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SUMMIT
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October 6, 2016

Mr. Rick Sargent
Royal Oaks Building Group, LLC
1210 Trinity Road, Suite 102
Raleigh, North Carolina 27607

Subject: **Summary of Foundation Bearing Material Evaluation**
Lot No. 26 – (99 Cardona Court)
Atkins Village Subdivision
Fuquay-Varina, North Carolina
Permit Number: 04-0664-0020
SUMMIT Project Number: 1852-10R (11690-00)

Dear Mr. Sargent:

On October 3, 2016, SUMMIT Engineering, Laboratory and Testing, Inc. (**SUMMIT**) visited the subject site for the purpose of observing the near surface foundation bearing materials for the proposed residential foundation. The following is a summary of our onsite observations and bearing material evaluation.

As requested, **SUMMIT**'s representative observed the excavations for the foundation areas for the lot referenced above. We observed the contractor excavate the footings to an approximate depth of 14 inches below the footing bearing elevation and 16 inches in width.

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 were 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 ½ inch diameter steel probe rod to check for soft areas at the surface intermediate of our hand auger boring locations.

The materials exposed at the bottom of excavations generally consisted of gray, orange and tan, sandy-clay (residual soils). Hand auger refusal was encountered at the planned foundation bearing elevation due to the presence of partially weathered rock at the front right exterior wall

footing corner. 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 hand probing and observation of the foundation excavations, the soils encountered are suitable for support of the proposed residential structure utilizing a net allowable soil bearing pressure of **2,000 pounds-per-square-foot**. Additionally, it was observed that the exterior wall foundations are 16 inches wide and 14 inches thick which is in compliance with Chapter 4 of the 2012 North Carolina Residential code.

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 eminent 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, Inc.

NORTH CAROLINA PROFESSIONAL SEAL 033237 ENGINEER Phanikumar Turlapati

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