

March 31, 2021



**ENTECH**  
ENGINEERING, INC.

Tech Contractors  
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505 ELKTON DRIVE  
COLORADO SPRINGS, CO 80907  
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Attn: Raul Guzman

Re: Cement Stabilized Subgrade Results - Laboratory Testing  
Rolling Hills at Meridian Ranch Filing No.1, Phase 1  
El Paso County, Colorado

ACCEPTED for FILE  
Engineering Review

04/19/2021 5:03:10 PM

dsdnijkamp

EPC Planning & Community  
Development Department

Ref: Pavement Recommendations Report by Entech Engineering, Inc., dated March 31,  
2021, Entech Job No. 210527

Dear Mr. Guzman:

As requested, personnel of Entech Engineering, Inc. have performed strength testing on two sets of three soil/cement composite samples for the above reference 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 4-day average strength values of the 2% mix was 177 psi. The 4-day average strength values of the 4% mix was 192 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 will likely 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



Reviewed by:

Mark H. Hauschild, P.E.  
Senior Engineer

DPS/am

Encl.

Entech Job No. 210527  
AAprojects/2021/210527 - cssr — lab

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

CLIENT TECH CONSTACTORS  
 PROJECT ROLLING HILLS  
 FIELD SAMPLE ID TB-4 @ 0-3'  
 SOIL ADDITIVE TYPE I/II CEMENT

JOB NO 210527  
 DATE 4/2/21  
 BY BL

<i>ADDITIVE %</i>	<i>WATER %</i>	<i>DENSITY (dry)</i>	<i>AGE (days)</i>	<i>STRENGTH (psi)</i>
2	8.6	121.7	4	186
2	8.6	121.6	4	174
2	8.6	121.8	4	170
AVERAGE:				177
4	8.6	121.4	4	190
4	8.6	121.7	4	188
4	8.6	121.6	4	197
AVERAGE:				192

CURING METHOD  
 100° HUMIDIFIED OVEN