

**SECTION 22 40 00  
PLUMBING FIXTURES**

**PART 1 – GENERAL**

**1.01 WORK INCLUDED**

A. The work of this Section shall include, but is not limited to, the following:

1. Water closets
2. Urinals
3. Lavatories
4. Sinks
5. Mop receptors
6. Drinking fountains
7. Showers
8. Hydrants
9. Safety equipment
10. Miscellaneous fixtures

**1.02 RELATED DOCUMENTS**

- A. Section 22 05 01 – Plumbing General Provisions
- B. Section 22 05 29 – Hangers and Supports for Plumbing Piping and Equipment
- C. Section 22 11 10 – Plumbing Piping and Accessories

**1.03 REFERENCE STANDARDS**

Published specifications standards, tests or recommended methods of trade, industry or governmental organizations apply to work in this Section where cited below:

- A. Regulatory compliance: All work performed under this Division shall comply with the latest currently adopted editions of all codes and regulations and all requirements of all Authorities Having Jurisdiction. The following references and standards are hereby made a part of this Section and work shall conform to applicable requirements herein except as otherwise specified herein or shown on the Drawings.
- B. Codes and Standards: Conform to all applicable codes and standards as stated herein and as described in Division 1 of the Specifications, including the following:
1. ADA – Americans with Disabilities Act
  2. ANSI – American National Standards Institute
  3. ASME – American Society of Mechanical Engineers
  4. ASTM International – originally known as the American Society for Testing and Materials
  - 5.ASSE – American Society of Sanitary Engineering
  6. FDA – U.S. Food and Drug Administration: Code of Federal Regulations, Title 21, Volume 3
  7. ISO – International Organization for Standardization
  8. MSS – Manufacturers Standardization Society of the Valve and Fittings Industry
  9. NSF – National Sanitation Foundation

- 10. UL – Underwriters Laboratories Inc.
- 11. International Plumbing Code

#### 1.04 QUALITY ASSURANCE

##### A. Regulatory Requirements:

- 1. Water Conservation: Comply with the applicable provisions and recommendations of the following Codes:
  - a. Uniform Building Code
  - b. International Plumbing Code
- 2. Comply with the applicable provisions and recommendations of the standards and codes listed in Paragraph 1.03 and the requirements of the listed Related Documents.

#### 1.05 SUBMITTALS

- A. For each fixture type indicated, submit fixture and trim materials; connections; arrangement; dimensions; and required clearances.
- B. Product Data: Submit manufacturer's latest certified published data on construction details, capacity data, operating characteristics, pressure ratings, operating weights, furnished specialties, and accessories and installation data including seismic restraints.
- C. Submit, for all equipment provided under this Section, dimensions, accessories and required clearances. Submit electrical requirements and wiring diagrams specific to this project that clearly differentiate between manufacturer-installed and field-installed wiring, and location and size of all required field connections.
- D. Submit manufacturer's installation instructions, operation data, start-up instructions, maintenance data, parts list and controls specific to this project, accessories and maintenance data.
- E. Submit warranties, complete warranty and service policies, including all exclusions and conditions.
- F. Submit Operational and Maintenance (O&M) manuals.

#### 1.06 MAINTENANCE

##### A. Extra Materials:

- 1. Loose Key Handles: Provide and deliver to Owner at least ten (10) loose key handles for lavatory supplies and wall hydrants and yard hydrants. Obtain receipt and submit to Architect.
- 2. Spare Flush Valves: Provide and deliver to Owner two (2) spare flush valves of each type used. Obtain receipt and submit to Architect.

#### 1.07 PERFORMANCE REQUIREMENTS

- A. Plumbing fixtures shall meet or exceed the performance requirements specified in this

specification Section.

- B. LEED Credit WE p2 and c2 Indoor Water Use Reduction

#### 1.08 ENVIRONMENTAL OBJECTIVES

- A. Owner has established environmental objectives and implementation strategies for this Project based upon the LEED Green Building Rating System™ v4 for New Construction as developed by the U.S. Green Building Council. Refer to Section 01 81 13 – “Sustainable Design and LEED Requirements” and associated attachments for environmental objectives and implementation strategies for this Project.
- B. Design Team has determined following are mandatory requirements:
  - 1. Credit WE 3: Fixture selection must be coordinated with the stated objective to maximize water efficiency.
- C. Products that conform to requirements of the Environmental Objectives yet do not fully meet other requirements of this Section may still be considered for use at the sole discretion of the Owner and Architect.

#### 1.09 LEED® SUBMITTALS

- A. General: Following submittals are in addition to those indicated in Section 01 81 13 – “Sustainable Design and LEED Requirements,” and associated attachments, for project closeout.
- B. Credit WEp2 and c2: Submit manufacturers’ product data for all water consuming fixtures with water conservation specifications highlighted. The data shall demonstrate that plumbing fixtures meet or exceed fixture performance requirements of the Energy Policy Act of 1992.
- C. **[All Water Closets, Urinals and Showers shall be WaterSense certified]**

### **PART 2 – PRODUCTS**

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Vitreous China Fixtures: [American Standard](#), [Kohler](#), [TOTO](#), or Zurn Industries.
- B. Flush Valves: [Sloan Valve](#), [TOTO](#), or [Zurn](#) Industries.
- C. Closet Seats: [Olsonite](#), Beneke, [Church](#), [Bemis](#)
- D. Carriers: [Josam](#), [Jay R. Smith](#), [Zurn](#) Industries.
- E. Stainless Steel Sinks: [Elkay](#) or [Just](#) Manufacturing.
- F. Enameled Cast Iron Fixtures: [Kohler](#), or [American Standard](#).
- G. Commercial Faucets: [Chicago Faucet](#), [Kohler](#), [American Standard](#), Zurn Industries, or

approved equal.

- H. Traps, Stops, Supplies, Drains and Strainers: [McGuire](#), [Dearborn](#) Brass, or approved equal.
- I. Drain and Supply Insulation: [McGuire](#), [Truebro](#), or approved equal.
- J. Hose Bibbs, Wall Hydrants: [Chicago Faucet](#), [J.R. Smith](#), Woodford, or [Zurn](#) Industries.
- K. Showers: [Symmons](#), [Bradley](#), or approved equal.
- L. Drinking Fountains: [Filtrine](#), [Halsey-Taylor](#), [Haws](#), [Elkay](#), or Oasis.
- M. Safety Equipment: [Speakman](#), [Haws](#), or [Bradley](#).

## 2.02 WATER CLOSETS

- A. General Characteristics:
  - 1. Vitreous China: Unmarked, true and level, clear, smooth and bright. Warranted not to craze, color or scale.
  - 2. Trap ways no less than 2¼ inches to 2⅝ inches in diameter and fully glazed.
  - 3. Water surface area no less than 10 inches by 12 inches.
  - 4. 100 percent factory-tested for hydraulic performance, and trap seal depth, meeting or exceeding ASME A112.19.2, ANSI/ASME A112.19.6, CSA B45.1 and a minimum ball pass diameter of 2 inches.
  - 5. Fixture dimensions conforming to ASME A112.19.2.
- B. See plumbing fixture schedule for fixture rough-ins
- C. Water Closet WC-1, HWC-1: Wall Hung, Flush Valve, 1.28 gpf – Operates at 30 psi:
  - 1. Fixture: Vitreous china, white, wall hung, elongated, siphon jet action, 1½-inch top inlet, designed for 1.28 gallon flush; or “Z5615” by Zurn Industries.
  - 2. Flush Valve: 1.28 gallon per flush, battery-powered sensor operated, polished chrome over-ride button, 4-AA lithium batteries with 10 year battery life, exposed piston type, adjustable tailpiece, sweat solder adaptor kit, skirted high back pressure vacuum breaker, “ZTR6200EV-LL” by Zurn Industries.
  - 3. Seat: Open front, elongated, white, heavy weight solid plastic, no cover, integrally molded bumper, stainless steel hinge, self-sustaining check hinge, antimicrobial “Z5955SS-EL-AM” by Zurn Industries.
  - 4. Support: Adjustable type no-hub cast iron carrier with rear anchor foot assembly and nipple length suitable for wall thickness and applicable fitting styles and patterns; i.e., right hand, left hand, single, back to back, vertical, horizontal; 500 lb capacity”Z1201” or “Z1202” series by Zurn Industries or approved equivalent.
- D. Water Closet WC-1, HWC-1: Wall Hung, Flush Valve, 1.1 gpf – Operates at 30 psi:
  - 1. Fixture: Vitreous china, white, wall hung, elongated, siphon jet action, 1½-inch top inlet, designed for 1.1 gallon flush; or “Z5615” by Zurn Industries.

2. Flush Valve: 1.1 gallon per flush, battery-powered sensor operated, polished chrome over-ride button, 4-AA lithium batteries with 10 year battery life, exposed piston type, adjustable tailpiece, sweat solder adaptor kit, skirted high back pressure vacuum breaker, "ZTR6200-ONE-LL" by Zurn Industries.
  3. Seat: Open front, elongated, white, heavy weight solid plastic, no cover, integrally molded bumper, stainless steel hinge, self-sustaining check hinge, antimicrobial; "Z5955SS-EL-AM-STS" by Zurn Industries.
  4. Support: Adjustable type no-hub cast iron carrier with rear anchor foot assembly and nipple length suitable for wall thickness and applicable fitting styles and patterns; i.e., right hand, left hand, single, back to back, vertical, horizontal; 500 lb capacity "Z1201" or "Z1202" series by Zurn Industries or approved equivalent.
- E. Floor Mounted Tank Type, ADA-Compliant Installation:
1. Bowl: ADA-compliant design, vitreous china, white, floor mounted, elongated, flush tank, siphon jet, three-bolt quick-connect tank system, tank lock, trip lever handle located to wide side of stall and 16½-inch floor-to-rim height, designed for 1.28 gallon flush, with bolt caps; "Z5555" by Zurn Industries or approved equivalent.
  2. Flush Valve: 1.28 gallon per flush, battery-powered sensor operated, polished chrome over-ride button, 4-AA lithium batteries with 10 year battery life, exposed piston type, adjustable tailpiece, sweat solder adaptor kit, skirted high back pressure vacuum breaker, "ZTR6200EV-LL" by Zurn Industries.
  3. Seat: Open front, elongated, white, heavy weight solid plastic, no cover, integrally molded bumper, stainless steel hinge, self-sustaining check hinge, antimicrobial; "Z5955SS-EL-AM-STS" by Zurn Industries
  4. Supply Kit: Chrome plated brass stops, certified to 200 psi line pressure, with full turn brass stem, no plastic, 15-inch chrome plated copper risers and shallow, steel, or wrought brass with set screw wall escutcheon flange. Inlet shall be ¾ inch IPS. Outlet shall be ¾ inch IPS, and ½-inch chrome plated brass nipple or chrome plated copper supply tube cover at rough-in connection to inlet of closet supply; "LFH2166CCLK" by McGuire or approved equivalent.
  5. Bowl Ring: 100 percent pure petroleum wax gasket for setting any floor type closet bowl, permanent seal impervious to vermin, odors, gases and acids, fit 3-inch and 4-inch waste lines with polyethylene sleeve extended discharge opening for positive seal assuring proper bowl alignment, including urethane sponge to provide resiliency for expansion and contraction with the bowl or building to prevent wax from settling; "Urethane Reinforced Wax Bowl Ring with Sleeve" by Oatey.

## 2.03 URINALS

A. General Characteristics:

1. Fixture dimensions conforming to ASME A112.19.2 and ANSI/ASME A112.19.6.

B. Urinal UR-1, HUR-1 Washout, ADA-Compliant Installation:

1. Fixture: Vitreous china, white, wall hung, ¾-inch top spud, washdown, 0.125 to 1.0 gpf; "Z5755-U" by Zurn Industries.

2. Flush Valve: ADA-compliant design, 0.125 gallon per flush, battery-powered sensor operated, 4-AA lithium batteries, "ZEG6003EV" by Zurn Industries with 10 year battery life.
3. Support: 1¼-inch diameter uprights welded to 4-inch square steel floor anchor plates with top and bottom fixture bearing and fixture hangers sized to meet plumbing fixture rough-in dimensions and provided with bearing stud lengths that allow floor anchor plates to be installed within plumbing chase behind masonry or finished dry walls; "644" by J.R. Smith or "Z1222" by Zurn Industries.

## 2.04 LAVATORIES

### A. General Characteristics:

1. Faucet:
  - a. Lead-free brass materials and construction, UL Listed certifying conformance with NSF Standard 61, Section 9 test protocol for Residential/Drinking Water Faucets.
  - b. Operating cartridges: Compression type that closes with water pressure or a ceramic disc type.
2. Vitreous China: Unmarked, true and level, clear, smooth and bright. Warranted not to craze, color or scale.
3. "P" Traps and water supplies at lavatories shall be insulated in accordance with Title 24 Handicapped Requirements.

### B. Lavatory L-1: Counter Undermount:

1. Fixture: Vitreous china, white, 16 inches long by 19 inches wide oval, rimless, for mounting under counter; "Z5220" by Zurn Industries.
2. Faucet: Polished chrome, brass construction, 0.35 gpm flow control, single hole mounting, vandal-resistant, 4-AA lithium batteries, "Z6950-XL-S-M-LL" by Zurn Industries.
3. Supply Kit: Chrome plated brass stops with stuffing box, full turn brass stem, chlorine- and chloramines-resistant replaceable washers, certified to 125 psi line pressure; "LF175LKDF" by McGuire:
  - a. Chrome plated copper risers, 12 inches, compression.
  - b. Chrome plated copper risers, 15 inches, IPS.
  - c. Chrome plated copper risers, 20 inches, compression.
  - d. Chrome plated wall escutcheon flange: deep flange – bell type – wrought brass or shallow flange – wrought brass with set screw.
  - e. Inlet: ½ inch, IPS, as required for connection to faucet supplies.
  - f. Outlet: [3/8, ½] inch, IPS, as required for connection to faucet supplies.
  - g. Stop valve handles: chrome plated brass cross.
  - h. ½-inch chrome plated brass supply tube from female ½-inch IPS water supply rough-in to stop valve.
4. Drain: Cast brass chrome plated drain assembly with open grid strainer, 17-gauge,

5. 1¼-inch O.D. tailpiece; “155A” by McGuire.  
Trap:
    - a. Standard: 1¼-inch by 1½-inch “P” Trap chrome plated cast brass “P” Trap body with cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts with steel, brass wall escutcheon flange; “8902C” by McGuire.
    - b. Vandal Resistant: 1¼-inch by 1½-inch chrome plated cast brass “P” Trap without cleanout. Chrome plated cast J-Bend without cleanout. Chrome plated brass slip nuts and deep wall escutcheon flange. Trap assembly shall be guaranteed to withstand a 300 ft/lb horizontal or vertical blow. Certified by CSA or other recognized testing authority. “P” Trap shall bear manufacturer and testing mark. “V8902CNC” by McGuire.
  6. Piping Insulation: White, seamless and antimicrobial, closed cell vinyl insulation systems, conforming to ADA article 4.19.4 and BOCA P 1203.4, covering hot and cold angle stops and water supplies, lavatory drain and “P” Trap assembly; secured without exposed plastic ties; by Truebro, or “ProWrap” by McGuire.
- C. Lavatory L-2: Self-rimming Counter, ADA Compliant:
1. Fixture: Vitreous china, white, self-rimming counter mounted, 8-inch faucet centers, 20 inches long by 17 inches wide, front overflow; “Aqualyn 0475.020” by American Standard.
  2. Faucet: ADA-compliant design, residential faucet on 8-inch centers, push-button valves, 4-inch spout.
  3. Supply Kit: Chrome plated brass stops with stuffing box, full turn brass stem, chlorine- and chloramines-resistant replaceable washers, certified to 200 psi line pressure; “Premier Line – Rigid Lavatory” by McGuire, with the following minimum features:
    - a. Chrome plated copper risers, 12 inches, compression
    - b. Chrome plated copper risers, 15 inches, IPS.
    - c. Chrome plated copper risers, 20 inches, compression.
    - d. Chrome plated wall escutcheon flange: deep flange – bell type – wrought brass
    - e. Inlet: ¾ inch, IPS, as required for connection to faucet supplies.
    - f. Outlet: ½ inch, IPS, as required for connection to faucet supplies.
    - g. Stop valve handles: chrome plated brass cross.
    - h. ½-inch chrome plated brass supply tube from female ½-inch IPS water supply rough-in to stop valve.
  4. Drain: Cast brass chrome plated drain assembly with open grid strainer, 17-gauge, 1¼-inch O.D. tailpiece; “155A” by McGuire.
  5. Trap:
    - a. Standard: 1¼-inch by 1½-inch “P” Trap chrome plated cast brass “P” Trap body with cleanout, with 17-gauge seamless tubular wall bend, cast brass slip nuts with steel, brass wall escutcheon flange; “C8902” by McGuire.
    - b. Vandal Resistant: 1¼-inch by 1½-inch chrome plated cast brass “P” Trap without cleanout. Chrome plated cast J-Bend without cleanout. Chrome plated brass slip nuts and deep wall escutcheon flange. Trap assembly shall be guaranteed to withstand a 300 ft/lb horizontal or vertical blow.

Certified by CSA or other recognized testing authority. "P" Trap shall bear manufacturer and testing mark. "V8902CNC" by McGuire.

6. Piping Insulation: White, seamless and antimicrobial, closed cell vinyl insulation systems, conforming to ADA article 4.19.4 and BOCA P 1203.4, covering hot and cold angle stops and water supplies, lavatory drain and "P" Trap assembly; secured without exposed plastic ties; by Truebro, or "ProWrap" by McGuire.

## 2.05 SINKS

### A. General Characteristics:

1. Faucet: Brass Quality: Lead-free brass materials and construction, UL Listed certifying conformance with NSF Standard 61, Section 9 test protocol for Residential/Drinking Water Faucets.

### B. Sink SK-1:

1. 304 stainless steel, two compartment, self-rimming, overall sink dimension of 33 inches long by 19½ inches wide and inside bowl dimensions of 14 inches long by 14 inches wide by 7⅝ inches deep, undercoated bowls, mounting clips, screws and undermount clamps for casework countertop thickness of 1¼-inch to 1½-inch, and 3-hole punch.
2. Faucet: Single handle top mount mixing faucet with swing spout, aerator and 1½ gpm maximum flow restrictor at 60 psi.
3. Supplies: Chrome plated wheel handle angle or straight supply as required with flexible chrome plated copper risers or stainless steel connector with NSF and FDA Listed non-toxic synthetic polymer core flexible riser of length, size and style of connector required for connection to faucet supply tubes, and cast brass set screw wall escutcheon.
4. Strainer: Basket strainer or offset type drain as required for installation; "LK-35" by Elkay or "J-ADA-35" by Just.
5. Garbage Disposer:
  - a. Continuous feed type, high polish sink flange, stainless steel grind chamber, grind wheel and shredder ring; ¾ HP, 120 V, 60 Hz; "Badger 15ss" by In-Sink-Erator or approved equivalent by KitchenAid.
6. Trap: 1½-inch by 1½-inch chrome plated cast trap with 17-gauge tubing waste to wall, cleanout plug and chrome plated cast brass set screw wall escutcheon; "8912" by McGuire.
7. Dishwasher connection:
  - a. Tailpiece: 17-gauge slip joint inlet dishwasher branch; Dearborn Brass or approved equivalent.
  - b. Supply: Provide ½-inch separate rough-in for dishwasher chrome plated brass supply wheel handle stop by McGuire. Verify size of outlet connection required for connection to dishwasher.
  - c. Provide air gap fitting at sink deck and associated drain piping.



## 2.06 DRINKING FOUNTAINS

### A. General Characteristics:

1. Lead-Free Requirements: Provide all waterway components constructed of lead-free materials and conforming to definition of "lead free" as defined in the Safe Drinking Water Act of 1974 amended in 1986; and the Lead Contamination Control Act of 1988.

### B. Drinking Fountain DF-1: ADA-Compliant Installation:

1. ADA-Compliant design, wall hung, recessed, , 20-gauge, Type 304 stainless steel cabinet with satin finish, and stainless steel vandal resistant;Haws wall mounted "Hi-Lo" #1011MS with remote remote chiller #HCR8.
2. Safety Bubbler: Flexible polyester elastomer hooded stream projector.
3. Self-closing push controls mounted on front and built-in flow regulator from 20 to 100 psi.
4. To be field-provided and -installed:
  - a. Service Stop (Valve)
  - b. Trap

## 2.07 MOP RECEPTORS

### A. Mop Receptor MS-1:

1. Fixture: Dimensions as shown on architectural drawings, one piece "molded stone" mop receptor; Florestone #2424 with 3-inch outlet and the following accessories:
  - a. Hose and hose bracket: "MR-370" by Florestone.
  - b. Mop hanger bracket: "MR-372" by Florestone.
  - c. Chrome strainer: ""MR-375" by Florestone.
2. Faucet: Exposed yoke wall mount utility faucet, Combination hose end faucet with brass vacuum breaker, integral stops, pail hook, top brace and rough chrome plated brass body and handle construction; "Z853M1-RC-CS" by Zurn Industries.

## 2.08 SHOWERS

### A. Shower SH-1: Pressure balancing valve with institutional style shower head; "WS-1F-HD-SX-G" by Bradley with the following additional features:

1. Pressure Balance Mixing Valve: Lever handle, brass valve body, housing cap and renewable seat, single bronze stem and housing, stainless steel balancing piston, adjustable limit stop to limit turn of handle, and integral supply stops; Equa-flo HD (-HD) by Bradley.
2. Shower Head: Heavy cast brass construction with triple chrome plated finish, 1½ gpm water saving flow restrictor, tamper-proof adjustable spray pattern, and design prohibiting lime build-up, installed at 6 feet-0 inches above finished floor measured to outlet of nozzle to finished floor. Provide anchor plate or installation on ceramic tile walls; Severe Service Shower Head (-SX) and 1½ gpm flow control (-G) by Bradley.

- B. Shower HSH-1: ADA-Compliant Installation: ADA-compliant design, with shower head on side wall opposite seat location with shower controls on side wall opposite seat location and on entry side of stall, recessed mount shower panel unit, constructed of 16-gauge Type 304 stainless steel polished to No. 4 finish, unit without seat; completely factory assembled, pre-piped and ready for installation and connection to shower supply piping, non-positive shut-off on handheld showerhead; "HN200-HD-SF-G-T24" by Bradley with the following additional features:
1. Pressure Balance Mixing Valve: ADA-compliant lever handle, brass valve body, housing cap and renewable seat, single bronze stem and housing, stainless steel balancing piston, adjustable limit stop to limit turn of handle, and supply stops, ASSE 1016 certified; Equa-flo HD (-HD) by Bradley.
  2. Shower Head: Includes hand-held shower head with swivel connector and bracket, 60-inch stainless steel extra heavy duty flexible hose, chrome plated elbow outlet with in-line backflow preventer and quick disconnect, and fixed direction severe service 1½ gpm shower head; Deluxe Showerhead with Ball Joint (-SF) by Bradley.
  3. Accessories: Lever handle diverter valve, recessed soap dish, grab bar.
- C. Shower SH-2: Residential shower – TBD.

## 2.09 HYDRANTS

- A. General Characteristics: Manufactured with "No lead" brazing rings and USDA-approved lubricants.
- B. Wall Hydrant WH: Non-freeze box type wall hydrant with integral vacuum breaker conforming to ANSI A112.21.3, 20-gauge stainless steel box with 16-gauge polished bronze box face and cover, ¼-turn valve operation, T-handle key operated locking cover with concealed stainless steel hinge and full 180-degree cover opening design, adjustable wall clamp, ¾-inch straight sweat inlet connection; "5509QT-[wall thickness]-PB-WC-SS" by J. R. Smith or "Z1320-NB-WC" by Zurn Industries.
1. Provide valve-operating rod and casing of sufficient length for shut-off to occur on warm side of wall and allow for length required for installation of adjustable wall clamp; i.e., wall thickness is equal to sum total of exterior brick veneer, cavity wall, rigid insulation and masonry wall thickness plus wall clamp installation dimension for applicable installations.
- C. Hose Bibb HB-1: Cast brass wall faucet designed so that removal of vacuum breaker makes hose connection impossible, vacuum breaker complying with ASSE Standard 10; "Y24" or "24 CP" faucet by Woodford with "34HF" vacuum breaker by Nidel with ¾-inch inlet or "Z1313" or "Z1341" by Zurn Industries.
- D. Deck Hydrant DH-1: Bronze hydrant with nickel bronze box, freezeless design, hinged and locking cover, 2-foot bury depth, removable operating handle to prevent unauthorized use, 1-inch female NPT inlet; "5810F-N-NV-W-NB" by J.R. Smith or "Z1360-DP-NB" by Zurn Industries.

## 2.10 SAFETY EQUIPMENT

- A. Emergency Shower and Eye/Face Wash ESEW-1: ADA-Compliant Installation: Horizontal-

mounted emergency shower, eye wash and face wash, all polished chrome plated steel brass construction including exposed piping and shower head, universal sign, with 1-inch self-closing ball valve with custom-length stainless steel pull rod; Bradley #S19-310LL or Haws #8300.

1. Custom-length pull rod at 48-inch maximum above finished floor.
2. Shower head shroud bottom located at 80-inch minimum above finished floor.
3. Spray heads at 36-inch maximum above finished floor.
4. 19-inch minimum from centerline of vertical pipe support and centerline of spray head bowl.
5. 27-inch minimum knee clearance from bottom of spray bowl drain pipe to finished floor.

B. Emergency Eyewash Mixing Valve:

1. Mixing Valve: Chrome plated mixing valve shall control outlet temperature over a wide range of flow and shall be suitable for single or multiple eyewash applications. The valve shall include a thermometer to measure the temperature of the stream. Temperature adjustment shall be vandal resistant. The control mechanism shall employ a liquid-filled thermostatic motor to drive the valve without additional power requirements. The control mechanism shall employ a stainless steel sliding piston control device with reverse seat closure and both fixed and variable cold water bypass. In the event of interruption of the cold water supply, the control mechanism shall close off the hot water port, stopping all flow. In the event of interruption of the hot water supply, the control mechanism shall allow cold flow through both the fixed and variable bypass. Bradley #S19-2000 or Haws model #9201E.
2. Recessed Cabinet: 23 inches tall by 19 inches wide by 6¾ inches deep, stainless steel construction.

C. Clothes Washer Wall Box WB-1: Supply and right-side drain unit for automatic clothes washers constructed from hot dipped galvanized steel 20-gauge box and 20-gauge faceplate; "FB200 – 2-inch Drain" by Guy Gray.

### **PART 3 – EXECUTION**

#### **3.01 INSTALLATION**

- A. Provide plumbing fixtures and trim as shown on the Drawings and as specified. Vitreous china fixtures shall be white, except as otherwise noted.
- B. Provide each fixture with all required trim, including but not limited to carriers, supports, faucets, stops, waste fitting, traps, seats, flushometer, vacuum breaker, bolts, gaskets, and wall escutcheons.
- C. Provide chromium-plated brass materials for exposed supplies, stops, valves, faucets, strainers, wastes, bolts, screws, bushings, traps and nipples, exposed piping and wall flanges plates and escutcheons.
- D. Fixture traps shall be "P" Traps with or without cleanouts as specified.
- E. During course of construction, cover exposed trim, fixtures and fittings with suitable protection. When directed, thoroughly clean fixtures and fittings.

- F. Be fully responsible for protection of fixtures before and after inspection until final acceptance of the entire building by the Owner. The Contractor regardless of who caused the damage shall immediately replace any damaged fixture.
- G. Provide fixtures free from imperfections; true as to line, angles, curves and color; smooth, and water-tight.
- H. Alternate products shall have clearances, waterways and assembly equal to that of the plate number of the product selected.
- I. Lavatory supports shall be furnished with lavatories for under-counter installation.
- J. Provide chromium plated, cast brass wall escutcheons with set screws at supply and drain penetrations through walls and casework.
- K. Provide chromium-plated brass materials for exposed supplies, stops, valves, faucets, strainers, wastes, bolts, screws, bushings, traps and nipples, etc.
- L. Securely fasten and support supply and drain piping in pipe chases and walls to obtain rigid installation.
- M. Vibration isolation of domestic water piping serving fixtures shall be as specified in specification Section 23 05 48 – Vibration Isolation and Seismic Restraints.
- N. Securely fasten and support all fixtures. Provide blocking in walls as required to support fixtures. Conceal all supports. Use expansion shields or toggle bolts for fastening to masonry. Carefully drill holes to avoid chipping, cracking, etc. Paint exposed ironwork with enamel color as approved by the Architect.
- O. Furnish electrical power requirements for fixtures requiring power, including but not limited to connection type and rough-in location to electrical work install.
- P. Provide sanitary sealant for fixture installations:
  - 1. Apply sealant to a clean and dry surface at temperatures between 20 and 90 degrees F. Use rubbing alcohol to clean surface before applying sealant. Cut opening on spout at desired angle to dispense sealant. Apply sealant with any standard caulking gun. Smooth off excess as recommended by manufacturer.
  - 2. Caulk between wall-hung vitreous china fixtures and wall with sanitary sealant.
  - 3. Caulk between self-rimming counter-mounted vitreous china fixtures and countertop of casework with sanitary sealant.
  - 4. Caulk between floor-set vitreous china fixtures and floor with sanitary sealant.
  - 5. Caulk between wall-mounted shower valve escutcheon plate and ceramic tile with sanitary sealant.
  - 6. Caulk between shower head wall plate and ceramic tile with sanitary sealant.
  - 7. Caulk between wall hydrant and wall opening with sanitary sealant.
- Q. ADA-Compliant Installations:
  - 1. Install ADA-compliant plumbing fixtures in conformance with Title III of American Disabilities Act Guidelines and ASME Standard A112.19.2.
  - 2. Install ADA-compliant wall type water closets at 18 inches from finished floor to top of seat.

3. Install ADA-compliant water closets with centerline of water closet at no less than 18 inches from adjacent wall with grab bar.
  4. Install ADA-compliant flush valve controls for water closets pointing to wide side of toilet area at no more than 44 inches above finished floor.
  5. Install ADA-compliant urinal at 17 inches from finished floor to rim of lip.
  6. Install ADA-compliant lavatories with bottom of fixture apron at no less than 29 inches above finished floor and minimum knee space of 27 inches from finished floor for distance of 8 inches from front of apron and with distance of finished floor to fixture basin rim set at 34 inches. Offset drain rough-in, right or left of standard drain rough-in location, to allow offset drain to be installed and "P" Trap centerline to be parallel with face of wall.
  7. Install ADA-compliant sinks in ADA-compliant casework supplied by Casework Installer. Locate sink casework cutout in countertop to allow drain, tailpiece, supplies and trap to be installed within casework. Coordinate sink cutout location, accessories, rough-in and connection dimensions with Casework Installer and casework shop drawings. Do not route piping through 9-inch high toe space clearance at base of cabinet.
  8. Install ADA-compliant lavatory in ADA-compliant casework supplied by Casework Installer. Locate lavatory and accessories in countertop to allow drain, tailpiece, supplies and trap to allow for minimum knee space of 27 inches from finished floor for distance of 8 inches from front edge of counter. Coordinate accessories, lavatory cutout location, and rough-in and connection dimensions with casework shop drawings to meet the ADA installation criteria. Do not route piping through 9-inch high toe space clearance at base of cabinet.
  9. Install ADA-compliant wash fountains with bottom of fixture apron at no less than 29 inches above finished floor and minimum knee space of 27 inches from finished floor for distance of 8 inches from front of apron.
  10. Install ADA-compliant electric water coolers with spout orifice 3 feet-0 inches above the finished floor.
  11. Install ADA-compliant drinking fountains with spout orifice 3 feet-0 inches above the finished floor.
- R. Standard Fixture Installations (fixtures not identified to be installed in compliance with ADA guidelines) shall be installed in accordance with the following, unless otherwise indicated on architectural documents:
1. Lavatories: with top of lavatory bowl 31 inches above finished floor.
  2. Wall hung water closets: with rim at 15 inches above finished floor.
  3. Wall hung urinals: with rim at 24 inches above finished floor.
  4. Electric water coolers: with spout 40 inches above the finished floor.
- S. Clothes Washer Wall Box: Provide deep seal "P" Trap and standpipe to clothes washer wall box connection.
- T. Service Sink/Mop Receptor:
1. Install mop hanger bracket centered along length of mop receptor on wall adjacent to faucet with fasteners at 4 feet-0 inches above finished floor.
  2. Install faucet water supply rough-ins at 3 feet-0 inches above finished floor and centered above mop receptor.
  3. Install top of mop bracket at 18 inches above finished floor and centerline of mop bracket 8 inches to left or right of the centerline of faucet.

U. Hydrants:

1. Establish location of wall hydrants rough-in and confirm wall-opening sizes with General Contractor.
2. Exterior Hydrant: Install centerline of wall hydrant at 1 foot-7 inches above finished floor, unless otherwise indicated.
3. Interior Wall Hydrant: Install centerline of wall hydrant at 1 foot-7 inches above finished floor, unless otherwise indicated.
4. Hose Bibs: Install hose bib with supply inlet centerline at 2 feet-0 inches above finished floor.

V. All Lavatory Thermostatic Mixing Valves:

1. Locate below lavatory behind lavatory basin enclosure and on wall.

END OF SECTION 22 40 00