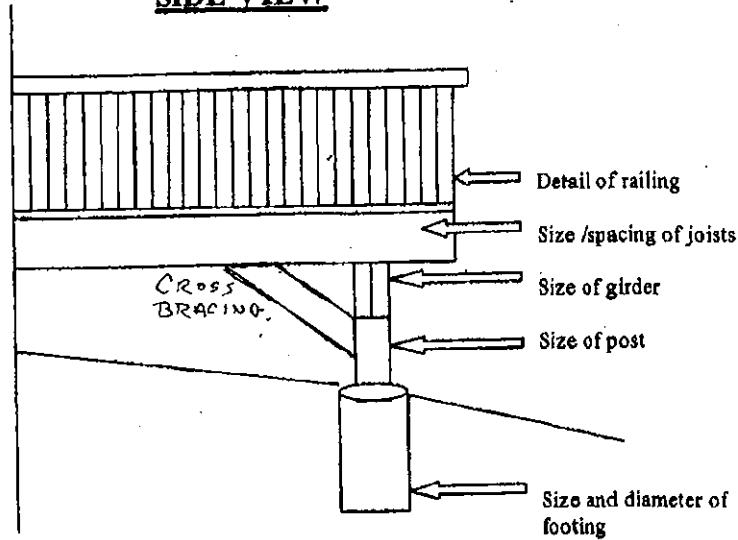


# DECK DETAIL

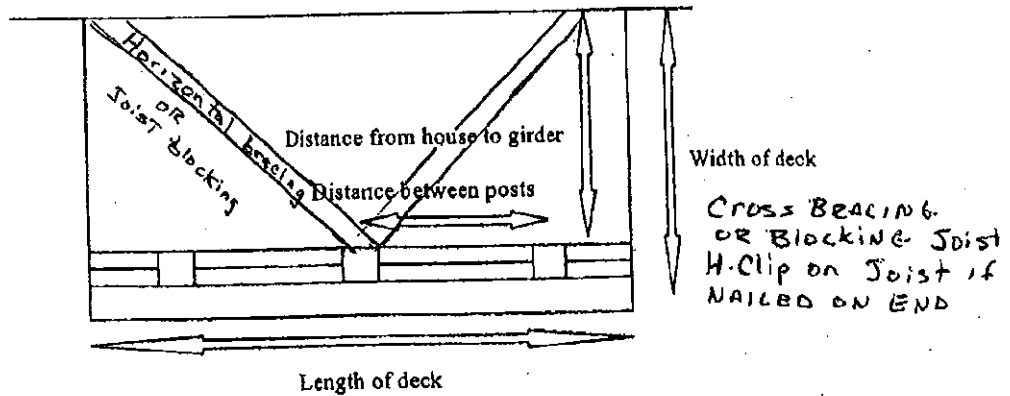
DO NOT DRAW ON THIS COPY.  
DO NOT SUBMIT FOR REVIEW.

ALL DECKS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE NEW YORK STATE  
UNIFORM FIRE PREVENTION AND BUILDING CODE

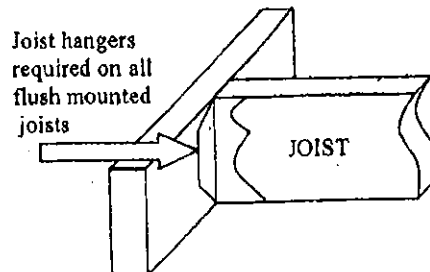
## SIDE VIEW

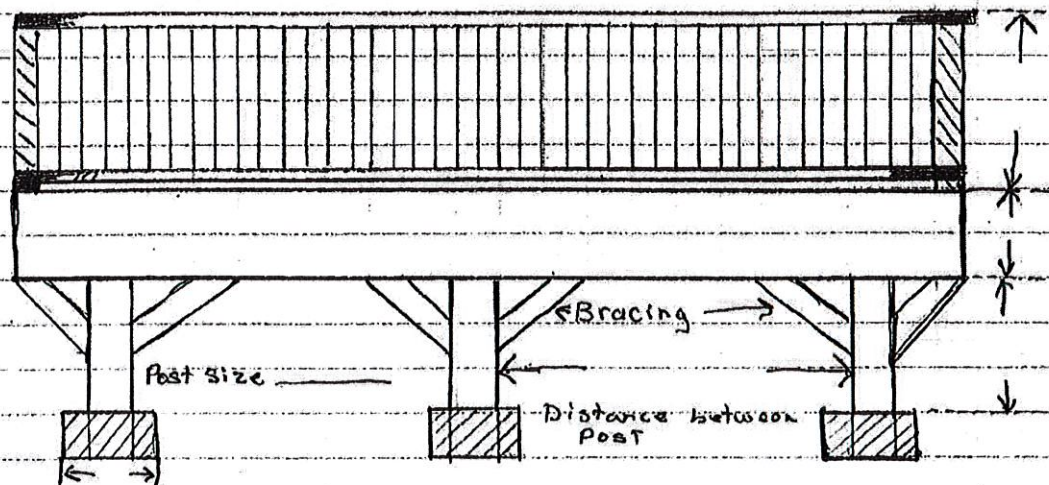
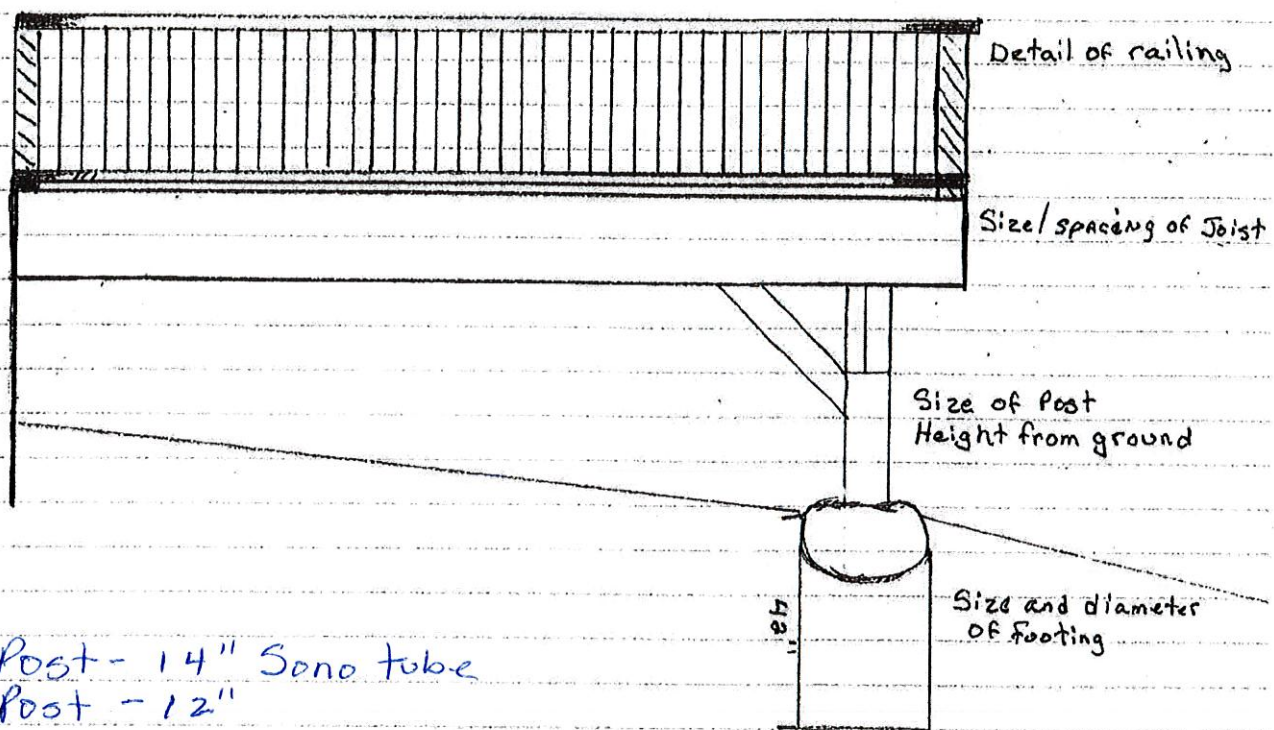


## PLAN VIEW



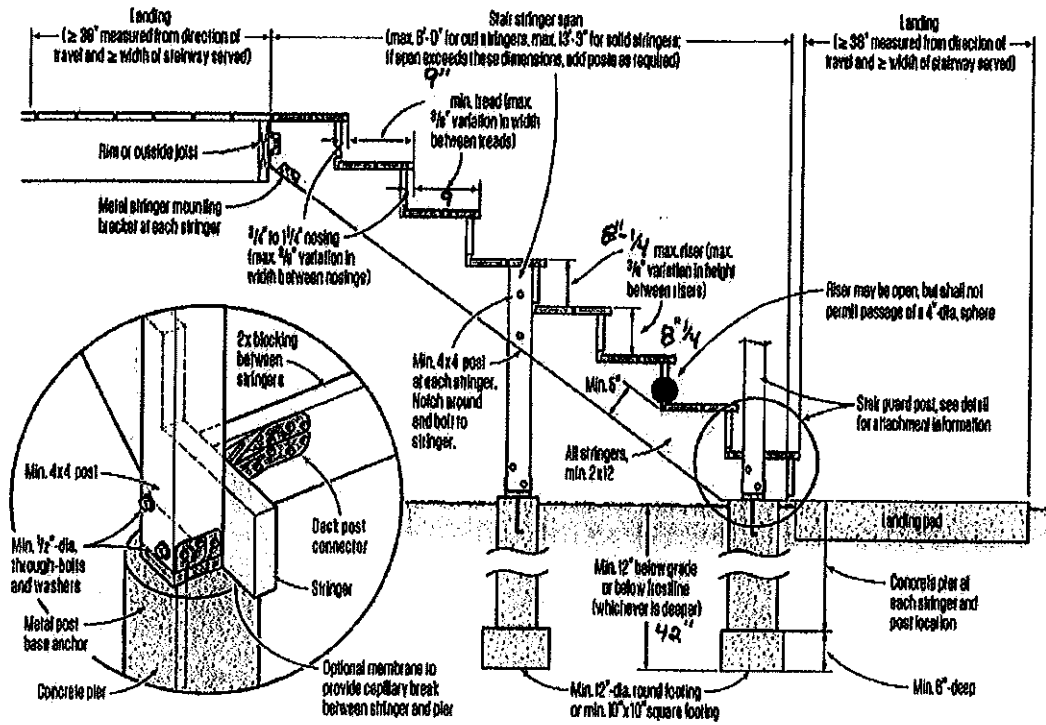
## DETAIL OF JOIST HANGERS

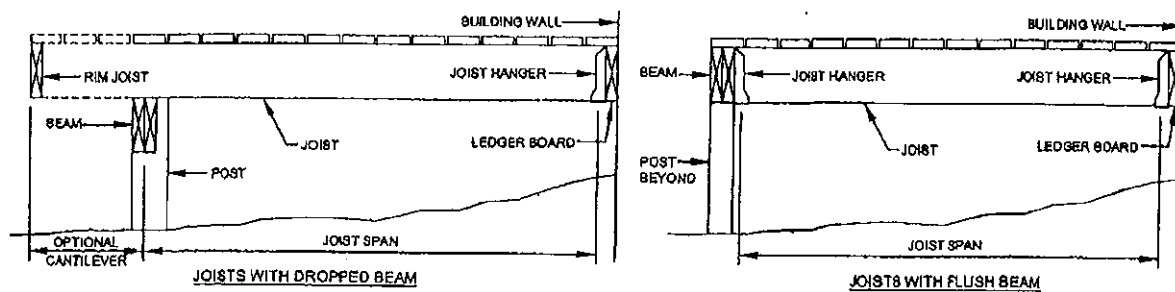




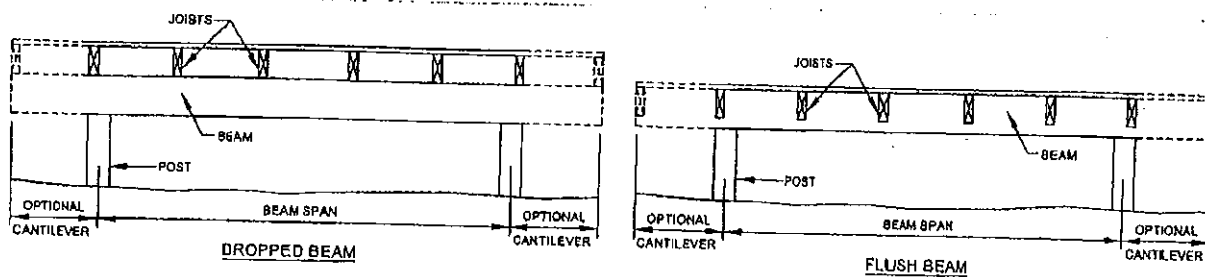
See minimum Footing Table R-507.3.1-RCN45 2020

## Deck Stair Requirements

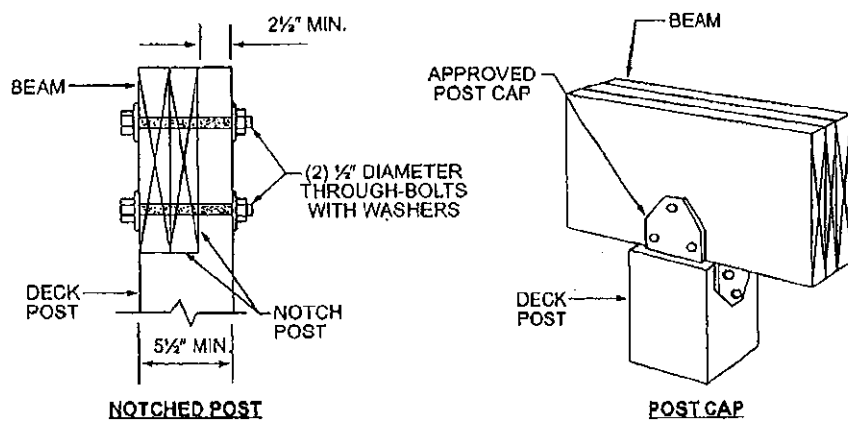




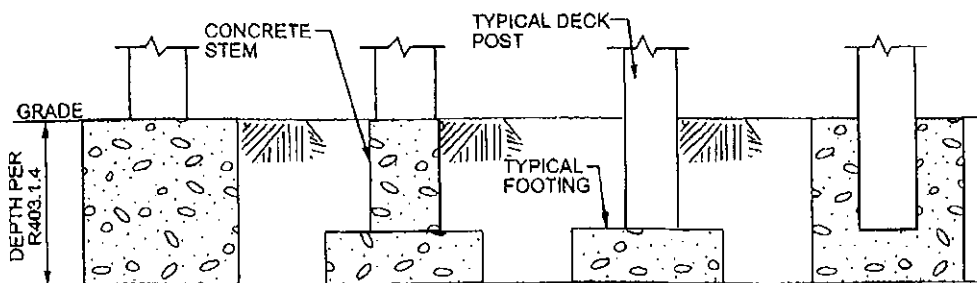
TYPICAL DECK JOIST SPANS



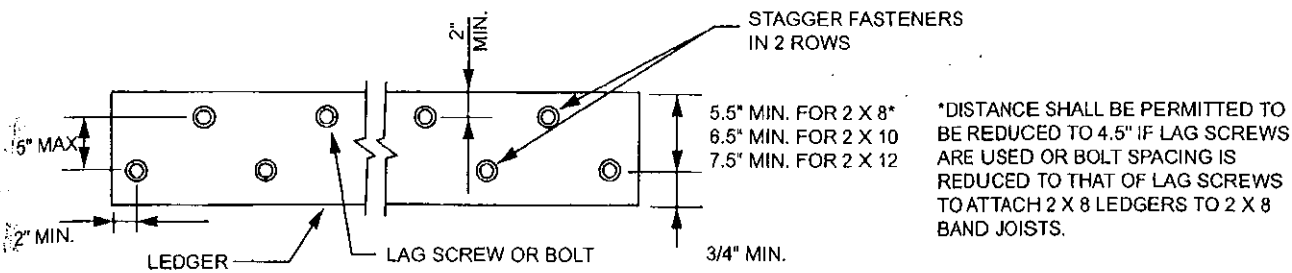
TYPICAL DECK BEAM SPANS



DECK BEAM TO DECK POST



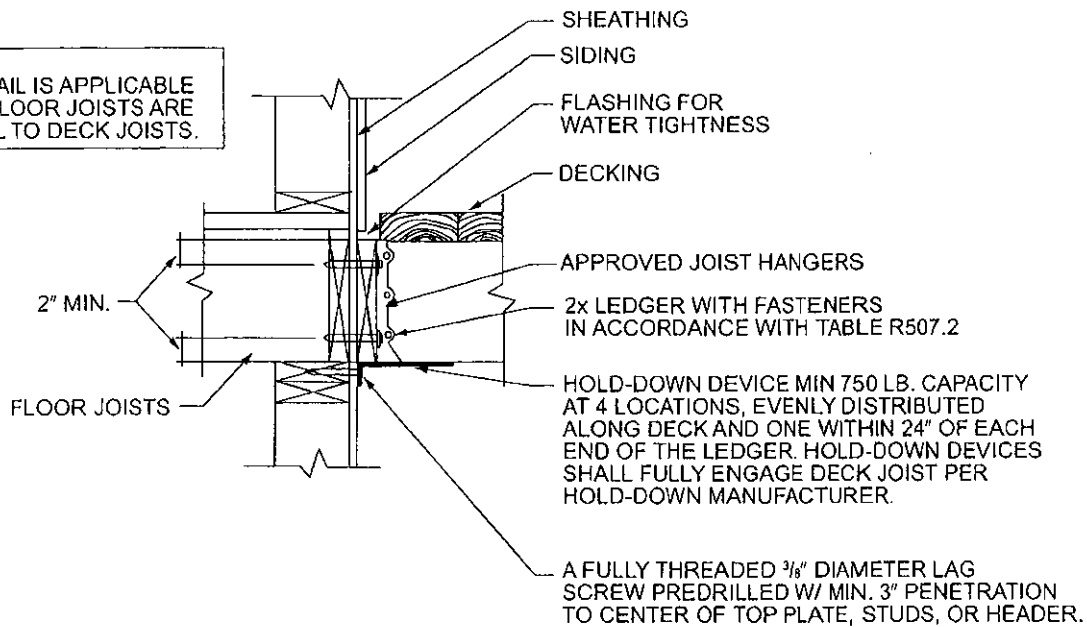
TYPICAL DECK POSTS TO DECK FOOTINGS



For SI: 1 inch = 25.4 mm.

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

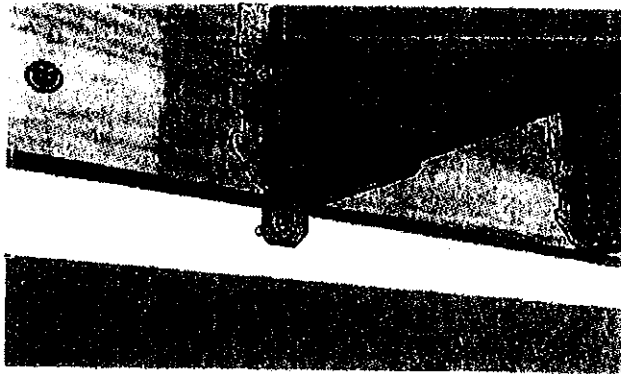
**NOTE:**  
THIS DETAIL IS APPLICABLE  
WHERE FLOOR JOISTS ARE  
PARALLEL TO DECK JOISTS.



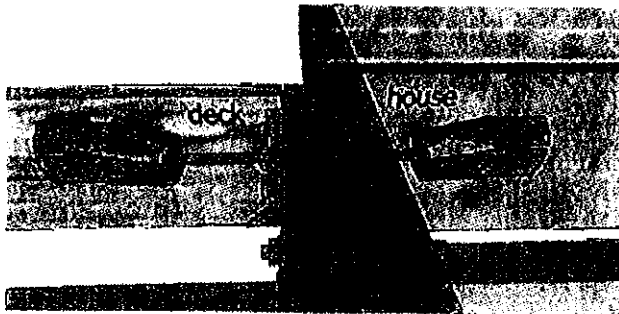
For SI: 1 inch = 25.4 mm.

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

Under the current code you will most likely be required to install a positive connection to the house wall to resist lateral loads. Lateral loads can result from earthquakes or from people moving around on your deck. In severe cases these loads can result in the ledger board being ripped from the house wall and collapsing.



The easiest way to ensure your ledger board connection will satisfy this requirement is to install 4 hold downs devices. You will need to pre-drill and attach this connector to the solid house rim with a 3/8" diameter fully threaded lag screw so that it has a minimum 3" penetration to the center of the top plate, studs or header. This L shaped hold down bracket is then screwed to the bottom of the deck joist. The hold down device will have a minimum 750 lb capacity at 4 locations evenly distributed along the deck and 1 within 2' of each end of the ledger board. Always follow the manufactures installation instructions when installing deck hardware.



Another method involves installing hold downs to the side of a house floor joist and attaching it to another hold down installed on the side of one of your deck joists with a threaded rod. Some wood or engineered I joist manufactures have developed details for this type of attachment to their products. This method is much more difficult than using the DTT1Z connection because it involves an attachment through the house wall. It is often difficult to gain access to the interior floor system of your house to make this option user friendly.



April 5, 2019

**CODE OUTREACH PROGRAM**

Issue 2019-04

**Code Outreach Program – Wood Decks**

This edition of the Code Outreach program is intended to summarize the prescriptive provisions of the 2015 International Residential Code (2015 IRC) applicable to wood decks.

**Design**

The structural design and construction of decks is required to support all loads imposed, including but not limited to live and dead loads, flood, snow, wind, and seismic loads as well as vertical and lateral loads. Design criteria can be found in Section R301 of the 2015 IRC. Section R301 includes several paths to compliance including: a path using prescriptive provisions; an 'alternative provisions'\* path (see Section R301.1.1); and an 'engineered design' path (see Section R301.1.3). This edition will focus mainly on key prescriptive code-compliance provisions.

**Key Prescriptive Code-Compliance Provisions of the 2015 IRC**

**Ledger.** Decks which are supported by the exterior wall of a building must be positively anchored to that wall. Where a positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. Lumber used for ledgers must be rated for exterior use, be a minimum nominal dimension of 2-inch by 8-inch, and flashed in accordance with Section R703.4. See Sections R507.1 and R507.2.

**Footings.** Exterior footings shall be placed a minimum of 12 inches below undisturbed ground surface per Section R403.1.4. Footings of decks anchored to a building wall as noted above, must also be frost-protected by one of the methods indicated in Section R403.1.4.1, however, according to exception 3, the footings of freestanding decks are not required to extend below the frost line. Regardless of depth, footings shall not be placed on frozen soil.

**Posts.** Posts shall be fastened to the beams per the requirements of Section R507.7.1 and restrained at the connection with the footing per Section R507.8.1.

**Framing.** Section 507 includes prescriptive tables to determine spans and spacing for deck joists and beams. The ends of joists and beams shall have adequate bearing on supports and shall also be fastened to them per Section R507.7.

**Guards, Stairs.** The requirements for guardrails of Section R312 are applicable to decks elevated 30-inches or more above the grade or floor below. The stair requirements of Section R311.7 are also applicable.

**Materials.** Lumber used for structural members, decking and guard rails shall be approved for exterior use according to Section R317, and fasteners should be corrosion resistant. While connector manufacturers often allow the use of either nails or screws, Section 507.1 states that attachment shall not be accomplished by the use of nails subject to withdrawal.

**Composite Materials.** Composite materials used for decking, stair treads, guards and handrails shall bear a label indicating compliance with ASTM D 7032 and the allowable spans determined by the testing standard. Combustible composite deck materials shall also be decay and termite resistant and have a flame spread index of 200 or less, when tested according to ASTM E84. Biodegradable materials shall be decay and termite resistant in accordance with ASTM D 7032.

*\*One of the standards listed under "alternative provisions" is the 'Wood Frame Construction Manual for One- and Two-family Dwellings' (WFCM). The 2015 version is incorporated by reference in the Uniform Code, and it is available from the American Wood Council (AWC). The AWC also publishes the 'Prescriptive Residential Wood Deck Construction Guide', which contains useful structural details including, but not limited to, lateral load connections. However, it is not enforceable and should only be used as a guide; compliance with the 'Design Criteria', as put forth in Section R301 of the 2015 IRC, is still required. \**

The provisions contained in this document are intended as a summary and not as a comprehensive checklist. Additional provisions apply to decks, and in particular, to those constructed in seismic zones or floodplains.

Please look for our next edition of the Code Outreach Program at the beginning of next month.

**In-Service Training**

How to check In-Service Training credits: <https://www.dos.ny.gov/DCEA/pdf/Check%20training%20credits.pdf>

How to View Your Training Credits in SLMS: <https://youtu.be/jgMPIOtV17c>

**DBSC - A Division of Department of State****OFPC – An Office of the Division of Homeland Security & Emergency Services**

If you have questions pertaining to the Code Outreach Program, email us at [COP.codes@dos.ny.gov](mailto:COP.codes@dos.ny.gov)

If you have questions pertaining to the Uniform Code or Energy Code, email our technical support group at: [codes@dos.ny.gov](mailto:codes@dos.ny.gov).

To cancel your subscription to this email list, click on the unsubscribe link found [here](#).

TABLE RS07.3.1  
MINIMUM FOOTING SIZE FOR DECKS

LIVE OR GROUND SNOW LOAD <sup>a</sup> (psf)	TRIBUTARY AREA (sq. ft.)	LOAD BEARING VALUE OF SOILS <sup>b,c,d</sup> (psf)									
		1500*	2000*	2500*	≥ 3000*	Side of a square footing (inches)	Thickness (inches)	Side of a square footing (inches)	Thickness (inches)	Side of a square footing (inches)	Thickness (inches)
40	40	14	16	6	6	12	14	14	6	12	14
	60	17	19	6	6	15	17	15	6	13	14
	80	20	22	7	6	17	19	17	6	15	16
	100	22	25	8	6	19	21	19	6	17	17
	120	24	27	9	7	21	23	21	6	19	19
	140	26	29	10	8	22	25	23	7	20	21
50	160	28	31	11	9	24	27	25	8	21	22
	20	12	14	6	6	12	14	14	6	12	14
	40	16	19	6	6	14	16	14	6	12	14
	60	20	23	7	6	17	20	16	6	14	16
	80	23	26	9	7	20	23	20	6	16	19
	100	26	29	10	8	22	25	23	7	18	21
60	120	28	32	11	9	25	28	25	8	20	23
	140	31	35	12	10	27	30	27	9	22	24
	160	33	37	13	11	28	32	29	10	23	26
	20	12	14	6	6	12	14	14	6	12	14
	40	18	20	6	6	15	17	15	6	12	14
	60	21	24	8	6	19	21	19	6	15	17
70	80	25	28	9	8	21	24	22	7	18	20
	100	28	31	11	9	24	27	24	8	20	22
	120	30	34	12	10	26	30	27	9	21	24
	140	33	37	13	11	28	32	29	10	23	26
	160	35	40	15	12	30	34	31	11	25	28
	20	12	14	6	6	12	14	14	6	12	14

For S1: 1 inch = 25.4 mm, 1 square foot = 0.0929 m<sup>2</sup>, 1 pound per square foot = 0.0479 kPa.

a. Interpolation permitted, extrapolation not permitted.

b. Based on highest load case: Dead + Live or Dead + Snow.

c. Assumes minimum square footing size for 12 inches x 6 inches for 6 x 6 post. Minimum 2 inch projection on all sides.