

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural floor, wall, and roof framing.
- B. Sheathing.
- C. Wall Underlayment.
- D. Preservative treated wood materials.
- E. Miscellaneous framing and sheathing.
- F. Communications and electrical room mounting boards.
- G. Concealed wood blocking, nailers, and supports.
- H. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 06 17 53 - Shop-Fabricated Wood Trusses.
- B. Section 06 17 33 - Wood I-Joists.
- C. Section 06 18 00 - Glued-Laminated Construction.
- D. Section 07 25 00 - Weather Barriers: Water-resistive barrier over sheathing.
- E. Section 07311 - Asphalt Shingles: Underlayment for roof construction.
- F. Section 07466 - Fiber Cement Siding: For vertical furring strips required for exterior rain screen system.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 - American National Standard for Particleboard ; 1999.
- B. AFPA (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings; American Forest and Paper Association ; 2001.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware ; 2005.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process ; 2009
- E. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2006.
- F. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Protection Association ; 2009.
- G. PS 1 - Structural Plywood ; 2007.
- H. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce) ; 2005.
- I. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau ; 2004, and supplements.
- J. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association ; 2005.

1.04 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.
- C. Samples: Crawl Space vapor barrier and seam tape. Submit two samples, One shall be returned for job site file.

- D. Manufacturer's Installation Instructions for Water-Resistive Barrier: Provide manufacturer's recommendations for installation of water-resistive barrier at penetrations including requirements for self-adhered membrane. If manufacturer's publishes no recommendations, than use Northwest Wall and Ceiling Bureau printed recommendation or other published recommendation, subject to the approval of the Architect.
- E. Evergreen Sustainable Development Standard (ESDS) Requirement, Item 6-3: Provide Certification that engineered framing materials exceed the 50% minimum. Provide with appropriate documentation.

1.05 QUALITY ASSURANCE

- A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
 - 1. Acceptable Lumber Inspection Agencies: WCLB and WWPA.
- B. Exposed-to-View Rough Carpentry: Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.
- C. 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.
- D. Attend Exterior Wall Pre-Construction Conference for building paper installation discussions with vinyl siding, window and door installers.
- E. Attend Roofing Pre-Construction Conference along with other suppliers.

1.06 EXTERIOR WALL CONSTRUCTION DEMONSTRATION CONFERENCE

- A. Attend Exterior Wall Construction Demonstration Conference for weather barrier installation discussions with siding, window and door installers. Refer to Section 01300 - Administration Requirements for additional information.
- B. Install the first penetrations with the Superintendent of Construction present throughout the installation and an internet camera recording the process.
- C. Install exterior materials where agreed upon while the Architect and all installers are present in a portion of the building, designated by the Contractor.
 - 1. To facilitate this conference, arrange some suppliers to need to arrange with manufacturer's to have furnish these components sooner than the bulk of their delivery. Where required arrange for air freight believer or other special conditions as require to assure delivery of components before the week of this conference.

1.07 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. Trusses: Protect site fabricated trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER

- A. Refer to the Structural Notes on the drawings.

- B. Grading Agency: West Coast Lumber Inspection Bureau (WCLIB).
- C. Grading Agency: Western Wood Products Association (WWPA).
- D. Sizes: Nominal sizes as indicated on drawings, S4S.
- E. Moisture Content: S-dry or MC19.
- F. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade, Kiln-dried.
 - 2. Boards: Standard or No. 3.

2.03 LAMINATED VENEER LUMBER

- A. Refer to the Structural Notes on the drawings.

2.04 CONSTRUCTION PANELS

- A. General: Refer to notes on the drawings for grades of all framing materials.
- B. Subflooring : APA PRP-108: Rated Sheathing.
 - 1. Exposure Class: Exterior.
 - 2. Span Rating: 32/16 inches.
- C. Underlayment : Particleboard, ANSI A208.1, Grade PBU.
- D. Roof Sheathing: APA PRP-108/APA PRPR-108, Form B455, Refer to the drawings for structural rating, Exterior Exposure Class, Span Rating, Thickness.
- E. Wall Sheathing : APA PRP-108/APA PRP-108, Form B455 Refer to the drawings for structural Rated Sheathing, Exterior Exposure Class, Span Rating and thickness.
- F. Glass Mat Faced Gypsum Sheathing: ASTM C 1177/C 1177M, water-resistant core, square long edges, where indicated on the drawings provide 5/8 and 1/2 inch thick. Type "X" sheathing where indicated.
- G. Communications and Electrical Mounting Boards: Interior grade, A-D plywood, or medium density fiberboard; 5/8 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E 84.
- H. Other Applications:
 - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
 - 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
 - 3. Other Locations: PS 1, C-D Plugged or better.

2.05 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
 - 3. Anchors: Toggle bolt type for anchorage to hollow masonry.
- B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.
- C. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
 - 1. For contact with preservative treated wood in exposed locations, provide minimum G185 galvanizing per ASTM A653/A653M.
- D. Subfloor Glue: Waterproof, water base, air cure type, cartridge dispensed.
- E. Water-Resistive Barrier: No. 15 asphalt felt.
- F. Refer to Section 07260 - Weather Barriers for exterior water resistive requirements.

- G. Primers and Adhesives: Types recommended by engineering wood elements or panel manufacturer.
 - 1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.

2.06 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.
 - 1. 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 AWWA standards.
- B. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
 - 1. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - 2. Treat lumber in contact with masonry or concrete.
 - 3. Treat lumber less than 18 inches above grade.
 - a. Treat lumber in other locations as indicated.
 - 4. Preservative Pressure Treatment of Plywood Above Grade: AWWA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
 - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
 - b. Treat plywood in contact with masonry or concrete.

PART 3 EXECUTION

3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
- B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.
- C. Coordinate installation of rough carpentry members specified in other sections.

3.02 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.

3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength .
 - 1. At "sound walls" identified on the plans, comply with all requirements, including a higher standard of workmanship for "tight" construction. Where gaps occur e, apply acrylic or butyl sealant where joints are open or backing studs have knots or other small flaws that are allowed by the Architect.
 - a. Framing with sheathing shall be installed "light-tight".
- 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 AFPA Wood Frame Construction Manual.
- E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.
- F. 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.
- G. Provide bridging at joists in excess of 8 feet span as detailed. Fit solid blocking at ends of members.
- H. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 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 code authorities 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. Specifically, provide the following non-structural 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. Cork and marker boards.
 8. Wall paneling and trim.
 9. Joints of rigid wall coverings that occur between studs.

3.05 STAIR FRAMING INSTALLATION

- A. Provide stair framing members of size, space, and configuration indicated or, if not indicated, to comply with the following requirements:
- B. Provide un-notched stringer against wood framed walls with sound wood, to be left exposed to view.
- C. Stringer Size: 2-by-12-inch nominal- size, minimum.
- D. Notching: Notch stringers to receive treads, risers, and supports; leave at least 3-1/2 inches of effective depth.
 1. Stringer Spacing: At least 3 stringers for each 36-inch clear width of stair.
- E. Provide stair framing with no more than 3/16-inch variation between adjacent treads and risers and no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

3.06 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

- B. Provide miscellaneous members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- C. Coordinate installation of all framing components, pre-engineered posts and beams as well as prefabricated wood trusses and plywood web joists.

3.07 INSTALLATION OF CONSTRUCTION PANELS

- A. Subflooring: Glue and nail to framing; staples are not permitted.
- B. Underlayment: Secure to subflooring with nails and glue.
 - 1. Place building paper between floor underlayment and subflooring.
- C. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. Use sheathing clips between roof framing members.
 - 2. Provide solid edge blocking between sheets.
 - 3. Nail panels to framing; staples are not permitted.
- D. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.
 - 1. Place water-resistive barrier horizontally over wall sheathing, weather lapping edges and ends.
 - a. Install self-adhered membrane at the perimeter of all penetration per self-adhered membrane's manufacturer's recommendation for "best practices" and as approved by the Architect during the Exterior Wall Construction Demonstration Conference.
- E. 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.

3.08 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.09 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.

3.10 CLEANING

- A. Waste Disposal: Comply with the requirements of Section 01 74 19.
 - 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 any 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