

**SECTION 06100**  
**ROUGH CARPENTRY**

**PART 1 - GENERAL**

**1.1 DESCRIPTION OF WORK**

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Wood blocking, cants, and nailers.
  2. Plywood backing panels.
  3. Rooftop equipment bases and support curbs.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 06402 - INTERIOR ARCHITECTURAL WOODWORK for interior woodwork not specified in this Section.

**1.2 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 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.
  2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
  3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
  4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
  5. Manufacturers' product data for construction adhesive, including printed statement of VOC content.

6. Composite wood manufacturer's product data for each composite wood product used indicating that bonding agent used contains no urea formaldehyde.

### 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

### 2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
  1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  3. Provide dressed lumber, S4S, unless otherwise indicated.
  4. Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.
- B. Plywood Panels:
  1. Plywood: Either DOC PS 1 or DOC PS 2, unless otherwise indicated.
  2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
  3. Factory mark panels according to indicated standard.

### 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWPA C2 (lumber) and AWPA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
  1. Preservative Chemicals: Acceptable to authorities having jurisdiction and not containing arsenate.
- B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.

- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee 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 in exterior walls.

### 2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: For all interior use materials, provide materials that are fire-retardant treated and comply with performance requirements in AWWA C20 (lumber) and AWWA C27 (plywood). Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
  - 1. Use treatment for which chemical manufacturer publishes physical properties of treated wood after exposure to elevated temperatures, when tested by a qualified independent testing agency according to ASTM D 5664, for lumber and ASTM D 5516, for plywood.
  - 2. Use treatment that does not promote corrosion of metal fasteners.

### 2.4 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
  - 1. Rooftop equipment bases and support curbs.
  - 2. Blocking.
  - 3. Cants.
  - 4. Nailers.
  - 5. Furring.
  - 6. Grounds.
- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 15 percent moisture content.

### 2.5 PANEL PRODUCTS

- A. Miscellaneous Concealed Plywood: Exposure 1 sheathing, span rating to suit framing in each location, and thickness as indicated but not less than 5/8”.

- B. Telephone and Electrical Equipment Backing Panels, Including those at Water Treatment: DOC PS 1, Exposure 1, A-C Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 5/8" thick.

## 2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
  - 1. Where carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Wire, Brads, and Staples: FS FF-N-105.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
  - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

## 2.7 MISCELLANEOUS MATERIALS

- A. Adhesive, Including Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
  - 1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit 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.
- C. Apply field treatment complying with AWWPA M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
- E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.
- F. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.
- G. Cutting and Repairing: Do such work as normally required and done for mechanical and other trades.
- H. Blocking: Furnish and install blocking, furring, brackets, etc., as required to properly carry out all work shown and reasonably inferred by the Drawings and Specifications.
- I. Underlayment Installation:
  - 1. Acclimate underlayment by standing individual panels on edge in rooms where they are to be installed 24 to 48 hours prior to installation.
  - 2. Plywood underlayments shall be installed immediately before laying finished floor.
  - 3. Install plywood underlayment smooth side up with face grain perpendicular to floor joists. Stagger end joints in underlayment panels and offset end and edge joints of underlayment panels by at least two inches from joints in SW floor panels.
    - \* Panel edge and ends shall be space 1/16”.
  - 4. Underlayment nailing shall be 3” o.c. along edge 3/8” minimum to 1/2” maximum from edge and 6” o.c. each way in field. Begin in corner adjacent to previous panels working diagonally across to opposite corner. **DO NOT TACK PANELS FIRST.**

- J. Nailers and Wood Cants: Nailers, 2” stock unless otherwise noted, of the proper widths. Bevel nailers for concrete ½” both sides and properly place in forms. Bolt nailers in place on steel or masonry. Furnish ledgers bolted to wall in locations shown and as required.
- K. Shoring: Furnish and place all necessary shoring and bracing of types and sizes best suited for the conditions to be met. Shoring must comply with all governing requirements.
- L. Provide wood curbs, required blocking and cants around all openings through the roof indicated on all architectural, mechanical and electrical drawings. Check drawings for all trades and furnish for all openings indicated.
- M. Studs for interior walls shall be solid and continuous from floor to double place at trusses, and shall not be cut for straightening; warped studs shall be replaced.
- N. Studs shall be doubled at all corners, opening, and beam bearing points.
- O. Headers over openings in walls shall be as follows, unless noted otherwise:
 

<u>Opening Width</u>	<u>Header Size</u>
up to 6’ – 0”	2-2x6
6’ to 8’ – 0”	2-2x8
8’ to 10” – 0”	2-2x10
- P. Plywood Backer Boards:
  - 1. Electrical, telephone, video and alarm equipment locations: install 5/8” plywood over gypsum board, fastening into studs @ 8” o.c. Seal all vertical joints top, bottom and ends with Tremco sealant.
  - 2. Water Treatment Equipment: Paint all exposed edges/ends and install per directions above. Hold bottom edge of plywood ½” above finish floor and set in a continuous bead of calking.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

**END OF SECTION**