

Derek Harwood, PE
Stonewall Structural Engineering, PLLC
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Raleigh, NC 27615
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Carter Lassiter
Tar Heel Basement Systems
8005 Knightdale Blvd.
Knightdale, NC 27545

Re: Review of Proposed Foundation Repair — 100 Hawksbill Drive, Franklinton, NC 27525

Mr. Lassiter,

At your request, Stonewall Structural Engineering, PLLC (Stonewall) was consulted to review and provide recommendations for foundation repair proposed by Tar Heel Basement Systems at the above referenced address. The purpose of the proposed foundation repair is to address issues observed by Tar Heel Basement Systems while on-site December 17, 2025.

Conditions Evaluated

Based on the information provided by Tar Heel Basement Systems, we understand the subject structure to be a conventionally framed, detached, single-family residence with a slab-on-fill foundation system (see pictures 1-2). Indicators such as “left,” “right,” “front,” and “back” are referenced as viewing the front of the home.



Picture 1 – Front of home (100 Hawksbill Drive, Franklinton, NC 27525)



Picture 2 – Back of home (100 Hawksbill Drive, Franklinton, NC 27525)

The following issues were reported by Tar Heel Basement Systems:

1. Foundation cracks were reported on the left and right side of the home (*see pictures 3-4*).
 - a. Measurement reported that the front left corner of the garage was down as much as approximately 1 ¼" relative to the back left corner of the home.
 - b. Measurement reported that the front right corner of the home was down as much as approximately 1" relative to the back right corner of the home.

In order to address the issues noted above, Tar Heel Basement Systems has proposed the following foundation repair:

1. Install eight (8) SettleStop helical piers at the front left and front right sides of the home.
2. Install four (4) SettleStop push piers at the middle left and middle right sides of the home.



Picture 3 – Foundation crack



Picture 4 – Foundation crack

Engineering Assessment and Recommendations

The above-noted slab cracks have been the result of minor differential settlement of the interior slab which can be accelerated by inadequate management of rainwater runoff around the perimeter of a home. Soils in this area tend to expand when wetted and contract when dried. These cycles of minor movements can cause short term cosmetic damage and long-term structural damage to occur in rigid slabs which can settle into areas around the perimeter of the home which stay wetter than other portions of a structure.

Based on our review of the information provided, the proposed foundation repair is recommended to be installed as follows (*see detail 1*):

1. Install a series of (8) galvanized steel helical piers and (4) galvanized steel push piers to stabilize the left and right sides of the home against additional differential settlement.
 - a. Helical piers should be installed to a torque capable of developing 20 kips of allowable axial load (40 kips ultimate), or to refusal. Push piers should be driven until engagement of the structure with lift indicating adequate depth/frictional resistance.
 - b. The contractor should locate and avoid utilities prior to work.
 - c. Avoid installing piers beneath windows and doors.
 - d. Install piers at approximately 6' on-center and at the approximate locations shown in the attached repair schematic.

- e. Piers should be installed concentrically below the bearing foundation. This may require chipping the existing footing projection, so the pier bracket is flush with the side of the foundation.

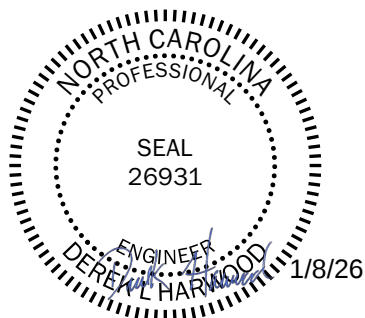
General Comments and Limitations

The determinations above were made in accordance with common engineering principles and the intent of the 2018 edition of the *North Carolina Residential Building Code*. Our review and assessment of the proposed reinforcement(s)/foundation repair(s) was limited to the information provided by Tar Heel Basement Systems, and Stonewall was not consulted to visit the subject project site. As such, Stonewall is not liable for any issues arising beyond the scope of information provided to Stonewall. Should additional information become available, or if site conditions are found to vary from those reported, Stonewall is to be notified and consulted regarding possible impacts to the structure's integrity and/or the effectiveness of the recommendations presented.

Sequencing, and means and methods of construction are considered to be beyond the scope of this report. A qualified 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.

Sincerely,

Derek Harwood, PE
Stonewall Structural Engineering, PLLC
Lic. #P-0951



Back

29' 6"

0.0 0.0

5' 7" 5' 5"

0.0 0.0 0.0

← HVAC

0.0

-0.5 -0.5 -0.75 -0.75 -1.0 -1.0

6' 6' 6' 6' 6' 6'

1.0

10' 9 1/2"

1.2

0.0

-0.5 -0.75 -0.75

6' 6' 6'

Garage

18' 8 1/2"

Front

Gabriel Nurrito
100 Hawksbill Drive
Franklinton, NC 27575

Push Pier

Helical Pier

TARHEEL
BASEMENT SYSTEMS
A Basement Solutions Company

Carter Lassette

Fence

Electric

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