

City of Angola

MATERIAL SPECIFICATIONS FOR INSTALLATION OF WATER MAINS AND SERVICE LATERALS

WATER MAIN MATERIAL:

- 1.) **Water main: min. class 50 type water main installed as per AWWA Standard C600 latest issue Installation of Ductile-Iron Water Mains and Their Appurtenances.**
 - a.) All water main extensions shall have bacteria samples taken at every 1200 ft. intervals and at all dead-ends.
 - b.) Depth of the water main **shall not be less than 5 ft. nor more than 6 ½ ft. bury** unless otherwise approved by the Water Superintendent.
 - c.) Note: Pipe bedding or Ductile-iron laying conditions specified in AWWA Standard C600 and in accordance with AWWA C150.
 - d.) Note: Max. joint deflection as in AWWA Standard C600 covering 4"-12" Push-On Type Joint Pipe.
Max. deflection angle = 5 deg. 18 ft. length section = 19" offset. 20 ft. length section = 21" offset.
- 2.) **Gate valves:** Shall conform to AWWA Standard C-509 latest issue on Resilient-Seated Gate Valves. **Waterous, Clow, Mueller, U.S. Pipe or Kennedy** type valves.
 - a.) All resilient seat gate valves are to open left (CCW) and close right (CW).
 - b.) All valve bonnet and body and stuffing box nuts and bolts shall be type 18-8 stainless steel and must be installed by the manufacturer.
- 3.) **Valve Boxes (5 ¼") C.I.: Tyler or Mueller** brand only.
- 4.) **Fire Hydrants:** Shall be **Waterous WB-67-250 UL/FM, Kennedy K81D or Mueller Centurion 250** traffic model type fire hydrants and shall be painted the color red.
 - a.) Fire hydrants to be 5 ½' Bury and have a 5 ¼" main valve opening with three way outlets (two 2 ½" hose nozzels and one 4 ½" pumper nozzle).
 - b.) Fire hydrant installation is covered in the AWWA Standard C600, note in this standard hydrants shall be set to the established grade, with the centerline of the lowest nozzle at least 12 in. above the ground. Traffic model hydrants shall be installed such that the breakaway flange shall be installed not less than 2 in., nor more than 6 in., above established grade.
 - c.) Note: Installation of fire hydrants included in AWWA Standard C600 requiring proper drainage pit for dry-barrel hydrants.
 - d.) All fire hydrants are to open CCW (left).
- 5.) All crossing that require casing pipe: The casing pipe should be 6-8 in. larger than the outside diameter of the ductile-iron pipe bells. **Casing Spacers** will be required on all carrier pipe (as approved by the Water Superintendent) to ensure approximate centering within the casing pipe and to prevent damage during installation. No metal-to-metal contact will be allowed.
- 6.) **Restrained joints:** Restraining mechanisms for push-on or mechanical joints will be used (as approved by the Water Superintendent) instead of concrete thrust blocking.
Recommended: anchor coupling, romac grip ring, megalug universal restraint or equal.
 - a.) **Hydrants:** The bowl of each hydrant shall be anchored from main to aux. valve then valve to hydrant.
 - b.) **Fittings:** All plugs, caps, tees, reducers, and bends unless otherwise specified, shall be provided with suitable restrained joints as specified.
- 7.) All service laterals 2" and larger will have gate valves anchored to the tee or tap sleeve.
- 8.) Serrated silicon bronze wedges to be installed on all push-on joints for continuity purpose. Two per joint, for 3" through 12" pipe; four for larger diameter pipe.. Each wedge is driven into the opening between the plain end and the bell until snug. When four wedges are used, they are inserted side by side, in pairs.

SERVICE LATERAL MATERIAL:

- 1.) **Service laterals:**
 - a.) Service laterals $\frac{3}{4}$ " through 2" shall have a **cc thread type corporation stop** at the main.
 - b.) Service laterals $\frac{3}{4}$ " and 1" will have the corporation stop tapped direct to the water main and a curb valve located in the right-of way as directed by a representative of the water dept.
 - c.) Service laterals 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ " or 2" will have a corporation stop with **cc thread** screwed into a **epoxy coated double strapped or banded tap saddle with stainless band** and a curb valve located approximately 1' from the corporation stop.
- 2.) **Service brass:** Shall be **Mueller** or **Ford** brand being of the flare or compression type.
 - a.) Mueller compression fittings shall be Mueller 110 conductive compression connection.
 - b.) Ford compression fitting shall be Ford grip joint for CTS.
- 3.) **Curb valves:** Shall be **full-port ball valves**.
- 4.) **Curb Valve Boxes:** Shall be a **1" slide type curb box** (steel) with a adjustable range of **4 $\frac{1}{2}$ ' – 5 $\frac{1}{2}$ ' bury** and shall have a $\frac{1}{2}$ " box rod 30" in length. A brass cotter pin is required to attach the rod to the curb valve. The style curb box lid (c.i.) shall be a brass pentagon screw plug type lid. Curb boxes for 1 $\frac{1}{4}$ " – 2" curb valves will utilize the same curb box with an enlarged base. All 1" curb boxes located in the asphalt shall have a 5 $\frac{1}{4}$ " valve box top section with lid adjusted to grade over the 1" curb box.
- 5.) All service laterals > 2 inch in size will have two consecutive satisfactory bacteria samples before water is turned on for use.

