

February 13, 2024

Mr. Chris Hare  
Mattamy Homes  
1210 Trinity Road, Suite 102  
Raleigh, North Carolina 27607



**Subject: Summary of Foundation Bearing Material Evaluation & 3<sup>rd</sup> Party Inspection  
Lot No. 29 – (246 Denali Drive)  
Riverfall Subdivision  
Angier, North Carolina  
Permit Number: 2401-0064  
SUMMIT Project Number: 1852-10R (39805-00)  
Order No.: N/A**

Dear Mr. Hare:

On January 30 and February 9, 2024, a representative of SUMMIT Engineering, Laboratory and Testing, Inc. (SUMMIT) visited the subject site for the purpose of observing and evaluating 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.

SUMMIT returned on February 9, 2024, to perform a third-party footing inspection. The exterior and interior wall foundations, thickened slab sections, and lugs were prepared per the onsite structural plans. Based on our measurements, the footings are in compliance with the signed and sealed project structural foundation plans provided onsite and Chapter 4 of the 2018 North Carolina Residential code. Additionally, we observed that the vapor barrier was installed and that the foundation insulation had been placed along the exterior wall foundations.

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 were 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 exposed at the bottom of excavations generally consisted of brown-orange, sandy-clay (residual soils) and were free of significant quantities of organics and debris. It should be noted that soft soils were encountered to approximate depths ranging from 2 to 3 feet below the planned foundation bearing elevation throughout the excavated footing. The contractor was informed and SUMMIT recommended over-excavating to firm soils in the areas designated in marking paint.

**SUMMIT** returned on February 9, 2024 to observe that the recommended over-excavations had been completed. We recommend backfilling the over-excavated areas with compacted clean washed stone (NCDOT No. 57 stone) wrapped in a woven geotextile (Mirafi 500x or equivalent) or place full depth concrete. 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, the completed remedial measures, and our site observations, 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**.

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.

We appreciate the opportunity to assist you during this phase of the project. If you need further assistance or additional information, please do not hesitate to contact us.

Sincerely,  
**SUMMIT** Engineering, Laboratory and Testing, Inc.



Jeff A. Taylor, P.E.  
Geotechnical Engineer

A handwritten signature in black ink, appearing to read "Adam D. Perry".

Adam D. Perry, E.I.  
Staff Professional