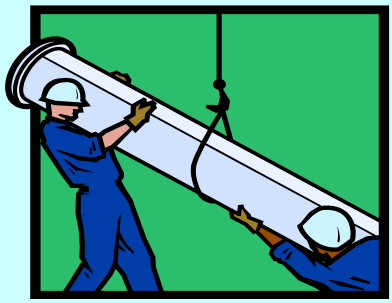
DEPARTMENT OF PUBLIC WORKS

WATER OPERATIONS

WORCESTER, MASSACHUSETTS



BID AND SPECIFICATIONS

FOR

WATER MAIN CONSTRUCTION
(190-26)

***

April 2026

BID #8691-J6

WATER MAIN CONSTRUCTION 190-26
BID #8691-J6

TABLE OF CONTENTS

WATER MAIN CONSTRUCTION 190-26
BID #8691-J6

INFORMATION FOR BIDDERS

The Work of this Contract generally consists of completing water main improvements along a portion of Chandler Street and May Street and completing large diameter valve replacement and other intersection work in other areas of the City. The Chandler Street Water Main Improvements generally consist of furnishing and installing approximately 1,730 linear feet of 24-inch diameter ductile iron water main, 550 linear feet of 42-inch diameter ductile iron water main, and 1,100 linear feet of 48-inch diameter ductile iron water main along Chandler Street and approximately 800 linear feet of 30-inch diameter ductile iron water main along May Street with associated water services, fire services, valves, fittings, hydrants, and temporary bypass piping. In addition, stormwater system improvements to be installed include approximately 240 linear feet of 15-inch RCP and three manholes. Generally, existing water mains being replaced will be removed and properly disposed of and the new water main will be installed within the existing trench. The large diameter valve replacement and other intersection work generally consists of furnishing and installing several large diam eter valves, and completing some water main improvements at various locations in the City, including furnishing and installing new water mains with associated valves, fittings, hydrants, and air release valves. In addition, temporary bypass piping will be installed.

NOTE: In addition to the work listed above, water mains and proportional quantities of associated items may also be required at additional residential streets to be named later. All work to be done under these to be named streets shall be done at contract bid unit prices and funded through the contingency should that funding remain available.

NOTE: CITY OF WORCESTER DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS & DETAILS VERSION February-2026 including subsequent addendum shall APPLY to all listed work. Specifications (not included in printed version of this document) are available online at the purchasing web site under this bid listing at; **http://www.worcesterma.gov/finance/purchasing-bids/bids/open-bids.** They are also located at the DPW web location at **http://www.worcesterma.gov/engineering**

Or they are also available directly at Worcester DPW, 20 East Worcester St., Worcester MA.; Monday through Friday 7:30 AM through 4:00 PM.

There will be a pre-bid meeting, at the date and time specified at the beginning of the total bid package. Attendance at this meeting is strongly encouraged.

The specific limits of the work for the named streets are designated on the drawings, which are part of the contract documents. Bidders should inspect the site of the work and satisfy themselves as to actual conditions and requirements of the work and the accuracy of the estimated quantities.

The bidder should thoroughly acquaint himself with the Agreement Forms used by the City's Law and Purchasing Departments so that they will know what their obligations are before they submit their proposal. These forms can be reviewed at the City of Worcester, Purchasing Department, City Hall, Room 201, 455 Main Street, Worcester, MA.

A certified check or bid bond made payable to the "City Treasurer, City of Worcester" in the amount of 5% of total bid shall accompany this bid.

The bid deposit will be returned within seven (7) days after the opening of the proposals with the exception of the three (3) lowest responsible and eligible bidders.

The Contractor shall be required to perform the work in sequence as directed by the Project Engineer. The Contractor **will be expected to start work as soon as the contract is signed and shall be completed by August 1, 2027**.

Schedule of Work:

Timeframe	Description
Spring - Summer 2026	• Dig test pits at each large diameter valve replacement location and each 16-inch diameter valve installation location not included in the Chandler Street Water Main Improvements drawings • Order all large diameter valves • Shop drawings and order equipment for all work, prioritize the 24" water main replacement work • Install 24" water main on Chandler Street
Summer - Fall 2026	• Install 42" and 48" water main on Chandler Street • Install 30" water main on May Street
Fall 2026 – August 1st 2027	• Complete shutdowns along Chandler Street and other locations in the City to install the remaining large diameter valves and complete all miscellaneous intersection work

The City of Worcester may award or may have awarded other contracts for work on or adjacent to the site and the Contractor shall cooperate fully with such other Contractors by scheduling his own work with that to be performed under other Contracts as may be directed by the Commissioner. The Contractor shall not commit nor permit any act, which will interfere with the performance of work by any other Contractor as scheduled.

WATER MAIN CONSTRUCTION 190-26
BID #8691-J6

Bid # 8691-J6 shall include all specifications and plans as included in the documents. More detailed plans of some drawings may be found on the City's Purchasing web site.

http://www.worcesterma.gov/e-services/bids/open-bids

Award of **Bid # 8691-J6** shall be based upon the Total Contract Bid Price from Page 8 of the Proposal section of the bid documents.

GENERAL SPECIFICATIONS

1.01 DEFINITION OF TERMS

Wherever the following words or phrases are used in these specifications, their intent and meaning shall be as follows:

1. City = the City of Worcester, MA.
2. Commissioner = the Commissioner of Public Works of the City of Worcester.
3. Assistant Commissioner = the Assistant Commissioner of Public Works of the City of Worcester.
4. Director = the Director of Water and Sewer Operations, Department of Public Works of the City of Worcester.
5. Field Engineer = the field representative of Water Operations, Department of Public Works of the City of Worcester.
6. Contractor = the person or persons, co-partnership or corporation who have entered into this contract as parties of the second part, or them or their legal representative.

1.02 EXISTING UNDERGROUND FACILITIES

1. Before making any excavation in a street, the Contractor shall notify all public utilities that they are making an entry, in accordance with Chapter 370, Acts of 1963 Massachusetts Law.

2. The Contractor shall ascertain the location of existing underground facilities and so conduct their work that those facilities shall not be damaged. The Contractor shall be fully responsible for damage to existing facilities and shall pay all costs of repairing damage caused by them or their agents.

3. Sewer connections or drains which are broken by the Contractor shall be repaired by a licensed drain layer, under the inspection of the DPW Permits division and paid for by the Contractor.

4. The City of Worcester, Department of Public Works, is not a participating member of the "Dig Safe" network. To get water lines marked out, the Contractor should contact **DPW Customer Service (508) 929-1300** at least 72 hours in advance of any execution.

1.03 INVESTIGATION OF CONDITIONS

Contractors are expected to visit the locality of the work and acquaint themselves with all available information concerning local conditions. They are also expected to make their own estimates of the facilities needed and difficulties attending the

execution of the proposed contract including the local conditions, availability of labor, uncertainties of weather and other contingencies.

In no event will the City assume any responsibility whatsoever for any interpretation, deduction or conclusion drawn from the inspection of the site. Failure to acquaint himself with all available information concerning these conditions will not relieve the Contractor from responsibility for estimating the difficulties and cost of successfully performing the complete work.

1.04 GENERAL SCOPE OF THE WORK TO BE PERFORMED

The work to be done under these Specifications will consist of the performing of such services and furnishing of such materials, except such material as is agreed to be furnished by the City at the location stated and as listed in the Proposal, and of doing all the miscellaneous work connected therewith. It shall include making excavations and backfilling, protection of the work, temporary street surface patching, furnishing and installing the necessary temporary by-pass pipes, installing water mains and appurtenances, cleaning up the work site, chlorinating and flushing the water mains, and testing of completed work for leaks.

1.05 DRAWINGS

1. The work shall be done in conformity with the plans and specifications and such modifications thereof as may be determined by the Assistant Commissioner, and with all conditions and requirements of these Specifications and under the direction and supervision of the Assistant Commissioner.

2. The length, size and location of the mains and other necessary information will be shown on a plan for each street in which mains are to be laid or as specified herein.

3. The plans are to be considered diagrammatical only. The final location is subject to such changes as may be necessary to avoid surface structures, underground pipes, sewers, conduits, etc. The location may be anywhere within the street limits and will be determined as work proceeds.

1.06 CITY ORDINANCES

The Contractor shall comply with all City ordinances regarding public work, the use of streets and highways, and the safety of the public, and with the regulations of the Department of Public Works of the Commonwealth of Massachusetts, when working in streets under their control.

1.07 RISKS FOR DELAY

The Contractor shall assume the risk of any and all delays arising from the nature of the work or from any unforeseen casualties, obstructions, or difficulties which may arise or be encountered in the doing of the work, or from the action of the elements, or other Contractors, or persons or otherwise; and further agrees that no claim for damages or extra compensation will be made by reason of any delay whatsoever.

1.08 INSPECTION

It is agreed that the Commissioner may appoint and employ at their own expense such officers as may be necessary, who are to act as engineers, inspectors, or agents for the purpose of supervising in the City's interest the materials furnished and the work done, as same progresses. Such officers shall have unrestricted access to all parts of the work and other places at and in which the preparation of materials and the construction of the different parts of the work to be done under these specifications are carried on and conducted and shall be given by said Contractor all facilities and assistance required to carry out their work of inspection and testing in a manner satisfactory to the Commissioner and Assistant Commissioner.

The Contractor shall give a minimum of a 24-HOUR NOTICE to the Director or his agent before he is ready to commence with the work.

All work shall be completed in the presence of the Field Engineer.

1.09 RIGHT OF REJECTION

Such officers shall have authority to reject any work, materials, and parts thereof, which do not in their opinion, conform to the Plans, Drawings and Specifications; it shall be admissible for them to do so at any time during the progress of the work, and until its completion and acceptance, notwithstanding the fact that any such defective work or materials may have been previously overlooked and received.

1.10 REJECTED MATERIAL AND DEFECTIVE WORK

The Contractor at their own expense shall promptly replace all defective work. At the request of the Commissioner or their representative, the Contractor shall remove any portion of the work done, as they may at some time think necessary for the discovery of improper materials or workmanship, and the Contractor shall restore such work, at their own expense in case it is found defective.

1.11 UNLOADING

The said Contractor agrees that they will, at their own expense, furnish all the means, appurtenances, and conveniences necessary for the delivery to the site of all material entering into the construction of the work including the delivery of pipes, valves, valve boxes, and other castings as defined in the specifications; and they agree that said City shall not be held responsible for the care and protection of said material and parts thereof, however, or wherever delivered, until the final acceptance of the work.

1.12 PERMITS TO OPEN STREETS AND INSTALL WATER MAINS AND SERVICES

1. Before any trench is opened in a public street in the City of Worcester, a permit shall be obtained from Department of Public Works, Permit office at 20 East Worcester Street. Permit applications shall be filed utilizing Online Permitting Portal located on DPW Engineering website.

2. Before any trench is opened in a State Highway, a permit shall be obtained from the District Highway Engineer. This permit shall be taken out by Water Operations.

3. Before any water main or water service is installed, replaced or repaired, a permit shall be obtained from Water Operations Engineering at 18 East Worcester Street. A water and a trench permit shall be drawn regardless of whether the work is being done on public or private property. Permit applications shall be filed utilizing Online Permitting Portal located on DPW Engineering website. The Contractor obtaining the permit shall be City of Worcester licensed and bonded drain layer only.

4. Failure to obtain the required permits shall result in the withholding of payments or final retainage release.

1.13 TRAFFIC TO BE MAINTAINED

The Contractor shall create and submit a Traffic Management Plan, including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD) at no additional compensation to the Contractor. The Traffic Management Plan shall be reviewed and approved by the Engineer and Owner prior to the start of construction. The Contractor shall adhere to the approved Traffic Management Plan throughout the duration of construction.
The Contractor is responsible for creating and implementing a Traffic Management Plan. The Contractor shall place and erect the necessary signs as

necessary and shall maintain said signs for the duration of the project.
Travel over streets where pipes are being laid shall be interrupted or obstructed as little as possible. The Commissioner may, at their discretion, direct that certain portions of the streets shall be clear of all excavated material, that at certain street intersections only a portion of the trench shall be excavated at a time, and closed again before the pavement over the balance is removed; and that no two adjoining street intersections be excavated at the same time. The Contractor shall erect temporary bridges and crossings at no additional compensation as determined by the Field Engineer.

1.14 PROTECTION OF TREES AND SHRUBS

The Contractor shall exercise every precaution to protect from injury all trees and shrubs not directly in the line of the water main or water service, and upon completion of the work shall restore the ground to its original condition without additional compensation.

1.15 BLASTING

Blasting, where necessary, shall be done with proper precautions to prevent injury or damage to persons and property. The Bond required by law and necessary permit from the Fire Chief shall be secured and filed.

1.16 PIPE LAYING IN PRIVATE STREETS OR RIGHT-OF-WAYS

1. When pipe is laid in a private street, or through private property, the surface of the ground shall, after the laying of the pipe, be carefully and promptly restored to the condition it was in previous to the laying of pipe.

2. When pipe is laid in a street that is being improved, as little interference as possible shall be caused to the street improvement work, and this contractor shall cooperate fully with the street contractor.

1.17 RECONSTRUCTION OF SUB-SURFACE STRUCTURES

1. In case it shall, in the opinion of the Commissioner, become necessary to divert or reconstruct any culvert, sewer, manhole valve chamber, catch basin connection, water main, house connection to water mains or sewers, in a new location, said work shall be done by the Contractor upon order from the said Commissioner.

2. Provisions must be made by the Contractor to take care of the drainage without damage to the work until the culvert, sewer, catch basin connection, and drains shall have been reconstructed and restored to service.

3. In case it shall, in the opinion of the Commissioner, become necessary to divert or reconstruct water mains or water service branches, said work shall be done by the Contractor.

4. In case it shall, in the opinion of the Commissioner, become necessary to divert and/or reconstruct any gas main or electric conduit or any connections thereto, the company owning same shall be notified to divert same by the Commissioner or their agent. In no case shall the Contractor make any change in the position of any gas pipe, electric conduits, or fixtures, without the written consent of the proper parties or an order from the Commissioner.

1.18 FENCES, DANGER SIGNALS, ETC.

The Contractor, at their own expense, shall erect and maintain all necessary fences, barricades and danger signals. The lights shall be kept on from sunset until sunrise, and necessary watchmen shall be provided for the safety of the public. The Contractor shall observe such rules relative to signals and safeguards, as the police regulations, laws and ordinances require.

1.19 CLOSING OF VALVES

DPW Water Operations employees, assisted by the Contractor, shall do the closing and opening of valves necessary for making connections with existing mains. Sufficient notice shall be given the Director of the time for shutting off. No allowance will be made for any delay in closing of valves. A 24-HOUR NOTICE must be given to residents or businesses affected by the shut-down and will be done by the Contractor under the direction of the Field Engineer.

1.20 CLEANING OF STREETS

Immediately upon completion of the work, refuse material and other material shall be removed by the Contractor at their own expense from the streets occupied by them during construction, and the streets shall be cleaned and restored to their original condition.

1.21 TRESPASS

The Contractor shall not allow anyone in their employ to damage the property of the City, or trespass on premises in the vicinity of the work. At the request of the Assistant Commissioner, they shall discharge from their employ any person guilty of such offenses, and they shall be held responsible for any acts of their employees. All buildings, fences, sidewalks, trees, and other properties shall be protected from injury, and the Contractor shall be held responsible for any

damages done to the same in any way, or by his act of neglect, or that of their agents, or by their act of neglect, or that of their agents, employees, or workmen.

1.22 DAMAGES TO PROPERTY

Special care must be taken by the Contractor not to allow any material of any kind to be deposited on any sidewalk, curb or sodding, and any damages caused by violating this provision must be made good by the Contractor at their own cost, and to the satisfaction of the Field Engineer.

1.23 RESPONSIBILITIES

The Contractor shall be responsible for their work for five (5) years starting on the day the work has been accepted by the City.

1.24 BORROWING OF MATERIALS

In the event the Contractor encounters a material delivery problem and, therefore, desires to borrow City-owned materials, they shall first seek permission to do same from the Director. If the quantity of City-owned materials on hand is such that a loan may be made, the Director may grant approval and the Contractor shall present the original copy of their purchase order showing the vendor's name who can properly replace said borrowed materials to the City storekeeper in charge of the store yard. Said purchase order shall contain the correct quantity and specifications to replace with identical materials to the original point of pick-up and in addition, said purchase order will also bear the signature of an authorized representative of the Contractor.

1.25 PROPER NOTICE BEFORE STARTING WORK

The Contractor shall be responsible for a minimum of one-week notice to Water Operations before starting work on a given street.

1.26 INEFFICIENCY OF INSPECTOR NOT TO PRECLUDE

The Contractor agrees that any omission, inefficiency, negligence or incapacity on the part of any or all such officers in exacting the full requirements of the Plans, Drawings and Specifications, shall not release the Contractor from supplying the same whenever it may be found that failure to meet requirements have occurred up to the final completion and acceptance of the work.

1.28 SEPARATION OF WATER MAINS AND SEWERS

All sanitary lines shall be laid at least 10 feet horizontally from any existing or proposed water line. The distance shall be measured edge to edge.

In areas where it is necessary to install sanitary lines with less than 10 feet horizontal distance from a water line the sanitary line shall be enclosed in concrete.

All sanitary lines crossing water lines shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. The sanitary line shall always cross under the water line unless directed by The Field Engineer. When an 18-inch vertical distance is not achievable the sanitary line shall be enclosed in concrete.

SPECIAL PROVISIONS

The following conditions and restrictions shall apply to all work performed under this contract:

.1 The Contractor shall be required to have, on-site at all times during the course of construction activities, a full-time superintendent who shall be in responsible charge of the project. This shall be the exclusive agent for the Contractor maintaining continuous correspondence with the Field Engineer.

.2 The Contractor shall notify the City in writing whenever there is a change of superintendents.

.3 The Contractor shall submit to Water Operations Engineering a schedule of operations within ten (10) days after the mailing of the executed contract to the Contractor. The schedule shall detail the proposed methods of construction, the sequence of work and the time the Contractor proposes to complete the various items of work within the time specified in the contract.

.4 The Contract Compliance Office requires certified payrolls be submitted on a weekly basis from the first week of work through the final week of work, regardless of whether they were on site or not. If they did not work during a particular week, they **must** submit a payroll stating that. It shall not be necessary for the Contractor to submit payrolls to any other agency. These submissions shall be a prerequisite to the City making any periodic or final payments to the Contractor. Failure to submit the required certified payroll shall result in the withholding of payments or final retainage release.

.5 The Contractor shall, prior to beginning work on each street or phase of the contract, submit to Water Operations Engineering, a digital record the street and sidewalk conditions of the street to be excavated. This record shall consist of video and/or photographic images of the street and street conditions prior to the start of any construction. Special note shall be made of any difficult or problem areas that could present problems for either the Contractor or property owners adjacent to the construction site. Similar post-construction records shall also be submitted after final restoration has been completed.

All photographs shall be submitted electronically in JPEG or PNG format (minimum resolution of 1920 x 1080 pixels) to the email address provided by the City or as directed by the City's inspector. Each image shall include metadata or labeling that identifies the date, location (GPS coordinates preferred), and a brief description of the photographed area or installation. All video and/or photos shall be supplied to the City at no additional expense to the City and will become City property upon receipt.

.6 A 24-hour emergency telephone number shall be supplied along with the name of the person to be notified for all repairs and emergencies that may occur. Failure to respond shall necessitate the actuation of City crews at the Contractor's expense.

.7 Police Officers for traffic control shall be furnished at the discretion of the Contracting Officer at the City's expense.

.8 In accordance with section 1, item 1.12, the Contractor shall be required to obtain a permit to open a public street **AT THE CONTRACTORS EXPENSE**. Failure to obtain the required street opening permits shall result in the withholding of payments or final retainage release. These permits are available at the Permit Office at 20 East Worcester Street. Permit applications shall be filed utilizing Online Permitting Portal located on DPW Engineering website.

.9 Item 301.01 1" Polyethylene Pipe for Change of Services

All water services ¾" or 1" in size shall be relayed or replaced with new 1" polyethylene tubing from the new 1" corporation stop at the new DI water main to the property line. All new service pipes shall be trenched over their entire length. No pulling or driving of services shall be allowed. These new service pipes shall be encased in a sand envelope per City of Worcester Standards.
Exceptions may be given only for replacement service to be pulled when conditions do not allow for trenching and must have approval from Field Engineer prior to pull.

.**10** Where old iron pipe exists on service lines, Contractor shall perform a change of service on the City portion. While the City encourages homeowners to replace any old iron water service pipe on their property, they are under no obligation to use the City's Contractor or to change the pipe. The Contractor shall not pressure or use any undue influence to entice the homeowner into this work. Should the opportunity arise, the Contractor may enter into a private agreement with homeowners to perform a change of service on the owner's side. Should the homeowner and Contractor enter into an agreement, the Contractor shall treat this as a private job unrelated to the City contract work and shall be responsible to take and pay for proper City Water permits. As part of this private agreement Contractor shall acknowledge that:
"According to G.L c. 165, sec. 1C; the applicant and excavator acknowledges that no pipe will be installed in any building or dwelling house without first notifying the occupant or owner that required electrical grounding may be affected by installation of plastic pipe, and that within 30 days of notification the owner of such building must cause the building or dwelling house to be properly grounded. If grounding services are required, the owner must hire a Massachusetts Licensed Electrician, file an application for an electrical permit, and notify the inspector assigned. Failure to ground buildings or dwelling houses

in accordance with safety standards within 30 days of notice will result in a fine of no less than $50 and no more than $100."
Homeowners shall be responsible for any normal City fees associated with turning on or off water or setting a new flared valve connection at the meter.

.11 Controlled Density Fill may be required as the backfill material at selected openings in any of the streets included in this bid. Field conditions shall dictate placement and shall be at the discretion of the Field Engineer.

The CITY shall employ the services of a certified testing contractor to ensure proper compaction of all trenches. Special note shall be made to **Section 300 - Water** paragraph D **EXCAVATION, TRENCING AND BACKFLIING**, of City of Worcester Standard Specifications & Details for related information of compaction requirements.

.12 The CITY requires the use of approved ramps for all driveway crossings of temp by-pass lines. No temporary pavement, gravel or other material will be allowed unless approved by DPW in advance.

.13 Item 301.50 <u>Ductile Iron Pipe and Polyethylene Wrap with Sand Envelope</u>

All ductile iron pipe installed as part of this contract shall be encased in an approved polyethylene wrap. This pipe and wrap shall be bedded in a sand envelope per the revised City Specifications. This sand envelope shall be the width of the trench from 6" below the pipe to 12" above the pipe. The remainder of the trench shall be backfilled per the City Specifications.

SPECIAL CONDITIONS

As specified in

DOCUMENTS AND SPECIFICATIONS FOR THE CHANDLER STREET WATER MAIN IMPROVEMENTS AND LARGE DIAMETER VALVE REPLACEMENTS
CONTRACT NO.190-26

ADDITIONAL MEASUREMENT AND PAYMENT DESCRIPTIONS

16-Inch Gate Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 305.1600 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve**.**

16-Inch, 24-Inch, 30-Inch, 36-Inch, 42-Inch, and 48-Inch Horizontal Gate Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 305.1650 through 305.4850 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve.

24-Inch Butterfly Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 307.2400 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic

Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve. All new 24-inch valves shall be horizontal gate valves unless available space does not allow for the installation of a horizontal gate valve. If a 24-inch horizontal gate valve cannot be installed due to lack of available space (as determined by the Contractor and agreed upon by the Owner), a 24-inch butterfly valve may be installed instead.

42-Inch by 8-Inch Tapping Sleeve & Valve

Payment shall be made at the unit price bid per each under Item No. 311.4208 in the Bid Form. Payment shall be full compensation for furnishing and installing the tapping sleeve and valve, valve box, all required fittings, excavation, setting of the valve, tapping, valve box, bedding, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, dewatering, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents.

Chandler Street at Mann Street Connection

Payment shall be made at the lump sum price bid under Item No. 912.10 in the Bid Form. Payment shall be full compensation for furnishing and installing a 42-inch by 30-inch tee with all required fittings, a 30- inch horizontal gate valve with all required fittings, and 30-inch diameter zinc coated CLDI water main with all required appurtenances. Payment shall include excavation, removal and disposal of unsuitable material, furnishing and installing suitable refill material, furnishing and laying of the pipe, furnishing and installing polyethylene wrap for the pipe, backfilling and compacting, compaction testing, dewatering, migration barriers, joint restraints, removal and disposal of existing water mains and tapping sleeve and valve, installation and removal of temporary taps for disinfection or testing, closing of predetermined gate valves and removal of gate boxes, concrete encasement of water main at sewer crossings, insulation, dust control, loam and seed, sidewalk replacement, curb replacement, street opening permits, trench opening permits, sheeting and bracing, disinfection and testing, furnishing and placing steel plates, preconstruction video recording, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Reference Figures No. 3D-E and 3D-P included in Appendix B.

Beaver Brook BPS Connection

Payment shall be made at the lump sum price bid under Item No. 912.20 in the Bid Form. Payment shall be full compensation for furnishing and installing a 42-inch by 30-inch tee, a 30-inch horizontal gate valve, 30-inch zinc coated CLDI water main, a 30-inch 45º bend, a 30-inch by 16-inch reducer to connect into the existing BPS inlet piping, and all required appurtenances. Payment shall include excavation, removal and disposal of unsuitable material, furnishing and installing suitable refill material, furnishing and laying of the pipe, furnishing and installing polyethylene wrap for the pipe, backfilling and compacting, compaction testing, dewatering, migration barriers, joint restraints, removal and disposal of existing water mains and valves, installation and removal of temporary taps for disinfection or testing, closing of predetermined gate valves and removal of gate boxes, concrete encasement of water main at sewer crossings, insulation, dust control, loam and seed, sidewalk replacement, curb replacement, street opening permits, trench opening permits, sheeting and bracing, disinfection and testing, furnishing and placing steel plates, preconstruction video recording, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Reference Figures No. 3C-E and 3C-P included in Appendix B.

Night Work

Payment shall be made at the unit price bid per each night under Item No. 938.2001 in the Bid Form. Payment shall be full compensation for all labor, work, and materials necessary for completing work under the Contract Documents at night. Various locations of valve replacement work and/or other intersection improvement work may be required to be completed at night to avoid significant disruption to vehicular traffic or interruption of water service. When work is completed at night, the Contractor shall receive payment at the unit price bid per each night under Item No. 938.2001 for each applicable night. The Contractor must obtain approval from the City of Worcester prior to completing any night work.

Silt Sacks

Payment shall be made at the unit price bid per each under Item No. 953.20 in the Bid Form. Payment shall be full compensation for furnishing, placing, staking, maintaining, and removing silt sacks. Payment shall include proper disposal of collected sediments as required during construction and proper disposal of silt sacks at the completion of work. Removal and replacement of the silt sack for the replacement of an existing catch basin shall not be considered for payment.

For Special Project Procedures please refer to DOCUMENTS AND SPECIFICATIONS FOR THE CHANDLER STREET WATER MAIN IMPROVEMENTS AND LARGE DIAMETER VALVE REPLACEMENTS CONTRACT NO.190-26

LIQUIDATED DAMAGES
(CONTRACTS OF $100,000.00 OR MORE)

It is expressly understood and agreed, by and between the Contractor and the City, that the time for completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial and / or residential conditions prevailing in the locality. If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof requested in writing by the Contractor and granted in writing by the Contracting Officer, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay the City the amount of $150.00 per day, not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the contractor shall be in default after the time stipulated for completing the work. The said amount of $150.00 per day is fixed and agreed upon by an between the Contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would in such event sustain, and the said amount shall be deducted by the City from periodic payments.

It is understood that the winter months of December, January, February, and March shall be excluded from the Liquidated Damages and the Contractor shall not suffer any penalty for not working during that period.

REFERENCES

The bidder is requested to state below what work of a similar character to that included in the Proposal Contract he/she has done, and give references that will enable the City to make inquiries and to judge of his/her experience, skill, available financial resources, credit and insurance standing.

1. _____
   _____
   _____
   _____
2. _____
   _____
   _____
   _____
3. _____
   _____
   _____
   _____
4. _____
   _____
   _____
   _____
5. _____
   _____
   _____
   _____
6. _____
   _____
   _____
   _____

As Bid Set No. _____

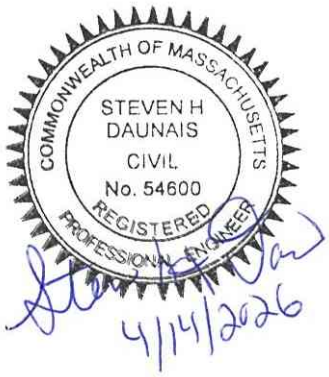
CITY OF WORCESTER, MASSACHUSETTS

DOCUMENTS AND SPECIFICATIONS

FOR THE

CHANDLER STREET WATER MAIN IMPROVEMENTS AND LARGE DIAMETER VALVE REPLACEMENTS

CONTRACT NO. 190-26



TATA & HOWARD, INC.

CONSULTING ENGINEERS

201 BOSTON POST ROAD WEST

MARLBOROUGH, MASSACHUSETTS

APRIL 2026

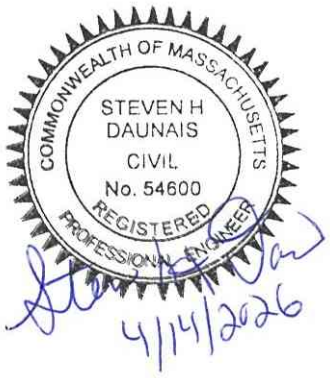
CITY OF WORCESTER, MASSACHUSETTS

DOCUMENTS AND SPECIFICATIONS

FOR THE

CHANDLER STREET WATER MAIN IMPROVEMENTS AND LARGE DIAMETER VALVE REPLACEMENTS

CONTRACT NO. 190-26



TATA & HOWARD, INC.

CONSULTING ENGINEERS

201 BOSTON POST ROAD WEST

MARLBOROUGH, MASSACHUSETTS

APRIL 2026

Chandler Street Water Main Improvements and Large Diameter Valve Replacements
City of Worcester

INDEX

DIVISION 1 GENERAL

DIVISION 2 SITE

SECTION 01025

ADDITIONAL MEASUREMENT AND PAYMENT DESCRIPTIONS

16-Inch Gate Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 305.1600 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve.

16-Inch, 24-Inch, 30-Inch, 36-Inch, 42-Inch, and 48-Inch Horizontal Gate Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 305.1650 through 305.4850 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve.

24-Inch Butterfly Valve, Box and Fittings

Payment shall be made at the unit price bid per each under Items No. 307.2400 in the Bid Form. Payment shall be full compensation for furnishing and installing valve, valve box, all required valve fittings, couplings, accessories, zinc coated CLDI water main as needed, bedding, excavation, dewatering, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Payment shall also be full compensation for cutting of existing pipe, removing existing pipe and valve, and proper disposal of existing pipe and valve. All new 24-inch valves shall be horizontal gate valves unless available space does not allow for the installation of a horizontal gate valve. If a 24-inch horizontal gate valve cannot be installed due to lack of available space (as determined by the Contractor and agreed upon by the Owner), a 24-inch butterfly valve may be installed instead.

42-Inch by 8-Inch Tapping Sleeve & Valve

Payment shall be made at the unit price bid per each under Item No. 311.4208 in the Bid Form. Payment shall be full compensation for furnishing and installing the tapping sleeve and valve, valve box, all required fittings, excavation, setting of the valve, tapping, valve box, bedding, shoring, setting of valve and valve box, joint restraint, backfilling and compacting, dewatering, disinfection and testing, sidewalk replacement, curb replacement, furnishing and placing steel plates, preconstruction video, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all

required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents.

Chandler Street at Mann Street Connection

Payment shall be made at the lump sum price bid under Item No. 912.10 in the Bid Form. Payment shall be full compensation for furnishing and installing a 42-inch by 30-inch tee with all required fittings, a 30-inch horizontal gate valve with all required fittings, and 30-inch diameter zinc coated CLDI water main with all required appurtenances. Payment shall include excavation, removal and disposal of unsuitable material, furnishing and installing suitable refill material, furnishing and laying of the pipe, furnishing and installing polyethylene wrap for the pipe, backfilling and compacting, compaction testing, dewatering, migration barriers, joint restraints, removal and disposal of existing water mains and tapping sleeve and valve, installation and removal of temporary taps for disinfection or testing, closing of predetermined gate valves and removal of gate boxes, concrete encasement of water main at sewer crossings, insulation, dust control, loam and seed, sidewalk replacement, curb replacement, street opening permits, trench opening permits, sheeting and bracing, disinfection and testing, furnishing and placing steel plates, preconstruction video recording, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Reference Figures No. 3D-E and 3D-P included in Appendix B.

Beaver Brook BPS Connection

Payment shall be made at the lump sum price bid under Item No. 912.20 in the Bid Form. Payment shall be full compensation for furnishing and installing a 42-inch by 30-inch tee, a 30-inch horizontal gate valve, 30-inch zinc coated CLDI water main, a 30-inch 45º bend, a 30-inch by 16-inch reducer to connect into the existing BPS inlet piping, and all required appurtenances. Payment shall include excavation, removal and disposal of unsuitable material, furnishing and installing suitable refill material, furnishing and laying of the pipe, furnishing and installing polyethylene wrap for the pipe, backfilling and compacting, compaction testing, dewatering, migration barriers, joint restraints, removal and disposal of existing water mains and valves, installation and removal of temporary taps for disinfection or testing, closing of predetermined gate valves and removal of gate boxes, concrete encasement of water main at sewer crossings, insulation, dust control, loam and seed, sidewalk replacement, curb replacement, street opening permits, trench opening permits, sheeting and bracing, disinfection and testing, furnishing and placing steel plates, preconstruction video recording, and developing and implementing the Traffic Management Plan including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD), all as required by the Contract Documents. Reference Figures No. 3C-E and 3C-P included in Appendix B.

Night Work

Payment shall be made at the unit price bid per each night under Item No. 938.2001 in the Bid Form. Payment shall be full compensation for all labor, work, and materials necessary for completing work under the Contract Documents at night. Various locations of valve replacement work and/or other intersection improvement work may be required to be completed at night to avoid significant disruption to vehicular traffic or interruption of water service. When work is completed at night, the Contractor shall receive payment at the unit price bid per each night under Item No. 938.2001 for each applicable night. The Contractor must obtain approval from the City of Worcester prior to completing any night work.

Silt Sacks

Payment shall be made at the unit price bid per each under Item No. 953.20 in the Bid Form. Payment shall be full compensation for furnishing, placing, staking, maintaining, and removing silt sacks. Payment shall include proper disposal of collected sediments as required during construction and proper disposal of

silt sacks at the completion of work. Removal and replacement of the silt sack for the replacement of an existing catch basin shall not be considered for payment.

SECTION 01100

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 DESCRIPTION

A. The work of this section consists of special project procedures during construction including:
   1. Contractor's Emergency Service
   2. Coordination with the City of Worcester Public Works Department
   3. Working Hours
   4. Public Safety and Convenience
   5. Delivery of Ductile Iron Water Mains
   6. Protection of Underground Facilities and Damages Thereto
   7. Cleanup and Disposal of Excavated Pipe and Construction Debris
   8. Disposal of Native Excavated Material
   9. Groundwater Conditions
   10. Police Details
   11. Temporary By-Pass Piping
   12. Traffic Management Plan
   13. Sidewalks & Curb Restoration
   14. Compliance with Reduction of Lead in Drinking Water Act and Section 1417 of the Safe Drinking Water Act (SDWA)
   15. Large Diameter Valve Installations
   16. Construction Sequence
   17. Pavement Schedule
   18. Ductile Iron Water Main
   19. Water Main Elevation

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.01 CONTRACTOR'S EMERGENCY SERVICE

A. Any Contractor whose place of business is located beyond the vicinity of the site of the Work and who does not maintain local headquarters 24 hours a day must provide the following:
   1. Make satisfactory arrangements with the Owner to service emergencies or complaints which may occur at night, over the weekend, or when the job is shut down. If he does not, the Owner may make arrangements and the cost will be charged to the Contractor.

B. Before the final estimate is certified for payment, the Contractor shall make similar arrangements to cover the guarantee period.

3.02 COORDINATION WITH CITY OF WORCESTER PUBLIC WORKS DEPARTMENT

A. The Contractor shall coordinate water main connections with the City of Worcester Public Works Department and provide a proposed schedule for all interruptions to the operation of the existing water system.

B. The Contractor shall provide Owner 48 hour notice prior to interruption of utility service to the existing water system (water mains, water supply services, etc.). The Contractor shall provide customers 48-hour notice prior to interruption of utility service.

3.03 WORKING HOURS

A. Working hours shall be 7:00 AM to 3:30 PM, Monday through Friday. The Contractor may work on Saturday or overnight if approval is obtained from the Owner.

B. If the Contractor elects to work more than (8) hours in one day, or more than forty (40) hours in one week, he shall obtain approval from the Owner, as well as, assume all such costs and will not be reimbursed under any bid item.

C. The Contractor shall obtain permission from the Owner to work during City of Worcester holidays.

D. The City may require some work to be to be completed at night at various locations. The Contractor must obtain approval from the City of Worcester prior to completing any night work. The payment for all night work will be at the unit price bid per each night under Item No. 938.2001 for each applicable night.

3.04 PUBLIC SAFETY AND CONVENIENCE

A. Particular care shall be taken to establish and maintain methods and procedures which will not create unnecessary or unusual hazards to public safety. The convenience of the general public along and adjacent to the work areas shall be provided for in an adequate and satisfactory manner. Adequate access shall be maintained to all buildings in use. Signs are to be kept clean at all times, and legends shall be distinct and unmarred.

B. The Contractor is responsible for creating and implementing a Traffic Management Plan. The Contractor shall place and erect the necessary signs as necessary and shall maintain said signs for the duration of the project.

C. Trenches shall not be excavated in traveled ways until all materials and equipment required for such work are at the site and available for immediate use. When work is not in progress, trenches in areas subject to public travel shall be covered with steel plates capable of safely sustaining a 20 ton truck load with impact. The work in each trench shall be practically continuous, with the placing of pipe and valve, backfilling and patching of the surface closely following each preceding operation. Payment for steel plates will be included under the unit bid price per each for each valve and access pit. Steel plates may remain in place overnight and during weekends.

D. The Contractor’s attention is directed to the AASHTO Guide on Occupational Safety of Highway Construction Projects relating to construction equipment clearances at overhead electric lines.

E. If conditions arise that are not adequately covered by the Contractor's Traffic Management Plan, traffic control, traffic patterns and/or traffic flow, traffic control will be governed by the Worcester Police Department's Safety Officer, in coordination with the Engineer.

F. Unless permission to close a street is issued by the Worcester Police Department, place all excavated material so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.

G. The safe passage of pedestrian and vehicular traffic around the perimeter of the construction area, within reasonable limits, shall be guaranteed at all times by the Contractor, except where detours have received prior approval. Temporary pedestrian walkways may be required by the Engineer at no additional compensation to the Contractor.

H. Particular attention is called to the Massachusetts Anti-Idling Law, which shall be followed during the Work of this Contract.

3.05 DELIVERY OF DUCTILE IRON WATER MAINS

A. New water mains shall be delivered to the site with plugs sealing the ends of all pipe lengths. Pipe plugs shall remain in place until the pipe is installed.

3.06 PROTECTION OF UNDERGROUND FACILITIES AND DAMAGES THERETO

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

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

C. The Contractor shall take all prudent steps to make himself aware of the physical condition of the existing underground facilities expected to be encountered.
   1. Claims by the Contractor for repair of damages alleged to be the result of the physical condition or faulty installation workmanship of the existing underground facilities, outside of the specified trench width, will in general not be considered by the Owner for extra work payment.
   2. For such underground facilities within the specified trench width, proposed change orders will be considered if, in the opinion of the Engineer, such damage was unavoidable.

D. Silt sacks are to be used on all catch basins within project limits and to which site surface runoff is directed to minimize silt deposits into drainage system.

3.07 CLEANUP AND DISPOSAL OF EXCAVATED PIPE AND CONSTRUCTION DEBRIS

A. The Contractor shall contact the Department of Environmental Protection, Division of Solid Waste, for approval of the demolition waste landfill chosen for disposal of the excavated pipe and construction debris. All excavated pipe and construction debris shall be disposed legally by the Contractor at no expense to the Owner.

B. During the course of the work, the Contractor shall keep the site of operations in as clean and neat a condition as is possible, dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and leave the entire site of the work in a neat and orderly condition.

C. The Contractor shall provide for the removal of all dirt spilled from his trucks on existing pavement over which it is hauled, or otherwise deposited thereon whenever, in the judgement of the Engineer, the accumulation is sufficient to cause the formation of mud or dust or interfere with drainage or create a traffic hazard.

D. Washing concrete mixers and/or discharge of excess concrete or controlled density fill is permitted in specifically designated areas. Contractor shall coordinate with the City for locations to discharge. No cement-containing spill is allowed to discharge to City drains, streets, or environment.

E. For cleaning of any materials used for the work, only cleaning materials recommended by the manufacturer of the surface to be cleaned shall be used. Cleaning materials shall be used only on surfaces recommended by the cleaning material manufacturer.

3.08 DISPOSAL OF NATIVE EXCAVATED MATERIAL

A. Suitable excavated material shall be used by the Contractor for backfilling, with any excess material being disposed of by the Contractor.

B. Stockpiling is only permitted in locations approved by the Owner or Engineer.

C. No stockpiling permitted within the right of way during daytime hours.

3.09 GROUNDWATER CONDITIONS

A. Exact groundwater conditions due to seasonal fluctuations shall be verified by the Contractor. It is the Contractor’s responsibility to perform all work related to dewatering at no additional cost to the Owner.

3.10 POLICE DETAILS

A. Prior to the start of construction, the Contractor shall familiarize himself with and adhere to the scheduling requirements of the Worcester Police Department. The Contractor shall inform the Worcester Water Department of the need for a police detail. The Worcester Water Department shall make all arrangements with the Worcester Police Department for the services of uniformed police officers.

B. The Owner will pay police invoices directly. Payment for an improperly scheduled or cancelled officers shall be the responsibility of the Contractor.

3.11 TEMPORARY BY-PASS PIPING

A. Prior to the start of construction, a temporary by-pass piping system shall be installed, chlorinated, and tested by the Contractor according to the Contract Documents. Upon approval by the Owner, temporary service connections shall be installed. The Contractor shall submit a by-pass piping plan to the Engineer for review and approval prior to installation. A mutually agreeable plan including location, method, and materials of the temporary by-pass piping system shall be the responsibility of the Contractor. All components in the temporary by-pass piping system shall be NSF-61 approved.

B. Prior to mobilization, the Contractor is to coordinate with the Public Works Department and the Engineer, and is then to locate, uncover, blow-out, and determine the serviceability of all existing gate valves and hydrants which are to be utilized to perform the work. Operation of the gate valves and hydrants will be the responsibility of the Worcester Water Department and is to be coordinated by the Contractor under the observation of the Engineer. No water system components shall be operated by anyone other than Worcester Water Department personnel, unless otherwise approved by the Owner.

C. At locations where temporary services cross the road, services shall be adequately protected in a solid sleeve, placed in a trench of adequate depth and covered with bituminous pavement to prevent breakage during construction of the new water main valves. All temporary service crossings shall be maintained throughout the duration of the project in a safe manner acceptable to the Owner.

3.12 TRAFFIC MANAGEMENT PLAN

A. The Contractor shall create and submit a Traffic Management Plan, including furnishing, installing, and maintaining all required traffic management materials and equipment according to the Manual on Uniform Traffic Control Devices (MUTCD). The Traffic Management Plan shall be reviewed and approved by the Engineer and Owner prior to the start of construction.

B. The Contractor shall adhere to the approved Traffic Management Plan throughout the duration of construction.

3.13 SIDEWALKS & CURB RESTORATION

A. Any sidewalks, curbs, and walks disturbed by the Contractor shall be replaced in kind throughout the project area. During the course of construction, all pedestrian areas shall be maintained in a safe conditions or alternate accommodations shall be made.

3.14 COMPLIANCE WITH REDUCTION OF LEAD IN DRINKING WATER ACT AND SECTION 1417 OF THE SAFE DRINKING WATER ACT (SDWA)

A. All pipes, pipe fittings, plumbing fittings and fixtures, including corporations and curb stops must meet the requirements of the 2011 Reduction of Lead in Drinking Water Act and amendments to SDWA Section 1417 for potable water use.

B. Certification of compliance shall be provided for all applicable materials herein.

3.15 LARGE DIAMETER VALVE INSTALLATIONS

A. A total of 22 large diameter valves (larger than 16-inch diameter) shall be installed throughout the project. Table No. 1 below lists each large diameter valve to be replaced or installed, with its respective City-designated Valve ID (if existing), location, whether the valve is being replaced or a new installation, existing valve type and diameter, and new valve type and diameter. All valves are located within the City's Low Service Area. Fourteen (14) of the below large diameter valves to be installed are included in the Chandler Street Water Main Improvements drawings, and therefore are not included in the Appendix B figures.

Table No. 1
Large Diameter Valves to be Installed

Valve ID	Location	Replaced or New Installation	Existing Valve Diameter & Type	New Valve Diameter & Type
V-2671	Chandler Street	Replaced	36" HGV[2]	42" HGV[2]
V-2488	Chandler Street at Lovell Street	Replaced	36" HGV[2]	42" HGV[2]
V-2036	Chandler Street, east of June Street	Replaced	36" HGV[2]	42" HGV[2]
V-780	Chandler Street, between May Street and Hadwen Road (Chandler Street Sta. 15+10)[1]	Replaced	40" HGV[2]	42" HGV[2]
V-529	May Street at Chandler Street (May Street Sta. 0+25)[1]	Replaced	24" HGV[2]	30" HGV[2]
V-481	Chandler Street, west of May Street (Chandler Street Sta. 11+00)[1]	Replaced	40" HGV[2]	48" HGV[2]
N/A	Chandler Street (Chandler Street Sta. 0+75)[1]	New Installation	N/A	48" HGV[2]
N/A	Chandler Street, between May Street and Hadwen Road (Chandler Street Sta. 17+00)[1]	New Installation	N/A	42" HGV[2]
N/A	Chandler Street (Chandler Street Sta. 0+10)[1]	New Installation	N/A	24" HGV[2]
N/A	2 valves - Chandler Street at May Street (Chandler Street Sta. 6+80)[1]	New Installation	N/A	24" HGV[2]

Table No. 1 Continued
Large Diameter Valves to be Installed

Valve ID	Location	Replaced or New Installation	Existing Valve Diameter & Type	New Valve Diameter & Type
N/A	2 valves - Chandler Street at Claridge Drive (Chandler Street Sta. 10+05)[1]	New Installation	N/A	24" HGV[2]
V-541	Chandler Street, south of May Street (Chandler Street Sta. 11+75)[1]	Replaced	24" BFV[3]	24" HGV[2]
N/A	3 valves - Chandler Street, between May Street and Hadwen Road (Chandler Street Sta. 17+00)[1]	New Installation	N/A	24" HGV[2]
V-2901	Park Avenue at Chandler Street	Replaced	36" BFV[3]	36" HGV[2]
V-2235	Park Avenue, south of Pleasant Street	Replaced	36" BFV[3]	36" HGV[2]
V-2018	Park Avenue, north of Pleasant Street	Replaced	36" BFV[3]	36" HGV[2]
N/A	Mann Street at Chandler Street	New Installation	N/A	30" HGV[2]
N/A	Beaver Brook BPS Inlet	New Installation	N/A	30" HGV[2]

1. Valves to be installed as part of the Chandler Street 24-inch diameter, 42-inch diameter, 30-inch diameter, and 48-inch diameter water main replacement work, and as included in the Chandler Street Water Main Improvements drawings.
2. Horizontal Gate Valve (HGV)
3. Butterfly Valve (BFV)

B. Reference Appendix B for figures of the remaining eight (8) large diameter valves to be replaced or installed as part of this project. The figures included in Appendix B also indicate additional work to be completed at several intersections along Chandler Street.

3.16 CONSTRUCTION SEQUENCE

A. The Contractor shall first complete test pits (under Bid Item No. 112) at each of the six (6) large diameter valve replacement locations not included in the Chandler Street Water Main Improvements drawings (not including the new 30-inch diameter HGV to be installed at the Beaver Brook BPS inlet, or the new 30-inch diameter HGV to be installed on Mann Street at Chandler Street) to confirm the inner diameter of the existing water main. These six (6) large diameter valve replacement locations are as follows:

a. V-2671 (Chandler Street)
b. V-2488 (Chandler Street at Lovell Street)
c. V-2036 (Chandler Street, east of June Street)
d. V-2901 (Park Avenue at Chandler Street)
e. V-2235 (Park Avenue, south of Pleasant Street)
f. V-2018 (Park Avenue, north of Pleasant Street)

In addition to completing test pits at the large diameter valve replacement locations, the Contractor shall also complete test pits (under Bid Item No. 112) at each of the 16-inch diameter valve replacements or new installations, the 16-inch line stop, and the 16-inch insertion valve locations not included in the Chandler Street Water Main Improvements

drawings. When completing test pits at the six (6) 16-inch diameter valve locations, it shall be determined if a new 16-inch diameter gate valve can be installed at each location. If a 16-inch diameter gate valve cannot be installed at any location due to spacing or water main depth, then a 16-inch diameter horizontal gate valve shall be installed at that location. In this case, Bid Item No. 305.1650 shall be used for a 16" Horizontal Gate Valve. The Contractor shall request approval from the City to install a 16-inch diameter horizontal gate valve at any location where the Contractor has determined that a 16-inch diameter gate valve cannot be installed. These six (6) 16-inch diameter valve locations are as follows:

a. New 16-inch diameter valve to replace existing 12-inch diameter valve V-2465 (Lovell Street at Chandler Street)
b. New 16-inch diameter valve (June Street at Chandler Street)
c. 16-inch insertion valve (June Street at Chandler Street)
d. 16-inch line stop (Mill Street at Chandler Street)
e. (2) new 16-inch diameter valves (Mill Street at Chandler Street)

B. Following the completion of the test pits at each of the six (6) large diameter valve replacement locations, the Contractor shall order all large diameter valves (22).

C. The Contractor shall complete the replacement of the 24-inch diameter water main on Chandler Street in accordance with the Chandler Street Water Main Improvements Contract Drawings. This work will include the installation of nine (9) new 24-inch diameter horizontal gate valves. This work will also include the installation of temporary bypass piping, the Contractor shall reference the May Street/South Flagg Street Bypass Plan Between High Service and Low Service Systems and the Chandler Street Bypass Plan Phase 1: Relay of 24" Main figures included in Appendix C.

D. The Contractor shall complete the replacement of the 48-inch diameter and 42-inch diameter water mains on Chandler Street in accordance with the Chandler Street Water Main Improvements Contract Drawings. This work will include the installation of two (2) new 48-inch diameter horizontal gate valves on Chandler Street just west of May Street (V-481 replacement) and two (2) new 42-inch diameter horizontal gate valves on Chandler Street between May Street and Hadwen Road (V-780 replacement). Reference the May Street/South Flagg Street Bypass Plan Between High Service and Low Service Systems and the Chandler Street Bypass Plan Phase 2: Cleaning & Lining of 48" Main figures included in Appendix C. The Contractor shall complete a test pit (under Bid Item No. 112) at the location where the new 42-inch diameter water main will connect to existing 42-inch diameter water main on Chandler Street to confirm the existing pipe elevation at the connection point.

E. After the completion of the 48-inch diameter and 42-inch diameter water main replacement work, the Contractor shall complete the replacement of the 30-inch diameter water main on May Street. This portion of new 30-inch diameter water main will include the installation of one (1) new 30-inch diameter horizontal gate valve on May Street at Chandler Street (V-529 replacement). This work will also include the installation of temporary bypass piping, the Contractor shall reference the May Street/South Flagg Street Bypass Plan Between High Service and Low Service Systems and the Chandler Street Bypass Plan Phase 2: Cleaning & Lining of 48" Main figures included in Appendix C. The Contractor shall complete a test pit (under Bid Item No. 112) at the location where the new 16-inch diameter water main will connect to existing 16-inch diameter water

main (at the end of the new 30-inch diameter water main) on May Street to confirm the existing pipe elevation at the connection point.

F. All work in Steps A through E shall be completed before the start of MassDOT roadway work on Chandler Street schedule for Spring 2027.

G. After Steps A through E are complete, the Contractor shall complete the installation or replacement of the remaining eight (8) large diameter valves in accordance with the figures attached in Appendix B. In addition, the Contractor shall complete all proposed intersection improvement work included in the figures attached in Appendix B. The Contractor shall also replace all existing hydrants (8 each) and all existing air release valves (17 each) along the shutdown areas of the Large Diameter Valve Replacement work. The Contractor shall also replace seven (7) existing blowoffs with a new blowoff and associated manhole along the shutdown areas of the Large Diameter Valve Replacement work. The Contractor shall coordinate with the Worcester Department of Public Works on the location of all existing hydrants, air release valves, and blowoffs to be replaced.

H. The remaining eight (8) large diameter valves to be installed or replaced are included in Shutdown Areas No. 1 through 3. The intent of the shutdown areas is to have smaller sections of the 48-inch diameter water main on Chandler Street being shut down at a given time. The figures included in Appendix A indicate the extent of each shutdown area. The following sections describe the sequence of work to be completed at each shutdown area.

I. Shutdown Area No. 1 shall include Park Avenue from Chandler Street to Elm Street as indicated in Figure No. 1 in Appendix A. The following sequence shall be followed for valve closings and replacements in Shutdown Area No. 1. All closed valves shall be re-opened after all work is completed within the Shutdown Area. The Park Avenue Bypass Plan shall be implemented in Shutdown Area No. 1 and is included in Appendix C.

1. Close V-2959 (Park Avenue at Chandler Street)
2. Close existing 42-inch valve (no ID, Chandler Street west of Park Avenue)
3. Close V-2933 (Chandler Street just east of Park Avenue)
4. Close V-2890 (Chandler just west of Park Avenue)
5. Close V-1675 (Townsend Street at Park Avenue)
6. Close V-1123 (Elm Street at Park Avenue)
7. Close V-1106 (Park Avenue at Elm Street)
8. At any point while Shutdown Area No. 1 is shut down, replace all existing hydrants and all existing air release valves along Shutdown Area No. 1
9. Remove V-2907 and replace with new 42-inch water main and air release valve (Chandler Street just west of Park Avenue)
10. Replace V-2901 (Park Avenue at Chandler Street) with a new 36-inch diameter horizontal gate valve and connect to the existing 36-inch diameter water main
11. Close V-2901 (Park Avenue at Chandler Street, replaced in Step 10)
12. Replace V-2235 (Park Avenue at Pleasant Street) with a new 36-inch diameter horizontal gate valve and connect to the existing 36-inch diameter water main
13. Close V-2235 (Park Avenue at Pleasant Street, replaced in step 12)
14. Replace V-2018 (Park Avenue at Pleasant Street) with a new 36-inch diameter horizontal gate valve and connect to the existing 36-inch diameter water main

J. Shutdown Area No. 2 shall include Chandler Street from Underwood Street to south of May Street as indicated in Figure No. 2 in Appendix A. The following sequence shall be followed for valve closings and replacements in Shutdown Area No. 2. All closed valves shall be re-opened after all work is completed within the Shutdown Area. The Ruth Street Bypass Plan shall be implemented in Shutdown Area No. 2 and is included in Appendix C.

1. Close V-1354 (Chandler Street at Underwood Street)
2. Close V-1556 (Ruth Street at May Street)
3. Close V-1112 (Van Street at Chandler Street)
4. Close V-780 (Chandler Street between May Street and Hadwen Road, replaced as part of Chandler Street Water Main Improvements)
5. At any point while Shutdown Area No. 2 is shut down, replace all existing hydrants and all existing air release valves along Shutdown Area No. 2
6. Complete the proposed improvements at the intersection of Ruth Street and Chandler Street (reference Figure No. 2A-P in Appendix B)
7. Close the newly installed 8-inch diameter gate valve on the eastern end of Ruth Street. Also close V-1354 and V-780 again.
8. Close V-1372 on the western end of Van Street. Complete the proposed improvements at the intersection of Van Street and Chandler Street (reference Figure No. 2B-P in Appendix B)

K. Shutdown Area No. 3 shall include Chandler Street from Park Avenue to Underwood Street as indicated in Figure No. 3 in Appendix A. The following sequence shall be followed for valve closings and replacements in Shutdown Area No. 3. All closed valves shall be re-opened after all work is completed within the Shutdown Area. The Abbott Street Bypass Plan and Lovell Street Bypass Plan shall be implemented in Shutdown Area No. 3 and is included in Appendix C.

1. Close existing 42-inch valve (no Valve ID, Chandler Street west of Park Avenue)
2. Close V-0 (Mann Street)
3. Close existing 8-inch valve (no Valve ID, Lovell Street north of Chandler Street)
4. Close MV-9168 (Walworth Street at Chandler Street, south of existing hydrant)
5. Close MV-4951 (Reed Street at Chandler Street)
6. Close V-1911 (June Street at Chandler Street)
7. Install 16-inch insertion valve on June Street between the existing 16-inch by 16-inch tee and the first water service northeast of the intersection with Chandler Street. Reference Figure No. 3F-E in Appendix B.
8. Close V-1379 (Underwood Street at Chandler Street)
9. Close V-1354 (Chandler Street at Underwood Street)
10. At any point while Shutdown Area No. 3 is shut down, replace all existing hydrants and all existing air release valves along Shutdown Area No. 3
11. Complete the proposed improvements at the intersection of June Street and Chandler Street (reference Figure No. 3F-P in Appendix B).
12. Replace V-2036 (Chandler Street south of June Street) with a new 42-inch diameter horizontal gate valve and connect to the existing 42-inch diameter water main
13. Repeat Steps 1-3
14. Close V-2036 (Chandler Street at June Street, replaced in Step 12)
15. Complete the proposed improvements at the intersection of Lovell Street and Chandler Street (reference Figure No. 3E-P in Appendix B).
16. Repeat Steps 1-2

17. Close V-2465 (Lovell Street at Chandler Street, new 16-inch gate valve installed in Step 15)
18. Close V-2036 (Chandler Street at June Street, replaced in Step 12)
19. Replace V-2488 (Chandler Street at Lovell Street) with a new 42-inch diameter horizontal gate valve and connect to the existing 42-inch diameter water main
20. Repeat Steps 1-2
21. Close V-2488 (Chandler Street at Lovell Street, replaced in Step 19)
22. Complete the proposed improvements at the intersection of Mann Street and Chandler Street (reference Figure No. 3D-P in Appendix B).
23. Repeat Steps 1-2. Alternatively, the new 30" HGV on Mann Street at Chandler Street (installed in Step 22) can be closed instead of V-0 on Mann Street.
24. Close V-2488 (Chandler Street at Lovell Street, replaced in Step 19)
25. Replace V-2671 (Chandler Street at the Beaver Brook Booster Pump Station) with a new 42-inch diameter horizontal gate valve and connect to the existing 42-inch diameter water main
26. Repeat Step 1
27. Close V-2671 (Chandler Street at the Beaver Brook Booster Pump Station, replaced in Step 25)
28. Complete the proposed improvements at the intersection of Abbott Street and Chandler Street (reference Figure No. 3A-P)
29. The Contractor shall coordinate with the City of Worcester on the timing of the installation of a new tee and valve on Chandler Street at the Beaver Brook Booster Pump Station. A new 42-inch by 30-inch tee and 30-inch horizontal gate valve shall be cut into the existing 42-inch diameter water main on Chandler Street at the entrance to the Station. The exact location of the new tee and valve shall be determined in the field and coordinated with the City of Worcester. The following sequence shall be followed for the installation of the new tee. Reference Appendix B, Figure No. 3C-P Beaver Brook BPS Inlet.
    a. Close V-2671 (Chandler Street at the Beaver Brook Booster Pump Station, replaced in Shutdown Area No. 3)
    b. Close V-2488 (Chandler Street south of Lovell Street, replaced in Shutdown Area No. 3)
    c. Close either V-0 (Mann Street) or newly installed 30" HGV on Mann Street at Chandler Street (installed in Shutdown Area No. 3)
    d. Cut in a new 42-inch by 30-inch tee, new 30-inch horizontal gate valve, new 30-inch water main, and new 30-inch by 16-inch reducer

3.17 PAVEMENT SEQUENCE

A. Reference Sheet C-1 of the Chandler Street Water Main Improvements drawings for sequence of paving for the Chandler Street water main replacement work.

B. The Contractor shall install temporary trench pavement after each valve replacement and intersection improvement work, before moving to the next intersection.

C. Permanent patch pavement shall be completed within a period of not less than 90 days but not more than 120 days from the date of the temporary patch. Reference City of Worcester Standard Construction Specifications and Details, Item 436.E for the required schedule of permanent patching.

3.18 DUCTILE IRON WATER MAIN

A. Water main shall be of ductile iron. Ductile iron water main shall be furnished with push-on joints or push-on restrained joints. Restrained joints shall be restrained using ductile iron mechanical joint fittings with multiple wedging action thrust restraint glands such as EBAA Iron, Inc. MEGALUG or approved equal, and using Griffin "SNAP-LOCK", US Pipe HDSS restrained joint pipe or an approved equal. Restraint glands and restrained joint pipe shall be installed in strict accordance with the manufacturer's instructions. The Contractor shall reference the City of Worcester Department of Public Works & Parks Standard Construction Specifications and Details for all other information on the pipe requirements.

3.19 WATER MAIN ELEVATION

A. The Contractor shall take water main elevation measurements throughout construction to ensure the water main is installed according to the depths indicated in the Contract Documents.

B. Water main elevation data shall be included in the set of As-built Record Drawings provided by the Contractor following completion of the water main improvements work, along with a profile view of the water main as installed.

END OF SECTION

SECTION 01567

SILT SACKS

PART 1 GENERAL

1.01 DESCRIPTION

A. The work under this item includes the furnishing, construction, maintenance and removal of a reusable fabric sack to be installed in drainage structures for the protection of wetlands and other resource areas during construction and prevention of silt and sediment from the construction site from entering the storm water collection system. Silt sacks shall be designed to intercept all water, silt and debris entering the catch basin. Silt sacks shall be installed at all catch basins designated by the Engineer.

B. The requirements set forth in this section of the specifications apply where indicated on the Contract Drawings and to any areas adjacent to wetlands, unless otherwise specifically stated.

C. All erosion control devices shall be constructed or installed prior to beginning any form of excavation, grading, placement of materials, or general construction.

PART 2 PRODUCTS

2.01 CATCH BASIN SILT FILTERING SYSTEM

A. Silt filtering system for catch basins accepting drainage from the site shall be Siltsack as manufactured by ACF Environmental Inc., Richmond, VA and distributed by A.H. Harris, or approved equal.

1. Manufactured to fit opening of catch basins or drop inlet.
2. Two dump straps attached to the bottom to facilitate emptying the sack.
3. Lifting loops as an integral part of the silt sack to be used in lifting the silt sack from the basin.
4. A restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls.
5. Manufactured from woven polypropylene fabric with the following properties:
    a. Grab Tensile: 300 pounds (ASTM D4632)
    b. Grab Elongation: 20% (ASTM D4632)
    c. Puncture: 120 pounds (ASTM D4833)
    d. Mullen Burst: 800 psi (ASTM D3786)
    e. Trapezoid Tear: 120 pounds (ASTM D4533)
    f. Apparent Opening: 40 US Sieve (ASTM D4751)
    g. Flow Rate: 40 gpm/sf (ASTM D4491)

PART 3 EXECUTION

3.01 CONSTRUCTION METHODS

A. Silt sacks shall be installed in catch basins in place within the project limits and as required by the Engineer. All curb openings shall be blocked to prevent stormwater from bypassing the device.

B. The silt sack shall be as manufactured to fit the opening of the drainage structure and shall be mounted under the grate. The insert shall be secured from the surface such that the grate can be removed without the insert discharging into the structure. The filter material shall be installed and maintained in accordance with the manufacturer's written recommendations and as directed by the Engineer.

C. Silt sacks shall remain in place until the placement of all temporary pavement. All materials used for the filter fabric will become the property of the Contractor and shall be removed from the site. The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and dispose of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired or replaced immediately at no additional cost.

D. When emptying the silt sack, the Contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the end of construction shall be removed at the Contractor's expense. The silt and sediment from the silt sack shall be legally disposed of offsite. Under no condition shall silt and sediment from the insert be deposited on site and used in construction.

END OF SECTION

SECTION 02640

HORIZONTAL GATE VALVES

PART 1 GENERAL

1.01 DESCRIPTION

A. Work included: Provide buried horizontal gate valves and valve accessories, as required by the Contract Documents.

1.02 SUBMITTALS

A. Product data: Within 30 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
   1. Materials list of items proposed to be provided under this Section.
   2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
   3. An exploded view diagram with a materials list.

1.03 STANDARDS

A. The following American Water Works Association (AWWA) standards form a part of this specification as referenced:
   1. AWWA C515 Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service.

1.04 QUALITY ASSURANCE

A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

B. All of the types of valves and appurtenances shall be products of established firms who are experienced in the manufacture of the particular item to be furnished.
   1. All valves and their appurtenances shall be of domestic manufacture.

PART 2 PRODUCTS

2.01 16-INCH TO 48-INCH HORIZONTAL GATE VALVE WITH BYPASS

A. Resilient Wedge Gate Valve: Shall be used on 24-inch to 48-inch water mains throughout the Chandler Street Water Main Improvements and large diameter valve replacement work. As discussed in Specification Section 01100 Special Project Procedures, 3.16 Construction Sequence, 16-inch horizontal gate valves may need to be installed at locations included in the large diameter valve replacement work if a 16-inch gate valve cannot be installed.
   1. Valves shall be as manufactured by Mueller Co. or approved equal.
   2. Meet or exceed the requirements of ANSI/AWWA C515.
   3. Joints: Mechanical joint conforming to ANSI/AWWA C111/A21.11.

4. Ductile iron body and bonnet.
5. Low zinc silicon bronze stem conforming to ASTM B763-C99500 stainless.
6. Resilient wedge type:
    a. Wedge: Ductile iron wedge, fully encapsulated with molded rubber; no exposed iron.
7. Triple O-ring seal stuffing box.
8. Non rising stem.
9. Two (2) inch square operating nut with bevel gearing for horizontal installation.
10. Rated for 250 psi working pressure and tested to 500 psi static pressure.
11. Open: Clockwise (right).
12. All internal and external surfaces except rubber coatings shall be coated with fusion bonded epoxy to a minimum thickness of 10 mils:
    a. Coating shall be non-toxic, impart no taste to water and shall conform to ANSI/AWWA C550.
13. Fasteners shall be Type 304, Type 316 stainless steel.
14. EPDM disc and O-rings.
15. Valve shall come equipped with a 3-inch bypass.
    a. Bypass valve shall have non-rising stem and comply with AWWA C500.
16. Gate valves shall be American made.

PART 3 EXECUTION

3.01 HANDLING AND INSPECTION

A. Care shall be taken to prevent damage to valves, and appurtenances during handling and installation. All materials shall be carefully inspected for defects in workmanship and materials.

B. All operating mechanisms operated to check their proper functioning, and all nuts and bolts checked for tightness. Valves which do not operate easily or are otherwise defective shall be replaced at the Contractor's expense.

3.02 INSTALLATION

A. General:
1. Construction methods for the work under this Section shall conform to the details as shown on the Contract Drawings, manufacturer's recommended installation procedures, and procedures specified herein.

B. Valves and Appurtenances:
1. Generally, valves shall be set and aligned plumb, supported by a flat stone or solid concrete block, with the trench bottom being firmly compacted.
2. Valves, bolts and all other appurtenances shall be thoroughly cleaned and given a shop coat of asphaltum varnish.
3. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.

END OF SECTION

APPENDIX A – SHUTDOWN AREA FIGURES

N

V-1675 to be closed

TOWNSEND ST

PARK AVE

Inset B
Approximate Scale: 1" = 100'

See Inset C

V-1106 to be closed

V-1123 to be closed

Inset C
Approximate Scale: 1" = 100'

See Inset B

See Inset A

V-2018 to be replaced.
See Figure No. 1B.

V-2235 to be replaced.
See Figure No. 1B.

V-2890 to be closed

V-2901 to be replaced.
See Figure No. 1A-P.

V-2933 to be closed

V-2965

V-2907 to be removed.
See Figure No. 1A-P.

V-2959 to be closed

42-inch valve to be closed

Inset A
Approximate Scale: 1" = 100'

LOIS LN
PARK AVE
RUSSELL ST
BLOSSOM ST
PLEASANT ST
FEDERAL PL
NORMAN AVE
ABBOTT PL
ABBOTT ST
WENDELL TER
HUDSON PL
HUDSON ST
RIEDL PL
TOWNSEND ST
PLEASANT TER
MASON ST
CHANDLER ST
WINFIELD ST

Legend

- Hydrant
- Main Line Valve
- Division Gate
- Blow Off

Water Main Diameter

- 4-Inch and smaller
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch
- 14-Inch
- 16-Inch
- 18-Inch
- 20-Inch
- 24-Inch
- 30-Inch
- 36-Inches and Greater

TATA & HOWARD

Approximate Scale: 1" = 200'
Date: April 2026

Shutdown Area No. 1
Large Diameter Valve Replacement

Worcester, Massachusetts

Figure No.

1

New 24-inch valve to be installed as part of Chandler Street Water Main Improvements

Chandler Street/May Street intersection improvements to be completed as part of Chandler Street Water Main Improvements

Chandler Street/Claridge Drive intersection improvements to be completed as part of Chandler Street Water Main Improvements

V-780 to be closed.
V-780 to be replaced as part of Chandler Street Water Main Improvements

New 24-inch valve to be installed as part of Chandler Street Water Main Improvements

V-1372 to be closed. Reference Specification Section 01100 Special Project Procedures

V-1556 to be closed

V-481 to be replaced as part of Chandler Street Water Main Improvements

V-529 to be replaced as part of Chandler Street Water Main Improvements

V-541 to be replaced as part of Chandler Street Water Main Improvements

Inset I
Approximate Scale: 1"=100'

See Inset I

V-1112 to be closed

See Figure No. 2B-P for proposed intersection improvements.

Inset H
Approximate Scale: 1"=50'

See Figure No. 2A-P for proposed intersection improvements.

Inset G
Approximate Scale: 1"=50'

V-1354 to be closed

Inset F
Approximate Scale: 1"=50'

See Inset H

See Inset G

See Inset F

Legend

- Main Line Valve
- Division Gate
- Blow Off

Water Main Diameter

- 4-Inch and smaller
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch
- 14-Inch
- 16-Inch
- 18-Inch
- 20-Inch
- 24-Inch
- 30-Inch
- 36-Inches and Greater

Figure No. 2

Shutdown Area No. 2
Large Diameter Valve Replacement
Worcester, Massachusetts

TATA & HOWARD
Approximate Scale 1" = 300'
Date: April 2026

Figure No. 3

Shutdown Area No. 3
Large Diameter Meter Valve Replacement
Worcester, Massachusetts

TATA & HOWARD
Approximate Scale 1" = 400'
Date: April 2026

16-inch insertion valve to be installed
V-1911 to be closed
See Figure No. 3F-P for proposed intersection improvements.
V-2036 to be replaced. See Figure No. 3F-P.

Inset D
Approximate Scale: 1"=100'

See Figure No. 3E-P for proposed intersection improvements.
V-2488 to be replaced. See Figure No. 3E-P.

Inset C
Approximate Scale: 1"=50'

See Figure No. 3D-P for proposed intersection improvements.

Inset B
Approximate Scale: 1"=30'

Inset E
Approximate Scale: 1"=50'

V-1354 to be closed
V-1379 to be closed

See Inset E
See Inset D
See Inset C
See Inset B
See Inset A

MV-4951 to be closed
8-inch valve to be closed
MV-9168 to be closed
V-0 to be closed
See Figure No. 3C-P for proposed improvements at Beaver Brook BPS inlet.
V-2671 to be replaced. See Figure No. 3B.
Beaver Brook BPS (LS to HS Standby)

See Figure No. 3A-P for proposed intersection improvements.
42-inch valve to be closed
V-2890
V-2901
V-2907
V-2965
V-2959

Inset A
Approximate Scale: 1"=100'

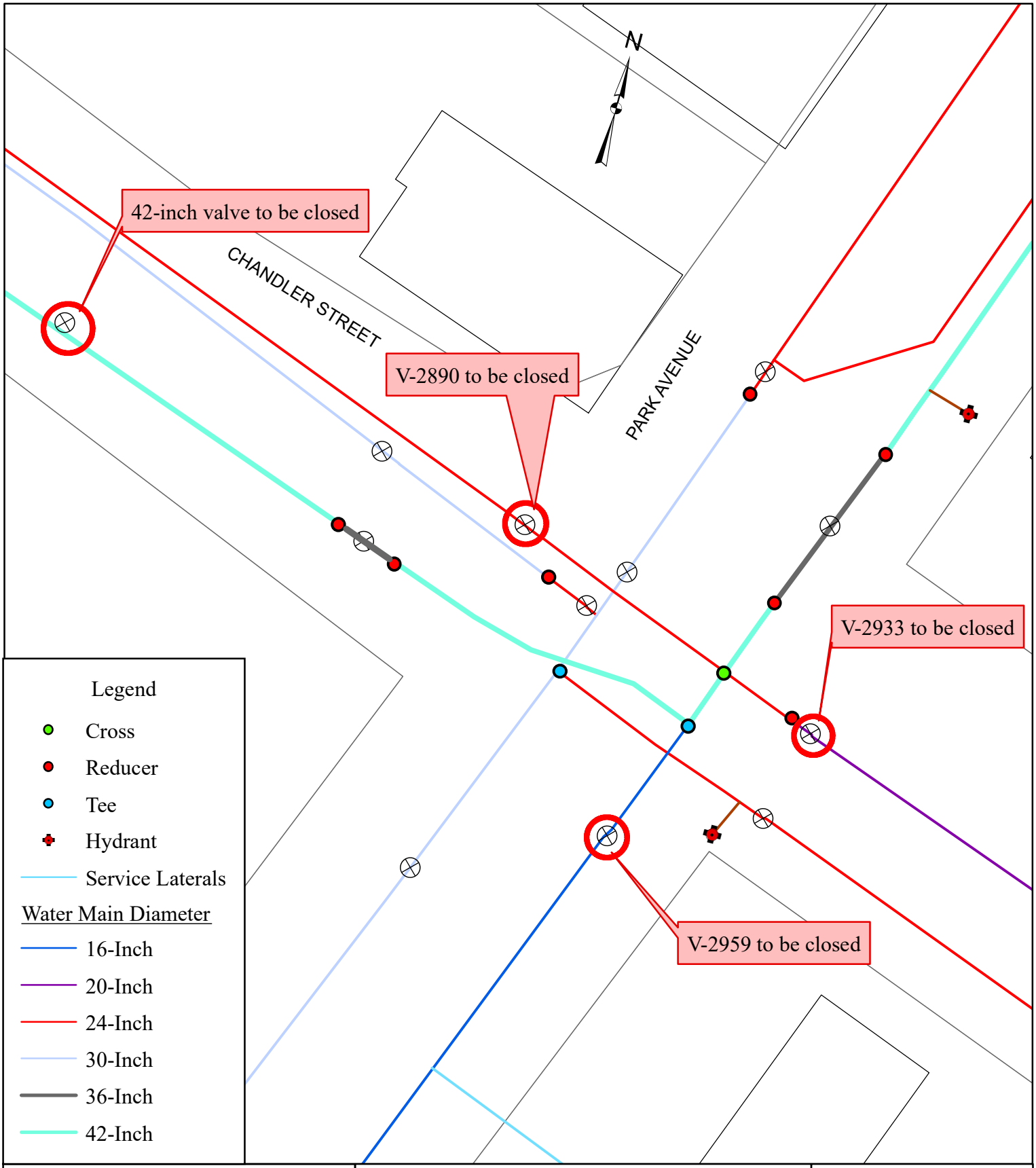
Legend

- Main Line Valve
- Division Gate
- Blow Off

Water Main Diameter

- 4-Inch and smaller
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch
- 14-Inch
- 16-Inch
- 18-Inch
- 20-Inch
- 24-Inch
- 30-Inch
- 36-Inches and Greater

APPENDIX B – VALVES TO BE REPLACED FIGURES



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

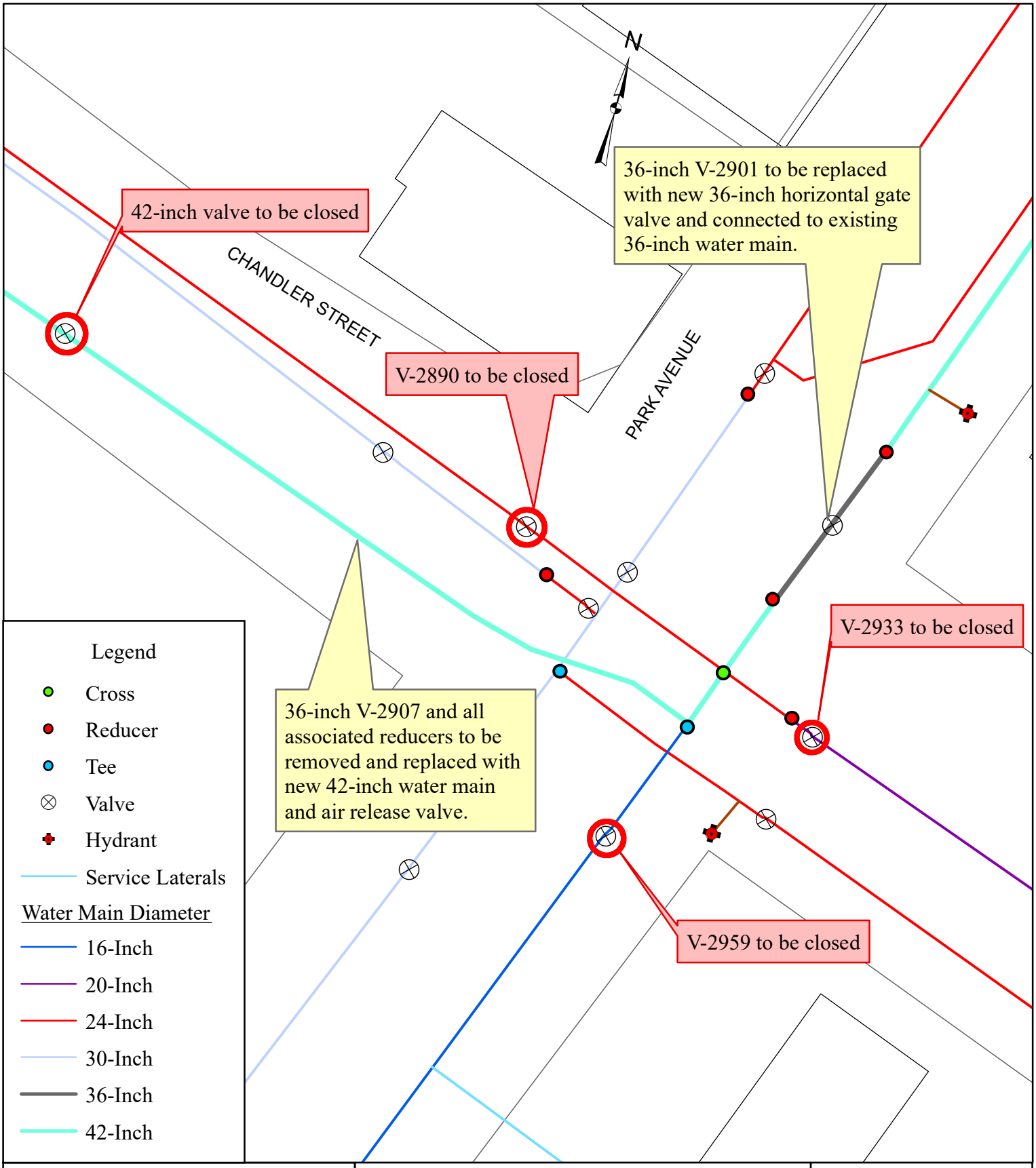
Existing Infrastructure

Park Avenue at Chandler Street

Worcester, MA

Figure No.

1A-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

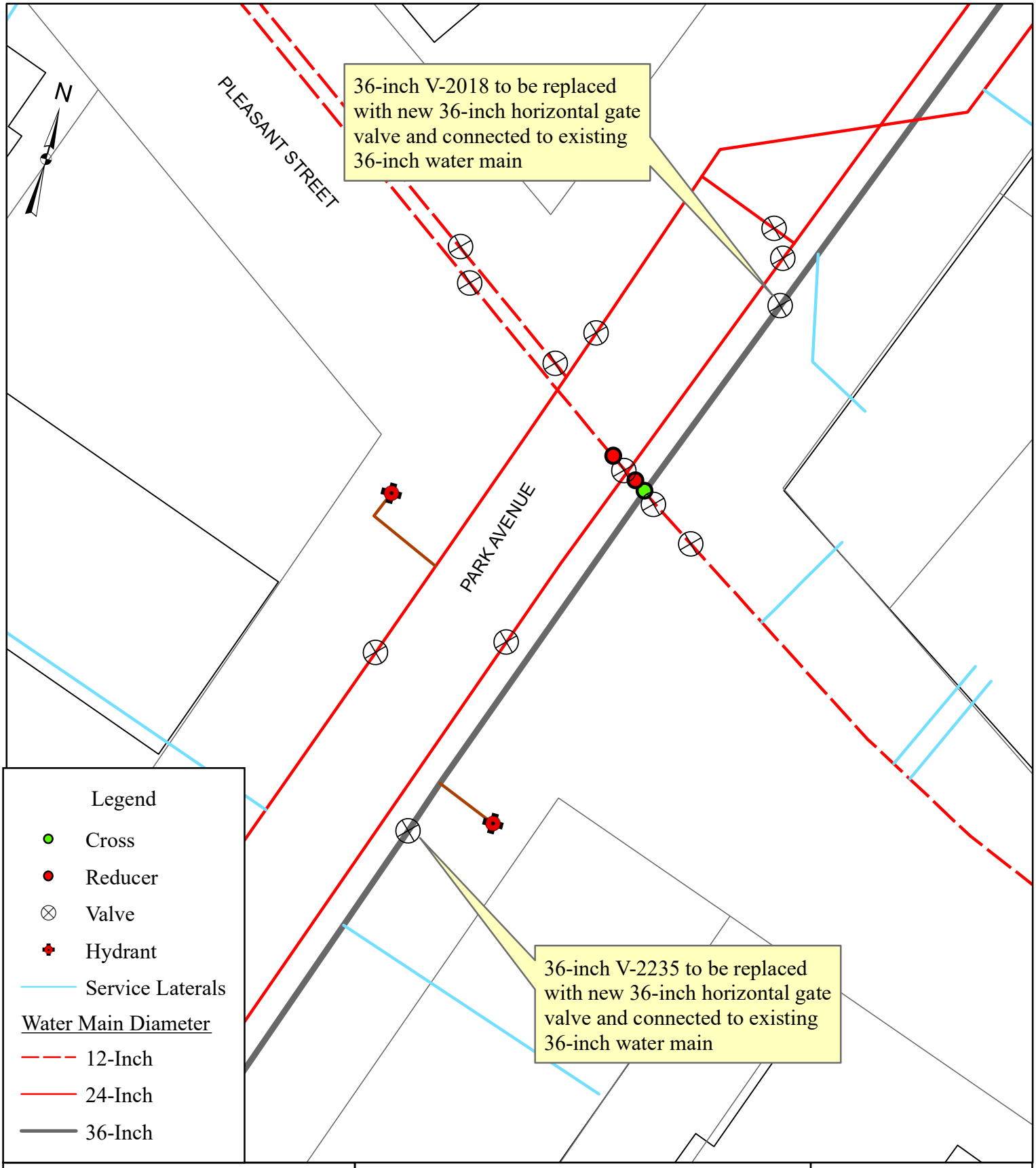
Proposed Infrastructure

Park Avenue at Chandler Street

Worcester, MA

Figure No.

1A-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

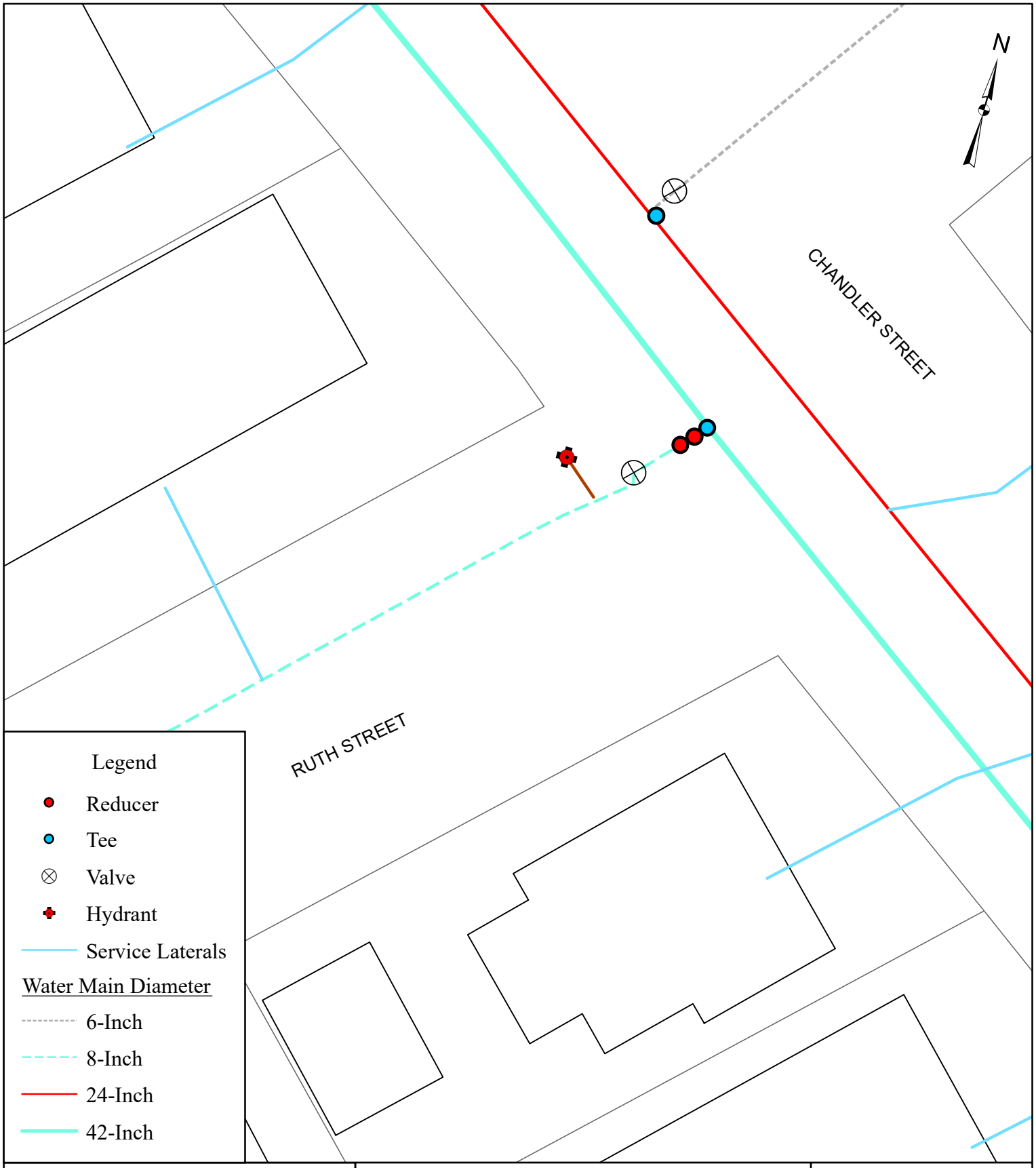
Existing and Proposed Infrastructure

Park Avenue

Worcester, MA

Figure No.

1B



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

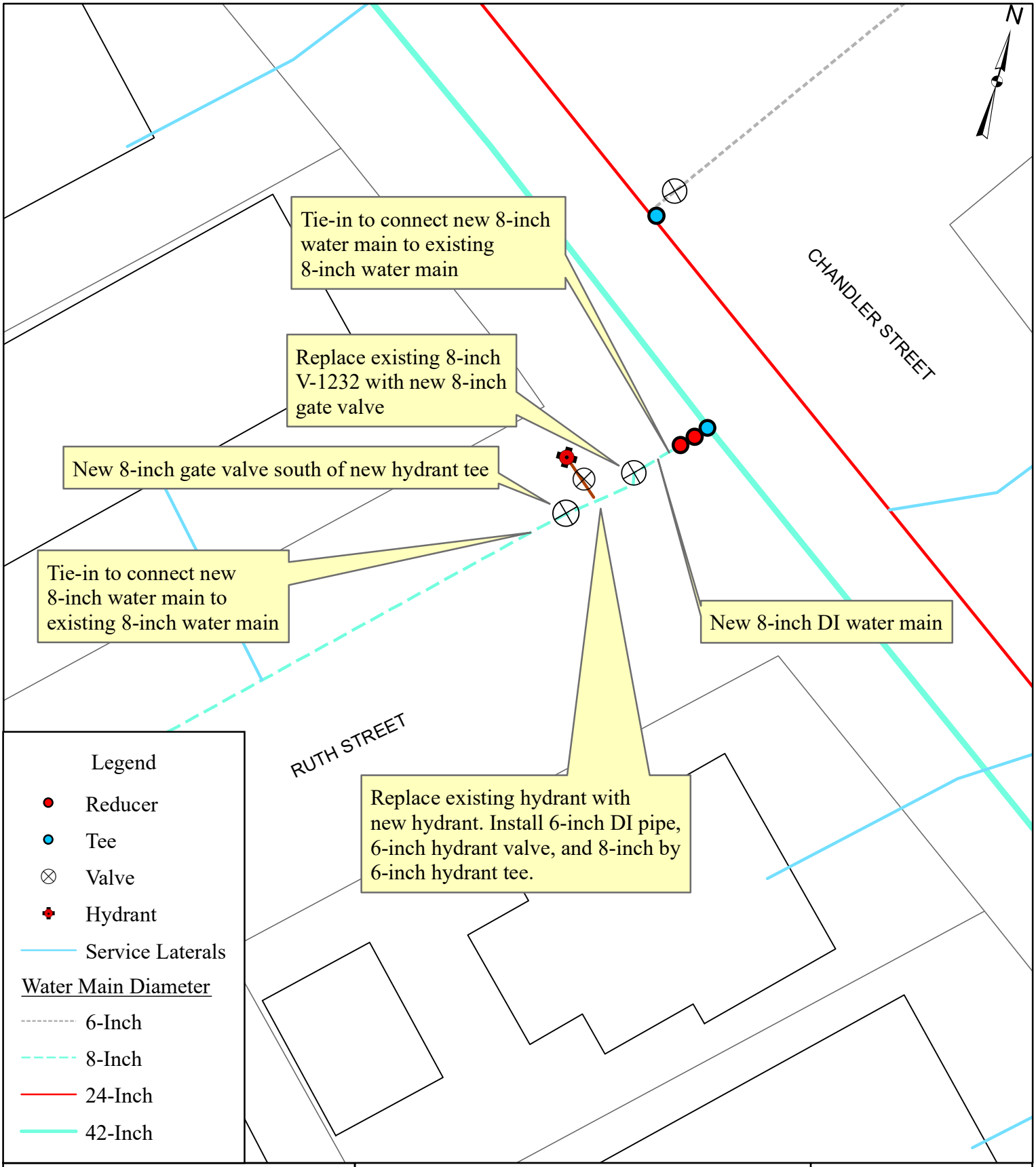
Existing Infrastructure

Ruth Street

Worcester, MA

Figure No.

2A-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

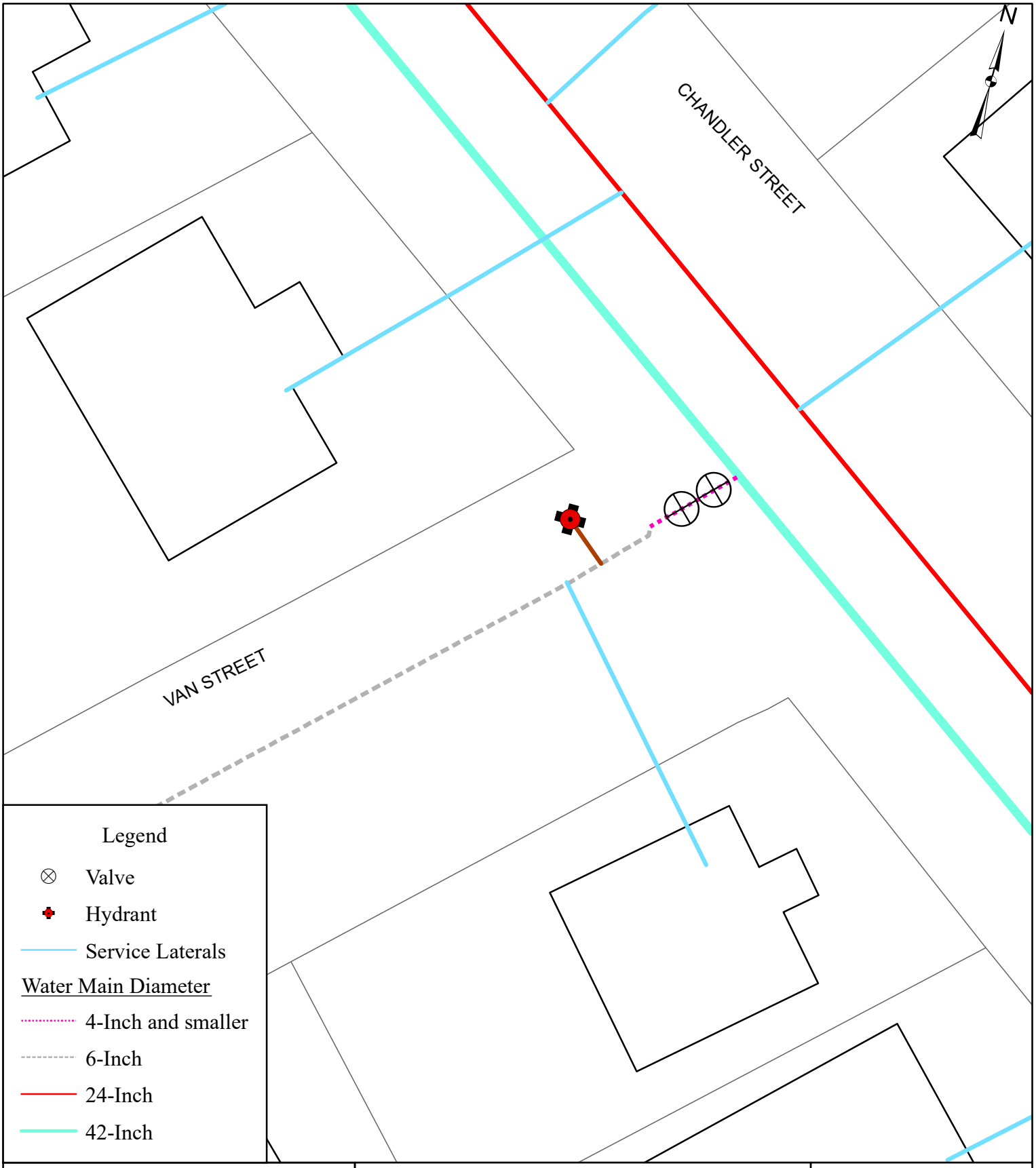
Proposed Infrastructure

Ruth Street

Worcester, MA

Figure No.

2A-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

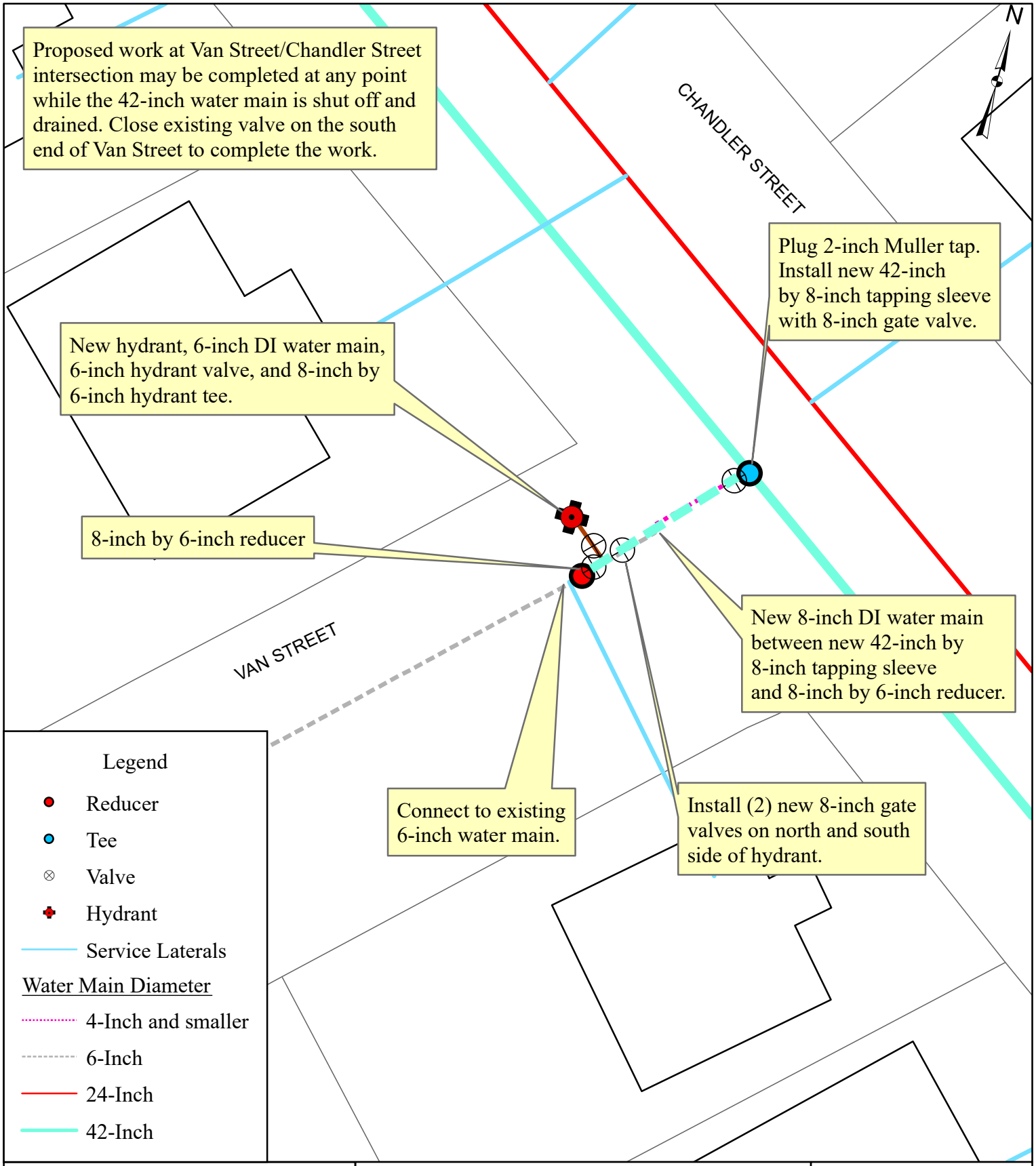
Existing Infrastructure

Van Street

Worcester, MA

Figure No.

2B-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

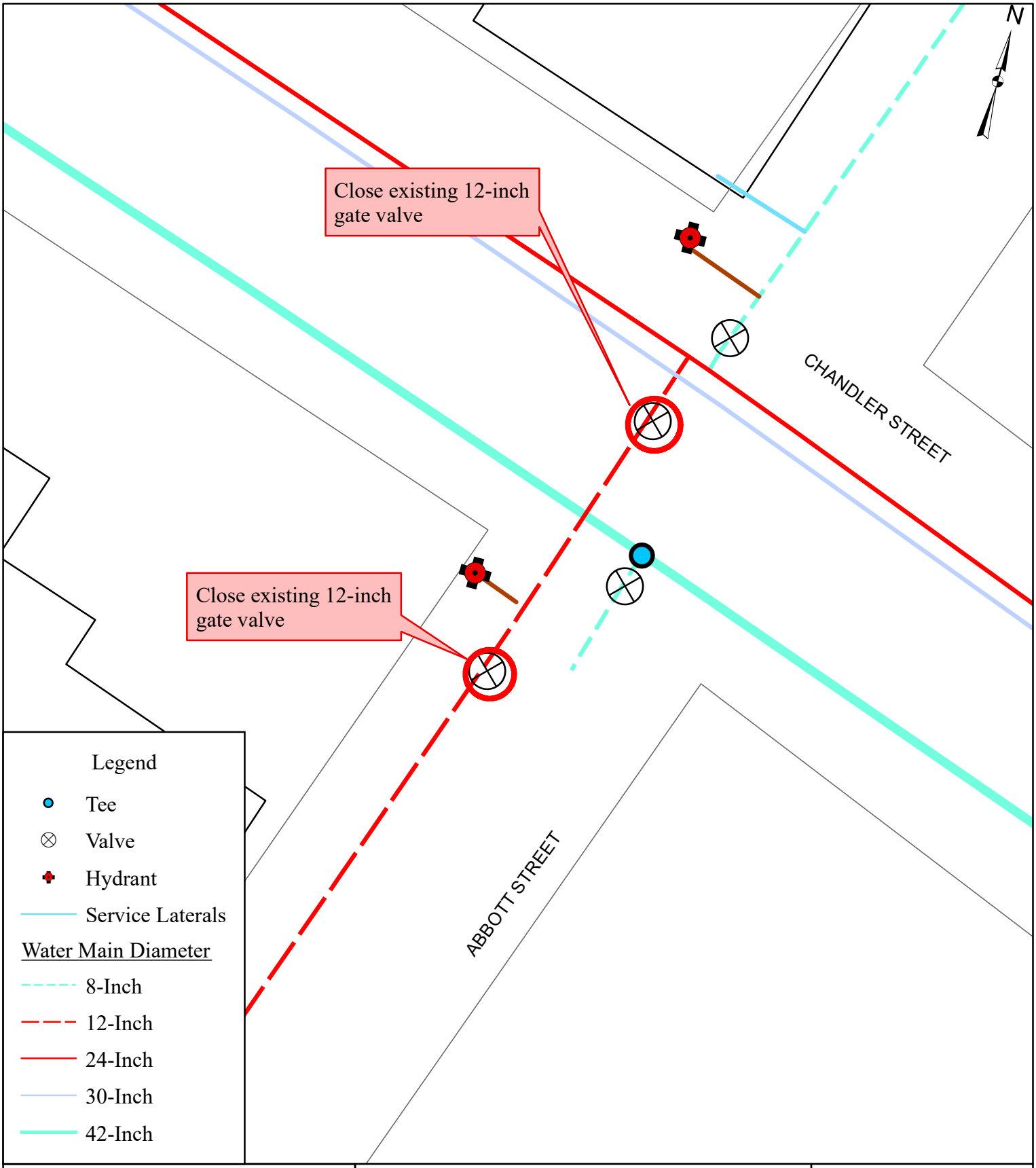
Proposed Infrastructure

Van Street

Worcester, MA

Figure No.

2B-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

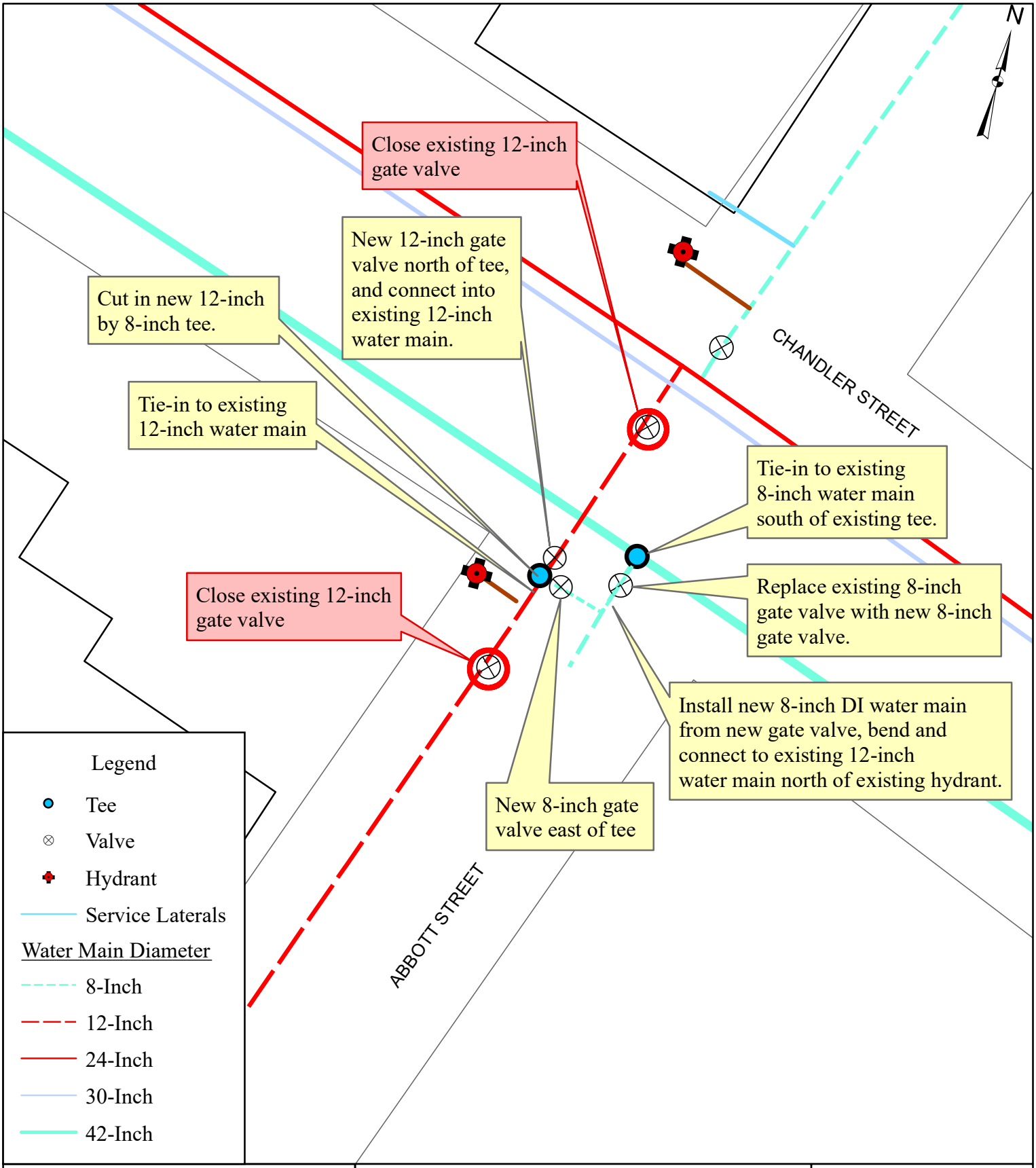
Existing Infrastructure

Abbott Street

Worcester, MA

Figure No.

3A-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

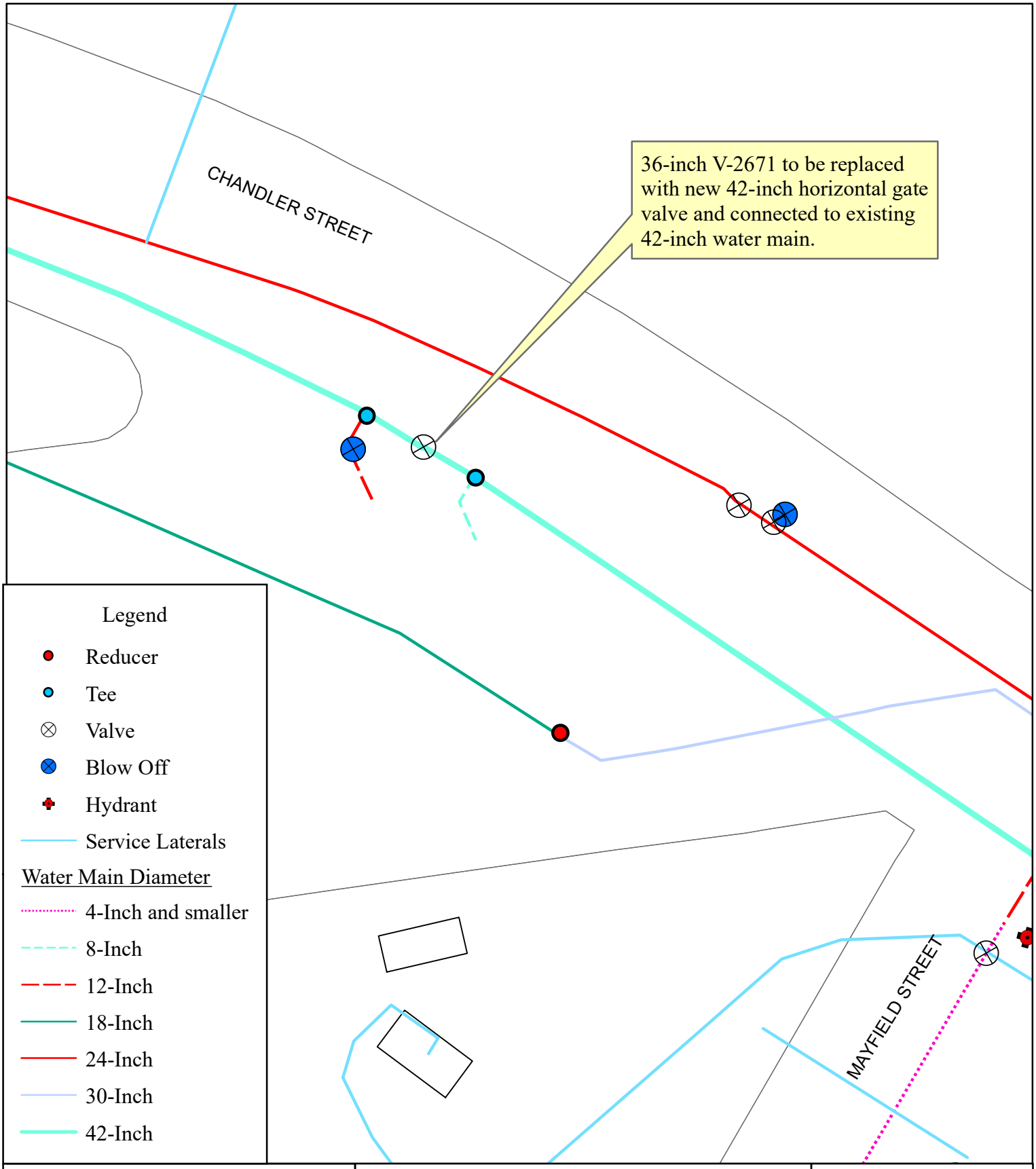
Proposed Infrastructure

Abbott Street

Worcester, MA

Figure No.

3A-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

Existing and Proposed Infrastructure

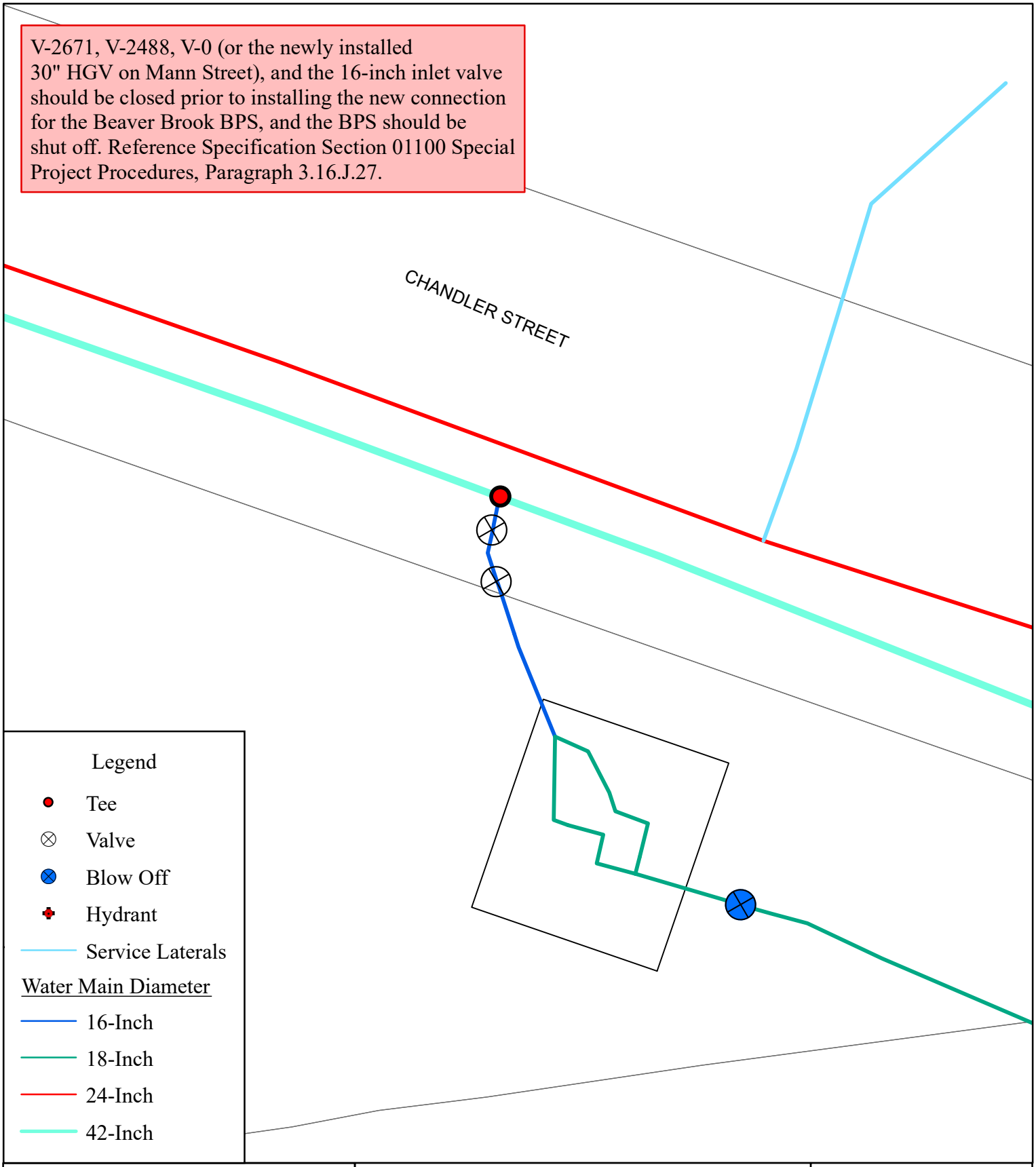
Chandler Street (V-2671)

Worcester, MA

Figure No.

3B

V-2671, V-2488, V-0 (or the newly installed 30" HGV on Mann Street), and the 16-inch inlet valve should be closed prior to installing the new connection for the Beaver Brook BPS, and the BPS should be shut off. Reference Specification Section 01100 Special Project Procedures, Paragraph 3.16.J.27.



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

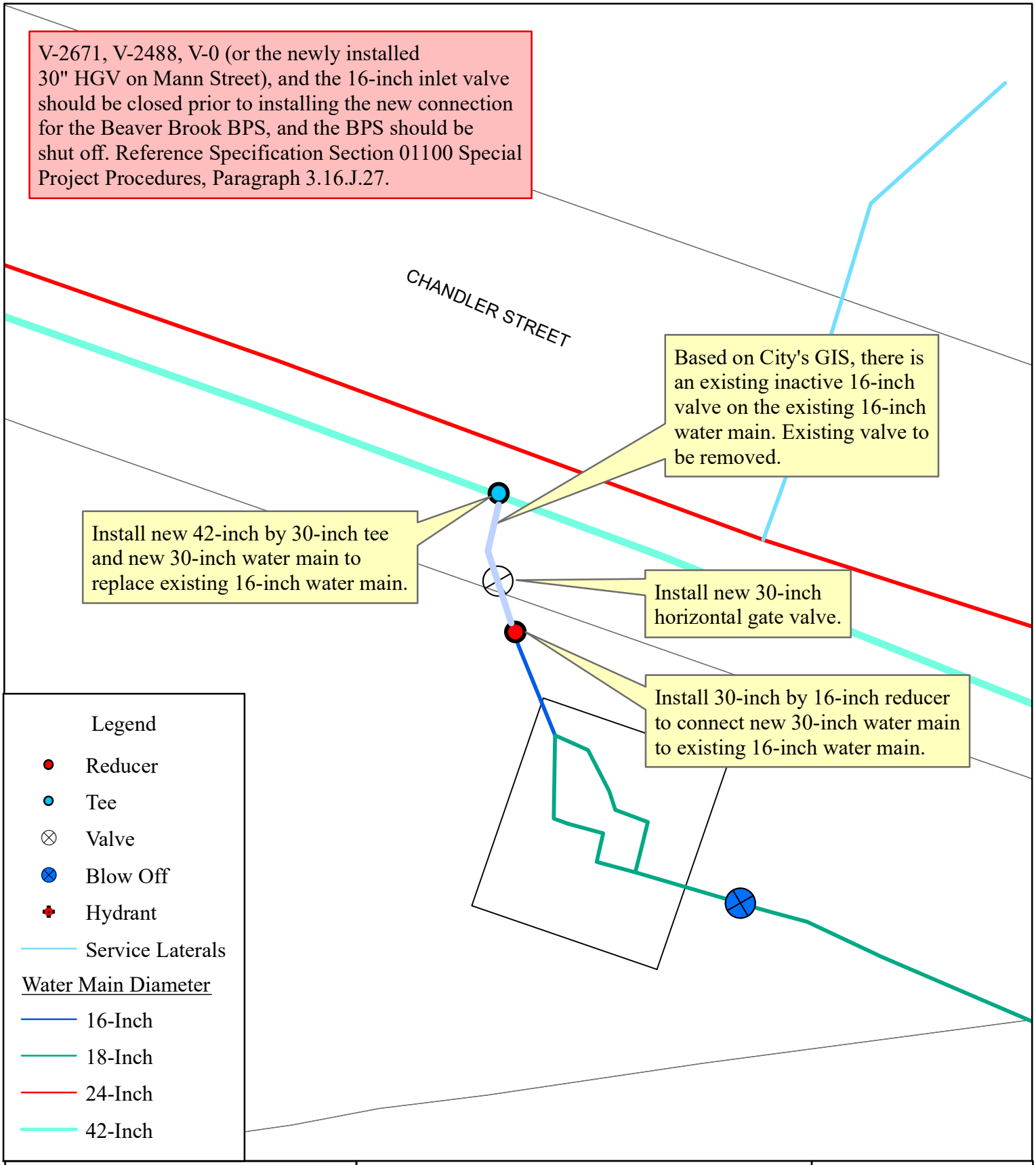
Existing Infrastructure

Beaver Brook BPS Inlet

Worcester, MA

Figure No.

3C-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

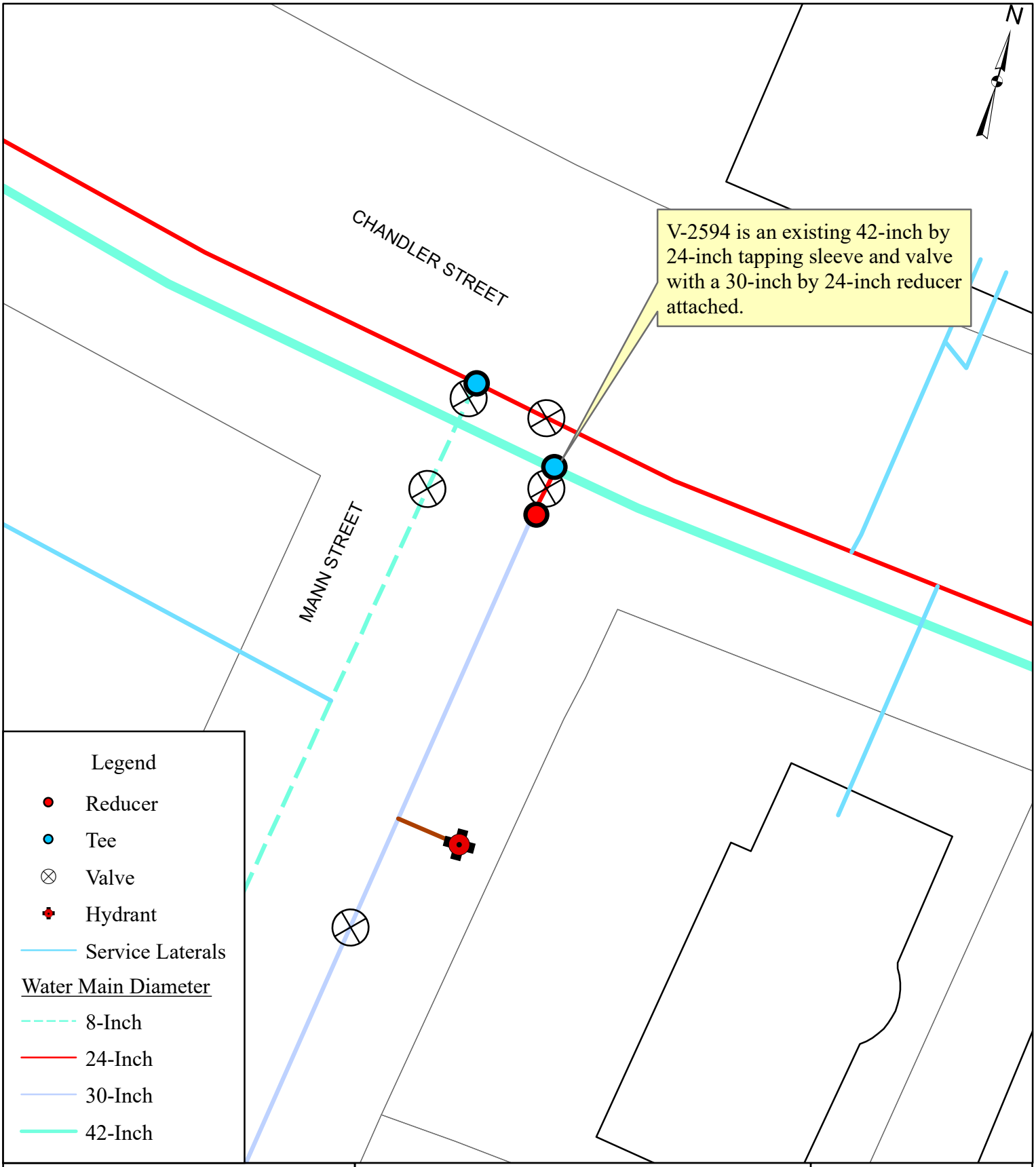
Proposed Infrastructure

Beaver Brook BPS Inlet

Worcester, MA

Figure No.

3C-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

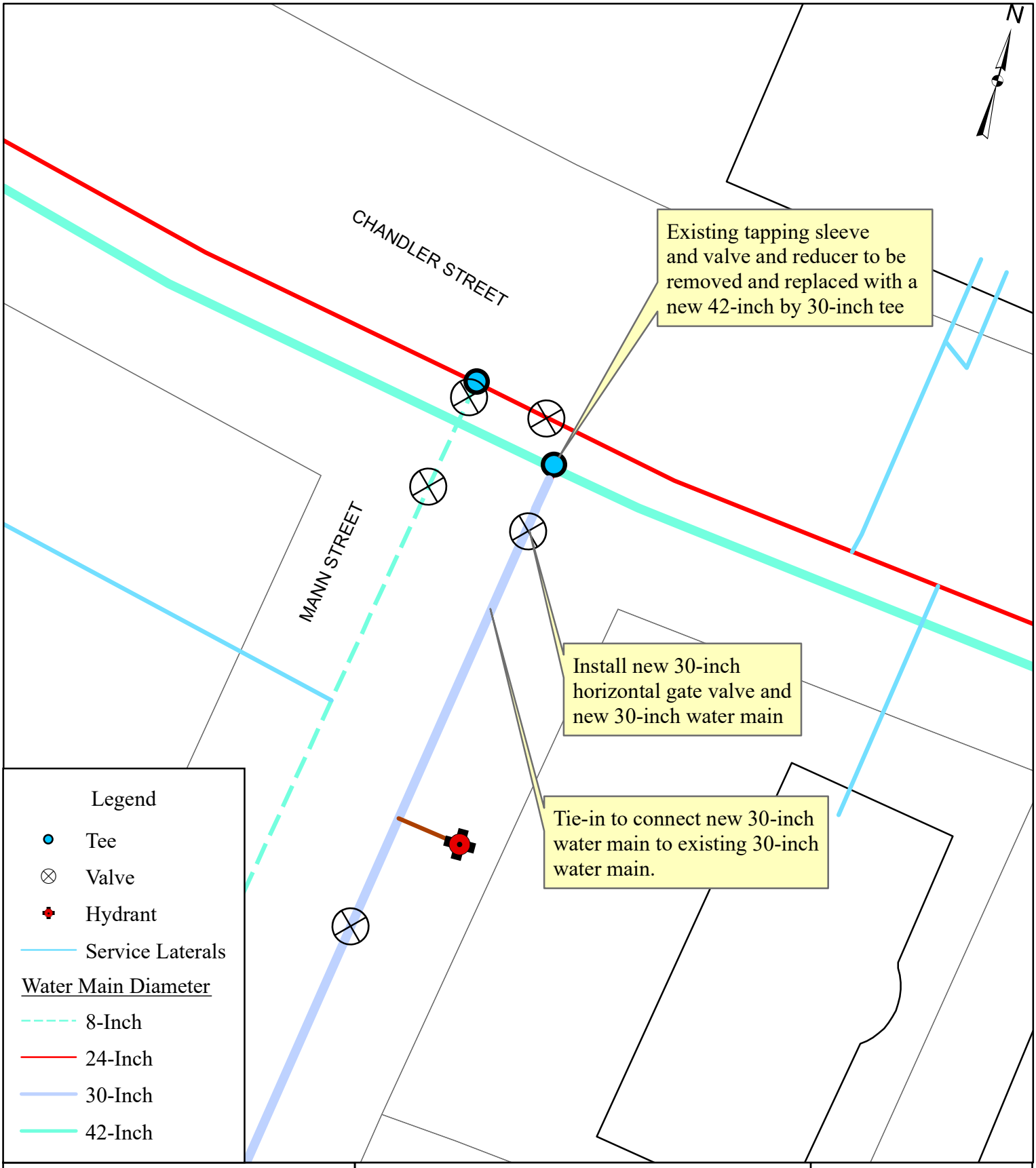
Existing Infrastructure

Mann Street (V-2594)

Worcester, MA

Figure No.

3D-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

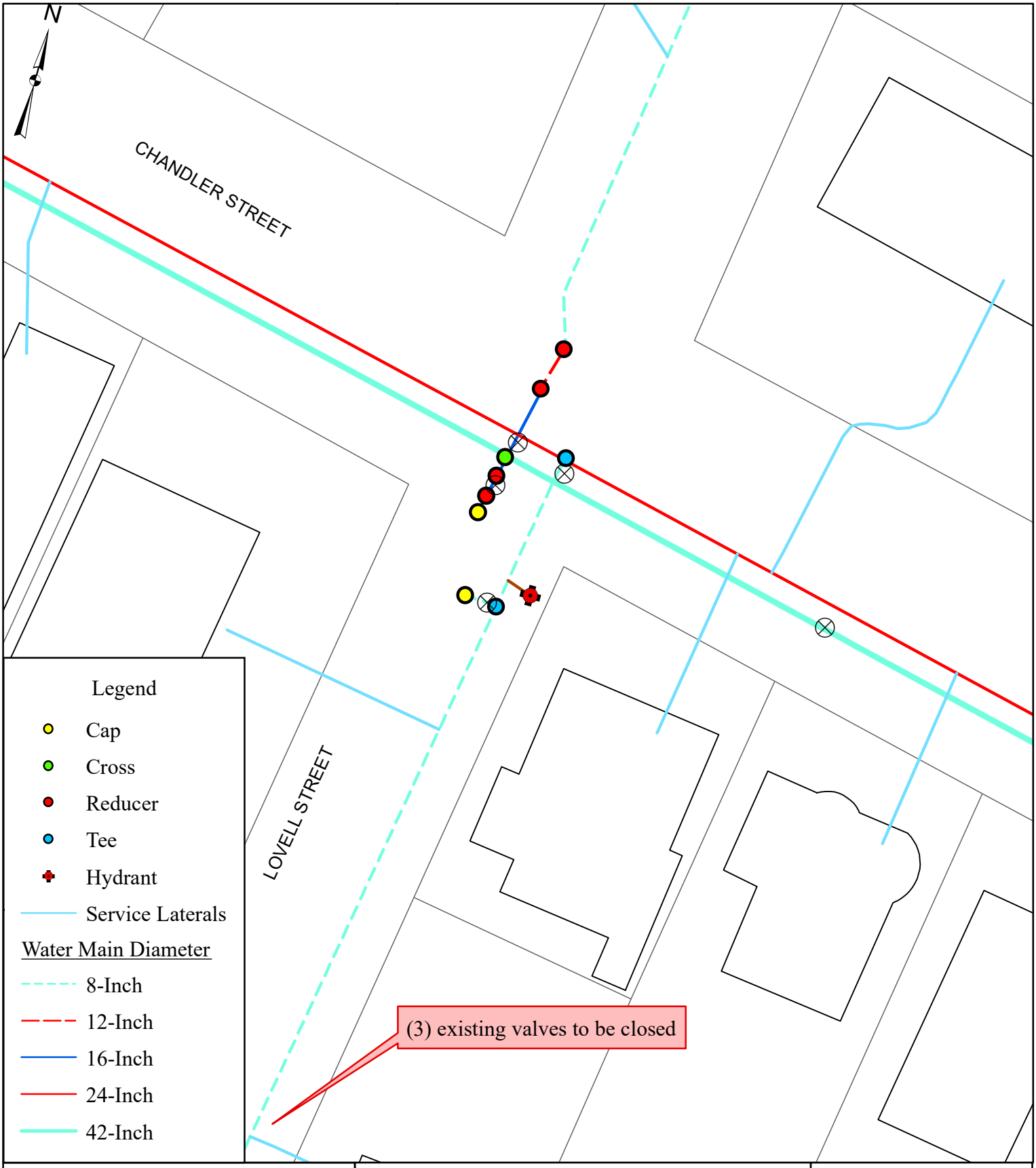
Proposed Infrastructure

Mann Street (V-2594)

Worcester, MA

Figure No.

3D-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

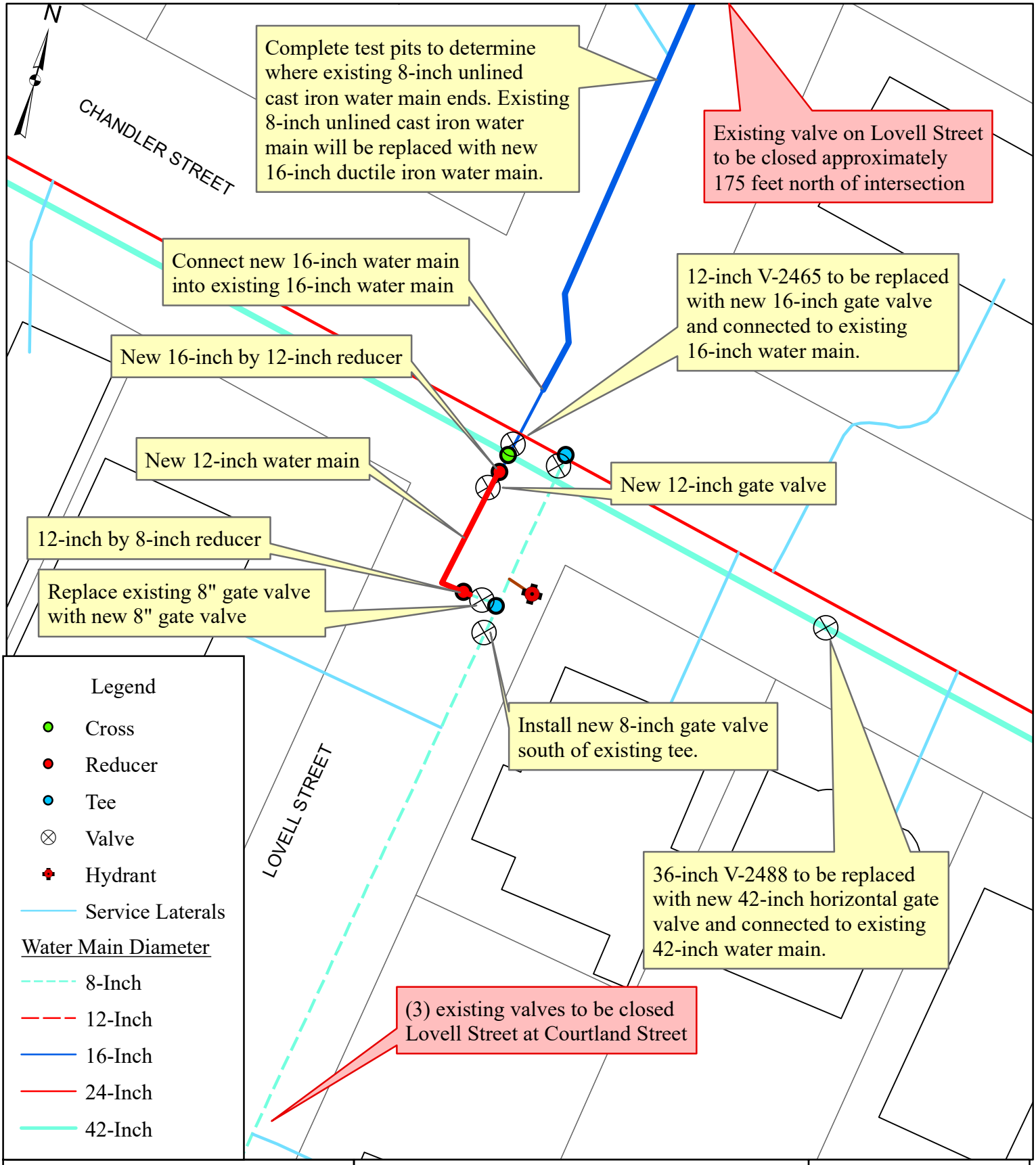
Existing Infrastructure

Lovell Street

Worcester, MA

Figure No.

3E-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 30'

Large Diameter Valve Replacement

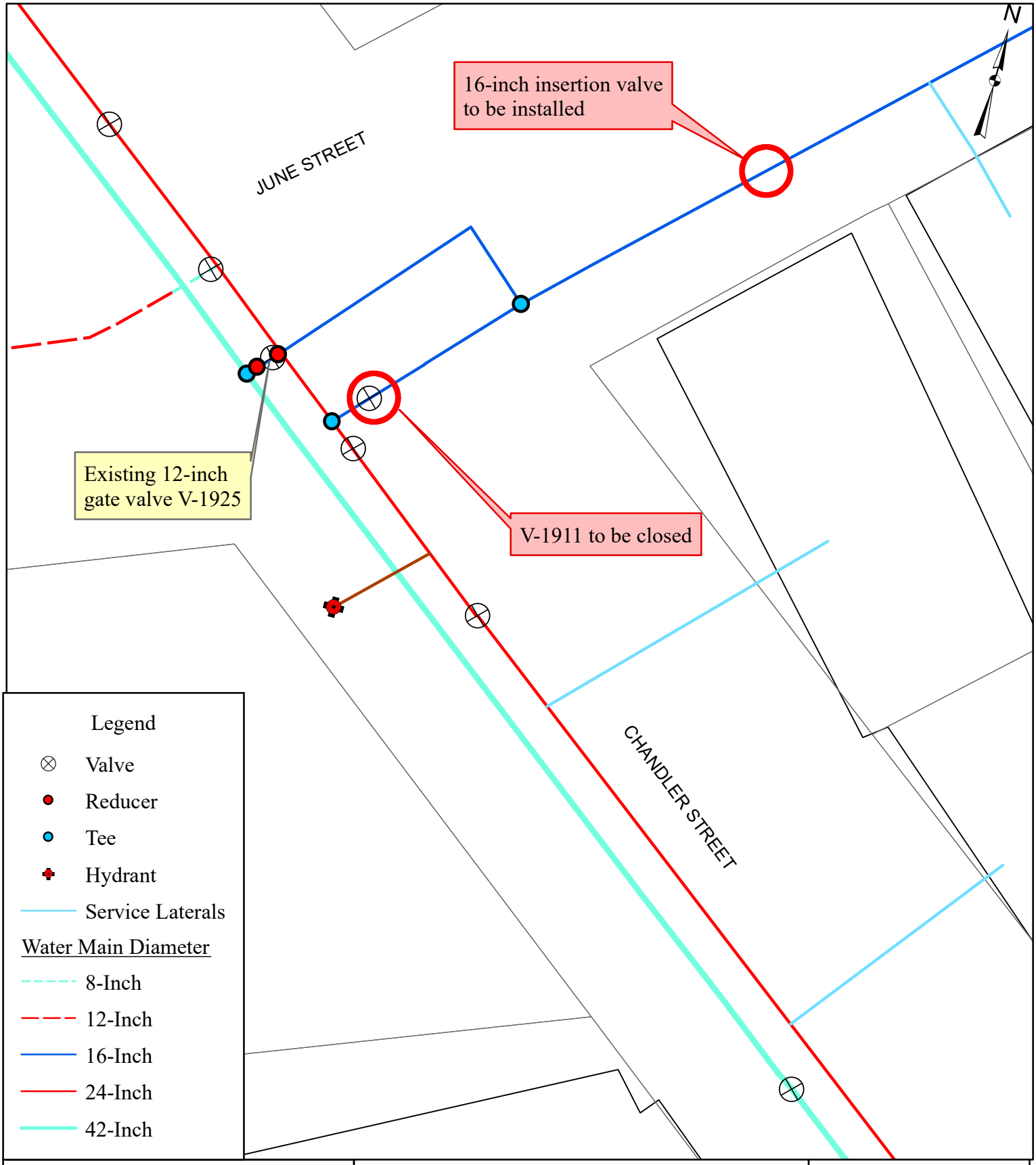
Proposed Infrastructure

Lovell Street

Worcester, MA

Figure No.

3E-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

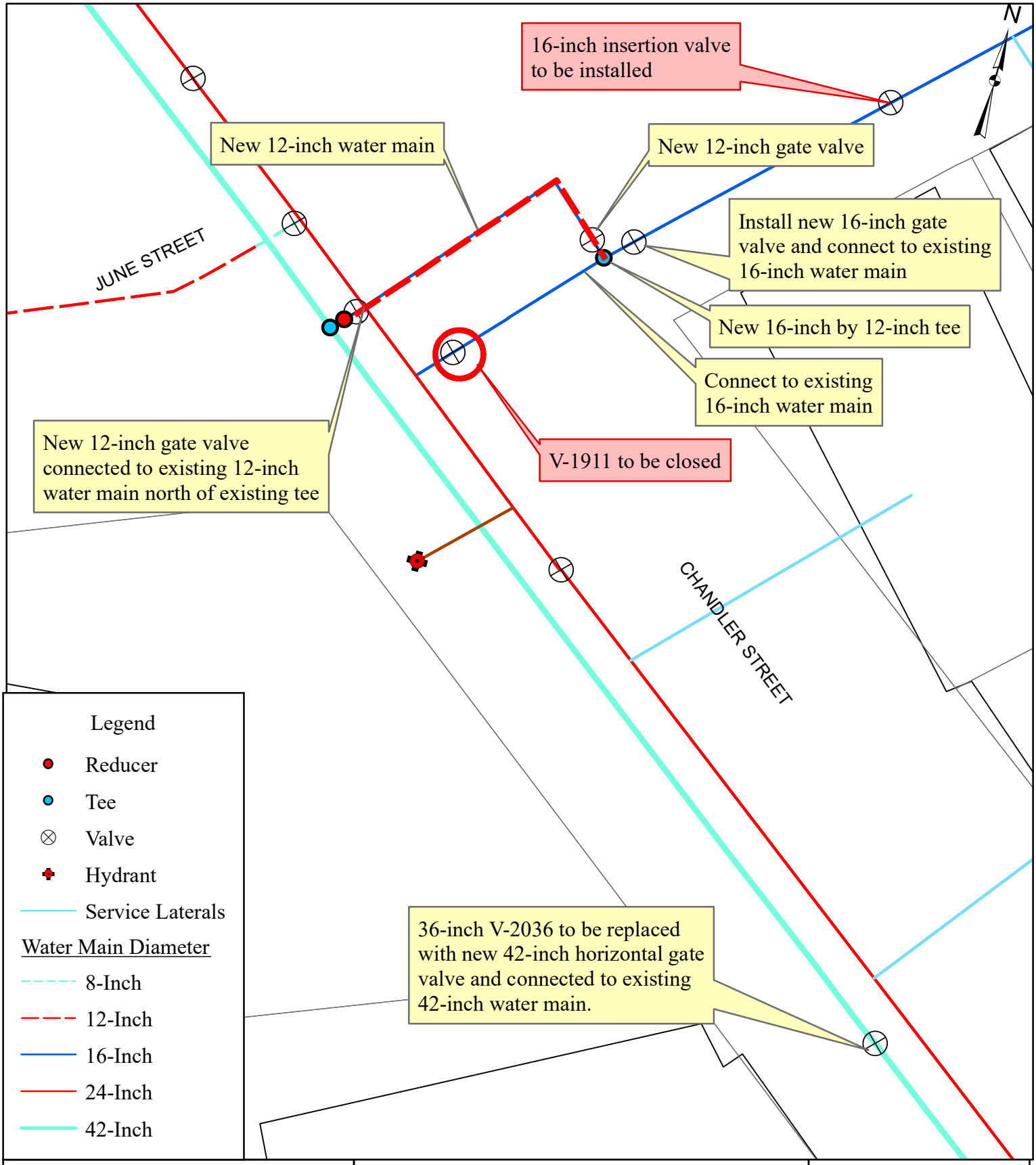
Existing Infrastructure

Chandler Street & June Street

Worcester, MA

Figure No.

3F-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 20'

Large Diameter Valve Replacement

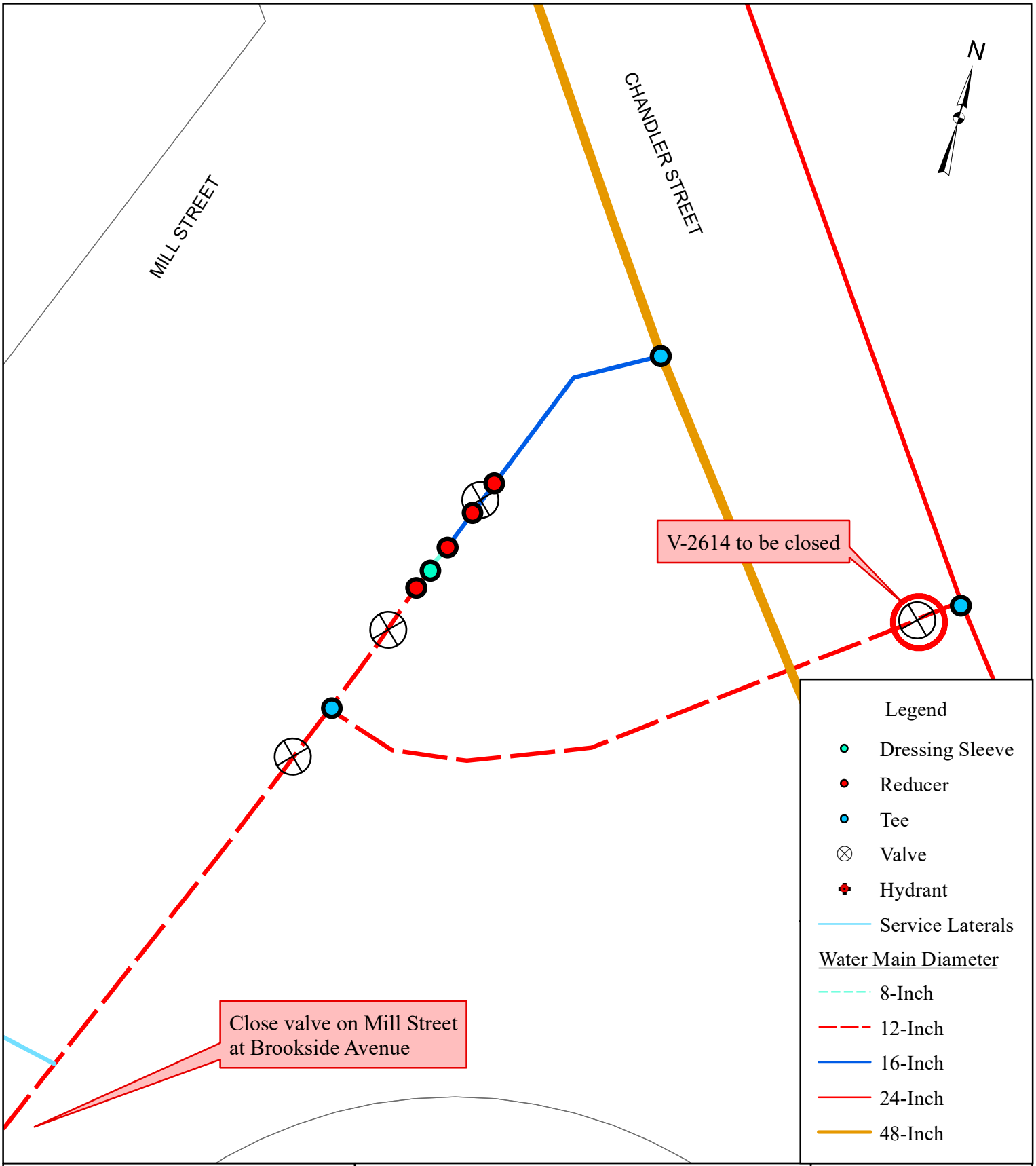
Proposed infrastructure

Chandler Street & June Street

Worcester, MA

Figure No.

3F-P



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 10'

Large Diameter Valve Replacement

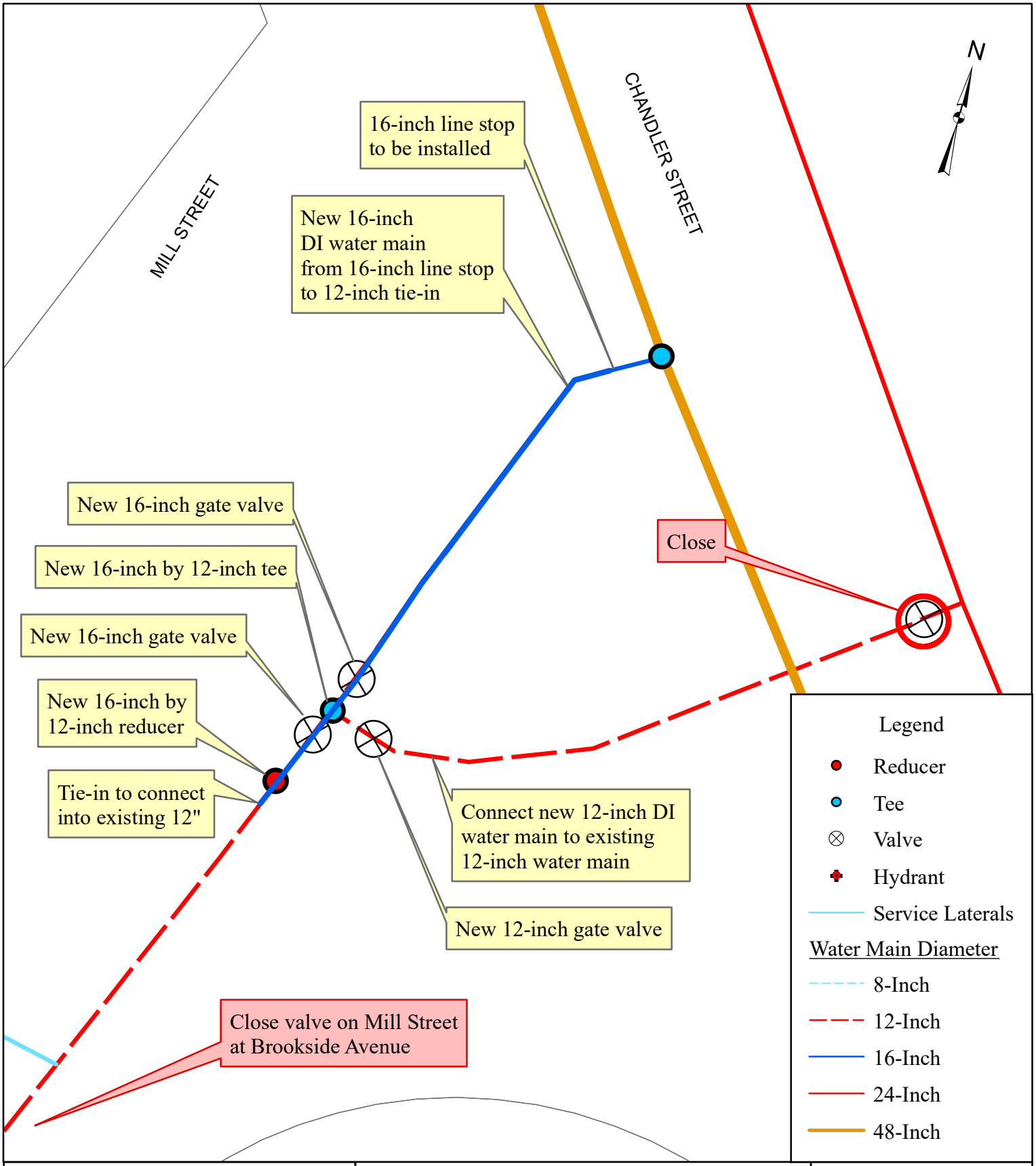
Existing Infrastructure

Mill Street

Worcester, MA

Figure No.

4-E



TATA & HOWARD

Date: April 2026
Approximate Scale: 1" = 10'

Large Diameter Valve Replacement

Proposed Infrastructure

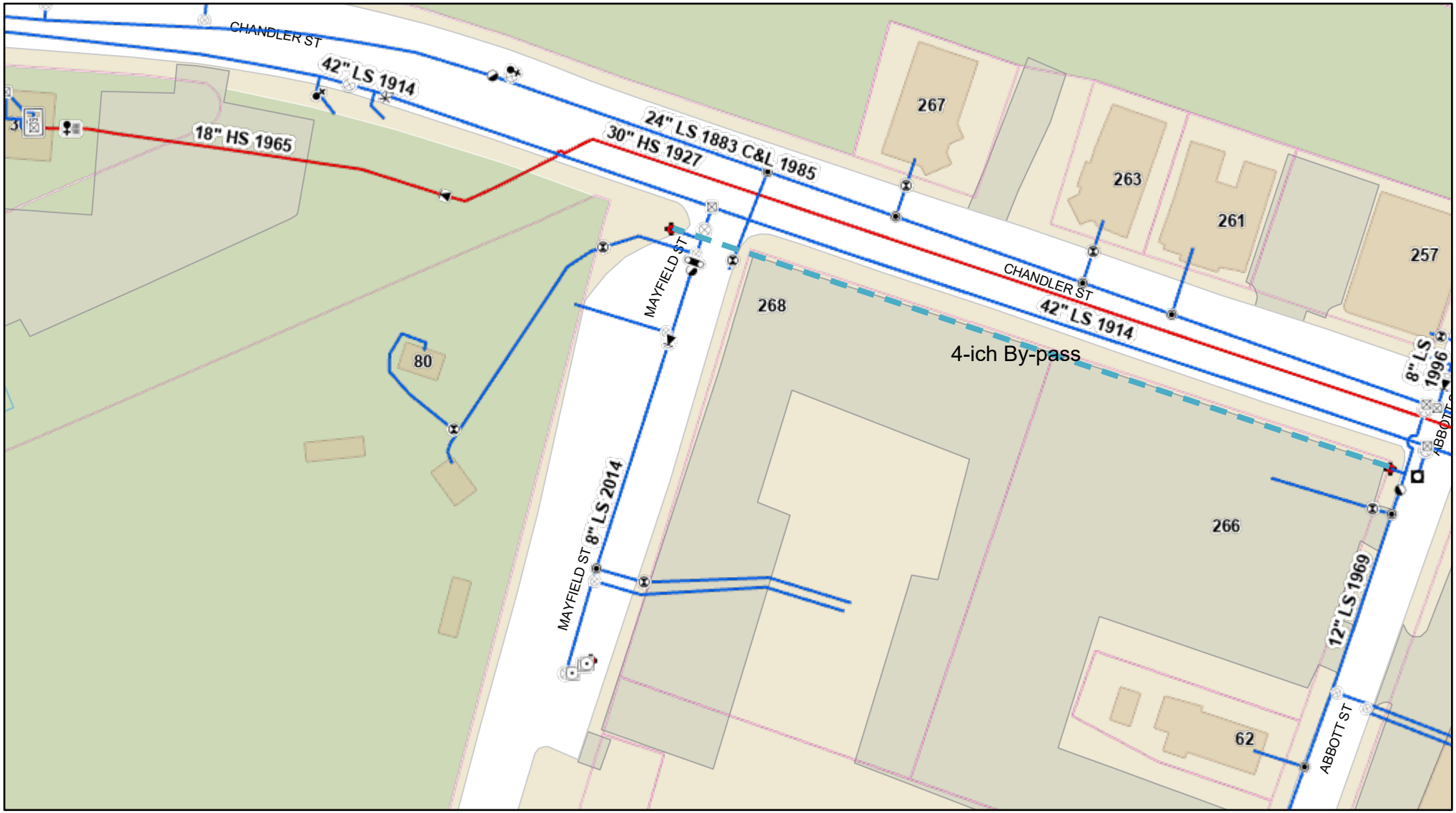
Mill Street

Worcester, MA

Figure No.

4-P

APPENDIX C – TEMPORARY BYPASS PLANS



CityViewer Print Layout

11/13/2024 1:10 PM

0 0.01 0.01 0.02 mi

N

DATA SOURCES:
Airport Clear Zones: MassPort | Census Tracts: U.S. Census Bureau | Environmental Justice Populations, FEMA Flood Hazards, Historic Areas/Properties, Wetlands, and Wildlife Habitat: MassGIS | Historic Redlining Zones: Digital map developed by Worcester Regional Research Bureau from the University of Richmond's photo | WRTA Bus Stops/Routes: Central Massachusetts Regional Planning Commission | All other data: City of Worcester GIS.

Considerable effort has been made to ensure the accuracy, correctness and timeliness of data presented; however, this information is only as accurate as its sources and may not reflect the most current information. The City of Worcester, MA assumes no liability for any errors, omissions or inaccuracies and makes no warranty, representation or guaranty of any kind, express or implied, as to the content or for any decisions made or actions taken or not taken by the user based upon any information provided on this map.

Override 1

Water Mains
SYSTEM
- High Pressure System
- Low Pressure System

Service Laterals
SYSTEM
- Low Pressure System

Hydrant Laterals
SYSTEM
- Low Pressure System

System Valve
- Gate Valve
- Butterfly Valve

Service Valve
- Corportation
- Curb Stop
- Gate Valve

Pump Station

Meters
- Meter Pit

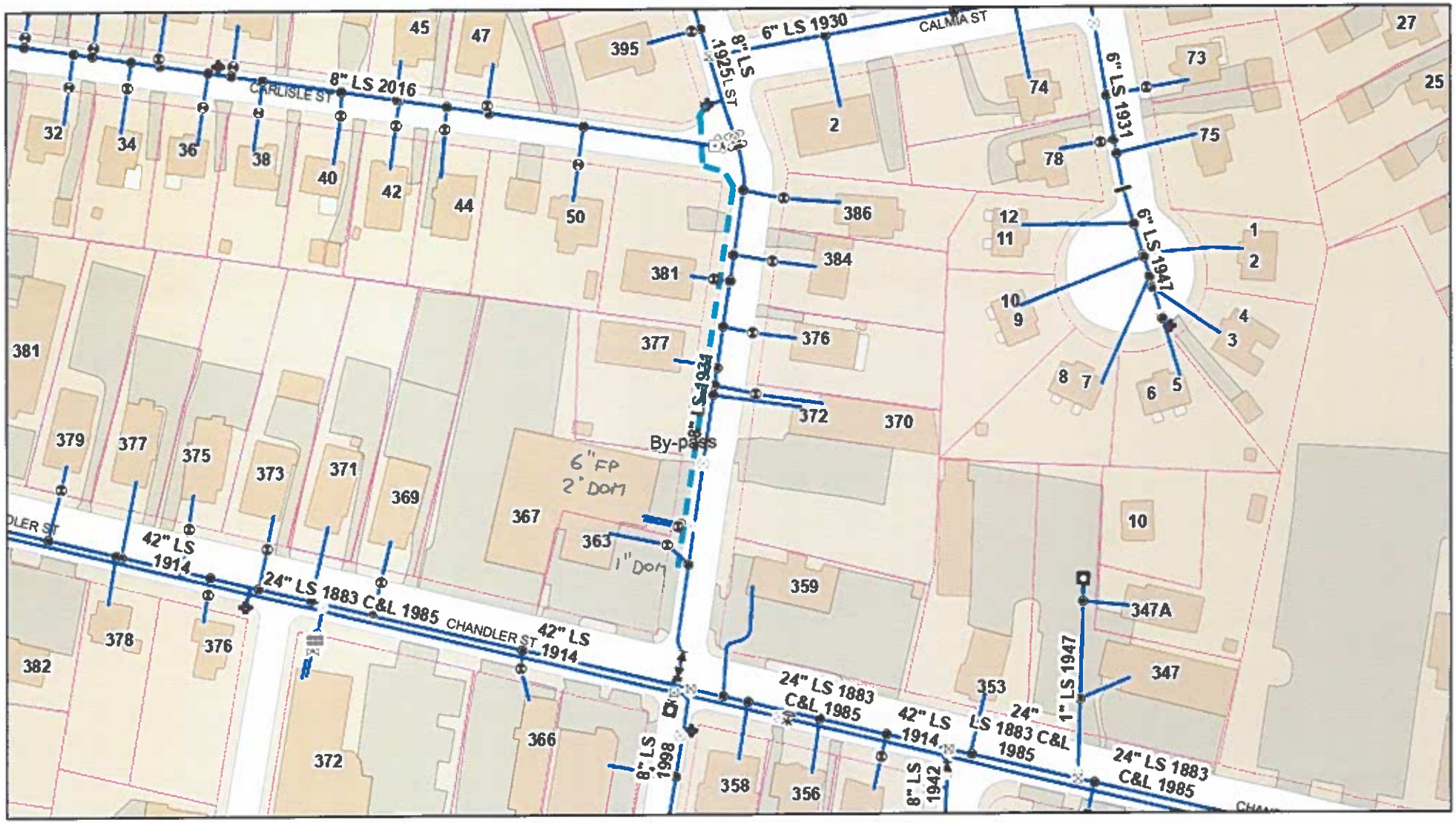
Fittings
- Bend
- Coupling
- End of Pipe
- Reducer
- Tee

Control Valve
- Air Cock
- Blow Off

Hydrants
- City Owned Hydrant, In Service

Tax Parcels

Buildings
TYPE
- Building



CityViewer Print Layout

12/9/2024 9:02 AM

0 0.01 0.01 0.03 mi

N

DATA SOURCES:
Airport Clear Zones: MassPort | Census Tracts: U.S. Census Bureau | Environmental Justice Populations, FEMA Flood Hazards, Historic Areas/Properties, Wetlands, and Wildlife Habitat: MassGIS | Historic Redlining Zones: Digital map developed by Worcester Regional Research Bureau from the University of Richmond's photo | WRTA Bus Stops/Routes: Central Massachusetts Regional Planning Commission | All other data: City of Worcester GIS.

Considerable effort has been made to ensure the accuracy, correctness and timeliness of data presented; however, this information is only as accurate as its sources and may not reflect the most current information. The City of Worcester, MA assumes no liability for any errors, omissions or inaccuracies and makes no warranty, representation or guaranty of any kind, express or implied, as to the content or for any decisions made or actions taken or not taken by the user based upon any information provided on this map.

- Override 1

Water Mains
SYSTEM
- Low Pressure System

Service Laterals
SYSTEM
- Low Pressure System

Hydrant Laterals
SYSTEM
- Low Pressure System

System Valve
- Gate Valve

Service Valve
- Corportation
- Curb Stop
- Post Indicator Valve
- Gate Valve

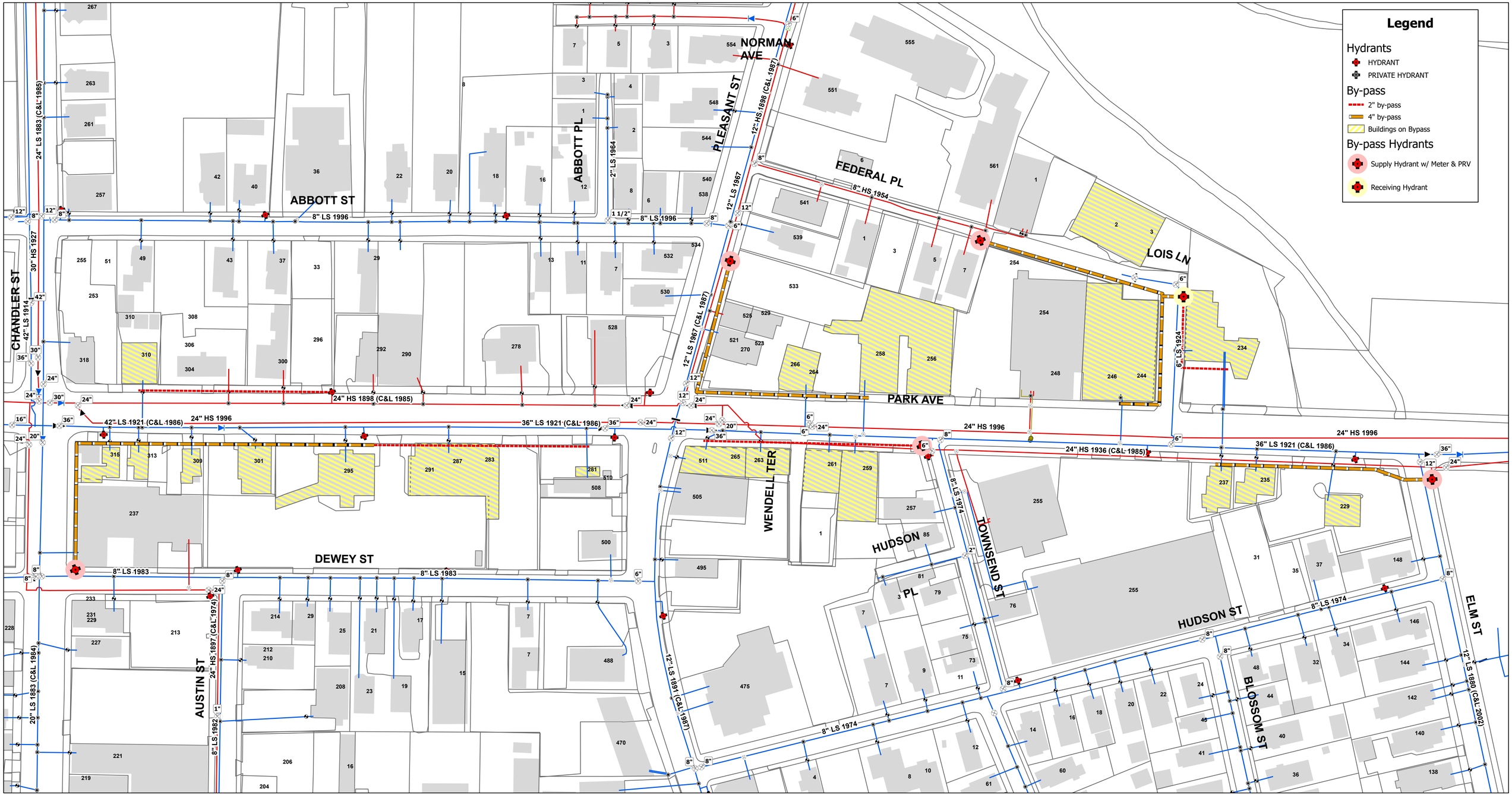
Meters
- Meter Pit

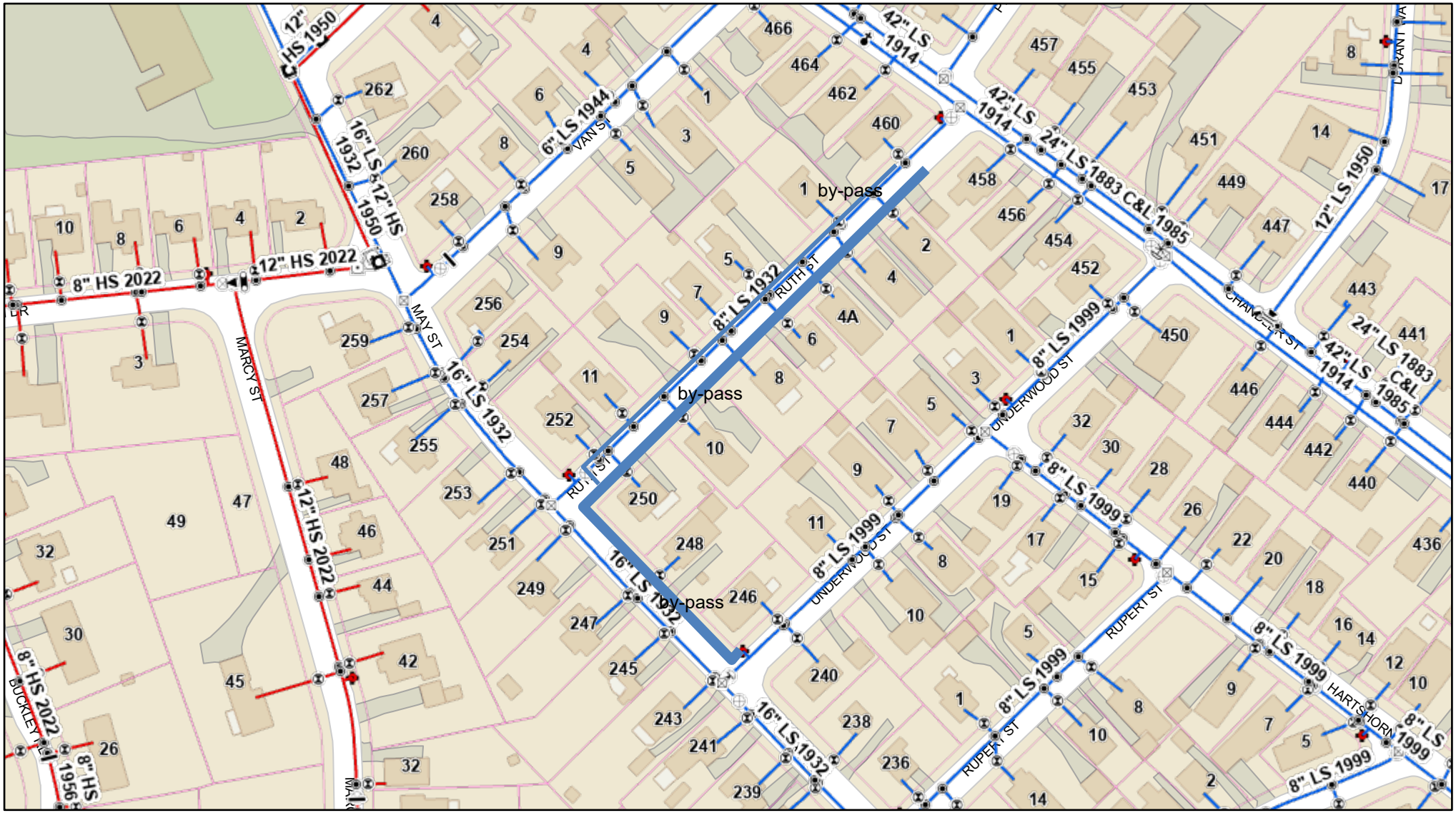
Fittings
- Bend
- Coupling
- End of Pipe
- Line Change
- Reducer
- Tee

Control Valve
- Air Cock

Hydrants
- City Owned Hydrant, In Service
- Tax Parcels

Buildings
TYPE
- Building
- Deck/Patio


Legend
Hydrants
HYDRANT
PRIVATE HYDRANT
By-pass
2" by-pass
4" by-pass
Buildings on Bypass
By-pass Hydrants
Supply Hydrant w/ Meter & PRV
Receiving Hydrant
ABBOTT ST
ABBOTT PL
NORMAN AVE
PLEASANT ST
FEDERAL PL
LOIS LN
PARK AVE
CHANDLER ST
WENDELL TER
HUDSON PL
HUDSON ST
TOWNSEND ST
DEWEY ST
AUSTIN ST
BLOSSOM ST
ELM ST
8" LS 1996
24" HS 1898 (C&L 1985)
42" LS 1921 (C&L 1986)
24" HS 1996
36" LS 1921 (C&L 1986)
24" HS 1936 (C&L 1985)
8" LS 1983
8" LS 1974
12" LS 1967 (C&L 1987)
12" HS 1898 (C&L 1987)
8" HS 1954
6" LS 1924
30" HS 1927
42" LS 1914
24" LS 1883 (C&L 1985)
20" LS 1883 (C&L 1984)
24" HS 1897 (C&L 1974)
8" LS 1982
12" LS 1891 (C&L 1997)
12" LS 1880 (C&L 2002)
2" LS 1964



CityViewer Print Layout

1/2/2025 9:09 AM

0 0.01 0.03 0.05 mi

N

DATA SOURCES:
Airport Clear Zones: MassPort | Census Tracts: U.S. Census Bureau | Environmental Justice Populations, FEMA Flood Hazards, Historic Areas/Properties, Wetlands, and Wildlife Habitat: MassGIS | Historic Redlining Zones: Digital map developed by Worcester Regional Research Bureau from the University of Richmond's photo | WRTA Bus Stops/Routes: Central Massachusetts Regional Planning Commission | All other data: City of Worcester GIS.

Considerable effort has been made to ensure the accuracy, correctness and timeliness of data presented; however, this information is only as accurate as its sources and may not reflect the most current information. The City of Worcester, MA assumes no liability for any errors, omissions or inaccuracies and makes no warranty, representation or guaranty of any kind, express or implied, as to the content or for any decisions made or actions taken or not taken by the user based upon any information provided on this map.

Lines
- Override 1
- Override 2

Water Mains
SYSTEM
- High Pressure System
- Low Pressure System

Service Laterals
SYSTEM
- High Pressure System
- Low Pressure System

Hydrant Laterals
SYSTEM
- High Pressure System
- Low Pressure System

System Valve
- Gate Valve
- Ball Valve
- Butterfly Valve

Service Valve
- Corportation
- Curb Stop

Fittings
- Bend
- Coupling
- End of Pipe
- Line Change
- Reducer
- Sleeve
- Tee

Control Valve
- Air Cock
- Blow Off

Hydrants
- City Owned Hydrant, In Service

Tax Parcels

Buildings
TYPE
- Building
- Deck/Patio


Phase 1: Relay of 24" Main
(1 inch equals 77 feet)
0
95
190
380 Feet
N
Water System Valves
CORPORATION
CURB STOP
DIVISION GATE
VALVE
Water Control Valves
AIRCOCK
BLOW OFF
Fittings
CAP
LINE CHANGE
REDUCER
END OF PIPE
Water Mains
High Pressure System
Low Pressure System
Super High Pressure System
Transfer Main
Abandoned Lines
Bypass
2" Bypass
4" Bypass
6" Bypass
New Valves
Buildings On Bypass
Supply Hydrant
Receiving Hydrant
CHANDLER ST
24" LS 1883 (C&L 1985)
48" LS 1914
8" LS 1916
CLARIDGE DR
8" LS 1949
8" LS 1947
8" HS 1947
SHERWOOD RD
WESTVIEW RD
SOUTH FLAGG ST
6" HS 1946
HADWEN RD
12" HS 1943 (C&L 2009)
30" LS 1926
42" LS 1914
HAMILL RD
12" HS 1950
VAN ST
6" LS 1944
RUTH ST
8" LS 1932
MAY ST
16" LS 1932
ZENITH DR
8" HS 2022
MARCY ST
12" HS 2022
New Valve
Supply Hydt: With PRV
Insertion Valve
2,349 ft
566 ft
156 ft

CHANDLER ST
24" LS 1883 (C&L 1985)
48" LS 1914
8" LS 1916
8" LS 1949
8" LS 1947
CLARIDGE DR
8" LS 1948
24" LS 1883 (C&L 1985)
48" LS 1914
24" LS 1883 (C&L 1985)
30" LS 1926
6" Bypass
WESTVIEW RD
SHERWOOD RD
SOUTH FLAGG ST
8" HS 1946
HADWEN RD
12" HS 1943 (C&L 2009)
12" LS 1914
24" LS 1883 (C&L 1985)
HAMILL RD
12" HS 1950
VAN ST
6" LS 1944
MAY ST
16" LS 1932
RUTH ST
8" LS 1932
ZENITH DR
8" HS 2022
MARCY ST
12" HS 2022
Supply Hydt: With PRV

Water System Valves
- CORPORATION
- CURB STOP
- DIVISION GATE
- VALVE

Water Control Valves
- AIRCOCK
- BLOW OFF

Fittings
- CAP
- LINE CHANGE
- REDUCER
- END OF PIPE

Water Mains
- High Pressure System
- Low Pressure System
- Super High Pressure System
- Transfer Main
- Abandoned Lines

Bypass
- 2" Bypass
- 4" Bypass
- 6" Bypass
- Buildings On Bypass
- Supply Hydrant
- Receiving Hydrant

Phase 2: Cleaning & Lining of 48" Main

(1 inch equals 77 feet)

N

0 95 190 380 Feet

Supply Hydt: With PRV

Supply Hydt: With PRV

12" HS 2022 MOORE AVE

8" HS 1916

8" HS 1939

8" HS 1950

ASHMORE RD

DELLWOOD RD

BRANTWOOD RD

BARR ST

8" LS 1951 ASBURY RD

MAY ST

IOWA ST

CHAMBERLAIN PKWY

12" HS 1910

8" HS 1913

ELMO RD

MORNINGSIDE RD

12" HS 1911

SOUTH LENOX ST

TAHANTO RD

MAPLEWOOD RD

WESTVIEW RD

8" HS 2008

COLONIAL RD

MORNINGSIDE TER

HAVELOCK RD

ROB ROY RD

8" LS 1949 SOUTH FLAGG ST

8" LS 1947

8" LS 1916

CLARIDGE DR

8" LS 1948

SHERWOOD RD

8" HS 1946

HADWEN RD

DURANT WAY

24" LS 1883 (C&L 1985) CHANDLER ST

48" LS 1914

8" LS 1960

HUNTHURST CIR

12" LS 1953

GLENDALE ST

CHICOPEE ST

30" LS 1926

Supply Hydt: With PRV

12" HS 1950

HAMILL RD

6" LS 1957

PERROT ST

6" LS 1944

VAN ST

8" LS 1932 RUTH ST

UNDERWOOD ST

8" LS 1999

RUPERT ST

Supply Hydt: With PRV

8" HS 2022

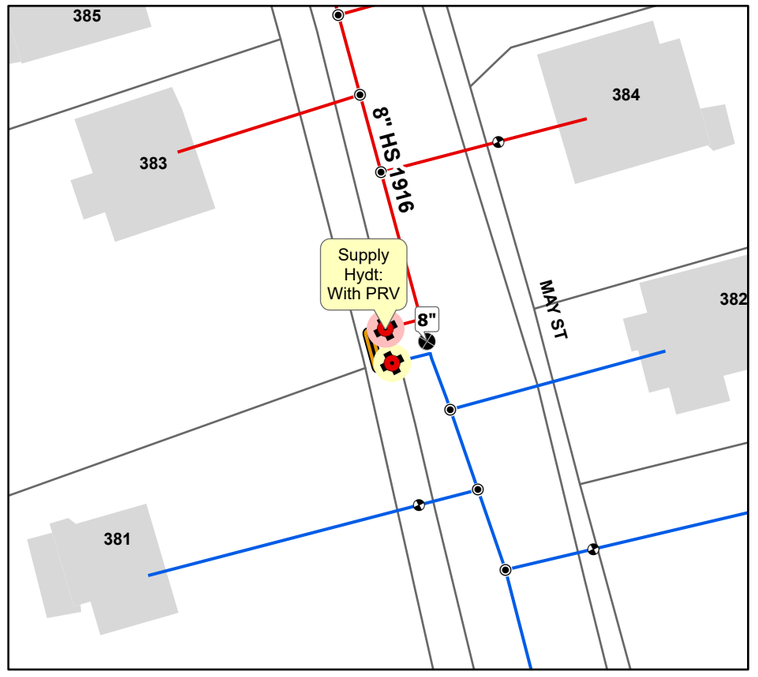
ZENITH DR

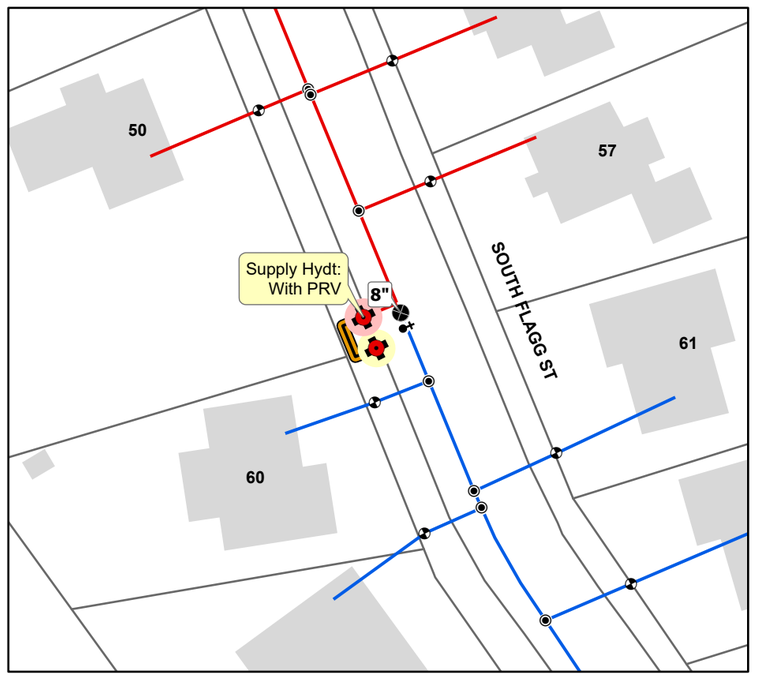
MARCY ST

Bypass Plan Between High Service and Low Service Systems

(1 inch equals 333 feet)

0 195 390 780 Feet





Chandler Street Large Valve Replacement 190-26
BID # 8691-J6

THE BIDDER MUST FILL IN THESE UNIT PRICES. Also carry out all extensions and fill in "Computed Totals."
In case of error or discrepancies, UNIT PRICES govern and written works take precedence over figures.

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
112.0000	UNCLASSIFIED EXCAVATION & BACKFILL		
	_____ Dollars	500.00	$ _____
	($ _____) CY		
120.0000	CLASS "B" ROCK EXCAVATION AND DISPOSAL		
	_____ Dollars	600.00	$ _____
	($ _____) CY		
122.0000	EARTH EXCAVATION BELOW NORMAL GRADE		
	_____ Dollars	400.00	$ _____
	($ _____) CY		
125.0000	SAND BORROW		
	_____ Dollars	1,660.00	$ _____
	($ _____) CY		
126.0000	GRAVEL BORROW		
	_____ Dollars	1,110.00	$ _____
	($ _____) CY		
150.0000	FURNISH AND SPREAD CALCIUM CHLORIDE		
	_____ Dollars	3,120.00	$ _____
	($ _____) LB		
171.0000	INSTALLATION AND MAINTENANCE OF EROSION CONTROLS		
	_____ Dollars	300.00	$ _____
	($ _____) LF		
221.1515	TRENCH EXCAVATION AND BACKFILL, FURNISH AND INSTALL 15" PVC & 15" RCP		
	_____ Dollars	240.00	$ _____
	($ _____) LF		
230.5000	5' MANHOLE BASE		
	_____ Dollars	1.00	$ _____
	($ _____) EA		

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
230.6000 6' MANHOLE BASE			
	Dollars	1.00	$
	($) EA		
230.7000 7' MANHOLE BASE			
	Dollars	1.00	$
	($) EA		
231.5000 5' MANHOLE SECTION			
	Dollars	10.00	$
	($) VF		
231.6000 6' MANHOLE SECTION			
	Dollars	10.00	$
	($) VF		
231.7000 7' MANHOLE SECTION			
	Dollars	10.00	$
	($) VF		
236.0000 MANHOLE FRAME & COVER			
	Dollars	3.00	$
	($) EA		
301.0100 1” Polyethylene Tubing			
	Dollars	160.00	$
	($) LF		
301.0600 6” Zinc Coated CLDI Pipe			
	Dollars	620.00	$
	($) LF		
301.0800 8” Zinc Coated CLDI Pipe			
	Dollars	410.00	$
	($) LF		
301.1200 12” Zinc Coated CLDI Pipe			
	Dollars	170.00	$
	($) LF		

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
301.1600	16” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	770.00	$ _____
301.2400	24” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	1,730.00	$ _____
301.3000	30” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	800.00	$ _____
301.3600	36” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	40.00	$ _____
301.4200	42” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	570.00	$ _____
301.4800	48” Zinc Coated CLDI Pipe		
	_____ Dollars ($ _____) LF	1,100.00	$ _____
301.5000	Polyethylene Wrap for Ductile Iron Pipe		
	_____ Dollars ($ _____) LF	6,200.00	$ _____
302.1000	Cast or Ductile Fittings		
	_____ Dollars ($ _____) LB	38,700.00	$ _____
304.0100	VALVE BOX		
	_____ Dollars ($ _____) EA	57.00	$ _____
305.0600	6” Gate Valve		
	_____ Dollars ($ _____) EA	28.00	$ _____

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
305.0800 8” Gate Valve			
	Dollars	22.00	$
	($) EA		
305.1200 12” Gate Valve			
	Dollars	7.00	$
	($) EA		
305.1600 16" Gate Valve			
	Dollars	4.00	$
	($) EA		
305.1650 16" Horizontal Gate Valve			
	Dollars	3.00	$
	($) EA		
305.2450 24" Horizontal Gate Valve			
	Dollars	9.00	$
	($) EA		
305.3050 30" Horizontal Gate Valve			
	Dollars	1.00	$
	($) EA		
305.3650 36" Horizontal Gate Valve			
	Dollars	3.00	$
	($) EA		
305.4250 42" Horizontal Gate Valve			
	Dollars	5.00	$
	($) EA		
305.4850 48" Horizontal Gate Valve			
	Dollars	2.00	$
	($) EA		
307.2400 24” Butterfly Valve			
	Dollars	1.00	$
	($) EA		

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
309.1000 Service Connection			
	Dollars	6.00	$
	($) EA		
309.2000 Service Box and Curb Stop			
	Dollars	6.00	$
	($) EA		
310.1000 New Hydrant			
	Dollars	18.00	$
	($) EA		
310.3000 Hydrant Removed and Stacked			
	Dollars	14.00	$
	($) EA		
311.4208 42"x8" Tapping Sleeve & Valve			
	Dollars	1.00	$
	($) EA		
312.0600 6” Tie-in			
	Dollars	2.00	$
	($) EA		
312.0800 8” Tie-in			
	Dollars	2.00	$
	($) EA		
313.2000 Thrust Block			
	Dollars	4.00	$
	($) EA		
314.1000 1-1/4” Air Release Valve			
	Dollars	19.00	$
	($) EA		
314.4000 Blow Off Manhole			
	Dollars	7.00	$
	($) EA		

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
316.0200 Temporary 2” By-Pass			
	Dollars	2,500.00	$
	($) LF		
316.0400 Temporary 4” By-Pass			
	Dollars	4,700.00	$
	($) LF		
316.0600 Temporary 6” By-Pass			
	Dollars	3,900.00	$
	($) LF		
317.0000 Temporary Taps on Service Laterals			
	Dollars	55.00	$
	($) EA		
322.1600 16” Inserting Valve			
	Dollars	2.00	$
	($) EA		
323.0000 Line Stop (various sizes)			
	Dollars	2.00	$
	($) EA		
416.0000 CURB REMOVE AND RESET			
	Dollars	120.00	$
	($) LF		
434.0000 SAWING PAVEMENT			
	Dollars	12,500.00	$
	($) LF		
436.0000 RESURFACE TRENCHES TEMPORARY			
	Dollars	3,400.00	$
	($) SY		
436.0100 RESURFACE TRENCHES PERMANENT			
	Dollars	900.00	$
	($) SY		

ITEM NUMBER AND DESCRIPTION		ESTIMATED QUANTITY	COMPUTED TOTALS
442.1000	CONCRETE SIDEWALK REPAIR <25 L.F.		
	Dollars	180.00	$
	($) SY		
446.3000	EXCAVATABLE CONTROL DENSITY FILL (CDF)		
	Dollars	100.00	$
	($) CY		
900.0000	Lump Sum Reserve		
	two hundred fifty thousand and xx / 100 Dollars		$ 250,000.00
912.1000	Chandler Street at Mann St Connection		
	Dollars	1.00	$
	($) LS		
912.2000	Beaver Brook BPS Connection		
	Dollars	1.00	$
	($) LS		
938.2001	Night Work		
	Dollars	20.00	$
	($) EA		
953.2020	SILT SACK		
	Dollars	22.00	$
	($) EA		

TOTAL BID PRICE INCLUDING CONTINGENCY

_____Dollars and _____Cents
(amount in words)

$_____
(amount in figures)

This proposal is based on provisions of the following addenda:

No. _____ No. _____

No. _____ No. _____

All amounts and totals given above will be subject to verification by the City. In case of variation between Unit Bid Price and Totals shown by the Bidder, the Unit Price written in words will be considered to be the bid.

The City reserves the right to reject any and all bids, wholly or in part, and to make awards in a manner deemed in the best interests of the City.

The above estimated quantities form an approximate statement of the extent of the work to be done, based upon the estimate of the Contracting Officer. The City does not expressly or by implication agree that the actual quantity of work will correspond therewith, but reserves the right to increase or decrease the quantity of any class or portion of the work, as may be deemed necessary by the Contracting Officer.