

SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Hydrants
- B. Vacuum Breakers.
- C. Backflow Preventers.
- D. Disinfection of Domestic Water System.
- E. Water Pressure Reducing Valve.
- F. Pressure Gauges.
- G. Expansion Tanks
- H. Mixing Valves.
- I. Thermometers.
- J. Sediment Filter

1.2 RELATED WORK

- A. Section 220523 - General Duty Valves for Plumbing Piping
- B. Section 221119 - Domestic Water Piping
- C. Section 224000 - Plumbing Fixtures

1.3 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Sections 013300.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Watts
- B. Zurn.
- C. Wade.
- D. Josam.
- E. Jay R. Smith.

- F. Precision Piping Products.
- G. Trerice.
- H. Substitutions: Under provisions of Section 012500.

2.2 HYDRANTS

- A. Exterior Wall Hydrant : Zurn Z1300. Encased, anti-siphon automatic draining wall hydrant for flush installation. Complete with non-freeze type integral backflow preventer, bronze casing, all bronze interior parts, non-turning operating rod with free-floating compression closure valve, replaceable bronze seat and seat washer, and combination $\frac{3}{4}$ " female or 1" male straight IP inlet. Nickel bronze box and hinged cover with operating key lock and "WATER" cast on cover.

2.3 VACUUM BREAKERS

- A. Hose connection vacuum breakers shall be Watts 8a or approved equal.

2.4 BACKFLOW PREVENTER REDUCED PRESSURE

- A. Watts Series LF009 or equal with two in-line, independent check valves with an intermediate relief valve, NPT body connections, ball type test cocks, and quarter turn-full port-resilient seated-bronze ball valve shutoffs. Unit shall have renewable seats. Unit shall be complete with strainer.
- B. Unit shall be tested and certified under the following standards for reduced pressure zone backflow preventers; A.S.S.E. Std. No. 1013, AWWA std. No. C 511-89, FCCHR of USC Manual, Section 10.
- C. Unit shall be suitable for pressure up to 172 psig and water temperature up to 180 degree F.

2.5 BACKFLOW PREVENTER

- A. Inline double check valve backflow preventer shall be Watts Series LF7 or equal.

2.6 DISINFECTION OF DOMESTIC WATER SYSTEM

- A. Provide services of water treatment agency regularly engaged for the purposes of cleaning and disinfecting the domestic water piping. Disinfection shall be as described in the International Plumbing Code latest adopted edition.

2.7 WATER PRESSURE REDUCING VALVE

- A. Water pressure reducing valve with integral strainer shall be installed in the water service pipe near its entrance to building. The water pressure reducing valve shall be constructed using lead free materials. The valve shall feature a lead free cast copper silicone alloy body suitable for water supply pressures up to 300 psi. Provision shall be made to permit the bypass flow of water back through the valve into the main when pressures, due to thermal expansion on the outlet side of the valve, exceed the pressure in the main supply. Approved valve shall be listed to ASSE 1003. Valve shall be a Watts Series LF25AUB-Z3.

2.8 PRESSURE GAUGES

- A. Bourdon tube type of phosphor bronze with cast aluminum case, 4-1/2" dial, white dial with black numbers, solid front, and 1/2% minimum accuracy of full range. Terice 500X/600B Series. Range approximately 50% more than maximum operating pressure.

2.9 EXPANSION TANK FOR POTABLE HOT WATER

- A. Provide a Watts Model DETA pre-charged steel thermal expansion tank with fixed butyl bladder for fresh potable hot water applications. The tank shall have a top NPT stainless steel system connection and a 0.301" – 32 charging valve connection (standard tire valve) to facilitate the on-site charging valve of the tank to meet system requirements. Tank shall be pre-charged with air pressure to minimum 60 psig. Contractor shall coordinate with fill and pressure relief valves for final charging pressure.

2.10 THERMOSTATIC MIXING VALVE

- A. Thermostatic mixing valve shall be installed on the hot water supply to fixtures. The valve shall be ASSE 1017, ASSE 1069 and ASSE 1070 listed. It shall have a lead free cast copper silicone alloy body. The valve shall be a Watts Series LFMMVM1 or approved equal.

2.11 THERMOMETER

- A. Type 300 Series stainless steel stem 9-1/4" O.D., case and ring, double strength window glass, white finished dial with black and blue markings accuracy 1% of full scale, balanced aluminum pointer with black finish, adjustable angle, 5" dial, Terice Series B85600, range 0 degrees to 250 degrees for hot water.

2.12 SEDIMENT FILTER

- A. Filter Housing: High grade polypropylene housing sump and cap with EPD o-rings. 100 degrees F maximum and 40 degrees F minimum temperature ratings. 100 psi maximum pressure rating. Watts model #PWHP10FF15BPR.
- B. Filter: Pleated, synthetic media filter cartridge. 5 micron rating. Washable and reusable. Watts Series PWPL.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install equipment per manufacturer's recommendations.
- B. Install vacuum breakers on plumbing lines where contamination of domestic water may occur and on hose bibbs, flush valves, etc.
- C. Furnish and install reduced pressure backflow preventers on the following services :
 - 1. Domestic water service
- D. Furnish and install funnel and drain assemblies on the backflow preventers and pipe them to the outdoors to prevent water from spraying around space.
- E. Provide pressure gauge at water service after pressure reducing valve. Provide thermometers at water heater.

END OF SECTION 221119