The video should include identification before each section of pipe filmed. The identification should include project number, structure numbers corresponding to the structure numbers on the plans, size of pipe, date and time. The video should also be marked with distances down the pipe length with an accuracy of one foot per 100 feet.

    vii. A copy of the video shall be provided to the Engineer on CD/DVD media in .WMV or .MPEG format. A written report accompanying the video shall also be provided to the Engineer

3.8.2. If the examination and inspection reveal that the cleaning operations have not been satisfactorily performed, the Contractor, at no additional expense to the Owner, shall provide all other additional cleaning and CCTV work as may be necessary for the proper installation and inspection of cement-mortar lining. No defective section or part shall be cement-mortar lined until repairs have been made and approved by the Engineer.

3.8.3. If the examination reveals any obstruction that will prevent the proper application of the lining material, the Contractor shall remove said obstruction and be fully compensated under Item 1008.3 Additions and Alterations as Needed – Obstruction Removal.

3.9 Spray-on Lining. Immediately prior to running the lining machine through the pipe; all sand, water, material and all other foreign matter that has accumulated in the pipe shall be satisfactorily removed.

3.9.1 The pipe lining shall consist of a one-course application of a pre-mixed cement-mortar and shall be continuously placed by a machine projecting the mortar against the wall of the pipe by centrifugal force, without injurious rebound, and with sufficient velocity to cause the mortar to be densely packed and to adhere in place.

3.9.2 Cables shall be sheathed and rollers provided at the ends of pipe at all times.

3.9.3 The travel of the machine and discharge rates shall be controlled so as to produce a continuous, dense, smooth application, without variations in quality. The lining application shall be free from noticeable changes in thickness, 1/8 inch minimum with an allowable positive tolerance of 1/16 inch. No negative tolerance permitted.

3.9.4 The machine shall be provided with attachment for mechanically troweling the mortar so as to produce a smooth surface finish, the design of the trowel shall be such as to permit operation in pipes which may be out of round and produce a smooth surface without spiral shoulders. The finished surface shall be smooth and shall not have a sand finish.

3.9.5 Hand placing of the mortar shall only be allowed in areas where machine placement is impossible or impracticable with approval of the Engineer. Cement-mortar lining of sharp bends, specials, areas adjacent to valves, or other areas where machine placing is impracticable, and correcting defective areas, shall be done by hand. Hand placed mortar shall have uniformly smooth finished surfaces and with smooth transitions adjacent to machine placed areas. Cement-mortar shall be as specified herein for machine lining. Prior to the placing of hand mortar work, all areas to be lined shall be thoroughly cleaned in an approved manner with all loose and foreign materials removed and if required, surfaces shall be dampened before placing the mortar. Steel trowels shall be used for finishing where practicable. Hand mortar work shall be completed within 24 hours after machine application in that particular section of pipe line has been completed.

3.9.6 Mortar which does not provide a dense, homogenous lining which will adhere to the pipe surfaces, sand pockets, voids, over-sanded and cracked areas, and such other defective areas and materials shall be removed to the pipe wall, and the areas shall be repaired by hand application or other approved method to the full required thickness of the mortar lining and as approved. All spatter and loose material shall be removed from the pipe lines.

3.9.7 Prior to final mortar set, service lines 2" or less in diameter shall be back flushed with water or air to result in each service line having a full opening with no obstructions. Any service found to be obstructed with cement or debris shall be excavated, cleared, repaired, backfilled and pavement restored (if necessary) by the Contractor, and at their sole expense. The back flush shall be performed in a manner that will not damage the lining.

3.9.8 The Contractor shall clean all interior surfaces of mainline valves except those to be replaced as part of the project.

3.10 Curing. Shall begin immediately following completion of the lining installation.

3.10.1. Immediately upon completion of the cement-mortar lining of pipe line between pipe openings or upon the completion of day's run of the machine, the section of the pipe line shall be closed at each end. As soon as practicable after placing the cement-mortar lining, water shall be introduced into the mortar lined section between the closed ends of pipe in order to create a moist atmosphere and keep the cement-mortar lining damp, but not under pressure, until the mortar lining has been in place not less than 48 hours. The Contractor shall be responsible for the proper curing of the cement-mortar linings.

3.11 Inspection & Testing

3.11.1 Cement-Mortar. The Engineer or Representative shall make test cylinders of the cement-mortar used for pipe linings at such times as necessary. The Engineer will perform slump test as required to verify the proper w/c ratio. The making, curing, handling and testing of cement-mortar shall be in accordance with A.S.T.M. Specifications and as approved; the making, handling, curing and testing of cylinders shall be performed by the Engineer or Representative at their expense and direction.

3.11.2 Post Lining Inspection. After the lining operations, the Contractor shall make an examination of the interior of the pipes by experienced personnel trained in CCTV video inspection to determine whether the pipes have been sufficiently lined. This inspection shall be subsidiary to the pipe lining item.

3.11.21. The Contractor shall provide such facilities as may be required for inspection of pipes by the Owner. Provide a copy of each video and report log to the Engineer. Video inspection equipment shall meet the requirements set forth in the Pre-Lining Inspection section of this specification.

3.11.22. If the examination and inspection reveal that the lining operations have not been satisfactorily performed, the Contractor, at no additional expense to the Owner, shall provide all other additional cleaning, lining, and inspection work as may be necessary for the proper replacement of the defective cement-mortar lining and as required.

3.11.23. Mortar lining shall be considered defective if it contains sand pockets, voids, over sanded areas, spiraled shoulders, excessively cracked areas of lining thinner than specified and areas of unsatisfactory surface finish.

3.11.3 Pressure Testing. All installed fittings (valves, bends, couplings, etc.) must be torqued and retorqued to manufacturer's specification. A visual inspection of said fittings at line pressure shall be performed by the Engineer prior to backfill.

3.11.4 Performance Criteria. The Hazen-Williams C factor (C_{hw}) will be used for determining the acceptability of surface finish of cement-mortar lining as detailed in Figure 2. The City reserves the right to require the Contractor to conduct flow testing, at the Contractor's sole expense, if the post-lining CCTV video inspection indicates a rough, uneven, or defective surface finish. The contractor shall supply all labor, equipment, materials, gauges, etc. to conduct the testing, if requested.

Table 2 Acceptable performance for smooth-bore pipe

Pipe Inside Diameter		
in.	(mm)	Guaranteed C_{hw} Factor*
4	(100)	90
6	(150)	100
8	(200)	110
10	(250)	115
12	(300)	120
14–20	(300–350)	125
>20	(>500)	130

*Based on nominal inside of pipe diameter before cement–mortar lining. The purchaser may specify that flow tests be conducted by an independent testing firm, by the constructor, or by the purchaser.

Figure 2 Acceptable performance for smooth-bore pipe

3.12 Disinfection. All work related to disinfection and testing shall be subsidiary to the pipe lining item.

3.12.1. All potable water pipe shall be disinfected in accordance with the latest version of AWWA C651, and the Contractor shall review disinfection and sampling points with the Engineer.

3.13.1. Using a dosage that will produce not less than 10 mg/L chlorine residual after a contact period of not less than 24 hours, during which period the Contractor shall exercise care to prevent contamination of the existing potable water system.

3.14.1. After chlorination, flush the pipe with clean water until the chlorine residual is that prevailing in the water system or less than 0.2 mg/L and pH of between 6.5 and 8.5 or as approved by the Engineer. The contractor shall chemically neutralize (dechlorinate) the flushed water in accordance with NHDES regulations and the latest version of AWWA C655. All labor, equipment, and chemicals required for dechlorination shall be considered subsidiary to the pipe lining item.

3.15.1. The Contractor shall test all potable water pipe for total coliform bacteria under the supervision of the Engineer. Samples shall be

collected and transported by the Contractor to a State approved laboratory for analysis. Any section of pipe shall be considered unsuitable for return to service if a coliform bacterial count is obtained from that sample.

3.16.1. Segments found unsuitable shall be re-chlorinated and tested until no coliform bacteria are present.

Method of Measurement

4.1 Pipe rehabilitation will be measured by the linear foot to the nearest linear foot complete in place measured along the centerline of the pipe from end to end.

4.2 Temporary bypass for pipe segments will be paid under separate item(s) in the contract. If no water diversion item is specified at a specific location, this work will be subsidiary.

4.3 Pre-Lining CCTV Video Inspection will be measured by the linear foot to the nearest linear foot.

4.4 No separate measurement will be made for post-installation video inspection.

Basis of Payment

5.1. The accepted quantities of pipe rehabilitation will be paid for at the contract unit price per linear foot of the kind, type, and size specified complete in place, including documented engineering plan, site inspection, cleaning of existing pipe; disposal of debris and sediment; bulkhead set-up and installation; and any materials and labor necessary for complete installation not paid for separately under other bid items.

5.2. Temporary bypass will be paid for under Items 611.99102 and 611.99106.

5.3. The accepted quantity of Pre-Lining CCTV Video Inspection will be paid for at the contract unit price per linear foot complete.

5.4. No separate payment will be made for post-installation video inspection. Cost shall be included in the linear foot cost of the pipe rehabilitation.

5.5. Removal of obstructions discovered during the pre-lining CCTV inspection, when directed by the Engineer, will be paid for under the Item 1008.3 allowance. The Engineer shall determine the method of removal collaboratively with the Contractor. The value of the repair, including excavation, pipe materials, and surface restoration, shall be calculated and drawn against this allowance based on contract unit prices as specified in Special Provision 1008.3.

5.6. Excavation for cleaning/lining pits, sawcutting, temporary bypass, turf restoration, granite curb, and pavement restoration, shall be paid under their respective contract pay items.

Pay Item and Unit:

602.0001	Pre-Lining CCTV Video Inspection	LF
602.71010	Clean & Line (Cement Mortar) 10” Cast Iron Water Main	LF

S P E C I A L P R O V I S I O N

SECTION 611 -- WATER INSTALLATION

Description

1.1 General Description of Work. The CONTRACTOR is responsible for furnishing, installing and removing temporary water systems and furnishing and installing the new water mains and appurtenances in accordance with the water main plans and as specified herein or as ordered by the ENGINEER.

1.1.1 The CONTRACTOR shall furnish all materials, labor, tools and equipment, and perform all operations, testing, and incidentals necessary for a complete operating water facilities installation, as outlined herein and on the plans and setting up and maintaining a temporary water system to maintain water service at all times, except for authorized shutdowns approved by the City of Concord.

1.2 Sequence/Maintenance of Service. The CONTRACTOR is responsible for maintaining continuous water service to affected customers via a temporary water system, except when construction requires an interruption of water service. A service interruption may last no longer than eight hours. The CONTRACTOR must obtain written approval from the OWNER prior to interruption of water service to affected water users. The OWNER requires that a written notice be sent to all water customers 48 hours in advance of the scheduled shutdown. The OWNER will provide written notification, but it is the CONTRACTOR's responsibility to establish and address needs, and shall coordinate with the ENGINEER and the OWNER.

1.3 Reference Drawings and Information. The OWNER cannot guarantee the accuracy or completeness of existing conditions shown on the project construction plans for this water facilities work. Sufficient investigations shall be made by the CONTRACTOR so that the CONTRACTOR is knowledgeable of existing conditions prior to tendering a bid.

1.4 Submittals

1.4.1 Shop Drawings are required for each and every element of the water facilities installation work. Shop and working drawings for water facilities shall be submitted to the City of Concord Engineering Services Division for approval in accordance with 105.02. Each shop drawing shall be assigned a sequential number for purposes of easy identification, and shall retain its assigned number, with appropriate subscript, on required resubmissions.

1.4.2 Shop Drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills of material, manufacturers data, spare parts lists, and other data prepared by the CONTRACTOR, his subcontractors, suppliers, or manufacturers which illustrate the manufacturer, fabrication, construction, and installation of the work, or a portion thereof.

1.4.3 Shop Drawings shall be submitted as a complete package by Special Provision section, unless otherwise reviewed and approved by the ENGINEER. It is the intent that all information, materials and samples associated with each specification section be included as a single submittal

for the ENGINEER's review. Any deviation from this requirement, such as submitting miscellaneous metals grouped by structure, shall be requested in writing prior to any associated submittal.

1.4.4 The CONTRACTOR shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

1.4.5 No material or equipment shall be purchased or fabricated specifically for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.

Materials

2.1 Earthwork Materials

2.1.1 Common Backfill. Common backfill shall be granular material, consisting of hard sand and gravel so graded that, of the material passing the No. 4 sieve, not more than 35 percent shall pass the No. 200 sieve. Common backfill shall be free of organic matter, trash, roots or other deleterious material and shall contain no stone measuring greater in any dimension than two-thirds of the loose lift thickness or 6 inches, whichever is smaller. Common backfill shall be capable of forming a firm, stable base when spread and compacted in accordance with this specification. In addition, common backfill shall be non-plastic (plasticity index zero, defined as liquid limit minus plastic limit). Common backfill may be obtained from either on-site excavations or off-site sources. Any materials excavated from the trench not conforming to this specification shall be properly disposed of as specified and replaced with approved material, as required, at no additional cost to the OWNER.

2.1.2 Sand Bedding and Blanket. Sand bedding and blanket material required for installation of the water mains, services, and appurtenances shall meet the following gradation requirements: 100% passing the ½ inch sieve and, of the material passing the #4 sieve, no more than 12% shall pass the #200 sieve.

2.1.3 Gravel Fill. Gravel fill shall consist of hard, durable gravel free from trash, organic matter, clay, surface coatings, and other deleterious materials. Gravel fill shall have a maximum stone size of two-thirds of the loose lift thickness, or 6 inches, whichever is smaller. That portion passing the 4-inch (100 mm) sieve shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

Sieve Size	Percent Passing
6 inch	100
No. 4	25-70
No. 200 *	0-12

* Based on fraction passing the No. 4 sieve.

2.1.4 Crushed Gravel. Crushed gravel shall consist of hard durable sand and gravel, free from trash, organic matter, clay, surface coatings, and other deleterious materials. Crushed gravel material shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

Sieve Size	Percent Passing
3 inch	100
2 inch	95-100
1 inch	55-85
No. 4	27-52
No. 200 *	0-12

* Based on fraction passing the No. 4 (4.75 mm) sieve.

2.2 Water Mains and Appurtenances. All products and materials shall conform to the latest appropriate section of American Water Work Association (AWWA) and American National Standards Institute (ANSI) Standards and as otherwise specified hereinafter.

2.2.1 Ductile Iron Water Main Pipe

2.2.1.1 Push-On Type Ductile Iron Water Pipe for permanent systems shall be ductile iron complying with ANSI A21.51 and AWWA C151, Class 52. Pipe shall be double cement-lined $^{1}/_{8}$ inch thick. The exterior of the pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The mass of the zinc applied shall be 200 g/m² (0.6554 oz/ft²) of pipe surface area. A finishing layer of top coat shall be applied to the zinc. The coating systems shall conform in every respect to ISO 8179-1 "Ductile Iron Pipes – External zinc-based coating – Part 1: Metallic zinc with finishing layer, Second Edition 2004-06-01". Seal coated inside and out in accordance with ANSI A21.4 and AWWA C104. Joints shall be rubber gasket, push-on type in accordance with ANSI A21.11 and AWWA C111. Use only lubricant that is specified by the pipe manufacturer.

2.2.1.2 Blank

2.2.2 Blank

2.2.2.1 Blank

2.2.3 Blank

2.2.4 Ductile Iron Fittings shall be mechanical joint type with a 350-psi pressure rating in accordance with ANSI A21.10 and AWWA C110. Compact ductile iron pipe fittings meeting or exceeding AWWA C153 are acceptable. Fitting shall be Tyler or approved equal. See section 2.3 for thrust restraint.

2.2.4.1 Fittings shall have the following coatings, listed in order of preference;

2.2.4.1.2 Fusion-bonded epoxy – shall be used to coat exterior and interior surfaces and shall be applied at a minimum thickness of 8 mils. Fusion-bonded epoxy

shall meet the requirements of AWWA C116/A21.16-15 and AWWA C550-17.

2.2.4.1.3 Zinc – The exterior of the pipe shall be petroleum asphaltic-coated with a minimum of 4 mils dry film thickness over zinc-rich primer coating. The petroleum asphaltic coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun, and strongly adherent to the fitting. The zinc coating shall meet the requirements of AWWA C110 or AWWA C153. Interior lining shall be double cement with an asphaltic top coat. Both shall conform to or exceed AWWA C104.

2.2.5 Mechanical Joint Restraining Devices shall be used with all mechanical joints. Glands shall be manufactured of ductile iron conforming to ASTM A-536. The ring shall be grade 65-45-12 ductile iron in accordance with ASTM A-536. Mechanical joint restraining devices shall be "Grip-Ring" as manufactured by Romac, "Field Lok" gasket system manufactured by Tyler Union or approved equal. Fasteners for joint restraint and fittings shall be "Cor-Blue" or approved equal.

2.2.6 Couplings shall be mechanical joint ductile iron solid sleeve type meeting the requirements stated above for ductile iron fittings. If outside diameters of existing pipes are not compatible with the ductile iron solid sleeve, only Romac XR-501, Macro, Alpha couplings or approved equal will be allowed for connection.

2.2.7 Valves

2.2.7.1 Gate Valves shall be in accordance with AWWA C509. Gate valves shall be resilient-wedge type with a non-rising bronze stem, 2-inch AWWA operating nut and fusion bonded epoxy coated both inside and out. Gate valves shall have mechanical joints as specified above. The valves shall be American Flow Control - 2500, Mueller A-2362, Clow – F series, Kennedy – Ken-Seal, M&H (style 4067). Valves shall open right (coded red). Unless approved by OWNER, valves larger than 12 inches shall be horizontal operating resilient wedge gate valves with non-rising stems. Valves shall conform to or exceed current AWWA C515 specifications. The large valves shall be Clow 2638, M&H 7000, Mueller 2361 or American Flow Control – 2500.

2.2.7.2 Blank

2.2.7.3 Insertion Valves shall be manufactured of ductile iron and feature a resilient wedge valve and shall be in accordance with AWWA C-509-01. The gate valve shall feature resilient-wedge type gate with a non-rising bronze stem and a 2-inch AWWA operating nut. Valve shall open RIGHT (coded red). Valves shall be Hydra-Stop Insta-Valve 250 Patriot, TEAM Insertion Valve or approved equal.

2.2.7.4 Valve Boxes shall be heavy pattern cast iron, two pieces, slip type, 5-inch shaft, with extension pieces sufficient to allow proper cover. Valve boxes shall weigh at least 100 pounds with cover. The upper section of the box shall be top-flange type to prevent settlement. The lower section shall be belled type to enclose the operating nut of the valve. The cover shall be cast iron with the word "WATER" plainly cast thereon. Valve boxes shall be North American made Tyler, Mueller, Quality Water Products, or approved equal.

2.2.7.5 Tapping Sleeves shall be mechanical joint, split sleeve with outlet flange conforming to AWWA C-110 section 10-14 with drilling recessed for tapping valve. The sleeve shall be ductile iron construction and include a ¾ inch FIP threaded test plug in the body of the sleeve. Side rubber gaskets shall be rectangular in cross section and fit into grooved channels in the casting. These gaskets shall not require cutting or trimming to match the mechanical joint end gaskets. Tapping sleeves shall be furnished with standard accessories including, but not limited to: glands, gaskets, and Cor-Ten bolts and nuts or equivalent. All flange bolts shall be 316 stainless steel. Interior and exterior of sleeve shall be bituminous coated with a minimum of 611 6 of 24 4 mils dry thickness. Tapping sleeves shall be capable of accepting a full-sized tapping cutter.

2.2.7.6 Tapping Gate Valves shall be resilient wedge style open right valves meeting the same specifications as gate valves under section 2.2.7.1 of these specifications except that one end of the valve shall be equipped with a flange conforming to AWWA C-110 section 10-14 for attachment to the tapping sleeve.

2.2.8 Hydrants and Appurtenances

2.2.8.1 Hydrants shall be in accordance with AWWA C502, and all addenda thereto. Hydrants shall be equipped with 5¼ inch main valves, as sized by seat ring internal opening, plugged drain holes, 6-inch pipe connection, one 4½ inch National Standard pumper connection and two 2½ inch hose connections. Each hydrant shall be equipped with a gate valve on the branch line as specified herein.

2.2.8.2 Hydrants shall open left.

2.2.8.3 For purposes of standardization, hydrants shall be American Darling B-62-B5 (20" Groundline to Nozzle) or Clow-Eddy F-2641. Hydrants shall have been manufactured no earlier than two years prior to installation. Hydrants shall be thoroughly cleaned and given two shop coats of paint in accordance with AWWA Specification C502 before shipment. Paint color shall be the standard hydrant color of the OWNER.

2.2.8.4 If the paint coating on any hydrant is damaged during shipping or installation, the CONTRACTOR shall touch-up paint the hydrants in accordance with AWWA Specification C502.

2.2.9 Corporation Stops shall be ball valve type with a PTFE coated brass ball, CC (AWWA tapered) threads, double O-ring seal, blow-out proof stem design, and compression-type outlet connection with a grip joint. All corporation stops are to be constructed of NSF 61 Annex G "Lead Free" compliant brass. Corporation stops shall be Ford, Mueller, McDonald or Hays.

2.2.10 Service Saddles will be required for corporation stops in accordance with paragraph 3.11 herein. Service saddles shall be double strap type with 360° contact on the main. The body shall be constructed of nylon-coated ductile iron and the straps shall be stainless steel. Service saddles shall be double bolt, Model "306", as manufactured by Romac Industries Inc, Ford Meter Box Company, or Mueller Company. Saddles shall meet all applicable parts of AWWA C800.

2.2.11 Service Pipe for house services shall be Type "K" copper tubing conforming to ASTM B 88. The name of trademark of the manufacturer and type shall be stamped at intervals along the pipe.

2.2.12 Curb Stops shall be ball valve type with a PTFE coated brass ball, CC (AWWA tapered) threads, double O-ring seal, blow-out proof stem design, and compression-type outlet connection with a grip joint. All curb stops are to be constructed of NSF 61 Annex G "Lead Free" compliant brass, shall not have a draining port, and shall open left

2.2.13 Curb Boxes shall be adjustable in lengths consistent with pipe depths. Curb boxes shall be ERIE style with a 1/2-inch x 24-inch stainless steel rod, pin and plug type cover. Curb boxes shall be Ford, Mueller, or approved equal.

2.2.14 Service Pipe Couplings shall be made of brass. Both ends of the coupling shall be compression type with a grip joint. Couplings shall be manufactured by Ford, Hayes or Mueller.

2.2.15 Temporary Water Main and Fittings shall conform to all applicable AWWA, NSF and ANSI requirements. Pipe shall have a working pressure of 200 psi. Typically, Certa-Lok Yelomine restrained joint PVC pressure system piping or approved equal.

2.2.16 Temporary Service Pipe and Fittings shall meet all requirements of 2.2.15, typically hoses or HDPE piping.

2.3 Thrust Blocks shall be 2'x2'x2' (⅓ CY) or 2'x2'x4' (⅔ CY) of 2000 psi precast concrete with integral cable hitch.

2.4 Insulation

2.4.1 Board Insulation shall be rigid extruded polystyrene 8 feet long, 2 feet wide, and 2 inches thick having an R value of 10 and conforming to ASTM C 578, Type VII, and shall be STYROFOAM HI-60 as manufactured by Dow Corning Chemical Co. or approved equal.

2.4.2 Round Insulation shall be a rigid pipe insulation supplied in half shells to completely cover the exterior of the pipe, joints and expansion joint with three inches of insulation to yield a minimum R-value of 15 (R=5 per inch of thickness). The compressive strength of the insulation shall be 24-PSI minimum in accordance with ASTM D 1621. The water absorption shall be 0.7% maximum in accordance with ASTM C 272. Service temperature range shall be -50ºF to 150º F.

2.4.2.1 Jacket. PVC or HDPE jacket shall consist of a hard PVC or HDPE wrapped cover completely surrounding the pipe and insulation, and have a nominal thickness of ¼ inch. The jacket shall be factory wrapped around the insulated pipe and fittings, and sealed. Pipe shall be joined to have the middle of the pipe centered over the drain pipe.

2.5 Blank

Construction Requirements

3.1 General. The CONTRACTOR shall furnish all water main pipe, fittings, services and related material and appurtenances, labor, tools and equipment, granular material, and concrete thrust blocks; and perform all operations and incidentals necessary for complete excavation, installation, backfill, and testing as outlined herein and on the plans; and maintain service at all times.

3.1.1 The CONTRACTOR shall be responsible for the layout of the work. The OWNER will provide control points as described in Section 105.08. The temporary and permanent water mains, service connections and appurtenances shall be built at the locations indicated on the Plans to facilitate reconstructing other facilities within this area of the project.

3.1.2 The CONTRACTOR shall be responsible to field locate all existing water services for the purpose of connecting them to the proposed mains. This may involve exploratory test pits of which payment will be made under Item 206.19 – Common Structure Excavation Exploratory.

3.1.3 Location of new water services for all lots throughout the project area as part of the new water line will be as determined by the OWNER.

3.1.4 Consequential damages resulting from the CONTRACTOR not locating the facilities as shown on the Plans are the responsibility of the CONTRACTOR.

3.1.5 The CONTRACTOR, at the completion of each part of the work, shall furnish the as-built locations of the water main and appurtenances referenced to the Construction Base Line and Benchmarks. The as-built locations shall be to an accuracy of plus or minus 0.10 feet in plan and elevation.

3.1.6 Any deviations from the locations shown on the Plans require the OWNER's and the ENGINEER's approval. Any discrepancies with locations shown on the plans shall be brought to the ENGINEER’s attention and subsequently resolved between the OWNER, the ENGINEER and the CONTRACTOR.

3.2 Temporary Water System

3.2.1 The CONTRACTOR shall provide a forty-eight (48) hour written notice to all water users regarding any disruption in service related to the installation and removal of by-pass and temporary service piping.

3.2.2 The temporary main shall be installed as shown on the Drawings, alternate layouts proposed by CONTRACTOR shall be approved by ENGINEER. Approval shall not be deemed as relieving the CONTRACTOR of full responsibility of the adequacy and safety of methods. Dead end bypass service lines shall be provided with valve, backflow preventer, piping and erosion control measures for the purpose of bleeding the line.

3.2.3 Services to be connected to the temporary main shall be identified by the CONTRACTOR and provided to all customers serviced by the section of main taken out of service.

3.2.4 New temporary services shall be connected to existing service piping and installed in accordance with these specifications unless otherwise directed by the ENGINEER. Materials shall be as specified herein and shall include piping, saddles, corporation stops, copper tubing, compression couplings and all necessary appurtenances. The ENGINEER will oversee the removal/reinstallation of all meters as necessary, and will accompany the CONTRACTOR when installing or removing temporary water service lines to private premises. Where sillcocks are utilized for temporary connection (only if explicitly approved by the ENGINEER), a "tee" or "wye" will be installed at the connection.

3.2.5 The temporary system shall be pressure and leakage tested and properly disinfected in accordance with applicable AWWA specifications prior to any temporary service connection.

3.2.6 The temporary piping shall be protected from vehicular damage at all driveway or roadway interfaces. At driveways, unless otherwise called for in the plans, the CONTRACTOR has the option to bury the pipe, use preformed pipe cradles, or ramp with bituminous materials (only for pipes ≤ 2" diameter). Pipes larger than 2" diameter shall be buried. At roadways, the CONTRACTOR shall bury any size pipe and temporarily patch. All materials related to this work shall be subsidiary to the item, aside from sawcutting, granite curb, temporary pavement patch as directed by the ENGINEER, and final restoration (turf or paved surfaces).

3.2.6.1 All bypass piping ramps on pavement shall be underlaid by 15-lb felt or other approved material to prevent scarring or other damage.

3.2.7 Pressure reducers may be required on temporary water mains and services to regulate excess water pressure, and shall be required where service pressure exceeds 80 psi.

3.2.8 Temporary hydrants shall be provided where shown on the plans. All hydrants, existing, temporary or new, that are "out of service" are to be bagged with an appropriate covering. The CONTRACTOR will notify the ENGINEER of operational status, ENGINEER will notify the FIRE DEPARTMENT.

3.2.9 The CONTRACTOR shall submit an emergency on-call list of employees available 24 hours per day, 7 days per week to respond to problems with the bypass system. No work will commence on the bypass system until the ENGINEER has received and approved. Response time shall be within one-half hour of notification of deficiency.

3.3 Trench Excavation

3.3.1 General. Excavation, dewatering, sheeting, and bracing shall be carried out in such a manner as to eliminate any possibility of undermining or disturbing the foundations of any existing structure, utilities or any work previously completed under this contract.

3.3.2 On paved surfaces that will not be resurfaced under this contract, the CONTRACTOR shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are so shaped to allow cutting or damage of such surfaces during excavation or other phases of the work.

3.3.3 All lawns, paved surfaces, roadways, and structures which have been damaged or disturbed by the CONTRACTOR's operations outside of the project work areas shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations or as specified on the plans.

3.3.4 The CONTRACTOR shall provide trench shoring and dewatering, if necessary, to provide a stable and dry trench at all times. The pipe trench must be dewatered to 1 foot 6 inches below the invert of the new water pipe. Trench width shall be 2 feet plus the diameter of the pipe. Cover on pipe shall be a minimum of 5 feet 6 inches. Trench depth shall extend to 6 inches below the invert of the pipe.

3.3.5 As the excavation approaches pipes, conduits, or other underground structures, digging by conventional trenching machine methods shall be discontinued. Only manual methods of excavating shall be employed around buried utilities.

3.3.6 Prior to doing any work outside the right-of-way line on private property for connection of water services, the CONTRACTOR shall advise the property owner of the work and/or disturbance of the person's property that shall be performed, and the restoration thereof.

3.3.7 The CONTRACTOR shall maintain utilities, utility services and sewer pipe encountered in the excavation, and repair or replace them to their owner's satisfaction and be responsible for consequential damages thereof.

3.3.8 The CONTRACTOR shall not be compensated for any additional work required in working in close proximity to a utility line, sewer or underground structure in the trench line above or below the water pipe, except for common structure excavation (if required).

3.3.9 Excavations shall be kept dry until the pipes and appurtenances to be built therein have been completed to such extent that they shall not be damaged.

3.3.9.1 Provide, operate and maintain any dewatering system required to lower and control groundwater levels and groundwater hydrostatic pressure during the construction of the Work as required by this Section and the Contract Documents. The CONTRACTOR shall assume full responsibility and expense for the adequacy of the dewatering system with no additional time for performance.

3.3.9.2 The dewatering system shall be capable of developing an excavated subgrade relieved of any hydrostatic pressure that could cause a decrease in the stability of the excavated subgrade and which shall provide the necessary groundwater control for the proper performance required for completion of the Work.

3.3.9.3 Properly dispose of subsurface water collected in a manner that conforms to all applicable local and state ordinances, statutes and laws. Obtain all permits required for operation of the dewatering system.

3.3.9.4 Erosion Control. Provide adequate protection from erosion from any of the dewatering operations utilized during the course of the construction. Any damage, disruption or interference to newly constructed work or existing properties, buildings, structures, utilities and/or

other work resulting directly or indirectly from dewatering operations conducted under this Contract shall be remedied by the CONTRACTOR, at no cost to the OWNER or DEPARTMENT.

3.3.9.5 Treatment of Dewatering Operations Discharges. Provide such additional treatment devices as may be required to meet the provisions of the Contract. This may include the construction of sumps and/or settling basins, stone rip-rap, sediment filter bags, silt fences or other requirements. The treatment devices shall be later removed and/or filled in with acceptable backfill material, and restored to original conditions once they are no longer needed, at no additional cost to the OWNER.

3.3.10 Over-Excavation. If, in the opinion of the ENGINEER together with the OWNER, the material at or below the depth of the trench is unsuitable for foundation, it shall be removed to such depths as directed by the OWNER and ENGINEER and shall be replaced with compacted Granular Backfill (Sand), conforming to 209.2.1.1, and placed as provided in 209.3.

3.3.11 If the bottom of the excavation is deeper than the depth shown on the plans, by error of the CONTRACTOR, the condition shall be corrected by refilling to the proper grade with compacted Granular Backfill (Sand), conforming to 209.2.1.1. All costs shall be borne by the CONTRACTOR.

3.3.12 Rock and Boulder Excavation shall be in accordance with Section 206.

3.3.13 Excess and Unsuitable Excavation. Excavation not used for backfill and unsuitable excavation shall be removed from the site and properly disposed of by the CONTRACTOR in accordance with local, State or Federal regulations.

3.4 Trench Backfill

3.4.1 General. After the pipe has been placed and has been inspected by the OWNER together with the ENGINEER, backfilling shall be performed without delay.

3.4.2 Bedding shall extend the full width of the trench from 6 inches below the pipe, to the springline (horizontal centerline) of the pipe. Compact the bedding material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922 prior to the placement of the blanket material.

3.4.3 Blanket Material shall be placed from the springline of the pipe to a minimum of 12 inches above the pipe crown. The trench shall be backfilled by placing and compacting the blanket material in lifts of 12 inches or less to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. The filling shall be carried up evenly on both sides of the pipe with care taken not to raise or otherwise disturb the pipe. Compact the blanket material with approved hand-operated devices. Blue “water” warning tape shall be installed 12 inches above the main and services.

3.4.4 Backfill shall be placed from 12 inches above the pipe crown to the underside of the pavement select material profile, or to the underside of loam and grassed areas, with common backfill described herein and as approved by the ENGINEER.

3.4.4.1 Backfill shall be placed and compacted in layers of 12 inches or less. Compact the backfill material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. Compaction shall be by hand-operated compactors, or other approved method.

3.4.4.2 Jetting and bucket compaction are not acceptable means of compaction.

3.4.4.3 Trench areas improperly backfilled or having excessive settlement, as determined by the ENGINEER, shall be reopened to the required grade, backfilled using proper techniques, and repaved as necessary. The CONTRACTOR shall receive no additional compensation for repair of trenches constructed under this Contract.

3.4.5 Trench Pavement Patch. All pavement patching of water main-related trenches shall be in accordance with Section 401.3. The water main trench pavement edges shall be saw-cut 2 linear feet back from the edge of the excavation prior to permanent patching.

3.5 Pipe Installation

3.5.1 General.

3.5.1.1 Pipe and fittings shall be handled with care to ensure that the pipe and fittings are in sound, undamaged condition. Particular care shall be taken to prevent damage to pipe coating and lining (if any).

3.5.1.2 The CONTRACTOR shall furnish slings, straps and/or other approved devices to support the pipe when it is lifted. Pipe and fittings shall not be dropped from trucks onto the ground or into the trench. Transporting pipe and fittings from storage areas shall be restricted to operations which shall not cause damage to the pipe or lining (if any).

3.5.1.3 All pipe and fittings shall be examined before laying, and no pipe or fittings shall be installed which are found to be defective. Damaged pipe coatings and/or lining (if any) shall be repaired as approved or directed by the ENGINEER at no additional cost to the OWNER.

3.5.1.4 Any pipe showing a distinct crack with no evidence of incipient fracture beyond the limits of the visible crack, if approved, may have the cracked portion cut off by, and at the expense of, the CONTRACTOR before the pipe is laid so that the pipe used is sound. The cut shall be made in the sound portion of the barrel at least 12 inches from the visible limit of the crack.

3.5.1.5 If any defective pipe is discovered after it has been laid, the CONTRACTOR shall remove the defective pipe and replace it with sound pipe at no additional cost to the OWNER.

3.5.1.6 Pipe and accessories shall be kept in a sound, undamaged condition. They shall, at all times, be handled with care and shall not be dropped, dumped or bumped against any other object. Damaged material shall be replaced at no cost to OWNER, at any time during the construction that the damage is identified or occurs.

3.5.1.7 Pipe shall be stored off the ground and CONTRACTOR shall be required to provide a water tight seal at both ends of pipe, with a minimum 1.5 mil polyethylene plastic wrap and secured.

3.5.2 Buried Pipe Installation. Installation of all buried piping shall be in accordance with AWWA Standard for installation of ductile iron water mains and their appurtenances, AWWA C600.

3.5.2.1 Pipe and fittings shall be thoroughly cleaned before they are placed. All lumps, blisters, and excess coal tar coating shall be removed from the spigot and from the interior of the bell, and these surfaces shall be wire-brushed, wiped clean and dry, and be free from oil and grease before the pipe is laid.

3.5.2.2 The interior of pipe, fittings and valves shall be kept clean and free of foreign material or soils at all times during storage and installation, or the material will be subject to rejection by the OWNER and ENGINEER.

3.5.2.3 All pipes and appurtenances laid in open trench excavation shall be bedded and uniformly supported over their full-length on bedding of the types specified herein and shown on the drawings. All work shall be performed in a dry trench.

3.5.2.4 Pipe and fittings shall be laid accurately to the line and grades. Care shall be taken to provide a firm bearing for the pipe along its entire length. Pipes shall not be laid in water, nor shall water be allowed to flow through them.

3.5.2.5 At all times when pipe laying is not actually in progress, the open ends of pipe in the trench shall be closed by temporary water-tight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.

3.5.2.6 Wherever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, the amount of deflection allowed shall not exceed that required for making a satisfactory joint and shall be subject to the approval of the OWNER and ENGINEER.

3.5.2.7 For mechanical joints, the spigot shall be centrally located in the bell, and adequate anchorage shall be provided at abrupt changes in direction and at dead-ends. All surfaces in contact with the rubber gaskets shall be brushed thoroughly with a wire brush immediately prior to assembly. The clean surfaces shall then be brushed with manufacturer's recommended lubricant prior to slipping the gasket over the spigot and into the bell. Lubricant shall also be brushed over the gasket prior to installation for the purpose of removing loose dirt and lubricating the gasket as it is forced into its retaining space. The CONTRACTOR shall use wrenches and the torque specifications as recommended by the manufacturer. When tightening bolts, it is essential that the gland be drawn toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket.

Generally Accepted Torques:

70 lbs. on set screws

75-90 lbs. on glands with 3/4" – (19 mm) bolts

60 lbs. on glands with 5/8" – (16 mm) bolts

3.5.2.8 For push-on joints, all foreign matter in the gasket seat in the socket shall be removed and the gasket wiped clean and flexed before placing in its seat. A thin film of lubricant shall be applied to the inside surface of the gasket. The plain end of the next pipe, after wiping clean, shall be aligned and carefully entered into the socket until it just contacts the gasket. Joint assembly shall be completed by forcing the end of the pipe past the gasket until it contacts the bottom of the socket. Final joint assembly of pipe 8 inches and smaller shall be accomplished by pushing against the face of bell of the entering pipe with a crow-bar or other tool. For larger pipe, the assembly shall be made with a jack and suitable slings.

3.5.2.9 When pipe is cut in the field, the cut end shall be tapered back approximately $^{1}/_{8}$ inch at an angle of 30 degrees with the centerline of the pipe with a coarse file or grinder to remove any rough edges which might injure the gasket.

3.5.2.10 The CONTRACTOR shall furnish and install all supports necessary to hold the piping and appurtenances in a firm, substantial manner at the lines and grades indicated on the drawings or as directed by the OWNER and ENGINEER.

3.5.2.11 Retaining glands, tie rods or a combination of precast concrete (2'x2'x2' typical, $^{1}/_{3}$ CY minimum) thrust blocks and retainers must be used on all mechanical fittings in pipe lines buried in the ground, against undisturbed earth (bearing area as shown on the plans). All accessories shall be seal-coated thoroughly and heavily with an approved material per AWWA C104 after assembly and shall be subsidiary to the ductile iron fitting unit price. Thrust blocks are to be precast with integral cable hitch unless otherwise approved by the ENGINEER. All tie rods or thrust blocks shall be subsidiary to the item being restrained.

3.5.2.12 Insulation shall be installed as shown on the plans or as directed by the ENGINEER.

3.5.2.12.1 Board insulation shall be installed as shown on the Plans over water mains having less than 5-foot 6 inches cover with all joints overlapped and extending 4 feet either side of the centerline of any drainage pipe/structure within 3 feet of outside wall, or as directed by ENGINEER. The total thickness of the insulation shall be 2 inches. The width of the installed insulation shall be 2 feet.

3.6 Blank

3.7 Blank

3.8 Valve Installation. Install valve boxes with a cushion of sand between the valve and the valve box. A Gate Box Aligner shall be required under the operating nut. In wet areas, crushed stone is to be placed around the valve box with a layer of geotextile fabric to prevent fine soil from mixing with stone during initial backfill. Valves and boxes shall be set with the stem vertical and box vertically centered over the operating nut. Valves shall be set on a firm foundation and supported by tamping selected excavated material under and at the sides of the valve. The gate box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade. Valves shall be rodded back to their respective "Tees"

3.8.1 Temporary Line Stops or Insertion Valves shall be installed per manufactory recommendations. Perform related work on connection to water main or associated work requiring installation of water line stop continuously and without interruption. After connection to main or associated work requiring installation of water line stop is complete, remove the line plugging equipment, seal and secure fitting per manufacture recommendations. Necessary disinfection, flushing and air release of the stopped water line shall be considered incidental to the temporary line stop item, including any appurtenances, fittings, labor and equipment necessary to put the previously stopped water line back in service.

3.9 Hydrants. Hydrants shall be set at the locations shown and bedded on a firm foundation. Each hydrant shall be set in true vertical alignment and properly braced.

3.9.1 Hydrants shall be mechanically restrained by either GripRing or Megalug type joint restraint systems as well as a thrust block.

3.9.2 Height adjustments shall be made to the hydrants so that the bottom flange of the hydrant is 4 inches above finish grade. Height adjustments shall be made with extension as manufactured by the hydrant supplied. All hydrant extension shall be considered subsidiary to the hydrant bid item.

3.9.3 Where an 8" Hydrant feed line is called for on the plans, the pipe shall not be reduced to 6" further than 2' from the hydrant.

3.9.4 Blank

3.9.5 Hydrants shall be set on a concrete base or another material base approved by the ENGINEER and shall be well braced and anchored by setting concrete thrust block behind the hydrants on undisturbed earth at the end of the trench, or by wedging granite block in place of concrete.

3.9.6 When hydrants are to be removed the existing isolation valve and tee shall be removed. A spool piece of pipe sized to match the mainline will be installed with two solid sleeves to replace tee.

3.9.7 The water main may be shut off for a maximum of 8 hours beginning after 9:00 a.m. for the removal of hydrants or installation of the tap or tee. Coordinate the shut off with the utility.

3.9.8 No hydrant shall be backfilled until directed by the ENGINEER.

3.10 Protection of Water Supplies

3.10.1 There shall be no physical connection between a public or private potable water supply system and a sewer, or sewer appurtenance which would permit the passage of any sewage or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sanitary sewer system. Locate the new water main with at least 10 feet (3 m) of horizontal separation distance between it and the existing or proposed sewer main.

3.10.2 Water Mains A deviation from the separation requirements of 3.10.1 above will be allowed where necessary to avoid conflict with subsurface structures, utility chambers and building foundations, provided that the sewer is constructed as follows:

3.10.2.1 Sewer pipe shall be Class 52 ductile iron or Polyvinyl Chloride (PVC) C900.

3.10.2.2 Joints shall be pressure tested with zero leakage at 25 psi for gravity sewers, and at 1-1/2 times working pressure for force mains.

3.10.3 Whenever sewers must cross water mains, the sewer shall be constructed as follows:

3.10.3.1 Vertical separation of the sewer and water main shall be not less than 18 inches.

3.10.3.2 Sewer pipe joints shall be located at least nine feet horizontally from the water main.

3.10.3.3 Sewer pipe joints shall be pressure tested with zero leakage at 25 psi for gravity sewers, and at 1-1/2 working pressure for force mains.

3.10.4 Water Services In accordance with the 2021 IPC, water service pipe and the sewer service shall be separated by 5’ of undisturbed or compacted earth, except as follows:

3.10.4.1 The required separation distance shall not apply where the bottom of the water service pipe within 5 feet of the sewer service is a minimum of 12 inches above the top of the highest point of the sewer pipe.

3.10.4.2 Water service pipe is permitted to be located in the same trench with the sewer service, provided the sewer is constructed of materials as noted in 3.10.2.

3.10.4.3 The required separation distance shall not apply where a water service pipe crosses a sewer pipe, provided that water service pipe is sleeved to at least 5 feet horizontally from the sewer pipe centerline on both sides of such crossing.

3.11 Service Installation. Install corporation stops on the new water main. The tapping machine shall be rigidly fastened to the pipe halfway between the horizontal and vertical position. The length of travel of the tap should be established so that when the stop is inserted and tightened with a 14-inch wrench, not more than one to three threads shall be exposed on the outside. When a wet tapping machine is used, the corporation stop shall be inserted with the machine while it is

in place. Stops shall be tightened only sufficiently enough to give water-tightness, and care must be constantly exercised not to over-tighten them.

3.11.1 Service saddles will be required as indicated by the following chart:

Pipe Size	Saddle Requirements for Class 52 D.I. Pipe
6 inch	Taps ≥ ¾ inch
8 inch	Taps > 1 inch

3.11.2 Install copper tubing, from the corporation stop to the curb stop, in a trench with a depth of at least 5 feet 6 inches. Care shall be exercised in the placing and laying of copper tubing to be sure that the pipe does not have kinks. Place at least 6 inches of sand adjacent to and below the tubing and 12 inches above the tubing.

3.11.3 Install curb stops and curb boxes at the approximate property line, or as indicated on the plans, and connect with new copper tubing coming from the new main. Place two bricks beneath curb box shoes. Install curb box vertically centered over the operating key, with the elevation of the top adjusted to conform to the finished grade. Prior to backfilling, the CONTRACTOR shall ensure corporation stops are in the open position and curb stops are fully shut. Adequately support the box during backfilling to maintain vertical alignment. Care must be taken to ensure that the curb box does not rest on the curb stop.

3.11.4 Make connections of new copper services to existing services as directed by the ENGINEER. Connection shall be made using suitable couplings.

3.12 Inspection. Each section of installed water main will be visually inspected by the OWNER and ENGINEER. The pipe shall be true to both line and grade, shall contain no broken pipe, shall show no leaks, and shall contain no debris or other deposits of which shall in any way reduce the full cross-sectional area of the pipe.

3.12.1 Any section of water pipe which does not comply with these inspection criteria, as determined by the OWNER and ENGINEER, shall be promptly corrected, replaced or repaired by the CONTRACTOR at no cost to the OWNER. Such methods as are employed for the correction shall be approved by the OWNER.

3.13 Pressure and Leakage Testing. The CONTRACTOR shall furnish all necessary equipment and labor for, and perform, pressure testing and leakage tests on the water pipe in accordance with AWWA C600 Specifications.

3.13.1 The CONTRACTOR shall make any taps and furnish all necessary caps, plugs, etc., as required in conjunction with testing, and also furnish a test pump, gauges, and any other equipment required in conjunction with carrying out the hydrostatic tests. The CONTRACTOR shall at all times protect the new water mains and the existing water mains against the entrance of polluting material.

3.13.2 Main Testing Requirements:

1. Test duration: One (1) hours, minimum.
2. Test pressure: Hydrostatically testes to a pressure of 150 psi (min) or 1.5 times the systems static pressure, not to exceed 200 psi.
3. Allowable pressure loss: Zero (0)
4. If any test of pipe laid discloses leakage, the CONTRACTOR shall, at his own expense, locate and make repairs as necessary until the leakage is corrected.

5. All visible leaks are to be repaired.

6. The pressure test shall not be performed concurrently with the disinfection.

3.13.3 Service Testing Requirements:

1. Hydrostatically tested to a testing pressure of 80-psi (min) or 1.5 times the systems static pressure not to exceed 200-psi. Test pressure must hold for 15 minutes for acceptance.

2. Visual hydrostatic testing using the pressure from the adjacent water mains system pressure. The line will be flushed out and the valve from the water source left open and valve at end of segment closed. The trench will be left open with the entire line accessible in its entirety with appropriate safety measures. No signs of leakage shall be observed for a minimum of 15 minutes for acceptance.

3. Pneumatically tested with air to a pressure of 50-psi (min). Test pressure must hold for 15 minutes for acceptance. Pneumatic testing will not be conducted on plastic services.

3.14 Disinfection. Before being placed in service, all new and temporary water pipelines shall be chlorinated by the CONTRACTOR in accordance with the requirements of AWWA C651. The procedure shall be discussed with the OWNER and ENGINEER prior to proceeding with the work.

3.14.1 The location of the chlorination and sampling points will be determined by the OWNER and ENGINEER in the field. Chlorination taps shall be located no farther than 10 linear feet from the flushing water supply introduction point. Taps for chlorination and sampling shall be uncovered and backfilled by the CONTRACTOR, as required. The general procedure for chlorination shall be first to flush all dirty or discolored water from the lines, and then introduce chlorine in approved dosages through a tap at one end, while water is being withdrawn at the other end of the line. The chlorine solution shall remain in the pipeline for a minimum of 24 hours. The City of Concord recommends a chlorine concentration of 50 ppm.

3.14.2 Following the chlorination period, all treated water shall be flushed from the lines at their extremities, and replaced with water from the distribution system. Bacteriological sampling and analysis of the replacement water shall then be made after the replacement water has occupied the chlorinated pipeline for a minimum of 16 hours. Bacteriological analysis shall be completed by a state-certified laboratory in full accordance with AWWA C651. The CONTRACTOR shall re-chlorinate at no cost to the OWNER or DEPARTMENT if the test fails to achieve satisfactory

results, as approved by the ENGINEER. The line shall not be placed in service until the requirements of the Engineering Services Division are met.

3.14.3 Special disinfection procedures, such as soaking or swabbing approved by the ENGINEER, shall be used in connections to existing mains and where the method outlined above is not practical.

3.14.4 Discharge of waste water to the environment with chlorine concentrations greater than the ambient distribution system chlorine residual is prohibited. Hyperchlorinated water must be neutralized before being discharged to the environment.

All water discharged from the temporary piping and the new water mains will need to be chemically treated for removal of chlorine and the lowering of PH to levels between 6.5 and 8.5 before being discharged into the environment per the requirements of the New Hampshire Department of Environmental Services (NHDES) and the latest version of AWWA C655. The method by which the contractor proposes to remove the chlorine and lower the PH must be approved by the OWNER. All labor, equipment, and chemicals required for dechlorination shall be considered subsidiary to the associated pipe item. Pretreated discharge to catch basins, streets, sidewalks, brooks and ponds are prohibited. A temporary discharge permit may be required by NHDES.

3.15 Spare Parts. Blank

Method of Measurement

4.1 Pipe of the kind, type and size specified (including temporary pipe and service pipe) will be measured by the linear foot to the nearest 0.1 foot of furnished, installed and operational water pipe. Measurements will be taken along the centerline of the pipe, end to end.

4.1.1 Common structure excavation required for the removal and disposal of unsuitable material below the typical trench section will be measured as provided in Section 206.

4.1.2 Rock structure excavation and common structure excavation exploratory will be measured as provided under Section 206.

4.1.3 Granular backfill (sand) to replace material excavated under 4.1.1 will be measured as provided in Section 209.

4.2 Supported pipe including support assemblies, pipe of the kind, type and size specified, shall be measured by the linear foot to the nearest 0.1 foot of furnished, installed, and operational water pipe. Measurements will be taken from the backwall of abutment A to the back wall of abutment B along the centerline of the pipe, end to end, with no deductions for any valves and fittings.

4.3 Encased pipe, including encasement of the kind, type and size specified, will be measured by the linear foot to the nearest 0.1 foot.

4.4 Water services of the size specified, up to and including 2" services including, saddles, corporation stops, copper tubing, curb box/rod, couplings, curb stops and any ancillary items to provide a complete domestic water service will be measured by the each for the number of water services furnished and installed.

4.5 Valves, including box, by the each for the number of units furnished and installed.

4.5.1 Tapping sleeves and valves with box, including thrust block and appurtenances, will be measured by the each for the number of units furnished and installed.

4.5.2 Adjusting water gates and shutoffs set by others will be measured by the number of units adjusted.

4.5.3 Temporary Line Stops or Insertions Valves, including appurtenances and other incidentals, including excavation and backfill, necessary for installation of stop, removal and re-energization of stopped main, will be measured by the each for the number of units furnished and installed.

4.6 Fittings, including retaining glands, shall be measured by the pound complete in place.

4.7 Hydrants including valve, pipe fittings, extensions and any other incidental work, including excavation and backfill, will be measured by the number of units furnished and installed, adjusted/relocated, reset, or removed.

4.8 Board insulation will be measured by the square yard to the nearest 0.1 of a square yard of area covered for the thickness specified.

> **4.8.1** Round insulation or round insulation with jacketing will be measured by the linear foot to the nearest 0.1 linear foot for the thickness specified. Measurement will be from end to end along the top (or bottom) of the insulation.

4.9 Temporary water system will be measured by the linear foot of furnished, installed and operational pipe. Temporary fire hydrants, backflow preventers, pressure reducing devices, services and appurtenances, and subsequent removal of said, upon acceptance of new water main shall be incidental to the temporary water system.

4.10 The ENGINEER must be involved in and approve of the measurement of any pay item.

Basis of Payment

5.1 The accepted quantity of pipe of the kind and type specified (including temporary pipe and service pipe) will be paid for at the contract unit price per linear foot complete in place, with the following stipulations:

5.1.1 Common structure excavation required for the removal of unsuitable material below the typical trench section will be paid for under item 203.1 (Common Excavation).

5.1.2 All rock structure excavation, any common structure excavation exploratory and any common structure excavation below the depth specified in 206.4.1.1 shall be paid as provided in 206.

5.1.3 Granular backfill (sand), to replace material excavated under 5.1.1 only, will be paid as provided in 209.

5.2 The accepted quantity of supported pipe, including support assemblies shall be paid at the contract price per linear foot complete in place as shown on the plans and specified herein, and shall include furnishing and installing pipe, insulation, hangers, insulation jacketing, rollers and fittings, expansion joints and all other work required for or incidental to the completion of this item.

5.3 The accepted quantity of encased pipe, including encasement, will be paid at the contract price per linear foot complete in place as shown on the plans and specified herein, and shall include furnishing and installing casing pipe, assembly of casing pipe, excavation, bedding, blanket, backfill, furnishing and installing carrier pipe, pipe spacers, bulkheads and appurtenances, and all other work required for or incidental to the completion of this item, except as noted below.

5.4 Water Service (of size specified), including, corporation stops, copper tubing, curb box/rod, couplings and curb stops will be paid for at the contract unit price of each water service complete in place.

5.5 The accepted quantity of valves will be paid for at the contract unit price of each of the kind, type, and size specified complete in place.

5.5.1 Tapping sleeves and valves with box, including thrust block and appurtenances, will be paid for at the contract unit price for each complete in place.

5.5.2 The accepted quantities of adjusting water gates and shutoffs set by others will be paid for at the contract unit price per each complete in place.

5.5.3 The accepted quantity of Temporary Line Stops or Insertion Valves will be paid for at the contract unit price of each of the kind, type and size specified complete in place.

5.6 The accepted quantity of fittings will be paid for at the Contract unit price per pound, complete in place.

5.7 The accepted quantity of hydrants, including thrust block and appurtenances, will be paid for at the contract unit price for each complete in place.

5.8 The accepted quantity of board insulation, including excavation and backfill, will be paid for at the Contract unit price per square yard, complete in place.

5.8.1 The accepted quantity of round insulation or round insulation with jacketing, including all appurtenances needed to install the insulation around the pipe, will be paid for at the Contract unit price per linear foot, complete in place.

5.9 Any work not specifically having a pay item and necessary for a complete and operational water system, as herein specified and called for on the plans, shall be considered incidental and subsidiary to the pay item work specified herein. The work considered as subsidiary and not separately paid for shall include but not be limited to the following:

5.9.1 Pipe material handling and storage on site.

5.9.2 Excavation, bedding, blanket and backfill.

5.9.3 Sheeting, shoring, and dewatering of trenches (if applicable).

5.9.4 Maintaining existing water service.

5.9.5 Concrete thrust blocks, thrust restraining systems.

5.9.6 Removal and decommissioning of temporary water system.

5.9.7 Blank

5.9.8 Pressure testing, chlorination taps, disinfection, flushing.

5.9.9 Blank

5.9.10 Plugging abandoned water pipe.

5.9.11 Blank

5.9.12 Blank

5.9.13 Record plans.

Pay items and units (ENGLISH):

611.05206	6" CEMENT LINED DUCTILE IRON WATER PIPE, CL 52, ZINC COATED	LF
611.05208	8” CEMENT LINED DUCTILE IRON WATER PIPE, CL 52, ZINC COATED	LF
611.05210	10” CEMENT LINED DUCTILE IRON WATER PIPE, CL 52, ZINC COATED	LF
611.05212	12” CEMENT LINED DUCTILE IRON WATER PIPE, CL 52, ZINC COATED	LF
611.520075	3/4" VALVE & BOX	EA
611.520100	1” VALVE & BOX	EA
611.520150	1.5” VALVE & BOX	EA
611.7	FITTINGS	LB
611.71006	6" GATE VALVE W/BOX	EA
611.71008	8" GATE VALVE W/BOX	EA
611.71010	10” GATE VALVE W/BOX	EA
611.71012	12” GATE VALVE W/BOX	EA
611.811	RESET HYDRANT	EA
611.9512	INSULATION BOARD, 2” THICK	SY
611.99102	2” TEMPORARY WATER PIPING	LF
611.99106	6” TEMPORARY WATER PIPING	LF

S P E C I A L P R O V I S I O N

AMENDMENT TO SECTION 619 – MAINTENANCE OF TRAFFIC

The following standards and specifications are considered to be part of the Traffic Control Plan:

1. Section 618 and 619 of the NHDOT Standard Specifications, latest edition.

2. New Hampshire Department of Transportation's Work Zone Traffic Control Standard Sheets.

3. Manual on Uniform Traffic Control Devices (MUTCD), latest edition, including all current updates, and official interpretations.

4. State of New Hampshire's Flagger Handbook.

All signs, channelizing devices and arrow boards as required by the Manual on Uniform Traffic Control Devices, including part six, as amended, and the above Standards Sheets shall be in place prior to moving any equipment onto the pavement.

Additionally, the special provisions for this project are also set forth in this section.

The Contractor shall provide trained personnel including Uniformed Officers and Flaggers in accordance with Section 618, to be responsible for the maintenance of traffic control.

All materials specified under Item 619.1, Maintenance of Traffic, shall be required to be certified for reflectivity. Damaged devices shall be replaced as directed by the Engineer without additional compensation.

MAINTENANCE OF TRAFFIC

The CONTRACTOR is required to submit a formal Traffic Control Plan (TCP) to the Engineer for approval.

TRAFFIC CONTROL PLAN SUBMITTAL

The CONTRACTOR shall submit, at or before the Preconstruction Meeting, a Traffic Control Plan (TCP) that provides the following information to the ENGINEER:

a. The name, telephone number, and other contact numbers (cellular phone, pager, if any) of the CONTRACTOR's employee (the "Responsible Person") with overall responsibility for following the TCP, and who is empowered to immediately resolve any traffic control deficiencies or issues.

b. Temporary traffic control treatments at all intersections with roads, businesses, parking lots, pedestrian ways, residences and other access points, as applicable.

c. The City's Engineering Department will review the TCP for completeness and conformity with the Contract provisions, the current edition of the MUTCD and City's policies and procedures.

GENERAL REQUIREMENTS

1. All equipment must be removed from the traveled way, shoulders and sidewalks during non-working hours, weekends and holidays unless prior arrangements have been made to the satisfaction of the ENGINEER.

2. The CONTRACTOR shall furnish all signs reading "CONSTRUCTION VEHICLE-DO NOT FOLLOW" to be used on trucks hauling to the project when such signs are deemed necessary by the ENGINEER. Work related to this requirement will be subsidiary to the item Maintenance of Traffic.

3. Unless otherwise permitted, all vehicles used in the project shall be equipped for the protection of traffic. All vehicles used in the project shall be equipped with Amber LED warning lights conforming to the latest MUTCD and SAE J595 Class 1 or 2 specifications. The signal system shall be in continuous operations while the vehicle is on any part of the traveled lanes, ramps, shoulders and detour. The ENGINEER will check the conformity of each vehicle as to the stipulations regarding flashing lights.

4. No operations shall be conducted, including loading and unloading of vehicles on or near the traveled lanes or road shoulders without first erecting warning signs, lights, and barricades, as directed. These precautions shall be maintained at all times while work is in progress.

5. Open excavation adjacent to the existing traveled way or shoulders shall not remain open through the hours of darkness, weekends, or periods of shutdown, unless specifically authorized and adequately protected.

6. Each driver of any vehicle used on this contract shall be furnished written instructions concerning the manner of operation of that vehicle. Specifically, these instructions shall warn against stopping on the traveled portion of the highway, against passing other vehicles and against traveling in close proximity to another vehicle.

Method of Measurement

Maintenance of Traffic will be measured as a single unit (1 U)

Basis of Payment

The accepted quantity for Maintenance of Traffic will be paid for at the contract lump sum price. This price shall constitute full compensation for formulating and submitting the Traffic Control

Plan, and for furnishing, installing, maintaining, relocating, and removing all warning signs, barricades, drums, cones, amber flashing lights, and other traffic control devices necessary to safely maintain traffic through the work zone in accordance with the MUTCD. Flaggers and Uniformed Officers shall be paid separately under their respective contract items.

END OF SECTION

S P E C I A L P R O V I S I O N

SECTION 646 – TURF ESTABLISHMENT

Description

1.1 This special provision modifies the standard requirements of NHDOT Section 646 to specify a 6-inch depth for loam.

Replace Section 646.2.7 to instead read:

2.7 Loam shall conform to 641.2, except the placement thickness shall be 6" ± 1/2" instead of 4" ± 1/2" as dictated in 641.3.1.

Pay Item and Unit:

646.51	Turf Establishment with Mulch, Tackifiers and 6” Loam	SY

S P E C I A L P R O V I S I O N

SECTION 1008.3 – ADDITIONS & ALTERATIONS AS NEEDED – OBSTRUCTION REMOVAL

Description

1.2 This work shall consist of the removal of any obstruction within a pipeline that would impede the successful preparation and/or installation of a pipe lining system. Obstructions include, but are not limited to:

1.2.1 Bends, reducers, valves or other such fittings not indicated on the drawings.

1.2.2 Over poured lead joints.

1.2.3 Deformations in the pipe wall, out of round or defective pipe.

1.2.4 Protruding lateral or service connections.

1.2.5 Internal tie-rods.

1.2.6 Successive deflected joints.

Materials

2.1 Materials shall conform to Special Provision 611 Water Installation.

Construction Requirements

3.1 Construction shall conform to Special Provision 611 Water Installation.

Method of Measurement

4.1 Measurement for obstruction removal will be on a dollar basis up to the total Allowance amount.

Basis of Payment

5.1. Obstruction removal will be paid for under the Item 1008.3 Allowance (AL). The value of each obstruction removal shall generally be calculated by measuring the actual quantities of work performed (e.g., cubic yards of excavation, pounds of fittings, tons of pavement) and multiplying them by their respective competitively bid contract unit prices. The cumulative total of these unit price extensions for the specific obstruction shall be the amount authorized and drawn against the Allowance. Only work required to remove the obstruction that cannot be reasonably quantified by existing contract unit prices shall be paid in accordance with NHDOT Section 109.04 - Extra Work.

Pay Item and Unit:

1008.3 Additions and Alterations as Needed – Obstruction Removal AL

END OF SECTION