



"History's Hometown"

CITY OF AUBURN

Department of Code Enforcement

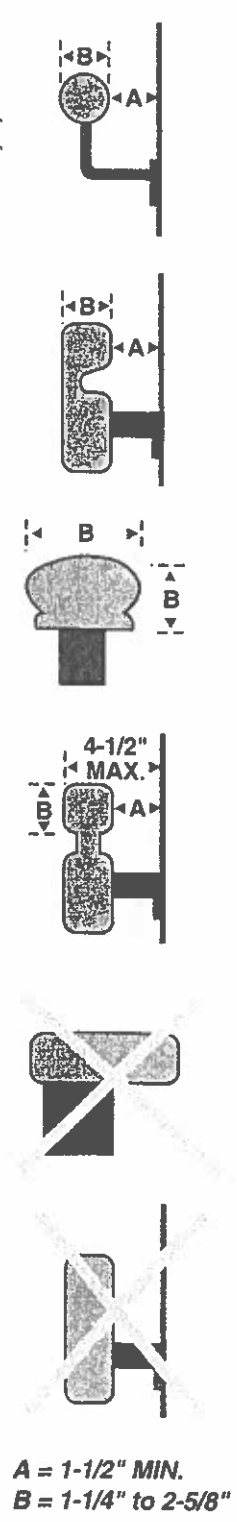
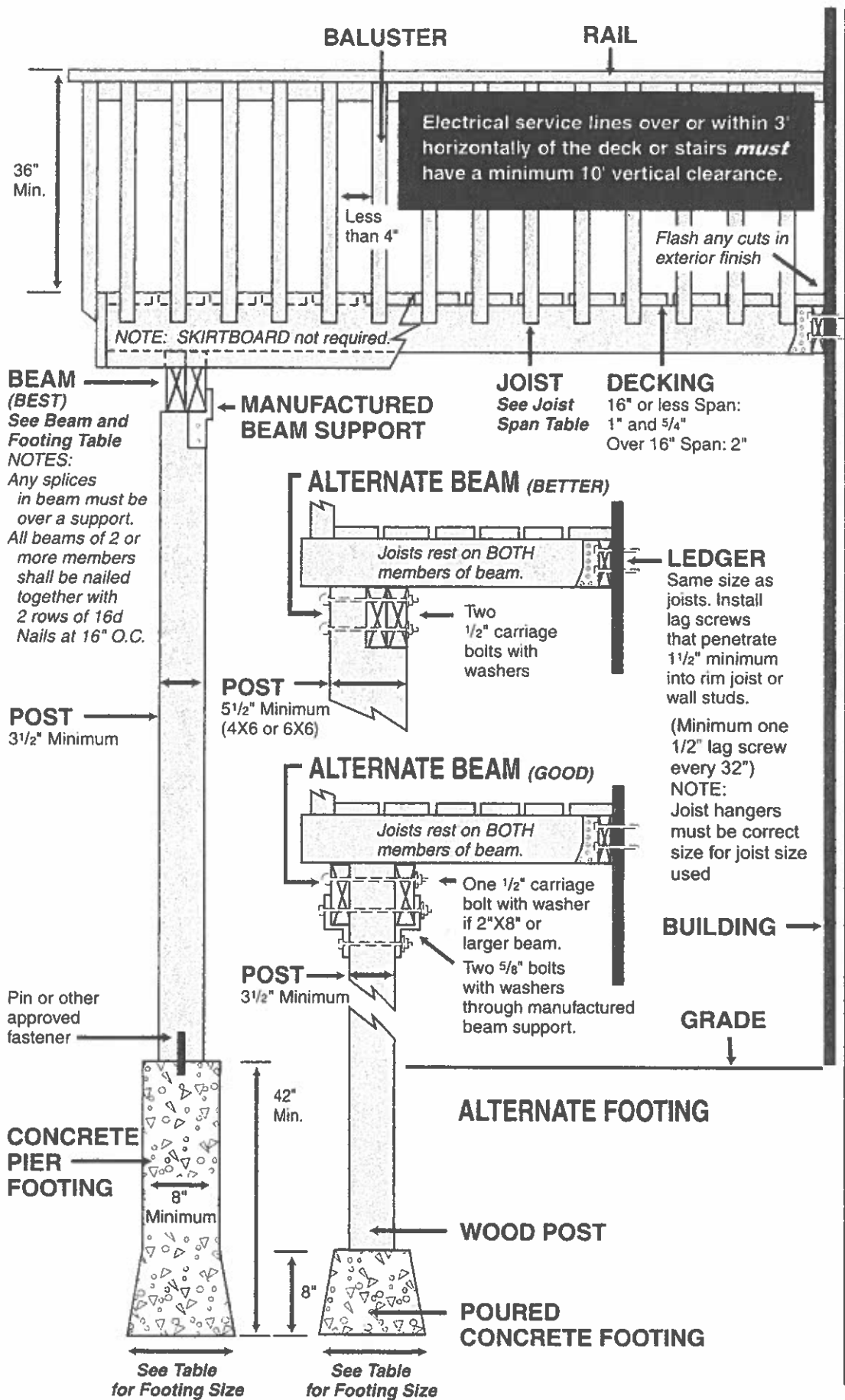
Deck Requirements

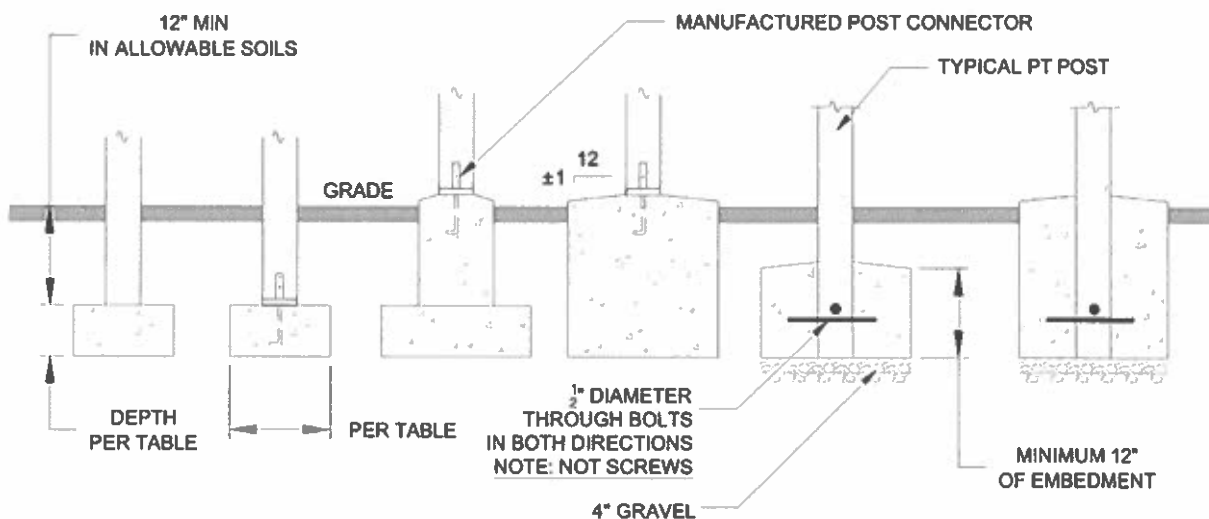
1. FOOTINGS/CONCRETE PIERS shall be a minimum of 48" deep. 8" diameter (minimum) pier type footings are required according to NYS design loads. Widen base of footing as required.
2. ALL LUMBER must be pressure treated or equal.
3. POST must be anchored to piers or otherwise prevent movement.
4. ALL nails, connectors & hangers shall be galvanized or equal.
5. Beam end joints and splices must be made over posts. Beams bolted to post must have at least two ½" bolts per post. Stagger bolts on post.
6. Decks off cantilevered houses require deck joist to either be run to the bearing wall or be supported independently. Rim joist on cantilever will not support a deck.
7. Deck ledger boards must be bolted to the house. Flash the ledger plate against the house or space the ledger plate away from the house to prevent snow, ice and rain from getting behind siding. Caulk all penetrations into siding. Flashing must be non-corrosive.
8. Joist hangers are required wherever joist do not have at least 1-1/2" of bearing. Joist hangers must be of proper size (i.e. 2x8 joist requires 2x8 joist hangers). Joist hangers must be fully nailed with one nail or approved screw per hole as designed.
9. Decks more than 30" off grade require a 36" minimum high guardrail, built so that a 4" diameter object cannot pass through any gaps present.
10. Handrails are required on at least one side of stairs with four or more risers. Handrails must be 34"-38" above the tread nosing. Stairs to decks more than 30" off grade or above adjacent floor level require a guardrail on all open sides, built so that a 4" diameter object cannot pass through any gaps present. Open risers more than 30" off grade or above adjacent floor level must be guarded as well.
11. Stairs must be at least 36" wide. Handrails may project into stairs a maximum of 4-1/2" each side. Maximum rise on stairs is 8-1/4". Risers may not vary more than 3/8" between the tallest and the shortest riser included at top and bottom of stairs. Minimum depth of tread with open risers 9". If risers are closed, treads must have 1-1/8" nosing. Tread depth may not vary more than 3/8" between deepest and shallowest tread.
12. Landings (minimum 36" deep) are required outside all doorways and at top and bottom of stairs. Landings may be a maximum of 8-1/4" below door threshold to prevent ice & snow accumulation.
13. Decks must be a minimum of 44" above grade if over a basement escape windows.
14. CALL FOR footing inspections after holes are dug, before pouring concrete. Call for framing prior to placement of decking. Call for final inspection when deck and stairs, if applicable, is/are complete.
15. Before digging, call Dig Safe New York excavation notification center at 1-800-962-7962 to locate utilities. ALL utilities (gas, electric, phone, cable TV, ect) will be located free of charge.

NOTE: The items listed on this sheet are common deficiencies noted during inspections of Decks, Stairs and Rails. Not all codes for Decks, Stairs and Rails are listed. For all codes related to Decks, Stairs and Rails requirements see the 2020 Residential Code of NYS or contact a design professional.

Possible handrail solutions at stairs

See Single-Family Stairways/Guards





NOTE:
POSTS MUST BE CENTERED ON OR IN FOOTING

For SI: 1 inch = 25.4 mm.

FIGURE R507.3
DECK POSTS TO DECK FOOTING CONNECTION

R507.3.2 Minimum depth. Deck footings shall extend below the frost line specified in Table R301.2(1) in accordance with Section R403.1.4.1.

Exceptions:

1. Free-standing decks that meet all of the following criteria:
 - 1.1. The joists bear directly on precast concrete pier blocks at grade without support by beams or posts.
 - 1.2. The area of the deck does not exceed 200 square feet (18.9 m²).
 - 1.3. The walking surface is not more than 20 inches (616 mm) above grade at any point within 36 inches (914 mm) measured horizontally from the edge.
2. Free-standing decks need not be provided with footings that extend below the frost line.

R507.4 Deck posts. For single-level wood-framed decks with beams sized in accordance with Table R507.5, deck post size shall be in accordance with Table R507.4.

TABLE R507.4
DECK POST HEIGHT*

DECK POST SIZE	MAXIMUM HEIGHT ^{a, b} (feet-inches)
4 × 4	6-9 ^c
4 × 6	8
6 × 6	14
8 × 8	14

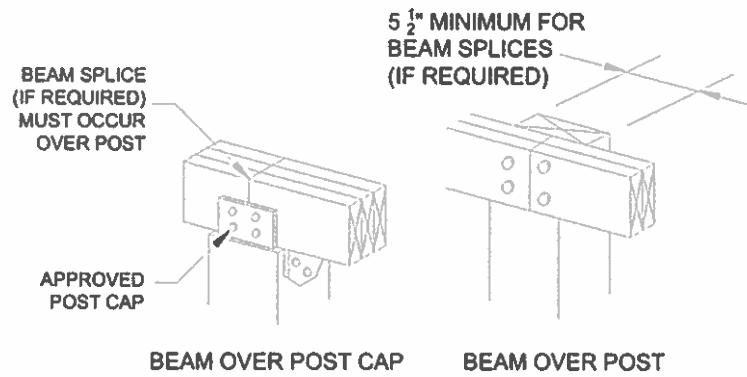
For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm,
 1 pound per square foot = 0.0479 kPa.

- a. Measured to the underside of the beam.
- b. Based on 40 psf live load.
- c. The maximum permitted height is 8 feet for one-ply and two-ply beams. The maximum permitted height for three-ply beams on post cap is 6 feet 9 inches.

R507.4.1 Deck post to deck footing connection. Where posts bear on concrete footings in accordance with Section R403 and Figure R507.4.1, lateral restraint shall be provided by manufactured connectors or a minimum post embedment of 12 inches (305 mm) in surrounding soils or concrete piers. Other footing systems shall be permitted.

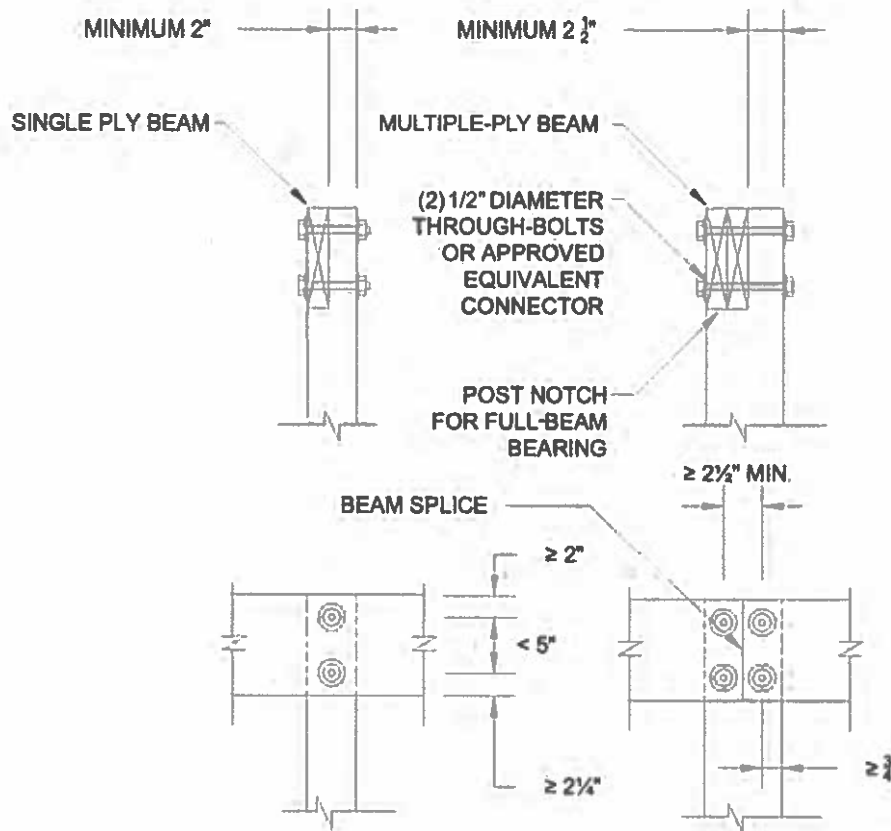
Exception: Where expansive, compressible, shifting or other questionable soils are present, surrounding soils shall not be relied on for lateral support.

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.



For SI: 1 inch = 25.4 mm.

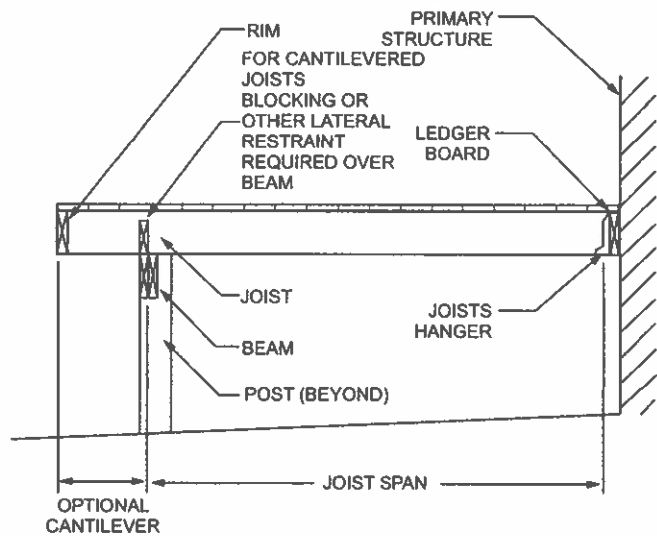
**FIGURE R507.5.1(1)
DECK BEAM TO DECK POST**



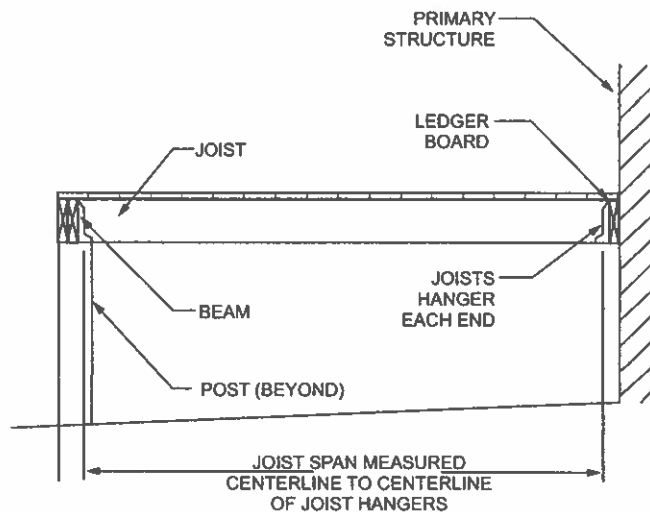
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**FIGURE R507.5.1(2)
NOTCHED POST-TO-BEAM CONNECTION**

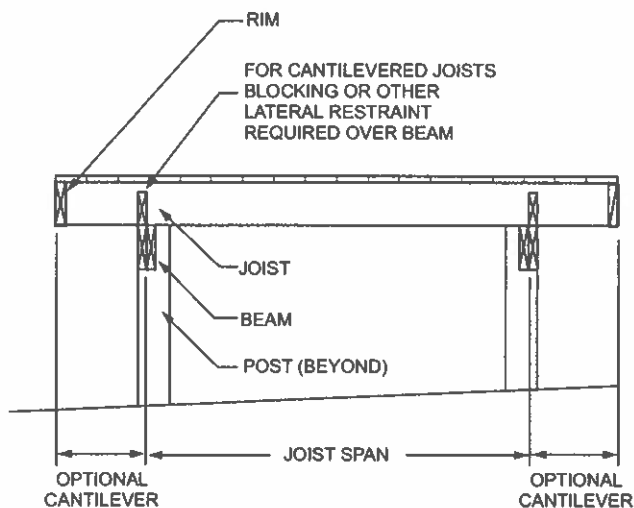
FLOORS



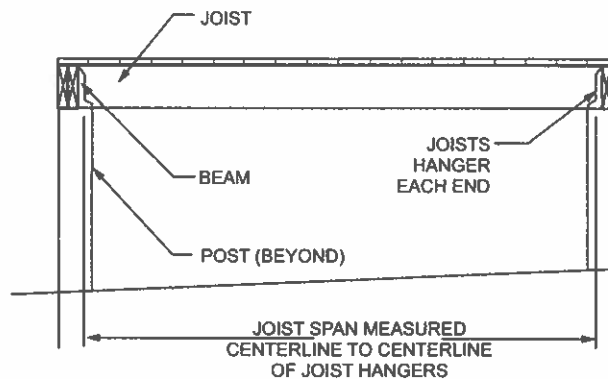
CANTILEVERED JOISTS WITH DROPPED BEAM



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 R507.9.1.3(1)
DECK LEDGER CONNECTION TO BAND JOIST^{a,b}
 (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 ^{c,d}	30	23	18	15	13	11	10
1/2-inch diameter bolt with 1/2-inch maximum sheathing ^d	36	36	34	29	24	21	19
1/2-inch diameter bolt with 1-inch maximum sheathing ^e	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.

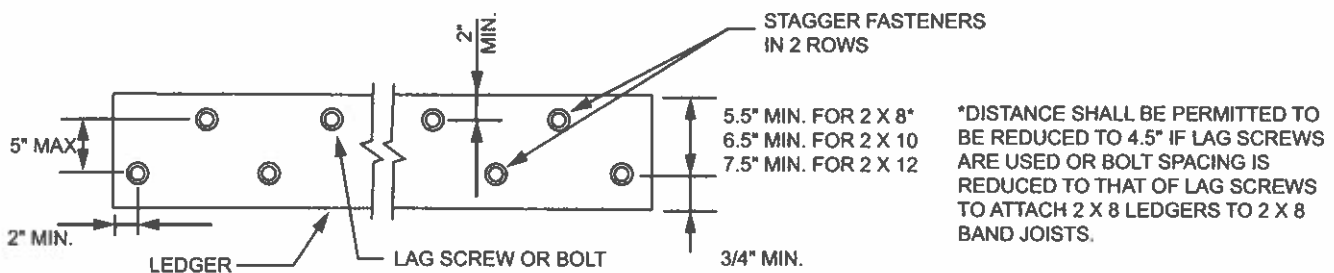
- a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
- b. Snow load shall not be assumed to act concurrently with live load.
- c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- d. Sheathing shall 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			
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger ^a	2 inches ^d	3/4 inch	2 inches ^b	1 3/8 inches ^b
Band Joist ^c	3/4 inch	2 inches	2 inches ^b	1 3/8 inches ^b

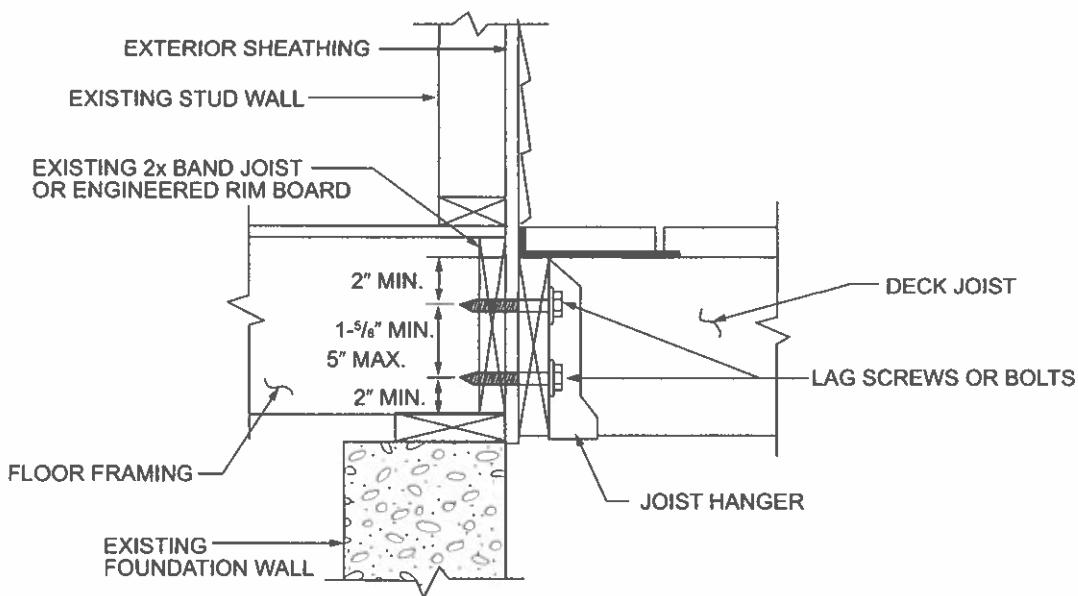
For SI: 1 inch = 25.4 mm.

- 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).



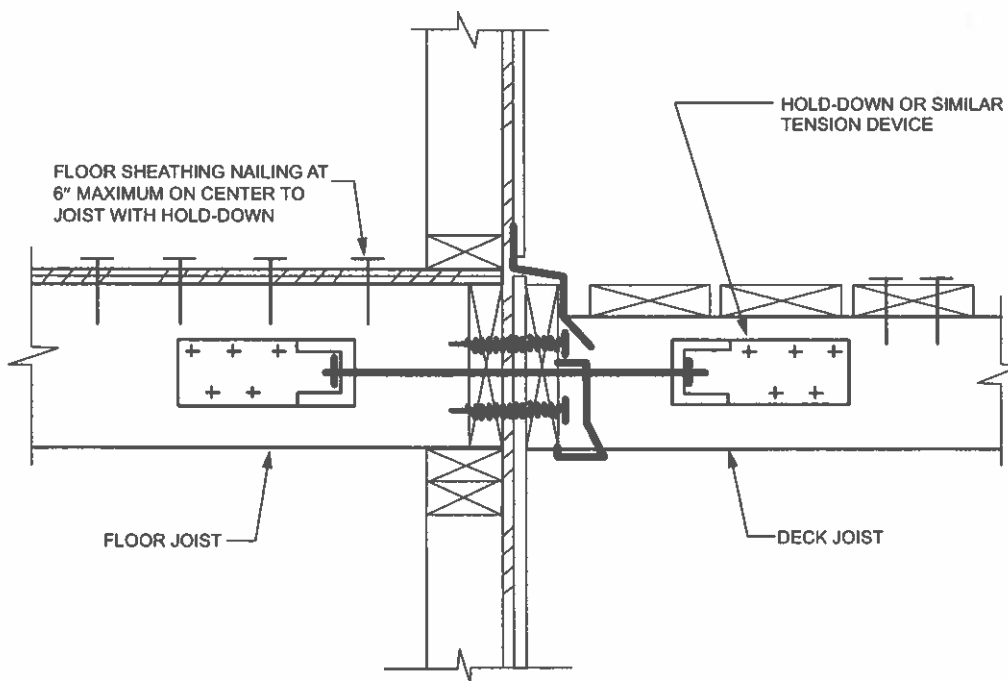
For SI: 1 inch = 25.4 mm.

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



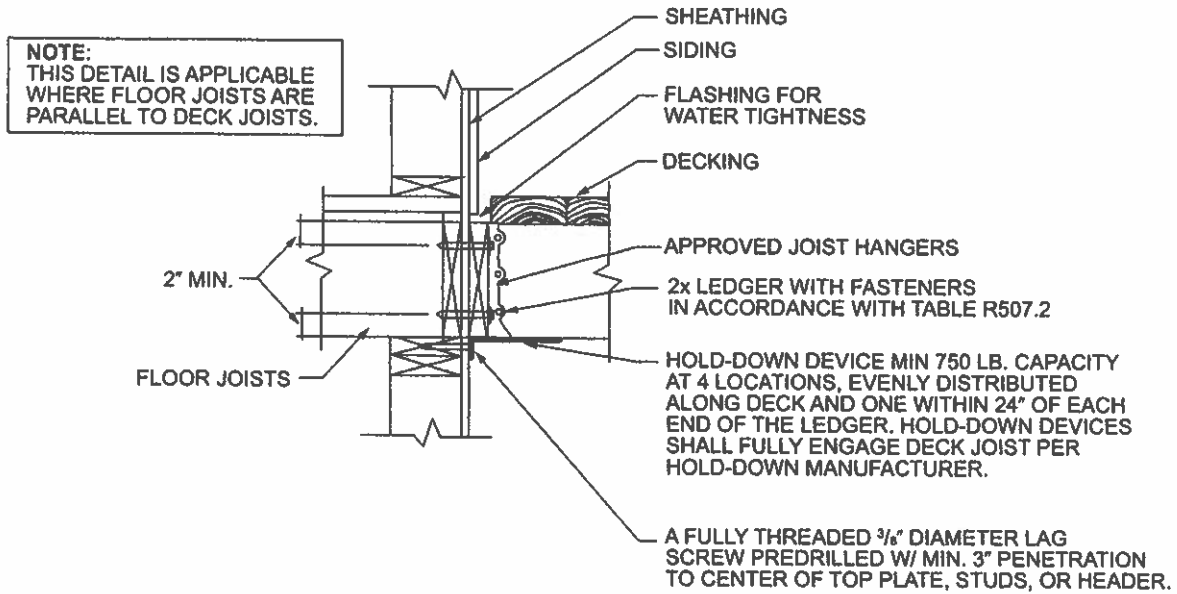
For SI: 1 inch = 25.4 mm.

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



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

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

TABLE R507.2.3
FASTENER AND CONNECTOR SPECIFICATIONS FOR DECKS^{a,b}

ITEM	MATERIAL	MINIMUM FINISH/COATING	ALTERNATE FINISH/COATING ^c
Nails and timber rivets	In accordance with ASTM F1667	Hot-dipped galvanized per ASTM A153	Stainless steel, silicon bronze or copper
Bolts ^c Lag screws ^d (including nuts and washers)	In accordance with ASTM A307 (bolts), ASTM A563 (nuts), ASTM F844 (washers)	Hot-dipped galvanized per ASTM A153, Class C (Class D for 3/8-inch diameter and less) or mechanically galvanized per ASTM B695, Class 55 or 410 stainless steel	Stainless steel, silicon bronze or copper
Metal connectors	Per manufacturer's specification	ASTM A653 type G185 zinc coated galvanized steel or post hot-dipped galvanized per ASTM A123 providing a minimum average coating weight of 2.0 oz./ft ² (total both sides)	Stainless steel

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

- a. Equivalent materials, coatings and finishes shall be permitted.
- b. Fasteners and connectors exposed to salt water or located within 300 feet of a salt water shoreline shall be stainless steel.
- c. Holes for bolts shall be drilled a minimum 1/32 inch and a maximum 1/16 inch larger than the bolt.
- d. Lag screws 1/2 inch and larger shall be predrilled to avoid wood splitting per the National Design Specification (NDS) for Wood Construction.
- e. Stainless-steel-driven fasteners shall be in accordance with ASTM F1667.