



Wise Engineering
3915 Old Fairground Rd.
Angier, NC 27501
(919)894-2203

July 26, 2024

Olegario Barajas

Subject: 87 E Dooley St, Coats, NC 27521

Mr. Barajas,

At your request, a representative from Wise Engineering (WE) reviewed the existing home located at 87 E Dooley St, Coats, NC 27521. Specifically, we inspected the alterations to the home to determine if they were constructed in general compliance of the 2018 North Carolina Residential Building Code. All views are as if you are standing on E Dooley Street facing the front of the home.

At the time of our site visit, the home had undergone extensive renovations and was in the framing stage of construction. It is our understanding that during the renovation process there were not any municipal permits, approved plans, and/or inspections.

Foundation

Based on our observations and analysis of the foundation, the perimeter masonry foundation wall of the additions was constructed out of 8"x16"x8" concrete masonry unit (CMU) blocks on a concrete footing. The concrete footing is not adequate to support the anticipated loading conditions. Therefore, the perimeter masonry foundation wall of the additions should be enhanced by pouring a 20"x20"x8" concrete footing directly under the existing concrete footing every five linear feet (on center) to support the loads from above. The existing interior piers within the additions are structurally adequate as constructed to support the anticipated loading conditions.

Floor Framing

Based on our observations and analysis, the floor framing of the additions consisted of 2x10 floor joists at 16" on center supported by solid sawn girders. The floor joists within the crawlspace should be secured to the outer band with a Simpson L90 (installed per manufacturer guidelines). Additionally, any of the floor joists that are connected to a flush girder should be supported by a ledger strip or a Simpson LUS210 joist hanger (installed per manufacturer guidelines). Provided the aforementioned enhancements are properly completed, the floor system for the additions will be structurally adequate to support the anticipated loading conditions.

Wall Framing

Based on our observations and analysis, the walls are wood framed with 2x4 studs and sheathed on the exterior with 7/16" OSB. There were multiple structural concerns with both the interior and exterior walls.

1. The window and door openings on the front of the home do not have headers to support the loads from above. WE recommends installing a (2)2x8 header supported by one jack stud and one king stud on each end over each of the window and door openings.
2. The window openings on the left side of the home were constructed with headers but without jack studs to support the headers. WE recommends removing the existing headers and installing new (2)2x8 headers supported by one jack stud and one king stud on each end over the window openings.
3. The header for the side of the front porch extends into the wall framing, however, there are not any jack studs to support the load of the header. WE recommends installing two jack studs under the header to support the anticipated loading conditions.
4. There are two headers for the side porch that extend into the wall framing, however, there are not any jack studs to support the load of the headers. WE recommends installing two jack studs under each header to support the anticipated loading conditions.
5. The doorway for the two rear bedrooms are both in a load bearing wall and there are no headers over the door openings. WE recommends installing a (2)2x8 header supported by one jack stud and one king stud on each end over each of the door openings.

Ceiling and Roof Framing

The ceiling and roof structures are both wood framed with dimensional lumber supported by a combination of load bearing walls and LVL beams. There were multiple structural concerns with both the ceiling and roof structures.

1. The ceiling joists on the right side of the home tie into an LVL beam and are not supported by a ledger strip or joist hangers. Each of the ceiling joist should be secured to the LVL beam with a Simpson LUS26 joist hanger (installed per manufacturer guidelines).
2. There are multiple broken/damaged roof rafters over the original portion of the home that should be sistered with new like members from bearing point to bearing point.
3. The roof system lacks collar ties. WE recommends installing a 2x4 collar tie on every other rafter throughout the roof system.

If you need additional information or have other questions, please let us know.

Sincerely,



Taylor Poulos

Randy K. Wise, PE

