

SECTION 221219 GATE POTABLE WATER STANDS

PART 1 - GENERAL

These standards apply to the installation of potable water stands, piping and accessories outside the building.

1.01 DESIGN CRITERIA

A. Drawings and Specifications:

1. An approved backflow assembly certified by the State of Washington will be provided to protect domestic water systems from contamination. This may be integral to the water box or it may be at the building water connection point.
2. All new piping shall be copper.
3. Include fixture cut sheets in specifications.
4. Locate valves and components for easy access and provide separate support where necessary.
5. Indicate invert elevations and point of connection locations.
6. Indicate or specify acceptable slope for all piping.

B. Design:

1. Piping: Main header and main piping distribution system should be sized with maximum water velocity of 5 feet per second during peak demand conditions.
2. Water piping and components (downstream of building pressure reducing station) shall be suitable for a minimum of 125 psig service.
3. Provide isolation valves to allow shutdown of portions of the system without shut down of the entire system. Each main branch and each gate box shall be provided with isolation valves.
4. Concealed plumbing components shall have access doors indicated on drawings. Minimum access door/panel size shall be 14-inches x 14-inches.
5. Do not use the following:
 - a. Plastic piping (ABS, CPVC, PE, PVC) within the building envelope.
 - b. Dielectric unions (only use dielectric fittings).
6. Design each run with minimum joints and couplings, but with adequate and accessible unions for disassembly and maintenance/repair of valves and equipment. Design piping vertically and horizontally without diagonal runs in shortest route, which does not block access for servicing or replacing equipment, or obstruct usable space. Locate piping close to walls, overhead construction, columns and other structural and permanent enclosure elements

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of the building. In finished and occupied spaces, conceal piping from view by locating it in column enclosures, in hollow wall construction or above suspended ceilings. Do not encase horizontal runs in solid partitions.

7. Locate groups of pipes parallel to each other, spaced to permit application of full insulation and for servicing valves.
8. Expansion Compensation: Design piping, including mains, branches, risers and run-outs, with sufficient offsets to allow for free expansion and contraction, and sufficient to prevent leaks and over-stressing of piping system. Provide expansion compensators where required when offsets are not adequate for free expansion and contraction, in accessible locations to allow for servicing or replacement.
9. Testing requirements: Conduct for a period of not less than 8 hours at 150-percent operating pressure or 100 psig minimum whichever is greater.
10. Potable water system (including tempered water and service water) will be cleaned, flushed and sanitized at the completion of any modification.
11. Pipes, fittings, valves, fixtures, solder or flux provided on a potable water system shall be lead free.
12. Domestic water service to all potable water stands shall have a Washington State Department of Health approved reduced pressure principle backflow preventer assembly (RPBA) located in a safely and readily accessible area. Properly vented drainage piping (including an approved air gap between the RPBA and the pipe) shall extend from immediately below. The drainage piping shall be sized for the full discharge flow of RPBA serving.

PART 2 – PRODUCTS

2.01 POTABLE WATER BOX

A. Gate Potable Water Box:

B. Manufacturers: Semler Industries, GNY or approved equal.

C. Cabinet:

1. Stainless steel, Type 304, double wall, 14 gage outer, 16 gauge inner, #4 polish finish interior and exterior.
2. Welded construction through-out.
3. 1-1/2" MNPS fitting for drain (located at the bottom center of cabinet). Slope bottom of cabinet interior toward the drain.

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4. 1" MNPT stub for water inlet connection (located at the outside back wall of cabinet).
5. 3/4" MNPT stub for electrical installation (located at the outside back wall of cabinet).
6. No support braces or equipment mounted on the bottom interior of cabinet to impede drainage or cleaning
7. Welded, ground, and polished joints
8. Automotive grade weather stripping installed on door jambs.
9. Double wall insulated on all sides, doors, top and bottom.
10. For worker safety, heated models have no exposed heating elements.
11. Cabinet hardware is all stainless steel.
12. Cabinet NRTL (OSHA) listed and marked
13. Stainless steel piping suitable for potable water service.

D. Doors

1. Stainless steel Type 304, 14 gauge, #3 brush finish interior and exterior, insulated double wall construction. Welded and ground joints, brushed and polished interior and exterior.
2. Two-point stainless steel latch with recessed stainless steel locking handle, with top mounted stainless steel door holder/closer.
3. Door hinges shall be mechanically fastened to cabinet body for ease in removal for maintenance or replacement. Stainless steel rods and full length stainless steel piano hinges.
4. Full 135 degree opening for hose clearance.
5. Automotive grade weather stripping installed on door jambs to minimize heat loss.

E. Components:

1. Hose Reel: Hannay Model AA-BZ-6028-25-26RT or equal, 1" w/bronze swing joint & bronze internal piping, aluminum drum, stainless steel disc & chromed sprocket. Heavy duty frame steel painted w/alkyd enamel.
2. Hose: 3/4"-225' (300 feet if required for wide body applications), special drinking water hose meeting FDA N.S.F. 51 & U.S.D.A. requirements,

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tasteless, odorless & non contaminating, maximum working pressure 225 psi @ 70°F.

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1. Nozzle: ¾" GNY1041-BV-Y open break with ball valve or **Multi-Alloy Nozzle** Stock Code L580-215-3409 (certified food grade compliant materials of manufacture) or approved equal.
2. Heater 1200W, 120 V single phase, stainless steel sheathed strip heater mounted on lower rear wall including on-off switch and thermostat (500F). (Note to Designer: delete heater if determined that freeze protection using light is adequate – this will be true for most STIA applications).
3. Light: 100 watt, weather proof, pendant type w/guard, includes on-off switch.
4. Wiring: All wiring enclosed in sealtite weatherproof flexible conduit.
5. Pressure Regulator: 1" brass, adjustable 25 to 75 psi.
6. Assembly shall have provisions within the cabinet water piping to enhance periodic sanitizing of the water pipe and hose. The provisions include a tee with a plug to enable connection for periodic sanitizing of the piping and the hose in the cabinet.
7. Two (2) replaceable 6" diameter drag cushions for protection of nozzle and valve during hose retrieval.
8. Drag cushion plug with stainless steel nylon coated security cable.

D. Stand:

1. Material: Type 304 Stainless Steel, 12/14 gage
2. 18" high, welded cabinet stops.
3. Legs with 4"X4"X1/4" min pads all four corners welded to legs with 2 anchor bolt holes each plate ½" dia.

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4. Stand designed and stamped by WA State licensed Structural engineer for Seismic design category D.

E. Electrical

1. A. All components mounted w/in the cabinet shall be U.L. approved, weatherproof in accordance w/the National Board of Fire Underwriters, suitable for service at 120volts. Note that if heater called out 2-120 V 15-20A service points required.
2. All parts to be grounded.

2.02 PIPING

A. Domestic Cold Water, and Non-Potable Water Piping:

1. Service Water Piping: Pipe, fittings, valves and accessories upstream of pressure reducing valves shall be suitable for 250 psig minimum pressure.
2. Building Water Piping: Pipe, fittings, valves and accessories downstream of pressure reducing valves shall be suitable for 125 psig minimum pressure.

B. Above Ground Piping and Fittings:

1. Piping Up to 3 inch: Type "L" copper tubing, hard drawn, ASTM B88.
 - a. Fittings: Wrought copper solder fittings and screwed adapters, ANSI B16.22. Cast bronze solder joint fittings and screwed adapters, ANSI B16.18.
 - b. Unions: Wrought copper solder joint unions, ANSI B16.22. Cast Bronze solder joint unions, ANSI B16.18.

C. Underground Piping Fittings (including Embedded in Concrete - subjected to Mechanical and Plumbing Codes):

1. Pipes up to 3 inch: Piping: Type "K" copper tubing, soft drawn, ASTM B88.
 2. Fittings: Wrought copper solder joint, ANSI B16.22, cast bronze solder joint, ANSI B16.18.
 3. Brazing: Silver Brazed Joints.

END OF SECTION