

SUBMITTAL



Submittal number	13.0	Date	06/24/2018
Project	TRAILS AT CROWFOOT #1&9	6954 N. CROWFOOT VALLEY RD. PARKER, CO 80138	
Project number	201810		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	
Topic	Riprap		

Submitter	
Reviewer	
Cc	

Date submitted	06/24/2018	Submission due date	06/24/2018
Released for review	06/24/2018	Review due date	06/29/2018
Date returned		Required on site date	
Date closed			

Notes



LETTER OF TRANSMITTAL

PIPELINE CONTRACTORS

8600 Verbena St.
Commerce City, CO 80022
Office 303-289-4355
Fax 303-289-4353

ISSUED TO:

Owner ATTN: Con Cockrun, Kelley Trucking

DATE:

6/21/18

TRANSMITTAL NO.:

A-013

REGARDING:

Project JBS Job No 0150

We are issuing you under separate cover the following (via):

Email

- Blue Prints
- Submittals
- Change Order
- Request for Information
- Copy of a letter
- Shop Drawings

#	Copies	Item Dated	Item #	Description
	1-Electronic		A-013	VL, L, M, H, VH Sized Rip Rap

- For your bid
- Returned for Correction
- For Approval
- For Review and Comment
- As Requested
- For Pricing

Prints are loaned to you and are to be returned to us by:

Date: _____

Bids are due on or before:

Date: _____

COMMENTS

CC:

Amie Parent
JBS Pipeline Contractors

March 7, 2018

Albert Frei and Sons, Inc.
PO Box 700
Henderson, Colorado 80640

Attention: Mr. Rick Foster

Subject: Physical Properties Testing (ASTM)
Riprap and Boulders, Pit 6
Project No. CT16373.000-400

Dear Mr. Foster:


This report presents results of physical properties testing performed on material delivered to our laboratory in December, 2017. Representative samples delivered were identified as Riprap and Boulders from Pit 6. Testing was performed to determine the materials compliance with ASTM specifications. The following testing was performed in general conformance with the applicable standards.

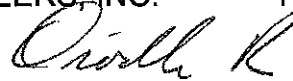
- 1) Specific Gravity & Absorption – ASTM C 127
- 2) Sodium Sulfate Soundness – ASTM D 5240
- 3) Magnesium Sulfate Soundness – ASTM D 5240
- 4) Los Angeles Abrasion – ASTM C 131
- 5) Los Angeles Abrasion – ASTM C 535
- 6) Compressive Strength – ASTM C 170
- 7) Freeze-Thaw Testing – ASTM D 5312

A summary of the aggregate test results is attached, followed by the complete test results. If you have any questions regarding this report, please call.

Respectfully submitted,

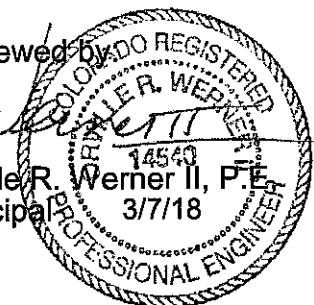
CTL | THOMPSON MATERIALS ENGINEERS, INC.


Daniel L. Barrett
Materials Lab Manager



Reviewed by

Orville R. Werner II, P.E.
Principal



DLB:DBT/clm
Enclosures
1 copy sent
1 copy emailed: rfoster@albertfreiandsons.com



Aggregate Qualification Summary - ASTM Specifications (ASTM C 33)

Albert Frei and Sons, Inc. - Pit 6, Riprap and Boulders

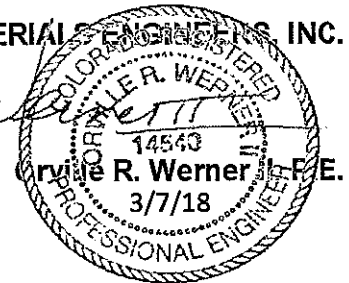
Project No. CT16373.000-400

Report Date: March 6, 2018

Test	Results	Specification
Specific Gravity (ASTM C 127)	2.71	-
Absorption (ASTM C 127)	0.7%	-
Sodium Sulfate Soundness (ASTM D 5240)	0% Average Loss	12% Max
Magnesium Sulfate Soundness (ASTM D 5240)	0% Average Loss	18% Max
Los Angeles Abrasion (ASTM C 131)	26%	50% Max
Los Angeles Abrasion (ASTM C 535)	21%	50% Max
Compressive Strength psi (perpendicular to rift)	28,040	Average of 5
Compressive Strength psi (parallel to rift)	23,630	Average of 5
Freeze-Thaw Testing (ASTM D 5312)	0%	Average of 5

CTL | THOMPSON MATERIAL ENGINEERS, INC.

Charles R. Werner





ATTACHMENT A
LABORATORY TEST RESULTS

PHYSICAL PROPERTIES OF AGGREGATES



Company Name: Albert Frei and Sons, Inc.
Material Source: Pit 6
Material Type: Riprap and Boulders

Project No. CT16373.000-400
Report Date: March 6, 2018

Specific Gravity and Absorption of Coarse Aggregate
 (ASTM C 127)

Oven Dry Weight (lbs)	SSD in Air Weight (lbs)	Submerged Weight (lbs)	Bulk Volume	Bulk (SSD) Specific Gravity	Absorption (%)
110.3	111.1	70.1	41.0	2.71	0.7

Soundness of Riprap by Use of Sodium Sulfate
 (ASTM D 5240)

Sample ID	Weight Before (g)	Weight After (g)	Percent Loss
1	3118.4	3116.0	0.1
2	3564.2	3562.1	0.1
3	3380.8	3378.0	0.1
4	3528.2	3525.9	0.1
5	3551.6	3549.9	0.0

Total Weighted Loss: 0.0%

Soundness of Riprap by Use of Magnesium Sulfate
 (ASTM D 5240)

Sample ID	Weight Before (g)	Weight After (g)	Percent Loss
1	3545.4	3540.8	0.1
2	3494.3	3493.3	0.0
3	3344.6	3342.9	0.1
4	3687.7	3685.8	0.1
5	3195.7	3193.9	0.1

Total Weighted Loss: 0.0%

Resistance to Degradation of Small-Size Coarse Aggregate
 by Abrasion and Impact in the Los Angeles Machine
 (ASTM C131)

Grading	Initial Weight	Final Weight	Percent Loss
A	5006.6	3724.6	26

Resistance to Degradation of Large-Size Coarse Aggregate
 by Abrasion and Impact in the Los Angeles Machine
 (ASTM C 535)

Grading	Initial Weight	Final Weight	Percent Loss
1	10,067.8	7943.4	21

TEST REPORT FOR COMPRESSIVE STRENGTH OF STONE

Tested in general accordance with ASTM C 170



Client: Albert Frei and Sons, Inc.
Project: 2018 Qualification Testing
Project No. CT16373.000-400

Sample ID: Riprap and
Boulders
Pit Name: 6

TEST INFORMATION: Cores were tested in an oven-dry condition.

COMPRESSIVE STRENGTH RESULTS

Sample ID: Riprap
Perpendicular to the rift

Sample No.	Height (in)	Diameter (in)	Area (in ²)	Correction Factor	Load (lbs)	Compressive Strength (psi)
1	2.77	2.77	6.03	1	177,470	29,430
2	2.78	2.77	6.03	1	165,060	27,370
3	2.77	2.77	6.03	1	153,385	25,440
4	2.78	2.77	6.03	1	172,125	28,540
5	2.77	2.77	6.03	1	177,385	29,420
Average, (psi):						28,040

Sample ID: Riprap
Parallel to the rift

Sample No.	Height (in)	Diameter (in)	Area (in ²)	Correction Factor	Load (lbs)	Compressive Strength (psi)
6	2.77	2.77	6.03	1	127,345	21,120
7	2.77	2.77	6.03	1	112,275	18,620
8	2.77	2.77	6.03	1	167,515	27,780
9	2.78	2.77	6.03	1	155,435	25,780
10	2.78	2.77	6.03	1	149,775	24,840
Average, (psi):						23,630



**Evaluation of Durability of Rock for Erosion Control
ASTM D 5312**

Client: Albert Frei and Sons, Inc.
Project: 2018 Qualification Testing
Project No. CT16373.000-400

Sample ID: Riprap and Boulders
Pit Name: 6

TEST INFORMATION

30 manual cycles in our laboratory freezer and thawing tank.

FREEZE-THAW TEST RESULTS

Sample ID: Riprap

Sample ID	Weight Before (g)	Weight After (g)	% Loss
1	3487.5	3487.5	0.0%
2	3652.9	3652.9	0.0%
3	3371.6	3371.5	0.0%
4	3384.2	3384.1	0.0%
5	3510.1	3509.9	0.0%
Average:			0.0%