

## PART 1 - GENERAL

### 1.1 SUMMARY

- A. This Section includes cable trays and accessories.
- B. Substitutions: Substitute products will be considered only under the terms and conditions of Section 26 05 00 - Common Work Results for Electrical.

### 1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. National Electrical Manufacturers Association (NEMA)
- C. Underwriter's Laboratories, Inc. (UL)

### 1.3 SUBMITTALS

- A. Make submittals in accordance with Section 26 05 00 - Common Work Results for Electrical. Submit product data for each size and type of cable tray including clamps, brackets, hanger rods, splice-plate connectors, expansion-joint assemblies and fittings.
- B. Shop Drawings: Detail fabrication and installation of cable tray, including plans, elevations, and sections of components and attachments to other construction elements. Designate components and accessories, including clamps, brackets, hanger rods, splice-plate connectors, expansion-joint assemblies, straight lengths, and fittings.
- C. Coordination Drawings: Include floor plans and sections drawn to scale. Fully dimension all cable tray components and lengths of runs. Determine exact layout and relationships between components adjacent structural and mechanical elements. Provide 1/8" scale (minimum) floor plans showing all cable tray components including transitions, expansion joints, supports, firestopping and sound wall penetrations. Show clearances between mechanical ducts and piping. AutoCAD backgrounds will be available upon request.

### 1.4 COORDINATION

- A. Coordinate layout and installation of cable tray with other construction elements to ensure adequate headroom, working clearance and access. Revise locations and elevations from those indicated as required to suit field conditions and as approved by Engineer.
- B. Examine drawings and existing conditions above ceilings and include bends and offsets in bid price to avoid ducts, pipes, conduits, etc. Installation in existing ceilings is very difficult. Include extra labor time involved in bid price.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. B-Line Systems, Inc.
2. Chalfant Cable Trays
3. GS Metals Corp.
4. Husky: MP Husky Corp.
5. Mono-Systems, Inc.
6. P-W Industries, Inc.
7. Thomas & Betts

## 2.2 MATERIALS AND FINISHES

- A. Cable Trays, Fittings, and Accessories: Aluminum or Steel, mill galvanized before fabrication, complying with ASTM A 653, G90 (ASTM A 653M, Z275) coating.
- B. Protect steel hardware against corrosion by galvanizing according to ASTM B 633 or cadmium plating according ASTM B 766. Interior installations may use painted hardware.

## 2.3 LADDER TYPE

- A. Flange-in with 6" high (minimum) side rails, rolled edges with 6" maximum rung spacing.
- B. Cable tray width: 12" or as shown on drawings.
- C. Load Rating: NEMA 8C in accordance with NEMA VE 1.
- D. Provide interior surfaces which are smooth and free of offset edges, projections or misalignment. Assembly bolts for end to end connections shall have a pattern, which does not cause any damage to cable sheaths or jackets. All edges smooth, de-burred.
- E. Provide accessories and special transitions (with 12" minimum radius turns) for all changes in direction and offsets. Use manufacturer's standard fittings including bolting assemblies for all end to end connections.

## 2.4 SUPPORTS

- A. Load Rating: As required to support cable tray load rating specified above.
- B. Single Channel Hangers: formed steel type.
- C. Wall Brackets: Steel without hooks or projections.

## 2.5 CABLE TRAY ACCESSORIES

- A. Fittings: Tees, crosses, risers, elbows, and other fittings as indicated, of same materials and finishes as cable tray.
- B. Cable tray supports and connectors, including bonding jumpers, as recommended by cable tray manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install cable tray level and plumb according to manufacturers' written instructions, coordination drawings, original design, and referenced standards.
- B. Mount bottom of tray approximately 5" above suspended ceilings.
- C. Support cable tray from single channel hangers with spacing in accordance with NEMA VE 1. Provide additional hangers on ends and two additional hangers at tees and corners. Attach brackets to structural ceiling with 3/8" threaded steel rods.
- D. Brace cable tray to structure with diagonal braces spaced 30' maximum on center.
- E. Support cable tray from wall brackets where single channel hangers cannot be installed.
- F. Install expansion connectors where cable tray crosses a building expansion joint. Space connectors and set gaps according to NEMA VE 1.
- G. Make connections to equipment with flanged fittings fastened to cable tray and to equipment. Support cable tray independently of fittings. Do not carry weight of cable tray on equipment enclosure.

### 3.2 COORDINATION

- A. Coordinate installation of the cable tray with mechanical ductwork, piping, structural members, fireproofing and sprinkler system piping so that tray remains accessible (minimum 1 foot clear above tray bottom) after installation. Coordinate exact routing with all trades to avoid interference.

### 3.3 PENETRATIONS OF BUILDING FIRE SEPARATIONS

- A. Where cable tray is penetrating building fire separations, seal penetration according to Division 7, Section 078413 Penetration Firestopping. Seal penetration only after telephone cables and all other system distribution cables have been installed.
- B. Sleeves for Future Cables: Install capped sleeves for future cables through firestopping-sealed cable tray penetrations of fire and smoke barriers.

### 3.4 CONNECTIONS

- A. Tighten electrical connectors and joints according to manufacturer's published torque-tightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

### 3.5 GROUNDING

- A. Ground cable trays as required for conductor enclosures in accordance with NFPA 70.

- B. Provide a ground fitting between cable tray sections or provide a #6 bare ground cable the length of the tray. Bond to every tray section using clamps manufactured for the purpose.

### 3.6 CLEANING

- A. On completion of cable tray installation, including fittings, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damage finishes, including chips, scratches, and abrasions.
- B. Repair damage to galvanized finishes with zinc-rich paint recommended by cable tray manufacturer.

**END OF SECTION**