

PLUMBING SPECIFICATIONS

ABBREVIATIONS:

LEGEND:

- Summary: Complete, tested and operational plumbing systems, including but not limited to the following:
 - Domestic cold water piping.
 - Domestic hot water piping.
 - Sanitary waste and vent piping.
 - Chimney and flue gas.
 - Hot water and radiators.
 - Hangers and supports.
 - Piping specialties.
 - Pipe and valve identification.
 - Field and out-of-process permits.
 - Demolition work.
 - Coordination with work of all other trades.
 - Obtain and pay for permits and inspections for plumbing work.
- Contract Drawings: See diagrams and include only the general arrangements of work. Additional work not shown but required to install the plumbing systems shall be included as part of this Schedule.
- Existing Conditions: Before starting prices or beginning work, thoroughly examine the site and Contract Documents. No claim for extra compensation will be recognized if difficulties which an examination of the site conditions and Contract Documents prior to executing Contract would have revealed.
- Referenced Standards: Equipment, specialties, accessories, installation and testing complying with the applicable edition of following:
 - International Building Code 2003.
 - Model State Internal Plumbing Code (Based on the 2000 Uniform Plumbing Code).
 - ADMG: Americans with Disabilities Act, Architectural Guidelines.
 - Local ordinances and regulations of Authority Having Jurisdiction.
- Minimum Working Pressure Ratings:
 - Water Distribution Systems, Above Ground: 125 psig.
 - Drainage Waste and Vent (DWV) Systems: 10 ft. head of water.
- Submittals: Product data for all components.
- General Schedule:
 - Operating and Maintenance (O&M) Manuals for plumbing fixtures and equipment.
 - Record Drawings.
 - Test reports.
 - Upon completion of all work, furnish, in duplicate, certificates of inspection from all inspectors and authorities having jurisdiction.
- Selective Demolition: Cut, cap and remove existing piping and equipment to extent indicated. Perform selective demolition in a neat and workmanlike manner. Take care to avoid creating hazards on the site or disrupting service in the building. Remove abandoned piping and equipment not built into building construction. Where ceiling or walls are removed, remove abandoned piping and cap ends of live services. Components which are built into walls or located above existing ceiling and inaccessible may be left in place; cap ends and mark as "abandoned".
 - Where items are indicated to be salvaged, wrap, label, and turn them over to the Owner in good condition.
 - Remove all other demolished materials from the premises.
- Plumbing Fixtures: Provide the fixtures scheduled in the Plumbing Fixture Schedule or equal products by one of the following manufacturers:
 - Stainless Steel Plumbing Fixtures: Elkay Mfg. Co., Kindred Industries, or American Standard.
- Fixtures: ASME A112.18.1M, ADMG edition, pressure compliant, fabricated of brass with polished chrome-plated finish. Provide faucets listed in the Plumbing Fixture Schedule as manufactured by Chicago Faucets, Symmons, Sloan, Delta Faucet Co. or equal.

- Storage/Supplies: Loose key angle stop, 1/2-inch IPS inlet, wall flange and 12 inch long flexible tubing rear outlet. Provide products listed in the Plumbing Fixture Schedule as manufactured by Measure Mfg. Co., Brass Craft Mfg. Co., Cambridge Brass or equal.
 - Stinks: 1/2 inch diameter.
- Ball Valves: MSS SP-110, Class 150, 600 Psg cold W.P., two-piece, full port, soldered or threaded ends, bronze body, chrome-plated brass ball, replaceable IPE seats and seals; as manufactured by Conbraco Industries, Inc. (Apollo), Watts Regulator Co., Nilco, Inc. or equal.
 - Provide stem extenders for installed applications.
- Pipe Insulation: 25/50 fire rated glass fiber with factory installed self-sealing jacket, as manufactured by Owens-Corning, Inc. (Fiberglas), Johns-Manville, or equivalent.
 - Domestic Cold Water: 1/2-inch (with vapor barrier).
 - Domestic Hot Water: 1-inch.
- Accessible Fixture Insulation: Fully molded white flexible vinyl kit for tub/shower, P-trap, and supplies, as manufactured by Measure Mfg. Co., Inc., Treadco, Brocor or equal.
- Hangers and Supports: Comply with MSS SP-69 and SP-89. Hangers of the following types shall be as manufactured by Copeland & Patterson, Inc., Grinnell Corp., B-Line Systems, Inc. or equal:
 - Piping under 4 inches: S-weld ring stop type.
 - Multiple pipe application: Strut hangers and pipe clips.
 - Copper or plastic coated hangers shall be used for application on un-insulated piping.
- Insulation Shields: MSS Type 40, 180 deg., minimum 12 inches long and 0.01948 inches thick.
- Identification: Pipe markers and valve tags as manufactured by Selon Home Pipe Co., W.H. Brody Co., Carlton Industries or equal.
 - Pipe Markers: Manufacturer's standard, pre-printed, semi-rigid, snap-on, conforming to ASME A13.1, color coded as follows:
 - Domestic Cold Water: Green
 - Domestic Hot Water: Yellow
 - Sanitary Sewer: Green
 - Sanitary Vent: Green
 - Valve Tags: Stamped or engraved, 1-1/2-inch diameter, plastic laminate with white core and black exterior, 1/4-inch letters, customer name, brass chain and S-hook.
 - Other: Shop drawings and/or notes schedule in a clear, rigid plastic frame, suitable for mounting on walls. Furnish with screws appropriate to wall construction at mounting location.
- Piping and Fitting Materials and Applications:
 - Water Distribution, Above Ground: Copper tubing, ASTM B88, Type L, water tube, drawn temper, with wrought copper or cast copper fittings and Alloy 5065 solder.
 - Water Distribution, Below Ground: Cast iron pipe and fittings, C900 301, with no-hub couplings or hot dip galvanized pipe and fittings, ASTM B-305, Type DWV, drawn temper with wrought copper, solder joint, damage pattern fitting, and Alloy 5065 solder.
 - Sanitary Waste and Vent, Buried: Hub and spigot, cast iron soil pipe and fittings, ASTM A74, service weight, with ASTM C554 neoprene rubber compression gaskets and lubricant.
- Access Panels: Furnish access panels for concealed parts of the plumbing systems that require access for proper operation and maintenance. Form panels conforming to specifications on the Architectural Drawings, minimum size 12" X 18".
- Preparation for Installation:
 - Protect all new and existing work before, during and after demolition and installation.
 - Minimize interruption of services in areas which will be occupied during the construction period. Before interrupting such services, provide written notification to Owner and obtain written consent. Perform work at a time outside normal working hours, if necessary, to avoid disruption of services. Schedule work to conform to this schedule and install work to not delay nor interfere with the progress of the project.
- Hangers and Supports: Comply with MSS SP-69 and SP-89. Install hangers, supports, clamps and attachments as required to properly support piping from structure. Provide insulation shields at each hanger on insulated pipe. For horizontal runs, install hangers of either size of each fitting and valve, and space hangers in accordance with the Plumbing Code. Support under-counter equipment as required.

22. Piping Installation:
 - Water Distribution Piping: Install piping with 1/28 inch per foot slope downward toward drain. Install drain valves at all low points. Insulate all water distribution piping.
 - Sanitary, Waste and Vent: Unless otherwise indicated, install 3 inch and smaller pipe at slope of 1/4-inch per foot; install 4 inch and larger pipe at slope of 1/8-inch per foot.
 - Install sleeve penetration systems at each wall and floor penetration. System hanger ratings shall match the construction being penetrated. Refer to Interpenetration Specifications in other sections.
23. Mechanical Identification Installation: Install pipe markers on each system, include arrows showing normal direction of flow.
 - Pipe Markers: Locate as follows:
 - Near each valve.
 - Near each branch take-off.
 - Water supply.
 - Near equipment.
 - Spaced at 25-foot intervals.
 - On piping above removable acoustical ceilings.
 - Valve tags: Install at all valves in piping system, except as follows:
 - On piping above removable acoustical ceilings.
 - On piping through walls, floors, and ceilings.
 - On piping through equipment.
 - On piping through equipment valves.
 - On piping through valve supply stops.
 - On piping through valve supply stops.
 - Facets.
24. Plumbing Fixture Installation: Install fixtures and trim and fixture carriers and supports in accordance with the Plumbing Fixture Schedule and the designations and locations indicated on the Plumbing Drawings. Refer to the Architectural Drawings (ADMs) for mounting heights and detailed dimensional information. Install fixtures in compliance with accessibility guidelines (ADAAG) and Americans with Disabilities Act (ADA) requirements. Seal all penetrations through walls, floors and ceilings using sanitary sealants of all piping and exposed support wall penetrations. Seal fixtures to walls, floors and counters using sanitary type, one-part, mildew resistant silicone sealant. Match sealant color to fixture.
 - Water Distribution Tests: Test water distribution systems, with water, to 125 psig for a period of 4 hours. Replace components which do not pass the test and retest as required until satisfactory results are obtained.
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25. Insulation Installation: Install insulation in strict accordance with manufacturer's installation instructions. Install pipe insulation continuous through walls, floors, ceilings and through supports with insulation shields.
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26. Testing and Inspection: Do not cover or conceal any water distribution or DWV piping until it has been inspected and approved by the Authority Having Jurisdiction. Inspectors shall be made after rough-in and after final installation. Provide for re-inspections, as required, for items which do not pass inspection. Prepare inspection reports signed by the Plumbing Official.
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27. Water Distribution Openings: Clean the piping systems in accordance with the Plumbing Official's requirements, in the absence of such requirements, perform the following:
 - Flush all piping until carry water does not appear at each outlet.
 - Fill the system with a water/chlorine solution containing at least 50ppm of chlorine. Allow the system to stand for 24 hours.
 - Drain the system and re-fill with a water/chlorine solution containing at least 200ppm of chlorine. Allow to stand for 3 hours.
 - Flush the piping system out with potable water at each outlet.
 - Submit water samples to the Plumbing Official for approval.
 - Repeat the process as required until satisfactory results are obtained.
28. System Start-up: Fill the water systems. Energize electrical circuits. Verify the operation of all equipment and fixtures.

FIGURE DESIG.	DESCRIPTION	MOUNTING	H / C	FIGURE	TRIM	STOP	TRAP	CARRIER
SK-1	SNK	COUNTER	YES	KINDRED INDUSTRIES COMMERCIAL NO. A858385-1 BRUSH NIBBON FINISHED LEUGE. SAINI FINISHED BOWL. LEUGE BACK.	DELTA COMMERCIAL FACETS MODEL NO. 2613245	HEAVY DUTY C.P. LOOSE KEY WALL ESCUTCHEON	FRONCE DELTA NO. 331311 1-1/4" SIZE POLISHED CHROME P. ADJUSTABLE "P" TRAP WITH CLEANOUT	NONE

* NOTE: MODEL NUMBERS AND MANUFACTURERS ARE INTENDED TO ESTABLISH A STANDARD OF QUALITY. SEE SPECIFICATIONS

PLUMBING FIXTURE SCHEDULE

Abbrev.	Description	Symbol	Abbrev.	Description
ABC	ABOVE FINISHED CEILING	○	DN	PIPE DOWN THROUGH FLOOR
AFB	ABOVE FINISHED FLOOR	○	UP	PIPE UP THROUGH FLOOR/ROOF ABOVE
AFG	ABOVE FINISHED GRADE	○	PPE DROP	PIPE DROP
CFH	CUBIC FEET PER HOUR	○	WCO	WALL CLEANOUT
CIE	CONNECT TO EXISTING	○	CO	CLEANOUT
DWG	DRAINING	○	FCO	FLOOR CLEANOUT
ER	EXISTING TO REMAIN	○	CP	PIPE BREAK
FEE	FINISHED FLOOR ELEVATION	○	S	NEW SANITARY PIPING BELOW GRADE (BURIED PIPING - TRENCHING AND SLAB REPAIR BY G.C.)
FLR	FLOOR	○	S	EXISTING SANITARY PIPING BELOW GRADE (BURIED PIPING)
GC	GENERAL CONTRACTOR	○	S	SANITARY PIPING ABOVE GRADE
INW	INVERT ELEVATION	○	S	VENT PIPING BELOW GRADE (BURIED PIPING - TRENCHING AND SLAB REPAIR BY G.C.)
LDC	LIMIT OF PLUMBING CONTRACT	○	V	NEW VENT PIPING ABOVE GRADE
NIC	NOT IN CONTRACT	○	V	EXISTING VENT PIPING ABOVE GRADE
NIS	NOT TO SCALE	○	V	EXISTING VENT PIPING ABOVE GRADE
RE	REMOVE EXISTING	○	V	EXISTING VENT PIPING ABOVE GRADE
SCF	SCHEDULE	○	CW	NEW DOMESTIC COLD WATER PIPING
TRP	TYPICAL	○	CW	EXISTING DOMESTIC COLD WATER PIPING
YTR	VENT THROUGH ROOF	○	HW	NEW DOMESTIC HOT WATER PIPING
W.C.	WATER COLUMN	○	HW	EXISTING DOMESTIC HOT WATER PIPING
		○	LWH	LOFT LINE INDICATES EXISTING PIPING
		○		HEAVY LINE INDICATES NEW PIPING
		○	ER	EXISTING TO REMAIN
		○	CIE	CONNECT TO EXISTING
		○		EXISTING EXPOSURE TO BE REMOVED

FIXTURE/EQUIPMENT DESIGNATIONS:

Abbrev.	Description
SK-1	SNK & TRPE