S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UCU / Brighton Ave./Portland	**Project No:**	07-0559
Client/Client's Rep.:	UCU/Joseph Gervais	**Date:**	7-24-07
Placement Location:	Entire Building	**SWCE Rep.:**	JLD
Placement Type:	Footing ☒ Wall ☐ Column ☐ Slab ☐ Other ☐	**Arrived at Site:**	2:45 pm
		Left Site:	4:30 pm

PRE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Bar Size (diameter, length, bend and anchorage)	Yes ☒	No ☐	☐	#7 instead of #5
Location (# of bars, spacing, and cover)	Yes ☒	No ☐	☐	
Splicing (weld joint, overlap)	Yes ☒	No ☐	☐	
Stability (wiring, chairs, and spacers)	Yes ☐	No ☒	☐	
Reinforcement free from mud, oil, rust, or other nonmetallic coatings	Yes ☒	No ☐	☐	
Reinforcement appears in conformance to specifications	Yes ☒	No ☐	☐	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	By Sebago Tech

Referenced Drawings	**Date**	**Page**	**Rev.**	**ASTM**	**GRADE**
Foundation Drawing	4/30/07	S 1.1		**A 615** ☒	**40** ☐ **50** ☐ **60** ☒
				A 616 ☐	**75** ☐
				A 617 ☐	
				A 706 ☐	**A 775 Epoxy** ☐

CONCRETE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	☐	☐	3000, ¾", w/mid-range
Placement and consolidation of concrete observed	Yes ☒	☐	☐	
Concrete properly conveyed to all areas of placement	Yes ☒	☐	☐	Pump truck
Depth of layer maximum limits not exceeded	Yes ☒	☐	☐	Single layer
Internal vibration (depth of insertion, spacing, time, vertical insertion, no conveyance of concrete by vibration)	Yes ☒	☐	☐	
Even layering around openings and embedments	Yes ☐	☐	☐	N/A
Removal of temporary ties and spacers	Yes ☐	☐	☐	N/A

FIELD TESTING OF CONCRETE PERFORMED Yes ☒ No ☐

***CYLINDER SET NO:** 778-1 ←**refer to associated concrete test report*

POST PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Specified finish	Yes ☒	☐	☐	Trowel
Protection of surfaces from cracking due to rapid drying	Yes ☐	☐	☒	
Proper curing procedures implemented	Yes ☐	☐	☒	

NON-CONFORMANCE ITEMS OBSERVED Yes ☒ No ☐

Non-Conformance Item Description:	Rebar size noted above.
Action Taken by SWCE:	Contractor notified and correct bar installed.
Person(s) Notified:	

N/O = Not Observed

Notes: Approved shop drawings not available. Structural drawings used as reference.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UCU / Brighton Ave./Portland	**Project No:**	07-0559
Client/Client's Rep.:	UCU/Joseph Gervais	**Date:**	7-30-07
Placement Location:	Wall lines A-E & 1-5	**SWCE Rep.:**	VLT
Placement Type:	Footing ☐ Wall ☒ Column ☐ Slab ☐ Other ☐	**Arrived at Site:**	2:45 pm
		Left Site:	4:45 pm

PRE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Bar Size (diameter, length, bend and anchorage)	Yes ☒	No ☐	☐	
Location (# of bars, spacing, and cover)	Yes ☒	No ☐	☐	
Splicing (weld joint, overlap)	Yes ☒	No ☐	☐	
Stability (wiring, chairs, and spacers)	Yes ☒	No ☐	☐	
Reinforcement free from mud, oil, rust, or other nonmetallic coatings	Yes ☒	No ☐	☐	
Reinforcement appears in conformance to specifications	Yes ☒	No ☐	☐	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	N/A

Referenced Drawings	**Date**	**Page**	**Rev.**	**ASTM**	**GRADE**
Foundation Drawing	4/30/07	S 1.1		**A 615** ☒	**40** ☐ **50** ☐ **60** ☒
Foundation Drawing	4/30/07	S 2.1		**A 616** ☐	**75** ☐
				A 617 ☐	
				A 706 ☐	**A 775 Epoxy** ☐

CONCRETE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	☐	☐	3000, ¾", w/mid-range
Placement and consolidation of concrete observed	Yes ☒	☐	☐	
Concrete properly conveyed to all areas of placement	Yes ☒	☐	☐	Pump truck
Depth of layer maximum limits not exceeded	Yes ☒	☐	☐	2 layers
Internal vibration (depth of insertion, spacing, time, vertical insertion, no conveyance of concrete by vibration)	Yes ☒	☐	☐	
Even layering around openings and embedments	Yes ☐	☐	☐	N/A
Removal of temporary ties and spacers	Yes ☐	☐	☐	N/A

FIELD TESTING OF CONCRETE PERFORMED Yes ☒ No ☐

***CYLINDER SET NO:** 778-2 ←**refer to associated concrete test report*

POST PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Specified finish	Yes ☒	☐	☐	Trowel
Protection of surfaces from cracking due to rapid drying	Yes ☐	☐	☒	
Proper curing procedures implemented	Yes ☐	☐	☒	

NON-CONFORMANCE ITEMS OBSERVED Yes ☐ No ☒

Non-Conformance Item Description:

Action Taken by SWCE:

Person(s) Notified:

N/O = Not Observed

Notes: Approved shop drawings not available. Structural drawings used as reference.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UCU / Brighton Ave./Portland	**Project No:**	07-0559
Client/Client's Rep.:	UCU/Joseph Gervais	**Date:**	8-3-07
Placement Location:	Entire Floor Slab	**SWCE Rep.:**	JLD
Placement Type:	Footing ☐ Wall ☐ Column ☐ Slab ☐ Other ☐	**Arrived at Site:**	7:00 am
		Left Site:	9:30 am

PRE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Bar Size (diameter, length, bend and anchorage)	Yes ☒	No ☐	☐	6" x 6" rebar mat
Location (# of bars, spacing, and cover)	Yes ☒	No ☐	☐	
Splicing (weld joint, overlap)	Yes ☒	No ☐	☐	
Stability (wiring, chairs, and spacers)	Yes ☒	No ☐	☐	
Reinforcement free from mud, oil, rust, or other nonmetallic coatings	Yes ☒	No ☐	☐	
Reinforcement appears in conformance to specifications	Yes ☒	No ☐	☐	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	N/A

Referenced Drawings	**Date**	**Page**	**Rev.**	**ASTM**	**GRADE**
				A 615 ☒	**40** ☐ **50** ☐ **60** ☒
				A 616 ☐	**75** ☐
				A 617 ☐	
				A 706 ☐	**A 775 Epoxy** ☐

CONCRETE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	☐	☐	4000, ¾", w/mid-range
Placement and consolidation of concrete observed	Yes ☒	☐	☐	
Concrete properly conveyed to all areas of placement	Yes ☒	☐	☐	Bucket & crane
Depth of layer maximum limits not exceeded	Yes ☐	☐	☐	N/A
Internal vibration (depth of insertion, spacing, time, vertical insertion, no conveyance of concrete by vibration)	Yes ☐	☐	☐	N/A
Even layering around openings and embedments	Yes ☐	☐	☐	N/A
Removal of temporary ties and spacers	Yes ☐	☐	☐	N/A

FIELD TESTING OF CONCRETE PERFORMED Yes ☒ No ☐

***CYLINDER SET NO:** 778-3 ←**refer to associated concrete test report*

POST PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Specified finish	Yes ☒	☐	☐	Trowel
Protection of surfaces from cracking due to rapid drying	Yes ☐	☐	☒	
Proper curing procedures implemented	Yes ☐	☐	☒	

NON-CONFORMANCE ITEMS OBSERVED Yes ☐ No ☒

Non-Conformance Item Description:

Action Taken by SWCE:

Person(s) Notified:

N/O = Not Observed

Notes: Approved shop drawings not available. Structural drawings used as reference. Vapor barrier installed beneath slab.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UCU / Brighton Ave./Portland	**Project No:**	07-0559
Client/Client's Rep.:	UCU/Joseph Gervais	**Date:**	8-6-07
Placement Location:	F/6, F/7, F/8, G/6, G/7 & G/8 (exterior piers)	**SWCE Rep.:**	CKT
Placement Type:	Footing ☒ Wall ☐ Column ☐ Slab ☐ Other ☐	**Arrived at Site:**	9:30 am
		Left Site:	10:45 am

PRE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Bar Size (diameter, length, bend and anchorage)	Yes ☒	No ☐	☐	#7's, #3's
Location (# of bars, spacing, and cover)	Yes ☒	No ☐	☐	<1" (see notes)
Splicing (weld joint, overlap)	Yes ☒	No ☐	☐	
Stability (wiring, chairs, and spacers)	Yes ☒	No ☐	☐	brick
Reinforcement free from mud, oil, rust, or other nonmetallic coatings	Yes ☒	No ☐	☐	
Reinforcement appears in conformance to specifications	Yes ☒	No ☐	☐	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	

Referenced Drawings	**Date**	**Page**	**Rev.**	**ASTM**	**GRADE**
Foundation Drawings	4/30/07	S 1.1		**A 615** ☒	**40** ☐ **50** ☐ **60** ☒
				A 616 ☐	**75** ☐
				A 617 ☐	
				A 706 ☐	**A 775 Epoxy** ☐

CONCRETE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	☐	☐	3000, ¾", w/mid-range
Placement and consolidation of concrete observed	Yes ☒	☐	☐	
Concrete properly conveyed to all areas of placement	Yes ☒	☐	☐	Tailgate
Depth of layer maximum limits not exceeded	Yes ☒	☐	☐	Single
Internal vibration (depth of insertion, spacing, time, vertical insertion, no conveyance of concrete by vibration)	Yes ☒	☐	☐	
Even layering around openings and embedments	Yes ☐	☐	☐	N/A
Removal of temporary ties and spacers	Yes ☐	☐	☐	N/A

FIELD TESTING OF CONCRETE PERFORMED Yes ☒ No ☐

***CYLINDER SET NO:** 778-4 ←**refer to associated concrete test report*

POST PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Specified finish	Yes ☒	☐	☐	Trowel
Protection of surfaces from cracking due to rapid drying	Yes ☐	☐	☒	
Proper curing procedures implemented	Yes ☐	☐	☒	

NON-CONFORMANCE ITEMS OBSERVED Yes ☒ No ☐

Non-Conformance Item Description:	Rebar cover inadequate.
Action Taken by SWCE:	Brand Partners notified. Correction made.
Person(s) Notified:	

N/O = Not Observed

Notes: Approved shop drawings not available. Structural drawings used as reference.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Concrete Construction Observation Report

Project Name/Location:	UCU / Brighton Ave./Portland	**Project No:**	07-0559
Client/Client's Rep.:	UCU/Joseph Gervais	**Date:**	10-11-07
Placement Location:	ATM/Drive Thru Slabs	**SWCE Rep.:**	VLT
Placement Type:	Footing ☐ Wall ☐ Column ☐ Slab ☒ Other ☐	**Arrived at Site:**	11:30 am
		Left Site:	12:45 pm

PRE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Bar Size (diameter, length, bend and anchorage)	Yes ☒	No ☐	☐	
Location (# of bars, spacing, and cover)	Yes ☒	No ☐	☐	
Splicing (weld joint, overlap)	Yes ☒	No ☐	☐	
Stability (wiring, chairs, and spacers)	Yes ☒	No ☐	☐	
Reinforcement free from mud, oil, rust, or other nonmetallic coatings	Yes ☒	No ☐	☐	
Reinforcement appears in conformance to specifications	Yes ☒	No ☐	☐	
Soil subgrade prepared in accordance with project specifications	Yes ☐	No ☐	☒	

Referenced Drawings	**Date**	**Page**	**Rev.**	**ASTM**	**GRADE**
Foundation Drawings	4/30/07	S 1.1		**A 615** ☒	**40** ☐ **50** ☐ **60** ☒
				A 616 ☐	**75** ☐
				A 617 ☐	
				A 706 ☐	**A 775 Epoxy** ☐

CONCRETE PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Required mix used	Yes ☒	☐	☐	4000, ¾", w/mid-range
Placement and consolidation of concrete observed	Yes ☒	☐	☐	
Concrete properly conveyed to all areas of placement	Yes ☒	☐	☐	Tailgate
Depth of layer maximum limits not exceeded	Yes ☒	☐	☐	Single
Internal vibration (depth of insertion, spacing, time, vertical insertion, no conveyance of concrete by vibration)	Yes ☒	☐	☐	
Even layering around openings and embedments	Yes ☐	☐	☐	N/A
Removal of temporary ties and spacers	Yes ☐	☐	☐	N/A

FIELD TESTING OF CONCRETE PERFORMED Yes ☒ No ☐

***CYLINDER SET NO:** 778-5 ←**refer to associated concrete test report*

POST PLACEMENT OBSERVATIONS	**In Compliance**		**N/O**	**Comments**
Specified finish	Yes ☒	☐	☐	Trowel
Protection of surfaces from cracking due to rapid drying	Yes ☐	☐	☒	
Proper curing procedures implemented	Yes ☐	☐	☒	

NON-CONFORMANCE ITEMS OBSERVED Yes ☒ No ☐

Non-Conformance Item Description:

Action Taken by SWCE:

Person(s) Notified:

N/O = Not Observed

Notes: Approved shop drawings not available. Structural drawings used as reference. 1% non-chloride accelerator added.

Attachments: None

Reviewed By: RED

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - UNIVERSITY CREDIT UNION - BRIGHTON AVENUE - MATERIALS TESTING

Project Number: 07-0559

Client: UNIVERSITY CREDIT UNION

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 7/24/2007 **Time Cast:** 3:15

Date Received: 7/25/2007

Placement Location: FOOTING OF BUILDING

Placement Method: PUMP TRUCK

Cylinders Made By: JLD

Placement Vol. (yd³): 40

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (ºF) **Maximum (ºF)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143):

Slump WR: 6

Air Content (%) (C-231):

Air WR: 5.5

Air Temp (ºF): 70

Conc. Temp (ºF) (C-1064): 75

Load Number: 1

Mixer Number: 106

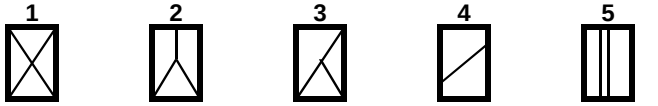
Ticket Number: 129255

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
778-1A		6.00	28.27	7/31/2007	Lab	**7**	4	100.0	**3540**
778-1B		6.00	28.27	8/21/2007	Lab	**28**	4	132.0	**4670**
778-1C		6.00	28.27	8/21/2007	Lab	**28**	4	128.0	**4530**
778-1D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - UNIVERSITY CREDIT UNION - BRIGHTON AVENUE - MATERIALS TESTING

Project Number: 07-0559

Client: UNIVERSITY CREDIT UNION

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 7/30/2007 **Time Cast:** 4:30

Date Received: 7/31/2007

Placement Location: WALL LINES A-E & 1-5

Placement Method: PUMP

Placement Vol. (yd³): 26

Cylinders Made By: VLT

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (ºF) **Maximum (ºF)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 5 3/4

Air Content (%) (C-231): **Air WR:** 4.5

Air Temp (ºF): 80

Conc. Temp (ºF) (C-1064): 81

Load Number: 2

Mixer Number: 94

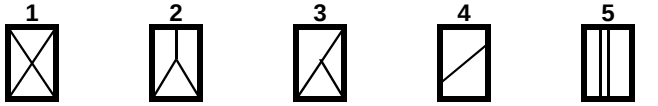
Ticket Number: 132475

Cubic Yards: 10

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
778-2A		6.00	28.27	8/6/2007	Lab	**7**	4	89.5	**3170**
778-2B		6.00	28.27	8/27/2007	Lab	**28**	4	119.5	**4230**
778-2C		6.00	28.27	8/27/2007	Lab	**28**	4	116.0	**4100**
778-2D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - UNIVERSITY CREDIT UNION - BRIGHTON AVENUE - MATERIALS TESTING

Project Number: 07-0559

Client: UNIVERSITY CREDIT UNION

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/3/2007 **Time Cast:** 7:30 **Date Received:** 8/4/2007

Placement Location: FLOOR SLAB

Placement Method: BUCKET/CHUTE

Placement Vol. (yd³): 41

Cylinders Made By: JLD

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (ºF) **Maximum (ºF)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 4

Air Content (%) (C-231): **Air WR:** 2

Air Temp (ºF): 74

Conc. Temp (ºF) (C-1064): 79

Load Number: 2

Mixer Number: 94

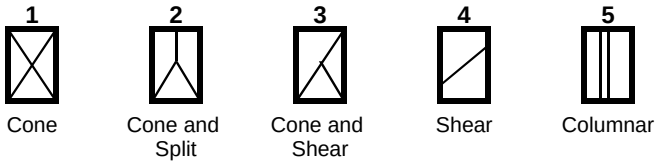
Ticket Number: 129600

Cubic Yards: 20

Design (psi): **4000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
778-3A		6.00	28.27	8/10/2007	Lab	**7**	4	92.0	**3250**
778-3B		6.00	28.27	8/31/2007	Lab	**28**	4	115.0	**4070**
778-3C		6.00	28.27	8/31/2007	Lab	**28**	4	112.0	**3960**
778-3D		6.00	28.27	9/28/2007	Lab	**56**	4	138.5	**4900**

Fracture Types



Remarks:

286 Portland Road, Gray, ME 04039-9586 • Tel (207) 657-2866 • Fax (207) 657-2840 • www.swcole.com

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - UNIVERSITY CREDIT UNION - BRIGHTON AVENUE - MATERIALS TESTING

Project Number: 07-0559

Client: UNIVERSITY CREDIT UNION

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 8/6/2007 **Time Cast:** 10:15

Date Received: 8/7/2007

Placement Location: PIER F-6, F-7, F-8, G-6, G-7, G-8

Placement Method: TAILGATE

Cylinders Made By: CKT

Placement Vol. (yd^3): 4

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (ºF) **Maximum (ºF)**

DELIVERY INFORMATION

Admixtures: POLYHEED 1020

TEST RESULTS

Slump (in) (C-143): 6.5

Air Content (%) (C-231): 5.4

Air Temp (ºF): 63

Conc. Temp (ºF) (C-1064): 74

Load Number: 1

Mixer Number: 84

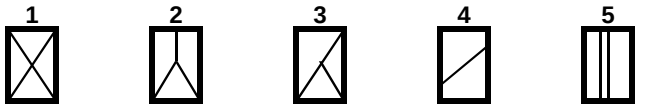
Ticket Number: 129667

Cubic Yards: 4

Design (psi): **3000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
778-4A		6.00	28.27	8/9/2007	Lab	**3**	4	67.0	**2370**
778-4B		6.00	28.27	9/3/2007	Lab	**28**	4	109.0	**3860**
778-4C		6.00	28.27	9/3/2007	Lab	**28**	4	98.5	**3480**
778-4D				Hold	Lab				

Fracture Types



Remarks:

S.W.COLE ENGINEERING, INC.

Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: PORTLAND - UNIVERSITY CREDIT UNION - BRIGHTON AVENUE - MATERIALS TESTING

Project Number: 07-0559

Client: UNIVERSITY CREDIT UNION

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 10/11/2007 **Time Cast:** 12:35

Date Received: 10/12/2007

Placement Location: ATM / DRIVE THRU SLABS

Placement Method: TAILGATE

Cylinders Made By: VLT

Placement Vol. (yd³): 19

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (ºF) **Maximum (ºF)**

DELIVERY INFORMATION

Admixtures: 170 POZZUTEC 20 + NON CHLORIDE POLYHEED 1020

TEST RESULTS

Slump (in) (C-143): **Slump WR:** 6 3/4

Air Content (%) (C-231): **Air WR:** 4.2

Air Temp (ºF): 53

Conc. Temp (ºF) (C-1064): 67

Load Number: 1

Mixer Number: 84

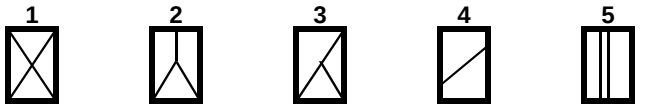
Ticket Number: 134702

Cubic Yards: 11

Design (psi): **4000**

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In)²	Date Of Test	Cure Type	**Age (days)**	Fracture Type	Load (kips)	**Strength (psi)**
778-5A		6.00	28.27	10/18/2007	Lab	**7**	4	120.5	**4260**
778-5B				11/8/2007	Lab	**28**			
778-5C				11/8/2007	Lab	**28**			
778-5D				Hold	Lab				

Fracture Types



1 Cone; 2 Cone and Split; 3 Cone and Shear; 4 Shear; 5 Columnar

Remarks: