

**SECTION 22 20 00
PLUMBING SPECIALTIES**

PART 1 GENERAL

1.1 SCOPE

- A. Work consists of all plumbing work indicated on drawings and specified herein.
- B. Also included are all fees and permits for installation and inspection of all plumbing work.
- C. Direct attention to "Instructions to Bidders", "General Conditions", "Supplementary General Conditions", "Special Conditions", and "General Requirements for Mechanical and Electrical Work" which are hereby made part of this section and shall govern in the event there is a conflict with this section.

1.2 SECTION INCLUDES

- A. Roof and floor drains
- B. Cleanouts
- C. Backflow preventers
- D. Water hammer arrestors
- E. Hose bibs hydrants
- F. Trap Primers
- G. Mixing valve
- H. Clothes washer hook-up
- I. Oil Water Separators

1.3 REFERENCES

- A. ANSI/ASSE 1012 – Performance Requirements for Backflow Preventors with Immediate Atmospheric Vent
- B. ANSI/ASSE 1011 – Performance Requirements for Hose Connection Vacuum Breakers
- C. ASSE 1013 – Performance Requirements for Reduced Pressure Principle Backflow Preventors and Reduced Pressure Principle Fire Protection Backflow Preventors
- D. PDI WH-201 - Water Hammer Arrestors
- E. FBC- Florida Building Code

1.4 QUALITY ASSURANCE

- A. For each product specified, provide components by same manufacturer throughout.

1.5 SUBMITTALS FOR REVIEW

- A. Submit shop drawings and product data under provisions of Section 01 33 00.
- B. Include component sizes, rough-in requirements, service sizes, and finishes.

PART 2 PRODUCTS

2.1 ROOF DRAINS

- A. Only if shown on plans, require prior approval of District.
- B. Roof Drains shall have a PVC body with sump and threaded inserts, removable cast aluminum dome strainer, flashing collar with integral gravel stop.
 - 1. JR Smith Manufacturing Series 102 or approved equal.

2.2 FLOOR DRAINS

- A. See schedule on drawings for manufacturer and model.

2.3 CLOTHES WASHER HOOK-UP

- A. Provide connections for hot and cold water hook-ups for clothes washer, as well as sanitary line connection in areas as indicated on the plans.

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2.4 CLEANOUTS

- A. Exterior Surfaced Areas: Zurn Series EZ1, PVC with threaded tapered plug or approved equal.
- B. Exterior Unsurfaced Areas: Zurn Series EZ1, PVC with threaded tapered plug or approved equal with 24" x 24" x 4" concrete surround.
- C. Interior Finished Floor Areas: Zurn Series EZ1, PVC with threaded tapered plug or approved equal round with scoriated cover in service areas and square with depressed cover to accept floor finish in finished floor areas.
- D. Interior Finished Wall Areas: Line type with PVC body and round gasketed cover, and round stainless steel access cover secured with machine screw.
- E. Interior Unfinished Accessible Areas Threaded types provide stack cleanouts on vertical rainwater leaders.

2.5 BACKFLOW PREVENTERS

- A. Reduced pressure backflow preventers, size to service and provide two gate valves.
 - 1. SPC 606.5 - ball valves 2" and smaller ball or gate 22 or larger.
 - 2. Reduced Pressure Backflow Preventors:
 - a. ASSE 1013 bronze body with bronze and plastic internal parts and stainless steel springs.
 - b. Two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve which opens under back pressure in case of diaphragm failure.
 - c. Non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.
 - d. The above based on the Series 900 as manufactured by Watts.
- B. Pipe drains to the exterior: Provide backflow device on all make up water lines for mechanical equipment.

2.6 WATER HAMMER ARRESTORS

- A. Size in accordance with PDI WH-201, precharged suitable for operation in temperature range -100 to 300°F and maximum 250-psi working pressure.
- B. Acceptable Manufacturers
 - 1. J. R. Smith Series 5000
 - 2. Josam Series 75000
 - 3. Zurn "Shoktrol"

2.7 WALL HYDRANTS

- A. ANSI/ASSE 1011, vandal-proof cast bronze, mild-climate recessed wall hydrant with satin face, self-opening locking cover removable key, 3/4" HPT outlet, integral vacuum breaker; recessed stainless steel box.
- B. Acceptable Manufacturers
 - 1. J. R. Smith #5509QT-SAP
 - 2. Josam #71000
 - 3. Zurn #Z-1320

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2.8 HOSE BIBS

- A. ANSI/ASSE 1011, cast bronze hose bib with laceable hexagonal disc, $\frac{3}{4}$ " HPT outlet, vacuum breaker.
- B. Acceptable Manufacturers
 - 1. J. R. Smith #5609QT-SAP
 - 2. Josam #71070
 - 3. Zurn #Z-1310

2.9 THERMOSTATIC MIXING VALVE

- A. Mixing valve rated at 8-10 GPM at 45-PSI differential pressure with check valve, volume control shutoff on outlet and strainer stop check on inlet.
- B. Acceptable Manufacturers
 - 1. Leonard #TM-554-15
 - 2. Powers
 - 3. Symmons

2.10 TRAP PRIMER

- A. Automatic $\frac{1}{2}$ " trap primer systems for all interior floor drains.
- B. Acceptable Manufacturers
 - 1. J. R. smith Series 2699
 - 2. Josam #88250
 - 3. Zurn #Z-1022
 - 4. PP1
- C. Trap primers connected to sink or lavatory wastes not permitted.

2.11 VENT CAP

- A. Stainless Steel dome secured with recessed allen-socket head set screw.
- B. Acceptable Manufacturers
 - 1. J. R. Smith #1748
 - 2. Josam #26700
 - 3. Zurn #Z-193

2.12 VALVE BOX

- A. Provide an underground valve box with traffic cover.
- B. Acceptable Manufacturer
 - 1. Brooks Products, Inc.

2.13 OIL WATER SEPARATOR

- A. Non well field locations; Fiberglass, corrosion resistant metal or coated metal, single wall, double compartment, minimum 2" inlet with baffle and internal distribution pipe, minimum 2" outlet with oil retention baffle, internal drop leg, and outlet weir, 1" drain with plug, 2" oil outlet. All pipe connections shall have an external pipe stub.
- B. Well field locations; Fiberglass, corrosion resistant metal or coated metal, double wall, double compartment, minimum 2" inlet with baffle and internal distribution pipe, minimum 2" outlet with oil retention baffle, internal drop leg and outlet weir, 1" drain with plug, 2" oil outlet. All pipe connections shall have an external double wall containment pipe stub.

PART 3 EXECUTION

3.1 PREPARATION

- A. Coordinate cutting and forming of roof and floor construction to receive drains to required invert elevations.

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3.2 INSTALLATION AND APPLICATION

- A. Install specialties in accordance with manufacturer's instructions to permit intended performance.
- B. Install a trap primer on each floor drain.
- C. Install traffic type round covers on all grease interceptors serving food service areas.
- D. Extend cleanouts to finished floor or wall surface.
 - 1. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil.
 - 2. Ensure clearance at cleanout for rodding of drainage system.
- E. Encase exterior cleanouts in 24 x 24 x 4 inches concrete flush with grade.
- F. Install cleanouts at the base of each vertical stack.
- G. Install cleanouts at each change of direction of horizontal run.
- H. Install cleanouts at 50-foot intervals of horizontal runs.
- I. Install cleanouts on all garbage disposals.
- J. Install water hammer arrestors to be accessible complete with accessible isolation valve.
- K. Install ¾" hose bibs/hydrants with vacuum breaker and gate valve on the exterior of all buildings with a maximum spacing of 150 feet.
- L. Install one ¾" hose bib/hydrant with vacuum breaker in each group restroom.
- M. Route oil-water separator effluent to the sanitary sewer system, and route the oil from the oil-water separator outlet pipe to a storage container for proper reuse or disposal of waste oil.

3.3 DEMONSTRATION AND TRAINING

- A. Training of the Owner's operation and maintenance personnel is required in cooperation with the Owner's Representative.
 - 1. Provide competent, factory-authorized personnel to provide instruction to FS personnel concerning the location, operation, and troubleshooting of the installed systems.
 - 2. Schedule the instruction in coordination with the Owner's Representative after submission and approval of formal training plans.
 - 3. Refer to Section 01 91 00, Commissioning, for further contractor training requirements.
- B. Demonstration and Training shall be provided for the following equipment:
 - 1. Double Check Backflow Preventors
 - 2. Thermostatic Mixing Valves

END OF SECTION