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BuildingName
The Description of the Project
P00000000 0000

SPECIFICATION DIVISION 22

NUMBER SECTION DESCRIPTION

DIVISION 22 PLUMBING
SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

END OF CONTENTS TABLE

DIVISION 22 PLUMBING
SECTION 221119 - DOMESTIC WATER PIPING SPECIALTIES

REVISIONS:
8-1-99: CONTENT APPROVED AS NEW MASTER
8-11-99: REVISED TO VBS.DOT TEMPLATE

7-19-12: ADDED (2.1) THAT SEALS ARE TO BE IMMUNE FROM CHLORAMINES AND THAT EPDM SEALS ARE TO BE PEROXIDE CURED. D. KARLE FOR PLMG MTT.

2014-01-06: IMPROVED LEAD FREE REQUIRMENTS TO REFLECT U.S SAFE DRINKING WATER ACT REQUIREMENTS THAT WENT INTO EFFECT JAN. 4, 2014. D.KARLE FOR MTT.

2015-06-30 REVISED CITY WATER METER ARTICLE TO INDICATE PURCHASED BY OWNER, INSTALLED BY CONTRACTOR, AND TO INDICATE LOCATIONS, ALL TO MATCH STANDARD DETAILS AND DG. D.KARLE FOR PLMG MTT.

APRIL 2018: REVISED TO LIST MFR.S FROM PML. R BENEDEK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

INCLUDE PARAGRAPH 1.1.A AND B IN EVERY SPECIFICATION SECTION. EDIT RELATED SECTIONS 1.1.B TO MAKE IT PROJECT SPECIFIC.

A. Drawings and general provisions of the Contract, Standard General and Supplementary General Conditions, Division 1 Specification Sections, and other applicable Specification Sections including the Related Sections listed below, apply to this Section.

1.2 SCOPE OF WORK:

A. Provide piping, fittings, and specialties up to point 5 feet beyond the building for the following systems:

1. Domestic Cold Water System
2. Domestic Hot Water System

1.3 QUALITY ASSURANCE

A. Manufacturers and Products: The products and manufacturers specified in this Section establish the standard of quality for the Work. Subject to compliance with all requirements, provide specified products from the manufacturers named in Part 2.

B. Reference Standards: Products in this section shall be built, tested, and installed in compliance with the specified quality assurance standards; latest editions, unless noted otherwise.

1. National Sanitation Foundation NSF/ANSI-61 (potable drinking water) and NSF-61 Annex G (listed as ≤ 0.25% weighted average lead content) (and/or NSF/ANSI-372)_and Annex F.
2. U.S Safe Drinking Water Act.

PART 2 - PRODUCTS

2.1 GENERAL

A. All wetted seals shall be made from materials that are immune from chloramine degradation. EPDM seals shall be peroxide cured.

2.2 PIPING SPECIALTIES

A. Water Hammer Arresters: Certified per PDI Standard WH-201. Bellows type, with stainless steel casing and bellows, pressure rated for 250 psi. Piston type, precharged to 60 psig, suitable for installation in any position.
Manufacturers: (Bellows) Zurn Shoktrol or by J.R. Smith, Wade; (Piston) Sioux Chief, Zurn, J.R. Smith, Wade

SPEC EDITOR: WALL FAUCETS ARE INEXPENSIVE ALTERNATIVE TO WALL HYDRANTS. CHROME PLATE AND T-KEY HANDLE ARE OPTIONS.

B. Wall Faucet - Freezeless: Bronze body, extended stem to suit wall construction, renewable composition disc, wheel handle, 3/4 inch MPT inlet, hose outlet with integral vacuum breaker.
Manufacturers: Woodford 15, J. R. Smith, Chicago, Zurn

C. Wall Faucet - for indoor use: Bronze body, renewable composition disc, wheel handle, 3/4 inch FPT inlet, hose outlet with integral vacuum breaker.
Manufacturers: Woodford 24, J. R. Smith, Chicago, Zurn

SPEC EDITOR: SELECT FROM 2 OPTIONS BELOW.

D. Recessed Nonfreeze Wall Hydrants: Brass box with chrome-plated face, hinged locking cover, brass body and casing, T-Key handle, vacuum breaker, 3/4-inch FPT inlet, hose outlet, inlet stem to suit wall construction.
Manufacturers: Woodford B65, J. R. Smith, Chicago, Zurn

E. Exposed Nonfreeze Wall Hydrants: Chrome plated brass body, T-Key handle, vacuum breaker, 3/4-inch inlet, and hose outlet, inlet stem to suit wall construction.
Manufacturers: Woodford 65, J. R. Smith, Chicago, Zurn

F. Vacuum Breakers: Hose connection vacuum breakers shall conform to ASSE Standard 1011, with finish to match hose connection.
Manufacturers: Chicago, Watts, Kewannee

SPEC EDITOR: ITEMS G THROUGH K ARE USED FOR PROTECTING DOMESTIC WATER SYSTEMS FROM CONTAMINATION. SELECT APPLICABLE ITEMS CAREFULLY, AND COORDINATE WITH DETAILS. GENERALLY, SIZE OR CAPACITY SHOULD BE ADDED TO DRAWINGS, INCLUDING FLOW AND ALLOWABLE PRESSURE DROP.

SPEC EDITOR: ITEM G BELOW IS USED FOR LARGE HIGH HAZARD CONNECTIONS, INCLUDING BUILDING MAIN, FIRE PROTECTION BRANCH, BOILER FEED. DRAIN IS REQUIRED.

G. Backflow Preventer - Reduced Pressure Zone: Includes dual check valves, reduced pressure relief valve and air vent, shutoff valves on inlet and outlet, strainer on inlet, test ports with test cocks, manufacturer's standard materials. ASSE Standard 1013 certified.

Manufacturer: Watts 909 Series, Conbraco, Febco, Ames, Zurn-Wilkins

SPEC EDITOR: ITEM H BELOW IS USED FOR LARGE LOW HAZARD CONNECTIONS, INCLUDING COOLING TOWER MAKE-UP WHERE OUTLET IS ABOVE TOWER OVERFLOW. NO DRAIN IS REQUIRED.

H. Backflow Preventer - Double Check Valve Assembly: Includes double check valves, shutoff valves on inlet and outlet, strainer on inlet, test ports with test cocks, manufacturer's standard materials. ASSE Standard 1015 certified.
Manufacturer: Watts 709 Series, Conbraco, Febco, Ames, Zurn-Wilkins

SPEC EDITOR: ITEM I BELOW IS USED FOR SMALL LOW HAZARD CONNECTIONS, INCLUDING ICE MACHINE AND WATER COOLERS. NO DRAIN IS REQUIRED.

I. Backflow Preventer - Dual Check Valve: Includes two removable check valve assemblies, manufacturer's standard materials. ASSE Standard 1024 certified.
Manufacturer: Watts 7 Series, Conbraco, Febco, Ames, Zurn-Wilkins

SPEC EDITOR: ITEM J BELOW IS USED FOR SMALL HIGH HAZARD CONNECTIONS NOT SUBJECT TO CONTINUOUS PRESSURE, INCLUDING INDIVIDUAL FUME HOODS. MUST BE LOCATED OUTSIDE OF FUME HOOD, DOWNSTREAM OF SHUT-OFF VALVE. NO DRAIN IS REQUIRED. FOR NEW FUME HOODS, THIS PARAGRAPH IS NOT REQUIRED, IT SHOULD BE INCLUDED IN HOOD SPECIFICATION

J. Atmospheric Vacuum Breaker - Single float and disc with large atmospheric port. Angle pattern brass body, with chrome plated finish, ½" inlet and outlet unless otherwise noted. ASSE Standard 1001 certified.
Manufacturer: Watts 288A Series, Chicago Water Saver Model L-102, B & G

SPEC EDITOR: ITEM K BELOW IS USED FOR SMALL HIGH HAZARD CONNECTIONS SUBJECT TO CONTINUOUS PRESSURE, INCLUDING GANGED FUME HOODS. MUST BE LOCATED OUTSIDE OF FUME HOOD. NO DRAIN IS REQUIRED.

K. Pressure Type Vacuum Breaker - Spring loaded single float and disc with independent first check valve, manufacturer's standard materials, with test cocks and ball type isolation valves. ASSE Standard 1020 certified. Manufacturer: Watts 800 Series, Conbraco, Febco, B & G.

SPEC EDITOR: ITEM L BELOW IS USED FOR AUTOMATIC FILL FOR HW HEATING AND CHILLED WATER SYSTEMS. EDIT BELOW FOR OTHER APPLICATIONS. INDICATE FLOW RATES AND INLET AND OUTLET PRESSURES ON THE DRAWINGS.

L. Pressure-Regulating Valves: Single-seated, direct-operated type, having bronze body with integral strainer and complying with requirements of ASSE Standard 1003. Select proper size for maximum flow rate and inlet and outlet pressures indicated.
Manufacturer: B&G Model 350, Conbraco, Watts, Hoffman, Keckley, Leslie, Spirax-Sarco.

SPEC EDITOR: ITEM M BELOW IS USED FOR DOMESTIC WATER HEATERS. IT IS USUALLY SPECIFIED WITH WATER HEATER OR OTHER EQUIPMENT. COORDINATE.

M. Combined Pressure-Temperature Relief Valves: Bronze body, test lever, thermostat, ANSI Z21.22. Factory set at 210 degrees F, and 150 psig. Size valves in accordance with ASME Boiler and Pressure Vessel Codes. Manufacturers: Watt series 40, 140, 240, 340, Spirax-Sarco, Leslie

2.3 WATER METER

SPEC EDITOR: APPROACH SPECIFIED BELOW IS THE USUAL METHOD. SIZE SHOULD BE COORDINATED BY DESIGNER, AND INDICATED ON DRAWINGS. USE DETAIL "WATMETR"

A. General: City water meters (domestic water at building entrance, cooling tower make-up and blow down, and irrigation meters) and associated remote read-out devices shall be obtained from the City of Ann Arbor (paid for by the owner) and installed by the contractor. Coordinate piping rough in and installation with the City of Ann Arbor.

PART 3 - EXECUTION

3.1 INSTALLATION OF PIPING SPECIALTIES

SPEC EDITOR: VERIFY LOCAL AUTHORITY REQUIREMENTS.

A. Install backflow preventers and vacuum breakers where shown on drawings, in compliance with the plumbing code and authority having jurisdiction. Install air gap fitting and pipe relief (where applicable) to sanitary waste. Test backflow prevention for proper operation. Tests shall be by Certified Tester. Provide Owner with one (1) copy of each backflow prevention test report.

B. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatories and sinks.

SPEC EDITOR: DISINFECTING IS TYPICALLY REQUIRED FOR LARGE DOMESTIC WATER SYSTEMS ONLY. DISINFECTING IS ALSO REQUIRED FOR ANY PIPING UPSTREAM OF THE BACKFLOW PREVENTER THAT PROTECTS THE CITY WATER SYSTEM. FLUSHING AND SAMPLING IS TYPICALLY ALL THAT IS DONE ON SMALL PROJECTS. SELECT FROM THE TWO APPROACHES SPECIFIED BELOW.

SPEC EDITOR: SELECT 3.2 BELOW FOR LARGE PROJECTS:

3.2 FLUSHING, DISINFECTING AND TESTING

A. Flush, disinfect and test domestic water piping as follows:

1. Flush all domestic water piping per Related Section 221113.
2. Purge and disinfect domestic water piping per City of Ann Arbor requirements.
3. Submit water samples in sterile bottles to the City of Ann Arbor. Repeat the procedure if the biological examination made by the City of Ann Arbor shows evidence of contamination.

B. Prepare reports for all purging and disinfecting activities. Furnish owner final copy of test results for acceptance.

SPEC EDITOR: SELECT 3.3 BELOW FOR SMALL PROJECTS:

3.3 FLUSHING AND TESTING

A. Flush and test domestic water piping as follows:

1. Flush all domestic water piping per Related Section 221113.
2. Submit water samples in sterile bottles to the City of Ann Arbor. Repeat the procedure if the biological examination made by the City of Ann Arbor shows evidence of contamination.

B. Furnish owner final copy of test results for acceptance.

END OF SECTION 221119