SECTION 27 05 53 – IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Provide all labor, materials, and equipment for the complete installation of Work called for in the Contract Documents.

B. This section includes the minimum requirements for the labeling of communications infrastructure.

C. Included in this section are the minimum composition requirements and installation methods for the following:

1. Equipment Rack Labels
2. 110-Block Labels
3. Patch Panel Labels
4. Cable Labels
5. Faceplate Labels
6. Conduit System Labels
7. Ground Tags
8. Innerduct Tags

1.2 DEFINITIONS AND TERMS

A. Trade association names and communications terminology are frequently abbreviated. The following acronyms or abbreviations may be referenced within this Section:

1. AACS Automated Access Control System
2. ANSI American National Standards Institute
3. AWG American Wire Gauge
4. BICSI Building Industry Consulting Service International
5. CCTV Closed Circuit Television System
6. CR Communications Room
7. DFW Dallas/Fort Worth International Airport
8. EF Equipment Field
9. LV Low Voltage
10. MATV Master Antenna Television
11. NECA National Electrical Contractors Association
12. NEMA National Electric Manufacturers Association
13. NFPA National Fire Protection Association
14. OAR Owner’s Authorized Representative
15. PA/VE Public Address and Voice Evacuation System
16. RCDD Registered Communications Distribution Designer
17. STD Standard
18. TGB Telecommunications Grounding Busbar
19. TIA Telecommunications Industry Association
20. TMGB Telecommunications Main Ground Bus Bar
21. TR Telecommunications Room
22. UL Underwriters Laboratories
23. UV Ultraviolet

1.3 QUALITY ASSURANCE

A. All cable and equipment shall be installed in a neat and workmanlike manner. All methods of construction that are not specifically described or indicated in the contract documents shall be subject to the control and approval of the OAR.

B. Equipment and materials shall be of the quality and manufacture indicated. The equipment specified is based upon the acceptable manufacturers listed. Where “approved equal” is stated, or a substitution is requested, equipment shall be equivalent in every way to that of the equipment specified. All substitutions are subject to the control and approval of the OAR.

C. Strictly adhere to all BICSI and TIA recommended installation practices when installing communications labeling systems.

D. Contractor’s Qualifications:

1. Firms regularly engaged in the installation of Communications Cabling that have five (5) years of installation experience with systems similar to that required for this project.
2. Provide references to include client names, phone numbers and a summary of project details. These references will be checked, and the clients will be asked questions relative to the performance of your company.
3. Provide verification that installation personnel responsible have been properly trained to install the products described in this Section.
4. Provide a BICSI RCDD certified professional for oversight on this project. This person does not have to be working on-site but must be accessible to answer questions and provide weekly status reports. The RCDD shall be a full time employee of the contractor.
5. Provide full time project manager with a minimum of ten (10) years field experience in installation of communications systems and infrastructures. Project manager shall be assigned for the duration of the project and shall not be replaced without written consent from the OAR.

E. Manufacturer’s Qualifications:

1. Firms regularly engaged in manufacture of products of the types, ratings and capacities required for this project; whose products have been in satisfactory use in similar service for not less than five (5) years, with production capabilities per applicable NEMA standards.

F. Material and Work specified herein shall comply with the applicable requirements of:

1. NECA 1 – Standard Practice of Good Workmanship in Electrical Construction, 2010
2. ANSI/TIA-606-C – Administration Standard for the Telecommunications Infrastructure of Commercial Buildings, 2015
3. NFPA 70 – National Electric Code, 2017
4. BICSI – Telecommunications Distribution Methods Manual, 13th Edition
5. DFW Airport Design Criteria Manual
6. US Customs and Border Protection Airport Technical Design Standard, 2017
7. Applicable codes and directives of authorities having jurisdiction

G. Work:

1. The Work shall be performed in compliance with the applicable manufacturer’s installation instructions, Standards, and certifications listed herein, the Contract Documents, and governing codes and regulations of the authorities having jurisdiction.
2. The drawing and specification requirements govern where they exceed Code and Regulation requirements.
3. Where requirements between governing Codes and Regulations vary, the more restrictive provision applies.

4. Nothing in the Contract Documents grants authority or permission to disregard or violate any legal requirements.

1.4 CONFLICTS

A. This installation shall be made in strict accordance with the Specifications, Drawings, any applicable codes, referenced publications and standards. In case of conflicts between the aforementioned, notify the OAR in writing prior to commencement of affected work.

1.5 SCHEDULING

A. The Contractor shall comply with all scheduling requests established by OAR, both prior to commencing Work, and during construction. The Contractor shall provide a detailed schedule of work to be performed.

1.6 REQUIREMENTS

A. All references to manufacturers, model numbers and other pertinent information herein are intended to establish standards of performance and quality of construction. The OAR must approve material submittal and substitutions in writing.

B. Verification that all the components specified and installed meet the criteria specified by the respective component manufacturer, supplier and designer is the responsibility of the Contractor.

C. All installation tools, special equipment and testing apparatus required to accomplish field connections and related work as described herein shall be furnished by the Contractor at no additional cost.

D. The requirements as given in this document are to be adhered to unless revised by the OAR in writing.

E. The Owner reserves the right to waive these requirements at any time.

1.7 SUBMITTALS

A. Comply with provisions of Division 01.

B. Comply with provisions of Section 27 05 00.

C. Provide product data for the following:

1. Product data consisting of manufacturers specifications for each type of product to be installed, all applicable certifications and elevation/plan documents supporting compliance with stated Specifications.
2. Proposed format of as-built documentation.

1.8 CONTRACTOR CLOSE OUT SUBMITTALS

A. Submit Closeout documentation in accordance with Division 01 of the Project Manual and any applicable supplements. The number of submittal sets required is the greater of either the requirements of Division 01 of the Project Manual, or a minimum of four (4) sets.

1. Segregate documents into separate binders containing data relevant to operational, maintenance, and warranty issues.
2. Provide above closeout documentation as an electronic file in PDF format.

B. Warranty and Maintenance:

1. Record Drawings

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials factory-packaged in containers or reels and handle in accordance with manufacturer's recommendations. Store in a clean, dry space and protect products from damaging fumes and traffic. Handle materials carefully to avoid damage.

B. Storage space on project site may be limited. Contractor shall coordinate delivery and arrange storage of materials and equipment with the OAR.

C. Components sensitive to damage in a harsh environment shall be stored off-site and delivered as needed.

D. Provide protective covering during construction to prevent damage or entrance of foreign matter.

E. Contractor is responsible for on-site security of tools, test equipment and materials.

F. Replace at no expense to Owner, product damaged during storage, handling or the course of construction.

1.10 PROJECT CONDITIONS

A. Verify conditions on the job site are applicable to this Work. Notify Architect in writing of discrepancies, conflicts, or omissions promptly upon discovery.

B. The Drawings diagrammatically show cabling and arrangements of equipment fitting the space available without interference. If conditions exist which make it impossible to install Work as shown, recommend solutions and/or submit drawings to the Architect for approval, showing how the Work may be installed.

1.11 WARRANTY

A. Warrant labor and product to be free of defects and deficiencies, and to conform to the drawings and specifications as to kind, quality, function, and characteristics, following Contractor Warranty requirements defined in Division 01. Repair or replace defects occurring in labor or product within the Warranty period without charge.

B. All surplus parts and pieces to the installation shall be maintained as a spare parts inventory at the building site. Parts replaced during the warranty period shall have a warranty matching that of the original part from date of replacement.

PART 2 - PRODUCTS

2.1 GENERAL

A. The products specified in this document do not necessarily constitute the exhaustive list of products required to complete the statement of work. Except where described in the SUMMARY subpart of this document, the contractor is responsible for providing any other parts and materials needed to deliver a complete and working system.

B. Labels and markings shall be physically and chemically resistant to damage that would render the label unreadable.

C. All labels shall be ANSI/TIA-606-C compliant labeling products. All cables, faceplates, patch panels, 110 blocks, conduit, Innerduct and patch cords shall be labeled to ANSI/TIA -606-C standards.

2.2 ADHESIVE COMPONENT LABELS

A. Outlet Label - 2-Port Identifier

1. Ink/laser printed labels shall be constructed of die-cut, adhesive polyolefin.
2. Thermal transfer labels shall be constructed of die-cut, adhesive polyester.
3. Label shall be 1.25 inches (31.8 mm) wide, by 0.30 inch (7.6 mm) high.
4. The label shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) C125X030FJC Network Label, P1 Cassette
        2) C125X030FJJ Network Label, Laser/Ink Jet
        3) C125X030YPT Network Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

B. Copper Patch Panel and Work Area Outlet Label, 4-Port

1. Ink/laser printed labels shall be constructed of die-cut, adhesive polyolefin.
2. Thermal transfer labels shall be constructed of die-cut, adhesive polyester.
3. Label shall be 2.52 inches (64.0 mm) wide, by 0.30 inch (7.6 mm) high.
4. The label shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) C252X030FJC Component Label, P1 Cassette
        2) C252X030FJJ Component Label, Laser/Ink Jet
        3) C252X030YPT Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

C. Copper Patch Panel Label, 6-Port

1. Ink/laser printed labels shall be constructed of die-cut, adhesive polyolefin.
2. Thermal transfer labels shall be constructed of die-cut, adhesive polyester.

3. Label shall be 3.79 inches (96.3 mm) wide, by 0.30 inch (7.6 mm) high.
4. The label shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) C379X030FJC Component Label, P1 Cassette
        2) C379X030FJJ Component Label, Laser/Ink Jet
        3) C379X030YPT Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

D. Fiber Patch Panel Port Labels

1. Ink/laser printed labels shall be constructed of die-cut, adhesive polyester, or black-on-white vinyl tape.
2. Label shall be 3.50 inches (88.9 mm) wide, by 1.00 inch (25.4 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:
    a. Panduit
        1) T100X100VPC-BK Component Label, P1 Cassette
        2) C350X100YJJ Component Label, Laser/Ink Jet
        3) C350X100YJT Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

E. Rack and Cabinet Labels, and Cabinet Row End Labels

1. Ink/laser printed labels shall be constructed of die-cut, adhesive polyolefin.
2. Thermal transfer labels shall be constructed of die-cut, adhesive polyester.
3. Label shall be 2.00 inches (50.8 mm) wide, by 1.00 inch (25.4 mm) high.
4. The label shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) C200X100YPC Component Label, P1 Cassette
        2) C200X100YJJ Component Label, Laser/Ink Jet
        3) C200X100YJT Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

F. Cabinet Row End Labels

1. Labels shall be constructed of die-cut, adhesive polyester.
2. Label shall be 4.00 inches (101.6 mm) wide, by 4.00 inches (101.6 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:
    a. Panduit
        1) C400X400YJJ Component Label, Laser/Ink Jet
        2) C400X400YJT Component Label, Thermal Transfer
    b. Brady

c. HellermannTyton
d. Owner approved equal

G. Raised Panel Rack and Cabinet Labels

1. Label to have a raised thermal transfer printable surface, with high-tack adhesive.
2. Label shall be 2.00 inches (50.8 mm) wide x 1.00 inch (25.4 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:

a. Panduit

1) C200X100APT Component Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

H. Raised Cabinet Row End Labels

1. Label to have a raised thermal transfer printable surface, with high-tack adhesive.
2. Label shall be 3.00 inches (76.2 mm) wide, by 2.50 inches (63.5 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:

a. Panduit

1) C300X250APT Component Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

2.3 ADHESIVE WIRE MARKER LABELS

A. Category 6/6A UTP Cable and Patch Cord Labels

1. Label shall be constructed of self-laminating vinyl.
2. Label shall be 1.50 inches (38.1 mm) long, by 1.00 inch (25.4 mm) wide.
3. Label shall accommodate an outside diameter of 0.16 inch (4.0 mm) to 0.32 inch (8.1 mm).
4. The print-on area height shall be 0.50 inch (12.7 mm) and shall be white in color, with black machine-printed characters.
5. Acceptable products:

a. Panduit

1) S100X150VAC Self-Laminating Label, P1 Cassette
2) S100X150YAJ Self-Laminating Label, Laser/Ink Jet
3) S100X150VAT Self-Laminating Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

B. Fiber (2 mm & 3 mm) Cable Labels

1. Label shall be constructed of self-laminating vinyl.
2. Label shall be 1.60 inches (40.6 mm) long, by 1.00 inch (25.4 mm) wide.
3. Label shall accommodate an outside diameter of 0.25 inch (6.4 mm).
4. The print-on area height shall be 0.80 inch (20.3 mm) and shall be white in color, with black machine-printed characters.

5. Acceptable products:
    a. Panduit
        1) S100X160VAC Self-Laminating Label, P1 Cassette
        2) S100X160YAJ Self-Laminating Label, Laser/Ink Jet
        3) S100X160VAT Self-Laminating Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

C. Fiber Duplex and Ribbon Cable Labels

1. Label shall be constructed of self-laminating vinyl.
2. Label shall be 2.20 inches (55.9 mm) long, by 1.00 inch (25.4 mm) wide.
3. Label shall accommodate an outside diameter of 0.48 inch (12.2 mm).
4. The print-on area height shall be 1.10 inches (27.9 mm) and shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) S100X220VAC Self-Laminating Label, P1 Cassette
        2) S100X220YAJ Self-Laminating Label, Laser/Ink Jet
        3) S100X220VAT Self-Laminating Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

D. Copper Riser Cable

1. Label shall be constructed of self-laminating vinyl.
2. Label shall be 2.25 inches (57.2 mm) long, by 1.00 inch (25.4 mm) wide.
3. Label shall accommodate an outside diameter of 0.24 inch (6.1 mm) to 0.48 inch (12.2 mm).
4. The print-on area height shall be 0.75 inch (19.1 mm) and shall be white in color, with black machine-printed characters.
5. Acceptable products:
    a. Panduit
        1) S100X225VAC Self-Laminating Label, P1 Cassette
        2) S100X225YAJ Self-Laminating Label, Laser/Ink Jet
        3) S100X225VAT Self-Laminating Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

2.4 WIRE MARKER LABEL CORES

A. Fiber Label Core

1. Label identification sleeve for fiber jumpers.
2. Sleeve locates on a straight section of cable of at least two inches from fiber boot.
3. Sleeve made of flexible PVC material.
4. Acceptable products:
    a. Panduit

1) NWSLC-2Y for 2 mm Simplex Fiber, Yellow
2) NWSLC-3Y for 3 mm Simplex Fiber, Orange
3) NWSLC-7Y for 3 mm Duplex Fiber, White

b. Owner approved equal

2.5 NON-ADHESIVE LABELS

A. Outlet Label, 2-Port

1. Label shall be constructed of die-cut, non-adhesive polyester.
2. Label shall be 1.25 inches (31.8 mm) wide, by 0.40 inch (10.2 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:

a. Panduit

1) C195X040Y1C Component Label, P1 Cassette
2) C195X040Y1J Component Label, Laser/Ink Jet
3) C195X040Y1T Component Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

B. Copper Patch Panel and Work Area Outlet Label, 4-Port

1. Label shall be constructed of die-cut, non-adhesive polyester.
2. Label shall be 2.61 inches (66.3 mm) wide, by 0.35 inch (8.9 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:

a. Panduit

1) C261X035Y1C Component Label, P1 Cassette
2) C261X035Y1J Component Label, Laser/Ink Jet
3) C261X035Y1T Component Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

C. Copper Patch Panel Label, 6-Port

1. Label shall be constructed of die-cut, non-adhesive polyester.
2. Label shall be 3.90 inches (99.1 mm) wide x 0.30 inch (7.6 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:

a. Panduit

1) C390X030Y1C Component Label, P1 Cassette
2) C390X030Y1J Component Label, Laser/Ink Jet
3) C390X030Y1T Component Label, Thermal Transfer

b. Brady
c. HellermannTyton
d. Owner approved equal

D. 110 Termination Block Label Insert

1. Label shall be constructed of die-cut, non-adhesive polyester.
2. Label shall be 7.50 inches (190.5 mm) wide, by 0.50 inch (12.7 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:
    a. Panduit
        1) C750X050Y1C Component Label, P1 Cassette
        2) C750X050Y1J Component Label, Laser/Ink Jet
        3) C750X050Y1T Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

E. Giga-Punch Block Label Insert

1. Label shall be constructed of die-cut, non-adhesive polyester.
2. Label shall be 7.88 inches (200.2 mm) wide, by 0.50 inch (12.7 mm) high.
3. The label shall be white in color, with black machine-printed characters.
4. Acceptable products:
    a. Panduit
        1) C788X050Y1C Component Label, P1 Cassette
        2) C788X050Y1J Component Label, Laser/Ink Jet
        3) C788X050Y1T Component Label, Thermal Transfer
    b. Brady
    c. HellermannTyton
    d. Owner approved equal

PART 3 - EXECUTION

3.1 GENERAL

A. Labeling shall be by mechanical means. Hand-lettered labels are not permitted unless otherwise noted.

1. Utilize Panduit, or equivalent, labeler and software

B. Tags shall be non-removable.

1. Exceptions:
    a. Faceplate labels that are placed in recessed label holders
    b. Patch panel labels that are placed in recessed label holders
    c. Telecommunications Ground tags secured with cable ties
    d. Innerduct tags secured with cable ties

C. Labels shall match hardware layout and design.

D. Labels shall be as large as practicable while fitting properly.

E. No lettering shall be smaller than 10-point.

F. Labeling shall comply with the standards set forth in this document.

3.2 DFW AND CBP AIRPORT STANDARDS

A. Room Identification

1. Label Communications Backboard or Equipment Rack closest to entry door with unique identifying code.
2. Lettering shall be a minimum of one inch high.

B. Equipment Rack Identification

1. Label each Equipment rack with a unique alpha numeric character indicating a TR/TC and a rack number
    a. Example: RS9-01
2. Position labels at top of rack.
3. Lettering shall be a minimum of one inch high.

C. Wall Field Identification

1. Each wall field chassis must be labeled with the TR/CR ID then an alphabetical code ‘AA’ to ‘ZZ’.
2. Each wall field row must be labeled numerically starting with ‘01’ at the top.
3. Each chassis port shall be labeled by Destination Faceplate ID – Chassis# - Row#
    a. Example: RS9-017-AF-04-02

D. Patch Panel and Port Labeling

1. Patch panel ports are numbered from left to right, top to bottom starting with ’01’ to ‘24’, then for a 48 port patch panel, ‘25’ to ‘48’.
2. The top line of the data port label shall indicate the Destination Faceplate
    a. Example: RS9-017
3. The second line (port label) shall be labeled by Cabinet/Rack# - Rack Unit – Port#
    a. Example: 03-24-15

E. Patch Panel to Patch Panel Labeling

1. The top line of the label shall indicate Destination Cabinet-Rack ID
    a. Example: RS9-09
2. The second line of the label shall indicate Destination Rack Unit – Port #
    a. Example: 24-15

F. Telecommunications Outlet Identification

1. Label each Telecommunications Outlet connector with a unique identifying code
    a. Position labels in recessed label holders on faceplate and cover with plastic covers.
2. Telecommunications Outlet Faceplate labeling code shall be as follows:
    a. TR/CR – Faceplate number where:
        1) “TR/CR” is identifier for room where cable terminates in horizontal cross-connect.
        2) Faceplate number starts with ‘001’ to ‘999’
        3) Example: RS9-117
    b. WAO Jack ID

1) Destination Cabinet/Rack #-Rack Unit-Port # (e.g. YY-YY-YY).
   a) Port number starts with ‘01’ to ‘24’ for 24-port patch panel or ‘48” if connected to a 48-port patch panel.

G. Horizontal Cabling

1. All horizontal cables shall be labeled at Telecommunications outlet and horizontal cross-connect with self-laminating labels via Panduit labeler and software.
2. Cables shall be labeled at each end with information indicating termination point of both ends of cable as follows:
   a. TR/ER – Faceplate #, Rack #/Wall Field ID – Rack Unit/Row – Port #
      1) Example:
         a) Data Cable: RS9-017-03-21-03
         b) Voice Cable: RS9-0122-AA-21-03
3. Cables shall be labeled on a visible part of the cable within three to six (3-6) inches of termination point for ease of identification after termination.
4. Labels at the telecommunications outlet shall be visible by removing the faceplate.
5. Rooms with multiple outlet locations shall be numbered sequentially beginning clockwise from the first outlet to the left of the main entrance to the room.

H. Backbone Cabling

1. All backbone cabling shall be labeled at each end with self-laminating labels via Panduit labeling system.
2. Cables, including air-blown-fiber-cell(s), shall be labeled while visible, including within cable tray, every 50-feet.
3. Cables, including air-blown-fiber-cell(s), shall be labeled while visible within a communications space every 10-feet.
4. Cables, including air-blown-fiber-cell(s), shall be labeled at the entry and exit of a wall sleeve or conduit within (12) inches of sleeve/conduit.
5. Cables shall be labeled at each end with information indicating termination point of both ends of the cable as follows:
   a. TR/ER -Cabinet Rack/Wall Field ID – Rack Unit-Row/Destination Cabinet Rack/Wall Field ID- Rack Unit-Row
      1) Example:
         a) Data: RS9-03-06/ MCRN-02-03
         b) Voice: RS9-AD-02/MCRN –AB-03
6. Cables and tube-cell shall be labeled on a visible part of the cable within twelve (12) inches of termination point for ease of identification after termination.
7. Backbone cabling shall be labeled at each end with information indicating the building identifier, owner, room, cable number and “FO” indicating fiber or “CO” indicating copper..
   a. “S” shall be used after the FO to indicate the use of single-mode fiber.
   b. “M” shall be used after the FO to indicate the use of multi-mode fiber.
   c. Fiber shall be labeled on the front of the fiber enclosure.
      1) SMF for single-mode fiber.
      2) MMF for multi-mode fiber.
8. If traditional fiber or air-blown fiber is ran in cable tray the fiber or tube cell should be labeled every 50 feet outside of the communications room and every 10 feet inside the communications room.

I. Outside Plant Cabling (Fiber and Copper)

1. All outside plant cabling shall be labeled at each end with self-laminating labels via Panduit labeling system.
2. Cables shall be labeled at each end with information indicating termination point of both ends of the cable as follows:
    a. Field Number – EF/TR –Cabinet/Rack #-Rack Unit / Destination Field number – EF/TR – Cabinet Rack # - Rack Unit
    b. Example: 2349-MCRS-02-14 / 2476 –RS9-01-16

J. Conduit Labeling

1. All conduits shall be labeled at each end with self-laminating labels via Panduit labeling system.
2. Conduits shall be identified in accordance with the identification legend in Appendix A.
3. Conduits shall be labeled at each end and at each junction box or pull box as follows:
    a. Origin / Destination –Conduit identification
        1) Example: MCRS / RS9-BR2435
4. Metallic conduit shall be labeled as follows:
    a. Metallic conduit, with a trade size of 2 inches or larger, shall be labeled every fifty (50) feet with UV rated, chemical resistant 3 inch high vinyl labels, that are ORANGE in color and are affixed with permanent adhesive. Conduit should be marked in 2 inch high black lettering (MAIN lettering) or 1/4 inch high black lettering (SECONDARY lettering).
        1) MAIN lettering shall identify the system.
            a) All conduit shall be marked “COMMUNICATIONS”
        2) SECONDARY lettering shall identify;
            a) Origination
            b) Destination
            c) Construction Contract Number
        3) DFW cable tray shall be marked “DFW-COMM – ITS”
        4) Labeling specifics are outlined in Appendix A in this section.
    b. Metallic conduit, with a trade size smaller than 2 inches, shall be labeled with UV rated, chemical resistant 1 inch high vinyl labels, that are ORANGE in color and are affixed with permanent adhesive. Conduit should be marked in 3/4 inch high black lettering (MAIN lettering) or 3/16 inch high black lettering (SECONDARY lettering).
        1) MAIN lettering shall identify the system.
            a) All conduit shall be marked “COMMUNICATIONS”
        2) SECONDARY lettering shall identify;
            a) Origination
            b) Destination
            c) Construction Contract Number
    c. Labeling specifics are outlined in PART 4 - Appendix A in this section.

K. Fiber Optic Patch Cable Labeling

1. All backbone cabling shall be labeled at each end with self-laminating labels via Panduit labeling system.
2. Cables shall be labeled at each end with the origin / destination by TR/ER # - Cabinet/Rack # - Rack Unit # - strand # or switch port
    a. Example: MCRS -03-40-17/18 /RS9-01-44-17/18

L. Telecommunications Grounds

1. Label Grounds on a visible part of the ground cable within twelve (12) inches of termination point for ease of identification after termination.
2. Tags shall be secured to ground cable using self-locking ties

M. Innerduct

1. Innerduct containing fiber optic cable shall be labeled where exposed.
    a. Includes areas where Innerduct is installed in trays and equipment rooms.
2. Label tags to include unique identifiers and pair counts of cable(s) contained therein.
    a. Use Backbone Cable labeling formats as described above.
    b. Hand lettering is acceptable.
        1) Use indelible type ink
3. Tag shall be secured to Innerduct using self-locking ties.

PART 4 - APPENDIX A

4.1 The document attached following "End of Section" is a part of the Specification.

A. Conduit Labeling / Marking:

TYPE	LABEL COLOR	LEGEND	SPACING
480V SYSTEM - CONDUIT	YELLOW	BLACK LETTERS "277/480V"	50' OC
480V SYSTEM	YELLOW w/black letters	Tag conduit with origination/destination location & contract #	Origination/ Termination Points & junction boxes
208V SYSTEM - CONDUIT	BLUE	WHITE LETTERS "120/208V"	50' OC
208V SYSTEM	BLUE w/white letters	Tag conduit with origination/destination location & contract #	Origination/ Termination Points & junction boxes
FA SYSTEM - CONDUIT	NONE	RED CONDUIT AND BOXES	N/A
LV CONDUIT - Pathways for Communication Systems	ORANGE w/black letters	Tag "COMMUNICATIONS" & origination/destination location & Contract Number	50' OC
LV SYSTEM	ORANGE w/black letters	Tag "COMMUNICATIONS" & origination/destination location & Contract Number	Termination Points & (junction boxes)
DFW CABLE TRAY Pathway/Cable Tray Communication Systems	ORANGE w/black letters	"DFW-COMM - ITS" & Contract Number	50' OC
ALL OTHER CABLE TRAY Pathway/Cable Tray Communication Systems	ORANGE w/black letters	"COMMUNICATIONS" & Contract Number	50' OC
MATV - Conduit	ORANGE w/black letters	Follow LV Conduit Guidelines	50' OC
MATV System	ORANGE w/black letters	Follow LV System Guidelines	50' OC
PA/VE CONDUIT - PA/VE (Speaker Zones)	WHITE w/red letters	Tag "PA/VE S Zone" (Speaker Zone Number) & Contract Number	25' OC
PA / VE CONDUIT - PA/VE (Ambient Microphones)	WHITE w/red letters	Tag "PA/VE A Zone" (Ambient Microphone Zone Number) & Contract Number	25' OC
TYPE	LABEL COLOR	LEGEND	SPACING

AACS Conduit - DFW Security Systems (AACS)	WHITE w/red letters	Tag "AACS" & origination location only (Comm Room) & Contract Number	25' OC
AACS System - DFW Security Systems (AACS)	WHITE w/red letters	Tag "AACS" & origination location only (Comm Room) & Contract Number	Termination Points & (junction boxes)
CCTV Conduit - DFW Security Systems (CCTV)	WHITE w/red letters	Tag "CCTV" & origination location only (Comm Room or Quad Box) & Contract Number	25' OC
CCTV System - DFW Security Systems (CCTV)	WHITE w/red letters	Tag "CCTV" & origination location only (Comm Room or Quad Box) & Contract Number	Termination Points & (junction boxes)

LABEL SIZES FOR VOLTAGE IDENTIFICATION

- All conduits 4 inch trade size and larger – 3 inch high labels with 2 inch high lettering.
- All conduits 2 inch trade size and larger, but smaller than 4 inch – 1 inch high labels with 3/4 inch high lettering.
- Electrical conduits smaller than 2 inch trade size – no labeling required.
- Low-Voltage conduits smaller than 2 inch trade size (LV, MATV, PA/VE, AACS, CCTV) – 1 inch high labels with 3/4 inch high lettering.

SUPPLEMENTARY INFORMATION (DEST/ORIG, CONTRACT #)

- Primary reasoning for labeling the voltage is for differentiation of different conduit systems (i.e. safety). Therefore, the label sizes for voltage must meet the above criteria. All other information on label is to aid maintenance personnel in identifying the systems in the field.
- Sizes of labels and lettering for the supplementary information can be smaller than the voltage ID sizes.
- Origination should be labeled with a distribution equipment label ID (i.e. Panel #, DP #, switch gear #) and Room Name.
- Destination should be labeled with the equipment label ID (switch gear #, panel board #, AHU #, etc.) and Room Name (if applicable)
- Contractors to submit label to design teams for approval prior to installation.

END OF SECTION 27 05 53