March 5, 2020

Mr. Oliver Hudson
LGI Homes
7201 Creedmoor Road, Suite 147
Raleigh, NC 27613

Subject: **Summary of Foundation Bearing Material Evaluation & 3rd Party Inspection**
Lot No. 86 – (153 Old Head Way)
Avery Pond Subdivision
Fuquay-Varina, North Carolina
Permit Number: N/A
SUMMIT Project Number: 1203-08R (27069-00)

Dear Mr. Hudson:

On March 2, 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 12 to 24 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. Additionally, we observed that the vapor barrier was installed, rebar was placed, and foundation insulation was installed along the exterior walls.

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 orange-tan, sandy-silt and sandy-clay (fill soils) and were free of significant quantities of organics and debris. If

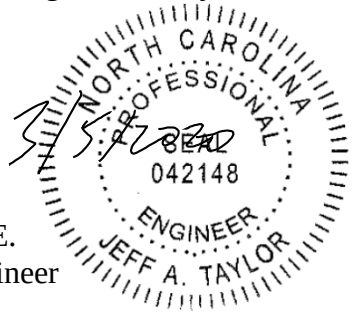
additional testing for the purpose of estimating volumetric change (shrink/swell) potential or to estimate consolidation of the tested soils is desired, **SUMMIT** can provide these services.

SUMMIT tested the four exterior wall corners of the residential foundation and fill soils were encountered to a minimum approximate depth of 3 feet below the foundation bearing elevation. **SUMMIT** assumes that the fill placement was observed and tested to verify that the fill material was placed and compacted properly. Based on the results of our DCP testing and the assumption that the fill placed throughout the building pad is similar or better than the properly compacted fill material encountered in the hand auger borings, the soils encountered are suitable for support of the residential structure utilizing a net allowable soil bearing pressure of **2,000 pounds-per-square-foot**. Concrete is ready to be placed for the foundation and slab areas.

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