H & H Homes
2919 Breezewood Avenue
Suite 400
Fayetteville, NC 28303

10/20/2020

Attention : Eric Baxley
Jimmy Barnard

RE: Daily Field Report for 10/19/2020
Lot 669 Manor @ Lexington MLP (CMT) Cameron, NC
Building & Earth Project No : RD200661

Ladies and Gentlemen:

On this date, representative(s) of Building & Earth were present to perform construction material testing services at this project site. Our testing and observations for this date include the following:

FO-1 : Field Observations made on this date.

• Foundation Inspection-Stem Wall	Passed
• Project Management Review	Passed

ST-1 : In place field density testing was performed for Finished Subgrade Soils -Building. The field density testing was performed in general accordance with ASTMD1556, using the results of field one-point as compared to the laboratory proctors. One(1) in-place field density test was performed on this date. The testing results indicate that in-place compaction and moisture content at the location and depth tested meet or exceed the specified requirements outlined in the project plans and specifications. For additional details of our testing, please refer to the attached Field Density Test Report.

Closing

The testing and observations identified above have been reviewed by our project manager. If you have questions regarding this information, please do not hesitate to contact us.

Respectfully Submitted,
Building & Earth Sciences, LLP

Enclosures : FO-1, ST-1

NORTH CAROLINA PROFESSIONAL SEAL 024482 ENGINEER KURT A. MILLER

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Rachael Heath
Reviewed By

Field Observations Report

Project Name:	**Lot 669 Manor @ Lexington MLP (CMT) Cameron, NC**	Project Number:	**RD200661**
Client Name:	**H & H Homes**	Placement#:	**FO-1**
Contractor:	**H & H Homes**	Technician:	**Paul Gaeta**
Monitoring:	**DCP**		

1 : Foundation Inspection-Stem Wall Passed

We arrived onsite to evaluate the building pad area for this residential lot. We understand the residence has been designed to be supported on a stem wall foundation. Upon arrival, the contractor had finished excavating the footings. Our evaluation as documented in this report includes:

1) Lt. Brown, Tan, Black Sandy Fill Material used to construct house pad.
2) Stem Wall Footing - Excavated.
3) Hand rod probing of the footing excavations w/ average penetration of 1.5".
4) Performing Dynamic Cone Penetration (DCP) tests at the NE corner and SW corner.
5) Soil compaction at pad surface area based on report ST-1 was 100% compaction of standard proctor generated in field onsite.

Visual Description of the Lot:

The lot slopes downward from right to left. Building locations are referenced from the street looking at the front of the residence. Maximum relief across the lot is approximately 5 feet. Surface water runoff appears to drain towards back of building lot, and from right to left side of lot.

Comments on Improvements:

The site has been stripped of surface cover and topsoil to at least a depth of 3 feet below grade.

Structural fill has been placed at the site to level the building pad. Based on our observations, we understand the pad has been filled according to the following:

Section----------Thickness of Fill
Left Front----------36 inches of fill
Left Rear----------36 inches of fill
Center----------36 inches of fill
Right Front----------36 inches of fill
Right Rear----------36 inches of fill

Measurements:
1) The nearest toe of slope is approximately 12 feet away from the right facing stem wall footing.

Future Footing Tests

Hand Rod Probing: Our representative performed hand rod probing of the surface of the building pad. Hand rod probing of the bearing material generally showed an average penetration of approximately 1.5 inches. Building pad surface appeared to be flat and uniform.

DCP Testing: Our representative performed Dynamic Cone Penetration (DCP) testing in general accordance with ASTM STP-399 at two representative locations to a depth of 36 inches. Our representative did not observe water within the DCP boreholes as noted below.

The following information provides the results of our hand auger borings and DCP testing:

Test --- FSG -1: [Front Left Corner]

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-- Depth----"N"------Soil Color---USCS--------
--- FSG ----- 15+ ---- Lt. Brown --SM --------
--- -1' ------ 15+ ----- Brown ---- SM ---------
--- -2' ------ 15+------ Brown -----SM -----
--- -3' ------ 15+ ------ Tan ----- SM -----

Test 2: [Rear Right Corner]

-- Depth----"N"------Soil Color---USCS--------
--- FSG ---- 15+ ---- Lt. Brown --SM --------
--- -1' ------ 15+ ----- Brown ---- SM ---------
--- -2' ------ 15+------ Brown -----SM -----
--- -3' ------ 15+ ------ Tan ----- SM -----

Soil Density Testing:

Soil density testing was performed using the sand cone method of compaction in general accordance with ASTM D1556. The results of our tests are attached as ST-1.

2 : Project Management Review Passed

Our client has authorized Building & Earth Sciences to perform an evaluation of the prepared building pad for this project. We understand that the structure will have a floor system that will have foundations and a floor slab that will be supported by the newly placed structural fill soils. It appears that between 2.5 and 3 feet of structural fill soils have been placed to achieve the desired grades. The intent of our testing was to determine if the newly placed structural fill soils are adequate to provide a bearing capacity of 2,000 psf for the foundations, and have been compacted to 95% to support the floor slab for the new structure.

Our evaluation included hand rod probing, advancing hand auger borings with DCPs and performing a density test on the surface. Based upon our hand rod probing the newly placed soils are firm and resistant to significant penetration. Hand auger borings were then advanced at 2 selected location across the building envelope to determine the consistency of the below grade soils. At 12-inch increments in the hand auger boring, to a depth of 3 feet, Dynamic Cone Penetrometer (DCP) Testing was performed in accordance with ASTM STP-399. With proper evaluation, DCP Testing can be correlated to both bearing capacity and percent compaction. Based upon the results of this testing, the below grade soils that will support the foundations and floor slab are acceptable.

While on site, our representative also performed in place density testing to confirm compaction of the surface soils. Our testing was performed using the sand cone method in general accordance with ASTM D-1556. Our results were compared to an in-field proctor that was performed in general accordance with ASTM D-698. Based upon our tests results, the soils have been properly compacted at the surface.

It is important to note that our testing was isolated to the upper 3 feet. As such, we are not able to comment upon the settlement characteristics of deeper soils. Additionally, inclement weather (rain or snow), as well as construction traffic across the pad, can

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Monitoring:	**DCP**		

compromise the stability and support characteristics of the surface soils. If the surface soils become compromised, it will be necessary to return to the site for re-testing. This decision should be executed by your onsite Quality Control and Superintendents.

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Photographs

Picture ID	Lot # 669 tested for compaction and bearing capacity.
23645	

Picture ID	Lot #669 - tested 10/19/20.
23646	

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BUILDING & EARTH
Geotechnical, Environmental, and Materials Engineers

ST-1

Test Date: 10/19/2020
Field Technician: Paul Gaeta
Tests requested by: N/R
Results provided to: N/R

Report of Field Density Testing

Project Name:	Lot 669 Manor @ Lexington MLP (CMT) Cameron, NC	Ambient Temperature:	70-90
Project Number:	RD200661	Weather:	Sunny
Project Location:	Cameron, NC	Wind Conditions:	Calm
Client:	H & H Homes	Results Provided To:	N/R
Contractor:	H & H Homes	Superintendant:	N/R

Notes:
1 Test location by technician
2 Elevation by Contractor
3 Fill/backfill placed prior to technician arriving

Design & Specification Data

Area ID	Area Description	Depth (ft)	Test Method	% Compaction	Moisture Range	
					Min	Max
FSG-Bldg	Finished Subgrade Soils -Building	0.0 - 2.0	ASTM D-698	95 %	- 10.0	+ 10.0

Laboratory Proctors

Proctor ID	Description of Material	USCS/AASHTO	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
1-point			111.5	13.2%

Density Test Data

Test #	IDs		Test Type	Location	Probe Depth (in)	Elev. (ft)	Dry Density(pcf)	% Moisture	% Compaction	Result
	Area	Proctor								
1	FSG-Bldg	1-point	ASTMD1556	Finished Subgrade Soils -Building : Lot #669 - Artillery Ln. Center of Pad :		Finish Sub-grade	111.7	10.6	100%	PASS

Equipment Used:
Last Calibration:
Standard Counts:
Density:
Moisture:

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