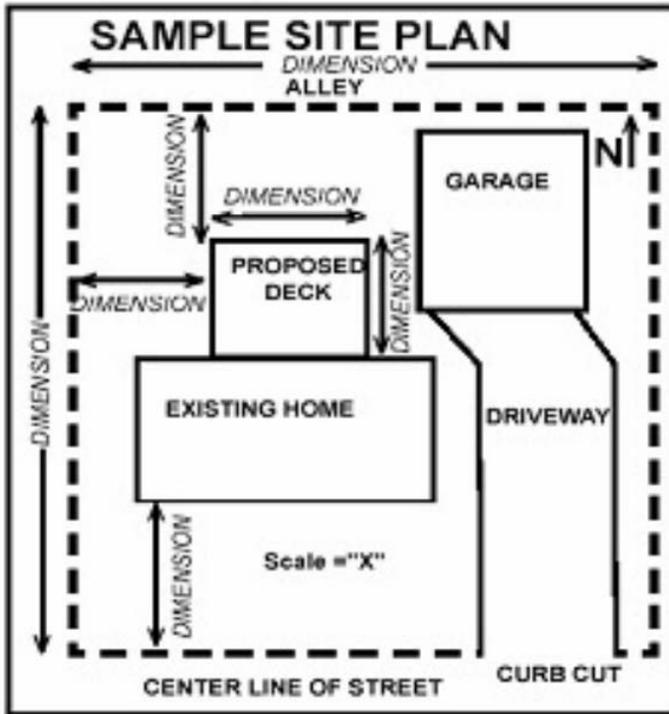


Residential Single and Two-Family Dwelling Exterior Decks & Stair Guidelines

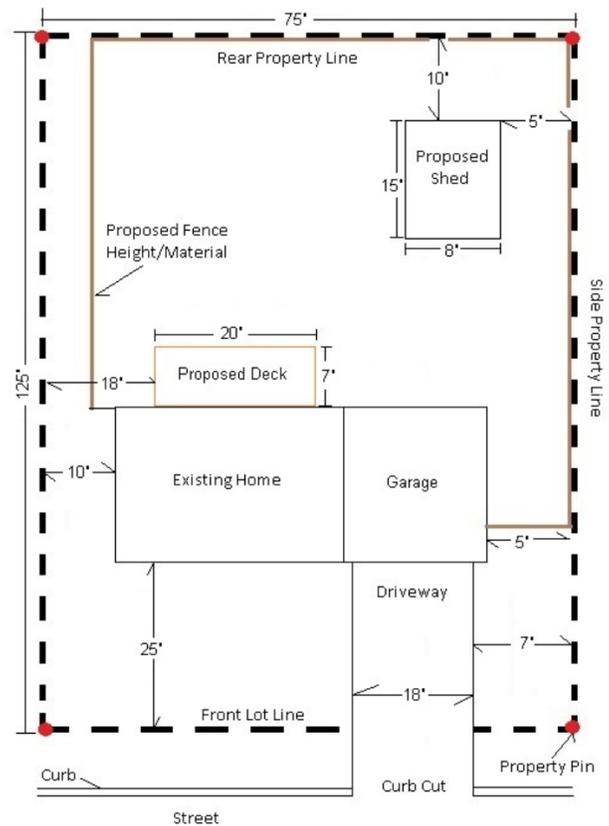
(Based on 2009 IRC [Int. Residential Code] - See full code for exceptions and additional information)

Basic Submittal Requirements for Decks & Stairs:

Provide a Site plan (may utilize County Parcel Map [maps.lincolncountysd.org/parcel-browser/], or survey/plat plan) showing property lines, setbacks, easements, north arrow. **Provide Floor/Framing plan** indicating size of posts and floor joists, show stair construction (36" min width/36" max between stringers), **Provide a section** showing height of deck off ground, indicate wall/deck flashing, and type of wood utilized (see fillable sheets at the end of this Guide).



Site Plan is required – Examples above

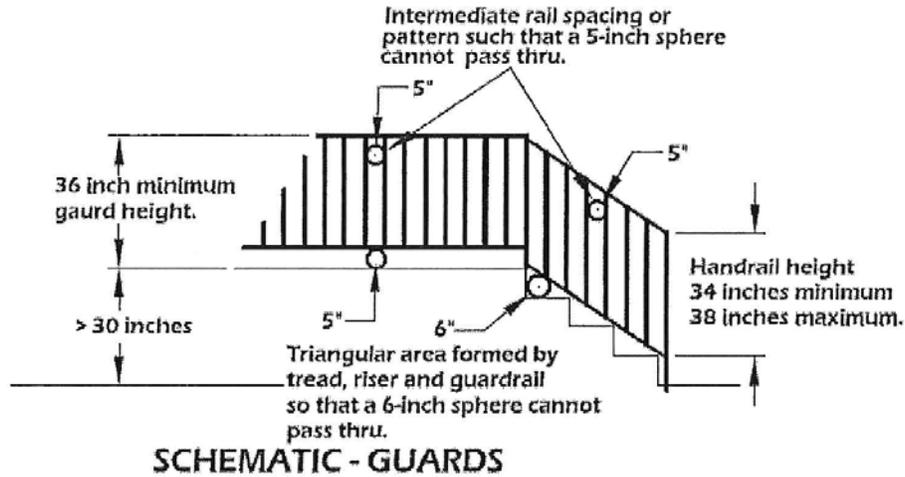


Standard Code Requirements (these are brief homeowner guides – more information available in IRC):

Locations: Stairs and decks located closer than 3 feet to the property line shall be of fire-resistive construction.
Stairs: Stairways shall not be less than 36 inches in clear width. The maximum riser height shall be 8 inches and the minimum tread depth shall be 10 inches. The walking surface of the treads and landings shall be sloped no steeper than one unit vertical in 48 units horizontal (2% slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch. Exterior stairs shall be provided with illumination by a light source located in the immediate vicinity of the top landing.

Handrails: Handrails having minimum and maximum heights of 34 and 38 inches, measured vertically from the nosing of the treads shall be provided on at least one side of stairways. All required handrails shall extend the full length of the stairs with four or more risers.

Guards/Railings: Guards shall be located along open-sided walking surfaces, ramps, and landings, that are located more than 30 inches above grade/floor. Required guards shall not be less than 36 inches high



Deck ledger connection to band joist [see diagram below]: For residential decks, the connection between a deck ledger of pressure treated lumber bearing on a sill plate or wall plate shall be constructed with ½ inch lag screws or bolts with washers – Lag screws, bolts, and washers shall be hot-dipped galvanized or stainless steel.

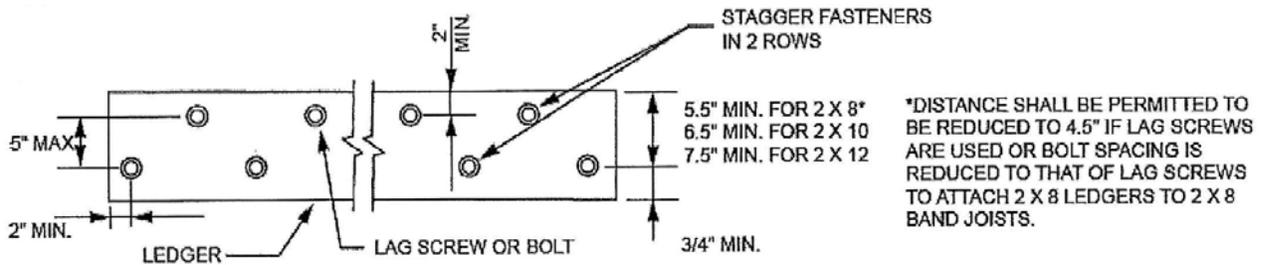


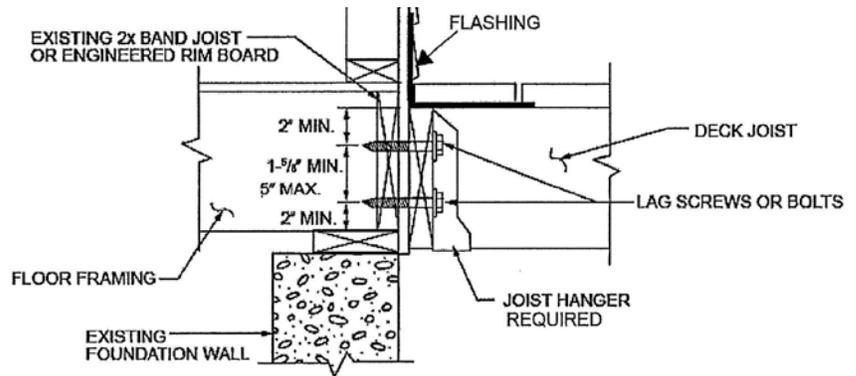
Figure 507.2.1

Fastener spacing requirements depend on size of deck (deck live load=40psd, dead load=10psf)

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}			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	36	36	29	24	21	18	16

Table R507.2

This is typical deck ledger connection – there are alternatives, depending on actual conditions. Deck ledgers shall not be supported on stone or masonry veneer. Note extent of Flashing – nominal roofing drip edge is NOT acceptable



Deck Joists: Maximum spans for wood deck joists shall be in accordance with table below. Deck joists shall be permitted to be cantilevered not greater than one-fourth of the actual, adjacent joist span. Wood decking shall be attached to each supporting member with not less than (2) 8d threaded nails or (2) No. 8 woodscrews listed for exterior use. Joists shall be fastened to the joist ledger by stainless steel or hot dipped galvanized joist hangers listed for the joist size.

Deck Joist Spans for Common Lumber Species^f (ft.-in.)

SPECIES	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER ^b (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS ^c (inches)		
		12	16	24	12	16	24
Southern pine	2 X 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 X 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 X 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 X 12	18-0	16-6	13-6	18-0	16-6	13-6
Douglas fir-larch ^d , hem-fir ^d	2 X 6	9-6	8-8	7-2	6-3	6-3	6-3
	2 X 8	12-6	11-1	9-1	9-5	9-5	9-1
Spruce-pine-fir ^d	2 X 10	15-8	13-7	11-1	13-7	13-7	11-1
	2 X 12	18-0	15-9	12-10	18-0	15-9	12-10
Redwood, western cedars, ponderosa pine ^d , red pine ^c	2 X 6	8-10	8-0	7-0	5-7	5-7	5-7
	2 X 8	11-8	10-7	8-8	8-6	8-6	8-6
	2 X 10	14-11	13-0	10-7	12-3	12-3	10-7
	2 X 12	17-5	15-1	12-4	16-5	15-1	12-4

Table 15/507.5

Deck Posts and Beams: Deck beams shall be attached to deck posts in accordance with the IRC, manufactured post-to-beam connectors shall be sized for the post and beam sizes, all bolts shall have washers under the head and nut. For single-level wood-framed decks: posts shall be sized in accordance with Table R507.8. Attached decks posts shall bear on footings per R507.8.1. Posts shall be restrained to prevent lateral displacement at the bottom support. Such lateral restraint shall be provided by manufactured connectors installed per manufacturer instructions, or a minimum post embedment of 12 inches in surrounding soils or concrete piers. Decks that are attached to any dwelling shall have first depth footing not less than 42 inches in depth.

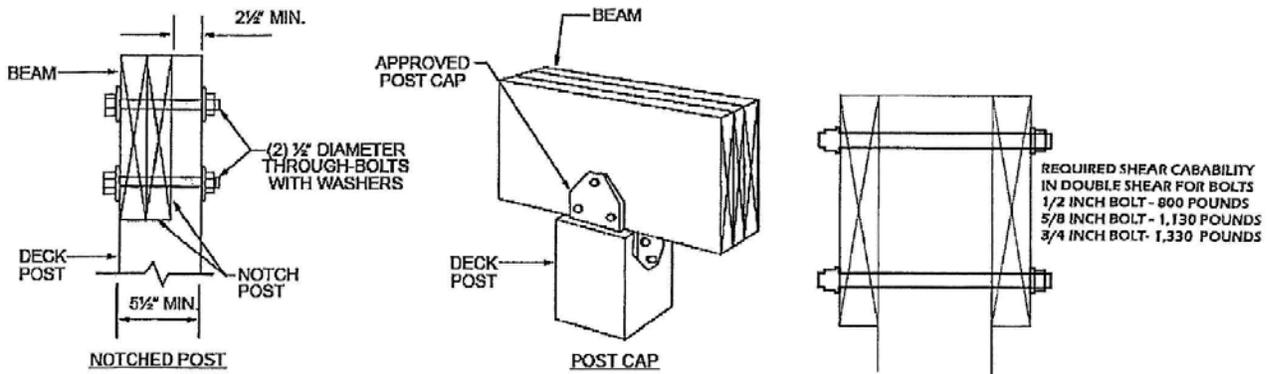


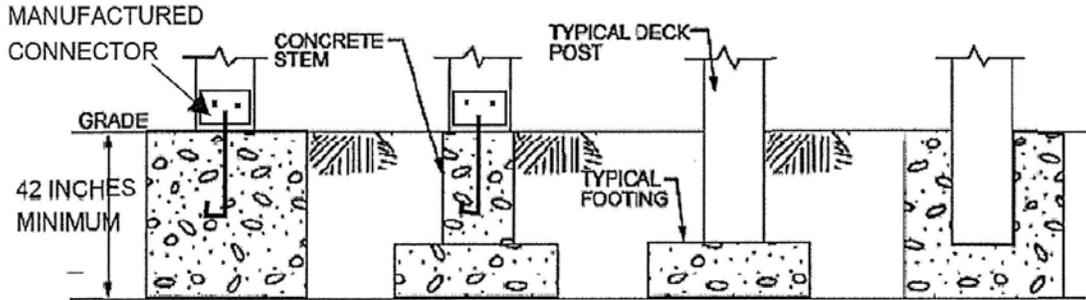
Figure: R507.7.1

DECK POST SIZE	MAXIMUM HEIGHT*
4 X 4	8'
4 X 6	8'
6 X 6	14'

For SI: 1 foot = 304.8 mm.

a. Measured to the underside of the beam.

Table: R507.8



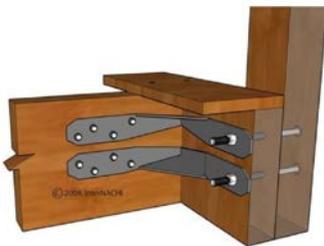
Typical footing details

PIER SIZE	BEARING CAPACITY
6 INCH ROUND	600 POUNDS
8 INCH ROUND	1,050 POUNDS
10 INCH ROUND	1,650 POUNDS
12 INCH ROUND	2,340 POUNDS
14 INCH ROUND	3,200 POUNDS
16 INCH ROUND	4,180 POUNDS
18 INCH ROUND	5,300 POUNDS
24 INCH ROUND	9,420 POUNDS

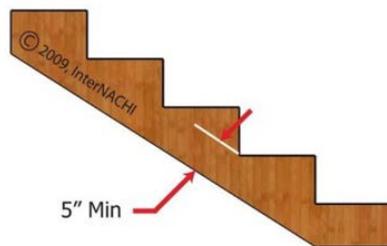
Figure R507.8.1

(Width x Length x 50 = deck load)

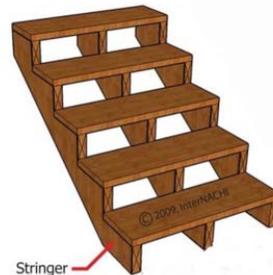
Other Typical Details:



Guardrail post attachment

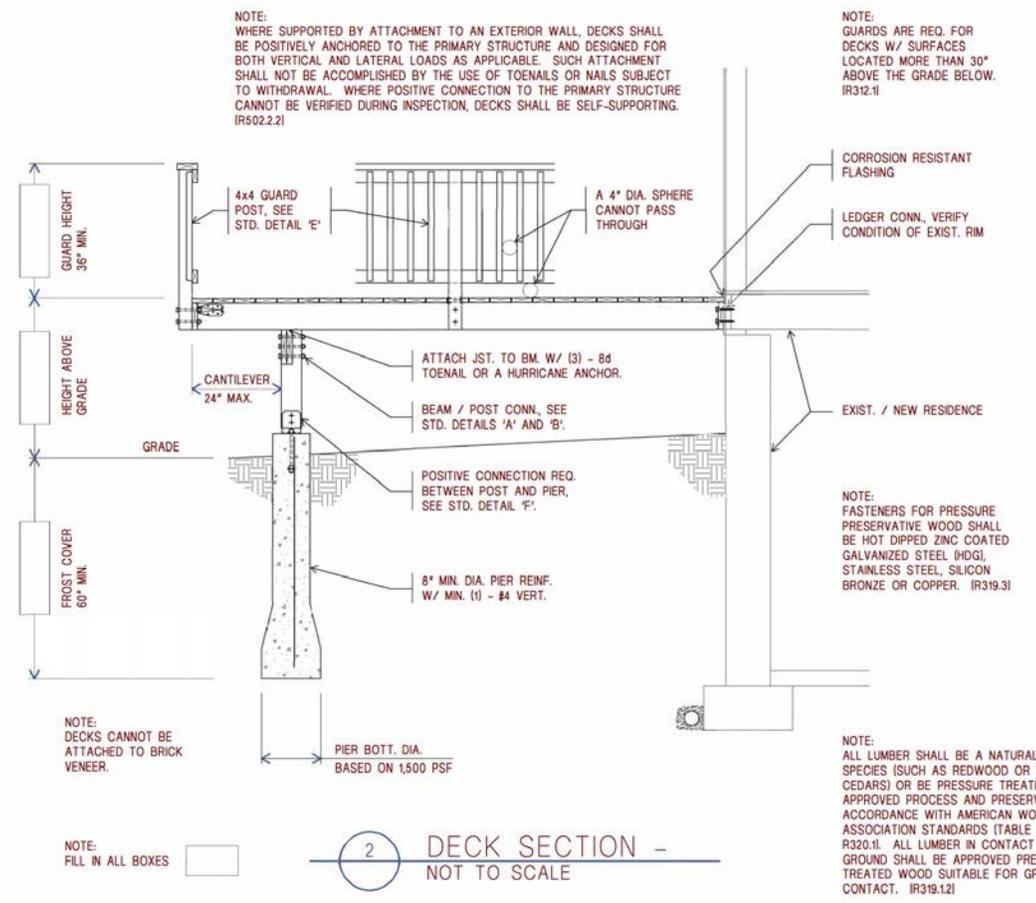
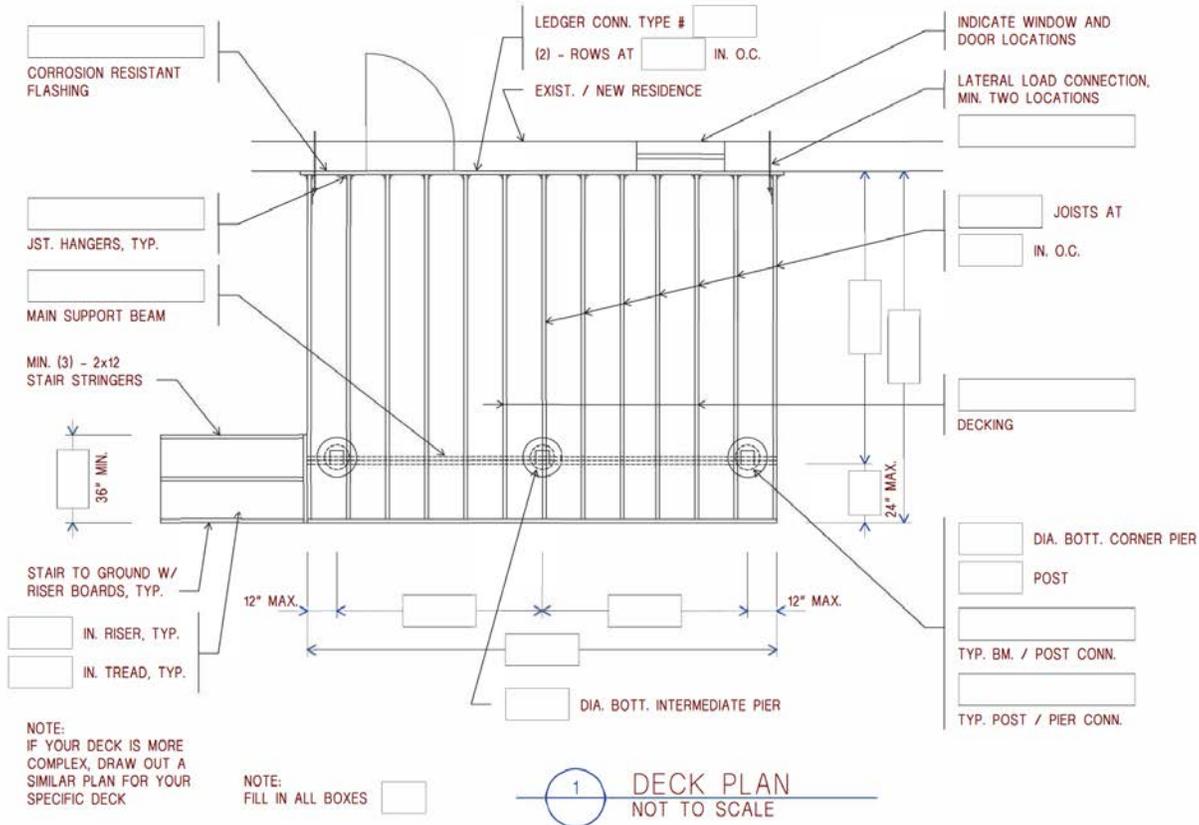


Min Stair Stringer Depth



Stringer max = 36" between stringers

See next Page for Fillable Plan and Section



EXAMPLE: FOUNDATION PLAN



Indicate Scale Used ($\frac{1}{4}'' = 1'$)

