Village of Third Lake
87 N. Lake Ave.
Third Lake, IL 60030
847-223-8422

Permit Requirements

Decks and Patios

The following items are required to be submitted at time of application for adding a deck or patio.

Please provide all documentation required to the Village Hall when submitting application for work to be completed.

1. Completed Building Permit Application. Application must be signed, dated, and include the total value of the project.
2. Providing Plat of Survey (digital and printed copy) showing up-to-date location of project to scale including driveways, patios, pools, fences, etc. This plat must also show building setbacks as required by Village Zoning Ordinance.
3. Provide digital and hard copy of Deck Plans showing in sufficient detail the nature and extent of the work to be completed and include dimensions, footing placement, methods of attachment to house, and exact square footage.
4. Provide drawing of patio placement, dimensions, and materials to be used.
5. General Contractor information including contact information and a list of all subcontractors.
6. A Tree Removal Permit is required for all trees over 8" in diameter to be removed.
7. Payment to the Village of Third Lake for a Review fee at time of application.
8. Payment to the Village of Third Lake for specified amount after review is completed before permit is issued.
9. Properties that use wells will need an additional permit from the Lake County Health Department. This review can take 5 to 9 days.

It is the owner's responsibility to contact JULIE 48 hours prior to any work to be completed that involves disturbing the ground. (800) 892-1023

Required Inspection/s

- □ Footing and setback
- □ Pre-pour
- □ Final

Please schedule your inspection with the Lake County Building Department. Building inspections can be scheduled through the Online Inspection Request Form at Lakecountyil.gov/738/building-inspections or by calling 847/377-2600. Inspection requests require 24-hr notice.

Residential Wood Deck Construction Guide

Based on the 2018 International Residential Code

General Notes and Requirements:

1. All lumber shall be pressure treated for exterior use. All metal fasteners and hangers shall be G1 85 galvanized, stainless steel, or otherwise compatible with the wood treatment. All bolts shall be ½-inch diameter minimum.
2. All beams, joists, posts, and decking shall be number 2 southern pine or better.
3. All beam or top rail splices shall occur at a post or otherwise on adequate bearing.
4. Decks shall be supported on concrete footings or other approved structural systems designed to accommodate all loads in accordance with 2018 IRC Section R301.
5. Guards are required at all areas where the deck/porch floor is greater than 30-inches above grade at any point.
6. Required guards shall be a minimum of 36-inches tall and be constructed so that a 4-inch diameter sphere will not pass through.
7. Required handrails at stairs shall range from 34 to 38 inches vertically above the stair nosings.
8. Handrail ends at the top and bottom shall terminate into a post or be returned to a wall.
9. Maximum stair riser height shall be 7-3/4-inches, and the minimum tread depth shall be 10-inches. The greatest riser height or tread depth cannot exceed the smallest riser height or tread depth by more than 3/8-inch. A nosing not less than ¾ inch but not more than 1-1/4 inches shall be provided on stairways with solid risers.
10. Guards shall be designed for a 200lb concentrated load placed along the top rail in any direction, at any point.
11. The deck/porch floor shall be within 7 ½ inches of the top of the door threshold.
12. Design Loads
    i. Floor live load – 40 pounds per square foot minimum; Dead Load – 10 pounds per square foot minimum.
    ii. Windspeed – 115mph
    iii. Soil bearing pressure – 3000 pounds per square foot.
13. A deck that is intended to hold a hot tub or a spa shall be designed by an architect or structural engineer.
14. Post size is based on the height of the deck floor above finished grade at the highest point. See table.
15. Bridging shall be installed at the mid span of all joists.
16. The actual field construction of the deck shall match the approved plans. All field changes shall be submitted to the Lake County Building Department for review and approval prior to the next inspection scheduled. Stamped plans are required on site for all inspections.

YOUR SIGNATURE BELOW ATTESTS THAT THE INFORMATION PROVIDED IS ACCURATE AND CONSTRUCTION WILL COMPLY WITH THE ADOPTED CODES OF LAKE COUNTY.

_____ AGENT Printed name & Signature

Date

_____ OWNER Printed name & Signature

Date

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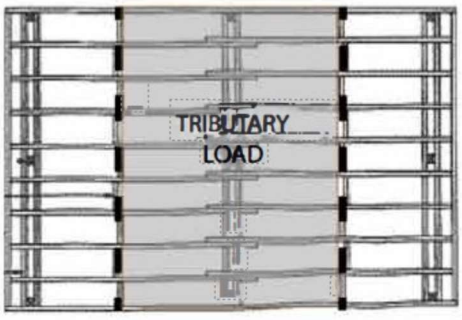
Framing Table for Single Span Decks

Live load = 40 PSF Dead load = 10 PSF

TABLE R507.5
DECK BEAM SPAN LENGTHS
(feet - inches)

SPECIES	SIZE	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	1 – 2x6	4-11	4-0	3-7	3-3	3-0	2-10	2-8
	1 – 2x8	5-11	5-1	4-7	4-2	2-10	3-7	3-5
	1 – 2x10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1 – 2x12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2 – 2x6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2 – 2x8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2 – 2x10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2 – 2x12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3 – 2x6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3 – 2x8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2x10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3 – 2x12	15-3	13-3	11-10	10-9	10-0	9-4	8-10
Douglas fir-larch, hem-fir, spruce-pine-fir, redwood, western cedars, ponderosa pine, red pine	3x6 or 2 – 2 x 6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3x8 or 2 – 2x8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3x10 or 2 – 2 x10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3x12 or 2 – 2x12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4x6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4x8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4x10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4x12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3 – 2x6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3 – 2x8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3 – 2x10	12-0	10-5	9-4	8-6	7-10	7-4	6-11

Single Span Deck



Multi-Span Deck

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TABLE R507.6
DECK JOIST SPANS FOR COMMON LUMBER SPECIES (ft. - in.)

SPECIES[a]	SIZE	ALLOWABLE JOIST SPAN[b] SPACING OF DECK JOISTS (inches)			MAXIMUM CANTILEVER[c, f] SPACING OF DECK JOISTS WITH CANTILEVERS[c] (inches)		
		12	16	24	12	16	24
Southern pine	2 × 6	9-11	9-0	7-7	1-3	1-4	1-6
	2 × 8	13-1	11-10	9-8	2-1	2-3	2-5
	2 × 10	16-2	14-0	11-5	3-4	3-6	2-10
	2 × 12	18-0	16-6	13-6	4-6	4-2	3-4
Douglas fir-larch[d], hem-fir[d] spruce-pine-fir[d],	2 × 6	9-6	8-8	7-2	1-2	1-3	1-5
	2 × 8	12-6	11-1	9-1	1-11	2-1	2-3
	2 × 10	15-8	13-7	11-1	3-1	3-5	2-9
	2 × 12	18-0	15-9	12-10	4-6	3-11	3-3
Redwood, western cedars, ponderosa pine[e], red pine[e]	2 × 6	8-10	8-0	7-0	1-0	1-1	1-2
	2 × 8	11-8	10-7	8-8	1-8	1-10	2-0
	2 × 10	14-11	13-0	10-7	2-8	2-10	2-8
	2 × 12	17-5	15-1	12-4	3-10	3-9	3-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. No. 2 grade with wet service factor.
b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360.
c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied to end.
d. Includes incising factor.
e. Northern species with no incising factor.
f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

Deck Post Height

DECK POST SIZE	MAXIMUM HEIGHT (feet-inches)
4x4	6-9
4x6	8
6x6	14
8x8	14

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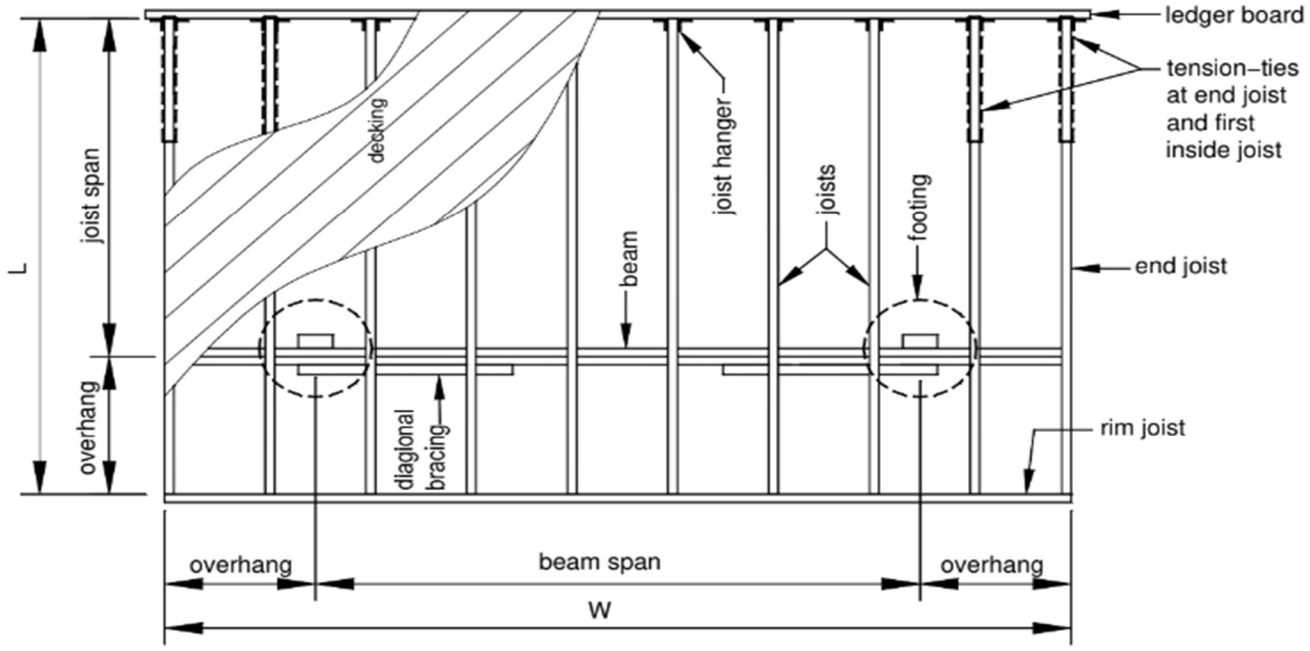
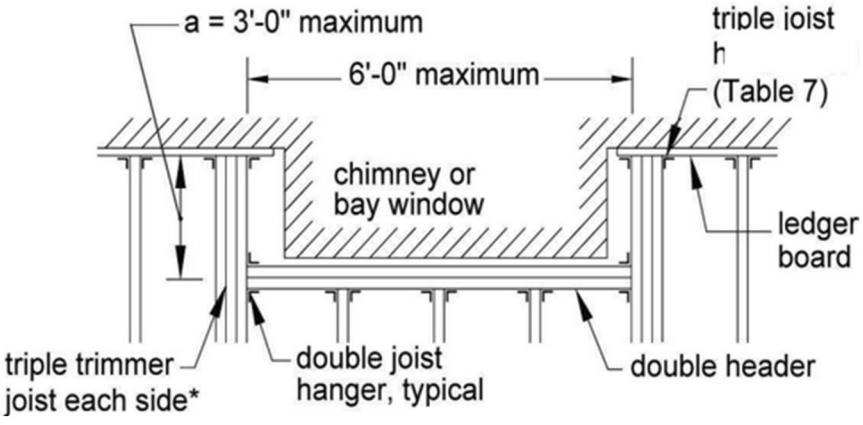
Beam to Post Connection Options

[3] Choose one beam to post connection option. [4] Choose one post size based on the height of the deck.

Typical Deck Framing Plan



Typical Framing Around a Chimney of Bay Window



The deck shall be positively anchored to the primary structure and designed for both vertical and lateral loads.

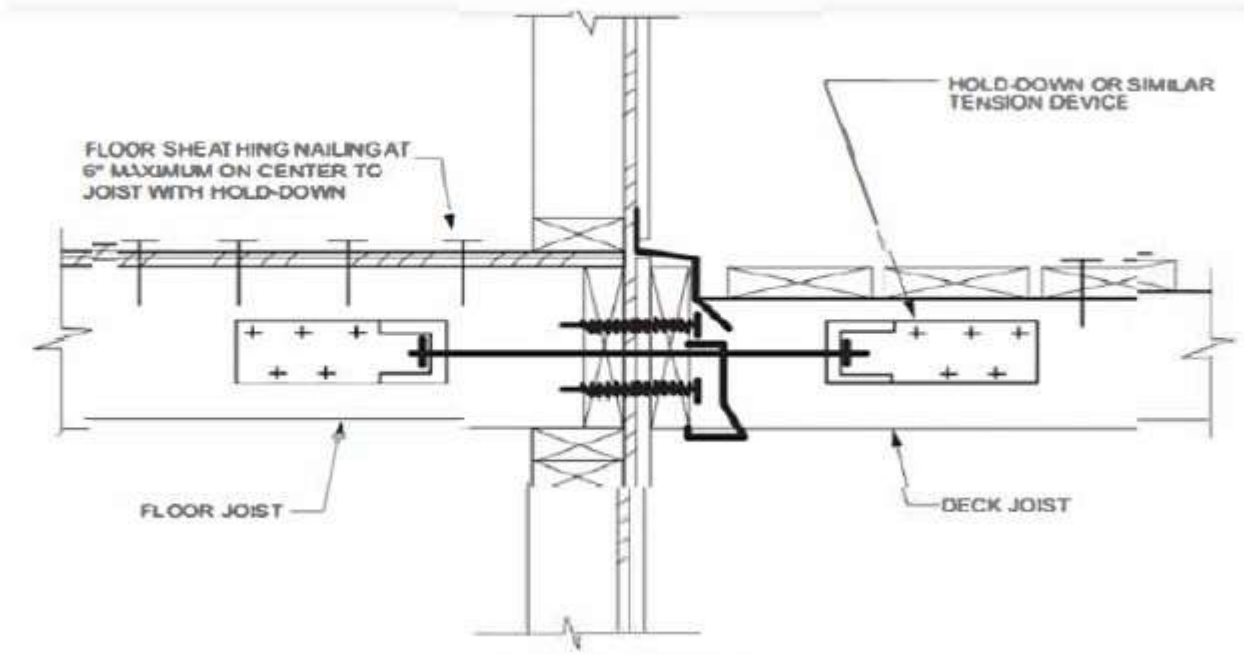


FIGURE R507.9.2(1)
DECK ATTACHMENT FOR LATERAL LOADS

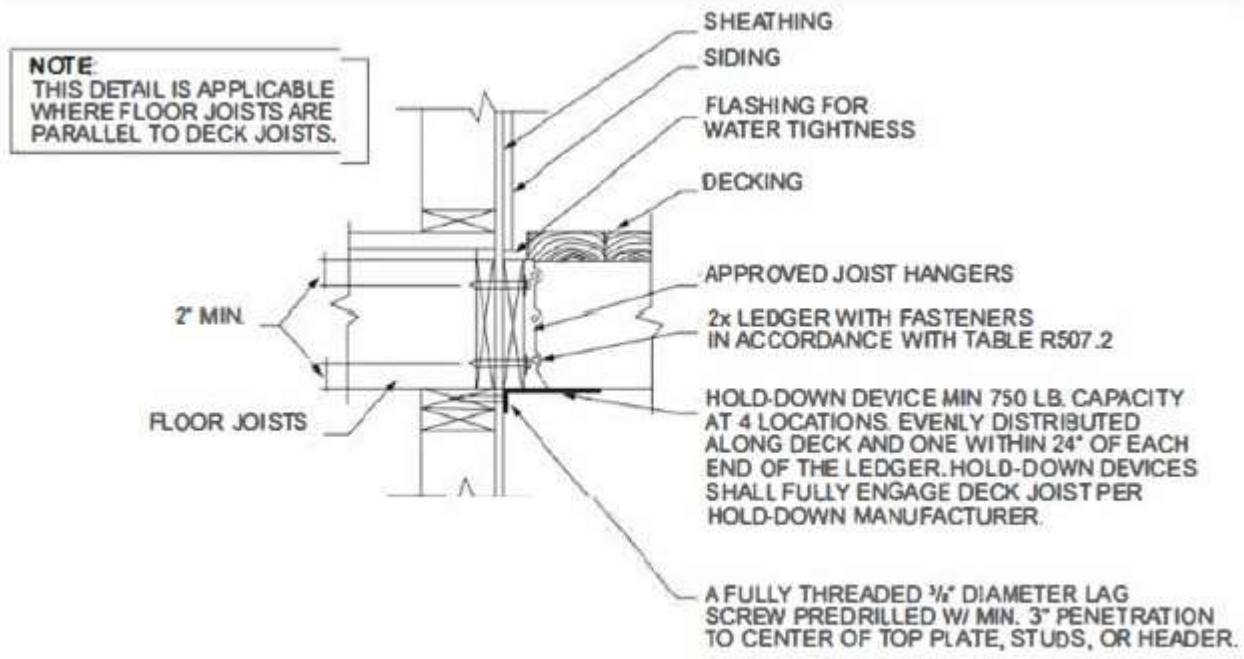


FIGURE R507.9.2(2)
DECK ATTACHMENT FOR LATERAL LOADS

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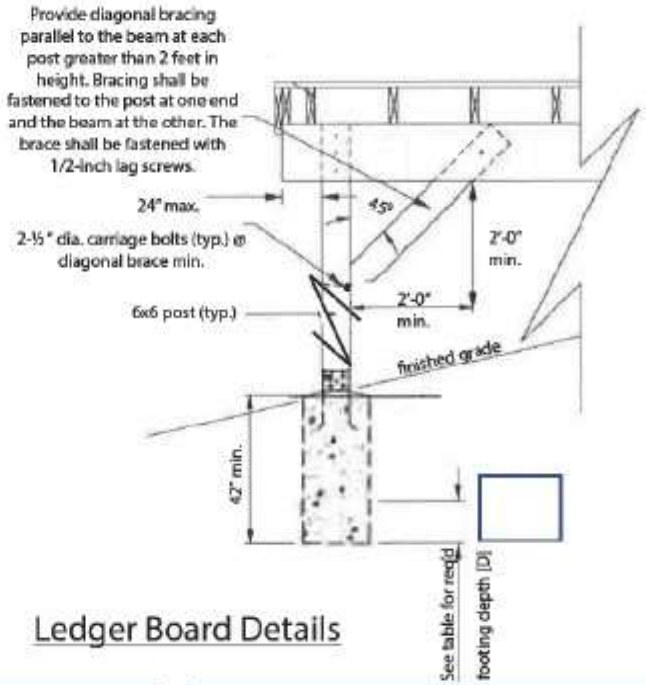
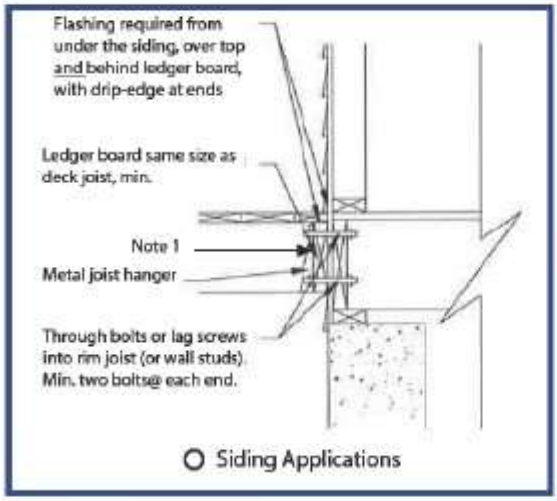
Decks shall be braced to provide lateral stability per IRC Section R301 and R507.1. Lateral stability shall be provided in accordance with the methods of AWC DCA 6 - 2015 Guide - Figure 10 - Post Requirements.

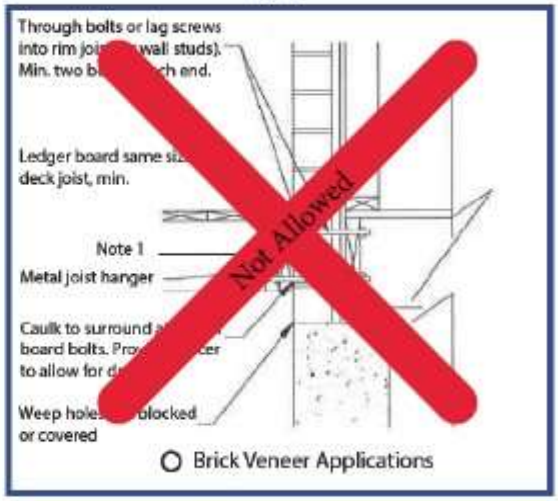
Post & Beam Detail

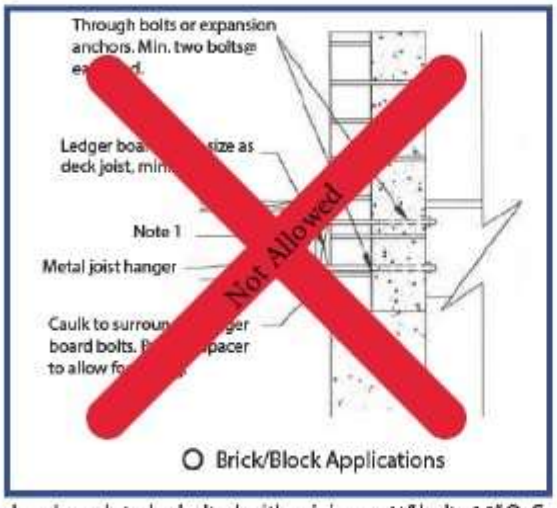
The actual field construction shall match the approved plans. All field changes and/or deviations require Building Dept. approval.

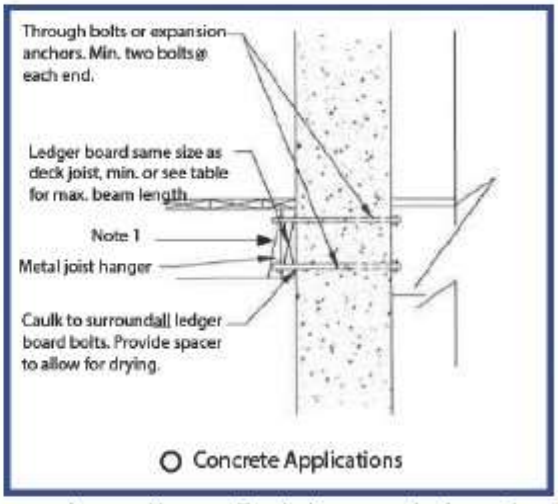


Ledger Board Details









Ledger boards to be bolted with minimum ½" bolts 16"O. C. staggered top and bottom. Two bolts are required at each end.
Note 1: Ledger boards that are parallel to the joists are not required to be bolted to the structure.

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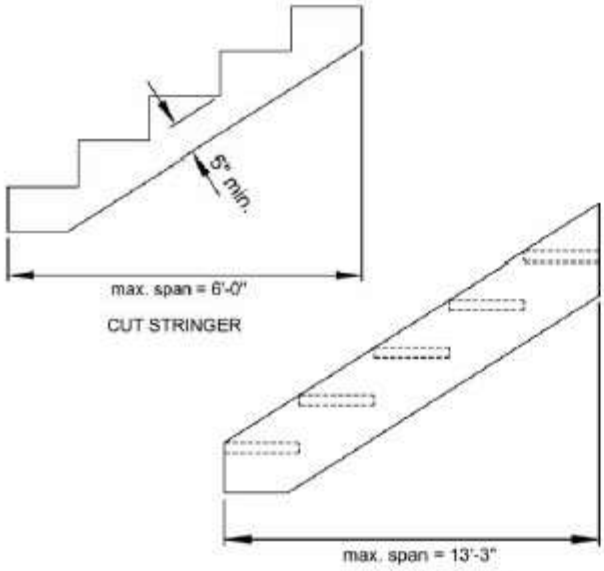
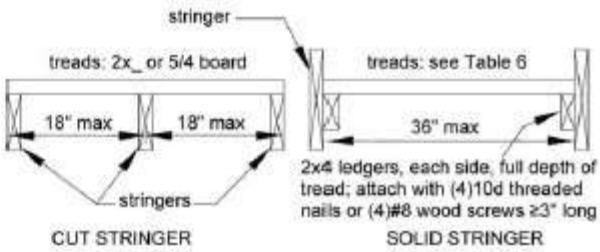
[redacted] Stair Stringer Requirements.

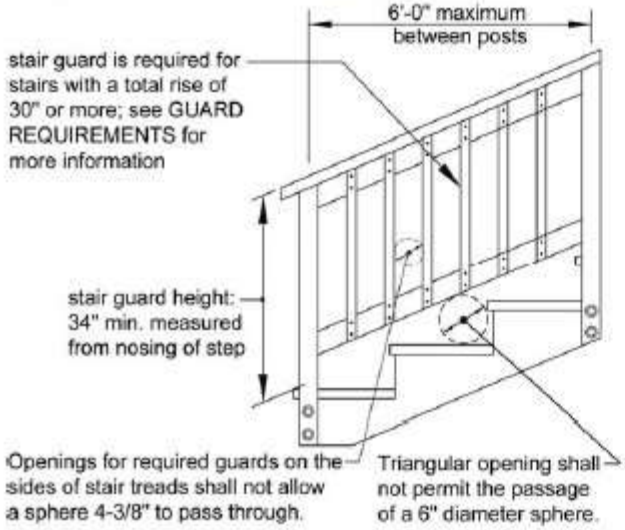


[redacted] Tread Connection Requirements.

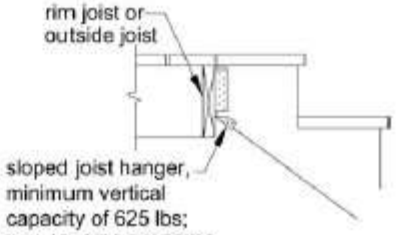
Attachment per tread at each stringer or ledger:
2x_ or 5/4 treads - (2)8d threaded nails or (2)#8 screws ≥2-1/2" long
3x_ treads - (2)16d threaded nails or (2)#8 screws ≥3-1/2" long



[redacted] Stair Guard Requirements.



[redacted] Stair Stringer Attachment Detail.



ATTACHMENT WITH HANGERS

Table 6. Minimum Tread Size for Cut and Solid Stringers.[1]

Species	Cut Stringer	Solid Stringer
Southern Pine	2x4 or 5/4	2x8
Douglas Fir Larch, Hem-Fir, SPF[2]	2x4 or 5/4	2x8 or 3x4
Redwood, Western Cedars, Ponderosa Pine,[3] Red Pine[3]	2x4 or 5/4	2x10 or 3x4

1. Assumes 300 lb concentrated load, L/288 deflection limit, No. 2 stress grade, and wet service conditions.
2. Incising assumed for Douglas Fir-Larch, Hem-Fir, and Spruce-Pine-Fir.
3. Design values based on northern species with no incising assumed.

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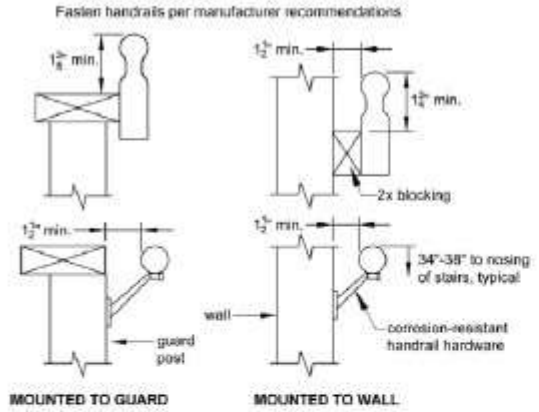
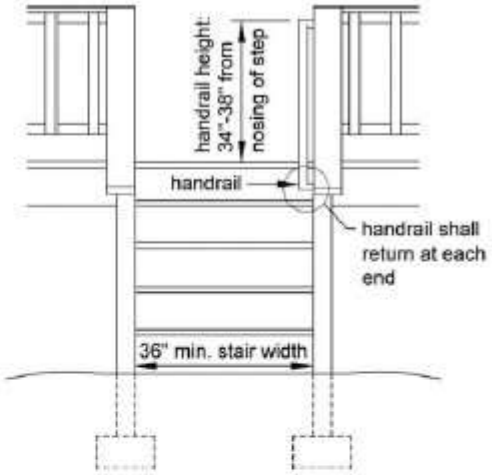
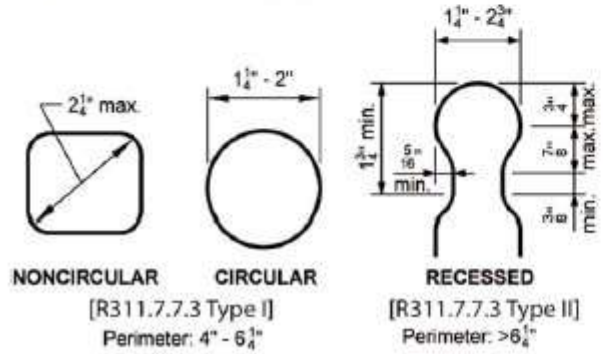
[redacted] Handrail Mounting Examples.



[redacted] Miscellaneous Stair Requirements.



[redacted]. Handrail Grip Size.



[redacted]. Stair Footing Detail.