

SECTION 06100

CARPENTRY

PART 1 - GENERAL

1.1. DESCRIPTION

A. Scope

1. Furnish and install all carpentry as indicated on the Drawings or as specified, including, but not limited to
 - a. Wood blocking, grounds and nailers
 - b. Wood stud walls
 - c. Wood trim
 - d. Plywood sheathing
 - e. Prefabricated metal-plate connected wood trusses
 - f. Wood roof or ceiling joists

B. Additional Requirements Specified Elsewhere

1. Section 01340: Shop Drawings, Product Data and Samples
2. Section 01500: Construction Facilities and Temporary Controls
3. Section 01600: Materials and Equipment

C. Related Requirements Specified Elsewhere

1. Section 03300: Concrete
2. Section 04200: Unit Masonry
3. Section 05501: Anchor Bolts and Drilled-In Anchors
4. Section 07200: Insulation
5. Section 08100: Metal Doors and Frames
6. Section 08630: Fiberglass Reinforced Plastic Windows
7. Section 08500: Steel Windows
8. Section 08710: Finish Hardware
9. Section 09250: Gypsum Wallboard
10. Section 09900: Painting
11. Section 13121: Prefabricated Metal Building

1.2. QUALITY ASSURANCE

A. Reference Standards

1. Wood framing
 - a. Comply with requirements of International Building Code, Pikes Peak Regional Building Department Regulations and "National Design Specification for Wood Construction" as published by National Forest Products Association
 - b. Each piece of lumber shall be grade stamped

2. Lumber
 - a. Comply with Standard Grading Rules for Western Lumber published by Western Wood Products Association
 - b. Each piece of lumber shall be grade stamped
 3. Plywood
 - a. Comply with U.S. Product Standard PS-166 for Softwood Plywood/Construction and Industrial
 - b. Each panel shall be identified with the grade trade mark of the American Plywood Association
 4. Sizes
 - a. Conform to Product Standard PS20
 - (1) Surfaced on 4 sides
 - (2) Sound and free of warp that cannot be corrected when secured
 - b. Sizes referenced are nominal sizes; actual sizes will be within manufacturing tolerances allowed by industry standard under which the product is produced
- B. All lumber design, materials, fabrication and construction shall conform to the International Building Code, 2003 Edition, the National Design specification for Wood Construction, 2001 Edition, along with its supplement of wood design values

1.3. SUBMITTALS

- A. In Accordance with Section 01340
- B. Product data for the following products
 1. Lumber
 2. Plywood
 3. Metal framing anchors
 4. Metal connector plates
 5. Hardware and fasteners
- C. Shop drawings for wood trusses indicating
 1. Species, species group, sizes, stress grades of lumber for each use required
 2. Configuration of trusses including type, size, material, design valves and location of metal connector plates
 3. Design analysis indicating loading, assumed calculations and other pertinent information
 4. All data and information specified by Section 2303.4 (Trusses) of the International Building Code
 5. Truss fabrication process
 6. Shop drawings and design data and calculations shall be signed and sealed by a professional engineer licensed to practice in the State of Colorado
 7. Certification of compliance signed by an officer of the truss fabricating firm and certifying that the metal plate connected wood trusses furnished for this project comply with all specified requirements
- D. Hardware templates for all hardware mounted on wood doors submitted directly to wood door manufacturer after approval of the hardware schedule

1.4. DELIVERY, STORAGE, AND HANDLING

- A. Store material off the ground and cover with waterproof covering; allow for ventilation
- B. Deliver to project site in clean, undamaged condition, free from objectionable warp
 - 1. Material subject to rejection if amount of warpage exceeds recommendations of PS20

1.5. TEMPORARY WORK

- A. Provide all temporary scaffolding, bracing, shoring, barricades, ladders, safety railings, etc. wherever required to complete the Work
- B. Construct temporary work to properly perform its function
- C. Remove temporary work when no longer required
- D. In accordance with Section 01500

PART 2 - PRODUCTS

2.1. MATERIALS

- A. Lumber: American Standard Lumber conforming to PS20, moisture content 19% or less; sized dry
 - 1. Light framing, plates, blocking, etc.: Hemlock Fir, S4S, No. 2 or better
 - 2. All dimension lumber (2" to 4" thick) shall be hem fir #2 or better
 - a. Minimum allowable stresses as indicated on the Drawings
- B. Plywood Sheathing
 - 1. Roof sheathing
 - a. APA rated sheathing
 - b. Exposure durability classification: Exposure 1
 - c. Thickness/span rating as indicated on drawings
- C. Trim Lumber
 - 1. Conforming to grading standards of the Western Cedar Lumber Association for clear finish cedar
 - 2. Grade: A
 - 3. Kiln-dried: Moisture content 10% or less
 - 4. Lumber for paint finish: Glued up lumber using waterproof glue suitable for exterior exposure or solid B stock
 - 5. Exposed faces surfaced smooth
- D. Hardware

1. Bolts, nuts and washers: ASTM A307, galvanized ASTM A153, cadmium plated ASTM A165 Type NS, or zinc plated ASTM A164 Type GS
2. Wood screws: ANSI B 18.6.1, Cadmium plated
3. Nails
 - a. Wire nails, Fed Spec FF-N-105
 - a. Hot dipped galvanized, aluminum coated or AISI Type 304 stainless steel where exposed to weather, ground contact or high humidity interior areas
4. Wall bracing: 16 ga., 1¼" wide, lengths as required, galvanized steel with mitered ends, nail holes at 2" maximum centers and three nail holes at ends for 16d nails
5. Metal connector plates: galvanized steel, 20 ga., minimum measured before galvanizing
6. Metal framing anchors
 - a. Galvanized steel
 - b. ASTM A446 structural grade
 - c. Size and type as indicated on the drawings
7. Headworks Building
 - a. All fasteners and hardware shall be Type 304 stainless steel except for nails and gusset plates in prefabricated wood trusses

E. Preservative Treatment

1. Chromated Copper Arsenate, Type A, conform to Fed. Spec TT-W-550
2. Kiln dry or air season to moisture content of 19% or less
3. Wolmanized pressure treatment to conform to American Wood Preserver's Association (AWPA) Standard C-2 for normal exposure
4. Mark to denote conformance with specified treatment

F. Design Loads for Wood Truss Systems

1. As indicated on the Drawings
 - a. Conform to the requirements of the Pikes Peak Regional Building Code
2. Provide special design considerations to supporting concentrated load points; refer to Drawings

PART 3 - EXECUTION

3.1. GENERAL

- A. Meet construction requirements specified in the latest edition of the International Uniform Building Code, or codes established by local building authorities, whichever is more conservative
- B. Provide washers under all bolt heads in contact with lumber

3.2. INSPECTION

- A. Verify that surfaces to receive carpentry are prepared to required grades and dimensions

3.3. INSTALLATION

A. Framing

1. Framing for all portions of the work to be performed in substantial manner consistent with accepted standards of the carpentry trade
2. Erect all framing plumb, level, and true and rigidly anchored in place
3. Anchor plates at bearing as indicated
 - a. Unless otherwise indicated, bolt plates firmly to concrete or masonry with $\frac{1}{2}$ " x 12" anchor bolts, 2'-0" on center
4. Install wood studs at 16" O.C. max.
5. Miscellaneous framing clips, anchors and hangers shall be provided as indicated on the drawings and as otherwise necessary to erect a rigid structural framework
6. Walls shall be framed solid at all beam and column bearings, securely anchored at top and bottom
7. All built-up members of two pieces shall be nailed together with a minimum of four (4) 10d nails per foot
8. All built-up members of more than two pieces shall be bolted together with $\frac{1}{2}$ " diameter bolts at 18" O.C. (countersink as required) with a minimum of three (3) bolts per member

B. Plywood Sheathing

1. Install sheathing panels with face grain across supports
2. Nailing guns will not be allowed
3. Nailing schedule as indicated on the Drawings

C. Finish Carpentry

1. Finish woodwork shall be installed plumb and level, straight and true
2. Workmanship shall conform to the best standards of the trade and shall be acceptable to the Engineer
 - a. Fine, smooth finish
 - b. Free from machine or tool marks, abrasions, raised grain, or knots on exposed surface
 - c. Back prime all trim

D. Wood Trusses

1. Fabricated to size and configuration indicated on Drawings
2. Lumber grades shall be as specified herein
3. Metal connector plates used for connections shall be of the type recommended by the truss manufacturer and shall be capable of developing the full strength of the truss members involved in each connection
4. Erect to configuration indicated on Drawings
5. Erect trusses plumb, level and rigidly secured in place
6. Do not modify trusses unless approved by Engineer
7. Provide temporary and permanent bracing as indicated on approved shop drawings

E. Trim Lumber

1. Free from machine or tool marks or abrasions on exposed surfaces
2. Tight joints, formed to conceal shrinkage
3. All corner joints shall be mitered
4. Install plumb and level, straight and true and fitted and scribed to other finish work
5. Back prime all trim

F. Wood Stud Wall Bracing

1. Provide at all corners
2. Attach to stud wall at
 - a. Top plate at both sides of corner with three 16d nails
 - b. Bottom sole 9'-6" from corners with three 16d nails
 - c. Each stud bracing crosses with an 8d nail
3. Conform with Architectural Wood Work Institute
 - a. "Architectural Woodwork Quality Standards"
4. Hang doors to be free of binding with all hardware functioning properly

G. Preservative Treatment

1. All lumber in contact with concrete, masonry, earth, or water
2. If treated lumber is cut on the jobsite, brush on two coats of a concentrated solution of original preservative; apply second coat after first coat is dry

END OF SECTION