



Critical Updates to the 2024 I-Codes All Component Manufacturers Need to Understand

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Introductions



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ASCE 7 Snow Loads

Structural Requirement

$$\text{Load} < \text{Capacity}$$

Allowable Stress Design (ASD)

$$\text{Load} < \frac{\text{Capacity}}{\text{Safety Factor}}$$

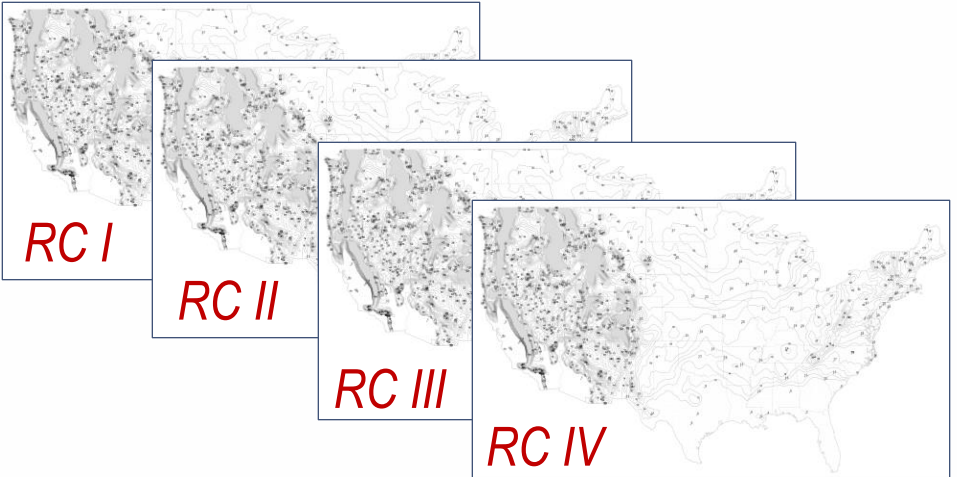
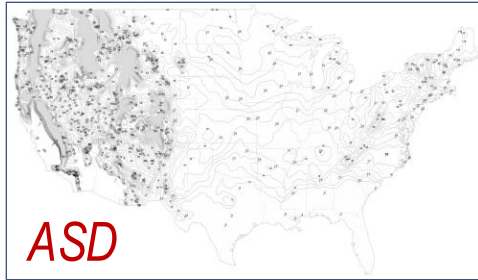
Strength Design (LRFD)

$$\text{Load} * \text{Safety Factor} < \text{Capacity}$$

ASCE 7 Snow Loads

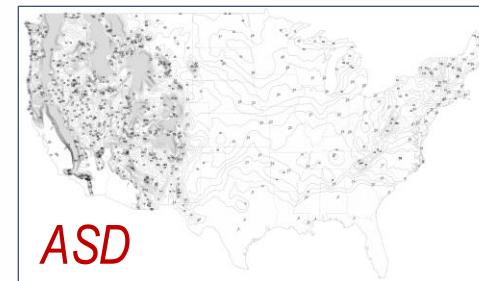
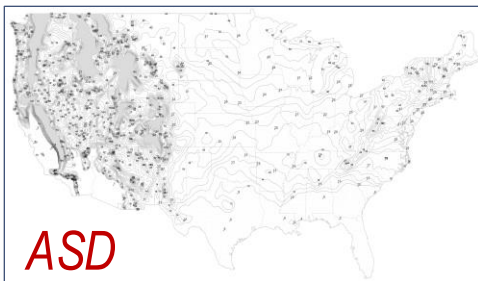
ASCE 7-16 / 2021 I-Codes

IBC



ASCE 7-22 / 2024 I-Codes

IRC



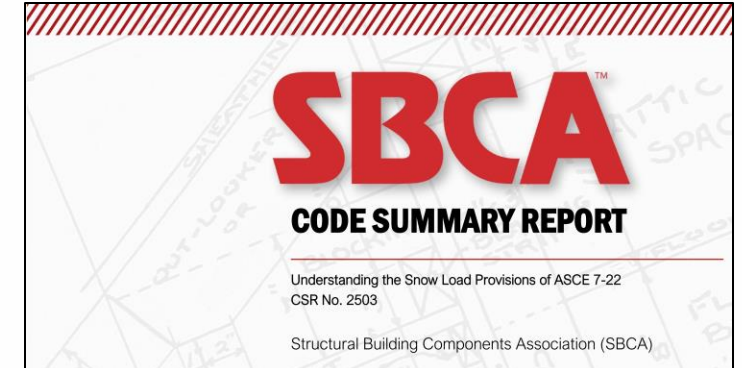
ASCE 7-22 Snow Loads

Ground Snow Load, P_g (psf)				
Location	St. Paul, MN	Boston, MA	Baltimore, MD	Columbus, OH
Risk Category I	45	49	39	16
Risk Category II	56	65	59	31
Risk Category III	62	74	73	37
Risk Category IV	70	86	94	43
IRC – $P_{g\ asd}$	39	46	41	22

IBC

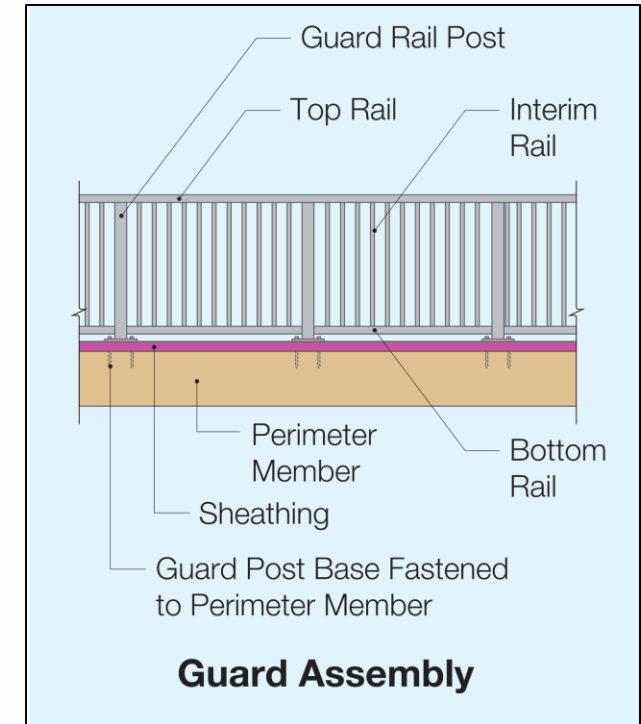
ASCE 7-22 Snow Loads

- Design Parameters
 - Risk Category
 - Roof R-Factor
 - Thermal Factor, C_t
 - Winter Wind Parameter, W_2
- Should be provided by the building designer
- ASCE Hazard Tool <https://ascehazardtool.org/>
- Software training
- ***Need to understand the load!***



Design Checklist	
Code Version	Verify code version of the IRC/IBC that is being used for the project. The 2024 version of the IRC/IBC will reference ASCE 7-2022, and the provisions described in this document will apply. Older versions will reference an older version of ASCE 7.
Project Location	Determine the geographical location. This will be needed to determine the correct ground snow load and Winter Wind Parameter.
Ground Snow Load	Is the ground snow load provided in the construction drawings? - Yes. Then determine if it is a service level load (ASD) or an ultimate load (LRFD). ▪ It is a service level load (ASD) if it is designated as $p_{g(ASD)}$ ▪ It is an ultimate load (LRFD) if it is designated p_g - No. If no snow load is provided, then it needs to be determined. ▪ Contact a registered design professional for the ground snow load and the code version to be used. ▪ If there isn't a registered design professional, then contact the local jurisdiction or owner for guidance. - No. Is another type of snow load provided? ▪ Is the flat roof design snow load, p_f, or sloped roof snow load, p_s, provided instead? Determine if this can be used with the software instead.
Risk Category	The Risk Category (I through IV) should be provided in the construction drawings. - If it isn't provided, contact the registered design professional, local jurisdiction, or owner for guidance. Residential structures will be Risk Category II.
Roof R-Value	The roof R-value, R_{roof} , is required to determine the Thermal Factor, C_t . The R-value of the roof should be provided in the construction drawings if the Thermal Factor isn't provided.
Thermal Factor	The Thermal Factor is determined using ASCE 7-2022 Table 7.3-2 and Table 7.3-3 for all structures except as indicated. Table 7.3-3 provides a Thermal Factor as a function of the ground snow load, p_g , and the R-value of the roof, R_{roof} .
Winter Wind Parameter	The Winter Wind Parameter, W_2 , is a function of the project location and is determined using ASCE 7-2022 Figure 7.6-1 or ASCE's online hazard tool.

Floor Framing Guard Support



Floor Framing Guard Support

R502.11 Floor framing supporting guards

The framing at the open edge of a floor supporting a required guard assembly shall be constructed in accordance with Section R502.11.1 or R502.11.2 for guard assemblies not exceeding 44 inches (1118 mm) in height, or shall be designed in accordance with accepted engineering practice to support the guard assembly. Where trusses and I-joists are used as edge framing members supporting guards, the effects of the guard loads shall be specifically considered in the design of the edge member.

R502.11.1 Conventional edge framing.

Where a roll brace is aligned with each guard post, the framing at the edge of the floor shall consist of a solid or built-up member of lumber, structural glued-laminated timber or structural composite lumber having a net width of not less than 3 inches (76 mm) and a net depth of not less than 9 1/4 inches (235 mm), and shall be braced to resist rotation by roll bracing as described in Section R502.11.3.

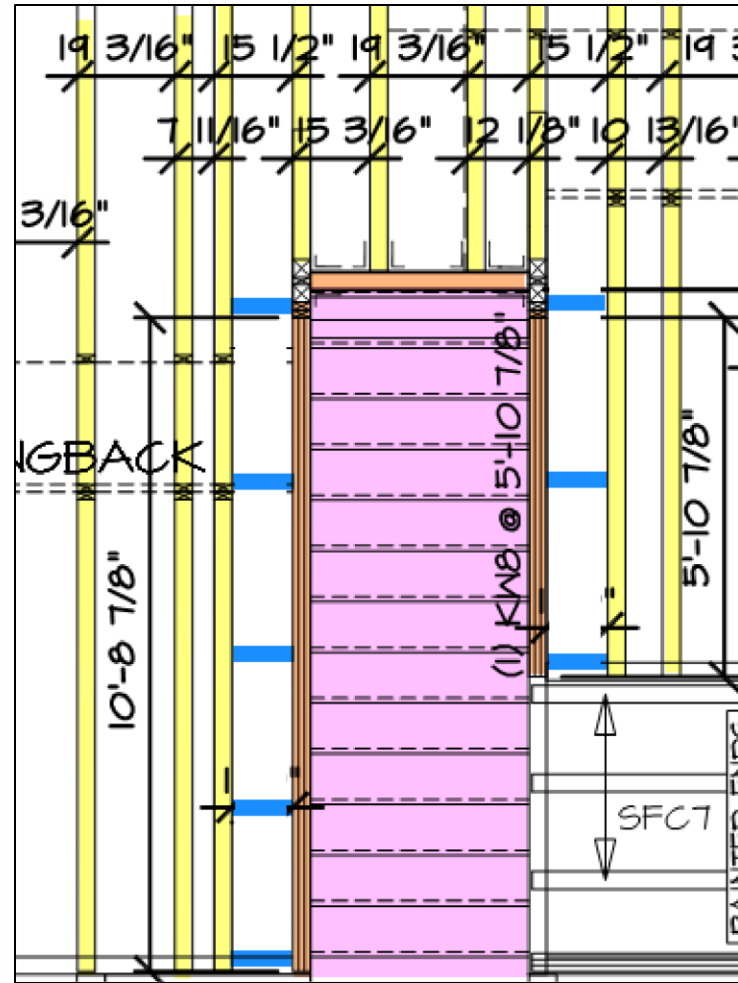
R502.11.2 Timber edge framing.

Where a roll brace is not aligned with each guard post, the framing at the edge of the floor shall consist of a minimum 6-inch by 10-inch sawn timber or a minimum 5 1/8-inch by 9 1/4-inch (130 mm × 235 mm) structural glued laminated timber and shall be braced to resist rotation by roll bracing as described in Section R502.11.3 at intervals of 48 inches (1219 mm) or less.

R502.11.3 Roll bracing.

Each roll brace shall be a joist or blocking matching the depth of the edge member and extending perpendicular to the edge member not less than 16 inches (406 mm) from the edge. Blocking shall have end connections with not fewer than six 16d common nails. Floor sheathing shall be continuous for not less than 24 inches (610 mm) from the edge and shall be fastened to each roll brace with not fewer than 12 (twelve) 10d common nails and shall be fastened to the edge member with a minimum of 12 (twelve) 10d common nails within 12 inches (305 mm) of the roll brace.

Floor Framing Guard Support



Floor Framing Guard Support

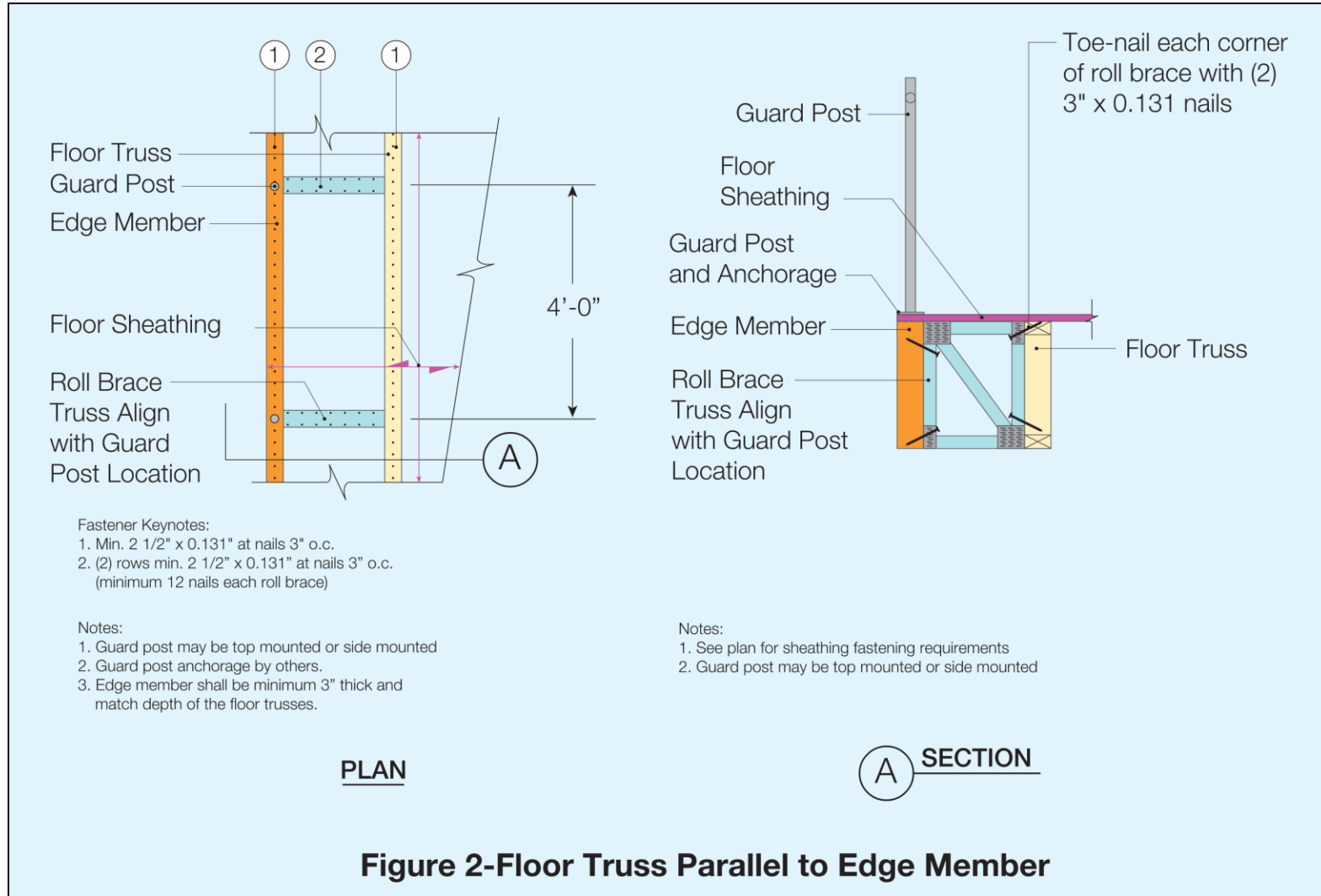


Figure 2-Floor Truss Parallel to Edge Member

Floor Framing Guard Support

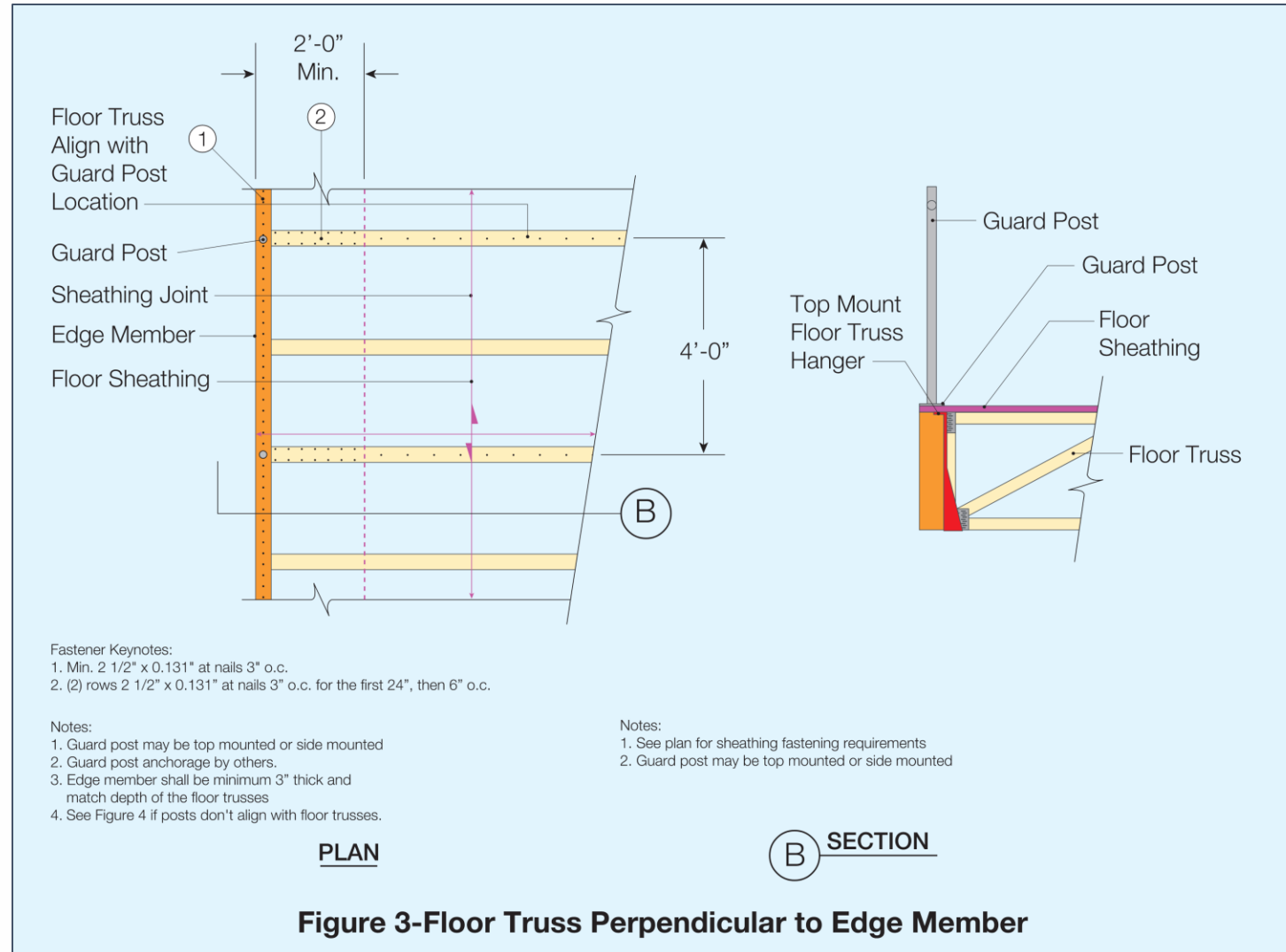


Figure 3-Floor Truss Perpendicular to Edge Member

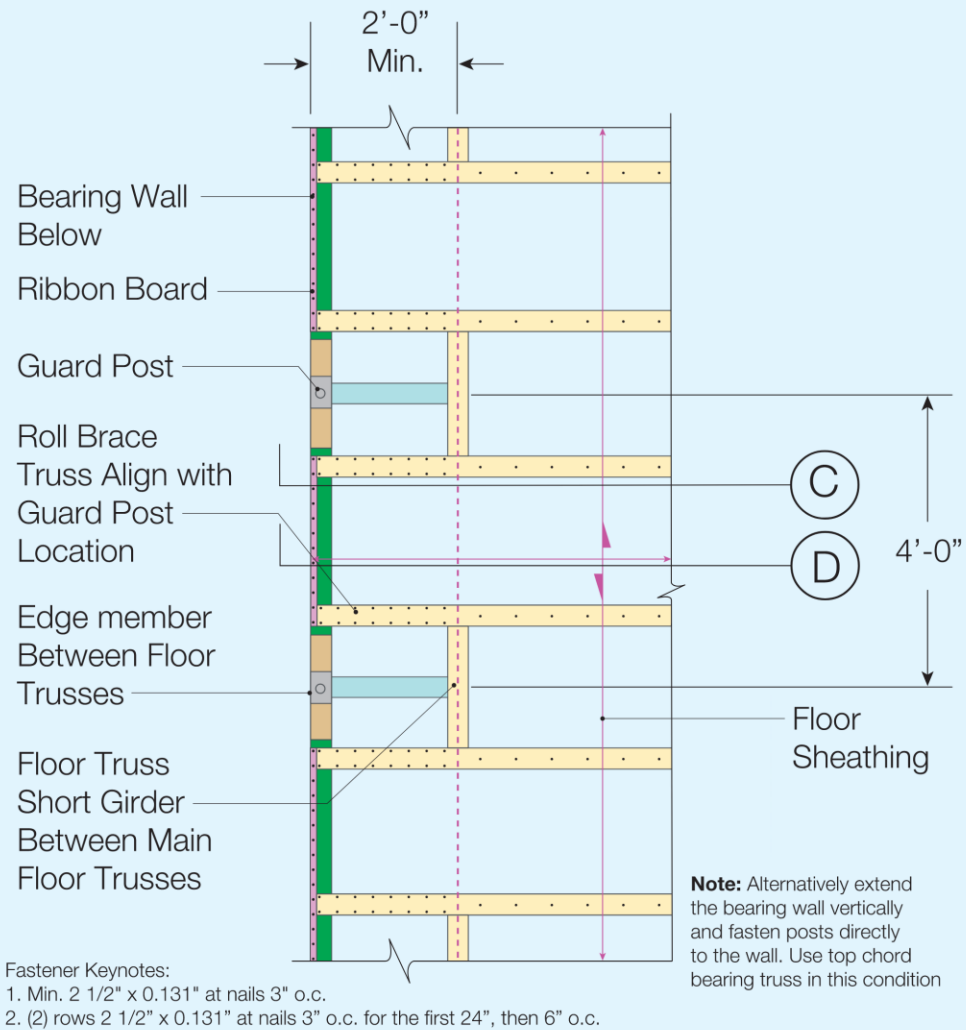


Figure 4 - Truss Perpendicular to Bearing Wall

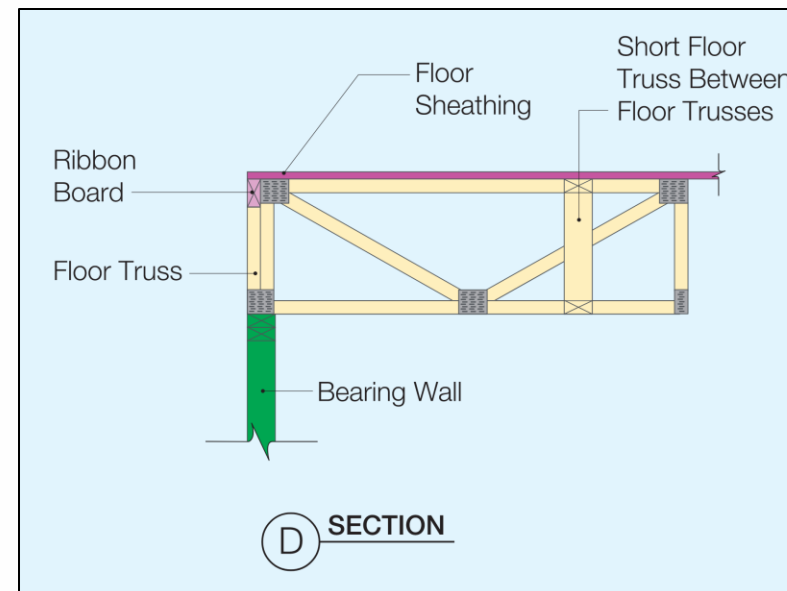
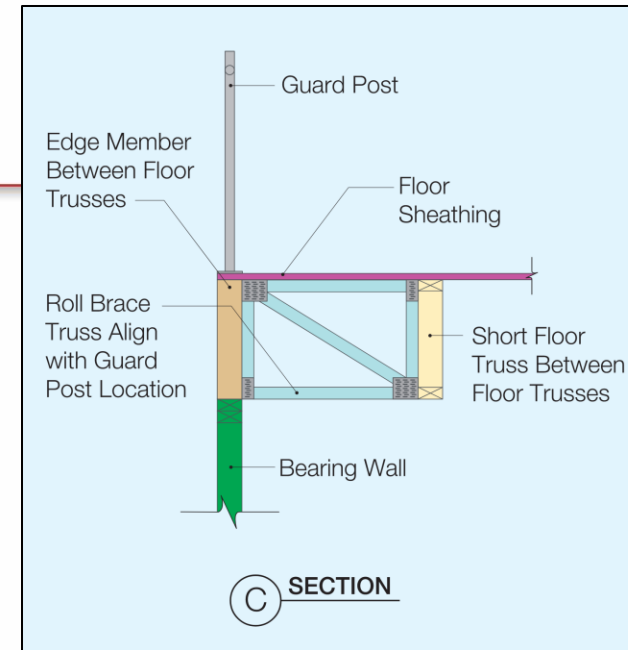
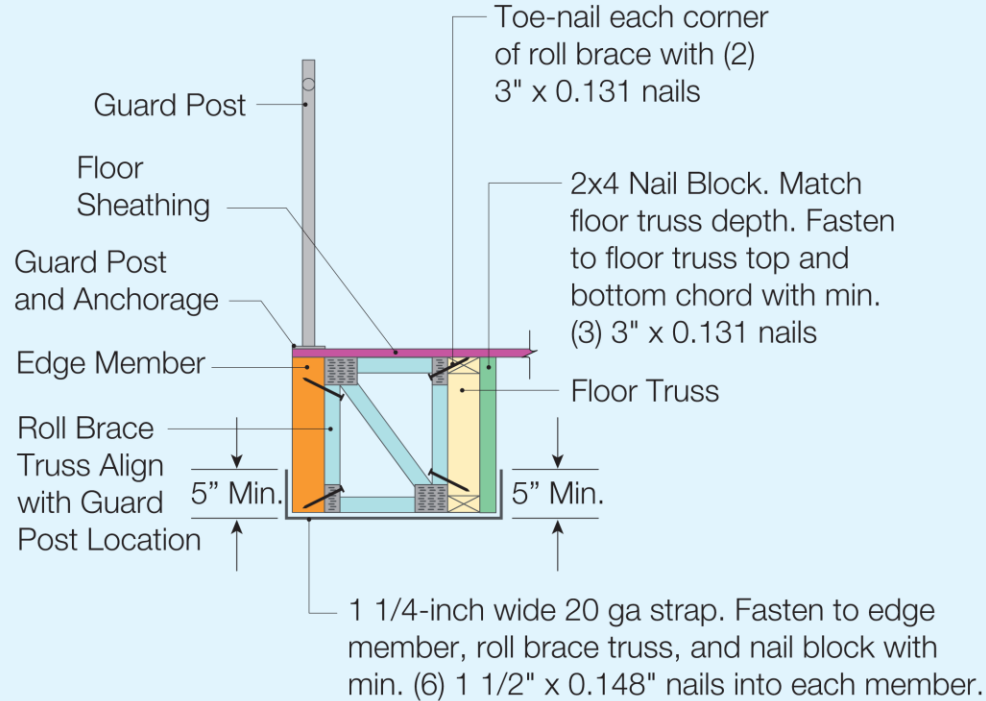


Figure 5-Floor Truss Parallel to Edge Member with Handrail



1. See plan for sheathing fastening requirements
2. Guard post may be top mounted or side mounted

A SECTION

Floor Framing Guard Support

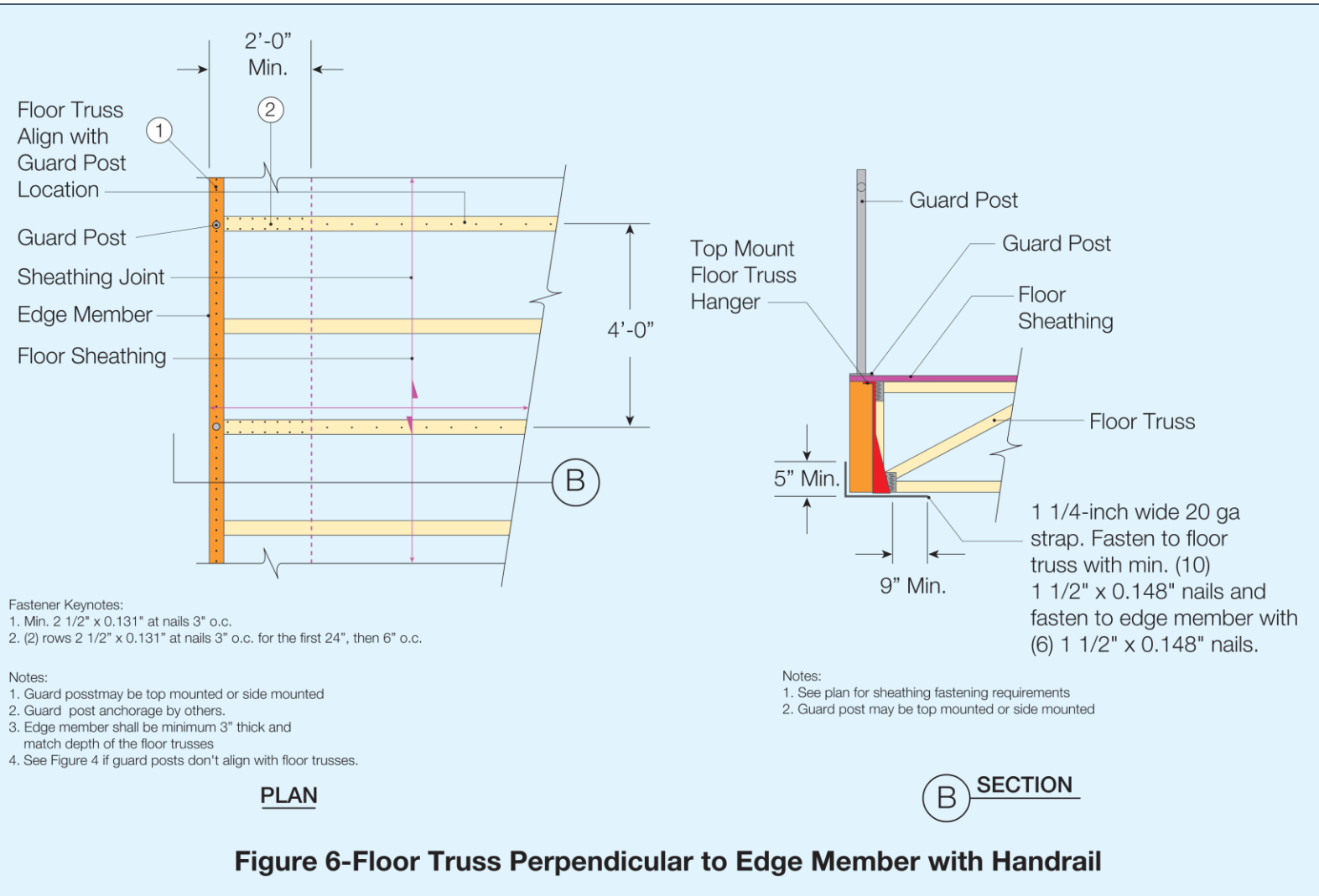


Figure 6-Floor Truss Perpendicular to Edge Member with Handrail

ANSI/TPI 1 Person Loading

6.2.2.5 Person Loading

In addition to any load cases required for the applicable end use, each roof Truss spanning 18 feet or more shall be designed for a single concentrated load at the mid-point of any Chord panel that is not sheathed with structural wood sheathing. This concentrated load shall be 300 lbs. and shall be applied concurrently with dead load. It shall not be applied concurrently with any other load. The load duration factor for this load case shall be 1.6 or less.

ANSI/TPI 1 Person Loading

- The 300-pound load is an in-service load. It is not intended to be a construction load.
- The person loading is intended to represent the occurrence of a person on the chord of a truss and is not the same as the roof man-load addressed in ASCE 7.
- The loading is not required for chords sheathed with structural wood sheathing.
- The person loading is not required for trusses with a span less than 18 feet.

ANSI/TPI 1 Person Loading



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**TPI Technical Advisory Committee (TAC)
Technical Interpretation
ANSI/TPI 1-2022 – Section 6.2.2.5 Person Loading
(Updated 4/24/2026)**

Purpose

The purpose of this Technical Interpretation is to clarify the application of the 300 lb concentrated person load specified in Section 6.2.2.5 of ANSI/TPI 1-2022, specifically with respect to how that load may be applied to roof trusses when trusses are spaced 30 inches on center or less.

Applicable Standard Language

Section 6.2.2.5 of ANSI/TPI 1-2022 states:

In addition to any load cases required for the applicable end use, each roof Truss spanning 18 feet (549 cm) or more shall be designed for a single concentrated load at the mid-point of any Chord panel that is not sheathed with structural wood sheathing. This concentrated load shall be 300 lbs. (1335 N) and shall be applied concurrently with dead load. It shall not be applied concurrently with any other load. The load duration factor for this load case shall be 1.6 or less.

Technical Interpretation

It is the interpretation of the Truss Plate Institute (TPI) Technical Advisory Committee (TAC) that, for roof trusses spaced 30 inches on center or less, the 300 lb concentrated person load specified in Section 6.2.2.5 may be distributed across two adjacent trusses, such that 150 lb is applied to each of two adjacent trusses. The load shall be applied at the mid-span of the chord panel and concurrently with dead load only.

In addition, the person load is only applicable to chord panels that meet the following criteria, regardless of on center spacing:

Bottom Chord Applicability Criteria

1. **Accessible Panel Geometry**
The bottom chord panel must be capable of accommodating a rectangular space measuring 42 inches in height by 24 inches in width within the panel.
2. **Horizontal Bottom Chords Only**
The bottom chord must have a slope less than 2/12.

Top and Bottom Chord Applicability Criterion

1. **Absence of Sheathing or Wide Spaced Purlins**
The person load is applicable only where there is no structural wood sheathing, or where purlins or bracing members are spaced greater than 24 inches on center.

As used in the provision the word “spanning” is intended to define the distance between bearings. It is not intended to be interpreted as the overall length of the truss.

Section 6.2.2.5 - Person Load_TAC Interpretation_Updated 260424.docx
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Rationale

Truss Installation Activities

The person load specified in Section 6.2.2.5 of ANSI/TPI 1-2022 is intended to be an in-service load. It is not intended to address incidental loads that may occur during the installation of trusses or during construction activities. Construction-phase loads, including temporary or accidental loading associated with erection, bracing, or other installation activities, are outside the scope of this provision.

Access During Service or Inspection in an Attic Space

During service, inspection, or maintenance activities within an attic space, personnel typically access the trusses using a catwalk, plank, or similar access system, or by straddling adjacent trusses for short periods of time. Under these conditions, the applied load is commonly distributed across two or more adjacent trusses rather than being concentrated on a single bottom chord panel.

The accessible panel geometry criterion is intended to represent the minimum clear space reasonably required for a person to occupy the panel area during in-service use. Bottom chord panels that do not provide this minimum clear space are not considered reasonably accessible for occupancy.

Sloping bottom chords are not considered reasonably accessible for in-service occupancy and therefore also fall outside the intent of the provision.

Where structural wood sheathing or purlins spaced at 24 inches on center or less are present, live loads are assumed to be adequately distributed among multiple chords or framing members. As a result, these configurations are excluded from the intent of the provision.

Limitations and Conditions

All other requirements of Section 6.2.2.5 remain applicable, including application at the mid-point of a chord panel, concurrent application with dead load only, and use of a load duration factor of 1.6 or less.

Intent

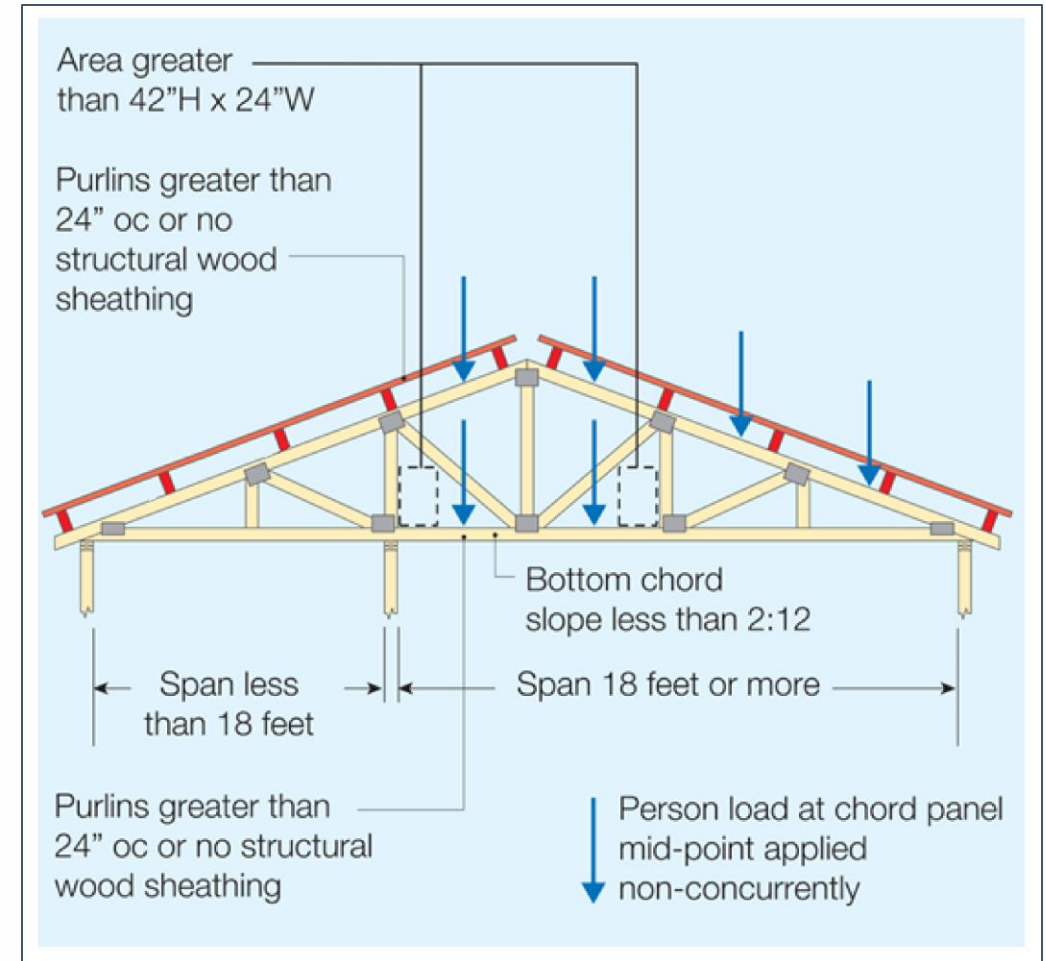
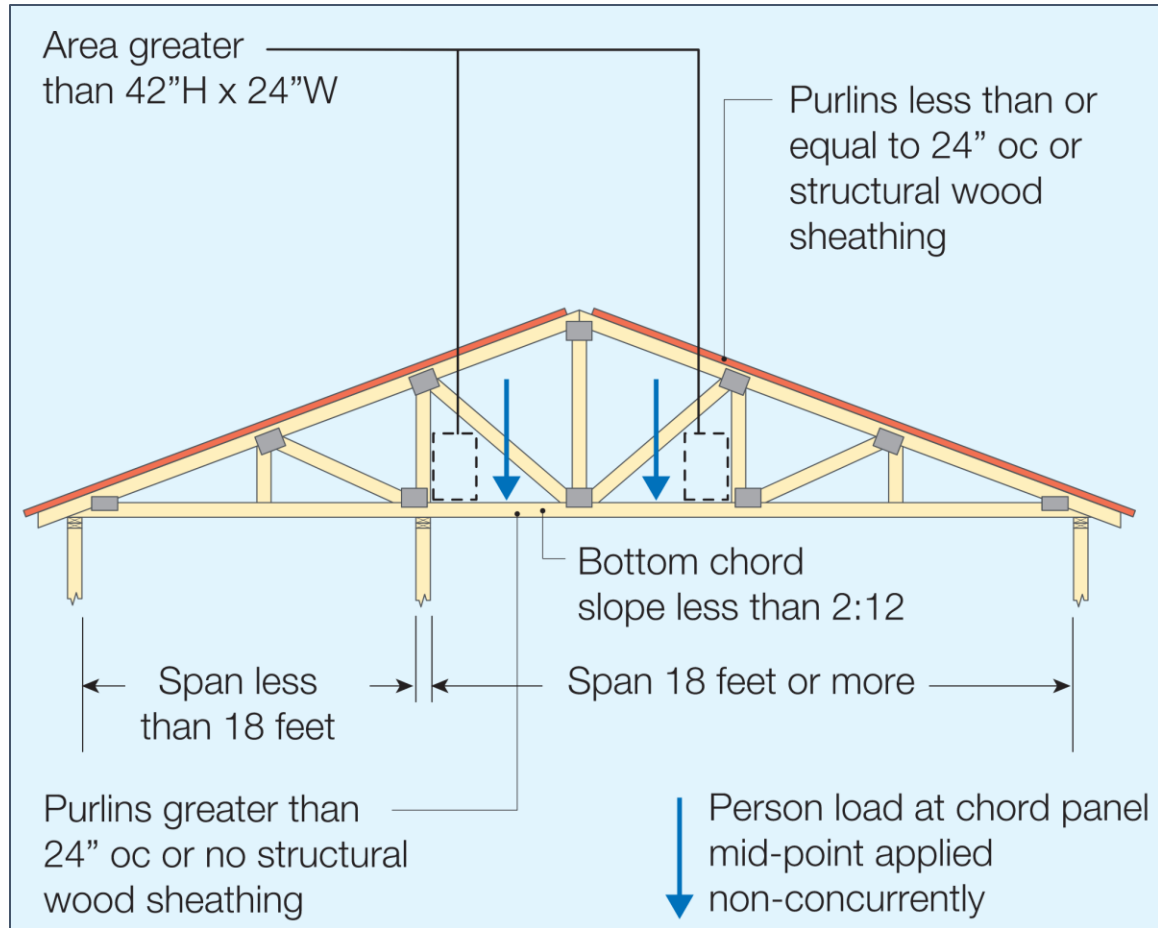
This Technical Interpretation is intended to clarify the application of the person loading provision in ANSI/TPI 1-2022 and to promote consistent and practical design application without reducing the level of safety intended by the standard.

<https://www.tpinst.org/freedownloads>

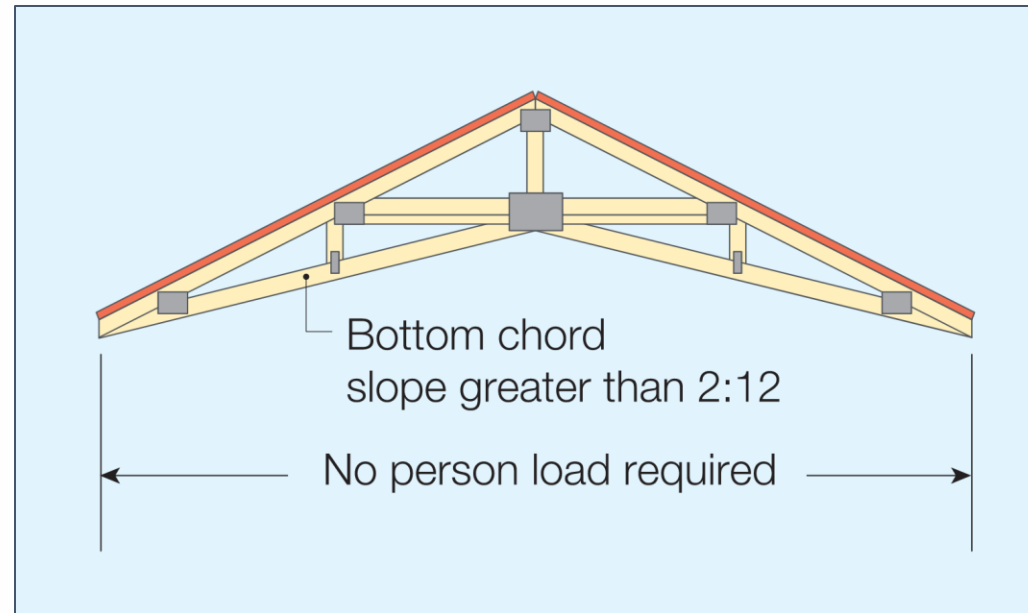
ANSI/TPI 1 Person Loading

- The 300-pound concentrated person load may be distributed across two adjacent trusses, such that 150-pound load is applied to each of two adjacent trusses, if the trusses are spaced 30 inches on center or less.
- The 300-pound load should only be applied to the bottom chord when:
 - The bottom chord panel must be capable of accommodating a rectangular space measuring 42 inches in height by 24 inches in width within the panel.
 - The bottom chord must have a slope less than $2/12$.
- The 300-pound load should only be applied to the top or bottom chord when:
 - There isn't structural wood sheathing fastened to the chord.
 - Purlins are spaced more than 24 inches on center.
- The 300-pound load should be applied at the mid-point of the chord panel, non-concurrently.

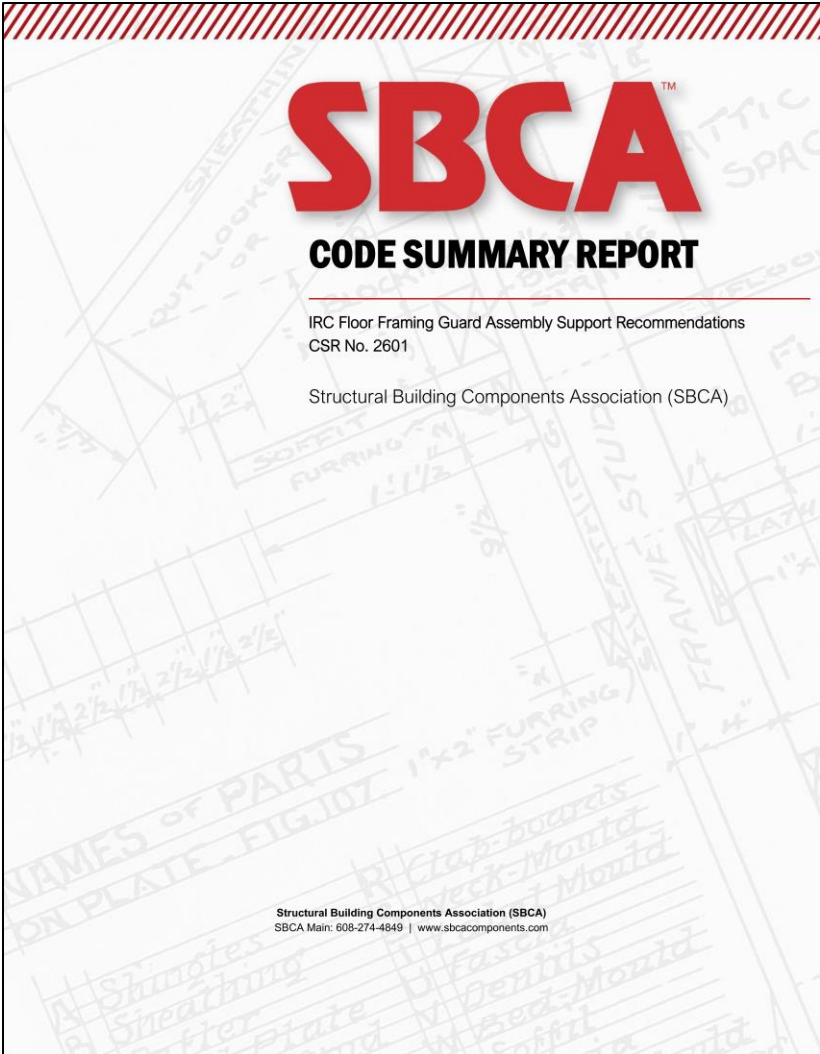
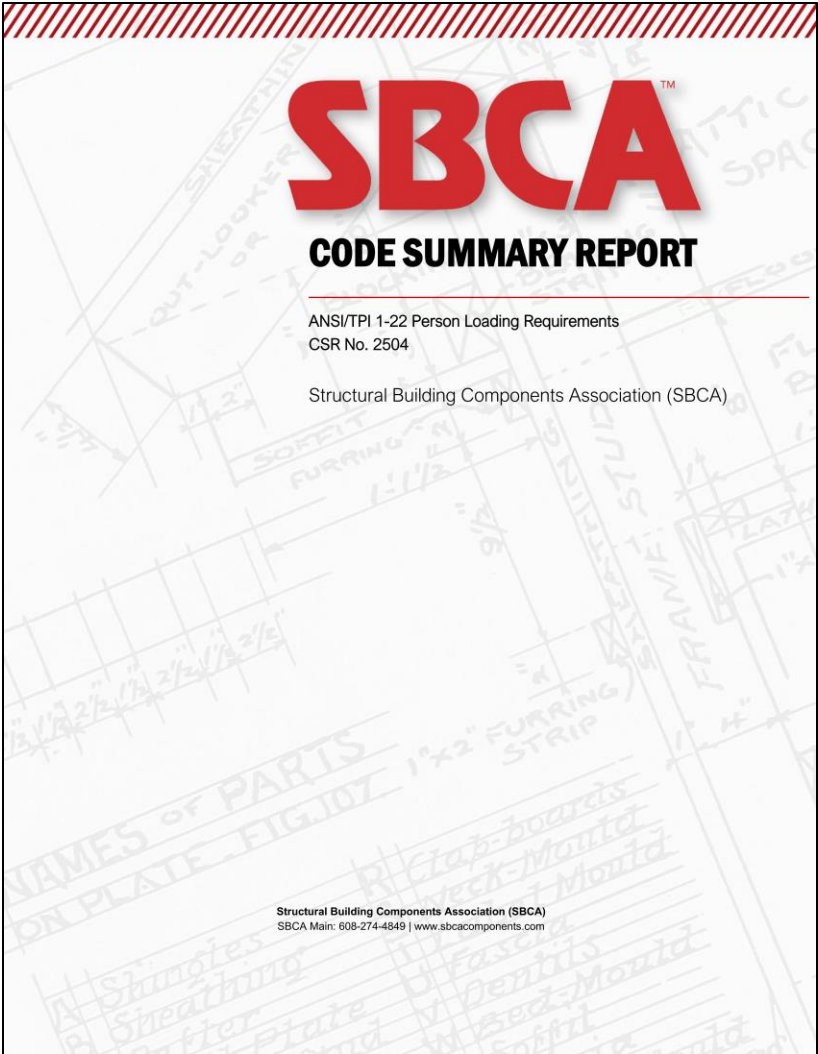
ANSI/TPI 1 Person Loading



ANSI/TPI 1 Person Loading



New Technical Documents



- Knowledge Center



- SBCA Guard Article



Q&A

Education Session
Evaluation

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