

**SECTION 06190
METAL-PLATE-CONNECTED WOOD TRUSSES**

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. RELATED DOCUMENTS: Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.
- B. Examine all other sections of the Specifications for requirements that affect work of this Section whether or not such work is specifically mentioned in this Section.
- C. Coordinate work with that of all trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.2 DESCRIPTION OF WORK:

- A. Definition: Metal-Plate-Connected Wood Trusses include planar structural units consisting of metal plate connected members which are fabricated from dimension lumber and which have been cut and assembled prior to delivery to the job site.
- B. Types of fabricated wood trusses are indicated on the drawings.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Section 06100 - Rough Carpentry

1.4 QUALITY ASSURANCE:

- A. TPI Standards: Comply with all requirements and recommendations of the following Truss Plate Institute (TPI) publications:
 - 1. ANSI/TPI 1 1995, "National Design Standard for Metal-Plate-Connected Wood Truss Construction" including Commentary and Appendices
 - 2. TPI DSB-1989, "Recommended Design specification for Temporary Bracing of Metal-Plate-Connected Wood Trusses."
 - 3. TOI HIB-1991, "Commentary and Recommendations for Handling, Installing & Bracing Metal-Plate-Connected Wood Trusses."
 - 4. TPI DSB-89, "Temporary Bracing of Metal-Plate-Connected Wood Trusses."

118 ON MUNJOY HILL – PORTLAND, MAINE

- B. Wood Structural Design Standard: Comply with all requirements and recommendations of the National Forest Products Association's NDS-1991, "National Design Specification for Wood Construction."
- C. Lumber Standard: Comply with PS20-70 and with applicable rules of the respective grading inspecting agencies for species and grade of lumber indicated.
- D. Connector Plate Manufacturer's Qualifications: Provide truss connector plates manufactured by a Truss Plate Institute member firm
- E. Fabricator's Qualifications: Provide trusses by a firm which has a record of successfully fabricating trusses similar to type indicated and participates in the TPI "Quality Control Inspection Program" as a licensee authorized to apply TPI marks to trusses.
- F. Uniformity of Manufacture for Connector Plates: Provide metal connector plates from a single manufacturer.

1.5 SUBMITTALS:

- A. The Engineer shall receive all submittals a minimum of two weeks prior to the start of fabrication. The Contractor shall have received and approved all submittals prior to review by the Engineer. All review by the Architect, Engineer and Contractor of submittals shall be completed prior to fabrication and installation of any material or product.
- B. Product Data: Submit fabricator's technical data covering lumber, metal plates, hardware, fabrication process and treatment (if any).
 - 1. Submit certificate, signed by an officer of fabricating firm, indicating that trusses to be supplied for project comply with indicated requirements.
- C. Shop Drawings:
 - 1. General: Submit shop drawings, prepared under the supervision of a professional engineer, showing species, sizes and stress grade of lumber to be used; pitch, span, camber, configuration and spacing for each type of truss required; type, size, material, finish, design value and location of metal connector plates; and bearing and anchorage details.
 - 2. Design: To the extent engineering design considerations are indicated as the Fabricator's responsibility, submit design analysis and test reports indicating loading, section modulus, assembled allowable stress, stress diagrams and calculations and similar information needed for analysis and to ensure that trusses comply with requirements.
 - 3. Engineer Stamp: Provide shop drawings that have been signed and stamped by a structural engineer licensed to practice in the State of Maine.

118 ON MUNJOY HILL – PORTLAND, MAINE

4. TPI Approval: All drawing submittals must bear a TPI stamp.

1.6 DELIVERY, STORAGE, HANDLING

- A. Handle and store trusses with care, and in accordance with manufacturer's instructions and TPI recommendations to avoid damage from bending, overturning or other cause for which truss is not designed to resist or endure.
- B. Time delivery and erection of trusses to avoid extended on-site storage and to avoid delaying work of other trades whose work must follow erection of trusses.

PART 2 - PRODUCTS

2.1 LUMBER

- A. General: Factory mark each plate of lumber with type, grade, mill and grading agency.
- B. Sizes: Nominal sizes are indicated except as shown by detail dimensions. Provide actual sizes as required by PS20-70 for dressed lumber, S4S, unless otherwise indicated.
- C. Moisture Content: Provide seasoned lumber with a maximum moisture content of 19% at time of dressing.
- D. Lumber Grade: Lumber members will be graded in accordance with the following grading agency requirements:
 1. Eastern Woods: NELMA or NHPMA
 2. Western Woods: WWPA
 3. Southern Pine: SPIB

2.2 METAL CONNECTOR PLATES, FASTENERS AND ANCHORAGES

- A. Connector Plate Material: Use metal not less than "0.036" thick, coated thickness, (Contractor's option if more than one metal indicated).
 1. Galvanized Sheet Steel: ASTM A 446, Grade A, Coating G60.
 2. Electrolytic Zinc Coated Steel Sheet: ASTM A 591, Coating Class C, with minimum structural quality equivalent to ASTM A 446, Grade A.

2.3 FABRICATION:

- A. Cut truss members to accurate lengths, angles and sizes to produce close fitting joints with wood-to-wood bearing in assembled units.

118 ON MUNJOY HILL – PORTLAND, MAINE

- B. Fabricate metal connector plates to size, configuration, thickness and anchorage details required for types of joint designs indicated.
- C. Assemble truss members in design configuration indicated using jigs or other means to ensure uniformity and accuracy of assembly with close fitting joints. Position members to produce design camber indicated.
- D. Connect truss members by means of metal connector accurately located and securely fastened to wood members by means indicated or approved.

PART 3 - EXECUTION

3.1 GENERAL

- A: Erect and brace trusses to comply with the recommendations of the Manufacturer and the TPI publications referenced above.
- B. Erect trusses with plane of truss webs vertical (plumb) and parallel to each other, located accurately at design spacing indicated.
- C. Hoist units in place by means of lifting equipment suited to sizes and types of trusses required, applied at designated lift points as recommended by fabricator, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
- D. Provide temporary bracing as required to maintain trusses plumb, parallel and in location indicated, until permanent bracing is installed.
- E. Anchor trusses securely at all bearing points to comply with methods and details indicated.
- F. Install permanent bracing and related components to enable trusses to maintain design spacing, withstand live and dead loads including lateral loads, and to comply with other indicated requirements.
- G. Do not cut or remove truss members.

END OF SECTION