SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Speciation Sections, apply to this section.

1.2 SUMMARY

A. Description:
   1. This section includes framing with dimension lumber, framing with timber, framing with engineered wood products, wood blocking, and nailers.

B. Related Documents and Standards:
   1. All referenced standards and cited publications shall be those specifically denoted within the applicable building code noted in the General Notes of the Construction Drawings.
   2. All Rough Carpentry work on this project shall confirm to the Construction Documents and applicable building code including referenced standards.

C. Related Sections:
   1. Division 05 Specifications – Steel Construction.
   2. Division 09 Specification – Finishes

1.3 QUALITY ASSURANCE

A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

B. Grade Marks: Identify all lumber and plywood by official grade marks.
   1. Lumber: Grade stamp to contain symbol of grading agency, mill number or name, grade of lumber, species or species grouping or combination designation, rules under which graded, where applicable, and condition of seasoning at time of manufacture.
   2. Softwood Plywood: Appropriate grade trademark of the American Plywood Association indicating:
      a. Type, grade, class and identification index.
      b. Inspection and testing agency mark.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
   1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
   2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Immediately upon delivery to the job site, place materials in areas protected from weather.

B. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

C. Store TJI joists in a vertical position.

D. Store materials a minimum of 6” above ground on blocking and cover with protected waterproof covering, providing for adequate air circulation and ventilation.

E. Do not store seasoned materials in wet or damp portions of building.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. For exposed lumber indicated to receive a stained or natural finish, omit grade stamp and provide certificates of grade compliance issued by grading agency.
   3. Provide dressed lumber, S4S, unless otherwise indicated.

B. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
   1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1
   1. Preservative Chemicals: Acceptable to authorities having jurisdiction.
   2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, omit marking and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat items indicated on Construction Drawings.

2.3 DIMENSION LUMBER FRAMING

A. Dimensions: Indicated lumber dimensions are nominal. Actual dimensions conform to industry standards established by the American Lumber Standards Committee and all the rules writing agencies.

B. Maximum Moisture Content shall be as noted in the Construction Drawings.

C. Non-Load-Bearing Interior Partitions shall be of a grade, species, and modulus of elasticity noted in the Construction Drawings.

D. Exterior and Load-Bearing Walls shall be of a grade, species, and modulus of elasticity in the Construction Drawings.

E. Joists, Rafters, and Other Framing Not Listed Above shall be of a grade, species, and modulus of elasticity noted in the Construction Drawings.

F. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.
1. Species and Grade: As indicated above for load-bearing construction of same type.

2.4 TIMBER FRAMING

A. Timber framing shall be off a dimension, grade, species, and modulus of elasticity noted in the Construction Drawings.

2.5 ENGINEERED WOOD PRODUCTS

A. Laminated-Veneer Lumber: Structural composite lumber made from wood veneers with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559
1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturer(s) noted in the Construction Drawings.
2. Laminated-Veneer Lumber shall be of an allowable stress and modulus of elasticity noted in the Construction Drawings.

B. Parallel-Strand Lumber: Structural composite lumber made from wood strand elements with grain primarily parallel to member lengths, evaluated and monitored according to ASTM D 5456 and manufactured with an exterior-type adhesive complying with ASTM D 2559
1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturer(s) noted in the Construction Drawings.
2. Parallel-Strand Lumber shall be of an allowable stress and modulus of elasticity noted in the Construction Drawings.

2.6 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
   1. Blocking.
   2. Nailers.

B. Dimensions: Indicated lumber dimensions are nominal. Actual dimensions conform to industry standards established by the American Lumber Standards Committee and all the rules writing agencies.

C. Maximum Moisture Content shall be as noted in the Construction Drawings.

D. Miscellaneous Lumber shall be off a grade, species, and modulus of elasticity noted in the Construction Drawings.

2.7 FASTENERS

A. General: Provide fasteners of size and type indicated in Construction Drawings that comply with requirements specified in this article for material and manufacture.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

G. Post-Installed Anchors: All expansion, screw, and adhesive anchors shall be as noted in the Construction Drawings.

2.8 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, provide products by the manufacturer(s) noted in the Construction Drawings.

B. Basis-of-Design Products: Subject to compliance with requirements, provide products indicated on Construction Drawings.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions.

D. Do not splice structural members between supports, unless otherwise indicated.

E. Provide blocking and framing as indicated in Construction Drawings and as required to support facing materials, fixtures, specialty items, and trim.

F. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

G. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated in Construction Drawings, complying with the following:
   1. NES NER-272 for power-driven fasteners.
   2. Governing Model Code with relevant Addenda, referenced in Construction Drawings, and all related and referenced Standards.

I. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

3.3 WALL AND PARTITION FRAMING INSTALLATION

A. General: Provide single bottom plate and double top plates using members of 2-inch nominal thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Fasten plates to supporting construction, unless otherwise indicated.
   1. Overlap double top plate minimum of 6” at corners and intersections, as follows.
   2. Toenail studs to bottom plate and end-nail to lower top plate.

B. Provide studs in continuous lengths without splices.
   1. Provide studs of a size and spacing as designated in the Construction Drawings.

C. Provide continuous horizontal blocking at midheight of partitions more than 96 inches high, using members of 2-inch nominal thickness and of same width as wall or partitions, where sheathing is not present in finished construction.

D. Construct corners and intersections with three or more studs, where not explicitly noted or scheduled in Construction Drawings.

E. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Support headers on jamb studs.
   1. Provide king studs, jamb studs, and headers as noted in Construction Drawings.

3.4 JOIST AND RAFTER FRAMING INSTALLATION

A. General: Install floor joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal, or 3 inches on masonry. Attach floor joists as noted in the Construction Drawings.

B. Do not notch in middle third of joists; limit notches to one-sixth depth of joist, one-third at ends. Do not bore holes larger than 1/3 depth of joist; do not locate closer than 2 inches from top or bottom.

C. Lap members framing from opposite sides of beams, girders, or partitions not less than 4 inches or securely tie opposing members together by toe nailing or metal connectors. Provide solid blocking of 2-inch nominal thickness by depth of joist over supports.

D. Provide solid blocking between joists under jamb studs for openings.

E. Provide bridging at intervals of 96 inches o.c., between joists.

F. Rafters: Notch to fit exterior wall plates and toe nail or use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.
   1. At valleys, bevel ends of jack rafters for full bearing against valley rafters. Where not specifically noted otherwise in Construction Drawings, provide double-valley rafters of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper.
   2. At hips, bevel ends of jack rafters for full bearing against hip rafter. Where not specifically noted otherwise in Construction Drawings, provide hip rafter of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches deeper.

END OF SECTION 061000