

Bill Clark Homes of Fayetteville
200 East Arlington Blvd
Suite A
Greenville, NC 27858

12/14/2015

Attention : Brian Walker
Edwin Waters

RE: Daily Field Report for 12/11/2015
Lot 54 Patton's Point (CMT), Broadway NC
Building & Earth Project No : RD150575

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-4 : Field Observations made on this date.

- DCP's
- Project Management review

Passed
Passed

ST-3 : In place field density testing was performed for Finished Subgrade Soils -Building. The field density testing was performed in general accordance with ASTM D1556, 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-4, ST-3

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Rachael Heath
Reviewed By

Field Observations Report

Project Name: **Lot 54 Patton's Point (CMT), Broadway NC** Project Number: **RD150575**
Client Name: **Bill Clark Homes of Fayetteville** Placement#: **FO-4**
Contractor: **Bill Clark Homes of Fayetteville** Technician: **Eugenio Quezada**
Monitoring: **DCP**

1: DCP's

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 not finished excavating the footings. Our evaluation as documented in this report includes:

- 1) A visual description of the residential lot
- 2) Comments on any improvements that hat affect the foundations of the residence
- 3) Hand rod probing of the footing excavations
- 4) Performing Dynamic Cone Penetration (DCP) tests at representative locations
- 5) Soil Density tests on fill, if applicable.

Visual Description of the Lot:

The lot generally slopes. The site slopes downward from back to front. Building locations are referenced from the street looking at the front of the residence. Maximum relief across the lot is approximately 1 foot. Surface water runoff appears to drain Downwards towards the front of the building.

Comments on Improvements:

The site has been stripped of surface cover and topsoil. It appears that 12 inches of topsoil has been removed from the building pad area.

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

Section	Thickness of Cut or Fill
Left Front	12 inches of fill
Left Rear	24 inches of fill
Center	12 inches of fill
Right Front	12 inches of fill
Right Rear	24 inches of fill

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 7 inches. Our representative did not observe standing water or evidence of standing water on the footing's bearing surface.

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 between 1 and 3 feet. 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:

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Client Name:	Bill Clark Homes of Fayetteville	Placement#:	FO-4
Contractor:	Bill Clark Homes of Fayetteville	Technician:	Eugenio Quezada
Monitoring:	DCP		

Test 1: front wall middle

-- Depth--	"N"	Soil Color	USCS	Notes:
-- ESG --	8	light brown	clay sand	
-- -1' --	7	dark brown	clay sand	
-- -2' --	9.5	dark brown	sand	
-- -3' --	13	brown	sand	

Test 2: back wall middle

-- Depth--	"N"	Soil Color	USCS	Notes:
-- ESG --	7	light brown	clay sand	
-- -1' --	12	brown	sand	
-- -2' --	8	brown	sand	
-- -3' --	6.5	brown	sand	

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-3.

2: Project Management review Passed

Our client has authorized Building & Earth Sciences to perform an evaluation of the prepared building pad for this project. The structure has a stem wall foundation, and the foundation walls have been backfilled to the slab grade using structural fill soils. It appears that between 1 and 2 feet of structural fill soils have been placed to achieve the slab grade. The intent of our testing was to determine if the newly placed structural fill soils have been compacted to 95% to support the floor slab and the interior lug footings.

Our evaluation included hand rod probing the entire area for consistency, performing hand auger borings with DCPs, and performing in place density tests to confirm compaction. Based upon our hand rod probing, the surface soils are firm and resistant to penetration. At selected locations, hand auger borings were advanced at 2 locations within the backfilled area. 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 our testing, the soils below the surface have been compacted properly at the locations tested.

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.

Therefore based upon the results of our testing, the newly placed fill soils have been compacted adequately to provide support for the interior lug foundations and the floor slab. Additionally, inclement weather (rain or snow), as well as construction traffic across the pad, can 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.

Rachael Heath
 Reviewed By

Field Observations Report

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Monitoring: **DCP**



ST-3

Test Date: 12/11/2015
 Field Technician: Eugenio Quezada
 Tests requested by: N/R
 Results provided to: N/R

Report of Field Density Testing

Project Name: Lot 54 Patton's Point (CMT), Broadway NC Ambient Temperature: 50-70
 Project Number: RD150575 Weather: Clear
 Project Location: Broadway, NC Wind Conditions: Calm
 Client: Bill Clark Homes of Fayetteville Superintendent: N/R
 Contractor: Bill Clark Homes of Fayetteville

- Notes: 1 Test location by technician
 2 Elevation by Technician
 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			115.9	13.7%

Density Test Data

Test #	IDs		Test Type	Location	Elev. (ft)	Dry Density(pcf)	% Moisture	% Compaction	Result
	Area	Proctor							
1	FSG-Bldg	1-point	ASTMD1556	Finished Subgrade Soils -Building : building pad front wall middle :	FSG	112.7	8.3	97%	PASS

Equipment Used:
 Last Calibration:

Standard Counts: Density:
 Moisture:

Rachael Heath
 Reviewed By