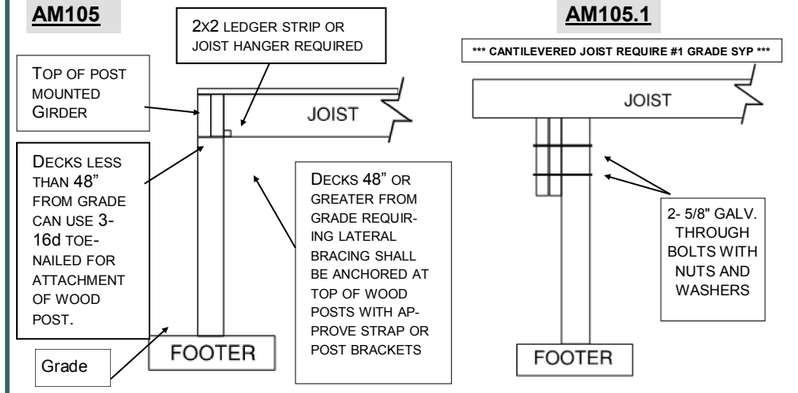
AM105



Top Mount / Flush Girder

AM105.1

Side Mount Dropped Girder

GIRDER SPAN TABLES #2 SYP @ 40 psf LIVE LOAD, 30 psf SNOW LOAD NCRC

Exterior Girder Clear Spans ***

	Nominal Lumber Size					Nominal Lumber Size			
DECK WIDTH	2 x 6	2 x 8	2 x 10	2 x 12	**DECK WIDTH**	2 x 6	2 x 8	2 x 10	2 x 12
20' (2 ply)	3'-6"	4'-5"	5'-1"	5'-7"	28' (2 ply)	3'-0"	3'-10"	4'-6"	5'-0"
20' (3 ply)	----	5'-5"	6'-0"	6'-6"	28' (3 ply)	----	4'-9"	5'-5"	5'-11"
20' (4 ply)	----	6'-1"	6'-9"	7'-3"	28' (4 ply)	----	5'-5"	6'-0"	6'-6"

***Partial reproduction of Supplemental Table R502.5(3) at 30 ground snow load and roof ceiling and 1 clear span floor**. Deck width is 20' or less measured in the direction of joists span. Splices in plys must break over bearing supports. For Larger Spans see Table R502.5(3). For other wood species, See Table R502.5(1). **New Span charts were effective 01/01/2015**.

AM 109.1

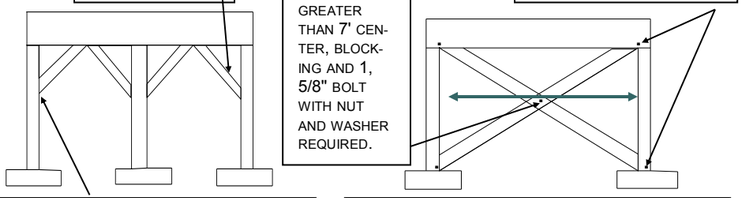
BRACES SHALL BE BETWEEN 45 AND 60 DEGREES

IF SPAN BETWEEN POST IS GREATER THAN 7' CENTER, BLOCKING AND 1, 5/8" BOLT WITH NUT AND WASHER REQUIRED.

AM109.3

CALL RTAC FOR DETAILS

ONE 5/8" BOLT TOP AND BOTTOM END WITH NUT AND WASHER OF REQUIRED 2x6 CROSS BRACING



ATTACHED NOT LESS THAN 1/3 OF POST LENGTH, WITH ONE (1) 5/8" H.D.G. BOLT WITH NUT AND WASHER ON EACH END OF BRACE

SPAN IS ACTUAL CLEAR DISTANCE BETWEEN SUPPORTS. 5/8" BOLTS ARE NEEDED AT THE TOP, BOTTOM, AND MIDDLE BRACING POINTS

Joist Span Tables #2 SYP @ 40 psf Live Load, 10 psf Dead Load NCRC

JOIST SIZE	SPACED @	MAX SPAN	JOIST SIZE	SPACED @	MAX SPAN
2 x 6	12" OC	10'-3"	2 x 10	12" OC	16'-2"
	16" OC	9'-4"		16" OC	14'-0"
	19.2" OC	8'-6"		19.2 "OC	12'-10"
	24" OC	7'-7"		24" OC	11'-5"
2 x 8	12" OC	13'-6"	2 x 12	12" OC	19'-1"
	16" OC	11'-10"		16" OC	16'-6"
	19.2" OC	10'-10"		19.2" OC	15'-1"
	24" OC	9'-8"		24" OC	13'-6"

New Span charts were effective 01/01/2015.

AM 111 ## Handrails, Guards and General Construction

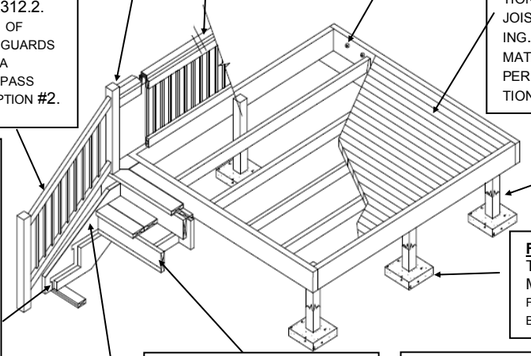
GUARDS AT A MINIMUM **36"** REQUIRED PER R312.1 WITH GREATER THAN **30"** DROP AND OPENING LIMITS PER R312.3 (**4"** SPHERE CANNOT PASS THROUGH VERTICAL PICKETS OR HORIZONTAL AND ORNAMENTAL GUARD RAILS), TOP RAIL AND POST TO SUPPORT **200**LBS WITH INFILL TO MEET **50**LBS PER TABLE R301.5 AND FOOTNOTES.

RAIL POSTS CANNOT EXCEED **8'** O.C. SPACING AND SHALL BE ATTACHED WITH **2 -3/8"** GALV BOLTS WITH NUT & WASHER TO OUTER BANDS. **4X4 POST MAY NOT BE NOTCHED PER DOI INTERPRETATION**.

ATTACHMENT TO STRUCTURE BASED UPON ALL CLADDING TYPES EXCEPT BRICK VENEER PER AM104.1.1, BRICK VENEER PER AM104.1.2, MASONRY LEDGE PER AM104.1.3 OR OTHER PER AM104.1.4.

DECKING PER AM107 FOR #2 SYP AND ATTACHED WITH 2-8D GALV NAILS AT EACH JOIST OR APPROVED SCREWS. OTHER MATERIALS PER MFG INSTALLATION BASED UPON JOISTS O.C. SPACING. ALTERNATE MATERIAL ATTACHED PER MFG INSTALLATION INSTRUCTIONS.

STAIR HANDRAIL/GUARD. HEIGHT BETWEEN **34"-38"** PER R311.7.7 & R312.2. OPENINGS ON SIDE OF STAIRS REQUIRING GUARDS SHALL NOT ALLOW A SPHERE **4 3/8"** TO PASS PER R312.3 EXCEPTION #2.



Post Height per AM108

STAIRS TREADS AND RISERS PER R311.7.4 (**8 ¼"** MAX RISER) & R311.7.4.2 (**9"** MINIMUM TREAD DEPTH + 3/4" NOSE). STAIRWAYS MIN 36" WIDTH PER R311.7.1 (RAIL PROJECTIONS ALLOWED).

FOOTERS PER TABLE AM102.1. MINIMUM BASE OF FOOTERS **12"** BELOW GRADE.

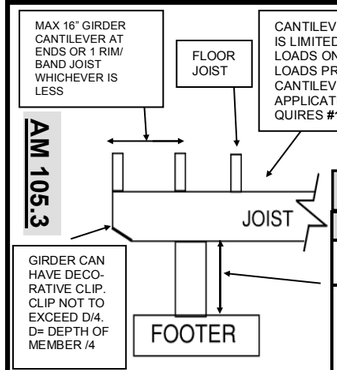
TRIANGLE OPENINGS SHALL NOT ALLOW A **6"** SPHERE TO PASS PER R312.3 EXCEPTION #1.

RISER OPENINGS. STAIRS WITH A **30"** OR MORE VERTICAL RISE MUST HAVE SOLID RISERS OR OPENING RESTRICTED TO PREVENT A **4"** SPHERE FROM PASSING PER R311.7.4.3.

LATERAL BRACING PER AM 109. AM109.1.1 HEIGHT REQUIRED; AM109.1.2 KNEE BRACING; AM109.1.3 SELF SUPPORTED EMBEDMENT; AM109.1.4 DIAGONAL BRACING; AM109.1.5 COASTAL EMBEDMENT.

FLOOR JOIST CANTILEVERS ALLOWED PER TABLE R502.3.3(1) **#1 GRADE SYP**

AM 105.3



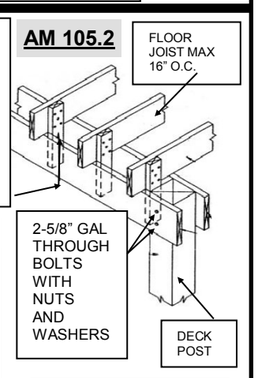
CANTILEVERED DROPPED GIRDER DETAIL

AM 108

Post Size [a]	Max Post Height [b,c]
4x4	8'-0"

a. This table is base 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

AM 105.2



SPLIT GIRDER DETAIL

IF YOU HAVE ANY QUESTIONS ABOUT THESE SPECIFICATIONS, THE USE OF OTHER MATERIALS, STANDARDS OR THE CODE REQUIREMENTS FOR YOUR DECK, PLEASE CALL THE RESIDENTIAL TECHNICAL ANSWER CENTER AT

980-314-CODE (2633) EXT 2123 or

Email: rtac@mecklenburgcountync.gov

WWW.MECKPERMIT.COM

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UPDATED 05/2017

MECKLENBURG COUNTY CodeEnforcement

Are You Ready to Get All Decked Out?

What you need to know before building an attached or self-supporting deck to your home.

First Things First…

Everyone dreams of the "perfect deck"… But getting from Point A (planning and constructing it) to point B (the dream deck) is not always as easy. This brochure will help you construct a safe, code-compliant "dream deck."

But, first things first… Be sure to obtain a building permit for the deck before you build it. For more information on how and where to obtain your building permit, call or visit Residential Services at 2145 Suttle Avenue, Charlotte, or simply call our Residential Technical Answer Center (RTAC) at 980-314-CODE (2633) or email us at rtac@mecklenburgcountync.gov. Office hours are Monday-Friday from 8 a.m. to 5 p.m.

Why the permit and inspections?

We are required to permit and inspect your deck to ensure that it complies with local zoning regulations and the North Carolina State Residential Building Code. Municipal zoning regulations establish minimum setbacks from property lines. The building code governs the method of construction, materials, means of support, attachment and requires safety features such as guard rails and hand rails. Decks require an open footing inspection, as well as a framing and a final inspection.

Some Things to Think About…

- **What type of lumber will I be using?**

First, all lumber should be treated or decay resistant. We will assume that you will use pressure treated **Southern Yellow Pine #2 (SYP)** . Girder/Header and Joist Spans for #2 SYP are partially listed on this brochure. Other species of lumber are acceptable for use. Please refer to the amendments of the current North Carolina Residential Code for complete lumber species, spacing, and allowable spans.

- **What distance will you span the joists?**

Your joists must be sized to carry a 40 lb. per sq. ft. live load. In some instances, a girder is used to help meet this design criteria and to allow use of smaller individual floor joists **(See Joist Span Tables on other side of this brochure).**

- **How high off the ground will the floor of your deck be?**

If the 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 inches in height. The steps for the deck must also have a hand rail on one side if there are 4 or more individual risers (a riser is considered any portion of the stair that requires a vertical motion). If the steps have a total rise of 30" or more above ground level, a combination guard rail/hand rail must be provided on open sides of the steps. **See AM105 and AM111**

- **Bracing your deck for lateral support**

If your deck will be 48" or more above the ground (measured from top of footing to deck floor), bracing for lateral support is required. Self supported decks of ANY height require lateral bracing. Several methods of bracing are acceptable depending on whether the deck is free standing or attached **(See AM109.1 and AM109.3)** Post embedment can be used in lieu of knee braces or diagonal bracing per AM109.1.3 of the 2012 NCRC. Consult with the Residential Technical Answer Center at 980-314-CODE (2633) to select a method that meets code and will work best for your project.

Still have questions?

If you're in doubt, reach out — 980-314-CODE (2633) ext. 2123

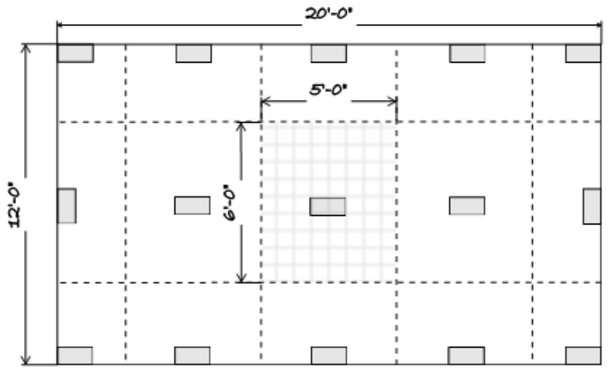
Some Things to Think About… (Continued)+

- **How deep and how large must the footings under support posts be?**

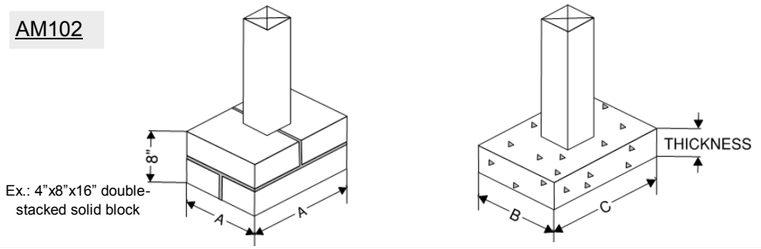
Each deck support post must be supported by concrete footings. The size of each footing is determined by the tributary load imposed on it. See the diagram below for an explanation of tributary load. Footing must be dug down into undisturbed soil and to a minimum depth of **12 INCHES BELOW FINISHED GRADE**.

AM102.1

Tributary area of shaded section on free standing deck shown is 5'x6'=30 sq. ft. Code will require a minimum footer of 8"x 16" per Table AM102.1



AM102



Ex.: 4"x8"x16" double-stacked solid block

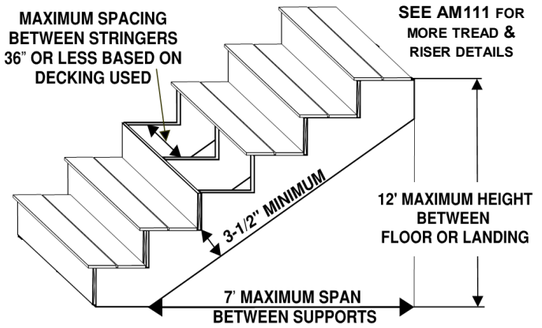
Table AM102.1 Footing Table [a, b, c]

SIZE (inches)		TRIBUTARY AREA (square feet)	THICKNESS (inches)	
Precast Footings	Poured-in-Place Footings		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

a. Footing values are based on single floor and roof loads;
b. Support post must rest in center 1/3 of footer;
c. Top of footer shall be level for full bearing support of post

SECTION AM110 STAIRS

AM110.1 Stair 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" between the step cut and the back of the stringer. Suspended headers shall be attached with 3/8" inch galvanized bolts



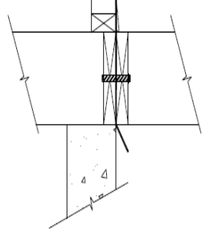
Some Things to Think About… (Continued)

- **Will your deck be attached to the residence for support or will it be a "self-supported" deck?**

If attached, this means the deck band will be connected to the house band and that your deck will be supported partially by the existing foundation of the house. Attached decks must be connected to the band or rim joist of the house by 5/8 inch galvanized through bolts. Also, the existing siding (except brick) which covers 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 AM103) to prevent water from rotting the house band. See diagram below for detail.

All Structures Except Brick Veneer			
Method	**Fasteners**	**8' Max Joist Span [a]**	**16' Max Joist Span [a]**
1	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			
2	Self-Drilling Screw Fastener [d]	12" O.C. STAGGERED	6" O.C. STAGGERED
Brick Veneer Structures			
5/8" Hot Dipped Galv. Bolts with Nut and Washer [b]		1@ 2'-4" O.C.	1@ 1'-4" O.C.

AM103



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

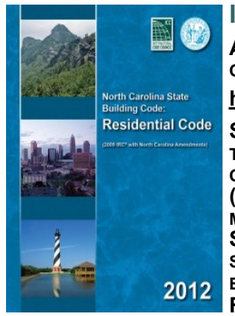
b. Minimum edge distance for bolts is 2.5 inches,

C. Nails must penetrate supporting structure band a minimum of 1.5 inches

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 pounds and shall have a corrosion resistant finish equivalent to hot dipped galvanized. Minimum edge distance for screws is 1-7/16". A minimum of 1/2" thick wood structural panel if permitted to be located between the deck and the structural band.

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



Important Note:

A COPY OF THE ENTIRE NC RESIDENTIAL CODE CAN BE FOUND ONLINE AT,

http://www.ncdoi.com/OSFM/Default.aspx# .

SELECT OSFM DIVISIONS THEN STATE BUILDING CODES. IN THE RESOURCES BOX SELECT 2012 NC CODES WHERE IT WILL OPEN A NEW PAGE TO THE INTERNATIONAL CODE COUNCIL (ICC). SELECT NC THEN 2012. FOR THE LATEST AMENDMANTS TO THE CURRENT CODE SELECT OSFM DIVISIONS, STATE BUILDING CODES, CODE (CURRENT AND PAST) THEN SCROLL TO THE 2012 NC/ICC 2009 AMENDMENTS. ALL REFERENCES TO AM REFER TO APPENDIX M OF THE 2012 NC RESIDENTIAL CODE AND AMENDMENTS TO THE CODE.