



## **Reinforcement of Boise Cascade Floor Framing Supporting Guards**

The 2024 International Residential Code® (IRC) contains new provisions mandating solid wood framing at the edge of openings like stairwells and balconies. Members of the Stairbuilders and Manufacturers Association (SMA) have observed a lack of solid framing at these locations to attach their edge guard posts to and thus sought to remedy via the adopted code provision.

The SMA assembled a group of industry shareholders that not only included stair professionals, but design professionals, code officials, builder representatives and component manufacturers. This group identified the issues and developed a prescriptive solution to present for adoption into the code. These solutions were specific to dimension lumber since that is the focus in the Code.

Below is the language that was adopted into the 2024 IRC:

**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 Sections R502.11.1 or R502.11.2 for guard assemblies not exceeding 44 inches (1118mm) 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 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 minimum net width of 3 inches (76 mm) and a minimum net depth of 9-1/4 inches (235 mm) and shall be braced to resist rotation by roll bracing as described in Section R502.11.3.*

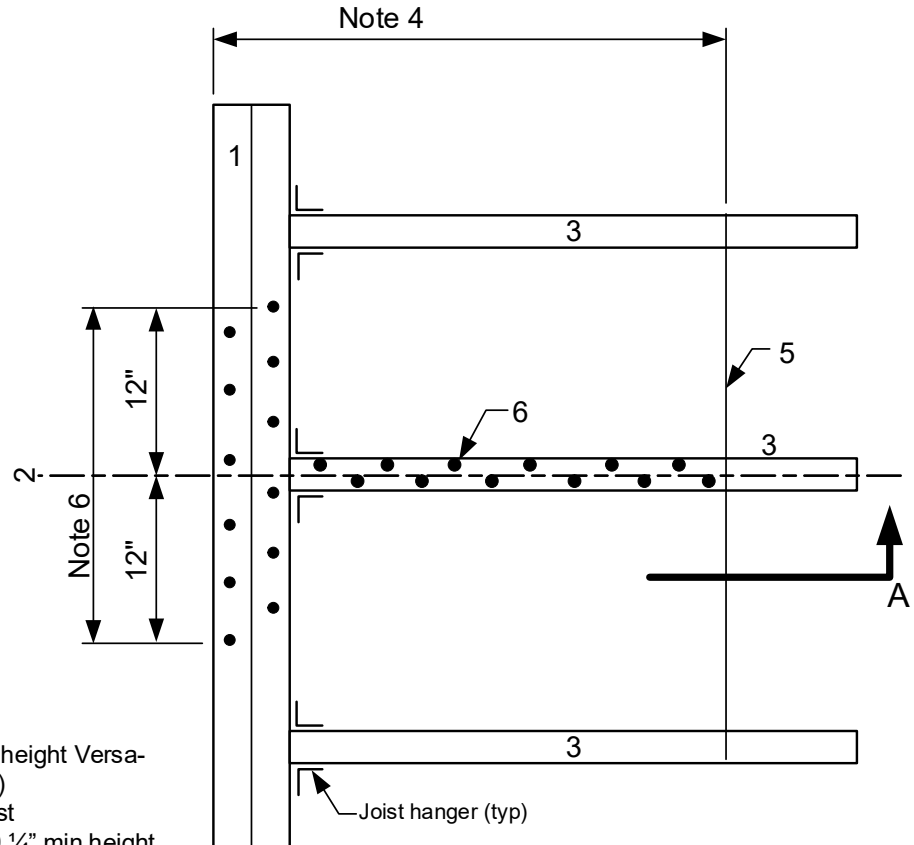
**R502.11.2 Timber edge framing.** *Where a roll brace is not aligned with each guard post, the framing at the edge of the floor shall consist of a minimum 6x10 sawn timber or a minimum 5-1/8 inch x 9-1/4 inch (130 mm x 235 mm) structural glued laminated timber and shall be braced to resist rotation 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 a minimum of 16 inches (406 mm) from the edge. Blocking shall have end connections with a minimum of six (6) – 16d common nails. Floor sheathing shall be continuous for a minimum of 24 inches (610 mm) from the edge and shall be fastened to each roll brace with a minimum of twelve (12) – 10d common nails and shall be fastened to the edge member with a minimum of twelve (12) – 10d common nails within 12 inches (305 mm) of the roll brace.*

Attached are details for complying with the code requirements using Boise Cascade Engineered Wood Products. It should be noted that BCI® and AJS® joists are not adequate for edge guard framing. Solid edge guard framing is required whether there is an opening below or the members are sitting on a load bearing wall below.

The edge guard framing shown in these details is based on Section R502.11.1 where a roll brace is aligned at each guard post. For applications where roll bracing does not align with the guard posts, more robust edge framing may be required per Section R502.11.2.

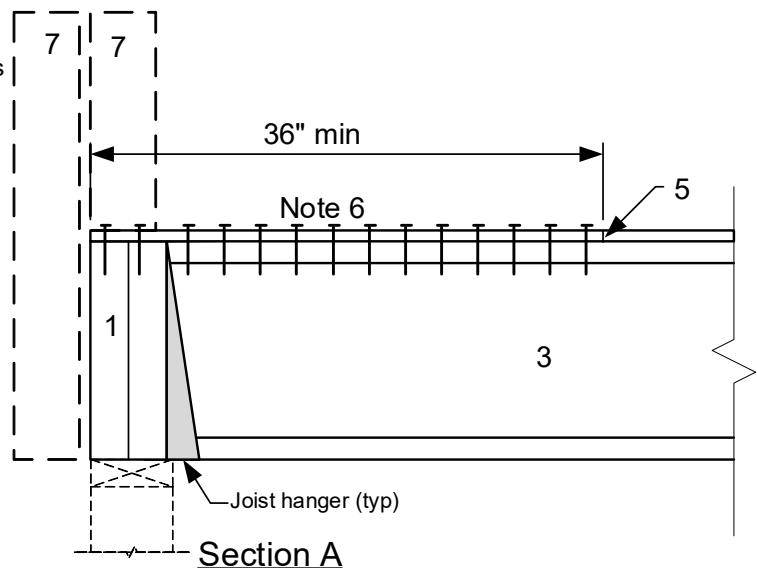
## Floor Edge Roll Bracing Joist Perpendicular to Edge Aligned with Floor Joist



**NOTES:**

1. Edge member 3" min width and 9 1/4" min height Versa-Lam® LVL (may be solid or built-up)
2. Center line of top/side mounted guard post
3. Floor joist (BCI® / AJS® / Versa-Lam®) 9 1/4" min height
4. Floor sheathing to be continuous for 36" min from edge
5. Joint in floor sheathing
6. 12-10d common (3" x 0.148") nails  
Edge beam: 4" o.c. staggered into both plies  
Floor joist: 3" o.c. staggered for 36" min  
Maintain minimum edge distances (typ)
7. Top or side mounted guard post, 44"h max, by others

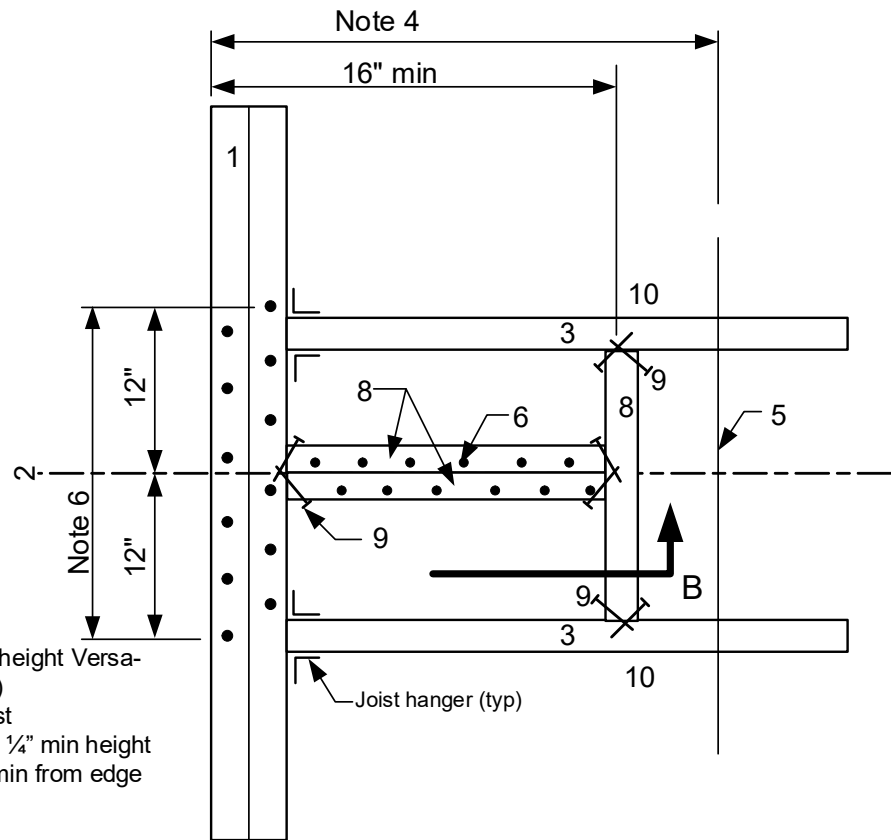
Top View



Section A

Not to Scale

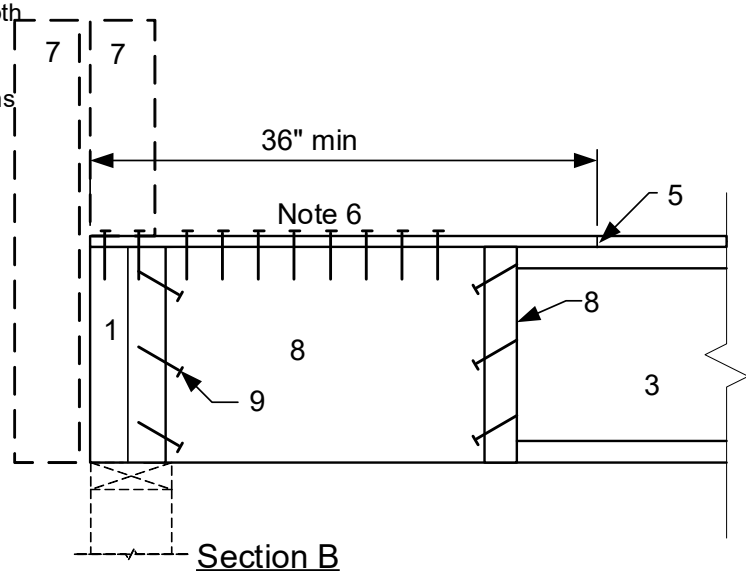
## Floor Edge Roll Bracing Joist Perpendicular to Edge Offset from Floor Joist



**NOTES:**

1. Edge member 3" min width and 9 1/4" min height Versa-Lam® LVL (may be solid or built-up)
2. Center line of top/side mounted guard post
3. Floor joist (BCI® / AJS® / Versa-Lam®) 9 1/4" min height
4. Floor sheathing to be continuous for 36" min from edge
5. Joint in floor sheathing
6. 12-10d common (3" x 0.148") nails  
Edge beam: 4" o.c. staggered into both plies  
Floor joist: 3" o.c. staggered for 36" min  
Maintain minimum edge distances (typ)
7. Top or side mounted guard post, 44"h max, by others
8. Versa-Lam® LVL blocking, 1 1/2" min, match floor depth
9. 6-16d common (3 1/2" x 0.162") toenails, staggered or A35 framing angles
10. Use backer per *Installation Guide* at header locations

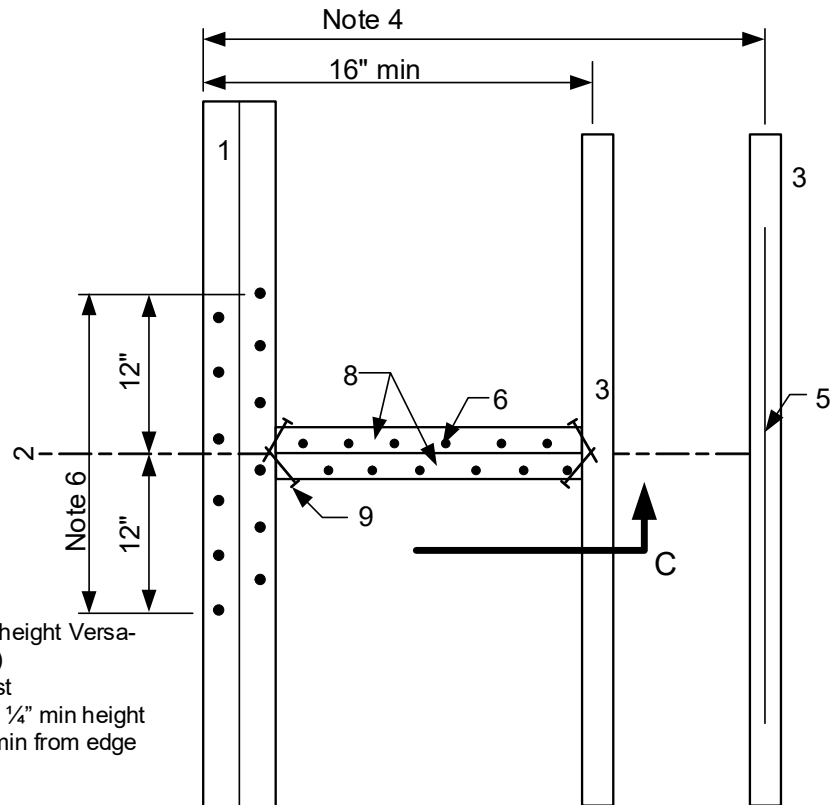
Top View



Section B

Not to Scale

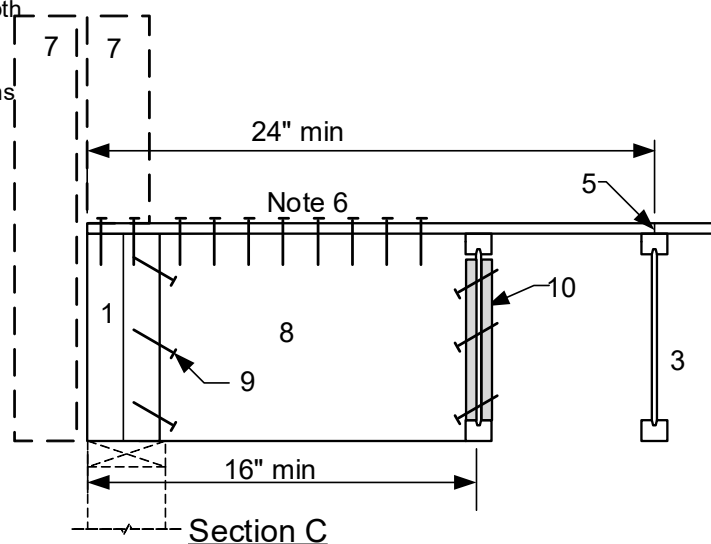
## Floor Edge Roll Bracing Joist Parallel to Edge



Top View

**NOTES:**

1. Edge member 3" min width and 9 ¼" min height Versa-Lam® LVL (may be solid or built-up)
2. Center line of top/side mounted guard post
3. Floor joist (BCI® / AJS® / Versa-Lam®) 9 ¼" min height
4. Floor sheathing to be continuous for 24" min from edge
5. Joint in floor sheathing
6. 12-10d common (3" x 0.148") nails  
Edge beam: 4" o.c. staggered into both plies  
Floor joist: 3" o.c. staggered for 36" min  
Maintain minimum edge distances (typ)
7. Top or side mounted guard post, 44"h max, by others
8. Versa-Lam® LVL blocking, 1 ½" min, match floor depth
9. 6-16d common (3 ½" x 0.162") toenails, staggered or A35 framing angles
10. Use backer per *Installation Guide* at header locations



Section C

Not to Scale