

SECTION 22 45 00 – EQUIPMENT

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.

1.2 SUBMITTALS

- A. Submit shop drawings for all items specified under "Part 2 - Products" of this Section.

PART 2 - PRODUCTS

2.1 FLOOR DRAINS (FD)

- A. Type FD-A:
 - 1. Coated cast iron body with bottom outlet, vandal-proof secured 7 inch diameter strainer composed of polished nickel bronze, flashing clamp and collar and drain weepholes. Verify type of outlet required on a per location basis before ordering drains. Make: Zurn Model ZN-415-C-VP.
- B. Acceptable floor drain manufacturers: Ancon, Jay R. Smith, Josam, Wade and Zurn. All drains shall be of one manufacturer.

2.2 FUNNEL FITTING

- A. Provide Zurn model Z325 indirect waste funnel with intergral backwater valve.
- B. Acceptable funnel manufacturers: Ancon, Jay R. Smith, Josam, Wade and Zurn. All drains shall be of one manufacturer.

2.3 TRAP SEALER

- A. Provide preassembled inline trap sealer on all floor drains, drain pans and funnel fittings equal to Sure Seal. Trap sealer shall be ICC-ES listed and meet the ASSE 1072 standard. Size as indicated on the drawings.
 - 1. 2" Sure Seal Model SS2009
 - 2. 3" Sure Seal Model SS3000
 - 3. 3.5" Sure Seal Model SS3509
 - 4. 4" Sure Seal Model SS4009
- B. Acceptable manufacturers: Sure Seal, Green Drain

2.4 TRENCH DRAINS (TD)

A. Type TD-A

1. Provide ACO drain model S300K (12" internal width) complete with gratings locked down with bolt and bar lockings, ductile iron grate system for load class "E" (134,800 lbs) loading. Provide lengths as required.
2. Trench drain to be modular precast polymer concrete, cast iron or polyester fiberglass trench drain sections with presloped interior waterways, knockouts, endcaps, cast iron frame and slotted ductile iron grate, extra heavy duty rated, stainless steel grate holdowns.
3. Provide catch basin with sediment/trash bucket as discharge point as indicated.
4. Acceptable trench drain manufacturers: Aco, Josam, Neenah, Smith, Tyler, Zurn.

2.5 DRAIN PANS - Rectangular (With Drain)

- A. Drain pans shall be one-piece molded fiberglass construction with center drain. Provide under washing machine(s) and hot water heater(s) as called for on the contract document.
- B. Mustee model 99 Durapan - Size 32"x30"

Note: Confirm exact size of washing machines and/or water heaters prior to ordering.

2.6 DRAIN PANS - Rectangular (No Drain)

- A. Drain pans shall be one-piece molded fiberglass construction. Provide under washing machine(s) and hot water heater(s) as called for on the contract document. 1" PVC drain connection to be piped to adjacent floor.
- B. Mustee model 95 Durapan - Size 24-1/2"x24-1/2"

Note: Confirm exact size of washing machines and/or water heaters prior to ordering.

2.7 DRAIN PANS - Circular (No Drain)

- A. Drain pans shall be one-piece molded plastic construction. Provide under hot water heater(s) as called for on the contract document. 1" PVC drain connection to be piped to adjacent floor.
- B. Oatey 18", 22", 24", 26", 28", 20" diameter pan

Note: Confirm exact size of water heaters prior to ordering.

2.8 CLEANOUTS (CO, WPCO, DPCO)

- A. Deck Plate Cleanout (DPCO) - floors: Coated cast iron body with round scoriated and polished nickel bronze top, vandal-proof feature, adjustable leveling feature, bronze plug and flashing clamp, carpet marker or tile cover as required and anchor flange with clamp collar. All connections and fittings to be gas and water tight. Make: Zurn Model ZN-1400-BP-KC.
- B. Wall Plate Cleanout (WPCO) - walls: Coated cast iron ferrule with bronze plug and stainless steel smooth access cover with securing screw, vandal-proof.
 - 1. Horizontal: Zurn Model Z-1441-BP-VP.
 - 2. Vertical: Zurn Model Z-1468-BP-VP.
- C. Grade Cleanout: Heavy duty coated cast iron body with cast iron tractor cover, bronze plug and vandal-proof screws. Make: Jay R. Smith Series 4246-C-U.
- D. Acceptable cleanout manufacturers: Ancon, Jay R. Smith, Josam, Wade or Zurn.

2.9 OIL/SAND SEPARATOR

- 1. By civil contract.

2.10 LINT TRAP

- A. Provide Striem lint trap model SIDEKICK injection-molded PVC housing and polycarbonate perforated basket. Perforated basket capacity shall be 0.17 gallons. Perforated basket shall have the ability to be maintained via side access. Perforated basket shall have clear face to allow visibility into unit. Interceptor shall be certified to IAPMO IGC 167-2011ae2 and carry a UPC listing.

2.11 WALL HYDRANTS (WH)

- A. Hydrants shall be approved by ASSE Standard 1019-B and be listed by IAPMO
- B. Hydrants shall be a 3/4 inch male hose thread, cast brass non-freeze type with polished brass face, galvanized wall sleeve, integral vacuum breaker, loose key control, and adjustable wall clamp. Make: Woodford Model B65 Series.
- C. Acceptable wall hydrant manufacturers: Ancon, Jay R. Smith, Josam, Wade, Woodford or Zurn.

2.12 HOSE BIBBS - INTERIOR (HB)

- A. Interior finished locations (single temperature):
 - 1. Hose bibbs shall be 3/4 inch male hose thread, polished chrome plated with loose key stop, removable tee handle and vacuum breaker. Make: Chicago No. 952.
- B. Interior unfinished locations (single temperature):

1. Hose bibbs shall be ¾ inch male hose thread, red brass head, solid brass valve stem, coated die cast aluminum hand wheel and ¾ inch inlet. Make: Woodford 101P.
- C. Acceptable Hose Bibb manufacturers: Woodford, Chicago, T&S Brass or approved equal.

2.13 WATER HAMMER ARRESTORS / SHOCK ABSORBERS (SA)

- A. Devices must meet or exceed requirements of the Plumbing and Drainage Institute Standard PDI - WH 201 and ASSE Standard 1010.
- B. Types of devices listed by the Contract Documents shall be based on the P.D.I. system corresponding to the following N.Y.S. water fixture unit ranges:
 1. Type A - 1 through 11 fixture units.
 2. Type B - 12 through 32 fixture units.
 3. Type C - 33 through 60 fixture units.
 4. Type D - 61 through 113 fixture units.
 5. Type E - 114 through 154 fixture units.
 6. Type F - 155 through 330 fixture units.
- C. Make: Zurn "Shoktrol", Z-1700 Series.
- D. Acceptable Water Hammer Arrestor / Shock Absorber manufacturers: Ancon, Jay R. Smith, Josam, **Precision Plumbing Products, Wade or Zurn.**

2.14 AIR ADMITTANCE VALVES

- A. Provide air admittance valve, as indicated in the contract documents, with screening on the inside and outside to protect the sealing membrane. Make: Studor Mini-Vent or approved equal.

2.15 ICE MAKER BOX

- A. Provide lead free ice maker box equal to Jones Stephens model B05910LF.

2.16 VENT CAPS

- A. Coated cast iron vandal-proof vent cap, hooded dome type. Secure to vent stack termination above roof with set screws. Make: Zurn Z-193 or approved equal.
- B. Acceptable makes: Ancon, Jay R. Smith, Josam, Wade, Zurn.

2.17 WASHING MACHINE WALL BOXES (WMF)

- A. Epoxy coated steel recessed wall box with face flange, overflow lip, fastening tabs, 1/2 inch hot and cold bronze washing machine angle shutoff valves rated for 125 psi and 180 deg. F, long shank valve fittings for replacement of valves within box, 2 inch drain outlet fitting.

- B. Acceptable makes: Oatey, Guy Gray.

2.18 EMERGENCY SHOWER/ EYEWASH (ESS)

- A. Combination emergency shower and eyewash with 10 inch safety orange ABS plastic shower head, 12 inch safety orange ABS plastic eye wash bowl, 1 inch IPS chrome plated brass stay-open shower ball valve furnished with stainless steel actuating arm and stainless steel pull rod. The eye wash outlet head assembly shall consist of two spray heads mounted on chrome plated brass supply arms, with dust covers, and an internal flow control and filter. The eye wash valve shall be a 1-1/2 inch IPS chrome plated brass stay-open ball valve, activated by an epoxy-coated cast aluminum flag handle. The pipe and fittings of the assembled unit shall be 1-1/4 inch IPS schedule 40 hot-dipped galvanized steel, with a 9 inch aluminum floor flange. Include with the unit an ANSI compliant identification sign.
- B. Provide with each safety station, a dual manifold emergency mixing valve system with temperature override protection. The valve shall utilize a solid bimetal thermostat that will compensate for supply temperature and pressure fluctuations. The temperature regulator adjustment shall be lockable to prevent accidental movement. The primary mixing valve shall close down upon failure of cold water supply, and be capable of providing 20 GPM at 30 PSI through the internal cold water bypass upon failure of the hot water supply. The valve shall include an adjustable high limit stop set for 90 deg. F.
- C. Make Speakman model SE-603 or approved equal.

2.19 HOT AND COLD WASH DOWN STATION

- A. Provide T&S Brass model MV-0771-12CW for hot and cold water with a 3/4" valve and stainless steel trim. Provide 003799-45 bi-metallic thermometer with stainless steel case, 005266-25 hose swivel.
- B. Provide Reelcraft model 5Z338 hose reel.

2.20 HOSE REELS (HR)

- A. Reelcraft Model #5635 OLP automatic spring driven retractable lubricated hose reel assembly, all welded steel construction, heavy duty bracket fitted with the following:
1. 3/8 in. I.D. x 50 ft. hose rated for 300 psi.
 2. Reelcraft Model 601024-2 flexible hose inlet assembly.
 3. Samson Model 938, 3/8" FPT coupler.

2.21 VACUUM BREAKERS (VB)

- A. Wall mounted chrome plated device. Make: Watts Series LF008PCQT with all chrome plated piping and chrome escutcheons. (Provide piping and escutcheon.)

2.22 ROOF HYDRANT (RH)

- A. Non-freeze roof hydrant with dual check backflow preventer and drain equal to Woodford model SRH-MS. ASSE 1057 listed. ¾" hose connection, cast iron hydrant support, cast iron under deck flange, EPDM boot covers, ¾" NPT female inlet connection.

PART 3 - EXECUTION

3.1 EQUIPMENT CONNECTIONS

- A. Plumbing Contractor Shall:
1. Provide all roughing and final water, waste, vent, gas, air, vacuum, diesel and / or oxygen connections to all fixtures and equipment requiring same as called for by the Contract Documents.
 2. Refer to the Contract Documents for roughing schedules, equipment and lists indicating scope of connections required.
 3. Provide loose key stops, traps ("P", etc.), tailpieces, adapters, gas or air cocks and all necessary piping, fittings and connections from roughing point to fixtures and equipment.
 4. Provide for installation of sinks, faucets, outlets, traps, tailpieces, etc. furnished by an Equipment or Casework Contractor. These items shall be delivered in easily identified cartons, to the proper room for the Division 22 Contractor's installation.
 5. Install controls and devices furnished by others as noted on the Construction Documents.
 6. Provide cold water line with reduced pressure zone backflow prevention devices at locations noted on the Construction Documents. Continuation of piping downstream from devices by others when noted.
 7. Provide relief valve discharge piping from equipment relief valves to floor drains, mop service sinks or exterior.
 8. Provide for Owner furnished equipment:
 - a) Connect complete and ready for use, including all valves, piping, piping accessories, traps, pressure reducing valves, gauges, relief valves, vents, drains, insulation, sheet metal work, controls, dampers, etc., as required by Owner and as called for on the Construction Documents. Verify all equipment requirements before submitting bid.
 - b) Refer to manufacturer Drawings and Specifications for requirements of medical, laboratory and other special equipment. Verify connection requirements before bidding.

3.2 FLOOR DRAINS

- A. Provide deep seal trap for all floor drains.

3.3 EXPANSION JOINTS FOR ROOF DRAINS

- A. Provide expansion joints for all roof drains located more than 25 feet - 0 inches above the finished floor of area being served.

3.4 CLEANOUTS

- A. Install cleanouts out of traffic patterns; provide offset as required from sanitary line being served. Do not locate cleanouts under doors, under lockers or under any permanently secured furniture. Allow minimum 18 inches clearance around cleanouts for rodding. Distance between cleanouts shall be a maximum of 100 feet apart. Provide cleanouts at all changes in direction of piping greater than 45°. Provide cleanouts at base of soil, waste, and vent stacks, and roof conductors. Provide additional cleanouts where shown on the Contract Drawings.
- B. Cleanouts: Same nominal size as pipe, but not larger than 4 in.

3.5 WALL HYDRANTS

- A. Provide wall hydrants at a minimum of 24 inches above grade.
- B. Mount wall hydrants recessed in exterior wall construction with valve plug extended beyond interior side of building insulation. Slope to drain to exterior. Set wall box in grout or caulk and fill exterior wall penetration with insulation.

3.6 HOSE BIBBS

- A. Provide hose bibbs at low points of piping systems.

3.7 SHOCK ABSORBERS

- A. Provide shock absorbers in the vertical position.
- B. Provide a ball valve between each shock absorber and the line being served.

3.8 THERMOMETERS

- A. Provide where called for and where shown. Adjust each thermometer so face is easily visible.

3.9 WASHING MACHINE WALL BOXES

- A. Install washing machine boxes in wall construction, secured to structure, directly behind proposed washing machine location. Provide water hammer arrestors in supply piping at washing machine boxes. Mount a minimum of 36 inches above finished floor.

END OF SECTION