

RESIDENTIAL DECKS – BASED ON 2024 IRC

INSPECTIONS:

- ◆ Inspections are scheduled through Customer Self-Service Portal used to apply for the permit.
- ◆ Please allow for 24 hours advanced notice.
- ◆ The location of the deck on the lot will be subject to all zoning requirements.

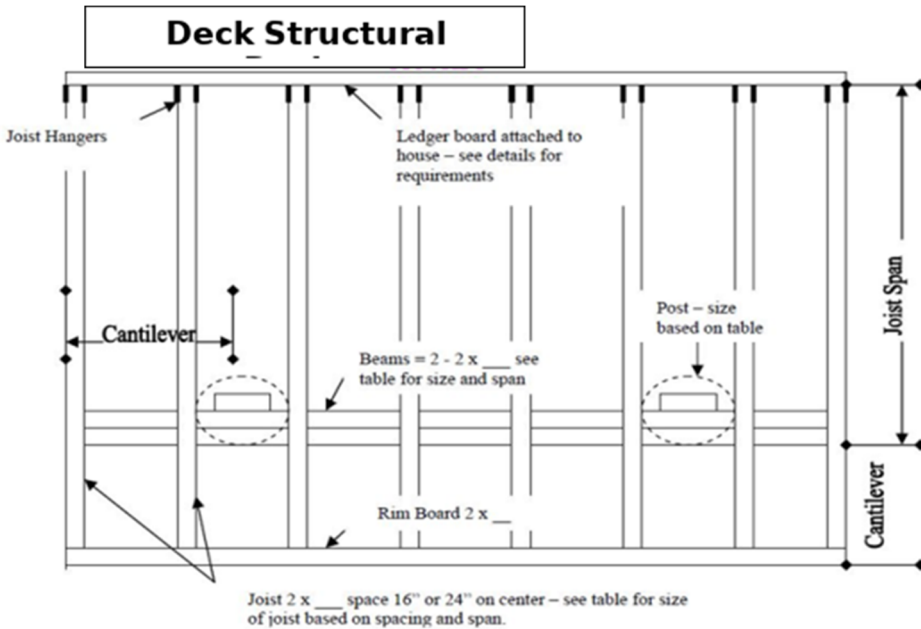
WHEN TO CALL FOR:

Footing/ Post Holes – Holes dug, clean and free from debris. Prior to concrete placement.

Framing – If deck is close to the ground and framing verification will be difficult.

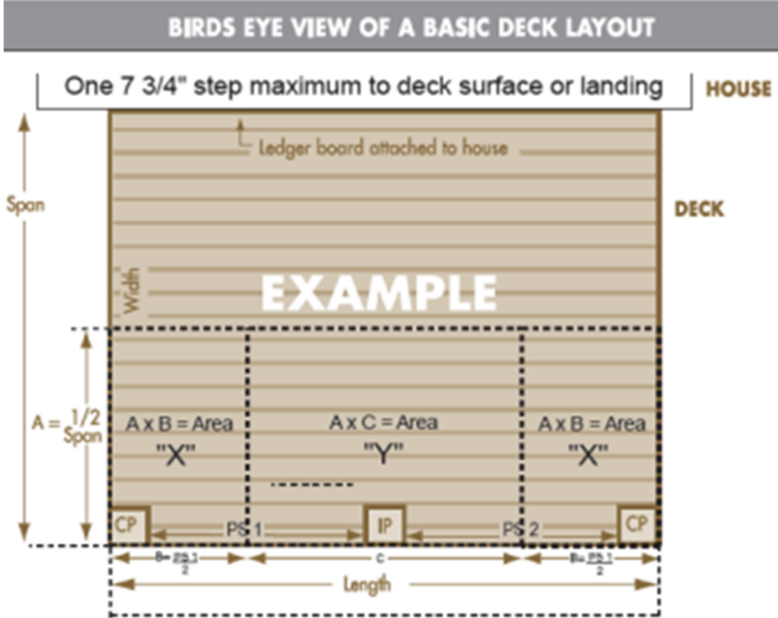
Framing/ Final – Deck, stairs, guards, handrails, and landing all complete.

Other Inspections – Separate electrical, plumbing, and mechanical inspections are required if those systems are included in your project.



Questions? Call us!
(319) 356-5120

Sizing Deck Footings
Minimum Footing Depth - 42

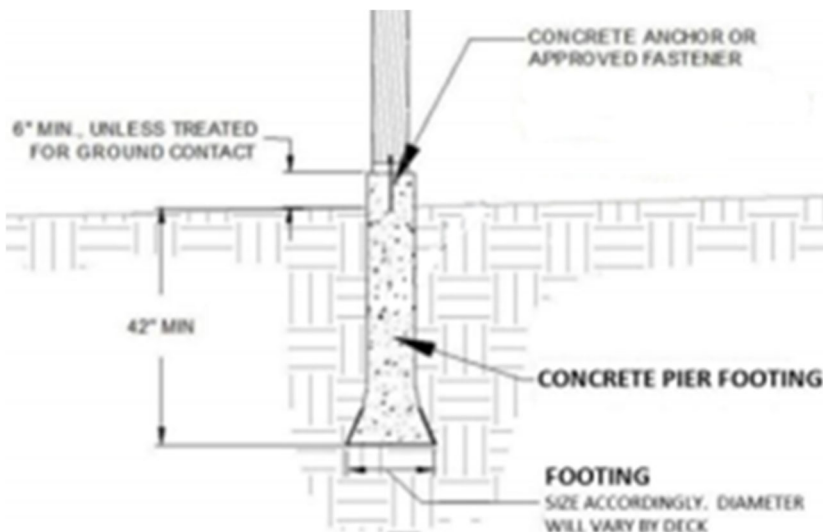


For Uncovered Decks

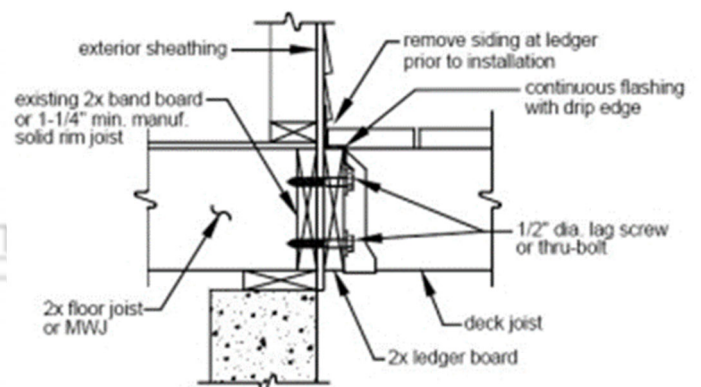
Footing Size Table (2000 psf soil bearing value)		
40 psf Live Load	Tributary Area (Sq. Ft)	Diameter of Round Footing (inches)
	5	8
	20	9
	40	14
	60	17
	80	19
	100	21
	120	23
	140	25
	160	27

Minimum thickness is 8 in. Frost depth is 42 in.
Interpolation permitted, extrapolation not permitted

Deck Footing Detail



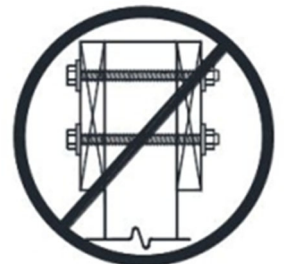
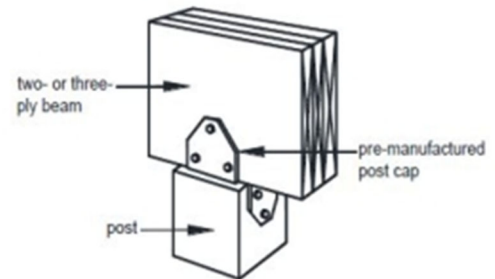
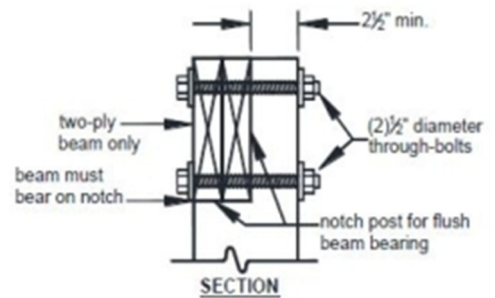
Deck Ledger Detail



MAXIMUM DECK BEAM SPAN—40 PSF LIVE LOAD^c

JOIST SPAN	JOIST SPAN LENGTH AND JOIST CANTILEVER LENGTH ^{a, i} (feet & feet)									
	6 & 0	6 & 1.5	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—
8	—	8 & 0	8 & 1	8 & 2	—	—	—	—	—	—
10	—	—	10 & 0	10 & 1	10 & 2.5	—	—	—	—	—
12	—	—	—	12 & 0	12 & 1	12 & 2	12 & 3	—	—	—
14	—	—	—	—	14 & 0	14 & 1	14 & 2	14 & 3.5	—	—
16	—	—	—	—	—	16 & 0	16 & 1	16 & 2.5	—	—
18	—	—	—	—	—	—	18 & 0	18 & 1.5	18 & 3	18 & 4.5

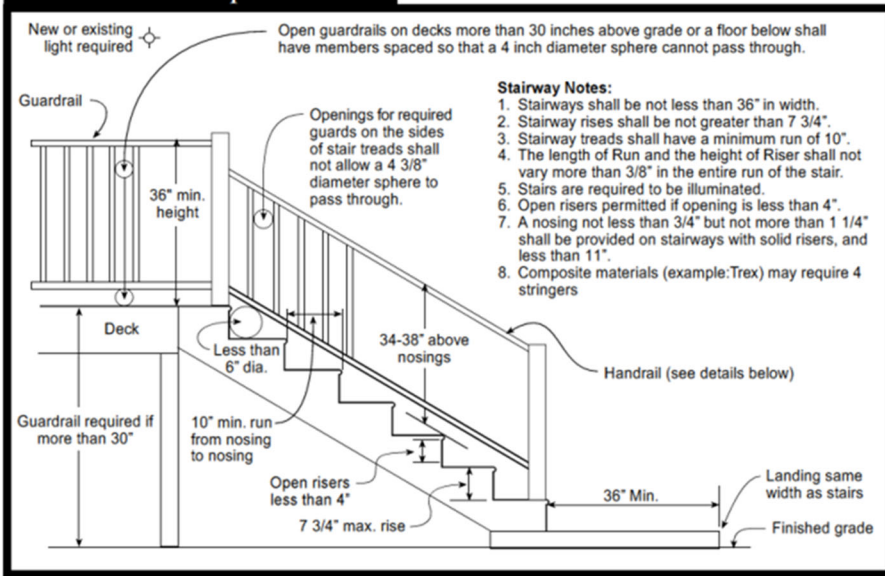
BEAM SPECIES ^d	BEAM SIZE ^e	MAXIMUM DECK BEAM SPAN LENGTH ^{b, c, f} (feet-inches)									
Southern pine	1 - 2 x 6	4-10	4-7	4-3	4-0	3-7	3-5	3-3	3-0	2-10	2-8
	1 - 2 x 8	6-4	5-11	5-6	5-1	4-7	4-4	4-2	3-10	3-7	3-5
	1 - 2 x 10	7-6	7-0	6-6	6-0	5-5	5-2	4-11	4-7	4-3	4-0
	1 - 2 x 12	8-8	8-3	7-8	7-1	6-4	6-1	5-10	5-5	5-0	4-9
	2 - 2 x 6	7-4	6-11	6-5	5-11	5-4	5-1	4-10	4-6	4-3	4-0
	2 - 2 x 8	9-4	8-9	8-2	7-7	6-9	6-5	6-2	5-9	5-4	5-0
	2 - 2 x 10	11-0	10-4	9-8	9-0	8-0	7-8	7-4	6-9	6-4	6-0
	2 - 2 x 12	13-0	12-2	11-4	10-7	9-5	9-0	8-7	8-0	7-5	7-0
	3 - 2 x 6	9-0	8-6	7-11	7-5	6-8	6-4	6-1	5-8	5-3	4-11
	3 - 2 x 8	11-7	10-11	10-3	9-6	8-6	8-1	7-9	7-2	6-8	6-4
3 - 2 x 10	13-11	13-0	12-1	11-2	10-0	9-7	9-2	8-6	7-11	7-6	
3 - 2 x 12	16-3	15-3	14-3	13-3	11-10	11-3	10-9	10-0	9-4	8-10	



MAXIMUM DECK JOIST SPANS

LOAD ^a (psf)	JOIST SPECIES ^b	JOIST SIZE	ALLOWABLE JOIST SPAN ^{b, c} (feet-inches)			MAXIMUM CANTILEVER ^{d, f} (feet-inches)								
			Joist spacing (inches)			Joist back span ^g (feet)								
			12	16	24	4	6	8	10	12	14	16	18	
40 live load	Southern pine	2 x 6	9-11	9-0	7-7	1-0	1-6	1-5	NP	NP	NP	NP	NP	NP
		2 x 8	13-1	11-10	9-8	1-0	1-6	2-0	2-6	2-3	NP	NP	NP	NP
		2 x 10	16-2	14-0	11-5	1-0	1-6	2-0	2-6	3-0	3-4	3-4	NP	NP
		2 x 12	18-0	16-6	13-6	1-0	1-6	2-0	2-6	3-0	3-6	4-0	4-1	NP
	Douglas fir-larch ^e Hem-fir ^e Spruce-pine-fir ^e	2 x 6	9-6	8-4	6-10	1-0	1-6	1-4	NP	NP	NP	NP	NP	NP
		2 x 8	12-6	11-1	9-1	1-0	1-6	2-0	2-3	2-0	NP	NP	NP	NP
		2 x 10	15-8	13-7	11-1	1-0	1-6	2-0	2-6	3-0	3-3	NP	NP	NP
		2 x 12	18-0	15-9	12-10	1-0	1-6	2-0	2-6	3-0	3-6	3-11	3-11	NP
	Redwood ^f Western cedars ^f Ponderosa pine ^f Red pine ^f	2 x 6	8-10	8-0	6-10	1-0	1-4	1-1	NP	NP	NP	NP	NP	NP
		2 x 8	11-8	10-7	8-8	1-0	1-6	2-0	1-11	NP	NP	NP	NP	NP
		2 x 10	14-11	13-0	10-7	1-0	1-6	2-0	2-6	3-0	2-9	NP	NP	NP
		2 x 12	17-5	15-1	12-4	1-0	1-6	2-0	2-6	3-0	3-6	3-8	NP	NP

Stair & Handrail Specifications



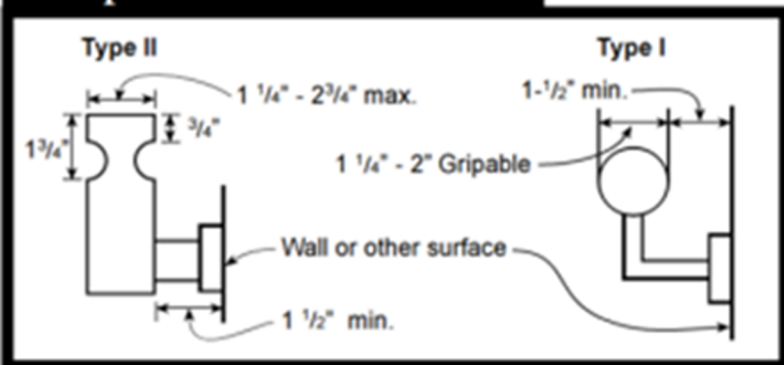
Decking Materials Spans

Material	Max Joist Spacing	
	Perpendicular	Diagonal
5/4 Decking	16"	12"
Nominal 2"	24"	16"
Composite	Follow Manufacturers Specs	

Handrail Notes:

1. Handrails shall be continuous on at least one side of stairs with 4 or more risers.
2. Top of the handrails shall be placed not less than 34 inches nor more than 38 inches above stair nosings.
3. The handgrip portion of handrails shall be not less than 1-1/4 inches nor more than 2 1/4 inches in cross section for non circular handrails.
4. Handrails shall be placed not less than 1-1/2 inches from any wall or other surface.
5. Handrails to be returned to wall, post or safety terminal (per 311.5.6.2 IRC)

Acceptable Handrail Details



Unacceptable Handrails

