



December 5, 2024

Mr. Thomas Crews
Dan Ryan Builders – North Carolina, LLC
1101 Slater Road, Suite 300
Durham, North Carolina 27703

**Subject: Summary of Foundation Bearing Material Evaluation & 3rd Party Inspection
Lot No. 199 – (442 Winding Creek Drive)
The Farm at Neills Creek Subdivision
Lillington, North Carolina
Permit Number: 2410-0112
Project Number: 3241-14R (41715-00)
Order No.: 5255_008765 & 5255_008855**

Dear Mr. Crews:

On November 18 and 19, 2024, a representative of UES PROFESSIONAL SOLUTIONS 29, INC. (**UES**) visited the subject site for the purpose of observing the near surface foundation bearing materials and to perform a third-party footing inspection for the proposed residential structure. The following is a summary of our onsite observations and evaluation.

The third-party footing inspection failed during our first site visit due to the minimum footing depth not being met. The contractor was informed and **UES** recommended excavating the footing in accordance with the specified plans provided. We returned on November 19, 2024 and observed that the recommended remedial measures had been completed. The residential foundations were excavated approximately 18 inches wide and approximately 12 inches below the existing ground surface prior to our site visit. We observed that the exterior and interior wall foundations, thickened slab sections, and lugs were prepared per the structural plans provided onsite. Additionally, we observed that the vapor barrier and electrical conduit was installed in the slab area 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 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 brown-tan, 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, **UES** can provide these services.

UES 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. **UES** 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**.

If foundation bearing materials are exposed to inclement weather or adverse construction activities, **UES** should be contacted to re-evaluate the foundation bearing materials prior to concrete placement.

UES 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,

UES PROFESSIONAL SOLUTIONS 29, INC.

Jeff A. Taylor, P.E.
Geotechnical Engineer



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

Adam D. Perry, E.I.
Staff Professional

