SECTION 23 05 53
MECHANICAL SYSTEMS IDENTIFICATION

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish and install pipe and duct markers, valve tags, and equipment nameplates for systems installed under this contract, as specified herein.

B. Provide list of valves, and update list at end of project, to provide as-built valve list to Owner.

C. Provide graphic floor plan mounted in a frame in the Computer Room with all valves indicated under raised floor or above ceilings. Provide valve tag and raised floor grid numbering from the Engineer's drawings.

1.2 REFERENCES

A. ASME A13.1 - Scheme for the Identification of Piping Systems.

1.3 SUBMITTALS

A. Furnish samples or catalog cuts of pipe markers, valve tags, and equipment nameplates for approval by the Engineer.

PART 2 - PRODUCTS

2.1 PIPE MARKERS

A. Pipe markers shall be Setmark wrap-around markers by Seton Nameplate Corporation. Markers shall be cylindrically coiled plastic sheets for pipes to 4" size, and flat plastic wrap-around markers with nylon ties for 6" size and above. Markers shall be rated for a service temperature of 32º to 150º F. Pipe markers shall have lettering size based on pipe diameter, to be easily readable without overlapping.

2.2 PLASTIC DUCT MARKERS

A. General: Provide manufacturer's standard laminated plastic, color coded duct markers. Conform to the following color code:

1. Yellow/Green: Supply air.

B. Nomenclature: Include the following:

1. Direction of airflow.
2. Duct service (supply, return, exhaust, etc.).
3. Duct origin (from).

2.3 VALVE & EQUIPMENT TAGS

A. Valve tags shall be stock brass valve tags as manufactured by Seton Nameplate Corporation. Tags shall be 19 gauge thickness, 1½ " diameter, with ¼" black-filled legend and ½" black-filled number.

B. Equipment tags shall be laminated plastic, minimum 1½" high, white background with ½" black-filled lettering. Furnish tags for CRAC units, RTUs, MUA, H, FPTs, EF, EUH and other major equipment in system.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Prepare and degrease and clean surfaces to receive adhesive for identification materials.

B. Coordination: Where identification is to be applied to surfaces which require insulation, painting or other covering or finish, including valve tags in finished mechanical spaces, install identification after completion of covering and painting. Install identification prior to installation of acoustical ceilings and similar removable concealment.

3.2 DUCTWORK IDENTIFICATION

A. General: Identify air supply, return, exhaust, intake and relief ductwork with duct markers; showing ductwork service and direction of flow, in black or white (whichever provides most contrast with ductwork color).

B. Location: In each space where ductwork is exposed, or concealed only by removable ceiling system, locate signs near points where ductwork originates or continues into concealed enclosures (shaft, underground or similar concealment), and at 20' spacings along exposed runs.

C. Access Doors: Provide duct markers on each access door in ductwork and housings, indicating purpose of access (to what equipment) and other maintenance and operating instructions, and appropriate safety and procedural information.

D. Concealed Doors: Where access doors are concealed above acoustical ceilings or similar concealment, plasticized tags may be installed for identification in lieu of specified signs, at Installer's option.

3.3 PIPING SYSTEM IDENTIFICATION

A. General: Install pipe markers of one of the following types on each system and include arrows to show normal direction of flow:

1. Plastic pipe markers, with application system as indicated under "Materials" in this section. Install on pipe insulation segment where required for hot non-insulated pipes.

B. Locate pipe markers and color bands as follows wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.

1. Near each valve and control device.
2. Near each branch, excluding short take-offs for fixtures and terminal units; mark each pipe at branch, where there could be question of flow pattern.
3. Near locations where pipes pass through walls or floors/ceilings, or enter non-accessible enclosures.
4. At access doors, manholes and similar access points which permit view of concealed piping.
5. Near major equipment items and other points of origination and termination.
6. Spaced intermediately at maximum spacing of 20' along each piping run.
7. On piping above removable acoustical ceilings, except omit intermediately spaced markers.

3.4 VALVE IDENTIFICATION

A. General: Provide valve tag on every valve, cock and control device in each piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibs, and shut-off valves at plumbing fixtures,

HVAC terminal devices and similar rough-in connections of end-use fixtures and units. List each tagged valve in a valve schedule for each piping system.

B. Stencil valve tag number on insulation covering valve body so that the number can be observed from the floor of the pump room.

C. Mark all valve wheels with indication of status (open/closed) so that position is observable from the floor of the pump room. Add contrasting color marker to hand wheel and/or chain wheel that points in the direction of flow when the valve is open.

3.5 MECHANICAL EQUIPMENT IDENTIFICATION

A. General: Install engraved plastic laminate sign or plastic equipment marker on or near each major item of mechanical equipment and each operational device, as specified herein if not otherwise specified for each item or device. Provide signs for the following general categories of equipment and operational devices:

1. CRAC Units.
2. Condensers and economizer pumps.
3. Exhaust Fans.
4. Humidifiers.
5. Rooftop Units and Make up Air Units.
6. Fan Powered Terminals.

B. Equipment labels shall be 2” black letters on 6”x4” white background.

C. Text of Signs: In addition to name of identified unit, provide lettering to distinguish between multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations.

END OF SECTION