

December 23, 2022

Clayton Homes  
1921 Keller Andrews Rd.  
Sanford, NC

Attention: Mr. Stephen Wheeler

Reference: Sloped Non-Bearing Curtain Wall Evaluation for 28 ft. by 76 ft. Mobile Home  
9444 Hwy. 27 W. Lillington, NC 27546  
Project No. 022ms168, Harnette County Permit No. BRES-2211-0039


Dear Mr. Wheeler:


Thank you for using Piedmont Geotechnical. Our understanding of the site conditions is based on approximate measurements described by the setup contractor. The proposed home is to be about 28 ft. by 76 ft. with a non-bearing perimeter curtain wall. It is understood that it is anticipated to have about 6 ft. of fall from the highest to the lowest points of the non-bearing perimeter curtain wall foundation for the proposed mobile home. For our evaluation, it will be assumed that a short section of the footing for the non-bearing perimeter curtain wall could have a section with as much slope as 1.5 ft. of fall over 10 ft. horizontal with a maximum wall height of 8 ft. From the Brick Industry Association, the bond strength of type S mortar is 100 psi.

For an assumed 8 ft. masonry wall on a footing with 1.5 ft. of fall over 10 ft. horizontal, the sliding force along the footing is about 1.5% of the weight of the wall and the weight of the wall is distributed at less than 10 psi. on the footing. The sliding component along the footing for the above referenced slope results in significantly less than 1 psi. of shear along the bond between the footing and the mortar. The factor of safety against sliding of a non-bearing masonry curtain wall on a footing with a maximum slope of 1.5 ft. of fall over 10 ft. horizontal is greater than 100.

Based on our evaluation, it is recommended to construct the non-bearing perimeter curtain wall and maintain a maximum slope of the footings of less than 1.5 ft. of fall over 10 ft. horizontal. It is recommended to "hog out" the bottom bed joint with type S mortar to level the non-bearing perimeter curtain wall and to limit the thickness of the bottom bed joint to 5 in. Based on implementation of the recommendations, the non-bearing perimeter curtain wall will be adequate to support the proposed loads of the non-bearing curtain wall at 9444 Hwy. 27 W. Lillington, NC 27546 (Harnette County Permit No. BRES-2211-0039). If you should have any questions pertaining to this report, please call.

Sincerely,

  
December 23, 2022



D. Allen Hughes, P.E., President  
Piedmont Geotechnical, Inc. PA