



City of Urbandale

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Deck Design Handout

	Maximum Joist Span*			
	2X6	2X8	2X10	2X12
12" O/C	10' - 9"	14' - 2"	17' - 9"	20' - 7"
16" O/C	9' - 9"	12' - 7"	15' - 5"	17' - 10"

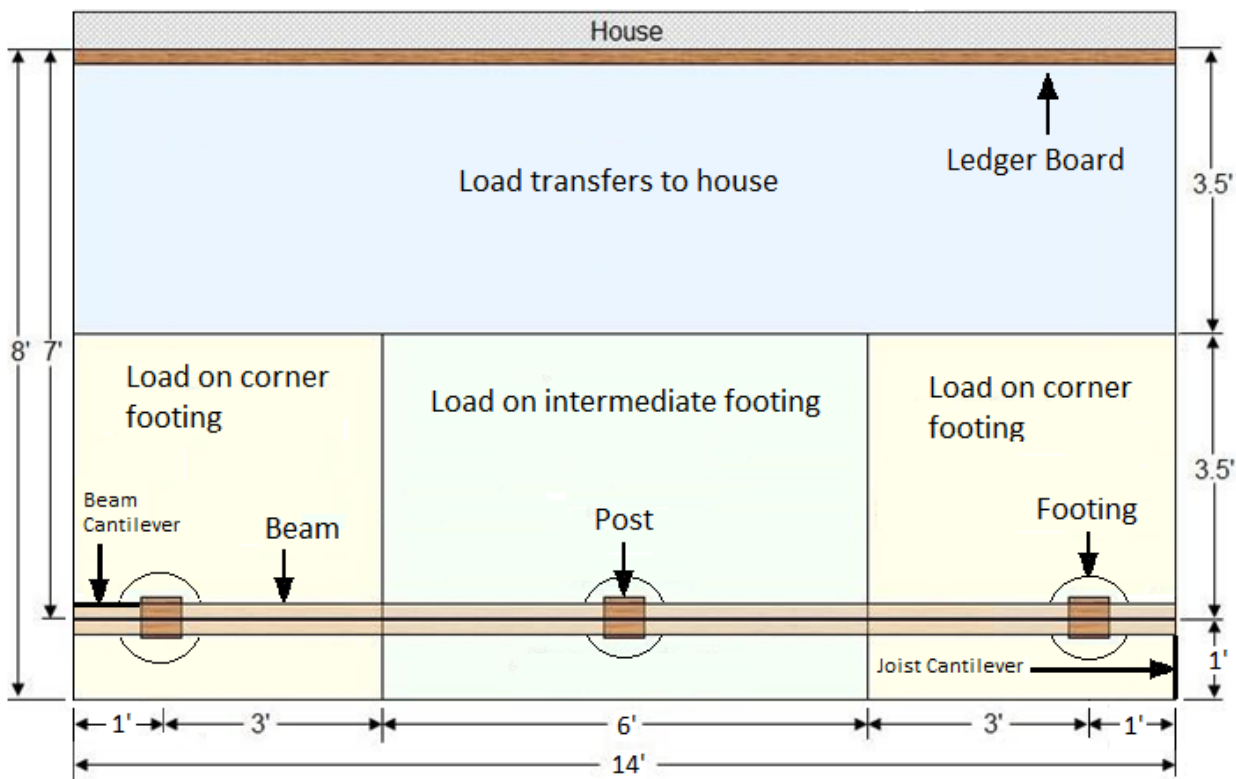
Material	Decking Material Span			
	5/4 X 4	5/4 X 6	2X4	2 X 6
Max Span	16"	24"	24"	24"

		Minimum Beam Size*									
		Distance between posts									
		3'	4'	5'	6'	7'	8'	9'	10'	11'	12'
Joist Load	5'	1 - 2X6	1 - 2X6	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X10	2 - 2X10	2 - 2X12	3 - 2X10
	6'	1 - 2X6	1 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X10	2 - 2X10	3 - 2X12	3 - 2X10	3 - 2X12
	7'	1 - 2X6	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X10	3 - 2X12	3 - 2X10	3 - 2X12	3 - 2X12
	8'	1 - 2X6	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X10	2 - 2X10	3 - 2X12	3 - 2X12	3 - 2X12	
	9'	1 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X10	2 - 2X10	3 - 2X10	3 - 2X12		
	10'	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X10	2 - 2X10	3 - 2X12	3 - 2X12		
	11'	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X12	2 - 2X12	3 - 2X12			
	12'	2 - 2X6	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X12	3 - 2X10	3 - 2X12			
	13'	2 - 2X6	2 - 2X8	2 - 2X8	2 - 2X8	2 - 2X12	3 - 2X12	3 - 2X12			

		Minimum ledger board attachment						
		Joist Span						
1/2" Dia. lag screw with 1/2" maximum sheathing, attaching to 2" Band Joist		6' or less	6'1" - 8'	8'1" - 10'	10'1" - 12'	12'1" - 14'	14'1" - 16'	16'1" - 18'
				On-center spacing of fasteners				
		30"	23"	18"	15"	13"	11"	10"

* Assumes 40# psf. live load and 10# psf. dead load. Loads such as hot tubs or roofs require additional support
 All lumber is assumed to be Doug-Fir #2 or better

Joist Load = 1/2" The distance of ledger to beam PLUS length of cantilever if applicable



Calculating size of Intermediate footing

½ ledger to beam distance + joist cantilever distance X ½ the distance to each corner post

$(3.5' + 1') \times (3' + 3') = 27$ square feet. Per chart - 27 square feet requires a minimum 12" dia. footing

Calculating size of Corner footings

½ ledger to beam distance + joist cantilever distance X ½ the distance intermediate post + beam cantilever

$(3.5' + 1') \times (3' + 1') = 18$ square feet. Per chart - 18 square feet requires a minimum 10" dia. Footing

Seasonal Rooms

Seasonal Rooms must be constructed on minimum 6"x6" treated wood columns and supported by 24x24x10" thick footings or other structurally designed foundations. An acceptable alternative is 24" diameter belled to 28". Ordinance 150.03 (21)

Deck footing sizing chart												
Area of deck (sq. ft.)*	14	21	31	42	55	70	87	105	125	147	171	196
Min. footing diameter	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"

*Assumes 40# psf. live load & 10 psf. dead load. Additional loads such as hot tubs or roofs require additional support.