Part 1 General

1.1 SECTION INCLUDES

.1 Pipe, pipe fittings, valves, and connections for piping systems.

- .1 Sanitary sewer.
- .2 Domestic water.
- .3 Natural gas.

1.2 RELATED SECTIONS

.1 Section 09 21 16 – Gypsum Board Assemblies.

.2 Section 09 91 99 – Painting for Minor Works

.3 Section 23 05 48 - Vibration Isolation.

.4 Section 23 05 53 - Mechanical Identification.

.5 Section 23 07 19 - Piping Insulation.

.6 Section 23 05 16 – Piping Expansion Compensation.

.7 Section 23 05 29 – Supports and Anchors.

1.3 REFERENCES

.1 ASTM E814 - Fire Tests of Through-Penetration Fire Stops.

.2 ASME B31.9 - Building Services Piping.

.3 ASME SEC IV - Construction of Heating Boilers.

.4 ASME SEC IX - Welding and Brazing Qualifications.

.5 ASME B16.3 - Malleable Iron Threaded Fittings.

.6 MSS SP58 - Pipe Hangers and Supports - Materials, Design and Manufacturer.

.7 MSS SP69 - Pipe Hangers and Supports - Selection and Application.

.8 MSS SP-80 - Bronze Gate, Globe, Angle and Check Valves.

.9 MSS SP89 - Pipe Hangers and Supports - Fabrication and Installation Practices.

.10 MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.

.11 NCPWB - Procedure Specifications for Pipe Welding.

.12 UL 1479 - Fire Tests of Through-Penetration Firestops.

.13 ASTM F708 - Design and Installation of Rigid Pipe Hangers.

.14 AWS A5.8 - Filler Metals for Brazing and Braze Welding.

.15 ASME B16.22-2001 (R2005) - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

.16 ASME B16.26 - Copper Alloy Bronze Fittings for Flared Copper Tubes.

.17 ASME B16.4 - Grey Iron Threaded Fittings.

.18 AWWA C651 - Disinfecting Water Mains.

.19 ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.

.20 ASTM B42 - Seamless Copper Pipe, Standard Sizes.

.21 ASTM B43 - Seamless Red Brass Pipe, Standard Sizes.

.22 ASTM B68 - Seamless Copper Tube, Bright Annealed.

.23 ASTM B75 - Seamless Copper Tube.

.24 ASTM B22.18-03 - Seamless Copper Water Tube.

.25 ASTM B251 - General Requirements for Wrought Seamless Copper and Copper-Alloy Tube.

.26 ASTM B302 - Threadless Copper Pipe, Standard Sizes.

.27 ASME B16.1 - Cast Iron Pipe Flanges and Flanged Fittings.

.28 ASME B16.23 - Cast Copper Alloy Solder Joint Drainage Fittings - DWV.

.29 ASME B16.32 - Cast Copper Alloy Solder Joint Fittings for Solvent Drainage Systems.

.30 ASTM A74 - Cast Iron Soil Pipe and Fittings.

.31 ASTM B306 - Copper Drainage Tube (DWV).

.32 ASME B16.29 - Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV.

.33 ASTM B32-04 - Solder Metal.

.34 CISPI 301 - Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.

.35 CISPI 310 - Joints with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.

.36 MSS SP-85 - Cast Iron Globe & Angle Valves, Flanged and Threaded Ends.

.37 MSS SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.

.38 MSS SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.

.39 MSS SP-78 - Cast Iron Plug Valves, Flanged and Threaded Ends.

.40 ASTM D2665 - Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings.

.41 ASTM D2564 - Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.

.42 ASTM D2855-96 (2002) - Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.

.43 ASME B31.1 - Power Piping.

.44 CAN/CSA B149.1 – Natural Gas and Propane Installation Code.

.45 ASME B31.2 - Fuel Gas Piping.

.46 ASTM A47/A47M - Ferritic Malleable Iron Castings.

.47 ASTM A53/A53M - Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

.48 ASTM A234/A234M - Piping Fittings of Wrought-Carbon Steel and Alloy Steel for Moderate and High Temperature Service.

1.4 SUBMITTALS FOR REVIEW

.1 Section 21 05 00: Submission procedures.

.2 Product Data: Provide data on all valves larger than 50mm (2”), and all backflow prevention devices and accessories. Provide manufacturers catalogue information. Indicate valve data and ratings.

1.5 CLOSEOUT SUBMITTALS

.1 Section 21 05 00: Submission procedures.

.2 Record Documentation: Record actual locations of valves on record drawings.

1.6 QUALITY ASSURANCE

.1 Perform Work to the standards of the Province and Municipality of Jurisdiction.

.2 Valves: Manufacturer's name and pressure rating marked on valve body.

.3 Welding Materials and Procedures: Conform to ASME SEC IX and applicable Provincial labour regulations.

.4 Welder's Certification: To Manitoba Department of Labour standards.

.5 Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

.6 All carbon steel pipe and fittings shall be manufactured in Canada or the United States of America. This does not include stainless steel.

1.7 REGULATORY REQUIREMENTS

.1 Perform Work to the latest version of the Manitoba Plumbing Code and local Municipal requirements.

.2 Conform to applicable code for installation of backflow prevention devices.

.3 Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Refer to specification section Product Requirements: Transport, handle, store, and protect products.

.2 Accept valves on site in shipping containers with labelling in place. Inspect for damage.

.3 Provide temporary protective coating on cast iron and steel valves.

.4 Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

.5 Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.9 ENVIRONMENTAL REQUIREMENTS

.1 Refer to specification section Environmental Protection: Environmental conditions affecting products on site.

.2 Do not install underground piping when bedding is wet or frozen.

Part 2 Products

2.1 SANITARY SEWER PIPING, ABOVE GRADE

.1 75mm (3”) and over - Cast Iron Pipe: CISPI 301, hubless, service weight. Class 4000

.1 Fittings: Cast iron.

.2 Joints: ASTM C564 and CISPI Standard 310, neoprene gasket system and stainless steel clamp-and-shield assemblies.

.2 Copper Tube: ASTM B306, DWV.

.1 Fittings: ASTM B306 with lead-free soldered cast brass drainage fittings to CSA B158.1 or wrought copper fittings to ANSI B16-29

.2 Joints: ASTM B32, lead-free solder, Grade 50B.

.3 PVC Pipe with FSR25: CSA B181.2

.1 Fittings: PVC.

.2 Joints: ASTM D2855, solvent weld to ASTM D2565.

.4 PVC Pipe with FSR25/SDC50: CSA B181.2. Piping shall be tested and listed in accordance with CAN/ULC-S102.2 and clearly marked with the certification logo indicating a flame spread rating (FSR) not exceeding 25 and a smoke developed classification (SDC) not exceeding 50.

.1 Fittings: PVC.

.2 Joints: ASTM D2855, solvent weld to ASTM D2565.

.3 Manufacturer: IPEX System XFR or equal.

2.2 WATER PIPING, ABOVE GRADE

.1 Copper Tubing 50mm (2") and under: ASTM B88, Type L hard drawn.

.1 Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.

.2 Joints ASTM B32, solder, Grade 95TA.

.2 Copper Tubing over 50mm (2"): ASTM B88, Type L hard drawn.

.1 Fittings: Silver brazed fittings.

2.3 NATURAL GAS PIPING, ABOVE GRADE

.1 Steel Pipe: ASTM A53 Schedule 40 Black.

.1 Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, forged steel welding type.

.2 Joints: NFPA 54, threaded or welded to ANSI B31.9.

2.4 FLANGES, UNIONS, AND COUPLINGS

.1 Pipe Size 80 mm (3 inches) and under:

.1 Ferrous pipe: Class 150 malleable iron threaded unions.

.2 Copper tube and pipe: Class 150 bronze unions with soldered joints.

.2 Pipe Size Over 25 mm (1 inch):

.1 Ferrous pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.

.2 Copper tube and pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.

.3 Grooved and Shouldered Pipe End Couplings:

.1 Housing: Malleable iron clamps to engage and lock, designed to permit some angular deflection, contraction, and expansion; steel bolts, nuts, and washers; galvanized for galvanized pipe.

.2 Sealing gasket: "C" shape composition sealing gasket.

.4 Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.5 BALL VALVES

.1 Manufacturers:

.1 MAS

.2 Kitz

.3 Crane.

.4 Substitutions: Refer to Section 21 05 00.

.2 Construction, 100 mm (4 inches) and smaller: MSS SP-110, Class 150, 2760 kPa (400 psi) brass, two piece body, 316 stainless ball and trim, full port, teflon seats and stuffing box ring, blow-out proof stem, lever handle, solder ends.

2.6 PLUG VALVES

.1 Manufacturers:

.1 Nordstrom Valves, Inc. MSS SP-78, Type II.

.2 Substitutions: Refer to Section 21 05 00.

.2 Construction 50 mm (2 inches) and smaller: Figure 114, MSS SP-78, 2700 kPa (400 psi), cast iron body and plug, pressure lubricated, teflon or Buna N packing, flanged or threaded ends. Provide lever operator with set screw.

.3 Construction 65 mm (2-1/2 inches) and larger: MSS SP-78, 1200 kPa (175 psi), cast iron body and plug, pressure lubricated, teflon or Buna N packing, flanged ends. Provide lever operator with set screw.

Part 3 Execution

3.1 EXAMINATION

.1 Section 21 05 00: Verify existing conditions before starting work.

.2 Verify that excavations are to required grade, dry, and not over-excavated.

3.2 PREPARATION

.1 Ream pipe and tube ends. Remove burrs.

.2 Remove scale and dirt, on inside and outside, before assembly.

.3 Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION

.1 Install to manufacturer's written instructions.

.2 Provide non-conducting dielectric connections wherever jointing dissimilar metals.

.3 Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

.4 Install piping to maintain headroom, conserve space, and not interfere with use of space.

.5 Group piping whenever practical at common elevations.

.6 Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 23 05 16.

.7 Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 23 07 19.

.8 Provide access where valves and fittings are not exposed. Coordinate size and location of access doors with Section 09 21 16.

.9 Establish elevations of buried piping outside the building to ensure not less than 2.4 m (8 ft) of cover.

.10 Install vent piping penetrating roofed areas to maintain integrity of roof assembly.

.11 Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.

.12 Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting. Refer to Section 09 91 99.

.13 Install valves with stems upright or horizontal, not inverted.

.14 Install water piping to ASME B31.9.

.15 Install fuel oil piping to ASME B31.9 and CSA B139.

.16 Sleeve pipes passing through partitions, walls and floors. Set sleeves in concrete forms for all pipes passing through new concrete walls, beams and slabs.

.17 Pipe sleeves to extend above floor line as follows:

.1 Unfinished areas – 25 mm (1 inches).
.2 Finished areas (copper sleeves) – 7 mm (1/4 inches).
.3 Mechanical rooms, kitchens and washrooms – 100 mm (4 inches).

.18 Caulk sleeves to provide watertight installation.

.19 Where pipes pass through floors and walls in finished areas and where exposed to view, provide Crane #10 B.C. chrome-plated, pressed steel floor plates.

.20 Install galvanized, oversize pipe sleeves on passing through walls or partitions, for building into wall construction, by other trades.

.21 Sleeves and holes for piping on cold water systems shall be large enough to accommodate pipe insulation. Insulation on piping for hot water systems may stop at walls or floors.

.22 Prior to installing sleeves in concrete beams, receive final jobsite approval by Structural Consultant.

3.4 PIPE PRESSURE TESTING

.1 Do not insulate pipe prior to pressure testing. Pressure test in sections if necessary before concealing or insulating pipe.

.2 Do not introduce water for testing where freezing conditions exist or where piping systems being tested are located above sensitive areas or equipment that may be damaged or contaminated by water leakage.

.3 Hydraulically test all pipe. Pneumatic testing not permitted without prior approval from the Contract Administrator and the Authority Having Jurisdiction.

.4 Should leaks develop in any part of the piping system, remove and replace defective sections, fittings and equipment. Pipe dope, caulking, tape, lead wool, dresser couplings, etc. shall not be used to correct deficiencies. The contractor shall be responsible for all cleanup related to leakage during flushing, testing, and chemical treatment of piping, including original building piping if included in the testing.

.5 Subject piping to a hydrostatic pressure of at least that 1-½ times the operating pressure of the system for a period of at least 12 hours. If leaks are detected, such leaks shall be repaired and the test started over. Record results and submit witnessed (by the Contract Administrator or the City's representative) reports to the Contract Administrator.

.6 Cast iron piping systems: water-test each portion of the system for 15 minutes at a head pressure of 10' of water. Test procedure shall be in accordance with CISPI and the manufacturer's recommendations. Compressed air shall not be used for testing.

.7 Register pressures at the highest system point.

.8 Provide at least 48 hours (during working days) notice to the Contract Administrator or the City's Representative prior to testing to allow the tests to be witnessed.

3.5 APPLICATION

.1 Install unions downstream of valves and at equipment or apparatus connections.

.2 Install brass male adapters each side of valves in copper piped system. Solder adapters to pipe.

.3 Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.

.4 Provide plug valves in natural and propane gas systems for shut-off service.

.5 PVC DWV piping installed in non-combustible buildings shall comply with the restrictions in the following table.

Product	NON-COMBUSTIBLE BUILDING				
	General Usage	Air Plenum[1]	Vertical Services Spaces[2]	High-Rise Building	Underground
Combustible Pipe FSR25: (eg. IPEX System 15)	P	N[3]	N	N	P
Combustible Pipe FSR25/SDC50: (eg. IPEX XFR, CPVC)	P	P	N	P	P
MJ Grey Coupling	P	P	N	P	N

1. Restrictions for air plenums also apply to combustible buildings as well.
2. Certified firestopping devices are required whenever the system penetrates a vertical or horizontal separation, and shall be certified to CAN4-S115 and tested with a pressure differential of 50 Pa.
3. Sizes 20" and 24" are N

3.6 ERECTION TOLERANCES

.1 Establish invert elevations, slopes for drainage to one percent (1/8 inch per foot) minimum, except pipe sized 75 mm (3 inches) or less shall have a slope no less than two percent (1/4 inch per foot). Maintain gradients.

.2 Slope water piping minimum 0.25 percent and arrange to drain at low points.

3.7 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

.1 Prior to starting work, verify system is complete, flushed and clean.

.2 Ensure pH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

.3 Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.

.4 Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.

.5 Maintain disinfectant in system for 24 hours.

.6 If final disinfectant residual tests less than 25 mg/L, repeat treatment.

.7 Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

.8 Take samples no sooner than 24 hours after flushing, from 5 percent of outlets and from water entry, and analyze to AWWA C651.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Floor Drains

.2 Trap seal primers.

.3 Cleanouts.

.4 Water hammer arrestors.

.5 Interceptors.

1.2 RELATED SECTIONS

.1 Section 01 11 00 - Summary of Work

.2 Section 22 10 00 - Plumbing Piping.

.3 Section 22 42 02 - Plumbing Fixtures.

1.3 REFERENCES

.1 ASME - SEC 8D - Boilers and Pressure Vessels Code - Rules for Construction of Pressure Vessels.

.2 ASME A112.21.1 - Floor Drains.

.3 ASME A112.26.1 - Water Hammer Arrestors.

.4 NSF/ANSI 61 – Drinking Water System Components – Health Effects

.5 PDI G-101 - Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data.

.6 PDI WH-201 - Water Hammer Arrestors.

.7 CSA B125.3 – Plumbing Fittings

1.4 SUBMITTALS FOR REVIEW

.1 Section 21 05 00: Submission procedures.

.2 Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.

.3 Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.

1.5 CLOSEOUT SUBMITTALS

.1 Section 21 05 00: Submission procedures.

.2 Operation Data: Indicate frequency of treatment required for interceptors.

.3 Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

.4 Record Documentation: Record actual locations of equipment, cleanouts, backflow preventers, water hammer arrestors, trap seal primers.

1.6 MAINTENANCE MATERIAL SUBMITTALS

.1 Section 01 78 40: Maintenance and extra material requirements.

1.7 QUALITY ASSURANCE

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

1.8 DELIVERY, STORAGE, AND PROTECTION

.1 Section 21 05 00: Transport, handle, store, and protect products.

.2 Accept specialties on site in original factory packaging. Inspect for damage.

Part 2 Products

2.1 FLOOR DRAINS

.1 Manufacturers:

.1 Mifab
.2 Zurn.
.3 Watts.
.4 Substitutions: Refer to Section 21 05 00.

.1 Floor Drain (FD-1) – Surface Membrane Floors:

.1 ANSI A112.21.1,
.1 Lacquered cast iron once piece body with wide anchor flange,
.2 Weep holes,
.3 Round, adjustable stainless steel strainer, vandal proof
.4 Complete with ½" trap primer connection.

Floor Drain Schedule

Tag	Type	Inlet	Body Material	Vandal Proof	Sediment Bucket	Trap Seal Primer
FD-1	Surface Membrane	Heavy Duty Strainer	Cast Iron	Yes	No	Yes

2.2 TRAP SEAL PRIMER

.1 Manufacturers:

.1 Mifab

.2 Zurn.

.3 Watts.

.4 Precision Plumbing Products.

.5 Substitutions: Refer to Section 21 05 00.

.2 Pressure drop activated brass trap seal primer

.1 Inlet opening of 1/2" (13mm) male N.P.T. and outlet opening of female 1/2" (13mm) N.P.T.

.2 Complete with four view holes and removable filter screen.

.3 Requires no site adjustments and no air pre-charge.

.4 Each trap seal primer shall be installed with brass trap seal primer air gap fitting,

.5 Where multiple floor drains are being served install a trap seal primer distribution unit.

.6 Primers shall be installed with union directly upstream, and shut off valve.

.7 Supply line to primer shall have a reverse bend in it to reduce the change of sediment collecting in primer, refer to manufacturer's installation instructions.

2.3 CLEANOUT COVERS

.1 Exterior Surfaced Areas:

.1 Manufacturers:

.1 Mifab

.2 Zurn.

.3 Watts.

.4 Substitutions: Refer to Section 21 05 00.

.2 Round cast nickel bronze access frame and non-skid cover.

.2 Exterior Unsurfaced Areas:

.1 Line type with lacquered cast iron body and round epoxy coated gasketed cover.

.3 Interior Finished Floor Areas:

.1 Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.

.4 Interior Finished Wall Areas:

.1 Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.

.5 Interior Unfinished Accessible Areas:

.1 Caulked or threaded type.

.2 Bolted stack cleanouts on vertical rainwater leaders.

2.4 GREASE INTERCEPTORS

.1 Manufacturer: Mifab Series MI-G-L-35.

.2 Other acceptable manufacturers offering equivalent products.

.1 Zurn.

.2 Watts.

.3 Substitutions: Refer to Section 21 05 00.

.3 Construction:

.1 Sanitary powder epoxy coated inside and outside fabricated 10 gauge steel grease interceptor with flow rating of 35 gpm and grease holding capacity of 70 lbs.

.2 Unit shall include: removable baffle assembly and cross bar, securing bolt, external vented flow control fitting, internal air relief bypass and steel epoxy coated rectangular gasketed lid.

2.5 INSTALLATION

.1 Install to manufacturer instructions.

.2 Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.

.3 Install floor cleanouts at elevation to accommodate finished floor.

.4 Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to washing machine outlets, banks of flush valve fixtures (eg. Water closets, urinals).

.5 Install air chambers on hot and cold water supply piping to each fixture or group of fixtures (each washroom). Fabricate same size as supply pipe or 20 mm (3/4 inch) minimum, and minimum 450 mm (18 inches) long.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Sinks.

1.2 RELATED SECTIONS

.1 Section 21 05 00 – Submittal Procedures.

.2 Section 01 45 00 - Quality Control.

.3 Section 01 61 00 – Common Product Requirements.

.4 Section 01 78 00 - Closeout Submittals.

.5 Section 06 41 11 - Architectural Woodwork:

.1 Preparation of counters for sinks,

.2 Lavatory tops.

.6 Section 07 92 00 - Joint Sealants: Seal fixtures to walls and floors.

.7 Section 23 05 29 - Supports And Anchors.

.8 Section 22 10 00 - Plumbing Piping.

.9 Section 22 42 01 - Plumbing Specialties.

1.3 REFERENCES

.1 CSA B651 – Barrier-free Design.

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

.3 ASME A112.18.1 / CSA-B125.1-05- Plumbing Fixture Fittings.

.4 NFPA 70 - National Electrical Code.

.5 NBCC 2010 - National Building Code of Canada

.6 NPCC 2010 – National Plumbing Code of Canada

.7 NFCC 2010 – National Fire Code of Canada

1.4 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.

1.5 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.

1.6 QUALITY ASSURANCE

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

1.7 REGULATORY REQUIREMENTS

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

1.8 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 SINKS

.1 Wall Hung Basin:

.1 Manufacturer: Kindred Commercial WHB2221-8

.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 304 stainless steel, with a #4 satin finish on exposed surfaces

.3 Faucet ledge, three hole, 4" centres

.4 Radius coved bowl corners,

.5 One-piece wall hanger bracket,

.6 Anti-spill rim,

.7 Open grid strainer.

.2 Trim:

.1 Manufacturer: Delta Model 2171LF-WBHHDF.

.1 Substitutions: Refer to Section 21 05 00.

.2 ASME A112.18.1:

.1 Two handle brass deckmount faucet,

.2 3-hole 102mm (4"),

.3 cast brass body, 279mm (11") high gooseneck spout with 360 degree rotation,

.4 1.5 gpm (5.7L/min) aerator.

.1 NSF 61

.1 Lead Free compliant

.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.

.4 SK-2 Triple Compartment Bowl:

.1 Manufacturer: Kindred Commercial LBT6410PCB-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 304 stainless steel,

.3 Faucet ledge, three hole, 8” centres

.4 Fully undercoated sink, self rimming,

.5 3-1/2” (89mm) basket strainer waste filling and installation kit.

.5 Trim:

.1 Manufacturer: Delta Model 26C32225-S8.

.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, 356 mm (14") tubular swing spout with 180° rotation,

.4 1.5 gpm (5.7L/min) vandal resistant aerator with Agion Antimicrobial

.5 Handles to be 152mm (6”) Wrist Blade Handles – ADA compliant, Sanitary Hoods – Metal color indexed – Vandal Resistant screws.

.3 NSF 61

.1 Lead Free compliant

.6 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.

Part 3 Execution

3.1 EXAMINATION

.1 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 Install and secure fixtures in place with wall supports or wall carriers (as specified in Part 2 Products) and bolt, washer, nut fasteners.

.6 Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 92 00, colour to match fixture.

.7 Thermally insulate and jacket all exposed drain pipe extensions, traps, and trap arms below barrier-free wall-hung lavatories.

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 11: Cleaning installed work.

.2 Clean plumbing fixtures and equipment.

3.7 PROTECTION OF FINISHED WORK

.1 Do not permit use of fixtures.

END OF SECTION