THINGS TO CONSIDER NO 1 - <u>How deep and how large must the footings under the support posts be?</u> Each deck support post must be supported by concrete footings. The size of each footing is determined by the tributary load imposed on it. See the diagram below for an explanation of tributary load. Footing must be dug down into undisturbed soil and to a minimum depth of 12-in below the finished grade.

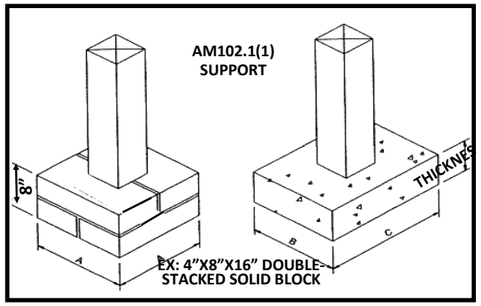
TABLE AM102.1 FOOTING CHART a,b,c*

Size (Inches)		Tributary Area (SF)	Thickness (inches)	
Precast Footings	Poured-in-Place Footings		Precast	Cast-in-Place
8x16	8x16	36	4	6
12x12	12x12	40	4	6
16x16	16x16	70	8	8
	16x24	100		8
	24x24	150		8

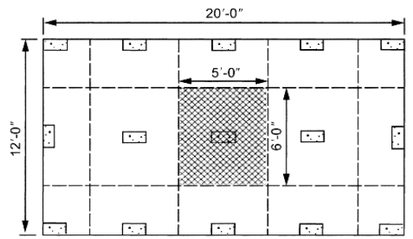
a. Footing values are based on single floor and roof

b. Support post must rest in center 1/3 of footing.

c. Top of footing shall be level for full bearing support of post.



AM102.1(2) CALCULATED TRIBUTARY AREA



TRIBUTARY AREA OF SHADED SECTION ON FREE STANDING DECK SHOWN IS 5'X6'=30SF. CODE WILL REQUIRE A MINIMUM FOOT OF 8"X16" PER TABLE AM102.1

THINGS TO CONSIDER NO. 2 - <u>Will your deck be attached to the residence or self supported?</u> Attached decks must be connected to the band or rim joist of the house by 5/8" galvanized bolts. Also, the existing siding (except brick) which cover the house band must be removed so that the deck band makes full contact with the house band. Non-aluminum, corrosion-resistant flashing must be installed between the house and deck bands (see flashing detail AM 103.1(1)) to prevent water from rotting the house band.

TABLE AM104.1.(1) ALL STRUCTURES EXCEPT BRICK VENEER

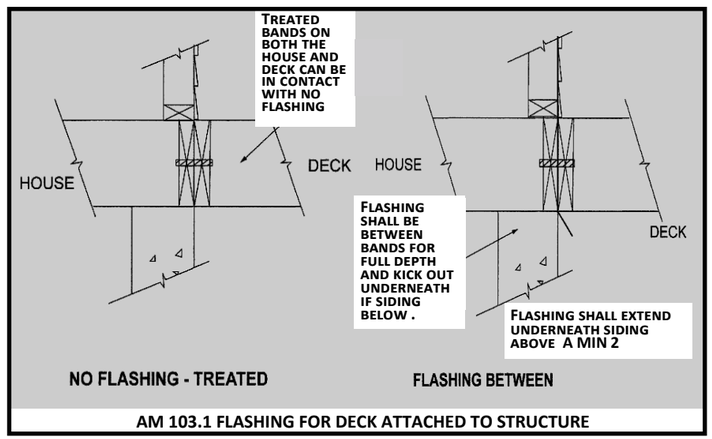
Fasteners	8' Max Joist Span[a]	16' Max Joist Span[a]
5/8" Hot Dipped Galv. Bolts with nut and washer[b] and 12d Common Hot Dipped Galv. Nails[c]	1 @ 3'-6" O.C. And 2 @ 8" O.C.	1 @ 1'-8" O.C. And 3 @ 6" O.C.
OR		
Self-Drilling Screw Fastener[d]	12" O.C. STAGGERED	6" O.C. STAGGERED
TABLE AM104.1.(2) BRICK VENEER STRUCTURES		
5/8" Hot Dipped Galv. Bolts with Nut and Washer[b]	1 @ 2'-4" O.C.	1 @ 1'-4" O.C.

a. Attachment interpolation between 8' & 16' joists span are allowed.

b. Minimum edge distance for bolts is 2.5".

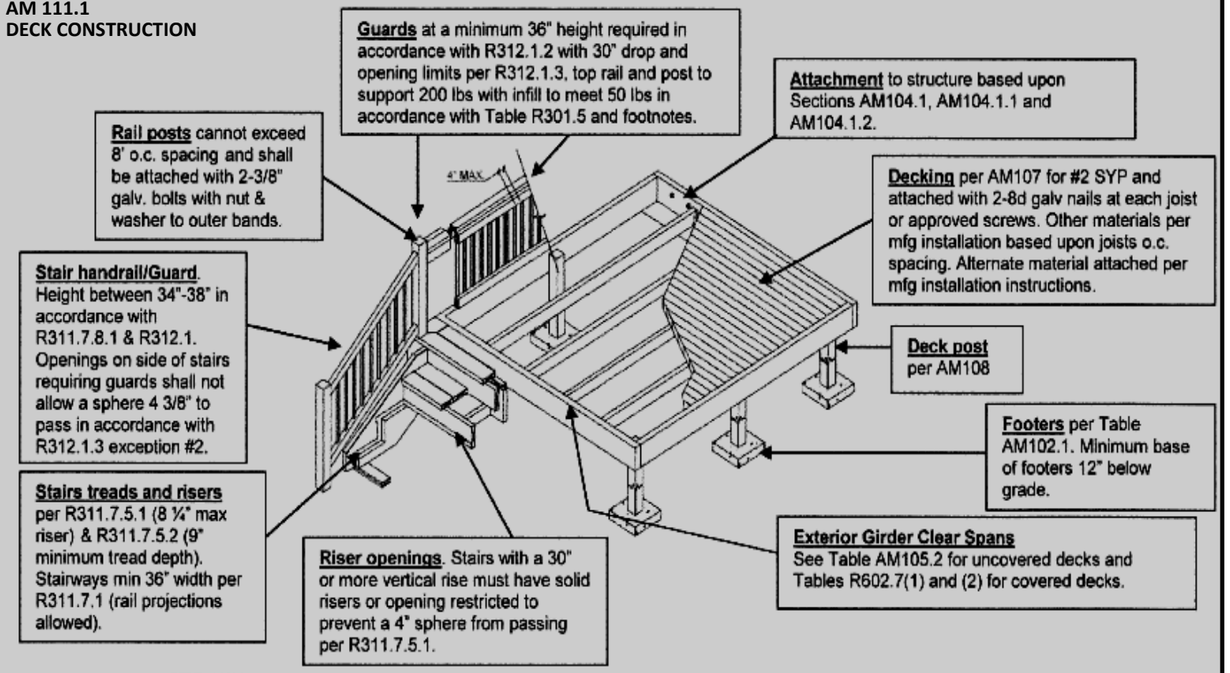
c. Nails must penetrate supporting structure band a minimum of 1.5".

d. Self-drilling fastener shall be an approved screw having a minimum shank diameter of 0.195" and a length long enough to penetrate through the supporting structure band. The structure band shall have a minimum depth of 1-1/8". Screw shall have an evaluated allowable shear load for Southern Pine to Southern Pine lumber of 250 lbs. and shall have a corrosion resistant finish equivalent to hot dipped galvanized. Minimum edge distance for screws is 1-7/16". A minimum of ½" thick wood structural panel is permitted to be located between the deck ledger and the structural band.



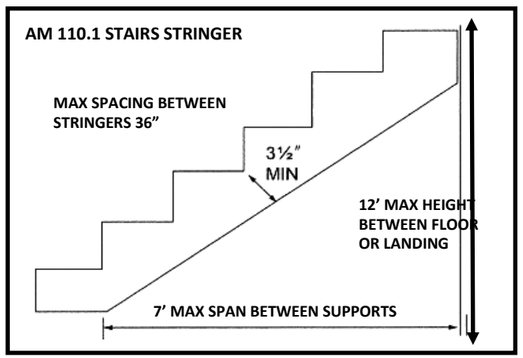
AM 103.1 FLASHING FOR DECK ATTACHED TO STRUCTURE

AM 111.1
DECK CONSTRUCTION



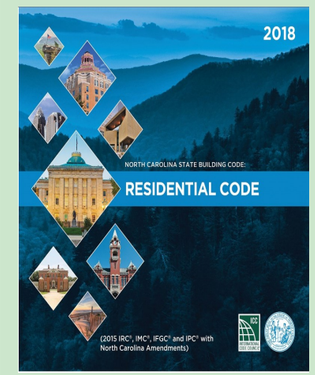
THINGS TO CONSIDER NO. 3 - <u>What height will your deck be from the finished grade?</u> If walking surface of the deck exceeds 30 inches from finished grade, your deck must be surrounded by guard rails which are a minimum of 36-in height. The steps for the deck must have a hand rail on one side if there are 4 or more individual risers. If the steps have a total rise of 30' or more above ground level, a combination guard rail/hand must be provided on open sides of the steps (See AM111 on the cover).

AM 110.1 STAIRS STRINGER



AM110: STAIRS - STRINGER SPANS SHALL BE NO GREATER THAN 7' SPAN BETWEEN SUPPORTS. SPACING BETWEEN STRINGERS SHALL BE BASED UPON DECKING MATERIAL USED PER AM107.1. EACH STRINGER SHALL HAVE A MINIMUM 3 ½" BETWEEN THE STEP CUT AND THE BACK OF THE STRINGER. SUSPENDED HEADERS SHALL BE ATTACHED WITH 3/8" GALVANIZED BOLTS. SEE AM111.1 FOR TREAD AND RISER DETAILS.

A copy of the entire NC Residential Code can be found online at https://codes.iccsafe.org/content/



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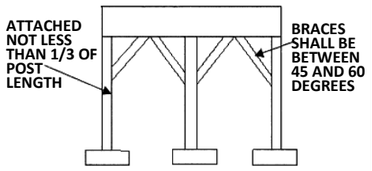
THINGS TO CONSIDER NO. 4 - <u>Bracing for lateral support</u>: Decks 48" or more above ground and self supported decks of any height require lateral bracing. Post embedment can be used in lieu of knee braces or diagonal bracing per AM 109.1(3). See AM109.1(2) and 109.1 (4) on the back panel of this brochure.

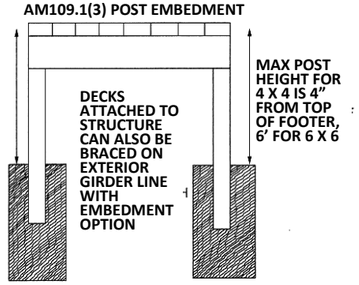
AM109.1(2) KNEE BRACING

FREESTANDING DECKS REQUIRING BRACING SHALL BE INSTALLED IN BOTH DIRECTIONS OF EACH POST

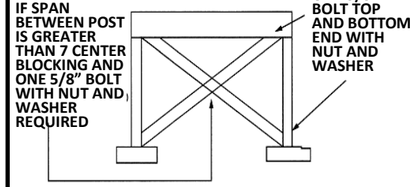
DECKS ATTACHED TO STRUCTURE REQUIRE DIAGONAL BRACING ONLY AT OUTSIDE GIRDER LINE PARALLEL WITH HOUSE



AM109.1(3) POST EMBEDMENT



AM109.1(4) CROSS BRACING



THINGS TO CONSIDER NO. 5 - <u>Type of Lumber</u>: Lumber should be treated or decay resistant. This brochure assumes construction with pressure treated Southern Pine. Other species are acceptable. Refer to Tables AM105.2 and 106.1 of the Residential Code for complete lumber species, spacing, and allowable spans.

AM105.2 DECK GIRDER SPAN LENGTHS (FEET-INCHES)
Spans below are for SYP #2 only

Size	DECK JOIST SPAN LESS THAN OR EQUAL TO: (FEET)						
	6	8	10	12	14	16	18
2 - 2 x 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
2—2 x 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
2—2 x 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
2 - 2 x 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
3—2 x 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
3—2 x 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
3—2 x 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
3—2 x 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10

THINGS TO CONSIDER NO. 6 - Distance of span joints: Joists must be sized to carry a 40 lb. per S.F. live load. Some instances require a girder to help meet this design criteria and to allow use of smaller individual floor joists.

AM106.1 DECK JOIST SPANS FOR COMMON LUMBER SPECIES (FEET-INCHES)
Spans below are for SYP #2 only

Size	SPACING OF DECK JOISTS WITH NO CANTILEVER INCHES			SPACING OF DECK JOISTS WITH CANTILEVERS INCHES		
	12	16	24	12	16	24
2x6	9-11	9-0	7-7	6-8	6-8	6-8
2x8	13-1	11-10	9-8	10-1	10-1	9-8
2x10	16-2	14-0	11-5	14-6	14-0	11-5
2x12	18-0	16-6	13-6	18-0	16-6	13-6

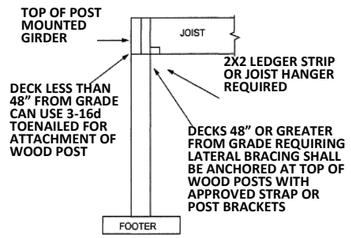
*CANTILEVER LIMITED TO NOMINAL DEPTH OF JOIST

AM 108.1
DECK SUPPORT POST HEIGHT

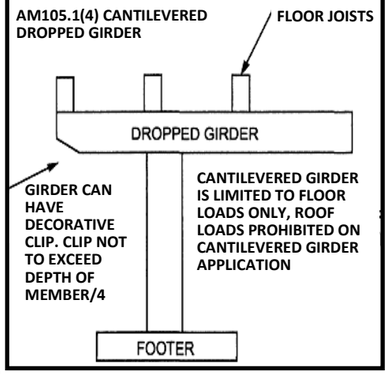
Post Size[a]	Max Post Height [b, c]
4" x 4"	8'-0"
6" x 6"	20'-0"

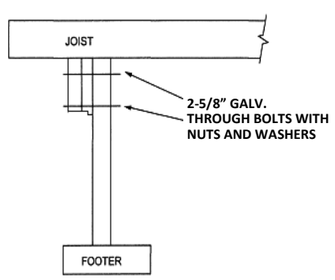
a. This table is based on #2 SYP
b. From top of footing to bottom of girder.
c. Decks with post heights exceeding these requirements shall be designed by a registered design professional.

AM105.1(1) TOP MOUNT/FLUSH GIRDER



AM105.1(4) CANTILEVERED DROPPED GIRDER



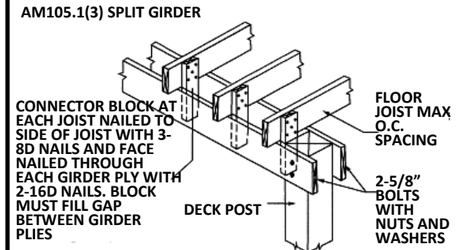


AM105.1(2) SIDE MOUNT DROPPED GIRDER

AM107.1 FLOOR DECKING
Floor decking shall be No. 2 grade treated Southern Pine or equivalent. The minimum floor decking thickness shall be as follows:

SPACING	DECKING (NOMINAL)
12" OC	1" S4S
16" OC	1" T&G
19.2" OC	1-1/4" S4S
24" - 36" OC	2" S4S

AM105.1(3) SPLIT GIRDER

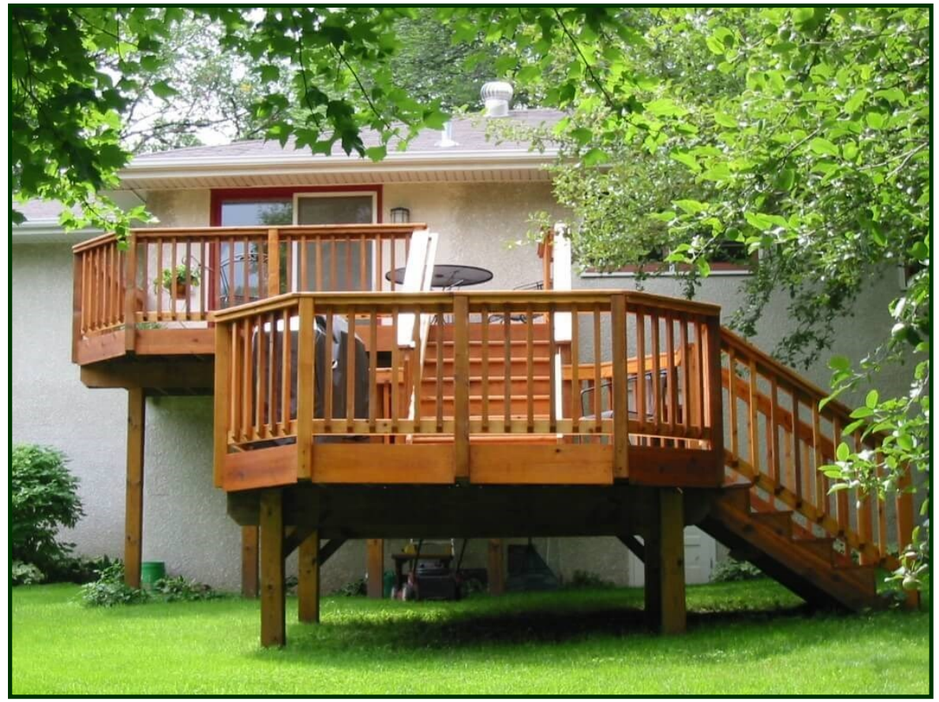


SPLIT GIRDER LIMITED TO FLOOR LOADS ONLY AND CANTILEVER GIRDER ENDS ALLOWED PER AM105.1(4)

READY?...SET...DECK!

TOWN OF APEX

GUIDE TO DECK CONSTRUCTION



This pamphlet will help guide you in planning and constructing a safe, code-compliant deck, but first things first...

<u>Acquire a Building Permit</u>

Before you start construction, please remember to acquire a building permit. A permit is required to ensure construction complies with local zoning regulations and the current North Carolina State Residential Building Code. These codes establish minimum setbacks, govern the method of construction, materials, means of support, attachment, and required safety features. All decks require an open footing, framing, and final inspection.

The One and Two Family Dwelling Permit Application and Checklist must be completed and submitted to the Inspections & Permitting Department at 322 N. Mason Street. The application and checklist can be found on our website at: www.apexnc.org/596/Obtaining-A-Building-Permit. Office hours are 8 a.m. to 5 p.m. Monday-Friday. If you have any questions about these specifications, the use of other materials, standards or the code requirements for your deck, please call Inspections & Permitting at (919) 249-3418.