



**Empire Laboratories, Inc.**  
A Division of The Terracon Companies, Inc.

301 N. Howes Street  
Ft. Collins, CO 80521  
Phone (303) 484-0359  
Fax (303) 484-0454

### CONCRETE TEST RESULTS

Project Name & Location: Stone Ridge - Phase II				The following tests have been performed by Empire in accordance with ASTM procedures.	
Contractor: Kiefer/Les Kaplan				Sampling ASTM C172-82	X
Engineer/Architect: City of Fort Collins Engineering Department				Making ASTM C31-85	X
Location of Placement: Curb & Gutter Station 4 + 75 Stonecreek St.				Curing C192-81	
Empire Job No.: 2093-1098	Concrete No.: 3106	Sample No.: 2	Date: 10/11/93	Capping C617-85b	X
Reviewed by: Gary M. Martinson		Mix I.D. No.: N/A		Compressive Strength C39-86	X

### CONCRETE MIX DESIGN DATA

Supplier:	PPM	Batch Time:	1:35	Specifications	Measured	Water Added (gal):	φ		
Ticket No.:	N/A	Sample Time:	2:15	Air (%):	N/A	Air (%):	5.4		
Truck No.:	31	Concrete Temperature °F:	70	Slump (in):	N/A	Slump (in):	1.25		
Batch Size:	8.0	Ambient Temperature °F:	68	Strength (psi):	3000	(7): 3880 (28): 4530	No. of Cylinders:	4	
Fine Agg. (lbs):	1371	Medium Agg. (lbs):	1728	Coarse Agg. (lbs):	φ	Cement (lbs):	564	Fly Ash (lbs):	N/A
Water (gal):	16.8	WRA (oz/100#):	N/A	Air Ent (oz/sack):	1.75	Other:	N/A	Yield (Ft <sup>3</sup> /Yd <sup>3</sup> ):	26.50

### CYLINDER TEST DATA

Cylinder No.	Date Made	Days Cured		Date Tested	Sample Age (Days)	Diameter (inches)	Cross Section Area, in. <sup>2</sup>	Length (inches)	Test Load (pounds)	Measured Strength (psi)	Type of Fracture	Tested By
		Field	Lab									
1	10/11/93	φ	7	10/18/93	7	6.0	28.3	12.0	110,000	3890	Conical	BB
2	10/11	φ	7	10/18	7	6.0	28.3	12.0	109,000	3860	Conical	BB
3	10/11	φ	28	11/8/93	28	6.0	28.3	12.0	128,000	4530	Conical	CM
4	10/11	φ	28	11/8	28	6.0	28.3	12.0	128,000	4530	Conical	CM

Distribution: (1) Kaplan; (1) Connell; (1) PPM; (1) City



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### CONCRETE MIX DESIGN DATA

Supplier: PPM	Batch Time: 1:35	Specifications	Measured	Water Added (gal):	φ
Ticket No.: N/A	Sample Time: 2:15	Air (%): N/A	Air (%): 5.4	Unit Weight (#/Ft <sup>3</sup> ):	143.5
Truck No.: 31	Concrete Temperature °F: 70	Slump (in): N/A	Slump (in): 1.25	Specimen Size:	6x12
Batch Size: 8.0	Ambient Temperature °F: 68	Strength (psi): 3000	(7): 3880 (28):	No. of Cylinders:	4
Fine Agg. (lbs): 1371	Medium Agg. (lbs): 1728	Coarse Agg. (lbs): φ	Cement (lbs): 564	Fly Ash (lbs):	N/A
Water (gal): 16.8	WRA (oz/100#): N/A	Air Ent (oz/sack): 1.75	Other: N/A	Yield (Ft <sup>3</sup> /Yd <sup>3</sup> ):	26.50

### CYLINDER TEST DATA

Cylinder No.	Date Made	Days Cured		Date Tested	Sample Age (Days)	Diameter (inches)	Cross Section Area, in. <sup>2</sup>	Length (inches)	Test Load (pounds)	Measured Strength (psi)	Type of Fracture	Tested By
		Field	Lab									
1	10/11/93	φ	7	10/18/93	7	6.0	28.3	12.0	110,000	3890	Conical	BB
2	10/11	φ	7	10/18	7	6.0	28.3	12.0	109,000	3860	Conical	BB
3	10/11	φ	28	11/8/93	28	6.0	28.3	12.0			Conical	
4	10/11	φ	28	11/8	28	6.0	28.3	12.0			Conical	

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Contractor: Kiefer/Les Kaplan					Sampling ASTM C172-82	X	
Engineer/Architect: City of Fort Collins Engineering Department					Making ASTM C31-85	X	
Location of Placement: Curb & Gutter @ Jewel Stone Court, Station 175+00					Curing C192-81		
Empire Job No.: 2093-1098		Concrete No.: 3106		Sample No.: 1	Date: 10/6/93	Capping C617-85b	X
Reviewed by: Gary M. Martinson			Mix I.D. No.: N/A		Compressive Strength C39-86		X

### CONCRETE MIX DESIGN DATA

Supplier:	PPM	Batch Time:	9:40	Specifications	Measured	Water Added (gal):	$\phi$
Ticket No.:	N/A	Sample Time:	10:30	Air (%):	N/A	Air (%):	5.0
Truck No.:	31	Concrete Temperature °F:	70	Slump (in):	N/A	Slump (in):	1.25
Batch Size:	8.0	Ambient Temperature °F:	78	Strength (psi):	3000	(7): 3900	(28): 4890
Fine Agg. (lbs):	1371	Medium Agg. (lbs):	1728	Coarse Agg. (lbs):	$\phi$	Cement (lbs):	564
Water (gal):	16.8	WRA (oz/100#):	N/A	Air Ent (oz/sack):	1.75	Other:	N/A
						Fly Ash (lbs):	N/A
						Yield (Ft <sup>3</sup> /Yd <sup>3</sup> ):	26.97

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Cylinder No.	Date Made	Days Cured		Date Tested	Sample Age (Days)	Diameter (inches)	Cross Section Area, in. <sup>2</sup>	Length (inches)	Test Load (pounds)	Measured Strength (psi)	Type of Fracture	Tested By
		Field	Lab									
1	10/6/93	$\phi$	7	10/13/93	7	6.0	28.3	12.0	111,000	3930	Conical	CM
2	10/6	$\phi$	7	10/13	7	6.0	28.3	12.0	109,000	3860	Conical	CM
3	10/6	$\phi$	28	11/3/93	28	6.0	28.3	12.0	138,000	4880	Conical	KA
4	10/6	$\phi$	28	11/3	28	6.0	28.3	12.0	138,500	4900	Conical	KA

Distribution: (1) Kaplan; (1) Connell; (1) PPM; (1) City



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Supplier: PPM	Batch Time: 9:40	Specifications	Measured	Water Added (gal):	φ
Ticket No.: N/A	Sample Time: 10:30	Air (%): N/A	Air (%): 5.0	Unit Weight (#/Ft³):	141.0
Truck No.: 31	Concrete Temperature °F: 70	Slump (in): N/A	Slump (in): 1.25	Specimen Size:	6x12
Batch Size: 8.0	Ambient Temperature °F: 78	Strength (psi): 3000	(7): 3900 (28):	No. of Cylinders:	4
Fine Agg. (lbs): 1371	Medium Agg. (lbs): 1728	Coarse Agg. (lbs): φ	Cement (lbs): 564	Fly Ash (lbs):	N/A
Water (gal): 16.8	WRA (oz/100#): N/A	Air Ent (oz/sack): 1.75	Other: N/A	Yield (Ft³/Yd³):	26.97

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		Field	Lab									
1	10/6/93	φ	7	10/13/93	7	6.0	28.3	12.0	111,000	3930	Conical	CM
2	10/6	φ	7	10/13	7	6.0	28.3	12.0	109,000	3860	Conical	CM
3	10/6	φ	28	11/3/93	28	6.0	28.3	12.0			Conical	
4	10/6	φ	28	11/3	28	6.0	28.3	12.0			Conical	

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