

November 6, 2024

Project No. 24-2270

W. Harrison Welch, PE
Stonewall Structural Engineering, PLLC
9203 Baileywick Rd. #200
Raleigh, NC 27615
(919)407-8663



Cullen Toomey
Tar Heel Basement Systems
3333 Air Park Rd.
Fuquay-Varina, NC 27526

Re: Structural Observation — 216 Pendergraft Road, Bunnlevel, NC 28323

Mr. Toomey,

At your request, on October 30, 2024 we performed a review of the structural plan proposed by *Tar Heel Basement Systems* for the first floor framing reinforcement at the Bunnlevel residence noted above. The structure is a conventionally framed, detached, single family residence with raised first floor framing over a pier/girder foundation system with perimeter masonry foundation walls (*see picture 1*).

Our observations are listed below. Indicators such as "left," "right," "front," and "back" are referenced as viewing the front of the home.

PROPOSED WORK

- A supplemental dropped girder has been proposed in the rear joist bay to reinforce sagging floor joists. The girder is proposed to be installed starting approximately 8' from the left foundation wall and extending to 13' from the left foundation wall. (*see picture 2*).
 - Measurement by laser level indicated that the floor joists at the location of the proposed supplemental girder were sagging by as much as approximately $\frac{3}{8}$ " at mid-span.

We recommend the following work be performed by a qualified general contractor (*see repair schematic at end of this report*):

- Reinforce the sagging floor joists with a supplemental S4x7.7 dropped girder within the middle $\frac{1}{3}$ of the joists. The new girder should span from approximately 8' to 13' from the left foundation wall over IntelliJack supports on well-compacted 18"x18"x18" gravel footings spaced no more than 6'-6" apart.

The above-listed determinations were made in accordance with common engineering principles and the intent of the 2018 edition of the *North Carolina Residential Building Code*. Sequencing, and means and methods of construction are considered to be beyond the scope of this report. Contractor is to provide adequate temporary shoring prior to cutting or removing any structural load-bearing elements. All work is to conform to applicable provisions of current building standards. Please feel free to contact us, should you have any questions or concerns regarding this matter.

Inspection performed by:
Derek Harwood

Sincerely,
W. Harrison Welch, PE
Stonewall Structural Engineering, PLLC
Lic. #P-0951



11/06/2024

PICTURE ADDENDUM



Picture 1 – 216 Pendergraft Road, Bunnlevel, NC 28323



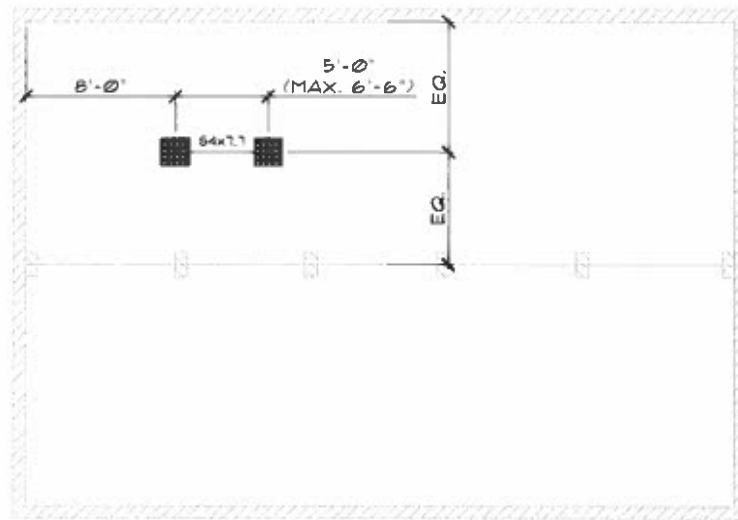
Picture 2 – Left rear area of crawlspace to be stabilized

NOTES

CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO WORK.
ASSUMED SOIL BEARING CAPACITY 2,000 PSF. CONTACT SOILS ENGINEER IF UNSUITABLE
SOILS FOUND.

LEGEND

■ INDICATES (N) INTELLIJACK SUPPORT OVER
18"x18"x18" COMPACTED GRAVEL FTG.



REPAIR SCHEMATIC
SCALE: N.T.S.