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SECTION 05400 - COLD FORMED METAL FRAMING

**PART 1 GENERAL**

1.01 WORK INCLUDED

- A. Provide structural stud systems and metal ceiling (drywall) support systems as shown on the Drawings and specified herein.

1.02 RELATED WORK

- A. Section 09200, Plaster and Stucco
- B. Section 09250, Gypsum Wallboard

1.03 QUALITY ASSURANCE

- A. Design Criteria: Design conditions and effects required are shown or indicated on the Drawings; however, arrangement, bracing, hanging, and support method of metal framing systems shall be the responsibility of the Metal Framing System installer.
- B. Component Design: Compute structural properties of studs and joists in accordance with AISC "Specification for the Design of Cold-Formed Steel Structural Members".
- C. Reference Standards: Comply with referenced standards of the following:
  - 1. American Hot Dip Galvanizers Association (AHDGA).
  - 2. American Institute of Steel Construction (AISC).
  - 3. American Iron and Steel Institute (AISI).
  - 4. American Society for Testing and Materials (ASTM).
  - 5. American Welding Society (AWS).
  - 6. BOCA Building Code, latest Edition.

1.04 SUBMITTALS

- A. Manufacturer's Data: Submit manufacturer's technical information and installation instructions for each material.
- B. Shop Drawings: Submit shop drawings for special components and installations not fully dimensioned or detailed in manufacturer's product data. Include placing drawings for framing members showing size and gage designations, number, type, location and spacing. Indicate supplemental bracing, splices, accessories, and details as required for proper installation.

1.05 PRODUCT DELIVERY AND STORAGE

- A. Upon delivery to the site, store materials in their original unopened packages in an enclosed shelter providing protection from damage from exposure to the elements. Damaged or deteriorated materials shall be removed from the site and replaced at no additional cost to the Department.

**PART 2 PRODUCTS**

2.01 SYSTEM TYPES AND COMPONENTS

- A. Screw-type drywall metal studs including furring and ceiling support members.
- B. Structural C-shaped type steel studs.
- C. With each type of metal framing required, provide manufacturer's standard steel runners (tracks), blocking, lintels, clip angles, shoe reinforcements, fasteners and accessories as recommended by manufacturer for application indicated, and/or as needed to provide a complete metal framing system.

2.02 ACCEPTABLE MANUFACTURERS

- A. Screw-Type Drywall Metal Studs and Ceiling Support Members:
  - 1. Dale Industries, Inc.
  - 2. Gold Bond Building Products Div., National Gypsum Co.
  - 3. Unimast, Inc.
- B. Structural C Type Shaped Steel Studs:
  - 1. Alabama Metal Industries Corp.
  - 2. Dale/Incor Industries of Florida
  - 3. Marino/Ware; Div. of Ware Industries, Inc.
  - 4. Unimast, Inc.

2.03 MATERIALS AND FINISHES

- A. Screw-Type Drywall Metal Studs, Ceiling Support Members, and Accessories:
  - 1. Metal Studs: ASTM C 645, 25 gage minimum thickness of hot-dipped galvanized base metal. Use 20 gage where limited heights and loading (i.e. ceramic tile, cabinets) as recommended by stud manufacturer are exceeded.
    - a. Depth of Section: As indicated.

- b. Runners: Match stud; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work.
  - 2. Furring Members: ASTM C 645, 25 gage minimum thickness of base metal, hat shaped. Type and size of fasteners as recommended by furring manufacturer for the substrate and application required.
  - 3. Screw-Type Ceiling Support Members: Furring channels meeting ASTM C 645, 25 gage minimum thickness of base metal, hat shaped. Runner channels shall be 16 gage minimum, 1-1/2", and wire shall be 9 gage minimum for hanger and 18 gage minimum for tie wire.
  - 4. Screws shall be corrosion-resistant steel, self-drilling and tapping type, with cross-recessed heads, 3/8" low-profile head.
- B. Structural C Type Shaped Steel Studs:
- 1. For 16 gage and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 40,000 psi; ASTM A 446, A 570, or A 611.
  - 2. For 18 gage and lighter units, fabricate metal framing components of commercial quality steel sheet with a minimum yield point of 33,000 psi; ASTM A 446, A 570 or A 611.
  - 3. C-Shaped Studs: Manufacturer's standard load-bearing steel studs of size, shape and gage indicated, with 1.625" minimum flange and flange return lip.
- C. Finish: Provide hot-dipped galvanized finish to metal framing components complying with ASTM A 525 for minimum G90 coating.

#### 2.04 PREFABRICATION OF STRUCTURAL STUDS

- A. Structural framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels to prevent damage or distortion.

### **PART 3 EXECUTION**

#### 3.01 INSPECTION

- A. Examine the areas and conditions under which cold formed metal framing shall be installed. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. All partitions and framing shall be aligned accurately as shown on Drawings. Securely attach all runners to concrete slabs, metal joists or beams with power driven anchors or other suitable fasteners in accordance with manufacturer's published instructions and current recommendations, unless otherwise indicated.
- B. Set floor runner-tracks in full bed of caulking compound. Anchor ceiling and floor tracks at 24" centers and positioned to insure vertical alignment of partitions. Studs of proper length shall be placed in tracks and rotated into place for a friction fit and secured on both tracks with screws. Provide double studs at all openings.
- C. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures equipment, services, casework, heavy trim and furnishings and similar work.
- D. Install a minimum of 3 studs at all partition intersections. Secure studs located at partition intersections with screws through both flanges of studs and tracks. Headers for openings shall be a cut-to-length section of track with the flanges slit and web bent to allow flanges to overlap adjacent studs.
- E. Provide deadwood or plates as required for equipment or other material support.
- F. For structural studs, attach similar components by welding. Attach dissimilar components by welding, bolting or screw fasteners, as standard with manufacturer.
- G. Wire tying of framing components will not be permitted, except where indicated for suspended drywall ceilings.

\*\*\*END OF SECTION\*\*\*