

# DECK PERMIT TIPS

- ◆ The zoning requirements for decks, terraces, porches and similar structures vary with the type and manner of construction as follows:
- ◆ The area of all structures on the lot, including but not limited to, decks, garages, the residence, pools, sheds and gazebos may not exceed thirty (30) percent of the lot area in the R-2 zoning district or thirty-five (35) percent of the lot area in the R-3 zoning district. The area of all structures, plus walkways, patios, driveways, storage sheds, stoops and stairs may not exceed fifty (50) percent of the area of the lot.
- ◆ All decks and similar structures must be a minimum distance (setback) from lot lines as defined below:

### SINGLE FAMILY DETACHED RESIDENCES

Lot Line	Setback
Front, corner side and rear yard	20 feet
Side yard	5 feet

### SINGLE FAMILY ATTACHED RESIDENCES (townhomes, duplexes, multi-family)

Lot Line	Setback
Front, corner side yard	20 feet
Side, rear yard	5 feet
Side adjacent to attached side of dwelling	0 feet

- ◆ Nonconforming decks may be replaced, provided the existing setback is maintained. Said deck may be extended provided that the extension maintains the required or existing setbacks.
- ◆ Decks and similar structures must not be located on any easement unless letters from all utility companies granting permission to encroach into the easement(s) are submitted with the permit application. (A list of utility companies is available at the Public Services & Development Department.) There must be a minimum distance of ten (10) feet between decks and any structure detached from the residence, except for swimming pools.
- ◆ Decks may not cover a basement escape window
- ◆ Three (3) foot clearance must be maintained in front of the exterior meter base.
- ◆ Hot tubs are considered above-ground pools and must meet the requirements for same. If incorporated into a deck or patio, the design and placement of the deck may be affected. See "Pool and Hot Tub Permit Tips".
- ◆ **To obtain a permit, please visit <https://bolingbrookil.viewpointcloud.com/> and submit the following:**
  - ✓ The online permit application.
  - ✓ A copy of your plat of survey accurately indicating all existing site improvements, plus the location and dimensions of the proposed deck and all structures on the lot and the distance from the deck to the lot lines and other nearby structures.

- ✓ A drawing of the side view of the proposed deck showing the ground slope, posts, deck floor and railings and note the height of the floor at the average level of the ground to the top of the deck floor (see attached example).
- ✓ A drawing indicating and explaining:
  - Location, size and spacing of posts, joists and beams. (Note if beam is a doubled member.);
  - thickness of deck floor and
  - height of stair risers and width of stair treads;
  - stair railing details.Note if the deck is attached or detached from the residence.
- ✓ Homeowner's Association permission, if applicable.
- ✓ PERMIT FEE: \$200.00

**Placement/Setback/Lot Coverage questions: Planning & Zoning Division 630/226-8480**

**Construction/Permit questions: Building Division 630/226-8470**

***Please note: Processing time is 15-20 working days; however, if the application is incomplete the time may be longer.***

BOLINGBROOK PUBLIC SERVICES & DEVELOPMENT DEPARTMENT 630/226-8460

**Apply Online and Track Your Permit Status at:**

<https://bolingbrookil.viewpointcloud.com/>

## CHECKLIST

To expedite the review process, please refer to the items listed below when preparing your permit submission:

1. Ledger board should be located a minimum of one and one-half (1 ½") inches below the interior floor line. Metal flashing must be separated from treated wood with a membrane (rubber, plastic) or spacers. See deck permit tip sheets for attachment details.
2. Ledger boards cannot be attached to a cantilever unless approved by a design professional.
3. All decks attached to frost protected structures or elevated more than 18-inches above grade, must bear on concrete footings minimum 8 inches in diameter for 4" x 4" posts, and 10 inches in diameter for 6" x 6" posts and footings shall extend to a minimum of 42-inches below grade. Wooden posts supporting decks, porches and similar structures shall not be placed in concrete. Tributary loads by design may require larger pier diameters as determined by the 2018 IRC.
4. Floating decks higher than 18inches above the ground must rest on frost protected footings.
5. For the attachment method for beams that are attached to posts see the deck permit tip sheets.
6. All structural members (joists, beams, posts, etc.) must be of pressure treated or decay resistant lumber. Joist hangers are required for joists; all hardware must be galvanized. All hardware and fasteners must be hot dip galvanized, stainless steel, or triple coated zinc materials.
7. Guardrails are required on decks thirty (30) inches or more above grade. Minimum of thirty-six (36) inches high with no more than four (4) inches in between spindles or balusters. Guardrails for stairs must be a minimum of thirty-four (34) inches high measured vertically from the stair nosing. Horizontal balusters are not permitted.
8. The triangular openings formed by the riser, tread and bottom rail of a guard at the opening side of the stairway are permitted to be of such size that a sphere 6" cannot pass through. Openings for required guards on the sides of stair treads shall not allow a sphere four and three-eighths (4 3/8) inches (107 mm) to pass through.
9. Handrails are required for stairs with four (4) risers or more. They must have a cross section of at least one and one-fourth (1 ¼) inches and not greater than two (2) inches (no 2x4s or 2x6s). Ends shall terminate or return into a post. Handrails to be thirty-four to thirty eight (34 to 38) inches in height measured vertically from tread nosing.
10. Maximum riser height for stairs is seven and three fourth (7 ¾) inches. Minimum tread width is ten (10) inches (measured nosing to nosing with a one (1) inch nosing). The tolerance between the largest and smallest risers and between the widest and narrowest tread is three eighths (3/8) inch. Minimum tread width required is ten (10) inches (measured nosing to nosing with a ¾" to 1 and ¼" inch nosing). For

- stairs more than thirty (30) inches above grade, no more than four (4) inches is permitted between tread openings.
11. For attached decks, stair stringers must rest on concrete piers forty-two (42) inches deep or be attached to posts forty-two (42) inches deep.
  12. A distance of three (3) feet must be left open in front of the electric pedestal.
  13. Escape window wells cannot be covered by a deck.
  14. A skirt board enclosing the space cannot be installed prior to a final inspection.
  15. Only fasteners approved for use with joist hangers must be used. Screws are not allowed for use in joist hanger and other bearing locations.
  16. A footing inspection is required before piers are poured, rough framing inspection before deck floorboards are installed and a final inspection is required when the deck is completed.
  17. A lateral connection of the deck to the house is now required by the 2018 IRC. See section 507.9.2 and Figures 507.9.2(1) and 507.9.2(2) located on the following pages of this deck handout.
  18. **A minimum of 48 to 72-hour notice is required for inspections. Call 630-226-8470 to schedule.**

**R507.5 Deck Beams.** Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Table R507.5. Beam plies shall be fastened with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the allowable beam span. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.

**R507.5.1 Deck beam bearing.** The ends of beams shall have not less than 1½ inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) of bearing on concrete or masonry for the entire width of the beam. Where multiple-span beams bear on intermediate posts, each ply must have full bearing on the post in accordance with Figures R507.5.1(1) and R507.5.1(2).

**R507.5.2 Deck beam connection to supports.** Deck beams shall be attached to supports in a manner capable of transferring vertical loads and resisting horizontal displacement. Deck beam connections to wood posts shall be in accordance with Figures R507.5.1(1) and R507.5.1(2). Manufactured post-to-beam connectors shall be sized for the post and beam sizes. Bolts shall have washers under the head and nut.

**R507.6 Deck joists.** Maximum allowable spans for wood deck joists, as shown in Figure R507.6, shall be in accordance with Table R507.6. The maximum joist spacing shall be limited by the decking materials in accordance with Table R507.7. The maximum joist cantilever shall be limited to one-fourth of the joist span or the maximum cantilever length specified in Table R507.6, whichever is less.

**R507.6.1 Deck joist bearing.** The ends of joists shall have not less than 1½ inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) of bearing on concrete or masonry over its entire width. Joists bearing on top of a multiple-ply beam or ledger shall be fastened in accordance with Table R602.3(1). Joists bearing on top of a single-ply beam or ledger shall be attached by a mechanical connector. Joist framing into the side of a beam or ledger board shall be supported by approved joist hangers.

**R507.6.2 Deck joist lateral restraint.** Joist ends and bearing locations shall be provided with lateral resistance to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall equal not less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with not fewer than three 10d (3-inch by 0.128-inch) (76 mm by 3.3 mm) nails or three No. 10x 3-inch (76 mm) long wood screws.

**R507.7 Decking.** Maximum allowable spacing for joists supporting decking shall be in accordance with Table R507.7. Wood decking shall be attached to each supporting member with not less than two 8d threaded nails or two No. 8 wood screws. Other approved decking or fastener systems shall be installed in accordance with the manufacturer's installation requirements.

**R507.8 Vertical and lateral supports.** Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. For decks with cantilevered framing members, connection to exterior walls or other framing members shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.5 acting on the cantilevered portion of the deck. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting.

**R507.9 Vertical and lateral supports at band joist.** Vertical and lateral supports for decks shall comply with this section.

**R507.9.1 Vertical supports.** Vertical loads shall be transferred to band joists with ledgers in accordance with this section.

**R507.9.1.1 Ledger details.** Deck ledgers shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, pressure-preservative-treated Southern pine, incised pressure-preservative-treated hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.

**R507.9.1.2 Band joist details.** Band joists supporting a ledger shall be a minimum 2-inch-nominal (51 mm), solid-sawn, spruce-pine-fir or better lumber or a minimum 1-inch by 9½-inch (25 mm × 241 mm) dimensional, Douglas fir or better, laminated veneer lumber. Band joists shall bear fully on the primary structure capable of supporting all required loads.

**R507.9.1.3 Ledger to band joist details.** Fasteners used in deck ledger connections in accordance with Table R507.9.1.3(1) shall be hot-dipped galvanized or stainless steel and shall be installed in accordance with Table R507.9.1.3(2) and Figures R507.9.1.3(1) and R507.9.1.3(2).

**R507.9.1.4 Alternate ledger details.** Alternate framing configurations supporting a ledger constructed to meet the load requirements of Section R301.5 shall be permitted.

**R507.9.2 Lateral connection.** Lateral loads shall be transferred to the ground or to a structure capable of transmitting them to the ground. Where the lateral load connection is provided in accordance with Figure R507.9.2(1), hold-down tension devices shall be installed in not less than two locations per deck, within 24 inches (610 mm) of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 pounds (6672 N). Where the lateral load connections are provided in accordance with Figure R507.9.2(2), the hold-down tension devices shall be installed in not less than four locations per deck, and each device shall have an allowable stress design capacity of not less than 750 pounds (3336 N).

FLOORS

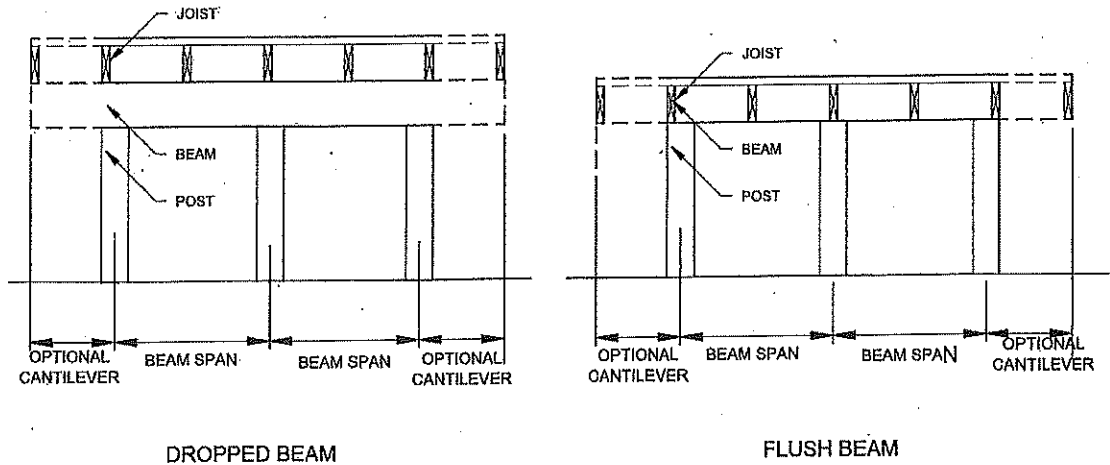
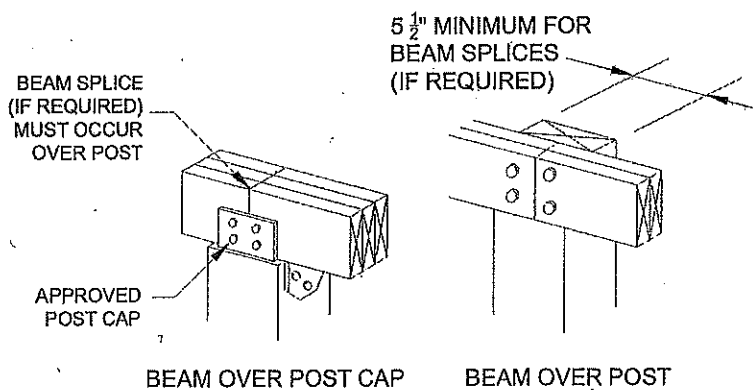


FIGURE R507.5  
TYPICAL DECK JOIST SPANS

TABLE R507.5  
DECK BEAM SPAN LENGTHS<sup>a, b, g</sup> (feet - inches)

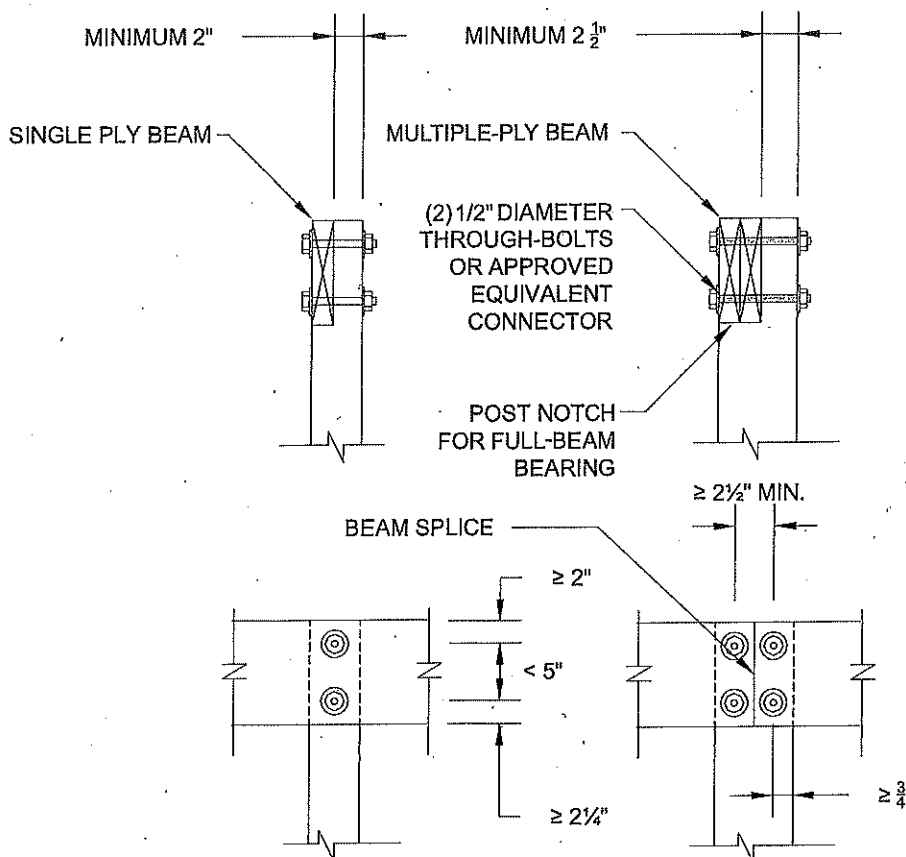
SPECIES <sup>c</sup>	SIZE <sup>d</sup>	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	1-2 x 6	4-11	4-0	3-7	3-3	3-0	2-10	2-8
	1-2 x 8	5-11	5-1	4-7	4-2	2-10	3-7	3-5
	1-2 x 10	7-0	6-0	5-5	4-11	4-7	4-3	4-0
	1-2 x 12	8-3	7-1	6-4	5-10	5-5	5-0	4-9
	2-2 x 6	6-11	5-11	5-4	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
Douglas fir-larch <sup>e</sup> , hem-fir <sup>e</sup> , spruce-pine-fir <sup>e</sup> , redwood, western cedars, ponderosa pine <sup>f</sup> , red-pine <sup>f</sup>	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.  
g. Beam cantilevers are limited to the adjacent beam's span divided by 4.



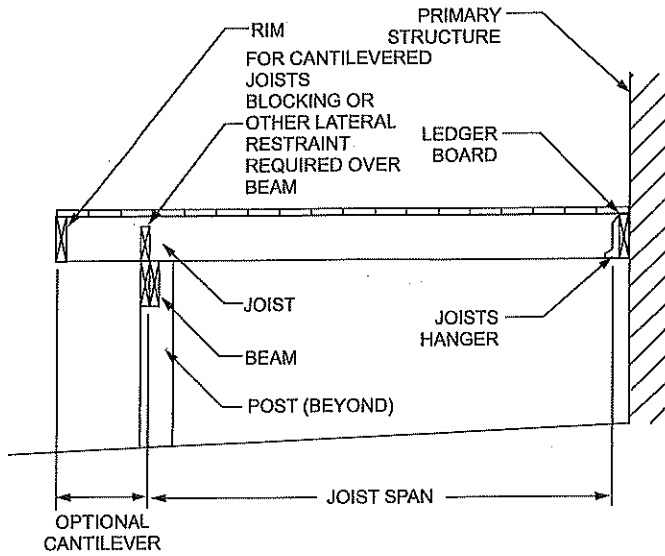
For SI: 1 inch = 25.4 mm.

FIGURE R507.5.1(1)  
DECK BEAM TO DECK POST

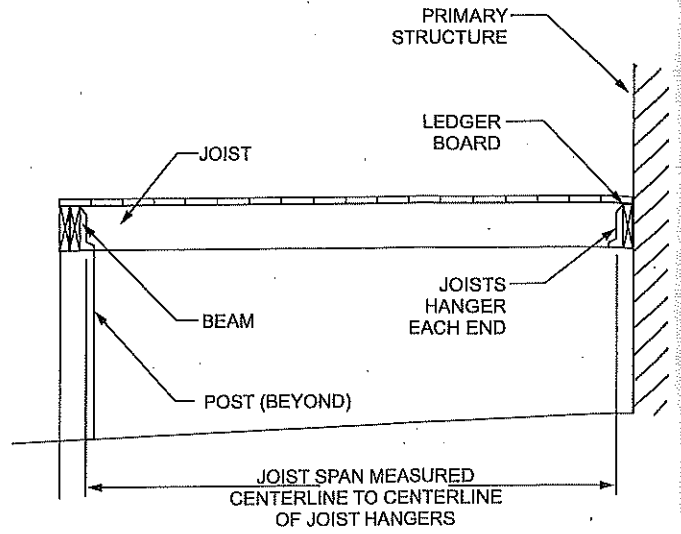


For SI: 1 inch = 25.4 mm.

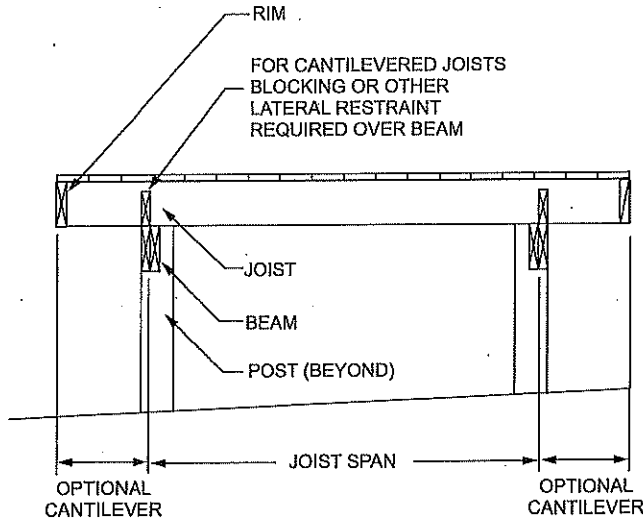
FIGURE R507.5.1(2)  
NOTCHED POST-TO-BEAM CONNECTION



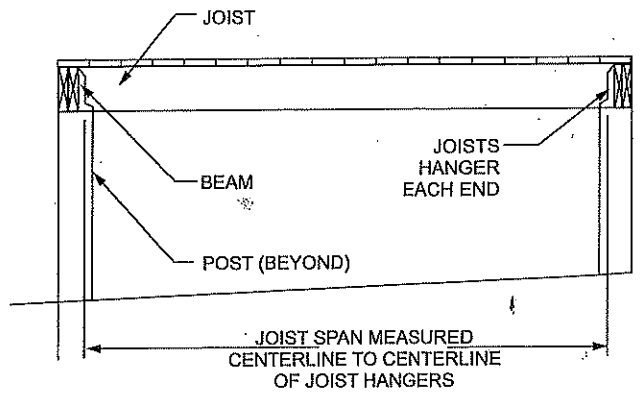
CANTILEVERED JOISTS WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM



JOISTS ON FREE-STANDING DECK WITH DROPPED BEAM



JOISTS ON FREE-STANDING DECK WITH FLUSH BEAM

FIGURE R507.6  
TYPICAL DECK JOIST SPANS

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

SPECIES <sup>a</sup>	SIZE	ALLOWABLE JOIST SPAN <sup>b</sup>			MAXIMUM CANTILEVER <sup>c,f</sup>		
		SPACING OF DECK JOISTS (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS <sup>e</sup> (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 <sup>d</sup> , hem-fir <sup>d</sup> , spruce-pine-fir <sup>d</sup>	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 <sup>e</sup> , red pine <sup>e</sup>	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.

**TABLE R507.7  
MAXIMUM JOIST SPACING FOR DECKING**

DECKING MATERIAL TYPE AND NOMINAL SIZE	MAXIMUM ON-CENTER JOIST SPACING	
	Decking perpendicular to joist	Decking diagonal to joist <sup>a</sup>
1 1/4-inch-thick wood	16 inches	12 inches
2-inch-thick wood	24 inches	16 inches
Plastic composite	In accordance with Section R507.2	In accordance with Section R507.2

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.

- a. Maximum angle of 45 degrees from perpendicular for wood deck boards.

**TABLE R507.9.1.3(1)**  
**DECK LEDGER CONNECTION TO BAND JOIST<sup>a, b</sup>**  
 (Deck live load = 40 psf, deck dead load = 10 psf, snow load ≤ 40 psf)

CONNECTION DETAILS	JOIST SPAN						
	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
	On-center spacing of fasteners						
1/2-inch diameter lag screw with 1/2-inch maximum sheathing <sup>c, d</sup>	30	23	18	15	13	11	10
1/2-inch diameter bolt with 1/2-inch maximum sheathing <sup>d</sup>	36	36	34	29	24	21	19
1/2-inch diameter bolt with 1-inch maximum sheathing <sup>e</sup>	36	36	29	24	21	18	16

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

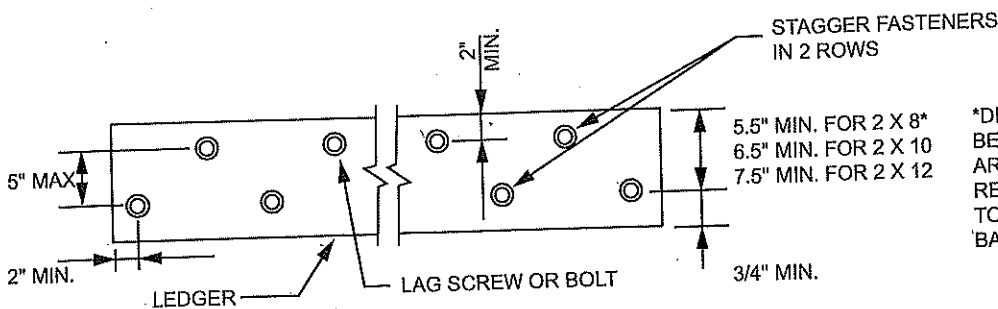
- a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
- b. Snow load shall not be assumed to act concurrently with live load.
- c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- d. Sheathing shall be wood structural panel or solid sawn lumber.
- e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber or foam sheathing. Up to 1/2-inch thickness of stacked washers shall be permitted to substitute for up to 1/2 inch of allowable sheathing thickness where combined with wood structural panel or lumber sheathing.

**TABLE R507.9.1.3(2)**  
**PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS**

	MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS			ROW SPACING
	TOP EDGE	BOTTOM EDGE	ENDS	
Ledger <sup>a</sup>	2 inches <sup>d</sup>	3/4 inch	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>
Band Joist <sup>c</sup>	3/4 inch	2 inches	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>

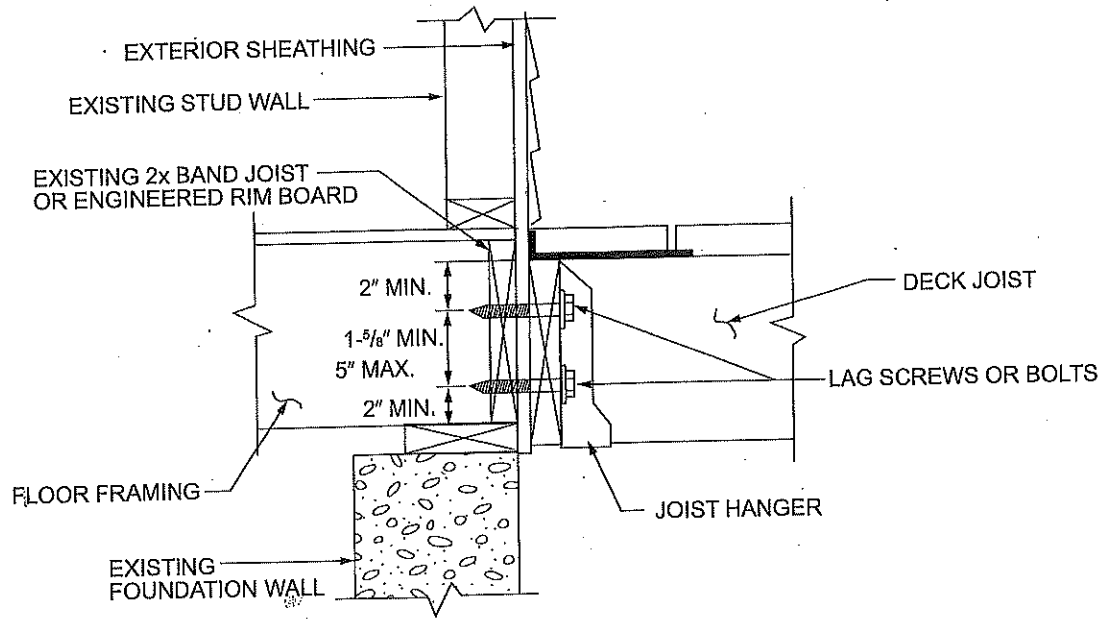
For SI: 1 inch = 25.4 mm.

- a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.9.1.3(1).
- b. Maximum 5 inches.
- c. For engineered rim joists, the manufacturer's recommendations shall govern.
- d. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.9.1.3(1).



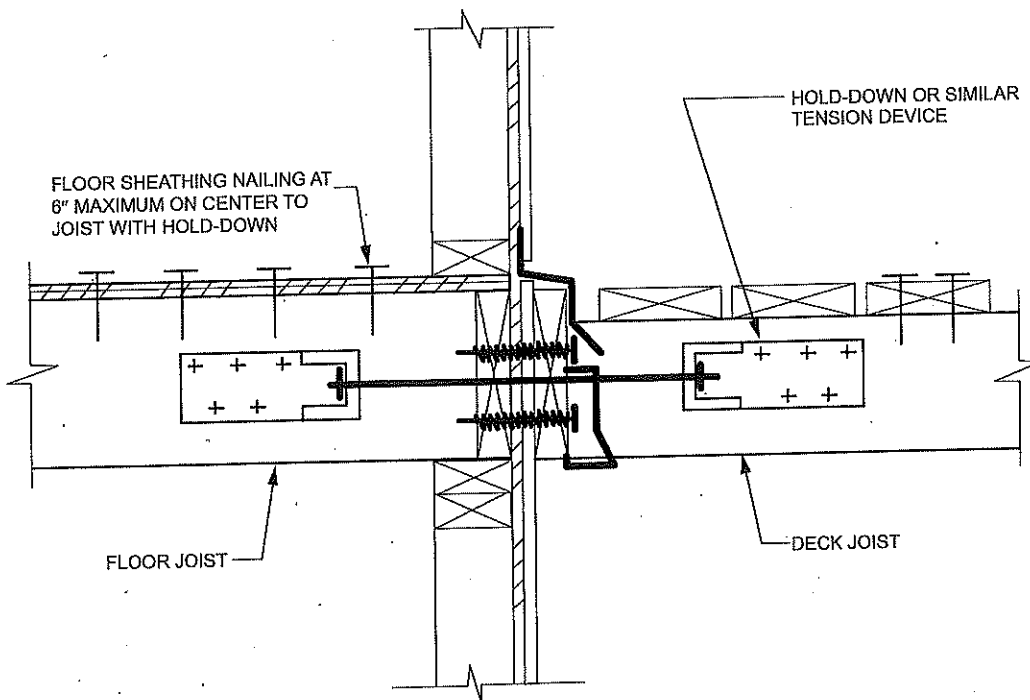
For SI: 1 inch = 25.4 mm.

**FIGURE R507.9.1.3(1)**  
**PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS**



For SI: 1 inch = 25.4 mm.

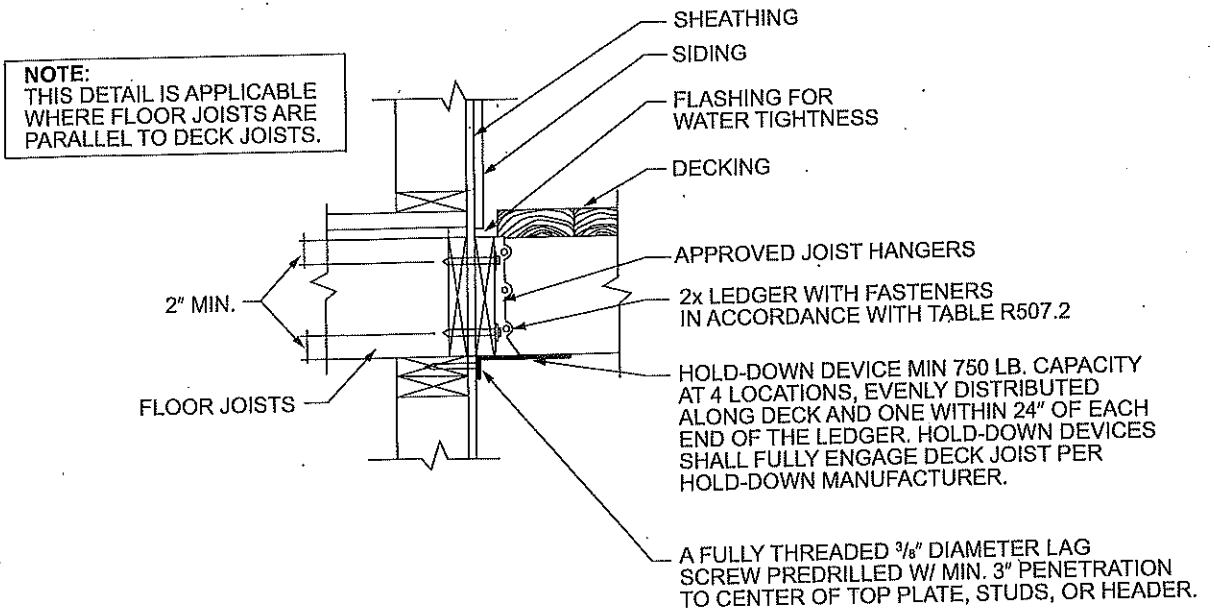
**FIGURE R507.9.1.3(2)**  
**PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS**



For SI: 1 inch = 25.4 mm.

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

FLOORS



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

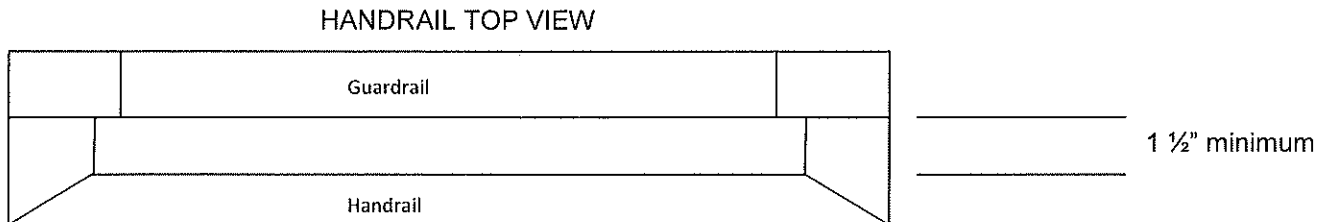
**FIGURE R507.9.2(2)**  
**DECK ATTACHMENT FOR LATERAL LOADS**

# HANDRAIL DETAIL

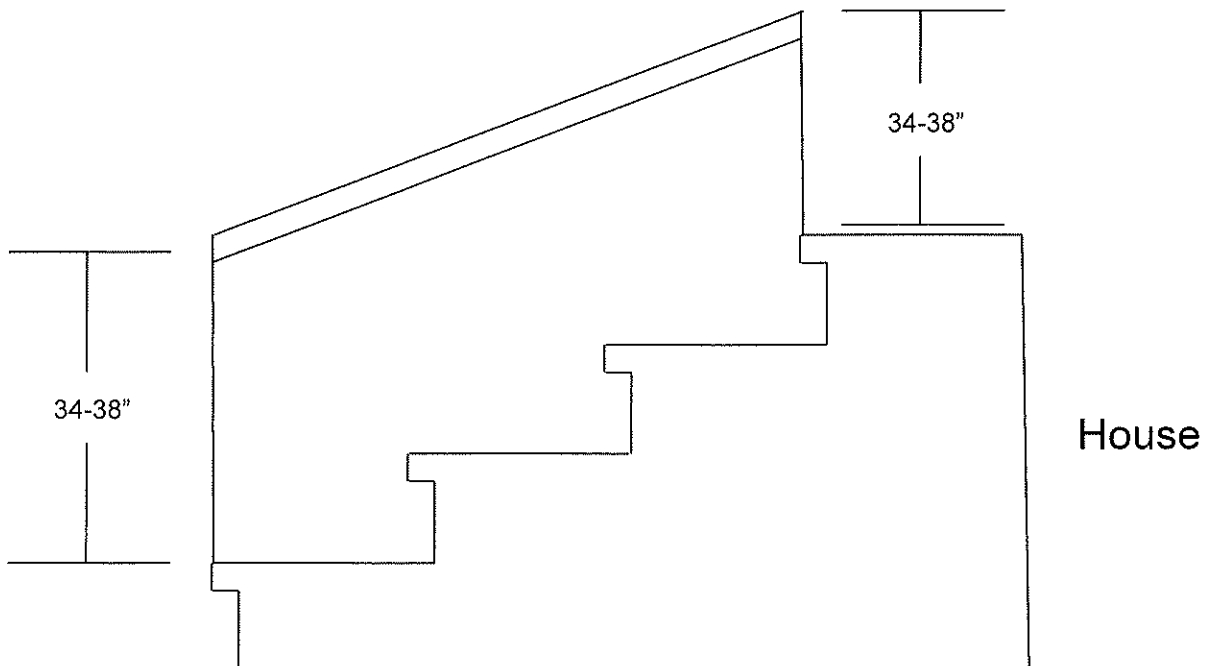
A handrail is required on at least one (1) side of the stairway with four (4) or more risers. A 2 x 4 or 2 x 6 is not allowed as a handrail. All handrails must conform to one of the three (3) types pictured below:



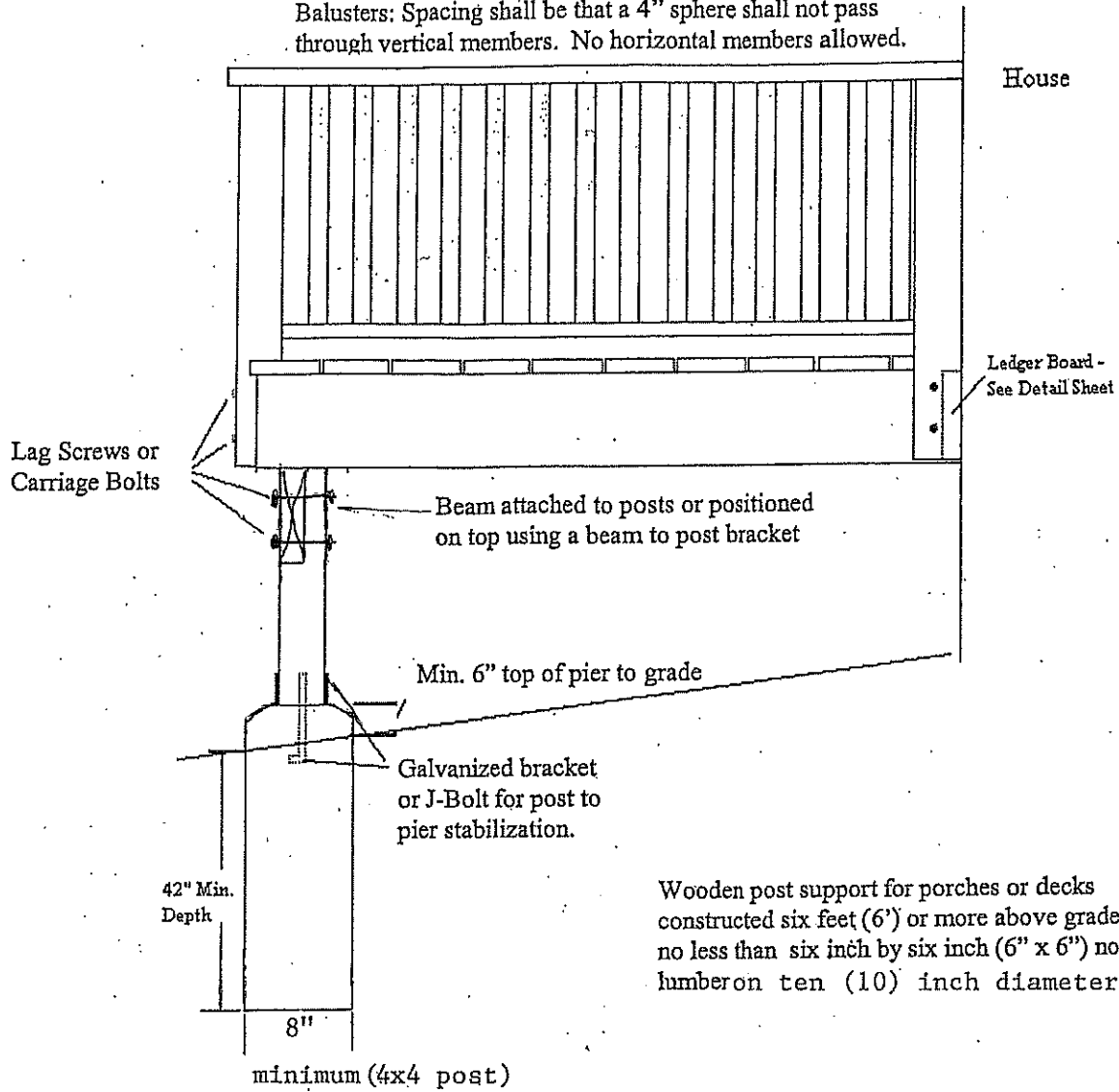
Handrails must be continuous from the top riser to the lowest riser in a flight of stairs. The end of the handrail must return or terminate in a post or wall. A space of not less than 1 1/2" must be maintained between the handrail and the guardrail or wall. See illustration below.



The top of the handrail shall be at a height of 34-38" measured vertically from the face of the tread nosing. See illustration below.



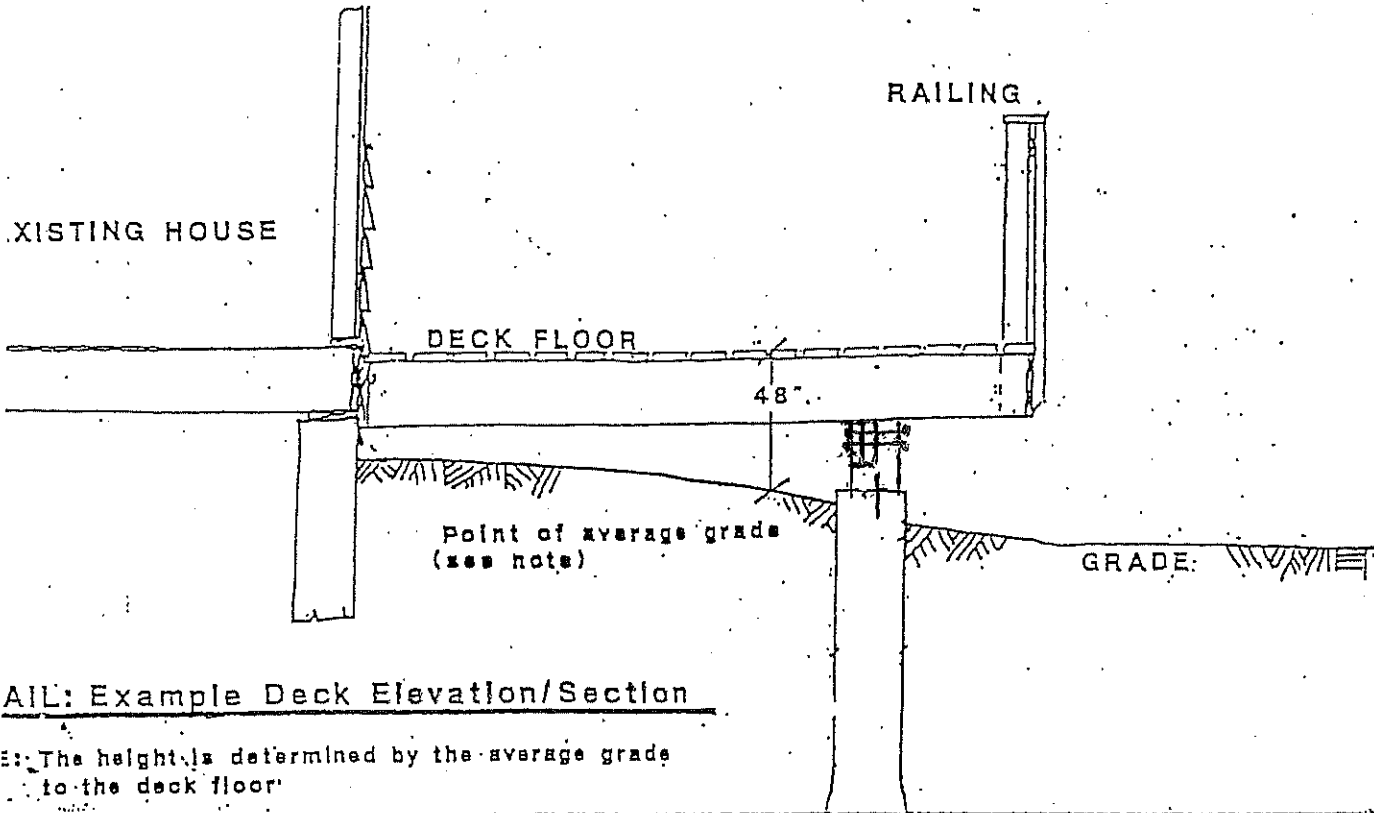
Railing Height 36" Min. above decking  
Balusters: Spacing shall be that a 4" sphere shall not pass  
through vertical members. No horizontal members allowed.



Wooden post support for porches or decks constructed six feet (6') or more above grade shall be no less than six inch by six inch (6" x 6") nominal lumber on ten (10) inch diameter piers.

Always call J.U.L.I.E. before Digging!! Toll Free - 24 Hrs. a day - 7 Days a week  
Call 48 Hrs. before digging 1-800-892-0123

# ELEVATION



# SITE PLAN

