



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

February 15, 2023

Elder Construction
4870 Centennial Boulevard, STE 100
Colorado Springs, CO 80919

Attn: Luke Smyth

Re: Excavation Observation – Trickle Channel
1755 East Las Vega Street
Colorado Springs, Colorado

Dear Mr. Smyth,

Personnel of Entech Engineering, Inc. have performed the excavation observation for the trickle channel at the above referenced address. The specific findings for this site are presented in this letter.

A Subsurface Soil Investigation was performed at the above-referenced address by Entech Engineering, Inc. The results are presented in our Subsurface Soil Investigation dated April 15, 2019, revised December 18, 2019, Entech Job No. 190395.

The following recommendations are based on conditions observed on February 7, 2023. Entech Engineering, Inc. should be notified if any changes in conditions are encountered or if the excavation depth or location should change.

Soil types observed in the foundation excavation were found to consist of silty sand to very sandy clay. An allowable bearing capacity on the order of 2400 psf with an equivalent hydrostatic fluid pressure (in the active state) of 45 pcf is recommended for this site.

A trickle channel is anticipated for this site. The trickle channel should be constructed per the design by others. The trickle channel was approved on site.

Recommendations surface drainage, concrete, etc. contained in the Subsurface Soil Investigation performed by Entech Engineering, Inc. remain valid and should be followed.

We trust that 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.

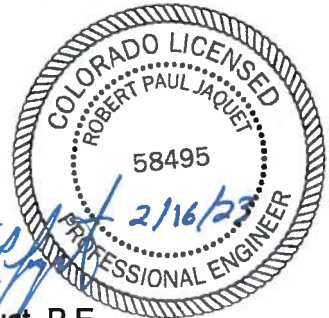
Respectfully Submitted,

ENTECH ENGINEERING, INC.

Daniel P. Stegman
RPJ/jhr
Enclosure
Entech Job No. 221033

Reviewed by:

Robert P. Jaquet, P.E.



March 15, 2023



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

Elder Construction
4870 Centennial Boulevard, STE 100
Colorado Springs, CO 80919

Attn: Luke Smyth

Re: Excavation Observation – East Forebay
1755 East Las Vegas Street
Colorado Springs, Colorado
Entech Job No. 221033

Dear Mr. Smyth,

Personnel of Entech Engineering, Inc. have performed the excavation observation for the east forebay at the above referenced address. The specific findings for this site are presented in this letter.

A Subsurface Soil Investigation was performed at the above-referenced address by Entech Engineering, Inc. The results are presented in our Subsurface Soil Investigation dated April 15, 2019, revised December 18, 2019, Entech Job No. 190395.

The following recommendations are based on conditions observed on February 8 through 20, 2023. Entech Engineering, Inc. should be notified if any changes in conditions are encountered or if the excavation depth or location should change.

Soil types observed in the forebay excavation were found to consist of silty sand. An allowable bearing capacity on the order of 2400 psf with an equivalent hydrostatic fluid pressure (in the active state) of 45 pcf is recommended for this site

Unstable soil conditions were encountered in the forebay excavation. Due to the unstable conditions encountered in the excavation, a shallow foundation system would not be expected to perform adequately if it was to rest on the soils in their in-situ condition. We therefore recommend that 1 foot of the unstable soils be removed and replaced with stabilization rock and fabric.

The western portion of the excavation should be overexcavated to a depth of 1 foot (bgs) and stabilized by wheel-rolling 6 to 8-inch rock into the soft, loose soils. A layer of Mirafi 500X and 1-1/4 inch rock should be placed to finished grade.

Observations made on February 20, 2023 indicated that the unsuitable soils have been removed and replaced with stabilization rock and fabric as recommended.

A forebay is anticipated for this site. The forebay should be constructed per the design by others. The forebay was approved on site.

Recommendations surface drainage, concrete, etc. contained in the Subsurface Soil Investigation performed by Entech Engineering, Inc. remain valid and should be followed.

Elder Construction
Excavation Observation – East Forebay
1755 East Las Vegas Street
Colorado Springs, Colorado
Entech Job No. 221033

We trust that 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.



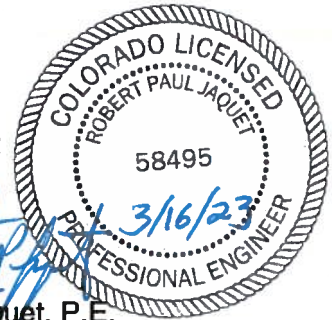
Daniel P. Stegman
RPJ/cw
Enclosure

Entech Job No. 221033

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Reviewed by:

Robert P. Jaquet, P.E.





ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

June 29, 2023

Elder Construction Inc.
4870 Centennial Boulevard, Suite 100
Colorado Springs, CO 80919

Attn: Luke Smyth

Re: Density Testing – Storm Sewer
1755 East Las Vegas Street
Colorado Springs, Colorado
Report No. 1, Test 1

Dear Mr. Smyth,

As requested, personnel of Entech Engineering, Inc. performed density testing at the above referenced site.

Density testing on this site was performed on June 1, 2023. The density testing indicates that the materials have been adequately compacted at the depths and in the locations noted. Results of the density tests are enclosed with this letter.

We trust that this has provided you with the information you require. Should you have any questions or need further information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.



Joseph C. Goode Jr., P.E.
President

JCG/sc

Enclosure

Entech Job No. 221033

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Client: Elder Construction Inc.	Entech Job #: 221033.4	Proctor Value Key: M = modified, ASTM D-1557 S = standard, ASTM D-698 T = AASHTO, T-180
Project: 1755 East Las Vegas Street	Tested By: B. Wasilik	
Subject: Storm Sewer	Report Date: 06-29-2023	

Test #	Test Location	Testing Date	Percent Compaction	Percent Required	Percent Moisture	Soil Type	Proctor Type/Value	Pass/Fail ☒ = Fail
1	22' east of the west end of the pond spillover cutoff wall, at grade.	6/1/2023	77	95	10.6	SC	M - 115.1 @ 13.8	☒
1a	Retest, 22' east of the west end of the pond spillover cutoff wall, at grade.	6/1/2023	87	95	16.8	SC	M - 115.1 @ 13.8	☒
1b	Retest, 22' east of the west end of the pond spillover cutoff wall, at grade.	6/1/2023	95	95	11.9	SC	M - 115.1 @ 13.8	☐

Comments:

Scope of Observation: PERIODIC; CONTRACTOR'S OR CLIENT'S REPRESENTATIVE ADVISED

All dimensions are approximate. Cl. = Centerline



ENTECH
ENGINEERING, INC.
505 Elkton Drive
Colorado Springs, CO 80907
(719) 531-5599 • (719) 531-5238 (fax)

FIELD DENSITY RESULTS

Joseph C. Goode, Jr., P.E.

November 30, 2023



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

Elder Construction Inc
4870 Centennial Boulevard, Suite 100
Colorado Springs, CO 80919

Attn: Luke Smyth

Re: Density Testing – Storm Sewer
1755 East Las Vegas Street
Colorado Springs, Colorado
Report No. 2, Tests 2 – 4

Dear Mr. Smyth,

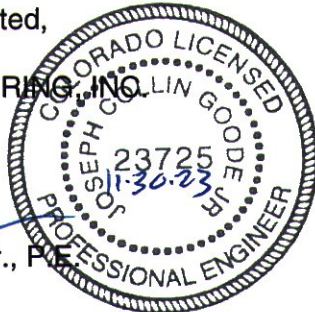
As requested, personnel of Entech Engineering, Inc. performed density testing at the above referenced site.

Density testing on this site was performed on November 2 through 10, 2023. The density testing indicates that the materials have been adequately compacted at the depths and in the locations noted. Results of the density tests are enclosed with this letter.

We trust that this has provided you with the information you require. Should you have any questions or need further information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.



Joseph C. Goode Jr., P.E.
President

JCG/sc

Encl.

Entech Job No. 221033

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Client: Elder Construction Inc.	Entech Job #: 221033.4	Proctor Value Key: M = modified, ASTM D-1557 S = standard, ASTM D-698 T = AASHTO, T-180	
Project: 1755 East Las Vegas Street	Tested By: B. Wasilik, D. Keeton		
Subject: Storm Sewer	Report Date: 12-01-2023		

Test #	Test Location	Testing Date	Percent Compaction	Percent Required	Percent Moisture	Soil Type	Proctor Type/Value	Pass/Fail
								☒ = Pass ☐ = Fail
2	35' south of the pond outfall structure (mid berm), 4' below grade.	11/2/2023	96	95	9.8	SM	M - 129.0 @ 8.0	☐
3	90' north of the flared end of the pond outfall structure, at grade.	11/2/2023	95	95	10.0	SM	M - 129.0 @ 8.0	☐
4	10' south of pond inlet, 2' below grade.	11/10/2023	97	95	9.3	SC	M - 115.7 @ 10.8	☐

Comments:

Scope of Observation: PERIODIC; CONTRACTOR'S OR CLIENT'S REPRESENTATIVE ADVISED		All dimensions are approximate. Cl. = Centerline	
 ENTECH ENGINEERING, INC. 505 Elkon Drive Colorado Springs, CO 80907 (719) 531-5599 • (719) 531-5238 (fax)	FIELD DENSITY RESULTS		<i>Joseph C. Goode, Jr., P.E.</i>

December 6, 2023



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

Elder Construction Inc
4870 Centennial Boulevard, Suite 100
Colorado Springs, CO 80919

Attn: Luke Smyth

Re: Density Testing – Structural Fill
1755 East Las Vegas Street
Colorado Springs, Colorado
Report No. 5, Tests 35 – 38

Dear Mr. Smyth,

As requested, personnel of Entech Engineering, Inc. have performed density testing at the above referenced site.

Density testing on this site was performed on November 6 through 15, 2023. The testing was performed on structural fill placed in the excavation. The density testing indicates that the structural fill placed at the depths and locations noted has been adequately compacted. Results of the density tests are attached with this letter.

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

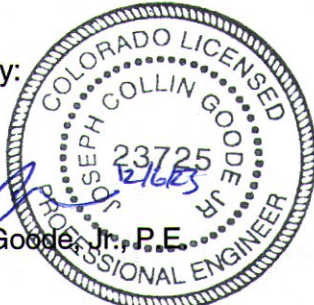
Respectfully submitted,

ENTECH ENGINEERING, INC.



Daniel P. Stegman

Reviewed by:



Joseph C. Goode, Jr., P.E.
President

DPS/sc

Encl.

Entech Job No. 221033

F:\AA Projects\2022\221033-Elder-1755 E Las Vegas-110-ConMat\221033_sfc\5.docx

Client: Elder Construction, Inc.	Entech Job #: 221033	Proctor Value Key: M = modified, ASTM D-1557 S = standard, ASTM D-698 T = AASHTO, T-180
Project: 1755 East Las Vegas Street	Tested By: J. Barnhart, R. Lewis	
Subject: Structural Fill	Report Date: 12-07-2023	

Test #	Test Location	Testing Date	Percent Compaction	Percent Required	Percent Moisture	Soil Type	Proctor Type/Value	Pass/Fail ☒ = Fail
35	Berm, GPS: 38.805135 N, -104.797326 W, at grade.	11/6/2023	97	95	9.6	SM	M - 117.6 @ 7.6	☐
36	Berm, GPS: 38.804927 N, -104.797062 W, at grade.	11/6/20223	100	95	8.7	SM	M - 117.6 @ 7.6	☐
37	25' south of the outlet structure (pond berm), at grade.	11/15/2023	97	95	11.2	SM	M - 120.2 @ 11.5	☐
38	25' south & 40' east of the outlet structure (pond berm), at grade.	11/15/2023	99	95	10.3	SM	M - 120.2 @ 11.5	☐

Comments:

Scope of Observation: PERIODIC; CONTRACTOR'S OR CLIENT'S REPRESENTATIVE ADVISED All dimensions are approximate. Cl. = Centerline

 ENTECH ENGINEERING, INC. 505 Elkton Drive Colorado Springs, CO 80907 (719) 531-5599 • (719) 531-5238 (fax)	FIELD DENSITY RESULTS	<i>Joseph C. Goode, Jr., P.E.</i>
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