



Village of Villa Park
Permitting Division
11 W. Home Avenue Villa Park, IL. 60181
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Email: permits@invillapark.com

DECKS, PORCHES, STAIRS & PATIOS

PERMIT APPLICATION

The Village of Villa Park requires a permit prior to beginning any construction.

To obtain a permit, the following is required:

- Completed Permit Application
- Plan Review Fee
- One (1) copy of the Current Plat of Survey showing the proposed location of the work to be performed with the minimum 5 ft setback shown.
- Submit two (2) copies of drawings with information about construction and installation, including foundation detail, sizes and location of all framing members, type of lumber, detail of attachments to the house (if applicable), details of stairs and rails when required.
- If a roof is being installed, please provide size, location and material type
- 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 or 811 allowing 48 hours to locate utilities.

INSPECTIONS REQUIRED

Pre-pour inspection for pier footing or slabs is required prior to concrete being poured.

Framing is to be inspected prior to installation of decking, concrete or paver materials.

Final Inspection when work is completed.

*It is the responsibility of the homeowner/contractor to schedule all required inspections with the building division. Required inspections are indicated on your building permit. When calling to schedule an inspection, please have the address & permit number. Inspections shall be scheduled a minimum of 24 hours in advance.

ZONING CODE REQUIREMENTS

Patios & Decks must meet minimum side yard setback requirements and in no instance be less than five (5) feet from the side and rear property lines.

Decks may project no more than 25% of the required rear yard depth.

Maximum lot coverage of the area of all structures shall not exceed 30% of the lot area.

The total of all impervious surfaces, including driveways, shall not exceed fifty (50)% of the lot area of the premises. If the lot is less than 7,500 sf, the total of all impervious surfaces, including driveways, shall not exceed 56% of the lot coverage on the premises.

BUILDING CODE REQUIREMENTS

Frost Footings: Shall be a minimum of 12" wide and 42" below grade, 2" above exposed earth (attached), 12" wide x 12" below grade (floating) with bracing.

Patios: (1) for concrete patios, a minimum of four (4) inch base of crushed stone or gravel with 4 inches of concrete is required.

(2) For paver patios, they shall be installed per the manufacturer's installation instructions.

Guardrails: All decks that are 24" or more above grade must be protected by a guardrail. Such rail shall be 36" minimum in height. The balusters shall be spaced no greater than 4" apart and 6" at riser/tread to the bottom of guardrail/handrail.

Overhanging Decks: Joists should not overhang beams by more than code requirements or by special design.

Live Load: All decks shall be designed to support a live load of 40 pounds per square foot.

Flashing: All connections between deck and dwelling shall be weatherproof. Any cuts in exterior finish shall be flashed or caulked.

Joist Hangers: Header joists more than six feet long and tail joists over 12 feet long shall be supported by approved framing anchors such as joist hangers. Stairs shall also be supported by joist hangers.

Wood Required: All exposed wood used in the construction of decks is required to be of approved wood of natural resistance to decay (redwood, cedar etc.) or approved treated wood. This includes posts, beams, joists and decking.

Special Design Note: Some deck designs may not be appropriate should the placement of a screen porch or 3-season porch on the deck platform be a future consideration.

Mechanical/Utility: All mechanical devices (AC units and disconnects) utility meters (gas and electric) shall have clear working clearances (36" outward, 30" wide and 6' 6' height.)

ELECTRICAL STATEMENT:

The electrical installations and clearances of electrical service drops (overhead) and laterals (underground) related to these structures shall comply with all applicable articles in the 2014 NEC and all local amendments. Minimum distance above deck shall be 11'.

CONSTRUCTION DRAWING REQUIRMENTS

Size and depth of concrete piers and location

Size, length and spacing of all floor joists and type of flooring material.

Size, length, and spacing of any beams and support of same. Also, give type and grade of lumber.

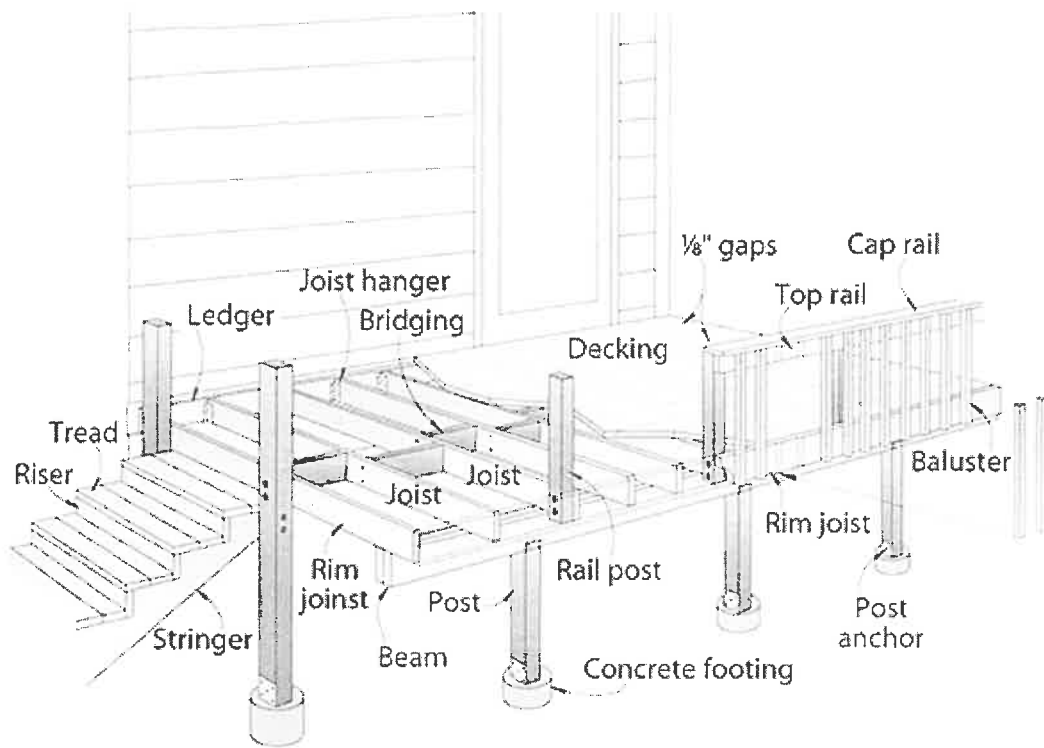
Show size of ledger board attached to house (minimum 2" x 8").

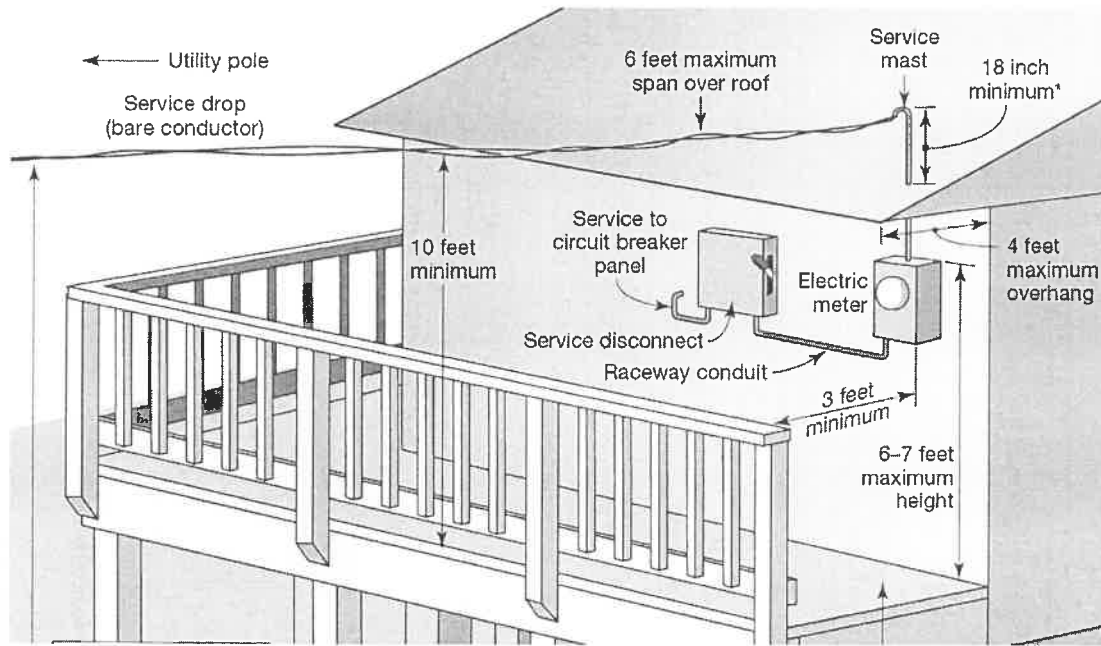
Provide guard rail 36" high on any deck 24" or over above finished grade.

Provide stairs and data on any over 7 3/4" above finished grade.

Provide hand rail on any set of stairs 24" or more above finished grade.

***Note: Construction of deck or patio shall not block any drainage or cause drainage to discharge to any adjacent property.**

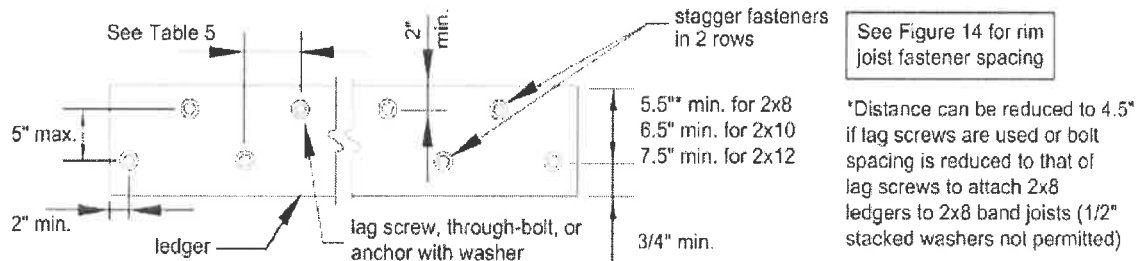




Placement of lag screws or bolts in deck ledgers
 The lag screws or bolts shall be placed as shown in Figure 19. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of

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 1/2". Pilot holes for through-bolts shall be 17/32" to 9/16" in diameter. Through-bolts require washers at the bolt head and nut.

manufacturer's recommendations. All anchors must have washers.

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 1/2". Minimum spacing and embedment length shall be per the

Lag Screws

Lag screws shall have a diameter of 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 14. General Attachment of Ledger Board to Band Joist or Rim Joist.

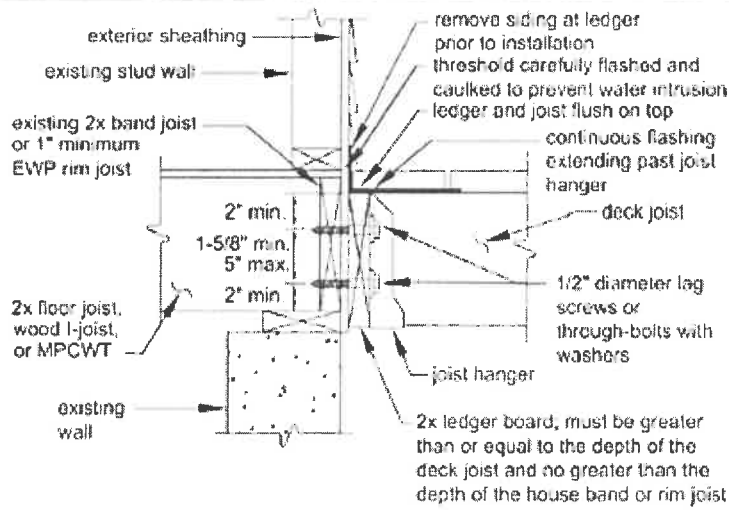
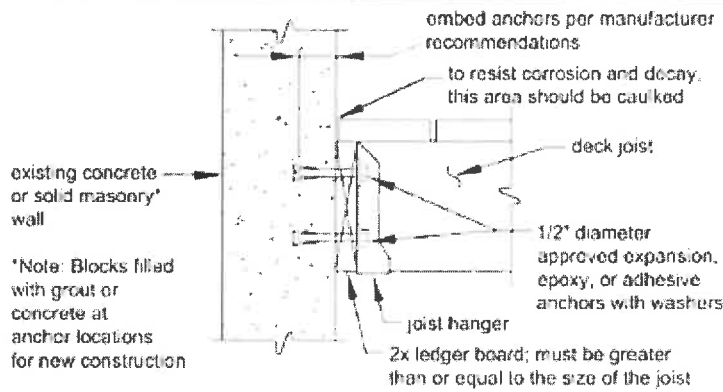
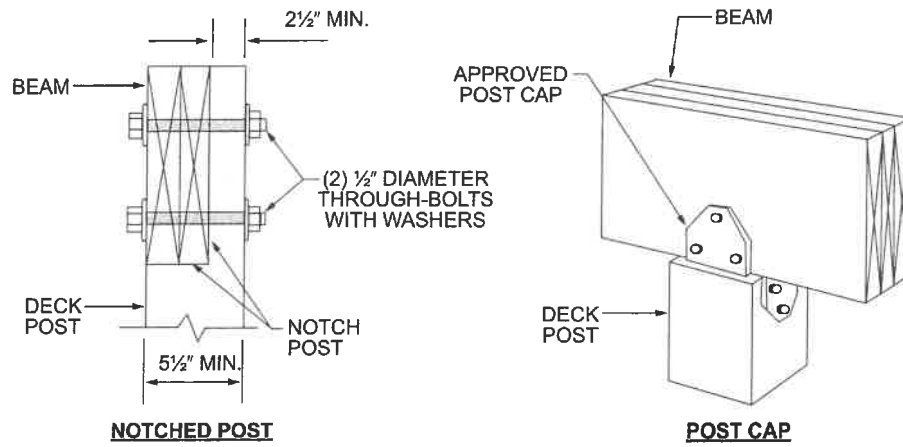


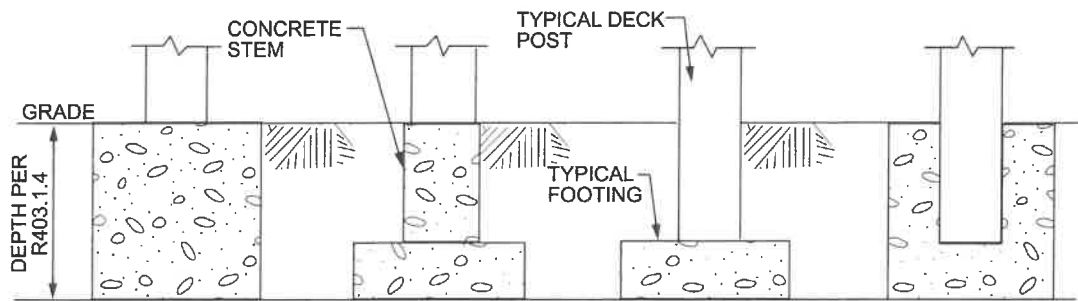
Figure 15. Attachment of Ledger Board to Foundation Wall (Concrete or Solid Masonry).





For SI: 1 inch = 25.4 mm.

**FIGURE R507.7.1
DECK BEAM TO DECK POST**



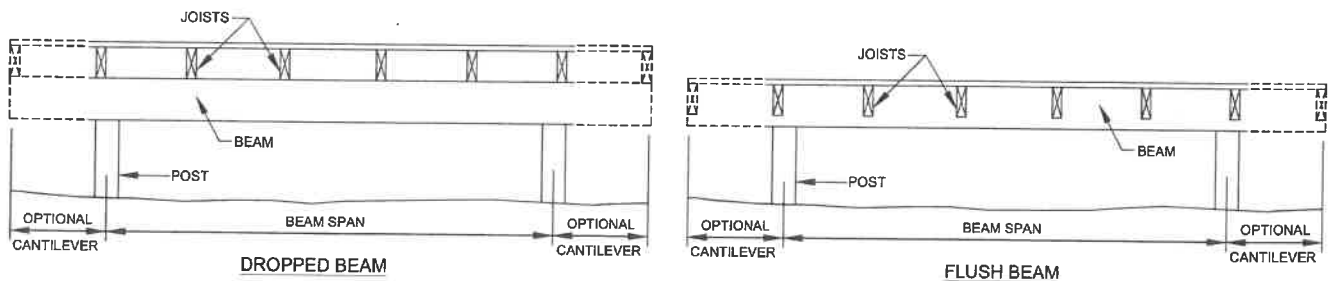
**FIGURE R507.8.1
TYPICAL DECK POSTS TO DECK FOOTINGS**

**TABLE R507.6
DECK BEAM SPAN LENGTHS^{a, b} (ft. - in.)**

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

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. 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 at the end.
- b. Beams supporting deck joists from one side only.
- c. No. 2 grade, wet service factor.
- d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.
- e. Includes incising factor.
- f. Northern species. Incising factor not included.



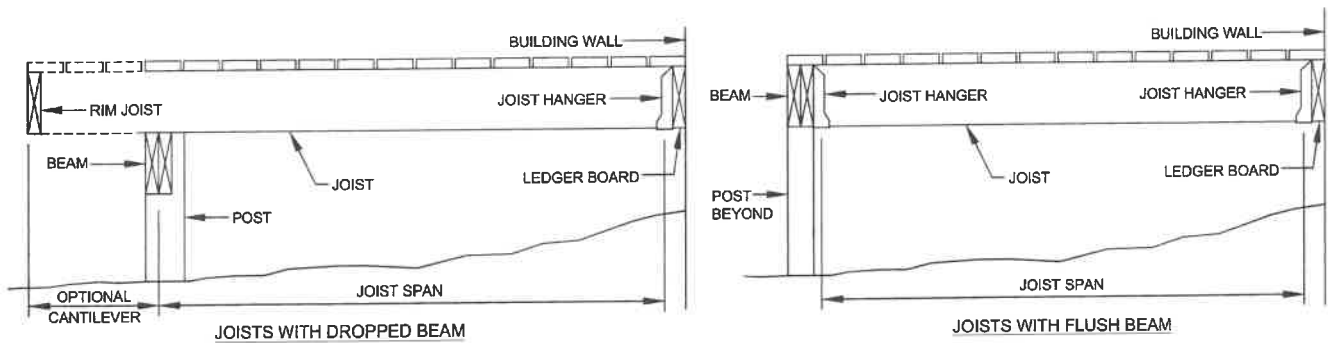
**FIGURE R507.6
TYPICAL DECK BEAM SPANS**

**TABLE R507.5
DECK JOIST SPANS FOR COMMON LUMBER SPECIES^f (ft. - in.)**

| SPECIES ^a | SIZE | SPACING OF DECK JOISTS WITH NO CANTILEVER ^b (inches) | | | SPACING OF DECK JOISTS WITH CANTILEVERS ^c (inches) | | |
|--|--------|--|-------|-------|--|------|-------|
| | | 12 | 16 | 24 | 12 | 16 | 24 |
| Southern pine | 2 × 6 | 9-11 | 9-0 | 7-7 | 6-8 | 6-8 | 6-8 |
| | 2 × 8 | 13-1 | 11-10 | 9-8 | 10-1 | 10-1 | 9-8 |
| | 2 × 10 | 16-2 | 14-0 | 11-5 | 14-6 | 14-0 | 11-5 |
| | 2 × 12 | 18-0 | 16-6 | 13-6 | 18-0 | 16-6 | 13-6 |
| Douglas fir-larch ^d , hem-fir ^d spruce-pine-fir ^d | 2 × 6 | 9-6 | 8-8 | 7-2 | 6-3 | 6-3 | 6-3 |
| | 2 × 8 | 12-6 | 11-1 | 9-1 | 9-5 | 9-5 | 9-1 |
| | 2 × 10 | 15-8 | 13-7 | 11-1 | 13-7 | 13-7 | 11-1 |
| | 2 × 12 | 18-0 | 15-9 | 12-10 | 18-0 | 15-9 | 12-10 |
| Redwood, western cedars, ponderosa pine ^e , red pine ^e | 2 × 6 | 8-10 | 8-0 | 7-0 | 5-7 | 5-7 | 5-7 |
| | 2 × 8 | 11-8 | 10-7 | 8-8 | 8-6 | 8-6 | 8-6 |
| | 2 × 10 | 14-11 | 13-0 | 10-7 | 12-3 | 12-3 | 10-7 |
| | 2 × 12 | 17-5 | 15-1 | 12-4 | 16-5 | 15-1 | 12-4 |

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, $L/\Delta = 360$.
- c. Ground snow load, live load = 40 psf, dead load = 10 psf, $L/\Delta = 360$ at main span, $L/\Delta = 180$ 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.



**FIGURE R507.5
TYPICAL DECK JOIST SPANS**

Table 5. Fastener Spacing for a Southern Pine, Douglas Fir-Larch, or Hem-Fir Deck Ledger or Band or Rim Joist and a 2-inch Nominal Solid-Sawn Spruce-Pine-Fir Band Joist or EWP Rim Joist.^{3,4,5,6,8}
(Deck Live Load = 40 psf, Deck Dead Load = 10 psf)

| Joist Span | Rim Joist or Band Joist | 6'-0" and less | 6'-1" to 8'-0" | 8'-1" to 10'-0" | 10'-1" to 12'-0" | 12'-1" to 14'-0" | 14'-1" to 16'-0" | 16'-1" to 18'-0" |
|--|---|---------------------------------------|----------------|-----------------|------------------|------------------|------------------|------------------|
| Connection Details | | On-Center Spacing of Fasteners | | | | | | |
| ¹⁵ / ₃₂ " diameter lag screw ¹ with ¹⁵ / ₃₂ " maximum sheathing | 1" EWP | 24" | 18" | 14" | 12" | 10" | 9" | 8" |
| | 1- ¹ / ₈ " EWP | 28" | 21" | 16" | 14" | 12" | 10" | 9" |
| | 1- ¹ / ₂ " Lumber | 30" | 23" | 18" | 15" | 13" | 11" | 10" |
| ¹⁵ / ₃₂ " diameter bolt with ¹⁵ / ₃₂ " maximum sheathing | 1" EWP | 24" | 18" | 14" | 12" | 10" | 9" | 8" |
| | 1- ¹ / ₈ " EWP | 28" | 21" | 16" | 14" | 12" | 10" | 9" |
| | 1- ¹ / ₂ " Lumber | 36" | 36" | 34" | 29" | 24" | 21" | 19" |
| ¹⁵ / ₃₂ " diameter bolt with ¹⁵ / ₃₂ " maximum sheathing and ¹⁵ / ₂ " stacked washers ^{2,7} | 1- ¹ / ₂ " Lumber | 36" | 36" | 29" | 24" | 21" | 18" | 16" |

- The tip of the lag screw shall fully extend beyond the inside face of the band or rim joist.
- The maximum gap between the face of the ledger board and face of the wall sheathing shall be ¹/₈".
- Ledgers shall be flashed or caulked to prevent water from contacting the house band joist (see Figures 14 and 15).
- Lag screws and bolts shall be staggered per Figure 19.
- Deck ledgers shall be minimum 2x8 pressure-preservative-treated No.2 grade lumber, or other *approved* materials as established by standard engineering practice.
- When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (minimum 1" thick wood structural panel band joist or structural composite lumber including laminated veneer lumber), the ledger attachment shall be designed in accordance with accepted engineering practice. Tabulated values based on 300 lbs and 350 lbs for 1" and 1-¹/₈" EWP rim joist, respectively.
- Wood structural panel sheathing, gypsum board sheathing, or foam sheathing shall be permitted between the band or rim joist and ledger. Stacked washers are permitted in combination with wood structural panel sheathing, but are not permitted in combination with gypsum board or foam sheathing. The maximum distance between the face of the ledger board and the face of the band joist shall be 1"
- Fastener spacing also applies to southern pine, Douglas fir-larch, and hem-fir band or rim joists.

Figure 28. Stair Stringer Requirements.

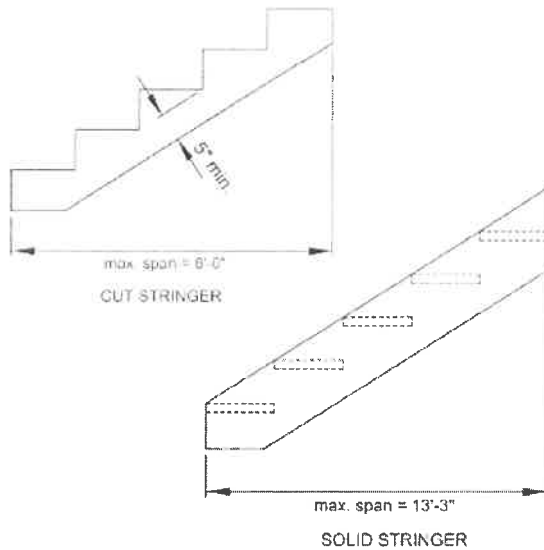


Figure 29. Tread Connection Requirements.

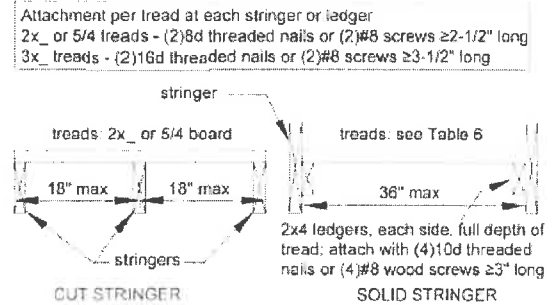


Figure 30. Stair Guard Requirements.

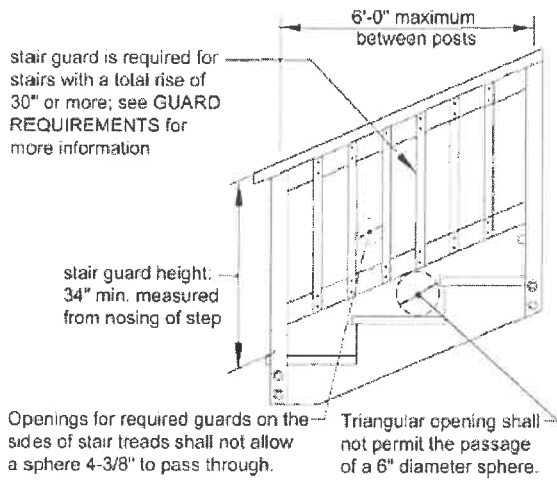


Figure 31. Stair Stringer Attachment Detail.

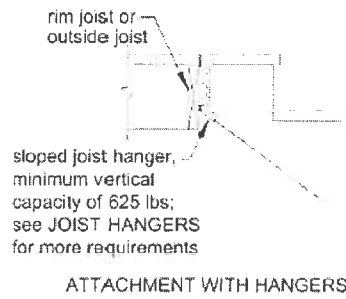


Table 6. Minimum Tread Size for Cut and Solid Stringers.¹

| 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.

Figure 32A. Handrail Mounting Examples.

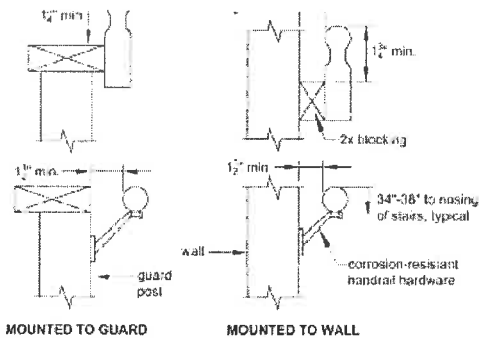


Figure 33. Miscellaneous Stair Requirements.

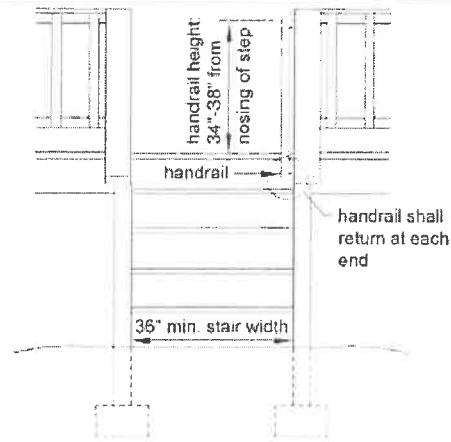


Figure 32B. Handrail Grip Size.

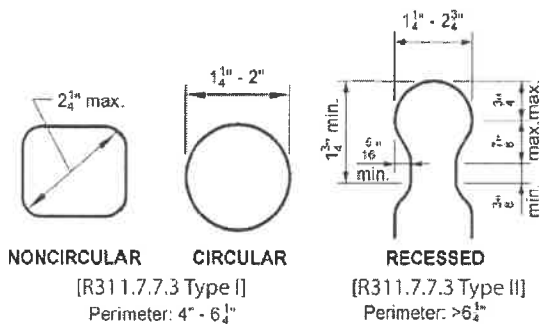


Figure 34. Stair Footing Detail.

