



August 7, 2019

GLH Construction, Inc.  
780 East Garden Drive  
Windsor, Colorado 80550

Attn: Mr. Andy Laycock

Re: Construction Materials Testing and Observation Services Report  
Mountain's Edge  
Fort Collins, Colorado  
Soilogic Project # 18-2066

Mr. Laycock:

During the period of February 25 through July 19, 2019, Soilogic Inc. (Soilogic) provided construction materials testing and observation services for the referenced project. Our services were provided on a part-time basis and included the observation and testing of reconditioned subgrade materials and cast in place concrete and hot mix asphalt delivered to the site for placement. Results of the observation and testing services completed on the referenced date are included with this report.

During the referenced period, Soilogic personnel performed field moisture/density tests on reconditioned subgrade materials that had been placed and compacted prior to and during our site visits. The field moisture/density tests were completed at random locations and elevations within the subgrade areas and were performed in general accordance with ASTM Specification D-2922. The field moisture/density test results met the project compaction requirement of at least 95% of standard Proctor maximum dry density and moisture content requirement of  $\pm 2\%$  of standard Proctor optimum moisture content.

During the referenced period, Soilogic personnel observed and tested cast-in-place concrete delivered to the site for construction of curb and gutter and sidewalks. The testing completed in the field included slump, air content, unit weight, concrete temperature, and ambient air temperature at the time of placement. Test cylinders were molded from representative samples of the plastic concrete for laboratory curing and compressive strength testing. Results of the field and laboratory tests performed during the referenced period are included with this report.

Results of laboratory concrete compressive strength tests completed during the referenced period are also included and will be provided as they become available.

During and after compaction of the asphaltic concrete, density tests were completed on the in-place pavement using a portable nuclear density gauge in general accordance with ASTM specification D-2950. The nuclear density tests were completed at random locations across the pavement surface. Results of the completed field density tests are outlined on the attached summary sheet. The final completed asphaltic concrete field density tests met the project compaction requirement of 92 to 96% of the materials Rice value.

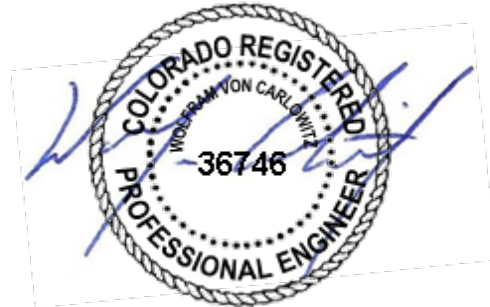
We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the enclosed information or if we can be of further assistance to you in any way, please do not hesitate to contact us.

Very Truly Yours,  
**Soilogic, Inc.**



Jason Horner, E.I.  
Project Engineer

Reviewed by:



Wolf von Carlowitz, P.E.  
Principal Engineer

**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	1	Application	Curb & Gutter
Placement Date	3/20/19	Supplier	Bestway
Location	Precipice Dr @ Building 13 Lot 2	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	-
Batch Time	7:00 AM	Truck #	-
Sample Time	7:40 AM	Water Added On Site	None
Sampled At (yards)	5 of 60	Field Personnel	GR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.0%
Unit Weight (pcf)      Field	-	141.2
Concrete Temperature      ASTM C-1064	90° Max	80 °F
Air Temperature @ Time of Placement	-	49 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	47855	Cone/Shear	3808	3900
1.7b	7	50125	Cone/Shear	3989	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	67520	Cone/Shear	5373	5340
1.28b	28	66700	Cone/Shear	5308	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE**  
**Fort Collins, Colorado**  
**18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	2	Application	Curb & Gutter
Placement Date	3/21/19	Supplier	Bestway
Location	Precipice Dr @ Building 14 Lot 3	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20169678
Batch Time	9:59 AM	Truck #	1157
Sample Time	11:10 AM	Water Added On Site	5 Gallons
Sampled At (yards)	5 of 60	Field Personnel	GR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2 1/2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.0%
Unit Weight (pcf)      Field	-	140.0
Concrete Temperature      ASTM C-1064	90° Max	72 °F
Air Temperature @ Time of Placement	-	52 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	49840	Cone/Shear	3966	4220
1.7b	7	56155	Cone/Shear	4469	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	65455	Cone/Shear	5209	5190
1.28b	28	65095	Cone/Shear	5180	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	3	Application	Curb & Gutter
Placement Date	3/28/19	Supplier	Bestway
Location	Crown View 50' S of N end	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20171365
Batch Time	7:38 AM	Truck #	1141
Sample Time	8:30 AM	Water Added On Site	None
Sampled At (yards)	3 of 100	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	1 1/2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	5.5%
Unit Weight (pcf)      Field	-	146.4
Concrete Temperature      ASTM C-1064	90° Max	65 °F
Air Temperature @ Time of Placement	-	45 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	58065	Cone/Shear	4621	4930
1.7b	7	65835	Cone/Shear	5239	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	71780	Cone/Shear	5712	5780
1.28b	28	73410	Cone/Shear	5842	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	4	Application	Crosspan
Placement Date	4/1/19	Supplier	Bestway
Location	Crown View & Knolls End	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20172020
Batch Time	8:42 AM	Truck #	1131
Sample Time	10:00 AM	Water Added On Site	5 Gallons
Sampled At (yards)	3 of 17	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	3" - 5"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	8.0%
Unit Weight (pcf)      Field	-	139.6
Concrete Temperature      ASTM C-1064	90° Max	66 °F
Air Temperature @ Time of Placement	-	42 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	46340	Cone/Shear	3688	3670
1.7b	7	45790	Cone/Shear	3644	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	72850	Cone/Shear	5797	5700
1.28b	28	70445	Cone/Shear	5606	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	5	Application	Curb & Gutter
Placement Date	4/2/19	Supplier	Bestway
Location	Bluegrass STA 11+00	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20172316
Batch Time	6:48 AM	Truck #	1166
Sample Time	8:00 AM	Water Added On Site	5 Gallons
Sampled At (yards)	3 of 80	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	5.3%
Unit Weight (pcf)      Field	-	143.0
Concrete Temperature      ASTM C-1064	90° Max	70 °F
Air Temperature @ Time of Placement	-	42 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	54105	Cone/Shear	4306	4250
1.7b	7	52735	Cone/Shear	4197	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	65070	Cone/Shear	5178	5150
1.28b	28	64365	Cone/Shear	5122	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	6	Application	Curb & Gutter
Placement Date	4/3/19	Supplier	Bestway
Location	Overland Trail STA 23+00	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	201072658
Batch Time	6:50 AM	Truck #	1150
Sample Time	8:00 AM	Water Added On Site	None
Sampled At (yards)	3 of 70	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.3%
Unit Weight (pcf)      Field	-	14140.0
Concrete Temperature      ASTM C-1064	90° Max	71 °F
Air Temperature @ Time of Placement	-	40 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	49735	Cone/Shear	3958	4080
1.7b	7	52845	Cone/Shear	4205	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	64880	Cone/Shear	5163	5170
1.28b	28	65065	Cone/Shear	5178	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in





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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	7	Application	Crosspan
Placement Date	4/4/19	Supplier	Bestway
Location	Crown View & Precipice	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20173126
Batch Time	10:07 AM	Truck #	1281
Sample Time	11:15 AM	Water Added On Site	None
Sampled At (yards)	1 of 10	Field Personnel	GR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	5.5%
Unit Weight (pcf)      Field	-	144.0
Concrete Temperature      ASTM C-1064	90° Max	70 °F
Air Temperature @ Time of Placement	-	54 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	56645	Cone/Shear	4508	4780
1.7b	7	63530	Cone/Shear	5056	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	64970	Cone/Shear	5170	5250
1.28b	28	67070	Cone/Shear	5337	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	8	Application	Crosspan
Placement Date	4/4/19	Supplier	Bestway
Location	Bluegrass & Crest Top	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20174199
Batch Time	7:35 AM	Truck #	1287
Sample Time	8:30 AM	Water Added On Site	None
Sampled At (yards)	1 of 18	Field Personnel	GR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	8.0%
Unit Weight (pcf)      Field	-	140.8
Concrete Temperature      ASTM C-1064	90° Max	58 °F
Air Temperature @ Time of Placement	-	54 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	47630	Cone/Shear	3790	3870
1.7b	7	49640	Cone/Shear	3950	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	57405	Cone/Shear	4568	4570
1.28b	28	57465	Cone/Shear	4573	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	9	Application	Curb & Gutter
Placement Date	4/16/19	Supplier	Bestway
Location	NE Cor of Overland & Drake	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20175424
Batch Time	7:38 AM	Truck #	1200
Sample Time	8:20 AM	Water Added On Site	None
Sampled At (yards)	1 of 9	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.3%
Unit Weight (pcf)      Field	-	140.8
Concrete Temperature      ASTM C-1064	90° Max	58 °F
Air Temperature @ Time of Placement	-	48 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	58350	Cone/Shear	4643	4620
1.7b	7	57740	Cone/Shear	4595	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	70775	Cone/Shear	5632	5500
1.28b	28	67385	Cone/Shear	5362	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	10	Application	Crosspan
Placement Date	4/17/19	Supplier	Bestway
Location	Upland & Bluegrass	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20175781
Batch Time	7:42 AM	Truck #	1141
Sample Time	8:30 AM	Water Added On Site	10 Gallons
Sampled At (yards)	1 of 22	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.5%
Unit Weight (pcf)      Field	-	142.4
Concrete Temperature      ASTM C-1064	90° Max	60 °F
Air Temperature @ Time of Placement	-	52 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	60525	Cone/Shear	4816	4730
1.7b	7	58305	Cone/Shear	4640	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	73250	Cone/Shear	5829	5740
1.28b	28	71105	Cone/Shear	5658	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	11	Application	Crosspan
Placement Date	4/17/19	Supplier	Bestway
Location	Bluegrass & Crown View	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20176188
Batch Time	7:57 AM	Truck #	1287
Sample Time	8:20 AM	Water Added On Site	None
Sampled At (yards)	2 of 22	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.6%
Unit Weight (pcf)      Field	-	142.4
Concrete Temperature      ASTM C-1064	90° Max	55 °F
Air Temperature @ Time of Placement	-	43 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	59310	Cone/Shear	4720	4790
1.7b	7	61135	Cone/Shear	4865	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	72710	Cone/Shear	5786	5750
1.28b	28	71700	Cone/Shear	5706	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	12	Application	Island
Placement Date	5/3/19	Supplier	Bestway
Location	Overland Trail & Drake	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20180260
Batch Time	11:35 AM	Truck #	1214
Sample Time	12:30 PM	Water Added On Site	8 Gallons
Sampled At (yards)	2 of 10	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	3 3/4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.0%
Unit Weight (pcf)      Field	-	140.2
Concrete Temperature      ASTM C-1064	90° Max	69 °F
Air Temperature @ Time of Placement	-	78 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	48375	Cone/Shear	3850	3800
1.7b	7	47200	Cone/Shear	3756	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	63045	Cone/Shear	5017	4940
1.28b	28	61190	Cone/Shear	4869	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
18-2066**

**Summary of Cast-In-Place Concrete Test**

**General**

Set #	13	Application	Sidewalk
Placement Date	7/2/19	Supplier	Bestway
Location	Crown View STA 15+50	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20192906
Batch Time	7:23 AM	Truck #	1281
Sample Time	8:20 AM	Water Added On Site	None
Sampled At (yards)	3 of 40	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.5%
Unit Weight (pcf)      Field	-	139.0
Concrete Temperature      ASTM C-1064	90° Max	80 °F
Air Temperature @ Time of Placement	-	66 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	51515	Cone/Shear	4099	4030
1.7b	7	49720	Cone/Shear	3957	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	61805	Cone/Shear	4918	4960
1.28b	28	62880	Cone/Shear	5004	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	14	Application	Sidewalk
Placement Date	7/3/19	Supplier	Bestway
Location	50' N of Knolls End	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20193405
Batch Time	11:08 AM	Truck #	1132
Sample Time	12:15 PM	Water Added On Site	None
Sampled At (yards)	3 of 10	Field Personnel	JG

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.0%
Unit Weight (pcf)      Field	-	141.6
Concrete Temperature      ASTM C-1064	90° Max	75 °F
Air Temperature @ Time of Placement	-	80 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	61750	Cone/Shear	4914	4720
1.7b	7	56920	Cone/Shear	4530	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	68780	Cone/Shear	5473	5470
1.28b	28	68795	Cone/Shear	5475	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in





**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	15	Application	Sidewalk
Placement Date	7/8/19	Supplier	Bestway
Location	Downs Way Block 21 Lot 3	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20193738
Batch Time	8:06 AM	Truck #	1131
Sample Time	9:20 AM	Water Added On Site	15 Gallons
Sampled At (yards)	3 of 20	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	3 1/2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.8%
Unit Weight (pcf)      Field	-	139.4
Concrete Temperature      ASTM C-1064	90° Max	85 °F
Air Temperature @ Time of Placement	-	73 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	44680	Cone/Shear	3556	3580
1.7b	7	45305	Cone/Shear	3605	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	57610	Cone/Shear	4584	4750
1.28b	28	61800	Cone/Shear	4918	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	16	Application	Sidewalk
Placement Date	7/10/19	Supplier	Bestway
Location	Bluegrass 20' E of Ridge Top	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20194532
Batch Time	10:20 AM	Truck #	1141
Sample Time	10:55 AM	Water Added On Site	15 Gallons
Sampled At (yards)	11 of 60	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.8%
Unit Weight (pcf)      Field	-	138.4
Concrete Temperature      ASTM C-1064	90° Max	75 °F
Air Temperature @ Time of Placement	-	73 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	41645	Cone/Shear	3314	3320
1.7b	7	41910	Cone/Shear	3335	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	52750	Cone/Shear	4198	4110
1.28b	28	50430	Cone/Shear	4013	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE**  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	17	Application	Sidewalk
Placement Date	7/11/19	Supplier	Bestway
Location	Private Sidewalk E Ridge Top	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20194819
Batch Time	6:50 AM	Truck #	1200
Sample Time	7:55 AM	Water Added On Site	None
Sampled At (yards)	3 of 20	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	3 1/2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.2%
Unit Weight (pcf)      Field	-	142.4
Concrete Temperature      ASTM C-1064	90° Max	69 °F
Air Temperature @ Time of Placement	-	72 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	50365	Cone/Shear	4008	4110
1.7b	7	52820	Cone/Shear	4203	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	58740	Cone/Shear	4674	4910
1.28b	28	64700	Cone/Shear	5149	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
Fort Collins, Colorado  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	18	Application	Sidewalk
Placement Date	7/12/19	Supplier	Bestway
Location	Crown View 50' N of Precipice	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20195296
Batch Time	7:27 AM	Truck #	1141
Sample Time	8:15 AM	Water Added On Site	None
Sampled At (yards)	1 of 30	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	2"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.5%
Unit Weight (pcf)      Field	-	140.0
Concrete Temperature      ASTM C-1064	90° Max	70 °F
Air Temperature @ Time of Placement	-	80 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	49130	Cone/Shear	3910	3730
1.7b	7	44650	Cone/Shear	3553	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	19	Application	Sidewalk
Placement Date	7/15/19	Supplier	Bestway
Location	North Prop & Bluegrass	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20194817
Batch Time	7:32 AM	Truck #	1287
Sample Time	8:40 AM	Water Added On Site	None
Sampled At (yards)	2 of 10	Field Personnel	LK

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.0%
Unit Weight (pcf)      Field	-	139.6
Concrete Temperature      ASTM C-1064	90° Max	80 °F
Air Temperature @ Time of Placement	-	72 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	51805	Cone/Shear	4123	4030
1.7b	7	49515	Cone/Shear	3940	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE**  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	20	Application	Sidewalk
Placement Date	7/16/19	Supplier	Bestway
Location	Overland 75' N of Bluegrass	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20196245
Batch Time	10:27 AM	Truck #	1214
Sample Time	11:25 AM	Water Added On Site	None
Sampled At (yards)	71 of 140	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in) ASTM C-143	2" - 4"	2"
Air Content (%) ASTM C-231	5.0% - 8.0%	7.8%
Unit Weight (pcf) Field	-	140.8
Concrete Temperature ASTM C-1064	90° Max	70 °F
Air Temperature @ Time of Placement	-	68 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	50670	Cone/Shear	4032	4040
1.7b	7	50780	Cone/Shear	4041	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	21	Application	Sidewalk
Placement Date	7/17/19	Supplier	Bestway
Location	Bluegrass Tie-In Crown View	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20196529
Batch Time	7:31 AM	Truck #	1200
Sample Time	8:25 AM	Water Added On Site	None
Sampled At (yards)	1 of 10	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	7.6%
Unit Weight (pcf)      Field	-	140.0
Concrete Temperature      ASTM C-1064	90° Max	70 °F
Air Temperature @ Time of Placement	-	78 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	44580	Cone/Shear	3548	3640
1.7b	7	46905	Cone/Shear	3733	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



**MOUNTAIN'S EDGE  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	22	Application	Bust Stop
Placement Date	7/18/19	Supplier	Bestway
Location	Overland Trail STA 14+00	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20197073
Batch Time	12:26 PM	Truck #	1215
Sample Time	1:30 PM	Water Added On Site	None
Sampled At (yards)	2 of 10	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.2%
Unit Weight (pcf)      Field	-	142.8
Concrete Temperature      ASTM C-1064	90° Max	93 °F
Air Temperature @ Time of Placement	-	98 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	55330	Cone/Shear	4403	4260
1.7b	7	51775	Cone/Shear	4120	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in





**MOUNTAIN'S EDGE**  
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**Summary of Cast-In-Place Concrete Test**

**General**

Set #	23	Application	Sidewalk
Placement Date	7/19/19	Supplier	Bestway
Location	Overland & Drake NE Corner	Mix Code	40VM11E2M
Placement Type	Chute	Ticket #	20197459
Batch Time	11:28 AM	Truck #	1280
Sample Time	12:35 PM	Water Added On Site	None
Sampled At (yards)	2 of 10	Field Personnel	KR

**Project Specifications and Test Results**

Test	Specifications	Results
Slump (in)      ASTM C-143	2" - 4"	4"
Air Content (%)      ASTM C-231	5.0% - 8.0%	6.0%
Unit Weight (pcf)      Field	-	141.8
Concrete Temperature      ASTM C-1064	90° Max	90 °F
Air Temperature @ Time of Placement	-	94 °F
28-day Compressive Strength (min)	4000 psi	See Below

**Compressive Strength Test Results (ASTM C-39/C-31)**

Specimen	Age (days)	Maximum Applied Load (lbs)	Failure Type	Compressive Strength (psi)	Rounded Avg. (psi)
1.3a	3	-	-	-	-
1.3b	3	-	-	-	
1.7a	7	52270	Cone/Shear	4160	4050
1.7b	7	49455	Cone/Shear	3936	
1.14a	14	-	-	-	-
1.14b	14	-	-	-	
1.28a	28	-	-	-	-
1.28b	28	-	-	-	
1.56a	56	-	-	-	-
1.56b	56	-	-	-	

Specimen Diameter = 4 in    Specimen Cross-Sectional Area = 12.57 sq in



# MOUNTAIN'S EDGE

Fort Collins, Colorado

Project # :18-2066

June 2019

## Field Asphaltic Concrete Density Test Summary

Date	Test #	Lift	Approximate Test Location	Mix	Density With Gauge Correction	Maximum Theoretical Specific Gravity	Percent Compaction	Percent Compaction Required	(Pass/Fail)
4/27	1	Botom	Knolls End - 70' E of Ridge Top	-	142.9	154.1	93%	92-96%	Pass
4/27	2	Botom	Knolls End - 220' E of Ridge Top	-	143.1	154.1	93%	92-96%	Pass
4/27	3	Botom	Knolls End - 320' E of Ridge Top	-	143.4	154.1	93%	92-96%	Pass
4/27	4	Botom	Ridge Top - 40' S of Knolls End	-	141.9	154.1	92%	92-96%	Pass
4/27	5	Botom	Ridge Top - 190' S of Knolls End	-	144.0	154.1	93%	92-96%	Pass
4/27	6	Botom	Ridge Top - 340' S of Knolls End	-	142.6	154.1	93%	92-96%	Pass
4/27	7	Botom	Precipice - 30' S of Knolls End	-	143.7	154.1	93%	92-96%	Pass
4/27	8	Botom	Precipice - 180' S of Knolls End	-	144.2	154.1	94%	92-96%	Pass
5/18	1	Botom	Crown View - 20' N of Knolls End	-	142.1	152.9	93%	92-96%	Pass
5/18	2	Botom	Crown View - 120' S of Knolls End	-	140.7	152.9	92%	92-96%	Pass
5/18	3	Botom	Crown View - 270' S of Knolls End	-	143.0	152.9	94%	92-96%	Pass
5/18	4	Botom	Crown View - 500' S of Knolls End	-	142.6	152.9	93%	92-96%	Pass
5/18	5	Botom	Crown View - 50' N of Bluegrass	-	141.7	152.9	93%	92-96%	Pass
5/18	6	Botom	Crown View - 200' N of Bluegrass	-	141.6	152.9	93%	92-96%	Pass
5/18	7	Botom	Crown View - 320' N of Bluegrass	-	142.0	152.9	93%	92-96%	Pass
5/18	8	Botom	Crown View - 450' N of Bluegrass	-	140.9	152.9	92%	92-96%	Pass
5/18	9	Botom	Bluegrass - 50' E of Crown View	-	142.7	152.9	93%	92-96%	Pass
5/18	10	Botom	Bluegrass - 150' W of Crown View	-	144.0	152.9	94%	92-96%	Pass
5/18	11	Botom	Bluegrass - 300' W of Crown View	-	143.1	152.9	94%	92-96%	Pass
5/18	12	Botom	Bluegrass - 450' W of Crown View	-	142.0	152.9	93%	92-96%	Pass
5/18	13	Botom	Bluegrass - 500' W of Crown View	-	140.7	152.9	92%	92-96%	Pass
5/18	14	Botom	Bluegrass - 350' W of Crown View	-	141.1	152.9	92%	92-96%	Pass
5/18	15	Botom	Bluegrass - 200' W of Crown View	-	143.3	152.9	94%	92-96%	Pass
5/18	16	Botom	Bluegrass - 50' W of Crown View	-	141.6	152.9	93%	92-96%	Pass
6/25	1	Top	Ridge Top - 50' N of Bluegrass	-	144.0	156.2	92%	92-96%	Pass
6/25	2	Top	Ridge Top - 200' N of Bluegrass	-	144.6	156.2	93%	92-96%	Pass
6/25	3	Top	Ridge Top - 300' N of Bluegrass	-	143.9	156.2	92%	92-96%	Pass
6/25	4	Top	Knolls End - 20' W of Ridge Top	-	145.0	156.2	93%	92-96%	Pass
6/25	5	Top	Knolls End - 30' E of Ridge Top	-	144.7	156.2	93%	92-96%	Pass
6/25	6	Top	Knolls End - 150' E of Ridge Top	-	143.7	156.2	92%	92-96%	*FAIL*
6/25	7	Top	Knolls End - 10' E of Ridge Top	-	143.8	156.2	92%	92-96%	Pass
6/25	8	Top	Precipice - 20' S of Knolls End	-	144.9	156.2	93%	92-96%	Pass
6/25	9	Top	Precipice - 130' S of Knolls End	-	145.1	156.2	93%	92-96%	Pass
6/26	1	Top	Crown View - 40' S of Knolls End	-	144.5	156.5	92%	92-96%	Pass
6/26	2	Top	Crown View - 190' S of Knolls End	-	144.0	156.5	92%	92-96%	Pass
6/26	3	Top	Crown View - 200' S of Knolls End	-	145.0	156.5	93%	92-96%	Pass
6/26	4	Top	Crown View - 50' S of Knolls End	-	144.2	156.5	92%	92-96%	Pass
6/26	5	Top	Bluegrass - 20' E of Crown View	-	145.6	156.5	93%	92-96%	Pass
6/26	6	Top	Bluegrass - 130' W of Crown View	-	144.9	156.5	93%	92-96%	Pass
6/26	7	Top	Bluegrass - 280' W of Crown View	-	144.0	156.5	92%	92-96%	Pass
6/26	8	Top	Bluegrass - 250' W of Crown View	-	144.2	156.5	92%	92-96%	Pass
6/26	9	Top	Bluegrass - 100' W of Crown View	-	144.7	156.5	92%	92-96%	Pass
6/27	1	Top	Overland Trail - 125' S of Bluegrass	-	144.1	156.1	92%	92-96%	Pass
6/27	2	Top	Overland Trail - 40' S of Bluegrass	-	143.9	156.1	92%	92-96%	Pass
6/27	3	Top	Overland Trail - 100' N of Bluegrass	-	145.1	156.1	93.0%	92-96%	Pass