



**DECK HOT SHEET**  
**City of Grand Rapids**  
**Building Safety Division**

**218-326-7601**

[www.cityofgrandrapidsmn.com](http://www.cityofgrandrapidsmn.com)



DECK FOOTING SIZES (1500 psf soils)							
Max. Area of Deck Supported in Sq Ft	Footing Diameter Required in Inches	Max. Area of Deck Supported in Sq Ft	Footing Diameter Required in Inches	Max. Area of Deck Supported in Sq Ft	Footing Diameter Required in Inches	Max. Area of Deck Supported in Sq Ft	Footing Diameter Required in Inches
10	8	23	12	41	16	65	20
13	9	27	13	47	17	72	21
16	10	32	14	53	18	79	22
19	11	36	15	59	19	86	23

JOIST SPANS (Wet Service)						
(Source AF&PA; rev. 8-17-10)						
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"

BEAM SPANS (Wet Service)								
(Center of one column to center of next)								
(Source AF&PA; rev. 8-17-10)								
Species	Beam Size	Joist Spans						
		6'	8'	10'	12'	14'	16'	18'
Southern Pine	2-2X6	7'1"	6'2"	5'6"	5'0"	4'8"	4'4"	4'1"
	2-2X8	9'2"	7'11"	7'1"	6'6"	6'0"	5'7"	5'3"
	2-2X10	11'10"	10'3"	9'2"	8'5"	7'9"	7'3"	6'10"
	2-2X12	13'11"	12'0"	10'9"	9'10"	9'1"	8'6"	8'0"
	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"	7'0"	6'7"
	3-2X10	14'5"	12'10"	11'6"	10'6"	9'9"	9'1"	8'7"
	3-2X12	17'5"	15'1"	13'6"	12'4"	11'5"	10'8"	10'1"

Cedar, Redwood, Ponderosa Pine	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"	6'0"	5'6"	5'1"	4'9"	4'6"
	3-2X8	9'8"	8'6"	7'7"	6'11"	6'5"	6'0"	5'8"
	3-2X10	12'0"	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"

MAXIMUM DECK BOARD SPANS	
5/4 AND 2X4 PERPENDICULAR TO JOIST	16" O.C. / 24" O.C. FOR SP
5/4 AND 2X4 AT 45 DEGRESS TO JOIST	12" O.C.
2X6	24" O.C.

FASTENER SPACING FOR SOUTHERN PINE OR HEM-FIR DECK LEDGER AND 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST							
Deck Live Load = 40 psf, Deck Dead Load = 10 psf <sup>3,6,7</sup>							
JOIST SPAN (ft)	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 <sup>4,5</sup>							
1/2" DIAM. LAG SCREW WITH 1 1/32" SHEATHING <sup>1</sup>	30	23	18	15	13	11	10
1/2" DIAM. BOLT WITH 1 1/32" MAX. SHEATHING	36	36	34	29	24	21	19
1/2" DIAM. BOLT / 1 1/32" MAX. SHEATHING AND 1/2" STACKED WASHERS <sup>2,8</sup>	36	36	29	24	21	18	16

<sup>1</sup> The tip of the lag screw shall fully extend beyond the inside face of the band joist.  
<sup>2</sup> The maximum gap between the face of the ledger board and the face of the wall sheathing shall be 1/2".  
<sup>3</sup> Ledgers shall be flashed to prevent water from contacting the house band joist.  
<sup>4</sup> Lag screws and bolts shall be placed two inches from the bottom or top of deck ledgers and between two and five inches from the ends. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.  
<sup>5</sup> Deck ledger shall be minimum 2X8 pressure-preservative treated No. 2 grade lumber or other approved materials as established by standard engineering practices.  
<sup>6</sup> When solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (structural composite rim board or laminated veneer lumber), the ledger attachment shall be designed in accordance with accepted engineering practices.  
<sup>7</sup> A minimum 1 X 9 1/2 Douglas Fir laminated veneer rimboard shall be permitted in lieu of the 2-inch nominal band joist.  
<sup>8</sup> Wood structural panel sheathing, gypsum board sheathing, or foam sheathing not exceeding one inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the band joist shall be one inch.

❖ Capacity of lag or carriage bolts shall not exceed 400 lb's per bolt unless design provided.

MAXIMUM CANTILEVER SPANS FOR JOISTS WITH BACKSPAN AT LEAST 2:1		
JOIST SIZE	SPACING O.C.	MAX. CANTILEVER
2X8	12"	34"
2X8	16"	29"
2X10	12"	49"
2X10	16"	42"
2X10	24"	34"
2X12	16"	57"
2X12	24"	47"

a. Connections capable of resisting uplift forces shall be provided at the backspan support. b. A full-depth rim joist shall be provided at the cantilevered end of the joists. Solid blocking shall be provided at the cantilevered support.

MAXIMUM POST HEIGHT IN FEET															
SPECIES	SIZE	SQUARE FEET OF DECK SUPPORTED													
		36	48	60	72	84	96	108	120	132	144	156	165	180	192
SOUTHERN PINE	4X4	10	10	10	9	9	8	8	7	7	6	6	6	6	6
	4X6	14	14	13	12	11	10	10	9	9	8	8	8	7	7
	6X6	17	17	17	17	17	17	17	17	16	16	15	14	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	7	6	6	5
	6X6	17	17	17	17	17	16	13	7						

**\*\*\*COMPOSITE DECKING AND RAILINGS NOT COVERED IN THIS HANDOUT!!!!!!!!!!**