



Bristol Water and Sewer Department

Water and Sewer Service Work Requirements For New Installations, Repairs, Replacements and Disconnection

All Work Requirements

- A permit application must be submitted online at www.bristolctwatersewer.gov under Permits/Forms.
- A Call Before You Dig (CBYD) must be taken out for the property by the contractor.
- A City or State Excavation (Road Opening) Permit must be taken out by the contractor prior to submitting water or sewer permit.
- Contractor must hold a minimum State of Connecticut P-7 license for all Water work and/or a State of Connecticut P-7 license for all Sewer work.
- License holder must be on site while all work is being performed. If license holder is found not to be on-site while work is being performed, the Bristol Water and Sewer Department may cancel inspection, revoke application and suspend any future application requests by license holder.
- Contractor shall contact the Bristol Water and Sewer Department and complete a Permit prior to scheduling any work.
- Copy of CBYD and Excavation Permit MUST be submitted to the Bristol Water Department with Permit.
- All fees must be paid at the time the Permit is submitted to the Bristol Water and Sewer Department.
- No Work shall be scheduled until the Permit, all permits and fees are complete.
- For non-emergency work, a minimum of 4 business days may apply for scheduling any work. Emergency work shall be scheduled to allow for inspections to be conducted during normal Bristol Water and Sewer Department business hours.

- For Emergency Work, Contractor shall contact the Bristol Water and Sewer Department office after completing Permit to schedule prior to any excavation is performed.
- No person other than a Bristol Water and Sewer Department employee may operate a curbstop, gate valve or fire hydrant. Illegal operation will result in a Tampering Fine under the current Miscellaneous Charges approved by the Board of Water and Sewer Commissioners and no work shall be approved until the fine is paid in full.
- No person other than a Bristol Water and Sewer Department employee may remove a meter or meter seal. Illegal operation will result in a Tampering Fine under the current Miscellaneous Charges approved by the Board of Water and Sewer Commissioners no work shall be approved until the fine is paid in full.

ADDITIONAL REQUIREMENTS

Water Service Installation, Repair, Replacement or Disconnection for Demolition

- All work shall be performed in accordance of the Bristol Water and Sewer Department's current specifications.
- All water mains and services must be installed with a minimum 56 inches of cover and must be a minimum 10 horizontal feet from any sewer main, sewer service or potential source of contamination.
- Contractor shall provide a safe trench and shoring shall be installed per OSHA regulations. If trench is deemed unsafe by the Bristol Water and Sewer Department personnel, the contractor shall immediately make any corrections required to provide a safe trench. The Bristol Water and Sewer Department personnel shall not enter any trench deemed to be unsafe or in violation of OSHA regulations.
- All work shall be inspected by Bristol Water and Sewer Department prior to any backfilling. If any area is backfilled prior to inspection, the Bristol Water and Sewer Department will require the area to be re-excavated before approving.

Disconnection of Water

- Contractor must schedule work with the Bristol Water and Sewer Department's Assistant Superintendent of Construction a minimum four (4) days prior to work being performed.
- Contractor must schedule to have the water meter removed with the Bristol Water Department's Assistant Superintendent of Metering and Administration a minimum four (4) days prior to work being performed.
- The Contractor shall excavate the water service at the Water Main and the Bristol Water and Sewer Department personnel will disconnect the service at the main and cap the corporation. Only Bristol Water and Sewer Department personnel are authorized to operate corporation stop. Contractor shall use care

when digging around any water main or service and shall hand dig area as required to ensure water main or service pipes are not damaged.

- Upon disconnection, the Bristol Water and Sewer Department will issue a Service Disconnection Letter to the City of Bristol Building Department indicating that the water meter to the property has been removed and that the service has been properly disconnected.

Sewer Service Installation, Repair, Replacement or Disconnection for Demolition

- For new service connection replacing Septic Tanks, Hollow Leaching Structures (galleries, dywells, etc.) or Cesspools; **MUST** pull a application/permit with the Bristol-Burlington Health District. Permit must be submitted to the Bristol Water & Sewer Department with Permit.
- Contractor shall provide a safe trench and shoring shall be installed per OSHA regulations. If trench is deemed unsafe by the Bristol Water and Sewer Department personnel, the contractor shall immediately make any corrections required to provide a safe trench. The Bristol Water and Sewer Department personnel shall not enter any trench deemed to be unsafe or in violation of OSHA regulations.
- All work shall be inspected by Bristol Water and Sewer Department prior to any backfilling. If any area is backfilled prior to inspection, the Bristol Water and Sewer Department will require the area to be re-excavated before approving.
- It will be the contractor's responsibility to follow code when doing any repair work. Should the existing sewer not meet current code for backwater valves, it will be mandatory it be made compliant to current code and should follow above guidelines.
- All new Connections to any sewer main, shall require a gravity backflow preventer as noted in the City of Bristol Code of Ordinances Section 22-19 F(4)

CITY CODE OF ORDINANCES SECTION 22-19

(f) Standard design and construction requirements

(4) Installation. Building sewers and connections shall be laid to a true rate of grade of not less than one (1) foot per hundred (100) feet; shall have not less than three (3) feet of cover at all points; and no other pipe shall be installed within three (3) feet of the building connection; except that conditions may require exceptions as authorized by the director. **All building sewers and connections shall have a gravity back flow preventer.** The size, type, installation and location shall be installed to provide ready access for inspection, service and repair.

- Should the backflow be put inside the residence a plumbing permit with the building department will be required and a 6" clean out will be required within 5' of the buildings foundation exterior

- Should the backflow be put outside it will be required that a 6” Clean Check be placed on the sewer line within 5’ of the buildings foundation exterior

SECTION 715 - BACKWATER VALVES

715.1 Sewage backflow. Where plumbing fixtures are installed on a floor with a finished floor elevation below the elevation of the manhole cover of the next upstream manhole in the public sewer, such fixtures shall be protected by a backwater valve installed in the building drain, or horizontal branch serving such fixtures. Plumbing fixtures installed on a floor with a finished floor elevation above the elevation of the manhole cover of the next upstream manhole in the public sewer shall not discharge through a backwater valve.

2015 International Plumbing Code

Disconnection of Sewer

- Contractor must schedule work with the Bristol Water and Sewer Department’s Assistant Superintendent of Construction a minimum four (4) days prior to work being performed.
- The Contractor shall excavate the sewer service at the Street Line. Contractor shall disconnect the service and cap the service. Contractor shall use care when digging around any sewer main or service and shall hand dig area as required to ensure sewer main or service pipes are not damaged.
- Disconnection must be inspected and approved by the Bristol Water and Sewer Department prior to backfilling.
- Upon disconnection, the Bristol Water and Sewer Department will issue a Service Disconnection Letter to the City of Bristol Building Department indicating that the sewer service to the property that the service has been properly disconnected.

Bristol Water and Sewer Department
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Bristol Water and Sewer Department

Standard Water Main and Service Installation Specifications

(Revised June 17, 2020)

A. GENERAL

All work shall be in accordance with the current Bristol Water and Sewer Department Rules and Regulations.

Installation of mains and services shall be performed by a person with a valid Connecticut P-1 or P-7 license.

B. PERMITS, FEES AND INSPECTION

All required State of Connecticut Department of Transportation or City of Bristol Road Opening Permits must be taken out prior scheduling any work.

All fees to the Bristol Water and Sewer Department must be paid in full a minimum 4 business days prior to scheduling any work.

Estimates for taps and inspections will be prepared by the Bristol Water and Sewer Department and shall conform to the current "Bristol Water and Sewer Department Miscellaneous Charges".

All inspections shall be scheduled with the Bristol Water and Sewer Department a minimum 4 business days prior and fees for inspection within City of Bristol or State of Connecticut roadways shall be waived at the discretion of the Bristol Water and Sewer Department.

All work requiring the shut down of existing mains must be approved by the Bristol Water and Sewer Department 2 weeks prior and must be scheduled a minimum 4 business days prior to work.

All water main inspections within Private developments shall be inspected by the Bristol Water and Sewer Department or its representative at an hour fee.

C. INSTALLATION PROCEDURES

1.01 EXCAVATION

Contractor shall perform all excavation and installation of the water main and appurtenances.

All excavation shall be in accordance with City of Bristol or State of Connecticut Department of Transportation specifications

The water main must be installed a minimum horizontal distance of 10 feet and a vertical distance of 1 ½ feet from existing or proposed sanitary sewer or septic system as per State of Connecticut Public Health Code.

Gravel or sand cushion below the pipe shall be provided depending on soil conditions.

1.02 INSTALLATION OF PIPE AND FITTINGS

The interior of all pipe and fittings shall be thoroughly cleaned of all foreign matter before being lowered into the trench, and shall be kept clean during laying operations by plugging or other approved method. The full length of each section of piping shall rest solidly upon the pipe bed, with recesses excavated to accommodate bells and joints. Any pipe that has the grade or joint disturbed after laying shall be taken up and relayed. Pipe shall not be laid in water, or when trench or weather conditions are unsuitable for the work, except by permission of the Bristol Water and Sewer Department or its representative. Water shall be kept out of the trench until the joints have been completed. Any section of pipe found to be defective before or after laying shall be immediately removed from the construction site and replaced by the contractor.

Where connections are made between existing mains and new mains a new gate valve shall be installed to prevent contamination. All connections between existing mains and new mains shall require an Outside Diameter (O.D.) be taken on the existing main prior to cutting or altering the pipe.

All installations shall be inspected prior to backfill by the Bristol Water and Sewer Department or its representative. Any area backfilled prior to inspection shall be re-excavated at the discretion of the Bristol Water and Sewer Department or its representative.

All pipe, fittings, valves and appurtenances shall be carefully inspected for defects immediately prior to placing the trench. Any pipe, fittings, valves or appurtenances found to be defective shall be immediately removed from the construction site.

Pipe shall be Ductile Iron, Class 52, tyton joint and installed with two bronze wedges at each joint, unless mechanical or restrained joint pipe is required by the Bristol Water and Sewer Department or its representative.

All fittings shall be ductile iron, mechanical joint. All fittings shall be restrained with mechanical joint restraints according to manufacturer's specifications.

All pipes and fittings shall be installed at a minimum depth of 56 inches and a maximum 5 ½ feet below finished grade unless otherwise approved by the Bristol Water and Sewer Department or its representative prior to installation.

All pipe shall be handled into the trench carefully and in a workmanlike manner. The contractor shall furnish all slings & straps to permit satisfactory support of all parts of pipe when it is being handled.

Metallic warning tape shall be installed a foot above all pipe and services.

1.03 BACKFILL

Suitable material, as determined on site, shall be required for backfill. Water service shall have sand bedding and 1 foot minimum sand cover on top of pipe with water bury tape 1 foot above service line. Removal of surplus or objectionable materials shall be the responsibility of the contractor. Backfill shall not contain any rocks or stones over 3 inches in diameter. Minimum 200 mm compaction layers with approved spoils or sand or gravel will be accepted. Compaction should meet all State of Connecticut, Department of Transportation specifications for roads, bridges and incidental construction, Form 814.

2.01 JOINTING PIPE

Ends of the pipe shall be thoroughly cleaned before joint is made. The surface of the joint shall be lubricated in accordance with the manufacturer's directions. The lubricant shall be of type recommended by pipe manufacturer and in accordance with AWWA specifications. Pipes shall be jointed in strict accordance with pipe manufacturer's directions and work shall be done by skilled workmen.

No pipe or fittings shall be laid in water or on a frozen trench bottom or when, in the opinion of the Bristol Water and Sewer Department or its representative, the trench conditions or the weather is unsuitable for such work.

2.02 JOINT RESTRAINT

Joint Restraints shall be installed on all joints at a minimum 40' prior to and after all mechanical bends. Thrust blocks shall only be used in conjunction with joint restraints to restrain water main or appurtenances where indicated by the Bristol Water and Sewer Department or its representative. When connecting to existing water mains, restraint shall be made using 2 friction clamps and treaded rod and thrust blocks as directed by the Bristol Water and Sewer Department or its representative.

2.03 INSTALLATION OF VALVES

Valves shall be installed on all tees at a maximum 2 feet from the connection with the tee. In line valves shall be installed at a maximum of every 800 feet of pipe or as directed by the Bristol Water and Sewer Department or its representative. Each valve shall be plumb to grade and shall be equipped with a gate box set vertically with top even with finished grade.

2.04 INSTALLATION OF HYDRANTS:

Hydrants shall be installed with a Ductile Iron hydrant anchor tee, class 250 or better, mechanical joint ends, cement-lined, bituminous seal coated, complete with accessories and conforming to ANSI/AWWA C110/A21.10-93.

Hydrants set shall have a 2'x2'x2' stone drainage pit excavated below them. The pits shall be filled with coarse gravel or crushed stone mixed with coarse sand to a level 6 inches above the drain ports. All pits must be wrapped with a filter fabric prior to backfill. Thrust blocking may be required depending on soil type.

A minimum of 6 feet of six-inch diameter ductile-iron pipe, class 52, cement lined, conforming to ANSI/AWWA C151/A21.21.51-91 shall be used between the hydrant and the secondary valve.

All nozzles shall be national standard thread and the hydrant breakaway traffic flange shall be installed no less than 2" and no more than 4" above finished grade. Digging of swales or mounding of grade will not be permitted. Hydrants will have a nominal 5" barrel, 6" inlet base with mechanical joint end, breakaway bolts at the flange, and a minimum 5'6" bury. The actual bury will be determined in the field.

2.05 DEFLECTION

Wherever curves are negotiated by deflecting successive lengths of pipe, the deflection of each length of pipe shall not exceed the manufacturer's recommendations. All mechanical joint bends shall be restrained with approved glands. Poured thrust blocks using 3,000 Psi concrete and rodding may be additionally required by the Bristol Water and Sewer Department or its representative. Thrust blocks must be allowed to cure for a minimum of three days, before the water main can be filled. 90 degree bends shall only be permitted with prior approval by the Bristol Water and Sewer Department or its representative.

2.06 TESTING

All water mains shall be hydrostatic tested for leakage at 200 Psi for ½ hour and 135 Psi for 1 ½ hours. Leakage shall be measured in gallons by pumping the water main back up to the required pressure at the end of the test and must not exceed allowable leakage specified in ANSI/AWWA C600-93 section 4.2.2 or its latest revision. All water used to fill, flush and hydrostatic test the main must be potable water. Any water to be used from any water source other than the

Bristol Water and Sewer Department must be tested for bacteria by a State of Connecticut certified laboratory and test results must be submitted to the Bristol Water and Sewer Department prior to use.

The contractor shall furnish all labor and equipment necessary for tests. Tests shall be made by section or as directed by the Bristol Water and Sewer Department or its representative. Air shall be expelled by filling the main slowly and permitting air to escape at the high points. Air bleeders shall be installed at all high points and in locations directed by the Bristol Water and Sewer Department or its representative.

All valves shall be operated only by Bristol Water and Sewer Department personnel.

In the event the leakage exceeds maximum allowable amount, the contractor shall take such steps that are required and necessary or as are directed by the Bristol Water and Sewer Department to reduce leakage to below the allowable maximum amount and shall replace any and all defective joints or piping and the test shall be repeated until the leakage requirements are complied with. No leak shall be repaired with a wrap around or bell/joint repair band.

All visible leaks shall be repaired in any event. Contract must assure water used for testing has chlorine residual of 1 mg/L. Testing water may then remain in system. The contractor shall make all necessary arrangements for obtaining supply, furnish all pumps, piping, hose, etc., and remove same when work is completed. All work shall conform to AWWA C600-65 or the latest revision thereof.

All testing must be inspected by the Bristol Water and Sewer Department or its representative and shall be conducted during normal business hours of the Bristol Water and Sewer Department.

2.07 CHLORINATION

All water mains shall be disinfected by the installer to a minimum 50 Parts Per Million (PPM) in accordance with ANSI/AWWA C651a-90 or its latest revision using the tablet or continuous feed method. After disinfection, water must remain in the pipes a minimum 24 hours at which point, the water main shall be flushed and the free chlorine residual after flushing shall be a minimum 0.2 PPM to a maximum 1.0 PPM. The Bristol Water and Sewer Department or its representative shall collect a bacteria sample and have it analyzed by its laboratory for total coliform. In the event the bacteria sample indicates a presence of coliform, the water line shall be flushed and resample by the Bristol Water and Sewer Department. If the second set of samples indicates the presence of coliform the water main shall be re-chlorinated by and at the expense of the contractor. No water main shall be approved by the Bristol Water and Sewer Department or its representative until a sample with zero coliform is obtained.

It shall be the contractor's responsibility to dispose of all chlorinated water used to disinfect a water main. This shall be accomplished in accordance with the federal CLEAN WATER ACT and current Connecticut D.E.P. standards for disposal.

2.08 TAPS AND SERVICES

All water main and service taps shall be performed by Bristol Water and Sewer Department personnel with the exception of taps on Private Water Mains.

All service installations shall be inspected by the Bristol Water and Sewer Department prior to backfill.

All services 2 inches and under shall be completely exposed and energized with water to full pressure by the Bristol Water and Sewer Department prior to backfill.

All services 4 inches in diameter and over shall be installed as water main and shall be hydrostatic pressure tested.

All services 2 inches and under shall be of Type K Copper tubing and all connections shall be made with compression type fittings.

Any services 2 inches and under that are backfilled prior to inspection shall be re-excavated and inspected by the Bristol Water and Sewer Department or its representative prior to a water meter being installed.

2.09 AS-BUILTS DRAWINGS

The contractor is responsible to submit As-Built field drawings with detailed location assessment of all valves, fittings, hydrants and service valves to the Bristol Water and Sewer Department within one month of completion.

At least two ties are required for each water main valve, hydrant secondary gate valve and water service valve.

All valve boxes must be at grade prior to approval by the Bristol Water and Sewer Department or its representative.