C05000: STRUCTURAL AND MISCELLANEOUS STEEL

B: COLD-FORMED METAL FRAMING

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Load-bearing wall framing.
2. Exterior non-load-bearing wall framing.

1.2 ACTION SUBMITTALS
A. Product Data: For each type of cold-formed steel framing product and accessory.
B. Product Data for each type of cold-formed metal framing product and accessory indicated.
C. Shop Drawings:
1. Include layout, spacings, 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, splices, accessories, connection details, and attachment to adjoining work.
3. For cold-formed metal framing indicated to comply with design loads. Include structural analysis data signed and sealed by a qualified professional engineer in the state if the project responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS
A. Qualification Data: For testing agency.
B. Welding certificates.
C. Product test reports.
D. Research reports.

1.4 QUALITY ASSURANCE
A. Product Tests: Mill certificates or data from a qualified independent testing agency.
B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
C. Comply with AISI S230 "Standard for Cold-Formed Steel Framing."
D. Structural design shall be in accordance with American Iron and Steel Institute specifications for the design of cold-formed steel structural members.

PART 2 - PRODUCTS (C05595)
2.1 MANUFACTURERS
A. Manufacturers: Subject to compliance with requirements
2.2 PERFORMANCE REQUIREMENTS
A. AISI Specifications and Standards: Unless more stringent requirements are indicated, comply with AISI S100 and AISI S200.
2.3 COLD-FORMED STEEL FRAMING, GENERAL
A. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
1. Grade: As required by structural performance.
2. Coating: G60, A60, AZ50, or GF30.
B. Steel Sheet for Vertical Deflection Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
1. Grade: As required by structural performance.
2. Coating: G60 (Z180).

2.4 LOAD-BEARING WALL FRAMING
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: 0.0428 inch.
2. Flange Width: 1-5/8 inches.
3. Section Properties: As required by structural performance and deflection limitations.
a. Exterior: Horizontal deflection l/600
b. Interior: Horizontal deflection l/240
B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and matching minimum base-metal thickness of steel studs.
C. Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to form header beams, of web depths indicated, unpunched, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0428 inch.
2. Flange Width: 1-5/8 inches.
3. Section Properties: As required by structural performance and deflection limitations.
a. Vertical Deflection: l/360

2.5 EXTERIOR NON-LOAD-BEARING WALL FRAMING
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: 0.0428 inch.
2. Flange Width: 1-5/8 inches.
3. Section Properties: As required by structural performance and deflection limitations.
a. Horizontal Deflection: l/360.
B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and matching minimum base-metal thickness of steel studs.
C. Vertical Deflection Clips: Manufacturer's standard head clips, capable of accommodating upward and downward vertical displacement of primary structure through positive mechanical attachment to stud web.
1. Manufacturers: Subject to compliance with requirements:
a. AllSteel & Gypsum Products, Inc.
b. ClarkWestern Building Systems, Inc.
c. Dietrich Metal Framing; a Worthington Industries company.
d. MarinoWARE.
e. SCAFCO Corporation.
f. Steel Network, Inc. (The).
g. Steeler, Inc.
D. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened 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.
E. Double Deflection Tracks: Manufacturer's double, deep-leg, U-shaped steel tracks, consisting of nested inner and outer tracks; unpunched, with unstiffened flanges.
F. 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.

2.6 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.

2.7 ANCHORS, CLIPS, AND FASTENERS
A. Steel Shapes and Clips: ASTM A 36, zinc coated by hot-dip process according to ASTM A 123.
B. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.
1.1
C. 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 1190 conducted by a qualified testing agency.
D. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping, steel drill screws.
1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

2.8 MISCELLANEOUS MATERIALS
A. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B.
B. Cement Grout: Portland cement, ASTM C150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTMC 1107/C 1107M, with fluid consistency and 30-minute working time.
D. Shims: Load bearing, high-density multimonomer plastic, and nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shim
E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch (6.4 mm) thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

PART 3 - EXECUTION
3.1 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 (6 mm) to ensure a uniform bearing surface on supporting concrete or masonry construction.
B. Install sealer gaskets at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations.

3.2 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 AISI S200 and to manufacturer's written instructions unless more stringent requirements are indicated.
C. Install cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened.
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. Care shall be exercised at all times to avoid damage through careless handling during unloading, storing and erection of framing members and sub-assemblies.
G. Joining of framing members shall be made with self-drilling screws or welding.
H. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard punched openings.
I. 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 (1:960) and as follows:
1. Space individual framing members no more than plus or minus 1/8 inch (3 mm) from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.3 LOAD-BEARING WALL INSTALLATION
A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:
1. Anchor Spacing: To match stud spacing unless noted otherwise.
B. Squarely seat studs against top and bottom tracks with gap not exceeding of 1/8 inch (3 mm) between the end of wall framing member and the web of track. Fasten both flanges of studs to top and bottom tracks. Space studs as follows:
1. Stud Spacing: As indicated (16" maximum).
C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar configurations.
D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer loads.
E. Align floor and roof framing over studs. Where framing cannot be aligned, continuously reinforce track to transfer loads.
F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.
G. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.
1. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings. Fasten jamb members together to uniformly distribute loads.
2. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.
1. If type of supplementary support is not indicated, comply with stud manufacturer's written recommendations and industry standards in each case, considering weight or load resulting from item supported.
I. Install horizontal bridging in stud system, spaced vertically 48 inches unless noted otherwise. Fasten at each stud intersection.
1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of two screws into each flange of the clip angle for framing members up to 6 inches (150 mm) deep.
2. Bridging: Combination of flat, taut, 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. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
J. Install steel sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.
K. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.4 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION
A. Install continuous tracks sized 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: As indicated (16" o/c maximum).
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.
1. Install single deep-leg deflection tracks and anchor to building structure.
2. Install double deep-leg deflection tracks and anchor outer track to building structure.
3. Connect vertical deflection clips to infill studs and anchor to building structure.
4. Connect drift clips to cold-formed metal framing and anchor to building structure.
E. Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings but not more than 48 inches (1220 mm) apart. Fasten at each stud intersection.
1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 12 inches (305 mm) of single deflection track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness matching studs, secured to stud webs or flanges.
a. Install solid blocking at 96-inch centers unless noted otherwise.
2. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
3. Bridging: Combination of flat, taut, 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.
4. 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 FIELD QUALITY CONTROL
A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
B. Field and shop welds will be subject to testing and inspecting.
C. Testing agency will report test results promptly and in writing to Contractor and Architect.
D. Remove and replace work where test results indicate that it does not comply with specified requirements.
E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.6 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.
END OF C05000 B

C06000: CARPENTRY

A: ROUGH CARPENTRY

PART 1 - GENERAL
1.1 SUMMARY
A. This Section includes the following:
1. Framing with dimension lumber.
2. Rooftop equipment bases and support curbs.
3. Wood blocking, cants, and nailers.
4. Wood furring and grounds.
5. Wood sleepers.
6. Plywood backing panels.
7. Engineered Wood Products.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL (C06115)
A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
3. Provide dressed lumber, S4S, unless otherwise indicated.
2.2 WOOD-PRESERVATIVE-TREATED LUMBER (C06115)
A. Preservative Treatment by Pressure Process: AWPA C2.
1. Preservative Chemicals: Acceptable to authorities having jurisdiction, and containing no arsenic or chromium.
B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
D. Application: Treat items indicated on Drawings, and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches (460 mm) above the ground in crawl spaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.
2.3
A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood).
B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
C. Application: Treat items indicated on Drawings.
2.4 DIMENSION LUMBER FRAMING (C06115)
A. Maximum Moisture Content: 19 percent.
B. Non-Load-Bearing Interior Partitions: No. 2 or better.
C. Framing Other Than Non-Load-Bearing Interior Partitions:
1. Southern pine No. 2 grade ; SPIB.
2. Douglas Fir-Larch No. 1 grade; BCLIB, or WWPA.
3. Any other visually graded dimension lumber with the minimum design values of Fb=1200 psi; Ft=725 psi; Fv=90 psi; Fc, perpendicular=565 psi; Fc, parallel=1550 psi; E=1,600,000 psi.
4. All other visually graded dimension lumber must be specifically designed for at the Contractor's request.
D. Exposed Exterior and Interior Framing Indicated to Receive a Stained or Natural Finish: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
1. Species and Grade: As indicated above for load-bearing construction of same type.
2. Species and Grade: Southern pine, No. 1 grade; SPIB.
3. Species and Grade: Douglas fir-larch; No. 1 grade; WCLIB, or WWPA.
2.5 MISCELLANEOUS LUMBER (C06495)
A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.
B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.
2.6 PLYWOOD BACKING PANELS (C06496)
A. Telephone, Kitchen Equipment, and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-C Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2-inch (13-mm) nominal thickness.
2.7 FASTENERS (C06115)
A. General: Provide fasteners of size and type indicated that comply with requirements specified.
1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
B. Power-Driven Fasteners: NES NER-272.
C. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers, unless noted otherwise in sections and plans.
D. Nails: All nails shall be common type.
2.8 METAL FRAMING ANCHORS (C06115)
A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Simpson Strong-Tie Co., Inc..
B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
C. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.
2.9 ENGINEERED WOOD PRODUCTS (C06170)
A. Engineered Wood Products, General: Products shall contain no urea formaldehyde.
B. Laminated Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559.
1. Extreme Fiber Stress in Bending, Edgewise: 2900 psi for 12-inch nominal depth members.
2. Modulus of Elasticity, Edgewise: 2,000,000 psi.
C. Wood I-Joists: Prefabricated units, I-shaped in cross section, made with solid or structural composite lumber flanges and wood-based structural panel webs, let into and bonded to flanges. Provide units complying with material requirements of and with structural capacities established and monitored according to ASTM D 5055.
1. Web Material: Either oriented strand board or plywood, complying with DOC PS 1 or DOC PS 2, Exposure 1.
2. Structural Properties: Provide units with depths and design values not less than those indicated.
3. Provide units complying with APA PRI-400, factory marked with APA trademark indicating nominal joist depth, joist class, span ratings, mill identification, and compliance with APA standard.
D. Rim Boards: Product designed to be used as a load-bearing member and to brace wood I-joists at bearing ends, complying with research/evaluation reports for I-joists.
1. Material: Product made from any combination of solid lumber, wood strands and veneers.
2. Thickness: 1-1/4 inches.
3. Provide performance-rated product complying with APA PRR-401 rim board grade, factory marked with APA trademark indicating thickness, grade and compliance with APA standard.

PART 3 - EXECUTION
3.1 INSTALLATION
A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
D. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.
E. Do not splice structural members between supports, unless otherwise indicated.
F. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
G. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
END OF C06000 A

C06000: CARPENTRY

B: HEAVY TIMBER FRAMING

PART 1 - GENERAL
1.1 SUMMARY
A. Section includes framing using timbers.
1.2 DEFINITIONS
A. Timbers: Lumber of 5 inches nominal (114 mm actual) or greater in least dimension.
B. Inspection agencies, and the abbreviations used to reference them, include the following:
1. SPIB: Southern Pine Inspection Bureau (The).
2. WWPA: Western Wood Products Association.

PART 2 - PRODUCTS
2.1 TIMBER (C06115)
A. Comply with DOC PS 20 and with grading rules of lumber-grading agencies certified by ALSC's Board of Review as applicable.
1. Factory mark each item of timber with grade stamp of grading agency.
2. For exposed timber indicated to receive a stained or natural finish, apply grade stamps to surfaces that are not exposed to view, or omit grade stamps and provide certificates of grade compliance issued by grading agency.
B. Timber Species and Grade: Southern pine; No. 2, SPIB.
C. Structural Properties: Provide any species and grade that, for moisture content provided, complies with required structural properties.
1. Allowable Stress Ratings for 12-Inch Nominal (286-mm Actual) Depth: Fb 1500 psi (10.3 MPa) and E 1,500,000 psi (10 340 MPa)
D. Moisture Content: Provide timber with 19 percent maximum moisture content at time of dressing.
E. Dressing: Provide dressed timber (S4S) unless otherwise indicated.

2.2 TIMBER CONNECTORS (C06115)
A. Manufacturers: Subject to compliance with requirements:
B. Basis-of-Design Products: Subject to compliance with requirements.
C. Provide bolts, 3/4 inch (19 mm) unless otherwise indicated, complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); provide nuts complying with ASTM A 563 (ASTM A 563M); and, where indicated, provide flat washers.
D. Materials: Unless otherwise indicated, fabricate from the following materials:
1. Structural-steel shapes, plates, and flat bars complying with ASTM A 36/A 36M.
2. Round steel bars complying with ASTM A 575, Grade M 1020.
E. Finish steel assemblies and fasteners with rust-inhibitive primer, 2-mil (0.05-mm) dry film thickness.
PART 3 - EXECUTION
3.1 INSTALLATION
A. General: Erect heavy timber framing true and plumb. Provide temporary bracing to maintain lines and levels until permanent supporting members are in place.
B. Fitting: Fit members by cutting and restoring exposed surfaces to match specified surfacing.
1. Predrill for fasteners using timber connectors as templates.
2. Finish exposed surfaces to remove planing or surfacing marks, and to provide a finish equivalent to that produced by machine sanding with No. 120 grit sandpaper.
3. Coat crosscuts with end sealer.
C. Install timber connectors as indicated.
1. Install bolts with orientation as indicated or, if not indicated, as directed by Architect.
3.2 ADJUSTING
A. Repair damaged surfaces and finishes after completing erection. Replace damaged heavy timber framing if repairs are not approved by Architect.
END OF C06000 A

C06000: CARPENTRY

C: SHEATHING

PART 1 - GENERAL
1.1 SUMMARY
A. Section Includes:
1. Wall sheathing.
2. Roof sheathing.
3. Composite nail base insulated roof sheathing.
4. Sheathing joint and penetration treatment.
1.2 ACTION SUBMITTALS
A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements.
1.3 INFORMATIONAL SUBMITTALS
A. Evaluation Reports: For following products, from ICC-ES:
1. Preservative-treated plywood.
PART 2 - PRODUCTS
2.1 WOOD PANEL PRODUCTS (C06115)
A. Emissions: Products shall meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
B. Plywood: Either DOC PS 1 or DOC PS 2 unless otherwise indicated.
C. Oriented Strand Board: DOC PS 2.
2.2 WALL SHEATHING (C06115)
A. Plywood Wall Sheathing: Exterior, Structural I sheathing.
B. Oriented-Strand-Board Wall Sheathing: Exposure 1, Structural I sheathing.
2.3 ROOF SHEATHING (C06115)
A. Plywood Roof Sheathing: Exposure 1, Structural I sheathing.
B. Oriented-Strand-Board Roof Sheathing: Exposure 1, Structural I sheathing.
2.4 FASTENERS (C06115)
A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153.
PART 3 - EXECUTION
3.1 INSTALLATION, GENERAL
A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
C. Securely attach to substrate by fastening as indicated, complying with the following:
1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's "International Residential Code for One- and Two-Family Dwellings."
D. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
3.2 WOOD STRUCTURAL PANEL INSTALLATION
A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
B. Fastening Methods: Fasten panels as indicated below:
1. Wall and Roof Sheathing:
a. Nail to wood framing.
b. Screw to cold-formed metal framing.
c. Space panels 1/8 inch (3 mm) apart at edges and ends.
END OF C06000 C

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SHEET
STRUCTURAL SPECIFICATIONS

SHEET NUMBER
S-902

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