

R O N A L D L . K N O T T , P . E .

801 CRICKET KNOLL ROAD  
FUQUAY-VARINA, NC 27526  
(919) 417-1962

June 7, 2020

Juan Carlos and Darlene Leon  
76 Virginia Lane  
Cameron, NC

RE: Engineering Review Inspection Issues for 76 Virginia Lane, Cameron, NC

Darlene:

Review of the inspection issues are itemized below.

1. Ceiling Joist Blocking
2. Wall Sheathing at Corners
3. Subfloor Material Thickness
4. Depth of Joist Taper and Rafter Bird Mouth Cuts
5. Header 2x8 Exterior, 2x6 Interior
6. Missing Insulation baffles
7. Fire Foam
8. Studs Under Joists
9. Needs (4) 10d nails from Ceiling Joists to Top Plate

Item 1: Blocking was specified for ceiling joists over the two bedrooms. Instead, a plywood floor is being added above the joists. The nailing pattern will more than replace blocking for reduction of the unbraced length of the tops of the ceiling joists. Note: Some stability is also gained by sheetrock attachment to the bottoms of the ceiling joists.

Item 2: Sheathing for wind bracing was specified to be 1/2" plywood at corners. However, 7/16" plywood was used all over. The reduction in thickness is acceptable considering the added area.

Item 3: The subfloor plywood thickness was specified to be 3/4". The use of 1/2" thick plywood for subfloor is acceptable.

Item 4: The taper on ceiling joists causes depth to be shallow at the support point. Additionally, the bird mouth cuts on the rafters cause a similar condition except for rafters, the heel is not supported. Since a spacer was used between the rafter and joist, the rafter will be predrilled and screwed to the spacer near the bottom of the rafter thereby preventing splitting of the rafter. Two #8 construction screws at least 2 1/2" long will be added at about 1 1/2" from the edge of each rafter and spaced about 3 1/2" apart.

Item 5: Double 2x8 headers are acceptable for the exterior doors. Double 2x6 headers are acceptable for the interior doors. The sliding door has a header span of about 6 feet and a double 2x8 header is acceptable for that location also.

Item 6: Insulation baffles are being installed.

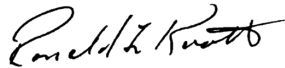
Item 7: Fire foam is being installed.

Item 8: Studs under the ceiling joists in the hall area are supported on nailers attached to the side of the studs. These nailers have adequate nails and the joists are also nailed to the studs to allow use as supports without continuity to the sole plate.

Item 9: The joists in Item 8 are also nailed on their other end to the band of the existing structure with less than (4) 10d nails. The use of (3) 10d nails at this location is acceptable.

It has been my pleasure to help in this effort. If you have any questions, please call. I'm glad to assist.

Sincerely,



Ronald L. Knott, P.E.  
(919) 417-1962

