



May 8, 2026

Byron Bagaasen

Re: Limited Structural Inspection
534 Siltstone Place
Cary, NC

Dear Mr. Bagaasen,

At your request, a limited structural inspection of the above property was performed on May 6, 2026. The report that follows has been prepared based on that inspection. The inspection was performed by Collin Vaughan, EI of Giles Flythe Engineers

The scope of this project was limited to inspection and evaluation of structural concerns addressed in the provided home inspection report by *JHI Services* dated April 27, 2026. The structural concerns included roof truss damages, foundation cracks, foundation separations, damages and concerns in the rear deck, and visible floor framing elements in the basement. The report is intended to cover only those premises that may be examined visually without excavation, removing surface materials, and disassembling components.

No tests, measurements, or calculations have been made except as described in this report. We have not investigated for toxic materials or wastes, or examined public records regarding this property. The scope of the inspection does not assure that the property conforms to any regulations, restrictions, or building codes that may be in effect at its location.

DESCRIPTION

The two-story, wood-framed home (with a basement) is constructed on precast concrete basement foundation walls and a concrete slab on grade with interior load-bearing stud walls supporting the floor joists. The house was built in 2006 according to Wake County property records. For purposes of this report, all directions (left, right, rear, etc.) are taken from the viewpoint of an observer standing outside and facing the front door of the home.

Upon our arrival, access to the interior was provided by the seller's agent. The items detailed above in the scope were subsequently inspected.

Note that the original builder was not interviewed and no plans for the construction of this home were provided. The information presented in this report is gathered from the conditions visible at the site, as they existed at the time of the inspection. A limited photo log is included with this report.

OBSERVATIONS

Rear-Left Walk-In Attic:

1. The bottom chord of the truss located approximately 9'-0" from the left gable end wall is cracked at the rear end of the truss.
2. The web member of the rightmost truss located approximately 21'-0" from the left gable end wall is cracked at the rear end of the truss.

Upper Ladder-Access Attic:

3. The vertical web member in the center of the truss approximately 5'-3" from the left gable end wall is cracked.
4. The diagonal web member in the truss approximately 7'-3" from the left gable end wall has a minor crack with no significant cross-sectional loss of the 2x4.
5. A diagonal web member in the truss approximately 23'-0" from the right gable end wall (rear of the HVAC) has a knot defect hole.

Interior:

6. No apparent signs of significant structural distress were noted in the drywall finish materials.

Garage:

7. Uncontrolled cracking and some minor concrete spalling/damage was noted in the concrete slab.

Exterior:

8. Multiple minor cracks (less than 1/16" wide) were noted in the parge coating on the perimeter walls around the home.
9. Separations (up to 1/8" wide) were noted at panel/control joints in the precast concrete foundation walls (Superior Walls) around the home.
10. The following was noted regarding the rear deck structure:
 - a. Multiple instances of damage/rot were noted throughout the deck in the upper subfloor sheathing and deck boards. The floor sheathing does not appear to be pressure treated.
 - b. The perimeter band at the front-right corner is not adequately supported.
 - c. No lateral bracing system was noted in the upper deck level supporting the roof structure. Some lateral bracing (cross bracing and knee bracing) was present on the lower-level posts.
 - d. The header framing of the upper roof was visibly sloping towards the rear and was measured to be sloping up to 1-1/2" vertical over 4'-0" horizontal.
 - i. Additionally, the tile flooring and underside of the upper joists were observed with similar slope to the rear.
 - e. A middle post on the lower level was measured to be leaning out of plumb (up to 5/8" horizontal over 4'-0" vertical).
 - f. The nut of a cross-bracing through bolt was loose along the rear edge of the deck.
 - g. Previous joist sistering repairs have occurred below the grill area.
11. The brick masonry at the front-left corner of the front porch is separated from the concrete driveway.
 - a. No significant cracking was observed in the masonry at this location.
12. Gutters and downspouts (with drainage leaders) were noted installed on the home. Grade was noted with overall front to rear slope through the property.



Basement:

13. Visible inspection of the framing and foundation elements was limited due to a majority of the basement being finished.
14. An uncontrolled crack (up to 1/8" wide) was noted in the concrete slab adjacent to the front foundation wall at a re-entrant corner.
15. The floor framing generally consists of 14" I-joists spaced at 24" O.C.
16. A bolt at the top of the front perimeter precast foundation wall appears to be missing a nut and washer. This instance is near a re-entrant corner in the wall.
17. Moisture staining was observed in the I-joist top flange located above the HVAC unit in the front-left of the basement. Due to congestion of the HVAC unit and ductwork, visual inspection of the I-joist was limited and up-close evaluation was not feasible. From the floor, the I-joist does not appear to have displaced and moved significantly.

DISCUSSION

Roof trusses are an engineered element of the roof system, and as such, any significant damage or modification to the roof trusses must have a repair sufficient for supporting the design loads incurred on the roof trusses. The roof truss conditions noted above (Observations #1-3) are structural concerns. The minor cracking and knot defect (Observations #4-5) are not considered structural concerns at this time. We have provided recommendations below to address these issues.

There are multiple concerns in the rear deck structure outlined in Observation #10. The most significant being evidence of movement/settlement towards the rear (away from the home). Covered decks are sometimes constructed with an approximately 1/4" per foot slope away from the structure; however, the slope observed is far greater than normal and believed to be settlement/movement. Due to covering soils and finish materials, all structural elements of the deck structure could not be visually evaluated (i.e. post footing and roof framing); however, there does not appear to be a lateral bracing system in the upper post framing to help resist horizontal wind loading onto the covered deck as part of the main wind force resisting system. This can commonly result in racking of the structure and is a structural concern. With the complex configuration of the deck structure and covering roof system, in combination with unknowns that could not be evaluated in the scope of this limited inspection, we are unable to provide retrofit repair to address the observed deck concerns at this time. Further evaluation by a structural engineer (involving invasive methods such as soil excavation and finish material removing) and design analysis of the deck structure is needed to properly address the concerns in the deck. Note, upon further evaluation, full reconstruction of the deck structure may be the best course of action.

The separations in the foundation walls noted above (Observation #9) are likely due to limited differential foundation settlement. The clay soils in this area are considered "expansive" type soils and will typically expand and contract with fluctuations in the moisture content. This expansion and contraction of load-bearing soil materials can lead to soil consolidation and foundation cracking/movement. The condition of the foundation wall does not appear to be a structural deficiency and improving exterior drainage and monitoring cracks for additional propagation is an acceptable approach at this time.

The minor cracking in the parge coating in the perimeter foundation walls (Observation #8) is likely the result of shrinkage. As cement-based materials harden and dry, they typically shrink, largely due to the evaporation of excess water. This shrinkage causes a buildup of internal forces in the material, commonly resulting in minor cracking, therefore naturally alleviating the internal stresses. The parge coating is an aesthetic component installed on the foundation walls and is not a structural concern.

The uncontrolled cracks observed in the garage concrete slab and basement slab (Observations #7 & #14) are likely a result of a combination of possible limited differential settlement and/or plastic shrinkage cracks which often can occur shortly after concrete placement during construction. As the concrete sets (hardens), it typically shrinks due to evaporation of excess moisture. This shrinkage causes a buildup of internal forces in the concrete which commonly results in minor cracking, therefore naturally alleviating the internal stresses. The cracks are not considered a structural concern. No structural repairs required.

The separation at the front-left corner of the front porch (Observation #11) is likely due to settlement of the concrete driveway from consolidation of the underlying soils. Though visibility is limited, the front porch appears to have a CMU foundation inside the brick masonry with the bricks primarily serving as an aesthetic component. Based on the lack of brick cracking and no significant signs of distress in the framing above this corner of the porch, we do not consider this separation to be indicative of a structural concern at this time.

The I-joist noted in Observation #17 does not appear to be significantly damaged. The area should be monitored for signs of excessive movement and/or deterioration in the future.

The through bolts at the top of the precast foundation walls appear to be anchoring the above framing to the foundation wall. The instance of what appears to be a missing nut and washer could be a deficiency from original construction. We have provided a recommendation below to install a new nut and washer.

Positive grade away from the foundation should be maintained, where possible, to help reduce moisture infiltration under the foundation. Soil consolidation and settlement can occur due to water infiltration into soils and subsequent drought conditions which dry out the soils below foundations. Maintaining positive stormwater drainage away from the perimeter foundation walls is vital to the long-term structural integrity of the foundation. If future conditions around the foundation are kept relatively dry, the likelihood of future significant settlement will be reduced, but we cannot predict the extent of future settlement.

The recommendations presented in this report are based on our experience and understanding of the concerns to provide a reasonable solution based on the conditions that were visible and/or known to us on the date of inspection. As this report is based on the circumstances at one point in time, conditions may change which may result in additional repair recommendations. Further, the recommendations are the opinion of the Engineer to address significant structural-related concerns and may not rectify cosmetic issues.

RECOMMENDATIONS

If there are any questions or concerns regarding location or method of repair contact the engineer prior to construction.

1. For the cracked truss members in the rear walk-in attic (Observations #1-2), we recommend the following at both locations:
 - a) Install 3/4"-thick plywood gusset plates, on both sides of the damaged truss, beginning at the rear end and extending a minimum 5'-6" forward. The gusset plates should be aligned to match the sloped truss profile and match the depth of the truss (overlapping the top & bottom chords). Attach each gusset plate to all intersecting truss members with (2) 3/8" beads of Loctite PL Premium polyurethane adhesive (or similar) and (2) rows of 8d nails at 4" O.C.



- b) Prior to gusset plate attachment, the cracked web member in Observation #2 should be returned to its original orientation/placement (to the greatest extent possible without further damage).
 - c) The existing 2x4 kicker attached to the trusses should be temporarily removed for installation of the gusset plates. Reattach the kickers to the trusses with a minimum of (3) 16d nails per connection.
2. We recommend consulting with a structural engineer to perform further evaluation of the deck structure to address the noted concerns in Observation #10 (i.e. lateral bracing, damaged framing, framing bearing concerns, sloped framing). Further evaluation will likely involve soil excavation and selective removal of the finish materials.
 - a) Note, it is possible that retrofit repairs are determined to be unfeasible and/or not economical versus full replacement of the deck structure. An experienced contractor could be consulted to discuss the economical cost of potential retrofit repairs compared to reconstruction of a new deck structure.
3. If a nut and washer is determined to be missing (upon removal of the existing insulation), we recommend installing an appropriately-sized nut and washer to secure the through bolt at the top of the foundation wall in Observation #16.
4. Monitor the cracks in the parge coating, concrete slabs, and foundation walls. If the cracks widen significantly (expand by an additional 1/8") or additional significant cracks (greater than 1/4" wide) propagate, then further evaluation by a structural engineer may be needed at that time.
5. We also recommend ensuring that stormwater drains positively away from the home to minimize the risk of future water infiltration. This can be accomplished by maintaining non-perforated drainage leaders on downspouts and ensuring gutters, downspouts, and leaders remain clear of debris and properly functioning to direct the drainage away from the home. Leaders should discharge a minimum of 10-feet away from the foundation (where possible). Also, maintaining a positive grade around the perimeter of the home, where possible, will aid in stormwater evacuation. Water infiltration can cause further consolidation of the soil and foundation settlement.

General Notes:

- All construction and workmanship shall adhere to the 2024 NC Residential Code.
- All new lumber should be SPF or SYP No.2 or equivalent. All lumber exposed to concrete/masonry or weather must be pressure treated. All metal components exposed to weather or pressure-treated lumber shall be galvanized.
- All fastening shall conform to Table R602.3(1) in the 2024 NC Residential Code.
- All notching, cutting and drilling shall conform to R502.8(1) in the 2024 NC Residential Code.
- Installation of the above recommended repairs may require temporary shoring of the in-place structural components. Shoring methods are the responsibility of the contractor.
- With any structural changes, finish material cracks and minor movements are typical and expected. These are associated with settlement and allowable deflection generally observed after construction of an addition, significant remodel, or repair.



CONCLUSION

We trust that this report provides the information you require. Please contact us at 919-465-3801 if you have any questions. Thank you for the opportunity to be of assistance to you.

Sincerely,



Collin Vaughan, EI
Project Engineer
Giles Flythe Engineers Inc.
NC Lic. No. C-2871



Christopher A Flythe
2026.05.08
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Christopher A. Flythe, PE
Principal Engineer
Giles Flythe Engineers
NC Lic. No. C-2871

Enclosed: Limited Photo Log

Description

General view of the front of the home (for reference).



Photo No.
1

Description

View of the cracked truss bottom chord.



Photo No.
2

Description View of the cracked truss web member.	 A photograph showing a wooden truss web member with a visible crack. The member is surrounded by yellow and pink insulation. A blue mesh patch is applied to the crack.
Photo No. 3	

Description View of the cracked vertical truss web member.	 A photograph showing a vertical wooden truss web member with a significant crack. The member is surrounded by yellow insulation. A blue mesh patch is applied to the crack.
Photo No. 4	

Description Typical view of separation in the foundation wall panel/control joints.	
Photo No. 5	

Description Typical view of damaged sheathing in the deck.	
Photo No. 6	

Description Typical view of damaged boards in the deck.	
Photo No. 7	

Description View of slope on the underside of the deck joist.	
Photo No. 8	

Description View of the visibly sloped deck header framing.
Photo No. 9



Description View of separation at the front porch corner.
Photo No. 10



Description

View of the missing nut and washer in the foundation wall through bolt.

**Photo No.
11**

