Section 923. WATER MAIN MATERIALS

923.01. General. Materials for water main work must meet the requirements of this section, ANSI/AWWA Specifications, and the requirements of the water main owner (Municipality).

923.02. Pipe. The Department considers lines 2 inches or less in diameter to be water services not water mains. Water service pipe must be Type K copper unless otherwise specified by the Municipality, except that the minimum water service size is 1 inch.

Water main pipe must be ductile iron pipe manufactured in accordance with ANSI/AWWA C150/A21.50 and C151/A21.51.

Water main pipe must be lined with a standard thickness cement mortar lining sealed with a bituminous seal coat in accordance with ANSI/AWWA C104/A21.4, unless otherwise required. The outside of the pipe must be coated with the standard bituminous seal and each length of pipe must be marked with the following information:

A. Metal thickness class,
B. Net weight of the pipe without lining,
C. The nominal size, and
D. The manufacturer's identifying symbol.

Provide “push on” joints. Provide gaskets meeting the requirements of ANSI/AWWA C111/A21.11. If shown on the plans, provide nitrile gaskets. Provide, for each joint, two serrated silicon bronze electrical continuity wedges or an external conductor connection meeting the standards of the Municipality.

If shown on the plans, provide ductile iron pipe and fittings with the standard joint restraint system required by the Municipality.

Fittings, plugs, and gaskets for ductile iron pipe must meet the requirements of AWWA/ANSI C110/A21.10, ANSI/AWWA C111/A21.11 and ANSI/AWWA C153/A21.53. Cement mortar linings for fittings must meet the requirements of ANSI/AWWA C104/A21.4.

923.03. Gate Valves. Provide resilient wedge valves with a nominal diameter from 6 inches to 12 inches, rated for at least 200 psi, for use in water distribution systems. Valves must meet the requirements of AWWA C509.

Provide valves with the end types shown on the plans, or conforming to the conditions encountered on the project, as necessary to complete installation. Provide manually operated valves with non-rising stems and

provide a standard AWWA square operating nut of the Municipality standard size.

923.04. Valve Boxes and Curb Boxes. Valve boxes and curb boxes must be made of cast iron, conforming to the requirements of ASTM A 48 for Class 30B and AASHTO M 306. Each box must be a screw type and consist of five sections: base, center, extension, top, and cover. The cover must be marked "Water". Ensure boxes also meet supplemental requirements or specifications of the Municipality.

923.05. Tapping Valves. Tapping valves include a gate valve meeting the requirements of AWWA C509 and a tapping sleeve allowing a wet tap. Size the valve body and seat opening to accommodate the tapping machine cutters. Provide the tapping valve with the end types conforming to the conditions encountered on the project, as necessary to complete installation. The tapping sleeve must be compatible with the existing pipe material.

923.06. Corporation Stops and Curb Stops. Corporation stops and curb stops must meet the requirements of AWWA C800. Provide stops of all-brass construction with the end types conforming to the conditions encountered on the project, as necessary to complete installation. Ensure stops open counterclockwise. Ensure stops also meet supplemental requirements or specifications of the Municipality.

923.07. Service Saddles. Provide solid stainless steel service saddles with a single bolt band, as specified by the Municipality.

923.08. Fire Hydrants. Provide Municipality-standard fire hydrants.

923.09. Polyethylene Encasement. Polyethylene encasement must be manufactured using 8 mil thick virgin polyethylene in accordance with ASTM D 1248.

Provide the tube size recommended by the manufacturer to protect the pipe and fitting sizes.

Provide adhesive tape for the polyethylene tube as recommended by the manufacturer. Tape for repairing damage to the polyethylene must have a life expectancy equal to the life expectancy of the polyethylene.