CABLE TRAYS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes steel cable trays and accessories for telecommunications cable.

B. Related Sections include the following:

1 Division 7 Section under “Through Penetration Firestop Materials" for firestopping materials and installation at penetrations through walls, ceilings, and other fire-rated elements.

2. Division 27 Section “Communications Equipment Room Fittings.”

1.03 SUBMITTALS

A. Product Data: Include data indicating dimensions and finishes for each type of cable tray indicated.

B. Shop Drawings: For each type of cable tray.

1. Show fabrication and installation details 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.

1.04 QUALITY ASSURANCE

A. Testing Agency Qualifications: A Nationally Recognized Testing Laboratory (NRTL), acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated.

B. Source Limitations: Obtain cable tray components through one source from a single manufacturer.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Comply with NEMA VE 1, "Metal Cable Tray Systems," if cable tray types specified are defined in the standard.

E. Comply with NFPA 70.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. 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 Mono-Systems, Inc.
5 MPHusky.
6 Wiremold.
7 Thomas & Betts.

2.02 MATERIALS AND FINISHES

A. Cable Trays, Fittings, and Accessories: Steel, with the following finish:
1. Hot-dip galvanized after fabrication, complying with ASTM A 123/A 123M, Class B2.

B. Protect steel hardware against corrosion by galvanizing according to ASTM B 633 or cadmium plating according to ASTM B 766.

C. Fabricate cable tray products with rounded edges and smooth surfaces.

D. Sizes and Configurations:

1 Type: Ladder.
2 Material and Finish: Galvanized steel.
3 Width: 6 inches.
4 Cross-Rung Spacing: To match existing cable tray.
5 Minimum Fitting Radius: 24 inches.
6 Inside Depth: To match existing cable tray.
7 Cover Type: None.
8 NEMA Load/Span Class: 10B.

2.03 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.

2.04 SOURCE QUALITY CONTROL

A. Perform design and production tests according to NEMA VE 1.

PART 3 EXECUTION
3.01 EXAMINATION

A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 CABLE TRAY INSTALLATION

A. Remove burrs and sharp edges from cable trays.

B. Fasten cable tray supports securely to building structure as specified in Division 26 Section "Basic Electrical Materials and Methods," unless otherwise indicated.
   1. Locate and install supports according to NEMA VE 1.

C. Install expansion connectors where cable tray crosses building expansion joint and in cable tray runs that exceed 90 feet. Space connectors and set gaps according to NEMA VE 1.

D. Make changes in direction and elevation using standard fittings.

E. Make cable tray connections using standard fittings.

F. Locate cable tray above piping unless accessibility to cable tray is required or unless otherwise indicated.

G. Seal penetrations through fire and smoke barriers according to Division 7 Section "Through-Penetration Firestop Systems."

H. Workspace: Install cable trays with sufficient space to permit access for installing cables.

I. After installation of cable trays is completed, install warning signs in visible locations on or near cable trays.

J. Support trays in accordance with Division 26 Section “Hangers and Supports for Electrical Systems”. Provide supports at each connection point, at the end of each run, and at other points to maintain spacing between supports of 10 ft maximum, in general, and 6 feet maximum for wall-mounted tray in Telecom spaces.

K. Spacing of supports shall be less than the span length of straight sections in all cases. Refer to NEMA VE2.

L. Support ladder type tray from trapeze hangers unless noted as wall bracket mounted. Do not use center hung supports except for center spline supported cable tray. Use manufacturer standard wall brackets in lieu of field fabricated.

M. Ground and bond cable tray. Provide continuity between tray components. Use anti-oxidant compound to prepare aluminum contact surfaces before assembly. Bond tray to ground minimum every 100' or at each end, and at all locations required by NEMA VE2 with a minimum #1 AWG copper insulated ground wire.

N. Cable tray shall be installed physically continuous for the complete run as shown on Drawings. Sprinkler piping, metal studs, ductwork, conduit, etc. shall not interfere with the wiring space provided by the cable tray or access to the cable tray.

O. Coordinate with the installation of ductwork, sprinkler piping, etc. to provide cable tray access of at least 6" above the top of the tray run and at least 12" on each side of the tray.

P. Where cable tray passes through floors or walls requiring smoke tight construction, provide 3M composite sheets and moldable putty to develop a smoke tight installation after all cables have been installed.

Q. Support cable tray independently of other systems and do not use cable tray or its supports for supporting other systems.

R. Provide lateral or transverse supports for cable tray to prevent swaying.

3.03 CONNECTIONS

A. Ground cable trays according to manufacturer's written instructions.

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

3.04 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer,that ensure cable tray is without damage or deterioration at time of Substantial Completion.

1 Repair damage to galvanized finishes with zinc-rich paint recommended by cable tray manufacturer.
2 Repair damage to PVC or paint finishes with matching touchup coating recommended by cable tray manufacturer.

END OF SECTION