

BRADLEY COMMERCIAL LAVATORIES AND FAUCETS

Bradley Corporation, the industry's leading manufacturer of premium quality commercial lavatories and lavatory faucets, serves a diverse customer base ranging from local business facilities to international corporations like Wal-Mart, General Motors, U.S. Postal Service, W.W. Grainger, AMC Theaters Corporation.

Architects, engineers, and specifiers look to Bradley Corporation for innovation in design and leadership in the development of environmentally conscious products. Bradley Corporation, a member of the U.S. Green Building Council, the Wisconsin Green Building Alliance, has several products earning certification by Greenguard Environmental Institute, and Greenguard Children and Schools program.

Bradley eases the specifying process with a seasoned customer service staff and a range of helpful information tools on an advanced website. For example, easy-to-use sizing software, available on Bradley's website, allows engineers to quickly determine the correct size Thermostatic Mixing Valves.

Bradley is the industry leader in the manufacture of premium quality commercial plumbing fixtures, valves, TMVs and washroom accessories that appear in the following CSI MasterFormat 2004™ Sections:

Section 10 21 13 – Toilet Compartments (Mills Metal, Plastic-laminate, Phenolic, and Plastic units)

Section 10 28 13.13 – Commercial Toilet Accessories

Section 10 28 13.15 – Hand and Hair Dryers

Section 10 28 13.63 – Detention Toilet Accessories

Section 10 51 26.00 – Plastic Lockers (Lenox Plastic Lockers)

Section 10 51 26.13 – Plastic Lockers (Lenox Recycled Plastic lockers)

Section 22 11 19 – Domestic Water Piping Specialties (Thermostatic mixing valves)

Section 22 42 16.01 – Commercial Lavatories and Faucets (Single and multi-station lavatory systems)

Section 22 42 16.02 – Commercial Lavatories and Faucets (Bradley Advocate Lavatory System)

Section 22 42 16.03 – Commercial Lavatories and Faucets (Bradley Verge Lavatory System)

Section 22 42 16.11 – Commercial Sinks and Faucets

Section 22 42 23 – Commercial Showers and Shower Valves

Section 22 42 33 – Wash Fountains

Section 22 43 00 – Healthcare Plumbing Fixtures (Patient care lavatory units)

Section 22 45 00 – Emergency Plumbing Fixtures (Emergency Eyewash Fixtures and Drench Showers)

Section 22 46 00 – Security Plumbing Fixtures

Contact Bradley Corporation, Menomonee Falls, WI 53051; Phone: 800-BRADLEY ((800)272-3539) Fax: (262)251-5817, or visit the Bradley web site www.bradleycorp.com.

Bradley Corporation is an AIA/CES registered provider currently offering five programs earning one (1) HS&W Learning Unit each; several qualify for sustainable design (SD) credit. All active AIA members must successfully complete 18 learning unit (LU) hours each year.

ndite® is a trademark of Bradley Corporation.

TouchTime® is a trademark of Bradley Corporation.

Crescent® is a registered trademark of Bradley Corporation.

Terreon® is a registered trademark of Bradley Corporation.

**SECTION 22 42 16
COMMERCIAL LAVATORIES AND FAUCETS**

PART 1 - GENERAL

1.1 SECTION INCLUDES

1. Commercial lavatories.
2. Commercial faucets.

1.2 RELATED SECTIONS

Specifier: Delete any paragraphs below that do not apply to this project.

1. Division 22 Section "Domestic Water Piping Specialties" for thermostatic mixing valves.
2. Division 22 Section "Healthcare Plumbing Fixtures" for healthcare lavatories.
3. Division 22 Section "Emergency Plumbing Fixtures" for emergency fixtures.
4. Division 22 Section "Security Plumbing Fixtures" for security lavatories.

1.3 REFERENCES:

- A. American National Standards Institute (ANSI):
 1. ANSI Z 124.3 - Plastic Lavatories.
 2. ANSI Z 124.6 - Plastic Sinks.
 3. ANSI/ICPA SS-1-2001 - Performance Standard for Solid Surface Materials.
- B. American Society of Mechanical Engineers (ASME):
 1. ASME A112.18.1 Plumbing Supply Fittings.

GREENGUARD Environment Institute is an ANSI Authorized Standards Developer that oversees the GREENGUARD certification program. GEI establishes acceptable indoor air standards for indoor products, environments, and buildings.

- C. GREENGUARD Environmental Institute (GEI):
 1. GREENGUARD listed and certified low emitting products.
- D. International Association of Plumbing and Mechanical Officials (IAPMO):
 1. Universal Plumbing Code (cUPC both U.S. and Canada).
- E. Public Law 102-486, *Energy Policy Act*, requires that public lavatories manufactured after December 31, 1996, have flow rate or consumption not greater than 0.5 gpm (1.5 L/min.) or 0.25 gal. (0.95 L) per metering cycle.
- F. State of Texas:
 1. Texas Accessibility Standards (TAS).
- G. US Federal Government:
 1. Public Law 102-486 - Energy Policy Act. 1992.
 2. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).

1.4 ACTION SUBMITTALS

- A. Product Data: For each product:

1. Manufacturer's data sheets indicating operating characteristics, materials and finishes.
2. Include details of electrical and mechanical operating parts.
3. Provide mounting requirements and roughin dimensions.
4. Mark each sheet with product drawing designation.

Bradley Corporation's TerreonRE recycled solid surface material contains 25-percent preconsumer recycled content and 8-percent rapidly renewable material. LEED WE Credit 2 is for 50 percent reduction in water use for building sewer, based on use of water-conserving fixtures documented under Credit WE 3. LEED WE Credit 3 is for 30, 35, or 40 percent reduction in water usage. Coordinate with Division 01 requirements for LEED MR Credit 5 Regional Materials where applicable.

- B. LEED Submittals:
1. Product Data for [Credit WE 2] [and] [Credit WE 3]: Documentation indicating compliance with requirements.

1.5 INFORMATION SUBMITTALS

- A. Sample warranty.
- B. Operation, care and cleaning instructions.

1.6 MAINTENANCE SUBMITTALS

- A. Furnish indicated spare parts that are packaged with identifying labels listing associated products.
- B. Operation and Maintenance data.

1.7 QUALITY ASSURANCE

- A. Comply with Public Law 102-486, Energy Policy Act.
- B. Comply with NSF 61, Drinking Water System Components – Health Effects.
- C. Solid surface material GREENGUARD certified as low-emitting material.

1.8 WARRANTY

- A. Special Manufacturer's Warranty: Provide manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship.
 1. Terreon: 10 years.
 2. Faucets: 1 year.
 3. ndite power management module and photovoltaic cells 5 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide commercial lavatories manufactured by Bradley Corporation, Menomonee Falls, WI 53051, (800)272-3539, fax (262)251-5817; Email info@BradleyCorp.com; Website www.bradleycorp.com.

Specifier: Retain one of three paragraphs below based upon Project requirements.

1. Submit comparable products of one of the following for approval by Architect:
 - a. [Specifier: Insert name of manufacturer of comparable product.]
2. Submit requests for substitution in accordance with Instructions to Bidders and Division 01 General Requirements.
3. Provide specified product; Owner will not consider substitution requests.

B. MATERIALS

Specifier: Below describes Terreon®, Bradley's premium densified solid surface vandal-resistant material, noted for its resistance to chemicals, stains, burns and impacts. Surface damage can be easily repaired with everyday cleansers or fine grit abrasives. Bradley's unique TerreonRE incorporates recycled content in solid surface material.

- C. Solid Surface Material: Where indicated as constructed of solid surface material, fabricate plumbing fixtures from thermoset acrylic modified polyester resin certified by approved independent testing agency as complying with ANSI/ICPA-SS-1-2001, ANSI Z124.3, and ANSI Z124.6, with the following minimum properties:
 1. Basis of Design Product: **Bradley, [Terreon] [TerreonRE]**, or a comparable product fabricated from one of the following materials:
 - a. DuPont, Corian Products.
 - b. Wilsonart International, Inc., Gibraltar Products.
 2. Thickness: 1/2 inch (13 mm), minimum.
 3. Liquid Absorption: 0.025 percent in 24 hours, per ASTM D 570.
 4. Tensile Strength: 5000 psi (34 MPa), minimum, per ASTM D 638.
 5. Thermal Expansion: 2.30, per ASTM D 696.
 6. Hardness: 55-60, per ASTM D 785.
 7. Fire Resistance: Class 1, per ASTM E 84.

2.2 LAVATORIES, SINGLE STATION

- A. ADA/ABA compliant Single-Station One-person Lavatory Fixture **LAV# ____**: Wall-mounted lavatory constructed of solid surface material with circular bowl [and soap dispenser] [with tankless water heater]. Unit includes waste and supply connections to wall with stop, strainer, and check valves [, concealed by high impact polymer access panel/trap cover] [, concealed by stainless steel access panel/trap cover].
 1. Basis of Design Manufacturer/Model: **Bradley, Express Model SS-1N.**
 2. Faucet: Sensor-operated, vandal-resistant low profile faucet.
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series.**

Specifier: Faucet above is standard. See Faucet Article in this specification for other Bradley faucet options. Delete above and edit and retain below if spray head option is required

3. Spray Head: Independent water stream former with flow rate of 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).

Specifier: Select one of three spray head valve operation options below. Select power source option for infrared sensing module.

- a. **Spray Head Valve Operation:** Capacitive sensing module and solenoid with adjustable turn off delay and automatic shut-off.
- b. **Spray Head Valve Operation:** Push button air valve metering with adjustable timing.
- c. **Spray Head Valve Operation:** Light-touch, 10 second auto shutoff and solenoid valve.
4. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].

5. Power Source: [Battery Operated] [110/24 VAC plug-in transformer].
6. Color: As selected by Architect from manufacturer's full line.

Specifier: **Bradley Frequency® lavatory systems** Model No. FL-1L and FL-1H described below feature a concave or convex shape that creates a contemporary "wave" design when mounted side by side, the concave unit meeting accessibility requirements while the convex unit providing ergonomically-correct wash station height for other adult users. Frequency lavatories come in 26 colors and are equipped with sensor-controlled faucets, with optional soap dispensers, thermostatic mixing valves, and optional point-of-use hot water heaters. Bradley also offers towel dispensers, mirrors, and waste receptacles with coordinated Frequency design features – specified in Division 10 Section "Toilet, Bath, and Laundry Accessories."

- B. ADA/ABA compliant single-Station One-person Frequency Lavatory Fixture **LAV#___**: Wall-mounted lavatory constructed of solid surface material with circular bowl [and soap dispenser]. Unit includes waste and supply connections to wall with stop, strainer, and check valves.
1. Basis of Design Manufacturer/Model: **Bradley, Frequency Model FL-1L**.
 2. Faucet: Sensor-operated, vandal-resistant low profile faucet.
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series**.

Specifier: Faucet above is standard. See Faucet Article in this specification for other Bradley faucet options. Delete above and edit and retain below if spray head option is required

3. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
4. Power Source: Battery Operated.
5. Color: As selected by Architect from manufacturer's full line.

Specifier: Retain optional hot water heater below when required for project.

6. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX55TMLB, 23A/240VAC] [EX60TMLB, 22A/277VAC]
 - b. Transformer: 120 VAC plug-in transformer to convert battery to permanent electrical service.

- C. Single-Station One-person Frequency Lavatory Fixture **LAV#___**: Wall-mounted lavatory constructed of solid surface material with circular bowl [and soap dispenser]. Unit includes waste and supply connections to wall with stop, strainer, and check valves.
1. Basis of Design Manufacturer/Model: **Bradley, Frequency Model FL-1H**.
 2. Faucet: Sensor-operated, vandal-resistant low profile faucet.
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series**.

Specifier: Faucet above is standard. See Faucet Article in this specification for other Bradley faucet options. Delete above and edit and retain below if spray head option is required

3. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
4. Power Source: Battery Operated.
5. Color: As selected by Architect from manufacturer's full line.
6. Hot Water Heater: Basis of Design Manufacturer/Model: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Bradley, Model [EX55TMLB, 23A/240VAC] [EX60TMLB, 22A/277VAC]

- b. Transformer: 120 VAC plug-in transformers to convert battery to permanent electrical service.

Bradley Terreon Imperial Lavatory described below are an ideal alternative for wall-mounted vitreous china lavatories. Tough and vandal resistant, the Terreon Imperial Lavatory will stand in place much longer.

- D. ADA/ABA compliant wall-mounted, Accessible, Single-Station Lavatory Fixture **LAV#___**: Constructed of solid surface material with water overflow and ledged back, drain, strainer, and tailpiece.
1. Basis of Design Manufacturer/Model: Bradley, Terreon Imperial Lavatory Model TL-18.
 2. Fixture Size: 22 by 18 inch (558 by 457 mm).
 3. Faucet: Low-Profile Faucet with Capacitive Sensor Metering Control[, with 110/24 VAC plug-in transformer] [battery operated].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series**.
 4. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
 5. Color: As selected by Architect from manufacturer's full line.
- E. ADA/ABA compliant wall-mounted, Single-Station Lavatory Fixture **LAV#___**: Constructed of solid surface material with water overflow and ledged back, drain, strainer, and tailpiece.
1. Basis of Design Manufacturer/Model: Bradley, Terreon Lavatory Model LD-3010.
 2. Fixture Size: 22 by 18 inch (558 by 457 mm).
 3. Bowl Size: 13 by 16 inch (330 by 406 mm).
 4. Faucet: Low-Profile Faucet with Capacitive Sensor Metering Control[, with 110/24 VAC plug-in transformer] [battery operated].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series**.
 5. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
 6. Color: As selected by Architect from manufacturer's full line.

Specifier: Retain and edit below for other types of single-station lavatory products when required by project.

Specifier: Bradley multiple-user lavatory systems described below are constructed of Terreon solid-surface material. The lavatories serve up to 3 users at a time, handling washroom traffic quickly and economically while providing each user with their own space. Lavatory bowls are positioned on 30 inch centers. The preassembled spray head modules are equipped with independent stream formers, each served by a separate infrared sensor or push-button. Standard flow rate of .5 GPM meets industry standard for water conservation while providing enough water to rinse hands quickly and efficiently. Operating range is 20-80 PSI.

Bradley multi-user lavatory decks are supported by a fully-enclosed stainless steel frame that houses the lavatory P-trap and tailpiece, flexible stainless steel supply connections, optional Bradley Vernatherm thermostatic mixing valve with integral strainers and external checkstops, and optional transformer for infrared sensor control.

2.3 LAVATORIES, MULTIPLE USER SYSTEMS

Specifier: **Bradley Express® SS-Series lavatory systems** described below feature a Terreon or TerreonRE continuous bowl with semi-circular wash stations. Express SS-Series lavatory systems are now available powered by Bradley's innovative **ndite™** sustainable technology – see note below.

Select floor supported option when wall supported installation is not available.

- A. ADA/ABA compliant, [Wall-mounted, Floor-supported,] [Wall-mounted,] [2] [3] Station Lavatory **LAV#___**: Constructed of solid surface material with integral semi-circular continuous bowls, deck, and ledge containing concealed, vandal-resistant spray head [and liquid soap dispenser]. Unit includes waste and supply connections to wall with stop, strainer, and check valves, and stainless steel support frame, concealed by high impact polymer pedestal enclosure. ADA/ABA, ANSI A117.1, and TAS compliant. IPC/cUPC-certified by IAPMO.
1. Basis of Design Manufacturer/Model: Bradley, Express Lavatory System, SS-series Model No. [SS-2N] [SS-3N].
 2. Overall Unit Size: [50 by 21-1/8 inch (1270 by 537 mm) with 2 bowls] [80 by 21-1/8 inch (2032 by 537 mm) with 3 bowls].
 3. Bowl Size: 16 inch (406 mm) diameter.
 4. Spray Head: Independent water stream former with flow rate of 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).

Specifier: Select one of three spray head valve operation options below. Select power source option for infrared sensing module.

- a. **Spray Head Valve Operation:** Infrared sensing module and solenoid with adjustable turn off delay and automatic shut-off, [with 110/24 VAC plug-in transformer] [battery operated] [with battery-free integral photovoltaic power cell].
 - b. **Spray Head Valve Operation:** Pushbutton air valve metering with adjustable timing.
 - c. **Spray Head Valve Operation:** Light-touch, 10 second auto shutoff.
5. Water Supply: [Single tempered line] [Single thermostatic mixing valve]

Specifier: If including point-of-use hot water heater option below, select 95 series for 2-bowl units and 110 series for 3-bowl units.

6. Bowl/Spray Head Color: As selected by Architect from manufacturer's full line.
7. Pedestal Enclosure Color: As selected by Architect from manufacturer's full line.
8. Accessories: Matching solid surface material: [Extensions] [Purse Shelves] [Waste Receptacles] [Splashes and Aprons] as indicated.

Specifier: Retain optional hot water heater below when required for project.

9. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX95TMLB, 40A/240VAC] [EX100TMLB, 36A/277VAC][EX110TMLB, 46A/240VAC] [EX110TMLB, 40A/277VAC]

Specifier: Bradley Express® MG-Series lavatory systems described below feature a continuous bowl with contemporary flowing "wave" design wash stations and a matching contoured spray head shelf. The angle-formed wall mount pedestal completes the contemporary design of the MG-series.

Express MG-Series lavatory systems are now available powered by Bradley's innovative ndite™ sustainable technology – see note below.

- B. ADA/ABA compliant wall-mounted, [2] [3] Station Lavatory **LAV#___**: Constructed of solid surface material with integral wave-formed continuous bowl, contoured deck, and ledge containing concealed, vandal-resistant spray head [and liquid soap dispenser]. Unit includes waste and supply connections to wall with stop, strainer, and check valves, and stainless steel

support frame, concealed by high impact polymer pedestal enclosure. ADA/ABA, ANSI A117.1, and TAS compliant. IPC/cUPC-certified by IAPMO.

1. Basis of Design Manufacturer/Model: Bradley, Express Lavatory System, MG series Model No. [MG-2] [MG-3].
2. Overall Unit Size: [54 by 22 inch (1372 by 559 mm) with 2 bowls] [84 by 21-1/8 inch (2134 by 537 mm) with 3 bowls].
3. Bowl Size: 16-inch (406 mm) diameter.
4. Spray Head: Independent water stream former with flow rate of 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).

Specifier: Select one of three spray head valve operation options below.

Select power source type for infrared option. Third IR power source type is Bradley's patented ndite™ sustainable technology using daylight or room lighting to eliminate need for batteries or separate electrical power source for spray head sensors.

- a. **Spray Head Valve Operation:** Infrared sensing module and solenoid with adjustable turn off delay and automatic shut-off, [with 110/24 VAC plug-in transformer] [battery operated] [with battery-free integral photovoltaic power cell].
 - b. **Spray Head Valve Operation:** Pushbutton air valve metering with adjustable timing.
 - c. **Spray Head Valve Operation:** Light-touch, 10 second auto shutoff.
5. Water Supply: [Single tempered line] [Single thermostatic mixing valve]

Specifier: If including point-of-use hot water heater option below, select 95 series for 2-bowl units and 110 series for 3-bowl units.

6. Bowl/Spray Head Color: As selected by Architect from manufacturer's full line.
7. Pedestal Enclosure Color: As selected by Architect from manufacturer's full line.
8. Accessories: Matching solid surface material: [Extensions] [Purse Shelves] [Waste Receptacles] [Splashes and Aprons] as indicated.

Specifier: Retain optional hot water heater below when required for project.

9. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX95TMLB, 40A/240VAC] [EX100TMLB, 36A/277VAC] [EX110TMLB, 46A/240VAC] [EX110TMLB, 40A/277VAC].

Specifier: Bradley Frequency® lavatory systems described below feature two individual multi-height bowls in a continuous, contemporary "wave" design deck formed of Bradley's Terreon or recycled content TerreonRE, meeting accessibility requirements while providing ergonomically-correct wash station height for other adult users. Frequency lavatories come in a variety of colors and are equipped with sensor-controlled faucets, with optional soap dispensers, thermostatic mixing valves, and point-of-use hot water heaters. Bradley also offers towel dispensers, mirrors, and waste receptacles with coordinated Frequency design features – specified in Division 10 Section "Toilet, Bath, and Laundry Accessories."

- C. ADA/ABA compliant, wall-mounted, Multi-Level Two Station Lavatory **LAV#_____**: Constructed of [recycled] solid surface material with wave-formed contoured deck, integral ergonomic multi-height bowls, and covered integral backsplash, with sensor faucets, [and liquid soap dispensers]. Unit includes waste and supply connections to wall with stop, strainer, and check

valves, and heavy-gage stainless steel support brackets, concealed by high impact polymer trap enclosure.

1. Basis of Design Manufacturer/Model: Bradley, Frequency Lavatory System Model No. [FL-2H] [FL-2L].
2. Overall Unit Size: 60 by 22 inches (1524 by 559 mm) with 2 bowls.
3. Bowl Size: Rectangular with rounded front: 17 by 13 inches (432 by 330 mm) on 30 inch (762 mm) centers.
4. Bowl Height (Standard): Low bowl: 32 inch (813 mm); High bowl: 36 inch (914 mm), with overall unit height adjustable to meet juvenile height requirements and to comply with accessibility requirements of authorities having jurisdiction.

Specifier: Faucet below is standard. See Faucet Article in this specification for other Bradley faucet options.

5. Faucet: With Infrared Sensor Metering Control[, with 110/24 VAC plug-in transformer] [battery operated].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 Series CS Faucet.**
6. Liquid Soap Dispenser: Vandal-resistant, deck-mounted infrared-controlled dispenser with removable filler collar.
 - a. Basis of Design Manufacturer/Model: **Bradley, Model No. 6334.**
7. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].

Specifier: If including point-of-use hot water heater option below, select 95 or 100 series for 2-bowl units and 110 series for 3-bowl units.

8. Bowl/deck Color: As selected by Architect from manufacturer's full line.
9. Trap Enclosure Color: As selected by Architect from manufacturer's full line.

Specifier: Retain optional hot water heater below when required for project.

10. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX95TMLB, 40A/240VAC] [EX100TMLB, 36A/277VAC] [EX110TMLB, 46A/240VAC] [EX110TMLB, 40A/277VAC]
- D. ADA/ABA compliant, wall-mounted, Multi-Level Three Station Lavatory **LAV#___**: Constructed of [recycled] solid surface material with wave-formed contoured deck, integral ergonomic multi-height bowls, and coved integral backsplash, with sensor faucets, [and liquid soap dispensers]. Unit includes waste and supply connections to wall with stop, strainer, and check valves, and heavy-gage stainless steel support brackets, concealed by high impact polymer trap enclosure.
1. Basis of Design Manufacturer/Model: Bradley, Frequency Lavatory System Model No. [FL-3H] [FL-3L].
 2. Overall Unit Size: 90 by 22 inches (2286 by 559 mm) with 3 bowls.
 3. Bowl Size: Rectangular with rounded front: 17 by 13 inches (432 by 330 mm) on 30 inch (762 mm) centers.
 4. Bowl Height (Standard): Low bowl: 32 inch (813 mm); High bowl: 36 inch (914 mm), with overall unit height adjustable to meet juvenile height requirements and to comply with accessibility requirements of authorities having jurisdiction.

Specifier: Faucet below is standard. See Faucet Article in this specification for other Bradley faucet options.

5. Faucet: With Infrared Sensor Metering Control[, with 110/24 VAC plug-in transformer] [battery operated].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 Series CS Faucet.**
6. Liquid Soap Dispenser: Vandal-resistant, deck-mounted infrared-controlled dispenser with removable filler collar.
 - a. Basis of Design Manufacturer/Model: **Bradley, Model No. 6334.**
7. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].

Specifier: If including point-of-use hot water heater option below, select 95 or 100 series for 2-bowl units and 110 series for 3-bowl units.

8. Bowl/deck Color: As selected by Architect from manufacturer's full line.
9. Trap Enclosure Color: As selected by Architect from manufacturer's full line.

Specifier: Retain optional hot water heater below when required for project.

10. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1 deg. F (0.56 deg. C), flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65 deg. F at 1 gpm (36 deg. C at 3.8 l/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX95TMLB, 40A/240VAC] [EX100TMLB, 36A/277VAC] [EX110TMLB, 46A/240VAC] [EX110TMLB, 40A/277VAC].

Specifier: Bradley Express Crescent lavatory system described below features a space-saving, crescent-shaped bowl with semi-circular wash station and integral concealed spray heads serving multiple users, a low-profile flush deck for accepting an optional soap dispenser, and an optional contoured pedestal enclosure concealing supply connections, optional transformer, and trap. ADA and TAS compliant.

- E. ADA/ABA compliant wall-mounted, [2] [3] Station Lavatory **LAV#___**: Constructed of [recycled] solid surface material with compact, crescent-shaped, low-profile deck and ledge containing concealed, vandal-resistant spray heads[and soap dispenser]. Unit includes waste and supply connections to wall with stop, strainer, and check valves[, concealed by high impact polymer access panel/trap cover].
 1. Basis of Design Manufacturer/Model: Bradley, Express Crescent Lavatory System, Model No. [CRS-2] [CRS-3].
 2. Spray Heads: Independent water stream former with flow rate of 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).
 3. Spray Head Valve Operation: Infrared sensing module and solenoid with adjustable turn off delay and automatic shut-off, [with 110/24 VAC plug-in transformer] [battery operated].
 4. Water Supply: [Tempered line] [Thermostatic mixing valve assembly] [Manual mixing valve].
 5. Bowl/deck Color: As selected by Architect from manufacturer's full line.
 6. Pedestal enclosure color: As selected by Architect from manufacturer's full line.

Specifier: Bradley Express Deck lavatory systems described below feature a continuous bowl with semi-circular wash stations, a flush deck for accepting individual wash station faucets and optional soap dispensers, and an angled pedestal enclosure concealing frame, supply connections, and trap.

- F. ADA/ABA compliant [Wall-mounted, Floor-supported,] [Wall-mounted,] [2] [3] Station Lavatory **LAV#___**: Constructed of solid surface material with integral semi-circular continuous bowls and deck, with deck mounted faucets [and liquid soap dispensers]. Unit includes waste and supply connections to wall with stop, strainer, and check valves, and heavy-

gage stainless steel support frame, concealed by high impact polymer pedestal enclosure [and scuff base].

Specifier: Faucet below is standard. See Faucet Article in this specification for other Bradley faucet options.

1. Basis of Design Manufacturer/Model: Bradley, Express Deck Lavatory System, EXD series.
2. Faucet: Low-Profile Faucet with Infrared Sensor Metering Control[, with 110/24 VAC plug-in transformer] : Basis of Design Manufacturer/Model: Bradley, Aerada 1200 Series CS Faucet [specifier insert other faucet selection].
3. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
4. Soap Dispenser: [16 oz. (473 mL)] [32 oz. (946 mL)] [stainless steel] [plastic] globe, with 4 inch (102 mm) spout.
5. Bowl/deck Color: As selected by Architect from manufacturer's full line.
6. Pedestal Enclosure Color: As selected by Architect from manufacturer's full line.

Specifier: Bradley Express® ELX-Series lavatory systems described below feature a seamless one piece Terreon or TerreonRE bowl with center contour and individual drains to create personal space, a flush deck for mounting faucets and soap dispensers, and an integral covered backsplash. The mounting bracket and integral mounting supports eliminate the need for an in-wall carrier and a high impact polymer trap enclosure fully conceals the bracket, single set of supply connections and trap.

G. ADA/ABA compliant wall-mounted [2] [3] Station Lavatory **LAV#___**: Constructed of a seamless one piece rectilinear solid surface bowl with center contour and individual drains to create personal space, integral overflows, [integral 2 ½ inch (63.5 mm) covered backsplash], [deck mounted faucets], [and liquid soap dispensers]. Unit includes supply kit – comprised of lead free supply hoses and stops. Unit includes [individual] or [combined] drain assembly – comprised of plungable 300 series stainless steel strainers, tail-piece connections and p-traps. Unit includes heavy-gage stainless steel mounting bracket, concealed by high impact polymer trap cover.

1. Basis of Design Manufacturer/Model: Bradley, Express Deck Lavatory System, ELX-Series Model No. [ELX-2] [ELX-3].
2. Overall Unit Size: [55 by 21 5/8 inch (1397 by 549 mm) with 2 bowls] [85 by 21 5/8 inch (2286 by 549 mm) with 3 bowls].
3. Backsplash: [integral 2 ½ inch (63.5 mm) covered backsplash] [less backsplash].
4. Drain Connection: [chrome-plated combined waste assembly] [polypropylene combined waste assembly] [chrome-plated individual waste assembly] [polypropylene individual waste assembly].
5. Faucet: Low profile Faucet with infrared sensing metering control [with 110/24 VAC plug-in transformer].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 Series CS Faucet** [specifier insert other faucet selection (see Faucet section 2.4 for other Bradley options)].
6. Liquid Soap Dispenser Drilling: [Shared soap drilling] [Personal soap drilling].
7. Liquid Soap Dispenser: Deck-mounted, sensor operated, chrome-plated plastic, with LED battery and soap level indicators [with battery box and batteries] [with single dispenser 120VAC powerpack] [with 4 dispenser 120VAC powerpack] [2000 shot soap]
 - a. Basis of Design Manufacturer/Model: **Bradley, Model 6315** [specifier insert other soap dispenser selection (see Soap Dispenser Section 2.5 for other Bradley options)].
8. Water Supply: [Single tempered line assembly] [Thermostatic mixing valve assembly].
9. Bowl/Deck Color: As selected by Architect from manufacturer's full line.
10. Trap enclosure Color: [Coal].

Specifier: Retain optional hot water heater below when required for project.

11. Hot Water Heater: Thermostatic electric tankless water heater with micro-processing temperature control providing temperature accuracy of +/- 1°F (0.56°C) flow switch activated, with replacement cartridge element, providing minimum temperature rise of 65°F at 1 gpm (36°C at 3.8L/m).
 - a. Basis of Design Manufacturer/Model: Bradley, Model [EX95TMLB, 40/240 VAC] [EX100TMLB, 36A/277VAC].

Specifier: Bradley Terreon Lavatory Deck described below features integral bowls, deck accepting individual wash station faucets and optional soap dispensers, and an optional trap cover concealing supply connections and trap. Deck extensions with or without waste receptacles are optional. Terreon Lavatory Deck may be supported by wall mount brackets (supplied), or by using in-wall carriers or wall cleats (supplied by others).

- H. ADA/ABA compliant wall-mounted Lavatory Deck **LAV#___**: Constructed of [recycled] solid surface material with integral oval bowls, covered backsplash[, and side splashes], with deck mounted faucets[and liquid soap dispensers]. Unit includes waste and supply connections to wall[, concealed by high impact polymer trap cover].
 1. Basis of Design Manufacturer/Model: Bradley, Terreon Lav Deck, 3010-series.
 2. Configuration: [1] [2] [3] [4] station deck, [with extended deck as indicated].
 3. Bowl Size: 16 by 13 by 5 3/4 inches (406 by 330 by 145 mm) on 30-inch (762 mm) centers.

Specifier: Faucet below is standard. See Faucet Article in this specification for other Bradley faucet options.

4. Faucet: Low-Profile Faucet with Capacitive Sensor Metering Control[, with 110/24 VAC plug-in transformer].
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 CS Series.**
5. Water Supply: [Single tempered line] [Thermostatic mixing valve assembly].
6. Soap Dispenser: [16 oz. (473 mL)] [32 oz. (946 mL)] [stainless steel] [plastic] globe, with 4 inch (102 mm) spout[, sensor-operated].
7. Deck Support: [Stainless steel mounting brackets] [In-wall carriers] [Wall cleats] [Casework specified elsewhere].
8. Deck Color: As selected by Architect from manufacturer's full line.
9. Bowl Color: [Match deck color] [As selected by Architect from manufacturer's full line].
10. Pedestal Enclosure Color: As selected by Architect from manufacturer's full line.

2.4 FAUCETS

Specifier: Retain descriptions of required faucets; if more than one faucet is required, insert faucet designation in paragraph below and use faucet designation in Lavatory Deck Article above.

- A. Electronic Lavatory Faucets:
 1. Sensor-Operated, Low Profile Metering Faucet with Infrared Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant.
 - a. Basis of Design Manufacturer/Model: **Bradley, Aerada 900 Series Futura.** (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass, with [centershank] [4 inch (102 mm) centerset] [8 inch (203 mm) centerset] mounting [with trim plate].

- c. Aerator: Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).
 - d. Water Supply: [Single tempered line] [Manual mixing valve, deck-mounted] [Single thermostatic mixing valve] [Remote thermostatic mixing valve assembly for [4] [8] [12] faucets [with surface-mounted] [with recessed] cabinet].
 - e. Sensor Module: Water-conserving, vandal-resistant [adjustable dual sensor unit] [adaptive single sensor unit] with timing turn-off delay and stationary object automatic timed cutoff.
 - f. Power Supply: [Single faucet 110VAC/24VDC, 50/60Hz plug-in transformer with anti-theft bracket] [Remote transformer for [4] [8] [12] faucets] [Existing supply].
2. Sensor-Operated, Gooseneck Metering Faucet with Infrared Control **FCT#___**: Vandal-resistant accessible faucet, meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant.
- a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1000 Series Gooseneck.** (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid forged brass spout base, with [centershank] [4 inch (102 mm) centerset] mounting [with trim plate].
 - c. Aerator: Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa). Provide installer-optional 1.6 gpm (0.100 L/s) laminar flow insert with plain spray ring and 2.2 gpm (0.139 L/s) aerator insert.
 - d. Water Supply: [Single tempered line] [Manual mixing valve, deck-mounted] [Single thermostatic mixing valve].
 - e. Sensor Module: Water-conserving, vandal-resistant sensor unit with programmable sensor range, with field-configurable timing turn-off delay and stationary object automatic timed cutoff.
 - f. Power Supply: [Battery operated] [Single faucet 110VAC/6VDC, 50/60Hz plug-in transformer with anti-theft bracket] [Existing supply].
3. Sensor-Operated, High Profile Metering Faucet with Infrared Control and External Temperature Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant.
- a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1100 Series High Arc.** (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass, with [centershank] [4 inch (102 mm) centerset mounting with anti-rotation trim plate].
 - c. Temperature Control: ADA-compliant lever on faucet body.
 - d. Aerator: Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).
 - e. Sensor Module: Water-conserving, vandal-resistant adjustable sensor unit with timing turn-off delay and stationary object automatic timed cutoff, with battery diagnostic light, serviceable from above deck.
 - f. Power Supply: Battery-operated single faucet with 6V lithium battery [and single 115VAC plug-in adapter] [and multiple unit 115VAC plug-in adapter].
4. Capacitive-Sensor-Operated, Low Profile Metering Faucet with Infrared Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. IPC/cUPC-certified by IAPMO. ADA/ANSI A117.1 compliant.
- a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 Series CS.** (LD-3010 and ELX-Series Only)
 - b. Body: Polished chrome plated commercial solid cast brass, with [centershank] [4 inch (102 mm) centerset] [8 inch (203 mm) centerset] mounting [with trim plate].
 - c. Aerator: Laminar Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).

- d. Water Supply: [Single tempered line] [Manual mixing valve, deck-mounted] [Single thermostatic mixing valve].
 - e. Sensor Module: Water-conserving, vandal-resistant capacitive-sensing [adjustable sensor unit] with omni-directional sensing zone, timing turn-off delay and stationary object automatic timed cutoff.
 - f. Power Supply: Battery-operated with below-deck-mounted battery box [and single faucet 100/120VAC/6VDC plug-in adapter] [and 6-faucet 100/120VAC/6VDC plug-in adapter].
5. Capacitive-Sensor-Operated, Gooseneck Metering Faucet with Infrared Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. IPC/cUPC-certified by IAPMO. ADA/ANSI A117.1 compliant.
- a. Basis of Design Manufacturer/Model: **Bradley, Aerada 1200 Series CS Gooseneck**. (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass, with [centershank] [4 inch (102 mm) centerset] [8 inch (203 mm) centerset] mounting [with trim plate].
 - c. Aerator: Laminar Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 552 kPa).
 - d. Water Supply: [Single tempered line] [Manual mixing valve, deck-mounted] [Single thermostatic mixing valve].
 - e. Sensor Module: Water-conserving, vandal-resistant capacitive-sensing [adjustable sensor unit] with omni-directional sensing zone, timing turn-off delay and stationary object automatic timed cutoff.
 - f. Power Supply: Battery-operated with below-deck-mounted battery box [and single faucet 100/120VAC/6VDC plug-in adapter] [and 6-faucet 100/120VAC/6VDC plug-in adapter].
6. Capacitive-Sensor-Operated Faucet with Remote Tempering Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant.
- a. Basis of Design Manufacturer/Model: **Bradley, CAP-DCA**. (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass spout.
 - c. Aerator: Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 522 kPa)
 - d. Tempered Water Supply: [Single tempered line] [Manual mixing valve, deck mounted] [Single thermostatic mixing valve].
 - e. Sensor Module: Water-conserving, vandal-resistant adjustable sensor unit with timing turn-off delay and stationary object automatic timed cutoff, with battery diagnostic audible signal, remote serviceable.
 - 1. Adjustable Sensing Distance: 0 to 3-1/2 inch (0 to 88.9 mm).
 - f. Power Supply: [120/24 VAC plug-in transformer] [Battery-operated]

Specifier: Retain thermostatic mixing valve if required for project.
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- g. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with stop/strainer/check valves, and flexible stainless steel connectors.
7. IR Sensor-Operated Faucet with Infrared Control and External Tempering Control **FCT#___**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant
- a. Basis of Design Manufacturer/Model: **Bradley, IR-DCD**. (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass spout.
 - c. Aerator: Flow rate 0.5 gpm (0.032 L/s) at operating range of 20 to 80 psi (138 to 522 kPa)

- d. Tempered Water Supply: [Single tempered line] [Manual mixing valve, deck mounted] [Single thermostatic mixing valve].
- e. Sensor Module: Water-conserving, vandal-resistant adjustable sensor unit with timing turn-off delay and stationary object automatic timed cutoff, with battery diagnostic signal light, remote serviceable.
 - 1. Adjustable Sensing Distance: 3-1/8 to 11-3/4 inches (80 to 300 mm).
- f. Power Supply: Battery operated single faucet with six: 1.5V "AA" cell batteries.

Specifier: Retain thermostatic mixing valve if required for project.

- g. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with stop/strainer/check valves, and flexible stainless steel connectors.
- 8. IR Sensor-Operated Faucet with Infrared Control and External Tempering Control **FCT#__**: Vandal-resistant accessible faucet meeting ASME A112.18.1/CSA B125. ADA/ANSI A117.1 compliant
 - a. Basis of Design Manufacturer/Model: **Bradley, IR-DCG**. (LD-3010 and ELX-Series only)
 - b. Body: Polished chrome plated commercial solid cast brass spout.
 - c. Aerator: Flow rate 0.5 gpm (1.9 L/Min) at operating range of 20 to 80 psi (138 to 522 kPa)
 - d. Tempered Water Supply: [Single tempered line] [Manual mixing valve, deck mounted] [Single thermostatic mixing valve].
 - e. Sensor Module: Water-conserving, vandal-resistant adjustable sensor unit with adjustable timing turn-off delay and stationary object automatic timed cutoff, with battery diagnostic signal light, remote serviceable.
 - f. Sensing Distance: 5 inches (127 mm).
 - g. Power Supply: [120/24 VAC plug-in transformer] [Battery-operated]

Specifier: Retain thermostatic mixing valve if required for project.

- h. Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with stop/strainer/check valves, and flexible stainless steel connectors.
- i.

2.5 SOAP DISPENSERS

- A. Sensored Soap Dispenser: Deck-mounted, sensor-operated, chrome-plated plastic, with LED battery and soap level indicators, [with battery box and batteries] [with single dispenser 120VAC powerpack] [with 4 dispenser 120VAC powerpack], [27 oz (798 mL) capacity bottle] [1000 shot soap].
 - 1. Basis of Design Manufacturer/Model: **Bradley, Model 6315-KT0000**. (LD-3010 and ELX-Series Only)
- B. Manual Soap Dispenser: Deck-mounted [16 oz. (473 mL) plastic] [32 oz. (946 mL) plastic] globe, with 4 inch (102 mm) spout.
 - 1. Basis of Design Manufacturer/Model: **Bradley, Model 6324**. (LD-3010 and ELX-Series only)
- C. Manual Soap Dispenser: Deck-mounted 16 oz. (473 mL) plastic globe, with 3.5 inch (88.90 mm) spout.
 - 1. Basis of Design Manufacturer/Model: **Bradley, Model 6334**. (LD-3010 and ELX-Series only)

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Assemble fixtures and associated fittings and trim in accordance with manufacturer's instructions.
- B. Install fixture supports attached to building structure for fixtures requiring supports.
- C. Install fixtures onto waste-fitting seals or flanges and attach to supports or building structure.
- D. Install fixtures level, plumb, and firmly in place in accordance with manufacturer's rough-in drawings.
- E. Install water supply piping to each fixture requiring water supply connection. Provide stop on each supply in readily-serviced location. Fasten supply piping to supports or substrate.
- F. Install trap and waste piping to each fixture requiring sanitary system connection.
- G. Install escutcheons at exposed piping penetrations in finished locations and within cabinets.
- H. Seal joints between fixtures and walls, floors, and countertops with mildew-resistant silicone sealant.

3.2 CLEANING AND PROTECTION

- A. Repair or replace defective work, including damaged fixtures and components.
- B. Clean unit surfaces, test fixtures, and leave in ready-to-use condition.
- C. Install new batteries in battery-operated devices at time of Substantial Completion.
- D. Turn over keys, tools, maintenance instructions, and maintenance stock to Owner.
- E. Protect units with water-resistant temporary covering. Do not allow temporary use of plumbing fixtures unless approved in writing by Architect. Remove protection at Substantial Completion and dispose.

3.3 TESTING AND ADJUSTING

- A. Set field-adjustable temperature set points of temperature-actuated water mixing valves. Adjust set point within allowable temperature range.
- B. Test and adjust installation.
- C. Remove and replace malfunctioning thermostatic mixing valves and retest.

END OF SECTION