NORTH CAROLINA
DEPARTMENT OF INSURANCE
OSFM
OFFICE OF STATE FIRE MARSHAL

Engineering

Wayne Goodwin, Commissioner of Insurance
Rick McIntyre, Assistant State Fire Marshal

April 21, 2016

Michael Newby
Assistant County Attorney
Davidson County
PO Box 1067
913 North Greensboro Street
Lexington, NC 27293-1067

RE: 2012 NC Residential Code
R302.1, Exterior Walls

Mr. Newby:

This letter is in response to your request for a specific interpretation dated 4/7/16. NCDOI Staff advised the Davidson County Inspection Department to seek a legal opinion from the County attorney. I offer my opinion, but it does not constitute an interpretation of the Technical Codes.

The 2012 NC Residential Code, R302.1 requires increased fire-resistance of the exterior wall as it is placed closer to the property line. A wall that is 6-feet from the property line does not require a fire-resistance rating. A wall that is 2-feet from the property line requires a 1-hour fire-resistance rating. A shared wall (townhouse) that is on the property line requires a 2-hour fire-resistance rating.

The Code does not address a building that crosses the property line. A separation, while not practical, would obviously be at least 2-hours. The 2-most common solutions for a building that crosses the property line are:

- Combine the lots by plat (eliminates the property line), or
- Record deed restrictions on each affected lot to describe the condition.

Please call if you have comments or questions.

Sincerely,

Barry Gupton, PE
Chief Code Consultant

cc: File
Clint Searcy, Davidson County
Chris Noles, PE, NCDOI
Bill Kirk, PE, NCDOI

attachments: 4/7/16 request
4/8/16 e-mail
10/25/13 interpretation
R302.1 Section and Table

DAVIDSON COUNTY
OFFICE OF THE COUNTY ATTORNEY
Charles E. Frye III, County Attorney

Post Office Box 1067
913 N. Greensboro Street
Lexington, North Carolina 27293-1067
336-236-3084
mike.newby@davidsoncountync.gov

April 7, 2016

Mr. Barry Gupton
North Carolina Department of Insurance
Chief Code Consultant
Code Services Section
#22 Chapanoke Road Suite 200
Raleigh, NC 27603

Re: Request for formal interpretation

Dear Mr. Gupton:

I am the Assistant County Attorney for Davidson County. A question has arisen concerning the application of R302 of the 2012 Residential Code in Davidson County. Davidson County has a sizeable section of shore line on High Rock Lake which is now a major recreational venue and growing residential area. When the lake was originally created, developers established numerous small subdivisions around the lake containing numerous very small (25 foot) lots which would be sub-standard under today's standards. Those lots and roads exist as parcels of record but most of these subdivisions were never developed; however, with the expanding popularity of the lake area, individuals are purchasing tracts of this land (usually comprised of several of these lots sold together) to build residences and vacation homes. Occasionally the proposed house will straddle two of these platted lots as building sites are now dictated by zoning set back regulations, the Flood Plain Ordinance and Health Department rules regarding septic tanks.

The Davidson County Building Inspection Department has been interpreting Section R302 of the 2012 Residential Building Code to require these owners of several platted substandard lots to either create a new deed recombining these lots into one description or to build the house in compliance with the requirements of Table R302.1 (fire resistant standards with significant costs). If the lots are "recombined" in a deed, besides the cost of obtaining such a document, there are other consequences as the Health Department considers such a recombination as a new lot which would require the landowner meet existing septic tank regulations which can result in creating an unbuildable tract.

I question whether the Davidson County Building Inspections Department's approach is a valid interpretation of the code regulation. As I read it, R302.1 specifically applies to two structures which are built within five feet of existing lot lines: "R302.1 Exterior Walls. Construction, projections, openings and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table R302.1." I point to the use of the word "exterior" which is defined in the code as "an outside wall" and the use of the plural – "dwellings and accessory buildings". Also I question whether the purchase of prior platted lots in one conveyance is in fact a combination of the lots creating a new tract and not just an amalgamation of

separate lots. I also question the rationale of having a fire wall or other fire preventive measures placed in the middle of someone's home. The more logical argument is that this regulation applies to two structures located within 5 feet of the properties' boundary line (See Attachment A) which is reasonable as fire resistant wall could prevent the spread of fire from one building to another where there are separate structures.

In summary, Davidson County would like you to render a specific interpretation of the application of R302.1 to the above described scenario. Your assistance in clarifying this matter is greatly appreciated.

Sincerely,

Michael K. Newby

Enclosure as stated

Cc: C. Searcy
G. Cornman
C. Frye

Gupton, Barry

From: Gupton, Barry
Sent: Friday, April 08, 2016 9:19 AM
To: Kirk, Bill
Subject: RE: Question about One House On Three lots

I think you have already told him as much as you can. If he needs more in writing, then that needs to come from his attorney. I would probably suggest some type of deed restriction/statement recorded on each of the 3-deeds to describe what the current owner is doing. Thanks. Barry.

From: Kirk, Bill
Sent: Monday, April 04, 2016 7:56 AM
To: Gupton, Barry <Barry.Gupton@ncdoi.gov>
Subject: Question about One House On Three lots

Hello Barry, I had a question from Beau Chollett with Davidson County inspections. An owner of 3 lots wants to build his house on these three lots without combining them into one lot. I have spoken with Mike about this and we think that the county attorney needs to decide the legal aspect of this. We also think that if the attorney decides that the owner can do this , as far as code requirements, it would be treated as one house on one lot. I had a conversation with Beau about this and he wanted something in writing. What I have below is what I told Beau in our conversation, with some minor editing from Mike. He asked me to let you review the response before I emailed to Beau. Thanks, Bill.

Beau,

This email is a follow up to our telephone conversation concerning your question:

Can an owner of three adjacent lots build his house on all three lots without combining the lots?

This issue would need to be decided by the county attorney. If the attorney decides that the owner can build his house on his lots I would consider it as one house on one piece of property as related to the Residential Code for construction.

I hope this information is helpful.

Bill Kirk, PE

Chief Residential Code Consultant
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INFORMAL CODE INTERPRETATION

NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
1202 Mail Service Center, Raleigh, NC 27699-1202
919-661-5880

Location on Lot Related to Zoning, Deed Restrictions and Covenants

Code: 2012 Residential Code
Section: R302, Table 302.1

Date: September 18, 2012
Rev 1: October 25, 2013

Question:
Can zoning, deed restrictions, and covenants be used to supersede the 3 feet fire separation distance requirements of Section R302 for two houses?

Answer:
Zoning and covenants are subject to change and are not recognized by the Department of Insurance. They would not qualify to supersede the code requirements of Section R302.

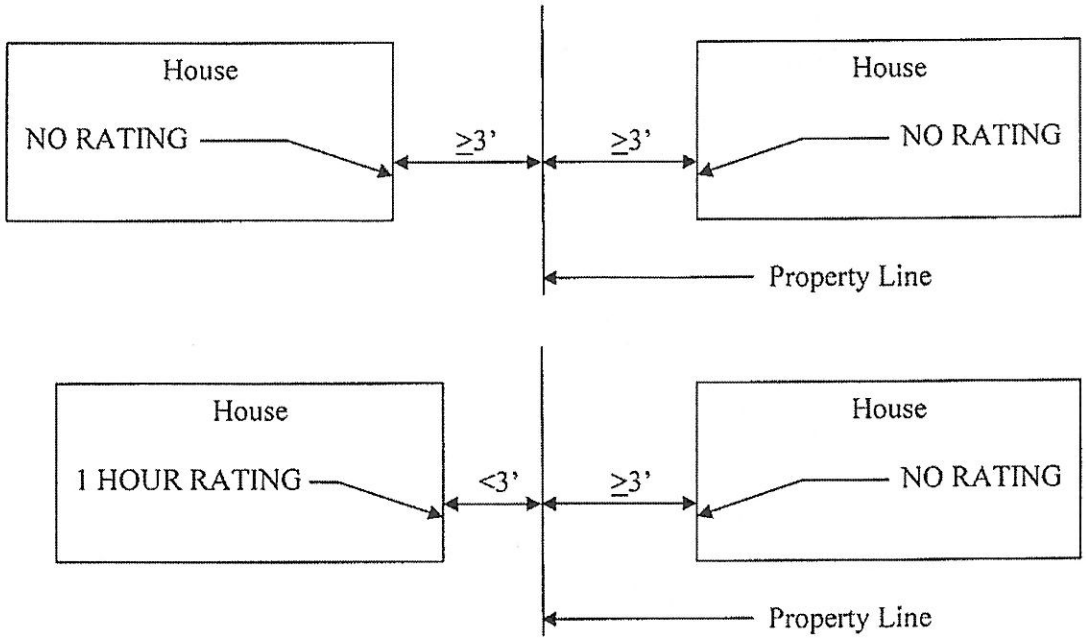
Deed restrictions may be accepted to reduce the distance of a structure to the property line but the two structures are still subject to the intent of the separation requirements listed in Section R302. If the deed restrictions maintains a 6 feet or greater separation between the two houses then no requirements for fire-resistive construction is necessary. If the separation is less than 6 feet, then the fire-resistive construction requirements of Section R302 are required. See below for examples.

Townhouses and duplexes are subject to the requirements of Section 302.2.

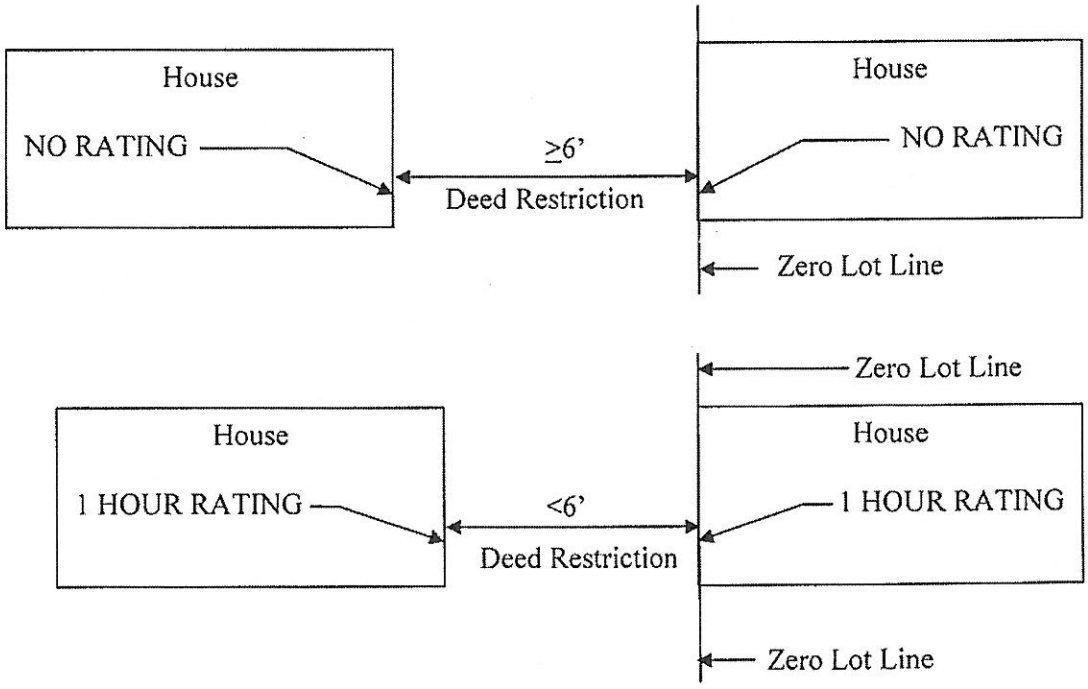
See page 2 for examples.

Revision Note:
Revised the separation distance references to reflect a change in the code that was approved by the NC Building Code Council on June 1, 2013.

STANDARD, ZONED, and COVENANT LOTS



DEED RESTRICTED LOTS



R301.6 Roof load. The roof shall be designed for the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater.

R301.7 Deflection. The allowable deflection of any structural member under the live load listed in Sections R301.5 and R301.6 shall not exceed the values in Table R301.7.

R301.8 Nominal sizes. For the purposes of this code, where dimensions of lumber are specified, they shall be deemed to be nominal dimensions unless specifically designated as actual dimensions.

TABLE R301.6
MINIMUM ROOF LIVE LOADS IN POUNDS-FORCE PER SQUARE FOOT OF HORIZONTAL PROJECTION

ROOF SLOPE	TRIBUTARY LOADED AREA IN SQUARE FEET FOR ANY STRUCTURAL MEMBER		
	0 to 200	201 to 600	Over 600
Flat or rise less than 4 inches per foot (1:3)	20	16	12
Rise 4 inches per foot (1:3) to less than 12 inches per foot (1:1)	16	14	12
Rise 12 inches per foot (1:1) and greater	12	12	12

For SI: 1 square foot = 0.0929 m^2, 1 pound per square foot = 0.0479 kPa, 1 inch per foot = 83.3 mm/m.

TABLE R301.7
ALLOWABLE DEFLECTION OF STRUCTURAL MEMBERS[a, b, c, d, e]

STRUCTURAL MEMBER	ALLOWABLE DEFLECTION
Rafters having slopes greater than 3:12 with no finished ceiling attached to rafters	L/180
Interior walls and partitions	H/180
Floors and plastered ceilings	L/360 [f]
All other structural members	L/240
Exterior walls with plaster or stucco finish	H/360
Exterior walls—wind loads[a] with brittle finishes	H/240
Exterior walls—wind loads[a] with flexible finishes	L/120[d]
Lintels supporting masonry veneer walls[e]	L/600

Note: L = span length in inches, H = span height in inches.

a. The wind load shall be permitted to be taken as 0.7 times the Component and Cladding loads for the purpose of the determining deflection limits herein.

b. For cantilever members, *L* shall be taken as twice the length of the cantilever.

c. For aluminum structural members or panels used in roofs or walls of sunroom additions or patio covers, not supporting edge of glass or sandwich panels, the total load deflection shall not exceed L/60. For continuous aluminum structural members supporting edge of glass, the total load deflection shall not exceed L/175 for each glass lite or L/60 for the entire length of the member, whichever is more stringent. For sandwich panels used in roofs or walls of sunroom additions or patio covers, the total load deflection shall not exceed L/120.

d. Deflection for exterior walls with interior gypsum board finish shall be limited to an allowable deflection of H/180.

e. Refer to Section R703.7.2.

f. When floor spans exceed 20 feet, joists, built-up beams and trusses shall not be spaced greater than 24 inches and deflection shall not exceed L/480.

SECTION R302
FIRE-RESISTANT CONSTRUCTION

R302.1 Exterior walls. Construction, projections, openings and penetrations of *exterior walls* of *dwellings* and accessory buildings shall comply with Table R302.1.

Exceptions:

1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*. Townhouse projections shall comply with R302.2.5.
2. Walls of *dwellings* and *accessory buildings* located on the same *lot*.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the *lot*. Projections beyond the *exterior wall* shall not extend over the *lot line*.
4. Detached garages accessory to a *dwelling* located within 2 feet (610 mm) of a *lot line* are permitted to have roof eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.

R302.2 Townhouses. Each *townhouse* shall be considered a separate building and shall be separated by fire-resistance-rated wall assemblies meeting the requirements of Section R302.1 for exterior walls.

Exception: If an automatic residential fire sprinkler is installed, a common 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Section R302.4.

R302.2.1 Continuity. The fire-resistance-rated wall or assembly separating *townhouses* shall be continuous from the foundation to the underside of the roof sheathing, deck or slab. The fire-resistance rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed *accessory structures*.

R302.2.2 Parapets. Parapets constructed in accordance with Section R302.2.3 shall be constructed for *townhouses* as an extension of exterior walls or common walls in accordance with the following:

1. Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces.
2. Where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is not more than 30 inches (762 mm) above the lower roof surface.

Exception: A parapet is not required in the two cases above when the roof is covered with a mini-

TABLE R302.1
EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	≥ 2 feet to 5 feet
	(Not fire-resistance rated)	0 hours	5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm.
N/A = Not Applicable.

mum class C roof covering, and the roof decking or sheathing is of noncombustible materials or *approved* fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of $^{5}/_{8}$*-inch* (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by a minimum of nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a minimum distance of 4 feet (1219 mm) on each side of the wall or walls. No openings or penetrations including dormers allowed within this 4 foot (1219 mm) protected area.

3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.

R302.2.3 Parapet construction. Parapets shall have the same fire-resistance rating as that required for the supporting wall or walls. On any side adjacent to a roof surface, the parapet shall have noncombustible faces for the uppermost 18 inches (457 mm), to include counterflashing and coping materials. Where the roof slopes toward a parapet at slopes greater than 2 units vertical in 12 units horizontal (16.7-percent slope), the parapet shall extend to the same height as any portion of the roof within a distance of 3 feet (914 mm), but in no case shall the height be less than 30 inches (762 mm).

R302.2.4 Structural independence. Each individual *townhouse* shall be structurally independent.

Exceptions:

1. Foundations supporting *exterior walls* or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall and roof coverings.
4. Flashing at termination of roof covering over common wall.
5. *Townhouses* separated by a common 1-hour fire-resistance-rated wall as provided in Section R302.2.

R302.2.5 Townhouse eave protection. In townhouse construction (with three or more attached dwellings) projections extending into the fire separation distance shall have not less than 1 hour fire resistive construction on the underside. Soffit material beyond the fire separation distance shall be securely attached to framing members and shall be constructed using either noncombustible soffit material; fire-retardant-treated soffit material; vinyl soffit installed over $^{3}/_{4}$-inch (19 mm) wood sheathing or $^{5}/_{8}$-inch (16 mm) gypsum board; or aluminum soffit installed over $^{3}/_{4}$-inch (19 mm) wood sheathing or $^{5}/_{8}$-inch (16 mm) gypsum board. Venting requirements shall be provided in both soffit and underlayments. Vents shall be either nomina1 2-inch (51 mm) continuous or equivalent intermittent and shall not exceed the minimum net free air requirements established in Section R806.2 by more than 50 percent.

Vents in soffit are not allowed within 4 feet (1219 mm) of fire walls or property lines.

R302.2.6 Townhouse eave projections. Overhang projections not exceeding 12 inches (305 mm) shall be allowed to extend beyond the property line in townhouse buildings provided all the following conditions are met:

1. Required fire resistant rated wall assembly is tight to roof deck; and
2. Eaves shall be protected with roof decking and fascia of non-combustible materials or approved fire-retardant-treated wood; and
3. Eaves shall have not less than 1 hour fire-resistive construction on the underside.

R302.2.7 Flame spread. Vinyl Siding and vinyl soffit materials when used in townhouse construction shall have a Flame Spread Index of 25 or less as tested in accordance with ASTM E 84.