

AKRON PUBLIC UTILITIES BUREAU
WATER MAIN NOTES
3-5-2018

1. The contractor shall supply all of the water main materials, including the ductile iron pipe, fittings and fitting restraints, hydrants and valves, polyethylene encasement, all other appurtenances and any items specially itemized as required for the water main installation. All water main materials shall comply with the City of Akron, Akron Engineering Bureau, Construction and Material Specifications (Latest Edition) Item 715, Water Main Materials. Installation of all water main materials shall be in accordance with Section 250, Water Mains. Submittals of material specifications are to be made to the Utilities Engineer prior to purchasing material.
2. Must maintain a ten-foot minimum horizontal clearance from edge of all water main pipe to edge of all sanitary and storm sewer pipes and/or force main pipes.
3. Must maintain an 18-inch minimum vertical clearance from edge of all water main pipe and/or service lines to edge of all sanitary sewer and storm pipes where they cross.
4. The contractor must maintain a 12-inch minimum vertical clearance from edge of all water main pipes to the edge of all direct burial conduits, concrete encased electrical conduits, light pole bases, and hand hole pull boxes.
5. The contractor must maintain a 36-inch minimum horizontal clearance from edge of all water main pipe to edge of all direct burial conduits, concrete encased electrical conduits, light pole bases, and hand hole pull boxes.
6. Where water mains cross sewer trenches, the trench is to be backfilled with approved granular material.
7. Approved pipe fittings, bolts, etc., for Akron system water main installation:

Pipe: Minimum thickness Class 53 ductile iron per AWWA C151 specifications, with cement-lining per AWWA C104. Labeled polyethylene encasement per AWWA C105 is required on all pipe, fittings, and valves.

Pipe Joints: Push-on joints (Tyton, Bell-Tite, etc.), per AWWA C151 specifications with plain or restraining rubber gaskets per AWWA C111 specifications.

Fittings: Class 350 ductile iron compact fittings per AWWA C153 or full thickness castings per AWWA C110 are acceptable, with mechanical joint ends and ductile iron follower glands. Anchor tees and anchor pipe are required on all hydrant runs between the tee and hydrant run valve.

Restrained pipe systems: Push-on joint with Field Lock (4 through 16-inch only) or Fast Grip gaskets (4 through 16-inch only), or mechanical joint with restrained follower glands, and 6 ounce zinc anode caps on every bolt thread. Where specified, TR Flex or Flex-Ring pipe and fittings are required on all 16-inch or larger pipe diameters.

Restrained fitting devices: All valves, bends, offsets, hydrant inlets, caps, plugs, and branches of tees and wyes must be restrained using mechanical joint with restrained follower glands or restraining gaskets. Hardwood blocking is required for all diameters 4 through 8-inch, concrete blocking and strapping for all diameters 12-inch and larger.

Concrete blocking is required on all fire lines (regardless of pressure) and on all diameters in areas over 100 psi. Restrained joints for diameters 16-inch and under shall be installed for a length of 30 feet on each side of a valve, bend or offset using Field-Lock or Fast-Grip restraining gaskets or mechanical joint with restrained follower glands. Restrained joints for diameters 20-inch and larger, shall be installed for a length of 30 feet on each side of a valve, bend or offset using mechanical joint with restrained follower glands.

Mechanical Joint T-head Bolts: All mechanical joints shall be made with Cor-Ten or construction-grade alloyed ductile iron bolts. T-head bolts shall be ½-inch longer than standard length and must include a 6 oz. zinc anode cap on every bolt thread.

Hydrants: Akron-style Mueller "Centurian" Model A423; Kennedy "Guardian" Model K-81A; EJ "FlowMaster" CD250; American Flow Control Model B62B with 6-inch inlet, American Flow Control Model B84B with 8-inch inlet. Threads shall be Akron style as shown on Akron Water Works Standard Construction Drawings F-3258 and F-3440. Hydrants must be lead-free per NSF 61-G.

Gate Valves: Resilient-seat wedge (RSW) valves with restrained mechanical joints. Valves shall have non-rising stems and shall open to the right (clockwise).

Butterfly Valves, 16-inch and up: Restrained mechanical joint or shouldered (not grooved) Victaulic ends with Style 44N couplings and stainless steel 316 bolts. Rubber seals in the valve must be replaceable. Flanged end or wafer-style valves are not acceptable.

Valve Boxes: Bibby, Tyler, Star (heavy duty only), or East Jordan brands are acceptable for compatibility.

Curb Boxes: Riser pipe must be of yoloy corrosion resistant material. Plug must be cast iron and thread into a brass ring.

8. Compacted premium backfill is required for underground construction under or within three feet of any proposed or existing sidewalk or pavement. The backfilling shall conform to Section 551.09 of the City of Akron Construction and Material Specifications, Latest Edition.
9. Any existing water mains, hydrants, valves, valve boxes, meter vaults, service lines, or curb boxes that are damaged or must be adjusted and/or moved must be repaired, adjusted, moved and/or replaced at the contractor's expense. Contact Doug Zwahlen, Water Distribution Supervisor, at (330) 375-2420 to schedule this work.
10. No taps for water services shall be made until after the mainline has been tested and sterilized. All taps 2-inch and smaller shall be made by the contractor and inspected by the City of Akron. All brass fittings used shall be lead-free per NSF 61-G.
11. All water main construction shall be inspected by the City of Akron. Notify the City of Akron (Tony Puglia or Doug Zwahlen) at (330) 375-2420 at least 48 hours prior to beginning construction and for all preconstruction meetings.
12. Prior to acceptance, the water line shall be pressure tested, as specified in AWWA C600, and disinfected as specified in AWWA C651 latest revisions, by the contractor.
13. Use extreme caution when excavating in the area of existing water main pipes, valves, hydrants and thrust blocks.

14. The contractor shall supply a temporary safe water service to all homes that will have their water service interrupted by this construction.
15. The proposed facilities must maintain a minimum of 35 psi pressure delivered to the curb stop during normal operating conditions.
16. Booster pumps are not permitted on service connections.
17. Any connection to existing ductile iron water main shall be made with a ductile iron solid sleeve with restraining gland. Any connection to existing cast iron water main may be made with a cast coupling or ductile iron solid sleeve with restraining gland.

Optional

1. Proper and suitable tools and appliances for the safe and convenient handling and laying of pipe shall be used, and great care shall be taken to prevent the pipe coating from being damaged, particularly on the inside of the pipe. After approval by the contractor of the pipe at the Triplett Blvd. store yard, any damage incurred in hauling, loading, unloading, delivering, etc., shall be at the contractor's expense, and in the case damage occurs, the contractor shall replace any materials so damaged or reimburse the City for any damage incurred in this operation.
2. All hydrants, valves, plugs, caps, and other specified fittings shown to be removed by the contractor are to be salvaged and delivered to the Akron Water Department store yard at 1460 Triplett Blvd. Cost of this work shall be included in the price bid for Item 254, Ductile Iron Pipe.
3. Existing water main to be abandoned, as designated on the plans, shall be abandoned per Item 202.11 for diameters 12 inches and larger or Item 251.18 for diameters less than 12 inches.
4. After the installation of the proposed water main is complete and after the line has passed the bacteria test, the contractor is to assist Public Utilities in the transfer of water services from the old water main to the new water main. While transferring water services, the contractor is responsible for the excavation required to expose the water service at the right-of-way and at the new main with a typical 3' x 5' trench. Cost of this work is to be included in Item 252, Trenches for Water Services in Earth.
5. The contractor is responsible for all excavation required assisting Public Utilities in the installation of new and renewed copper services on new and existing water mains. The cost of this work shall be included in Item 252, Trenches for Water Service in Earth.
6. In casing pipe, all joints shall be restrained by using either Field Lock or Fast Grip restraining gaskets (4 through 12-inch only) or boltless (TR Flex) anchors. Carrier pipe shall have stainless steel casing spacers with plastic runners. Sand shall be blown into the annular space. Wooden runners and straps are not allowed.
7. Pipe shall be backfilled to one foot above the pipe with bank run sand, Item 604 (no crushed concrete allowed). Unless otherwise specified, backfill under roadways from one foot above pipe to bottom of pavement shall be Item 304 gravel.