



Wise Engineering
3915 Old Fairground Rd.
Angier, NC 27501
(919)754-7907

May 4, 2020

Mr. Juan Herrera

Subject: 2856 US 301 S Dunn, NC 28334

Mr. Herrera,

I have reviewed your home at the address shown above. Specifically, I reviewed the soils on the lot for adequate bearing to support a new footing/foundation wall for the home. Based on my analysis, I conclude the following.

The soils in this area are fairly soft and only have a bearing capacity of approximately 1000 PSF (approximately $\frac{1}{2}$ of the normally expected 2000 PSF). The soils have excellent bearing capacity (greater than 2000 PSF) approximately 24-30 inches below your current excavation. Based on these findings I offer 2 options for you to consider:

1. Excavate down to solid soils (approximately 24-30 inches), fill the excavation back up to the desired bottom of footing excavation with #57 stone, then pour new footings, construct new foundation wall, etc. The existing footing would have to be removed in this scenario.
2. Excavate a wider footing (minimum of 20 inches wide, 8 inches deep), place 3 pieces of #4 rebar (spaced evenly at 2 inches from bottom of footing), pour footing and construct new foundation wall. This scenario would leave the existing footing in place and pour the new footing directly over top of the old. Since the soils are less than the desirable 2000 PSF, the wider footing would provide adequate support over the weaker, softer soils. The interior footings should be a minimum of 30"x30"x8" with a rebar mat (3 pieces x 3 pieces).

The above options apply to the majority of the perimeter of the home, with the exception being the back-right corner of the home (adjacent to the existing concrete patio). This is an addition that appears to have been done at a later time than the original structure, and the soils in this area appear to have been reinforced or compacted. In this area, a 16" wide footing will be adequate along the sides and back of the new addition.

The above specified solutions are in accordance with the 2018 NC State Residential Building Codes. If you need additional information or have other questions, please let me know.

Sincerely,

Randy K. Wise, PE

