APPENDIX B

Specimen Shop Drawings

REPLACEMENT SPANCRETE "I-GIRDER" MATERIAL LIST SHEET#: 1

PC. #	QTY.	SIZE	LENGTH	WEIGHT	CONCRETE CU./YD.	SPAN#
1-7607	5	36"	8'-0"	3,280#	0.78 CY	1

"PRODUCTION NOTES"

1. ALL REBAR DIMENSIONS IN SCHEDULE ARE OUT TO OUT.
2. ALL STRANDS TO BE CUT FLUSH W/ ENDS OF GIRDERS.
3. TOPS OF GIRDERS TO BE ROUGH FLOATED AND BROOMED TRANSVERSLY FOR BONDING-
~ TO THE SLAB, EXCEPT THE OUTSIDE 2" SHALL BE TROWEL FINISHED.
4. ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON BITUMINOUS JOINT SEALER.
~ (THIS APPLIES ONLY TO THOSE ENDS OF GIRDER THAT ARE FINALLY EXPOSED).
5. GIRDER DATA: STRANDS:
( ) 1/2"ø 270,000 P.S.I. LOW-RELAXATION STRANDS (UN-DRAPED) (STRESS TO K)
~ LONG BARS-----FY= 60 KSI ~ CONCRETE STRENGTH @ RELEASE: (4,800) PSI
~ STIRRUPS------FY= 60 KSI ~ CONCRETE STRENGTH @ 28-DAYS: (6,000) PSI
7. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A497.

SPANCRETE INC.
2448 CENTURY ROAD
GREEN BAY, WI.54307-0608

SPANCRETE.

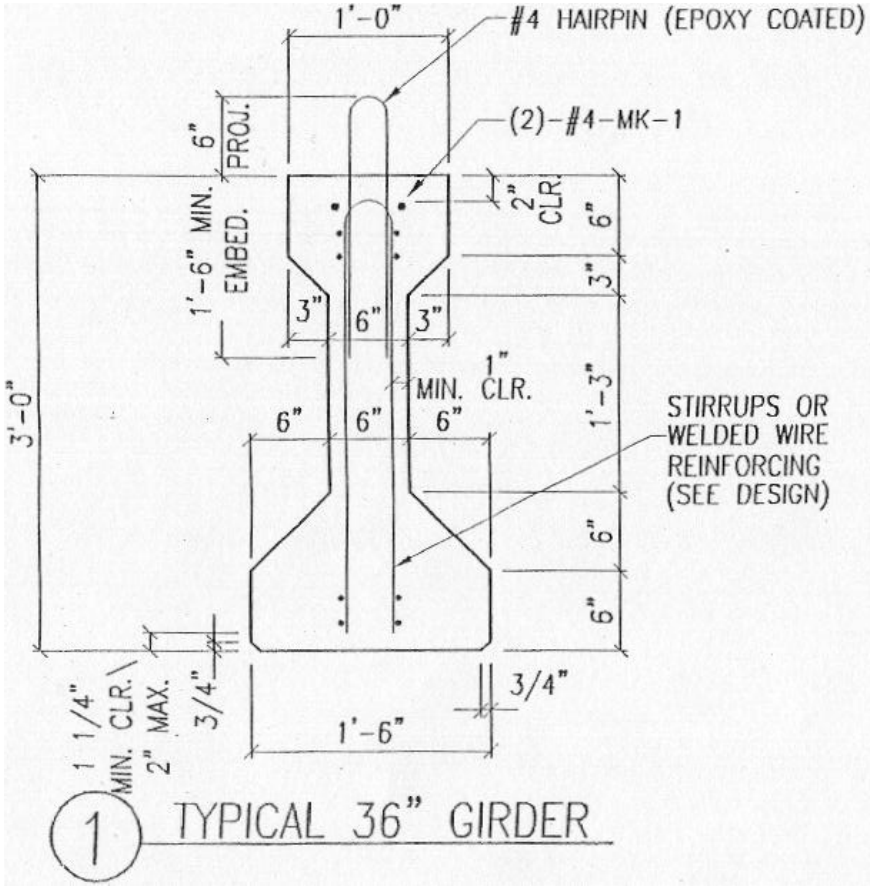
TEST BEAMS
UNIVERSITY OF WISCONSIN-
MIWAUKEE

STA.# :
STRUCTURE # :
SECTION # :
PROJECT # :
COUNTY :

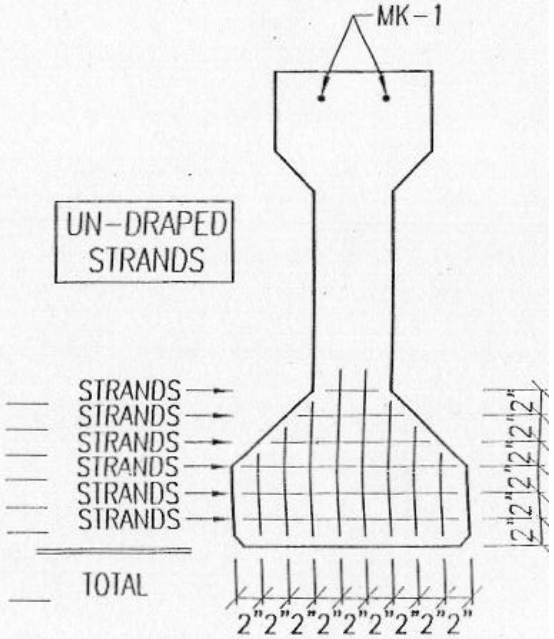
ENGINEER:	DRAWN BY: KRISTI	DATE: 12-12-01
CONTRACTOR:	JOB CAPTAIN: TP-9211	CHECKED: URC 12/14/01
APPROVED: REVISED:		JOB NO.: 1-7607
DRAWING FILE NO.: H:\DWG1\1-7607\SHT01.DWG TASK# 2402		SHEET: 1 OF 1

CAST IN HARDWARE					
MK.#	QTY.	LENGTH	SIZE	SHAPE	REMARKS
1 4–0508	20	5'-8"	#4	5'-0" 8"	(2) REQ'D. @ TOP EACH END
3 5–0306	20	3'-6"	#5	2'-6" 6" 6"	(2) REQ'D @ EA. END
4 5–0308	40	3'-8"	#5	2'-8" 6" 6"	HALF RIGHT HALF LEFT
6 3–0302	140	3'-2"	#3	12" 8 1/2" 14" 3 1/2"	(7) LOC. EA. END. (EPOXY COATED) (USED IN PAIRS)
7 4–0702	10	7'-2"	#4	3'-0" 14" 3'-0"	(1) REQ'D @ EA. END @ BTM.
9 4–0700	10	7'-0"	#4	3'-2" 8" 3'-2"	(1) REQ'D @ EA. END @ TOP

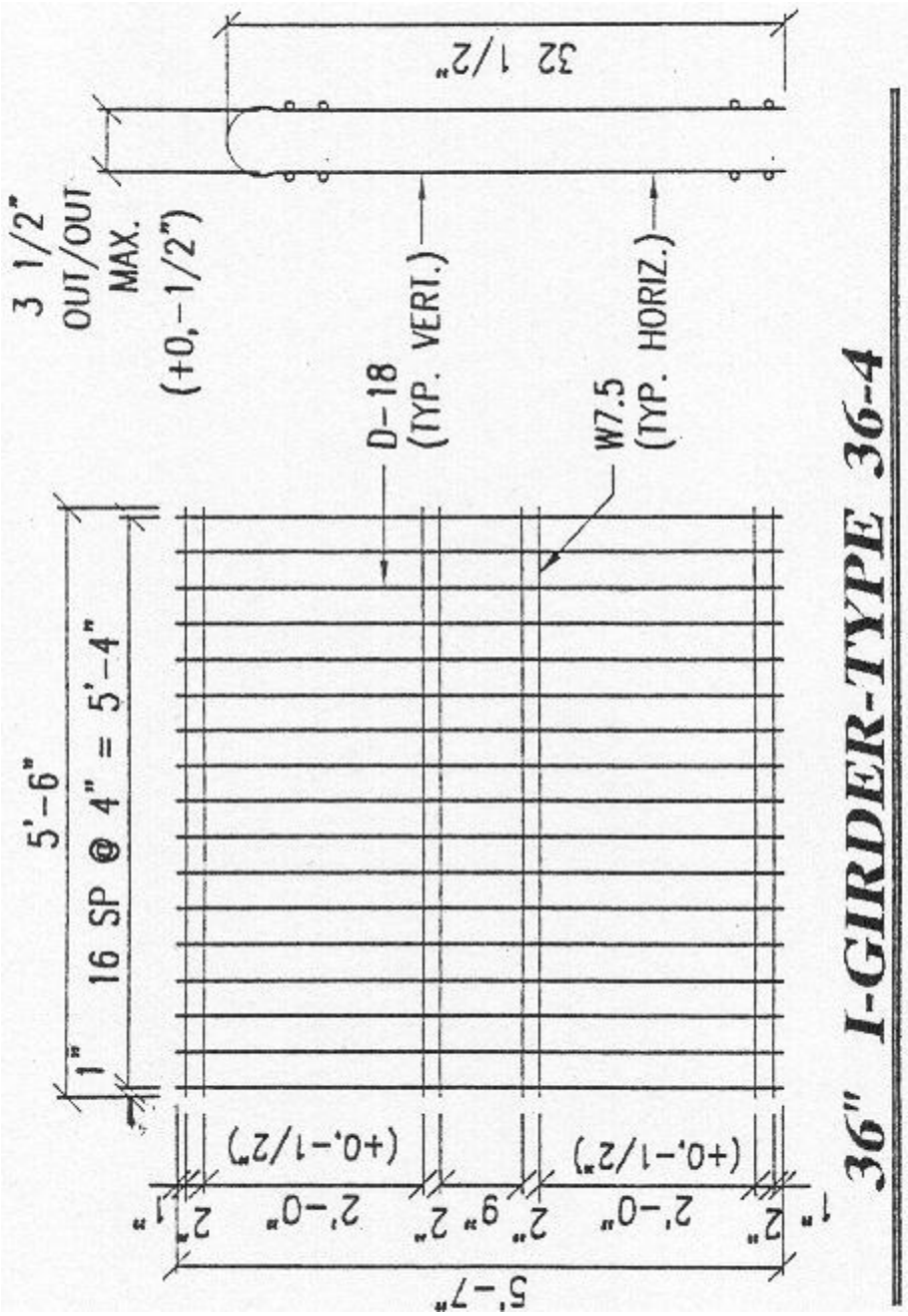
20 4–0404	152	4'-3 1/2"	#4	3 1/2" 24" 24"	U-SHAPED EPOXY COATED
36–4	154 SF	SEE DESIGN	W7.5xD18	3 1/2" 32 1/2"	U-SHAPED BENT (SEE DESIGN DETAIL)
0481603	LF 1/2"ø 270 KSI LOW-RELAXATION (7) WIRE STRAND				

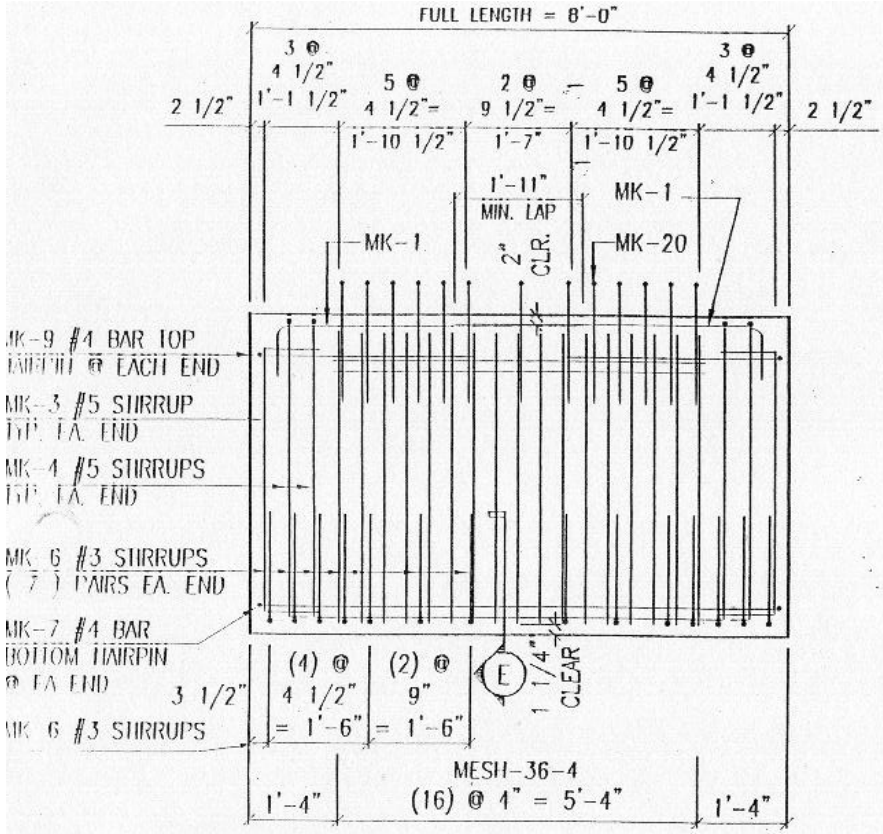


1 TYPICAL 36" GIRDER

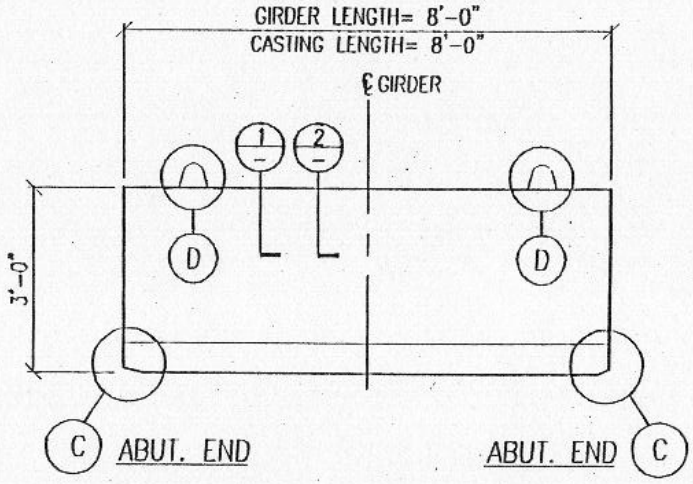


2 SECTION

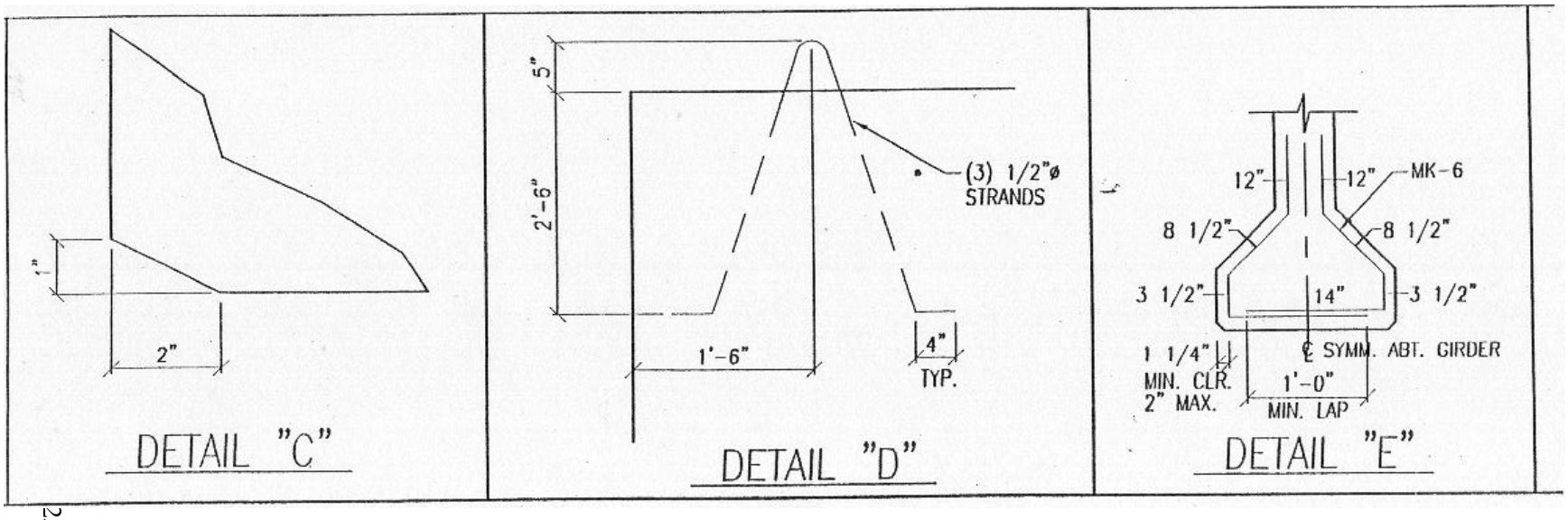

5'-6"
1"
16 SP @ 4" = 5'-4"
3 1/2"
OUT/OUT
MAX.
(+0,-1/2")
D-18
(TYP. VERT.)
W7.5
(TYP. HORIZ.)
32 1/2"
(+0,-1/2")
(+0,-1/2")
2"
2'-0"
2"
9"
2"
2'-0"
2"
1"
5'-7"
36" I-GIRDER-TYPE 36-4



STIRRUP & MESH DESIGN



STRAND PROFILE– STRAIGHT


1"
2"
DETAIL "C"
5"
2'-6"
(3) 1/2"ø
STRANDS
1'-6"
4"
TYP.
DETAIL "D"
12"
12"
MK-6
8 1/2"
8 1/2"
3 1/2"
14"
3 1/2"
1 1/4"
MIN. CLR.
2" MAX.
℄ SYMM. ABT. GIRDER
1'-0"
MIN. LAP
DETAIL "E"

APPENDIX C

Spancrete Test Reports

SPANCRETE®
INCORPORATED

precast, prestressed concrete roof, floor and wall systems

SALES OFFICE: P.O. BOX 10508 • 2448 CENTURY ROAD • GREEN BAY, WI 54307-0508 • 920 / 494-0274 • FAX 920 / 494-7901

February 15, 2002

DR. HABIB TABATABAI, PH.D., P.E., S.E.
UNIVERSITY OF WISCONSIN-MILWAUKEE
DEPARTMENT OF CIVIL ENGINEERING & MECHANICS
3200 N. CRAMER ST.
MILWAUKEE WI 53211

Enclosed are the 28-day test reports for the (5) 36" I beams we made for you.

If you have any questions or would like additional information, please contact me at (920) 965.9451.

Sincerely,

Michael Grochowski
Quality Control

MG:sd
enc

please reply to ADMINISTRATIVE OFFICE unless indicated below

SPANCRETE INDUSTRIES, INC.

SPANCRETE, INC.
☐ PLANT
P.O. Box 188
Valders, Wisconsin 54245
920 / 775-4121
Fax 920 / 775-4511

☐ SALES OFFICE
P.O. Box 828
Waukesha, WI 53187-0828
414 / 290-9000
Fax 414 / 290-9125

☐ PLANT
1600 East Main Street
Waukesha, Wisconsin 53186
414 / 290-9000 • Fax 414 / 290-9170
Engineering
414 / 290-9100 • Fax 414 / 290-9120

SPANCRETE OF ILLINOIS, INC.
☐ PLANT & SALES OFFICE
4012 Route 14
Crystal Lake, Illinois 60014
815 / 459-5580
773 / 775-6402
Fax 815 / 459-0510

SPECIMEN TYPES: Concrete
0 - Cylinder
1 - Cube
2 - Beam, Center Point Loading
3 - Beam, Third Point Loading, Fracture in Middle Third of Span
4 - Beam, Third Point Loading, Fracture Outside of Middle Third
5 - Cross Sectional Area

Cylinder Break Type per ASTM C39
1 - Cone
2 - Cone and Split
3 - Cone and Shear
4 - Shear
5 - Columar

	DATE	TIME	OP ID#	SP TYP	SP ID#	AREA (sq in)	LENGTH (in)	PK LOAD (Lb)	PK STRESS (Lb/sq in)	C.F.	BRK TYPE	
1	01-08-02	07:06	11		074700211	12.566	8.000	59120.	4704.	1.000	4	
2	01-08-02	07:09	11		074700221	12.566	8.000	56740.	4515.	1.000	4	
3	01-08-02	07:13	11		073370811	12.566	8.000	51590.	4105.	1.000	4	
4	01-08-02	12:26	11		074145581	12.566	8.000	89780.	7144.	1.000	4	
5	01-08-02	12:29	11		074142683	12.566	8.000	94800.	7543.	1.000	4	
6	01-08-02	12:32	11		074790581	12.566	8.000	101470.	8074.	1.000	4	
7	01-09-02	07:07	11		074700311	12.566	8.000	56880.	4526.	1.000	4	
8	01-09-02	07:09	11		074700321	12.566	8.000	53890.	4288.	1.000	4	
9	01-09-02	07:14	11		073370911	12.566	8.000	43710.	3478.	1.000	4	
10	01-09-02	07:31	11		074170111	12.566	8.000	65450.	5208.	1.000	4	
11	01-09-02	08:07	11		072531311	12.566	8.000	56560.	4500.	1.000	4	
12	01-09-02	08:35	11		073370912	12.566	8.000	51020.	4060.	1.000	4	
13	01-09-02	13:03	11		074145681	12.566	8.000	96330.	7665.	1.000	4	
14	01-09-02	13:07	11		074142783	12.566	8.000	101690.	8092.	1.000	4	
15	01-09-02	13:10	11		075430181	12.566	8.000	87640.	6974.	1.000	4	
16	01-09-02	13:14	11		072530581	12.566	8.000	95530.	7602.	1.000	4	
17	01-10-02	07:09	11		074700411	12.566	8.000	65140.	5183.	1.000	4	
18	01-10-02	07:12	11		074700421	12.566	8.000	60860.	4843.	1.000	4	
19	01-10-02	07:16	11		073371011	12.566	8.000	67060.	5336.	1.000	4	
20	01-10-02	07:19	11		074140211	12.566	8.000	45400.	3612.	1.000	4	
21	01-10-02	08:21	11		076070111	28.274	12.000	188730.	6674.	1.000	4	RELEASE
22	01-10-02	08:24	11		076070112	28.274	12.000	184430.	6522.	1.000	4	
23	01-10-02	12:30	11		074145781	12.566	8.000	100540.	8000.	1.000	4	
24	01-10-02	12:33	11		074142883	12.566	8.000	95790.	7622.	1.000	4	
25	01-10-02	12:36	11		075430281	12.566	8.000	96180.	7653.	1.000	4	
26	01-10-02	15:13	11		072530681	12.566	8.000	104180.	8290.	1.000	4	

STATISTICS: 26 Samples

Low:	43710.	3478.
Mean:	83481.	6008.
High:	188730.	8290.
+3 Sigma:	193484.	10946.
-3 Sigma:	-26521.	1071.

SPECIMEN TYPES: Concrete
0 - Cylinder
' - Cube
Beam, Center Point Loading
3 - Beam, Third Point Loading, Fracture in Middle Third of Span
4 - Beam, Third Point Loading, Fracture Outside of Middle Third
5 - Cross Sectional Area

Cylinder Break Type per ASTM C39
1 - Cone
2 - Cone and Split
3 - Cone and Shear
4 - Shear
5 - Columar

	DATE	TIME	OP ID#	SP TYP	SP ID#	AREA (sq in)	LENGTH (in)	PK LOAD (Lb)	PK STRESS (Lb/sq in)	C.F.	BRK TYPE
1	02-05-02	07:06	11		074140411	12.566	8.000	39400.	3135.	1.000	4
2	02-05-02	07:10	11		074144931	12.566	8.000	57380.	4566.	1.000	4
3	02-05-02	08:12	11		074140211	12.566	8.000	58990.	4694.	1.000	4
4	02-05-02	08:16	11		076560411	28.274	12.000	145300.	5138.	1.000	4
5	02-05-02	08:20	11		076560421	28.274	12.000	139810.	4944.	1.000	4
6	02-05-02	08:33	11		074140412	12.566	8.000	45090.	3588.	1.000	4
7	02-05-02	12:00	11		074700381	12.566	8.000	110280.	8775.	1.000	4
8	02-05-02	12:21	11		074700382	12.566	8.000	105100.	8363.	1.000	4
9	02-05-02	12:24	11		072531381	12.566	8.000	111970.	8910.	1.000	4
10	02-05-02	12:27	11		073370981	12.566	8.000	90450.	7197.	1.000	4
11	02-05-02	16:52	11		074170181	12.566	8.000	98610.	7847.	1.000	4
12	02-06-02	07:08	11		074140511	12.566	8.000	59880.	4765.	1.000	4
13	02-06-02	07:11	11		074144931	12.566	8.000	57040.	4539.	1.000	4
14	02-06-02	08:19	11		076560511	28.274	12.000	151760.	5367.	1.000	4
15	02-06-02	08:22	11		076560521	28.274	12.000	136740.	4836.	1.000	4
16	02-06-02	15:18	11		076070181	12.566	8.000	111300.	8856.	1.000	4
17	02-06-02	15:21	11		076070182	12.566	8.000	110330.	8779.	1.000	4
18	02-06-02	15:28	11		076070183	12.566	8.000	111550.	8876.	1.000	4
19	02-06-02	15:50	11		074700481	12.566	8.000	107930.	8588.	1.000	4
20	02-06-02	17:03	11		074700482	12.566	8.000	97610.	7767.	1.000	4
21	02-06-02	17:04	11		073371081	12.566	8.000	107070.	8520.	1.000	4
22	02-06-02	17:06	11		074170281	12.566	8.000	88940.	7077.	1.000	4
23	02-07-02	07:14	11		074145111	12.566	8.000	60190.	4789.	1.000	4
24	02-07-02	07:18	11		0 2060211	12.566	8.000	60230.	4792.	1.000	4
25	02-07-02	08:16	11		076560611	28.274	12.000	165300.	5846.	1.000	4
26	02-07-02	08:20	11		076560621	28.274	12.000	174680.	6178.	1.000	4
27	02-07-02	08:44	11		0 0	12.566	8.000	66470.	5289.	1.000	4
28	02-07-02	14:55	11		074143683	12.566	8.000	100200.	7973.	1.000	4
29	02-07-02	14:58	11		074141982	12.566	8.000	92430.	7355.	1.000	4
30	02-07-02	15:07	11		074170381	12.566	8.000	91260.	7262.	1.000	4
31	02-07-02	15:12	11		073371181	12.566	8.000	94480.	7518.	1.000	4
32	02-07-02	15:14	11		072531481	12.566	8.000	90430.	7196.	1.000	4

28 DAY

STATISTICS: 32 Samples

Low:	39400.	3135.
Mean:	98068.	6541.
High:	174680.	8910.
+3 Sigma:	201082.	11884.
-3 Sigma:	-4945.	1199.

THIS MEMORANDUM is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading,

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

DATE: 9/10/2001

16226

SHIPPER NO.

P.O. NO. 2176713

BOL #: 22690-1

TO: CONSIGNEE

SPANCRETE INDUSTRIES
2448 CENTURY RD.
GREEN BAY WI 54303
(414)290-9000

FROM: SHIPPER

STRUCTURAL REINFORCEMENT PROD.
409-A FOREST ROAD
HUMBOLDT INDUSTRIAL PARK
POW BOX 1828
HAZLETON, PA 18201

No. Packages	Description Of Articles, Special Marks And Exceptions		Weight Subject To Correction
100	95-SPA-011239-36-4 VX4-D7.5/D18 (GRADE 70) 66''(+0.5,+0.5)X8'2''(1,1) LS(0.5''OH,1@2,1@24,1@2,1@10, 1@2,0.5''OH)	24590	10,192
100	95-SPA-011239-36-8 VX8-D7.5/D18 (GRADE 70) 66''(+0.5,+0.5)X12'2''(1,1) LS(0.5''OH,1@2,1@24,1@2,1@10, 1@2,0.5''OH)	24591	8,961
150	95-SPA-011239-36-17 VX17-D7.5/D18 (GRADE 70) 66''(+0.5,+0.5)X14'4''(1,1) LS(0.5''OH,1@2,1@24,1@2,1@10, 1@2,0.5''OH)	24592	10,008
150	95-SPA-011239-45-8 VX8-D7.5/D18 (GRADE 70) 84''(+0.5,+0.5)X12'2''(1,1) LS(0.5''OH,1@2,1@32,1@2,1@10, 1@2,0.5''OH)	24594	16,055
		TOTAL WEIGHT	45,216

SPANCRETE INC.
GREEN BAY
RECEIVED
9-28-01
DATE:
SIGN:
FJB

SPANCRETE INC.
GREEN BAY
RECEIVED

DATE:
SIGN:

‡Subject to Section 7 Conditions of applicable bill lading, if this shipment is to delivered to the consignee with recourse on the consignor, t consignor shall sign the followi statement.
The carrier shall not ma delivery of this shipment withe payment of freight and all oth lawful charges.

SIGNATURE OF CONSIGN

If charges are to be prepaid, wr or stamp here, "To be Prepaid."

Received $ _____
to apply in prepayment of the charg on the property described hereon.

Agent or Cashier

Per _____
(The signature here acknowledg only the amount prepaid.)

Charges Advanced

$ _____

† Shipper's imprint in lieu stamp not a part of bill of ladi approved by the Interista Commerce Commission.

† The fibre boxes used for th shipment conform to th specifications set forth in the b maker's certificate thereon, and other requirements of Consolidat Freight Classification.

If the shipment moves between p ports by a carrier by water, the l requires that the bill of lading sh state whether it is carrier's shipper's weight."

NOTE - Where the rate dependent on value, shippers a required to state specifically writing the agreed or declared val of the property.

The agreed or declared value the property is hereby specifica stated by the shipper to be not

exceeding _____

per _____

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight."
NOTE–Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

per

RFJ KUSCO

'RUCTURAL REINFORCEMENT PRODUCTS

TR-4803 Agent.

Per _____ TA

Per _____

Permanent post-office address of shipper, HAZLETON, PA 18201

RENDER FREIGHT BILLS IN DUPLICATE

1 of 1

SEP 26 2001

3

REBAR AND MESH REPORT

Job Number: 1-7607 Job Name: 36" IB

Mesh/Rebar Size	Grade	I.D. #/ Heat #	Quantity/Sht's/Lin. Ft.
36-4	70	SRP 95-SPA-011239-36-4	154 sq ft.
# 4	60	5502I1618 Birm.	88' MK-1
# 4	60	" " "	140' MK-7, 9
# 5	60	5502I1858 Birm	210' MK-3,4

STRESSING DATA - SPANCRETE GREEN BAY Inspector: M. GRUCHOWSKI

Job No.: 1-7607-2402 Structure No. UW MILWAUKEE Project No.: _____

Bed: 36" I-BEAM Total Stress fsi: _____ No. Strand: _____

Strand Manufacturer: SWPC Grade: 270K Diameter: 1/2

Reel No.: DM 17246 DM17751 Heat No.: D242715

Area (A): .1528 Mod Elasticity (E): 28400 000

Load Per Strand (Pi): 31000 Lbs Bed Len Inches (L): 2625

Initial Preload (Pp): 3000 Lbs. Pi + Group I lbs (Pt): 31000 + 826 = 31826

Group I Losses (Added Force)	Group II (Added Elongation)
Chuck Slippage: ½F = 826	Strand Splices: See Pour Sheet
Thermal: _____	Dead End Seating: _____
Anchor Movement: _____	Other: _____
Other: _____	$\frac{.5 \times .1528 \times 28400000}{2625} = 826$

Concrete Temp: ± (stressing temp greater than 25° differeance to be corrected 1% per 10°.)

Thermal = (Degree difference greater than 25°) + 10° = % correction factor.

(Product len. inches + bed len.) x Pi x correction factor = (Thermal load pounds).

$\frac{(Pt - Pp) \times L}{A \times E}$ = Elongation

Group I Losses = $\frac{(\text{Total Inches}) \times A \times E}{L}$

35°
60°

$\frac{40 \times 12}{2625} = 18\% \times 31000 \times .025 = 140^{\#} + 31826 = 31966$

$\frac{(31966 - 3000) \times 2625}{.1528 \times 28400000} = 17.52 + 1/8 = 17\frac{5}{8}$ gross $\boxed{17\frac{1}{8} \text{ net}}$ min $16\frac{1}{4}$ max 18

3000 + 826 + 14 = 3840

STRUCTURAL REINFORCEMENT PRODUCTS

QUALITY CONTROL DEPARTMENT
MILL CERTIFICATION REPORT

CUSTOMER NAME: SPANCRETE IND. ORDER #: 22680 CURRENT DATE: 10/23/01

PROJECT NUMBER: 01-1238 LOT#: 4590 DATE TESTED: 09/20/01

PRODUCT CODE: 95-SPA-011239-36-4 SAMPLES REQUIRED: 1

SHEET DESIGNATION: V x 4 D 7.5 D 18.0 66 " x 8.17 ' GRADE: 70 SHEET QUANTITY: 100

THE PROPERTIES OF THE MATERIAL ORDERED WERE TESTED FOR COMPLIANCE WITH ASTM SPECIFICATIONS A496 AND A497 WITH THE FOLLOWING RECORDED RESULTS:

LONGITUDINAL SAMPLE (7.5) HEAT NO: 125885	1	2	3	4	AVG	NOMINAL	RESULT
WEIGHT PER FOOT(LBS):	0.269	0.000	0.000	0.000	0.269	0.255	PASS
YIELD LOAD(LBS):	0	0	0	0	0	5250	N/A
YIELD STRENGTH(KSI):	0.0	0.0	0.0	0.0	0.0	70.0	N/A
TENSILE LOAD(LBS):	7246	0	0	0	7246	6000	PASS
TENSILE STRENGTH(KSI):	96.6	0.0	0.0	0.0	96.6	80.0	PASS
DEFORMATION HEIGHT(IN):	0.0260	0.0000	0.0000	0.0000	0.0260	0.0139	PASS
BEND TEST:							PASS

TRANSVERSE SAMPLE (18.0) HEAT NO: 906349	1	2	3	4	AVG	NOMINAL	RESULT
WEIGHT PER FOOT(LBS):	0.578	0.000	0.000	0.000	0.578	0.611	PASS
YIELD LOAD(LBS):	0	0	0	0	0	12600	N/A
YIELD STRENGTH(KSI):	0.0	0.0	0.0	0.0	0.0	70.0	N/A
TENSILE LOAD(LBS):	15231	0	0	0	15231	14400	PASS
TENSILE STRENGTH(KSI):	84.6	0.0	0.0	0.0	84.6	80.0	PASS
DEFORMATION HEIGHT(IN):	0.028	0.000	0.000	0.000	0.0280	0.024	PASS
BEND TEST:							PASS
WELD SHEAR(PSI)	6492	7398	6316	6738	6736	6300	PASS

STATEMENT

THE UNDERSIGNED CERTIFIES THAT THE ABOVE IS A TRUE AND ACCURATE REPRESENTATION OF THE TEST RESULTS OBTAINED ON THE DESCRIBED MATERIAL AS APPEARING ON COMPANY RECORDS. THIS DOCUMENT CERTIFIES THAT THE MATERIAL MENTIONED ABOVE MEETS THE REQUIRED ASTM SPECIFICATIONS AND THAT ALL MATERIAL WAS PROCESSED WITHIN THE UNITED STATES OF AMERICA.

THE MATERIAL TESTED DOES ☒ DOES NOT ☐ CONFORM WITH THE ABOVE STATEMENT

REGARDS,

DAVID MUNDIE
QUALITY CONTROL

The First Two Digits Of The Heat Number Denote Plant of Origin:
55 - Kankakee, Illinois Steel Division
58 - Birmingham, Alabama Steel Division
70 - Seattle, Washington Steel Division
31 - Jackson, Mississippi Steel Division

CERTIFIED MILL T

SOLD TO
- AMBASSADOR STEEL CORP
- PO BOX 2340
- KOKOMO, IN 46904-2340

SHIP TO
- AMBASSADOR STEEL CORP
- CUST TRUCK
- KOKOMO, IN

BIRMINGHAM STEEL CORP
KANKAKEE, IL STEEL DIVISION
972 EAST 4500 N ROAD
BOURBONNAIS, IL 60914-4127
(815)937-3131

11310140 1
DATE: 09/25/01
B.L. NO.: 55-I57848
LOAD NO.: 5520023957

HEAT NO.*	DESCRIPTION	PHYSICAL TESTS YIELD P.S.I.	TENSILE P.S.I.	ELONG % IN 8"	Bend	WT% / DEF	CHEMICAL TESTS C / Ni	Mn / Cr	P / Mo	S / V	Si / Cb	Cu	C.E.
PO#: BB23957													
5502I1617	KANKAKEE, IL STEEL DIVISION	71,500	111,700	12.0%	OK	-3.7%	.09	1.00	.017	.037	.19	.36	
	13 Rebar 60'(Gr420/#4Gr60)	493MPa	770MPa			.038	.15	.20	.07	.001	.001		
	ASTM A615/A615M-96a, GR 420												
5502I1618	KANKAKEE, IL STEEL DIVISION	70,000	109,200	10.0%	OK	-3.1%							
10-4-01	13 Rebar 60'(Gr420/#4Gr60)	483MPa	753MPa			.038							
	ASTM A615/A615M-96a, GR 420												
5502I1080	KANKAKEE, IL STEEL DIVISION	69,300	105,100	13.0%	OK	-4.4%	.39	1.02	.009	.053	.22	.42	
	16 Rebar 60'(Gr420/#5Gr60)	478MPa	725MPa			.038	.14	.12	.07	.013	.001		
	ASTM A615/A615M-96a, GR 420												
5502I1081	KANKAKEE, IL STEEL DIVISION	68,500	103,500	14.0%	OK	-3.9%	.39	.99	.009	.053	.26	.35	
10-4-01	16 Rebar 60'(Gr420/#5Gr60)	472MPa	714MPa			.039	.13	.12	.07	.013	.001		
	ASTM A615/A615M-96a, GR 420												

CE 1080 = $.39 + \frac{1.02}{6} = .56$ 100% per heat required

CE 1081 = $.39 + \frac{.99}{6} = .555$ 100% per heat required

SPANCRETE INC.
GREEN BAY
RECEIVED
DATE: 9-26-01
SIGN: T DB

HEREBY CERTIFY THAT THE ABOVE FIGURES ARE CORRECT AS CONTAINED IN THE RECORDS OF THE CORPORATION.
MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. IN COMPLIANCE WITH THE "BUY AMERICAN" PROVISION OF THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982.

GLEN MCADAM
QUALITY ASSURANCE

Spancrete Pour Report
Green Bay, WI

Job Name: TEST BEAMS UW MILWAUKEE WI

County:

Job No: 1-7607 - 2402

Bed: 36" I-BEAM

Struc No:

Date: 1-9-02

Project No:

Pour No: 1

Mix Design:

Strand Usage: 4500

Yards Poured:

Actual: 800

WRDA 19 @ oz= (Gal)

Waste: 3700

Daratard @ oz= (Gal)

Steam On: 7:15

ADVA CAST @ oz= (Gal)

Steam Off: 6:30

DARACEM 65 @ oz= (Gal)

Max Temp: 134 to 144°

W.C. =

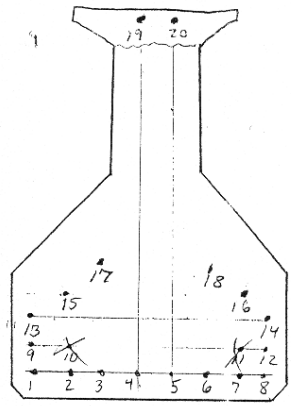
Cement Source:

Avg Moisture Sand: %

Avg Water Per Yd: (Gal)

Pc. Number	Pc. Length
1-7607	8'-0"
1-7607	8'-0"
1-7607	8'-0"
1-7607	8'-0"
1-7607	8'-0"
	40'-0"

Strand Loc.	Initial	⊗ Net ○ Gross	T. Force + ½ Seat	Measured Elongation ☑ Pull Witnessed					
8(1/2) @ 2"	3000	17 1/8	31966	1	—	2	17 3/4	3	17 3/4
2		16 1/4 / 18		4	19 1/8	5	18	6	18
				7	18	8	18 1/8		
4(1/2) @ 4"				9	17 3/4	10		11	
2				12	17 5/8				
2(1/2) @ 6"				13	17 5/8	14	18		
2(1/2) @ 8"				15	17 3/4	16	17 1/2		
2(1/2) @ 10"				17	17 3/4	18	17 7/8		
2 1/2 @ 34"	—	—	~~3000~~	19	17 7/8	20	17 7/8		



⊗ No Savers Used

○ Savers Allow 1/4" Slip

○ Savers Allow 1/8" Slip

Concrete Temp Est: 60

⊗ Hercules ✓ Temp: 35°

○ Simms Time: 7:50

⊗ Pre-Pour Inspection Completed

✓ Pour Start: 3:00 Pour Finish: 3:35

Pour Start: Pour Finish:

Reel No: DM 17746 DM17751

Required Release: 4800 PSI

Lead Man: GENE S.

Cyl. Break Hrs: 15

Inspector: MG

P1- 16675

P1- 6523

Cyl. No: P.1

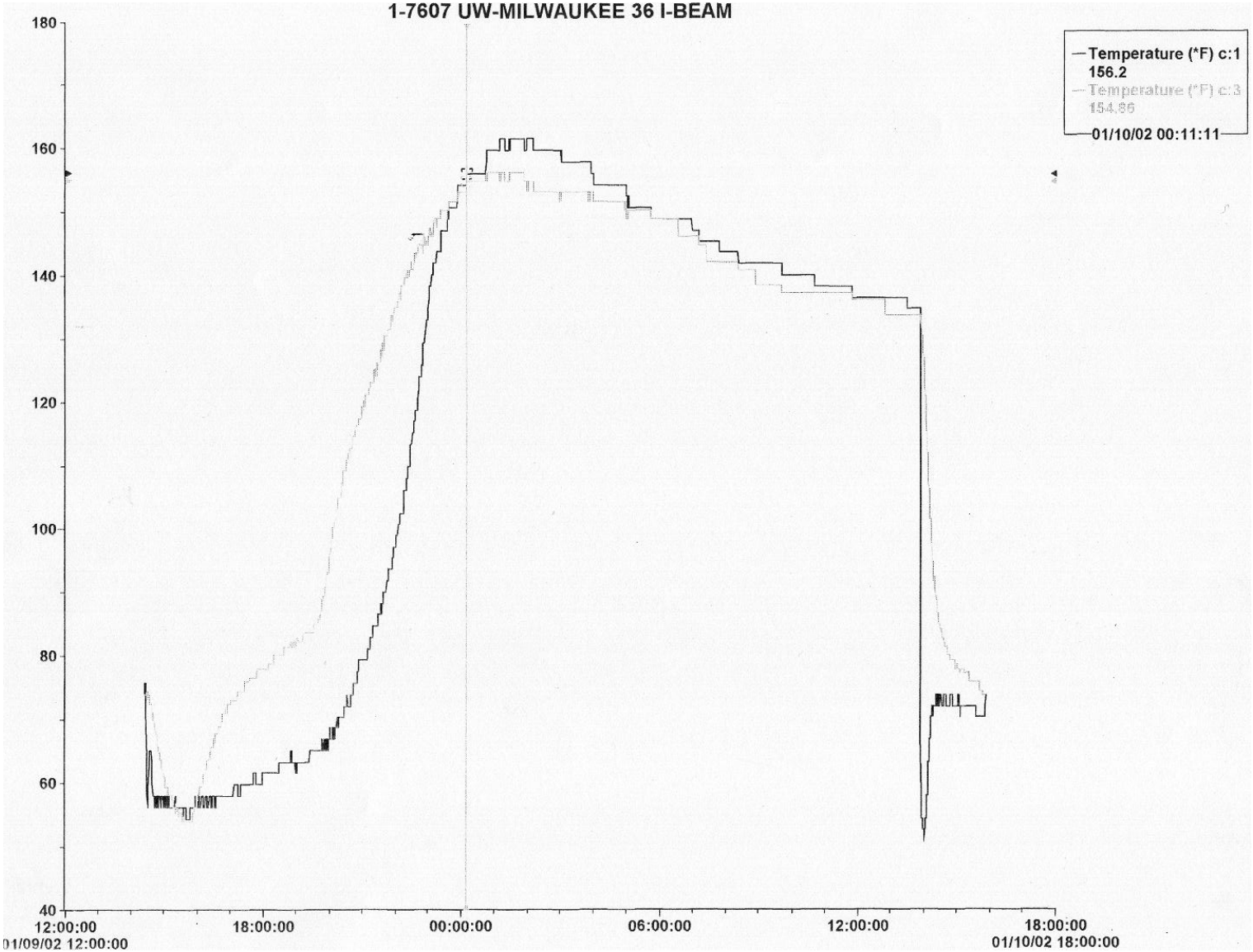
Slump: 7 1/2

Temp: 54°

Air %: —

Pour Temp & Cond: Sunny high 40's

Comments:


1-7607 UW-MILWAUKEE 36 I-BEAM
Temperature (*F) c:1
156.2
Temperature (*F) c:3
154.86
01/10/02 00:11:11
180
160
140
120
100
80
60
40
12:00:00
01/09/02 12:00:00
18:00:00
00:00:00
06:00:00
12:00:00
18:00:00
01/10/02 18:00:00

APPENDIX D

Chloride Test Data

Measurement of the acid soluble chloride content of hardened concrete by the RCT method 2/13/2002

Report #: _____ **Structure:** _____ **Project:** _____

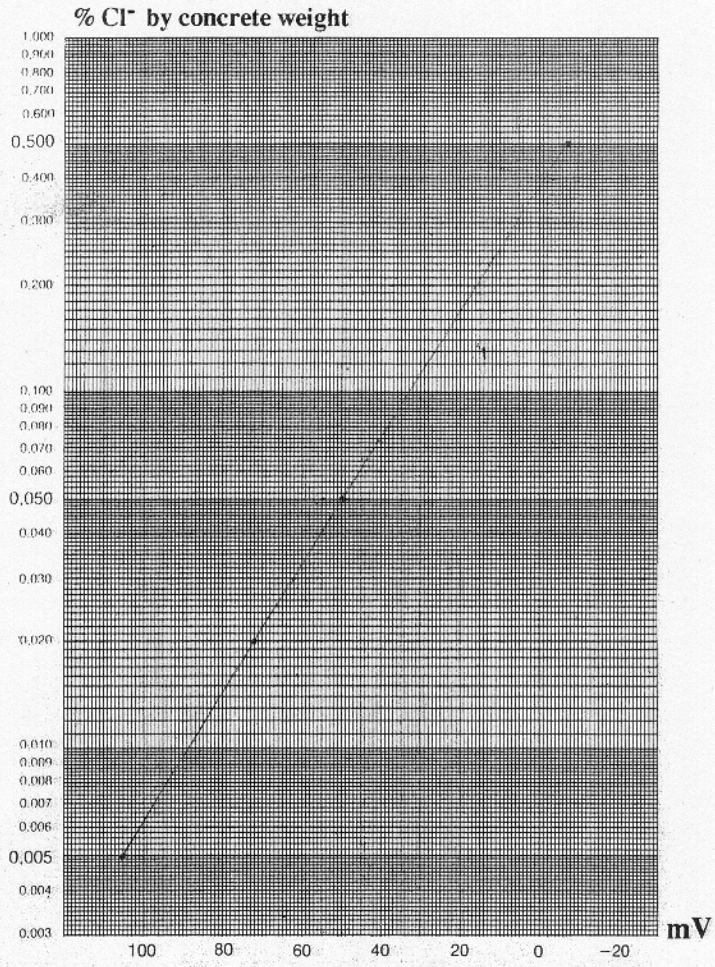
Date of testing: _____ **Electrode #:** _____ **Person:** _____

Testing Lab: 185 **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	105	72.2	50.1	-7.2
mV after				

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1/4"	62.5	0.030			
1/2"	54.8	0.041			
3/4"	40.5	0.072			
7/8"	55.3	0.040			

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: 2/19/2002 **Structure:** _____ **Project:** _____

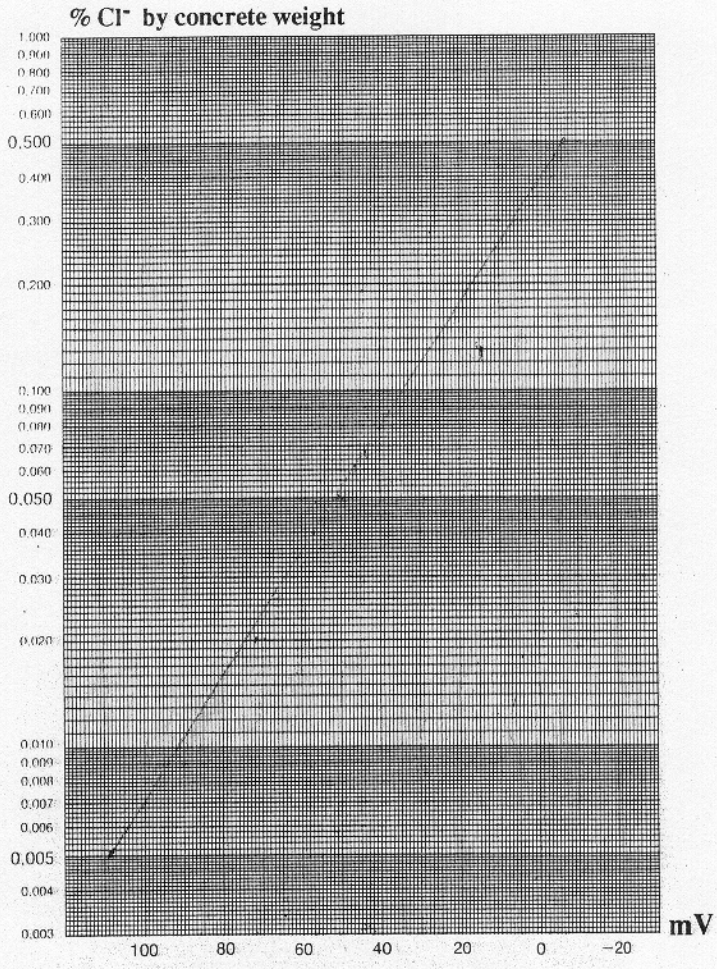
Date of testing: _____ **Electrode #:** _____ **Person:** _____

Testing Lab: WSDOT **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	108.9	71.7	50.5	-6.4
mV after				

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1/4"	57.2	0.040			
1/2"	46.5	0.061			
3/4"	44.1	0.069			
7/8"	43.3	0.070			

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 2 – Patch CE **Project:** _____

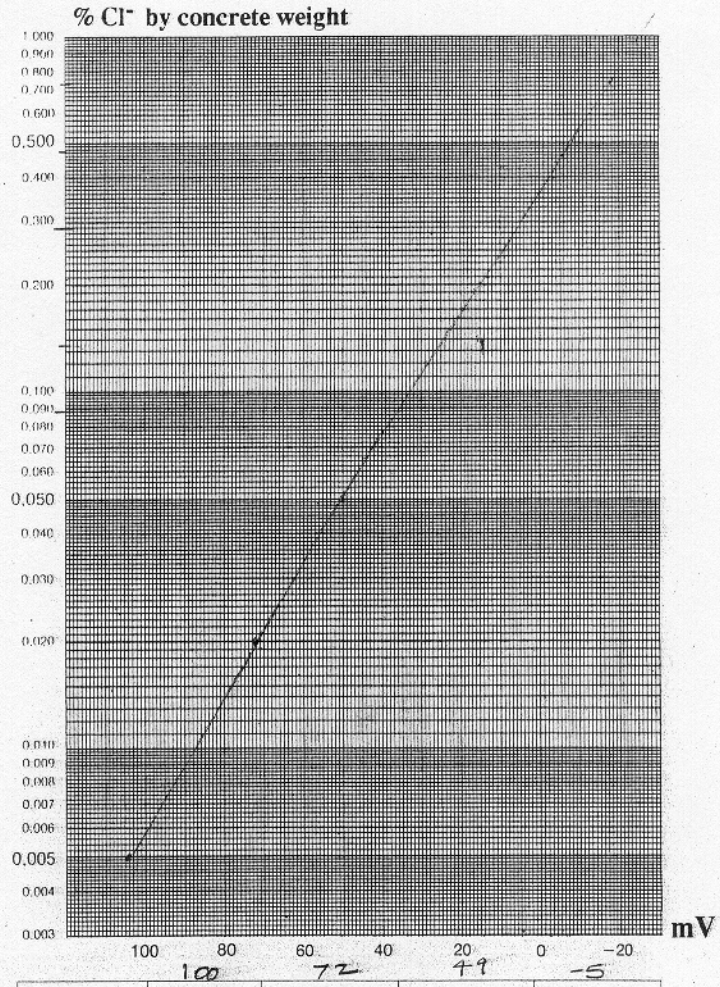
Date of testing: 11/18 **Electrode #:** _____ **Person:** _____

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	104.6	72.5	50.5	−6.8
mV after				

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
2" → 1/4	−24.3	0.96			
1/2	−18.1	0.74			
3/4	−6.4	0.47			
1"	6.5	0.29			
6" → 1/4	12.5	0.21			
1/2	6.5	0.29			
3/4	36.1	0.188			
1"	25.6	0.135			

from face of beam

Measurement of the acid soluble chloride content of fresh concrete by the RCT method

Report #: _____ Mix Identification: _____ Project: Water Test

Date of testing: 7/17 Electrode #: _____ Person: _____

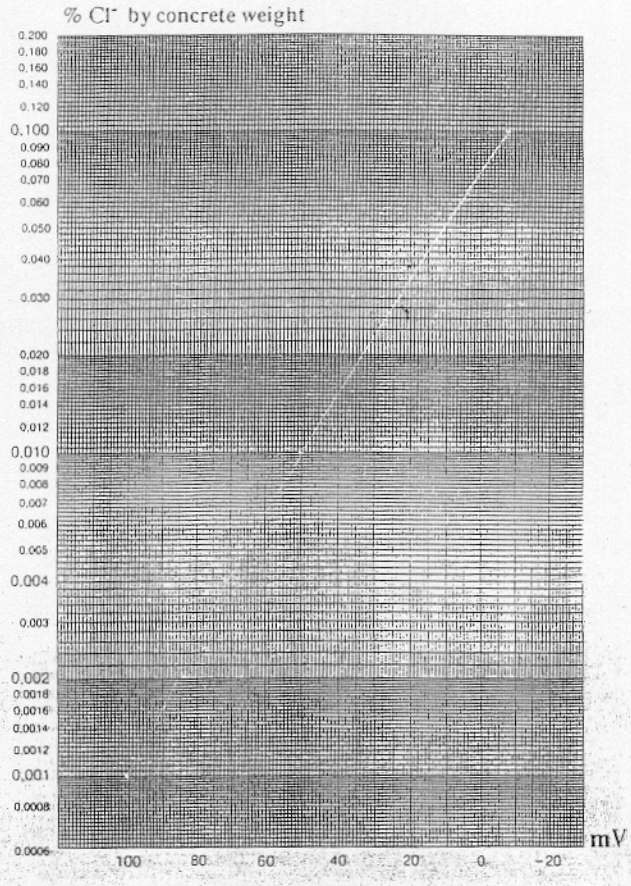
Testing Lab: _____ Address: _____ Phone: _____

tested with 300 mL H_2O

RCT

FRESH CONCRETE

0.1 liter of fresh concrete mixed into 290 milliliter of RCT extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.001	0.004	0.010	0.100
mV before	100.7	71.5	50.1	-7.4
mV after				

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
Green Bay	90.2	0.00165	90.3	0.00165	
Milwaukee	93.7	0.0014	93.5	0.0014	

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 1 SW **Project:** _____

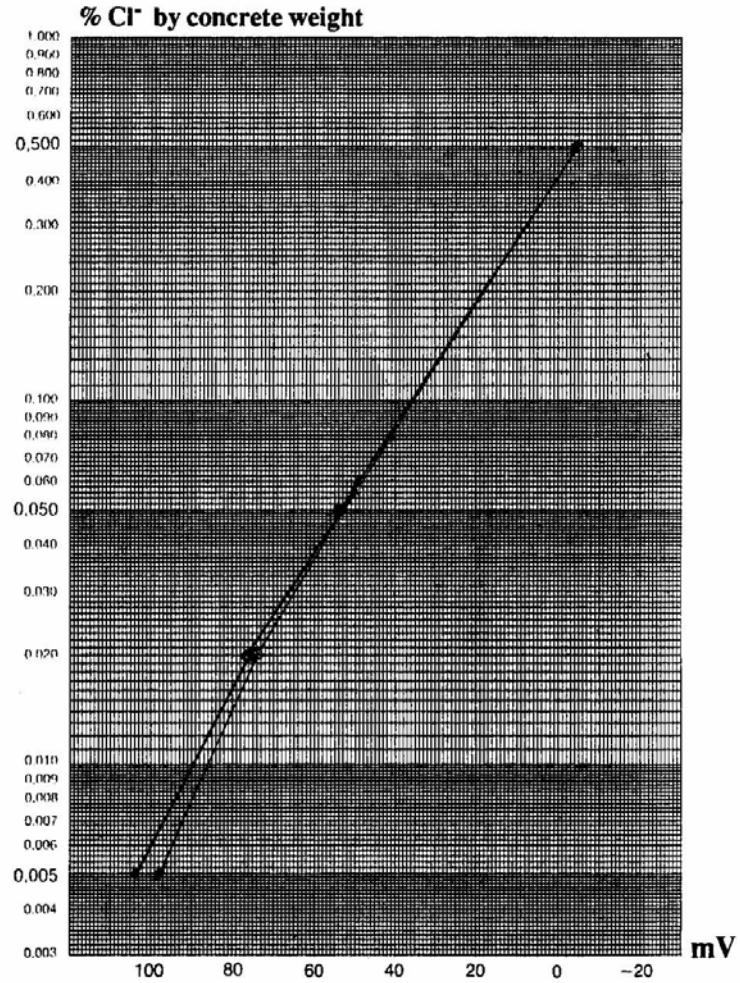
Date of testing: 12-30-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	98.1	74.3	53.1	-4.8
mV after	103.6	76.1	54.2	-4.1

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	43.5	0.071	49.1	0.059	1/4 - 3/4
2	49.0	0.058	49.3	0.058	3/4 - 5/4
3	49.5	0.057	49.2	0.058	5/4 - 7/4
4	41.2	0.080	41.1	0.081	7/4 - 1 1/4
5	43.8	0.070	43.9	0.072	1 1/4 - 1 3/4
6	42.5	0.075	42.3	0.078	1 3/4 - 2 1/4

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 1 SE **Project:** _____

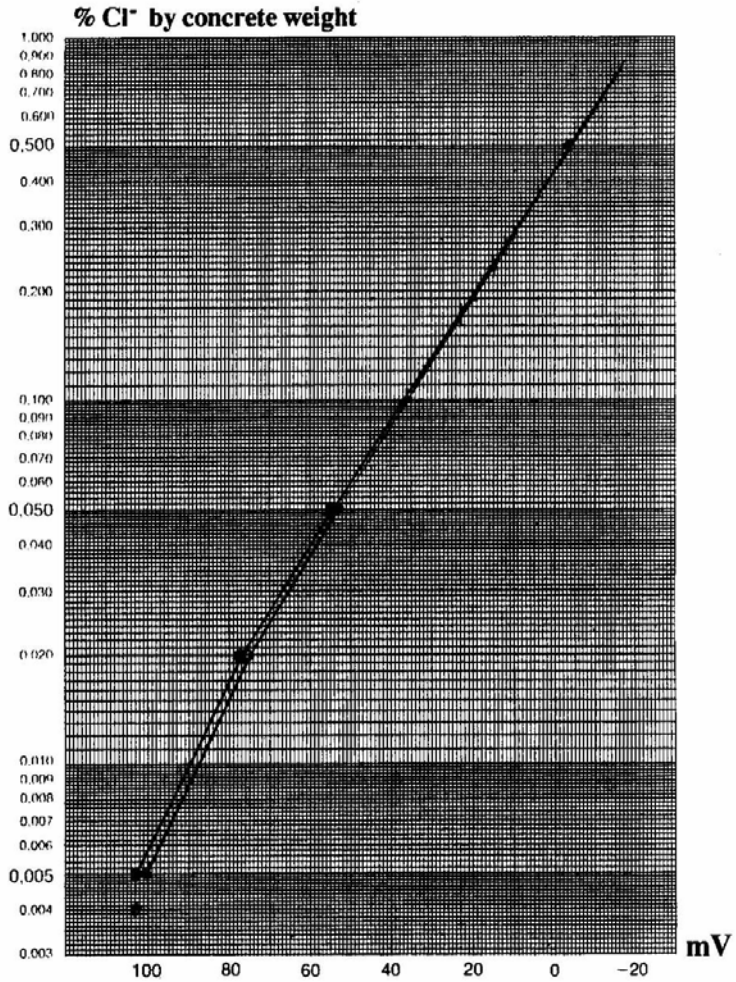
Date of testing 12-30-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	102.9	77.4	54.5	-3.4
mV after	100.4	74.9	53.0	-3.5

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	-15.3	0.78	-11.9	0.650	1/8 - 3/8
2	-8.8	0.62	-9.9	0.640	3/8 - 5/8
3	15.1	0.24	14.5	0.240	5/8 - 7/8
4	11.4	0.26	10.1	0.285	7/8 - 1 1/8
5	23.2	0.17	20.2	0.190	1 1/8 - 1 3/8
6	35.8	0.105	35.0	0.103	1 3/8 - 1 5/8

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 2 SW **Project:** _____

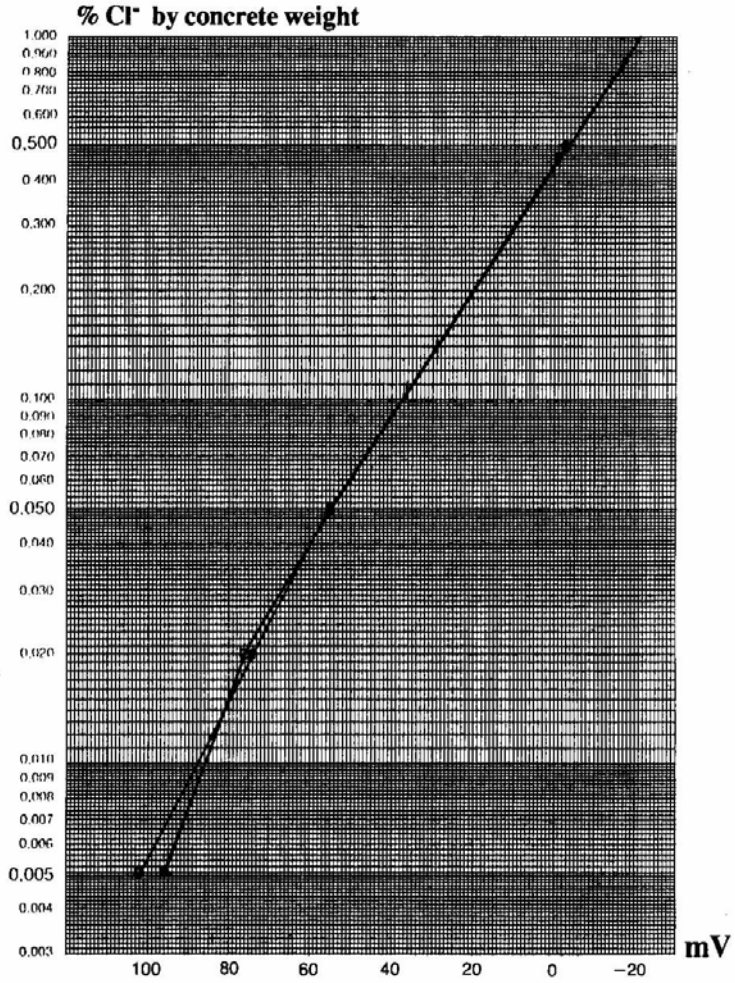
Date of testing: 12-30-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	101.7	73.9	54.4	-2.7
mV after	96.1	76.0	54.2	-2.8

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	-16.8	0.83	-15.2	0.79	1/8 - 3/8
2	-0.9	0.46	1.1	0.42	3/8 - 5/8
3	19.5	0.205	18.0	0.215	5/8 - 7/8
4	36.0	0.105	36.6	0.102	7/8 - 1 1/8
5	28.6	0.140	28.0	0.145	1 1/8 - 1 3/8
6	37.1	0.100	37.1	0.100	1 3/8 - 1 5/8

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 2 SE **Project:** _____

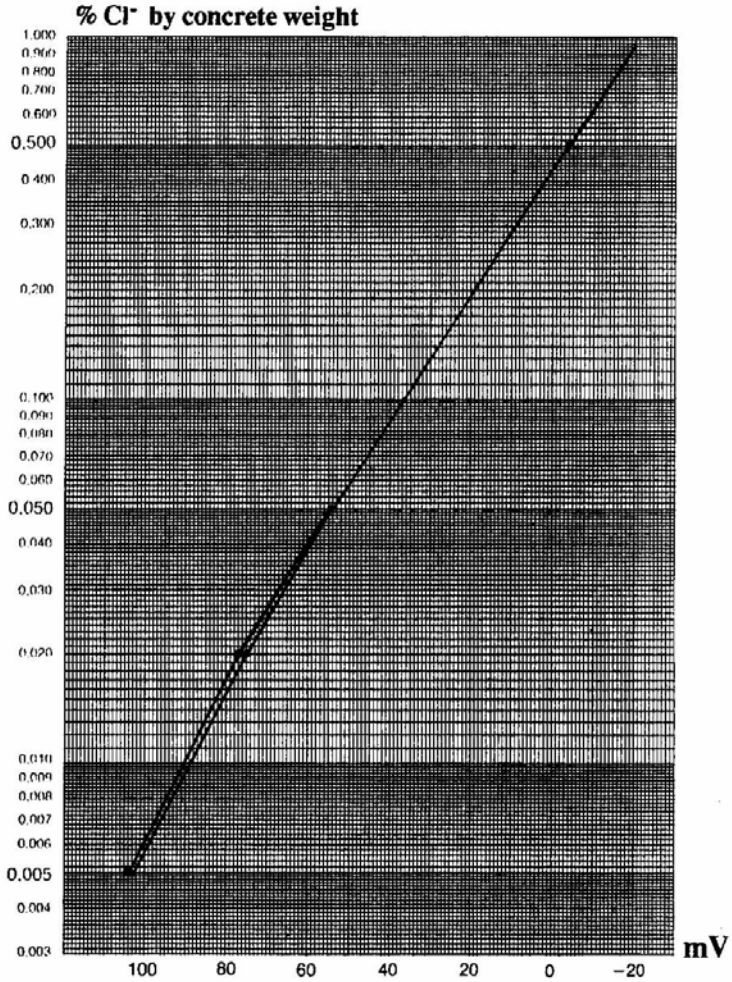
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	103.7	76.8	54.4	-3.4
mV after	102.9	75.2	54.0	-3.0

SAMPLE #	1		2		Remarks	
	mV	% Cl	mV	% Cl		
1	-2.5	0.475	-2.3	0.475	1/8 - 3/8	0.70
2	3.4	0.375	4.4	0.360	3/8 - 5/8	0.75
3	-5.2	0.520	-5.5	0.530	5/8 - 7/8	0.81
4	-9.5	0.620	-10.4	0.650	7/8 - 1 1/8	1.01
5	-10.5	0.670	-8.8	0.600	1 1/8 - 1 3/8	1.31
6	-4.3	0.510	-5.1	0.520	1 3/8 - 1 5/8	1.10

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 3 SW **Project:** _____

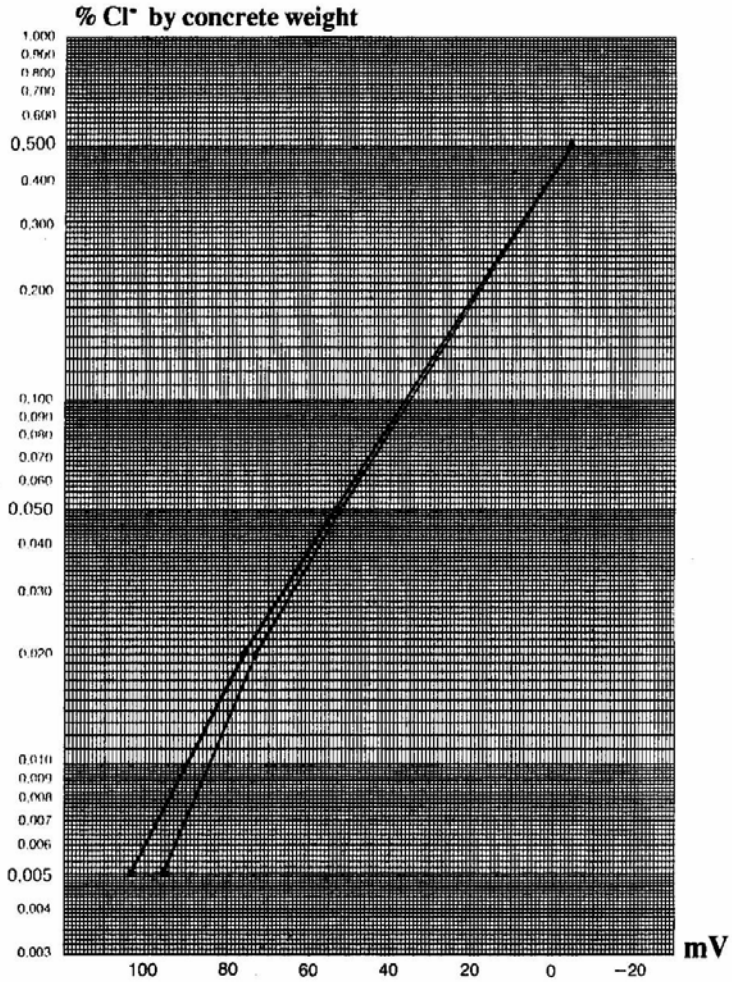
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	103.2	76.3	53.4	-3.9
mV after	95.4	73.3	52.4	-3.7

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	29.1	0.132	26.6	0.143	1/8 - 3/8
2	48.7	0.061	42.1	0.074	3/8 - 5/8
3	42.4	0.077	39.0	0.084	5/8 - 7/8
4	45.7	0.068	38.9	0.084	7/8 - 1 1/8
5	55.6	0.046	48.8	0.057	1 1/8 - 1 3/8
6	39.2	0.088	41.7	0.076	1 3/8 - 1 5/8

1.31

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 3 SE **Project:** _____

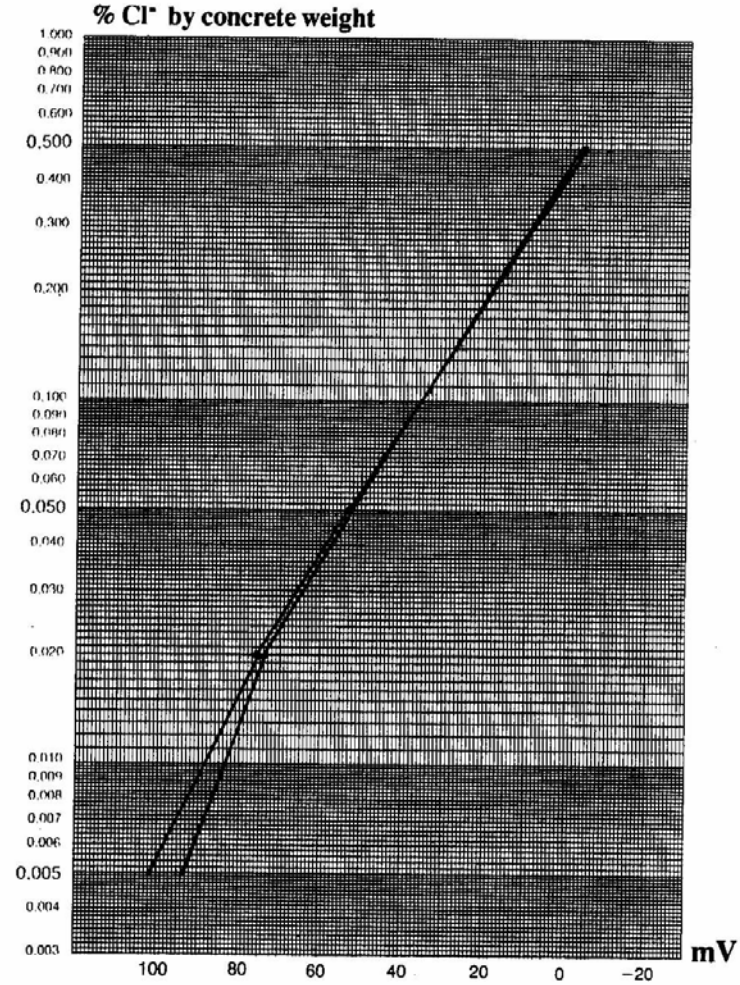
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	101.6	75.8	53.2	-3.7
mV after	93.6	73.9	52.7	-2.6

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	0.5	0.430	1.3	0.430	1/8 - 3/8
2	15.4	0.225	18.9	0.205	3/8 - 5/8
3	34.2	0.105	34.5	0.105	5/8 - 7/8
4	26.9	0.142	26.8	0.145	7/8 - 1 1/8
5	33.5	0.108	33.2	0.110	1 1/8 - 1 3/8
6	29.3	0.127	34.5	0.105	1 3/8 - 1 5/8

1.18
1.21

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 4 SW **Project:** _____

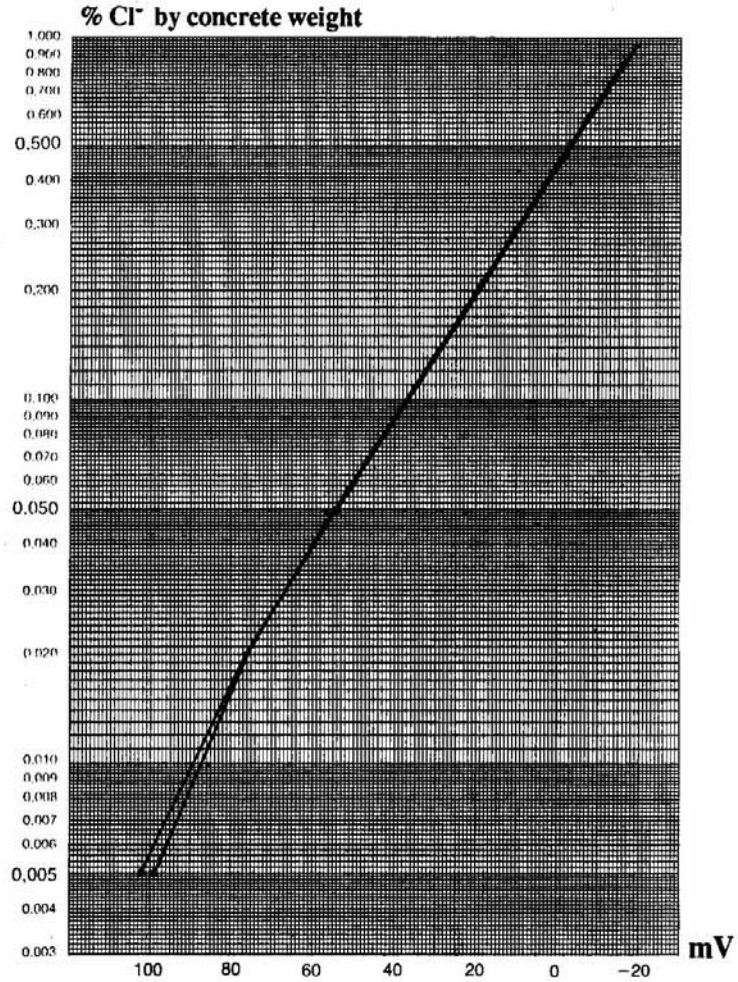
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	102.1	76.4	53.8	-3.1
mV after	99.0	76.3	54.7	-2.6

SAMPLE #	1		2		Remarks	
	mV	% Cl	mV	% Cl		
1	-16.1	0.840	-16.6	0.870	1/8 - 3/8	
2	-3.1	0.500	-3.4	0.510	3/8 - 5/8	
3	5.7	0.350	5.6	0.360	5/8 - 7/8	
4	11.3	0.275	10.5	0.295	7/8 - 1 1/8	1.39
5	-1.6	0.470	-1.6	0.480	1 1/8 - 1 3/8	
6	6.6	0.335	6.5	0.340	1 3/8 - 1 5/8	1.07

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 4 SE **Project:** _____

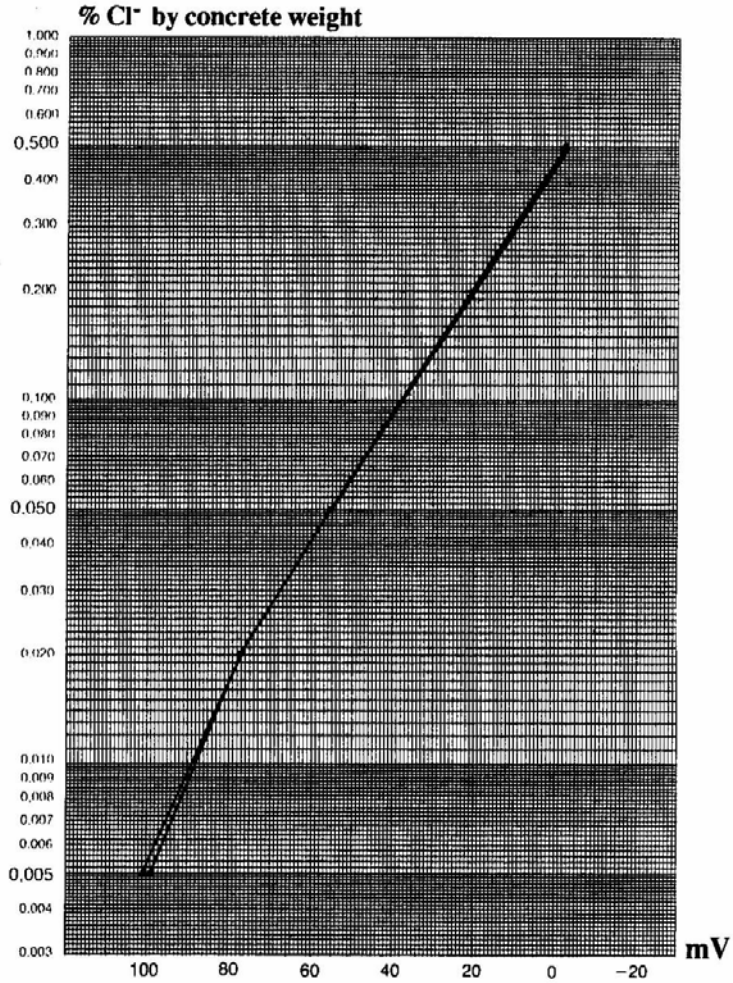
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	99.0	77.4	55.6	-1.9
mV after	100.7	77.7	55.3	-2.9

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	12.7	0.275	14.5	0.250	1/8 - 3/8
2	8.8	0.320	8.8	0.320	3/8 - 5/8
3	11.8	0.290	11.0	0.290	5/8 - 7/8
4	33.3	0.118	32.3	0.123	7/8 - 11/8
5	33.8	0.115	32.9	0.120	11/8 - 13/8
6	36.2	0.105	35.4	0.109	13/8 - 15/8

1.25
1.32

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 5 SW **Project:** _____

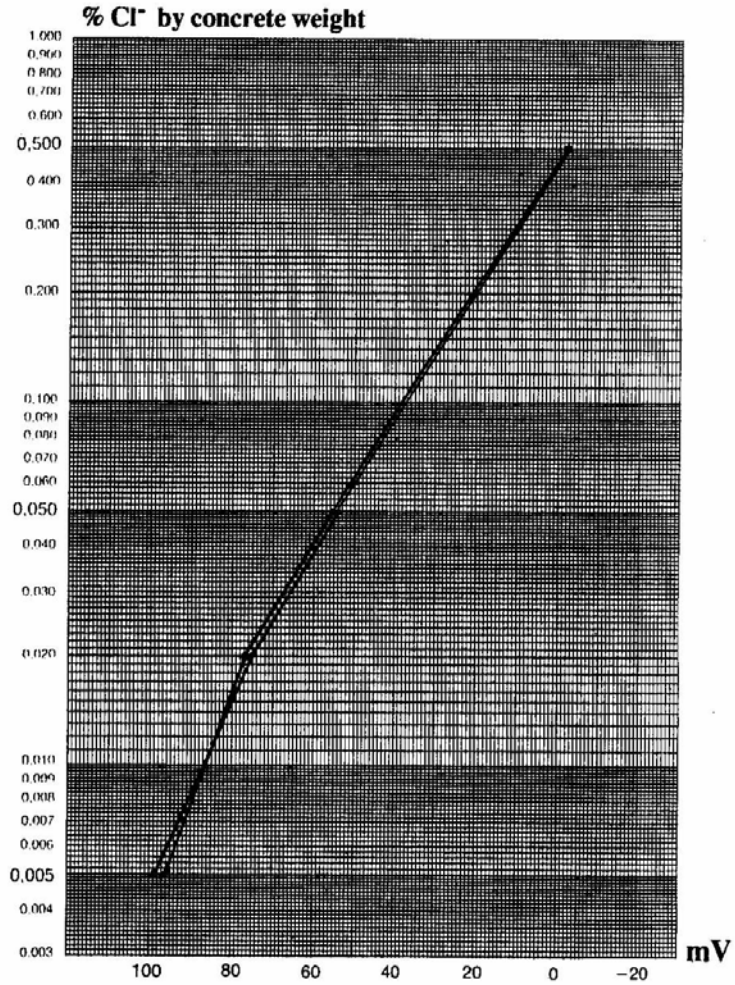
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	95.9	77.0	55.6	-1.9
mV after	98.7	75.0	53.7	-2.7

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	53.9	0.053	49.9	0.060	1/8 - 3/8
2	45.0	0.076	44.0	0.076	3/8 - 5/8
3	50.8	0.060	50.3	0.060	5/8 - 7/8
4	53.9	0.053	49.4	0.061	7/8 - 1 1/8
5	46.1	0.072	45.1	0.073	1 1/8 - 1 3/8
6	45.0	0.076	44.4	0.076	1 3/8 - 1 5/8

1.66

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam 5 SE **Project:** _____

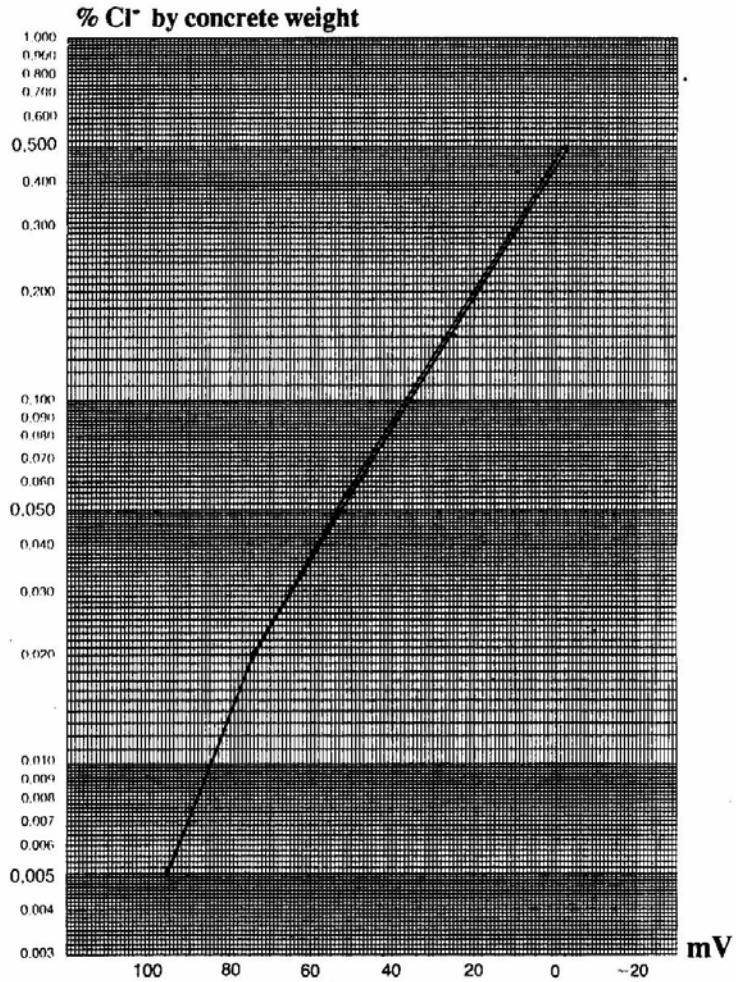
Date of testing: 1-7-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	95.6	74.7	52.6	-2.6
mV after	95.4	74.4	53.5	-1.7

SAMPLE #	1		2		Remarks	
	mV	% Cl	mV	% Cl		
1	46.6	0.064	46.7	0.068	1/8 - 3/8	
2	50.6	0.054	50.0	0.058	3/8 - 5/8	
3	49.3	0.056	48.5	0.062	5/8 - 7/8	
4	46.7	0.062	45.6	0.070	7/8 - 11/8	
5	51.5	0.052	51.2	0.055	11/8 - 13/8	1.22
6	35.3	0.100	36.2	0.100	13/8 - 15/8	1.27

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: _____ **Structure:** Beam Checks **Project:** _____

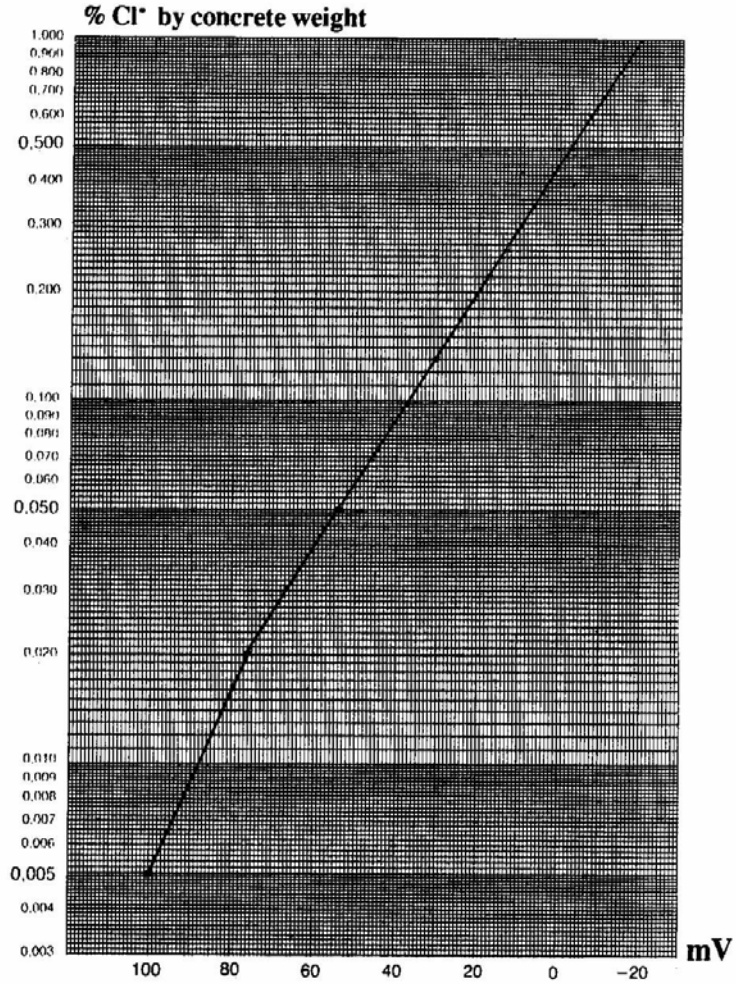
Date of testing: 1-9-2003 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	100.1	76.3	54.3	-2.4
mV after				

SAMPLE #	1		2		~~Remarks~~ Sample #
	mV	% Cl	mV	% Cl	
B1A - 1	45.2	0.072	40.0	0.090	B3A - 6
B1B - 1	-12.2	0.740	17.6	0.225	B3B - 2
B1B - 6	34.9	0.110	30.2	0.133	B3B - 6
B2A - 1	-15.7	0.840	13.1	0.265	B4B - 1
B2A - 2	-0.6	0.465			
B2A - 4	31.5	0.110			
B2B - 2	4.5	0.375			
B2B - 5	-8.0	0.620			

Measurement of the acid soluble chloride content of hardened concrete by the RCT method

Report #: Water solvable **Structure:** 3/4" crushed Agg. **Project:** _____

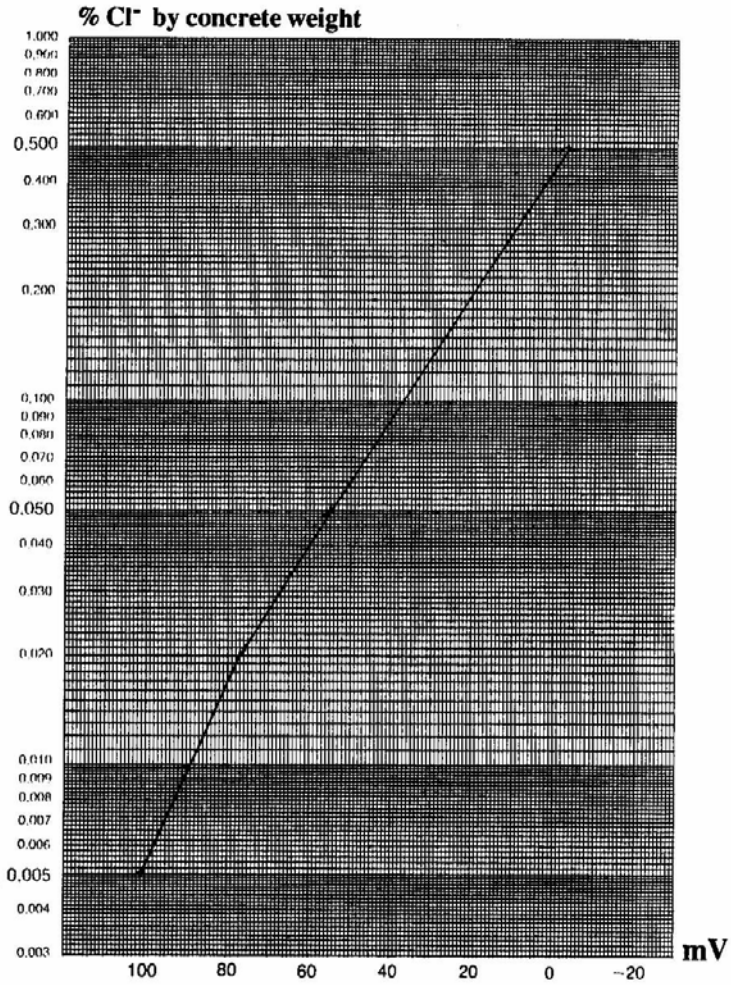
Date of testing: 1-15-04 **Electrode #:** _____ **Person:** CAB

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before	101.1	77.3	54.8	-2.8
mV after				

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
1	62.9	0.035			3/4" Crushed Agg. Gre

Measurement of the acid soluble chloride content of hardened concrete by the RCT method 5-min test

Report #: _____ **Structure:** _____ **Project:** For Prof. Takatakai

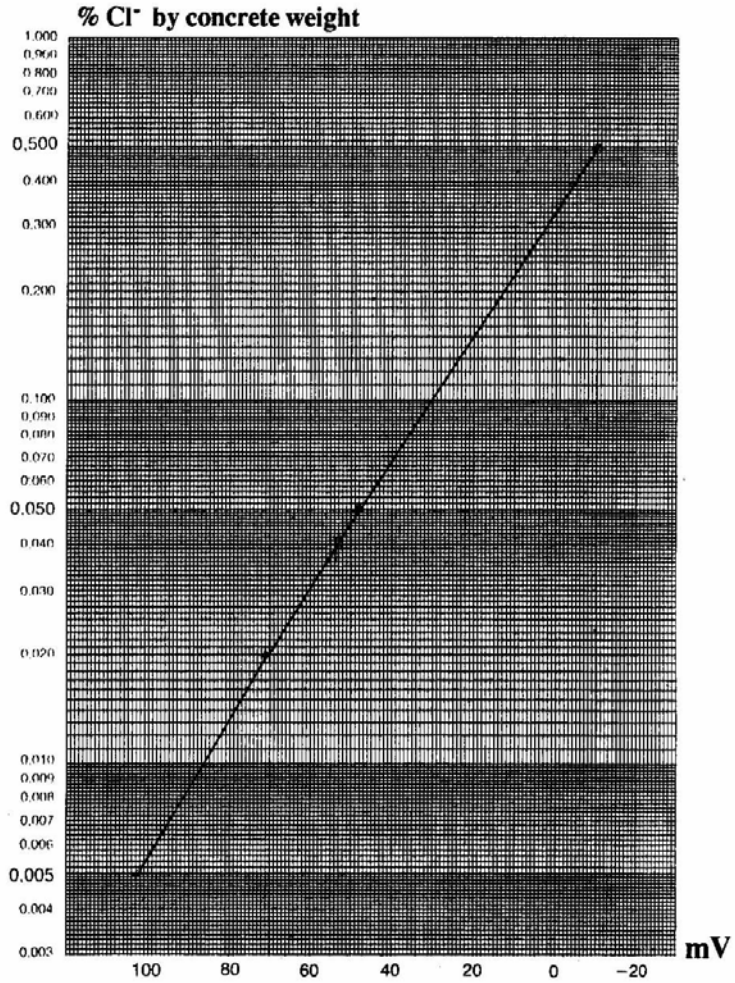
Date of testing: 07/14/03 **Electrode #:** _____ **Person:** KL

Testing Lab: _____ **Address:** _____ **Phone:** _____

RCT

HARDENED CONCRETE

1.5 gram of concrete dust dissolved in a RCT-1023 vial with 10 milliliter of extraction liquid



CALIBRATION:

Liquid	Clear	Purple	Green	Pink
% Cl	0.005	0.020	0.050	0.500
mV before				
mV after	102.4	71.0	47.3	−9.7

SAMPLE #	1		2		Remarks
	mV	% Cl	mV	% Cl	
Green Bay Sand	53.5	0.039			
Green Bay CHASE 3/4	52.6	0.041			