SECTION 224000 - PLUMBING FIXTURES

This Section includes representative examples of plumbing fixtures and trim. Select, repeat, and edit for Project conditions.

Manufacturers found in SpecAgent for this Section were identified as representative and not as an endorsement for meeting requirements of this Specification.

This Section includes performance, proprietary, and descriptive type specifications. Edit to avoid conflicting requirements.

This Section includes the term Architect/Engineer. "Architect" is used in AIA contract documents; "Engineer" is used in EJCDC contract documents. Retain appropriate term.

See Drawing Coordination Considerations for information needed to coordinate this Specification Section with Drawings.

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes:

Water closets.

Bidets.

Urinals.

Lavatories.

Sinks.

Service sinks.

Electric water coolers.

Drinking fountains.

Bathtubs.

Showers.

Wash fountains.

Emergency showers.

Emergency eye and face wash.

Emergency combination shower with eye and face wash.

* + - * 1. Related Sections:

Section 079200 - Joint Sealants: Product requirements for calking between fixtures and building components for placement by this Section.

Section 221100 - Facility Water Distribution: Supply connections to plumbing fixtures.

Section 221300 - Facility Sanitary Sewerage: Waste connections to plumbing fixtures.

Execution requirements for electric connections to sensor valves and faucets.

* + - 1. REFERENCES

List reference standards included within text of this Section. Edit the following for Project conditions.

* + - * 1. American National Standards Institute:

ANSI A117.1 - Accessible and Usable Buildings and Facilities.

ANSI Z124.1 - Plastic Bathtub Units.

ANSI Z124.2 - Plastic Shower Units.

ANSI Z358.1 - Emergency Eyewash and Shower Equipment.

* + - * 1. Air-Conditioning and Refrigeration Institute:

ARI 1010 - Self-Contained, Mechanically Refrigerated Drinking-Water Coolers.

* + - * 1. American Society of Mechanical Engineers:

ASME A112.6.1 - Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use.

ASME A112.18.1 - Plumbing Fixture Fittings.

ASME A112.19.1M - Enameled Cast Iron Plumbing Fixtures.

ASME A112.19.2M - Vitreous China Plumbing Fixtures.

ASME A112.19.3 - Stainless Steel Plumbing Fixtures (Designed for Residential Use).

ASME A112.19.4 - Porcelain Enameled Formed Steel Plumbing Fixtures.

ASME A112.19.5 - Trim for Water-Closet Bowls, Tanks and Urinals.

* + - 1. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Section 013300 - Submittal Procedures: Submittal procedures.
				2. Product Data: Submit catalog illustrations of fixtures, sizes, [**rough-in dimensions,**] utility sizes, trim, and finishes.

Include the following paragraph for submission of physical samples for selection of finish, color, texture, and other properties.

* + - * 1. Samples: Submit [**two**] <**\_\_\_\_\_\_\_\_**> [**lavatory supply fittings**] [**fixtures for color matching**] [**sets of color chips for each standard color**] <**\_\_\_\_\_\_\_\_**>.
				2. Manufacturer's Installation Instructions: Submit installation methods and procedures.
				3. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
				4. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				5. Manufacturer’s installation instructions shall be provided along with product data.
				6. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
			1. SUSTAINABLE DESIGN SUBMITTALS
				1. Section 018113 - Sustainable Design Requirements: Requirements for sustainable design submittals.

Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.

Edit material certifications list to suit products specified in this Section and Project sustainable design requirements. Specific certificate submittal and supporting data requirements are specified in Section 018113.

Water Efficiency Certificates:

Certify plumbing fixture flow rates.

* + - 1. CLOSEOUT SUBMITTALS
				1. Section 017716 Contract Closeout:

Article 1.5 Operation and Maintenance Data:

Submit fixture, trim, exploded view, and replacement parts lists.

* + - 1. QUALITY ASSURANCE
				1. Perform Work according to [**State**] [**Municipality**] of <**\_\_\_\_\_\_\_\_**> [**Highways**] [**Public Works**] standard.
				2. Provide products requiring electrical connections listed and classified by [**UL**] [**testing firm acceptable to authority having jurisdiction**] as suitable for purpose specified and indicated.
				3. Provide plumbing fixture fittings according to ASME A112.18.1 “Plumbing Fixture Fittings” that prevent backflow from fixture into water distribution system.

Include the following paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain one copy of each document on Site.
			1. QUALIFICATIONS
				1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' [**documented**] experience [**, and with service facilities within 100 miles of Project**] [**, and with service facilities within <\_\_\_\_\_\_\_\_> miles of Project**].
				2. Installer: Company specializing in performing Work of this Section with minimum three years' [**documented**] experience [**and approved by manufacturer**].
			2. MOCKUPS

Use this Article for full sized erected assemblies required for review of construction, coordination of Work of several sections, testing, or observation of operation.

* + - * 1. Section 014000 - Quality Requirements: Mockup requirements.

Construct mockup of typical bathroom group.

Locate where directed by Director’s Representative or as indicated on Drawings.

Incorporate accepted mockup as part of Work.

\*\*\*\*\* [OR] \*\*\*\*\*\*

Remove mockup when directed by Director’s Representative.

* + - 1. PRE-INSTALLATION MEETINGS
				1. Section 013000 - Administrative Requirements: Pre-installation meeting.
				2. Convene minimum [**one week**] [**<\_\_\_\_\_\_\_\_> weeks**] prior to commencing Work of this Section.
			2. DELIVERY, STORAGE, AND HANDLING
				1. Section 016500 – Materials and Equipment:

Product storage and handling requirements.

* + - * 1. Accept fixtures on Site in factory packaging. Inspect for damage.
				2. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.
			1. WARRANTY

This article extends warranty period beyond one year. Extended warranties increase construction costs and Owner enforcement responsibilities. Specify warranties with caution.

* + - * 1. Section 017000 - Execution and Closeout Requirements: Product warranties and product bonds.
				2. Furnish [**five**] <**\_\_\_\_\_\_\_\_**>**-**year manufacturer warranty for plumbing fixtures.
			1. EXTRA MATERIALS
				1. Section 017000 - Execution and Closeout Requirements: Spare parts and maintenance products.
				2. Furnish [**two**] <**\_\_\_\_\_\_\_\_**> [**sets of faucet washers**] [**flush valve service kits**] [**lavatory supply fittings**] [**shower heads**] [**toilet seats**] <**\_\_\_\_\_\_\_\_**>.
1. PRODUCTS
	* + 1. FLUSH VALVE WATER CLOSETS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8018&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify project requirements and to eliminate conflicts with manufacturers' products specified above.

Select between either floor mounted or wall hung bowl.

* + - * 1. Bowl: ASME A112.19.2 “Vitreous China Plumbing Fixtures; wall hung, [**siphon jet**] [**blow out**] vitreous china closet bowl, with elongated rim, 1-1/2-inch [**top**] [**back**] spud, china bolt caps.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Bowl: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; floor mounted, siphon jet 17-inch bowl height, ADA accessible vitreous china closet bowl, with elongated rim, 1-1/2-inch [**top**] [**back**] spud, china bolt caps.

Select one of the following three flush valves.

* + - * 1. Exposed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; exposed chrome-plated, diaphragm type with oscillating handle, escutcheon, seat bumper, integral screwdriver stop and vacuum breaker [**; maximum 1.6 gal. flush volume**] [**; maximum 3.5 gal. flush volume**] [**; maximum <\_\_\_\_\_\_\_\_> gal. flush volume**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Concealed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed rough brass, diaphragm type with exposed chrome-plated [**push button**] [**oscillating handle**] and escutcheon, screw driver stop and vacuum breaker [**; maximum 1.6 gal. flush volume**] [**; maximum 3.5 gal. flush volume**] [**; maximum <\_\_\_\_\_\_\_\_> gal. flush volume**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Sensor Operated Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed rough brass, diaphragm type with [**low voltage**] [**battery**] operated solenoid operator, infrared sensor and over-ride button in chrome-plated plate, wheel handle stop and vacuum breaker [**; maximum 1.6 gal. flush volume**] [**; maximum 3.5 gal. flush volume**] [**; maximum <\_\_\_\_\_\_\_\_> gal. flush volume**].

Most plumbing codes require open front seats for specific public occupancies. Coordinate seat height with bowl height to meet ADA requirements.

* + - * 1. Seat: Solid [**black**] [**white**] plastic, open front, extended back, [**self-sustaining hinge,**] brass bolts, [**with**] [**without**] cover, [**<\_\_\_\_\_\_\_\_> inch**].

Adjustable supports have large adjustable faceplate and are principally for horizontal piping connections. Non-adjustable supports have adjustable stands and are intended for vertical piping.

* + - * 1. Wall Mounted Carrier: ASME A112.6.1 “Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use”; [**adjustable**] [**non-adjustable**] cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.
			1. TANK TYPE WATER CLOSETS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8019&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International, Inc.

Kohler Co.

Approved Equivalent.

Paragraph below describes full size, siphon-jet fixtures. brand-x other types, such as junior, or BABY FIXTURES.

* + - * 1. General: Fixtures (GENERAL): Vitreous China, full size, elongated bowl with integral flushing rim and jet; trapway at the rear and the outlet centered between a pair of hold down bolt holes.

Trapway size: Pass minimum ball of 2 inches.

Trap seal: 2 inches minimum.

Water surface area: 12 inches x 10 inches minimum.

Provisions for flushing:

1-1/2 inch spud for flush valve operation.

Use subparagraph above or below as required.

2 inch top connection for flush tank operation.

Use subparagraph below with floor mounted fixtures.

Floor Supported Fixture Heights:

Standard Fixture: 14 to 15 inches from finished floor to rim.

Use subparagraph above and/or below, check with designer.

Handicapped Accessible Fixture: 17 to 19 inches from finished floor to top of seat (15-13/16 to 17-13/16 inches from finished floor to top of rim based on 1-3/16 inch seat height).

* + - * 1. Operation: Fixture shall flush satisfactorily without extraordinary rise of water level in the bowl.

Maximum gallons of water per flush: 1.6 gallons.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Bowl: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; wall hung, vitreous china, reverse trap, whirlpool action close-coupled closet combination with regular rim, insulated vitreous china closet tank with fittings and lever flushing valve, chrome-plated bolt caps.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Use higher units for handicap washrooms; confirm height requirements.

* + - * 1. Bowl: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; floor mounted, siphon jet, vitreous china, [**16.5 inches high**] [**18 inches high**] [**<\_\_\_\_\_\_\_\_> inches high**] close-coupled closet combination with elongated rim, insulated vitreous china closet tank with fittings and lever flushing valve, bolt caps [**vandal proof cover locking device**].

Most plumbing codes require open front seats for specific public occupancies. Coordinate seat height with bowl height to meet ADA requirements.

* + - * 1. Seat: Solid [**black**] [**white**] plastic, open front, extended back, [**self-sustaining hinge,**] brass bolts, [**with**] [**without**] cover, [**<\_\_\_\_\_\_\_\_> inch**].

Adjustable supports have large adjustable faceplate and are principally for horizontal piping connections. Non-adjustable supports have adjustable stands and are intended for vertical piping.

* + - * 1. Wall Mounted Carrier: ASME A112.6.1 “Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use”; [**adjustable**] [**non-adjustable**] cast iron frame, integral drain hub and vent, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers.
			1. BIDETS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8077&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Bowl: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; floor mounted, vitreous china bidet with [**integral overflow, flushing rim,**] extended back shelf, 1-1/4-inch tailpiece.

Select one of the following two types of supply fittings.

* + - * 1. Supply Fitting: ASME A112.18.1 “Plumbing Fixture Fittings”; exposed chrome-plated, two-valve fitting with backflow preventer, transfer valve, spray, pop-up waste, indexed acrylic handles.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Supply Fitting: ASME A112.18.1 “Plumbing Fixture Fittings”; chrome-plated supply fitting with chain and plug, water economy aerator, indexed handles.
				2. Provide regulator conforming to ASSE 1070 “Performance Requirements for Water Temperature Limiting Devices” to limit discharge water temperature to 110 degrees F.
			1. WALL HUNG URINALS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8078&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer: A Household International Co.

Kohler Co.

Approved Equivalent.

* + - * 1. Wall Supported Fixture: Vitreous china, with elongated rim, integral trap and extended side shields.

Dimensions (approx.): 28 inches high, 18 inches wide, 12 inches front to back.

Method of Support: Wall hangers and lugs for bearing plate bolting.

* + - * 1. Operation: Fixture shall flush satisfactorily with a maximum of one gallon of water and be accomplished without extraordinary rise in water level in the bowl.
				2. Urinal: ASME A112.19.2 “Vitreous China Plumbing Fixtures” or ANSI Z124.9, vitreous; vitreous china, wall hung [**washout**] [**blowout**] [**siphon jet**] urinal with shields, integral trap, [**removable stainless-steel strainer,**] [**3/4-inch**] [**1-inch**] [**top**] [**back**] spud, steel supporting hanger.
				3. Exposed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; exposed chrome plated, diaphragm type with [**oscillating handle,**] [**push plate,**] escutcheon, integral screwdriver stop [**,vacuum breaker**]; maximum 1 gal. flush volume.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Concealed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed rough brass, diaphragm type with exposed chrome-plated [**push button**] [**oscillating handle**] and escutcheon, wheel handle stop and vacuum breaker; maximum 1 gal. flush volume.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Sensor Operated Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; [**concealed rough brass**] [**exposed chrome plated**], diaphragm type with [**low voltage**] [**battery**] operated solenoid operator, infrared sensor and over-ride button in chrome-plated plate, wheel handle stop and vacuum breaker; maximum 1 gal. flush volume.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Flush (Metering) Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; exposed chrome plated, porous felt type for 1/2-inch supply with [**oscillating handle,**] [**push button,**] screwdriver stop [**and vacuum breaker**].
				2. Wall Mounted Carrier: ASME A112.6.1 “Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use”; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.
				3. Provide elastomeric gasket complying with ASME A112.4.3 “Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System”, or approved setting compound, for fixture to flange connection.
			1. STALL URINALS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8079&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

* + - * 1. Floor Supported Fixture: Vitreous china, stall type.

Dimensions (approx.): 38 inches high, 18 inches wide.

* + - * 1. Operation: Fixture shall flush satisfactorily with a maximum of one gallon of water and be accomplished without extraordinary rise in water level in the bowl.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Urinal: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; vitreous china slope front stall urinal with integral flushing rim, removable stainless-steel strainer 3/4-inch top spud.
				2. Exposed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; exposed chrome plated, diaphragm type with [**oscillating handle,**] [**push plate,**] escutcheon, integral screwdriver stop [**, vacuum breaker**]; maximum 1 gal. flush volume.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Concealed Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed rough brass, diaphragm type with exposed chrome-plated [**push button**] [**oscillating handle**] and escutcheon, wheel handle stop and vacuum breaker; maximum 1 gal. flush volume.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Sensor Operated Flush Valve: ASME A112.18.1 “Plumbing Fixture Fittings”; [**concealed rough brass**] [**exposed chrome plated**], diaphragm type with [**low voltage**] [**battery**] operated solenoid operator, infrared sensor and over-ride button in chrome-plated plate, wheel handle stop and vacuum breaker; maximum 1 gal. flush volume.
				2. Flush Tank: ASME A112.19.5 “Trim for Water-Closet Bowls, Tanks and Urinals”; vitreous china insulated tank with concealed cover, [**bottom**] [**over rim**] supply, siphon valve.
				3. Provide elastomeric gasket complying with ASME A112.4.3 “Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System”, or approved setting compound, for fixture to flange connection.
			1. LAVATORIES

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8080&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Vitreous China Wall Hung Basin: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; vitreous china wall hung lavatory <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches minimum, with 4-inch high back, drillings on [**4-inch**] [**8-inch**] centers, rectangular basin with splash lip, front overflow, and soap depression.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Cast Iron Wall Hung Basin: ASME A112.19.1M “Enameled Cast Iron Plumbing Fixtures”; porcelain enameled cast iron wall-hung lavatory <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches minimum, with 4-inch high back, drillings on [**4-inch**] [**8-inch**] centers, rectangular basin with splash lip, front overflow, and soap depression.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Steel Counter Top Basin: ASME A112.19.4 “Porcelain Enameled Formed Steel Plumbing Fixtures”; porcelain on steel self-rimming counter top lavatory, <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches with drillings on [**4-inch**] [**8-inch**] centers, front overflow, [**soap depression,**] seal of putty, caulking, or concealed vinyl gasket.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Vitreous China Counter Top Basin: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; vitreous china self-rimming counter top lavatory, <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches with drillings on [**4-inch**] [**8-inch**] centers, front overflow, [**soap depression,**] seal of putty, caulking, or concealed vinyl gasket.
				2. Pedestal Basin: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; vitreous china pedestal lavatory with integral rear splash rim, <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches with drillings on 8-inch centers, front overflow, steel hanger.
				3. Undercounter Lavatory: ASME A112.19.2 “Vitreous China Plumbing Fixtures”; vitreous china, unglazed rim for under counter mount with rear overflow, <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches with drillings on [**4-inch**] [**8-inch**] centers.
				4. Supply Fitting: ASME A112.18.1 “Plumbing Fixture Fittings”; chrome-plated [**combination**] supply fitting with [**pop-up waste,**] [**chain and plug,**] [**open grid strainer,**] water economy aerator with maximum 2.0 gpm flow, [**indexed handles**] [**single lever handle**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Metered Faucet: ASME A112.18.1 “Plumbing Fixture Fittings”; chrome-plated metered mixing faucet with [**low voltage**] [**battery**] operated solenoid operator and infrared sensor, [**aerator**] [**spray**] and cover plate, open grid strainer.
				2. Waste Fittings: ASME A112.18.2 “Plumbing Waste Fittings” or ASTM F 409 “Standard Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings”.
				3. For public hand washing facilities, provide tempered water through regulating device conforming to ASSE 1070 “Performance Requirements for Water Temperature Limiting Devices”.
				4. Accessories:

Chrome-plated 17-gage brass P-trap [**with clean-out plug**] and arm with escutcheon.

Offset waste with [**perforated open strainer**] [**plug and strainer**].

[**Wheel handle**] [**Screwdriver**] stops.

[**Rigid**] [**Flexible**] supplies.

[**Trap and waste insulated and offset to meet ADA compliance.**]

* + - * 1. Wall Mounted Carrier: ASME A112.6.1 “Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use”; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, [**threaded studs for fixture hanger,**] [**concealed arm supports,**] bearing plate and studs.
			1. SINKS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8081&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Crane Plumbing/ Fiat Products

Elkay Manufacturing Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

Types 302 and 304 stainless steels are suitable for most residential and general service uses. Use Type 316, in combination with stainless-steel drain, for use with specific chemicals.

* + - * 1. Single Compartment Bowl: ASME A112.19.3 “Stainless Steel Plumbing Fixtures (Designed for Residential Use)”; <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches outside dimensions, [**18-gage**] [**20-gage**] [**<\_\_\_\_\_\_\_\_>-gage**] thick, Type [**302**] [**304**] [**316**] stainless steel. Self-rimming and undercoated, with [**1-1/2-inch chromed brass drain**] [**1-1/2-inch stainless-steel drain**] [**3-1/2-inch crumb cup and tailpiece**], ledge back drilled for trim.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Double Compartment Bowl: ASME A112.19.3 “Stainless Steel Plumbing Fixtures (Designed for Residential Use)”; <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches outside dimensions [**18-gage**] [**20-gage**] [**<\_\_\_\_\_\_\_\_>-gage**] thick, Type [**302**] [**304**] [**316**] stainless steel. Self-rimming and undercoated, with [**1-1/2-inch chromed brass drains**] [**1-1/2-inch stainless-steel drains**] [**3-1/2-inch crumb cups and tailpieces**], ledge back drilled for trim.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Enameled Bowl: [**ASME A112.19.4; steel,**] [**ASME A112.19.1M; cast iron,**] porcelain enameled [**single**] [**double**] compartment, <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> by <**\_\_\_\_\_\_\_\_**> inches outside dimensions, self-rimming and undercoated, with 3-1/2-inch diameter crumb cup and chromed brass tailpiece, ledge back drilled for trim.
				2. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; chrome-plated brass supply with [**high rise**] swing spout, [**vandal proof**] water economy aerator with maximum 2.2 gpm flow, [**indexed lever handles**] [**single lever handle**] [**and retractable spray**].
				3. Accessories: [**Chrome-plated**] 17-gage brass P-trap [**with clean-out plug**] and arm with escutcheon, [**wheel handle**] [**screwdriver**] stop, [**rigid**] [**flexible**] supplies.
			1. BATHTUBS [**AND SHOWERS**]

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8082&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Crane Plumbing/ Fiat Products

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Bathtub: ASME A112.19.4 “Porcelain Enameled Formed Steel Plumbing Fixtures”; [**porcelain on steel**] [**enameled cast iron**] [**with slip resistant surface,**] contoured front apron, [**60**] <**\_\_\_\_\_\_\_\_**> inches long, <**\_\_\_\_\_\_\_\_**> color [**as selected**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Bathtub: ANSI Z124.1 “Plastic Bathtub Units”; molded glass fiber reinforced polyester, [**with slip-resistant bottom surface,**] contoured shape, [**60**] <**\_\_\_\_\_\_\_\_**> inches long by [**30**] <**\_\_\_\_\_\_\_\_**> inches wide <**\_\_\_\_\_\_\_\_**> color [**as selected**].
				2. Bath Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed over rim supply with spout and indexed handles, lever operated pop-up waste and overflow.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Bath and Shower Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed shower and over rim supply with diverter spout, indexed handles, bent shower arm with [**flow control and**] [**adjustable spray**] ball joint showerhead with maximum 2.5 gpm flow and escutcheon, lever operated pop-up waste and overflow.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

The pressure balance valve is most suitable for single shower installations. Thermostatic mixing valves require flow to maintain good control. Some codes may dictate their use.

* + - * 1. Bath and Shower Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed shower and over rim supply with diverter spout, [**pressure balanced**] [**thermostatic**] mixing valve, bent shower arm with [**flow control and**] [**adjustable spray**] ball joint showerhead with maximum 2.5 gpm flow and escutcheon, lever operated pop-up waste and overflow.
				2. For individual showers or tub showers, provide controls to limit discharge temperature to 120 degrees F. Do not provide inline thermostatic valve to comply with this requirement.
				3. For multiple (gang) showers fed by single tempered water supply, provide automatic temperature mixing valve that conforms to ASSE 1069 “Automatic Temperature Control Mixing Valves” to limit discharge temperature to 120 degrees F.
			1. SHOWERS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8083&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard Co.

Crane Plumbing/ Fiat Products

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Cabinet: ASME A112.19.4 “Porcelain Enameled Formed Steel Plumbing Fixtures”; porcelain enameled steel, [**32 by 32 by 75 inches**] [**<\_\_\_\_\_\_\_\_> by <\_\_\_\_\_\_\_\_> by <\_\_\_\_\_\_\_\_> inches**] high, with [**stone texture**] receptor, soap dish, removable chrome-plated strainer, tail piece, <**\_\_\_\_\_\_\_\_**> color [**as selected**].

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Cabinet: ANSI Z124.2 “Plastic Shower Units” [**reinforced glass fiber**] [**molded cast acrylic**], [**32 by 32 by 75 inches**] [**<\_\_\_\_\_\_\_\_> by <\_\_\_\_\_\_\_\_> by <\_\_\_\_\_\_\_\_> inches**] high, with [**stone texture**] [**integral**] receptor, soap dish, [**integral seat,**] removable chrome-plated strainer, tailpiece, <**\_\_\_\_\_\_\_\_**> color [**as selected**].
				2. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed shower supply with indexed handles, bent shower arm with [**flow control and**] [**adjustable spray**] ball joint showerhead with maximum 2.5 gpm flow, and escutcheon.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed straight way pattern valve with indexed cross handle.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings; concealed rough brass metering valve with closed fluid metering system adjustable from 5 to 120 seconds, chrome-plated push button and escutcheon, wheel handle stop.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

The pressure balance valve is most suitable for single shower installations. Thermostatic mixing valves require flow to maintain good control. Some codes may dictate their use.

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed shower supply with [**pressure balanced**] [**thermostatic**] mixing valves, integral service stops, bent shower arm with [**flow control and**] [**adjustable spray**] ball joint shower head with maximum 2.5 gpm flow, and escutcheon.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; chrome-plated vandal-proof institutional head with integral wall bracket and built-in 2.5 gpm flow control.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

The following are similar to previous two shower trims except they include hand held shower with hose to comply with ADA.

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; concealed shower supply with [**pressure balanced**] [**thermostatic**] mixing valves, integral service stops, hand held shower with [**69-inch**] [**60-inch**] [**metal clad**] [**white reinforced vinyl**] hose and [**51-inch**] [**24-inch**] [**no**] slide bar, female inlet.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Trim: ASME A112.18.1 “Plumbing Fixture Fittings”; built-in 2.5 gpm flow control, hand held shower with [**69-inch**] [**60-inch**] [**metal clad**] [**white reinforced vinyl**] hose and [**51-inch**] [**24-inch**] [**no**] slide bar, female inlet.

Provide backflow protection according to ASME A112.18.1 “Plumbing Fixture Fittings” or by device complying with ASME 112.18.3 “Performance Requirements for Backflow Devices and Systems in Plumbing Fixture Fittings”.

* + - 1. DRINKING FOUNTAINS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8084&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard Co.

Eljer; A Household International Co.

Haws Drinking Faucet Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Fountain: Molded [**white**] <**\_\_\_\_\_\_\_\_**> reinforced glass fiber with underside vandal proof cowling, hooded elevated anti-squirt bubbler with stream guard, automatic stream regulator, [**cross**] [**lever**] handle, mounting bracket, screwdriver stop.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Fountain: [**White**] <**\_\_\_\_\_\_\_\_**> [**reinforced glass fiber,**] [**vitreous china,**] [**semi-recessed,**] [**fully-recessed,**] with elevated anti-squirt bubbler with stream guard, automatic stream regulator, [**cross**] [**lever**] handle, access cover plate, mounting bracket, screwdriver stop.
			1. ELECTRIC WATER COOLERS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8085&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Elkay Manufacturing Co.

Haws Drinking Faucet Co.

Sunroc Corp.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Fountain:

ARI 1010 “Self-Contained, Mechanically Refrigerated Drinking-Water Coolers”; [**surface**] [**semi-recessed**] [**recessed**] [**handicapped**] mounted electric water cooler with stainless-steel top, [**vinyl on steel**] [**stainless-steel**] <**\_\_\_\_\_\_\_\_**> body, elevated anti-squirt bubbler with stream guard, automatic stream regulator, push button, mounting bracket, refrigerated with integral air cooled condenser [**and stainless-steel grille**].

Capacity: <**\_\_\_\_\_\_\_\_**> gpm of 50 degrees F water with inlet at 80 degrees F and room temperature of 90 degrees F.

Electrical: Maximum <**\_\_\_\_\_\_\_\_**> hp compressor, [**6-foot**] [**<\_\_\_\_\_\_\_\_>-foot**] cord and plug for connection to electric wiring system [**including grounding connector**].

* + - 1. WASH FOUNTAINS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8086&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Acorn Engineering Co.

Bradley Corp.

International Sanitary Ware Manufacturing Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Bowl: [Circular] [Semi-circular] <\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_>, [**36-inch**] [**54-inch**] [**<\_\_\_\_\_\_\_\_>-inch**] diameter, [precast stone] [enameled steel] [stainless steel].
				2. Accessories: Foot controlled self-closing valve, spray head, liquid soap dispenser, [**manual**] [**thermostatic**] mixing valve, supporting tube, spud and strainer, operating mechanism, foot levers and rail, combination stop, strainer and check valves.
			1. SERVICE SINKS

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8087&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Crane Plumbing / Fiat Products

Elkay Manufacturing Co.

Kohler Co

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Bowl: ASME A112.19.1 “Enameled Cast Iron Plumbing Fixtures”; 22 by 18 by 12 inches deep, porcelain enameled (inside only) cast iron roll-rim sink, with 12-inch high back, concealed hanger, chrome-plated strainer, [**stainless-steel rim guard,**] cast iron P-trap with adjustable floor flange.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Bowl: [**36 by 24 by 10 inches**] [**24 by 24 by 10 inches**] high [**white**] <**\_\_\_\_\_\_\_\_**> molded stone, floor mounted, with one inch wide shoulders, [**vinyl bumper guard,**] stainless-steel strainer.
				2. Trim: ASME A112.18.1 “Plumbing Fixture Fittings” exposed wall type supply with [**cross**] [**lever**] handles, spout wall brace, vacuum breaker, hose end spout, strainers, eccentric adjustable inlets, integral screwdriver stops with covering caps and adjustable threaded wall flanges.
				3. Accessories:

5 feet of 1/2 inch diameter plain end reinforced [**plastic**] [**rubber**] hose.

Hose clamp hanger.

Mop hanger.

* + - 1. EMERGENCY SHOWER

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8088&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Bradley Corp.

Guardian Equipment

Speakman Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. ANSI Z358.1 “Emergency Eyewash and Shower Equipment”; [**wall-mounted,**] [**free standing,**] self- cleaning, non-clogging 8-inch diameter [**stainless-steel**] [**copper alloy**] [**plastic**] [**drench**] [**deluge**] shower head with elbow, [**1-inch**] [**1-1/4-inch**] [**galvanized steel**] [**stainless-steel**] [**PVC**] pipe pedestal with floor flange, instant action stay open valve actuated by rigid stainless-steel pull rod. Furnish universal emergency sign. [**Furnish corrosion resistant coating.**]
			1. EMERGENCY EYE AND FACE WASH

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8089&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Bradley Corp.

Guardian Equipment

Speakman Co

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. ANSI Z358.1 “Emergency Eyewash and Shower Equipment”; [**wall**] [**pedestal**] mounted, [**plastic**] [**stainless-steel**] bowl with elbow, [**1-inch**] [**1-1/4-inch**] [**galvanized steel**] [**stainless-steel**] pipe pedestal with floor flange, instant action stay open valve actuated by [**push flag**] [**foot pedal**] [**push flag or foot pedal**], twin spray heads [**with face spray ring**], [**dust cover assembly,**] [**wall mount bracket,**] and tailpiece and chrome-plated brass P-trap. Furnish universal emergency sign. [**Furnish corrosion resistant coating.**]
			1. EMERGENCY COMBINATION SHOWER WITH EYE AND FACE WASH

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8090&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Bradley Corp.

Guardian Equipment

Speakman Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Shower: ANSI Z358.1 “Emergency Eyewash and Shower Equipment”; free standing, self- cleaning, non-clogging 8-inch diameter [**stainless-steel**] [**copper alloy**] [**plastic**] [**drench**] [**deluge**] shower head, instant action stay open valve actuated by rigid stainless-steel pull rod.
				2. Eyewash: ANSI Z358.1 “Emergency Eyewash and Shower Equipment”; [**plastic**] [**stainless-steel**] bowl with elbow, [**1-inch**] [**1-1/4-inch**] [**galvanized steel**] [**stainless-steel**] pipe pedestal with floor flange, instant action stay open valve actuated by [**push flag**] [**foot pedal**] [**push flag or foot pedal**], twin spray heads [**with face spray ring**], [**dust cover assembly,**] [**wall mount bracket,**] and tailpiece and chrome-plated brass P-trap.
				3. Supply and Waste Piping: [**1-inch**] [**1-1/4-inch**] [**galvanized steel**] [**stainless-steel**] pipe pedestal with floor flange.
				4. Furnish universal emergency sign.
				5. [**Furnish corrosion resistant coating.**]
			1. LAVATORY INSULATION KIT

In this article, list manufacturers acceptable for this Project.

* + - * 1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8091&mf=04&src=wd): Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

American Standard, Inc.

Eljer; A Household International Co.

Kohler Co.

Approved Equivalent.

Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturers specified above.

* + - * 1. Product Description: Where Lavatories are noted to be insulated for ADA compliance, furnish the following: Safety Covers conforming to ANSI A117.1 “Accessible and Usable Buildings and Facilities” and consisting of insulation kit of molded closed cell vinyl construction, 3/16 inch thick, [**white**] [**gray**] <**\_\_\_\_\_\_\_\_**> color, for insulating tailpiece, P-trap, valves, and supply piping. Furnish with weep hole and angle valve access covers.
1. EXECUTION
	* + 1. EXAMINATION
				1. Section 013000 - Administrative Requirements: Coordination and project conditions.
				2. Verify walls and floor finishes are prepared and ready for installation of fixtures.
				3. Verify electric power is available and of correct characteristics.
				4. Confirm millwork is constructed with adequate provision for installation of counter top lavatories and sinks.
			2. PREPARATION
				1. Rough-in fixture piping connections according to minimum sizes indicated in fixture rough-in schedule for particular fixtures.
			3. INSTALLATION
				1. Install Work according to [**State**] [**Municipality**] of <**\_\_\_\_\_\_\_\_**> [**Highways**] [**Public Works**] standards.
				2. Install each fixture with trap, easily removable for servicing and cleaning.
				3. Provide chrome-plated rigid or flexible supplies to fixtures with [**loose key**] [**screwdriver**] <**\_\_\_\_\_\_\_\_**> stops, reducers, and escutcheons.
				4. Install components level and plumb.
				5. Install and secure fixtures in place with wall [**supports**] [**carriers**] and bolts.
				6. Seal fixtures to wall and floor surfaces with sealant as specified in Section 079000, color to match fixture.
				7. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.
				8. For ADA accessible water closets, install flush valve with handle to wide side of stall.
			4. INTERFACE WITH OTHER PRODUCTS
				1. Review millwork shop-drawings. Confirm location and size of fixtures and openings before rough in and installation.
			5. ADJUSTING
				1. Section 017000 - Execution and Closeout Requirements: Testing, adjusting, and balancing:

Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

* + - 1. CLEANING
				1. Clean plumbing fixtures and equipment.
			2. PROTECTION OF INSTALLED CONSTRUCTION
				1. Protecting installed construction.
				2. Do not permit use of fixtures before final acceptance.
			3. SCHEDULES

Include schedule to avoid repetitive statements and suit Project requirements.

Consider the following examples when developing Project schedule.

Use this schedule where fixture-mounting heights are different or adjustable. Confirm for each Project.

* + - * 1. Fixture Mounting Heights:

Water Closet:

Standard: [**15 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of bowl rim.

Accessible: [**18 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of seat.

Water Closet Flush Valves:

Standard: [**11 inches**] [**<\_\_\_\_\_\_\_\_> inches**] min. above bowl rim.

Recessed: [**10 inches**] [**<\_\_\_\_\_\_\_\_> inches**] min. above bowl rim.

Urinal:

Standard: [**22 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of bowl rim.

Accessible: [**17 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of bowl rim.

Lavatory:

Standard: [**31 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of basin rim.

Accessible: [**34 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of basin rim.

Drinking Fountain:

Child: [**30 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of basin rim.

Standard Adult: [**40 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of basin rim.

Accessible: [**36 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to top of spout.

Shower Heads:

Adult Male: [**69.5 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to bottom of head.

Adult Female: [**64.5 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to bottom of head.

Child: [**58.5 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to bottom of head.

Emergency Eye [**And Face**] Wash: Standard: [**38 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to receptor rim.

Emergency Shower: Standard: [**84 inches**] [**<\_\_\_\_\_\_\_\_> inches**] to bottom of head.

Consider using following schedule to avoid indicating size of run-out piping on Drawings. Edit to suit Project requirements. Expand to include other fixtures.

* + - * 1. Fixture Rough-In:

Water Closet Flush Valve:

Cold: 1 inch.

Waste: 4 inches.

Vent: 2 inches.

Water Closet - Tank Type:

Cold: 1/2 inch.

Waste: 4 inches.

Vent: 2 inches.

Bidet:

Hot: 1/2 inch.

Cold: 1/2 inch.

Waste: 1-1/2 inches.

Vent: 1-1/4 inches.

Urinal Flush Valve:

Cold: 3/4 inch.

Waste: 2 inches.

Vent: 1-1/2 inches.

Urinal - Tank Type:

Cold: 1/2 inch.

Waste: 2 inches.

Vent: 1-1/2 inches.

Lavatory:

Hot: 1/2 inch.

Cold: 1/2 inch.

Waste: 1-1/2 inches.

Vent: 1-1/4 inches.

Sink:

Hot: 1/2 inch.

Cold: 1/2 inch.

Waste: 1-1/2 inches.

Vent: 1-1/4 inches.

Service Sink:

Hot: 1/2 inch.

Cold: 1/2 inch.

Waste: [**2**] [**3**] inches.

Vent: 1-1/2 inches.

Drinking Fountain:

Cold: 1/2 inch.

Waste: 1-1/4 inches.

Vent: 1-1/4 inches.

Bathtub:

Hot: 1/2 inches.

Cold: 1/2 inch.

Waste: 1-1/2 inches.

Vent: 1-1/4 inches.

Shower:

Hot: 1/2 inches.

Cold: 1/2 inch.

Waste: 1-1/2 inches.

Vent: 1-1/4 inches.

END OF SECTION 224000