

**PART 1 – GENERAL**

These standards apply to the installation of plumbing fixtures, trim and accessories.

**1.01 RELATED SECTIONS**

- A. Section 221100 – Interior Water Pipe and Fittings.
- B. Section 221200 – Sanitary Waste, Vent and Storm System.

**1.02 DESIGN CRITERIA**

A. Drawings and Specifications:

1. Provide fixture and equipment schedules, fixture locations and riser diagrams scheduled on drawing sheets. Indicate cold, hot, waste and vent sizes in accordance with Uniform Plumbing Code. Fixture Data sheets shall be provided in specifications. For any required fixtures not included, design team shall present a proposed fixture data sheet for review.
2. Design ramp accessible handwash stations for aircraft servicing personnel at no more than 150 feet spacing (with no additional hindrances such as stairs etc.) per FDA requirements.
3. All invert elevations of sanitary sewer lines leaving a building shall be indicated on drawings and of sufficient depth to permit future connection of a waste line from any point in the lowest level of the building.
4. Domestic water service (both hot and cold) to all buildings and all tenant spaces (no matter what activities occur within the tenant space) shall have a Washington State Department of Health approved reduced pressure principle backflow preventer assembly (RPBA) located in a safe and readily accessible area outside the tenant space to serve as premises isolation to protect the Port's public water system as per 221100 Interior Water Pipe and Fittings, which includes all testing requirements.
5. Properly vented drainage piping (including an approved air gap between the RPBA and the pipe) shall extend from immediately below each RBPA and be hard piped to a floor drain or sanitary sewer tie-in. The drain shall be adequately sized to handle the anticipated maximum discharge from the RPBA under full dynamic flow conditions without overflowing. Do not assume that the funnel assembly that comes with the RPBA is adequately sized to meet this requirement. Submit detailed hydraulic calculations stamped by a registered Professional Engineer as part of the Application for Connection. Under no

circumstances shall the drainage be directed onto the floor. The RBPA and supporting appurtenances shall be installed in strict conformance with latest industry practices, including AWWA's cross connection control manual, UPC, and other applicable industry publications. A detail showing the premises isolation cross connection installation shall be clearly shown in the design documents, including the specific size and slope of the drain piping. The Port's Water System Manager can provide guidance during design process to meet these requirements.

6. Provide shut-off valves on all water lines to fixture groups. (Sustainability Feature: limited water system loss due to drain down for maintenance)
7. Water velocities shall not exceed 5 fps during normal peak demand conditions.
8. Single Plumbing Chases shall be a minimum 24-inch clear depth and back-to-back Plumbing Chases shall be a minimum 36-inch clear depth. Piping shall be arranged in the chase so that a maintenance worker should be able to reach the farthest fixture in the chase for service.
9. Provide floor drains in all restrooms, accessible plumbing chases, mechanical rooms, rooms that contain fire sprinkler risers, compactor and trash areas, and elsewhere as needed for project design. Slope floor to floor drain.
10. Provide freeze-proof hose bibbs at exterior locations near equipment requiring cleaning, including HVAC equipment (cold water) and trash compactors (tempered water).
11. Provide hose bibbs (cold water) at mechanical rooms.
12. Trap primers with access shall be scheduled and shown on the design drawings. Trap primer piping shall be shown on drawings.
13. Provide water hammer arrestors per PDI Standard WH-201 and wherever flow velocity is subject to sudden change. Water hammer arrestors shall be provided for each plumbing fixture or group of fixtures on same supply line.
14. Dielectric fittings as specified in Section 200300 shall be used in lieu of dielectric unions.
15. Locate mixing valves for easy access with access panel.
16. Concealed plumbing components shall have access doors indicated on drawings.
17. Provide an approved waterproof membrane beneath the floor topping for a minimum of five feet by five feet and install clamping ring type floor drains watertight. New installations shall have the entire restroom floor covered with the waterproof membrane. Refer to 200300 for additional requirements.

18. Double wall semi-instantaneous heat exchangers shall be provided for domestic hot water service with re-circulation pump.
19. All Food/Drink Service Waste shall be routed through 304 stainless piping to a Port of Seattle approved grease interceptor.
20. All domestic water piping shall be sloped to facilitate drainage at low points to suitable drain locations.
21. Provide seismic flex loops where required. Seismic loops shall be factory prefabricated. Movement shall be calculated by structural engineer on each project based elevation and seismic conditions. Design team shall specify movement conditions for each project.
22. Provide stop/check valves in each (hot and cold) supply to each fixture to prevent hot and cold water from intermixing upstream of fixtures.
23. Floor drain shall have minimum 3" waste connection.
24. In order to protect the STIA potable water supply, each water service to a lease holder shall have an approved Reduced Pressure Back Flow Prevention device (RPBP) installed, including lines serving soft drink dispensing machines.
25. All RBPB's shall be provided with a strainer upstream of the RBPB's and isolation valves on both sides of the strainer to allow removal without need for drainage of the entire system.
26. All required calculations shall be provided so that any changes that become necessary during construction or after are made efficiently.
27. Coordinate electrical connection requirements for any all fixtures with electrical engineer.
28. Each Restroom shall be provided with a non-potable (purple) flush piping system that connects only to the flush valve piping and will be provided with an approved reduced pressure principle backflow preventer for connection to the non-potable water source. (Purple) pipe will be routed to a nearby mechanical space on ramp level unless otherwise approved by AV/F&I.

### **1.03 QUALITY ASSURANCE**

Provide plumbing work conforming to requirements of uniform plumbing code and Port of Seattle Standards.

**PART 2 - PRODUCTS**

**2.01      PLUMBING FIXTURES**

Refer to plumbing fixture data sheets below:

Plumbing Fixture Data Sheet		Lunchroom Sink	S1
<p><b>Sink:</b> Elkay Lustertone DLR252210. Acorn, Just or approved equal</p> <p><b>Faucet:</b> Chicago 200-AGN8AE3-317AB, T&amp;S Brass, or Zurn</p> <p><b>Drain/Stops:</b> Just J-35, McGuire, Brasscraft, Dearborn Brass, Elkhart Brass, B&amp;K, Mueller</p>	 <p><i>Picture shown may not include all options and accessories indicated</i></p>		
<p><b>Specification:</b> 304 Stainless Steel, 18 gauge, heavy duty sound insulation, self-rimming, countertop mounted sink. Faucet to be 8" rigid gooseneck spout with aerator, ADA handles, include hand sprayer. Drain to be type 304 stainless steel crumb cup strainer with stainless steel basket, 4" long chrome plated brass tailpiece and chrome plated brass p-trap. Garbage disposal not allowed.</p>			

Plumbing Fixture Data Sheet	Shower Accessories	SH1
<b>Fittings:</b>	Symmons Safetymix Model 1-117-FS-X-CHKS, Kohler K-76466, American Standard. 1662.743 or approved equal.	 <p data-bbox="792 1444 1344 1503"><i>Picture shown may not include all options and accessories indicated</i></p>
<b>Description:</b>	Shower system with hand shower, lever handle, pressure balancing mixing valve with adjustable stop screw to limit handle turn, showerhead, single mode with adjustable flood or mist spray #4-231, lever diverter with volume control for showerhead and hand shower #4-458, open-flo wall/hand shower #FS, with flexible 5-foot metal hose and inline vacuum breaker, wall hook for mounting hand shower, 2.5 gpm, polished chrome finish. ADA Compliant.	
<b>Mounting:</b>	Wall mounted. Just J-35, McGuire, Brasscraft, Dearborn Brass, Elkhart Brass, B&K, Mueller	

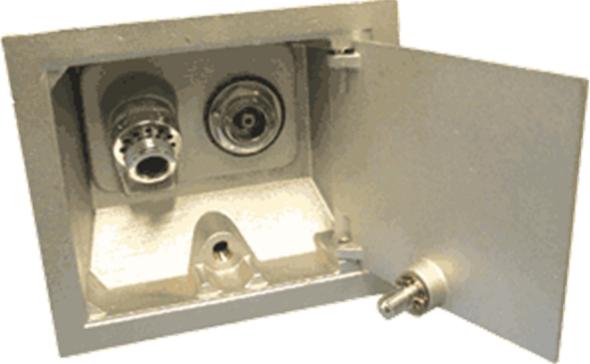
Plumbing Fixture Data Sheet		Service Sink - Corner Mounted	S2
<p><b>Service Sink:</b> American Standard Florwell 7741.000, Kohler K-6710 Whitby, or Zurn Z5850</p> <p><b>Material</b> Enamel Cast Iron ASME A112.19</p> <p><b>Mounting</b> Corner mount, 28x28x13</p> <p><b>Faucet:</b> Chicago 897 with vertical wall support, hose thread outlets, integral vacuum breaker, check valves between hot and cold water connections, pail hook, and 4" color coded wrist blade handles. Acceptable alternates, American Standard 8344, or T&amp;S Brass B-0665</p>	 <p><i>Picture shown may not include all options and accessories indicated</i></p>		
<b>Accessories</b>	Include vinyl coated rim guard, 3" chrome plated brass grid strainer.		

Plumbing Fixture Data Sheet		Thermostatic Mixing Valve	TMV1
<p><b>Manufacturer:</b> Leonard XL-186-670-LF-DT series, Armstrong RADA, or Holby(certified to ASSE 1070)</p> <p><b>Material:</b> Rough Bronze</p> <p><b>Type:</b> Adjustable temperature</p> <p><b>Mounting:</b> Recessed or exposed in back of house closets. Include 16 gauge type 304 stainless steel cabinet and 12 gauge stainless steel locking access panel for recessed applications.</p>			
<p><i>Picture shown may not include all options and accessories indicated</i></p>			
<p><b>Specification:</b> Highly responsive copper encapsulated thermostat assembly            Locking temperature adjustment (tamper-resistant)            Lead free bronze, brass, stainless steel and engineered polymer internal components            Integral check valves on hot and cold inlets Approach temperature 5°F (2.8°C) above set point            Maximum inlet pressure 125 PSI            Minimum flow rate: 2.5GPM            cold water bypass capable of by passing cold water in the event the hot water supply fails with the recirculation connection.</p>			

Plumbing Fixture Data Sheet		Thermostatic Mixing Valve Undersink	TMV2
<p><b>Manufacturer:</b> Leonard 170-LF, Powers LFE480, or Watts LF70A</p> <p><b>Material:</b> Bronze</p> <p><b>Type:</b> Adjustable temperature</p> <p><b>Mounting:</b> Exposed or recessed applications.</p>			
<p><i>Picture shown may not include all options and accessories indicated</i></p>			
<p><b>Specification:</b></p>	<p>Highly responsive copper encapsulated thermostat assembly</p> <p>Locking temperature adjustment (Tamper-resistant)</p> <p>Lead free bronze, brass, stainless steel and engineered polymer internal components</p> <p>Integral check valves on hot and cold inlets Approach temperature 5°F (2.8°C) above set point</p> <p>Minimum flow rate: 0.25 GPM</p>		

Plumbing Fixture Data Sheet		Trap Primer	TP1
<p><b>Manufacturer:</b> PPP Prime-Time, Zurn, MiFab</p> <p><b>Materials:</b> Steel Cabinet</p> <p><b>Type:</b> Pre-assembled in a cabinet for surface or recessed mounting, solenoid valve type, serves 4-30 traps.</p> <p><b>Valve:</b> "Mini-Prime for 1-4 FD's 120/220 solenoid valve</p> <p><b>Protection:</b> Atmospheric vacuum breaker</p>	 		
<p><i>Picture shown may not include all options and accessories indicated</i></p>			
<p><b>Specification:</b> Package to include atmospheric vacuum breaker, pre-set 24 hr clock, manual override switch, solenoid valve, 3 wire connection, 3/4" fpt connection, calibrated manifold for equal water distribution, 5/8" or 1/2" outlet compression fittings. Unit to supply minimum of 2 oz. of water at 20 psig at a factory setting of 10 seconds. Unit to be pre-assembled in a steel cabinet for flush or surface mounting. Specify number of drains to be served for manifold size from 4,6, 8, 20, 23, 13-20, or 21-30 drains."</p> <p><b>Accessories</b> 1/2" or 5/8" fittings, dry wall or fire rated cabinet and access doors. Include cylinder lock for access doors. Include prime coat access door for recessed applications in public areas. Include stainless steel access for back-of-house applications.</p>			

Plumbing Fixture Data Sheet		Urinal – Wall Mounted	U1
<p><b>Urinal:</b> American Standard Washbrook 6590.001 or Crane Crawford 7399</p> <p><b>Material:</b> Vitreous China</p> <p><b>Bowl Type</b> ADA Compliant, wall mounted, washout flushing action, 3/4" inlet top spud, flushing rim, elongated rim 14 inches from finished wall extended sides, low consumption 0.125 - 1 gpf.</p>	 <p><i>1. Picture shown may not include all options and accessories indicated</i></p>		
<p><b>Accessories:</b> Zurn Aquasense ZER6003AV-EWS-CPM series exposed, with manual override button, quiet diaphragm, chrome plated, vandal resistant top cap, internal siphon protection. Battery powered infrared sensor. Acceptable Alternate: Sloan Royal 186-0.5-SMO.</p> <p><b>Support:</b> Jay R Smith 06036series, Zurn, Wade, Josam Heavy duty carriers. Light commercial carriers not allowed.</p>			

Plumbing Fixture Data Sheet	Wall Hydrant	WH1
<p><b>Wall Hydrant:</b> Woodford model B65, Jay R Smith, or Zurn</p> <p><b>Material:</b> Rough Bronze</p> <p><b>Type:</b> Non-freeze</p> <p><b>Mounting:</b> Recessed</p>	 <p><i>Picture shown may not include all options and accessories indicated</i></p>	
<p><b>Specification:</b> Recessed type wall hydrant. Freeze proof, bronze recessed hydrant, with chrome face plate, 3/4" vacuum breaker, T-handle key, and nickel bronze box.</p>		

Plumbing Fixture Data Sheet	Emergency Eye Wash	EW1
<p><b>Manufacturer:</b> Haws 7778B, Bradley, Guardian</p> <p><b>Material:</b> 18 gauge 304 Stainless Steel</p> <p><b>Type:</b> Wall Mount</p> <p><b>Mounting:</b> 16 gauge type 304 stainless steel bracket.</p> <p><b>Heads:</b> Soft Flo type 303 Stainless Steel anti-surge heads w/ built-in 1.2 GPM controls</p> <p><b>Face Ring:</b> Stainless Steel type 304, simultaneous w/ heads</p> <p><b>Valve:</b> Stainless Steel ball/stem</p> <p><b>Dust Cover:</b> Stainless Steel</p> <p><b>Waste:</b> 1-1/4" IPS Chrome 6: straight</p>	 <p><i>Picture shown may not include all options and accessories indicated</i></p>	
<p><b>Accessories:</b> Universal Sign (8x10), test cards, integral type 304 stainless steel water strainer.</p> <p><b>Installation:</b> Contractor to provide trap for wall waste connection.</p> <p><b>Options:</b> Include Model TWBS.EWE fully packaged and tested system of blending tempering water valve that blends hot and cold water sized to handle a minimum of 5 gpm. Unit to be constructed of bronze, brass, copper, and/or stainless steel. Unit to blend hot/cold water to set point as pressure fluctuations of up to 50%. Initial setting of tempered water to be 80 degrees F in accordance with ANSI Z358.1-2004. Unit to consist of thermostatic mixing valve, high temperature limit valve, bypass valve, and glass lens temperature gauge. Include isolation check valves. Locate near fixture in sealed stainless steel cabinet wall cabinet with access door labeled Emergency Eye Wash or in an adjacent space as required in design documents.</p>		

Plumbing Fixture Data Sheet		Emergency Shower	ES1
<p><b>Manufacturer:</b> Haws 8330, Guardian, Speakman</p> <p><b>Material:</b> Type 304 Stainless Steel pipe and fittings along with cast finished stainless steel 9" diameter floor flange.</p> <p><b>Type:</b> Free standing combination shower and eye/face wash including a stainless steel round bowl. Include stainless steel head with flow control, 316 stainless steel ball valve with type 304 stainless steel strainer. Soft Flo type 303 Stainless Steel anti-surge heads w/ built-in 1.2 GPM controls with stainless steel dust covers.</p> <p><b>Supply:</b> 1-1/4" NPT female inlet</p>			
<i>Picture shown may not include all options and accessories indicated</i>			
<b>Accessories:</b>	Universal Sign (8x10), test cards, integral type 304 stainless steel water strainer.		
<b>Installation:</b>	Contractor to provide trap for wall waste connection.		
<b>Options:</b>	Include Model TWBS.EWE fully packaged and tested system of blending tempering water valve that blends hot and cold water sized to handle a minimum of 5 gpm and maximum of 20 gpm. Unit to be constructed of bronze, brass, copper, and/or stainless steel. Unit to blend hot/cold water to set point as pressure fluctuations of up to 50%. Initial setting of tempered water to be 80 degrees F in accordance with ANSI Z358.1-2004. Unit to consist of thermostatic mixing valve, high temperature limit valve, bypass valve, and glass lens temperature gauge. Include isolation check valves. Locate near fixture in sealed stainless steel cabinet wall cabinet with access door labeled Emergency Shower/Eye Wash or in an adjacent space as required in design documents.		

Plumbing Fixture Data Sheet		Public Electric Water cooler	EWC1
<b>Manufacturer:</b>	Elkay EZSTL8WSLK or equal by Haws or Sunroc		
<b>Material:</b>	18 gauge 304 Stainless Steel		
<b>Type:</b>	Barrier Free, ADA compliant, lead free, with cane apron for cane detection		
<b>Mounting:</b>	MLP200 heavy gauge galvanized steel		
<b>Bubbler:</b>	Flexguard safety		
<b>Valve:</b>	brass, lead free		
<b>Chiller:</b>	R-134A		
<b>Filter:</b>	None		
<b>Features:</b>	GreenSpec	<i>Picture shown may not include all options and accessories indicated</i>	
<b>Refrigeration:</b>	Instantaneous cooling chiller R-134A, capacity defined as 80 deg F inlet temp, 90 deg F room temp, producing 50 deg F water.		

Plumbing Fixture Data Sheet		Floor Drain	FD1
<p><b>Manufacturer:</b> Zurn Z-415-SH-ZB-P-VP, Jay R Smith, Josam</p> <p><b>Material:</b> Cast Iron Body</p> <p><b>Type:</b> Bottom outlet</p> <p><b>Mounting:</b> Tile or concrete</p>			
<i>Picture shown may not include all options and accessories indicated</i>			
<b>Features:</b>		Combination invertible membrane clamp and adjustable collar, polished nickel bronze strainer, 8"x8" nickel bronze vandal-proof top, trap primer connection.	

Plumbing Fixture Data Sheet		Funnel Floor Drain	FD2
<p><b>Manufacturer:</b> Zurn Z-415-E-ZB-P-VP, Jay R Smith, Josam</p> <p><b>Material:</b> Cast Iron Body</p> <p><b>Type:</b> Bottom outlet</p> <p><b>Mounting:</b> Tile or concrete</p>			
<i>Picture shown may not include all options and accessories indicated</i>			
<b>Features:</b>		Combination invertible membrane clamp and adjustable collar, polished nickel bronze strainer, 4" diameter funnel, trap primer connection, vandal-proof top.	

Plumbing Fixture Data Sheet		Floor Drain	FD1
<p><b>Manufacturer:</b> Josam 49320A series, JR Smith, Zurn</p> <p><b>Material:</b> Cast Iron Body</p> <p><b>Type:</b> Bottom outlet</p> <p><b>Mounting:</b> Tile or concrete</p>			
<i>Picture shown may not include all options and accessories indicated</i>			
<b>Features:</b>		Combination invertible membrane clamp and adjustable collar, nickel bronze traffic top, internal dome polished nickel bronze strainer, trap primer connection.	

Plumbing Fixture Data Sheet		Lavatory – Wall Mounted	L1
<p><b>Lavatory:</b></p> <p>American Standard Murro Model 0954004EC                      Toto 307A                      Kohler Brennam 1997-1L</p> <p><b>Faucet:</b></p> <p>Eco friendly faucet with cover plate or equivalent with proven three year record of medium to heavy use between battery changes. 15 second minimum run time</p> <p><b>Stops:</b></p> <p>Jay R Smith, Wade, Zurn, Josam, McGuire ST02LK, Dearborn Brass, Brasscraft, Elkhart Brass, B&amp;K, or Mueller.</p> <p><b>Carrier:</b></p> <p>Josam, Zurn, J.R. Smith 085X Floor mount carrier capable of supporting 500 pounds.</p> <p><b>Soap Disp:</b></p> <p>Stainless Sensor Operated automatic, ADA Compliant matching the faucet.</p>	  	<p><i>Picture shown may not include all options and accessories indicated</i></p>	
<p><b>Features:</b></p> <p>Vitreous china wall mounted lavatory. Rear overflow, recessed self-draining deck, concealed arm supports. ADA compliant installation. Include knee contact guard. Contractor to obtain and install for ease of shroud installation and removal. Solid brass chrome plated grid strainer. Faucet to be chrome plated brass, ultra-low consumption, integral strainer, mixing valve and lithium battery. Include micro-turbine or other technology that provides for no power connection and means to recharge batteries. Mount on 4" chrome plated cover plate. Include chrome plated grid strainer. Provide proof that faucet batteries will last three years without a change.</p> <p>Recommended for "family toilet rooms and for all employee restrooms.</p>			

Plumbing Fixture Data Sheet		Employee Lavatory	L2
<p><b>Manufacturer:</b> Bradley SS-3N/IR, Acorn Meridian 3793, or Sloan EW-73000.</p> <p><b>Material:</b> Polyester resin basin, acrylic laminate or type 304 stainless steel, access panels, vandal-proof sprayhead and infrared sensor.</p> <p><b>Type:</b> 3 bowl, individual infrared lavatory sensors and solenoids, 0.5 gpm max flow per head, pressure balance mixing valve, checkstops, waste, vent, and traps. Unit to be completely vandal-proof.</p> <p><b>Mounting:</b> Wall or floor mounted with access cover for drains and piping.</p> <p><b>Support:</b> Heavy Gauge Type 304 Stainless Steel.</p>			
<i>Picture shown may not include all options and accessories indicated</i>			
<p><b>Features:</b> Unit sprayhead assembly to be pre-plumbed, pre-wired, and provide dry surface ledge above water spray area. All water and waste connections to be concealed in frame. Infrared sensor controlled by individual solenoid valves. Include all packaged waste and supply connections to wall, thermostatic mixing valve with stops, strainer, and check valves.</p> <p><b>Accessories:</b> Include wall hung frame, integral liquid soap dispensers, and thermostatic mixing assembly.</p> <p><b>Solar Option:</b> Individual infrared controls powered by solar panels mounted on dry shelf. No AC power required or batteries. System provides power through PV cells to convert light into electricity to power the solenoid.</p>			

NOTE: FDA requires a handwash station or facility within 150 ft. of aircraft service point (Gate)

Plumbing Fixture Data Sheet		Employee Lavatory	L3
<p><b>Manufacturer:</b> Bradley, Acorn Meridian, or Sloan.</p> <p><b>Material:</b> Polyester resin basin, acrylic laminate or type 304 stainless steel, access panels, vandalproof sprayhead and infrared sensor.</p> <p><b>Type:</b> 1 bowl, individual infrared lavatory sensor and solenoid, 0.5 gpm max flow per head, pressure balance mixing valve, checkstop, waste, vent, and trap. Unit to be completely vandalproof.</p> <p><b>Mounting:</b> Wall or floor mounted with access cover for drains and piping.</p> <p><b>Support:</b> Heavy Gauge Type 304 Stainless Steel.</p> <p><b>Dryer:</b> Excel Exlrator Reco XL-SB -ECO dryer, no heat, SS Cover, Greenspec, 500W</p> <p><b>Soap Disp.</b> Bradley Model 6563, Surface</p>	<p><i>Picture shown may not include all options and accessories indicated</i></p> 		
<b>Features:</b>	<p>Unit sprayhead assembly to be pre-plumbed, pre-wired, and provide dry surface ledge above water spray area. All water and waste connections to be concealed in frame. Infrared sensor controlled by individual solenoid valve. Include all packaged waste and supply connections to wall, thermostatic mixing valve with stops, strainer, and check valves.</p>		
<b>Accessories:</b>	<p>Include wall hung frame thermostatic mixing assembly and soap dispenser Model 6563.</p>		
<b>Solar Option:</b>	<p>Individual infrared controls powered by solar panels mounted on dry shelf. No AC power required or batteries. System provides power through PV cells to convert light into electricity to power the solenoid.</p>		

Plumbing Fixture Data Sheet		Public Lavatory	L4
<p><b>Manufacturer:</b> Bradley Verge 2 Station Lavatory Sink LVSD2 or approved equal.</p> <p><b>Material:</b> Single piece molded design eliminates caulk lines and seams, unmatched durability, unit is constructed of Evero Natural Quartz Surface - a blend of natural quartz, granite, exotic materials and bio-based resin.</p> <p><b>Faucet:</b> Eco friendly faucet with cover plate or equivalent with proven three year record of medium to heavy use between battery changes. 15 second minimum run time</p> <p><b>Type:</b> 2 fitting, individual lavatory. Unit to be completely vandalproof.</p> <p><b>Mounting:</b> Wall mounted with access cover for drains and piping.</p> <p><b>Support:</b> Heavy Gauge Type 304 Stainless Steel. Capable of supporting the fixture plus at least an additional 400 pounds.</p> <p><b>Soap Disp.:</b> Stainless Sensor Operated automatic, ADA Compliant matching the faucet.</p>	  		
<p><b>Accessories:</b> Include wall hung frame, use L1 accessories, faucet and soap dispensers.</p>		<p><i>Picture shown may not include all options and accessories indicated</i></p>	

Plumbing Fixture Data Sheet		Public Lavatory	L5
<p><b>Manufacturer:</b> Bradley Verge 1 Station Lavatory Sink LVSD1 or approved equal.</p> <p><b>Material:</b> Single piece molded design eliminates caulk lines and seams, unmatched durability, unit is constructed of Evero Natural Quartz Surface - a blend of natural quartz, granite, exotic materials and bio-based resin.</p> <p><b>Faucet:</b> Eco friendly faucet with cover plate or equivalent with proven three year record of medium to heavy use between battery changes. 15 second minimum run time</p> <p><b>Type:</b> 2 fitting, Faucet and soap individual lavatory. Unit to be completely vandalproof.</p> <p><b>Mounting:</b> Wall mounted with access cover for drains and piping.</p> <p><b>Support:</b> Heavy Gauge Type 304 Stainless Steel. Capable of supporting the fixture plus at least an additional 400 pounds.</p> <p><b>Soap Disp.:</b> Stainless Sensor Operated automatic, ADA Compliant matching the faucet.</p>			
<b>Accessories:</b>		<p>Include wall hung frame, use L1 accessories, faucet and soap dispensers.                      (Sustainability Feature: water turbine recharge saves on battery/electrical use.)                      Not recommended unless as part of a suite with double Verge lavs.</p>	

*Picture shown may not include all options and accessories indicated*

Plumbing Fixture Data Sheet	Water Closet – Wall Mounted	WC1
<p><b>Manufacturer:</b> American Standard Afwall 2257.101, Kohler K-84325, Sloan ST-2459 Vitreous china.</p> <p><b>Material:</b></p> <p><b>Bowl Type:</b> Siphon jet, back outlet, elongated, 1.1-1.6gpf, 1-1/2 inch top spud.</p> <p><b>Mounting:</b> Wall mounted. 4 bolt carrier for new construction.</p> <p><b>Features:</b> Flushometer - Zurn Aquavantage Model #: Z6000AV-WS1-DF-X</p>	<div data-bbox="938 432 1295 810" data-label="Image"> </div> <div data-bbox="873 814 1373 1121" data-label="Image"> </div> <p data-bbox="797 1163 857 1192">1.6gpf</p>	
<p>Exposed, quiet diaphragm, chrome plated, vandal resistant top cap, internal siphon protection. Lifting the handle up initiates a reduced flush of 30% for evacuation of liquid waste. Pushing the handle down actuates a full flush for solid waste. Include wall plate with graphics and instruction for user operations. Include a pressure vacuum breaker. Acceptable Alternate: Sloan Uppercut WES-111.</p> <p>Toilet Seat – Church 9500SSC Color white. Extra heavy weight injection molded solid plastic, open front, less cover elongated bowl, large molded in bumpers, concealed check hinges with 300 series stainless steel posts with integral checks that stop seat up to 11 degrees beyond vertical, 300 series stainless steel hardware. Acceptable Alternates: Toto SC534 with check Hinge, Bemis 1655SSC, or Beneke 527SS</p> <p>Outlet &amp; Support - 4 inch no-hub with 2 inch vent outlet. Bariatric (1,000 lbs. min) Jay R. Smith 0211Y-M54-XK series, Zum, Wade, Josam bariatric-duty carriers. Light commercial carriers not allowed.</p>		

Plumbing Fixture Data Sheet		Water Closet – Wall Mounted	WC2
<p><b>Manufacturer:</b> American Standard Afwall 2257.101, Kohler K84325, Sloan ST-2459</p> <p><b>Material:</b> Vitreous china.</p> <p><b>Bowl Type:</b> Siphon jet, back outlet, elongated, 1.1-1.6gpf, 1-1/2 inch top spud.</p> <p><b>Mounting:</b> Wall mounted. 4 bolt carrier for new construction.</p>			
<p><b>Features:</b></p> <p>Flushometer - Eco Friendly with proven three-year record of medium to heavy use without battery changes. Such as Toto TET1GA32</p> <p>Toilet Seat – Church 9500SSC</p> <p>Outlet &amp; Support -</p>	<p>Durable chrome plated body with tamper-proof screws and solid bronze valve body. Self-powered flush valve system with no minimum daily usage requirement. Include micro-turbine or other technology that provides for no power connection and means to recharge batteries. Minimum proven 3-year battery life. Adjustable sensor to prevent ghost flushing. Fully mechanical override button. Self-cleaning piston to reduce clogging and maintenance. High back pressure vacuum breaker. Flow rate of 1.6 gallons per flush. ADA compliant.</p> <p>Color white. Extra heavy weight injection molded solid plastic, open front, less cover elongated bowl, large molded in bumpers, concealed check hinges with 300 series stainless steel posts with integral checks that stop seat up to 11 degrees beyond vertical, 300 series stainless steel hardware. Acceptable Alternates: Toto SC534 with check Hinge, Bemis 1655SSC, or Beneke 527SS</p> <p>4 inch no-hub with 2-inch vent outlet. Bariatric (1,000 lbs. min) Jay R. Smith 0211Y-M54-XX series, Zum, Wade, Josam bariatric duty carriers. Light commercial carriers not allowed</p>		

Plumbing Fixture Data Sheet	Gas Water Heater	SS1
<p><b>Water Heater:</b> Bradford White                      LG2100H853N                      A.O. Smith, Rheem.</p> <p><b>Description</b> Atmospheric Vent High Input Model, electronic ignition, T&amp;P relief valve (route to drain), low NOx emissions</p> <p>Provide with 4" lip powder coated steel drip pan beneath entire heater.</p>	 <p><i>Picture shown may not include all options and accessories indicated</i></p>	

Plumbing Fixture Data Sheet		Electric Water Heater	SS2
<b>Water Heater:</b>	Bradford White LE112T3-1 A.O. Smith, Rheem.		
<b>Description</b>	Fast acting surface-mount thermostat with high limit energy cut-off (manual reset) for safety. 1" (25mm) non-CFC foam insulation covers the sides and top of the tank, reducing heat loss. Heavy gauge steel automatically formed, rolled, and welded.  208V, 240V		
<b>Drain Pan</b>	Provide with 4" lip powder coated steel drip pan beneath entire heater.		
	T&P Relief Valve—route to drain		

**2.02      ACCESSORIES**

A. Floor Drains:

Refer to plumbing fixture data sheets above.

B. Trap Primers:

Refer to plumbing fixture data sheets above.

C. Water Hammer Arresters:

Manufacturers: J.R. Smith, PPP, Josam. Factory fabricated, PDI certified unit with stainless steel construction and nitrogen charge, copper type K with air charge.

D. Thermostatic Mixing Valves:

Refer to plumbing fixture data sheets above.

E. Vacuum Breakers:

Manufacturer: Watts NF8, Zurn, Wade, or approved equal. Provide with a flow-thru pattern, on the water supply to each fixture, which has a water connection or hose attachment located below the rim.

F. Wall Hydrant:

Refer to plumbing fixture data sheets above.

G. Hose Bibb:

Refer to plumbing fixture data sheets above.

H. Yard Hydrant:

Refer to plumbing fixture data sheets above.

I. Floor Cleanout:

Refer to plumbing fixture data sheets above.

J. Wall Cleanout:

Refer to plumbing fixture data sheets above.

**PART 3 – EXECUTION**

**3.01 INSTALLATION**

**A. Plumbing fixture supports:**

1. Support wall mounted fixtures rigidly with metal supporting members so no stress is transmitted to connections. Fit fixtures on finished walls without noticeable warpage on either the wall or fixture.
2. Anchor support to floor slab with anchor bolts.

**B. Fixture General Fixtures, General:**

1. Locate fixtures where indicated on the Drawings. Drawings shall locate drain/wastes from lavs to be upstream of urinal/water closet drain/waste stream. Refer to Architectural Drawings for mounting heights. Locate in accordance with details and dimensions on Drawings. Use the type of mountings specified.
2. Secure the floor outlet of floor-mounted fixtures rigidly to the drainage connections and the floor.
3. Make connections gas tight and watertight.
4. Use one-piece special molded gaskets for connections between earthenware of fixtures and soil pipe flanges. Do not use bulk material, including putty and plastic, for gaskets.
5. Provide individual vents for each fixture.
6. Provide separate traps for each fixture, where manufacturers do not supply trap for fixture.
7. Stops: Provide stops in each water connection to each fixture, except where a fitting has integral stops.

Unless otherwise specified, provide water based silicone sealer between the top and the sides of plumbing fixture edges and adjacent wall [and countertop] surfaces. Apply per manufacturer's recommendations to form a smooth unobtrusive joint. Install 1 sample joint on each type of fixture for the Architect's review before proceeding with installation of remainder of this sealant.

**C. Water Closet Flush Valves:**

Install flush valves with handles facing the wide side of the toilet stall per ADA requirements.

D. Kitchen and Laboratory Fixtures and Equipment:

1. Rough-in and connect water, drain and vent piping for plumbing fixtures and equipment.
2. Provide stops and supply piping for fixtures and equipment.
3. Install faucets and fittings shipped loose with fixtures and equipment.

**3.02**      **FIELD TESTS**

- A. Tests shall be witnessed by the Commissioning Authority.
- B. Infrared Sensor Operated Faucets: Test each faucet to verify the temperature control and that the sensor operates as specified. Prepare a report indicating results of test.
- C. Infrared Sensor Operated Flush Valves: Test each flush valve to verify that the sensor operates as specified. Prepare a report indicating results of test.

**3.03**      **CLEANING**

Prior to acceptance of building, thoroughly clean exposed portions of plumbing installation, removing labels and traces of foreign substance, using only a cleaning solution approved by manufacturer of plumbing fixture and Port of Seattle Representative and being careful to avoid damage to finished surfaces.

**3.04**      **DEMONSTRATION**

Subject systems to such operating tests as are required to demonstrate that the equipment installed will operate within the specified limits through normal ranges and sequences including simulation of possible abnormal conditions. Operate every device manually and automatically, in accordance with its purpose. Operating test duration; not less than 6 hours after major corrections have been made. If tests do not demonstrate satisfactory system performance, correct deficiencies and retest systems.

END OF SECTION