MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**BLOW OFF VALVE, GREAT LAKES WATER AUTHORITY**

TAY:AJP 1 of 3 APPR:NJM:CJD:07-15-22

**a. Description.** This work consists of installing a Great Lakes Water Authority (GLWA) blow off valve as indicated on the plans including pipes, valves, thrust restraints, precast structures, frames and covers, excavation, bedding, installation, backfilling, providing as-built plans, and related work.

**b. Materials.** Furnish all pipe, fittings, and appurtenance materials required in accordance with the standard specifications and as follows:

1. Manhole Structure. Furnish material in accordance with section 403 of the Standard Specifications for Construction with the following exceptions and as shown on the plans.

A. Ensure the manhole structure cover is GLWA standard. Cast all manhole covers and valves with the letters “GLWA”, the manufacturer’s name or mark, the year of manufacturer, and the size. Ensure other markings, in lieu of cast markings, are approved by the Engineer.

B. Furnish and install *AISI Type 304* stainless steel manhole designation tags, bolts, nuts, and lock washers for each manhole. GLWA will provide a list of the characters on the tags. Countersink the nuts and bolts flush with surrounding material.

C. Furnish plastic coated steel steps a minimum of 14 inches wide. Furnish PS2-PFS Manhole Steps made by M.A. Industries, Inc., Peachtree City, GA; a similar model by American Step Company, Inc.; or an Engineer approved equal. Ensure steps are of a type driven into preformed holes or embedded plastic inserts. Ensure all steps can resist a minimum horizontal pull-out load of 400 pounds and a minimum vertical load of 800 pounds without loosening or damaging.

2. Backfill Material. Furnish material in accordance with section 902 of the Standard Specifications for Construction and the plans.

3. DI Pipe. Furnish material in accordance with the Special Provision for Water Main Materials and Construction, with the following exceptions and additional requirements:

A. Fittings must meet *ANSI/AWWA* *C153/A21.53* except 350 psi pressure.

B. Furnish flange joints meeting *ANSI/AWWA* *C115/A21.15*. Do not use push on joints.

C. Ensure bolts, studs, and nuts are as specified on the plans in accordance with the requirements of *ANSI/AWWA C111/A21.11* and *ASTM A153/A153M* or *B633*, *Type GS*, for zinc coating.

4. Gate Valve. Furnish material in accordance with section 923 of the Standard Specifications for Construction and the plans, with the following exceptions and requirements.

A. Furnish valve with a pressure rating of at least 250 psi.

B. In supplement to the marking requirements of *ANSI/AWWA C509*, furnish a valve with the name of the manufacturing country cast onto the exterior of the valve body. Furnish a gate with the name of the manufacturing country molded into the resilient seat material. Mark or tag each resilient-seated gate valve with the identifying number provided by GLWA.

C. Furnish all gate valves, except buried or submerged valves, with a permanent number plate. The Engineer will approve the location of number plates and the method of fastening. Plates must feature numerals at least 1-inch high and of black baked enamel on anodized aluminum plate, or as indicated in the contract.

D. Furnish valves fabricated of DI.

E. The handwheel or wrench nut must open to the right (clockwise).

F. Furnish valves that have been tested in accordance with Section 6 of *ANSI/AWWA C509*. Submit certified copies of the results of all tests, together with a certification of compliance, to the Engineer before the valves ship. Furnish each valve and all appurtenances in accordance with the reference standards, including pressure, vacuum, and temperature ratings of the valve, and submit certification of compliance.

G. Submit results of all pressure and leakage testing.

**c. Construction.** Ensure all construction methods are in accordance with the standard specifications. Provide all documents in PDF.

Submit product data for all water main pipe, fittings, valves, valve manholes/wells, mechanical thrust restraints, appurtenances, and accessories. Submit shop drawings and calculations for all mechanical thrust restraints, thrust blocks, and manholes.

Submit complete drawings, details, and specifications covering the valves and their appurtenances. The submittal must include drawings by the valve manufacturer to indicate the position of the valve actuator and valve shaft. Submittal drawings must clearly indicate the country of origin of all DI valve components.

Submit certified copies of physical and chemical test results for the materials of construction of valve components.

For all furnished materials, provide a statement of compliance, certifying that all the inspection and tests required have been completed and that the results comply with all applicable standards. A Professional Engineer licensed in the State of Michigan must certify all statements of compliance.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

**Pay Item Pay Unit**

Blow Off Valve, Great Lakes Water Authority Each

**Blow Off Valve, Great Lakes Water Authority** includes cleaning, disinfection, and pressure testing of all items in this special provision.