

SECTION 06100

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Rough carpentry items including, but not necessarily limited to, the following:
 - 1. Blocking, backing, stripping, furring, and nailers.
 - 2. Concealed wood blocking for support of casework.
 - 3. [Telephone and electrical panel backboards.]
 - 4. [Pressure treatment.]
 - 5. [Fire-retardant treatment.]
- B. Related Sections
 - 1. Section 05 05 23 - Standards for Anchors and Fastenings.
 - 2. Section 06 41 00 - Architectural Wood Casework

1.02 REFERENCE STANDARDS

- A. American Plywood Association
 - 1. APA - Guide to Plywood Grades.
- B. American Wood-Preservers' Association:
 - 1. AWPA C2 - Lumber, Timbers, Bridge Ties and Mine Ties, Pressure Treated.
 - 2. AWPA C9 - Plywood, Pressure Treated.
 - 3. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes.
 - 4. AWPA C27 - Plywood - Fire-Retardant Treatment by Pressure Process
 - 5. AWPA U1 - Use Category System: User Specification for Treated Wood.
- C. ASTM International:
 - 1. [ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.]
 - 2. [ASTM D779 -Standard Test Method for Water Resistance of Paper, Paperboard, and Other Sheet Materials by the Dry Indicator Method.
 - 3. [ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials.]
- D. CBC - California Building Code.
- E. Forest Stewardship Council:
 - 1. FSC Guidelines - Forest Stewardship Council Guidelines.
- F. Redwood Inspection Service:
 - 1. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber.
- G. Southern Pine Inspection Bureau, Inc.
 - 1. SPIB (GR) - Grading Rules.
- H. U.S. Department of Commerce National Institute of Standards and Technology
 - 1. DOC PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology.

- I. West Coast Lumber Inspection Bureau:
 - 1. WCLB (GR) - Standard Grading Rules for West Coast Lumber No. 17.
- J. Western Wood Products Association:
 - 1. WWPA G-5 - Western Lumber Grading Rules.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate curb installation with installation of mechanical equipment and roofing
- B. [Preinstallation Meeting:]
- C. Sequencing:
 - 1. Coordinate details with other work supporting, adjoining, or fastening to rough carpentry work.
- D. [Scheduling:]

1.04 [SUSTAINABLE CHARACTERISTICS]

- A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design compliance.

- B. Materials and Resources Characteristics:

- 1. [Recycled Content Materials: Furnish materials with maximum available recycled content including:

SPEC NOTE *List materials specified in this section required to have recycled content.*

- a. [_____.]

- 2. [Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.]

SPEC NOTE *List materials specified in this section required to be regional materials.*

- a. [_____.]

- 3. Certified Wood Materials: [Furnish wood materials] ~~--or--~~[Use a minimum of 50 percent of wood-based materials and products] certified in accordance with FSC Guidelines.

1.05 SUBMITTALS

- A. See Section 01 33 00 - Submittal Procedures, for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials.
- C. Certified Wood Products: Submit Forest Stewardship Council (FSC) Chain of Custody Certificate from wood supplier of each wood and panel product. Provide statement from supplier that required quantity of FSC certified wood products can be delivered to project site in timeframe that will not delay project.
- D. Samples: Only as requested.
- E. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.06 [SUSTAINABLE DESIGN SUBMITTALS]

- A. Section 01 35 63 - Sustainability Project Design Requirements: Requirements for sustainable design submittals.
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Materials Resources Certificates:
 - a. Certify recycled material content for recycled content products.
 - b. Certify source for regional materials and distance from Project site.
 - c. Certify lumber is harvested from Forest Stewardship Council Certified well managed forest.
 - 2. Indoor Air Quality Certificates:
 - a. Certify each composite wood [and agrifiber] product contains no added urea-formaldehyde resins.
- C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
 - 1. Provide cost data for the following products:
 - a. Products with recycled material content.
 - b. Regional products.
 - c. Certified wood products.

1.07 QUALITY ASSURANCE

- A. Lumber: Comply with DOC PS 20 and approved grading rules and inspection agencies.
 - 1. Acceptable Lumber Inspection Agencies: RIS, SPIB, WCLB, and WWPA.
- B. Design Criteria: Pressure treatment shall not adversely affect application, permanence, or appearance of finish paint systems.
- C. Requirements of Regulatory Agencies: Fire-retardant treated wood shall comply with CBC Section 2303.2.
- D. Apply label from agency acceptable by authority having jurisdiction to identify each [preservative treated] [and] [fire retardant treated] material.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Provide proper facilities for handling and storage of materials to prevent damage to edges, ends, and surfaces.
- B. Deliver and store packaged products in original containers or bundles with seals unbroken and labels intact until time of use.
- C. Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wood: Bearing grade-trademark or accompanied by certificate of compliance of appropriate grading and inspection agencies. Wood and plywood used for rough carpentry to come from Forest Stewardship Council (FSC) Certified Forests.
 - 1. Lumber:

- a. (Blocking, Backing, Stripping, Furring, and Nailers): [Fire-retardant][Preservative] treated WCLIB construction grade Douglas fir.
- b. Wood Framing: Meet requirements of following minimum grades. [Fire-retardant][Preservative] treated.]

<u>Item</u>	<u>Species</u>	<u>Grade</u>	<u>Reference</u>
Studs	Douglas Fir	No. 2	WCLIB 123c
Plates	Douglas Fir	No. 1	WCLIB 123b
Beams	Douglas Fir	No. 1 Structural	WCLIB 130b
Joists	Douglas Fir	No. 2	WCLIB 123c
Posts	Douglas Fir	No. 1 Structural	WCLIB 131b
Blocking	Douglas Fir	No. 2	WCLIB 123c

- c. Air- or kiln-dry to maximum 25 percent moisture content, except maximum 19 percent for 2-inch lumber at time of surfacing.
 - d. Furnish S4S unless otherwise noted.
 - e. Size to conform to rules of governing standard. Sizes shown are nominal unless otherwise noted.
2. Plywood: DOC PS 1 grade structural 1, C-C exterior, with no added urea-formaldehyde resins, fire-retardant treated.
 3. [Sills Bearing on Concrete: RIS foundation grade redwood.]
 4. [Architecturally Exposed Roof Rafters: WCLIB select structural FOHC grade Douglas fir and meeting the requirements of wood framing lumber specified above.]
 5. [Architecturally Exposed Roof Decking: WCLIB C and BTR VG flooring grade Douglas fir and meeting the requirements of wood framing lumber specified above.]
- B. Fasteners and Anchors: See Section 05 05 23- Metal Fastenings for expansion shield and lag bolt type for anchorage to solid masonry or concrete.
- C. [Fire-Retardant Treatment: Furnish in accordance with AWWA.]
- D. [Preservative Treatment: Furnish in accordance with AWWA.]
- E. [Building Paper: ASTM D226/D226; [Type I, No. 15][Type II, No. 30] unperforated asphalt felt
- F. [Building Paper:
1. Description:
 - a. Two plies of building paper that meets requirements of FS UU-B-790A, Type I, Grade D, Style 2.
 - b. Water Vapor Transmission, ASTM E96/E96M: 67 grams and 10 perms (MVT).
 - c. Water Resistance, ASTM D779: 150.
 - d. Tensile Strength: Machine direction of 160-pound feet per inch and cross direction of 110 pound feet per inch.
 2. Product: Fortifiber Building Systems Group's "Two-Ply Super Jumbo Tex 60 Minute"; or equal.

2.02 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
- B. Fire-Retardant Treatment:
1. Lumber: Treat in accordance with [AWPA C20][AWPA C20, Interior Type typical and Exterior Type for roof nailers, blocking, insulation stops, and similar items].

2. Plywood: Treat in accordance with [AWPA C27][AWPA C27, Interior Type typical and Exterior Type for roof nailers, blocking, insulation stops, and similar items].
 3. Inspect each piece of treated lumber or plywood after drying. Discard damaged or defective materials.
- C. Preservative Treatment:
1. Lumber: Treat in accordance with AWPA C2 with 0.25 pcf retainage.
 2. Plywood: Treat in accordance with AWPA C9 with 0.25 pcf retainage.
 3. [0.40 pcf retainage for material in contact with soil.]
 4. Pressure treatment materials shall not contain chromium or arsenic.
- D. After treatment and prior to shipping, air- or kiln-dry lumber to maximum 15 percent moisture content.

2.03 SOURCE QUALITY CONTROL

- A. Lumber shall bear grade-trademark or be accompanied by certificate of compliance of appropriate grading agency. [In lieu of grade stamping exposed to view lumber and plywood, submit manufacturer's certificate certifying that products meet or exceed specified requirements.]
- B. Douglas fir lumber shall bear WCLIB grade stamp.
- C. Plywood shall bear APA grade-trademark.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine areas to receive rough carpentry work and verify that :
 1. Installation of building components is complete to receive rough carpentry work.
 2. Surfaces are satisfactory to receive work.
 3. Spacing, direction, and details of supports are correct to accommodate installation of blocking, backing, stripping, furring, and nailers.
- B. Do not proceed with installation until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. General:
 1. Work must be accurately cut and solidly fit together to provide strong rigid joints with full bearing for all members.
 2. Reinforce members damaged by cutting or boring with steel straps acceptable to University's Representative.
 3. Split, warped, curled or otherwise defective material or careless improper workmanship will not be accepted.
 4. Set carpentry work to required levels and lines, with members plumb and true and cut and fitted.
 5. Fit rough carpentry to other construction; scribe and cope as required for accurate fit.
 6. Surfaces must be level, plumb and true to lines indicated on Drawings.
 7. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.
 8. Provide accessories and install as per manufacturer's specifications.

9. [Exposed-to-View Rough Carpentry: Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.]
 10. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.
- B. Nailed Connections and Fastenings:
1. Install joist hangers and framing connectors in accordance with manufacturer's recommendations as framing proceeds. Install required nails in the holes provided in the manufactured items.
 2. Nail joints in accordance with CBC Section 2325, unless otherwise noted.
 3. Use only common nails, unless otherwise noted.
 4. Where required, predrill to prevent splitting. Replace structurally or architecturally objectionably split members.
 5. Drop-In Expansion Anchors: Use for floor installation only. Not permitted for use in overhead or vertical surfaces.
- C. Provide blocking, grounds, nailers, stripping, and backing as noted and as required to secure other work.
- D. [Coat all non-preservative treated wood members in contact with masonry or concrete with two flowing brush coats of preservative treatment materials. Extend coating on members a minimum of 2 feet from face of masonry or concrete. Coat members prior to installation. Perform all cutting prior to treating.]
- E. Where wood is cut, sawed, planed, bored, or marred after [preservative] [or] [fire-retardant] treatment, apply two heavy brush coats of same material used in treatment. Allow preservation to dry prior to erecting members.
- F. [Install telephone and electrical panel backboards with plywood sheathing material where required. Size the back board by 12 inches beyond size of telephone and electrical panel.]

3.03 CLEANING

- A. Comply with Section 01 74 00 - Cleaning.

END OF SECTION