

Approved Fabricators and Manufactured Trusses

Subject

Truss Plant Inspection Program

Under the International Building Code, each truss manufacturer is to retain an approved testing and inspection agency to make non-scheduled inspections of the truss fabrication, delivery and operation. The truss manufacturer is to use the inspection agency's approval stamp on every truss. All plant records of the inspection agency are to be on file with the Washoe County Department of Building & Safety and updated every six months.

All trusses shall contain the following information on the stamp:

1. Approval agency
2. Manufacturer
3. Design loading

Note: This stamp shall be placed in clear view on the truss. The majority of remaining components shall bear a lumber grading stamp.

Design Responsibilities

1 Truss Designer

Truss Designer – is the design professional individual or organization having responsibility for the design of metal plate connected wood trusses. This responsibility shall be in accordance with the state's statutes and regulations governing the professional registration and certification of architects or engineers. Also referred to as truss engineer, design engineer, and registered engineer, but hereinafter will be referred to as truss designer.

2 Building Designer

Building Designer – is the design professional individual or organization having responsibility for overall building design, in accordance with the state's statutes and regulations governing the professional registration and certification of architects or engineers. This responsibility includes but is not limited to foundation design, structural member sizing, load transfer, bearing conditions, and the structure's compliance with applicable building codes. Also referred to as registered architect or engineer, building designer, and registered building designer, but hereinafter will be referred to as building designer.

2.1

The Building Designer shall specify the following:

- (a) Design loads in accordance with the latest adopted edition of the International Building Code and ANSI/TPI Design Standards.
- (b) Truss profile and intended support locations.
- (c) Temperature and moisture environment for the intended end-use.

- (d) Any special requirements to be considered in the truss design.

2.2

As this Standard does not cover the design for the complete structural system of a building, the Building Designer shall provide for the following in the design and detailing of the building:

- (a) Truss deflections.
- (b) Truss movement due to moisture and temperature change.
- (c) Truss supports and anchorage accommodating horizontal, vertical or other reactions or displacements. Include all connections between trusses as well as to the structure.
- (d) Permanent truss bracing to resist wind, seismic and any other lateral forces acting perpendicular to the plane of the truss.
- (e) Permanent lateral bracing as specified by the Truss Designer, to prevent buckling of the individual truss members due to design loads.

Truss Engineering

All engineering shall include the following:

1. Slope or depth, span and spacing;
2. Location of joints;
3. Required bearing widths;
4. Design loads as applicable;
5. Top chord live load (including snow loads);
6. Top chord dead load;
7. Bottom chord live load;
8. Bottom chord dead load;
9. Concentrated loads and their points of application;
10. Controlling wind and earthquake loads;
11. Adjustments to lumber and metal connector plate design value for conditions of use;
12. Each reaction force and direction;
13. Metal connector plate type, size, thickness or gage, and the dimensioned location of each metal connector plate except where symmetrically located relative to the joint interface;
14. Lumber size, species and grade for each member;
15. Connection requirements for:
 - 15.1. Truss to truss girder;
 - 15.2. Truss ply to ply; and
 - 15.3. Field species;
16. Calculated deflection ratio or maximum deflection for live and total load;
17. Maximum axial compression forces in the truss members to design the size, connections and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss construction documents or on supplemental documents; and
18. Required permanent truss member bracing location.
19. Shop drawing approval for each truss calculation from the engineer of record for the project.
20. The front cover sheet is to be on the project engineer of record's letterhead and shall state that he/she has reviewed the truss package and finds them to be in compliance with the plans and design specifications. (See attached sample of the truss submittal certification letter.)

Truss Submittal and Approval Process

Method 1

Truss calculation and plans shall be submitted at the time of submittal for the building permit. The following information will be required:

1. Roof plan with truss designations and shown on plans.
2. Calculations that are designed by the truss engineer and approved by the engineer of record.
3. Engineer of Record's building design and details.
4. All connections between trusses and truss connections to the building and shown on the plans.

Method 2

Roof framing plans and engineering shall be submitted at the time of submittal for the building permit. Actual truss calculations shall be the responsibility of the engineer of record for the project. The truss calculations along with the Engineer of records truss certification letter, which shall be checked by the County inspector at the time of rough frame. The following information will be required:

1. Roof framing plans with truss designation.
2. Truss configuration showing span, loading, reactions and connections.
3. Details and building engineering.
4. All connections between trusses and truss connections to the structure and shown on the plans.

Change to Trusses

The truss manufacturer and his engineer, the project engineer and the Department of Building & Safety shall review all trusses that have been altered in any way.

The truss engineer shall review repair of a truss that has been damaged in the field. The wet stamped repair resolution will be given to the inspector during the framing inspection.

If the contractor changes the truss supplier, it will be his responsibility to resubmit to the engineer of record for approval. The engineer of record is to review the package and provide an on-site inspection of the installation of the trusses. The project's engineer is to certify that the trusses and their installation are in compliance with the approved plans and specifications including connections, truss loads, load path, bearing points, etc. The engineer's letter (see attached example letter) is to be given to the inspector for verification at the rough framing inspection. If substantial changes are made, in the judgement of the inspector to the roof design, the engineer of record shall review and approve the changes. The plans shall be resubmitted to the Department of Building & Safety for approval before the framing inspection.

Pre-approved Standard Truss Design

Truss manufacturers may provide the Department of Building & Safety with standard truss designs and configurations. The standard designs shall be placed in a bound book in 8-1/2" x 11" format. The following information shall be provided:

1. Truss engineering and proper stamp.
2. Loading for each type truss.
3. Lumber grades and sizes.

Note: All trusses for projects above the 5300-foot elevation shall require site specific design.

Truss Inspection Procedure

During inspection of the trusses, the contractor shall provide the inspector with proper truss information. The inspector shall verify that the engineer of record for the project has reviewed truss calculations and that the roof layout is in conformance with the approved plans. Calculations submitted to the inspector that do not bear the approval of the engineer as described in the provisions of this policy shall be rejected.

Attachment 1

Truss Submittal Certification Letter

(EXAMPLE ONLY)

Date: _____
Project Address: _____
Owner's Name: _____
Contractor: _____
Permit Number: _____
Truss Manufacturer: _____ Dated: _____

To Washoe County Department of Building & Safety,

This letter is to certify that I have reviewed the attached truss calculations for the above address, prior to submitting to the building department, and find them to be in compliance with the plans and specifications (including, but not limited to, connections, truss loads, load path, bearing points, etc.).

Project engineer signature and wet seal below.

Note: This is an example only. All of the above information is to be included on the engineer of record's company letterhead. Truss calculations will not be accepted for plan check without the above information.

Attachment 2

Truss Change Certification Letter

(EXAMPLE ONLY)

Date: _____

Project Address: _____

Owner's Name: _____

Contractor: _____

Permit Number: _____

Original Truss

Manufacturer: _____ Dated: _____

New Truss

Manufacturer: _____ Dated: _____

To Washoe County Department of Building & Safety,

This letter is to certify that I have reviewed the attached truss calculations for the above address and have personally visited the site and find the truss installation to be in compliance with the approved plans and specifications (including, but not limited to, connections, truss loads, load path, bearing points, etc.)

Note: Deviations, other than truss changes, from the approved plans will need to be submitted to the building department for review.

Project engineer signature and wet seal below.

Note: This is an example only. All of the above information is to be included on the engineer of record's company letterhead. Truss calculations will not be accepted for plan check without the above information.