SECTION 09 51 23
LINEAR METAL CEILING

PART 1 GENERAL

1.1 RELATED DOCUMENTS
- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.

1.2 SECTION INCLUDES
- A. Suspended metal grid ceiling system and perimeter trim.
- B. Linear, formed metal ceiling and soffit panels
- C. Supplementary acoustical insulation over system units

1.3 REFERENCES
- A. ASTM A167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- C. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- D. ASTM B221 - Standard Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
- E. ASTM C636/C636M - Standard Practice for the Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
- F. ASTM C665 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
- G. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne-Sound Transmission Loss of Building Partitions and Elements
- H. ASCE 7 - Minimum Design Loads for Buildings and other Structures
- I. FBC - Florida Building Code

1.4 SYSTEM DESCRIPTION
- A. System: Pre-formed extruded steel or aluminum sections, with sub-girt beam framing grid and acoustic insulation steel suspension system, anchored to structure.

1.5 DESIGN REQUIREMENTS
- A. Design components to ensure light fixtures, and installed accessories will not induce eccentric loads. Where components may induce rotation of ceiling system components, provide stabilizing reinforcement.
- B. Design, fabricate, and install soffit and suspension system to accommodate wind and suction loads and wind uplift in accordance with applicable code.

1.6 PERFORMANCE REQUIREMENTS
- A. Installed Ceiling System: Exhibit maximum deflection of 1/360 of span
- B. Acoustic Attenuation: 44 STC in accordance with ASTM E90.
- C. Wind Pressure: Conform to ASCE 7.

1.7 SUBMITTALS
- A. Submit under provisions of Section 01 33 00.
- B. Shop Drawings: Indicate ceiling and soffit system reflected plan, location of mechanical and electrical components, details of junction with dissimilar materials and points of suspension.
- C. Product Data: Provide component profiles, materials, perimeter and integral trim and space closures.

D. Submit two samples 12" x 24" in size illustrating color and finish of exposed to view components.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum 5-years documented experience.
B. Installer: Company specializing in performing the work of this section with minimum 5-years documented experience.

1.9 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection shall be Underwriters Laboratories, Inc. listed products.

1.10 PRE-INSTALLATION CONFERENCE

A. Meet 1-week prior to commencing work of this section, under provisions of Section 01 31 00.

1.11 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.12 COORDINATION

A. Coordinate work under provisions of Section 01 31 00.
B. Coordinate the work with installation of mechanical and electrical components.

1.13 WARRANTY

A. Provide minimum 1-year coverage for corrosion resistance or discoloration of surface finish.

PART 2 PRODUCTS

2.1 EXPOSED PANEL MATERIALS AND COMPONENTS

A. Steel Sheet: ASTM A653 Grade A, galvanized to 1.25-oz/sf zinc coating, with surface paint finish.
B. Internal and External Corners: Of same material, thickness, finish, and preformed to profile to match exposed linear panels; back brace internal corners.
C. Edge Molding, Expansion Joints, and Splices: Of same material, thickness, and finish as exposed linear panels.
D. End Caps: Formed metal, of same color and finish as exposed linear panels.

2.2 COMPONENTS AND ACCESSORIES

A. Suspension Members: Formed steel sections, with integral attachment points; galvanized finish; size and type to suit application and ceiling system flatness requirement specified.
B. Suspension Wire: Steel, annealed, galvanized finish, size, and type to suit application, and ceiling system flatness requirement specified.
C. Sub-girt Members: ASTM A653/A653M, Grade A, galvanized to 1.25-oz/sf zinc coating, formed structurally rigid to resist imposed loads, shaped to provide attachment for the finish panels and other accessories.
D. Space Closures: Recessed formed steel sections; snap fit between exposed linear panels.
E. Acoustic: ASTM C665, preformed glass fiber batt; friction fit, conforming to the following:
    1. Faced on one side with an asphaltic treatment
F. Accessories: Stabilizing bars, clips, splices, hold down clips as required for suspended grid system.
G. Touch-up Paint for Concealed Items: Zinc rich type.

2.3 FINISHES

A. Linear Panel Exposed Surface shall be enamel finish, of color from manufacturer's standard range.

B. Space Closures shall be black color as selected
C. Accessories exposed to view items of same color and finish as linear panels.

PART 3 EXECUTION

3.1 EXAMINATION
A. Verify site conditions under provisions of Section 01 31 00.
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.

3.2 INSTALLATION
A. Install suspended grid system in accordance with manufacturer's instructions.
B. Install work after above ceiling and soffit work is complete. Coordinate location of hangers with other work.
C. Where ducts or other equipment prevents regular spacing of hangers, reinforce nearest adjacent hangers to span the required distance.
D. Hang suspension system independent of walls, columns, ducts, light fixtures, pipe, and conduit.
1. Avoid visible displacement of face panels with adjacent panels for spliced members.
E. Install panel members. Stagger end joint minimum 12".
F. Set exterior butt end joints with 1/16" gap for expansion and contraction.
G. Exercise care when site cutting exposed finished components to ensure surface finish is not defaced.
H. Install edge moldings at intersection of ceiling or soffit and vertical surfaces using maximum lengths.
I. Install prefabricated corner sections.
J. Provide edge moldings at junction with other finishes.
K. Where bull-nose masonry units occur, provide radii closures to fit edge molding.
L. Provide end caps for linear panels' exposed-to-view.
M. Install insulation above panel members; fit tight between grids members and place insulation facing down.
N. Provide expansion and control joints to accommodate plus or minus 1" movement and maintain visual closure.

3.3 ERECTION TOLERANCES
A. Maximum Variation from Flat and Level Surface: ⅛" in 10'.
B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: ±2°.
C. Maximum Variation from Dimensioned Position: ±¼".

3.4 CLEANING
A. Clean work under provisions of Section 01 77 00.
B. Clean surfaces.
C. Replace damaged or abraded components.

END OF SECTION