

City of Hazelwood 2021 IRC Prescriptive Deck Guide



Required Documentation

1. Copy of contract showing cost of construction
2. A Site Plan showing distances from the deck to property lines, and to other structures or HVAC equipment on the lot. R106.2
3. Front and Side cross-section drawing are required and must be to scale with measurements. R106.1.1
4. Detailed construction drawings and framing details are required with measurements for piers/foundation, posts, beam sizes and spans, joist sizes and spans, cantilever spans, decking, ledger, guards, stairs/landing, and details for all connections, hardware and fasteners. R106.1.1
5. Manufacturers installation instructions for any manufactured railing kits or composite materials.

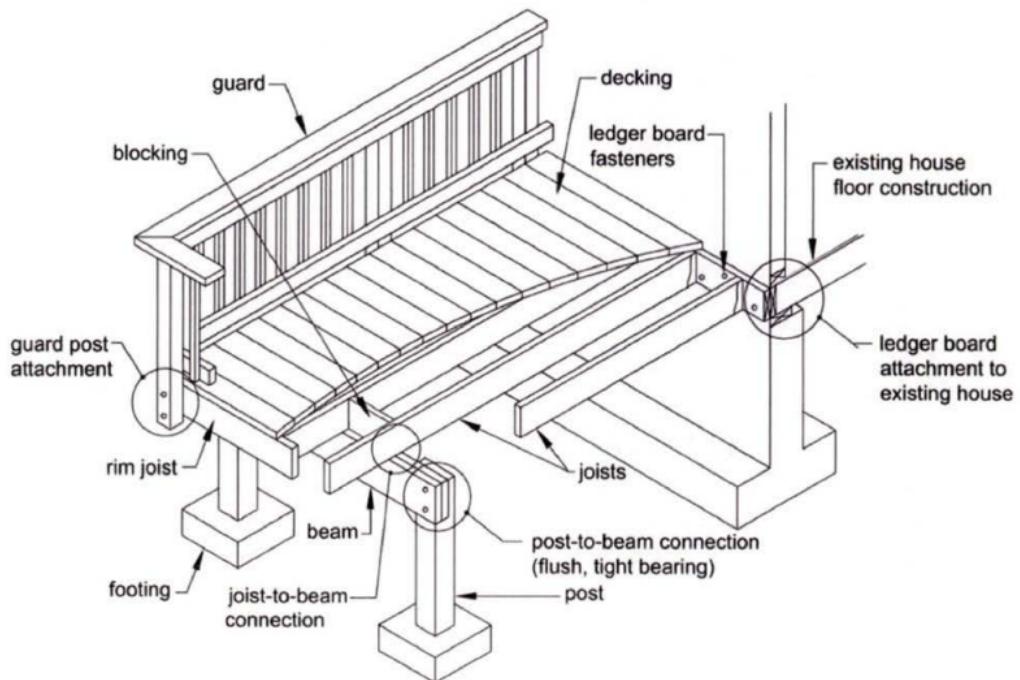
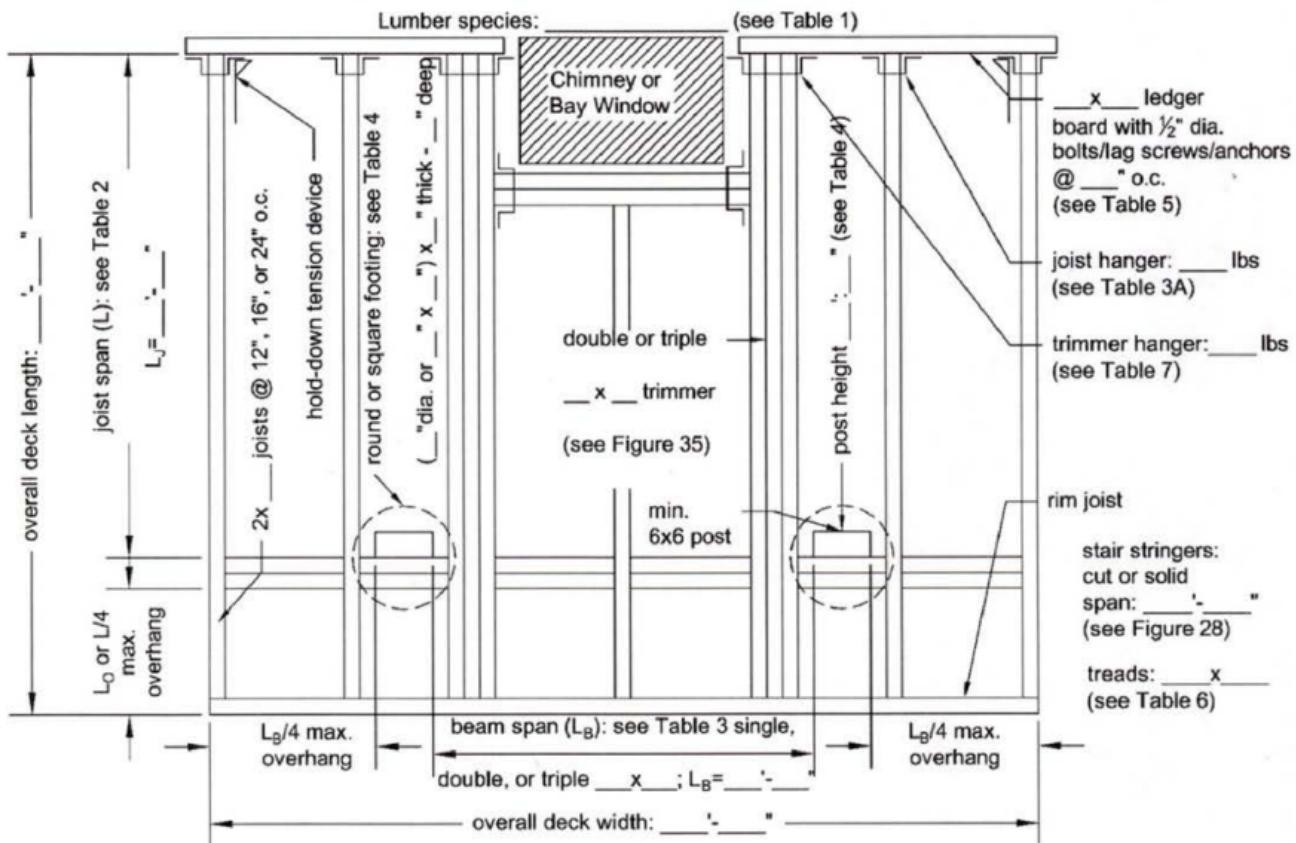
References:

DCA6 (design for code acceptance)
2021 International Residential Code Chapter 5

GENERAL

- All lumber must be sized according to 2021 IRC Chapter 507 - Exterior Decks
- Wood material shall be No. 2 grade or better, preservative-treated, naturally termite and decay resistant or approved material. Fasteners shall be hot-dipped galvanized nails, stainless steel or approved material.
- Decks may not be within 36" inches measured horizontally and 10' feet measured vertically from overhead electrical wires.
- The house must have one GFCI protected electrical receptacle accessible from the deck.
- Deck stairs must be illuminated for safety.

Framing Plan Examples



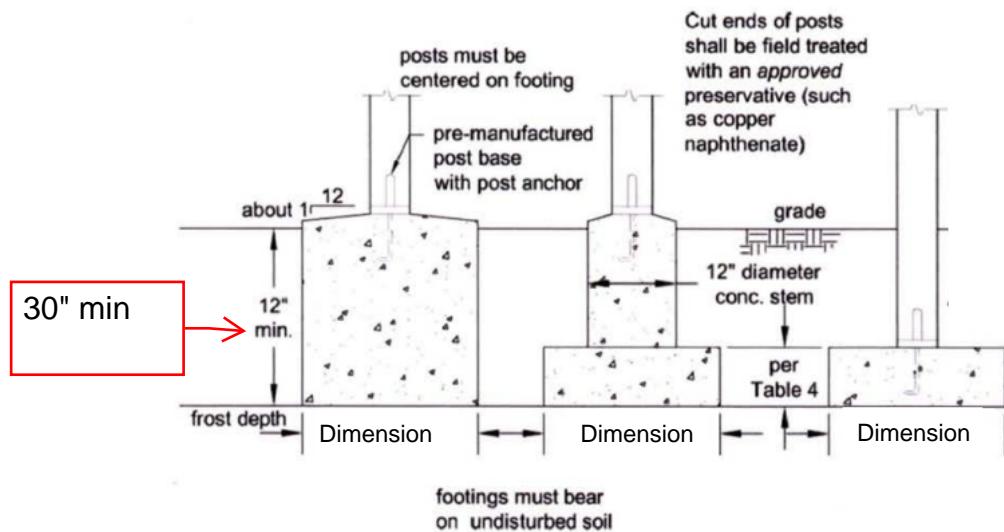
Footings

•Footing details provided, extending minimum 30" below grade Table R301.2(1) Hazelwood code 500.050.B.2.q

•Footings meet minimum size requirements per IRC Table R507.3.1

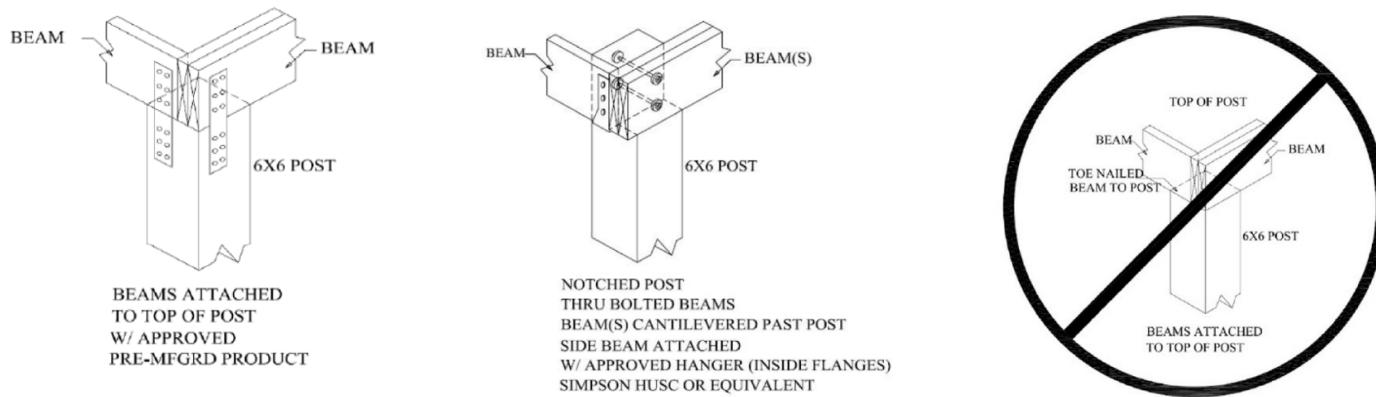
•Exceptions for footing frost depth for free-standing decks R507.3

Typical type of Footings, may be belled at bottom



Posts and Beams

- Post sizes, spans, and connections to footings detailed R507.4, R507.5
- Beam sizes and spans detailed, meeting IRC Table R507.5
- Beam-to-post connections use notched posts or post caps R507.5.2
- Built-up beam plies fastened per R507.5.1 and splices over a post
- Beam bearing minimum 1.5" on wood or metal, 3" on concrete/masonry R507.5.1



Beam Span.

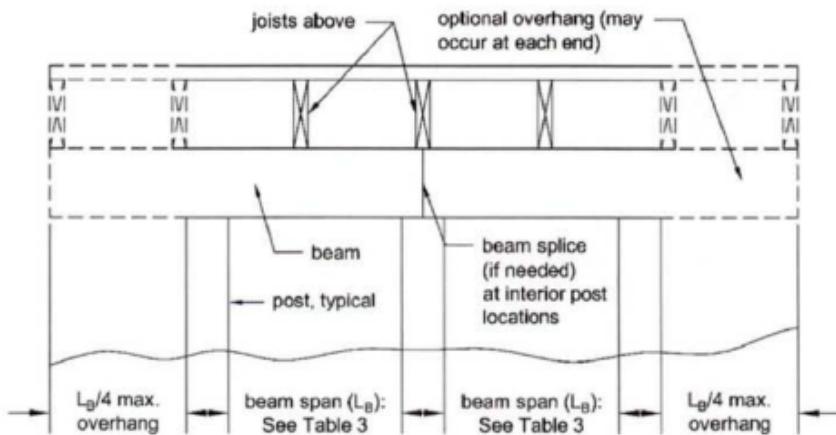
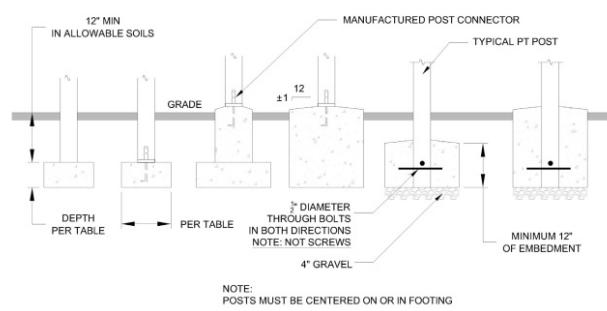


FIGURE R507.3 DECK POSTS TO DECK FOOTING CONNECTION



Joists 507.6

- Joist sizes and spans detailed, meeting IRC Table R507.6
- Joist cantilevers do not exceed IRC limits R507.6
- Joist bearing minimum 1.5" on wood or metal R507.6.1
- Joist hangers sized for joists and fastened with manufacturer's hardware R507.6.1
- Joists connected to the beam with hurricane clips or code-compliant toenailing R507.6.2

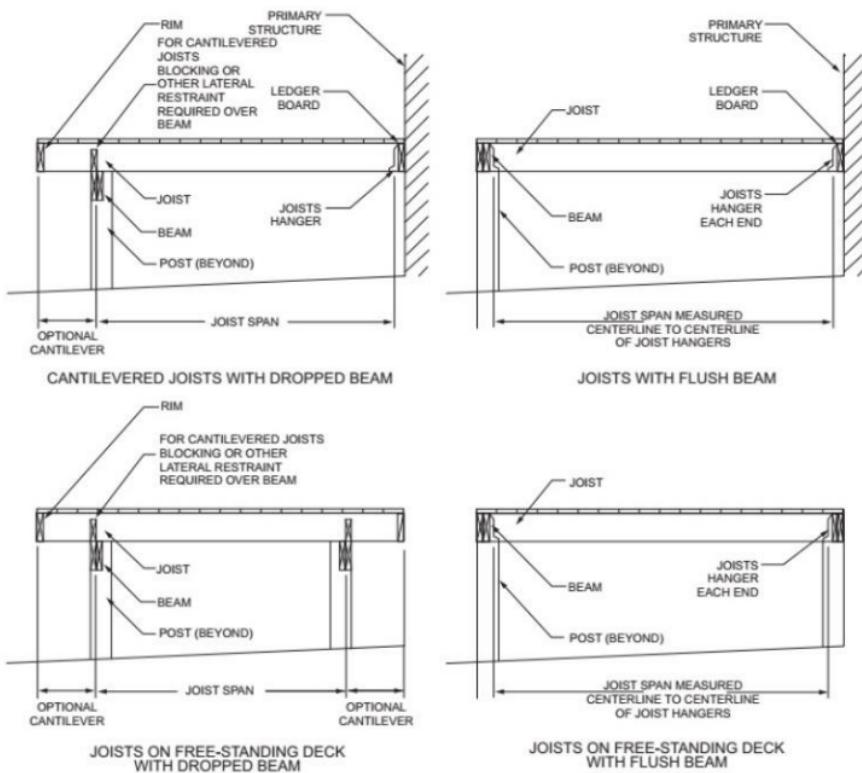
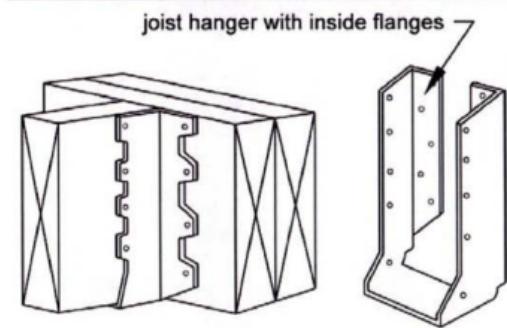
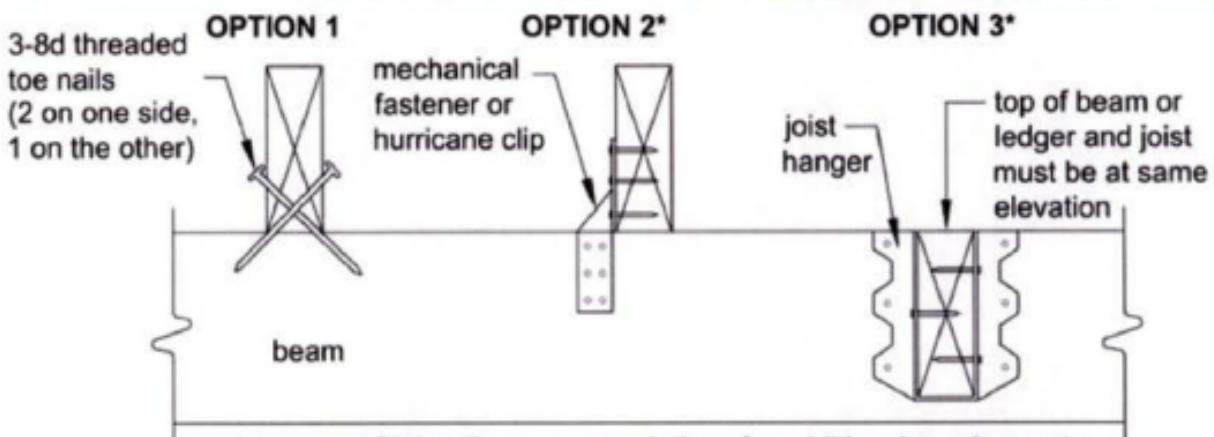


Figure 7. Typical Joist Hangers.



Joist-to-Beam Detail.



Ledger Attachment R507.9

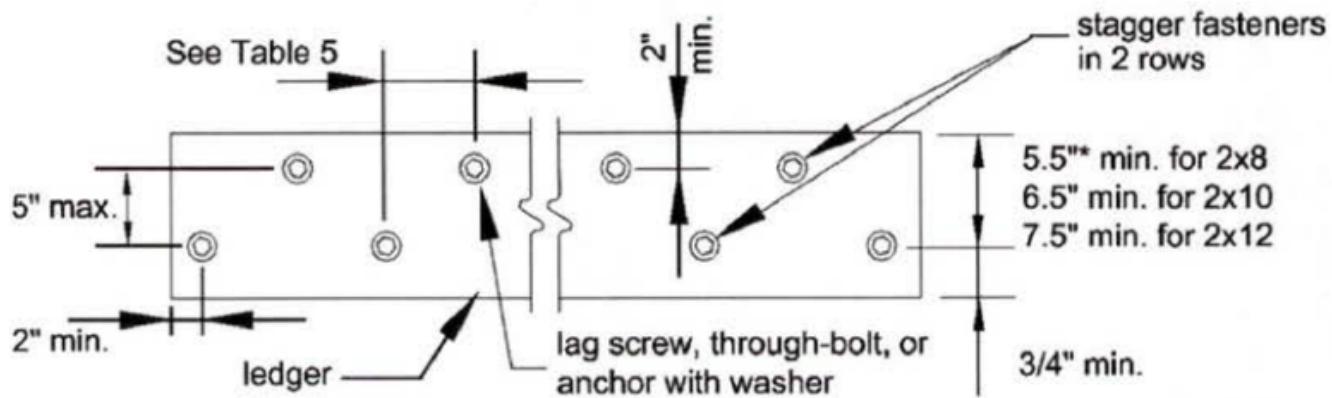
- Ledger board attached with minimum 1/2" lag bolts or approved equivalent R507.9.1.1

- Ledger fasteners staggered and spaced per IRC Table R507.9.1.3(1)

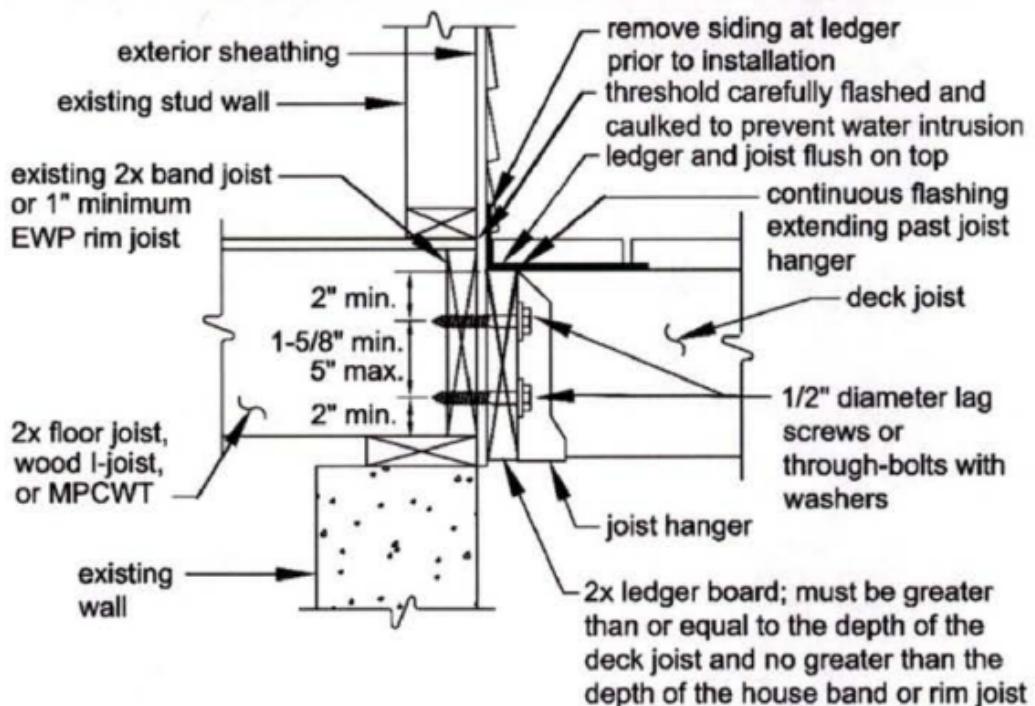
- Ledger flashing extends behind exterior wall covering R507.9.1.3

- Ledger board not attached to stone/masonry veneer R507.9.1.2

- Check the "H" frame header and trimmer joist size, attached directly to the house band.

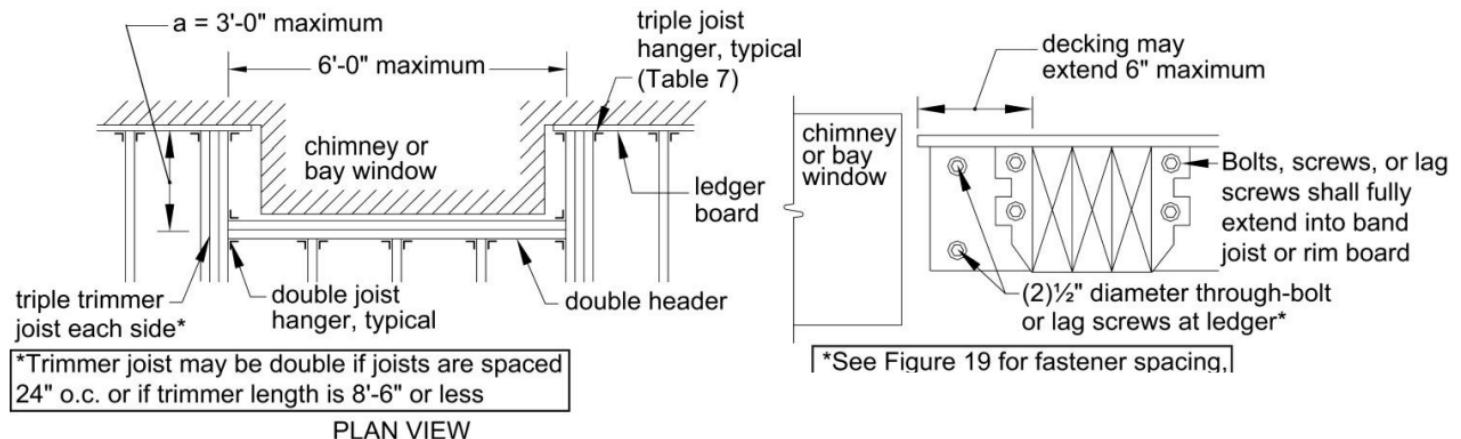


Flashing Detail

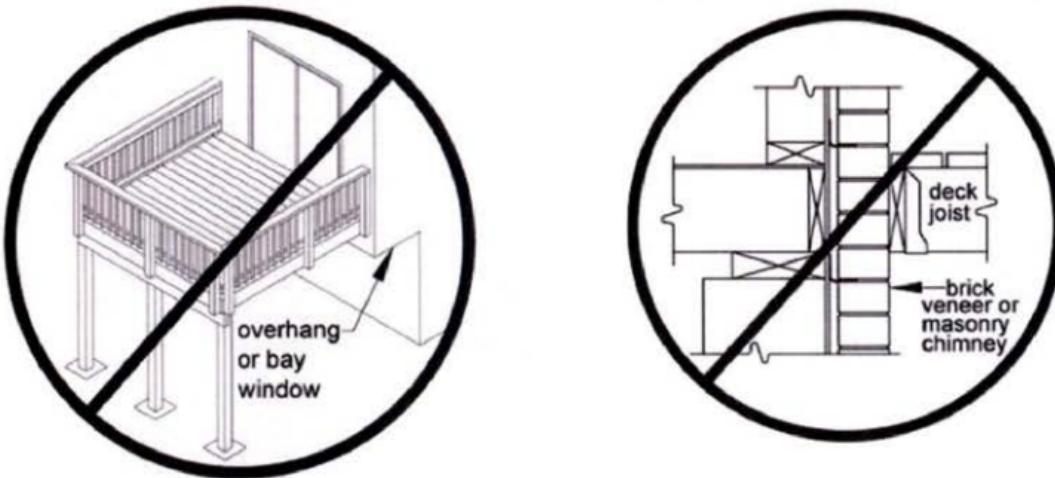


H-Frame

Headers must be installed within 3 feet of the trimmer joist ends and are limited to a maximum span of 6 feet. For obstructions wider than 6 feet, you must install additional 6x6 posts on code-compliant footings to reduce header spans accordingly.DCA 6



PLAN VIEW



Lateral Load Connection 507.9.2

- Minimum two lateral load devices installed per IRC Figure R507.9.2(1)

or

- four devices per Figure R507.9.2(2)

or

- full depth posts, a 45° angle brace, Decking on 45°, X or K bracing

- 1500 lb lateral load device capacity, or 750 lb for free-standing decks R507.9.2

Figure 23. Lateral Load Device with Floor Joists Perpendicular to Deck Joists.

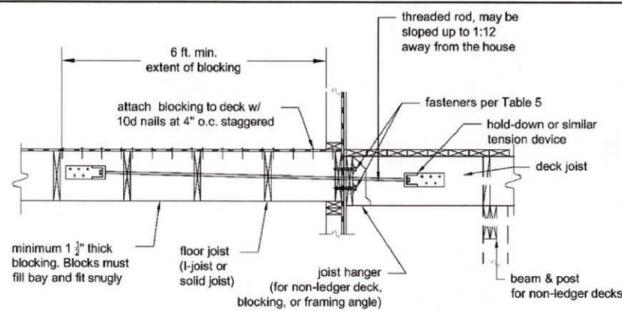
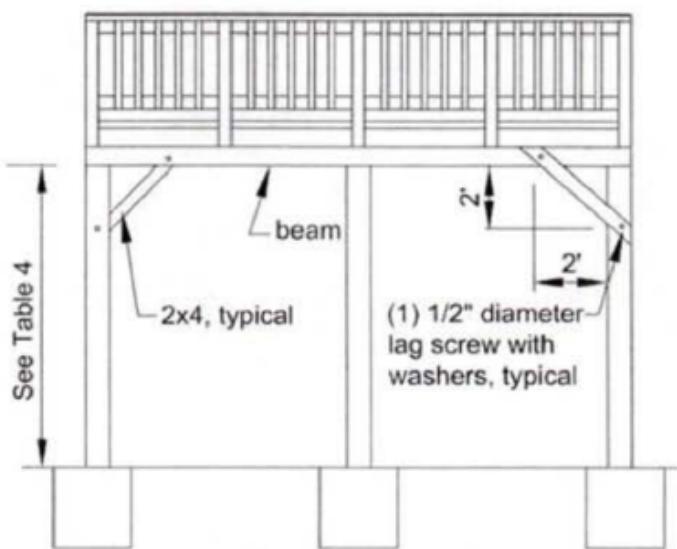
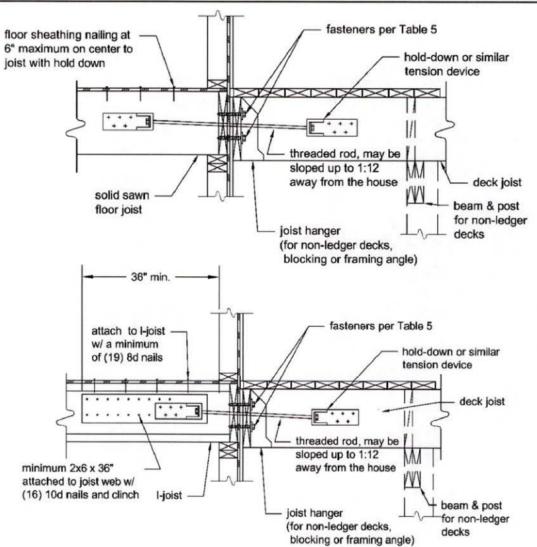


Figure 22. Lateral Load Device with Floor Joists Parallel to Deck Joists.



DIAGONAL BRACING PARALLEL TO BEAM

Note: Diagonal Bracing is prohibited on center posts.

Guards 507.10

- Guard height minimum 36" R507.10.1
- Guard openings do not allow 4" diameter sphere to pass R507.10.2
- Guard post connection to the deck framing detailed to meet load requirements Table R301.5
- Guard posts not stacked on top of support posts
- 4x4 guard posts are not notched at the connection to the deck R507.10.1
- If using a system, provide manufacturer instructions

Figure 24. Example Guard Detail.

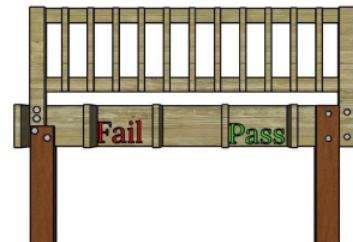
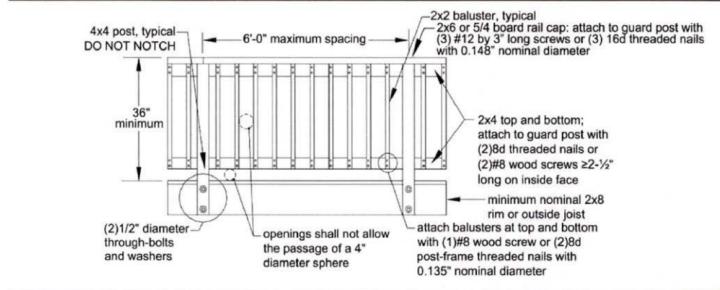
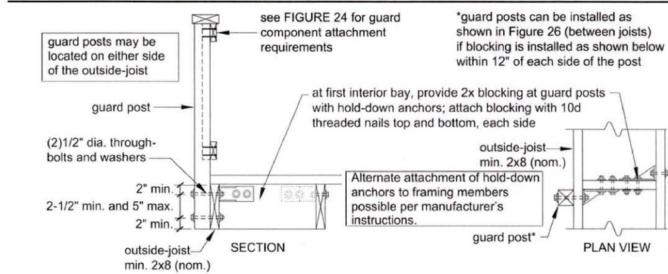


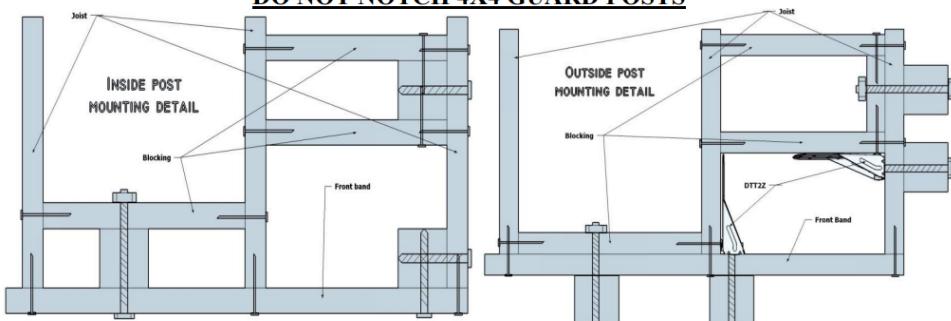
Figure 25. Guard Post to Outside-Joist Example.



**PROHIBITED NOTCHING
AT GUARD POSTS**

UNLESS 6" x 6" POST

**Typical guard post attachment
DO NOT NOTCH 4X4 GUARD POSTS**



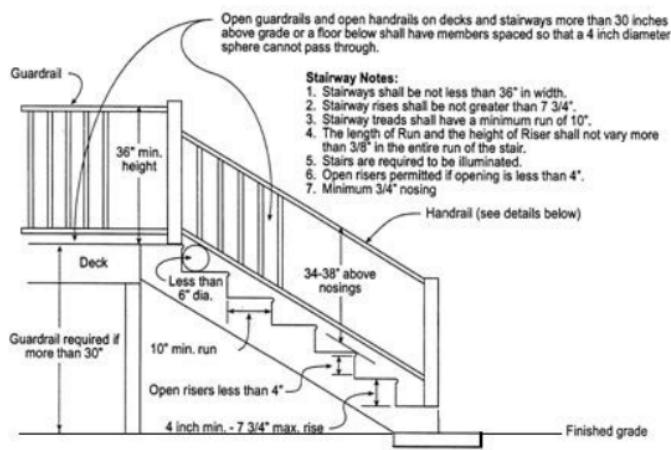
Stairs 507.11

- Stair geometry meets IRC for width, landing size, tread depth, and riser height R311.7

- Handrails provided and meet IRC height and opening limitations R311.7.8

- Stair stringers sized per IRC Table R507.11.1

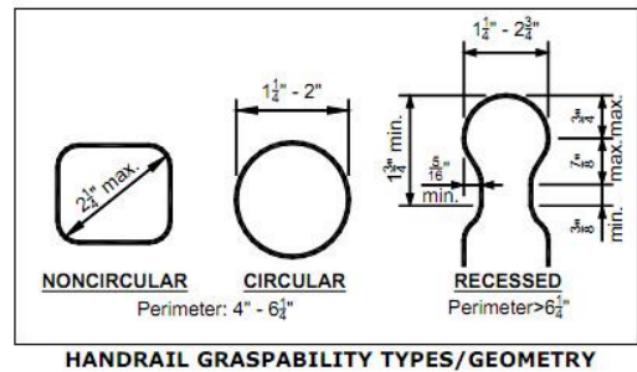
- Stair footings extend below the frost line R507.11.2



TYPICAL STAIR

Stringers attached at top with non-corrosive metal straps or joist hangers and bottom on concrete pad.

Stringers shall be a minimum of 3 - 2" x 12"



GRASPABLE HANDRAIL

(Required minimum on one side)

