

Part 1 General

1.1 SECTION INCLUDES

- .1 Water closets.
- .2 Lavatories.
- .3 Sinks.
- .4 Service sinks.
- .5 Drinking fountains.

1.2 REFERENCES

- .1 CSA B651 – Barrier-free Design.
- .2 ANSI Z124.1 - Gel-Coated Glass-Fibre Reinforced Polyester Resin Bathtub Units.
- .3 ANSI Z124.2 - Gel-Coated Glass-Fibre Reinforced Polyester Resin Shower Receptor and Shower Stall Units.
- .4 ANSI Z358.1 - Emergency Eye Wash and Shower Equipment.
- .5 ARI 1010 - Self-Contained Mechanically Refrigerated Drinking Water Coolers.
- .6 ASME A112.6.1 - (Floor Affixed) Supports for Off-the-Floor Plumbing Fixtures for Public Use.
- .7 ASME A112.18.1 / CSA-B125.1-05- Plumbing Fixture Fittings.
- .8 ASME A112.19.1 / CSA B45.2-08 - Enamelled Cast Iron Plumbing Fixtures.
- .9 ASME A112.19.2 / CSA B45.1-08 - Vitreous China Plumbing Fixtures.
- .10 ASME A112.19.3 / CSA B45.4-08- Stainless Steel Plumbing Fixtures (Designed for Residential Use).
- .11 ASME A112.19.4 - Porcelain Enamelled Formed Steel Plumbing Fixtures.
- .12 ASME A112.19.5 - Trim for Water-Closet Bowls, Tanks, and Urinals.
- .13 NFPA 70 - National Electrical Code.
- .14 NBCC 2010 - National Building Code of Canada
- .15 NPCC 2010 – National Plumbing Code of Canada
- .16 NFCC 2010 – National Fire Code of Canada

1.3 SUBMITTALS FOR REVIEW

- .1 Section 21 05 00: Submission procedures.
- .2 Product Data: Provide catalogue illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.

1.4 CLOSEOUT SUBMITTALS

- .1 Section 21 05 00: Submission procedures.
- .2 Maintenance Data: Include fixture trim exploded view and replacement parts lists.
- .3 Warranty Documentation: Submit manufacturer warranty and ensure forms have been completed in The City's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.6 REGULATORY REQUIREMENTS

- .1 Products Requiring Electrical Connection: Listed and classified by CSA as suitable for the purpose specified and indicated.

1.7 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 21 05 00: Transport, handle, store, and protect products.
- .2 Accept fixtures on site in factory packaging. Inspect for damage.
- .3 Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

Part 2 Products

2.1 FLUSH VALVE WATER CLOSETS – FLOOR-MOUNTED

- .1 WC-1:
 - .1 **Manufacturer: Kohler Model K-4405.**
 - .2 **Other acceptable manufacturers offering equivalent products.**
 - .1 **American Standard.**
 - .2 **Crane.**
 - .3 **Contrac.**
 - .4 **Substitutions: Refer to Section 21 05 00.**
 - .3 **ASME A112.19.2 / CSA B45.1:**

- .1 Substitutions: Refer to Section 21 05 00.
- .3 Stainless steel bar uses #4 gloss with flanges and covers.
- .4 Antique white solid core plastic laminate 10"x4" panel back.
- .5 Concealed snap flanges and mounting hardware included.
- .6 Provide adequate backing in wall for support and comply to local codes for barrier free requirements.

2.2 WALL HUNG URINALS

- .1 UR-1:
 - .1 Manufacturer: Kohler Model K-4904-ET.
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 American Standard.
 - .2 Crane.
 - .3 Contrac.
 - .4 Substitutions: Refer to Section 21 05 00.
 - .3 ASME A112.19.2 / CSA B45.1:
 - .1 Vitreous china,
 - .2 Wall hung washout urinal with shields,
 - .3 Integral trap,
 - .4 19 mm (3/4 inch) top spud,
 - .5 Steel supporting hanger.
 - .4 ADA / CSA B651:
 - .1 Barrier-free compliant when installed at proper height. Refer to drawings.
- .2 Exposed Sensor Operated Flush Valve:
 - .1 Manufacturer: Delta Model 81T231BTA.
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 Powers.
 - .2 Substitutions: Refer to Section 21 05 00.
 - .3 ASME A112.18.1:
 - .1 Exposed chrome plated, battery-operated diaphragm type with infrared sensor for 19mm (3/4 inch) top-inlet urinal fixture,
 - .2 Four AA batteries, factory-installed, low battery indicator,
 - .3 Vandal-resistant cover screw,
 - .4 Metal "non hold open" handle,
 - .5 Integral screwdriver stop,
 - .6 Vacuum breaker,
 - .7 Cover tube and SS wall flange, spud flange and sput nut.
- .3 Wall Mounted Carrier:
 - .1 Manufacturer: Mifab.
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 Zurn.

- .2 Substitutions: Refer to Section 21 05 00.
- .3 ASME A112.6.1:
 - .1 Cast iron and steel frame with two structural steel legs,
 - .2 Lugs for floor and wall attachment,
 - .3 Threaded fixture studs for fixture hanger to bearing studs.

2.3 LAVATORIES

- .1 (LAV-1)Steel Counter Top Basin:
 - .1 Manufacturer: Franke Model OV1317U/5.
 - .1 Substitutions: Refer to Section 21 05 00.
 - .2 ASME A112.19.3:
 - .1 Construction: 18-10 Stainless steel, type 304, 18 gauge,
 - .2 Undermount Vanity
 - .3 Mirror-finished rim, satin-finished bowl, undercoated.
 - .4 1-1/4" waste fitting.
 - .5 290 x 460 x 130 mm (11-7/16 x 18 x 5 inches)
 - .6 Integral back overflow,
 - .7 Seal of putty, caulking, or concealed vinyl gasket.
 - .3 ADA / CSA B651:
 - .1 Barrier-free compliant when installed in a 533mm (21 inch) minimum depth countertop.
- .2 (LAV-2) Vitreous China Wall Hung Basin:
 - .1 Manufacturer: Kohler Model K-1728.
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 American Standard.
 - .2 Crane.
 - .3 Contrac.
 - .4 Substitutions: Refer to Section 21 05 00.
 - .3 ASME A112.19.2 / CSA B45.1:
 - .1 Vitreous china wall hung lavatory,
 - .2 48.9 x 43.8 mm (19-1/4 x 17-1/4 inch),
 - .3 Ledge back,
 - .4 Drillings on 100 mm (4 inch) centres,
 - .5 Rectangular basin and splash lip,
 - .6 Integral front overflow.
 - .7 Angle valve screwdriver stop,
 - .8 Chrome-plated copper supplies.
 - .4 ADA / CSA B651:
 - .1 Barrier-free compliant.
- .3 Lavatory Faucet - Manual:

- .1 Manufacturer: Delta Model 22C151.
- .2 Other acceptable manufacturers offering equivalent products.
 - .1 Substitutions: Refer to Section 21 05 00.
- .3 ASME A112.18.1:
 - .1 Single Handle Lavatory Faucet,
 - .2 Ceramic cartridge with high temperature rotational limit stop,
 - .3 Cast centerset with less Pop-Up,
 - .4 3 hole installation, 146mm (5.75") long reach on spout,
 - .5 Metal hold-down package,
 - .6 Washerless, Colour coded plug button on handle for hot/cold identification,
 - .7 Integrated volume and temperature control,
 - .8 Chrome Finish.
 - .9 Outlet: 0.5 GPM (1.9 L/min) - vandal resistant.
 - .10 Handle#: 1 – Vandal-resistant 89mm (3 1/2") lever handle - ADA compliant-colour indexed - vandal resistant (VR) screw.
- .4 Accessories:
 - .1 Chrome plated 1.3 mm (17 gauge) brass P-trap with clean-out plug and arm with escutcheon.
 - .2 Offset waste with perforated open strainer.
 - .3 Angle valve screwdriver stop,
 - .4 Chrome-plated copper supplies.
- .5 Wall Mounted Carrier:
 - .1 Manufacturer: Mifab Model MC-41
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 Zurn.
 - .2 Substitutions: Refer to Section 21 05 00.
 - .3 ASME A112.6.1:
 - .1 Cast iron and steel frame with two structural steel legs,
 - .2 Lugs for floor and wall attachment,
 - .3 Concealed arm supports,
 - .4 Bearing plate and studs.

2.4 SINKS (SK-1)

- .1 Single Compartment Bowl:
 - .1 Manufacturer: Kindred Commercial UCS4608/316P-1
 - .1 Substitutions: Refer to Section 21 05 00.
 - .2 ASME A112.19.3:
 - .1 18-8 stainless steel sink, 18 gauge, satin finished bowl,
 - .2 Type 316 stainless steel,
 - .3 Undermount
 - .4 Fully undercoated sink,

- .5 3-1/2" (89mm) Type 316 basket Center waste location,
 - .6 3 1/2" (89mm) type 316 stainless steel crumb cup strainer with 1 1/2" type 316 stainless steel tailpiece.
- .2 Trim:
- .1 Manufacturer: Delta Model 100LF-HDF.
 - .1 Substitutions: Refer to Section 21 05 00.
 - .2 ASME A112.18.1:
 - .1 Single-control brass deckmount faucet,
 - .2 3-hole 203mm (8"),
 - .3 cast brass body, 221mm (8 11/16") tubular swing spout with 180 degree rotation,
 - .4 1.5 gpm (5.7L/min) aerator.
 - .3 NSF 61
 - .1 Lead Free compliant
 - .4 Manufacturer: Delta Model 26C3154.
 - .1 Substitutions: Refer to Division 01.
 - .5 ASME A112.18.1:
 - .1 Two handle brass deckmount faucet,
 - .2 3-hole 203mm (8"),
 - .3 Heavy Duty cast brass body, 203mm (8") swing spout with 360 degree rotation,
 - .4 1.9L/min (0.5gpm) aerator.
- .3 Accessories:
- .1 Chrome plated 1.3 mm (17 gauge) brass P-trap with clean-out plug and arm with escutcheon,
 - .2 Angle valve screwdriver stop,
 - .3 Chrome-plated copper supplies.

2.1 **ELECTRIC WATER COOLERS**

- .1 Combination Bi-Level Drinking Fountain & Bottle Filler:
- .1 Manufacturer: Elkay Model LZSTL8WSLK.
 - .1 Substitutions: Refer to Section 21 05 00.
 - .2 Bi-Level Filtered Cooler with Bottle Filling Station
 - .3 Unit shall provide 8.0 gph of 50°F water at 90°F ambient and 80°F inlet water.
 - .4 Bottle filling unit shall include an electronic sensor for no-touch activation with an automatic 30-second shut-off timer.
 - .5 Shall provide 1.1-1.5 gpm flow rate with laminar flow to minimize splashing.
 - .6 Shall include antimicrobial protected plastic components to prevent mold and mildew.
 - .7 Cooler unit shall have pushbar activation and water-efficient Stream-Saver™ bubbler.

- .8 Shall include the WaterSentry® Plus filter, certified to NSF/ANSI 42 and 53 for lead reduction, with visual monitor to indicate when replacement is necessary.
- .9 Bottle Filling unit shall meet ADA guidelines for parallel approach.
- .10 Cooler shall meet ADA guidelines for frontal or parallel approach.
- .11 Complete with 3 pack replacement filter, and vandal resistant streamSaver bubbler.
- .12 1-1/4" P-trap, SS braided supply with stops.
- .13 Electrical: Hermetically sealed, reciprocating type 115V, 60Hz single phase compressor.
- .14 2 m (6 foot) cord and plug for connection to electric wiring system including grounding connector.

2.2 SERVICE SINKS

- .1 Mop Sink:
 - .1 Manufacturer: American Standard PFMB2424S 24" x 24" x 10" (610 x 610 x 254 mm)
 - .2 Other acceptable manufacturers offering equivalent products.
 - .1 Zurn.
 - .3 Configuration:
 - .1 Size: 600 x 600 x 250 mm (24 x 24 x 10 inch) high,
 - .2 Floor mounted molded stone mop service basin, with 832 hose and holder, 889 cc. mop hanger, and PFBG24V (24") vinyl bumper guard.
 - .3 Stainless steel strainer.
- .2 Trim:
 - .1 Manufacturer: Delta Model 28T2383.
 - .1 Not permitted.
 - .2 ASME A112.18.1
 - .1 Polished chrome wallmount service faucet with rigid spout, 8" centres, cast brass construction, chrome-plated.
 - .2 Two handle with integral check stops, polished chrome plated finish, lever-blade handles.
 - .3 Long rigid spout with pail hook and adjustable top wall brace, pail hook and 3/4" hose thread on spout.
 - .4 Body mounted angle vacuum breaker, garden hose end outlet on spout.
 - .5 Vacuum breaker, integral stops.
- .3 Accessories:
 - .1 Stainless Steel Wall Guard Set
 - .2 1.5 m (5 feet) of 13 mm (1/2 inch) diameter plain end reinforced rubber hose,
 - .3 Hose clamp hanger,
 - .4 Mop hanger.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- .3 Verify that electric power is available and of the correct characteristics.
- .4 Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.2 PREPARATION

- .1 Rough-in fixture piping connections to minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.3 INSTALLATION

- .1 Install to manufacturer's instructions.
- .2 Install each fixture with trap, easily removable for servicing and cleaning.
- .3 Provide chrome plated rigid supplies to fixtures with screwdriver stops, reducers, and escutcheons. Install all exposed piping and valves neatly and close to the wall. Supplies should be run as plumb as possible.
- .4 Install components level and plumb.
- .5 All mixing valves serving multiple fixtures shall be installed in recessed cabinets.
- .6 Sanitary pipe serving lavatories shall run fully concealed within plumbing chase and only penetrate wall directly inline with each basin. No lateral offset will be permitted. There shall be one penetration per basin. All exposed sanitary pipe shall be chrome plated complete with echeloned plates at wall. Echeloned plate shall be secured to wall with silicone.
- .7 Install lavatory mixing valves neatly and out of site under millwork unless specified as installed in recessed cabinet. Secure with proper fasteners – galvanized strapping is not acceptable. Where provided on the drawings, refer to mixing valve installation details.
- .8 The temperature of water discharging into a bathtub or shower shall be set and tested by the mechanical subcontractor to not exceed 120°F (49°C).
- .9 Install and secure fixtures in place with wall supports or wall carriers (as specified in Part 2 Products) and bolt, washer, nut fasteners.
- .10 Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 92 00, colour to match fixture.
- .11 Seal sinks and lavatories to the millwork. Install gasket where supplied or recommended by sink or lavatory manufacturer.

- .12 Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.
- .13 Thermally insulate and jacket all exposed drain pipe extensions, traps, and trap arms below barrier-free wall-hung lavatories.
- .14 Transformers serving electronic plumbing fixtures shall be supplied by this section. Coordinate installation with electrical trades. Low voltage wiring by this section. Mechanical subcontractor is responsible for coordinating quantity of transformers required. Transformers shall be installed in nearest fully accessible ceiling space unless noted otherwise on drawings. Coordinate exact location with The City.

3.4 INTERFACE WITH OTHER PRODUCTS

- .1 Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.5 ADJUSTING

- .1 Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.
- .2 Adjust stops or valves to comply with specified flow rates.
- .3 Adjust sensor ranges to allow consistent operation of fixtures.

3.6 CLEANING

- .1 Section 01 74 00: Cleaning installed work.
- .2 Clean plumbing fixtures and equipment.

3.7 PROTECTION OF FINISHED WORK

- .1 Section 01 78 40: Protecting installed work.
- .2 Do not permit use of fixtures.

END OF SECTION