

SECTION 01015

CONSTRUCTION SEQUENCE AND CONSTRAINTS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Constraints pertaining to the Sequence of Work for this Contract.

B. Related Sections:

1. Section 01000 – Summary of Work
2. Section 01200 – Coordination and Meetings
3. Section 01050 – Field Engineering
4. Section 01300 – Submittals
5. Section 01310 – Progress Schedules
6. Section 01700 – Contract Closeout
7. Section 02200 – Earthwork
8. Section 02514 – Ductile Iron Pipe
9. Section 02515 – Steel Pipe and Fittings
10. Section 02516 – Valves and Appurtenances
11. Section 02675 – Disinfection of Water Mains

1.02 SUBMITTALS

A. Submit the following in accordance with Section 01300:

1. Sequence and Schedule of Work complying with the constraints and work hours specified in this Section.
2. Submit thirty (30) days after Notice to Proceed a Progress Schedule of the Work to be performed, sequence of connections, and a progress schedule covering all part of the work that shall be submitted to the Authority. Progress Schedule shall state the method and shall forecast the dates for carrying out each segment of the Work to be completed. Prepare Progress Schedule to include the work constraints under Paragraph 1.03.

A. MILESTONES

1. All work in the pipe Segment shall be completed, including cleaning and lining, structural lining, valve installation, meter installation, pipe installation, testing, disinfection, and flushing, cathodic protection and backfill, prior to the given milestone completion date provided below. Authority water mains shall not be available for isolation until after September 15 of any given year. Authority water mains shall be activated and back in service by May 15 of any given year. The Contractor shall be ready to begin the pipeline activation process no later than four (4) weeks prior to the May 15 activation date.
 - a. Segment 1 = Section W10 from record plan STA 114+52 to STA 144+47: shutdown isolation between 36-inch valve W9-19-A (Bellevue Street, Waltham) and W10-20-A (Main Street, Waltham).
 - b. Segment 2 = Section W10 from Contract 6543 pipe STA 0+00 to STA 29+45: shutdown isolation between 36-inch valve W10-20-A (Main Street, Waltham) and W11-4-D (Pleasant Street, Belmont).
2. Milestone 1A: Segment 1 shall be completed by May 15, 2027.
3. Milestone 1B: The 60-inch valve within Segment 1 on Felton Street (STA 144+37) must be tested and available for operation by Dec 14, 2026.
4. Milestone 2: Segment 2 shall be completed by May 15, 2029.
5. Failure to complete work by the above Milestones will be subject to the immediate assessment of liquidated damages for each workday beyond the Milestone date provided. In addition, the Contractor will be responsible for additional time and materials to isolate, dewater, retest, flush and disinfect pipes if Segments have to be isolated for work a second time.

B. CONSTRAINTS

1. No shutdown of Authority water mains shall occur between May 15 and September 15 due to high water demands.
2. The 60-inch valve within Segment 1 on Felton Street (STA 144+37) shall be installed immediately following the Segment 1 pipeline dewatering.
 - a. Following successful isolation of the pipe segment, the Contractor shall allow a minimum monitoring period of seven (7) calendar days during which the Authority will observe system performance under isolated conditions.
 - 1) No cutting or physical modification of the isolated pipe segment shall occur during this monitoring period.

- 2) The Contractor may proceed with cutting into the pipe only upon written approval from the Authority, confirming satisfactory system operation during the monitoring period.
- b. The 60-inch valve must be tested and available for operation and pipeline isolation immediately following the installation of the valve. The valve must be available for operation by Dec 14, 2026.
- c. The portion of the Segment 1 Authority main between the new valve on Felton Street (STA 144+37) and the isolation valve W10-20-A (Main Street, Waltham), shall be tested, disinfected, and placed back in service immediately following the isolation of the new valve on Felton Street (STA 144+37)
3. 60-inch steel pipe replacement and associated valves within Segment 2 from STA 0+00 to 7+50 shall be completed during the first shutdown isolation of Segment 2 between W10-20-A (Main Street, Waltham) and W11-4-D (Pleasant Street, Belmont).
4. Meter 202 in Waltham, which services Waltham, may be completed at any time during the contract period, but must be in service during the isolation of Segment 1.
5. Meter 152 in Belmont, which services Arlington, may be completed at any time within the contract provided Meter 171 in Arlington is active.
 - a. The Arlington Water Department and Town of Belmont must approve the schedule and work for Meter 152 prior to starting construction.
 - b. Work within public roadways owned or controlled by MassDOT shall be subject to the terms of the MassDOT Permit to Access State Highway.
6. All Authority pipe isolated for segment shutdowns shall be disinfected.
 - a. If 60-inch butterfly valves within Segment 2 are installed during the first isolation of Segment 2 and are to be used for a second isolation during future work, the Contractor is required to complete a full disinfection of the Authority pipe to the limits of the initial shutdown described in 1.03.A.1.b.
 - b. The Contractor shall also disinfect the Authority pipeline from W11-4-D to W11-6-A. The additional limit of disinfection is required due to extended duration of dead-ended pipeline on the east side of the Segment 2 isolation (W11-4-D). Disinfection of this segment will result in isolation of the Belmont Pump Station and Belmont Meter 88 and shall be coordinated with the Authority and Town of Belmont.
 - c. The Contractor shall also disinfect the Authority pipeline from WS-1-A to WS-9-D (Watertown Branch). The additional limit of disinfection is required due to the extended duration of this pipeline being isolated as a result of the Segment 1 isolation. The Watertown Branch pipeline shall be

disinfected during the same time period as when the disinfection is done between the new valve on Felton Street (STA 144+37) and the isolation valve W10-20-A. Disinfection of this segment shall be coordinated with the Authority and City of Watertown and City of Waltham.

7. Work Schedule:

- a. Work shall only be performed between 7:00 a.m. to 3:30 p.m. Monday through Friday, except as further restricted as follows:
 - 1) Work hour restriction on Linden Street, Waverley Oaks Road, and Beaver Street in Waltham is 9:00 a.m. to 3:30 p.m.
 - 2) Work hour restriction on Pleasant Street in Belmont is 9:00 a.m. to 3:00 p.m.
 - 3) Equipment and machinery shall not be started or operated prior to 7:00 a.m. or later than 7:00 p.m. except as otherwise noted.
 - 4) Deliveries shall only be accepted between the hours of 9:00 a.m. and 2:00 p.m. and shall be unloaded within the specified work hours.
 - 5) ***The Contractor may submit a written request to the Authority to work outside the normal work hours for certain activities. Such requests will be reviewed and considered on a case-by-case basis. Excavation dewatering, ventilation, and temporary systems to support the work are exempt from normal work hour restrictions and may operate continuously as required.***
- b. Authority Holidays - Do no work on the following holidays:
 - 1) New Year's Day, Martin Luther King Jr. Day, President's Day, Patriot's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day.
 - 2) Authority observed holidays which fall on a Saturday will be observed by the Authority on Friday, the day before. Authority observed holidays which fall on a Sunday will be observed on Monday, the day after.
 - 3) No work shall occur after 12:00 p.m. (noon) on the day before the following major holidays: Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas, and New Year's Day.
- c. Work in MassDOT Jurisdiction
 - 1) Comply with all MassDOT permit requirements as stated in Appendix H.

- 2) Work along Route 60 Pleasant Street in Belmont, MA in the vicinity of the Route 2 Off-Ramp and Lake Street: 9:00 AM through 3:00 PM Monday through Friday.
8. Winter Moratorium in Belmont is in effect November 15 to April 15. Work may only take place subject to Town of Belmont approval and compliance with Belmont Street and Trench Opening Permit Regulations as included as Appendix J.
9. *Winter Moratorium in Waltham is in effect November 15 to April 15. Work may proceed during municipal winter moratorium period provided the Contractor obtains written approval/permits from the respective Municipality and complies with all municipal conditions, including Waltham Street Opening, Curb Cut & utility Permit Rules and Regulations as included as Appendix K. The Contractor is responsible for coordinating the schedule with MWRA and Waltham, securing all approvals in advance, and submitting the proposed work plan schedule per the Contract Documents.*
10. Winter Moratorium within MassDOT jurisdiction is in effect November 15 to April 15. Work may only take place with prior approval from the District Highway Director or an authorized Representative.
11. Steel Plates in the Traveled Way
 - a. During the Winter Moratorium Period steel plates are not allowed on any street without prior approval by the Municipality.
12. Work within existing easements:
 - a. Work within an easement shall be limited to a single sixty (60) day period.
 - b. Upon completion of work within an easement, the area shall be immediately restored to existing condition and use of this easement will no longer be permitted.
13. Shutdowns, flushing, and start-ups of existing MWRA water mains:
 - a. Will not be permitted within four (4) days before or one (1) day after the following Authority Holidays:
 - 1) New Year's Day, Independence Day, Thanksgiving, Christmas.
 - b. Will not be permitted within two (2) days before or after the following Authority holidays:
 - 1) Martin Luther King Day, President's Day, Patriot's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veteran's Day.
 - c. Will only be allowed Monday through Thursday on any given week subject to the above restrictions.

d. DCR Beaver Brook Spray Deck and Playground (621 Trapelo Rd, Belmont, MA 02478) water service will be impacted with the shutdown of the Authority pipeline. The Contractor shall notify and coordinate with DCR prior to pipe shutdown.

14. Coordination Constraints

a. MBTA operates bus routes along Route 60 – Pleasant Street and Lake Street in Belmont. Work on this portion of the project shall be coordinated with MBTA Bus Operations Division, including but not limited to:

- 1) Maintain pedestrian access and egress at all times at all posted MBTA Bus Stops affected during construction. These areas must remain accessible to handicap persons per ADA requirements.
- 2) Coordinate temporary bus stops or relocate existing bus stops. Provide temporary bus stops in accordance with MBTA regulations. MBTA shall approve final language on the signs prior to installation in the work area.
- 3) Print, laminate, and post customer advisories two (2) weeks before any diversion, two (2) weeks before any diversion ends, and to indicate any changes to the timeline during the diversion. MBTA to provide customer advisory language.

b. Steel plates may be left on the roadway overnight. The length of steel plates used shall be kept to a minimum, to cover the open excavation where work has ended for that shift. Plates shall be secured and no bouncing of plates shall be allowed. Steel plates are not permitted to be left on the roadways over a weekend. No steel plates shall be permitted to be left on the roadways when any snowfall is predicted in the forecast.

c. No tree or limb shall be cut other than those indicated on the Drawings.

1.04 MISCELLANEOUS REQUIREMENTS

A. The Contractor shall place temporary paving at the conclusion of each work week in roadways where excavations have been backfilled. The Contractor shall place temporary paving on trenches and excavations prior to being subject to vehicular traffic. Permanent paving shall be placed after ninety (90) days but no later than one hundred and twenty (120) days after temporary paving installation.

1. Paving in areas under MassDOT jurisdiction shall be completed in accordance with the time restrictions in the MassDOT Access Permit, Appendix H.

B. Contract restrictions regarding work hours, noise limits and control of pollution, dust, debris, sediment and traffic shall apply to the Contractor's use of all property including private property.

C. Provide onsite the following pipe repair products for each size of water pipe in the work area prior to beginning excavations or connections to existing water mains. The Contractor

shall submit a list of all repair products in accordance with Section 01300. All materials shall meet the requirements of Sections 02514, 02515 and 02516 and repaired pipes shall be disinfected and flushed in accordance with Section 02675.

1. Two (2) Pipe Repair Clamp/Sleeves for each size and material of pipe to be connected to.
2. One (1) 20-foot length of Pipe for each diameter and material of pipe to be connected to.
 - a. If the Authority approves pipe removal prior to new pipe delivery, existing pipe segments removed shall be stockpiled nearby in case an emergency closure is required.
 - b. Where existing pipe removal will facilitate both cleaning and lining and butterfly valve installation, the Contractor may use the existing pipe segment that was removed to temporarily close the pipe in an emergency if service must be restored. Prior to butterfly valve installation the temporary closure piece must be removed in its entirety.
3. Two (2) restrained flexible couplings or (2) steel closure pieces for welded closures for each length of pipe provided diameter and material of pipe to be connected to.
4. Pipe repair products shall be turned over to the Authority upon completion of the pipeline work.

D. Inspection for Substantial Completion

1. Provide all labor, tools, materials, equipment, electrical power, water, air instruments, pumps, access and traffic controls and police details as required for final cleaning and inspection of all components of the Work as specified in Section 01700.
2. Successful completion of inspections is a condition precedent to Substantial Completion. (Please refer to the General Conditions of the Contract).

E. All work within the public way is subject to the requirements of the Municipality's street opening permit.

G. It is assumed that proposed new valve locations and pipe replacement locations will also be used as access pits for cleaning and lining operations.

1. Initial excavation in roadways shall be completed to accommodate cleaning and lining operations only. Once cleaning and lining operations are completed, the excavation shall be expanded to accommodate valve installation.
2. The Contractor shall determine availability of new pipe and valves prior to removal of pipe at new valve or pipe installation locations to ensure work can be completed in the designated construction timeframe for each pipe segment described in Section 1.03.A Milestones.

3. The Contractor shall consider delivery lead times for new pipe and valves when scheduling cleaning and lining operations to ensure access pits are not left idle after cleaning and lining is complete.
4. Valves and new pipe shall be delivered and on site prior to the Contractor cutting the pipe for removal and/or cleaning and lining operations.
 - a. The Contractor is to pick up the 60-inch butterfly valves at the Authority's Weston Reservoir Headquarters & Chlorine Building located at 115 Newton St, Weston, MA 02493. The Contractor is to coordinate pickup with the Authority; Billy Krukowski, Manager of Western Maintenance, phone 508-424-3651.

H. In addition to, and not in limitation of the foregoing, if, in the opinion of the Authority, the progress of the Work is insufficient to achieve the scheduled completion of the Contract, the Contractor shall be required to take the necessary measures to achieve completion of the Work by completion date of the Contract. Such measures may include, but shall not be limited to, employing additional equipment and personnel, working overtime, added shifts or any combination thereof, all at no additional cost to the Authority.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

** END OF SECTION**