1 General

1.01 Section Includes

.1 Plumbing fixtures and related components.

1.02 Submittals

.1 Submit product data sheets (fixture cuts) for all plumbing fixtures and fittings, including accessories.

.2 Product Data: Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports and indicate materials and finishes, dimensions, construction details, and flow-control rates for each type of fixture indicated.

.3 Wiring Diagrams: Power, signal, and control wiring.

.4 Submit fixture manufacturer's standard colour charts for all fixtures where colours are available, but a particular colour is not specified.

.5 [Submit proof of WaterSense labelling for all applicable plumbing fixtures in accordance with Section 01 35 66.]

1.03 Closeout Submittals

.1 Operation and maintenance data.

2 Products

2.01 Manufacturers

.1 Subject to compliance with requirements, manufacturers that may be incorporated into the Work include, but are not limited to, following:

.1 Flush Valves:

.1 Sloan;

.2 Delta Commercial;

.3 Zurn Industries;

.4 Moen Commercial.

.2 Plumbing Brass:

.1 Sloan;

.2 Acorn Engineering;

.3 American Standard;

.4 Delta Commercial;

.5 Chicago Faucet;

.6 Moen Commercial.

.3 Stainless Steel Sinks:

.1 Franke Commercial;

.2 Novanni Commercial;

.3 Aristaline;

.4 Arch Metal Ind.

.4 Mop Sinks:

.1 Stern Williams;

.2 Acorn Engineering;

.3 Zurn Industries.

.5 Emergency Eye Wash and Emergency Showers:

.1 Haws;

.2 Speakman;

.3 Bradley.

.6 Drain Fittings, Angle Supplies, and Traps:

.1 McGuire;

.2 American Standard;

.3 Delta Commercial;

.4 Zurn Industries.

.7 Fixture Carriers:

.1 Watts Industries;

.2 Jay R. Smith;

.3 Zurn Industries.

.8 Hose Bibbs:

.1 Jay R. Smith;

.2 Zurn Industries.

.9 Water Closets, Lavatories, and Urinal:

.1 American Standard;

.2 Zurn Industries;

.3 Kohler.

.10 Thermostatic Mixing Valves:

.1 Lawler;

.2 Delta Commercial;

.3 Leonard.

.11 Shower and Associated Trim:

.1 American Standard;

.2 Delta Commercial;

.3 Zurn Industries;

.4 Moen Commercial.

.12 Toilet Seats:

.1 Olsonite;

.2 Centoco;

.3 Bemis Commercial.

.13 Electronic “No Touch” Flush Valves:

.1 Sloan;

.2 Delta Commercial;

.3 Zurn Industries;

.4 Moen Commercial.

.14 Electronic “No Touch” Faucets:

.1 Sloan;

.2 Delta Commercial;

.3 Zurn Industries;

.4 Moen Commercial.

2.02 General Re: Plumbing Fixtures and Fittings

.1 Fixtures and fittings, where applicable, are to be in accordance with requirements of CAN/CSA B45 Series, General Requirements for Plumbing Fixtures, including supplements, ASME A112.1.18.1/CSA B125.1, Plumbing Supply Fittings, and CSA B125.3, Plumbing Fittings.

.2 Barrier-free fixtures and fittings are to be in accordance with governing Code requirements.

.3 Unless otherwise specified, vitreous china, porcelain enamelled, and acrylic finished fixtures are to be white.

.4 Unless otherwise specified, fittings and piping exposed to view are to be chrome plated and polished.

.5 Fittings located in areas other than private washrooms are to be vandal-proof.

.6 Fixture carriers are to be suitable in all respects for the fixture they support and construction in which they are located.

.7 Floor flanges for floor mounted water closets are to be cast iron or brass, secured to floor to prevent movement and complete with a wax seal and brass or stainless steel bolts, nuts, and washers. Plastic floor flanges will not be acceptable.

.8 Proper seal to mate with fixture carrier flange and produce a water-tight installation.

.9 Exposed traps for fixtures not equipped with integral traps, such as lavatories, are to be adjustable chrome plated cast brass "P" traps with cleanouts, minimum 17 gauge chrome plated tubular extensions, and chrome plated escutcheons, all to suit fixture type and drain connection.

.10 Concealed traps for fixtures not equipped with integral traps, such as counter sinks, are to be adjustable cast brass with cleanout plugs, all to suit fixture type and drain connection.

.11 Exposed supplies for fixtures which do not have supply trim/fittings with integral stops, i.e. lavatories, are to be solid chrome plated brass angle vales with screwdriver stops for public areas, wheel handle stops for private areas, flexible stainless steel risers, and stainless steel or chrome plated steel escutcheons, all arranged and sized to suit fixture.

.12 Water piping as specified, complete with ball type shut-off valves as specified with water piping, or Dahl Bros. Canada Ltd. ¼ turn Mini Ball Valves.

2.03 Plumbing Fixtures and Fittings

.1 Plumbing fixtures and fittings are to be in accordance with the following:

.1 [ ].

2.04 Caulking

.1 General Electric Series SCS-1200 Silicone Construction Sealant or Dow Corning 780 silicone rubber sealant with primers as recommended by sealant manufacturer. Caulking colour(s) for coloured fixtures other than white, if any, will be selected by the Consultant from sealant manufacturer’s standard colour range.

2.05 [LEED Minimum Flow Rates]

.1 WaterSense labelling for toilets, urinals, private lavatory facets, and showerheads in accordance with the following table:

Fixture or Fitting	Maximum Installed flush or flow rate	Threshold below code baseline
Toilet (water closet)	4.8 LPF (1.28 GPF)	20%
Urinal	1.9 LPF (0.50 GPF)	50%
Public lavatory (restroom) faucet	1.5 LPM (0.40 GPM)	20%
Private lavatory faucets	5.7 LPM (1.50 GPM)	32%
Kitchen faucet	6.7 LPM (1.75 GPM)	20%
Showerhead	7.6 LPM (2.00 GPM)	20%

3 Execution

3.01 Demolition

.1 Refer to demolition requirements specified in Section 20 05 05 – Selective Demolition for Mechanical.

3.02 Installation of Plumbing Fixtures and Fittings

.1 Provide required plumbing fixtures and fittings.

.2 Where new fixtures and fittings are to be connected to existing piping, include for required piping revisions.

.3 Connect plumbing fixtures and fittings with piping sized in accordance with drawing schedule. Refer to manufacturer's published connection (rough-in) requirements. Where manufacturer requires piping connection larger than shown below, provide piping accordingly:

Fixture and/or Fitting	Drain Size mm (in)	Vent Size mm (in)	DHW Size mm (in)	DCW Size mm (in)	Temp Water Size mm (in)
Water Closets Flush Valve Type	100 (4)	38 (1-½)	-	25 (1)	-
Urinals	75 (3)	38 (1-½)	-	25 (1)	-
Lavatories	32 (1-¼)	32 (1-¼)	12 (½)	12 (½)	-
Lavatories (Electronic Faucet)	32 (1-¼)	32 (1-¼)	12 (½)	12 (½)	12 (½)
Counter Sinks	38 (1-½)	32 (1-¼)	12 (½)	12 (½)	-
Shower Valves and Heads	-	-	12 (½)	12 (½)	12 (½)
Shower Stalls	50 (2)	38 (1-½)	12 (½)	12 (½)	12 (½)
Prefab. Mop Sinks with Drain	75 (3)	38 (1-½)	20 (¾)	20 (¾)	-
Emergency Eye Wash	-	-	-	-	12 (½)
Emergency Shower	-	-	-	-	25 (1)

.4 Confirm exact location of plumbing fixtures and trim prior to roughing-in. Refer to architectural plan and elevation drawings.

.5 When installation is complete, check, and test operation of each fixture and fitting. Adjust or repair as required.

.6 For barrier-free fixtures, comply with mounting height and other requirements of governing Code(s).

.7 For barrier-free water closets utilizing manual flush controls, controls to be installed so that it is operable from the transfer side of the fixture.

.8 Supply templates for counter mounted fixtures and trim and hand to trades who will cut the counter. Ensure openings in counter are properly located.

.9 Locate control panels for electronic faucets under lavatories and recessed into wall. Coordinate panel installations with electrical trade who will provide 115 V power wiring to panels. Install flexible conduit (supplied with box) and extend cord from faucet through the flexible conduit to control box. Connect hot and cold water piping to mixing valve in each box, and tempered water piping from each mixing valve to faucet. Set mixing valve maximum temperature limit stops to 43°C (110°F) after domestic water systems (hot and cold) are complete. Ensure each programmable controller is properly programmed and water off after deactivation is set for 3 seconds.

.10 For electronic flush valves, locate transformer in ceiling space above electronic units to be served. Coordinate locations with electrical trade who will provide 120 V line supply to transformers. Provide low

voltage wiring from transformers to each electronic flush valve terminal point. Electrical line supply and low voltage wiring is to be concealed and access to transformer must be provided for servicing.

.11 Protect shower bases from damage during construction and finishing work.

.12 Confirm exact mixing valve and shower head locations prior to roughing-in.

.13 Install refrigerated drinking fountains in accordance with manufacturer's instructions. Plug into a wall receptacle provided as part of electrical work. Coordinate receptacle installation with electrical trade on site.

.14 For emergency showers, install so bottom of shower head is approximately 2 m (82 in) above floor, and approximately 400 mm (16 in) out from the wall. Wall mount mixing valve approximately 1.5 m (5 ft) above floor and adjacent shower head. Set valve temperature limit stop to 35°C (95°F). Ensure valve is open and exposed piping is chrome plated or stainless steel.

.15 Install eye wash fixtures in accordance with manufacturer's instructions. Ensure exposed piping is painted.

.16 Wall mount mixing valves for emergency fixtures approximately 1.5 m (5 ft) above floor and secure in place. Check and confirm valve operation and temperature of tempered water supply. Provide cabinets. Identify each cabinet and hand 3 identified cabinet keys to Consultant prior to Substantial Performance of the Work.

.17 Set mop service basins on floor over drain piping and connect to roughed-in service. Install wall supply trim and any accessories specified.

3.03 Caulking at Plumbing Fixtures and Fittings

.1 Caulk around plumbing fixtures and fittings where they contact walls, floors, and any other building surface.

.2 Clean areas/surfaces to be caulked and prime in accordance with sealant manufacturer's instructions. Where damage to a building surface may occur, mask surface to prevent damage and ensure a clean exact edge to the caulking bead.

.3 Apply caulking using a gun with proper size and shape of nozzle and force sealant into joints to ensure good surface contact and a smooth and even finished bead of sealant.

.4 If joints have been masked sealant may be tooled in a continuous stroke to obtain complete void filling. Remove masking tape immediately after tooling and before sealant begins to skin.

3.04 Dishwasher Connections

.1 Provide roughed-in water and drain connections for Owner supplied dishwasher consisting of:

.1 15 mm (½") dia. domestic hot water connection with a Dahl "Mini-Ball" valve with hose end and water hammer arrestor;

.2 40 mm (1-½") dia. DWV copper drain connection with "P" trap and cleanout plug.

3.05 Clothes Washer Connections

.1 Provide roughed-in water and drain connections for Owner supplied clothes washer consisting of:

.1 15 mm (½") dia. piping connection for both hot and cold water, each terminated in a Dahl "Mini-Ball" Valve with hose end and water hammer arrestor;

.2 50 mm (2") dia. standing waste with a height to suit the washer drain and complete with a “P” trap.

End of Section