

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Glue laminated wood beams and columns.
- B. Steel hardware and attachment brackets.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 PRICE AND PAYMENT PROCEDURES

- A. Glue Laminated Structural Column Members: By the unit. Includes unit member shop finished, connectors and brackets, placed and anchored.

1.04 REFERENCE STANDARDS

- A. AITC 117 - Standard Specifications for Structural Glued Laminated Timber of Softwood Species; 2010.
- B. AITC A190.1 - American National Standard for Wood Products - Structural Glued Laminated Timber; 2007.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- E. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts; 2007a (Reapproved 2014).
- F. ASTM A563M - Standard Specification for Carbon and Alloy Steel Nuts [Metric]; 2007.
- G. ASTM D2559 - Standard Specification for Adhesives for Bonded Structural Wood Products for Use Under Exterior Exposure Conditions; 2012a.
- H. AWPA U1 - Use Category System: User Specification for Treated Wood; 2012.
- I. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.
- J. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber; 2000.
- K. UL (FRD) - Fire Resistance Directory; current edition.
- L. WWPA G-5 - Western Lumber Grading Rules; 2011.

1.05 DESIGN REQUIREMENTS

- A. Design and laminate members in accordance with AITC 117.
- B. Design Live and Dead Loads as indicated on structural drawings.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials, application technique and resultant performance information.
- C. Shop Drawings: Indicate framing system, sizes and spacing of members, loads and cambers.

1.07 QUALITY ASSURANCE

- A. Manufacturer/Fabricator Qualifications: Company specializing in manufacture of glue laminated structural units with three years of documented experience, and certified by AITC in accordance with AITC A190.1.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Protect members to AITC requirements for individually wrapped.
- B. Leave individual wrapping in place until finishing occurs.
- C. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS**2.01 MANUFACTURERS**

- A. Glued-Laminated Structural Units:
 - 1. Sentinel Structures, Inc; _____: www.sentinelstructures.com/#sle.
 - 2. Western Wood Structures, Inc; _____: www.westernwoodstructures.com/#sle.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 GLUED-LAMINATED UNITS

- A. Glued-Laminated Units: Fabricate in accordance with AITC 117 Industrial grade.
 - 1. Verify dimensions and site conditions prior to fabrication.
 - 2. Cut and fit members accurately to length to achieve tight joint fit.
 - 3. Fabricate member with camber built in.
 - 4. Do not splice or join members in locations other than those indicated without permission.
 - 5. After end trimming, seal with penetrating sealer in accordance with AITC requirements.

2.03 MATERIALS

- A. Lumber: Softwood lumber complying with RIS (GR) grading rules with 12 percent maximum moisture content before fabrication. Design for the following values:
 - 1. Combination 24F-V4 for simple span beam and 24F-V8 for all others
 - 2. Columns may be any combined symbol and grade with $F_c=1500$ psi minimum and E-1,800,00 psi minimum
 - 3. Lumber fabricated from old growth timber is not permitted.
 - 4. Provide sustainably harvested lumber, certified or labeled as specified in Section 01 6000.
 - 5. Provide lumber harvested within a 500 mile radius of the project site.
 - 6. Lumber salvaged from deconstruction or demolition of existing buildings or structures is permitted provided it is clean, denailed, and free of paint and finish materials, and other contamination; identify source.
 - a. Where used for structural applications, provide lumber re-graded by an inspection service accredited by the American Lumber Standard Committee, Inc.
- B. Steel Connections and Brackets: ASTM A36/A36M weldable quality, prime paint except where embedded in concrete.
- C. Hardware: ASTM A 307 bolts and nuts, hot-dip galvanized to meet requirements of ASTM A 153/A 153M, matching washers and nuts.
- D. Anchor Bolts: ASTM A 307 , matching washers and nuts.
- E. Laminating Adhesive: Tested for wet/exterior service in accordance with ASTM D 2559.

2.04 WOOD TREATMENT

- A. Factory-Treated Lumber: Comply with requirements of AWWPA U1 - Use Category System for pressure impregnated wood treatments determined by use categories, expected service conditions, and specific applications.

2.05 FABRICATION

- A. Fabricate glue laminated structural members in accordance with AITC Architectural grade for members exposed to view and industrial elsewhere.
- B. Welding: Perform welding in accordance with AWS D1.1/D1.1M.
- C. Verify dimensions and site conditions prior to fabrication.
- D. Cut and fit members accurately to length to achieve tight joint fit.
- E. Fabricate member with camber built in.
- F. Do not splice or join members in locations other than those indicated without permission.
- G. Fabricate steel hardware and connections with joints neatly fitted, welded, and ground smooth.

PART 3 EXECUTION**3.01 EXAMINATION**

- A. Verify that supports are ready to receive units.
- B. Verify sufficient end bearing area.

3.02 PREPARATION

- A. Coordinate placement of support items.

3.03 ERECTION

- A. Lift members using protective straps to prevent visible damage.
- B. Set structural members level and plumb, in correct positions or sloped where indicated.
- C. Provide temporary bracing and anchorage to hold members in place until permanently secured.

3.04 TOLERANCES

- A. Framing Members: 1/2 inch maximum from true position.

END OF SECTION