

**SECTION 06100**

**ROUGH CARPENTRY**

PART 1 - GENERAL

**1.01 SECTION INCLUDES**

- A. Framed construction of interior walls where substituted for metal stud framing indicated on drawings.
- B. Wood blocking for installation of other trades.

**1.02 RELATED SECTIONS**

- A. Section 03100 - Concrete Formwork:
- B. Section 06400 - Architectural Woodwork:
- C. Section 08200 - Wood doors:
- D. Section 13123 - Prefabricated Solarium:

**1.03 QUALITY ASSURANCE**

- A. Codes and standards: In addition to complying with all pertinent codes and regulations, all materials of this Section shall comply with the pertinent provisions of:
  - 1. Structural Douglas Fir: "Standard Grading and Dressing Rules for West Coast Lumber", Number 16, as published by the West Coast Lumber Inspection Bureau, or the Standard Grading Rules for Western Lumber, Western Wood Product Association, latest edition.
  - 2. Structural Plywood: Product Standard PS 1-latest edition of U.S. Department of Commerce, Bureau of Standards.
  - 3. Exterior Structural and siding redwood: Standard Specifications for Grades of California Redwood Lumber, adopted by the Redwood Inspection Service.
  - 4. Exterior and Interior Trim, Paneling and Millwork: Woodwork Institute of California, Manual of Millwork, latest edition.
- B. Qualifications of Workmen: For actual cutting and fitting of trim and finish material, use only journeymen finish carpenters who are thoroughly trained and experienced in the skills required, who are completely familiar with the materials involved and the manufacturer's recommended methods of installation, and who are thoroughly familiar with the requirements of this Work.
- C. Rejection: In the acceptance or rejection of finish carpentry, no allowance will be made for lack of skill on the part of workmen.

#### **1.04 PRODUCT HANDLING**

- A. Protection:
1. Use all means necessary to protect the materials of this Section before, during, and after delivery to the job site, and to protect the installed work and materials of all other trades.
  2. Deliver the materials to the job site and store, in a safe area, out of the way of traffic, and shored up off the ground surface, and supported to avoid warping and twisting.
  3. Prefabricated trusses are to be delivered, stored and transported in a vertical position.
  4. Identify all framing lumber as to grades and store all grades separately from other grades.
  5. Protect all metal products with adequate waterproof outer wrappings.
  6. Use extreme care in the off-loading of lumber to prevent damage, splitting, and breaking of materials. Remove all damaged material from the site.
  7. Provide and maintain scaffolding as required.

### PART II - PRODUCTS

#### **2.01 GRADE STAMPS**

- A. Framing lumber: Identify all framing lumber by the grade stamp of the West Coast Lumber Inspection Bureau or such other grade stamp as is approved in advance by the Architect.
- B. Plywood: Identify all plywood as to species, grade, and glue type by the stamp of the American Plywood Association.

#### **2.02 FRAMING MATERIALS**

- A. Unless otherwise shown, all lumber shall be S4S and dried to 19 % moisture by weight.
- B. Framing lumber:
1. Posts and beams: select structural grade Douglas Fir.
  2. Joists, rafters, and other framing lumber: No. 1 Grade Douglas Fir.
  3. 2 x 4 studs, plates, caps, blocking, and ledgers: No. 2 grade Douglas Fir.
  4. Sill plates: Douglas Fir, impregnated with an approved preservative.
- C. Plywood: Douglas Fir Structural I Interior Type CD grade with exterior glue conform to PS-1-83.
- D. Members exposed to view: Select for best appearance available in grade specified, free of heart center rings, checks, and splits. Grade stamps exposed to view will not be acceptable. Remove all stains or gouges prior to installation.

**2.03 BUILDERS ROUGH HARDWARE**

- A. Hot dipped galvanized where exposed to weather.
- B. Nails: Use common nails except where specified otherwise. Box nails will not be accepted.
- C. Bolts, lag screws, and wood screws: Commercial Standard of sizes indicated or required.
- D. Joist anchors, hangers and connection devices: Galvanized steel as detailed or required.

**2.04 POWER DRIVEN STUDS**

- A. 1/4" diameter, with threads upset to 3/8", shot through 1-1/2" diameter x 11. ga. washers, with not less than 1-1/4" concrete penetration. Use for interior, non-bearing sill on slab only.

**2.05 BUILDING PAPER**

- A. Federal Specification UU-B-790a, dated February 5, 1968, type 1, grade B, style 4. Orange Label Sisalkraft, Seekure.

**2.06 WOOD PRESERVATIVE**

- A. Standard P-5 of the American Wood Preservers Institute.

**2.07 TRIM AND MILLWORK**

- A. W.I.C. custom grade, sections 3, 4, 5 and 6 for interior and exterior hardwood and softwood.

**2.08 OTHER MATERIALS**

- A. All other materials, not specifically described but required for a complete and proper installation as indicated on the Drawings, shall be new, suitable for the intended use, and subject to the approval of the Architect.

**2.09 MISCELLANEOUS ITEMS**

- A. Carpentry work and miscellaneous items and their related components furnished and/or installed under this section are not necessarily individually described. The most important features and those requiring detailed descriptions are mentioned. Furnish and install all carpentry work and miscellaneous items not mentioned or described, in accordance with the intent of the drawings and specifications and as required to complete the work.

PART III - EXECUTION

**3.01 WORKMANSHIP FOR FRAMING**

- A. Carefully lay out, cut, fit, and install rough carpentry items. All joints to fit tightly and shall reject a common business card (0.01 inch).
- B. Refer to nailing schedule and connection details on the drawings. Use sufficient nails, spikes, screws, and bolts to insure rigidity and permanence.
- C. Drive nails perpendicular to grain of wood in lieu of toe-nailing, where feasible. When nailing through plates into studs, space nails to avoid stud twisting.
- D. Provide for installation and support of plumbing, heating, and ventilating work.
- E. Install work to true lines, plumb and level, unless indicated otherwise.

**3.02 INSTALLATION OF FRAMING**

- A. Plates and sills:
  - 1. Use nominal 2 inch stock, or greater size as detailed.
  - 2. Anchor with 1/2 inch by 10 inch bolts at 4 foot centers, unless shown otherwise.
  - 3. Provide single plates at floors and bottoms of openings, double plates at ceilings.
  - 4. Stagger ends of double plates.
- B. Studs:
  - 1. Nominal 2 x 4 inch size spaced at 16 inch centers, unless noted otherwise.
  - 2. Double studs at openings, triple at corners and intersections.
  - 3. Provide blocking required for nailing of surfacing materials.
  - 4. Provide firestopping of 2 inch material, full width of stud, at midpoint of each story, at furred area, at both sides of double wall areas, and at ceiling lines.
  - 5. Anchor studs abutting masonry or concrete with 3/8 inch bolts not more than 3 feet oc, not less than 4 bolts per story.
- C. Joists and Rafters:
  - 1. Set with crown side up; lap and spike together over intermediate bearings.
  - 2. Spike joists to studs resting on ribbon boards.
  - 3. Block ends between studs where studs and joists are not in contact.
  - 4. Double joists under partitions parallel to joists; space to provide clearance for pipes in partitions. Solid block between joists @ 16"

o.c. if clearance required is equal to partition width.

- D. Cross Bridging:
  - 1. Nominal 2 x 3 inch wood, to be nailed to rafters with 2-16d nails each end, or approved type metal.
  - 2. Provide not more than 8 feet apart in joist spans.
- E. Solid Blocking:
  - 1. Provide nominal 2 inch solid blocking over bearings, 2 inches less in depth of roof joists, full depth for floor and ceiling joists.

### **3.03 INSTALLATION OF PLYWOOD SHEATHING**

- A. Placement:
  - 1. Place all plywood with face grain perpendicular to supports and continuously over at least two supports, except where otherwise specifically shown on the Drawings.
  - 2. Center joints accurately over supports. Unless otherwise specifically shown on the Drawings, stagger the end joints of plywood panels to achieve a minimum continuity of joints.
- B. Protection of Plywood: Protect all plywood from moisture by use of all required waterproof coverings until the plywood has in turn been covered with the next succeeding component or finish.
- C. Machine nailing of sheathing:
  - 1. Machine nailing is only acceptable if the samples thereof are specifically approved by the Architect. Edge distance criteria are to meet UBC Table 25P. Top of nail head to be driven no less than 1/32 inch above plywood surface and no more than flush with the plywood surface. Depth shall be controlled by fixed adjustments on the nailer and not by operator technique.

### **3.04 INSTALLATION OF T&G DECKING**

- A. Except for alternate planks in end spans, each plank shall be at least two spans in length, end joints on supports, well scattered.
- B. For floor decks: Blind nail each plank to each support with nails long enough to penetrate at least 1-1/2 inches into support.
- C. For roof decks: Toe nail as required to draw planks tight and surface nail with 2-16d nails at each support.

### **3.05 FASTENING FOR FRAMING**

- A. Nails:
  - 1. Use only common wire nails or spikes of the dimension shown on the Drawings.
  - 2. For conditions not covered on the Drawings, 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.

3. Do all nailing without splitting wood. Prebore as required. Replace all split members.

B. Bolts:

1. Drill holes 1/16" larger in diameter than the bolts being used. Drill straight and true from one side only.
2. Bolt threads shall not bear on wood. Use washers under head and nut where both bear on wood. Use washers under all nuts.

C. Screws:

1. For lag-screws and wood screws, prebore holes same diameter as root of threads; enlarge holes to shank diameter for length of shank.
2. Screw all lag-screws and wood-screws. Do not hammer into place.

**3.06 NAILING SCHEDULE FOR FRAMING**

- A. Conform to Table No. 23-I-Q, UBC 1994 Edition, the following nailing schedule and connection details or notations on the drawings. Where discrepancies are found, the most stringent requirement shall govern.

Blocking to joist bearing:	2-8d toenailed each side
Blocking to joist or stud:	2-8d toenailed each side
One inch brace to stud :	2-8d facenailed at each stud and plate
Two inch brace to stud :	2-16d facenailed at each stud and plate
Bridging to joist :	2-8d toenailed at each end
Built-up beams eight inches or less in depth :	20d @ thirty-two inches on center, staggered w/ 2-20d each splice
Joists and rafters:	
to support :	3-8d toenailed
at laps (12 inches min.) :	3-16d facenailed
multiple joists:	16d @ twelve inches on center, staggered w/ 2-16d each end
Studs toenailed to plate :	2-8d each side
Studs endnailed to plate :	2-16d
Studs nailed together :	16d @ 24 inches on centers, staggered
Plates Upper to lower :	16d @ 16 inches on centers, staggered

**3.07 INSTALLATION OF BUILDING PAPER**

- A. Install the specified building paper over all exterior framing members where siding is indicated to be installed, lapping all joints to prevent penetration of water into the stud spaces, and securely fastening the paper in place in accordance with the manufacturer's published recommendations. Lap 6" at vertical joints and 2" at horizontal joints upper sheet lapped over lower sheet.

**3.08 INSTALLATION OF TRIM AND MILLWORK**

- A. Conform to the applicable requirements of the WIC "Manual of Millwork," Sections 7, 8 and 9 for exterior work and Sections 10, 11, 12 and 13 for interior work. Conform to Custom grade.
- B. For securing all exterior members, face nail with common or box nails, driven flush. Where other anchorage details are shown, use appropriate rough hardware as hereinabove specified.
- C. Secure all interior finish with finishing nails or screws as required, unless otherwise indicated. Set nails and screws for putty stopping.
- D. Hammer or tool marks or marred surfaces and edges will not be acceptable on any exposed finished surfaces and, as evidence of inferior workmanship, will be cause for rejection of such work.
- E. All end splices exposed in finished members may be accurately and neatly miter butted. Install members in as long lengths as possible.
- F. Install all work to details shown, plumb, level, true to line, and securely anchored. Neatly set nails and screws and remove all wood raised in the driving of nails and screws. Miter exterior corner joints. Interior corner joints may be coped. Carefully and accurately scribe molded members adjoining other molding or plain sections to the other members. Ease all exposed edges.

**3.09 INSTALLATION OF BUILDING SPECIALTIES**

- A. Install items specified in other sections which are not specified to be installed by the manufacturer or supplier. Install in accordance with the details shown on the drawings, the manufacturer's printed installation instructions, and any additional requirements specified. Securely fasten all wall-mounted items to solid backing or blocking.

**END OF SECTION**

**SECTION 06400**

**ARCHITECTURAL WOODWORKING**

PART 1 - GENERAL

**1.01 SECTION INCLUDES**

- A. Architectural Woodwork.
- B. Finish hardware for architectural woodwork.

**1.02 RELATED SECTIONS**

- A. Section 06100 - Rough Carpentry:
- B. Section 08200 - Wood Doors and Frames:
- C. Division 10: Specialties
- D. Section 12300 - Plastic Covered Casework:
- E. Section 12302 - Wood Casework:

**1.03 QUALITY ASSURANCE**

- A. Codes and Standards:
  - 1. Architectural woodwork: "Custom" grade in accordance with the specifications, rules, and details of the Woodwork Institute of California's "Manual of Millwork," current edition with all amendments (hereinafter referred to as WIC).
    - a. In Section 14, Paragraph VIII, K, reduce allowable spans by 12" for all thickness' and materials.
    - b. All materials are to be certified free of Formaldehyde.

**1.04 SUBMITTALS**

- A. Shop Drawings: Submit fully detailed shop drawings of all architectural woodwork to the Architect for approval. Prepare shop drawings in accordance with the Woodwork Institute of California's "Manual of Millwork," section entitled "Millwork Shop Drawings."

**1.05 PRODUCT DELIVERY**

- A. Delivery and storage :
  - 1. Do not deliver woodwork until the building is closed in and wet operations are completed and dry. Protect work against dampness during and after delivery. Store where directed out of the way of work in progress in well ventilated room where not exposed to

extreme changes of temperature and humidity.

2. Keep all material clearly identified with grade marks legible; keep all damaged material clearly identified as damaged, and separately store to prevent its inadvertent use.

## PART 2 - PRODUCTS

### **2.01 MATERIALS**

- A. General: Comply with the following standards:
  1. Softwoods: WIC "Manual of Millwork," current edition, Sections 3 and 5.
  2. Hardwoods: WIC "Manual of Millwork," current edition, Sections 4 and 6.
  3. Architectural Woodwork: WIC "Manual of Millwork," current edition, Sections 14, 15, 16, 17 and 17A.
  4. Finish Hardware: Use materials as specified in WIC Sections 14 and 15, Supplement No. 1. Finish to be Satin Chromium on exposed parts.
- B. Rough hardware: Furnish all items of rough hardware, connections, bolts, etc., required to complete the work. Hot-dip galvanize exposed bolts, nuts, and washers conforming to ASTM A153.
  1. Bolts: Standard mild steel, hexagonal head machine bolts with matching nuts and malleable iron or steel plate washers, or carriage bolts with square nuts and cut washers as indicated.
  2. Lag bolts and screws: Galvanized, conforming to Federal Specification FF-B-561B, of sizes shown or noted on drawings.
  3. Toggle bolts. Galvanized conforming to Federal Specification.
- C. Mastic: As required for the work of this section, materials and application in accordance with Sealants section of these specifications.

### **2.02 MISCELLANEOUS ITEMS**

- A. Architectural woodwork and miscellaneous items and their related components furnished and/or installed under this section are not necessarily individually described. The most important features and those requiring detailed description are mentioned. Furnish and install all woodwork and miscellaneous items not mentioned or described, in accordance with the intent of the drawings and specifications and as required to complete the work.

## PART 3 - EXECUTION

### **3.01 FABRICATION AND WORKMANSHIP**

- A. Make architectural woodwork to exact dimensions, profiles, and details shown on drawings and approved shop drawings. Finger joints will be permitted only for interior millwork to be painted. Remove sander

waves, rough or raised grain, rough edges, splinters, etc., except for raw-textured (re-sawn) members. Leave work in suitable condition for paint, stain or natural finish. Back out interior trim two inches wide and over unless otherwise shown. Ease all exposed edges, except for raw-textured members.

- B. Prime all surfaces, edges, and ends of millwork to be painted at the shop before shipping. Prime unexposed surfaces in contact with concrete or masonry with two coats of enamel undercoat.
- C. Prime all unexposed edges cut on the job with the same primer used in the shop.

### **3.02 PREPARATION**

- A. Measurements: Take such field measurements as may be required for accurate fitting of all work and proper accommodation of other trades.

### **3.03 INSTALLATION**

- A. Conform to the applicable requirements of the WIC "Manual of Millwork."
- B. Hammer or tool marks or marred surfaces and edges will not be acceptable on any exposed finished surfaces and, as evidence of inferior workmanship, may be cause for rejection of such work.
- C. All end splices exposed in finished members must be accurately and neatly miter butted. Install members in as long lengths as possible.
- D. Install all work to details shown, plumb, level, true to line, and securely anchored. Neatly set nails and screws and remove all wood raised in the driving of nails and screws. Miter exterior corner joints. Interior corner joints may be coped. Carefully and accurately scribe molded members adjoining other molding or plain sections to the other members. Ease all exposed edges.

**END OF SECTION**