

# D. ALLEN HUGHES ENGINEERING, Inc.

1669 Jimmie Kerr Rd., Haw River, NC 27258  
336-578-8634, Firm No. C-2951

April 23, 2019

Choo Choo Homes  
5657 Bragg Blvd.  
Fayetteville, NC 28303

Attention: Mr. Charles Dent

Reference: Foundation/Subgrade Evaluation for Approximate 27 ft. by 76 ft. Mod. Office  
2498 Old US 421, Lillington, NC  
Project No. D18mh49

Dear Mr. Dent:

Thank you for using D. Allen Hughes Engineering to conduct the evaluation for your project. As requested, the site was visited on April 9, 2019 and April 20, 2019 to observe and evaluate the foundation and anchoring system and test to test the subgrade for the footings, of the approximate 27 ft. by 76 ft. on frame modular office unit. The office is anchored with (9) pairs of lateral ground anchors and (4) longitudinal anchors (1 near each corner), all with single straight straps.

Upon arrival on April 9, 2019, the modular office unit had been set up on (11) evenly spaced rows of piers (4 piers per row) evenly spaced masonry piers along the (4) chassis beams and (7) piers along the marriage line. All piers were constructed on 16 in. by 16 in. footings ABS footings. The subgrade adjacent to (6) of the footings approximately evenly spaced throughout the office area was tested adjacent to the bottom of footings to 1- 2 ft. below the bottom of footing with a Static Cone Penetrometer (SCP) test. The subgrade was probed at other pier footing locations for comparison to the test locations. The testing indicated adequate bearing capacity to support 2,000 psf.

Per our recommendation (12) masonry piers were added (in 4 rows) with 24 in. by 24 in. ABS footings. The office is now supported by (16) rows of piers. Additionally, the 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> marriage line piers from the left had the 16 in. by 16 in. ABS footings properly replaced with 24 in. by 24 in. ABS footings. These were observed to be properly implemented on April 20, 2019.

At the time of our second visit, the longitudinal anchor near the front right corner of the office had been disconnected. It is recommended to properly attach and tighten that strap.

Based on, observation, testing and implementation of the recommendations, it is my professional opinion that once the recommendations have been properly implemented, the subgrade, footings and anchoring system at 2498 Old US 421, Lillington, NC will be adequate to support the proposed loads (bearing and uplift) of the modular office. Thank you for using D. Allen Hughes Engineering for your evaluation. If you should have any questions pertaining to this report, please call me.

Sincerely,



D. Allen Hughes, P.E., President  
D. Allen Hughes Engineering, Inc.