SECTION 10 14 00

IDENTIFICATION DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Tag, tape and stenciling systems for equipment, piping, valves, pumps, ductwork and similar items, and hazard and safety signs.

B. Related Specification Sections include but are not necessarily limited to:
   1. Division 00 - Procurement and Contracting Requirements.
   2. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

A. Referenced Standards:
   1. American Society of Mechanical Engineers (ASME):
      a. A13.1, Scheme for the Identification of Piping Systems.
   2. The International Society of Automation (ISA).
   3. National Electrical Manufacturers Association/American National Standards Institute (NEMA/ANSI):
      a. Z535.1, Safety Color Code.
      b. Z535.2, Environmental and Facility Safety Signs.
      c. Z535.3, Criteria for Safety Symbols.
      d. Z535.4, Product Safety Signs and Labels.
   4. National Fire Protection Association (NFPA):
      a. 70, National Electrical Code (NEC).
   5. Occupational Safety and Health Administration (OSHA):
      a. 29 CFR 1910.145, Specification for Accident Prevention Signs and Tags.

1.3 SUBMITTALS

A. Shop Drawings:
   1. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.
   2. Product technical data including:
      a. Catalog information for all identification systems.
      b. Acknowledgement that products submitted meet requirements of standards referenced.
   3. Identification register, listing all items in PART 3 of this Specification Section to be identified, type of identification system to be used, lettering, location and color.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
   1. W.H. Brady Co.
   2. Panduit.
   3. Seton.

4. National Band and Tag Co.
5. Carlton Industries, Inc.

B. Submit request for substitution in accordance with Specification Section 01 25 13.

2.2 MANUFACTURED UNITS

A. Type A1 - Round Metal Tags:
1. Materials:
a. Aluminum or stainless steel.
b. Stainless steel shall be used in corrosive environments.
2. Size:
a. Diameter: 1-1/2 IN minimum.
b. Thickness: 0.035 IN (20 GA) minimum.
3. Fabrication:
a. 3/16 IN minimum mounting hole.
b. Legend: Stamped and filled with black coloring.
4. Color: Natural.

B. Type A2 - Rectangle Metal Tags:
1. Materials: Stainless steel.
2. Size:
a. 3-1/2 IN x 1-1/2 IN minimum.
b. Thickness: 0.036 IN (20 GA) minimum.
3. Fabrication:
a. 3/16 IN minimum mounting hole.
b. Legend: Stamped and filled with black coloring.
4. Color: Natural.

C. Type F - Underground Warning Tape:
1. Materials: Polyethylene.
2. Size:
a. 6 IN wide (minimum).
b. Thickness: 3.5 mils.
3. Fabrication:
a. Legend: Preprinted and permanently imbedded.
b. Message continuous printed.
c. Tensile strength: 1750 PSI.
4. Color: As specified.

D. Type G - Stenciling System:
1. Materials:
a. Exterior type stenciling enamel.
b. Either brushing grade or pressurized spray can form and grade.
2. Size: As required.
3. Fabrication:
a. Legend: As required.
4. Color: Black or white for best contrast.

E. Underground Tracer Wire:
1. Materials:
a. Wire:
1) 12 GA AWG.
2) Solid.
b. Wire nuts: Waterproof type.
c. Split bolts: Brass.

2.3 ACCESSORIES

A. Fasteners:
   1. Bead chain: #6 brass, aluminum or stainless steel.
   2. Plastic strap: Nylon, urethane or polypropylene.
   3. Screws: Self-tapping, stainless steel.
   4. Adhesive, solvent activated.

2.4 MAINTENANCE MATERIALS

A. Where stenciled markers are provided, clean and retain stencils after completion and include in extra stock, along with required stock of paints and applicators.

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION

A. Install identification devices at specified locations.

B. All identification devices to be printed by mechanical process, hand printing is not acceptable.

C. Attach tags to equipment with sufficient surface or body area with solvent activated adhesive applied to back of each tag.

D. Attach tags with 1/8 IN round or flat head screws to equipment without sufficient surface or body area, or porous surfaces.
   1. Where attachment with screws should not or cannot penetrate substrate, attach with plastic strap.

E. Single items of equipment enclosed in a housing or compartment to be tagged on outside of housing.
   1. Several items of equipment mounted in housing to be individually tagged inside the compartment.

F. Tracer Wire:
   1. Attach to pipe at a maximum of 10 FT intervals with tape or tie-wraps.
   2. Continuous pass from each valve box and above grade at each structure.
   3. Coil enough wire at each valve box to extend wire a foot above the ground surface.
   4. 1,000 FT maximum spacing between valve boxes.
   5. If split bolts are used for splicing, wrap with electrical tape.
   6. If wire nuts are used for splicing, knot wire at each splice point leaving 6 IN of wire for splicing.
   7. Use continuous strand of wire between valve box where possible.
      a. Continuous length shall be no shorter than 100 FT.

3.2 SCHEDULES

A. Process Systems:
   1. General:
      a. Provide arrows and markers on piping.
         1) At 20 FT maximum centers along continuous lines.
         2) At changes in direction (route) or obstructions.
         3) At valves, risers, "T" joints, machinery or equipment.

4) Where pipes pass through floors, walls, ceilings, cladding assemblies and like obstructions provide markers on both sides.

b. Position markers on both sides of pipe with arrow markers pointing in flow direction.

1) If flow is in both directions use double headed arrow markers.

c. Apply tapes and stenciling in uniform manner parallel to piping.

2. Trenches with piping:

a. Tag type: Type F - Underground Warning Tape

b. Location: Halfway between top of piping and finished grade.

c. Letter height: 1-1/4 IN minimum.

3. Piping systems:

a. Tag type:

1) Outdoor locations: Type G - Stenciling System.

2) Indoor locations:

a) Type D - Self-Adhesive Tape Tags and Signs.

b) Type G - Stenciling System.

b. Fastener: Self.

c. Color: Per ASME A13.1.

d. Legend:

1) Letter height: Manufacturers standard for the pipe diameter.

2) Mark piping in accordance with ASME A13.1.

3) Use piping designation as indicated on the Drawings.

4) Arrow: Single arrow.

4. Enclosure for instrumentation and control equipment, (e.g., lighting control panels, etc.):

a. Tag type: Type C - Phenolic Name Plates.

b. Fastener: Screws.

c. Legend:

1) Letter height: 1/2 IN minimum.

2) Equipment name (e.g., "LIGHTING CONTROL PANEL LCPxxx").

5. Components inside equipment enclosures (e.g., circuit breakers, fuses, control power transformers, control relays, contactors, timers, etc.):

a. Tag type: Type D - Self-Adhesive Tape Tags and Signs.

b. Fastener: Self.

c. Legend:

1) Letter height: 3/16 IN minimum.

2) Description or function of component (e.g., "M-xxx", “CR-xxx” or “TR-xxx").

END OF SECTION