

## SECTION 05 40 00 - COLD-FORMED METAL FRAMING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes:

1. Exterior load-bearing wall framing.
2. Exterior non-load-bearing wall framing.

#### 1.2 QUALITY ASSURANCE

- A. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating designation as follows. Provide thicknesses as indicated on Drawings but no less than as indicated below:

1. Interior:
  - a. Grade: ST33H.
  - b. Coating: G60.
  - c. Minimum Base-Metal Thickness:
    - 1) Vertical Members: As indicated but no less than (18 gage) 0.0428 inch.
    - 2) Horizontal Members: As indicated but no less than (18 gage).

- B. Welding Electrodes: E60XX, weld size as noted on Drawings.

#### 2.2 FRAMING

A. General:

1. Provide components specified on the Drawings.
2. Members shall have 1-5/8-inch flange width unless noted otherwise on the plans.
3. Provide flange lip on stud/joist members.

- B. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges.
- C. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and same minimum base-metal thickness as steel studs.
- D. Header Beams and Other Built-Up Members: Manufacturer's standard C-shapes used to form box, back-to-back, or double-L header beams or other built-up members.
- E. Narrow Leg Track: Manufacturer's standard U-shaped steel tracks, unpunched, base steel thickness and web depth as required for application, and 1-1/4 inch minimum width with straight flange.
- F. Deflection Track: U-shaped steel track with unstiffened flanges, of web depth to contain studs while allowing free vertical movement.
- G. Furring Channels: Minimum 1-1/2 inches. Install vertically at spacing indicated on drawings.
  - 1. Provide 2-1/2 inch furring inside along front wall at canopy area only to accommodate installation of canopy sidewall sprinkler piping

## 2.3 FRAMING ACCESSORIES

- A. General: Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members, unless otherwise indicated.
- B. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.
- C. Mechanical Fasteners: ASTM C 1513, self-drilling, self-tapping steel drill screws, number 10 minimum size, corrosion resistant or hot-dip zinc coated per ASTM A123. Provide low profile head fasteners beneath sheathing.
- D. Welding Electrodes: Meet requirements of AWS D1.3 and as recommended by steel framing manufacturer.
- E. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.
- F. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
- G. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.

## 2.4 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: ASTM A 780.

## PART 3 - EXECUTION

### 3.1 PREPARATION

### 3.2 INSTALLATION, GENERAL

- A. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.
- B. Install cold-formed metal framing and accessories plumb, square, and true to line except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements and with connections securely fastened
- C. Cut all framing components so they fit squarely together. Bear studs must tight against track web. Hold members positively in place until properly fastened. Brace wall components as required during erection to prevent racking and distortion.
- D. Install framing members in one-piece lengths.
- E. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- F. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.
- G. Install insulation, specified in Division 07 Section "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.
- H. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
  - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

### 3.3 INSTALLATION, WALL SYSTEMS

- A. Install continuous runner tracks, sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer for type of construction

involved, except do not exceed 24 inches o.c. spacing for nail or power-driven fasteners, or 16 inches o.c. for other types of attachment. Provide fasteners at corners and ends of tracks.

1. Stud spacing: As indicated on Drawings.
- B. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners to supporting structure.
- 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, grab bars and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards, in each case, considering weight or loading resulting from item supported.
- D. Stud Attachment, Load Bearing: Secure studs to top and bottom runner tracks, either by welding or screw fastening at both inside and outside flanges.
  1. Fasten components utilizing self-drilling screws or welding.
  2. Provide welded connections by welders certified for welding members of gage being used per AWS D.1.3-98.
- E. Stud Attachment, Non-Load Bearing:
  1. Isolate steel framing from supporting structure at locations indicated to prevent transfer of vertical loads while providing lateral support.
  2. Install deflection track and anchor to supporting structure or connect studs with vertical deflection clips to continuous angles or supplementary framing anchored to supporting structure. Provide connections meeting instructions of stud manufacturer.
- F. Bridging Requirements for Bearing and Exterior Walls: See structural drawings.

### 3.4 FIELD QUALITY CONTROL

- A. General: Owner's testing agency to perform quality assurance and control evaluations of work to verify compliance or work with requirements of Contract Documents and codes and regulations of public authorities having jurisdiction over the Work. As a minimum, Owner may invoke relevant provisions of the latest edition of the International Building Code.

### 3.5 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

**Jeffery A. Scott Architects, P.C.**  
JSA Project No. 24108

**Kroger Store No. D-416**  
Fenton, Michigan

END OF SECTION 05 40 00

