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R507.2 Deck ledger connection to band joist

- For decks supporting 50# total load
- **Connection** between a **deck ledger** of pressure-preservative-treated Southern Pine, Hem-Fir or approved decay-resistant species, and
- 2" nominal lumber **band joist** bearing on a sill plate or
- Wall plate shall be ½" lag screws or bolts with washers according to Table R507.2. Meet the same equivalent for bolting
- Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.

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TABLE 507.2.1
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]	1/4 inch	2 inches[b]	1 5/8 inches[b]
Band Joist[c]	3/4 inch	2 inches	2 inches[b]	1 5/8 inches[b]

For SI: 1 inch = 25.4 mm.

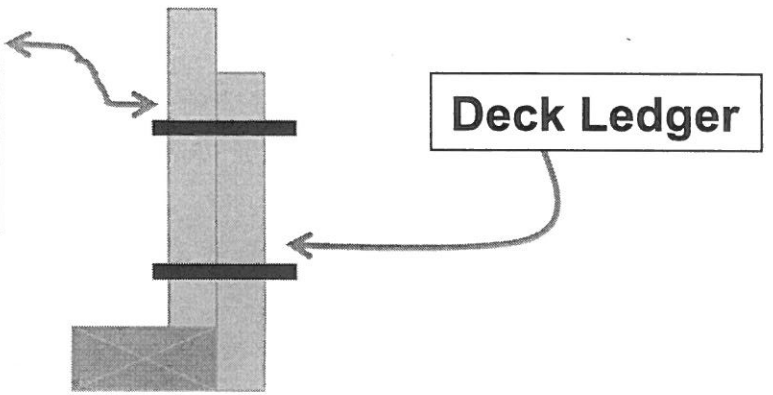
a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).

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 R507.2.1(1).

Band Joist
Min 2" - SYP or HF or app. PP
1 x 9 ½ " DF laminated veneer



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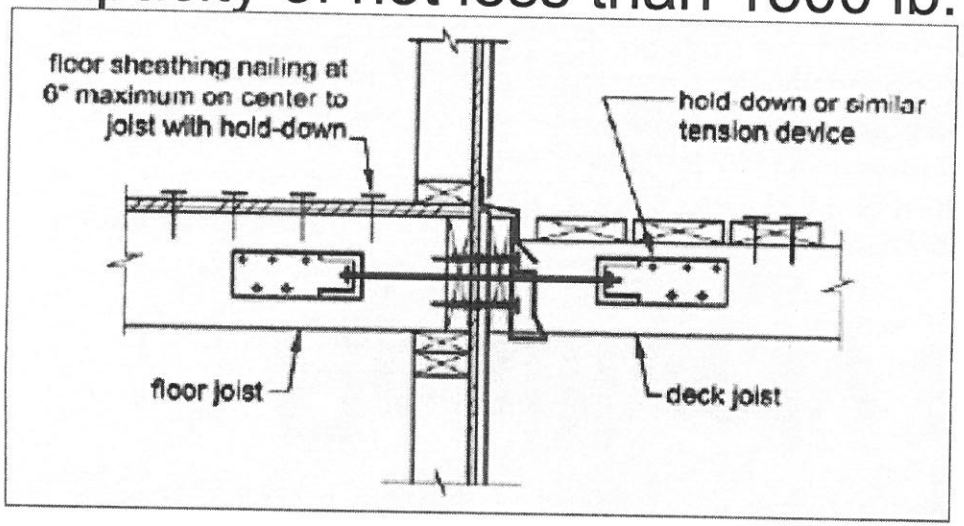
R507.2.3 Deck lateral load connection.

- The lateral load connection required

- Where the lateral load connection … hold-down tension devices shall be installed in not less than **two locations** per deck, *and* each device shall have an allowable stress design capacity of not less than 1500 lb.



Lateral loads may come from wind, seismic or the people moving on the deck. Think of the people doing the "electric slide".

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TABLE R507.2
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST[c, f, g]
(Deck live load = 40 psf, deck dead load = 10 psf)

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'
Connection details	On-center spacing of fasteners[d, e]						
1/2 inch diameter lag screw with 15/32 inch maximum sheathing[a]	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch stacked washers[b, h]	36	36	29	24	21	18	16

a. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be 1/2 inch.
c. Ledgers shall be flashed to prevent water from contacting the house band joist.
d. Lag screws and bolts shall be staggered in accordance with Section R507.2.1.
e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials as established by standard engineering practice.
f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1-inch-thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
g. A minimum 1 × 91/2 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.
h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

Note: There are "lag screws" and "thru-bolts". There is no such thing as a "lag bolt".

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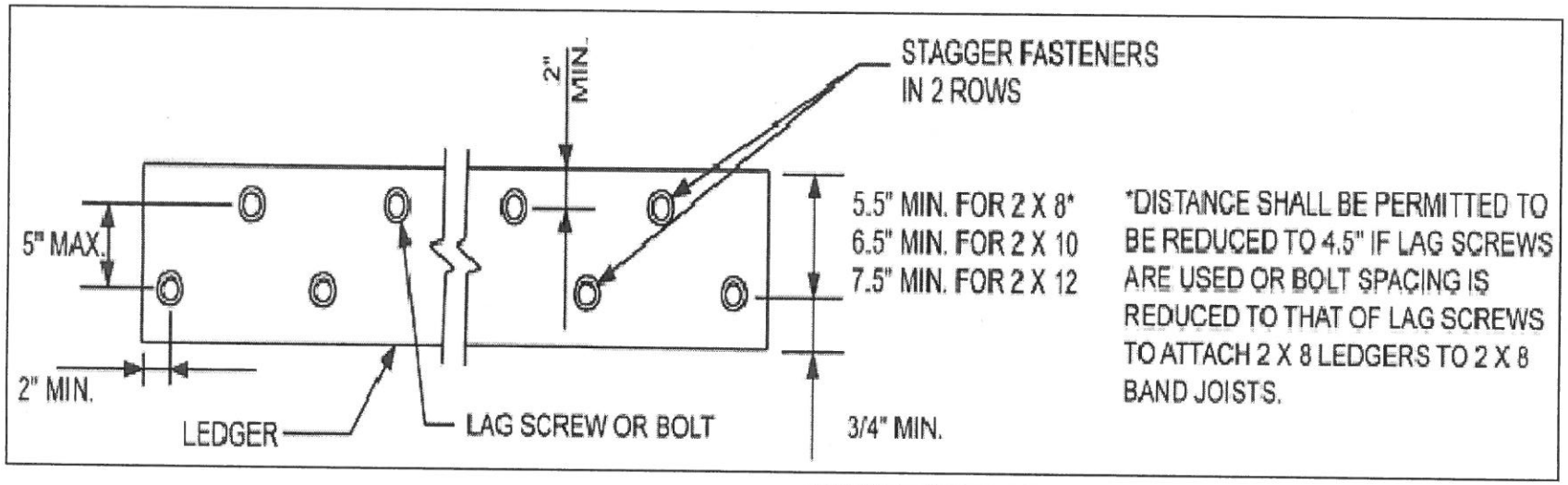
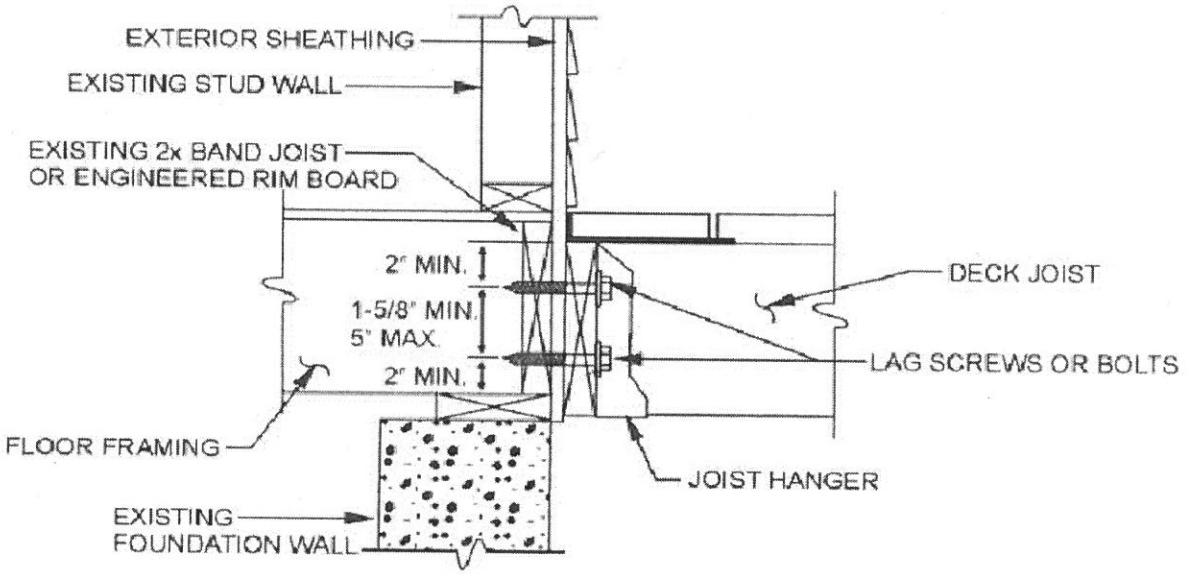
FIGURE R507.2.1(1)
PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS