

SECTION 22 0553 - IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Equipment labels.
 - 2. Pipe labels.
 - 3. Valve tags.
 - 4. Warning tags.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For color, letter style, and graphic representation required for each identification material and device.
- C. Equipment Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.
- D. Valve numbering scheme.
- E. Valve Schedules: For each piping system to include in maintenance manuals.

1.4 COORDINATION

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

1.5 WORK INCLUDED

- A. Furnish and install nameplates, valve tags, valve charts, and pipe markers on all Plumbing equipment, and piping.
- B. Provide nameplates with the unit number and service designation on all plumbing equipment.

- C. Indicate all valve tag numbers on Record Drawings and submit framed under glass valve tag charts including valve service and location.
- D. Install color coded ceiling tacks in acoustical tile ceilings or color coded tape on ceiling grid to identify location of equipment, valves and dampers that require regular maintenance or are part of a life safety system (fire dampers, smoke dampers, sprinkler valves or main isolation valves). Concealed fire protection valves shall be marked by red label triangles (3" equilateral) and circle dots (1" diameter). Triangles shall be placed on the wall nearest the valve with the apex pointing toward the ceiling tile. Dots shall be placed on border of ceiling tile.
- E. Provide underground plastic pipe markers 6 to 8 inches below finish grade, directly above buried pipes.
- F. Prepare valve charts and frame under glass. All valves and the tag numbers shall be shown on the Record As-Built Drawings.
- G. Provide valve computer data base to match chart.
- H. Prepare and install exterior protected brass plaques indicating underground service entrances.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Acceptable manufactures contingent on compliance with the specification.
 - 1. Seton
 - 2. Brady Corporation
 - 3. Marking Services Incorporated

2.2 EQUIPMENT NAMEPLATES

- A. Equipment nameplates shall be 3" x 6" long, 0.02" aluminum with a black enamel background with engraved natural aluminum letters similar to Seton Style 2065-20. Nameplate shall have pressure sensitive taped backing.
- B. The nameplate shall contain the unit or equipment designation ("AHU" for air handling unit, "P" for circulating pump, etc.), unit number and area or system served.
- C. Nameplates for exterior equipment shall be applied with waterproof adhesive.

2.3 PIPE IDENTIFICATION AND VALVE TAGS

- A. All piping, except that piping which is within inaccessible chases, shall be identified with semi-rigid plastic identification markers equal to Seton Setmark pipe markers.
 - 1. Direction of flow arrows are to be included on each marker.
 - 2. Each marker background shall be appropriately color coded with a clearly printed legend to identify the contents of the pipe in conformance with the "Scheme for the Identification of Piping Systems" (ASME A13.1-1981).

3. Setmark snap-around markers shall be used for overall diameters up to 6" and strap-around markers shall be used above 6" overall diameters.
4. Markers shall be located:
 - a. Adjacent to each valve
 - b. At each branch
 - c. At each cap for future
 - d. At each riser takeoff,
 - e. At each pipe passage through wall (each side)
 - f. At each pipe passage at 20' – 0" intervals maximum.
 - g. At each piece of equipment.
 - h. At all access doors.
 - i. A minimum of one (1) marker shall be provided at each room.
5. Under ground pipe markers:
 - a. Provide detectable tape on all underground piping:
 - b. Labels shall be color coded and labeled the same as indoors.

B. Valve tags

1. All valves shall be designated by distinguishing numbers and letters carefully coordinated with a valve chart. Valve tags shall include what room(s) the valve serves and piece of equipment served.
2. Valve tags shall be color coded 0.032" anodized aluminum tags, with engraved letters similar to Seton S Type 250-BL or approved equal.
 - a. HVAC tags shall be round 2" diameter, similar to Seton 15426.
 - b. Plumbing tags shall be square 2" x 2" similar to Seton 42769.
 - c. Fire Protection tags shall be square 2" x 2" similar to Seton 42769 RED.
 - d. Lettering shall be ¼" high for type service and ½" for valve number. Tag shall indicate service and valve number.
 - e. Each service shall be a different color.
3. Tag shall be attached to valves with chain similar to Seton No 16 stainless steel jack chain.
4. Whenever a valve is above a hung ceiling, the valve tag shall be located immediately above the hung ceiling.
5. Provide a tag for every valve except:
 - a. Perimeter radiation shut-off valves that are located at the finned tube radiation element within the accessible (from the space) heating enclosure

C. Furnish a minimum of two (2) typed valve lists

1. Each framed under glass or Plexiglas. Each chart shall be enclosed in an approved 0.015" thick plastic closure for permanent protection.
2. Valve numbers shall correspond to those indicated on the Record Drawings and on the printed valve lists.
3. The printed list shall include the valve number, location and purpose of each valve.
4. It shall state other necessary information such as the required opening or closing of another valve when one valve is to be opened or closed.
5. Printed framed valve lists shall be displayed in each Mechanical Room or in a location designated by Northwestern University.

D. Valve data base.

1. Provide a valve data base for all valves to operate on the building computer.
2. Every valve shall include:
 - a. Tag Number
 - b. Service (Hot water, Chilled water, Sprinkler, etc.)
 - c. Size
 - d. Operation
 - e. Location
 - f. Manufacture
 - g. Model number
 - h. Submittal reference

2.4 UTILITY ENTRANCE DESIGNATIONS

- A. Provide a brass wall plaque, minimum 0.020" thickness, secured to the exterior wall just above the grade line for all buried service entrances or exits. Samples are: Water Service Below; Gas Service Below; Sanitary Sewer Below; Storm Sewer Below; Irrigation Water Below; etc.
- B. Ceiling Tacks or Tape.
- C. Provide steel color coded 3/4 inch diameter ceiling tacks in acoustical tile ceilings or color coded tape applied to ceiling grid to locate equipment, valves or dampers that require regular maintenance or are part of a Life Safety System.
- D. The tacks or tapes shall be color codes as follows:
 1. Yellow – HVAC
 2. Red – Life Safety (fire dampers, sprinkler valves, etc.)
 3. Green - Plumbing Valves.
 4. Blue – Heating/Cooling Valves.

PART 3 - EXECUTION

3.1 PREPARATION

- A. All surfaces shall be cleaned and insulated (if applicable) prior to installing any identification.
- B. Exterior surfaces of outdoor equipment shall be dry and prepared to accept the specified identification.

3.2 INSTALLATION

- A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion. Seal with clear lacquer.
- B. Install valve tags with chain.
- C. Install plastic pipe markers in accordance with manufacturer's Instructions.

- D. Install plastic tape markers complete around pipe in accordance with manufacturer's instructions.
- E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- F. Identify air handling units, pumps, domestic hot water heaters, fire pumps, heat transfer equipment tanks, water treatment devices, etc. with plastic nameplates. Small devices, such as in-line pumps, may be identified with tags.
- G. Identify control panels and major control components outside panels with plastic nameplates.
- H. Install detector tape on all under ground services in accordance with the manufactures recommendations.
- I. Identify thermostats relating to air handling equipment serving multiple spaces.
- J. Identify valves in main and branch piping with valve tags.
- K. Tag automatic controls, instruments and relays. Key to control schematic.
- L. Identify piping, concealed or exposed, with pipe markers or where buried using plastic tape pipe markers. Use tags on piping $\frac{3}{4}$ inch diameter and smaller. Identify service, flow direction and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION 22 0553

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