

Windom, MN

General Deck Requirements

Building Permits are required for all decks that are attached to the house or 30 inches or more above grade. All other decks do not require building permits but must meet the setback requirements. Setback requirements vary between zoning districts. All decks should be discussed with the Building and Zoning Department prior to construction.

Plans Required for decks are detailed below. Sample plans are attached for reference.

- **Site Plan** should indicate lot size and dimensions, size and location of existing structures, size and location of proposed structures, and setback dimensions from property lines, streets, alleys and utility easements.
- **Floor Plan** should show proposed deck size, size and spacing of joists; size, type and location of posts and beams; and size and type of decking material.
- **Elevation Plan** should detail guards and stairs, indicate deck height above grade, and show footing size, location and depth.

Inspections are required for all decks that need a building permit. These inspections will be discussed when you obtain the permit. All other decks will need a site inspection or site plan approval before construction begins.

General Building Code Requirements:

- Footings and posts must extend below frost line. Minimum 42" below grade.
- Footings must be sized properly. Footing size will depend on the amount of deck to be supported. Refer to attached footing chart to determine correct size.
- Decks must be designed for 40 pounds per square foot live load. Refer to attached charts to determine correct spans for framing members.
- Decks must be constructed of approved materials. Wood decks should be constructed of wood that has a natural resistance to decay such as redwood or cedar.
- Chemically-treated lumber in contact with or within 12 inches of the ground must be a minimum of 40% treated. Posts that are embedded in the ground must be a minimum of 60% treated.
- Manufactured deck products need prior approval. They must meet ASTM D 7032 standards based on an ICC ES Report. Your material supplier or the Building Department can help verify compliance. These types of materials must be installed in accordance with the manufacturer's recommendations.
- Decks that are 30 inches or more above grade must have a guard that is a minimum of 36 inches in height. Guards must be able to withstand a 200 pound force applied in any direction. Refer to the attached drawing for guardrail construction.
- Stairs must be 36 inches minimum width, have a maximum rise of 7 ¾ inches, and a minimum run of 10 inches. Stairs that have 4 or more risers must have handrails installed 34 - 38 inches above the front edge of stair treads. Refer to attached drawing for details.
- Flashing must be installed where existing siding or other finishes are cut to attach deck ledger boards.

REFERENCE CHARTS FOR DECKS

THESE REQUIREMENTS WILL CHANGE IF YOU PLAN TO CONVERT DECK INTO PORCH.

Clearances for Decks:

Lot lines: Varies with zoning districts and location on lot. Check with Building Office for specific details.

Streets: Varies with zoning districts and location on lot. Check with Building Office for specific details.

Alleys: Varies with zoning districts and location on lot. Check with Building Office for specific details.

Overhead lines: 10 feet

Exhaust pipes or air intakes: 3' or manufacturer's recommendations

Maximum Post Height in Feet

Wood Type	Post Size	Square Feet of Deck Supported												
		36	48	60	72	84	96	108	120	132	144	156	180	192
Southern Pine	4X4	10	10	10	9	9	8	8	7	7	6	6	6	6
	4X6	14	14	13	12	11	10	10	9	9	8	8	7	7
	6X6	17	17	17	17	17	17	17	17	16	16	15	13	13
Redwood/Cedar	4X4	10	10	9	8	7	7	6	6	5	4			
	4X6	14	13	12	11	10	9	8	8	7	7	6	6	5
	6X6	17	17	17	17	17	16	13	7					

Joist Spans-Joists should not overhang beams by more than 2 feet.

Joist Size	Southern Pine			Western Cedar/Ponderosa Pine		
	12" OC	16" OC	24" OC	12" OC	16" OC	24" OC
2X6	10'4"	9'5"	7'10"	8'10"	8'0"	7'0"
2X8	13'8"	12'5"	10'2"	11'8"	10'7"	8'8"
2X10	17'5"	15'10"	13'5"	14'11"	13'0"	10'7"
2X12	21'2"	18'10"	15'5"	17'5"	15'1"	12'4"

Maximum Deck Board Spans

Wood Type	Orientation	Board Size	Max Span
Southern Pine	Perpendicular to Joist	2X6 or 5/4	24"
Southern Pine	45 Degrees to Joist	2X6 or 5/4	16"
Cedar or Redwood	Perpendicular to Joist	2X4 or 5/4	16"
Cedar or Redwood	45 Degrees to Joist	2X4 or 5/4	12"

Beam Spans

Joist Spans

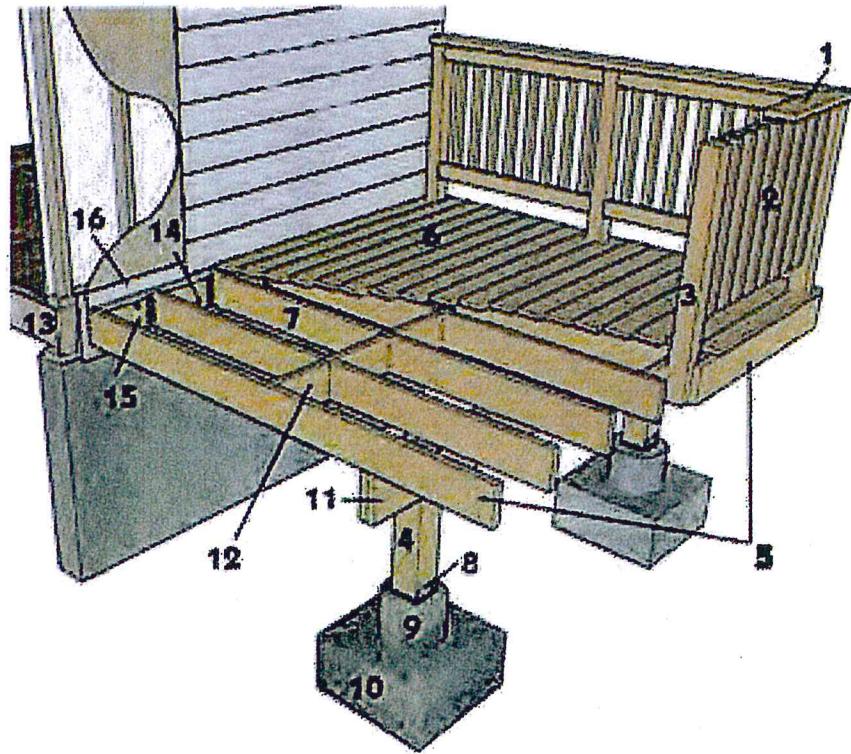
Footing Sizes - assuming 1500 psf soils

SQ. FT. of Deck Supported	Footing Diameter in Inches	Square Feet of Deck Supported	Footing Diameter in Inches
10	8	41	16
13	9	47	17
16	10	53	18
19	11	59	19
23	12	65	20
27	13	72	21
32	14	79	22
36	15	86	23

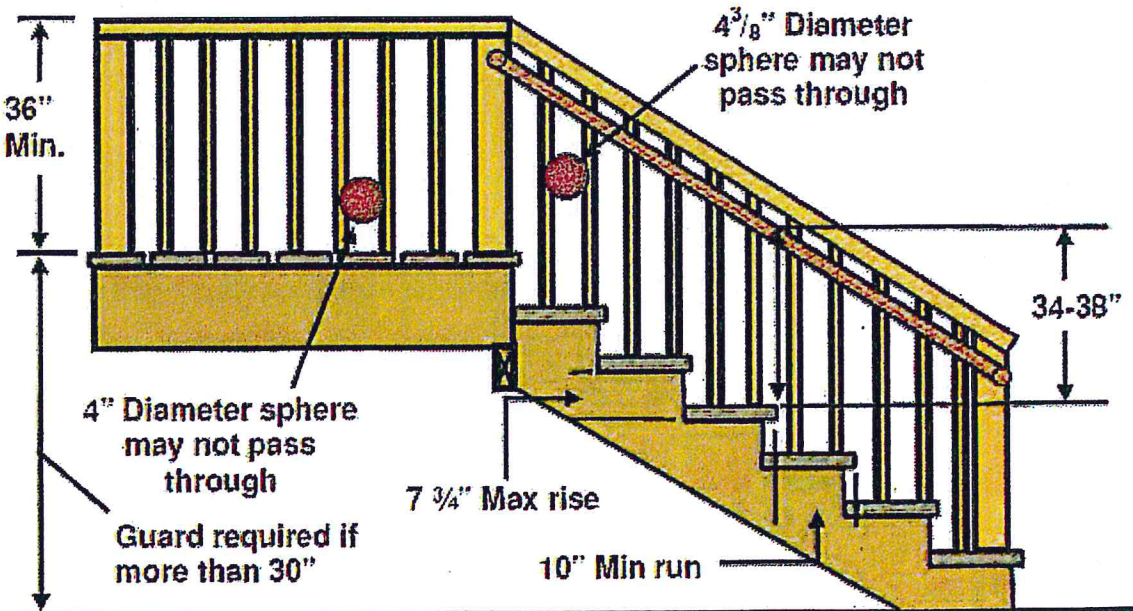
Wood Type	Beam	6'	8'	10'	12'	14'	16'	18'
	Southern Pine	2-2X6	7'1"	6'2"	5'6"	5'	4'8"	4'4"
2-2X8		9'2"	7'11"	7'1"	6'6"	6'	5'7"	5'3"
2-2X10		11'10"	10'3"	9'2"	8'5"	7'9"	7'3"	6'10"
2-2X12		13'11"	12'	10'9"	9'10"	9'1"	8'6"	8'
3-2X6		8'7"	7'8"	6'11"	6'3"	5'10"	5'5"	5'2"
3-2X8		11'4"	9'11"	8'11"	8'1"	7'6"	7'	6'7"
3-2X10		14'5"	12'10"	11'6"	10'6"	9'9"	9'1"	8'7"
Cedar, Redwood, Ponderosa Pine	3-2X12	17'5"	15'1"	16'6"	12'4"	11'5"	10'8"	10'1"
	2-2X6	5'5"	4'8"	4'2"	3'10"	3'6"	3'1"	2'9"
	2-2X8	6'10"	5'11"	5'4"	4'10"	4'6"	4'1"	3'8"
	2-2X10	8'4"	7'3"	6'6"	5'11"	5'6"	5'1"	4'8"
	2-2X12	9'8"	8'5"	7'6"	6'10"	6'4"	5'11"	5'7"
	3-2X6	7'4"	6'8"	6'	5'6"	5'1"	4'9"	4'6"
	3-2X8	9'8"	8'6"	7'7"	6'11"	6'5"	6'	5'8"
3-2X10	12'	10'5"	9'4"	8'6"	7'10"	7'4"	6'11"	
3-2X12	13'11"	12'1"	10'9"	9'10"	9'1"	8'6"	8'1"	

TERMINOLOGY

1. RAIL TOP CAP
2. BALLUSTERS
3. RAIL POST
4. SUPPORT POST
5. RIM OR BAND JOIST
6. DECKING
7. JOISTS
8. POST BASE CONNECTOR
9. PIER
10. FOOTING
11. DROP BEAM
12. BLOCKING
13. HOUSE JOIST
14. 1/2" BOLTS
15. LEDGER BOARD
16. FLASHING

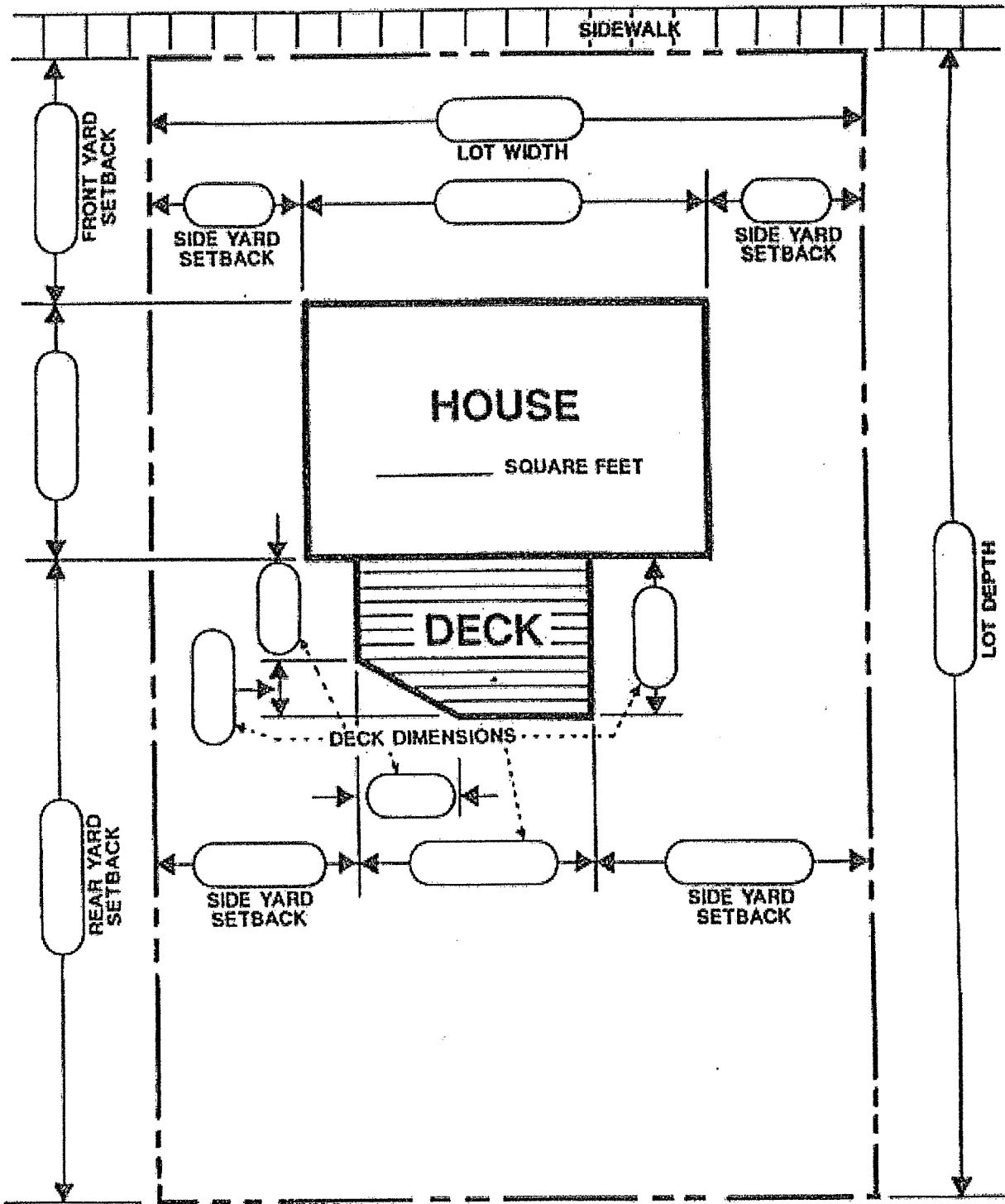


STAIRS MUST BEAR ON STRUCTURAL MATERIAL (i.e. treated lumber, concrete, gravel) AND BE PERMANENTLY RESTRAINED FROM LATERAL MOVEMENT.

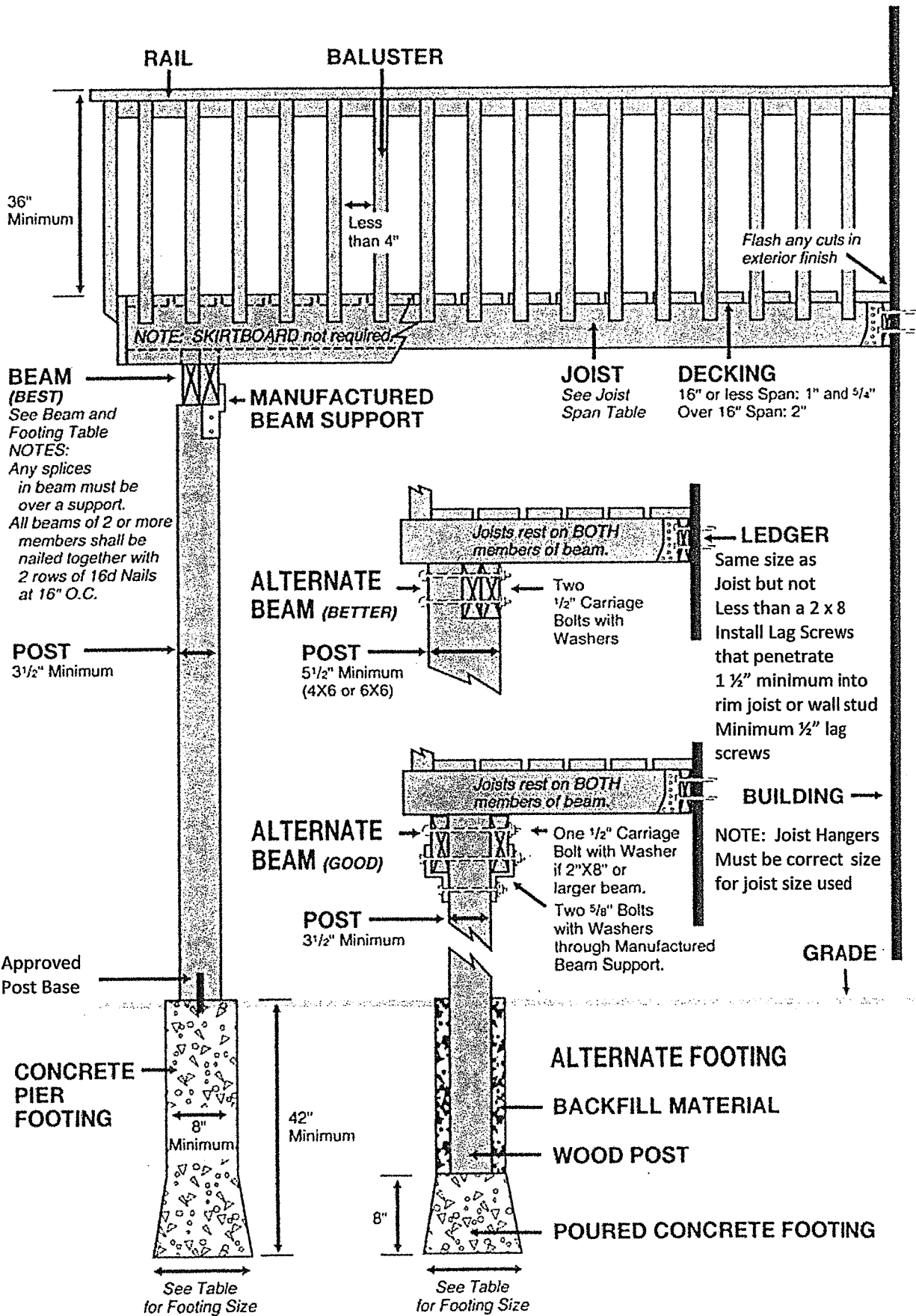


SAMPLE SITE PLAN

ADDRESS: _____



DECK SIDE VIEW



FASTENERS SPACING FOR A SOUTHERN PINE OR HEM-FIR LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIRE 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}						
½" diameter lag screw with 15/32" maximum sheathing ^a	30	23	18	15	13	11	10
½" diameter bolt with 15/32" maximum sheathing	36	36	34	29	24	21	19
½" diameter bolt with 15/32" maximum sheathing and ½" stacked washers ^{b,h}	36	36	29	24	21	18	16

or SI: 1 inch = 25.4 mm, 1 foot = 304.88 mm. 1 pound per square foot = 0.0479 kPa.

- a. The tip of the lag screw shall fully extend beyond the inside face of the bank joist.
- b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be ½ inch.
- c. Ledgers shall be flashed to prevent water from contacting the house band joist.
- d. Lag screw and bolts shall be staggered in accordance with Section R507.2.1.
- e. Deck ledger shall be minimum 2 x 8 pressure-preservative-treated No. 2 grade lumber, or other approved material 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 x 9 ½ 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.

R507.2.3 Deck Lateral load connection

The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3. Where the lateral load connection is provided in accordance with Figure 507.2.3, 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 pounds (6672N).

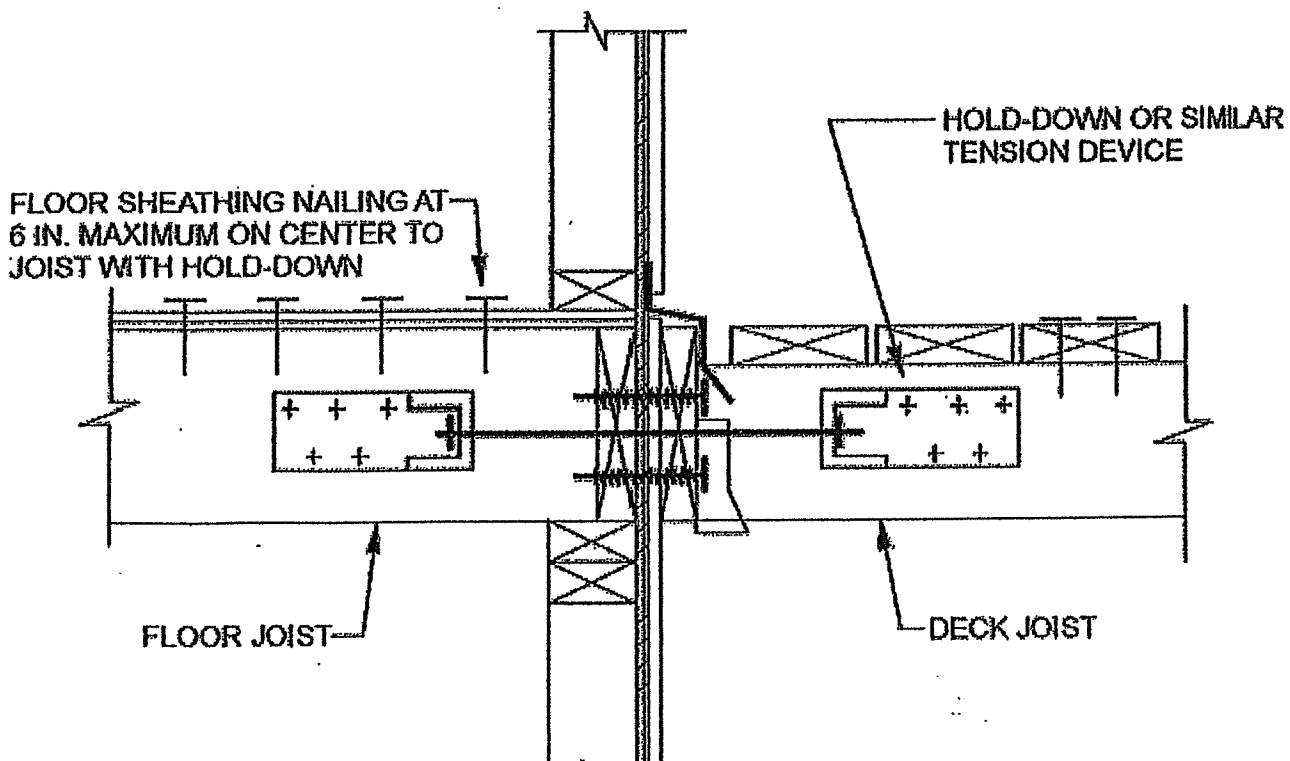


TABLE 507.2.1 PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

MINIMUM END EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger ^a	2 inches ^d	¼ inch	2 inches ^b	1 5/8 inches ^b
Band Joist ^c	¾ inch	2 inches	2 inches ^b	1 5/8 inches ^b

For SI: 1 inch = 25.4 mm.

- 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).
- Maximum 5 inches.
- For engineered rim joists, the manufacturer's recommendations shall govern.
- 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).

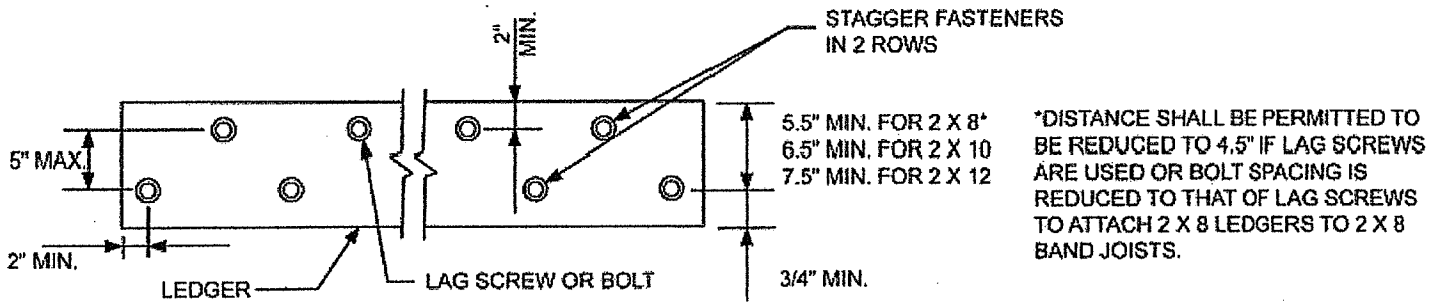


FIGURE R507.2.1(1) PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS

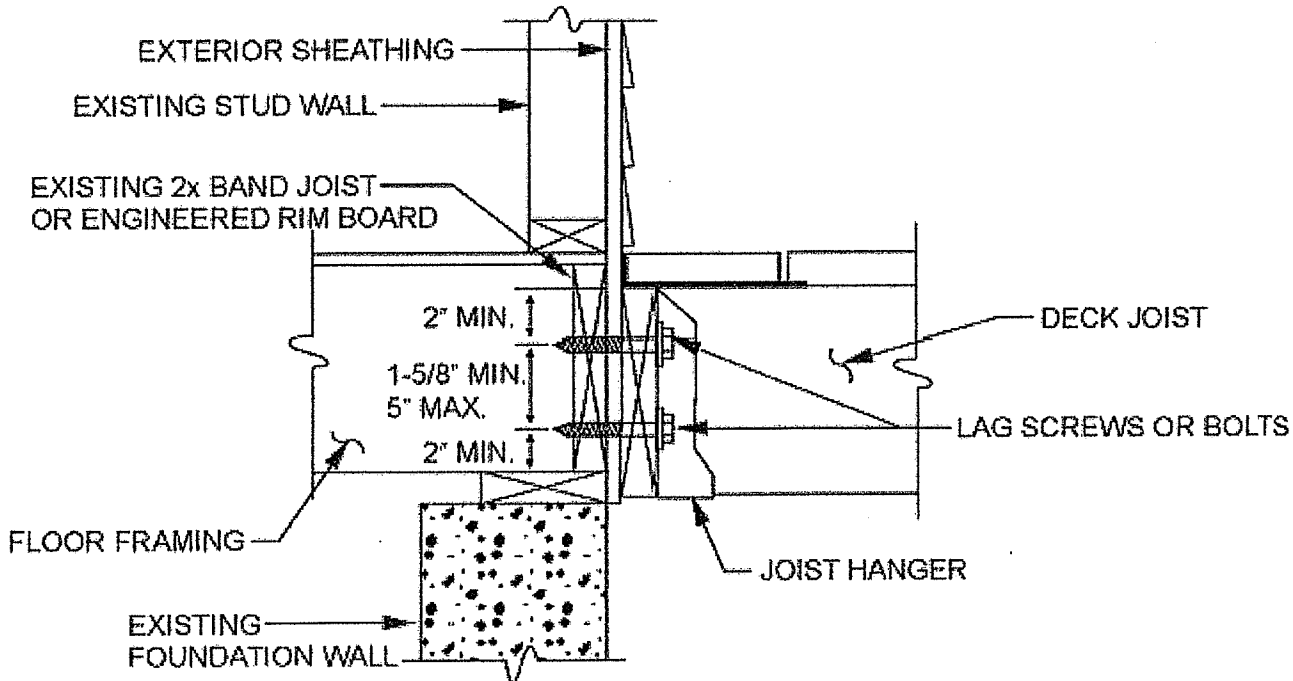


FIGURE R507.2.1(2) PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS