

Part 1 - General

1.1 REFERENCES

- .1 American Society for Testing and Materials (ASTM).
 - .1 ASTM A126-84, Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 - .2 ASTM B62-90, Specification for Composition Bronze or Ounce Metal Castings.
- .2 American Water Works Association (AWWA).
 - .1 ANSI/AWWA C700-77, Cold Water Meters - Displacement Type.
 - .2 ANSI/AWWA C7011-88, Cold Water Meters - Turbine Type for Customer Service.
 - .3 ANSI/AWWA C702-86, Cold Water Meters - Compound Type.
- .3 Canadian Standards Association (CSA).
 - .1 CAN/CSA-B64 Series-M88, Backflow Preventers and Vacuum Breakers.
 - .2 CAN/CSA-B64.10-M88, Backflow Prevention Devices - Selection, Installation Maintenance and Field Testing.
 - .3 CAN3-B79-M79, Floor Drains and Trench Drains.
- .4 Plumbing & Drainage Institute (PDI)
 - .1 PDI-WH201-77, Water Hammer Arrestors.

1.2 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Indicate dimensions, construction details and materials for following.

1.3 MAINTENANCE DATA

- .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Data to include:
 - .1 Description of plumbing specialties and accessories, giving manufacturers name, supplier's name and address, type, model, year and capacity.
 - .2 Details of operation, servicing and maintenance.
 - .3 Recommended spare parts list.

Part 2 - Products

2.1 FLOOR DRAINS

- .1 Floor drains and trench drains: to CAN3-B79.
- .2 All floor drains to be installed with temporary covers and screws to prevent construction debris from entering the drainage system. The practice of taping over the drain grate will not be acceptable.

- .3 FD-1: Dura-Coated cast iron body, bottom outlet, 127 mm round, adjustable head, polished nickel bronze strainer, invertible membrane clamp and adjustment collar, stainless steel screws.
 - .1 Approved Product: Zurn ZN-415-B. Mifab, Jay R. Smith.
- .4 LD-1: Fabricated linear stainless steel shower drain, 1200mm long, vertically adjustable anchoring support legs, anti-ponding V-shaped channel with 50mm no-hub center outlet, adjustable secured leveling frame with built-in tile edge, integral membrane flange for glue-on waterproofing membrane, and secured light duty, slotted heel-proof grate..
 - .1 Approved Product: Zurn ZS-880-48.

2.2 CLEANOUTS (CO)

- .1 End of pipe cleanouts (CO-1):
 - .1 Standard PVC gas and water tight cleanout plug.
- .2 Cleanout in wall (CO-2): PVC body, gas and water tight ABS tapered thread plug, c/w 100mm diameter stainless steel access cover.
 - .1 Approved Product: Zurn Z-1666-1, Mifab, Jay R. Smith.

2.3 WATER HAMMER ARRESTORS (WHA)

- .1 Stainless steel bellows or copper piston construction: to PDI-WH 201.
 - .1 Standard of Acceptance: Zurn Series 1700 bellows or Series 1705 piston; Ancon, Precision Plumbing Products.

2.4 VACUUM BREAKERS (VB)

- .1 To CAN/CSA-B64 Series.
- .2 Testable pressure vacuum breaker:
 - .1 Standard of Acceptance: Zurn 460XL, Watts, Febco.

2.5 TRAP PRIMER STATION

- .1 Electronic trap primer assembly with atmospheric vacuum breaker, pre-set 24-hour clock, manual override switch, normally closed solenoid valve, galvanized steel cabinet and door, serves 13-20 drains, and NPS 3/4" inlet connection.
 - .1 Standard of Acceptance: Precision Plumbing Products PTS-1320.
- .2 Tubing: NPS 1/2", Type K, soft annealed copper tubing connection between trap primer valve and floor drain.

2.6 THERMOSTATIC MIXING VALVE (TMV)

- .1 Point of use thermostatic controllers for single lavatory fixtures;
 - .1 Lead-Free Bronze, C/w integral backflow checks.
 - .2 High temperature limit of 50 degC.
 - .3 Manual temperature adjustment. Setpoint 43 degC.
 - .4 Minimum flow rate – 8 L/Min @ 310 kPa.
 - .5 Standard of Acceptance: Lawler TMM1070.

2.7 HYDRATION STATION (HS-1)

- .1 In-wall mount, chilled water bottle filling station for indoor application.
- .2 Lead-free design, ADA, NSF 42/53/61/372, UL 399 compliant.
- .3 Finish: Stainless steel.
- .4 ADA, NSF 42/53/61/372, UL 399 compliant.
- .5 Drain connection.
- .6 Cooling system:
 - .1 Hermetically-sealed compressor, reciprocating type, single phase, sealed-in lifetime lubrication.
 - .2 Fan cooled, copper tube with aluminum fins. Fan motor is permanently lubricated.
 - .3 Combination tube-tank type. Continuous copper tubing, fully insulated with EPS foam that meets UL requirements for self extinguishing material.
 - .4 Refrigerant R-134a controlled by accurately calibrated capillary tube.
 - .5 Factory pre-set, easily accessible enclosed adjustable thermostat.
- .7 Chilling capacity: 30 Liters per hour at 10C, based on inlet water temperature of 27C, and 32C ambient temperature per ASHRAE 18 testing.
- .8 Electronic Bottle Filler Sensor activation
- .9 Silver ion antimicrobial protection on key plastic components to inhibit the growth of mold and mildew.
- .10 Filter: to NSF 42 and 53, for lead particulate, chlorine, taste and odour reduction. 11,356 Liter capacity.
- .11 Electrical: 115V/60Hz.
- .12 Include:
 - .1 Bottle filler.
 - .2 Filter.
 - .3 Chiller.
 - .4 Mounting frame.
 - .5 Filter Monitor.
 - .6 Green Ticker – bottles saved from waste counter.
- .13 Standard of Acceptance: Elkay EZH20 and Franke.

Part 3 - Execution

3.1 INSTALLATION

- .1 Install in accordance with National Plumbing Code and local Departmental Representative except where specified otherwise.
- .2 Install in accordance with manufacturer's instructions, and as specified.

3.2 FLOOR DRAINS

- .1 Floor drains to be installed flush with finished floor and per manufacture's recommendations.
- .2 All floor drains to be installed with temporary covers and screws to prevent construction debris from entering the drainage system. The practice of taping over the drain grate will not be acceptable.
 - .1 Remove the grate and install a temporary cover of similar thickness before floor drain has been installed. Secure cover with screws similar to grate screws.
 - .2 Cover to fit tight, void of large gaps where debris can collect.

- .3 Prior to Consultant's substantial review, remove temporary covers and screws and replace with manufacturer's specified grate and screws.

3.3 CLEANOUTS

- .1 In addition to those required by code, install at base of all soil and waste stacks, and where indicated.
- .2 Bring cleanouts to wall or finished floor if not serviceable from below floor. Inform Departmental Representative immediately upon discovery of Cleanout(s) that are unable to be installed below floor.
- .3 Building drain cleanout and stack base cleanouts: line size to maximum NPS 4.

3.4 WATER HAMMER ARRESTORS

- .1 Install on branch supplies to each fixture or group of fixtures and where indicated.

3.5 VACUUM BREAKERS

- .1 Install in accordance with CSA B64.10, where indicated and elsewhere as required by code.
- .2 Install as required for proper functioning of equipment and/or systems.
- .3 Pipe discharge to over nearest drain.

3.6 COMMISSIONING

- .1 After start-up, test, adjust and prove operation of all equipment and accessories to suit site conditions including but not limited to:
 - .1 Clean out strainers periodically until clear.
 - .2 Clean out and prime all floor drain traps using trap seal primers or other means acceptable to the National Plumbing Code.
 - .3 Prove freedom of movement of cleanouts. Cleanouts covers of cleanouts and floor drain strainers.
 - .4 Vacuum Breakers: Confirm operation of vacuum breakers, with test procedures in accordance with CSA B64.10 and Departmental Representative.
 - .5 Thermostatic mixing valves: Verify in writing maximum temperature settings as specified for each valve.
 - .6 Maximum temperature settings to be verified using a digital thermometer.

END OF SECTION