



**City of Lufkin
TCSS Manual**

**CONCRETE MIX
DESIGN**

CONCRETE COMPRESSIVE STRENGTH TEST



PICKETT-JACOBS
CONSULTANTS, INC.
A Terracon Company

Report Number: 93051072.0017
Service Date: November 1, 2005

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 29, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3600 psi @ 28 Days

Batch Time:
Supplier: Contractor's Supplies, Inc.
Truck No: Ticket No:
Mix I.D. No.: 8 (2005)

Sample Information

Sample Time: Date Cast: November 1, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method:
Sample Locations:
Placement Location: Class C, E, & S

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	5		ASTM C-143
Air Content, %:	5.0		ASTM C-173
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	146.6		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	11/08/2005	7	100,000	3,540
1	B	6.00	28.27	11/08/2005	7	99,000	3,500
1	C	6.00	28.27	11/08/2005	7	100,500	3,550
Average							3,530
1	D	6.00	28.27	11/29/2005	28	143,000	5,060
1	E	6.00	28.27	11/29/2005	28	143,500	5,070
1	F	6.00	28.27	11/29/2005	28	142,500	5,040
Average							5,060

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by:
William V. Jacobs
Office Manager III

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



REPORT OF CONCRETE MIX DESIGN

Date: November 4, 2005
Job No. 93051072
Report No. 93051072.0019

MIX DESIGN NO. 9 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Contractor's Supplies, Inc., Lufkin, Texas

Specification Requirements:

Location of Usage <u>Curb & Gutter</u>	Slump <u>2 -3</u> inches
Cement Content <u>414</u> pounds per cubic yard	Air Content <u>4 -6</u> %
Strength <u>3,000</u> psi @ 28 days	Fly Ash <u>130</u> lbs. per cubic yard
Coarse Aggr. Size <u>3/8" (Max.)</u>	

Materials Source:

Coarse Aggregate Crockett Sand & Gravel, Crockett, Texas
Fine Aggregate Crockett Sand & Gravel, Crockett, Texas
Cement Ash Grove Resources, Inc., Houston, Texas
Admixture Grace Materials, Houston, Texas
Fly Ash Headwater Resources, Martin Lake, Texas

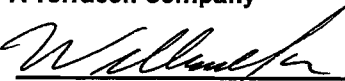
Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	414	414
Water	220	165
Fine Aggregate	1577	1624
Coarse Aggregate (Pea Gravel)	1600	1608
Admixture (WRA)	18.8 oz.	18.8 oz.
Admixture (AEA)	2.0 oz.	2.0 oz.
Fly Ash	130	130

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 2 inches Air Content 4.9 % Unit Weight 146.0 pcf Yield 27.0 cu.ft.

Submitted by: **PICKETT-JACOBS CONSULTANTS, INC.**
A Terracon Company


William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Report Number: 93051072.0019
Service Date: November 4, 2005



PICKETT-JACOBS
CONSULTANTS, INC.
A Terracon Company

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 11, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3000 psi @ 28 Days

Batch Time:
Supplier: Contractor's Supplies, Inc.
Truck No: Ticket No:
Mix I.D. No.: 9 (2005)

Sample Information

Sample Time: Date Cast: November 4, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method:
Sample Locations:
Placement Location: Contractor's Supplies Curb & Gutter

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	2		ASTM C-143
Air Content, %:	4.9		ASTM C-173
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	146.0		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	11/11/2005	7	98,500	3,480
1	B	6.00	28.27	11/11/2005	7	102,500	3,620
1	C	6.00	28.27	11/11/2005	7	101,000	3,570
Average							3,560
1	D			12/02/2005	28		
1	E			12/02/2005	28		
1	F			12/02/2005	28		

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by:

William V. Jacobs, P.E.
Associate Principal

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



REPORT OF CONCRETE MIX DESIGN

Date: December 12, 2005
Job No. 93051072
Report No. 93051072.0024

MIX DESIGN NO. 11 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Transit Mix Concrete and Materials, Lufkin, Texas

Specification Requirements:

Location of Usage Class A
Cement Content 345 pounds per cubic yard
Strength 3,000 psi @ 28 days
Coarse Aggr. Size 1-1/2" (Max.)
Slump 4 - 6 inches
Air Content 4 - 6 %
Fly Ash 90.0 lbs. per cubic yard

Materials Source:

Limestone Aggregate TXI Materials, Bridgeport, Texas
Fine Aggregate Crockett Sand & Gravel, Crockett, Texas
Cement Cemex Materials, Houston, Texas
Admixture Degussa Materials (Materials Builders), Houston, Texas
Fly Ash ISG Resources, Tatum, Texas
Pea Gravel Crockett Sand & Gravel, Crockett, Texas

received
12/27/05

Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	345	345
Water	220	170
Fine Aggregate	1352	1393
Coarse Aggregate (Limestone)	1360	1367
Admixture (WRA)	12.7oz.	12.7oz.
Admixture (AEA)	1.8 oz.	1.8 oz.
Fly Ash	90	90
Coarse Aggregate (Pea Gravel)	470	470

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 5.5 inches Air Content 5.5 % Unit Weight 142.1 pcf Yield 27.0 cu.ft.

Submitted by: **PICKETT-JACOBS CONSULTANTS, INC.**
A Terracon Company

William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Terracon

Report Number: 93051072.0024
Service Date: December 12, 2005

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: January 09, 2006
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength:

Batch Time: Plant: Lufkin, Texas
Supplier: Transit Mix Concrete
Truck No: Ticket No:
Mix I.D. No.: 11 (2005)

Sample Information

Sample Time: Date Cast: December 12, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:
Placement Method: Direct Discharge
Sample Locations:

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	5.5		ASTM C-143
Air Content, %:	5.5		ASTM C-172
Concrete Temperature, ° F:			ASTM C-1064
Ambient Temperature, ° F:			
Plastic Unit Weight, pcf:	142.1		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	12/19/2005	7	85,000	3,010
1	B	6.00	28.27	12/19/2005	7	85,000	3,010
1	C	6.00	28.27	12/19/2005	7	85,500	3,020
Average							3,010
1	D	6.00	28.27	01/09/2006	28	144,500	5,110
1	E	6.00	28.27	01/09/2006	28	147,000	5,200
1	F	6.00	28.27	01/09/2006	28	148,000	5,230
Average							5,180

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.


Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Received
Eag 1/12/06

Report Distribution:

(1) City of Lufkin TX

Reviewed by: 
William V. Jacobs, P.E.
Associate Principal

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



REPORT OF CONCRETE MIX DESIGN

Date: November 1, 2005
Job No. 93051072
Report No. 93051072.0016

MIX DESIGN NO. 5 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Transit Mix Concrete and Materials

Specification Requirements:

Location of Usage Class C, E, & S
Cement Content 451 pounds per cubic yard
Strength 3,600 psi @ 28 days
Coarse Aggr. Size 1-1/2" (Max.)
Slump 4 - 6 inches
Air Content 4 - 6 %
Fly Ash 141 lbs. per cubic yard

Materials Source:

Coarse Aggregate TXI Materials, Bridgeport, Texas
Fine Aggregate Crockett Sand & Gravel, Crockett, Texas
Cement Cemex Materials, Houston, Texas
Admixture Degussa Materials (Materials Builders), Houston, Texas
Fly Ash ISG Resources, Tatum, Texas

Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	451	451
Water	215	165
Fine Aggregate	1272	1313
Coarse Aggregate (Limestone)	1875	1884
Admixture (WRA)	22.6 oz.	22.6 oz.
Admixture (AEA)	3.0 oz.	3.0 oz.
Fly Ash	141	141

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 5.5 inches Air Content 5.3 % Unit Weight 146.5 pcf Yield 27.0 cu.ft.

Submitted by: **PICKETT-JACOBS CONSULTANTS, INC.**
A Terracon Company

William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST



PICKETT-JACOBS
CONSULTANTS, INC.
A Terracon Company

Report Number: 93051072.0016
Service Date: November 1, 2005

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 29, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3600 psi @ 28 Days

Batch Time:
Supplier: Tranist Mix Concrete &
Truck No: Ticket No:
Mix I.D. No.: 5 (2005)

Sample Information

Sample Time: Date Cast: November 1, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:
Placement Method: Direct Discharge
Sample Locations: Transit Mix Class C, E, & S

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	5.5		ASTM C-143
Air Content, %:	5.3		ASTM C-173
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	146.5		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	11/08/2005	7	105,000	3,710
1	B	6.00	28.27	11/08/2005	7	105,000	3,710
1	C	6.00	28.27	11/08/2005	7	105,500	3,730
						Average	3,720
1	D	6.00	28.27	11/29/2005	28	195,000	6,900
1	E	6.00	28.27	11/29/2005	28	142,500	5,040
1	F	6.00	28.27	11/29/2005	28	142,000	5,020
						Average	5,650

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by:

William V. Jacobs, P.E.
Associate Principal

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REPORT OF CONCRETE MIX DESIGN

Date: November 4, 2005
 Job No. 93051072
 Report No. 93051072.0020

MIX DESIGN NO. 6 (2005)

Project: City of Lufkin Standard Concrete Mix Design
 Client/Arch./Engr.: City of Lufkin, Texas
 Concrete Supplier: Transit Mix Concrete and Materials

Specification Requirements:

Location of Usage Curb & Gutter
 Cement Content 414 pounds per cubic yard Slump 2 - 3 inches
 Strength 3,000 psi @ 28 days Air Content 4 - 6 %
 Coarse Aggr. Size 3/8" (Max.) Fly Ash 130 lbs. per cubic yard

Materials Source:

Coarse Aggregate Crockett Sand & Gravel, Crockett, Texas
 Fine Aggregate Crockett Sand & Gravel, Crockett, Texas
 Cement Cemex Materials, Houston, Texas
 Admixture Degussa Materials (Materials Builders), Houston, Texas
 Fly Ash ISG Resources, Tatum, Texas


Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	414	414
Water	220	164
Fine Aggregate	1577	1624
Coarse Aggregate (Pea Gravel)	1600	1608
Admixture (WRA)	18.8 oz.	18.8 oz.
Admixture (AEA)	2.0 oz.	2.0 oz.
Fly Ash	130	130

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 2.0 inches Air Content 4.5 % Unit Weight 146.0 pcf Yield 27.0 cu.ft.

Submitted by: PICKETT-JACOBS CONSULTANTS, INC.
 A Terracon Company


 William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Report Number: 93051072.0020
Service Date: November 4, 2005

 **PICKETT-JACOBS
CONSULTANTS, INC.**
A Terracon Company
1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 11, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3000 psi @ 28 Days

Batch Time:
Supplier: Tranist Mix Concrete &
Truck No: Ticket No:
Mix I.D. No.: 6 (2005)

Sample Information

Sample Time: Date Cast: November 4, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method: Direct Discharge
Sample Locations:
Placement Location: Transit Mix Curb & Gutter

Field Test Data

<u>Test</u>	<u>Result</u>	<u>Specification</u>	<u>Test Method</u>
Slump, inches:	2.0		ASTM C-143
Air Content, %:	4.5		ASTM C-172
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	146.0		

Laboratory Test Data

<u>Set No.</u>	<u>Specimen ID</u>	<u>Diameter (inches)</u>	<u>Area (sq. inches)</u>	<u>Date Tested</u>	<u>Age at Test (days)</u>	<u>Maximum Load (lbs)</u>	<u>Compressive Strength (psi)</u>
1	A	6.00	28.27	11/11/2005	7	60,000	2,120
1	B	6.00	28.27	11/11/2005	7	67,500	2,390
1	C	6.00	28.27	11/11/2005	7	63,000	2,230
Average							2,250
1	D			12/02/2005	28		
1	E			12/02/2005	28		
1	F			12/02/2005	28		

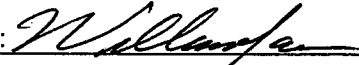
Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by: 
William V. Jacobs, P.E.
Associate Principal

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REPORT OF CONCRETE MIX DESIGN

Date: December 12, 2005
Job No. 93051072
Report No. 93051072.0025

MIX DESIGN NO. 12 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Durrett Ready Mix Concrete, Lufkin, Texas

Specification Requirements:

Location of Usage Class A
Cement Content 345 pounds per cubic yard
Strength 3,000 psi @ 28 days
Coarse Aggr. Size 1-1/2 (Max.)
Slump 4 - 6 inches
Air Content 4 - 6 %
Fly Ash 90.0 lbs. per cubic yard

Materials Source:

Limestone Aggregate Hanson Materials, Chico, Texas
Fine Aggregate Trinity Materials, Rye, Texas
Cement TXI Cement, Hunter, Texas
Admixture Evelid Chemical, Houston, Texas
Fly Ash ISG Resources, Tatum, Texas
Pea Gravel Romayor Sand & Gravel, Romayor, Texas

received
12/27/05

Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	345	376
Water	220	172
Fine Aggregate	1310	1327
Coarse Aggregate (Limestone)	1350	1357
Admixture (WRA)	12.7 oz.	12.7 oz.
Admixture (AEA)	1.7 oz.	1.7 oz.
Fly Ash	90	90
Coarse Aggregate (Pea Gravel)	470	472

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 5.0 Inches Air Content 5.2 % Unit Weight 140.2 pcf Yield 27.0 cu.ft.

Submitted by: **PICKETT-JACOBS CONSULTANTS, INC.**
A Terracon Company

William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Terracon

Report Number: 93051072.0025
Service Date: December 12, 2005

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: January 09, 2006
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3000 psi @ 28 Days

Batch Time: Plant: Lufkin, Texas
Supplier: Durrett Ready Mix Concrete
Truck No: Ticket No:
Mix I.D. No.: 12 (2005)

Sample Information

Sample Time: Date Cast: December 12, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method:
Sample Locations:

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	5.0		ASTM C-143
Air Content, %:	5.2		ASTM C-172
Concrete Temperature, ° F:			ASTM C-1064
Ambient Temperature, ° F:			
Plastic Unit Weight, pcf:	140.2		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	12/19/2005	7	90,000	3,180
1	B	6.00	28.27	12/19/2005	7	89,000	3,150
1	C	6.00	28.27	12/19/2005	7	88,500	3,130
Average							3,150
1	D	6.00	28.27	01/09/2006	28	148,500	5,250
1	E	6.00	28.27	01/09/2006	28	147,000	5,200
1	F	6.00	28.27	01/09/2006	28	147,500	5,220
Average							5,220

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

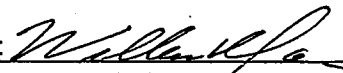
Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Received
Eng 1/12/06

Report Distribution:

1) City of Lufkin TX

Reviewed by: 
William V. Jacobs, P.E.
Associate Principal

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



REPORT OF CONCRETE MIX DESIGN

Date: November 4, 2005
Job No. 93051072
Report No. 93051072.0018

MIX DESIGN NO. 2 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Durrett Ready Mix Concrete, Lufkin, Texas

Specification Requirements:

Location of Usage Class C, E, & S
Cement Content 451 pounds per cubic yard
Strength 3,600 psi @ 28 days
Coarse Aggr. Size 1-1/2 (Max.)
Slump 4 - 6 inches
Air Content 4 - 6 %
Fly Ash 141 lbs. per cubic yard

Materials Source:

Coarse Aggregate Hanson Materials, Chico, Texas
Fine Aggregate Trinity Materials, Rye, Texas
Cement TXI Cement, Hunter, Texas
Admixture Evelid Chemical, Houston, Texas
Fly Ash ISG Resources, Tatum, Texas

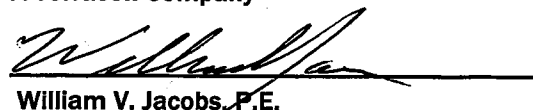
Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	451	451
Water	215	170
Fine Aggregate	1203	1239
Coarse Aggregate (Limestone)	1875	1884
Admixture (WRA)	22.6 oz.	22.6 oz.
Admixture (AEA)	2.8 oz.	2.8 oz.
Fly Ash	141	141

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 5.5 Inches Air Content 5.3 % Unit Weight 143.9 pcf Yield 27.0 cu.ft.

Submitted by: PICKETT-JACOBS CONSULTANTS, INC.
A Terracon Company


William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Report Number: 93051072.0018
Service Date: November 4, 2005



PICKETT-JACOBS
CONSULTANTS, INC.
A Terracon Company

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 11, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3600 psi @ 28 Days

Batch Time:
Supplier: Durrett Ready Mix Concrete
Truck No: Ticket No:
Mix I.D. No.: 2 (20050)

Sample Information

Sample Time: Date Cast: November 4, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method: Direct Discharge
Sample Locations:
Placement Location: Durrett Ready Mix Class C,E, & S

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	5.5		ASTM C-143
Air Content, %:	5.3		ASTM C-173
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	143.9		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	11/11/2005	7	113,000	4,000
1	B	6.00	28.27	11/11/2005	7	112,000	3,960
1	C	6.00	28.27	11/11/2005	7	112,500	3,980
Average							3,980
1	D			12/02/2005	28		
1	E			12/02/2005	28		
1	F			12/02/2005	28		

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by:
William V. Jacobs, P.E.
Associate Principal

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.



REPORT OF CONCRETE MIX DESIGN

Date: November 4, 2005
Job No. 93051072
Report No. 93051072.0021

MIX DESIGN NO. 3 (2005)

Project: City of Lufkin Standard Concrete Mix Design
Client/Arch./Engr.: City of Lufkin, Texas
Concrete Supplier: Durrett Ready Mix Concrete, Lufkin, Texas

Specification Requirements:

Location of Usage Curb and Gutter

Cement Content 414 pounds per cubic yard

Strength 3,000 psi @ 28 days

Coarse Aggr. Size 3/8" (Max.)

Slump 2 - 3 inches

Air Content 4 - 6 %

Fly Ash 130 lbs. per cubic yard

Materials Source:

Coarse Aggregate Hanson Materials, Chico, Texas

Fine Aggregate Trinity Materials, Rye, Texas

Cement TXI Cement, Hunter, Texas

Admixture Evelid Chemical, Houston, Texas

Fly Ash ISG Resources, Tatum, Texas


Mix Design Data: A trial batch using the above materials and specifications was made in our laboratory. Mix design weights based on the saturated - surface - dry (SSD) condition should be corrected during production for actual moisture contents within the aggregates being used. Suggested batch weights for 3.0 % free moisture in the fine aggregate and 0.5 % free moisture in the coarse aggregate are listed below. Physical properties of the aggregates are listed on the attached report.

Material	Mix Design Weight Per Cubic Yard (lbs. - SSD)	Suggested Batch Weights for Indicated Moisture of Aggregates (lbs.)
Cement	414	414
Water	220	167
Fine Aggregate	1489	1534
Coarse Aggregate (Pea Gravel)	1600	1608
Admixture (WRA)	18.6 oz.	18.6 oz.
Admixture (AEA)	1.8 oz.	1.8 oz.
Fly Ash	130	130

Confirmatory cylinders were made from the trial batch, and compressive strength test results will be reported following the proper curing period. The measured properties of the trial batch were:

Slump 2 inches Air Content 5.2 % Unit Weight 142.7 pcf Yield 27.0 cu.ft.

Submitted by: **PICKETT-JACOBS CONSULTANTS, INC.**
A Terracon Company


William V. Jacobs, P.E.

CONCRETE COMPRESSIVE STRENGTH TEST

Report Number: 93051072.0021
Service Date: November 4, 2005



PICKETT-JACOBS
CONSULTANTS, INC.
A Terracon Company

1609 S Chestnut, Ste 107
Lufkin, Texas 75901
(936) 634-5044

Client:
City of Lufkin TX
Attn: Keith Wright
PO Box 190
Engineering Dept
Lufkin TX 75901

Report Date: November 11, 2005
Project: City of Lufkin Concrete Mix Designs
Shepherd Avenue
Lufkin, TX

Project No.: 93051072

Material Information

Specified Strength: 3000 psi @ 28 Days

Batch Time:
Supplier: Durrett Ready Mix Concrete
Truck No: Ticket No:
Mix I.D. No.: 3 (2005)

Sample Information

Sample Time: Date Cast: November 4, 2005
Technician: Micheal Z. Hewitt
Weather Conditions:

Placement Method:
Sample Locations:
Placement Location: Durrett Curb & Gutter

Field Test Data

Test	Result	Specification	Test Method
Slump, inches:	2.0		ASTM C-143
Air Content, %:	5.2		ASTM C-173
Concrete Temperature, ° F:	--		ASTM C-1064
Ambient Temperature, ° F:	--		
Plastic Unit Weight, pcf:	142.7		

Laboratory Test Data

Set No.	Specimen ID	Diameter (inches)	Area (sq. inches)	Date Tested	Age at Test (days)	Maximum Load (lbs)	Compressive Strength (psi)
1	A	6.00	28.27	11/11/2005	7	102,500	3,620
1	B	6.00	28.27	11/11/2005	7	101,000	3,570
1	C	6.00	28.27	11/11/2005	7	105,000	3,710
					Average		3,630
1	D			12/02/2005	28		
1	E			12/02/2005	28		
1	F			12/02/2005	28		

Services - Determine aggregate moisture contents, calculate batch weights, mix materials in lab, sample concrete, perform required tests and cast compressive strength specimens.

Samples made by PJC/Terracon

Technician: Micheal Z. Hewitt

Report Distribution:

1) City of Lufkin TX

Reviewed by:

William V. Jacobs, P.E.
Associate Principal

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

