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SECTION 224223 - COMMERCIAL SHOWERS

TIPS:

To view non-printing **Editor's Notes** that provide guidance for editing, click on MasterWorks/Single-File Formatting/Toggle/Editor's Notes.

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PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Individual showers.
2. Shower heads and shower valves.
3. Shower basins.
4. Group showers.
5. Outdoor showers.
6. Grout.

B. Related Requirements:

1. Section 224100 "Residential Plumbing Fixtures" for residential showers.
2. Section 224300 "Healthcare Plumbing Fixtures" for healthcare showers.
3. Section 224500 "Emergency Plumbing Fixtures" for emergency showers.
4. Section 224600 "Security Plumbing Fixtures" for security showers.

1.2 DEFINITIONS

- A. FRP: Fiberglass-reinforced plastic.
- B. PMMA: Polymethyl methacrylate; also known as "acrylic."

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for showers[**and basins**].
 2. Include rated capacities, operating characteristics, and furnished specialties and accessories.
- B. Sustainable Design Submittals:
 1. Product Data: For water consumption.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For shower valves to include in maintenance manuals.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Shower Valve Washers and O-Rings: Equal to [10] <Insert number> percent of amount of each type and size installed.
 2. Shower Valve Cartridges and O-Rings: Equal to [5] <Insert number> percent of amount of each type and size installed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Shower valves intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), with requirements of the Authority Having Jurisdiction (AHJ), and with NSF 61 and NSF 372, or be certified in compliance with NSF 61

and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

2.2 INDIVIDUAL SHOWERS

A. Individual, One-Piece, FRP Showers with Top: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Florestone Products Co., Inc.
 - b. Kohler Co.
 - c. LASCO Bathware.
 - d. <Insert manufacturer's name>.
2. Source Limitations: Obtain FRP showers with top from single source from single manufacturer.
3. General: FRP shower enclosure with valve and receptor[**and appurtenances**].
4. Standard: CSA B45.5/IAPMO Z124.
5. Style: [Standard residential] [Handicapped/accessible].
6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
7. Shower Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [34 by 34 inches (864 by 864 mm) square] [36 by 36 inches (915 by 915 mm) square] [48 by 36 inches (1219 by 915 mm) rectangular] [60 by 36 inches (1524 by 915 mm) rectangular] [36 inches (915 mm) neo-corner (two walls)] [36 inches (915 mm) neo-corner (four walls)] [38 inches (965 mm) neo-corner (two walls)] [38 inches (965 mm) neo-corner (four walls)] [42 inches (1067 mm) neo-corner (two walls)] [42 inches (1067 mm) neo-corner (four walls)] <Insert dimensions>.
8. Color: [White] <Insert color>.
9. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet.
10. Shower Rod and Curtain: [Not required] [Required].
11. Grab Bar: [ASTM F446, mounted on support area back wall] [Not required].

B. Individual, One-Piece, FRP Showers without Top: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Florestone Products Co., Inc.
 - b. Kohler Co.
 - c. LASCO Bathware.
 - d. <Insert manufacturer's name>.
2. Source Limitations: Obtain FRP showers without top from single source from single manufacturer.
3. General: FRP shower enclosure with valve and receptor[**and appurtenances**].
4. Standard: CSA B45.5/IAPMO Z124.

5. Style: [**Standard residential**] [**Handicapped/accessible**].
 6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
 7. Shower Nominal Size and Shape: [**30 by 30 inches (762 by 762 mm) square**] [**32 by 32 inches (813 by 813 mm) square**] [**34 by 34 inches (864 by 864 mm) square**] [**36 by 36 inches (915 by 915 mm) square**] [**48 by 36 inches (1219 by 915 mm) rectangular**] [**60 by 36 inches (1524 by 915 mm) rectangular**] [**36 inches (915 mm) neo-corner (two walls)**] [**36 inches (915 mm) neo-corner (four walls)**] [**38 inches (965 mm) neo-corner (two walls)**] [**38 inches (965 mm) neo-corner (four walls)**] [**42 inches (1067 mm) neo-corner (two walls)**] [**42 inches (1067 mm) neo-corner (four walls)**] <Insert dimensions>.
 8. Color: [**White**] <Insert color>.
 9. Outlet: Drain with [**NPS 2 (DN 50)**] <Insert pipe size> outlet.
 10. Shower Rod and Curtain: [**Not required**] [**Required**].
 11. Grab Bar: [**ASTM F446, mounted on support area back wall**] [**Not required**].
- C. Individual, Sectional, FRP Showers with Top: <Insert drawing designation>.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Florestone Products Co., Inc.
 - b. LASCO Bathware.
 - c. <Insert manufacturer's name>.
 2. Source Limitations: Obtain FRP showers with top from single source from single manufacturer.
 3. General: FRP shower enclosure with valve and receptor[**and appurtenances**].
 4. Standard: CSA B45.5/IAPMO Z124.
 5. Style: [**Standard residential**] [**Handicapped/accessible**].
 6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
 7. Shower Nominal Size and Shape: [**30 by 30 inches (762 by 762 mm) square**] [**32 by 32 inches (813 by 813 mm) square**] [**34 by 34 inches (864 by 864 mm) square**] [**36 by 36 inches (915 by 915 mm) square**] [**48 by 36 inches (1219 by 915 mm) rectangular**] [**60 by 36 inches (1524 by 915 mm) rectangular**] [**36 inches (915 mm) neo-corner (two walls)**] [**36 inches (915 mm) neo-corner (four walls)**] [**38 inches (965 mm) neo-corner (two walls)**] [**38 inches (965 mm) neo-corner (four walls)**] [**42 inches (1067 mm) neo-corner (two walls)**] [**42 inches (1067 mm) neo-corner (four walls)**] <Insert dimensions>.
 8. Color: [**White**] <Insert color>.
 9. Outlet: Drain with [**NPS 2 (DN 50)**] <Insert pipe size> outlet.
 10. Shower Rod and Curtain: [**Not required**] [**Required**].
 11. Grab Bar: [**ASTM F446, mounted on support area back wall**] [**Not required**].
- D. Individual, Sectional, FRP Showers without Top: <Insert drawing designation>.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. E. L. Mustee & Sons, Inc.
 - b. Florestone Products Co., Inc.
 - c. Kohler Co.
 - d. LASCO Bathware.
 - e. **<Insert manufacturer's name>**.
2. Source Limitations: Obtain FRP showers without top from single source from single manufacturer.
 3. General: FRP shower enclosure with valve and receptor[**and appurtenances**].
 4. Standard: CSA B45.5/IAPMO Z124.
 5. Style: [**Standard residential**] [**Handicapped/accessible**].
 6. Shower Head and Shower Valve: **<Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>**.
 7. Shower Nominal Size and Shape: [**30 by 30 inches (762 by 762 mm) square**] [**32 by 32 inches (813 by 813 mm) square**] [**34 by 34 inches (864 by 864 mm) square**] [**36 by 36 inches (915 by 915 mm) square**] [**48 by 36 inches (1219 by 915 mm) rectangular**] [**60 by 36 inches (1524 by 915 mm) rectangular**] [**36 inches (915 mm) neo-corner (two walls)**] [**36 inches (915 mm) neo-corner (four walls)**] [**38 inches (965 mm) neo-corner (two walls)**] [**38 inches (965 mm) neo-corner (four walls)**] [**42 inches (1067 mm) neo-corner (two walls)**] [**42 inches (1067 mm) neo-corner (four walls)**] **<Insert dimensions>**.
 8. Color: [**White**] **<Insert color>**.
 9. Outlet: Drain with [**NPS 2 (DN 50)**] **<Insert pipe size>** outlet.
 10. Shower Rod and Curtain: [**Not required**] [**Required**].
 11. Grab Bar: [**ASTM F446, mounted on support area back wall**] [**Not required**].
- E. Individual, One-Piece, PMMA Showers with Top: **<Insert drawing designation>**.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Aqua Bath Company, Inc.
 - b. Aquarius Bathware; a Praxis Company.
 - c. Clarion Bathware.
 - d. Jacuzzi Inc.
 - e. Kohler Co.
 - f. MAAX.
 - g. **<Insert manufacturer's name>**.
 2. Source Limitations: Obtain PMMA showers with top from single source from single manufacturer.
 3. General: PMMA shower enclosure with valve and receptor[**and appurtenances**].
 4. Standard: CSA B45.5/IAPMO Z124.
 5. Style: [**Standard residential**] [**Handicapped/accessible**].
 6. Shower Head and Shower Valve: **<Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>**.
 7. Shower Nominal Size and Shape: [**30 by 30 inches (762 by 762 mm) square**] [**32 by 32 inches (813 by 813 mm) square**] [**34 by 34 inches (864 by 864 mm) square**] [**36 by 36 inches (915 by 915 mm) square**] [**48 by 36 inches (1219 by 915 mm) rectangular**] [**60 by 36 inches (1524 by 915 mm) rectangular**] [**36 inches (915 mm) neo-corner**

(two walls)] [36 inches (915 mm) neo-corner (four walls)] [38 inches (965 mm) neo-corner (two walls)] [38 inches (965 mm) neo-corner (four walls)] [42 inches (1067 mm) neo-corner (two walls)] [42 inches (1067 mm) neo-corner (four walls)] <Insert dimensions>.

8. Color: [White] <Insert color>.
9. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet.
10. Shower Rod and Curtain: [Not required] [Required].
11. Grab Bar: [ASTM F446, mounted on support area back wall] [Not required].

F. Individual, One-Piece, PMMA Showers without Top: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Aqua Bath Company, Inc.
 - b. Aquarius Bathware; a Praxis Company.
 - c. Clarion Bathware.
 - d. Jacuzzi Inc.
 - e. MAAX.
 - f. Swan Corporation (The).
 - g. <Insert manufacturer's name>.
2. Source Limitations: Obtain PMMA showers without top from single source from single manufacturer.
3. General: PMMA shower enclosure with valve and receptor[and appurtenances].
4. Standard: CSA B45.5/IAPMO Z124.
5. Style: [Standard residential] [Handicapped/accessible].
6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
7. Shower Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [34 by 34 inches (864 by 864 mm) square] [36 by 36 inches (915 by 915 mm) square] [48 by 36 inches (1219 by 915 mm) rectangular] [60 by 36 inches (1524 by 915 mm) rectangular] [36 inches (915 mm) neo-corner (two walls)] [36 inches (915 mm) neo-corner (four walls)] [38 inches (965 mm) neo-corner (two walls)] [38 inches (965 mm) neo-corner (four walls)] [42 inches (1067 mm) neo-corner (two walls)] [42 inches (1067 mm) neo-corner (four walls)] <Insert dimensions>.
8. Color: [White] <Insert color>.
9. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet.
10. Shower Rod and Curtain: [Not required] [Required].
11. Grab Bar: [ASTM F446, mounted on support area back wall] [Not required].

G. Individual, Sectional, PMMA Showers with Top: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Aquarius Bathware; a Praxis Company.
 - b. Clarion Bathware.
 - c. Jacuzzi Inc.

- d. MAAX.
 - e. <Insert manufacturer's name>.
2. Source Limitations: Obtain PMMA showers with top from single source from single manufacturer.
 3. General: PMMA shower enclosure with valve and receptor[**and appurtenances**].
 4. Standard: CSA B45.5/IAPMO Z124.
 5. Style: [Standard residential] [Handicapped/accessible].
 6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
 7. Shower Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [34 by 34 inches (864 by 864 mm) square] [36 by 36 inches (915 by 915 mm) square] [48 by 36 inches (1219 by 915 mm) rectangular] [60 by 36 inches (1524 by 915 mm) rectangular] [36 inches (915 mm) neo-corner (two walls)] [36 inches (915 mm) neo-corner (four walls)] [38 inches (965 mm) neo-corner (two walls)] [38 inches (965 mm) neo-corner (four walls)] [42 inches (1067 mm) neo-corner (two walls)] [42 inches (1067 mm) neo-corner (four walls)] <Insert dimensions>.
 8. Color: [White] <Insert color>.
 9. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet.
 10. Shower Rod and Curtain: [Not required] [Required].
 11. Grab Bar: [ASTM F446, mounted on support area back wall] [Not required].
- H. Individual, Sectional, PMMA Showers without Top: <Insert drawing designation>.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Aquarius Bathware; a Praxis Company.
 - b. Clarion Bathware.
 - c. Jacuzzi Inc.
 - d. MAAX.
 - e. Swan Corporation (The).
 - f. <Insert manufacturer's name>.
 2. Source Limitations: Obtain PMMA showers without top from single source from single manufacturer.
 3. General: PMMA shower enclosure with valve and receptor[**and appurtenances**].
 4. Standard: CSA B45.5/IAPMO Z124.
 5. Style: [Standard residential] [Handicapped/accessible].
 6. Shower Head and Shower Valve: <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
 7. Shower Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [34 by 34 inches (864 by 864 mm) square] [36 by 36 inches (915 by 915 mm) square] [48 by 36 inches (1219 by 915 mm) rectangular] [60 by 36 inches (1524 by 915 mm) rectangular] [36 inches (915 mm) neo-corner (two walls)] [36 inches (915 mm) neo-corner (four walls)] [38 inches (965 mm) neo-corner (two walls)] [38 inches (965 mm) neo-corner (four walls)] [42 inches (1067 mm) neo-corner (two walls)] [42 inches (1067 mm) neo-corner (four walls)] <Insert dimensions>.

8. Color: **[White]** <Insert color>.
9. Outlet: Drain with **[NPS 2 (DN 50)]** <Insert pipe size> outlet.
10. Shower Rod and Curtain: **[Not required]** **[Required]**.
11. Grab Bar: **[ASTM F446, mounted on support area back wall]** **[Not required]**.

I. Individual Cabinet Showers: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. E. L. Mustee & Sons, Inc.
 - b. Stern-Williams Co., Inc.
 - c. Willoughby Industries.
 - d. <Insert manufacturer's name>.
2. Source Limitations: Obtain cabinet showers from single source from single manufacturer.
3. General: Factory-fabricated[, **accessible**] cabinet shower, with valve and receptor.
4. Nominal Size: **[30 by 30 inches (762 by 762 mm)]** **[32 by 32 inches (813 by 813 mm)]** **[36 by 36 inches (915 by 915 mm)]** **[36 by 39 inches (915 by 990 mm)]** **[45 by 39 inches (1145 by 990 mm)]** <Insert dimensions>.
5. Material: **[Steel]** **[Stainless steel]** **[Composite]** **[Plastic]**.
6. Access: **[front]** **[corner]** **[front and rear]** access.
7. Color: **[Not applicable]** <Insert color>.
8. Accessibility Options: Grab bar and bench.
9. Shower Head and Shower Valve: **[Manufacturer's standard fitting assembly]** <Insert shower head and shower valve designation from "Shower Heads and Shower Valves" Article>.
10. Supplies: **NPS 1/2 (DN 15)** copper tubing[**with ball, gate, or globe valves**].
11. Drain: Grid, **NPS 2 (DN 50)**.

2.3 SHOWER HEADS AND SHOWER VALVES

A. Shower Head with Single-Handle, Pressure-Balancing Mixing Valve: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Kohler Co.
 - c. Leonard Valve Company.
 - d. Moen Incorporated.
 - e. POWERS; A WATTS Brand.
 - f. Speakman Company.
 - g. Symmons Industries, Inc.
 - h. Zurn Industries, LLC.
 - i. <Insert manufacturer's name>.

2. Source Limitations: Obtain shower heads and shower valves from single source from single manufacturer.
 3. Description: Single-handle, [**accessible**,]pressure-balancing mixing valve with hot- and cold-water indicators; [**diverting valve**] check stops; and [**hose with handheld shower head**] [**hose with handheld shower head on sliding rod**] shower head.
 4. Shower Valve:
 - a. Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016/ASME A112.1016/CSA B125.16.
 - b. Body Material: Solid brass.
 - c. Finish: [**Polished chrome plate**] <Insert finish>.
 - d. Mounting: [**Concealed**] [**Exposed**].
 - e. Operation: Single-handle, [**push-pull**] [**or**] [**twist or rotate**] [**or**] [**metering**] control.
 - f. Antiscald Device: [**Integral with mixing valve**] [**Separate unit**] [**Not required**].
 - g. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
 5. Supply Connections: **NPS 1/2 (DN 15)**.
 6. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Type: [**Ball joint with arm and flange**] [**Without ball joint, but with arm and flange**] [**Ball joint and head integral with mounting flange**] [**Integral with mounting flange**] <Insert type>.
 - c. EPA WaterSense: Required.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.75 gpm (6.6 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
 - g. Provide shower valve with integral manual volume control.
 - h. Temperature Indicator: [**Integral with shower valve**] [**Not required**].
- B. Shower Head with Single-Handle Thermostatic Mixing Valve: <Insert drawing designation>.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Kohler Co.
 - b. Leonard Valve Company.
 - c. Matco-Norca.
 - d. POWERS; A WATTS Brand.
 - e. <Insert manufacturer's name>.
 2. Source Limitations: Obtain shower heads and shower valves from single source from single manufacturer.
 3. Description: Single-handle, [**accessible**,]thermostatic mixing valve with hot- and cold-water indicators; [**diverting valve**] check stops; and [**hose with handheld shower head**] [**hose with handheld shower head on sliding rod**] shower head.
 4. Shower Valve:

- 1) Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016/ASME A112.1016/CSA B125.16.
 - 2) Body Material: Solid brass.
 - 3) Finish: [**Polished chrome plate**] <Insert finish>.
- b. Mounting: [**Concealed**] [**Exposed**].
 - c. Operation: Single-handle, [**push-pull**] [**or**] [**twist or rotate**] control.
 - d. Antiscald Device: [**Integral with mixing valve**] [**Separate unit**] [**Not required**].
 - e. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
5. Supply Connections: **NPS 1/2 (DN 15)**.
 6. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Type: [**Ball joint with arm and flange**] [**Without ball joint, but with arm and flange**] [**Ball joint and head integral with mounting flange**] [**Integral with mounting flange**] <Insert type>.
 - c. EPA WaterSense: Required.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.75 gpm (6.6 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
 - g. Provide shower valve with integral manual volume control.
 - h. Temperature Indicator: [**Integral with valve**] [**Not required**].
- C. Shower Head with Single-Handle, [**Thermostatic**] [**Pressure-Balancing**] Mixing Valve: <Insert drawing designation>.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [**SV16**] [**SV16LVR**]; <Insert drawing designation> or comparable product by one of the following:
 - a. Chicago Faucets; Geberit Company.
 - b. Lawler Manufacturing Company, Inc.
 - c. POWERS; A WATTS Brand.
 - d. <Insert manufacturer's name>.
 2. Source Limitations: Obtain shower heads and shower valves from single source from single manufacturer.
 3. Description: Concealed shower assembly with single-handle mixing valve and ceramic ON-OFF control.
 4. Shower Valve:
 - a. Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016/ASME A112.1016/CSA B125.16.
 - b. Valve Body Material: Solid brass.
 - c. Finish: Polished chrome-plated handle, and No. 4 satin finish stainless steel escutcheon.
 - d. Valve Mounting: Concealed behind wall.

- e. Operation: Single-handle, ADA-compliant, [**ligature resistant**] [**lever**] handle thermostatic and pressure-balancing mixing valve with factory set limit stop at **110 deg F (43 deg C)**.
 - f. Indicators: Hot and cold.
 - g. Antiscald Device: Integral with mixing valve.
 - h. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
 - 1) Provide check stops with replaceable strainers.
5. Supply Connections: **NPS 1/2 (DN 15)**.
6. Shower Head:
- a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Type:
 - 1) Mount: Provide chrome plated deluxe bent arm and flange.
 - 2) Function: [**Economy ABS multi-stream with ball joint**] [**Chrome plated, brass multi-stream with ball joint**] [**Large chrome plated brass multi-stream with ball joint**] [**Conical ligature-resistant fixed spray with wall flange**] <Insert type>.
 - c. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
 - g. Provide shower valve with integral manual volume control.
7. Accessible Components:
- a. Accessible Shower Head: Provide [**chrome**] [**white**] handheld shower head with **60 inch (152 mm)** [**stainless steel**] [**vinyl**] hose.
 - b. Diverter: Provide concealed two-way diverter valve with ADA compliant [**ligature resistant**] [**lever**] style handle and stainless steel trim plate.
 - c. Provide handheld shower head supply elbow.
 - d. Grab Bar: [**24 in. (610 mm)**] [**36 in. (914 mm)**] grab bar with flange caps.
8. Accessories:
- a. Tub spout with diverter, chrome-plated [**brass**] [**zinc**] for 3/4 NPT with 1/2 NPT adapter.
 - b. Tub spout with diverter, chrome-plated zinc for [**1/2 in. slip fit**] [**1/2 NPT**].

subparagraphs below when handheld shower head is required for Project design.

- c. Inline three-port diverter mounted on bent arm.
- d. Quick disconnect for handheld shower head.
- e. [**24 in. (610 mm)**] [**36 in. (914 mm)**] glide rail for handheld shower head.
- f. [**Chrome**] [**White**] grab bar mounting bracket for handheld shower head.
- g. [**Inline**] [**Elevated**] vacuum breaker.

- D. Shower Head with Single-Handle, [Thermostatic] [Pressure-Balancing] Mixing Valve: <Insert drawing designation>.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [538] [538ADA]; <Insert drawing designation> or comparable product by one of the following:
 - a. Chicago Faucets; Geberit Company.
 - b. Lawler Manufacturing Company, Inc.
 - c. POWERS; A WATTS Brand.
 - d. <Insert manufacturer's name>.
 2. Source Limitations: Obtain shower heads and shower valves from single source from single manufacturer.
 3. Description: Concealed shower assembly with single-handle mixing valve.
 4. Shower Valve:
 - a. Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016/ASME A112.1016/CSA B125.16.
 - b. Valve Body Material: Solid brass.
 - c. Finish: Polished chrome-plated handle, and No. 4 satin finish stainless steel escutcheon.
 - d. Valve Mounting: Concealed behind wall.
 - e. Operation: Single-handle, ADA-compliant, [ligature resistant] [lever] handle [thermostatic] [pressure-balancing] mixing valve with factory set limit stop at 110 deg F (43 deg C).
 - f. Indicators: Hot and cold.
 - g. Antiscald Device: Integral with mixing valve.
 - h. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
 - 1) Provide check stops with replaceable strainers.
 5. Supply Connections: NPS 1/2 (DN 15).
 6. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Mount: Provide [wall mounting] [bent arm and] flange.
 - c. Function: [Multi-stream with ball joint] [Security, non-adjustable] [Universal ball joint and head with adjustable stream] [Lockable universal ball joint and head with adjustable stream] [Conical, ligature-resistant fixed spray] <Insert type>.
 - d. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - e. Shower Head Maximum Flow Rate: [1.5 gpm (5.7 L/min.)] [1.6 gpm (6.1 L/min.)] [2.0 gpm (7.6 L/min.)] [2.5 gpm (9.5 L/min.)].
 - f. Shower Head Material: Metallic with chrome-plated finish.
 - g. Spray Pattern: [Adjustable] [Fixed].
 7. Accessible Components:

- a. Diverter Valve: Provide concealed two-way with accessible chrome-plated **[ligature-resistant] [lever]** style handle and stainless steel trim plate.
 - b. Accessible Shower Head: Provide **[white, handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, quick-disconnect coupler, and wall hook] [handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect coupler with positive shut-off] [fixed shower head for mounting 48 in. (1219 mm) above finished floor with shower head that matches upper shower head]**.
 - c. Grab Bar: Two-wall, **1-1/2 in. (38 mm)** OD stainless steel.
 - d. Folding seat: Provide ADA-compliant **[padded vinyl] [phenolic] [stainless steel]** folding seat.
8. Accessories:
- a. Wall flange anchor plate.
 - b. Back plate for rear chase mounting.
 - c. Tub spout with diverter, chrome plated zinc for **[1/2 in. slip fit] [1/2 NPT]** connection.
 - d. **[Recessed] [Surface-mounted]** soap dish.
 - e. High-low mounting brackets for handheld shower head.
- E. Shower Head with Push-Button Metering Valve: **<Insert drawing designation>**.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model **[530] [530ADA] [536] [536ADA]**; **<Insert drawing designation>** or comparable product by one of the following:
 - a. Willoughby Industries.
 - b. Bradley Corporation.
 - c. **<Insert manufacturer's name>**.
 2. Source Limitations: Obtain shower heads and shower valves from single source from single manufacturer.
 3. Description: Concealed shower assembly with push-button metering valve.
 4. Shower Valve:
 - a. Standards: ASME A112.18.1/CSA B125.1; Section 1417(d) of the Federal Safe Drinking Water Act.
 - b. Valve Body Material: Noryl thermoplastic resin.
 - c. Valve Mounting: Concealed behind wall, with front-accessible, Type 304 stainless steel faceplate having No. 4 satin finish.
 - d. Operation:
 - 1) Provide single-temperature, air-controlled pneumatic push-button-operated metering valve and shower.
 - 2) Provide single-temperature electronic metering valve and shower head, with **[piezo-electric programmable controller] [Time-trol, pre-programmed controller, with pneumatic] [Master-trol, field programmable controller, with pneumatic] [Master-trol, field programmable controller, with piezo-electric] [Master-trol Plus, field programmable**

controller, with pneumatic] [Master-trol Plus, field-programmable controller, with piezo-electric] type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.

- e. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
 - f. Provide hemispherical push button.
5. Supply Connections: **NPS 1/2 (DN 15)**.
6. Shower Head:
- a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Function: [**Multi-stream with ball joint**] [**Security, non-adjustable**] [**Universal ball joint and head with adjustable stream**] [**Lockable universal ball joint and head with adjustable stream**] [**Conical, ligature-resistant fixed spray**] [**WaterSense certified conical fixed spray**] [**Handheld shower head and hose (non-ADA)**] <Insert type>.
 - c. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
7. Accessible Components:
- a. Diverter Valve: Provide concealed two-way with accessible chrome-plated [**ligature-resistant**] [**lever**] style handle and stainless steel trim plate.
 - b. Accessible Shower Head: Provide [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect**] [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect with positive shut-off**] [**fixed shower head for mounting 48 in. (1219 mm) above finished floor with shower head that matches upper shower head**].
 - c. Recessed soap dish.
 - d. Grab Bar: Two-wall, **1-1/2 in. (38 mm)** OD stainless steel.
 - e. Folding seat: Provide ADA-compliant [**padded vinyl**] [**phenolic**] [**stainless steel**] folding seat.
8. Accessories:
- a. Wall flange anchor plate.
 - b. Back plate for rear chase mounting.
 - c. Surface-mounted soap dish.
 - d. Recessed soap dish.
 - e. High-low mounting brackets for handheld shower head.
 - f. Transformer: 120 V ac to 24 V ac.
 - g. Cycle interrupt.
9. Provide wall mounting hardware in field.

2.4 SHOWER BASINS

A. Cast-Polymer Shower Basins: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Florestone Products Co., Inc.
 - b. Inpro Corporation.
 - c. Sterling; a Kohler Company.
 - d. <Insert manufacturer's name>.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: Cast-polymer base for built-up-type shower fixture.
4. Standard: CSA B45.5/IAPMO Z124.
5. Type: [Standard commercial] [Handicapped/accessible].
6. Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [36 by 36 inches (915 by 915 mm) square] [42 by 34 to 36 inches (1067 by 864 to 915 mm) rectangular] [48 by 34 to 36 inches (1219 by 864 to 915 mm) rectangular] [36 inches (915 mm) neo-corner] [42 inches (1067 mm) neo-corner] <Insert dimensions>.
7. Color: [White] <Insert color>.
8. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet[; lip drain outside shower in accordance with the ADA].

B. FRP Shower Basins: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. E. L. Mustee & Sons, Inc.
 - b. Florestone Products Co., Inc.
 - c. LASCO Bathware.
 - d. <Insert manufacturer's name>.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: FRP base for built-up-type shower fixture.
4. Standard: CSA B45.5/IAPMO Z124.
5. Type: [Standard commercial] [Handicapped/accessible].
6. Nominal Size and Shape: [30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [36 by 36 inches (915 by 915 mm) square] [42 by 34 to 36 inches (1067 by 864 to 915 mm) rectangular] [48 by 34 to 36 inches (1219 by 864 to 915 mm) rectangular] [36 inches (915 mm) neo-corner] [42 inches (1067 mm) neo-corner] <Insert dimensions>.
7. Color: [White] <Insert color>.
8. Outlet: Drain with [NPS 2 (DN 50)] <Insert pipe size> outlet[; lip drain outside shower in accordance with the ADA].

C. PMMA Shower Basins: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Standard.
 - b. Florestone Products Co., Inc.
 - c. Jason International, Inc.
 - d. Kohler Co.
 - e. LASCO Bathware.
 - f. MAAX.
 - g. Royal Baths Manufacturing Co.
 - h. Swan Corporation (The).
 - i. **<Insert manufacturer's name>**.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: PMMA base for built-up-type shower fixture.
4. Standard: CSA B45.5/IAPMO Z124.
5. Type: **[Standard commercial] [Handicapped/accessible]**.
6. Nominal Size and Shape: **[30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [36 by 36 inches (915 by 915 mm) square] [42 by 34 to 36 inches (1067 by 864 to 915 mm) rectangular] [48 by 34 to 36 inches (1219 by 864 to 915 mm) rectangular] [36 inches (915 mm) neo-corner] [42 inches (1067 mm) neo-corner] <Insert dimensions>**.
7. Color: **[White] <Insert color>**.
8. Outlet: Drain with **[NPS 2 (DN 50)] <Insert pipe size> outlet[; lip drain outside shower in accordance with the ADA]**.

D. Molded Stone Shower Basins: **<Insert drawing designation>**.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Bath Factory.
 - b. Fiat Products.
 - c. Florestone Products Co., Inc.
 - d. Swan Corporation (The).
 - e. **<Insert manufacturer's name>**.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: Molded-stone base for built-up-type shower fixture.
4. Standard: CSA B45.8/IAPMO Z403.
5. Type: **[Standard commercial] [Handicapped/accessible]**.
6. Nominal Size and Shape: **[30 by 30 inches (762 by 762 mm) square] [32 by 32 inches (813 by 813 mm) square] [36 by 36 inches (915 by 915 mm) square] [42 by 34 to 36 inches (1067 by 864 to 915 mm) rectangular] [48 by 34 to 36 inches (1219 by 864 to 915 mm) rectangular] [36 inches (915 mm) neo-corner] [42 inches (1067 mm) neo-corner] <Insert dimensions>**.
7. Color: **[White] <Insert color>**.
8. Outlet: Drain with **[NPS 2 (DN 50)] <Insert pipe size> outlet[; lip drain outside shower in accordance with the ADA]**.

E. Precast-Terrazzo Shower Basins: <Insert drawing designation>

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [SBADA] [SBADAR Series] [SBBOD] [SBC] [SBIC] [SBIR] [SBIS] [SBR] [SBS] [SBWA]; <Insert drawing designation> or comparable product by one of the following:
 - a. Florestone Products Co., Inc.
 - b. Stern-Williams Co., Inc.
 - c. <Insert manufacturer's name>.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: Precast-terrazzo base for built-up-type shower fixture.
4. Standard:
 - a. CSA B45.8/IAPMO Z403.
 - b. IAPMO PS 99.
 - c. 2010 ADA Standards for Accessible Design.
5. Threshold Type: [Standard commercial] [Handicapped/accessible].
6. Shape: [Square] [Rectangular] [Corner] [Square, ADA for roll-in] [Rectangular, ADA for roll-in] [Square, ADA with ramp] [Rectangular, ADA with ramp] [Square, non-ADA with ramp] [Rectangular, non-ADA with ramp].
7. Nominal Size:
 - a. Square: [30 by 30 in. (762 by 762 mm)] [32 by 32 in. (813 by 813 mm)] [34 by 34 in. (864 by 864 mm)] [36 by 36 in. (914 by 914 mm)] [40 by 40 in. (1016 by 1016 mm)] [42 by 42 in. (1067 by 1067 mm)] [48 by 48 in. (1219 by 1219 mm)] <Insert dimensions>.
 - b. Rectangular: [32 by 36 in. (813 by 914 mm)] [36 by 32 in. (914 by 813 mm)] [36 by 42 in. (914 by 1067 mm)] [36 by 48 in. (914 by 1219 mm)] [42 by 32 in. (1067 by 813 mm)] [42 by 34 in. (1067 by 864 mm)] [42 by 36 in. (1067 by 914 mm)] [48 by 32 in. (1219 by 813 mm)] [48 by 34 in. (1219 by 864 mm)] [48 by 36 in. (1219 by 914 mm)] [54 by 32 in. (1372 by 813 mm)] [60 by 30 in. (1524 by 762 mm)] [60 by 32 in. (1524 by 813 mm)] [60 by 34 in. (1524 by 864 mm)] [60 by 36 in. (1524 by 914 mm)] <Insert dimensions>.
 - c. Corner: [32 by 32 in. (813 by 813 mm)] [34 by 34 in. (864 by 864 mm)] [36 by 36 in. (914 by 914 mm)] [38 by 38 in. (965 by 965 mm)] [40 by 40 in. (1016 by 1016 mm)] <Insert dimensions>.
 - d. Square, ADA for Roll-In: 36 by 36 in. (914 by 914 mm).
 - e. Rectangular, ADA for Roll-In: [60 by 30 in. (1524 by 762 mm)] [60 by 36 in. (1524 by 914 mm)] [64 by 32 in. (1626 by 813 mm)] [64 by 38 in. (1626 by 965 mm)] <Insert dimensions>.
 - f. Square, With Ramp for ADA: 36 by 36 in. (914 by 914 mm).
 - g. Rectangular, with Ramp for ADA: [60 by 30 in. (1524 by 762 mm)] [60 by 36 in. (1524 by 914 mm)] [64 by 32 in. (1626 by 813 mm)] [64 by 38 in. (1626 by 965 mm)] <Insert dimensions>.
 - h. Square, With Ramp, Non-ADA: [36 by 36 in. (914 by 914 mm)] [48 by 48 in. (1219 by 1219 mm)] [60 by 60 in. (1524 by 1524 mm)] <Insert dimensions>.

- i. Rectangular, With Ramp, Non-ADA: [**42 by 70 in. (1524 by 1778 mm)**] [**48 by 70 in. (1219 by 1778 mm)**] [**60 by 48 in. (1524 by 1219 mm)**] [**60 by 70 in. (1524 by 1778 mm)**] <Insert dimensions>.
- 8. Color: <Insert color > from manufacturer's standard color selection.
 - 9. Outlet: [**Removable stainless steel grid strainer, NPS 2 (DN 50), no-caulk drain**] [**Back outlet stainless steel strainer 2 in. NPT, female**].
 - 10. Tiling Flange: Integral, stainless steel.
 - a. Square or rectangular fixture: [**Rear**] [**Left and rear**] [**Right and rear**] [**Three sides**].
 - b. Corner Fixture: [**Left**] [**Right**] [**Left and right**].
 - 11. Rabbeted Joint Shoulders: **1 in. (25 mm)**, <Insert locations>.
 - 12. Accessories:
 - a. Rubber drain gasket reducer for **NPS 2 (DN 50)** waste pipe.
 - b. Vandal resistant strainer.
 - c. Double drain.
- F. Solid-Surface Shower Basins: <Insert drawing designation>.
- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [**CSB3636**] [**CSB3636ADA**] [**CSB6030**] [**CSB6030ADA**] [**CSBS-36-3F**] [**CSBS-42-3F**] [**CSBR-4234-3F**] [**CSBADA-36-3F**] [**CSBRADA-6030-3F**]; or comparable product by one of the following:
 - a. Swan Corporation (The).
 - b. Tower Industries.
 - c. Willoughby Industries.
 - d. <Insert manufacturer's name>.
 - 2. Source Limitations: Obtain shower basins from single source from single manufacturer.
 - 3. Description: Solid-surface base for built-up-type shower fixture with coved corners, pitched to drain outlet for positive drainage.
 - 4. Standard:
 - a. CSA B45.5/IAPMO Z124.
 - b. IAPMO PS 99.
 - c. [**2010**] ADA Standards for Accessible Design.
 - 5. Slip Resistance: Comply with ASTM F462.
 - 6. Certification: Comply with Greenguard Gold standard for maximum chemical emissions.
 - 7. Threshold Type: [**Standard commercial**] [**Handicapped/accessible**].
 - 8. Shape: [**Square**] [**Rectangular**].
 - 9. Nominal Size:
 - a. Square: [**36 by 36 in. (914 by 914 mm)**] [**42 by 42 in. (1067 by 1067 mm)**] <Insert dimensions>.

- b. Rectangular: [42 by 34 in. (1067 by 864 mm)] [60 by 30 in. (1524 by 762 mm)] <Insert dimensions>.
10. Color: <Insert color> from manufacturer's standard color selection.
 11. Tiling Flange: Integral, stainless steel.
 - a. Provide shower base with tiling flange on three sides.
 12. Drain Opening: Integrally cast opening for NPS 2 (DN 50), no-caulk waste fitting.
 13. Drain Fitting: No-caulk type, NPS 2 (DN 50), with removeable round strainer.
 14. Trench Drain: Provide rectangular trench cover, Type 304 stainless steel with [No. 4 satin finish] [No. 8 polished mirror finish] [white powder coated finish].
 15. Drain Location: [Centered] [Left side entry] [Right side entry].
 16. Accessories: Anti-microbial additive.

2.5 GROUP SHOWERS

A. Group Column Showers: <Insert drawing designation>.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [620] [630] [640] [650] [660] [720] [730] [740] [750] [760] Series; <Insert drawing designation> or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Willoughby Industries.
 - c. <Insert manufacturer's name>.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Description: Stainless steel, column shower fixture with individual nozzles.
4. Standards: ASME A112.18.1/CSA B125.1 [and ASSE 1016/ASME A112.1016/CSA B125.16].
5. Material: Type 304 stainless steel column [with upper spray head] [base with multisided upper housing].
6. Finish, Exposed Surfaces: [No. 4 satin finish] [Powder coat from manufacturer's standard color selection].
7. Number of Shower Nozzles: [Two] [Three] [Four] [Five] [Six].
8. Height to Nozzles: [60 in. (1525 mm)] [66 in. (1675 mm)] [72 in. (1830 mm)] <Insert dimension>.
9. Control:
 - a. Provide [hot and cold, dual-handle, on-off] [single-temperature, on-off] [pneumatic, single-temperature, metering push-button] [mechanical, single-temperature, metering push-button] [hot and cold pressure-balancing, single-handle, mixing] [temperature and pressure-balancing, single-handle, mixing] valve.
 - b. Provide shower without valves, for remote activation.
 - c. Provide single-temperature electronic metering valve, with [piezo-electric programmable] [Time-trol, pre-programmed controller, with pneumatic]

[**Master-trol, field programmable controller, with pneumatic**] [**Master-trol, field programmable controller, with piezo-electric**] [**Master-trol Plus, field programmable controller, with pneumatic**] [**Master-trol Plus, field-programmable controller, with piezo-electric**] type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.

- d. Provide thermostatic controller in concealed location at top of shower column.
10. Shower Nozzle, Flow-Control Fitting: [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] for each shower head.
 11. Liquid Soap Dispenser: Provide for each shower head.
 12. Soap Dish: Circular, to accommodate each shower head.
 13. Mounting: [**Floor flange to mount to drain fitting**] [**Floor flange to mount to finished floor. Provide column without drain slots**].
 14. Supplies: **NPS 3/4 (DN 20)** copper tubing, from [**bottom**] [**top**][, and shutoff valve].
 15. Drain Fitting:
 - a. [**NPS 3 (DN 80)**] [**NPS 4 (DN 100)**] no-hub outlet.
 - b. **NPS 3 (DN 80)** inside caulk.
 - c. Provide dome-type drain grate.
 16. Drain Line Vent: [**NPS 2 (DN 50) through column integral with drain base**] [**Vent piping in wall**].
 17. Shroud: Type 304 stainless steel, with finish matching shower column. Size shroud to cover supply lines and vent piping.
 - a. Provide shroud to cover top supply drop and vent piping to ceiling. Include vertical adjustment section.
 - b. Provide shroud to cover [**control valve assembly**] [**and**] [**thermostatic controller**] only. Include top cover.
 18. Barrier-Free Station: At one station, provide accessible valve control, lowered valve height, diverter valve with lever handle, column-mounted handheld shower head assembly with **60 in. (1524 mm)** hose and vertical grab bar.
 19. Provide foot-operated shower with separate control at one shower station.
 20. Privacy Compartments: [**Circular**] [**Modular bathing compartment only**] [**Modular bathing and dressing compartments**].
 21. Accessories:
 - a. Lever handle.
 - b. Unit shutoff valve.
 - c. Adapter for Bradley shower drain.
 - d. Ceiling anchor plate for supply cover.
 - e. Adjustable height column flange.
 - f. Handheld shower head and hose at **<Insert number>** station[s].
 - g. Quick disconnect for handheld shower head.
 - h. Quick disconnect with positive shut-off for handheld shower head.
 - i. Transformer: 120 V ac to 24 V ac.
 - j. Cycle interrupt.

B. Group Wall-Mounted Showers: **<Insert drawing designation>**.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [110] [110ADA] Series; <Insert drawing designation> or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Willoughby Industries.
 - c. <Insert manufacturer's name>.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Description: Stainless steel, wall-mounted shower fixture with individual nozzles.
4. Standards: ASME A112.18.1/CSA B125.1[and ASSE 1016/ASME A112.1016/CSA B125.16].
5. Submittals: Submit Drawings and product information for wall-mounted shower layout based on construction documents.
6. Housing: Provide wall-mounted, horizontal shower housing(s) consisting of multiple shower stations to suit Project-specific shower room layout and measurements with adjustable overlay components where required for joining adjacent shower housings, corners, open ends and end caps.
7. Provide each shower station consisting of [shower head] [control valve] [and] <Insert type of soap>.
8. Mounting: Wall, surface mounted.
9. Material: Type 304 stainless steel, [16 gauge] [0.063 inch (1.6 mm)] thick.
10. Finish, Exposed Surfaces: [No. 4 satin finish] [Powder coat from manufacturer's standard color selection].
11. Fasteners: Type 18-8 stainless steel, tamper-resistant. Provide stainless steel cage nuts at connections that allow adjustment.
12. Control:
 - a. Single-handle, ADA-compliant, [ligature-resistant] [lever] handle, thermostatic and pressure-balancing mixing valve and shower head.
 - 1) Indicators: Hot and cold.
 - 2) Antiscald Device: Integral with mixing valve.
 - 3) Valve Body: Solid brass.
 - 4) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
 - b. Pneumatic Push Button: Single-temperature, air-controlled, pneumatic push-button-operated metering valve with ADA-compliant[ligature-resistant hemispherical] push-button control.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
 - c. Electronic Push Button: Provide single-temperature electronic metering valve and shower head, with [piezo-electric programmable] [Time-trol, pre-programmed controller, with pneumatic] [Master-trol, field programmable controller, with pneumatic] [Master-trol, field programmable controller, with piezo-electric] [Master-trol Plus, field programmable controller, with pneumatic] [Master-

trol Plus, field-programmable controller, with piezo-electric] type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.

- 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
- d. Operation: Provide shower without valves, for remote activation.
13. Height to Nozzles: [**60 inches (1525 mm)**] [**66 inches (1675 mm)**] [**72 inches (1830mm)**] <Insert dimension>.
 14. Supply Connections: [Wall] [Top]supply, <Insert size>.
 15. Provide metering pneumatic push-button valve in shower head riser.
 16. Vertical Shroud: Type 304 stainless steel, with No. 4 finish. Size shroud to cover vertical supply lines.
 17. Horizontal Shroud: Type 304 stainless steel [**having 30 degree slope on**] [**top**] [**bottom**] surfaces, and No. 4 finish. Size shroud to cover horizontal supply lines.
 18. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Mount: Front, mounted to housing.
 - c. Function: [**Multi-stream with ball joint**] [**Security, non-adjustable**] [**Universal ball joint and head with adjustable stream**] [**Lockable universal ball joint and head with adjustable stream**] [**Conical, fixed spray**] [**WaterSense-certified conical, fixed spray**] [**Handheld shower head and hose (non-ADA)**] <Insert type>.
 - d. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - e. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - f. Shower Head Material: Metallic with chrome-plated finish.
 - g. Spray Pattern: [**Adjustable**] [**Fixed**].
 19. Accessories:
 - a. Surface-mounted soap dish.
 - b. Recessed soap dish.
 - c. Transformer: 120 V ac to 24 V ac.
 - d. Cycle interrupt.
 20. Accessible Components:
 - a. Housing: Provide lowered vertical housing section to match horizontal for locating shower components at required accessible heights and locations.
 - b. Diverter Valve: Provide concealed two-way with accessible chrome plated [**ligature-resistant**] [**lever**] style handle.
 - c. Accessible Shower Head: Provide [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect**] [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect with positive shut-off**] [**fixed shower head for mounting**]

48 in. (1219 mm) above finished floor with shower head that matches upper shower head].

- d. Recessed soap dish.
- e. Grab Bar: Two-wall, **1-1/2 in. (38 mm)** OD stainless steel.
- f. Folding Seat: Provide ADA-compliant [**padded vinyl**] [**phenolic**] [**stainless steel**] folding seat.

21. Provide wall mounting hardware in field.

C. Group Stanchion-Mounted Showers: **<Insert drawing designation>**.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model 130 series, Acme Back-to-Back Showers; **<Insert drawing designation>** or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Willoughby Industries.
 - c. **<Insert manufacturer's name>**.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Standards: ASME A112.18.1/CSA B125.1[**and ASSE 1016/ASME A112.1016/CSA B125.16**].
4. Submittals: Submit Drawings and product information for stanchion-mounted shower layout based on construction documents.
 - a. Total Number of Shower Rooms: **<Insert number>**.
 - b. Total Number of Standard Shower Stations: **<Insert number>**.
 - c. Total Number of Accessible Shower Stations: **<Insert number>**.
5. Housing Components: Provide stanchion-mounted horizontal back-to-back shower housings consisting of multiple shower stations with sections that suit Project-specific shower room layout and measurements, with adjustable overlay components where required. Provide each shower station with shower head [**control valve**] [**and**] [**soap dish**].
6. Mounting: [**Freestanding stanchion-mounted back-to-back horizontal shower panels with floor-mounted vertical stanchions**] [**Stanchion-mounted back-to-back showers integrated with wall-mounted horizontal shower housing sections**] [**Stanchion-mounted back-to-back showers integrated with wall-mounted horizontal supply cover housing sections**].
 - a. Provide intermediate stanchion and overlay components as required for joining adjacent shower housings to comprise a complete horizontal modular shower system. Provide overlay sections having minimum **1 inch 25 mm** adjustment on each side where they assemble to shower housing.
7. Material: Type 304 stainless steel, [**16 gauge**] [**0.063 inch (1.6 mm)**] [**14 gauge**] [**0.078 inch (2.0 mm)**] thick.
8. Finish, Exposed Surfaces: [**No.4 satin finish**] [**Powder coat from manufacturer's standard color selection**].

9. Stanchion: Provide **3/16 in. (4.8 mm)** thick Type 304 stainless steel base flange with bolt holes for mounting to floor.
 - a. Where stanchion conceals supplies, provide removable insert for access.
 - b. For floor-to-ceiling stanchion, include vertical adjustment section with ceiling mounting flange at top of stanchion.
10. Fasteners: Type 18-8 stainless steel, tamper-resistant. Provide stainless steel cage nuts at connections that allow adjustment.
11. Control:
 - a. Single-handle, ADA-compliant, **[ligature-resistant] [lever]** handle thermostatic and pressure-balancing mixing valve and shower head.
 - 1) Indicators: Hot and cold.
 - 2) Antiscald Device: Integral with mixing valve.
 - 3) Valve Body: Solid brass.
 - 4) Check Stops: Check-valve type, integral with or attached to body, on hot-and cold-water supply connections. Include replaceable strainers.
 - b. Pneumatic Push Button: Single-temperature, air-controlled, pneumatic push-button-operated metering valve with ADA-compliant **[ligature-resistant hemispherical]** push-button control.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot-and cold-water supply connections. Include replaceable strainers.
 - c. Electronic Push Button: Provide single-temperature electronic metering valve and shower head, with **[piezo-electric programmable] [Time-trol, pre-programmed controller, with pneumatic] [Master-trol, field programmable controller, with pneumatic] [Master-trol, field programmable controller, with piezo-electric] [Master-trol Plus, field programmable controller, with pneumatic] [Master-trol Plus, field-programmable controller, with piezo-electric]** type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot-and cold-water supply connections. Include replaceable strainers.
 - d. Operation: Provide shower without valves, for remote activation.
12. Height to Nozzles: **[60 in. (1525 mm)] [66 in. (1675 mm)] [72 in. (1830 mm)]** <Insert dimension>.
13. Supply Connections: Provide **[freestanding vertical stanchion that conceals water supply piping from floor] [freestanding vertical stanchion that conceals water supply piping from ceiling] [wall supply from wall-mounted horizontal housing]**.
14. Provide splash panels matching stanchion.
15. Provide metering pneumatic push-button valve in shower head riser.

16. Horizontal Shroud: Type 304 stainless steel [**having 30 degree slope on**] [**top**] [**bottom**] surfaces, and No. 4 finish. Size shroud to cover horizontal supply lines.
17. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Function: [**Multi-stream with ball joint**] [**Security, non-adjustable**] [**Universal ball joint and head with adjustable stream**] [**Lockable universal ball joint and head with adjustable stream**] [**Conical, fixed spray**] [**WaterSense-certified conical, fixed spray**] [**Handheld shower head and hose (non-ADA)**] <Insert type>.
 - c. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
18. Accessories:
 - a. Surface-mounted soap dish.
 - b. Recessed soap dish.
 - c. Liquid soap dispenser.
 - d. Provide quick disconnect for handheld shower head.
 - e. Quick disconnect with positive shut-off for handheld shower head.
 - f. Transformer: 120 V ac to 24 V ac.
 - g. Cycle interrupt.

2.6 OUTDOOR SHOWERS

A. Outdoor Plastic Showers: <Insert drawing designation>.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bradley Corporation.
 - b. ShowerTower Inc.
 - c. <Insert manufacturer's name>.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Description: Freestanding, plastic group-shower fixture.
4. Number of Shower Stations: [**One**] [**Two**] [**Three**] [**Four**] <Insert number up to six> with individual, self-closing control valve(s).
5. Nozzles: With adjustable spray pattern; fixed, on column.
6. Control: Push button and timer.
7. Maximum Flow: **2.5 gpm (9.5 L/min.)** for each shower head.
8. Number of Foot-Wash Stations: [**One**] [**Two**] <Insert number> with individual, self-closing control valve(s).
9. Hose Bibb: [**Not**] [**One**] required.
10. Control-Valve Mounting Height: [**50 inches (1270 mm)**] [**48 inches (1219 mm)**].
11. Material: Cast-filled-polymer plastic.

12. Color: **[Gray]** <Insert color>.
13. Internal Piping: Factory installed.
14. Mounting: Base flange with bolt holes.

B. Outdoor Stainless Steel Showers: <Insert drawing designation>.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model Pylon Shower, 900 Series; <Insert drawing designation> or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Most Dependable Fountains, Inc.
 - c. <Insert manufacturer's name>.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Description: Freestanding, stainless steel, outdoor group-shower fixture.
4. Number of Shower Stations: **[One]** **[Two]** **[Three]** **[Four]**, with individual control valve at each station.
5. Height to Nozzles: **[60 in. (1525 mm)]** **[66 in. (1675 mm)]** **[72 in. (1830 mm)]** <Insert dimension>.
6. Control:
 - a. **[Single-temperature, on-off canopy handle]** **[Single-temperature, on-off lever handle]** **[Pneumatic, single-temperature metering push-button]** valve.
 - b. Provide shower without valves, for remote activation.
7. Function: **[Multi-stream with ball joint]** **[Security, non-adjustable]** **[Universal ball joint and head with adjustable stream]** **[Lockable universal ball joint and head with adjustable stream]** <Insert type>.
8. Flow-Control Fitting: **[Not required]** **[1.6 gpm (6.17 L/min.)]** **[2.0 gpm (7.6 L/min.)]** for each shower head.
9. Supplies: 3/4 NPT pipe connection from below unit. Provide unit with O-ring adapter for assembling shower in ground base.
10. Material: Type 304 stainless steel, **[14 gauge]** **[0.078 inch (2.0 mm)]** thick.
 - a. Provide stainless steel control valve access plate with stainless steel, tamper-resistant fasteners.
11. Finish, Exposed Surfaces: **[No. 4 satin finish]** **[Powder coat from manufacturer's standard color selection]**.
12. Provide shower unit with factory-installed internal piping.
13. Provide foot shower with individual, control valve at one shower station.
14. Provide hand shower with individual, control valve at one shower station.
15. Mounting: Provide in-ground base with **1/4 inch (6 mm)** thick steel plate and number 4 rebar, with bolt holes to match shower unit flange.
 - a. Provide base with rust-preventive coating.
16. Accessories:

- a. High-low mounting brackets for handheld shower head.
- b. Provide unit shutoff valve.

2.7 INDIVIDUAL SHOWERS

A. Wall-Mounted, Individual, Non-Accessible, Stainless Steel Shower: **<Insert drawing designation>**.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model **[410B] [420B] [450B]**; **<Insert drawing designation>** or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Willoughby Industries.
 - c. **<Insert manufacturer's name>**.
2. Source Limitations: Obtain showers from single source from single manufacturer.
3. Housing:
 - a. Mounting: **[Surface, wall-mounted] [Flush-mounted, with in-wall mounting frame] [Surface, corner, wall-mounted]** with exposed, tamper resistant, stainless steel fasteners.
 - b. Material: Type 304 stainless steel, **[18 gauge] [0.050 inch (1.3 mm)]** thick.
4. Finish, Exposed Surfaces: **[No. 4 satin finish] [Powder coat from manufacturer's standard color selection]**.
5. Control:
 - a. Single-handle, ADA-compliant, **[ligature-resistant] [lever]** handle thermostatic and pressure-balancing mixing valve and shower head.
 - 1) Indicators: Hot and cold.
 - 2) Antiscald Device: Integral with mixing valve.
 - 3) Valve Body: Solid brass.
 - 4) Check Stops: Check-valve type, integral with or attached to body, on hot-and cold-water supply connections. Include replaceable strainers.
 - b. Pneumatic Push Button: Single-temperature, air-controlled, pneumatic push-button-operated metering valve with ADA-compliant **[ligature-resistant hemispherical]** push-button control.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot-and cold-water supply connections. Include replaceable strainers.
 - c. Electronic Push Button: Provide single-temperature electronic metering valve and shower head, with **[piezo-electric programmable] [Time-trol, pre-programmed controller, with pneumatic] [Master-trol, field programmable controller, with pneumatic] [Master-trol, field programmable controller, with piezo-electric]**

[**Master-trol Plus, field programmable controller, with pneumatic**] [**Master-trol Plus, field-programmable controller, with piezo-electric**] type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.

- 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
- d. Operation: Provide shower without valves, for remote activation.
6. Provide metering pneumatic push-button valve in shower head riser.
 7. Vertical Shroud: Type 304 stainless steel, with No. 4 finish. Size shroud to cover vertical supply lines.
 8. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Function: [**Multi-stream with ball joint**] [**Security, non-adjustable**] [**Universal ball joint and head with adjustable stream**] [**Lockable universal ball joint and head with adjustable stream**] [**Conical, fixed spray**] [**WaterSense-certified conical, fixed spray**] [**Handheld shower head and hose (non-ADA)**] <Insert type>.
 - c. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
 9. Accessories:
 - a. Surface-mounted soap dish.
 - b. Recessed soap dish.
 - c. Liquid soap dispenser.
 - d. Provide quick disconnect for handheld shower head.
 - e. Quick disconnect with positive shut-off for handheld shower head.
 - f. High-low mounting brackets for handheld shower head.
 - g. Provide **24 in. (610 mm)** glide rail for handheld shower head.
 - h. Transformer: 120 V ac to 24 V ac.
 - i. Cycle interrupt.
 10. Provide wall mounting hardware in field.
- B. Wall-Mounted, Individual, Accessible, Stainless Steel Shower: <Insert drawing designation>.
1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [**410BADA**] [**410BADAWH**] [**410CBCWH**] [**410BBF**] [**450BADA**] [**450BADAWH**] [**450BBF**]; <Insert drawing designation> or comparable product by one of the following:
 - a. Bradley Corporation.
 - b. Willoughby Industries.

- c. <Insert manufacturer's name>.
2. Source Limitations: Obtain showers from single source from single manufacturer.
 3. Standards: ASME A112.18.1/CSA B125.1 [and ASSE 1016/ASME A112.1016/CSA B125.16].
 4. Housing:
 - a. Mounting: [Surface, wall-mounted] [Flush-mounted, with in-wall mounting frame] [Surface, corner, wall-mounted] with exposed, tamper-resistant, stainless steel fasteners.
 - b. Material: Type 304 stainless steel, [18 gauge] [0.050 inch (1.3 mm)] thick.
 5. Finish, Exposed Surfaces: [No. 4 satin finish] [Powder coat from manufacturer's standard color selection].
 6. Control:
 - a. Single-handle, ADA-compliant, [ligature-resistant] [lever] handle thermostatic and pressure-balancing mixing valve and shower head.
 - 1) Indicators: Hot and cold.
 - 2) Antiscald Device: Integral with mixing valve.
 - 3) Valve Body: Solid brass.
 - 4) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
 - b. Pneumatic Push Button: Single-temperature, air-controlled, pneumatic push-button-operated metering valve with ADA-compliant [ligature-resistant hemispherical] push-button control.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
 - c. Electronic Push Button: Provide single-temperature electronic metering valve and shower head, with [piezo-electric programmable] [Time-trol, pre-programmed controller, with pneumatic] [Master-trol, field programmable controller, with pneumatic] [Master-trol, field programmable controller, with piezo-electric] [Master-trol Plus, field programmable controller, with pneumatic] [Master-trol Plus, field-programmable controller, with piezo-electric] type push button and 24 Vac, 50/60 Hz solenoid with electro-polished stainless steel plunger.
 - 1) Valve Body: Noryl.
 - 2) Check Stops: Check-valve type, integral with or attached to body, on hot- and cold-water supply connections. Include replaceable strainers.
 - d. Operation: Provide shower without valves, for remote activation.
 - e. Supply Connections: NPS 1/2 (DN 15), [wall] [top] supply.
 - f. Height to Nozzles: [60 in. (1525 mm)] [66 in. (1675 mm)] [72 in. (1830 mm)] <Insert dimension>.

7. Provide metering pneumatic push-button valve in shower head riser.
8. Vertical Shroud: Type 304 stainless steel, with No. 4 finish. Size shroud to cover vertical supply lines.
9. Shower Head:
 - a. Standard: ASME A112.18.1/CSA B125.1.
 - b. Function: [**Multi-stream with ball joint**] [**Security, non-adjustable**] [**Universal ball joint and head with adjustable stream**] [**Lockable universal ball joint and head with adjustable stream**] [**Conical, fixed spray**] [**WaterSense-certified conical, fixed spray**] [**Handheld shower head and hose (non-ADA)**] <Insert type>.
 - c. EPA WaterSense: Provide EPA WaterSense-compliant shower head.
 - d. Shower Head Maximum Flow Rate: [**1.5 gpm (5.7 L/min.)**] [**1.6 gpm (6.1 L/min.)**] [**2.0 gpm (7.6 L/min.)**] [**2.5 gpm (9.5 L/min.)**].
 - e. Shower Head Material: Metallic with chrome-plated finish.
 - f. Spray Pattern: [**Adjustable**] [**Fixed**].
10. Accessible Components:
 - a. Diverter Valve: Provide concealed two-way with accessible chrome plated [**ligature-resistant**] [**lever**] style handle and stainless steel trim plate.
 - b. Accessible Shower Head: Provide [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect**] [**handheld shower head with ON-OFF control, 60 in. (1524 mm) stainless steel hose, and quick-disconnect with positive shut-off**] [**fixed shower head for mounting 48 in. (1219 mm) above finished floor with shower head that matches upper shower head**].
 - c. Privacy Curtain: Provide Herculite material curtain, **36 in. (9140 mm)**-long shower rod and wall mounting clips, curtain hooks.
 - d. Grab Bar: Two-wall, **1-1/2 in. (38 mm)** OD stainless steel.
 - e. Folding seat: Provide ADA-compliant [**padded vinyl**] [**phenolic**] [**stainless steel**] folding seat.
 - f. Recessed soap dish.
11. Provide wall mounting hardware in field.
12. Accessories:
 - a. Surface-mounted soap dish.
 - b. Recessed soap dish.
 - c. Liquid soap dispenser.
 - d. Transformer: 120 V ac to 24 V ac.
 - e. Cycle interrupt.
13. Provide wall mounting hardware in field.

2.8 GROUT

- A. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.

- B. Characteristics: Nonshrink; recommended for interior and exterior applications.
- C. Design Mix: **5000 psi (34.5 MPa)**, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine rough-in of water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before shower installation.
- B. Examine walls and floors for suitable conditions where showers will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Assemble shower components in accordance with manufacturers' written instructions.
- B. Install showers level and plumb.
- C. Install ball[**or gate**] valves in water-supply piping to the shower if supply stops are specified with the shower valve. Comply with valve requirements specified in Section 220523.12 "Ball Valves for Plumbing Piping"[**and Section 220523.15 "Gate Valves for Plumbing Piping."**] Install valves in locations that are accessible for ease of operation.
- D. Install shower flow-control fittings with specified maximum flow rates in shower arms.
- E. Set [**shower receptors**] [**and**] [**shower basins**] in leveling bed of cement grout.
- F. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings. Comply with escutcheons requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- G. Seal joints between showers and floors and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 PIPING CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."

- C. Comply with traps and soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ADJUSTING

- A. Operate and adjust showers and controls. Replace damaged and malfunctioning showers, fittings, and controls.
- B. Adjust water pressure at shower valves to produce proper flow.

3.5 CLEANING AND PROTECTION

- A. After completing installation of showers[**and basins**], inspect and repair damaged finishes.
- B. Clean showers[**and basins**], shower valves, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed fixtures and fittings.
- D. Do not allow use of showers[**and basins**] for temporary facilities unless approved in writing by Owner.

END OF SECTION 224223