# PART 1 - GENERAL

## 1.1 SUMMARY

A. Section Includes:

1. Exterior wall framing.
2. Exterior ceiling joist framing.
3. Exterior soffit framing.

B. Related Requirements:

1. Section 092216 "Non-Load-Bearing Steel Framing" for interior non-load-bearing, metal-stud framing and ceiling-suspension assemblies.

## 1.2 PRECONSTRUCTION MEETINGS

A. Preconstruction Conference: Conduct conference at Project site.

## 1.3 SUBMITTALS

A. Product Data: For each type of cold-formed steel framing product and accessory.

B. Sustainable Design Submittals:

1. Documentation indicating percentages by weight of postconsumer and pre-consumer recycled content.
2. Provide data indicating material was produced within 50 miles of the project location.

C. Shop Drawings:

1. Include spacing, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and fastening and anchorage details, including mechanical fasteners.
2. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, connection details, and attachment to structure.
3. Shop drawings shall be stamped by a professional engineer registered in the State of California.
4. Design intent is for no visible control joints within the plaster system. Design-assist subcontractor to identify areas structure requires revisions to allow placement of movement joints at termination of plaster system or at concealed locations.

D. Welding certificates of tradesmen performing welding activities.

E. Product Test Reports: For each listed product, for tests performed by manufacturer and witnessed by a qualified testing agency.

1. Steel sheet.
2. Expansion anchors.
3. Power-actuated anchors.
4. Mechanical fasteners.
5. Vertical deflection clips.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed steel framing from corrosion, moisture staining, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Clark Dietrich – Riverside, CA

B. United Metal Products, Inc – Corona, CA

C. Consolidated Fabricators, Corp – Fontana, CA

D. Cemco – City of Industry, CA

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified engineer to design cold-formed steel framing.

B. Structural Performance: Provide cold-formed steel framing capable of withstanding design loads within limits and under conditions indicated.
   1. Design Loads: As indicated on structural design criteria.
   2. Deflection Limits: Code requirement of plaster system is L/360. Due to limited control joint requirement, metal stud framing to be designed to L/400 as added precaution to reduce movement within framing substrate.
   3. Design framing system to maintain clearances at openings, and to accommodate live load deflection of primary building structure.
   4. Design exterior non-load-bearing wall framing to accommodate horizontal deflection.
   5. Clearly indicate minimum and maximum spacing required for cold formed framing scope as it relates to structure so applicable structure scope will coordinate construction tolerances to align with 1/8” in 10’ 0” requirement of cold formed metal framing.

2.3 COLD-FORMED STEEL FRAMING, GENERAL

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Steel Sheet: ASTM A 1003ST or ASTM A 653:
   1. Grade: 43 mil and thinner steel – 33 ksi min. 54 mil and thicker steel – 50 ksi min.
   2. Coating: G60
   3. Thickness: As shown on engineered shop drawings.

2.4 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003ST or ASTM A 653, of same grade and coating weight used for framing members.

B. Provide accessories as required by engineered shop drawings.

2.5 ANCHORS, CLIPS, AND FASTENERS

A. Include anchors, clips and fasteners as required by the design requirements including by not limited to:
   1. Steel Shapes and Clips.
   2. Anchor Bolts.
   3. Expansion Anchors.
   4. Power-Actuated Anchors
   5. Mechanical Fasteners, head type: low-profile head beneath sheathing, manufacturer's standard elsewhere.
   6. Welding Electrodes.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: ASTM A780.

2.7 FABRICATION

A. Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced SSMA and AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
   1. Cut framing members by sawing or shearing; do not torch cut.
   2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
   3. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.

B. Fabrication Tolerances: Fabr*icate assemblies level, plumb, and true to line to a maximum* allowable tolerance variation of 1/8 inch in 10 feet and as follows:
   1. Spacing: 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.
   2. Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.

B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed steel framing according to engineered shop drawings.

C. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.

a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.

D. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.

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. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.

G. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

## 3.4 FIELD QUALITY CONTROL

A. Framing to comply with general inspection guidelines, with the exception of wedge anchors which will require special inspection.

B. Inspector will report test results promptly and in writing to Contractor and Architect.

C. Remedy or replace work where test results indicate that it does not comply with specified requirements.

## 3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed steel 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 ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION