

**SECTION 06 10 00
ROUGH CARPENTRY**

PART 1 GENERAL

1.1 STIPULATIONS

- A. The specifications sections "General Conditions to the Construction Contract", "Special Conditions" and "Division 01 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SECTION INCLUDES

- A. Subflooring.
- B. Preservative treated wood materials.
- C. Fire retardant treated wood materials.
- D. Communications and electrical room mounting boards.
- E. Concealed wood blocking, nailers, and supports.

1.3 DESCRIPTION

- A. Install all wood framing indicated on the Drawings or required for a complete and operable facility. The actual spacing and location of framing members as shown on the drawings is diagrammatic and may not clearly depict each framing member required for a complete system. The General Contractor is required to provide all framing for a complete system.
- B. Certain framing series and sizes are indicated on the drawings. Other series, sizes and manufacturers of framing may be substituted if there is equal performance and with the approval of the Architect and Client Agency. UL ratings are based on the series specified. If substitutions to the series are proposed, the substitution shall include all necessary work to maintain the fire rating indicated at no additional charge to the Client Agency. If substitutions to the series are proposed, the substitution shall include all necessary work to maintain the depths necessary to run ductwork, etc., in the joist space at no additional charge to the Client Agency. No change orders will be approved for additional work related to an approved substitution of a series, size or manufacturer, due to a conflict that was not addressed, unforeseen, or would not otherwise have occurred had the substitution not been proposed.
- C. Provide all wood, nails, bolts, screws, framing anchors and other rough hardware and all other items needed for rough carpentry in this Work but not specifically described in other Sections of these Specifications.

1.4 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.5 REFERENCE STANDARDS

- A. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2018, with Errata (2019).

- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- D. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- E. ASTM D2898 - Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing 2010 (Reapproved 2017).
- F. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing 2019a.
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
- H. AWPA U1 - Use Category System: User Specification for Treated Wood 2022.
- I. PS 1 - Structural Plywood 2009 (Revised 2019).
- J. PS 2 - Performance Standard for Wood Structural Panels 2018.
- K. PS 20 - American Softwood Lumber Standard 2021.

1.6 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
 - 1. Include data from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
- C. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, and installation.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified

requirements.

2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6):
 1. Species: Southern Yellow Pine.
 2. Grade: No. 2.
- D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16):
 1. Species: Southern Yellow Pine.
 2. Grade: No. 2.
- E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 1. Lumber: S4S, No. 2 or Standard Grade.
 2. Boards: Standard or No. 3.

2.3 EXPOSED DIMENSION LUMBER

- A. Sizes: Nominal sizes as indicated on drawings.
- B. Surfacing: S4S.
- C. Moisture Content: S-dry or MC19.

2.4 EXPOSED BOARDS

- A. Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- B. Moisture Content: Kiln-dry (15 percent maximum).
- C. Surfacing: S4S.
- D. Species: Douglas Fir.
- E. Grade: No. 2, 2 Common, or Construction.

2.5 CONSTRUCTION PANELS

- A. Subflooring: PS 2 type, rated Sheathing.
 1. Bond Classification: Exterior.

2. Span Rating: 48.
 3. Performance Category: 3/4 PERF CAT.
- B. Wall Sheathing, Exterior Gypsum Sheathing: Gypsum, complying with requirements of ASTM C1396/C1396M for gypsum sheathing, V-shaped long edges, 5/8 inch Type X fire resistant.
- C. Wall Sheathing: Oriented strand board wood structural panel; PS 1 or PS 2.
1. Grade: Sheathing.
 2. Bond Classification: Exposure 1.
 3. Performance Category: 7/16.
 4. Span Rating: 40/20.
 5. Edges: Square.
- D. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.6 ACCESSORIES

- A. Fasteners and Anchors:
1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Bolts:
1. Machine Bolts: ASTM 307
 2. Steel Bolts: ASTM307, Grade a; with ASTM 563 hex nuts and, where indicated, washers
 3. Lag Bolts: Federal Spec. FF-B-561
- C. Stainless Steel Fasteners: Type 304 or 316 Stainless steel fasteners shall be used with AWWA UC4 wood preservative products
- D. Power-Driven Fasteners: ESR-1539
- E. Connectors:
1. Connectors in contact with AWWA Use Category UC2 & UC3 wood preservative treated products shall be triple dipped galvanized, G185 coating designation
 2. Connectors in contact with AWWA Use Category UC4A wood preservative treated products shall be Type 304 or 316 stainless steel
- F. Subfloor Adhesives: Gap-filling construction adhesive for bonding wood structural panels to wood-based floor system framing; complying with ASTM D3498.
1. Products:

- a. Adfast USA Inc; ADBOND EX 5690: www.adfastcorp.com/#sle.
- b. Franklin International, Inc; Titebond Fast Set Polyurethane Construction Adhesive: www.titebond.com/#sle.
- c. Franklin International, Inc; Titebond PROvantage Weatherproof Subfloor Adhesive: www.titebond.com/#sle.
- d. Substitutions: See Section 01 25 00 - Substitution Procedures.

2.7 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
 2. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Fire Retardant Treatment:
 1. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D2898.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Do not use treated wood in direct contact with the ground.
- C. Preservative Treatment:
 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber in contact with roofing, flashing, or waterproofing.
 - c. Treat lumber in contact with masonry or concrete.
 - d. Treat lumber less than 24 inches above grade.
 2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood in contact with roofing, flashing, or waterproofing.

- c. Treat plywood in contact with masonry or concrete.
- d. Treat plywood less than 24 inches above grade.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 WORKMANSHIP

- A. General: All rough carpentry shall produce joints true, tight, and well nailed, with all members assembled in accordance with the Drawings and with all pertinent codes and regulations.
- B. Selection of lumber pieces: Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or making connections.
 - 1. Cut out and discard all defects, which will render a piece unable to serve its intended function. Lumber may be rejected by the Architect, whether or not it has been installed, or excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
- C. Shimming: Do not shim sills, joists, short studs, trimmers, headers, lintels, or other framing components.

3.3 TREATED LUMBER

- A. General: Use pressure treated lumber for all bottom stud wall plates and any wood in contact with concrete and/or ground surfaces or as indicated on the drawings for poles, trim, curbing, fencing, and any miscellaneous apparatus, etc.
- B. Fasteners and connectors used with treated wood products in ground contact applications shall be stainless steel. Fasteners and connectors used with treated wood products in above ground applications, shall be hot dipped galvanized.
- C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

3.4 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.
- D. Do not notch, bore, or cut members for pipes, ducts, conduits, or other reasons except as shown on the Drawings or as specifically approved in advance by the Architect. Contractor shall be responsible for reinforcing all members in accordance with the latest written

instructions.

3.5 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and AWC (WFCM) Wood Frame Construction Manual.
- E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.
- G. Bearing: Make all bearing full unless otherwise indicated on the drawings
- H. Finish all bearing-surfaces on which structural members are to rest so as to give sure and even support. Where framing members slope. cut or notch the ends as required to give uniform bearing surface.

3.6 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- F. Provide the following specific nonstructural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.

4. Grab bars.
5. Towel and bath accessories.
6. Wall-mounted door stops.
7. Marker boards.
8. Wall paneling and trim.
9. Joints of rigid wall coverings that occur between studs.

3.7 INSTALLATION OF CONSTRUCTION PANELS

- A. Subflooring: Glue and nail to framing; staples are not permitted.
- B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 3. Install adjacent boards without gaps.

3.8 STUD WALLS AND PARTITIONS

- A. Studs: Make all studs single length, unspliced, and platform framed.
- B. Corners and intersections: Unless otherwise indicated on the Drawings, frame all corners and intersections with three or more studs and all required bearing for wall finish.
- C. Alignment: On all framing members to receive a finished wall or ceiling, align the finish subsurface to vary not more than 1/8" from the plan of surfaces of adjacent framing and furring members.

3.9 FASTENING

- A. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
- B. ESR-1539 for power-driven fasteners.
- C. Published requirements of metal framing anchor manufacturer.
- D. Table 2305.2, "Fastening Schedule," in the International Building Code.
- E. Nailing: Use only common wire nails or spikes.
- F. For conditions not covered in the Nailing Schedule, provide penetration into the piece receiving the point of not less than 1/2 the length of the nail or spike provided, however, that 16d nails may be used to connect two pieces of two-inch nominal thickness.

- G. Do all nailing without splitting wood. Pre-bore as required. Replace all split members.
- H. Bolting: Use washers under head and nut where both bear on wood; use washers under all nuts.
- I. Screws: For lag screws and wood screws, pre-bore holes same diameter as root of thread; enlarge holes to shank diameter for length of shank. Screw, do not drive, all lag screws and wood screws.
- J. Interior Walls: Interior walls shall be permitted to be anchored down using a power actuated nail/pin gun. Anchoring of interior walls shall be as follows:
- K. 36" o.c. maximum spacing
- L. Minimum 2-1/2" long nails, 1" of which shall project into the concrete slab.

3.10 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.11 CLEANING

- A. Waste Disposal:
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION