



Empire Laboratories, Inc.

A Division of Terracon Companies
 Materials and Foundation Engineers
 Fort Collins, Denver, Greeley,
 Longmont, Colorado Springs, Colorado
 and Cheyenne, Wyoming

CONCRETE TEST RESULTS

Tests checked below have been performed by Empire Laboratories, Inc., in accordance with ASTM procedures

SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING TEST SPECIMENS Field C31 <input checked="" type="checkbox"/>	Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Curb & Gutter; firestone Dr. Station 13+25; N. side

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 8

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.25 Gals.

REQUIRED STRENGTH 3500 SLUMP 2.0 In. AIR 5.5 % UNIT WEIGHT 143.8 #/Ft.³ YIELD 26.99 Ft.³/Yd.³

TEMP. (CONCRETE) 78 °F (AMBIENT) 75 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 33 TIME 8:25 CUBIC YARDS 8.0-88 of 100+ CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	7/2/93	7/9/93	7	87,000	3080	6.0	28.3	12.0	Conical	7	φ
2	7/2	7/9	7	86,000	3040	6.0	28.3	12.0	Conical	7	φ
3	7/2	7/30/93	28								
4	7/2	7/30	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CM 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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REC.D '93RUG 6AM11=21

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SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING TEST SPECIMENS Field C31 <input checked="" type="checkbox"/>	Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Curb & Gutter; firestone Dr. Station 13+25; N. side

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 8

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.25 Gals.

REQUIRED STRENGTH 3500 SLUMP 2.0 In. AIR 5.5 % UNIT WEIGHT 143.8 #/Ft.³ YIELD 26.99 Ft.³/Yd.³

TEMP. (CONCRETE) 78 °F (AMBIENT) 75 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 33 TIME 8:25 CUBIC YARDS 8.0-88 of 100+ CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	7/2/93	7/9/93	7	87,000	3080	6.0	28.3	12.0	Conical	7	φ
2	7/2	7/9	7	86,000	3040	6.0	28.3	12.0	Conical	7	φ
3	7/2	7/30/93	28	105,000	3710	6.0	28.3	12.0	Conical	28	φ
4	7/2	7/30	28	107,000	3780	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CM 14 DAY _____ 28 DAY BB 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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REC.D *93AUG 6AM11:21

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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Sidewalk on East side of Blackstone - Station FO 54

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 7

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.625 Gals.

REQUIRED STRENGTH 3500 SLUMP 1.75 In. AIR 7.0 % UNIT WEIGHT 142.0 #/Ft.³ YIELD 27.36 Ft.³/Yd.³

TEMP. (CONCRETE) 81 °F (AMBIENT) 72 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 31 TIME 9:30 CUBIC YARDS 8.0-176 of 200 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE DAY/LAB	CURE DAY/FIELD
1	7/1/93	7/8/93	7	88,500	3130	6.0	28.3	12.0	Conical	7	φ
2	7/1	7/8	7	89,500	3170	6.0	28.3	12.0	Conical	7	φ
3	7/1	7/29/93	28	110,000	3890	6.0	28.3	12.0	Conical	28	φ
4	7/1	7/29	28	109,000	3860	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY BB 14 DAY _____ 28 DAY CM 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Sidewalk on West side of Blackstone - Station CO 33

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 6

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 24.125 Gals.

REQUIRED STRENGTH 3500 SLUMP 1.50 In. AIR 6.4 % UNIT WEIGHT 142.0 #/Ft.³ YIELD 27.21 Ft.³/Yd.³

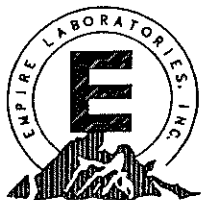
TEMP. (CONCRETE) 74 °F (AMBIENT) 61 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 24 TIME 7:30 CUBIC YARDS 8.0-64 of 200 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	7/1/93	7/8/93	7	92,500	3270	6.0	28.3	12.0	Conical	7	φ
2	7/1	7/8	7	92,000	3220	6.0	28.3	12.0	Conical	7	φ
3	7/1	7/29/93	28	112,500	3980	6.0	28.3	12.0	Conical	28	φ
4	7/1	7/29	28	113,000	4000	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY BB 14 DAY _____ 28 DAY CM 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Sidewalk on West side of Blackstone - Station CO 33

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 6

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REQUIRED STRENGTH 3500 SLUMP 1.50 In. AIR 6.4 % UNIT WEIGHT 142.0 #/Ft.³ YIELD 27.21 Ft.³/Yd.³

TEMP. (CONCRETE) 74 °F (AMBIENT) 61 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 24 TIME 7:30 CUBIC YARDS 8.0-64 of 200 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	7/1/93	7/8/93	7	92,500	3270	6.0	28.3	12.0	Conical	7	φ
2	7/1	7/8	7	92,000	3220	6.0	28.3	12.0	Conical	7	φ
3	7/1	7/29/93	28								
4	7/1	7/29	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY BB 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Sidewalk on East side of Blackstone - Station FO 54

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 7

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.625 Gals.

REQUIRED STRENGTH 3500 SLUMP 1.75 In. AIR 7.0 % UNIT WEIGHT 142.0 #/Ft.³ YIELD 27.36 Ft.³/Yd.³

TEMP. (CONCRETE) 81 °F (AMBIENT) 72 °F WRA φ oz/100# AIR ENTRAINMENT 1.75 oz/sack

TRUCK NO. 31 TIME 9:30 CUBIC YARDS 8.0-176 of 200 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	7/1/93	7/8/93	7	88,500	3130	6.0	28.3	12.0	Conical	7	φ
2	7/1	7/8	7	89,500	3170	6.0	28.3	12.0	Conical	7	φ
3	7/1	7/29/93	28								
4	7/1	7/29	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY BB 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC

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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Curb & Gutter, Station 1.73 TC Stonecrest Drive

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 5

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 23.5 Gals.

REQUIRED STRENGTH 3500 SLUMP 1.25 In. AIR 6.8 % UNIT WEIGHT 139.4 #/Ft.³ YIELD 27.68 Ft.³/Yd.³

TEMP. (CONCRETE) 76 °F (AMBIENT) 70 °F WRA φ oz/100# AIR ENTRAINMENT 0.333 oz/sack

TRUCK NO. 32 TIME 11:25 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	5/13/93	5/20/93	7	88,000	3110	6.0	28.3	12.0	Conical	7	φ
2	5/13	5/20	7	88,500	3130	6.0	28.3	12.0	Conical	7	φ
3	5/13	6/10/93	28	105,000	3710	6.0	28.3	12.0	Conical	28	φ
4	5/13	6/10	28	107,000	3780	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY JC 14 DAY _____ 28 DAY BB 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT Hall Irwin Construction

LOCATION OF PLACEMENT Curb & Gutter, Station 1.73 TC Stonecrest Drive

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 5

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 23.5 Gals.

REQUIRED STRENGTH 3500 SLUMP 1.25 In. AIR 6.8 % UNIT WEIGHT 139.4 #/Ft.³ YIELD 27.68 Ft.³/Yd.³

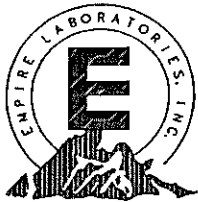
TEMP. (CONCRETE) 76 °F (AMBIENT) 70 °F WRA φ oz/100# AIR ENTRAINMENT 0.333 oz/sack

TRUCK NO. 32 TIME 11:25 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	5/13/93	5/20/93	7	88,000	3110	6.0	28.3	12.0	Conical	7	φ
2	5/13	5/20	7	88,500	3130	6.0	28.3	12.0	Conical	7	φ
3	5/13	6/10/93	28								
4	5/13	6/10	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY JC 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Sidewalk N of Horsetooth Station 9+25

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 4

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 21.25 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/2 In. AIR 6.8 % UNIT WEIGHT 141.8 #/Ft.³ YIELD 27.08 Ft.³/Yd.³

TEMP. (CONCRETE) 70 °F (AMBIENT) 51 °F WRA φ oz/100# AIR ENTRAINMENT .38 oz/sack

TRUCK NO. 33 TIME 8:20 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	5/11/93	5/18/93	7	87,500	3100	6.0	28.3	12.0	Conical	7	φ
2	5/11	5/18	7	87,000	3080	6.0	28.3	12.0	Conical	7	φ
3	5/11	6/8/93	28	105,500	3730	6.0	28.3	12.0	Conical	28	φ
4	5/11	6/8	28	105,000	3710	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CM 14 DAY _____ 28 DAY JC 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Sidewalk N of Horsetooth Station 9+25

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 4

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 21.25 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/2 In. AIR 6.8 % UNIT WEIGHT 141.8 #/Ft.³ YIELD 27.08 Ft.³/Yd.³

TEMP. (CONCRETE) 70 °F (AMBIENT) 51 °F WRA φ oz/100# AIR ENTRAINMENT .38 oz/sack

TRUCK NO. 33 TIME 8:20 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	5/11/93	5/18/93	7	87,500	3100	6.0	28.3	12.0	Conical	7	φ
2	5/11	5/18	7	87,000	3080	6.0	28.3	12.0	Conical	7	φ
3	5/11	6/8/93	28								
4	5/11	6/8	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CM 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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SAMPLING
 ASTM C172

MAKING & CURING TEST SPECIMENS
 ASTM C31 ASTM C192

CAPPING
 ASTM C617

COMPRESSIVE STRENGTH
 ASTM C39

NAME OF PROJECT Stone Ridge Patio Homes

CONTRACTOR Keifer Concrete/Connell Resources

ENGINEER OR ARCHITECT City of Fort Collins Eng. Dept.

LOCATION OF PLACEMENT North End, West Side of Main Parking

EMPIRE JOB NO. 2888 MIX NO. _____ REPORT NO. 1

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 23.75 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/2 In. AIR 5.2 % UNIT WEIGHT 145.4 #/Ft.³ YIELD 26.55 Ft.³/Yd.³

TEMP. (CONCRETE) 68 °F (AMBIENT) 31 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 32 TIME 11:10 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	1/5/93	1/12/93	7	113,500	4010	6.0	28.3	12.0	Conical	7	φ
2	1/5	1/12	7	115,000	4070	6.0	28.3	12.0	Conical	7	φ
3	1/5	2/2/93	28	151,000	5340	6.0	28.3	12.0	Conical	28	φ
4	1/5	2/2	28	155,000	5480	6.0	28.3	12.0	Conical	28	φ

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY SH 14 DAY _____ 28 DAY CR 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION Albrecht (1); City (1); Connell (1); PPM (1)



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CONCRETE TEST RESULTS

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SAMPLING
 ASTM C172



MAKING & CURING TEST SPECIMENS
 ASTM C31 ASTM C192



CAPPING
 ASTM C617



COMPRESSIVE STRENGTH
 ASTM C39



NAME OF PROJECT Stone Ridge Patio Homes

CONTRACTOR Keifer Concrete/Connell Resources

ENGINEER OR ARCHITECT City of Fort Collins Eng. Dept.

LOCATION OF PLACEMENT North End, West Side of Main Parking

EMPIRE JOB NO. 2888 MIX NO. _____ REPORT NO. 1

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 23.75 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/4 In. AIR 5.2 % UNIT WEIGHT 145.4 #/Ft.³ YIELD 26.55 Ft.³/Yd.³

TEMP. (CONCRETE) 68 °F (AMBIENT) 31 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 32 TIME 11:10 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	1/5/93	1/12/93	7	113,500	4010	6.0	28.3	12.0	Conical	7	φ
2	1/5	1/12	7	115,000	4070	6.0	28.3	12.0	Conical	7	φ
3	1/5	2/2/93	28								
4	1/5	2/2	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY SH 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION Albrecht (1); City (1); Connell (1); PPM (1)



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CONCRETE TEST RESULTS

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Engineering Dept.

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SAMPLING

C172

MAKING & CURING TEST SPECIMENS

Field C31

Laboratory C192

CAPPING

C617

COMPRESSIVE STRENGTH

C39

NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Curb & Gutter Fieldstone Drive - STA 1+33

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 3

FINE 1371 Lbs. MEDIUM φ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 23.75 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/2 In. AIR 6.0 % UNIT WEIGHT 143.7 #/Ft.³ YIELD 26.87 Ft.³/Yd.³

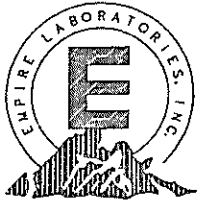
TEMP. (CONCRETE) 70 °F (AMBIENT) 30 °F WRA φ oz/100# AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 22 TIME 8:30 CUBIC YARDS 8.0/24 of 40+ CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	11/18/92	11/25/92	7	101,000	3570	6.0	28.3	12.0	Conical	6	1
2	11/18	11/25	7	102,000	3610	6.0	28.3	12.0	Conical	6	1
3	11/18	12/15/92	28								
4	11/18	12/15	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CR 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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CONCRETE TEST RESULTS

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SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING Field C31 <input checked="" type="checkbox"/>	TEST SPECIMENS Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Curb & Gutter Fieldstone Drive - STA 1+33

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 3

FINE 1371 Lbs. MEDIUM ϕ Lbs. COARSE AGG. 1728 Lbs. CEMENT 564 Lbs. FLY ASH ϕ Lbs. WATER 23.75 Gals.

REQUIRED STRENGTH 3500 SLUMP 1 1/2 In. AIR 6.0 % UNIT WEIGHT 143.7 #/Ft.³ YIELD 26.87 Ft.³/Yd.³

TEMP. (CONCRETE) 70 °F (AMBIENT) 30 °F WRA ϕ oz/100# AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 22 TIME 8:30 CUBIC YARDS 8.0/24 of 40+ CALCIUM CHLORIDE ϕ ACCELERATOR ϕ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	11/18/92	11/25/92	7	101,000	3570	6.0	28.3	12.0	Conical	6	1
2	11/18	11/25	7	102,000	3610	6.0	28.3	12.0	Conical	6	1
3	11/18	12/15/92	28	128,000	4530	6.0	28.3	12.0	Conical	27	1
4	11/18	12/15	28	130,500	4620	6.0	28.3	12.0	Conical	27	1

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CR 14 DAY _____ 28 DAY CR 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING TEST SPECIMENS Field C31 <input checked="" type="checkbox"/> Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Brownston Court Curb & Gutter

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 2

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.0 Gals.

REQUIRED STRENGTH 3500 SLUMP 2 In. AIR 5.5 % UNIT WEIGHT 143.8 #/Ft.³ YIELD 27.1 Ft.³/Yd.³

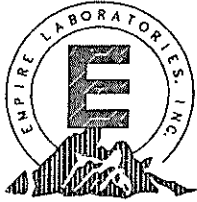
TEMP. (CONCRETE) 68 °F (AMBIENT) 48 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 21 TIME 8:25 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	11/17/92	11/24/92	7	94,000	3330	6.0	28.3	12.0	Conical	6	1
2	11/17	11/24	7	93,500	3310	6.0	28.3	12.0	Conical	6	1
3	11/17	12/15/92	28	118,000	4170	6.0	28.3	12.0	Conical	27	1
4	11/17	12/15	28	117,000	4140	6.0	28.3	12.0	Conical	27	1

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CR 14 DAY _____ 28 DAY SH 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING TEST SPECIMENS Field C31 <input checked="" type="checkbox"/>	Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Brownston Court Curb & Gutter

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 2

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 26.0 Gals.

REQUIRED STRENGTH 3500 SLUMP 2 In. AIR 5.5 % UNIT WEIGHT 143.8 #/Ft.³ YIELD 27.1 Ft.³/Yd.³

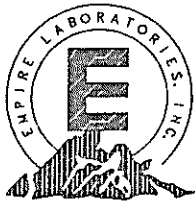
TEMP. (CONCRETE) 68 °F (AMBIENT) 48 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 21 TIME 8:25 CUBIC YARDS 8.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	11/17/92	11/24/92	7	94,000	3330	6.0	28.3	12.0	Conical	6	1
2	11/17	11/24	7	93,500	3310	6.0	28.3	12.0	Conical	6	1
3	11/17	12/15/92	28								
4	11/17	12/15	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY CR 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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SAMPLING C172 <input checked="" type="checkbox"/>	MAKING & CURING TEST SPECIMENS Field C31 <input checked="" type="checkbox"/> Laboratory C192 <input type="checkbox"/>	CAPPING C617 <input checked="" type="checkbox"/>	COMPRESSIVE STRENGTH C39 <input checked="" type="checkbox"/>
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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Horestooth Road Curb & Gutter

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 1

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 25.7 Gals.

REQUIRED STRENGTH 3500 SLUMP 2 1/2 In. AIR 5.5 % UNIT WEIGHT 144.3 #/Ft.³ YIELD 26.9 Ft.³/Yd.³

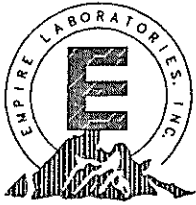
TEMP. (CONCRETE) 69 °F (AMBIENT) 50 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 24 TIME 10:15 CUBIC YARDS 7.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	CURE
										DAY/LAB	DAY/FIELD
1	11/11/92	11/18/92	7	103,500	3660	6.0	28.3	12.0	Conical	6	1
2	11/11	11/18	7	102,000	3610	6.0	28.3	12.0	Conical	6	1
3	11/11	12/9/92	28	134,500	4760	6.0	28.3	12.0	Conical		
4	11/11	12/9	28	137,500	4860	6.0	28.3	12.0	Conical		

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY SH 14 DAY _____ 28 DAY CR 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC



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NAME OF PROJECT Stoneridge Single Family Homes

CONTRACTOR Kiefer Concrete

ENGINEER OR ARCHITECT _____

LOCATION OF PLACEMENT Horestooth Road Curb & Gutter

EMPIRE JOB NO. 2887 MIX NO. _____ REPORT NO. 1

FINE 1371 Lbs. MEDIUM 1728 Lbs. COARSE AGG. φ Lbs. CEMENT 564 Lbs. FLY ASH φ Lbs. WATER 25.7 Gals.

REQUIRED STRENGTH 3500 SLUMP 2 1/2 In. AIR 5.5 % UNIT WEIGHT 144.3 #/Ft.³ YIELD 26.9 Ft.³/Yd.³

TEMP. (CONCRETE) 69 °F (AMBIENT) 50 °F WRA φ AIR ENTRAINMENT 1.5 oz/sack

TRUCK NO. 24 TIME 10:15 CUBIC YARDS 7.0 CALCIUM CHLORIDE φ ACCELERATOR φ

CYLINDER NO.	DATE MADE	DATE BROKEN	BREAK DAYS	BREAK POUNDS	BREAK PSI	AVERAGE DIA. IN	CROSS SECTIONAL AREA IN ²	LENGTH INCHES	TYPE OF FRACTURE	CURE	
										DAY/LAB	DAY/FIELD
1	11/11/92	11/18/92	7	103,500	3660	6.0	28.3	12.0	Conical	6	1
2	11/11	11/18	7	102,000	3610	6.0	28.3	12.0	Conical	6	1
3	11/11	12/9/92	28								
4	11/11	12/9	28								

CAST BY Empire Labs BROKEN BY: 24 HOUR _____ 48 HOUR _____ 3 DAY _____ 7 DAY SH 14 DAY _____ 28 DAY _____ 45 DAY _____

CONCRETE SUPPLIER PPM DISTRIBUTION (1) Kiefer; (1) Irwin; (1) Kaplan; (1) PPM; (1) COFC