SECTION 21 05 53

FIRE PROTECTION PIPING AND EQUIPMENT IDENTIFICATION

PART 1 – GENERAL

1.1 PURPOSE
- A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 **LESSONS LEARNED AND DESIGN CONSIDERATIONS**
- **A. FDC signage to be provided by UTA EH&S.**

1.3 THE FOLLOWING SECTIONS ARE TO BE INCLUDED AS IF WRITTEN HEREIN:
- A. Section 21 00 00 – Basic Fire Protection Requirements.
- B. Section 21 05 29 – Fire Protection Supports and Sleeves.

1.4 SECTION INCLUDES
- A. Nameplates.
- B. Tags.
- C. Stencils.
- D. Pipe Markers.
- E. Ceiling Tacks.

1.5 RELATED SECTIONS
- A. Section 09 91 00 – Painting: Identification painting.

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

1.7 SUBMITTALS
- A. Submit under provisions of Section 21 00 00.
- B. Submit list of wording, symbols, letter size, and color coding for mechanical identification.
- C. Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- D. Product Data: Provide manufacturers catalog literature for each product required.
- E. Samples: Submit two of each type of label, tag, etc., of the approximate size specified of implied in the specification.
- F. Manufacturer's Installation Instructions: Indicate special procedures, and installation.

1.8 PROJECT RECORD DOCUMENTS
- A. Submit under provisions of Section 21 00 00.
- B. Record actual locations of tagged valves.

PART 2 – PRODUCTS

2.1 GENERAL
- A. All materials shall meet or exceed all applicable referenced standards, federal, state and local requirements, and conform to codes and ordinances of authorities having jurisdiction.

2.2 MANUFACTURERS
- A. Equipment Tags, Valve Tags, and Markers:
  1. Marking Systems, Inc.

2. Seton Name Plate Company.
3. W.H. Brady Company.
4. Graphic Products, Inc.

2.3 EQUIPMENT

A. Description: 3" x 4" vinyl label, 3.0 Mil self-adhesive vinyl similar to DuraLabel Pro. Label color shall be black text on a white background. The label shall contain the following information per the template, described in Attachment "B":
   1. Asset Short Description As listed in Equipment Matrix.
   2. Asset Number: As listed in Equipment Matrix.
   3. Asset Location: As listed in Equipment Matrix.
   4. Asset Bar Code Number.
B. All scheduled equipment shall be identified with an Equipment Tag.

2.4 VALVE TAGS

A. Valve tags shall conform to ANSI A13.1-1981 "Scheme for the Identification of Piping Systems", refer to Attachment "A" for abbreviation, and label color designations.
B. Valve tags shall be black ABS plastic tags: Injected molded ABS plastic, 3.375" X 4.75" with self-adhesive vinyl label, similar to DuraLabel Pro, affixed to valve tag. Each tag shall be attached to its valve with one tie strap.
C. Vinyl Label: 3.0 Mil self-adhesive vinyl similar to DuraLabel Pro. Label color shall be as per the standard designated colors listed in the attachment to this specification. The label shall contain the following information as per template, refer to Attachment "B":
   1. Asset Short Description: As listed in Equipment Matrix.
   2. Asset Number: As listed in Equipment Matrix.
   3. Asset Location: As listed in Equipment Matrix.
   4. Asset Bar Code Number.
D. Each valve shall be named as per attached valve tag naming convention, refer to Attachment "C".
E. In addition to valve tags, valves at PRV stations, and other valves as specified shall be tagged with standardized color coded plastic tags. Each tag shall be attached to its valve with one tie strap. These tags shall be 2-½ inches wide by 1-½ inches high with these color codings:
   1. Red = normally closed.
   2. Green = normally open.
   3. Blue = open in winter, closed in summer.
   4. Yellow = closed in winter, open in summer.
F. Valve Tag Fasteners: Single ABS plastic tie strap.

ENGINEERS NOTE – UTS BASE DESIGN REQUIRES FIRE PROTECTION PIPING TO BE PAINTED RED, THEN DELETE THE FOLLOWING PARAGRAPH

2.5 PIPE MARKERS

A. Pipe Markers shall conform to ANSI A13.1-2007 "Scheme for the Identification of Piping Systems" as indicated below.

Pipe Contents	Label Abbreviation	Label Colors (Background/Text)
Fire Suppression Water	FIRE	Red/White
Dry Pipe Sprinklers	DRY FIRE	Red/White
Pre-action Sprinklers	PREACTION	Red/White
Wet Sprinklers	WET FIRE	Red/White

B. Arrow markers must have same ANSI background colors as their companion pipe markers, or be incorporated into the pipe identification marker.
C. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

D. Plastic Tape Pipe Markers: Heat sealed or heat shrink, spring fasteners, clips or snap-on are acceptable.
E. Underground Plastic Pipe markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.
F. Pipe markers and arrow markers also shall be provided for all piping systems.
G. Use Seton Setmark Type SNA or Brady snap-on type identification for all piping systems, up through 6 inch. For piping systems larger than 6 inches, use Seton or Brady strap-on markers or similar by Marking Services, Inc.

2.6 CEILING TACKS

A. Description: 3/4" x variable length" vinyl label, 3.0 Mil self-adhesive vinyl similar to Dura Label Pro. Label color shall be black text on a white background. The label shall contain the following information per the template, described in Attachment "C":
   1. Asset Short Description:As listed in Equipment Matrix.
   2. Asset Bar Code Number.
B. All scheduled equipment above finish lay-in ceiling shall be identified with an Equipment Tag.
C. All ceiling grid tags shall be installed prior to the ceiling cover inspection.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Installation shall meet or exceed all applicable federal, state and local requirements, referenced standards and conform to codes and ordinances of authorities having jurisdiction.
B. All installation shall be in accordance with manufacturer's published recommendations.
C. Install plastic tape, and pipe markers completely around pipe in accordance with manufacturer's instructions.
D. Locate markers on the two (2) lower quarters of the pipe where view is unobstructed.

3.2 VALVE TAGS

A. Contractor(s) shall provide and install valve tags on all valves installed within this Project, except check valves; Existing valve tags shall not be attached to new valves. When removing and/or replacing existing tagged valves, give the Owner all existing tags that are attached to the valves that are removed. New tags with new asset numbers shall be provided for new valves.

3.3 APPLICATION OF MARKERS AND STENCILS

A. Piping runs throughout the Project including those above lift-out ceilings, under floor and those exposed to view when access doors or access panels are opened shall be identified by means of pipe markers and/or stencils. Concealed areas, for purposes of this identification section, are those areas that cannot be seen except by demolition of the building elements. In addition to pipe markers and/or stencils, arrow markers shall be used to indicate direction of flow.
B. As a minimum, locate pipe markers and/or stencils as follows:
   1. Provide a pipe marker at each valve to indicate proper identification of pipe contents. Where several valves exist on one (1) header, it is necessary to mark only the header.
   2. Every 20 feet in exposed and concealed areas on all piping systems. Provide at least one (1) pipe marker in each room on all piping systems.
   3. At each branch or riser take off on piping systems, excluding short takeoffs for fixtures.
   4. Provide a pipe marker or stencil and an arrow marker at every point of pipe entry or exit where the pipe penetrates a wall, floor, service column or enclosure.
      a. At access doors, manholes and similar access points that permit view of concealed piping.
      b. Near major equipment items and other points of origination and termination.
C. Provide an arrow marker with each pipe marker pointing away from the pipe marker to indicate direction of flow.
D. Provide a double-ended arrow marker when flow can be in either or both directions.
E. Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
F. Identify control panels and major control components outside panels with plastic nameplates.
G. Identify valves in main and branch piping with tags.
H. Tag automatic controls, instruments and relays. Key to control schematic.
I. Provide ceiling grid tags to locate valves or other concealed equipment above T-bar type panel ceilings. Locate in corner of grid closest to equipment.

J. Identify right and left nipple and coupling union assemblies with the statement “Right/Left Nipple/Coupling”.

END OF SECTION