



February 19, 2020

Mr. Austin Brown
Capital City Homes
5711 Six Forks Road, Suite #200
Raleigh, North Carolina 27609

**Subject: Summary of Foundation Bearing Material Evaluation & 3rd Party Inspection
Lot No. 1100 – (101 Education Drive)
Academy at Anderson Creek Subdivision
Spring Lake, North Carolina
Permit Number: 1912-0040
Project Number: 6603.500 (26839-00)**

Dear Mr. Brown:

On February 14, 2020, a representative of SUMMIT Engineering, Laboratory and Testing, P.C. (SUMMIT) visited the subject site for the purpose of observing the near surface foundation bearing materials and to perform a third-party inspection for the proposed residential structure. The following is a summary of our onsite observations and evaluation.

The residential footings were excavated approximately 18 inches wide and approximately 18 inches below the existing ground surface prior to our site visit. We observed that the interior and exterior wall foundations were prepared per the structural plans provided onsite.

Our work included testing and bearing grade evaluations of the in-place soil at the bottom of the foundation excavations. Hand auger borings were incrementally advanced by manually twisting a sharpened steel auger into the soil at selected locations along the footing excavation. The soil consistency in the bottom of the excavation and at selected intervals below the bearing grade was evaluated by Dynamic Cone Penetrometer (DCP) testing. The conical point of the DCP was first seated to penetrate any loose cuttings and then driven three additional 1-3/4 inch increments with blows from a 15-pound hammer falling 20 inches. The soil's strength characteristics and foundation support capability was determined based on the average blows per increment (bpi) over the last two increments to achieve this penetration. Additionally, the entire excavated foundation was evaluated by hand probing using a 1/2 inch diameter steel probe rod to check for soft areas at the surface intermediate of our hand auger boring locations.

The materials encountered in our hand auger borings generally consisted of tan-brown and gray, silty-sand (residual soils) and were free of significant quantities of organics and debris. We recommend dewatering the left rear corner of the footing before placing concrete. Additionally, we recommend installing a foundation drain. If additional testing for the purpose of estimating

volumetric change (shrink/swell) potential or to estimate consolidation is desired, **SUMMIT** can provide these services.

Based on the results of our DCP testing, our site observations, and once recommended remedial measures have been completed, the soils encountered will be suitable for support of the residential structure utilizing a net allowable soil bearing pressure of **2,000 pounds-per-square-foot**.

If foundation bearing materials are exposed to inclement weather or adverse construction activities, **SUMMIT** should be contacted to re-evaluate the foundation bearing materials prior to concrete placement. If it is imminent that inclement weather is forecasted prior to concrete placement, then the footings can be over-excavated (deepened) approximately 2 to 4 inches and a mud-mat (lean concrete) can be placed up to the foundation bearing elevation to help protect the foundation bearing materials from softening.

SUMMIT appreciates the opportunity to provide our professional services to you on this project. If you have any questions concerning the information in this report or if we can be of further service, please contact us.

Sincerely,
SUMMIT Engineering, Laboratory and Testing, P.C.



Jeff A. Taylor, P.E.
Geotechnical Engineer

Adam D. Perry, E.I.
Staff Professional