



Village of Westchester

10300 West Roosevelt Road, Westchester, IL 60154
Phone: (708) 345-0199 • Email: Building@westchester-il.gov

Code Requirements for Deck Permits

Permit Procedure: A permit application must be submitted with the cost shown. If a contractor will be doing the construction that person must be licensed and bonded with the Village of Westchester and show proof of insurance. If the homeowner is doing the building they must sign a sworn statement that they are the only ones who will be doing work on the premises.

Application Requirements: The following must accompany each application for a building permit:

- Application Form:** Fill out a copy of the application form & written consent from property owner to complete work.
- Current Plat of Survey:** One copy of the current plat of survey. Plat must be submitted for all deck permits.
- Proposed Site Plan:** Three copies of proposed site plan showing location of the proposed deck and all size & setback dimensions.
- Deck Framing Plan:** Provide a deck framing plan. Plan shall include:
 - a. Indicate the size, spacing, direction of the joists,
 - b. Lumber species type.
 - c. Indicate hardware, nails, bolts, hangars, etc. to be used.
- Homeowners Association: If located in a subdivision governed by a homeowners association, approval from the association for the proposed plan.
- Contractor Information:**
 - a. If the owner will be applying for the permit & doing the work, "owner/self" should be written on the "Contractor" line.
 - b. If a contractor is doing the work, Contractor's Bond, Insurance and Licensing form and documents
- Call JULIE (Joint Utility Locating Information for Excavators) at 1-800-892-0123 allowing 48 hours to locate utilities.**

INSPECTIONS: You must contact the Building Department (708-345-0199) and schedule the necessary inspections. While this is an extensive list of inspections, there may be additional required inspections not listed.

- **Post Hole:** When holes are dug for deck post and PRIOR to pouring concrete and installing posts. *(Please note, decks may not be supported by existing slabs)*
- **Framing or Structural:** Newels and stair rough framing in place, no finished decking or rails.
- **Final Inspection:** A final inspection is required (all work is complete).

Zoning Requirements: In residential districts the following regulations shall govern garages and carports:

1. Decks may be roofed, however they may not be enclosed or heated.
2. **Setbacks for Decks:**
 - a. **Front Yard:** No deck shall be located in the front yard.
 - c. **Side Yard Setback:** Ten percent of the lot width;
 - d. **Corner Side Yard Setback:** Twenty-five feet, minimum.
 - e. **Rear Yard Setback:** Decks may extend ten feet into the minimum required rear yard;
3. The area of any deck, detached garage, carports and any other accessory structures shall be added to the building area of the principal structure for purposes of determining the maximum lot coverage.

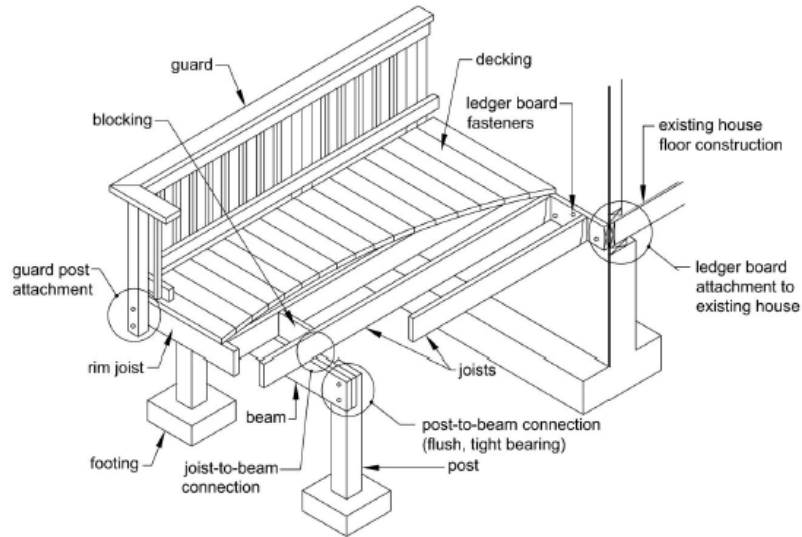
4. **Building Coverage:** The maximum coverage of a lot by a principal building, accessory building(s) and accessory structure(s), shall not exceed forty percent (40%) of the total lot area.
5. **Impervious Surface Coverage:**
 - a. The maximum coverage of a lot by a principal building, accessory building(s) and accessory structure(s) INCLUDING paved areas such as driveways, patios and sidewalks, shall not exceed fifty percent (50%) of the total lot area. All areas not covered by impervious materials shall be improved with landscaping consisting of grass and other living material.

Construction Requirements:

1. **Please note:** If this deck is to replace a patio outside the back door or concrete stoop, the Village’s local building code requires all exterior stairs, platforms, porches or patios leading to doors that are required means of access shall be concrete or approved metal. No wooden stairs, porch, platform or deck on the exterior side of a door that is a required means of access shall be permitted.
Exception: If a third stair is provided on the rear of the structure it is allowed to be constructed using wood.
2. **Materials:** All structural members in a deck, joists, beams, posts, etc. must be of pressure treated wood. Other areas of the deck may be of wood that is naturally resistant to decay and fungus, such as cedar or redwoods. **All hardware, nails, bolts, hangars, etc. must be galvanized.**
3. **Piers:** Pier depth is 48" (freeze line) minimum below grade and 6" minimum from grade to top of pier. Minimum pier diameter is 10". Pour concrete on compacted clay or gravel fill.
4. **Stairs:** A minimum tread is 10" and maximum riser is 7 ¾" stairs are to be a minimum of 3' wide. Bottom of stair riser must be supported on concrete piers that extend a minimum 48" below grade.
5. **Flashing & Woodsiding:** When ledges are bolted on ceiling or when arching is removed, flashing is required. Aluminum siding must allow for secure attachments of ledger or be removed, flashed and sealed.

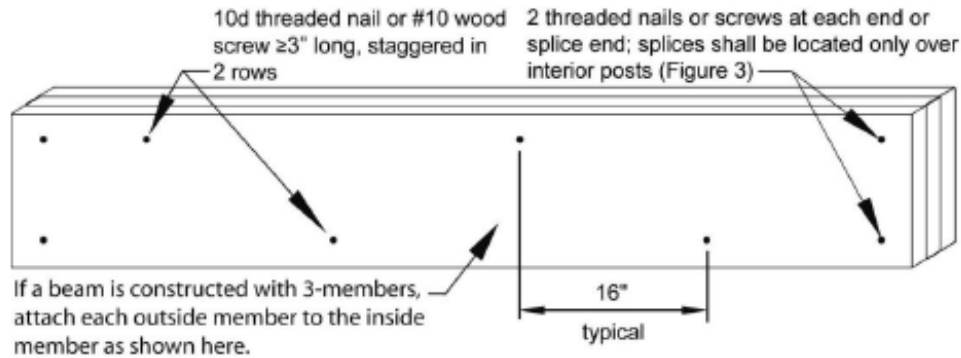
Prescriptive Residential Wood Deck Construction Guide

Based on the 2012 International Residential Code



Where applicable, provisions and details contained in this document are based on the *International Residential Code (IRC)* [bracketed text references applicable sections of the *IRC*]. Prescriptive construction methods recommended meet or exceed minimum requirements of the *IRC*. Provisions that are not found in the *IRC* are recommended as good industry practice. Where differences exist between provisions of this document and the *IRC*, provisions of the *IRC* shall apply. This document is not intended to preclude the use of other construction methods or materials. All construction and materials must be approved by the authority having jurisdiction. Every effort has been made to reflect the language and intent of the *IRC*. However, no assurance can be given that designs and construction made in accordance with this document meet the requirements of any particular jurisdiction.

Figure 4. Beam Assembly Details.



DECK FRAMING PLAN

A framing plan shows the width, length, joist and beam layout; the location of the ledger board, posts, and footings; and the type, size, and spacing of the ledger board fasteners.

The overall deck length shall be equal to or less than the overall deck width. Stairs and stair landings shall not be included in determining the overall deck length or width. See Figure 5 for an example of a typical deck framing plan.

Figure 5. Typical Deck Framing Plan.

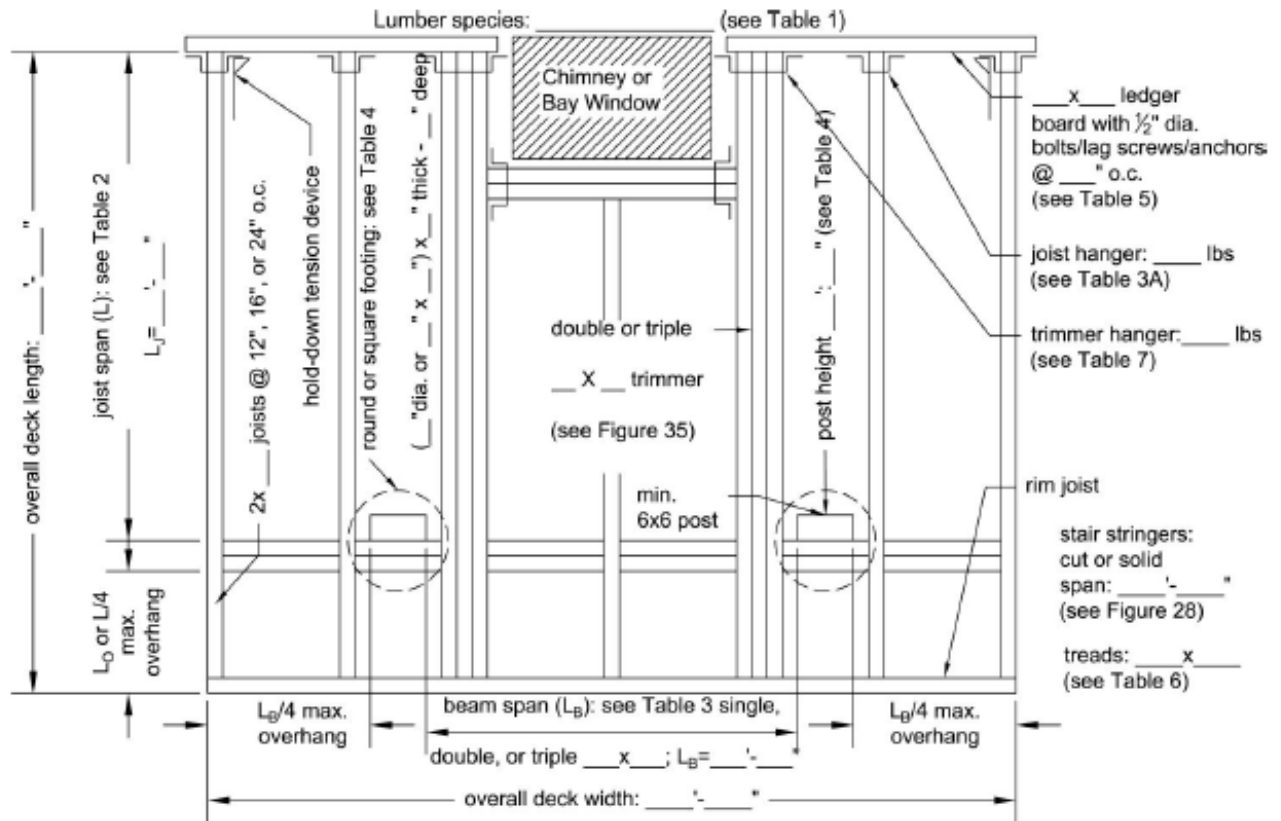


Figure 1B. Joist Span – Joists Attached at House and to Side of Beam.

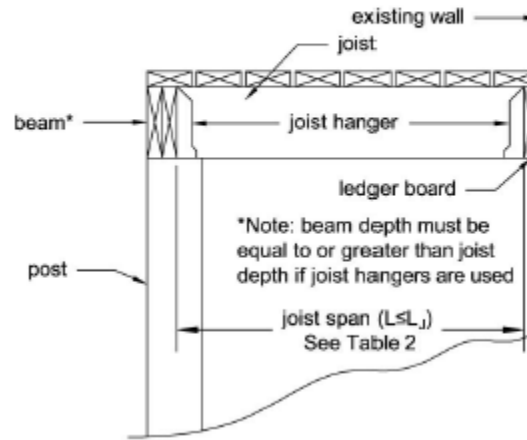
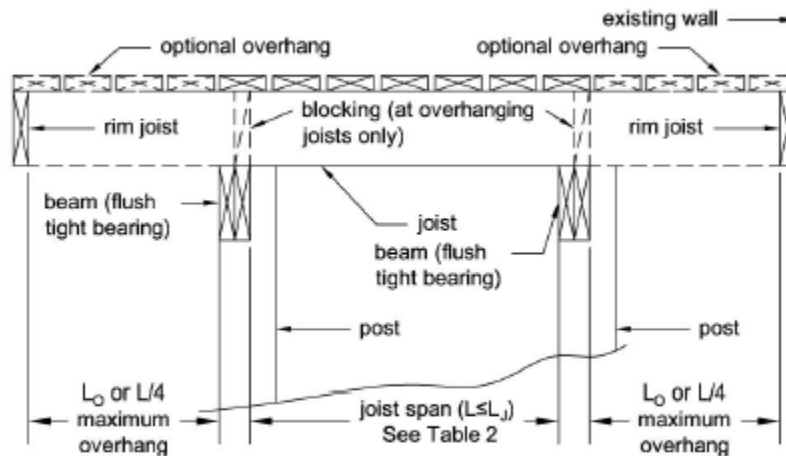


Figure 2. Joist Span – Non-Ledger Deck.



BEAM SIZE & ASSEMBLY REQUIREMENTS

Deck beam spans shall be in accordance with Table 3 and can extend past the post face up to $L_B/4$ as shown in Figure 3. Joists may bear on the beam and extend past the beam face up to the lesser of L_0 or $L/4$ as shown in Figures 1A and 2, or the joists may attach to the side of the beam with joist hangers as shown in Figure 1B.

Joists shall not frame in from opposite sides of the same beam. See JOIST-TO-BEAM CONNECTION details, Figure 6.

Where multiple 2x members are used, the deck's beam is assembled by attaching the members identified in Table 3A in accordance with Figure 4 [Table R602.3(1)].

Table 3A. Dimension Lumber Deck Beam Spans (L_B)¹ for Joists Framing from One Side Only.

Species	Size ⁴	Joist Spans (L) Less Than or Equal to:						
		6'	8'	10'	12'	14'	16'	18'
Southern Pine	2-2x6	6' - 8"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	4' - 0"	3' - 9"
	2-2x8	8' - 6"	7' - 4"	6' - 6"	5' - 11"	5' - 6"	5' - 1"	4' - 9"
	2-2x10	10' - 1"	8' - 9"	7' - 9"	7' - 1"	6' - 6"	6' - 1"	5' - 9"
	2-2x12	11' - 11"	10' - 4"	9' - 2"	8' - 4"	7' - 9"	7' - 3"	6' - 9"
	3-2x6	7' - 11"	7' - 2"	6' - 5"	5' - 10"	5' - 5"	5' - 0"	4' - 9"
	3-2x8	10' - 7"	9' - 3"	8' - 3"	7' - 6"	6' - 11"	6' - 5"	6' - 1"
	3-2x10	12' - 9"	11' - 0"	9' - 9"	8' - 9"	8' - 3"	7' - 8"	7' - 3"
	3-2x12	15' - 0"	13' - 0"	11' - 7"	10' - 6"	9' - 9"	9' - 1"	8' - 7"
Douglas Fir-Larch ² , Hem-Fir ² , Spruce-Pine-Fir ² , Redwood, Western Cedars, Ponderosa Pine ³ , Red Pine ³	3x6 or 2-2x6	5' - 2"	4' - 5"	3' - 11"	3' - 7"	3' - 3"	2' - 10"	2' - 6"
	3x8 or 2-2x8	6' - 7"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	3' - 10"	3' - 5"
	3x10 or 2-2x10	8' - 1"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 10"	4' - 5"
	3x12 or 2-2x12	9' - 5"	8' - 2"	7' - 3"	6' - 7"	6' - 1"	5' - 8"	5' - 4"
	4x6	6' - 2"	5' - 3"	4' - 8"	4' - 3"	3' - 11"	3' - 8"	3' - 5"
	4x8	8' - 2"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 11"	4' - 7"
	4x10	9' - 8"	8' - 4"	7' - 5"	6' - 9"	6' - 3"	5' - 10"	5' - 5"
	4x12	11' - 2"	9' - 8"	8' - 7"	7' - 10"	7' - 3"	6' - 9"	6' - 4"
	3-2x6	7' - 1"	6' - 5"	5' - 9"	5' - 3"	4' - 10"	4' - 6"	4' - 3"
	3-2x8	9' - 5"	8' - 3"	7' - 4"	6' - 8"	6' - 2"	5' - 9"	5' - 5"
	3-2x10	11' - 9"	10' - 2"	9' - 1"	8' - 3"	7' - 7"	7' - 1"	6' - 8"
	3-2x12	13' - 8"	11' - 10"	10' - 6"	9' - 7"	8' - 10"	8' - 3"	7' - 10"

1. Assumes 40 psf live load, 10 psf dead load, L/360 simple span beam deflection limit, cantilever length/180 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.

4. Beam depth must be equal to or greater than joist depth if joist hangers are used (see Figure 6, Option 3).

Table 3B. Glued Laminated Timber Beam Spans (L_B)¹ for Joists Framing from One Side Only.

Stress Class ²	Width ³	Depth ⁴	Joist Spans (L) Less Than or Equal to:						
			6'	8'	10'	12'	14'	16'	18'
Balanced or Unbalanced 20F-1.5E And Higher Grade Cedar	3-1/2"	9-1/2"	12'-2"	10'-6"	9'-4"	8'-6"	7'-10"	7'-4"	6'-11"
		11-7/8"	15'-2"	13'-1"	11'-8"	10'-8"	9'-10"	9'-2"	8'-8"
		14"	17'-10"	15'-5"	13'-9"	12'-7"	11'-7"	10'-10"	10'-2"
	5-1/4"	11-7/8"	18'-0" ⁵	16'-8"	14'-10"	13'-7"	12'-6"	11'-8"	11'-0"
		14"	18'-0" ⁵	18'-0" ⁵	17'-6"	15'-11"	14'-9"	13'-9"	13'-0"
		16"	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	16'-10"	15'-9"	14'-10"
Unbalanced 24F-1.8E Douglas Fir-Larch or Southern Pine	3-1/2"	9-1/2"	13'-11"	12'-1"	10'-9"	9'-10"	9'-1"	8'-6"	8'-0"
		11-7/8"	17'-5"	15'-1"	13'-5"	12'-3"	11'-4"	10'-7"	10'-0"
		14"	18'-0" ⁵	17'-9"	15'-10"	14'-5"	13'-4"	12'-6"	11'-9"
	5-1/4"	11-7/8"	18'-0" ⁵	18'-0" ⁵	17'-1"	15'-7"	14'-5"	13'-6"	12'-8"
		14"	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	17'-0"	15'-10"	14'-11"
		16"	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	17'-0"
Balanced 24F-1.8E Douglas Fir-Larch or Southern Pine	3-1/2"	9-1/2"	13'-11"	12'-7"	11'-8"	11'-0"	10'-5"	9'-11"	9'-7"
		11-7/8"	17'-5"	15'-10"	14'-8"	13'-9"	13'-1"	12'-6"	12'-0"
		14"	18'-0" ⁵	18'-0" ⁵	17'-4"	16'-3"	15'-5"	14'-9"	14'-2"
	5-1/4"	11-7/8"	18'-0" ⁵	18'-0" ⁵	17'-4"	16'-3"	15'-5"	14'-9"	14'-2"
		14"	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	17'-6"	16'-9"
		16"	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵	18'-0" ⁵

1. Assumes 40 psf live load, 10 psf dead load, L/360 simple span beam deflection limit, cantilever length/180 deflection limit. Glued laminated timber shall be naturally durable or preservative treated with an oil-borne treatment in accordance with AWPA U1. See MINIMUM REQUIREMENTS & LIMITATIONS.
2. Preservative treated structural composite lumber of equal or greater capacity can be substituted.
3. Beam widths of 3-1/8" or wider can be used for the tabulated 3-1/2" width, and beam widths of 5-1/8" or wider can be used for the tabulated 5-1/4" width.
4. Beam depth must be equal to or greater than joist depth if joist hangers are used (see Figure 6, Option 3).
5. Beam span prescriptively limited to 18'-0" for footing design.

Figure 3. Beam Span.

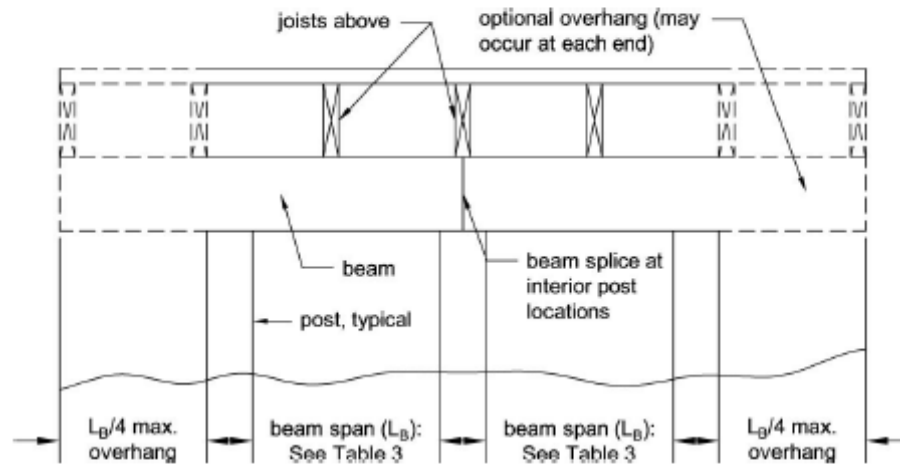
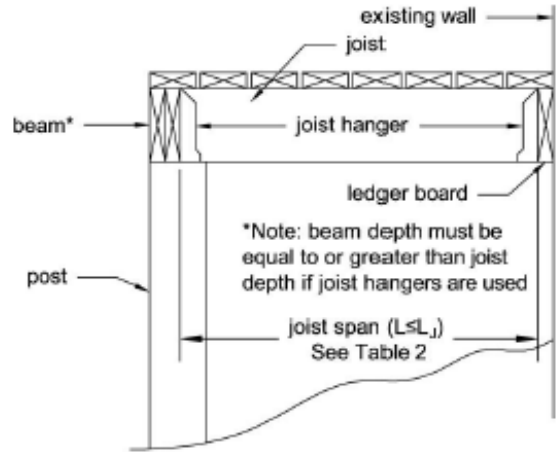


Figure 1B. Joist Span – Joists Attached at House and to Side of Beam.

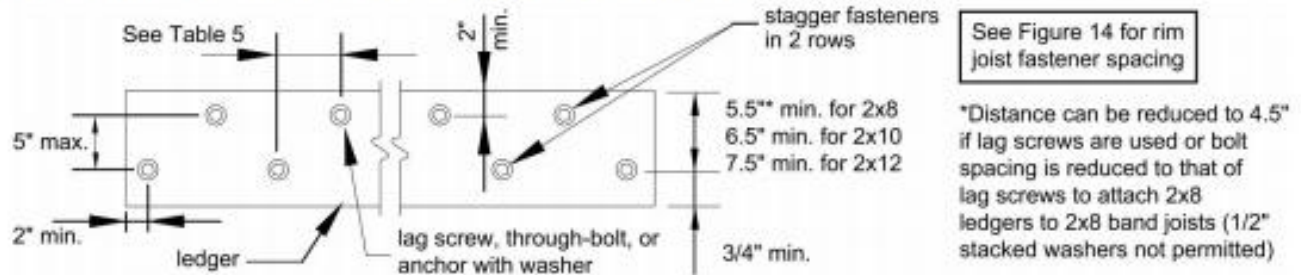


Placement of lag screws or bolts in deck ledgers

The lag screws or bolts shall be placed as shown in Figure 19. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of

the deck ledger (see Figure 19). Proper installation of lag screws or bolts shall be verified by the authority having jurisdiction.

Figure 19. Ledger Board Fastener Spacing and Clearances.

**Through-Bolts**

Through-bolts shall have a diameter of $\frac{1}{2}$ ". Pilot holes for through-bolts shall be $\frac{17}{32}$ " to $\frac{9}{16}$ " in diameter. Through-bolts require washers at the bolt head and nut.

Expansion and Adhesive Anchors

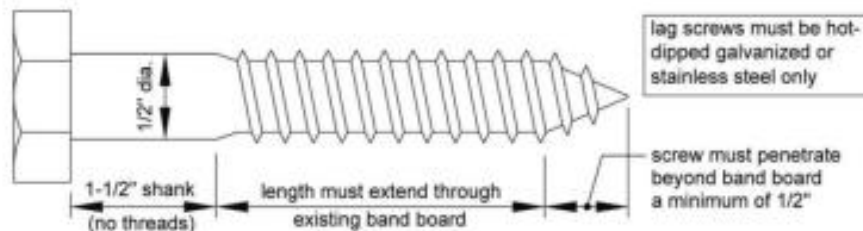
Use *approved* expansion or adhesive anchors when attaching a ledger board to a concrete or solid masonry wall as shown in Figure 15. Expansion and adhesive anchor bolts shall have a diameter of $\frac{1}{2}$ ". Minimum spacing and embedment length shall be per the

manufacturer's recommendations. All anchors must have washers.

Lag Screws

Lag screws shall have a diameter of $\frac{1}{2}$ " (see MINIMUM REQUIREMENTS). Lag screws may be used only when the field conditions conform to those shown in Figure 14. See Figure 20 for lag screw length and shank requirements. All lag screws shall be installed with washers.

Figure 20. Lag Screw Requirements.



Lag screw installation requirements: Each lag screw shall have pilot holes drilled as follows: 1) Drill a $\frac{1}{2}$ " diameter hole in the ledger board, 2) Drill a $\frac{5}{16}$ " diameter hole into the band board of the house. **DO NOT DRILL A $\frac{1}{2}$ " DIAMETER HOLE INTO THE BAND BOARD.**

The threaded portion of the lag screw shall be inserted into the pilot hole by turning. **DO NOT DRIVE LAG SCREWS WITH A HAMMER.** Use soap or a wood-compatible lubricant as required to facilitate tightening. Each lag screw shall be thoroughly tightened (snug but not over-tightened to avoid wood damage).

Figure 1B. Joist Span – Joists Attached at House and to Side of Beam.

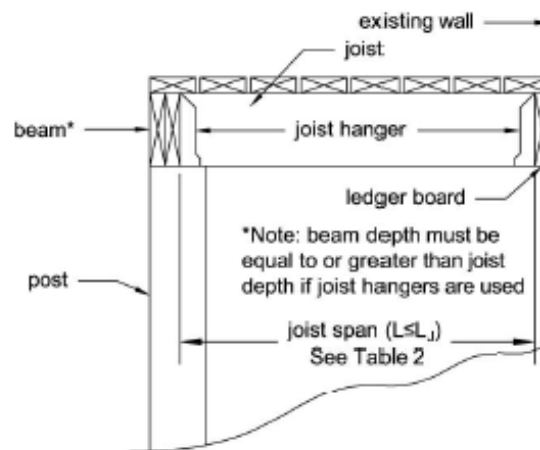
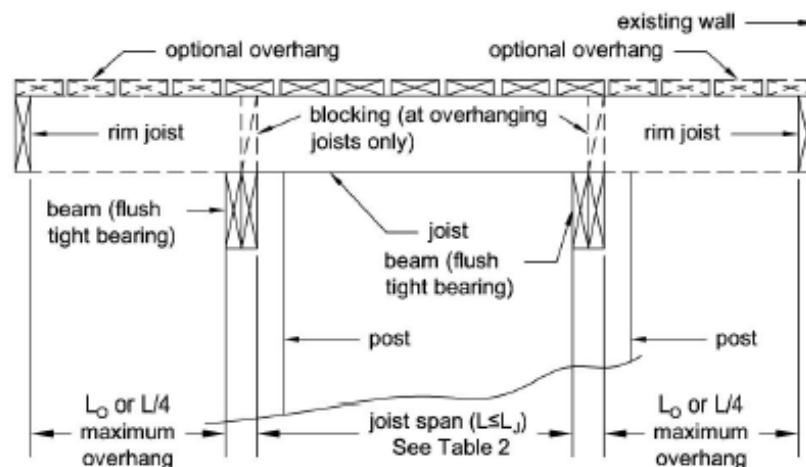


Figure 2. Joist Span – Non-Ledger Deck.



BEAM SIZE & ASSEMBLY REQUIREMENTS

Deck beam spans shall be in accordance with Table 3 and can extend past the post face up to $L_B/4$ as shown in Figure 3. Joists may bear on the beam and extend past the beam face up to the lesser of L_0 or $L/4$ as shown in Figures 1A and 2, or the joists may attach to the side of the beam with joist hangers as shown in Figure 1B.

Joists shall not frame in from opposite sides of the same beam. See JOIST-TO-BEAM CONNECTION details, Figure 6.

Where multiple 2x members are used, the deck's beam is assembled by attaching the members identified in Table 3A in accordance with Figure 4 [Table R602.3(1)].

Figure 28. Stair Stringer Requirements.

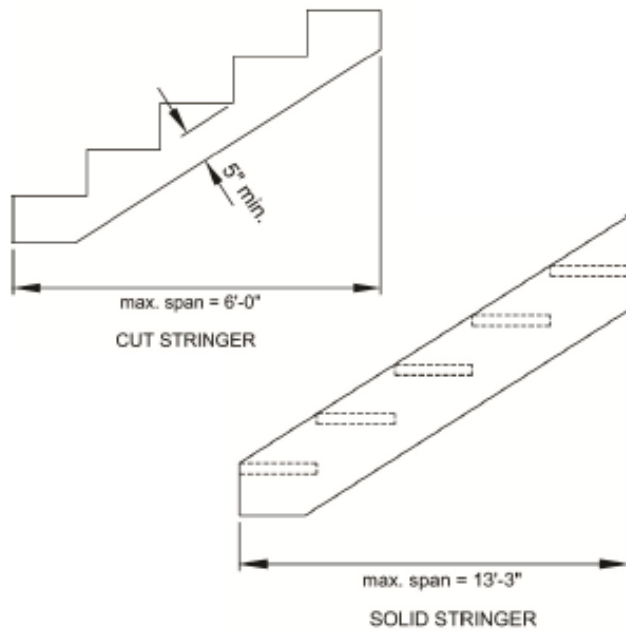


Figure 29. Tread Connection Requirements.

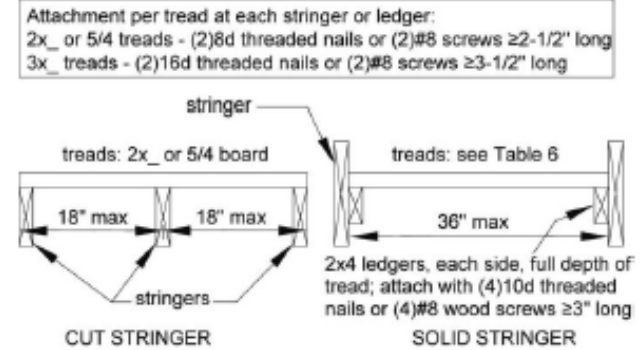


Figure 30. Stair Guard Requirements.

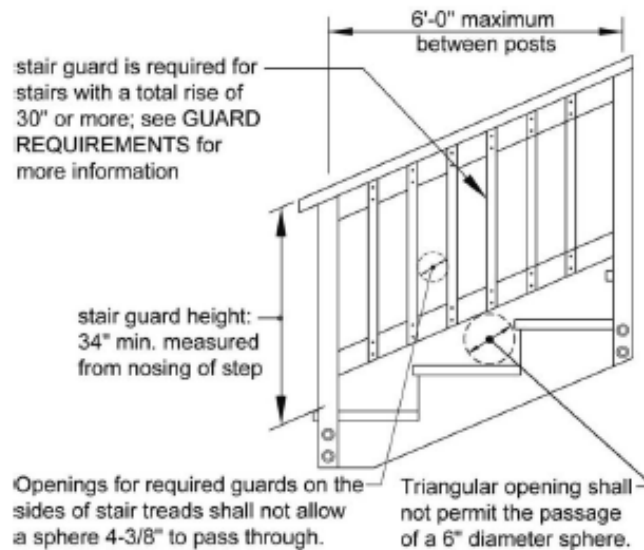


Figure 31. Stair Stringer Attachment Detail.

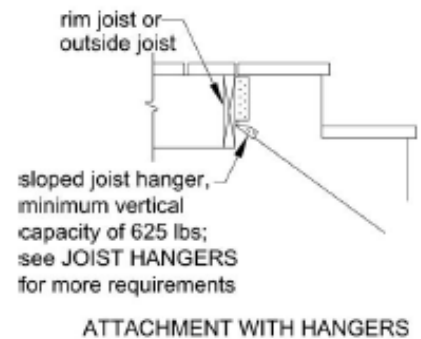


Table 6. Minimum Tread Size for Cut and Solid Stringers.¹

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.

STAIR HANDRAIL REQUIREMENTS

All stairs with 4 or more risers shall have a handrail on at least one side (see Figure 32A) [R311.7.8]. The handrail height measured vertically from the sloped plane adjoining the tread nosing shall be not less than 34 inches and not more than 38 inches (see Figure 30) [R311.7.8.1]. Handrails shall be graspable and shall be composed of decay-resistant and/or corrosion resistant material. Handrails shall be Type I, Type II, or provide equivalent graspability (see Figure 32B). Type I shall have a perimeter dimension of at least 4" and not greater than 6-1/4". Type II rails with a perimeter greater than 6-1/4" shall provide a graspable finger recess area on both sides of the profile [R311.7.8.3]. All shapes shall have a smooth surface with no sharp corners. Handrails shall run continuously from a point directly over the lowest riser to a point directly over the highest riser and shall return to the guard at each end (see Figure 33). Handrails may be interrupted by guard posts at a turn in the stair [R311.7.8.2].

STAIR FOOTING REQUIREMENTS [R403]

Where the stairway meets grade, attach the stringers to the stair guard posts as shown in Figure 34. Posts shall bear on footings. All footings shall bear on solid ground and shall be placed at least 12 inches below the undisturbed ground surface or below the frost line, whichever is deeper (see Figure 34). Stringers shall bear on a 2x4 bearing block attached to the post as shown. Stringers shall not bear on new or existing concrete pads or patios that are not founded below this depth. When guards are not required (see **GUARD REQUIREMENTS**), posts may terminate below the bottom tread elevation. Bolts are only required if a guard post is required.

Figure 32A. Handrail Mounting Examples.

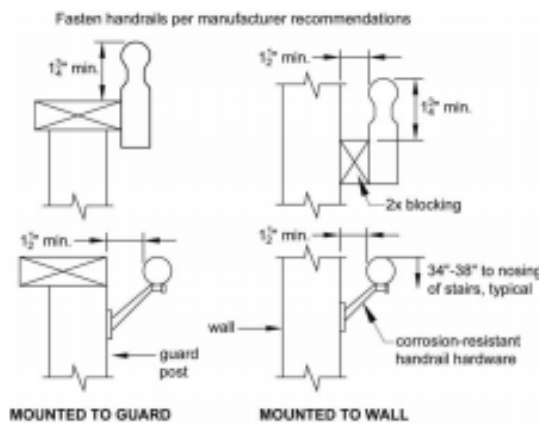


Figure 33. Miscellaneous Stair Requirements.

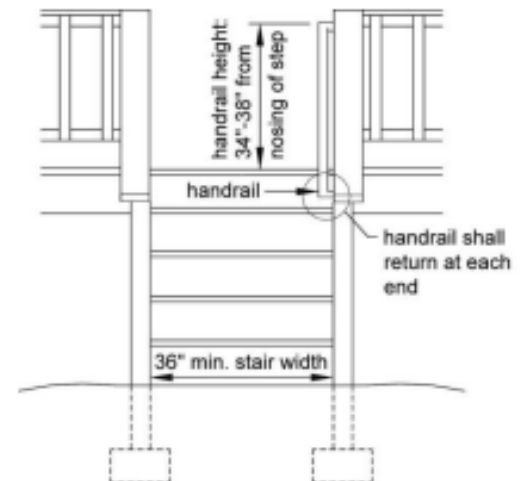


Figure 32B. Handrail Grip Size.

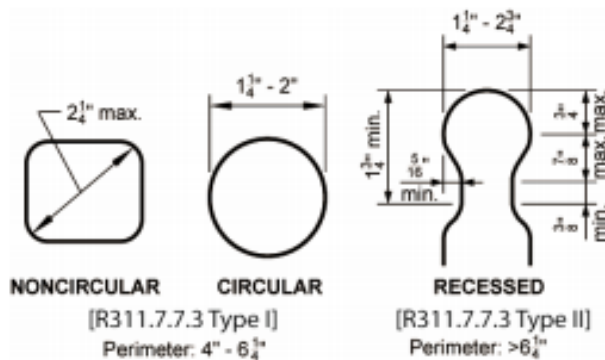
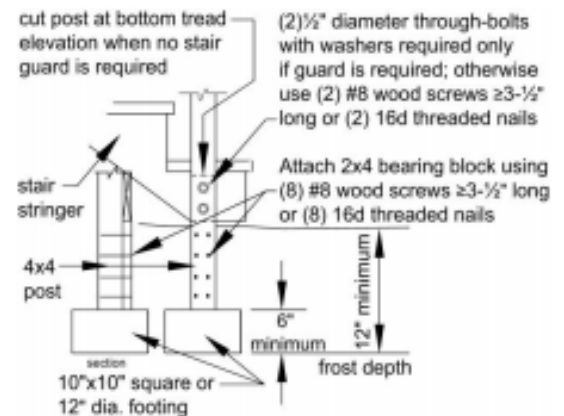


Figure 34. Stair Footing Detail.



FRAMING AT CHIMNEY OR BAY WINDOW

All members at a chimney or bay window shall be framed in accordance with Figure 35. Headers may span a maximum of 6'-0". When a chimney or bay window is wider than 6'-0", one or more 6x6 posts may be added to reduce header spans to less than 6'-0". In such cases, the post footing must meet the requirements in the FOOTINGS section. Headers shall be located no more than 3'-0" from the end of the trimmer joist.

Triple trimmer joists are required on each side of the header if joist spacing is 12" or 16" o.c. or if the trimmer joist span exceeds 8'-6"; otherwise, double trimmer joists are permitted. Trimmer joists may bear on the beam and extend past the beam centerline up to the lesser of L_0 or $L/4$ as shown in Figures 1A and 2, or the trimmer joist may attach to the side of the beam with joist hangers as

shown in Figure 1B. Joist hangers shall each have a minimum vertical capacity in accordance with Table 7. Bolts, screws, or lag screws used to attach the hanger to the ledger shall fully extend through the ledger into the 2-inch nominal lumber band joist (1-1/2" actual) or EWP rim joist. Otherwise a non-ledger deck is required.

Table 7. Trimmer Joist Hanger Vertical Capacity.

Joist Size	Minimum Capacity, lbs
2x6	870
2x8	1155
2x10	1420
2x	

Figure 35. Detail for Framing Around a Chimney or Bay Window.

