

Client: Elliott Van Stelle
Structures, Inc.
4 Inverness Court East, Suite 250
Englewood, CO 80112

Forest Lakes Bridges

Report Date: Jan 17, 2022

Work Order No.: 21-8536.Concrete.0021; ver: 3

Work Order Date: Jan 10, 2022

Reviewed by: Josiah Johnson

Concrete

Concrete Contractor: Structures

Performed by: Zach Mitchell

Placement Method: Pumped

Finish Method: Vibrated- Internally|Machine Finished|Hand Finished

Total Quantity Placed: 161 yd³

Weather: Mostly Sunny

Placement Location: Bridge Deck for Mesa Top Drive from STA 14+40 to 17+10

On-site Notifications, Specification, and Mix Information

On-Site Notification(s)	Item / Structure Type	Test	Specified	Mix Design
Elliott Van Stelle with Structures, Inc.	Normal Weight Concrete	Air Content (%)	5 to 8	6.2
		Slump (in)	-	4.25
	Mix Placed	Unit Weight (pcf)	-	142.2
	CDOT 2020138 - Martin Marietta: XCD4195	Comp. Strength (psi)	4500	4500

Sampling (ASTM C172 / AASHTO R60 / CDOT CP61)

Sample No.	Location	Sampled From	Quantity (yd ³)	Truck No.	Ticket No.	Batch Time	Test Time	Air Temp. (°F)	Water Added (gal)
43	STA 14+80, 5' L of CL	Point of Delivery	10	2002	67099607	7:56 AM	9:00 AM	40	0
44	STA 14+70, 20' L of CL	Point of Delivery	19	1747	67099608	8:25 AM	9:30 AM	40	0
45	STA 14+85, 40' L of CL	Point of Delivery	28	1636	67099610	8:48 AM	10:00 AM	42	5
46	STA 16+00, 25' R of CL	Point of Delivery	100	1758	67099630	11:17 AM	12:20 PM	50	0
47	STA 16+25, 35' L of CL	Point of Delivery	145	2002	67099647	1:11 PM	2:33 PM	50	4
47.1	STA 16+25, 35' L of CL	Point of Delivery	145	2002	67099647	1:11 PM	2:43 PM	50	4
48	STA 16+40, 40' L of CL	Point of Delivery	155	2032	67099650	1:30 PM	3:02 PM	52	0
49	STA 16+55, 15' L of CL	Point of Delivery	161	2220	67099658	3:37 PM	4:32 PM	50	0

Field Tests (ASTM C138, C143, C231, and C1064 / AASHTO T119, T121, and T152)

Sample No.	Concrete Temp. (°F)	Slump (in)	Air Cont. (%)	Meas. Vol. (ft ³)	Empty Meas. (lb)	Full Meas. (lb)	Unit Wt. (pcf)	Lab Samples Cast
43	65	4	5.9	.249	7.86	43.03	141.2	
44	61	4.25	6.7	.249	7.86	42.68	139.8	
45	64	4.5	7.4	.249	7.86	42.36	138.6	Yes
46	73	5	7.0	.250	8.58	43.68	140.4	Yes
47	78	4.75	4.5	.247	7.80	43.49	144.5	
47.1	78	5	6.8	.247	7.80	42.50	140.5	
48	77	5.5	5.1	.247	7.80	42.96	142.3	
49	73	4.75	6.5	.247	7.80	42.57	140.8	Yes

Results apply only to the specific items and locations referenced and at the time of testing, observations or special inspections. Unless noted otherwise, specimens were received in adequate condition. Compressive strength specimens, if tested, were capped in accordance with ASTM C1231 or ASTM C617, as applicable. This report should not be reproduced, except in full, without the written permission of GROUND Engineering Consultants, Inc.

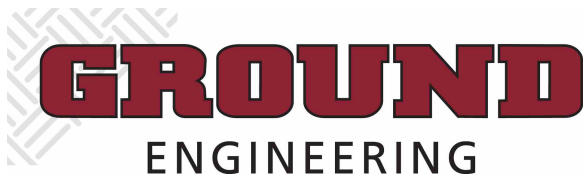
7393 Dahlia Street, Commerce City, Colorado

www.groundeng.com

303-289-1989

Englewood | Commerce City | Loveland | Granby | Gypsum | Colorado Springs

Page 1 of 2



Client:

Elliott Van Stelle
Structures, Inc.
4 Inverness Court East, Suite 250
Englewood, CO 80112

Forest Lakes Bridges

Report Date: Jan 17, 2022

Work Order No.: 21-8536.Concrete.0021; ver: 3

Work Order Date: Jan 10, 2022

Reviewed by: Josiah Johnson

Concrete**Compressive Strength (ASTM C31 and C39 / AASHTO T22 and T23)**

Sample No. 45	Lab ID	Age (d)	Diameter (in)	Area (in ²)	Fracture Type	Max. Load (lb-f)	Corrected Strength (psi)	Strength at Acceptance (psi)
	C1030	3	4.00	12.57	5 / Side	38,500	3,060	-
	C1031	7	4.00	12.57	5 / Side	46,460	3,700	-

Average Compressive Strength (psi):

Compressive Strength (ASTM C31 and C39 / AASHTO T22 and T23)

Sample No. 46	Lab ID	Age (d)	Diameter (in)	Area (in ²)	Fracture Type	Max. Load (lb-f)	Corrected Strength (psi)	Strength at Acceptance (psi)
	C1036	3	4.00	12.57	5 / Side	39,800	3,170	-
	C1037	7	4.00	12.57	5 / Side	48,110	3,830	-

Average Compressive Strength (psi):

Compressive Strength (ASTM C31 and C39 / AASHTO T22 and T23)

Sample No. 49	Lab ID	Age (d)	Diameter (in)	Area (in ²)	Fracture Type	Max. Load (lb-f)	Corrected Strength (psi)	Strength at Acceptance (psi)
	C1042	3	4.00	12.57	5 / Side	39,930	3,180	-
	C1043	7	4.00	12.57	5 / Side	48,730	3,880	-

Average Compressive Strength (psi):

Results apply only to the specific items and locations referenced and at the time of testing, observations or special inspections. Unless noted otherwise, specimens were received in adequate condition. Compressive strength specimens, if tested, were capped in accordance with ASTM C1231 or ASTM C617, as applicable. This report should not be reproduced, except in full, without the written permission of GROUND Engineering Consultants, Inc.