

**SECTION 22 40 00
PLUMBING FIXTURES**

SPEC WRITER NOTES:

1. Delete between //____// if not applicable to project. Also delete any other item or paragraph not applicable in the section and renumber the paragraphs.
2. References to pressure in this section are gage pressure unless otherwise noted.
3. Use the same fixture numbers in the floor plans and schedules.
4. The "Safe Drinking Water Act" (SDWA) was originally passed into law in 1974. It was amended several times. The "Reduction of Lead in Drinking Water Act" was passed in January 2011 and amends the SDWA to the new lead-free standard to include NSF 61 and NSF 372.

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Plumbing fixtures, associated trim and fittings necessary to make a complete installation from wall or floor connections to rough piping, and certain accessories.
- B. A complete listing of all acronyms and abbreviations are included in Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS.
- B. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- C. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- //D. Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.//
- E. Section 07 92 00, JOINT SEALANTS: Sealing between fixtures and other finish surfaces.
- F. Section 08 31 13, ACCESS DOORS AND FRAMES: Flush panel access doors.
- G. Section 10 21 13, TOILET COMPARTMENTS: Through bolts.
- H. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.
- //I. Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS: Requirements for commissioning, systems readiness checklist, and training.//
- J. Section 22 13 00, FACILITY SANITARY AND VENT PIPING.

- B. Information and material submitted under this section will be marked "SUBMITTED UNDER SECTION 22 40 00, PLUMBING FIXTURES", with applicable paragraph identification.
- C. Manufacturer's Literature and Data including: Full item description and optional features and accessories. Include dimensions, weights, materials, applications, standard compliance, model numbers, size, connections, and capacity.
- D. Operating Instructions: Comply with requirements in Section 01 00 00, GENERAL REQUIREMENTS.
- //E. Completed System Readiness Checklist provided by the CxA and completed by the Contractor, signed by a qualified technician and dated on the date of completion, in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//
- //F. Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//

1.5 QUALITY ASSURANCE

- A. Bio-Based Materials: For products designated by the USDA's Bio-Preferred Program, provide products that meet or exceed USDA recommendations for bio-based content, so long as products meet all performance requirements in this specifications section. For more information regarding the product categories covered by the Bio-Preferred Program, visit <http://www.biopREFERRED.gov>.

1.6 AS-BUILT DOCUMENTATION

SPEC WRITER NOTE: Coordinate O&M Manual requirements with Section 01 00 00, GENERAL REQUIREMENTS. O&M manuals will be submitted for content review as part of the close-out documents.

- A. Submit manufacturer's literature and data updated to include submittal review comments and any equipment substitutions.
- B. Submit operation and maintenance data updated to include submittal review comments, substitutions and construction revisions will be // in electronic version on compact disc or DVD // inserted into a three-ring binder. All aspects of system operation and maintenance procedures, including piping isometrics, wiring diagrams of all circuits, a written description of system design, control logic, and sequence of operation will be included in the operation and maintenance manual. The operations and maintenance manual will include troubleshooting

techniques and procedures for emergency situations. Notes on all special systems or devices such as damper and door closure interlocks will be included. A List of recommended spare parts (manufacturer, model number, and quantity) will be furnished. Information explaining any special knowledge or tools the owner will be required to employ will be inserted into the As-Built documentation.

- C. The installing contractor will maintain as-built drawings of each completed phase for verification; and will provide the complete set at the time of final systems certification testing. As-built drawings are to be provided, and a copy of them in AutoCAD version //____// provided on compact disk or DVD. Should the installing contractor engage the testing company to provide as-built or any portion thereof, it will not be deemed a conflict of interest or breach of the 'third party testing company' requirement.
- D. Certification documentation will be provided to COR 10 working days prior to submitting the request for final inspection. The documentation will include all test results, the names of individuals performing work for the testing agency on this project, detailed procedures followed for all tests, and certification that all results of tests were within limits specified.

PART 2 - PRODUCTS

SPEC WRITER NOTE: Make material requirements agree with applicable requirements specified in the referenced Applicable Publications. Update and specify only that which applies to the project.

2.1 MATERIALS

- A. Material or equipment containing a weighted average of greater than 0.25 percent lead is prohibited in any potable water system intended for human consumption and will be certified in accordance with NSF 61 or NSF 372. Endpoint devices used to dispense water for drinking will meet the requirements of NSF 61.
- B. Plastic pipe, fittings, and solvent cement will meet NSF 14 and will be NSF listed for the service intended.

2.2 STAINLESS STEEL

- A. Corrosion-resistant Steel (CRS):
 - 1. Plate, Sheet and Strip: CRS flat products will conform to chemical composition requirements of any 300 series steel specified in ASTM A276.
 - 2. Finish: Exposed surfaces will have standard polish (ground and polished) equal to NAAMM finish Number 4.
- B. Die-cast zinc alloy products are prohibited.

2.3 STOPS

- A. Provide lock-shield loose key or screw driver pattern angle stops, straight stops or stops integral with faucet, with each compression type faucet whether specifically called for or not, including sinks in solid-surface, wood and metal casework, laboratory furniture and pharmacy furniture. Locate stops centrally above or below fixture in accessible location.
- B. Furnish keys for lock shield stops to the COR.
- C. Supply from stops not integral with faucet will be chrome plated copper flexible tubing or flexible stainless steel with inner core of non-toxic polymer.
- D. Supply pipe from wall to valve stop will be rigid threaded IPS copper alloy pipe, i.e. red brass pipe nipple, chrome plated where exposed.
- E. Mental Health Area: Provide stainless steel drain guard for all lavatories not installed in casework.

2.4 ESCUTCHEONS

- A. Heavy type, chrome plated, with set screws. Provide for piping serving plumbing fixtures and at each wall, ceiling and floor penetrations in exposed finished locations and within cabinets and millwork.

2.5 LAMINAR FLOW CONTROL DEVICE

- A. Smooth, bright stainless steel or satin finish, chrome plated metal laminar flow device will provide non-aeration, clear, coherent laminar flow that will not splash in basin. Device will also have a flow control restrictor and have vandal resistant housing. **Aerators are prohibited.**
- B. Flow Control Restrictor:
 - 1. Capable of restricting flow from 32 ml/s to 95 ml/s (0.5 gpm to 1.5 gpm) for lavatories; 125 ml/s to 140 ml/s (2.0 gpm to 2.2 gpm) for sinks P-505 through P-520, P-524 and P-528; and 174 ml/s to 190 ml/s

(2.75 gpm to 3.0 gpm) for dietary food preparation and rinse sinks or as specified.

2. Compensates for pressure fluctuation maintaining flow rate specified above within 10 percent between 170 kPa and 550 kPa (25 psig and 80 psig).
3. Operates by expansion and contraction, eliminates mineral/sediment build-up with self-cleaning action, and is capable of easy manual cleaning.

2.6 CARRIERS

- A. ASME A112.6.1M, with adjustable gasket faceplate chair carriers for wall hung closets with auxiliary anchor foot assembly, hanger rod support feet, and rear anchor tie down.
- B. ASME A112.6.1M, lavatory, // chair carrier for thin wall construction // concealed arm support // //steel plate as detailed on drawing //. All lavatory chair carriers will be capable of supporting the lavatory with a 250-pound vertical load applied at the front of the fixture.
- C. Where water closets, lavatories or sinks are installed back-to-back and carriers are specified, provide one carrier to serve both fixtures in lieu of individual carriers. The drainage fitting of the back-to-back carrier will be so constructed that it prevents the discharge from one fixture from flowing into the opposite fixture.

SPEC WRITER NOTE: Edit fixture specification to suit Project requirements. Coordinate and edit power requirements with electrical power drawings. Fixtures will be water conserving (low flow) type. Water closets installed in compliance with ADA requirements will be mounted with rim of seat 432 mm to 483 mm (17 inches to 19 inches) above the floor. Mounted height of flush valve will not interfere with the hand rail/grab bar in ADA stalls. Hands-free controls will be utilized for staff use fixtures. Electronic faucets and flush valves will be hard-wired, except battery-operated may be considered for renovation projects.

2.7 WATER CLOSETS

- A. (P-101) Water Closet (Floor Mounted, ASME A112.19.2, Figure 6)-office and industrial, elongated bowl, siphon jet // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // dual flush oscillating bio-guard handle, 4.2 L/6 L

(1.1 gallon/1.6 gallon) // per flush, floor outlet. Top of seat will be 435 mm to 438 mm (17-1/8 inches to 17-1/4 inches) above finished floor.

1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
 2. Fittings and Accessories: Floor flange fittings-cast iron; Gasket-wax; bolts with chromium plated cap nuts and washers.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, // non-hold open ADA approved side oscillating handle // dual flush non-hold open ADA approved side oscillating handle // battery powered active // hard-wired electric // infra-red sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, top spud connection, adjustable tailpiece, one-inch IPS screwdriver back check angle stop with vandal resistant cap, high back pressure vacuum breaker, solid-ring pipe support, and sweat solder adapter with cover tube and cast set screw wall flange. Set centerline of inlet 292 mm (11-1/2 inches) above seat. Seat bumpers will be integral part of flush valve. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 Alloy classification for semi-red brass.
- B. (P-102) Water Closet (Floor Mounted with Bedpan Washer ASME A112.19.2) // floor outlet // wall outlet //, with bed pan lugs-bedpan washer, flush valve operated, // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // per flush. Top of seat will be 450 mm (18 inches) above finished floor. Provide standoff bracket support between studs for bedpan washer at height as recommended by manufacturer.
1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
 2. Fittings and Accessories: Floor Flange fittings-cast iron; gaskets-wax; bolts with chromium plated cap nuts and washers.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, // non-hold open ADA approved

side oscillating handle // battery powered // hard-wired electric // active infra-red sensor for automatic operation with courtesy flush button for flush with maximum 10 percent variance, offset top spud connection, adjustable tailpiece, one-inch IPS screwdriver back check angle stop with vandal resistant cap, sweat solder adapter with cover tube and cast set screw wall flange, solid-ring pipe support, and high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM Alloy classification for semi-red brass. Set centerline of inlet 673 mm (26-1/2 inches) above seat. Seat bumpers will be set in wall behind fixture at proper contact height.

SPEC WRITER NOTE: See standard detail SD224000-01.DWG available at <http://www.cfm.va.gov/til/sDetail.asp>.

C. (P-103) Water Closet (Wall Hung, ASME A112.19.2) office and industrial, elongated bowl, siphon jet // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // dual flush oscillating bio-guard handle, 4.2 L/6 L (1.1 gallon/1.6 gallon) // per flush, wall outlet. Top of seat will be between 400 mm and 432 mm (16 inches and 17 inches) above finished floor. Handicapped water closet will have seat set 450 mm (18 inches) above finished floor.

1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
2. Fittings and Accessories: Gaskets-neoprene; bolts with chromium plated caps nuts and washers and carrier.
3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, // non-hold open ADA approved side oscillating handle, // dual flush non-hold open ADA approved side oscillating handle // battery powered active infra-red sensor for automatic operation with courtesy flush button for manual operation // sensor operated with manual override// water saver design per flush with maximum 10 percent variance // 25 mm (1 inch) screwdriver back check angle stop with vandal resistant cap, adjustable tailpiece, a high back pressure vacuum breaker, spud coupling for 40 mm (1-1/2 inches) top spud, wall and spud flanges,

solid-ring pipe support, and sweat solder adapter with cover tube and set screw wall flange. Valve body, cover, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass. Seat bumpers will be integral part of flush valve. Set centerline of inlet 292 mm (11-1/2 inches) above seat.

- D. (P-104) Water Closet (Wall Hung with Bedpan Washer, ASME A112.19.2) elongated bowl, siphon jet, wall outlet, with bedpan lugs-bedpan washer with grab bar offset, flush valve operated //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// per flush. Top of seat will be 450 mm (18 inches) above finished floor. Provide standoff bracket support between studs for bedpan washer at height recommended by the manufacturer.
1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
 2. Fittings and Accessories: Gaskets-neoprene; bolts with chromium plated cap nuts and washers and carrier.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, water saver design per flush with maximum 10 percent variance, non-hold open ADA approved operating side oscillating handle, 25 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, adjustable tailpiece, high back pressure vacuum breaker, solid-ring pipe support, offset spud coupling for 40 mm (1-1/2 inches) top spud, cast screw wall and spud flanges, sweat solder adapter with cover tube and wall support at diverter valve body. Valve body, cover, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass. Set centerline of inlet 673 mm (26-1/2 inches) above seat.
- E. (P-105) Water Closet (Wall Hung, with Bedpan Lugs ASME A112.19.2) elongated bowl with siphon jet //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// per flush, with bedpan lugs- wall outlet. Top of seat will be 450 mm (18 inches) above finished floor.
1. Seats: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.

2. Fittings and Accessories: Gaskets-neoprene; bolts with chromium plated cap nuts and washers and carrier.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, non-hold open ADA approved side oscillating handle, 25 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high pressure vacuum breaker, water saver design per flush with maximum 10 percent variance, top spud connection, solid-ring pipe support, wall and spud flanges and sweat solder adapter with cover tube and cast set screw wall flange. Valve body, cover, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass. Set centerline of inlet 292 mm (11-1/2 inches) above seat. Seat bumpers will be integral part of flush valve.
- F. (P-106) Water Closet (Tank Type, pressure assisted, ASME A112.19.2) domestic, elongated bowl with tank, closed coupled, flushometer tank, floor outlet. Top of seat will be 450 mm (18 inches) above finished floor.
1. Seat: Domestic with cover, solid molded plastic, elongated bowl. Color will be white.
 2. Fittings: Tank fittings and accessories.
 - a. Flushing mechanism will be: Pressure assisted, close coupled, flushometer tank, //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// per flush.
 - b. Stops, tank-angle.
- SPEC WRITER NOTE: See standard detail
SD224000-02.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.
- G. (P-107) Water Closet (Wall Hung, ASME A112.19.2) elongated bowl, 356 mm (14 inches) maximum overall width, siphon jet, wall outlet, top spud, flush valve operated //4.8 L (1.28 gallons)// //6 L (1.6 gallons // dual flush oscillating bio-guard handle, 4.2 L/6 L (1.1 gallon/1.6 gallon) // per flush). Top of seat will be 381 mm (15 inches) above finished floor.
1. Seat Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.

2. Fittings and Accessories: Gaskets-neoprene; bolts with chrome plated cap nuts and washers and carrier.
 3. Flush valve: Concealed, Large chloramines resistant diaphragm, semi-red brass valve body, electric solenoid operated flush valve for remote operation by a minimum 40 mm (1-1/2 inches) diameter push button, provide 24 volt transformer, non-hold open, water saver design, 25 mm (1 inch) IPS wheel handle back check angle stop valve with vandal resistant protection cap, high pressure vacuum breaker, solid-ring pipe support, coupling for 40 mm (1-1/2 inches) top spud, wall and spud flanges. Provide 300 mm by 400 mm (12 inches by 16 inches) stainless steel access door with vandal proof screws as specified in Section 08 31 13, ACCESS DOORS AND FRAMES. Valve body, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass.
- H. (P-110) Water Closet (Wall Hung ASME A112.19.2) elongated bowl, siphon jet //4.8 L (1.28 gallons)// //6 L (1.6 gallon // dual flush 4.2 L/6 L (1.1 gallon/1.6 gallon) // per) flush, wall outlet with 10 percent maximum variance, back inlet spud. Top of seat will be 450 mm (18 inches) above finished floor.
1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
 2. Fittings and Accessories: Gaskets and bolts with chrome plated cap nuts and washers and carrier.
 3. Flush valve: Concealed, Large chloramines resistant diaphragm semi-red brass valve body, // hydraulic flush valve //, non-hold open, push button minimum 40 mm (1-1/2 inches) diameter, 25 mm (1 inch) IPS wheel handle back check angle valve, high pressure vacuum breaker, concealed back spud connection. Valve body, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass. Provide 300 mm by 400 mm (12 inches by 16 inches) stainless steel access door with vandal resistant screws as specified in Section 08 31 13, ACCESS DOORS AND FRAMES.

SPEC WRITER NOTE: See standard detail SD224000-03.DWG available at <http://www.cfm.va.gov/til/sDetail.asp>.

I. (P-111) Water Closet (Wall Hung, ASME A112.19.2) elongated bowl, siphon jet, wall outlet, top inlet spud, //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// dual flush 4.2 L/6 L (1.1 gallon/1.6 gallon) // per flush with maximum 10 percent variance. Top of seat will be 450 mm (18 inches) above finished floor.

1. Seat: Institutional/Industrial, solid plastic, extra heavy duty, chemical resistant, posture contoured body open front design less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Color will be white.
2. Fittings and Accessories: Gaskets-neoprene; bolts with chrome plated cap nuts and washers and carrier.
3. Flush valve: Large chloramines resistant diaphragm, semi-red brass body, // hydraulic flush valve, // electric solenoid operated // battery operated // concealed, non-hold open, push button operated minimum 40 mm (1-1/2 inches) diameter button, 25 mm (1 inch) IPS wheel handle back check angle stop valve, adjustable tailpiece, high pressure vacuum breaker, elbow flush connection, spud coupling for 40 mm (1-1/2 inches) top spud, and cast set screw wall and spud flanges. Provide 300 mm by 300 mm (12 inches by 12 inches) stainless steel access door with key operated cylinder lock specified in Section 08 31 13, ACCESS DOORS AND FRAMES.

SPEC WRITER NOTE: See standard detail
SD224000-04.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

J. (P-112) Water Closet (Wall Hung, ASME A112.19.2) elongated bowl, siphon jet, wall outlet, back inlet spud, //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// per flush with maximum 10 percent variance. Top of seat will be 450 mm (18 inches) above finished floor.

1. Seat: Institutional/Industrial, solid plastic, extra heavy duty, chemical resistant, posture contoured body open front design less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Color will be white.
2. Fittings and Accessories: Gaskets-neoprene; bolts with chrome plated cap nuts and washers and carrier.
3. Flush valve: Large chloramines resistant diaphragm, electronic sensor solenoid operated flush valve, concealed, non-hold open, with manual override button, 25 mm (1 inch) IPS wheel handle back check angle stop valve, adjustable tailpiece and vacuum breaker. Provide

330 mm by 432 mm (13 inches by 17 inches) stainless steel access door with key operated cylinder lock specified in Section 08 31 13, ACCESS DOORS AND FRAMES. Valve body, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass.

SPEC WRITER NOTE: See standard detail SD224000-05.DWG available at <http://www.cfm.va.gov/til/sDetail.asp>.

- K. (P-113) WATER CLOSET (Wall Hung with Bedpan Washer, ASME A112.19.2) //electronic Sensor operated, // battery powered // elongated bowl, siphon jet, wall outlet, with bedpan lugs-bedpan washer, //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// per flush with maximum 10 percent variance. Top of seat will be 450 mm (18 inches) above finished floor. Provide standoff bracket support between studs for bedpan washer at height recommended by the manufacturer.
1. Seat: Institutional/Industrial, extra duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat will be posture contoured body design. Color will be white.
 2. Fittings and Accessories: Gaskets-neoprene, bolts with chromium plated cap nuts and washers and carrier.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass body, // electronic sensor operated // battery powered // one-inch screwdriver angle check stop, override button, diverter valve assembly with spray protection cap, adjustable tailpiece, high pressure vacuum breaker, offset spud coupling for 38 mm (1-1/2 inches) top spud, spud wall support at diverter valve body, cast set screw flanges, solid-ring pipe support, and sweat solder adapter with cover tube. // Provide 24-volt transformer.// Set centerline of inlet 673 mm (26-1/2 inches) above seat. Valve body, cover, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass.
- L. (P-114) Bariatric Floor Mounted Water Closet ASME A112.19.2, Fully enclosed floor mounted with integral seat , siphon jet, white-powder-coated, 14 gage type 304 stainless steel construction with white powder coating and hinged seat with cover, flush valve operated, top of seat 450 mm (18 inches) above floor. Bio-based materials will be utilized when possible. Rated for bariatric use - 1000-pound minimum capacity.

1. Fittings and Accessories: Gaskets-neoprene, bolts with chromium plated cap nuts and washers, and extra heavy-duty carrier.
 2. Flush Valve: exposed chrome plated diaphragm type with low force ADA compliant // 6 L (1.6 gallon) // dual flush oscillating bio-guard handle, 4.2 L/6 L (1.1 gallon/1.6 gallon) // per flush, seat bumper, integral screwdriver stop and vacuum breaker, solid-ring pipe support, and escutcheon.
- M. (P-115) Water Closet (Floor Mounted, ASME A112.19.2) siphon jet, //4.8 L (1.28 gallons)// //6 L (1.6 gallons)// dual flush oscillating bio-guard handle, 4.2 L/6 L (1.1 gallon/1.6 gallon) // per flush. Top of seat will be 280 mm to 430 mm (11 to 19 inches) above finish floor, depending on age group (refer to ADA standard for guidance).
1. Seat: Commercial weight, chemical resistant, solid plastic open front less cover for infant bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Color will be white.
 2. Fitting and Accessories: Gaskets-neoprene, bolts with chromium plated cap nuts and washers.
 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass body, // non-hold open ADA approved side oscillating handle // dual flush non-hold open ADA approved side oscillating handle // battery operated // // hard-wired electric // exposed chrome plated, water saver design, 25 mm (1 inch) screwdriver angle check stop, adjustable tailpiece, high pressure vacuum breaker, cast set screw wall flanges and spud flanges, sweat solder adapter with cover tube, spud coupling for 40 mm (1-1/2 inch) top spud, solid-ring pipe support, and wall and spud flanges. Set centerline inlet 292 mm (11-1/2 inches) above seat. Valve body, cover, tailpiece, and control stop will be in conformance with ASTM alloy classification for semi-red brass.

SPEC WRITER NOTE: Ultra-low flow urinals (less than 4 L) are only available as washout types. These should not be specified in areas where potential for abuse, such as locker rooms.

2.8 URINALS

- A. (P-201) Urinal (Wall Hung, ASME A112.19.2) bowl with integral flush distribution, wall to front of flare 343 mm (13.5 inches) minimum. Wall hung with integral trap, siphon jet flushing action // 1.9 L (0.5

gallons) // // 4 L (1.0 gallons) // per flush with 50 mm (2 inches) back outlet and 20 mm (3/4 inch) top inlet spud.

1. Support urinal with chair carrier and install with rim 600 mm (24 inches) above finished floor.
2. Flushing Device: Large chloramines resistant diaphragm, semi-red brass body, exposed flush valve // electronic sensor operated // battery powered, active infrared sensor for automatic operation // hardwired active infrared sensor for automatic operation // non-hold open, water saver design, solid-ring pipe support, and 20 mm (3/4 inch) capped screwdriver angle stop valve. Set centerline of inlet 292 mm (11-1/2 inches) above urinal. Valve body, cover, tailpiece, and control stop will be in conformance with ASTM alloy classification for semi-red brass.

B. (P-202) Urinal (Wheelchair, Wall Hung, ASME A112.19.2) bowl with integral flush distribution, wall to front of flare 343 mm (13.5inches) minimum. Wall hung with integral trap, siphon jet flushing action // 1.9 L (0.5 gallons) // 4 L (1.0 gallons) // per flush with 50 mm (2 inches) back outlet and 20 mm (3/4 inch) top inlet spud.

1. Support urinal with chair carrier and install with rim 432 mm (17 inches) maximum above finished floor.
2. Flushing Device: Large chloramines resistant diaphragm, semi-red brass body, exposed flush valve, // electronic sensor operated // battery powered active infrared sensor for automatic operation // hardwired active infrared sensor for automatic operation // non-hold open, water saver design, solid-ring pipe support, and 20 mm (3/4 inch) capped screwdriver angle stop valve. Set centerline of inlet 292 mm (11-1/2 inches) above urinal. Valve body, cover, tailpiece and control stop will be in conformance with ASTM alloy classification for semi-red brass.

C. (P-203) Urinal (Wall hung ASME A112.19.2) bowl with washout flush action, wall to front flare 343 mm (13.5inches) minimum. Vitreous china, wall hung with integral trap // 0.5 L (0.125 gallons) // 1.0 L (0.25 gallons) // 1.9 L (0.5 gallons) // 4 L (1.0 gallons) // per flush with 50 mm (2 inches) back outlet and 20 mm (3/4 inch) back spud inlet. Flush valve 292 mm (11-1/2 inches) above urinal.

1. Support urinal with chair carrier and install with rim at 600 mm (24 inches) above finished floor.

2. Flushing device // Large chloramines resistant diaphragm concealed brass bodied flush valve with wheel handle stop, connection for spud connection and metal oscillating chrome plate, non-hold open handle // electronic sensor operated // battery powered, active infrared sensor for automatic operation // hardwired active infrared sensor for automatic operation //.
- D. (P-204) Urinal (Wheelchair) (Wall hung ASME A112.19.2) bowl with washout flush action, wall to front flare 343 mm (13.5inches) minimum. Vitreous china, wall hung with integral trap // 0.5 L (0.125 gallons) // 1.0 L (0.25 gallons) // 1.9 L (0.5 gallons) // // 4 L (1.0 gallon) // per flush with 50 mm (2 inches) back outlet and 20 mm (3/4 inch) back spud inlet. Flush valve 292 mm (11-1/2 inches) above urinal.
1. Support urinal with chair carrier and install with rim at a maximum of 432 mm (17 inches) above finished floor.
 2. Flushing device // Large chloramines resistant diaphragm concealed brass bodied flush valve with wheel handle stop, connection for spud connection and metal oscillating chrome plate, non-hold open handle // electronic sensor operated // battery powered, active infrared sensor for automatic operation // hardwired active infrared sensor for automatic operation //.
- SPEC WRITER NOTE: Waterless urinals are for use in non-patient areas only.
- E. (P-205) Urinal (Waterless, Wall Hung, ASME A112.19.2) white vitreous china, wall outlet with integral drain line connection, with sealed replaceable cartridge or integral liquid seal trap.
1. Support urinal with concealed chair carrier conforming to ASME A112.6.1M and install with rim 600 mm (24 inches) above finished floor.
 2. From urinals that use a replaceable cartridge, provide four additional cartridges for each urinal installed along with any tools needed to remove/install the cartridge. Provide an additional quart of biodegradable liquid for each urinal installed.
- F. (P-206) Urinal (Waterless, Wall Hung, ASME A112.19.2) white vitreous china, wall outlet with integral drain line connection, with sealed replaceable cartridge or integral liquid seal trap.
1. Support urinal with concealed chair carrier conforming to ASME A112.6.1M and install with rim 432 mm (17 inches) maximum above finished floor.

2. For urinals that use a replaceable cartridge, provide four additional cartridges for each urinal installed along with any tools needed to remove/install the cartridge. Provide an additional quart of biodegradable liquid for each urinal installed.

SPEC WRITER NOTE: Specify suicide proof (anti-ligature) handles for bath and shower equipment where required by building function.

2.9 BATHTUBS

SPEC WRITER NOTE: See standard detail SD224000-06.DWG available at <http://www.cfm.va.gov/til/sDetail.asp>.

- A. (P-301) Bathtub, free standing type hydro massage bathtub with wall mounted mixing valve, fill control valve and drain will be furnished by the Owner.
 1. Provide rough-in and final waste and water connections including installation of accessories supplied with the fixture.
 2. Prior to starting work, obtain from the Owner, the manufacturers' written installation instruction for the bathtub being installed.
- B. (P-302) Bathtub (Recessed, with Shower, Thermostatic Valve, ASME A112.19.1) enameled cast iron, slip resistant, approximately 1500 mm by 762 mm (60 inches by 30 inches) and 400 mm (16 inches) high, recessed, wide rim.
 1. Drain: Pop-up, 40 mm (1-1/2 inches).
 2. Shower Installation: Wall mounted, detachable spray assembly with hand spray and hose attached to a 762 mm (30 inches) chrome bar with adjustable slide, elevated vacuum breaker, supply wall connection and flange, diverter valve, over the rim tub spout, thermostatic/pressure balanced mixing valve.
 3. Shower Head: Metallic shower head with 1500 mm (60 inches) length of rubber lined CRS or chrome plated brass interlocked, metal flexible reinforced hose connection to 15 mm (1/2 inch) supply, with automatic flow control device to limit discharge to not more than // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 170 kPa (25 psig). Design showerhead to fit in palm of hand. Provide CRS or chrome plated metal wall bar with an adjustable swivel hanger for showerhead. Fasten wall bar securely to wall.
 4. Valve: Type T/P combination thermostatic and pressure balancing, wall mounted shower with chrome plated metal lever type operating

handle with adjustment for rough-in variation and chrome plated brass or CRS face plate. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS, or thermoplastic material. Valve inlet and outlet will be 15 mm (1/2 inch) IPS. Provide external screwdriver check stops and temperature limit stops. Set stops for a maximum temperature of 43.3 degrees C (110 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 5.7 L/m (1.5 gpm) // // 9.5 L/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.

- C. (P-304) Bathtub (End Type) with thermostatic valve and thermometer, enameled cast iron slip resistant, approximately 1676 mm by 762 mm by 450 mm (66 inches by 30 inches by 18 inches), except base and shampoo fittings will be omitted.
1. Drain: Pop-up, 50 mm (2 inches).
 2. Valve: Type T/P, combination thermostatic and pressure balancing, and bathtub spout with chrome plated metal lever type operating handle with adjustment for rough-in variation. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS, or thermoplastic material. Valve inlet and outlet will be 15 mm (1/2 inch) IPS. Provide external combination screwdriver check stops, strainers and temperature limit stops. Set stops for a maximum temperature of 43.3 degrees C (110 degrees F). Valve will provide // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.
 3. Thermometer: Stainless steel, 65 mm (2-1/2 inches) dial type, range 0 to 60 degrees C (32 to 140 degrees F).
- D. (P-305) Perineal Bath (Sitz Bath, Wall Hung) approximately 686 mm by 584 mm (27 inches by 23 inches) will be supported by chair carrier with feet. Finished floor to top of rim at front is 400 mm (16 inches).
1. Trap: Cast copper alloy 40 mm (1-1/2 inches) P-trap, adjustable with connected elbow and nipple to wall, chrome plated with a bright finish.
 2. Valve: Type T/P combination thermostatic and pressure balancing, with external combination screwdriver check stops, strainers, volume control, temperature limit stops, elevated vacuum breaker, thermometer and chrome plated metal lever type operating handle with adjustment for rough-in variation. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet

will be 15 mm (1/2 inch) IPS. Valve will provide 160 ml/s at 310 kPa (2.5 gpm at 45 psig) pressure drop.

- E. (P-307) Bathtub (Recessed, with Shower Thermostatic Valve, ASME A112.19.1) enameled cast iron, slip resistant, approximately 1500 mm by 762 mm by 400 mm (60 inches by 30 inches by 16 inches), recessed, wide rim.
1. Drain: Pop-up, 40 mm (1-1/2 inches).
 2. Shower Installation: Bathtub showers, with over rim spout and diverter, wall mounted showerhead with integral back secured to wall.
 3. Shower Head: Chrome plated metal head, institutional type, adjustable spray direction, self-cleaning head with automatic flow control device to limit discharge to not more than // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig). Provide mounting and vandal-proof screws. Body, internal parts of showerhead, and flow control fittings will be copper alloy or CRS. Install showerhead 1829 mm (72 inches) above finished floor.
 4. Valve: Type T/P, combination thermostatic and pressure balancing. Valve body will be any suitable copper alloy. Valve will provide a minimum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig). Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 15 mm (1/2 inch) IPS. Provide external combination screwdriver check stops, diverter valve, quick connection for hose spray, and temperature limit stops. Set stops for a maximum temperature of 43.3 degrees C (110 degrees F). One piece chrome plated brass or CRS faceplate, with chrome plated metal lever handle with adjustment for rough-in variation. Exposed fasteners will be vandal resistant.

2.10 LAVATORIES

- A. Dimensions for lavatories are specified, Length by width (distance from wall) and depth.
- B. Brass components in contact with water will contain no more than 0.25 percent lead content by dry weight. Faucet flow rates will be 3.9 L/m (1.5 gpm) for private lavatories and either 1.9 L/m (0.5 gpm) or 1.0 liter (0.25 gallons) per cycle for public lavatories.
- C. (P-401) Lavatory (Single Lever Handle Control ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) maximum apron, first quality vitreous china. Punching for

faucet on 102 mm (4 inches) centers. Set with rim 864 mm (34 inches) above finished floor.

1. Faucet: Solid cast brass construction, vandal resistant, heavy-duty single lever handle, center set. Control will be washerless ceramic disc cartridge type. Provide laminar flow control device, adjustable hot water limit stop, and vandal proof screws. Flow will be limited to // 1.9 L/m (0.5 gpm) // 3.8 L/m (1.0 gpm) // 5.7 L/m (1.5 gpm) //.
 2. Drain: Cast or wrought brass with flat grid strainer offset tailpiece, chrome plated. Provide cover per A.D.A 4-19.4.
 3. Stops: Angle type, see paragraph "Stops". Provide cover per A.D.A 4-19.4.
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extensions to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to wall. Provide cover per A.D.A 4-19.4.
- D. (P-402) Lavatory (Elbow Control, ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) maximum apron, first quality vitreous china. Punching for faucet on 203 mm (8 inches) centers. Set with rim 864 mm (34 inches) above finished floor.
1. Faucet: Solid cast brass construction with washerless ceramic disc mixing cartridge type and centrally exposed rigid gooseneck spout with outlet 127-152 mm (5-6 inches) above rim. Provide laminar flow control device. One hundred millimeters (4 inches) elbow handles on faucets will be cast, formed or drop forged copper alloy. Faucet, wall and floor escutcheons will be either copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish. Flow will be limited to // 1.9 L/m (0.5 gpm) // 3.8 L/m (1.0 gpm) // 5.7 L/m (1.5 gpm) //.
 2. Drain: Cast or wrought brass with flat grid strainer and offset tailpiece, chrome plated finish.
 3. Stops: Angle type, see paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extensions to wall. Exposed metal trap surfaces and

connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to wall.

5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- E. (P-403) Lavatory (Foot Pedal Control, ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) maximum apron, first quality vitreous china. Centrally located single hole in slab for rigid gooseneck spout. Escutcheons will be either copper alloy or CRS. Provide valve plate for foot control. Set with rim 864 mm (34 inches) above finished floor.
1. Faucets: Solid cast brass construction, single rigid gooseneck spout with outlet 127 to 203 mm (5 to 8 inches) above slab. Provide laminar flow control device. Wall mounted, mechanical pedal mixing valve with self-closing pedal valve with stops, renewable seats, and supply from valve to spout, indexed lift up pedals having clearances of not more than 13 mm (1/2 inch) above the floor and not less than 356 mm (14 inches) from wall when in operation. Supply pipe from wall to valve stop will be rigid threaded IPS copper alloy pipe. Supply pipe from valve to faucet will be manufacturer's option. Exposed brass parts will be chrome plated with a smooth bright finish.
 2. Drain: Cast or wrought brass with flat grid strainer and tailpiece, chrome plated finish.
 3. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension nipple to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish.
- F. (P-404) Lavatory (Spinal Cord-Self Care, Integral with Countertop):
1. Faucet: Solid cast brass construction, chrome plated, gooseneck spout 102 by 127 mm (4 to 5 inches) above the rim, // electronic sensor // battery // operated, four-inch center set mounting, // wiring box // 120/24-volt solenoid // plug in transformer // remote mounted transformer // tee with check valves // thermostatic mixing valve // inline filter // modular wiring box with transformer // . Provide laminar flow control device.
 2. Valve: Type T/P combination thermostatic and pressure balancing with lever operating handle. Valve body will be copper alloy. Internal parts will be copper, nickel alloy, CRS or thermostatic material.

- Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external screwdriver checkstops and temperature limit stop. Set stops for a maximum temperature of 35 degrees C (95 degrees F). // Valve will also serve P-418 in the same room, where applicable. //
3. Drain: Cast or wrought brass with flat grid strainer and offset tailpiece, chrome plated finish.
 4. Stops: Angle type. See paragraph "Stops".
 5. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to wall.
 6. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- G. (P-408) Lavatory (ASME A112.19.2) straight back, approximately 457 mm by 381 mm (18 inches by 15 inches) and a 102 mm (4 inches) maximum apron, first quality vitreous china. Punching for faucet on 102 mm (4 inches) centers. Support lavatory to wall with steel wall plate. Set with rim 864 mm (34 inches) above finished floor:
1. Faucet: Solid cast brass construction with washerless ceramic disc mixing cartridge type and centrally exposed rigid gooseneck spout with outlet 127-152 mm (5-6 inches) above rim. Provide laminar flow control device. One hundred two millimeters (4-inch) wrist blade type handles on faucets will be cast, formed or drop forged copper alloy. Faucet, wall and floor escutcheons will be either copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will be chrome plated with a smooth bright finish.
 2. Drain: Cast or wrought brass with flat grid strainer and offset tailpiece, chrome plated finish.
 3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface, and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to wall.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- H. (P-413) Lavatory (Counter Mounted ASME A112.19.2) vitreous china, self-rimming, approximately 483 mm (19 inches) in diameter with punching for

faucet on 203 mm (8 inches) centers. Mount unit in countertop. // Support countertop with ASME A112.6.1M, Type I, chair carrier with exposed arms //.

1. Faucet: Solid cast brass construction with washerless ceramic disc mixing cartridge type, rigid gooseneck spout with outlet 102 mm to 127 mm (4 inches to 5 inches) above slab with 102 mm (4 inches) wrist blade handles. Provide laminar flow control device. Faucet, wall and floor escutcheons will be either copper alloy or CRS. Exposed metal parts will be chrome plated with a smooth bright finish.
2. Drain: cast or wrought brass with flat grid strainer, offset tailpiece, brass, chrome plated.
3. Stops: Angle type. See paragraph "Stops".
4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap, adjustable with connected elbow and 1.4mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to the wall.
5. Provide cover for exposed piping, drain, stops and trap per A.D.A.

SPEC WRITER NOTE: See standard detail SD224000-08.DWG available at <http://www.cfm.va.gov/til/sDetail.asp>.

I. (P-414) Lavatory (Wrist Control, ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) minimum apron, first quality vitreous china. Punching for faucet will be on 203 mm (8 inches) centers. Set rim 864 mm (34 inches) above finished floor.

1. Faucet: Solid cast brass construction with washerless ceramic mixing cartridge type and centrally exposed rigid gooseneck spout with outlet 102 mm to 127 mm (4 inches to 5 inches) above rim. Provide laminar flow control device. One hundred two-millimeter (4-inch) wrist blade type, handles on faucets will be cast, formed or drop forged copper alloy. Faucet, wall and floor escutcheons will be either copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will be chrome plated with a smooth bright finish.
2. Drain: Cast or wrought brass with flat grid strainer, offset tailpiece, chrome plated.

3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface, and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to the wall.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- J. (P-415) Lavatory (Single Lever Handle, ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) minimum apron, first quality vitreous china. Punching for faucet on four-inch centers. Set rim 864 mm (34 inches) above finished floor.
1. Faucet: Solid cast brass construction, vandal resistant, heavy duty, single lever handle, center set. Control will be washerless ceramic disc mixing cartridge type. Provide laminar flow control device, adjustable hot water limit stop, and vandal proof screws.
 2. Drain: Cast or wrought brass with flat grid strainer, offset tailpiece, brass, chrome plated.
 3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to the wall. Set trap parallel to wall.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- K. (P-417) Lavatory (Counter Mounted ASME A112.19.2) vitreous china, self-rimming, approximately 483 mm (19 inches) in diameter with punching for faucet on 102 mm (4 inches) centers. Mount unit in countertop. // Support countertop with ASME A112.19.1, Type 1, chair carrier with exposed arms //.
1. Faucet: Solid cast brass construction, Single handle deck type, 203 mm (8 inches) maximum center, gooseneck spout with outlet 127 to 178 mm (5 to 7 inches) above rim, 152 mm (6 inches) lever handle. Control will be washerless ceramic disc mixing cartridge type. Provide laminar flow control device, high temperature limit stop and vandal proof screws.
 2. Drain: Cast or wrought brass with flat grid strainer, offset tailpiece, chrome plated.

3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap, adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Set trap parallel to the wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- L. (P-418) Lavatory (Sensor Control, Gooseneck Spout, ASME A112.19.2) straight back, approximately 508 mm by 457 mm (20 inches by 18 inches) and a 102 mm (4 inches) minimum apron, first quality vitreous china with punching for gooseneck spout. Set rim 864 mm (34 inches) above finished floor.
1. Faucet: Solid cast brass construction, chrome plated, gooseneck spout with outlet 102 mm to 127 mm (4 inches to 5 inches) above rim. Electronic sensor operated, 102 mm (4 inches) center set mounting, // wiring box // 120/24-volt solenoid // plug in transformer // remote mounted transformer // battery operated electronic module // back check valves // solid brass hot-cold water mixer adjusted from top deck with barrier free design control handle // and inline filter. Provide laminar flow control device. Breaking the light beam will activate the water flow. Flow will stop when user moves away from light beam. // Provide steel access door with key operated cylinder lock. See Section 08 31 13, ACCESS DOORS AND FRAMES // All connecting wiring between transformer, solenoid valve and sensor will be cut to length with no excess hanging or wrapped up wiring allowed.
 2. Drain: Cast or wrought brass with flat grid strainer with offset tailpiece, brass, chrome plated.
 3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 17 gage tubing extension to wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish. Set trap parallel to wall.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- M. (P-420) Lavatory (Sensor Control, Counter Mounted ASME A112.19.2) vitreous china, self-rimming, approximately 483 mm (19 inches) in diameter with punching for faucet on 102 mm (4 inches) centers. Mount

unit in countertop. Support countertop with ASME A112.19.1, Type 1, chair carrier with exposed arms.

1. Faucet: Brass, chrome plated, gooseneck spout with outlet 102 mm to 127 mm (4 inches to 5 inches) above rim. Electronic sensor operated, 102 mm (4 inches) center set mounting, // wiring box // 120/24-volt solenoid // plug in transformer // remote mounted transformer // battery operated electronic module // back check valves // solid brass hot/cold water mixer adjusted from top deck with barrier free design control handle // and inline filter. Provide laminar flow control device. Breaking the light beam will activate the water flow. Flow will stop when user moves away from light beam. // All connecting wiring between transformer, solenoid valve and sensor will be cut to length with no excess hanging or wrapped up wiring allowed. //
 2. Drain: Cast or wrought brass with flat grid strainer, offset tailpiece, chrome plated. Set trap parallel to wall.
 3. Stops: Angle type. See paragraph "Stops".
 4. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap, adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extension to wall. Set trap parallel to the wall. Exposed metal trap surface and connection hardware will be chrome plated with a smooth bright finish.
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- N. (P-421) Bariatric Floor Mounted Pedestal Lavatory (Sensor controlled ASME A112.19.2), 14 gage type 304 stainless steel construction with white powder coating of lavatory deck. Bio-based materials will be utilized when possible. Rated for bariatric use - 1000-pound minimum capacity.
1. Faucet: Brass, chrome plated, gooseneck spout with outlet 102 mm to 127 mm (4 inches to 5 inches) above rim. Electronic sensor operated, 102 mm (4 inches) center set mounting, // wiring box // 120/24-volt solenoid // plug in transformer // remote mounted transformer // battery operated electronic module // back check valves // solid brass hot/cold water mixer adjusted from top deck with barrier free design control handle // and inline filter. Provide laminar flow control device. Breaking the light beam will activate the water flow. Flow will stop when user moves away from light beam. // All connecting wiring between transformer, solenoid valve and sensor

will be cut to length with no excess hanging or wrapped up wiring allowed. //.

2.11 SINKS AND LAUNDRY TUBS

- A. Dimensions for sinks and laundry tubs are specified, length by width (distance from wall) and depth.
- B. (P-501) Service Sink (Regular, ASME A112.19.1) service sink, class 1, single bowl, acid resistant enameled cast iron, approximately 610 mm by 508 mm (24 inches by 20 inches) with a 229 to 305 mm (9 to 12 inches) raised back without faucet holes. Equip sink with CRS rim guard and mounted on trap standard. Set sinks rim 711 mm (28 inches) above finished floor.
 - 1. Faucet: Part B, Type II, solid brass construction, 9.5 L/m (2.5 gpm) combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, integral check/stops, mounted on wall above sink. Spout will have a pail hook, 19 mm (3/4 inch) hose coupling threads, vacuum breaker, and top or bottom brace to wall. Four-arm handles on faucets will be cast, formed, or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish.
 - 2. Drain: Grid.
 - 3. Trap: Trap standard, painted outside and enameled inside with acid-resistant enamel, drain through adjoining wall.
- C. (P-502) Service Sink (Corner, Floor Mounted) stain resistant terrazzo, 711 mm by 711 mm by 305 mm (28 inches by 28 inches by 12 inches) with 152 mm (6 inches) drop front. Terrazzo, composed of marble chips and white Portland cement, will develop compressive strength of 20684 kPa (3000 psig) seven days after casting. Provide extruded aluminum cap on front side.
 - 1. Faucet: Solid brass construction, 9.5 L/m (2.5 gpm) combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, integral check/stops, mounted on wall above sink. Spout will have a pail hook, 19 mm (3/4 inch) hose coupling threads, vacuum breaker, and top or bottom brace to wall. Four-arm handles on faucets will be cast, formed, or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve

handle when in open position, will have a smooth bright finish.

Provide 914 mm (36 inches) hose with wall hook. Centerline of rough in is 1219 mm (48 inches) above finished floor.

2. Drain: Seventy-six millimeter (3 inches) cast brass drain with nickel bronze strainer.
 3. Trap: P-trap, drain through floor.
- D. (P-503) Service Sink (Regular, Foot Pedal Control, ASME A112.19.1, Class 1) single bowl, acid resistant enameled cast iron, approximately 610 mm by 508 mm (24 inches by 20 inches) with 229 to 305 mm (9 to 12 inches) raised back without faucet holes. Equip sink with CRS rim guard. Mount sink on trap standard.
1. Faucet: Solid brass connection, 9.5 L/m (2.5 gpm) horizontal swing spout with escutcheon mounted on wall above sink. Mechanical pedal mixing valve with self-closing pedal valve with check/stops, renewable Monel seats, removable replacement unit containing all parts subject to wear, and supply from valve to spout, indexed lift up pedals having clearance of not more than 13 mm (1/2 inch) above the floor and not less than 356 mm (14 inches) from wall when in operation. Supply pipe from wall to valve stop will be rigid threaded IPS copper alloy pipe. Supply pipe from valve to faucet will be copper alloy pipe. Supply pipe from valve to faucet will be manufacturer's option. Exposed brass parts will be chromium plated with a smooth bright finish.
 2. Drain: Seventy-six millimeter (3 inches) cast brass with nickel bronze strainer.
 3. Trap: Trap standard, painted outside and enameled inside with acid-resistant enamel, drain through adjoining wall.

SPEC WRITER NOTE: See standard detail
SD224000-09.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- E. (P-505) Clinic Service Sink (Flushing Rim, Wall Hung) approximately 508 mm by 635 mm (20 inches by 25 inches) by 203 mm (8 inches) deep. Support with ASME A112.6.1M chair carrier and secure with 10 mm (3/8 inch) bracket studs and nuts. Set sink with rim 762 mm (30 inches) above finished floor. Provide 762 mm (30 inches) CRS drainboard where required, without corrugations and with heavy duty CRS brackets.
1. Faucet: Elbow control, wall hung, integral check/stops, single spout with 19 mm (3/4 inch) hose threaded outlet and pail hook, vacuum

- breaker and brace to wall. Outlet 356 mm to 381 mm (14 inches to 15 inches) from wall. Exposed metal parts will be chromium plated with a smooth bright finish. Provide 9.5 L/m (2.5 gpm) laminar flow control device.
2. Flush valve: Large diaphragm, semi-red brass body, Foot pedal operated, exposed chromium plated flush valve with screwdriver back check straight stop with cap, union outlet, street ells, elevated high pressure vacuum breaker, casing cover, 32 mm (1 1/4 inches) elbow flush connection from finished wall to 38 mm (1 1/2 inches) top spud. Spud coupling, wall and spud flanges.
 3. Bed Pan Washer: Mechanical pedal mixing valve, wall hung, with double self-closing pedal valve with loose key stops, renewable seats and supply from valve to nozzle with wall hook hose connection; 1219 mm (48 inches) of heavy duty rubber hose, with extended spray outlet elevated vacuum breaker, indexed lift up pedals having clearance of not more than 13 mm (1/2 inch) above the floor and not less than 356 mm (14 inches) from wall when in operation. Supply pipe from wall to valve stop will be rigid, threaded, IPS copper alloy pipe. Exposed metal parts will be chromium plated with a smooth bright finish. Provide valve plate for foot control. Provide inline laminar flow control device.
- F. (P-507) Plaster Sink, vitreous glazed earthenware, single compartment with 152 mm to 203 mm (6 inches to 8 inches) integral back and approximately 762 mm by 559 mm (30 inches by 22 inches) with 229 mm (9 inches) apron. Support sink with cast aluminum or enameled iron brackets on ASME A112.6.1M, Type I, chair carrier. Set sink rim 914 mm (36 inches) above finished floor. Provide CRS drainboard without corrugations and with heavy duty CRS brackets with leveling screws:
1. Faucet: Solid brass construction, 9.5 L/m (2.5 gpm) combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, mounted on wall above sink back, 13 mm (1/2 inch) female union inlets, integral screw-driven stops in shank, and rigid gooseneck spout. Provide laminar control device. 152 mm (6 inches) blade handles on faucets will be cast, formed or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish.

2. Drain: Open waste strainer with 51 mm (2 inches) outside diameter waste connection and clean out between strainer and plaster trap. Provide 51 mm (2 inches) outside diameter connection to wall with escutcheon.
 3. Plaster Trap: Heavy cast iron or steel body with removable gasket cover, porcelain enamel exterior and two female, threaded, side inlet and outlet. Provide removable perforated stainless steel sediment bucket. Minimum overall dimensions will be 216 mm (8 1/2 inches) diameter by 318 mm (12 1/2 inches) high. Trap will be non-siphoning and easily accessible for cleaning.
 4. Drainboard: Not less than 14 gage CRS. Secure to wall with two substantial stainless-steel brackets. Size will be as follows:
 - a. Cast Room: 1219 mm by 533 mm (48 inches by 21 inches).
 - b. Other Locations: 762 mm by 533 mm (30 inches by 21 inches).
 5. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- G. (P-510) Sink (CRS, Single Compartment with Drainboard, Wall Hung, Foot Pedal Control) with right or left hand drainboard as shown on the drawings, 14 gage CRS, one-piece approximately 1067 mm by 508 mm (42 inches by 20 inches) with 432 mm by 432 mm (17 inches by 17 inches) by 152mm (6 inches) deep sink and 102 mm (4 inches) back splash. Provide rolled rim on front and ends. Corners and edges will be well rounded. Support sink with 10 gage CRS brackets on ASME A112.6.1M, Type I, on chair carrier and secure fixture with minimum 10 mm (3/8 inch) all-thread bracket studs and nuts. Set rim of sink 914 mm (36 inches) above finished floor. Provide valve plate for foot pedal control.
1. Drain: Stainless steel stamped drain fitting with 114 mm (4 1/2 inches) top and 76 mm (3 inches) perforated grid strainer.
 2. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap, adjustable with connected elbow and nipple to wall and escutcheon.
 3. Faucets: Solid brass construction, single rigid gooseneck spout with outlet 127 mm to 203 mm (5 inches to 8 inches) above flood rim of sink. Provide laminar flow control device. Wall mounted, mechanical pedal mixing valve with self-closing pedal valve with stops, renewable seats, and supply from valve to spout, indexed lift up pedals having clearances of not more than 13 mm (1/2 inch) above the floor and not less than 356 mm (14 inches) from wall when in operation. Supply pipe from wall to valve stop will be rigid threaded IPS copper alloy pipe. Supply pipe from valve to faucet

will be manufacturer's option. Exposed brass parts will be chrome plated with a smooth bright finish.

H. (P-512) Sink (CRS, Single Compartment, with Drainboard, Wall Hung, Foot Pedal Control) 14 gage CRS, approximately 610 mm by 508 mm (24 inches by 20 inches) by 203 mm (8 inches) deep with 203 mm (8 inches) splash back, and single drainboard at right or left as shown on the drawings. Overall dimensions (sink and drainboard) approximately 1372 mm by 610 mm (54 inches by 24 inches) wide. Slope drainboard to compartment and brace rigidly with CRS reinforcements. Provide rolled rim on front and ends. Corners and edges will be well rounded. Support sink with 10 gage CRS brackets on ASME A112.6.1M, Type I, chair carrier and secure fixture with minimum 10 mm (3/8 inch) all-thread bracket studs and nuts. Set rim of sink 914 mm (36 inches) above finished floor. Provide valve plate for foot pedal control.

1. Drain: Drain plug with cup strainers, stainless steel.
2. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow and nipple to wall and escutcheon.
3. Faucets: Solid brass construction, single rigid gooseneck spout with outlet 127 mm to 203 mm (5 inches to 8 inches) above flood rim of sink. Provide laminar flow control device. Wall mounted, mechanical pedal mixing valve with self-closing pedal valve with stops, renewable seats, and supply from valve to spout, indexed lift up pedals having clearances of not more than 13 mm (1/2 inch) above the floor and not less than 356 mm (14 inches) from wall when in operation. Supply pipe from wall to valve stop will be rigid threaded IPS copper alloy pipe. Supply pipe from valve to faucet will be manufacturer's option. Exposed brass parts will be chrome plated with a smooth bright finish.

I. (P-514) Sink (CRS, Single Compartment with Drainboard, Wall Hung, Elbow Controls) 14 gage CRS approximately 457 mm by 381 mm (18 inches by 15 inches) by 254 mm (10 inches) deep with 203 mm (8 inches) splash back and drainboard at right or left as shown on the drawings. Overall dimensions (sink and drainboard), approximately 1219 mm (48 inches) long by 610 mm (24 inches) wide. Slope drainboard to compartment and brace rigidly with CRS reinforcements. Provide rolled rim on front and ends. Corners and edges will be well rounded. Support sink with 10 gage CRS brackets on ASME A112.6.1M, Type I, chair carrier and secure

fixture with minimum 10 mm (3/8 inch) all-thread bracket studs and nuts. Set rim of sink 914 mm (36 inches) above finished floor.

1. Drain: Drain plug with cup strainers.
 2. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow and nipple to wall and escutcheon.
 3. Control and Faucet: Solid brass construction, Elbow control, wall hung, with gooseneck spout. Provide laminar flow control device.
 4. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- J. (P-516) Sink (CRS, Single Compartment, Wall Hung) 14 gage CRS, approximately 762 mm by 508 mm (30 inches by 20 inches) by 203 mm (8 inches) deep with 305 mm (12 inch) splash back. Provide rolled rim on front and ends. Corners and edges will be well rounded. Support sink with 10 gage CRS brackets on ASME A112.6.1M, Type I, chair carrier and secure fixture with minimum 10 mm (3/8 inch) all-thread bracket studs and nuts. Set rim of sink 914 mm (36 inches) above finished floor.
1. Faucet: Solid brass construction, combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, and swinging elevated spout, integral stops, mounted as close as possible to top of splash back. Wrist blade handles on faucet will be cast, formed or drop forged copper alloy or CRS. Exposed metal parts, including exposed part under valve when in open position, will have a smooth bright finish. Provide laminar flow control device.
 2. Drain: Drain plug with strainer, stainless steel.
 3. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow and nipple to wall and escutcheon.
 4. Provide cover for exposed piping, drain, stops and trap per A.D.A.

SPEC WRITER NOTE: See standard detail
SD224000-10.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- K. (P-519) Sink (Surgeons Scrub-up, Sensor Control) // single unit, approximately 787 mm by 660 mm (31 inches by 26 inches) and 305 mm (12 inches) deep. // Double units approximately 1600 mm by 559 mm (63 inches by 22 inches) and 305 mm (12 inches) deep. //
1. Construction: Provide a minimum of 16 gage, Type 302/304 stainless steel, with exposed welds grounded and polished to blend with adjacent surfaces. Sound deadened front and back, front access panel, splash-retarding angle design. Exterior surfaces will have a

uniformed NAAMM Number 4 finish. Mount sink with wall hanger and stainless-steel support brackets and ASME A112.6.1M, Type III, heavy duty chair carriers and secure fixture with minimum 3/8-inch bracket studs and nuts. Cove corners with 6 mm (1/4 inch) radius. Set sink rim 914 mm (36 inches) above finished floor as shown.

2. Equip each scrub bay with an infrared photocell sensor to control water flow automatically, solenoid valve and thermostatic valve. Breaking the light beam will activate the water flow. Flow will stop when the user moves away from light beam. Sensor may be wall mounted, deck mounted, or integral with faucet.
3. Valve: Type T/P combination thermostatic and pressure balancing with chrome plated metal lever type operating handle and chrome plated metal or CRS face plate. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be IPS. Provide external screwdriver check stops, and temperature limit stops. Set stops for a maximum temperature of 43 degrees C (110 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 8.3 l/m (2.2 gpm) // 22 l/m (6 gpm) // at 310 kPa (45 psig) pressure drop.
4. Gooseneck Spout: For each scrub bay, provide gooseneck spout with laminar flow device. Spout and trim will be cast or wrought copper alloy and be chrome plated with smooth bright finish.
5. Grid Drain: Stainless steel stamped drain fitting, 114 mm (4 1/2 inches) top with 76 mm (3 inches) grid and 38 mm (1 1/2 inches) tailpiece.
6. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap, adjustable with connected elbow and nipple to the wall. Exposed metal trap surfaces and connection hardware will be chrome plated with smooth bright finish.
7. Shelf: Surface mounted of Type 304 stainless steel with exposed surface in satin finish and stainless-steel support brackets. Shelf will be 203 mm (8 inches) wide and length as shown on the drawings.

SPEC WRITER NOTE: See standard detail
SD224000-11.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- L. (P-520) Sink (Surgeon's Scrub-Up, Sensor Control) approximately 711 mm by 559 mm (28 inches by 22 inches) by 305 mm (12 inches) deep, first

quality vitreous china. Centrally locate single hole in slab for gooseneck spout. Escutcheons will be either copper alloy or CRS. Support sink with heavy-duty stainless-steel brackets with stainless steel leveling screws and ASME A112.6.1M, Type I, chair carriers. Set rim of sink 914 mm (36 inches) above finished floor.

1. Operation: Provide thermostatic valve to supply a water temperature of 35 degrees C (95 degrees F). Equip scrub sink with an infrared photocell sensor to control water flow automatically. Breaking the light beam will activate the water flow. Provide unlimited flow time with flow stopping when user moves away from light beam. Provide laminar flow control device. Provide recessed steel control box with chrome-plated bronze or stainless-steel access cover for solenoid and transformer.
 2. Valve: Type T/P combination temperature and pressure balancing with chrome plated metal lever type operating handle and chrome plated metal or CRS face plate. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be IPS. Provide external screwdriver check stops, and temperature limit stops. Set stops for a maximum temperature of 40 degrees C (104 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 8.3 l/m (2.2 gpm) // 22 l/m (6 gpm) // at 310 kPa (at 45 psig) pressure drop.
 3. Gooseneck Spout: Provide gooseneck spout and laminar flow device. Spout and trim will be cast or wrought copper alloy and be chrome plated with smooth bright finish.
 4. Drain: Strainer with bright finish.
 5. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap, adjustable with connected elbow and nipple to the wall. Exposed metal trap surface, and connection hardware will be chrome plated with a smooth bright finish.
- M. (P-521) Laundry Tub (Plastic, Single Compartment with Legs) fiber reinforced plastic, single bowl with raised back, approximately 635 mm by 559 mm (25 inches by 22 inches) by 356 mm (14 inches) deep, with base and legs.
1. Faucets: Solid brass construction, combination faucet with replacement Monel seat, removable replacement unit containing all parts subject to wear, vacuum breaker, integral stops, mounted on

- splash back. Lever handles on faucet will be cast, formed or drop forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish.
2. Drain: Stopper.
 3. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow, and nipple to wall and escutcheon.
- N. (P-522) Laundry Tub (Plastic, Double Compartment with Legs) fiber reinforced plastic, double bowl with raised back, approximately 1219 mm by 559 mm (48 inches by 22 inches) by 356 mm (14 inches) deep for each bowl, base with legs.
1. Faucet: Solid brass construction, combination faucet with replaceable Monel seat, removable replacement unit containing all parts, subject to wear, and swinging spout, vacuum breaker, integral stops, mounted on splash back. Lever handles on faucet will be cast, formed or drop forged copper alloy. Escutcheons will be forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish.
 2. Drain: Stopper.
 3. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow, and nipple to wall and escutcheon.
- O. (P-524) Sink, (CRS, Double Compartment, Counter Top, ASME A112.19.3, Kitchen Sinks) self-rimming, approximately 838 mm by 559 mm (33 inches by 22 inches) with two compartments inside dimensions approximately 343 mm by 406 mm by 191 mm (13 1/2 inches by 16 inches by 7 1/2 inches), minimum 20 gage CRS. Corners and edges will be well rounded.
1. Faucet: Kitchen sink, solid brass construction, 8.3 L/m (2.2 gpm) swing spout, chrome plated copper alloy with spray and hose.
 2. Drain: Drain plug with cup strainer, stainless steel.
 3. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap with cleanout plug, continuous drain with wall connection and escutcheon.
 4. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- P. (P-527) Laundry Tub (Plastic, Single Compartment with Legs, Plaster Trap) fiber reinforced plastic, single bowl with raised back, approximately 635 mm by 559 mm by 356 mm (25 inches by 22 inches by 14 inches) deep, base with legs.

1. Faucet: Solid brass construction, combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, vacuum breaker, integral stops, mounted on splash back. Lever handles on faucet will be cast, formed or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a smooth bright finish.
 2. Drain: Stopper.
 3. Plaster Trap: Heavy cast iron body with removable gasketed cover, porcelain enamel exterior and two female, threaded, side inlet and outlet. Provide removable cage of heavy galvanized material, having integral baffles and replaceable brass screens. Minimum overall dimensions will be 356 mm by 356 mm by 406 mm (14 inches by 14 inches by 16 inches) high, with 178 mm (7 inches) water seal. Trap will be non-siphoning and easily accessible for cleaning.
- Q. (P-528) Sink (CRS, Single Compartment, Countertop ASME A112.19.2, Kitchen Sinks) self-rimming, back faucet ledge, approximately 533 mm by 559 mm (21 inches by 22 inches) with single compartment inside dimensions approximately 406 mm by 483 mm by 191 mm (16 inches by 19 inches by 7 1/2 inches) deep. Will be minimum of 1.3 mm thick (18 gauge) CRS. Corners and edges will be well rounded:
1. Faucet: Solid brass construction, 8.3 L/m (2.2 gpm) deck mounted combination faucet with Monel or ceramic seats, removable replacement unit containing all parts subject to wear, swivel gooseneck spout with approximately 203 mm (8 inches) reach with spout outlet 152 mm (6 inches above deck and // 102 mm (4 inches) wrist blades // single lever // with hose spray. Faucet will be polished chrome plated.
 2. Drain: Drain plug with cup strainer, stainless steel.
 3. Trap: Cast copper alloy 38 mm (1 1/2 inches) P-trap with cleanout plug. Provide wall connection and escutcheon.
 4. Provide cover for exposed piping, drain, stops and trap per A.D.A.
- R. (P-530) Sink (CRS, Single Compartment with Drainboard, Wall Hung, Sensor Controls) 14-gauge CRS approximately 457 mm by 381 mm (18 inches by 15 inches) by 254 mm (10 inches) deep with 203 mm (8 inches) splash back and drainboard at right or left as shown on the drawings. Overall dimensions (sink and drainboard), approximately 1219 mm (48 inches) long by 610 mm (24 inches) wide. Slope drainboard to bead, not less

than 6 mm (1/4 inch) high, on front and ends. Corners and edges will be well rounded. Support sink with 3.5 mm thick (10 gauge) CRS brackets on ASME A112.6.1M, Type I, chair carrier and secure fixture with minimum 10 mm (3/8 inch) all-thread bracket studs and nuts. Set rim of sink 914 mm (36 inches) above finished floor.

1. Drain: Drain plug with cup strainers.
2. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow and nipple the wall and escutcheon.
3. Sensor Control: Provide an infra-red photocell sensor and solenoid valve to control flow automatically, thermostatic control valve with check stops, 24-volt transformer, wire box and steel access door with key operated cylinder lock see specification ACCESS DOORS. Operation: Breaking the light beam will activate the water flow. Flow will stop when the user moves from the light beam.
4. Gooseneck spout: Spout and trim will be solid brass construction and be chromium plated with smooth bright finish. Provide laminar flow device.
5. Provide cover for exposed piping, drain, stops and trap per A.D.A.

2.12 DISPENSER, DRINKING WATER

- A. Standard rating conditions: 10 degrees C (50 degrees F) water with 27 degrees C (80 degrees F) inlet water temperature and 32 degrees C (90 degrees F) ambient air temperature.
- B. Filters shall be as recommended or supplied by the manufacturer of drinking water dispensers; however all filters shall be free of carbon.
- C. (P-604) Electric Water Cooler (Mechanically Cooled, Wall Hung, Self-contained, Wheelchair) bubbler style, // 19 l/h (5 gph) // 30 l/h (8 gph) // minimum capacity, lead free. Top will be CRS anti-splash design. Cabinet, CRS, satin finish, approximately 457 mm by 457 mm by 635 mm (18 inches by 18 inches by 25 inches) high with mounting plate. Set bubbler 914 mm (36 inches) above finished floor. Unit will be push-bar operated with front and side bar and automatic stream regulator. All trim polished chrome plated. // Provide with bottle filler option.//
- D. (P-606) Drinking Fountain (Exterior Wall Hung, Freezeproof, Surface Mounted) cabinet, CRS, with stainless steel receptor, 18 gage, type 304 with satin finish and will be complete with hanger and bottom cover plate. Unit dimensions, 305 mm (12 inches) wide by 286 mm (11 1/4

inches) front to back by 241 mm (9 1/2 inches) high including a 45 mm (1-3/4 inches) high splash back. Lead free.

1. Provide frost-proof self-closing, drain back valve assembly with automatic stream height control and an 86 mm (3 3/8 inch) high bubbler.
2. Provide 38 mm (1 1/2 inches) cast brass P-trap mounted in pipe space, with opening to accept drain back from the frost-proof valve assembly.
3. All exposed accessories will be chrome plated. Set receptor rim 1067 mm (42 inches) above grade.

E. (P-608) Electric Water Cooler (Mechanically Cooled, Wall Hung, Wheelchair, with Glass Filler) bubbler style, air cooled compressor, 15 ml/s (15 gph) minimum capacity, lead free. Top will be one piece type 304 CRS anti-splash design. Cabinet, CRS satin finish, approximately 457 mm by 457 mm by 635 mm (18 inches by 18 inches by 25 inches) high with mounting plate. Unit will be push-bar operated with front and side bars, automatic stream regulator, and heavy chrome plated brass push down glass filler with adjustable flow control, and all trim chrome plated. Set bubbler 914 mm (36 inches) above finished floor. // Provide with bottle filler option.//

F. (P-609) Electric Water Cooler: Mechanically cooled, self-contained, wheel chair, bubbler style fully exposed dual height stainless steel fountain, recessed in wall refrigeration system, stainless steel grille, stainless steel support arm, wall mounting box, energy efficient cooling system consisting of a hermetically sealed reciprocating type compressor, 115v, 60 Hz, single phase, fan cooled condenser, permanently lubricated fan motor. Set highest bubbler 1016 mm (40 inches) above finished floor. // Provide with bottle filler option.//

SPEC WRITER NOTE: Specify shower head assembly with internal flow restrictor to limit shower discharge rate to 2.5 GPM. To achieve domestic water use reduction, specify discharge rates lower than 2.5gpm utilizing permanently affixed vacuum flow restrictors as an option. Do not specify flow rates lower than 1.5 GPM based on the available water supply pressure.

2.13 SHOWER BATH FIXTURE

SPEC WRITER NOTE: See standard detail
SD224000-13.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- A. (P-701) Shower Bath Fixture (Detachable, Wall Mounted, Concealed Supplies, Type T/P Combination Valve):
1. Shower Installation: Wall mounted detachable spray assembly, 600 mm (24 inch) wall bar, elevated vacuum breaker, supply elbow and flange and valve. All external trim, chrome plated metal.
 2. Shower Head Assembly: Metallic shower head with flow control to limit discharge to // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) //, 1524 mm (60 inches) length of rubber lined CRS, chrome plated metal flexible, or white vinyl reinforced hose and supply wall elbow. Design showerhead to fit in palm of hand. Provide CRS or chrome plated metal wall bar with an adjustable swivel hanger for showerhead. Fasten wall bar securely to wall for hand support.
 3. Valves: Type T/P combination thermostatic and pressure balancing, with chrome plated metal lever type operating handle adjustable for rough-in variations and chrome plated metal or CRS face plate. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external screwdriver check stops, vacuum breaker and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (122 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.

SPEC WRITER NOTE: See standard detail
SD224000-14.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- B. (P-702) Shower Bath Fixture (Wall Mounted, Concealed Supplies, Type T/P Combination Valve):
1. Shower Installation: Wall mounted, shower head connected to shower arm. All external trim will be chrome plated metal.
 2. Shower Heads: Chrome plated metal head, adjustable ball joint, self-cleaning with automatic flow control device to limit discharge to not more than // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) //. Body, internal parts of shower head and flow control fittings will be

copper alloy or CRS. Install showerhead 1829 mm (72 inches) above finished floor.

3. Valves: Type T/P combination thermostatic and pressure balancing, with chrome plated metal lever with adjustment for rough-in variations, type operating handle and chrome plated brass or CRS face plate. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external screwdriver check stops, and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (122 degrees F). Install valve 1372 mm (54 inches) from bottom of shower receptor. All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.

SPEC WRITER NOTE: See standard detail
SD224000-16.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

C. (P-703) Shower Bath Fixture (Wall Mounted, Concealed Supplies, Type T/P combination Valve):

1. Shower Installation: Wall mounted showerhead with integral back secured to wall, diverter valve and supply elbow with quick connect for hose assembly and wall hook for hose assembly.
2. Shower Heads: Chrome plated metal head, institutional type, adjustable spray direction, self-cleaning head with automatic flow control device to limit discharge to not more than // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) //. Provide mounting and vandal-proof screws. Body, internal parts of showerhead, and flow control fittings will be copper alloy or CRS. Install showerhead 1829 mm (72 inches) above finished floor.
3. Valves: Type T/P combination thermostatic and pressure balancing. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external combination screwdriver check stops, and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (122 degrees F). One piece chrome plated brass or CRS faceplate, with chrome plated metal lever handle with adjustment for rough-in variation. Exposed fasteners will be vandal resistant. Valve will provide minimum of // 5.7 l/m

(1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.

D. (P-704) Shower Bath Fixture (Wall Mounted, Concealed Supplies, Hose Spray):

1. Shower Installation: Wall mounted showerhead connected to shower arm.
2. Shower Heads: Chrome plated metal head, adjustable ball joint, self-cleaning head with automatic flow control device to limit discharge to not more than three gpm. Body, internal parts of shower head and flow control fittings will be copper alloy or CRS. Install showerhead 1829 mm (72 inches) above finished floor.
3. Valves: Type T/P combination temperature and pressure balancing, with chrome plated metal lever type operating with adjustment for rough-in variations handle and chrome plated metal or CRS face plate. Install diverter selector valve and elevated vacuum breaker to provide tempered water to shower head and hose spray. Valve body will be any suitable copper alloy. Internal parts will be copper nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external screwdriver check stops, and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (122 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a minimum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.
4. Spray Assembly: Will consist of a 1524 mm (60 inches) length of rubber lined CRS, chrome plated metal flexible, or white vinyl reinforced hose with coupling for connection to 13 mm (1/2 inch) hose supply elbow protruding through wall. Spray will consist of a self-closing, lever-handle, faucet with thumb control having open-shut positions and intermediate positions for regulating water flow and elevated pressure type vacuum breaker. Provide wall hook for faucet.

E. (P-705) Thermostatic Valve (Wall Mounted, Thermometer and Hose Assembly):

1. Installation: Wall mounted hose assembly connected to exposed wall mounted vacuum breaker, flow control valve, thermometer and thermostatic valve.

2. Valves: Type T/P combination temperature and pressure balancing for wall mounted hose assembly. Valve body will be suitable copper alloy. Internal parts will be copper, nickel alloy, CRS, or thermoplastic material. Valve inlet and outlet will be 19 mm (3/4 inch) IPS. Provide external screwdriver check stops and strainers. Install mixing valve 1219 mm (48 inches) above finished floor. Valve will provide a minimum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.
3. Thermometer: Stainless steel, 64 mm (2 1/2 inches) dial type range from 0 to 60 degrees C (32 to 140 degrees F).
4. Spray assembly: Will consist of a 1219 mm (48 inches) length of not lighter than two braid cloth-inserted rubber 13 mm (1/2 inch) hose with coupling for connection to 13 mm (1/2 inch) hose nipple connected to vacuum breaker. Provide wall hook for faucet.

SPEC WRITER NOTE: See standard detail
SD224000-15.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

F. (P-711) Shower Bath Fixture (Detachable, Wall Mounted, Concealed Supplies, Type T/P Combination Valve and Thermometer):

1. Shower Installation: Wall mounted detachable spray assembly, 610 mm (24 inches) wall bar, elevated vacuum breaker, supply elbow and flange, concealed pipe to wall mounted thermometer, and valve. All external trim will be chrome plated metal.
2. Shower Head Assembly: Metallic shower head with flow control to limit discharge to // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) //, 2134 mm (84 inches) of rubber lined CRS or chrome plated metal flexible or white vinyl reinforced hose and supply wall elbow. Design showerhead to fit in palm of hand. Provide CRS or chrome plated metal wall bar with an adjustable swivel hanger for showerhead. Fasten wall bar securely to wall for hand support.
3. Valves: Type T/P combination thermostatic and pressure balancing, for wall mounted shower with chrome plated lever type operating handle with adjustment for rough-in variations and chrome plated metal or CRS face plate. Valve body for mixing valve and valve body for separate valves will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide screwdriver check stops with strainers, vacuum breaker, flow control

valve with four-arm or lever handle and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (122 degrees F). All exposed fasteners will be chrome plated. Valve will provide a minimum of 190 ml/s at 310 kPa (3 gpm at 45 psig) pressure drop.

4. Thermometer: Stainless steel, 65 mm (2 1/2 inches) dial type range from 0 to 60 degrees C (32 to 140 degrees F).

2.14 EMERGENCY FIXTURES

A. (P-706) Emergency Shower:

1. Shower Head: Polished chrome plated, 203 mm (8 inches) in diameter.
2. Installation: Head will be 2134 mm (84 inches) above floor.
3. Valves: Stay-open ball type, chrome plated, operated by a 610 mm (24 inches) stainless steel pull-rod with triangle handle. Pull-down opens valve push-up closes valve. Provide with thermostatic mixing valve to provide 75.7 L/m (20 gpm) of tepid water from 30 to 35 degrees C (85 to 95 degrees F).

4. Provide with signage to easily locate fixture.

//5. Provide with emergency alarm horn and light. Tie alarm to BAS.//

//6. Unit will be freezeless.//

B. (P-707) Emergency Shower and Eye and Face Wash (Free Standing):

1. Shower Head: Polished chrome plated, 203 mm (8 inches) in diameter, install head 2134 mm (84 inches) above floor. Equip with stay-open ball valve, chrome plated. Operate valve with 610 mm (24 inches) stainless steel pull-rod with triangle handle. Pull-down opens valve; push-up closes valve. Flow rate will be 75.7 L/m (20 gpm).
2. Emergency Eye and Face Wash: CRS receptor. Equipment with a 13 mm (1/2 inch) stay open ball valve operated by push flag handle. Mount eye and face wash spray heads 1067 mm (42 inches) above finished floor. Flow rate will be 11.4 L/m (3 gpm).

3. Provide with thermostatic mixing valve to provide tepid water from 30 to 35 degrees C (85 to 95 degrees F).

4. Shower head and emergency eye and face wash will be mounted to stanchion with floor flange through floor waste connection and P-trap. Paint stanchion same color as room interior. Provide with signage to easily locate fixture.

//5. Provide with emergency alarm horn and light. Tie alarm to BAS.//

//6. Unit will be freezeless.//

C. (P-708) Emergency Eye and Face Wash (Wall Mounted): CRS, wall mounted,

foot pedal control. Mount eye and face wash spray heads 1067 mm (42

inches) above finished floor. Pedal will be wall mounted, entirely clear of floor, and be hinged to permit turning up. Receptor will be complete with drain plug with perforated strainer, P-trap and waste connection to wall with escutcheon. Provide with thermostatic mixing valve to provide tepid water from 30 to 35 degrees C (85 to 95 degrees F). Flow rate will be 11.4 L/m (3 gpm).

- D. (P-709) Emergency Eye and Face Wash (Pedestal Mounted): CRS receptor, pedestal mounted, hand operated. Mount eye and face wash spray heads 1067 (42 inches) above finished floor through floor waste connection and P-trap. Paint pedestal same color as room interior. Provide with thermostatic mixing valve to provide tepid water from 30 to 35 degrees C (85 to 95 degrees F). Flow rate will be 11.4 L/m (3 gpm).

2.15 HYDRANT, HOSE BIBB AND MISCELLANEOUS DEVICES

- A. (P-801) Wall Hydrant: Cast bronze non-freeze hydrant with detachable T-handle. Brass operating rod within casing of bronze pipe of sufficient length to extend through wall and place valve inside building. Brass valve with coupling and union elbow having metal-to-metal seat. Valve rod and seat washer removable through face of hydrant; 19 mm (3/4 inch) hose thread on spout; 19 mm (3/4 inch) pipe thread on inlet. Finish may be rough; exposed surfaces will be chrome plated. Set not less than 457 mm (18 inches) nor more than 914 mm (36 inches) above grade. On porches and platforms, set approximately 762 mm (30 inches) above finished floor. Provide integral vacuum breaker which automatically drains when shut off.
- B. (P-802) Hose Bibb (Combination Faucet, Wall Mounted to // Concealed // Exposed // Supply Pipes): Cast or wrought copper alloy, combination faucet with replaceable Monel seat, removable replacement unit containing all parts subject to wear, mounted on wall 914 mm (36 inches) above floor to concealed supply pipes. Provide faucet without top or bottom brace and with 19 mm (3/4 inch) hose coupling threads on spout, integral stops and vacuum breaker. Design valves with valve disc arranged to eliminate rotation on seat. Four-arm handles on faucets will be cast, formed or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a bright finish.
- C. (P-804) Hose Bibb (Single Faucet, Wall Mounted to // Concealed // Exposed // Supply Pipe): Cast or wrought copper alloy, single faucet

with replaceable Monel seat, removable replacement unit containing all parts subject to wear, mounted on wall 914 mm (36 inches) above floor to concealed supply pipe. Provide faucet with 19 mm (3/4 inch) hose coupling thread on spout and vacuum breaker. Four-arm handle on faucet will be cast, formed or drop forged copper alloy. Escutcheons will be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, will have a bright finish.

- D. (P-806) Lawn Faucet: Will be brass with detachable wheel or T-handle, straight or angle body, and be of compression type 19 mm (3/4 inch) hose threaded on spout; 19 mm (3/4 inch) pipe threaded on inlet. Finish may be rough; exposed surfaces will be chrome plated, except handle may be painted. Set not less than 457 mm (18 inches) or more than 914 mm (36 inches) above grade. On porches and platforms, set approximately 762 mm (30 inches) above finished floor. Provide integral vacuum breaker.
- E. (P-805) Lawn Faucet: Freezeless. Will be brass with detachable wheel or T-handle, straight or angle body, and be of compression type 19 mm (3/4 inch) hose threaded on spout; 19 mm (3/4 inch) pipe threaded on inlet. Finish may be rough; except handle may be painted. Set not less than 457 mm (18 inches) or more than 914 mm (36 inches) above roof. Provide integral vacuum breaker.
- F. (P-807) Reagent Grade Water Faucet: Gooseneck, deck mounted for recirculating reagent grade water, forged brass valve body and 13 mm (1/2 inch) I.P.S. brass riser with polypropylene interior lining, polypropylene serrated hose end. Polypropylene inlet and outlet tube, compression control polypropylene diaphragm valve inside valve body. Provide inlet and outlet adapters. Color code faucets with full view plastic index buttons. Bio-based materials will be utilized when possible.

SPEC WRITER NOTE: Coordinate power requirements with electrical design.

- G. (P-808) Washing Machine Supply and Drain Units: Fabricate of 16-gage steel with highly corrosion resistant epoxy finish. Unit to have 51 mm (2 inches) drain connection, 13 mm (1/2 inch) combination MPT brass sweat connection, ball type shut-off valve, 51 mm (2 inches) cast brass P-trap // and duplex electric grounding receptacle and dryer outlet //. Size 229 mm by 375 mm (9 inches by 14 3/4 inches) rough wall opening

203 mm by 330 mm by 92 mm (8 inches by 13 inches by 3 5/8 inches).
Centerline of box will be 1118 mm (44 inches) above finished floor.

- H. (P-812) Water Supply Box Units: Fabricate of 16-gage steel with highly corrosion resistant epoxy finish. Unit to have 13 mm (1/2 inch) combination MPT brass sweat connection, ball type shut-off valve. Size 229 mm by 298 mm (9 inches by 11 3/4 inches) rough wall opening 203 mm by 254 mm by 92 mm (8 inches by 10 inches by 3 5/8 inches). Bottom of box will be 457 mm (18 inches) above finished floor.

SPEC WRITER NOTE: See standard detail
SD224000-17.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- I. (P-809) Dialysis Box: Recessed wall // floor // box with continuously welded 18 gage CRS, Type 316, with satin finish. Wall // Floor // flange and hinged door will be 16 gage CRS, Type 304, with satin finish. Provide polypropylene ball valve, 19 mm (3/4 inch) male supply outlet and two discharge hose brackets above 38 mm (1 1/2 inches) chemical resisting waste. Furnish each valve with flushing nipple. Provide with indirect drain in box or with separate funnel floor drain.

SPEC WRITER NOTE: See standard detail
SD224000-18.DWG available at
<http://www.cfm.va.gov/til/sDetail.asp>.

- J. (P-810) Thermostatic Steam and Water Mixing Valve in Recessed Cabinet:
1. Valve: Chrome plated bronze construction, 19 mm (3/4 inch) IPS steam inlet, 19 mm (3/4 inch) IPS water inlet, 19 mm (3/4 inch) IPS outlet, two stop and check valves with color coded heat resistant handles, unions on inlets, solid bi-metal thermostat, heat-resistant temperature adjusting handle. Provide outlet with dial thermometer range -7 to 115 degrees C (20 to 240 degrees F), vacuum breaker and hose connection. Interior parts will be bronze.
 2. Cabinet: Concealed cabinet for recessed installation, body 16 gage CRS, door and flange 12 gage CRS, NAAMM Number 4 finish. Piano hinge in left side of door, cylinder lock, top inlets and stainless-steel hose rack. Factory assembled or a unit.
 3. Hose: Heavy duty hose, 19 mm (3/4 inch), cream color, high temperature resistance hot water or saturated steam up to 143 degrees C (290 degrees F) at 50 psig, with two high tensile cord braids and a cover of Nitrile-PVC. Provide 10668 mm (420 inches) of hose.

4. Nozzle: Rear trigger, adjustable spray, self-closing automatic shut-off with heavy rubber cover. Internal parts of bronze, brass and stainless steel.

SPEC WRITER NOTE: The AE will pay special attention to the use of plumbing fixtures in mental health patient areas.

2.16 MENTAL HEALTH PLUMBING FIXTURES

- A. All fixtures will utilize an anti-ligature design specifically intended for the safety of mental health patients and fitting for patient rooms. All Stainless-Steel fixtures will be white powder-coated.
- B. There will be no sharp edges/corners, exposed piping or conduit in patient areas. The faucet should be a single unit with a round handle that is designed with a taper or a round lever so a noose would slip off with the weight of a person. A sensor type faucet is preferable since this has no lever.
- C. Tamper resistant screws/security fasteners will be used. Tamper resistant strainers and screws used for the covers should be of the TORX or Allen head type (tools typically carried by IT personnel) for maintenance access purposes. Coordinate with VA Maintenance Shops for type of tamper resistant screws they are currently using.
- D. Each patient toilet room will have individual isolation valves on hot and cold-water lines accessible above ceilings.
- E. Fixtures:
1. Water Closet
 2. Urinal
 3. Lavatory
 4. Shower push button controls for the shower are also an acceptable alternative.
- F. (P-901) Ligature Resistant Water Closet (Floor Mounted, ASME A112.19.3 and CSA B45.4) - Security fixture fabricated from white powder-coated 14 gauge or 16-gauge type 304 stainless steel. (Bio-based materials will be utilized when possible.) The standard toilet will include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive after fill and fully enclosed trap which will maintain a minimum 50 mm (2 inch) seal and pass 54 mm (2-1/8 inch) ball. Skirt of toilet bowl will be extended to floor as close to front of toilet bowl to prevent tie off. // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // per flush. Top of seat will be 381 mm (15 inches)

above finished floor. Fixture will withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

1. Fittings and Accessories: Rear wall // chase connections; 102 mm (4 inch) waste // on-floor outlet and 40 mm (1-1/2 inch) water back spud // top spud. Provide toilet waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.
2. Seat: Seat will be integral with the bowl // #4 satin finish high polish seat // (as required).
3. Flush valve: Battery powered active // hard-wired electric // infra-red sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, // rear spud // top spud // connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass. Flush valves will be // concealed // installed in lockable stainless-steel enclosure with sloped top //.

G. (P-910) Ligature Resistant Water Closet (ADA) Handicap (Floor Mounted, ASME A112.19.3 and CSA B45.4) - Security fixture fabricated from 14 gauge or 16-gauge type 304 stainless steel. The standard toilet will include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive after fill and fully enclosed trap which will maintain a minimum 50 mm (2 inch) seal and pass 54 mm (2-1/8 inch) ball. Skirt of toilet bowl will be extended to floor as close to front of toilet bowl to prevent tie off. // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // per flush. Top of seat will be 432 to 483 mm (17 to 19 inches) above finished floor. Fixture will withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

1. Fittings and Accessories: Rear wall // chase connections; 102 mm (4 inch) waste // on-floor outlet and 40 mm (1-1/2 inch) water back spud // top spud. Provide toilet waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.

2. Seat: Seat will be integral with the bowl // #4 satin finish high polish seat // (as required).
 3. Flush valve: Battery powered active // hard-wired electric // infra-red sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, rear spud connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass.
- H. (P-911) Ligature Resistant Water Closet (Wall Mounted, ASME A112.19.3 and CSA B45.4) - Security fixture fabricated from 14 gauge or 16-gauge type 304 stainless steel. The standard toilet will include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive after fill and fully enclosed trap which will maintain a minimum 50 mm (2 inch) seal and pass 54 mm (2-1/8 inch) ball. Skirt of toilet bowl will be extended to floor as close to front of toilet bowl to prevent tie off. // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // per flush. Top of seat will be 381 mm (15 inches) above finished floor. Fixture will withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.
1. Fittings and Accessories: Rear wall // chase connections; 102 mm (4 inch) waste and 40 mm (1-1/2 inch) water back spud // top spud //. Provide extra heavy-duty carrier, toilet waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.
 2. Seat: Seat will be integral with the bowl // #4 satin finish high polish seat // (as required).
 3. Flush valve: Battery powered active // hard-wired electric // infra-red sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, rear spud connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass. Flush valves will be // concealed

// installed in lockable stainless-steel enclosure with sloped top
//.

- I. (P-912) Ligature Resistant Water Closet - (ADA) Handicap (Wall Mounted, ASME A112.19.3 and CSA B45.4) - Security fixture fabricated from 14 gauge or 16-gauge type 304 stainless steel. The standard toilet will include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive after fill and fully enclosed trap which will maintain a minimum 50 mm (2 inch) seal and pass 54 mm (2-1/8 inch) ball. Skirt of toilet bowl will be extended to floor as close to front of toilet bowl to prevent tie off. // 4.8 L (1.28 gallons) // 6 L (1.6 gallons) // per flush. Top of seat will be 432 to 483 mm (17 to 19 inches) above finished floor. Fixture will withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.
1. Fittings and Accessories: Rear wall // chase connections; 102 mm (4 inch) waste and 40 mm (1-1/2 inch) water back spud // top spud. Provide extra heavy-duty carrier, toilet waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.
 2. Seat: Seat will be integral with the bowl // #4 satin finish high polish seat // (as required).
 3. Flush valve: Battery powered active // hard-wired electric // infra-red sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, rear spud connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, solid-ring pipe support, and high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass.
- J. (P-920) Ligature Resistant Urinal - (Wall Hung, ASME A112.19.2) - Security fixture fabricated from 14 gauge or 16-gauge type 304 stainless steel bowl with integral flush distribution, wall to front of flare 356 mm (14 inches) minimum. Wall hung with integral trap, siphon jet flushing action // 1.9 L (0.5 gallons) // 4 L (1.0 gallons) // per flush with 40 mm (1-1/2 inches) back outlet and 20 mm (3/4 inch) // rear inlet spud // for concealed flush valve with push button. Rim height will be 355 mm (14 inches) above finish floor. Fixture will

withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

1. Fittings and Accessories: Rear wall // chase connections; 40 mm (1-1/2 inch) waste and 20 mm (3/4 inch) top inlet spud // rear inlet spud. Provide waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.
 2. Flush valve: Battery powered active // hard-wired electric // infrared sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, // top spud // rear spud // connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high back pressure vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass. Flush valves will be // concealed // installed in lockable stainless-steel enclosure with sloped top //.
- K. (P-925) Ligature Resistant Urinal - (ADA) Handicap (Wall Hung, ASME A112.19.2) - Security Fixture fabricated from 14 gauge or 16-gauge type 304 stainless steel bowl with integral flush distribution, wall to front of flare 356 mm (14 inches) minimum. Wall hung with integral trap, siphon jet flushing action // 1.9 L (0.5 gallons) // 4 L (1.0 gallons) // per flush with 40 mm (1-1/2 inches) back outlet and 20 mm (3/4 inch) // rear inlet spud // for concealed flush valve with push button. Rim height will be 432 mm (17 inches) above finished floor. Fixture will withstand loadings up to 2000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.
1. Fittings and Accessories: Rear wall // chase connections; 40 mm (1-1/2 inch) waste and 20 mm (3/4 inch) water // back spud // top inlet spud //. Provide waste extension, gaskets, wall sleeve, and cleanout. Provide water connections with individual shutoff valve for each fixture.
 2. Flush valve: Battery powered active // hard-wired electric // infrared sensor for automatic operation with courtesy flush button for manual operation //, water saver design per flush with maximum 10 percent variance, // rear inlet spud // top inlet spud // connection, adjustable tailpiece, 20 mm (1 inch) IPS screwdriver back check angle stop with vandal resistant cap, high back pressure

vacuum breaker. Valve body, cover, tailpiece and control stop will be in conformance with ASTM B584 alloy classification for semi-red brass. Flush valves will be // concealed // installed in lockable stainless-steel enclosure with sloped top //.

SPEC WRITER NOTE: Counter-mounted lavatories with under piping enclosures are preferred over wall-hung. These can be solid-surface, undermount, or drop-in types.

L. (P-930) Ligature Resistant Lavatory:

1. Dimensions for lavatories are specified, Length by width (distance from wall) and depth.
2. Brass components in contact with water will contain no more than 0.25 percent lead content by dry weight. Faucet flow rates will be 3.9 L/m (1.5 gpm) for private lavatories either 1.9 L/m (0.5 gpm) or 1.0 liters (0.25 gallons) per cycle for public lavatories.
3. Ligature Resistant Lavatory // front access // rear mount chase access // lavatory fabricated from 14-gauge, type 304 type stainless steel, the construction will be all welded, with exposed stainless-steel surfaces polished to a #4 satin finish, approximately 324 mm by 209 mm (12-3/4 inches by 8-1/4 inches) and 127 mm (5 inches) depth. Angle wall braces. Stainless steel anti-suicide penal filler/bubbler, slow drain with air vent, elbow waste 40 mm (1-1/2-inch FIP), sloped backsplash and self-draining soap dish. Punching for faucet on 102 mm (4 inches) centers.
4. Valve and Bubbler conforms with lead free requirements of NSF 61, Section 9, 1997 and CHSC 116875.
5. Faucet: Solid cast brass construction, vandal resistant, heavy-duty, hemispherical pushbuttons. // Hot and cold // Single temperature // air control valve assembly. Provide laminar flow control device, adjustable hot water limit stop, and vandal proof screws. Flow will be limited to 1.9 L/m (0.5 gpm) with hemispherical penal bubbler.
6. Drain: Cast or wrought brass with flat, ligature resistant grid strainer offset tailpiece, chrome plated. Pop-up drains are prohibited. Provide cover per A.D.A 4-19.4.
7. Stops: Angle type. Provide cover per A.D.A 4-19.4.
8. Trap: Cast copper alloy, 38 mm by 32 mm (1-1/2 inches by 1-1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extensions to wall. // Exposed metal trap surface and

connection hardware will be chrome plated with a smooth bright finish. // Stainless Steel trap enclosure. // Set trap parallel to wall. Provide cover per A.D.A 4-19.4.

M. (P-935) Ligature Resistant ADA Handicap Lavatory.

1. Dimensions for lavatories are specified, length by width (distance from wall) and depth.
2. Brass components in contact with water will contain no more than 0.25 percent lead content by dry weight. Faucet flow rates will be 3.9 L/m (1.5 gpm) for private lavatories and either 1.9 L/m (0.5 gpm) or 1.0 liters (0.25 gallons) per cycle for public lavatories.
3. Ligature Resistant Lavatory // front access // rear mount chase access // handicap lavatory fabricated from 14-gauge, type 304 type stainless steel, the construction will be all welded, with exposed stainless-steel surfaces polished to a #4 satin finish, approximately 324 mm by 209 mm (12-3/4 inches by 8-1/4 inches) and 127 mm (5 inches) depth. Stainless steel anti-suicide penal filler/bubbler, slow drain with air vent, elbow waste 20 mm (1-1/2-inch FIP), sloped backsplash and self-draining soap dish. Punching for faucet on 102 mm (4 inches) centers.
4. Valve and bubbler conforms with lead free requirements of NSF61, Section9, 1997 and CHSC 116875.
5. Faucet: Solid cast brass construction, vandal resistant, heavy-duty, hemispherical pushbuttons. // Hot and cold // Single temperature // air control valve assembly. Provide laminar flow control device, adjustable hot water limit stop, and vandal proof screws. Flow will be limited to 1.9 L/m (0.5 gpm) with hemispherical penal bubbler.
6. Drain: Cast or wrought brass with flat, ligature resistant grid strainer offset tailpiece, chrome plated. Pop-up drains are prohibited. Provide cover per A.D.A 4-19.4.
7. Stops: Angle type. Provide cover per A.D.A 4-19.4.
8. Trap: Cast copper alloy, 38 mm by 32 mm (1 1/2 inches by 1 1/4 inches) P-trap. Adjustable with connected elbow and 1.4 mm thick (17 gauge) tubing extensions to wall. Exposed // metal trap surface and connection hardware will be chrome plated with a smooth bright finish // stainless steel trap enclosure //. Set trap parallel to wall. Provide cover per A.D.A 4-19.4.

- N. (P-940) Shower Bath Mixing Valve (Wall Mounted, Concealed Supplies, Type T/P Combination Valve with ligature resistant //Single // Tri-Lever // Ligature resistant handle):
1. Shower Head Assembly: Metallic institutional shower head with flow control to limit discharge to // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // Conical ligature resistant showerhead, chrome plated brass.
 2. Valves: Shower valve will meet performance requirements of ASSE 1016 lead free Type T/P combination thermostatic and pressure balancing individual showers, with chrome plated metal, ligature resistant // single // tri-lever // tapered // type operating handle adjustable for rough-in variations and chrome plated metal. Valve body will be any suitable copper alloy. Internal parts will be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet will be 13 mm (1/2 inch) IPS. Provide external screwdriver check stops, vacuum breaker and temperature limit stops. Set stops for a maximum temperature of 50 degrees C (120 degrees F). All exposed fasteners will be vandal resistant. Valve will provide a maximum of // 5.7 l/m (1.5 gpm) // 9.5 l/m (2.5 gpm) // at 310 kPa (45 psig) pressure drop.
 3. For handicap access fixtures, provide knurled diverter valve handle with hand-held, ligature resistant shower head with hook. Hose and hook will be on quick disconnect so that when head is removed, hook is also disconnected.
- O. Shower floor or trench drains will be vandal resistant and as specified in Section 22 13 00, FACILITY SANITARY AND VENT PIPING.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Fixture Setting: Opening between fixture and floor and wall finish will be sealed as specified under Section 07 92 00, JOINT SEALANTS. Bio-based materials will be utilized when possible.
- B. Supports and Fastening: Secure all fixtures, equipment and trimmings to partitions, walls and related finish surfaces. Exposed heads of bolts and nuts in finished rooms will be hexagonal, polished chrome plated brass with rounded tops.
- C. Through Bolts: For free standing marble and metal stud partitions refer to Section 10 21 13, TOILET COMPARTMENTS.
- D. Toggle Bolts: For hollow masonry units, finished or unfinished.

- E. Expansion Bolts: For brick or concrete or other solid masonry. Will be 6 mm (1/4 inch) diameter bolts, and to extend at least 76 mm (3 inches) into masonry and be fitted with loose tubing or sleeves extending into masonry. Wood plugs, fiber plugs, lead or other soft metal shields are prohibited.
- F. Power Set Fasteners: May be used for concrete walls, will be 6 mm (1/4 inch) threaded studs, and will extend at least 32 mm (1 1/4 inches) into wall.
- G. Tightly cover and protect fixtures and equipment against dirt, water and chemical or mechanical injury.
- H. Where water closet waste pipe has to be offset due to beam interference, provide correct and additional piping necessary to eliminate relocation of water closet.
- I. Aerators are prohibited on lavatories and sinks.
- J. If an installation is unsatisfactory to the COR, the Contractor will correct the installation at no cost or additional time to the Government.

3.2 CLEANING

- A. At completion of all work, fixtures, exposed materials and equipment will be thoroughly cleaned.

3.3 WATERLESS URINAL

- A. Manufacturer will provide an operating manual and onsite training for the proper care and maintenance of the urinals.

//3.4 COMMISSIONING

- A. Provide commissioning documentation in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.
- B. Components provided under this section of the specification will be tested as part of a larger system.//

3.5 DEMONSTRATION AND TRAINING

- A. Provide services of manufacturer's technical representative for //four// // // hours to instruct VA Personnel in operation and maintenance of the system.
- //B. Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//

- - - E N D - - -