

SPECIFICATIONS (continued)

SECTION 051100 - STEEL DECKING

PART 1 - GENERAL

1.1 ACTION SUBMITTALS

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Shop Drawings: Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

1.2 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of steel deck.
- B. Product Test Reports: power-actuated mechanical fasteners.

1.3 QUALITY ASSURANCE: A Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel".

1.4 DELIVERY, STORAGE, AND HANDLING: A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

2.2 ROOF DECK

- A. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following:
 1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33 zinc coating.
 2. Deck Profile: Type WR, wide rib.
 3. Profile Depth: 1-1/2 inches.
 4. Span Condition: Triple span or more.
 5. Side Laps: Overlapped.

PART 3 - EXECUTION

3.1 EXAMINATION: Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION: GENERAL: Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions.

3.3 ROOF DECK INSTALLATION

- A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds at the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches (38 mm) long, and as follows:
 1. Weld Diameter: 5/8 inch, nominal.
 2. Weld Spacing: as indicated on framing plans.
 3. Weld Washers: Install weld washers at each weld location.
- B. Side-Lap and Perimeter Edge Fastening: as indicated on framing plans.
- C. End Beaming: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Field welds will be subject to inspection.
- C. Testing agency will report inspection results promptly and in writing to Contractor and Engineer of Record.
- D. Remove and replace work that does not comply with specified requirements.
- E. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.5 PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

SECTION 054000 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 ACTION SUBMITTALS

- A. Product Data: For each type of cold-formed steel framing product and accessory.
- 1.2 INFORMATIONAL SUBMITTALS
 - A. Product Test Reports: For each listed product, for tests performed by a qualified testing agency:
 1. Steel sheet.
 2. Expansion anchors.
 3. Power-actuated anchors.
 4. Mechanical fasteners.
 5. Vertical deflection clips.
 6. Horizontal drift deflection clips.
 7. Miscellaneous structural clips and accessories.
 - B. Research Reports: For non-standard cold-formed steel framing, from ICC-ES.

1.3 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 PERFORMANCE REQUIREMENTS

- A. AISI Specifications and Standards: Unless more stringent requirements are indicated, comply with AISI S100 and AISI S200.
- 2.2 COLD-FORMED STEEL FRAMING, GENERAL: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight G60.

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
 1. Minimum Base Metal Thickness: 18 Gauge Minimum or as indicated by Specialty Engineer.
 2. Minimum Flange Width: 1-5/8 inches.

- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows:
 1. Minimum Base Metal Thickness: Matching steel studs.
 2. Minimum Flange Width: 1-1/4 inches.

2.3 NON-LOAD-BEARING WALL FRAMING

- A. Vertical Deflection Clips: Manufacturer's standard clips, capable of accommodating upward and downward vertical displacement of primary structure through positive mechanical attachment to stud web.

- B. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track, with stiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal loads and transfer them to the primary structure.

- C. Double Deflection Tracks: Manufacturer's double, deep-leg, U-shaped steel tracks, consisting of nested inner and outer tracks, unpunched, with stiffened flanges.

- D. Drift Clips: Manufacturer's standard bypass or head clips, capable of isolating wall stud from upward and downward vertical displacement and lateral drift of primary structure through positive mechanical attachment to stud web and structure.

2.4 FRAMING ACCESSORIES

- A. 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.

- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated.

2.5 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.

- B. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts, and flat, hardened steel washers, zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.

- C. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC108 and AC108 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

- D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1150 conducted by a qualified testing agency.

- E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant coated, self-drilling, self-tapping, steel drill screws.

2.6 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: SSPC Paint 2, ASTM A 780.

- B. Shims: Load bearing, high-density multimonomer plastic, and nonleaching, or of cold-formed steel of same grade and coating as framing members supported by shims.

- C. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

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 AISI's specifications and standards, and manufacturer's written instructions.

- B. Fabrication Tolerances: Fabricate 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: Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Install load bearing shims or grout between the underside of load-bearing wall bottom track and the top of foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete or masonry construction.

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 members to AISI Standard to manufacturer's written instructions, unless more stringent requirements are indicated.

- C. Install shop or field fabricated cold-formed steel framing and accessories accurately anchor to supporting structure.

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

- E. Install framing members in one plane, unless splice connections are indicated for track or stud members.

- F. 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 established supporting structure has been completed and permanent connections to framing are secured.

- G. Do not bridge building expansion joints with cold-formed steel framing. Independently frame each side of joints.

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

PART 3 - EXECUTION - CONTINUED

3.4 WALL INSTALLATION - NON-LOAD BEARING

- A. Install continuous tracks studded to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

- B. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Space studs as follows:
 1. Stud Spacing: 16 inches or as indicated by Specialty Engineer.

- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

- D. Isolate non-load bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.

- E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Drawings but not more than 48 inches apart. Fasten at each stud intersection.
 1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 12 inches of single deflection track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness to match studs.
 2. Bridging: Combination of flat, laut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 3. Optional Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.

- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall framing system.

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 manufacturer and installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.

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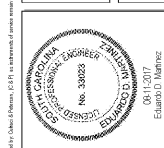
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1925 Prospect Ave
Orlando, FL 32814
P (407) 661-9100
F (407) 661-9101
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Calacaci & Retana
Architects Engineers

CLIENT NAME
WindCrest Companies
605 E. Robinson Street, Suite 340
Orlando, Florida 32801

PROJECT NAME
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