

SECTION 15400

PLUMBING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes requirements for plumbing system materials and installation.

1.2 DESCRIPTION

- A. Refer to as-built drawings for extent of existing plumbing systems, however, field verify all piping.
- B. Waste and vent piping has been extended to most areas of the building for use by tenants. Connection to this system is anticipated.
- C. Extension of waste and vent piping to tenant areas from existing piping is the responsibility of the tenant.
- D. Hot and cold domestic water has been extended to most areas of the terminal, with stub-outs provided for tenant service. Domestic hot water circulation lines are also stubbed out to be extended into tenant areas. Each hot water circulation line has been provided with a flow control valve, which shall be the maximum flow available to the tenant for hot water circulation in that area.
- E. Use of terminal hot water service for process needs, such as vehicle washing, shall not be permitted. In these cases, provide additional hot water generation shall be provided by the tenant.
- F. Provide chemical resistant piping in all drains serving soft drink dispensers. Extend chemical resistant piping from dispenser to a point of dilution downstream of major drainage flows, such as public toilets.
- G. Provide acid resistant piping for all drainage flows where corrosive flows are anticipated.
- H. Extend hot water circulation lines to all fixtures plumbed with hot water.
- I. Provide sand interceptors in all floor drainage systems where motor vehicles operate.
- J. Provide trap primers to all traps that do not normally receive drainage flow.

1.3 SUBMITTALS

- A. Submit certificate of sterilization of all water piping

PART 2 PRODUCTS

2.1 SANITARY DRAINAGE PIPING, BURIED WITHIN FIVE FEET OF BUILDING

- A. Cast Iron Pipe: ASTM A74 service weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: Hub-and-spigot, compression type with neoprene gaskets.
- B. Hubless cast iron pipe fittings: Use heavy-duty couplings constructed of 304-type stainless steel. Husky Series 4000 or approved equal.

2.2 SANITARY DRAIN AND VENT PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A74, service weight.
 - 1. Fittings: Cast iron.
- B. Cast Iron Pipe: CISPI 301, hubless.
 - 1. Fittings: Cast iron.
- C. Copper Tube: Type L.
 - 1. Fittings: cast bronze, wrought copper.
 - 2. Joints: ASTM B32, solder, Grade 50B.

2.3 SUMP PUMP DISCHARGE PIPING

- A. Copper Tubing: hard drawn.
 - 1. Fittings: cast copper alloy or wrought copper and bronze.
 - 2. Joints: AWS A5.8, BCuP silver braze.

2.4 WATER PIPING, ABOVE GRADE

- A. Use one material throughout project except that steel pipe four-inch and larger may be used with smaller copper sizes. Provide dielectrically insulating flanges between copper and steel piping.
- B. Copper Tubing: Type L hard drawn.
 - 1. Fittings: cast copper alloy or wrought copper and bronze.
 - 2. Joints: ASTM B32, solder, Grade 95TA.
 - 3. Copper grooved coupling piping system may be substituted for cold water piping only.
- C. Steel Pipe: Schedule 40, galvanized.
 - 1. Fittings: Cast iron.
 - 2. Joints: Steel piping four-inch and larger may be used with galvanized, groove-joint fittings and couplers. Cold water only.

2.5 WATER PIPING, BELOW GRADE

- 1. Copper Tubing: ASTM B42, annealed
 - a. Fittings: ASME B16.26 cast bronze.
 - b. Joints: Flare

2.6 COPPER MECHANICAL COUPLING PIPING SYSTEM

- A. May be used in hot and cold water piping systems.
- B. Tubing: Type L hard drawn.
- C. Mechanical Coupling: Victaulic Style 606 rigid ductile iron couplings for copper.

- D. Gaskets: Molded synthetic rubber designed with an wide annular interior recess open to fluid pressure such that fluid pressure presses the gasket to both the pipe and the coupling.
- E. Flange Adapters: Victaulic Sytyle 641, ductile iron, for connecting grooved copper tubing with ANSI Class 125 cast iron and Class 150 steel flanged components.
- F. Fittings: Victaulic copper or bronze sand casting fittings.
- G. Manufacturer: Victaulic only.

2.7 CHEMICAL RESISTANT DRAINS

- A. Cast Iron Pipe: ASTM A861-94e1, hubless, high-silicon chemical resistant.
 - 1. Fittings: High silicon cast iron, ASTM A518.
 - 2. Joints: Chemical resistant clamp-and-shield assemblies.
 - 3. Trade name: Duriron.

2.8 COUPLINGS FOR BURIED HUBLESS CAST IRON SOIL PIPE

- A. Heavy duty all stainless band type coupling with four or more clamp bands. Husky Coupling, or approved equal below grade.

2.9 VALVES

- A. Select valves of the best quality and type suited for the specific service and piping system used. Minimum working pressure rating 125 psig saturated steam or 200 psig W.O.G. Packing material or seals shall not contain asbestos.
- B. Provide ball valves for shut-off service, 2" and smaller. Larger may be butterfly valves.

2.10 FLOW CONTROL VALVE

- A. Refer to Section 15510 - Hydronic Pipe and Specialties.

2.11 WATER HAMMER ARRESTERS

- A. Provide all stainless steel balanced expansion bellows type or pressurized piston type water hammer arresters where shown. Provide size noted on drawings per PDI (Plumbing and Drainage Institute) symbol (A, B, etc.).

2.12 TRAP PRIMER VALVES

- A. Trap primer valve activated by a drop in building water pressure, no adjustment required. Brass or PVC bodied. Valves shall be factory set for proper operation with water pressure of 30 to 70 psi. Units shall serve one or multiple traps as shown on the drawing.
- B. For valves serving more than one trap, provide trap primer distribution units. Units shall have up to four outlets, and evenly distribute water to each outlet. Provide clear or removable cover for observation of trap primer operation.

2.13 FIXTURES

- A. Handicapped Fixtures:
 - 1. Provide fixtures in compliance with the ANSI A117.1 – 1998.

2. All Handicap lavatories and sinks: Provide Fixture Insulation Assembly for all fixtures with exposed drains and supplies.
- B. Provide sensor operators on all public use toilet, urinal and lavatory fixtures.
 - C. Floor sinks constructed of fiberglass are not acceptable.

PART 3 EXECUTION

3.1 GENERAL PIPING INSTALLATION REQUIREMENTS

- A. Provide Dielectric Isolators when joining pipes of dissimilar metals.
- B. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- C. Arrange piping in toilet room plumbing chases so that all piping and fixtures are accessible. Do not install water or vent piping across the chase such that the access way is obstructed.
- D. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

3.2 INSPECTION AND TESTING

- A. Waste Piping: Test as described in this section, and to the satisfaction of the Municipality of Anchorage.
- B. Water Piping: Test all water piping to the satisfaction of the Municipality of Anchorage.

END OF SECTION