December 6, 2024

Mr. Donnie Bentley
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. 8 – (155 Shelby Meadows Lane)
Honeycutt Hills Subdivision
Angier, North Carolina
Permit Number: 2409-0025
Project Number: 3241-14R (41668-00)
Order No.: N/A

Dear Mr. Bentley:

On November 20, 22 and 27, 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 foundation inspection for the proposed residential structure. The following is a summary of our onsite observations and evaluation.

The residential footings were excavated approximately 16 inches wide and approximately 16 inches below the existing ground surface. We observed that the exterior and interior wall foundations and lugs were prepared per the structural plans provided onsite. During our November 20 and 22, 2024 inspections we noted that the rebar was missing at the right rear lug footing. We returned November 27, 2024 to observe that the rebar had been placed in accordance with the plans.

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 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-tan and orange, silty-sand and sandy-clay (residual soils) and were free of significant quantities of organics and debris. It should be noted that soft soils were encountered to an approximate depth 12 to 18 inches below the planned foundation bearing elevation throughout the excavated footings. The contractor was informed and **UES** recommended over-excavating to firm soils in the areas designated in marking paint. **UES** returned November 22, 2024 and observed 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 of the tested soils is desired, **UES** 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**. The foundation bearing soils are in accordance with the 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.

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,
  UES Professional Solutions 29, Inc.

Jeff A. Taylor, P.E.   Adam D. Perry, E.I.
Geotechnical Engineer   Staff Professional