A/E Suggested Specs for Wood Trusses

Suggested Architectural Specifications

SECTION 06192

FABRICATED WOOD TRUSSES

1.01 Work Included

1. Fabricate, supply and erect wood trusses as shown on the drawings and as specified. Work to include anchorage, blocking, curbing, miscellaneous framing and bracing.

1.02 Definitions

TRUSS: The terms "truss" and "wood truss component" refer to open web load carrying assemblies suitable for support of roof decks or floors in buildings.

MANUFACTURER: A manufacturer who is regularly engaged in design and fabrication of wood truss components.

TRUSS INSTALLER: Builder, contractor or sub-contractor who is responsible for the field storage, handling and installation of trusses.

1.03 Design

A. Trusses shall be designed in accordance with these specifications and where any applicable design feature is not specified herein, design shall be in accordance with applicable provisions of latest edition of National Design Specifications for Wood Construction (NDS) of the American Forest and Paper Association (AF & PA), and Design Specifications for Metal Plate Connected Wood Trusses (ANSI/TPI 1) of the Truss Plate Institute (TPI), and code of jurisdiction.

B. Manufacturer shall furnish design drawings bearing seal and registration number of a civil or structural engineer licensed in state where trusses are to be installed. Drawings shall be approved by Architect prior to fabrication.

C. Truss design drawings shall include as minimum information:

1. span, depth or slope and spacing of trusses;
2. required bearing width;
3. design loads, as applicable:
    a. top chord live load;
    b. top chord dead load;
    c. bottom chord live load;
    d. bottom chord dead load;
    e. concentrated loads and their points of application; and
    f. wind and seismic criteria;
4. adjustment to lumber and plate design loads for condition of use;
5. reactive forces, their points of occurrence and direction;
6. ALPINE plate type, gauge, size and location of plate at each joint;
7. lumber size, species and grade for each member;
8. location of any required continuous later bracing;
9. calculated deflection ratio and/or maximum deflection for live and total load;
10. maximum axial compressive forces in truss members;
11. location of joints;
12. connection requirements for:
    a. truss to truss girders;
    b. truss ply to ply; and
    c. field splices.

2.01 Materials

A. Lumber:

1. Lumber used for truss members shall be in accordance with published values of lumber rules writing agencies approved by the Board of Review of American Lumber Standards Committee. Lumber shall be identified by Grade mark of a lumber inspection bureau or agency approved by that Board, and shall be as shown on design drawings.

2. Moisture content of lumber shall be no greater than 19 percent at time of fabrication.

3. Adjustment of values for duration of load or conditions of use shall be in accordance with National Design Specifications for Wood Construction (NDS).

4. Fire retardant treated (FRT) lumber, if applicable, shall meet specifications of truss design, use category UCFA as specified by the American Wood Protection Association, section 2303.2 of the International Building Code from the International Code Council, and ANSI/TPI 1, par 6.4.9 and NDS par 2.3.4. Lumber treater shall supply certificate of compliance including specified design values and use conditions, including minimum acceptable galvanizing level for galvanized steel fasteners used with their FRT lumber.

B. Metal connector plates:

1. Metal connector plates shall be manufactured by ITW Building Components Group Inc. (ITW BCG) and shall be not less than .0356 inches in thickness (20 gage) and shall meet or exceed ASTM A653 grade 37, and shall be hot dipped galvanized according to ASTM A653, coating designation G60. Design values shall be determined in accordance with ANSI/TPI 1.

2. In highly corrosive environments, special applied coatings or stainless steel may be required.

3. At the request of Architect, ITW BCG shall furnish a certified record that materials comply with steel specifications.

2.02 Fabrication

A. Trusses shall be fabricated in a properly equipped manufacturing facility of a permanent nature. Trusses shall be manufactured by experienced workmen, using precision cutting, jigging and pressing equipment meeting requirements of ANSI/TPI 1, Section 3. Truss members shall be accurately cut to length angle and true to line to assure proper fitting joints within tolerances set forth in ANSI/TPI 1, Chapter 3, and proper fit with other work.

3.01 Handling, Installation and Bracing

A. Trusses shall be handled during fabrication, delivery and at jobsite so as not to be subjected to excessive bending.

B. Trusses shall be unloaded on smooth ground to avoid lateral strain. Trusses shall be protected from damage that might result from on-site activities and environmental conditions. Prevent toppling when banding is removed.

C. Handle during installation in accordance with latest version of Building Component Safety Information (BCSI 1) from TPI, and ANSI/TPI 1. Installation shall be consistent with good workmanship and good building practices and shall be responsibility of Truss Installer.

D. Apparent damage to trusses, if any, shall be reported to Manufacturer prior to installation.

E. Trusses shall be set and secured level and plumb, and in correct location. Trusses shall be held in correct alignment until specified permanent bracing is installed.

F. Cutting and altering of trusses is not permitted.

G. Concentrated loads shall not be placed atop trusses until all specified bracing has been installed and decking is permanently nailed in place. Specifically avoid stacking full bundles of decking or other heavy materials onto unsheathed trusses.

H. Erection bracing is always required. Professional advice should always be sought to prevent toppling or dominoing of trusses during installation.

I. The Contractor is responsible for obtaining and furnishing the materials used for installation and permanent bracing.

Code Reports

Building code evaluation reports on ITW BCG connector products have been issued by the ICC Evaluation Service (ESR-1118), Canadian Construction Materials Centre (CCMC 12182-L, 12802-L & 13124-L) and those jurisdictions requiring separate approvals including the State of Florida (FL #1999), City of Los Angeles (RR 24201), and Miami-Dade County.

- ICC ESR-1118: http://www.icc-es.org/reports/pdf_files/ICC-ES/ESR-1118.pdf
- CCMC: http://irc.nrc-cnrc.gc.ca/ccmc/registry/eval/eval12800_e.shtml

(By number...select number of report of interest)

- City of Los Angeles Research Report 24201: http://netinfo.ladbs.org/rreports.nsf/c6ffedc1d96cefd5882569300057d053/09fe6fea771dee468825693c0076802c?OpenDocument
- State of Florida Product Approval FL1999, electronic only and exists only athttp://www.floridabuilding.org/pr/pr_app_srch.aspx
  (Search for FL # 1999, or Subcategory Truss Plates under Category Structural Components)
- Miami-Dade County Notices of Acceptance: http://www.miamidade.gov/buildingcode/pc-search_app.asp
  (Search for Subcategory Truss Plates)

ITW BCG personnel are active members of the Truss Plate Institute, American Society for Testing & Materials, American Society of Civil Engineers, National Association of Home Builders, Southern Forest Products Association, Forest Products Society, National Frame Builders Association, and National Society of Professional Engineers.