

## SECTION 15075 – MECHANICAL IDENTIFICATION

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.2 WORK INCLUDED

- A. Furnish and install nameplates, valve tags, valve charts, stencils and pipe markers on all Mechanical equipment, piping and ductwork.
- B. Provide nameplates with the unit number and service designation on all mechanical 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).
- E. Provide underground plastic pipe markers 6 to 8 inches below finish grade, directly above buried pipes.
- F. Provide manufactured pipe and ductwork identification stencils with flow arrows and service indicated. All backgrounds of the stencils shall be color coded with specific service designation
- G. Prepare valve charts and frame under glass. All valves and the tag numbers shall be shown on the Record As-Built Drawings.
- H. Provide valve computer data base to match chart.
- I. Prepare and install exterior protected brass plaques indicating underground service entrances.

### 1.3 RELATED SECTIONS

- A. Examine all drawings and criteria sheets and all other Sections of the Specifications for requirements which affect work under this Section whether or not such work is specifically mentioned in this Section.

### 1.4 REFERENCES

- A. Applicable provisions of the following Codes and Trade Standard Publications shall apply to the work of this Section, and are hereby incorporated into, and made a part of the Contract Documents.
- B. Material standards shall be as specified or detailed hereinafter and as follows:
  - 1. ASME A 13.1 – Scheme for Identification of Piping Systems; The American Society of Mechanical Engineers.

### 1.5 SUBMITTALS

- A. See Section 15050 and General Conditions for Additional Requirements.
- B. Product Data: Submit product description including materials, attachment methods, color coding and lettering sizes.

### 1.6 QUALITY ASSURANCE

- A. All materials, lettering and individual system color coding schemes shall be uniform and of one single manufacturer.
- B. No identification shall be installed until all systems are complete and insulated.
- C. All surfaces shall be cleaned.
- D. No nametag or identification shall break or penetrate a surface used as a vapor barrier.

### 1.7 REGULATORY REQUIREMENTS

- A. Conform to all local/state and NFPA requirements for color-coding or painting of systems, piping or equipment related to Life Safety or Fire Protection.

## 1.8 DELIVERY, STORAGE AND HANDLING

- A. All identification systems shall be stored in sealed containers in suitable locations to keep the containers and contents dry and clean.

## 1.9 ENVIRONMENTAL REQUIREMENTS

- A. All surfaces shall be cleaned and dry before applying any form of identification or tagging.
- B. Consult with the manufacturer prior to installation for the proper tagging and identification procedure and materials to be used on exterior outdoor equipment.

## PART 2 – PRODUCTS

### 2.1 GENERAL

- A. Acceptable manufactures contingent on compliance with the specification.

- 1. Seton
- 2. W. H. Bradey Company
- 3. Marning Services Incorporated

### 2.2 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 is 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.
  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 the Owner.
  
- 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

### 2.3 DUCTWORK IDENTIFICATION

- A. All ductwork (supply, return, exhaust, etc.) serving multiple spaces or floors shall be identified with directional flow arrows and unit identification numbers (AHU-1, EX-1, etc.) on the side of each duct (or bottom if abutting other systems or obstructions).
- B. All flow arrows and labels shall be similar to Seton Name Plate Company vinyl labels or stencil painted.
- C. The kitchen hood exhaust system shall also have identified access doors with numbers of specific doors identified on the Record As-Built Drawings.
- D. All duct access doors.

### 2.4 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.

### 2.5 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.

### 2.6 CEILING TACKS OR TAPE

- A. 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.

- B. 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 duct markers in accordance with manufacturer's instructions.
- D. Install plastic pipe markers in accordance with manufacturer's Instructions.
- E. Install plastic tape markers complete around pipe in accordance with manufacturer's instructions.
- F. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- G. Identify air handling units, pumps, boilers, 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.
- H. Identify control panels and major control components outside panels with plastic nameplates.
- I. Install detector tape on all under ground services in accordance with the manufactures recommendations.
- J. Identify thermostats relating to air handling equipment serving multiple spaces.
- K. Identify valves in main and branch piping with valve tags.

- L. Tag automatic controls, instruments and relays. Key to control schematic.
- M. 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.
- N. Identify ductwork with plastic nameplates and flow arrows. Identify with air handling unit or fan identification number and area served. Locate identification at air handling unit or fan, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION