# DIVISION 6 – SECTION 06100 CARPENTRY

## PART 1 GENERAL

### 1.01 WORK INCLUDED

A. Work may include any or all of the following, check drawings to determine scope of work required:
   1. Wood framing
   2. Blocking, backing, nailers, sleepers and wood grounds required for securing other work
   3. Wood furring
   4. Sheathing
   5. Rough hardware and connectors
   6. Installation of special connectors, seats, plates, anchors and hangars furnished by other trades

### 1.02 QUALITY ASSURANCE

A. Wood Product Quality Standards:
   1. Lumber standards: Comply with the latest edition of Product Standards PS 20-05, American Softwood Lumber Standards and West Coast Lumber Inspection Bureau (WCLIB).
   2. Plywood standard: Comply with the latest edition of Product Standard PS 1, Construction and Industrial Plywood.
   3. Pressure treated material: American Wood Preservers Bureau Standards (AWPB)
   4. Factory mark each piece of lumber and plywood with type, grade, mill and grading agency, and for treated material, retention values of treatment and end use for which product is suitable.
   5. Conform to current edition of International Building Code (IBC), Chapter 23 along with California Code of Regulations, Title 24 or any other specific code or ordinance that may be applicable to the specific project.

B. Do not use power driven fasteners unless approved by the Structural Engineer.

### 1.03 PRODUCT HANDLING

A. Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood or other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

### 1.04 PROJECT CONDITIONS

A. Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work. Cooperate with other trades to prevent the duplication of rough hardware furnished.

## PART 2 PRODUCTS

### 2.01 LUMBER AND MATERIALS

A. Framing Lumber:
   1. Specified lumber dimensions are nominal, provide actual sizes as required by PS 20.
   2. Surfacing – Dressed lumber surface four sides (S4S), seasoned with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness.
   3. Species – Stress grade and wood species as noted on Structural Drawings.

B. Nailer at Roof: No. 2 or better.

C. Blocking: Utility grade or better.

D. Fasteners: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers, and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails. Where rough carpentry is exposed to weather, in ground contact, or in areas of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating.

E. Roof Hatch Access Platform: ¾-inch C-D interior APA plywood with exterior glue

F. Structural Sheathing: Structural 1, C-B exterior APA plywood, or oriented strand board (OSB), thickness as indicated on drawings.

G. Plywood Backing Panels: For mounting telephone equipment and on walls behind fixtures, fire-retardant plywood C-D plugged interior with exterior glue not less than 15/32-inch thick.
H. Wall plywood used to back E.I.F.S. canopy exterior on cold rolled framing, or to support wall signage on metal buildings, and for the back side of canopy parapet wall, C-D exterior APA plywood, minimum of 15/32 inch thick or as indicated on the drawings.

**2.02 PRESERVATIVE TREATMENT (PT)**

A. Preservative treatment for lumber shall conform to AWPA Standards U1 and T1:
   1. Use water-borne salt preservatives for painted, stained or exposed natural wood products in both above ground and ground contact applications.
   2. Do not use creosote.
   3. Whenever necessary to cut, notch, or drill treated lumber, paint new surfaces thoroughly with two saturating coats of the preservative material used in the treatment of the lumber.
   4. Do not treat Douglas Fir Coast Region with ACC or CCA.
   5. Redry items after treatment to maximum moisture content of 19 percent, and stamp “dry”.
B. Use preservative treatment lumber (PT) as follows:
   1. Lumber in contact with concrete or masonry.
   2. Lumber in contact with roofing, flashing, or waterproofing.
   3. Fence posts.
   4. Fence boards and lumber within 18 inches of finished grade.
   5. All lumber exposed to the elements.

**2.03 FIRE RETARDING TREATMENT**

A. Fire retardant treatment for plywood shall conform to AWPA Standards C27 and as follows:
   1. Flame spread rating of less than 25 in accordance with ASTM E-84, NFPA 255, or UL 723.
   2. Redry items after treatment to maximum moisture content of 15 percent.
B. Use fire retardant treated plywood (FT) as follows:
   1. All locations

**2.04 PRE-ENGINEERED WOOD TRUSSES**

A. Pre-engineered wood trusses shall be designed and produced by an authorized “Gang-Nail” truss manufacturer or approved equal. Engineering drawings and design calculations shall bear the seal of a professional engineer registered in the state in which the project is located and shall be submitted to the original building design engineer for review prior to fabrication. The truss fabricator shall supply all hardware and fasteners required for joining timber members.

**PART 3 EXECUTION**

**3.01 GENERAL**

A. Accurately locate members to line and dimension. Ensure full contact of timbers framed together. Ensure let-in members in full contact on two surfaces.
B. Securely attach work to substrate by anchoring and fastening as shown and as required by recognized standards.
C. Provide all supports, guys and braces required to stabilize structure during construction.
D. Refer to details and tables on drawings for specific nailing requirements. In the absence of specific instructions, use 16d nails for two inch thick material and 8d for one inch thick material. Drill nail holes 75 percent of nail diameter where splitting occurs, and for 20d and larger nails. Replace split or otherwise damaged structural members. Machine applied nailing shall be allowed provided satisfactory installation is demonstrated on the job and the acceptance of the structural engineer obtained prior to the use of machine applied nails.
E. 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
F. Provide and install all bolts extending through two or more wood members. Drill bolt holes 1/32 inch larger than bolt diameter, with members held in place true to line. Ensure full engagement of nut, but projection of bolt beyond shall not exceed one bolt diameter. Tighten bolts when installed and again immediately before concealing with further construction, or upon completion of work. Provide malleable iron or steel plate washers under the head and nuts of bolts where bearing on wood.

G. Screws shall be of sizes and types as indicated on drawings. They shall be zinc plated and be of sufficient strength to cause failure in the wood rather than the screw itself.
H. Do not cut, notch or bore framing members for passage of pipes or conduits except as detailed on drawings. Reinforce all framing members damaged by cutting.

**3.02 SILLS AND PLATES**

A. Wood plates, sills and sleepers which rest on concrete slabs or masonry foundations shall be made of No.2 pressure treated wood. For all structural walls, anchor sill plates to slabs or foundations per the requirements and details contained within the drawings. For all non-structural walls, space anchors 4 foot on center maximum and not less than 1 foot away from the end of the wall. All walls 2 foot and longer shall have at least 2 anchors.

**3.03 STUD WALLS AND PARTITIONS**

A. Provide studs in continuous lengths without splices.
B. Provide single bottom plate and double top plate, stagger joints 4 feet in top plates.
C. Frame corners and intersections with three studs or as detailed on drawings.
D. Frame openings in non-structural walls with double studs each side and double headers placed on edge resting on cripple studs. Truss or block over headers. For openings in structural walls see drawings for specific requirements and framing details.
E. Provide continuous horizontal blocking row at mid-height of single story partitions over 8 feet high and at midpoint of multi-story partitions, using 2 inch thick members of the same width as the wall or partition.
F. Cut-in blocks wherever necessary for bracing or backing for applied finish or fixtures. Cut-in 2 inch solid blocking between studs at all horizontal joints in non-structural plywood wall sheathing.
G. Provide continuous perimeter backing at ceiling plane for longitudinal forces of wall secured suspended ceiling or lighting systems.

**3.04 WOOD TRUSSES**

A. Trusses shall be engineered for all live, dead, and uplift loads listed in the drawings along with any other specific requirements so noted.
B. All trusses must bear directly above a wall stud or studs.
C. All trusses must be securely braced during erection and permanently as required by the truss manufacturer.

**3.05 ROOF AND CEILING FRAMING**

A. Lay joists and rafters with crowning edge up and with full end bearing.
B. Frame for openings, hatches, vents, etc. as required.
C. Install 2x3 cross bridging at 10 feet maximum at joists over 8 inches in depth, and 2x3 cross bridging or 2 inch solid blocking between roof rafters and ceiling joists. Approved metal cross bridging nailed using all nail holes may be used in lieu of the woos bridging. Do not nail bottom of cross bridging at roof rafters until after the installation of roof sheathing.
D. Install plywood roof sheathing or wood decking over roof rafters as indicated on drawings. Thickness and nailing requirements shall be as indicated on structural drawings.
E. Provide special framing where shown for eaves, overhangs, dormers, towers and similar conditions, if any are indicated on drawings.

End of Section