

August 14, 2018



**ENTECH**  
ENGINEERING, INC.

505 ELKTON DRIVE  
COLORADO SPRINGS, CO 80907  
PHONE (719) 531-5599  
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Classic Communities  
6385 Corporate Drive, Suite 200  
Colorado Springs, CO 80919

Attn: Ben Bustos

Re: Cement Stabilized Subgrade Results - Laboratory Testing  
Forest Lakes, Filing 2B  
Colorado Springs, Colorado

Ref: Pavement Recommendations Report by Entech Engineering, Inc.,  
Dated July 9, 2018, Entech Job No. 181096

**ACCEPTED for FILE**  
**Engineering Review**

09/11/2019 2:45:49 PM

*dsdnijkamp*

EPC Planning & Community  
Development Department

Dear Mr. Bustos:

As requested, personnel of Entech Engineering, Inc. have performed strength testing on two sets of three soil/cement composite samples for the above referenced project. Testing was performed on soil samples prepared with 2% and 4% Portland Cement Type 1/2, from Martin Marietta, near Pueblo, Colorado.

A minimum compression strength of 160 psi is recommended for cement stabilized subgrade. The 5-day average strength value of the 2% mix was 414 psi. The 5-day average strength value of the 4% mix was 497 psi. A 2% mix is recommended based on the laboratory test results. A summary of the testing results is attached.

Pending the results of the field density testing, microfracturing of the stabilized subgrade may be required. Soil strengths in excess 200 psi require microfracturing.

We trust this has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

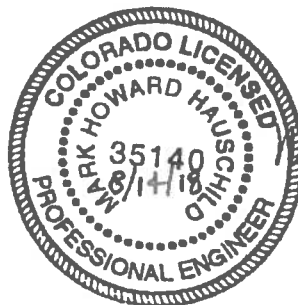
ENTECH ENGINEERING, INC.

Daniel P. Stegman

DPS/ds

Encl.

Entech Job No. 181096  
AAprojects/2018/181096 cssr - lab



Reviewed by:

Mark H. Hauschild, P.E.  
Senior Engineer

**SUMMARY OF CTS TEST RESULTS**  
**LAB TESTING**

CLIENT CLASSIC COMMUNITIES  
 PROJECT FOREST LAKES, F-2B  
 FIELD SAMPLE ID TB-1 @ 0-3'  
 SOIL ADDITIVE TYPE I/II CEMENT

JOB NO 181096  
 DATE 8/14/18  
 BY BL

<b>ADDITIVE %</b>	<b>WATER %</b>	<b>DENSITY (dry)</b>	<b>AGE (days)</b>	<b>STRENGTH (psi)</b>
2	7.4	126.3	5	420
2	7.4	126.2	5	425
2	7.4	126.0	5	398
<b>AVERAGE:</b>				<b>414</b>
4	7.4	126.4	5	604
4	7.4	126.0	5	445
4	7.4	126.1	5	442
<b>AVERAGE:</b>				<b>497</b>

CURING METHOD  
 100° HUMIDIFIED OVEN