

**APPENDIX M
WOOD DECKS**

This appendix is a North Carolina addition to the 2009 International Residential Code. (The provisions contained in this appendix are adopted as part of this code.)

**SECTION AM101
GENERAL**

AM101.1 General. A deck is an exposed exterior wood floor structure which may be attached to the structure or freestanding. Roofed porches (open or screened-in) may be constructed using these provisions.

AM101.2 Deck design. Computer deck design programs may be accepted by the code enforcement official.

**SECTION AM102
FOOTERS**

AM102.1 Footers. Support post shall be supported by a minimum footing per Figure AM102 and Table AM102.1. Minimum footing depth shall be 12-inches below finished grade per Section R403.1.4. Tributary area is calculated per Figure AM102.1.

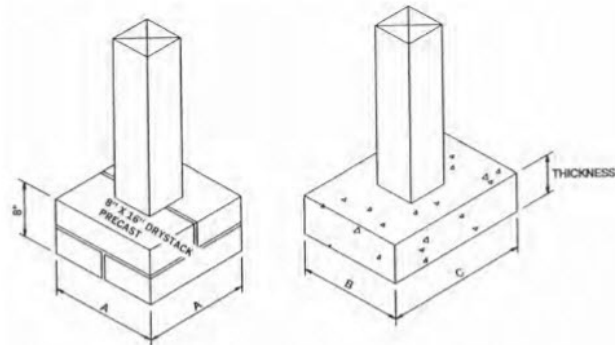


FIGURE AM102

SIZE (inches)		TRIBUTARY AREA (sq. ft.)	THICKNESS (inches)	
A x A	B x C	(sq. ft.)	Precast	Cast-in-Place
8 x 16	8 x 16	36	4	6
12 x 12	12 x 12	40	4	6
16 x 16	16 x 16	70	8	8
—	16 x 24	100	—	8
—	24 x 24	150	—	8

For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².
 a. Footing values are based on single floor and roof loads.
 b. Support post must rest in center 1/2 of footer.
 c. Top of footer shall be level for full bearing support of post.

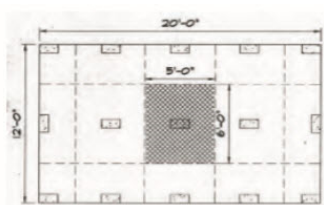


FIGURE AM102.1

**SECTION AM104
DECK ATTACHMENT**

AM104.1 Deck attachment. When a deck is supported at the structure by attaching the deck to the structure, the following attachment schedules shall apply for attaching the deck band to the structure.

METHOD	FASTENERS	1/2" MAX JOIST SPACING	16" MAX JOIST SPACING
1	1/2" Hot dipped galv. bolts with nut and washer	1 @ 3'-0" o.c.	1 @ 1'-4" o.c.
2	1/2" Common hot dipped galv. nails	2 @ 17" o.c.	3 @ 6" o.c.
3	Self-drilling screw fastener ^a	12" o.c.	6" o.c.

a. Attachment interpolation between 8 foot and 16 foot joist spans is allowed.
 b. Maximum edge distance for bolts is 2 1/2 inches.

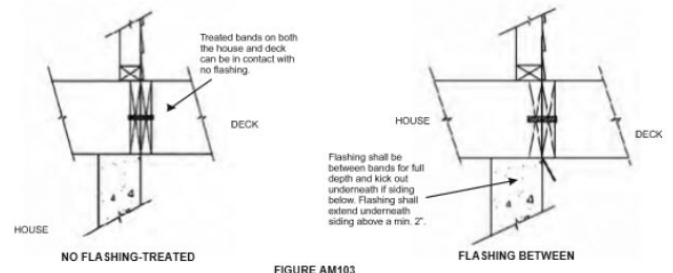


FIGURE AM104

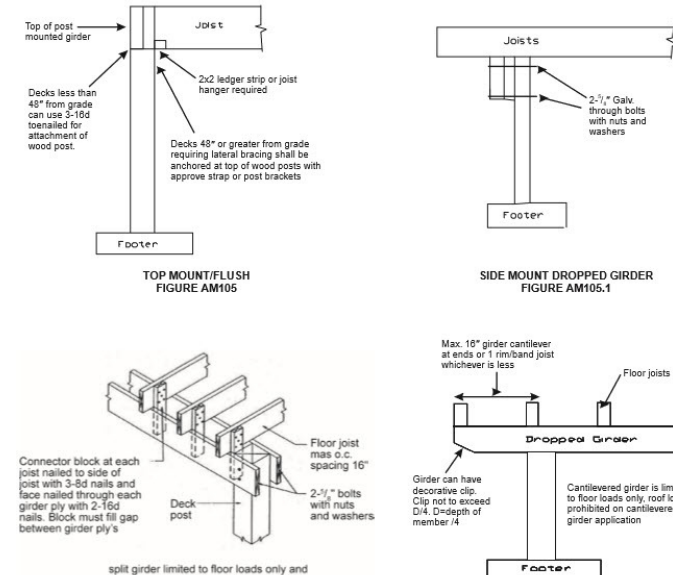


FIGURE AM105

**SECTION AM106
JOIST SPANS AND CANTILEVERS**

AM106.1 Joist spans and cantilevers. Joist spans shall be based upon Table R502.3.3(1) with 40 lbs per sq. ft. live load and 10 lbs per sq. ft. dead load. Floor joists for exterior decks may be cantilevered per Table R502.3.3(1).

SPACING	DECKING (nominal)
12" o.c.	1" S4S
16" o.c.	1" TAG
19.2" o.c.	1 1/2" S4S
24" o.c.	2" S4S

**SECTION AM108
POST HEIGHT**

AM108.1 Post height. Maximum height of deck support posts as follows:

Post size ^a	Max. Post Height ^{b,c}
4x4	8'-0"
6x6	20'-0"

a. This table is based on No. 2 Southern Pine posts.
 b. From top of footing to bottom of girder.
 c. Decks with post heights exceeding these requirements shall be designed by a registered design professional.

**SECTION AM109
DECK BRACING**

AM109.1 Deck bracing. Decks shall be braced to provide lateral stability. The following are acceptable means to provide lateral stability:

AM109.1.1. When the deck floor height is less than 4'-0" above finished grade per Figure AM109 and the deck is attached to the structure in accordance with Section AM104, lateral bracing is not required.

AM109.1.2. 4x4 wood knee braces may be provided on each column in both directions. The knee braces shall attach to each post at a point not less than 1/2 of the post length from the top of the post, and the braces shall be angled between 45 degrees and 60 degrees from the horizontal. Knee braces shall be bolted to the post and the girder double band with one 1/2 inch hot dipped galvanized bolt with nut and washer at both ends of the brace per Figure AM109.1.

AM109.1.3. For freestanding decks without knee braces or diagonal bracing, lateral stability may be provided by embedding the post in accordance with Figure AM109.2 and the following:

POST SIZE	MAXIMUM TRIBUTARY AREA	MAXIMUM POST HEIGHT	EMBEDMENT DEPTH	CONCRETE DIAMETER
4x4	48 SF	4'-0"	2'-6"	1'-0"
6x6	120 SF	6'-0"	3'-6"	1'-8"

AM109.1.4. 2x6 diagonal vertical cross bracing may be provided in two perpendicular directions for freestanding decks or parallel to the structure at the exterior column line for attached decks. The 2x6's shall be attached to the posts with one 1/2 inch hot dipped galvanized bolt with nut and washer at each end of each bracing member per Figure AM109.3.

AM109.1.5. For embedment of piles in Coastal Regions, see Chapter 45.

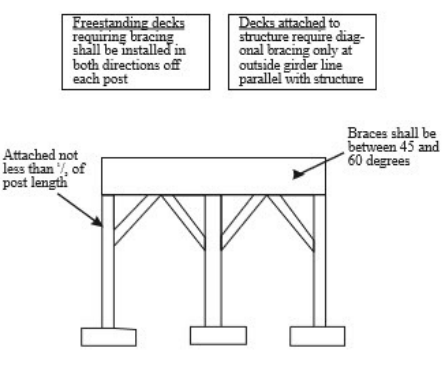


FIGURE AM109.1

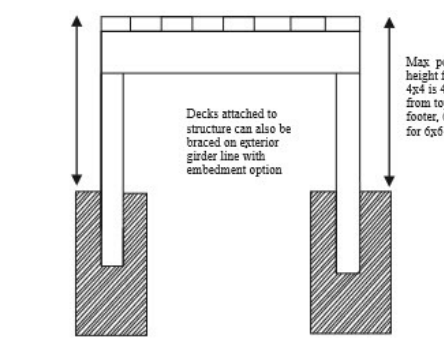


FIGURE AM109.2

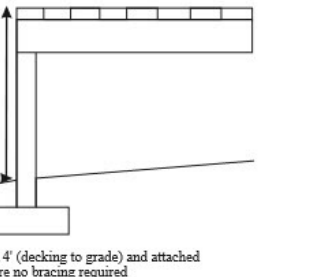


FIGURE AM109.3

**SECTION AM110
STAIRS**

AM110.1 Stairs shall be constructed per Figure AM110. Stringer spans shall be no greater than 7 foot span between supports. Spacing between stringers shall be based upon decking material used per AM107.1. Each Stringer shall have minimum 3 1/2 inches between step cut and back of stringer. If used, suspended headers shall be attached with 1/2 inch galvanized bolts with nuts and washers to securely support stringers at the top.

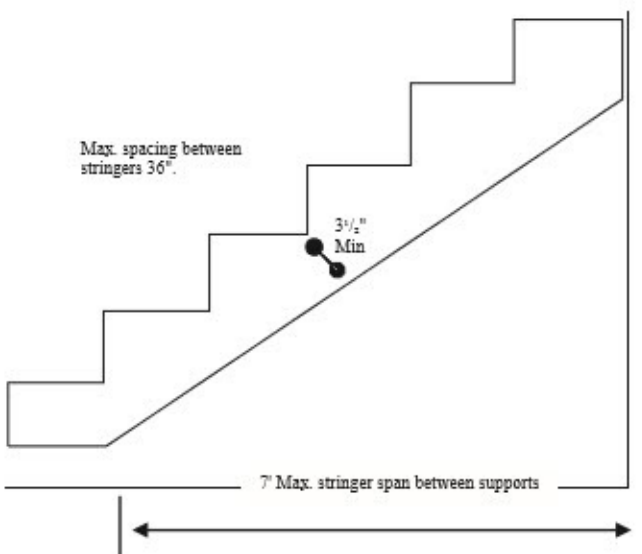


FIGURE AM110

**SECTION AM111
HANDRAILS, GUARDS AND GENERAL**

AM111.1 Handrails, guards and general. Deck handrails, guards and general construction shall be per Figure AM111.

**TABLE R507.5
DECK JOIST SPANS FOR COMMON LUMBER SPECIES^a (ft. - in.)**

SPECIES ^b	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER ^c (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS ^d (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
Douglas fir-larch ^e , hem-fir ^f , spruce-pine-fir ^f	2 x 6	18-0	16-6	13-6	18-0	16-6	13-6
	2 x 8	9-6	8-8	7-2	6-3	6-3	6-3
	2 x 10	12-6	11-1	9-1	9-5	9-5	9-1
Redwood, western cedars, ponderosa pine ^g , red pine ^h	2 x 6	15-8	13-7	11-1	13-7	13-7	11-1
	2 x 8	18-0	15-9	12-10	18-0	15-9	12-10
	2 x 10	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

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.
 a. No. 2 grade with wet service factor.
 b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360.
 c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360 at main span, L/A = 180 at cantilever with a 220-pound point load applied to end.
 d. Includes incising factor.
 e. Northern species with no incising factor.
 f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

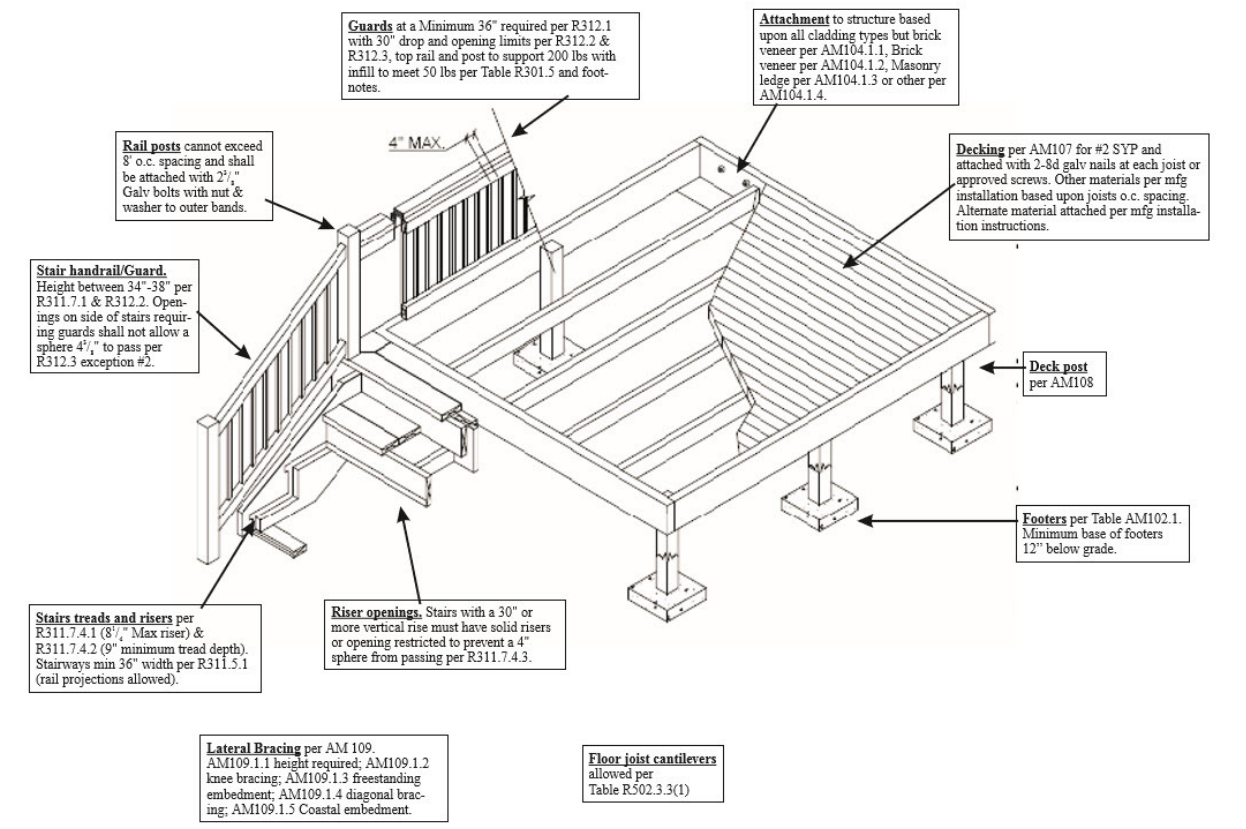
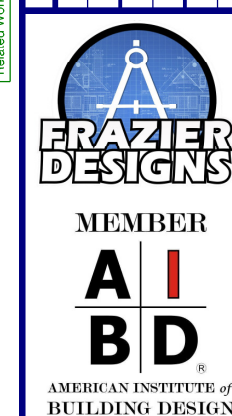


FIGURE AM111

APPROVED BY	DATE



Frazier Designs
 Residential Design Company
 (910) 818-2413
 www.frazierplans.com

Project: Perkins Renovation
 Cameron NC
 MODEL:
 FD-764
 BUILDER:
 RG Williams Construction

DATE PRINTED:
 Sept. 2021
 DRAWN BY:
 AIF

Deck Framing Details
 SHEET
 3