



December 31, 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 & 3<sup>rd</sup> Party Inspection  
Lot No. 50 – (592 Winding Creek Drive)  
The Farm at Neills Creek Subdivision  
Lillington, North Carolina  
Permit Number: 2411-0108  
Project Number: 3241-14R (41847-00)  
Order No.: 5255\_009099**

Dear Mr. Crews:

On December 23, 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 residential foundations 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 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 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. It should be noted that a slope was observed within 10 feet of the left exterior wall footing line. The contractor was informed and **UES** recommended over-excavating 12 inches along the left exterior wall footing line. **UES** remained onsite and observed that the recommended remedial measures had been completed. We recommend backfilling the over-excavated areas

with full depth concrete. 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, the completed remedial measures, 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**. The foundation bearing soils are in accordance with HUD requirements.

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 "Adam D. Perry".

Adam D. Perry, E.I.  
Staff Professional

