SECTION 09.54.23
LINEAR METAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES
   A. Suspended metal ceiling grid system and perimeter trim.
   B. Linear, formed metal ceiling panels.

1.02 RELATED REQUIREMENTS
   A. Section 07.21.00 - Thermal Insulation.
   B. Section 21.13.00 - Fire-Suppression Sprinkler Systems: Sprinkler heads.
   C. Section 26.51.00 - Interior Lighting: Light fixtures.

1.03 REFERENCE STANDARDS

1.04 DESIGN REQUIREMENTS
   A. Design components to ensure light fixtures will not induce eccentric loads. Where components may induce rotation of ceiling system components, provide stabilizing reinforcement.

1.05 ADMINISTRATIVE REQUIREMENTS
   A. Coordination: Coordinate work of this section with installation of mechanical and electrical components and with other construction activities affected by work of this section.
   B. Preinstallation Meeting: Convene one week before starting work of this section.
   C. Sequencing: Supply hanger clips during steel deck erection. Supply additional hangers and inserts as required.

1.06 SUBMITTALS
   A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Furnish for component profiles.
   C. Shop Drawings: Indicate reflected plan.
   D. Samples: Submit two samples 6 by 12 inch in size illustrating color and finish of exposed to view components.
   E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
      1. Extra Linear Panels: Ten, standard length.
1.07 QUALITY ASSURANCE
   A. Designer Qualifications for Seismic Design: Under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at Tennessee.
   B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
   C. Installer Qualifications: Company specializing in performing the work of this section.
      1. Minimum three years documented experience.
      2. Approved by metal ceiling manufacturer.
   D. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc.

1.08 MOCK-UP
   A. Construct partial mock-up, 12 feet long by 6 feet wide; include suspension system, panels, closures in mock-up.
   B. Locate mock-up where directed.
   C. Mock-up may remain as part of the Work.

1.09 DELIVERY, STORAGE, AND HANDLING
   A. Accept factory-finished products on site in manufacturer's unopened factory packaging only; reject opened packages.
   B. Protect factory-finished products from damage to appearance by storing products in manufacturer's unopened factory packaging in dry storage area.

1.10 WARRANTY
   A. Provide five year manufacturer warranty; include coverage for corrosion resistance and discoloration of surface finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS
   A. Linear Metal Ceilings:
      2. Substitutions: See Section 01.60.00 - Product Requirements.

2.02 LINEAR METAL CEILING
   A. Linear Metal Ceiling and Soffit System: Panels, suspension members, trim and accessories as required to provide a complete system.
   B. Performance Requirements:
      1. Design to support imposed loads of indicated items without eccentric loading of supports.
      2. Design for maximum deflection of 1/360 of span.
      3. Design to resist seismic load required by applicable code.

2.03 COMPONENTS
   A. Linear Panels:
      2. Edge: Square.
      3. Length: Equal.
4. Sight-exposed Surface Finish: Enamel finish; of wood-toned color from manufacturer's standard range.

B. Edge Molding, Expansion Joints, and Splices: Same material, thickness, and finish as linear panels.

C. End Caps: Formed metal; same color and finish as sight-exposed surfaces of linear panels.

D. Space Closures: Recessed extruded vinyl sections, black; snap fit between exposed linear panels.

E. Accessories: Stabilizer bars as required for suspended grid system; sight-exposed surfaces same color and finish as sight-exposed surfaces of linear panels.

F. Suspension Members: Formed steel sections, with integral attachment points; galvanized finish; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

G. Suspension Wire: Size and type as required for application, seismic requirements, and ceiling system flatness requirement specified.

H. Subgirt Members: Prime painted steel sheet, formed to resist imposed loads and to provide attachment for linear panels and accessories.

I. Insulation: Specified in Section 07.21.00.

J. Touch-up Paint For Concealed Items: Zinc rich type.

2.04 FABRICATION

A. Shop cut linear panels to accommodate mechanical and electrical items.

B. Factory-form internal and external corners of same material, thickness, finish, and profile to match exposed linear panels; back brace internal corners.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

C. Verify that required utilities are available, in proper location, and ready for use.

D. Verify that field measurements are as indicated.

3.02 INSTALLATION

A. Suspension Components:
   1. Install after above-ceiling work is complete in accordance with manufacturer's instructions, ASTM C636/C636M, and ASTM E580/E580M.
   2. Hang carrying members independent of walls, columns, ducts, light fixtures, pipe, and conduit; where carrying members are spliced, avoid visible displacement of face panels with adjacent panels.
   3. Where ducts or other equipment prevent regular spacing of hangers, reinforce nearest adjacent hangers to span the required distance.
   4. Locate suspension system for linear panel layout on room axis according to reflected plan.

B. Linear Panels:
   1. Install linear panels and other system components in accordance with manufacturer's instructions.
   2. Align end joints.
   4. Set exterior end joints with 1/16 inch gap for expansion and contraction.
   5. Provide expansion joints to accommodate plus or minus 1/2 inch movement and maintain visual closure.
   6. Install prefabricated corner sections at changes in panel direction.
   7. Install space closures between linear panels at interior locations.
8. Install edge moldings at junctions with other finishes and at vertical surfaces; use maximum piece lengths.
9. Where bullnose masonry units occur, install radiused closures to fit edge molding.
10. Install end caps at sight-exposed ends of linear panels.
11. Exercise care when site cutting sight-exposed finished components to ensure surface finish is not defaced.

C. Insulation: Install above panel members; fit tight between grid members; place insulation with facing side down.

3.03 TOLERANCES
A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.
C. Maximum Variation From Dimensioned Position: 1/4 inch.

3.04 CLEANING
A. Clean polished surfaces.
B. Replace damaged or abraded components.

END OF SECTION