Job Number: 1-5281-24

Takla Engineering, PLLC

Alfred A. Takla, PE alfredtakla@taklaengr.com NC PE License # 047507

Andy A. Takla, PE andytakla@taklaengr.com NC PE License # 050695

NC Firm License # P-1952

Consulting. Design. Efficiency.

PO Box 71298 Durham, NC 27722

Office@TaklaEngr.com 919-258-2648

Digitally Signed By: Alfred Atef Takla, PE 2024.10.17 15:54:01-04'00'

NORTH CAROLINA PROFESSIONAL SEAL 047507 ENGINEER ALFRED ATEF TAKLA

Project: Purfoy Place Lot 4

Location: 90 Lambert Lane, Fuquay-Varina NC

Company: Gemstone Homes

Care Of: Daniel Hager

Subject: Rear Porch Foundation Wall Footing and 3rd Party Inspection

As requested, Alfred Takla, PE visited the above referenced site on October 15th and October 17th, 2024 to evaluate the bearing capacity of the sub-grade soils supporting:

_____Foundation wall and/or interior pier footings
_____Turndown monoslab on grade and interior lug footings
__X__**Rear porch foundation wall continuous footings**
_____Detached garage foundation wall footings
_____Front and rear porch post lug footings

*Patio slabs with no thickened or lug footings are outside the scope of our inspection.

Observations of lot topography, vegetation horizons and soil characteristics were made in order to generally characterize the lot. Based on these observations, and evaluations by means of probing excavation bottoms with a static cone penetrometer with a 60 degree cone assembly, friction sleeve, and gauge with pressure readings correlated to blow counts associated with a Dynamic Cone Penetrometer (DCP), and/or a ½" diameter steel probe rod, we verify the average bearing capacity of the sub-grade soils to meet or exceed a minimum of 2000 pounds per square foot as required by NCRC 2018, Chapter 4 and engineered specifications. No mechanical soil borings, standard proctors or density testing was completed during our inspection to verify compaction or soil conditions at deeper depths. If lot has been subjected to fill (compacted or otherwise), documentation of these aspects should be provided by grading contractor or a geotechnical engineering firm.

We also performed a 3rd party monoslab inspection in-lieu of municipal inspector using the plan provided by the builder and approved by municipal building inspections department. Based on our inspection, we verify the following:

- **To compensate for soft / inconsistent conditions of subgrade soils as well as the high water table encountered at the rear of this lot, during our site visit on October 15th, 2024, we recommended over-excavating rear porch foundation wall continuous footings to a depth of at least 12" below the level of the existing continuous footings for the rear elevation foundation wall of the house, fully lining all sides of footing excavations with non-woven water-permeable fabric, and backfilling the lined footing excavations with #57 washstone, leaving enough space for per-plans concrete footing thickness to be poured over the top of the #57 stone tied to the existing continuous footings for the rear elevation foundation wall of the house. Based on our observations during our site visit on this day, all footings excavations mentioned above have been prepared per our recommendations.**

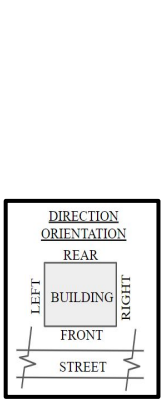
- **Steel reinforcement installed at interface where the new rear porch foundation wall continuous footings meets the existing continuous footings for the rear elevation foundation wall of the house as well as the steel reinforcement installed continuously at bottoms of rear porch foundation wall footing excavations were installed in accordance with engineering verbal recommendations provided during our initial visit to this site on October 15th, 2024, see pictures on Page 2 of this report for additional reference.**

- Depth and size of rear porch foundation wall continuous footing excavations meets or exceeds per plan specifications and code requirements.

- Locations of rear porch foundation wall continuous footing excavations are found to be per plans.

- Footings are prepared in compliance with NCRC 2018 Chapter 4 (Sections R401-R404)

- **All conditions are acceptable to receive concrete.**



Job Number: 1-5281-24

Takla Engineering, PLLC

Alfred A. Takla, PE alfredtakla@taklaengr.com NC PE License # 047507

Andy A. Takla, PE andytakla@taklaengr.com NC PE License # 050695

NC Firm License # P-1952

Consulting. Design. Efficiency.

PO Box 71298 Durham, NC 27722

Office@TaklaEngr.com 919-258-2648

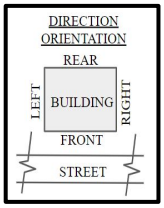
Project: Purfoy Place Lot 4

Location: 90 Lambert Lane, Fuquay-Varina NC

Company: Gemstone Homes

Care Of: Daniel Hager

Subject: Rear Porch Foundation Wall Footing and 3rd Party Inspection



Harnett County Inspections Department

3rd Party Inspection Form

Record of the Inspection of a **Component or Element** by a NC Licensed Architect or Engineer

Project Information:

Residential Single Family Project: (Y) N

Commercial Project: Y (N)

Code Enforcement Project No.:

Permit No.: SFD2206-0033

Project Name: Purfoy Place Lot 4

Owner:

Project Address: 90 Lambert Lane

Suite No.:

Date Inspected: 10/17/2024

Contractor Name: Gemstone Homes (Hager)

Component Inspected: Footing and 3rd Party Inspection, Job Number 1-5281-24

Responsible Licensed NC Architect or NC Engineer

Name: Alfred A Takla, PE

Firm Name: Takla Engineering, PLLC

Phone No.: Office 919-258-2648 Mobile 919-332-7903

Email Address: alfredtakla@taklaengr.com

Mailing Address: PO Box 71298 Durham, NC 27722

Applicable Code Section: NCRC 2018

2018 NCBC = 2018 NC Building Code; 2018 NCRC = 2018 NC Residential Code

Describe Element/Component/Type of Inspection: *

Rear Porch Foundation Wall Footing and 3rd Party Inspection

*(subgrade form/letter may also be required) **Attestation/Signature:**

By signing below, I certify that the component and/or element of the building as identified on this form has been inspected by me or someone under my direct supervision per subsection (b2) of NC G.S. 153A-352 and is in compliance with the Code or other proposal of the architect or engineer for the project. This inspection is in compliance with all of the requirements of the above referenced Code. Attach any additional documents if needed.

Licensed Architect or Engineer Alfred Takla

Digitally Signed By: Alfred Atef Takla, PE
2024.10.17 15:54:11-04'00'

NORTH CAROLINA PROFESSIONAL SEAL 047507 ENGINEER ALFRED ATEF TAKLA

Inspection Department disclaimer: