MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**WATER MAIN MATERIALS - CITY OF ISHPEMING**

ISH:JSK 1 of 3 APPR:CJD:NJM:05-09-22

**a. Description.** This work consists of installing the following materials in the City of Ishpeming’s water system. Unless otherwise noted below, ensure all work, materials, construction requirements, and methods of measurement and payment are in accordance with the standard specifications, except as modified herein.

**b. Materials.** Furnish materials in accordance with *AWWA* standards and section 823 of the Standard Specifications for Construction except as modified herein.

1. Pipes and Gaskets. Furnish pressure class 350 or Class 52 DI pipe of the sizes shown on the plans. Ensure gaskets for water main are comprised of chemically resistant material such as nitrile or fluroelastomer.

2. Mechanical Joints. Mechanical joints with joint restraint must include all necessary glands (follower rings), rubber gaskets, bolts, nuts, and lubricant. Restrained joints using retainer glands must include all necessary retainer glands, bolts, nuts, and gaskets required for a proper installation. Acceptable manufacturers include: EBAA Iron, Inc., Megalug Series, Super-Lock, or Ductile Retainer Gland, Model F-1058 (as manufactured by Clow Corporation, Ford Meter Box Co., Inc.), or Engineer approved equal.

3. Thrust Blocks. Furnish concrete thrust blocks comprised of 3,000 psi concrete and sized appropriately to resist the design working surge pressures to which the water main will be subject to as indicated.

4. Gate Valves. Furnish American Flow Control Series 2500 that are manufactured with the following features:

A. Open right, or clockwise;

B. 2-inch square wrench nut operator;

C. Mechanical joint ends;

D. Bronze non-rising stem with integral thrust collar;

E. Ductile iron valve body, bonnet, and operating nut;

F. Designed for 250 psi cold working pressure with zero leakage; and

G. *ANSI* *Type 304* stainless steel bolts.

5. Electrical Conductivity. Ensure electrical conductivity connections are furnished on all DI water main, fittings, and valves. Ensure connections are external type cable or strap capable of carrying 600 amperes for an extended period. Mechanical joint connections at fittings will be considered as conductive. Ensure conductivity at valves is maintained utilizing cable or strap conductivity straps placed across the valve connection. Do not use conductive gaskets or “conductivity wedges” as a means of maintaining conductivity. Acceptable conductivity connections are U.S. Pipe and Foundry Company “Electrobond” Strips, Clow Corporation “Cable Bond/Conductor”, or Engineer approved equal.

6. Valve Boxes. Acceptable manufacturers include: Tyler (manufactured in the United States), East Jordan (EJ), or Engineer approved equal. Ensure valve boxes have the following characteristics:

A. Four-piece assembly suitable for 7-foot-0-inch top of main bury depth, including cap;

B. 5¼-inch valve box diameter;

C. Base section sized to fit valve bonnet;

D. Valve box adaptor cradles;

E. Screw together construction; and

F. Covers are marked “Water”.

7. Gate Valve Adaptor. Ensure a valve box adapter is utilized on all gate valves. Adapters must be 1/4-inch steel with UV polyurethane protective coating and 3/4-inch rubber gasket attached to the gate valve adaptor. Furnish adaptors manufactured by Adaptor Inc.

8. Ensure bolts for flanged and mechanical joints are domestic origin high strength, low alloy, cor-blue steel.

9. Water Services.

A. Furnish materials that comply with the provisions of *AWWA C800* for composition and style of thread. All brass must meet *NSF/ANSI 61* and *Standard 372* of low-lead alloy brass.

B. Furnish pipe materials that are Type “K” soft annealed seamless copper tubing in accordance with requirements of *ASTM B88*. The minimum service size is 1-inch;

C. Fittings. *AWWA* standard threads, conductive compression connections;

(1) Corporation Stops. Use Ford FB1000 ball type.

(2) Curb Stops. Use Ford B44-444M Ball Curb Valve (Minneapolis Pattern).

(3) Curb Box. Use Ford EM2-70-56 extension type cast iron Minneapolis pattern base with 1-inch upper section designed for 7-foot bury depth with plugged lid, no stationary rod, and painted inside and out with asphalt varnish. Ensure plug is brass construction with pentagon operating nut.

(4) Furnish service saddles for DI. Ensure service saddles are used for all services. Use Ford FSD202 double stainless-steel strap. *AWWA* standard thread size for 250 psi minimum working pressure.

**c. Construction.** Perform construction in accordance with *AWWA C600 Standard* and section 823 of the Standard Specifications for Construction. Install water transmission main at a minimum bury depth of 7 feet.

1. Chlorine in tablet form is not an acceptable form of disinfection.

2. Install service lines with a single line from water main to curb stop without connectors. Construction staging requires a roll of sufficient length to complete the service run to be buried during one phase of construction and completed during subsequent stages of construction.

3. Install conductivity straps at all pipe joints and around all valves. Factory install continuity straps and field install straps by exothermic weld, as necessary.

4. Gaskets with conductivity wedges are prohibited.

5. Notify the City of Ishpeming a minimum of 3 work days to schedule shutting down all or part of a water main.

6. Verify that all valves installed or operated by the Contractor during the project are open at the completion of the project.

7. All gate valve boxes installed on the project must also include a 1-inch adjustment ring installed on the top of the box.

8. All hydrants, gate valves, and appurtenances removed by the Contractor remain the property of the City of Ishpeming and are to be stored on site for pick up by the City.

9. The Contractor will be issued a hydrant meter and be billed for water used in accordance with the City’s latest billing schedule ($21.93 per 1,000 gallons). This cost must be borne by the Contractor.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price in accordance with subsection 823.04 of the Standard Specifications for Construction.