This master should be used by designers working on Port of Portland construction projects and by designers working for PDX tenants (“Tenants”). Usage notes highlight a few specific editing choices, however the entire section should be evaluated and edited to fit specific project needs.

SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

1. GENERAL
	* + 1. DESCRIPTION
				1. This section describes the identification of valves, piping, and equipment components of the mechanical systems to indicate their function and system served.
			2. REFERENCES
				1. ANSI: American National Standards Institute

ANSI A13.1: Scheme for the Identification of Piping Systems

* + - 1. SUBMITTALS
				1. Product Data: For all products specified herein.
				2. Valve Tag Directory: Submit for approval prior to fabrication of valve tags.
				3. Equipment Nameplate Directory: Submit for approval prior to fabrication of labels.
				4. Include copy of valve tag and equipment nameplate directories in each set of operation and maintenance manuals.
1. PRODUCTS

Fill in abbreviated name of project in the blank below. Check with the PE, if necessary.

* + - 1. VALVE IDENTIFICATION
				1. Valve Tags:

General: Identify valves with metal tags. Legends shall be stamped or embossed. Tags shall indicate the function of the valve and its normal operating position; for example:

\_\_\_\_\_\_ (PROJECT SPECIFIC IDENTIFIER)

56 HW (NUMBER AND CONTENT OF PIPE)

ISOLATION (VALVE FUNCTION)

NO (NORMAL OPERATION POSITION)

Size: Valve tags 2-inch diameter with 1/4-inch-high letters.

Material: Use 0.050 or 0.064-inch brass tags.

Automatic Valves and Regulating Valves: Use 1/16-inch-thick laminated 3-ply plastic, center ply white, outer ply red, “lamicoid” or equal. Form letters by exposing center ply.

Existing Buildings and Systems: Contact the Port for coordination with existing building tagging system and supplementary information required for any specific system before valve tagging begins.

* + - * 1. Valve Tag Directory: Include tag number, location, exposed or concealed, service, valve size, valve manufacturer, valve model number, tag material, and normal operating position of valve.
			1. PIPING MARKERS
				1. Acceptable Manufacturers: Brady, Seton, Marking Systems, Inc. (MSI), or equal.
				2. Label pipes with all-vinyl, self-sticking labels or letters. For pipe covering sizes up to and including 3/4-inch outside diameter, select labels with 1/2-inch letters. For sizes from 3/4- to 2-inch outside diameter, 3/4-inch letters; above 2 inches outside diameter, 2-inch letters. The pipe markers shall be identified and color coded as follows with black directional arrows. Labels with green background shall use white letters and arrows.

|  |  |  |
| --- | --- | --- |
| **SERVICE** | **PIPE MARKER** | **BACKGROUND COLOR** |
| Chilled Water | “CHILLED WATER SUPPLY”\* | Green |
|  | “CHILLED WATER RETURN”\* | Green |
| Condensate from Air Cooling Equipment | “CONDENSATE” | Green |
| Condenser Water | “CONDENSER WATER SUPPLY” | Green |
|  | “CONDENSER WATER RETURN” |  |
| Heating Water | “HEATING WATER SUPPLY”\* | Yellow |
|  | “HEATING WATER RETURN” | Yellow |
| Refrigerant Suction | “REFRIGERANT SUCTION”\* | Yellow |
| Refrigerant Liquid | “REFRIGERANT LIQUID” | Green |
| Non-Potable Water | “NON-POTABLE WATER” | Yellow |
| High Pressure Steam | “HIGH PRESSURE STEAM” | Yellow |
| Low Pressure Steam | “CONDENSATE” | Yellow |
| Steam Condensate | “LOW PRESSURE RETURN” | Yellow |
| Pumped Condensate | “PUMPED CONDENSATE” | Yellow |
| Drain | “DRAIN” | Green |
| Vent to Atmosphere | “(COMMODITY) VENT” | Yellow |
| Glycol  | “GLYCOL WATER SUPPLY”\* | Green |
|  | “GLYCOL WATER RETURN”\* |  |
| Ground Source | “GROUND SOURCE SUPPLY”\* | Green |
|  | “GROUND SOURCE RETURN”\* |  |

\* Directional arrow applied adjacent to pipe marker indicating direction of flow.

* + - 1. EQUIPMENT IDENTIFICATION
				1. Nameplates:

Tag all pumps, air supply units, fans, converters, air terminal units, and miscellaneous items of mechanical equipment with engraved nameplates. Nameplates shall be 1/16-inch-thick, 3 x 5 laminated 3-ply phenolic plastic, center ply white, outer ply black. Form letters by exposing center ply.

Identify unit with code number as shown on the drawings and the area served.

* + - * 1. Equipment Nameplate Directory: List pumps, air handlers, terminal units, and other equipment nameplates. Include Port- and Contractor-furnished equipment. List nameplate designation, manufacturer’s model number, location of equipment, area served or function, disconnect location, and normal position of HOA switch.
1. EXECUTION
	* + 1. VALVE IDENTIFICATION
				1. Valve Tags:

Attach to valve with a brass chain.

Number valves per direction of the Port.

* + - * 1. Valve Tag Directory: Post final copy in operation and maintenance manual.
				2. Concealed Valves: Affix color coded “dot” to walls or ceilings wherever valves are concealed. Colors shall be as follows:

HVAC = Blue

* + - 1. PIPING MARKERS
				1. Unless recommendations of ANSI A13.1 are more stringent, apply labels or letters after completion of pipe cleaning, insulation, painting, or other similar work, as follows:

Every 20 feet along continuous exposed lines.

Every 10 feet along continuous concealed lines.

Adjacent to each valve and stubout for future.

Where pipe passes through a wall, into and out of concealed spaces.

On each riser.

On each leg of a “T.”

Locate conspicuously where visible.

* + - * 1. Further, apply labels or letters to lower quarters of the pipe on horizontal runs where view is not obstructed or on the upper quarters when pipe is normally viewed from above. Apply arrow labels indicating direction of flow.
				2. Spray a protective coating of clear epoxy over markers and arrows in corrosive atmosphere areas.
			1. EQUIPMENT IDENTIFICATION
				1. Nameplates: Attach to prominent area of equipment, either with sheet metal screws, brass chain, or contact cement as applicable.
				2. Nameplate Directory: Post final copy in operation and maintenance manual.
				3. HVAC Equipment Installed Above T-Bar Ceiling: Label T-bar grid with mechanical equipment identifier as shown on the drawings. Use label maker with peel and stick labels, white background, and black lettering.
			2. TERMINAL UNITS
				1. In addition to nameplates, mark all terminal units with a grease pencil so that the markings can be easily read from the most likely viewing position (e.g., catwalk, through the ceiling below, etc.). Markings shall be the unit number as directed by the Port.
				2. Label each thermostat cover with associated terminal unit identifier on an inconspicuous location. Use label maker with peel and stick labels, white background, and black lettering.
				3. Terminal Units Installed Above Access Ceiling: Label T-bar with terminal unit identifier as shown on the drawings. Use label maker with peel and stick labels, white background, and black lettering.

END OF SECTION 230553