

SECTION 16075

ELECTRICAL IDENTIFICATION

PART I - GENERAL

A. SUMMARY

1. Section Includes:
 - a. Nameplates.
 - b. Labels.
 - c. Wire markers.
 - d. Conduit markers.
 - e. Stencils
 - f. Underground Warning Tape.
 - g. Lockout Devices.
2. Related Sections:
 - a. Section 09900 – Paints and Coatings: Execution requirements for painting specified by this section.

B. SUBMITTALS

1. Section 01330 – Submittal Procedures: Submittal procedures.
2. Product Data:
 - a. Submit manufacturer's catalog literature for each product required.
 - b. Submit electrical identification schedule including list of wording, symbols, letter size, color coding, tag number, location, and function.
 - c. Submit two samples of each type of identification products applicable to project.
 - d. Submit two nameplates, 4 x 4 inch in size illustrating materials and engraving quality.
3. Manufacturer's Installation Instructions: Indicate installation instructions, special procedures, and installation.

C. QUALITY ASSURANCE

1. Perform Work in accordance with PHA standard.

D. QUALIFICATIONS

1. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

2. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

E. DELIVERY, STORAGE, AND HANDLING

1. Section 01600 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.
2. Accept identification products on site in original containers. Inspect for damage.
3. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
4. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

F. ENVIRONMENTAL REQUIREMENTS

1. Section 01600 – Product Requirements: Environmental conditions affecting products on site.
2. Install nameplates only when ambient temperature and humidity conditions for adhesive are within range recommended by manufacturer.

PART II - PRODUCTS

A. NAMEPLATES

1. Furnish materials in accordance with PHA standards.
2. Product Description: Laminated three-layer plastic with engraved black letters on white contrasting background color.
3. Letter Size:
 - a. $\frac{1}{8}$ inch high letters for identifying individual equipment and loads.
 - b. $\frac{1}{4}$ inch high letters for identifying grouped equipment and loads.
4. Minimum nameplate thickness: $\frac{1}{8}$ inch.

B. LABELS

1. Furnish materials in accordance with standards.
2. Labels: Embossed adhesive tape, with $\frac{3}{16}$ inch white letters on black background.

C. WIRE MARKERS

1. Furnish materials in accordance with PHA standards.
2. Description: Cloth tape, split sleeve, or tubing type wire markers.
3. Legend:
 - a. Power and Lighting Circuits: Branch circuit or feeder number as indicated on Drawings.
 - b. Control Circuits: Control wire number as indicated on schematic and interconnection diagrams.

D. CONDUIT AND RACEWAY MARKERS

1. Furnish materials in accordance with PHA standards.
2. Description: Stencils.
3. Color:
 - a. 480 Volt System: Black lettering on white background.
 - b. 208 Volt System: Black lettering on white background.
 - c. Fire Alarm System: Red lettering on white background.
 - d. Telephone/CATV System: Blue lettering on white background.

E. STENCILS

1. Furnish materials in accordance with PHA standards.
2. Stencils: With clean cut symbols and letters of following size:
 - a. Up to 2 inches Outside Diameter of Raceway: ½ inch high letters.
 - b. 2-½ to 6 inches Outside Diameter of Raceway: 1 inch high letters.
3. Stencil Paint: As specified in Section 09900, semi-gloss enamel, colors conforming to the following:
 - a. Black lettering on white background.
 - b. White lettering on gray background.
 - c. Red lettering on white background.
 - d. Blue lettering on white background.

F. UNDERGROUND WARNING TAPE

1. Description: 4 inch wide plastic tape, detectable type, colored yellow with suitable warning legend describing buried electrical lines as per PREPA and JRT regulations.

G. LOCKOUT DEVICES

1. Lockout Hasps:
 - a. Manufacturers:
 1. Substitutions: Section 01600 – Product Requirements.
 - b. Anodized aluminum hasp with erasable label surface; size minimum 7-¼ x 3 inches.

PART III - EXECUTION**A. PREPARATION**

1. Degrease and clean surfaces to receive adhesive for identification materials.
2. Prepare surfaces in accordance with Section 09900 for stencil painting.

B. EXISTING WORK

1. Install identification on existing equipment to remain in accordance with this section.
2. Install identification on unmarked existing equipment.
3. Replace lost nameplates.
4. Re-stencil existing equipment.

C. INSTALLATION

1. Install identifying devices after completion of painting.
2. Nameplate Installation:
 - a. Install nameplate parallel to equipment lines.
 - b. Install nameplate for each electrical distribution and control equipment enclosure with corrosive-resistant mechanical fasteners, or adhesive.
 - c. Install nameplates for each control panel and major control components located outside panel with corrosive-resistant mechanical fasteners, or adhesive.
 - d. Secure nameplate to equipment front using screws, rivets, or adhesive.
 - e. Secure nameplate to inside surface of door on recessed panel-board in finished locations.
- f. Install nameplates for the following:
 1. Switchboards.

2. Panel-boards.
 3. Transformers.
 4. Service Disconnect.
3. Label Installation:
- a. Install label parallel to equipment lines.
 - b. Install label for identification of individual control device stations.
 - c. Install labels for permanent adhesion and seal with clear lacquer.
4. Wire Marker Installation:
- a. Install wire marker for each conductor at panel-board gutters, pull boxes, outlet and junction boxes, and each load connection.
 - b. Mark data cabling at each end. Install additional marking at accessible locations along the cable run.
 - c. Install labels at data outlets identifying patch panel and port designation as indicated on Drawings.
5. Conduit Raceway Marker Installation:
- a. Install conduit raceway marker for each conduit raceway longer than 6 feet.
 - b. Conduit Raceway Marker Spacing: 20 feet on center.
 - c. Raceway Painting: Identify conduit using field painting in accordance with Section 09900.
 1. Paint colored band on each conduit longer than 6 feet.
 2. Paint bands 20 feet on center.
 3. Color:
 - a. 480 Volt System: Blue.
 - b. 208 Volt System: Yellow.
 - c. Fire Alarm System: Red.
 - d. Telephone/CATV System: Green.
6. Stencil Installation: Apply stencil painting in accordance with Section 09900.
7. Underground Warning Tape Installation: Install underground warning tape along length of each underground conduit, raceway, or cable 6 to 8 inches below finished grade, directly above buried conduit, raceway, or cable as per PREPA and JRT regulations.

END OF SECTION 16075