

## GEOTECHNICAL INVESTIGATION LABORATORY DATA

**Description.** The following data was collected during preliminary engineering and is attached herein for the Contractor's information.

Data included is in reference to the following structures which require Aggregate Column Ground Improvements:

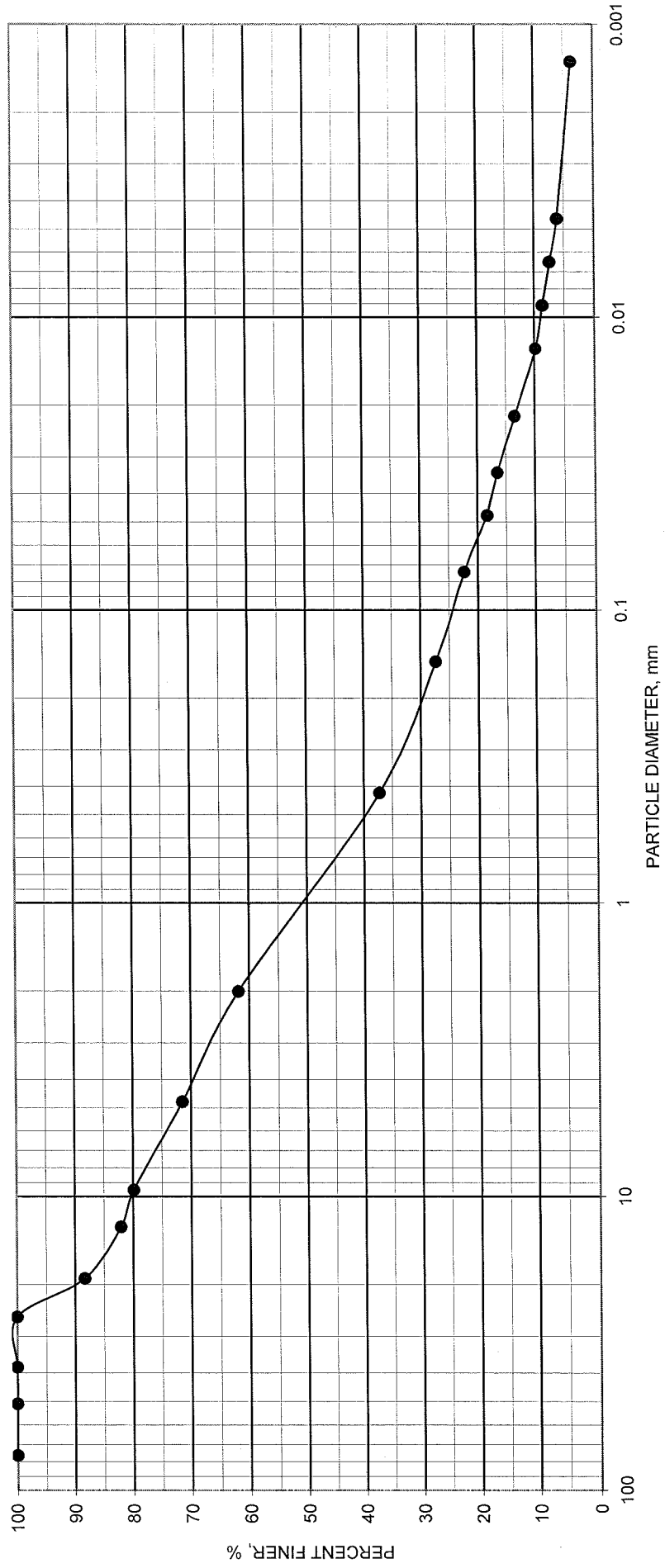
SN 081-6012 – Retaining Wall 03

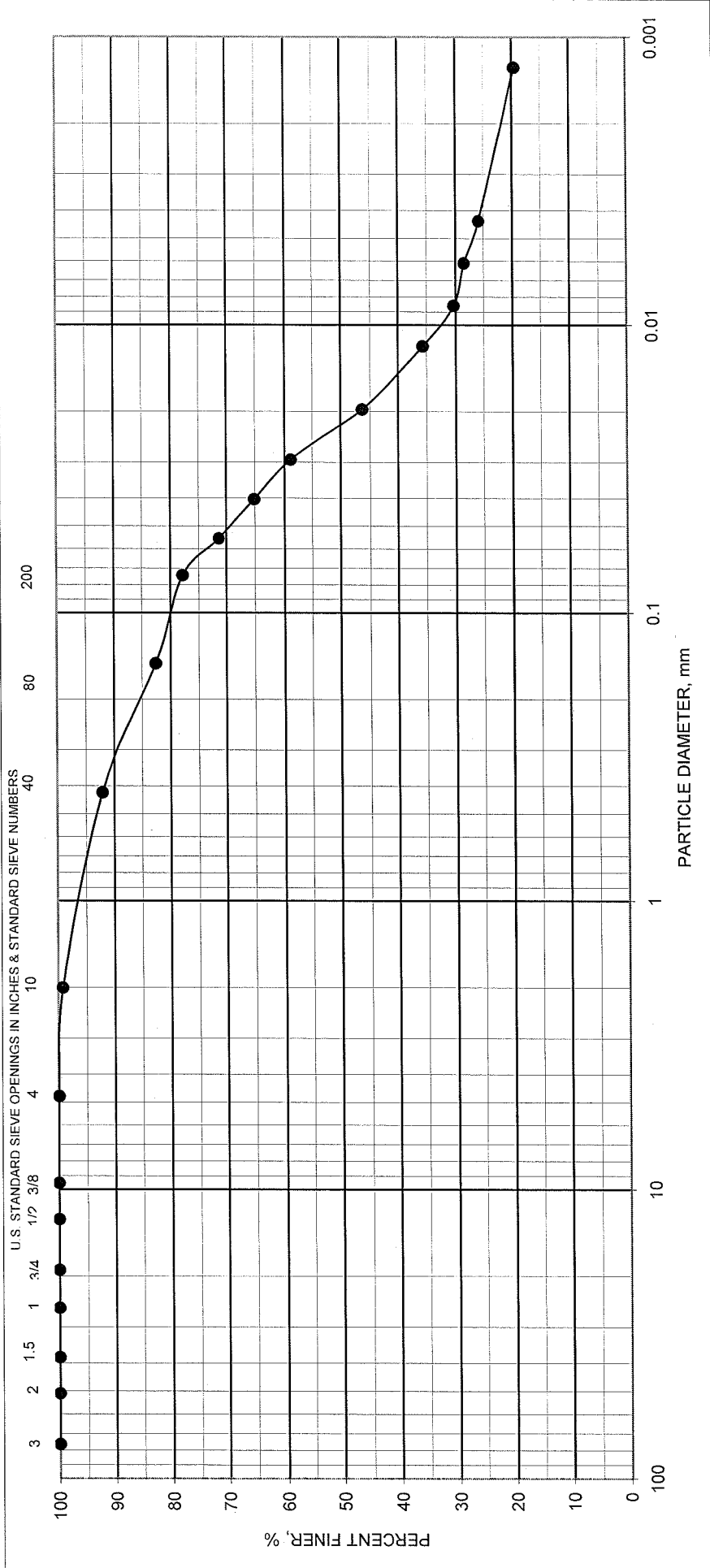
SN 081-6019 – Retaining Wall 18



U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS

3 2 1.5 1 3/4 1/2 3/8 4 10 40 80 200





GRAVEL		SAND		SILT or CLAY	
Coarse	Fine	Coarse	Medium	Fine	

GRAIN SIZE DISTRIBUTION CURVE

BORING NO.	SAMPLE NO.	DEPTH, feet	ASTM DESCRIPTION	UNIFIED SYMBOL	NAT. WC, %	ATTERBERG LIMITS		
						LL	PL	PI
ILR0302	4	8			25.3	35	15	20

PROJECT I-74 Corridor

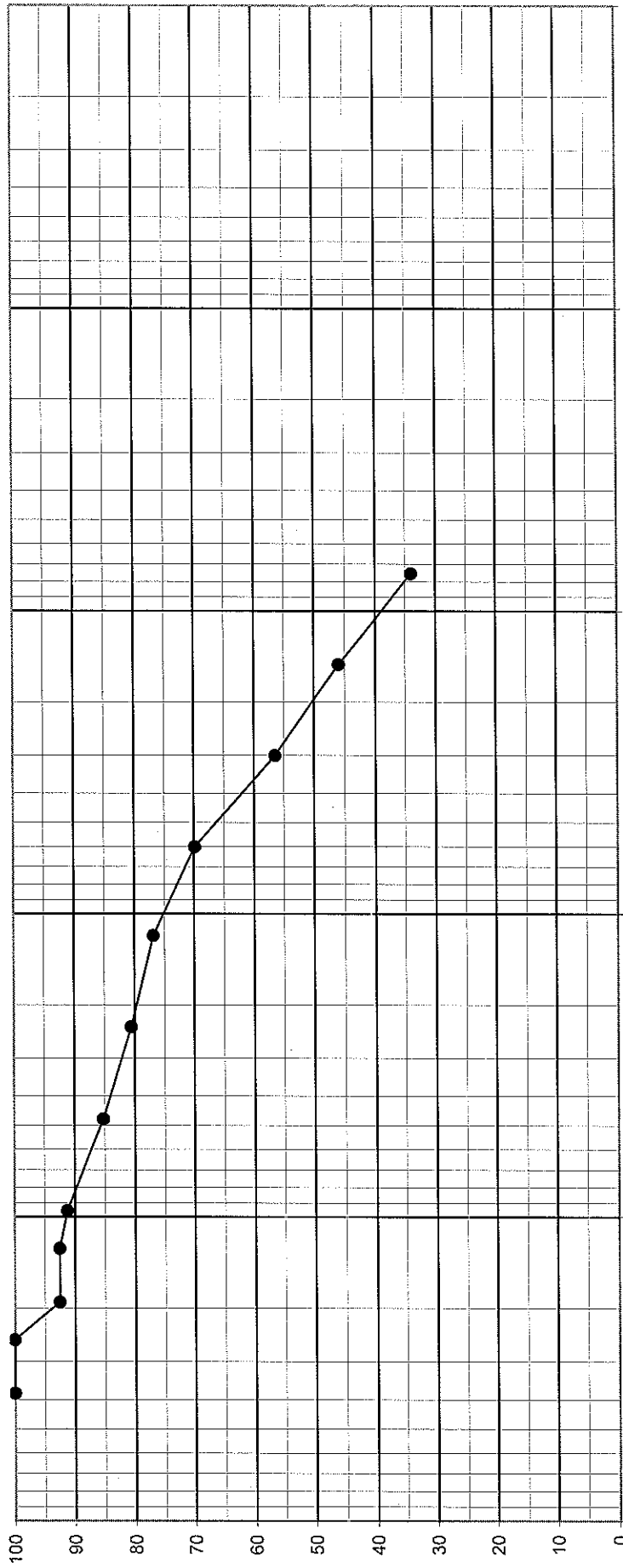
Moline, IL

JOB NO. 07045052 DATE 2/13/2008



U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS

3 2 1.5 1 3/4 1/2 3/8 4 10 40 80 200



100 0 10 20 30 40 50 60 70 80 90 100 1 0.1 0.01 0.001

PARTICLE DIAMETER, mm

GRAVEL		Sand		Silt or Clay	
Coarse	Fine	Coarse	Medium	Fine	

GRAIN SIZE DISTRIBUTION CURVE

BORING NO.	SAMPLE NO.	DEPTH, feet	SOIL DESCRIPTION	UNIFIED SYMBOL	NAT. WC. %	ATTERBERG LIMITS	
						LL	PL
ILR0302	5	13-15	Well Graded Sand with Silt and Gravel	CL	13.9		

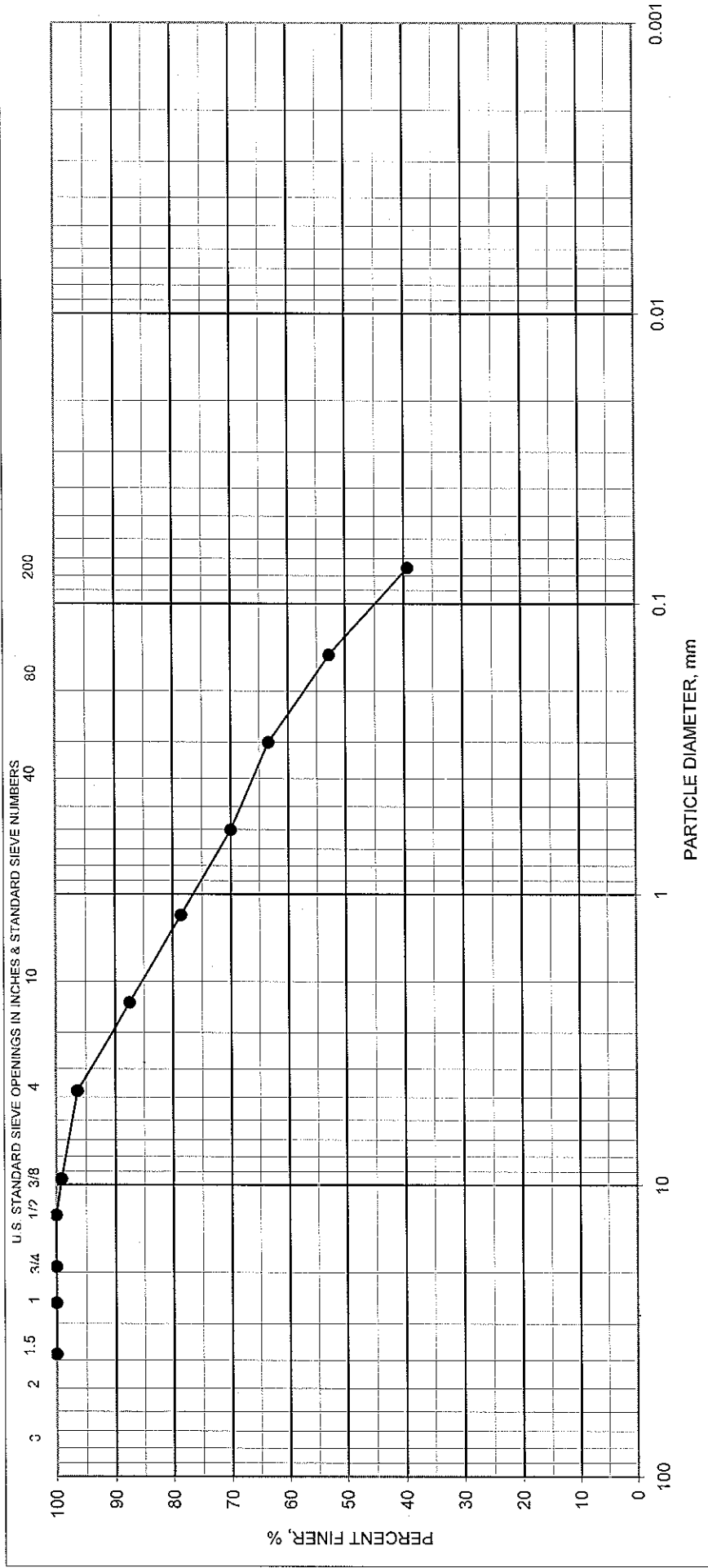
PROJECT I-74 Corridor

Moline, IL

PROJECT NO. 07045052

DATE 2/13/2008





GRAVEL		Sand		Silt or Clay	
Coarse	Fine	Coarse	Medium	Fine	

**GRAIN SIZE DISTRIBUTION CURVE**

BORING NO.	SAMPLE NO.	DEPTH, feet	SOIL DESCRIPTION	UNIFIED SYMBOL	NAT. WC, %	ATTERBERG LIMITS		
						LL	PL	PI
ILR0302	6	16-18	Clayey Silt	CL		30	11	19

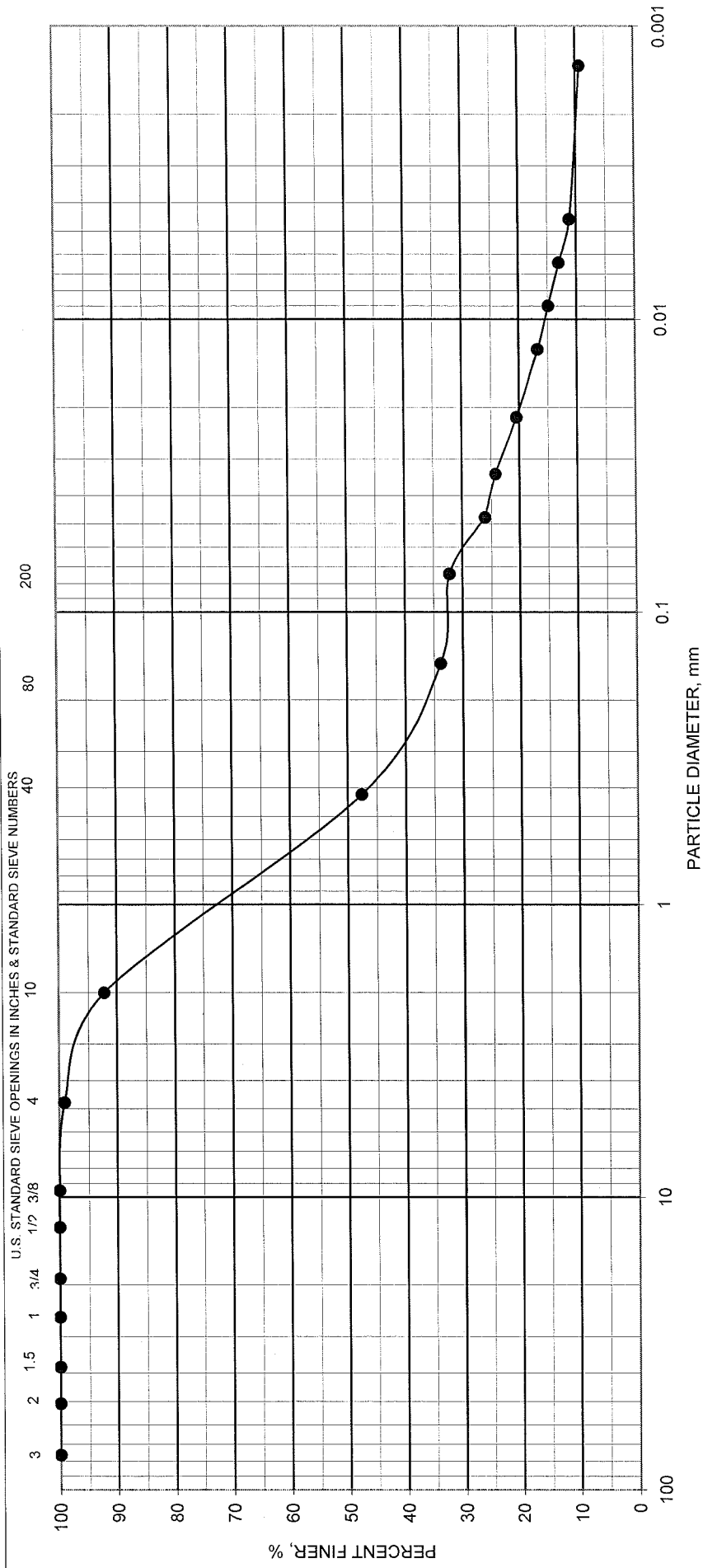
PROJECT I-74 Corridor

Moline, IL

PROJECT NO. 07045052 DATE 2/14/2008

N:\Projects\2004\07045052\lab data\Grain Size Distribution\ILR0302 S-6.xls\ACT DATA





GRAVEL		Sand		Silt or Clay	
Coarse	Fine	Coarse	Medium	Fine	

GRAIN SIZE DISTRIBUTION CURVE

BORING NO.	SAMPLE NO.	DEPTH, feet	ASTM DESCRIPTION	UNIFIED SYMBOL	NAT. WC, %	ATTERBERG LIMITS		
						LL	PL	PI
ILR0303	1	2						

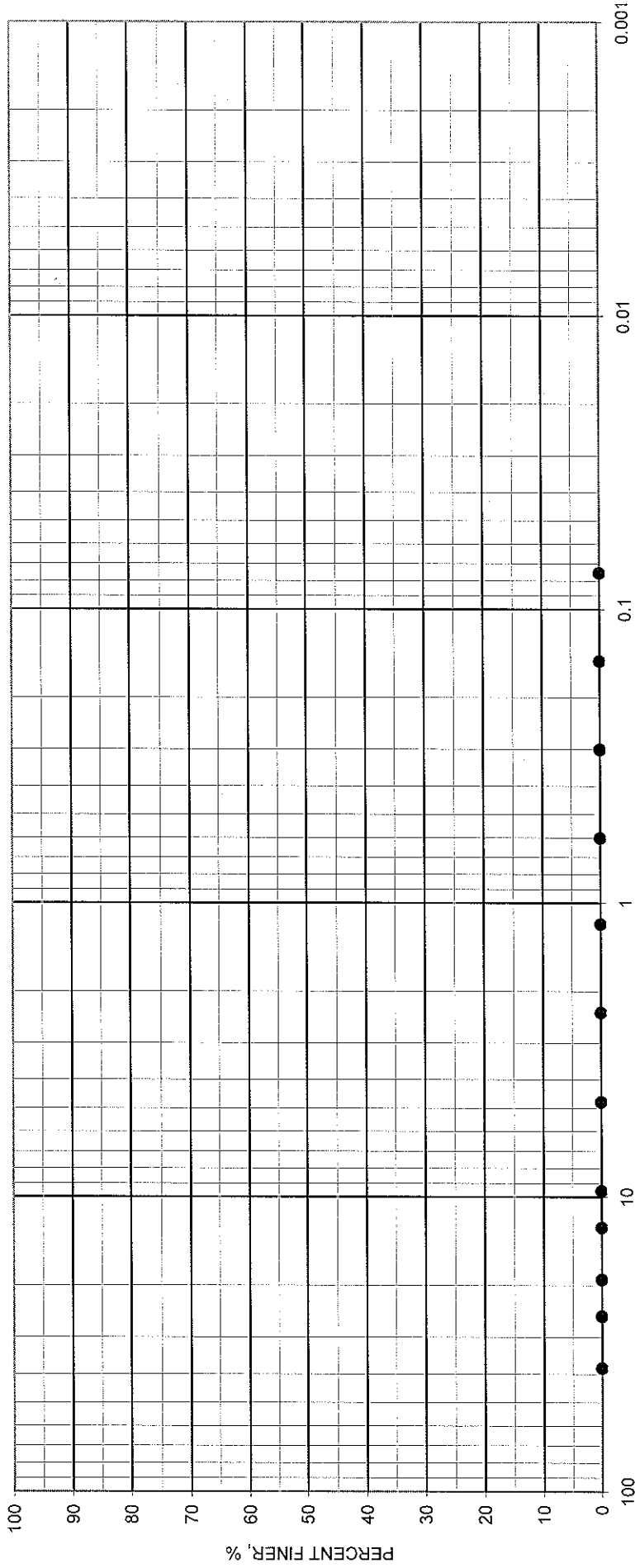
PROJECT I-74 Corridor

Moline, IL

JOB NO. 07045052 DATE 2/14/2008



U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS



PARTICLE DIAMETER, mm

GRAVEL		Sand			Silt or Clay	
Coarse	Fine	Coarse	Medium	Fine		

GRAIN SIZE DISTRIBUTION CURVE

BORING NO.	SAMPLE NO.	DEPTH, feet	SOIL DESCRIPTION	UNIFIED SYMBOL	NAT. WC, %	ATTERBERG LIMITS			
				LL	PL	PI			
ILR0303	2	4	Silt	CL	36	15	21		

PROJECT I-74 Corridor

Moline, IL

PROJECT NO. 07045052

DATE 2/21/2008

N:\Projects\2004\07045052\lab data\Grain Size Distribution\ILR0303 S-2.xls\ACT DATA





U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS

200

80

40

10

4

3/8

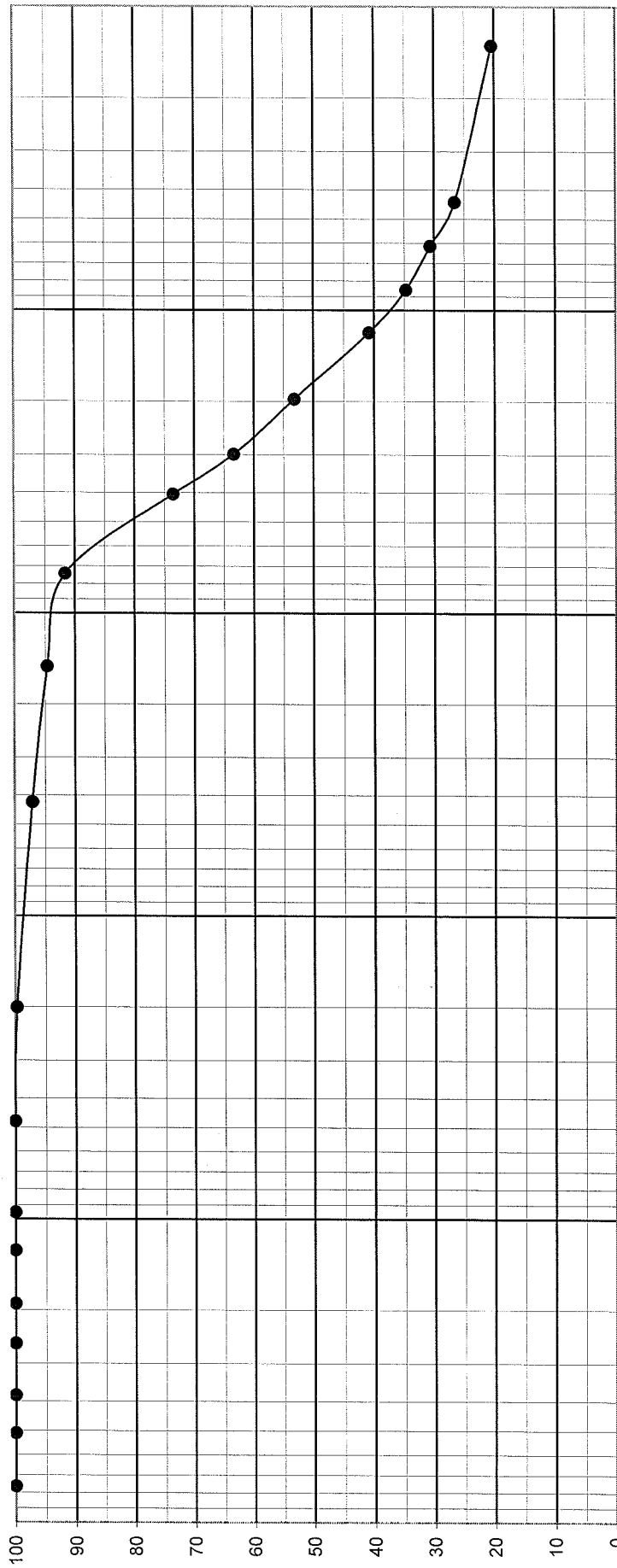
3/4

1

1.5

2

3



100 0

PARTICLE DIAMETER, mm

0.001

0.01

0.1

1

10

GRAVEL		SAND		SILT OR CLAY	
Coarse	Fine	Coarse	Medium	Fine	

GRAIN SIZE DISTRIBUTION CURVE

BORING NO.	SAMPLE NO.	DEPTH, feet	ASTM DESCRIPTION	UNIFIED SYMBOL	NAT. WC, %	ATTERBERG LIMITS		
						LL	PL	PI
ILR0303	3	6			19.7	45	21	24

PROJECT I-74 Corridor

Moline, IL

JOB NO. 07045052

DATE 2/21/2008





**UNCONFINED COMPRESSIVE STRENGTH OF INTACT ROCK CORE**

**CLIENT: CH2M HILL**

**JOB NO.: 07045052**

**PROJECT: INTERSTATE I-74 IMPROVEMENTS  
BETTENDORF, IOWA**

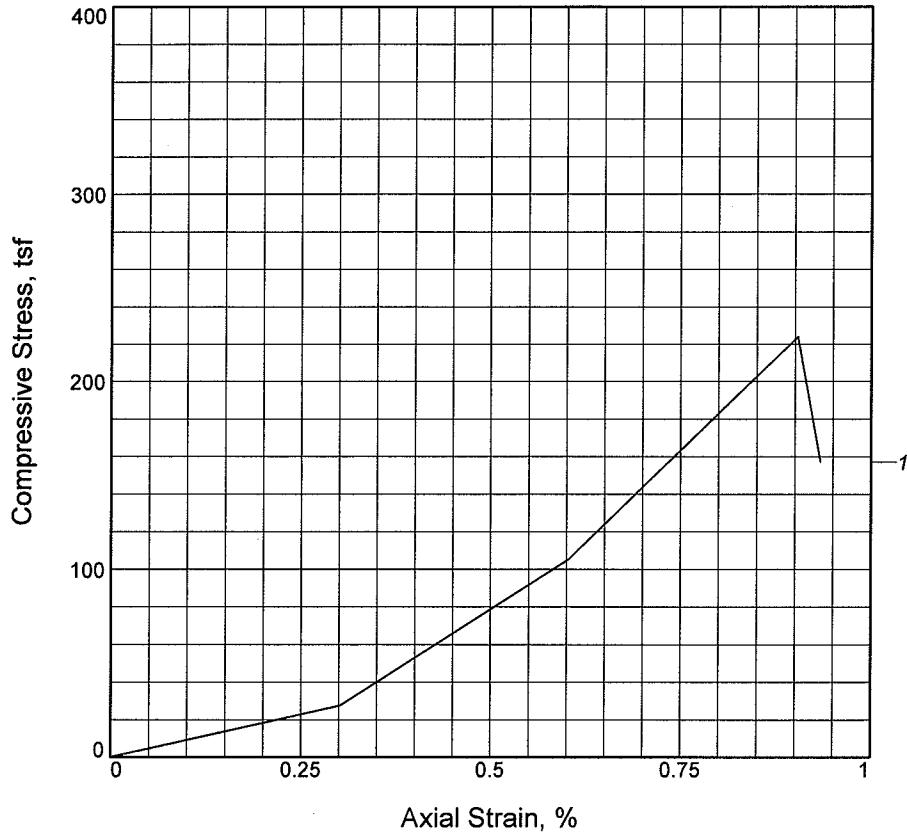
**DATE: 2/22/06**

TEST NO.	5	6	7	8
BORING NO.	PRMPD2	PRMPA1	RW1401	RW1401
RUN NO.	1	2	5	5
DEPTH (FT.)	171/2 – 18	25 – 25 1/2	38 1/2 – 39	39 – 39 1/2
PREPARED CORE (IN.)	4.50	4.52	3.06	3.07
ROCK DESCRIPTION (Note 1)	LIMESTONE	LIMESTONE	SHALE SANDSTONE	SHALE SANDSTONE
MOISTURE CONTENT %	0.2	0.1	2.2	7.0
<b>COMPRESSIVE STRENGTH TESTS</b>				
DIAMETER (IN.)	1.87	1.86	1.87	1.88
AREA (SQ.IN.)	2.74	2.72	2.74	2.77
L/D RATIO	2.4	2.4	1.6	1.6
TOTAL LOAD (LBS.)	18,420	25,830	7,540	11,300
COMPRESSIVE STRENGTH (PSI) (Note 2)	6,720	9,500	2,750	4,080
TYPE FRACTURE	VERTICAL FRACTURE	VERTICAL FRACTURE	VERTICAL FRACTURE	VERTICAL FRACTURE
DATE TESTED	2/21/06	2/21/06	2/21/06	2/21/06
DENSITY (PCF)	157	162	130	122

Note 1: Rock type based on visual and tactile observation of core.

Note 2: Tests No. 7 and 8 are below the L/D ratio of 2.0 to 2.5 stated in the ASTM 4543 Standard, compressive strength values may not be representative.

# UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	223.8938			
Undrained shear strength, tsf	111.9469			
Failure strain,	0.9			
Strain rate, in./min.	0.500			
Water content, %	0.3			
Wet density, pcf	161.5			
Dry density, pcf	161.1			
Saturation, %	N/A			
Void ratio	N/A			
Specimen diameter, in.	1.850			
Specimen height, in.	3.320			
Height/diameter ratio	1.79			

**Description:** LIMESTONE

LL =	PL =	PI =	GS =	Type: Limestone
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<p><b>Project No.:</b> 19636.040  <b>Date:</b> 4-7-08  <b>Remarks:</b>                  Lab No. 3192</p>	<p><b>Client:</b> TERRACON (#07045052)  <b>Project:</b> I-74 CROSSING-BETTENDORF-MOLINE  <b>Source of Sample:</b> ILR0302      <b>Depth:</b> 20'11"  <b>Sample Number:</b> R-1</p>
UNCONFINED COMPRESSION TEST <h2 style="margin: 0;">H. C. NUTTING COMPANY</h2>	

Figure \_\_\_\_\_

**Tested By:** DR      **Checked By:** GS

**Hanson Professional Services Inc.**  
**Unconfined Compression Test Report (ASTM D2166)**

Date 8/30/10

Checked By JCC

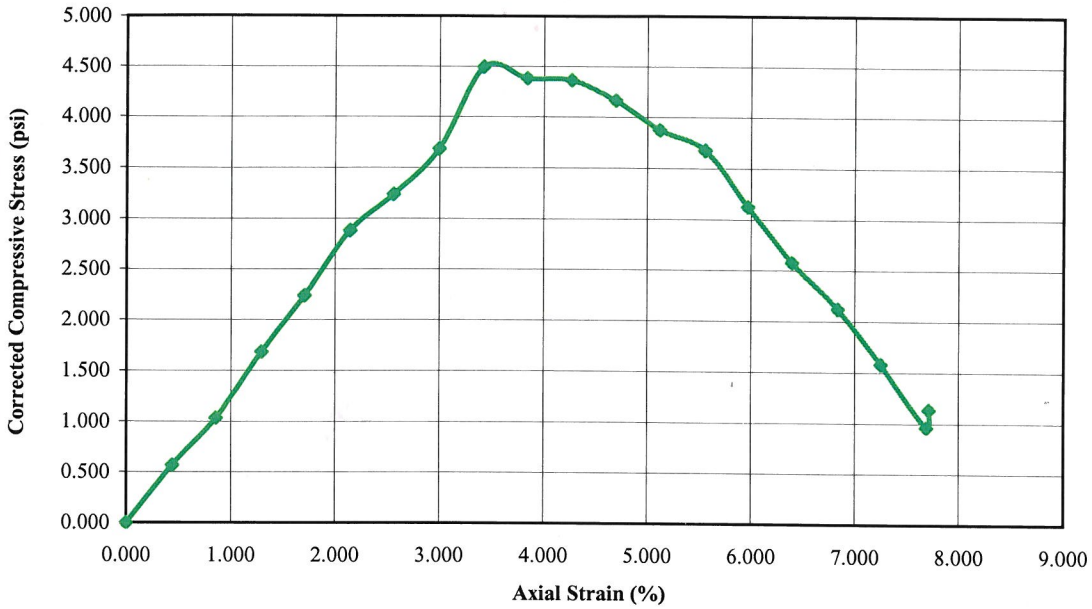
Date

Computed By

Date 8/6/10

Tested By Rin

**Compressive Stress Axial Strain Curve**



—◆— RW03-1-3-1

Before Test	Specimen			
	RW03-1-3-1	B	C	D
Water Content (%)	18.95			
Dry Density (pcf)	106.800			
Saturation (%)	91.50			
Void Ratio	0.55			
Diameter (in)	2.859			
Height (in)	4.822			
Test Data	RW03-1-3-1	B	C	D
Unconfined Strength (psi)	4.500			
Undrained Shear Strength (tsf)	0.162			
Undrained Shear Strength (psi)	2.250			
Rate of Strain (in/min)	0.100000			
Strain at Failure (%)	3.42			
Project Information		Specimen Description		
Project Num	08H0120E	RW03-1-3-1	Dk. gray vf.-f. sandy silty clay.	
Project	I-74 Mississippi River Bridge			
Depth	6.0-6.5			
Sample #	3-1			
Client				
		Specific Gravity	2.65	
		Liquid Limit:		
		Plastic Limit:		

Remarks

Hanson Professional Services Inc.  
Unconfined Compression Test Report (ASTM D2166)

Date 8/31/10

Checked By JCC

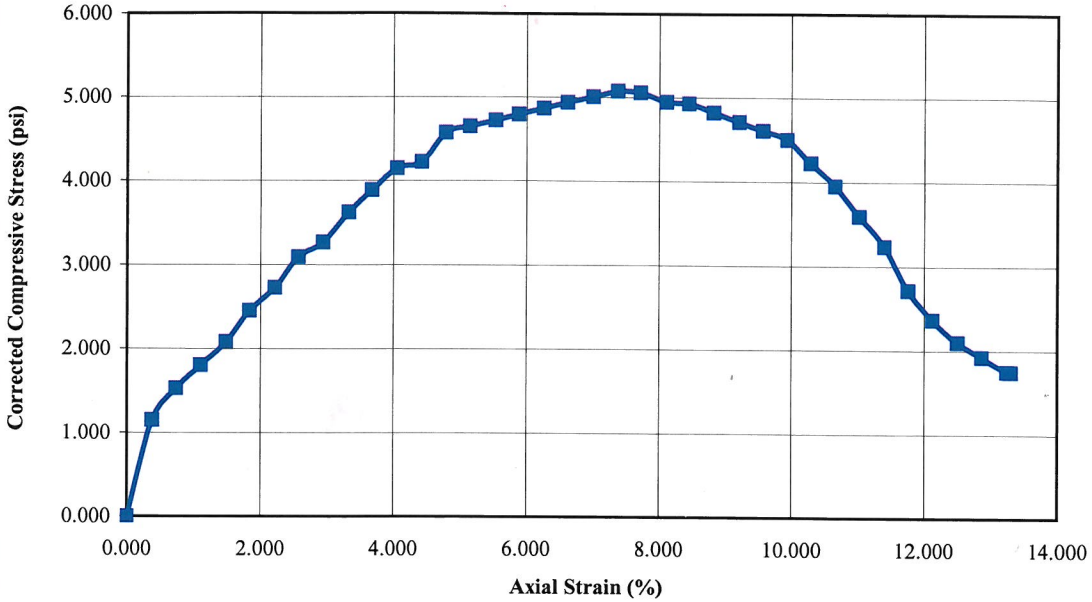
Date

Computed By

Date 8/6/2010

Tested By Rin

Compressive Stress Axial Strain Curve



RW03-1-4-1

Before Test	Specimen			
	A	B	C	D
Water Content (%)		27.17		
Dry Density (pcf)		94.600		
Saturation (%)		96.16		
Void Ratio		0.75		
Diameter (in)		2.843		
Height (in)		5.595		
Test Data	A	B	C	D
Unconfined Strength (psi)		5.078		
Undrained Shear Strength (tsf)		0.183		
Undrained Shear Strength (psi)		2.539		
Rate of Strain (in/min)		0.200000		
Strain at Failure (%)		7.37		
Description				
Project Information		Specimen Description		
Project Num	08H0120E			
Project	I-74 Mississippi River Bridge	RW03-1-4-1	Dk. gray vf. sandy silty clay.	
Depth	8.0-8.5			
Sample #	4-1			
Client		Test Variables		
		Specific Gravity	2.65	
		Liquid Limit:		
		Plastic Limit:		
Remarks				

**Hanson Professional Services Inc.**  
**Unconfined Compression Test Report (ASTM D2166)**

Date 8/31/10

Checked By JCC

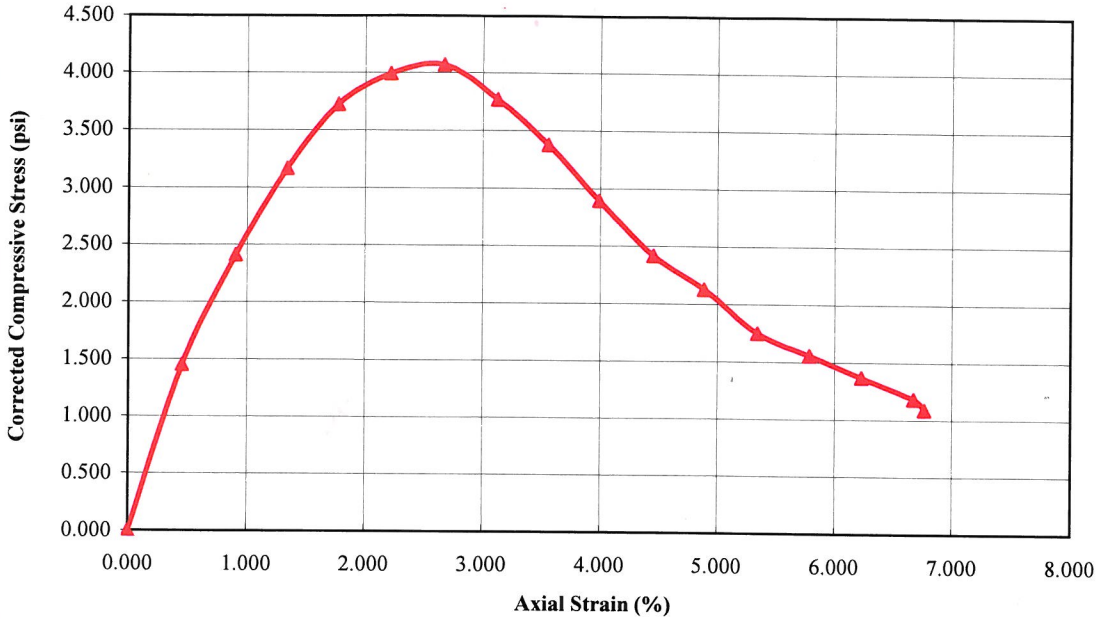
Date

Computed By

Date 8/6/10

Tested By Rin

**Compressive Stress Axial Strain Curve**



Before Test	Specimen			
	A	B	C	D
Water Content (%)			30.86	
Dry Density (pcf)			92.200	
Saturation (%)			103.06	
Void Ratio			0.79	
Diameter (in)			2.828	
Height (in)			5.663	
Test Data	A	B	C	D
Unconfined Strength (psi)			4.068	
Undrained Shear Strength (tsf)			0.146	
Undrained Shear Strength (psi)			2.034	
Rate of Strain (in/min)			0.200000	
Strain at Failure (%)			2.67	

Project Information		Specimen Description	
Project Num	08H0120E		
Project	I-74 Mississippi River Bridge		
Depth	8.5-9.0	RW03-1-4-2	Gray & brn. vf. sandy clayey silt.
Sample #	4-2		
Client		Test Variables	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

**Hanson Professional Services Inc.**  
**Unconfined Compression Test Report (ASTM D2166)**

Date 8/31/10

Checked By JCC

Date

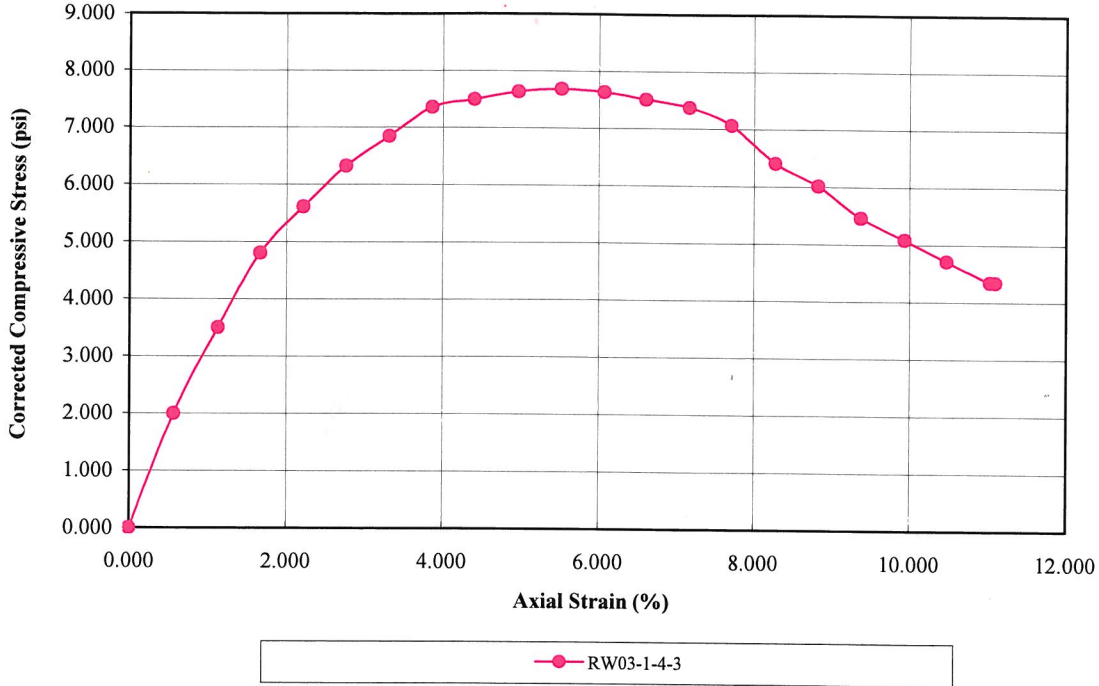
Computed By

8/6/10

Date

Tested By Rin

**Compressive Stress Axial Strain Curve**



Before Test	Specimen			
	A	B	C	D
Water Content (%)				33.17
Dry Density (pcf)				88.900
Saturation (%)				102.18
Void Ratio				0.86
Diameter (in)				2.852
Height (in)				4.563
Test Data	A	B	C	D
Unconfined Strength (psi)				7.675
Undrained Shear Strength (tsf)				0.276
Undrained Shear Strength (psi)				3.838
Rate of Strain (in/min)				0.200000
Strain at Failure (%)				5.52

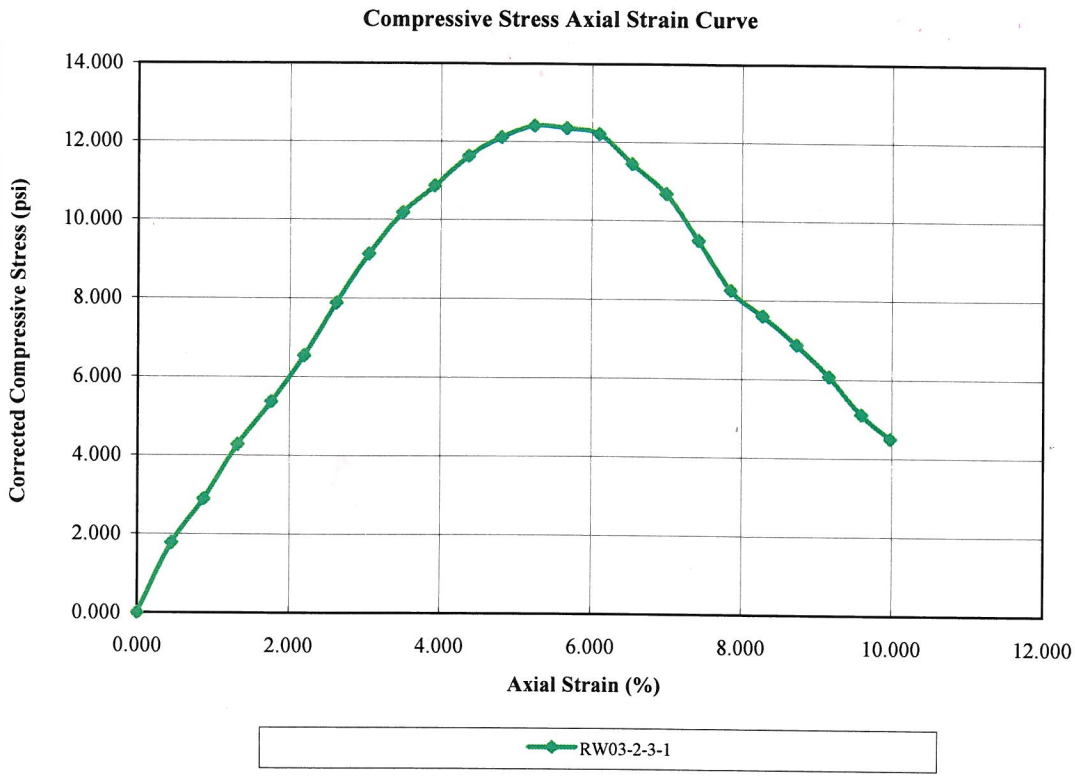
Project Information		Specimen Description	
Project Num	08H0120E		
Project	I-74 Mississippi River Bridge		
Depth	9.0-9.5		
Sample #	4-3	RW03-1-4-3	Dk. gray vf. sandy clayey silt.
Client		Test Variables	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks



Hanson Professional Services Inc.  
Unconfined Compression Test Report (ASTM D2166)

08/31/10  
Date  
Checked By JCC



Date  
Computed By

Before Test	Specimen			
	A	B	C	D
Water Content (%)	22.31			
Dry Density (pcf)	102.555			
Saturation (%)	96.43			
Void Ratio	0.61			
Diameter (in)	2.872			
Height (in)	5.769			
Test Data	A	B	C	D
Unconfined Strength (psi)	12.414			
Undrained Shear Strength (tsf)	0.447			
Undrained Shear Strength (psi)	6.207			
Rate of Strain (in/min)	0.200000			
Strain at Failure (%)	5.24			

8/6/10  
Date  
Tested By Rin

Project Information		Specimen Description	
Project Num	08H0120E	RW03-2-3-1	Gray & brn. vf. sandy clayey silt.
Project	I-74 Mississippi River Bridge		
Depth	6.0-6.5		
Sample #	3-1		
Client		Test Variables	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

**Hanson Professional Services Inc.**  
**Unconfined Compression Test Report (ASTM D2166)**

Date 8/31/10

Checked By JCC

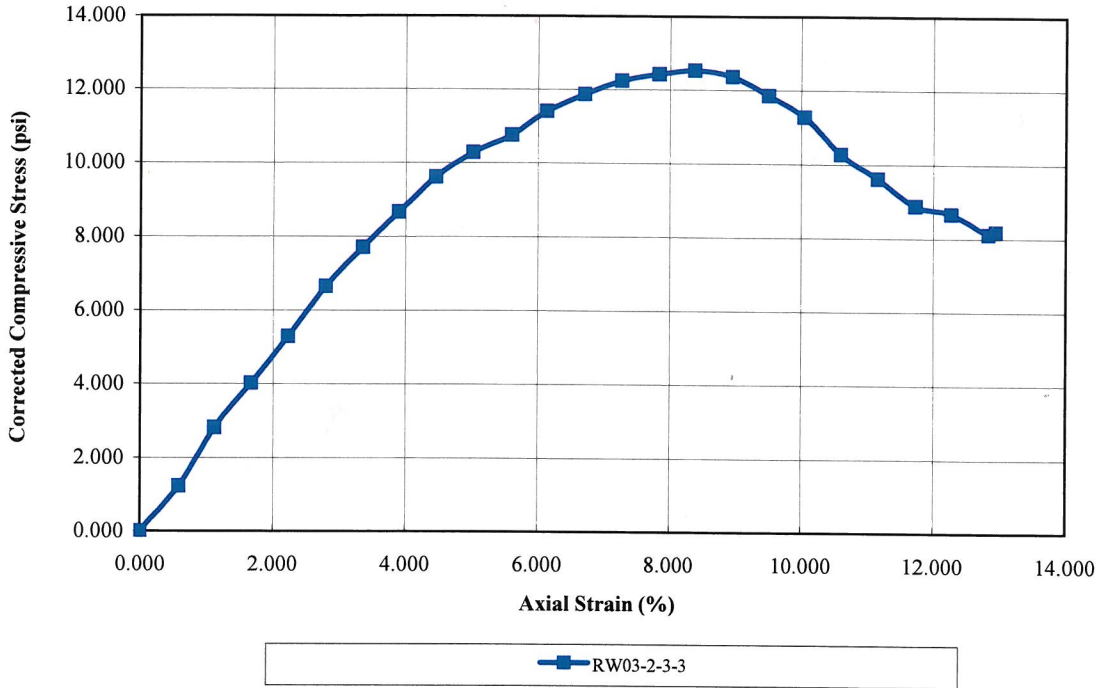
Date

Computed By

Date 8/6/10

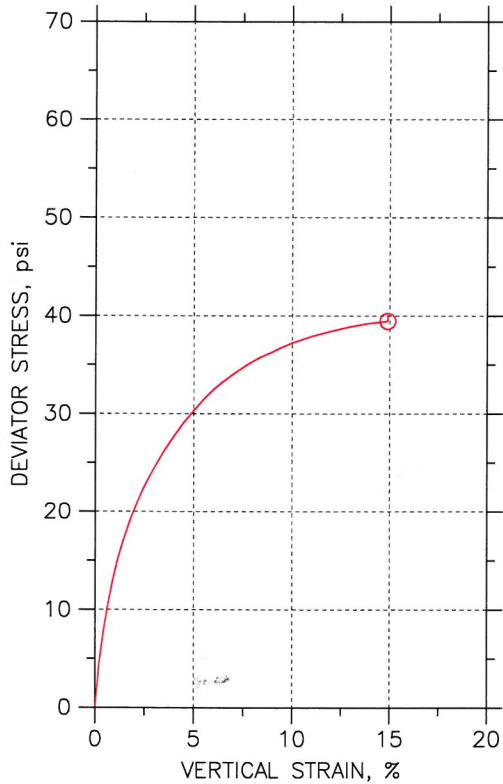
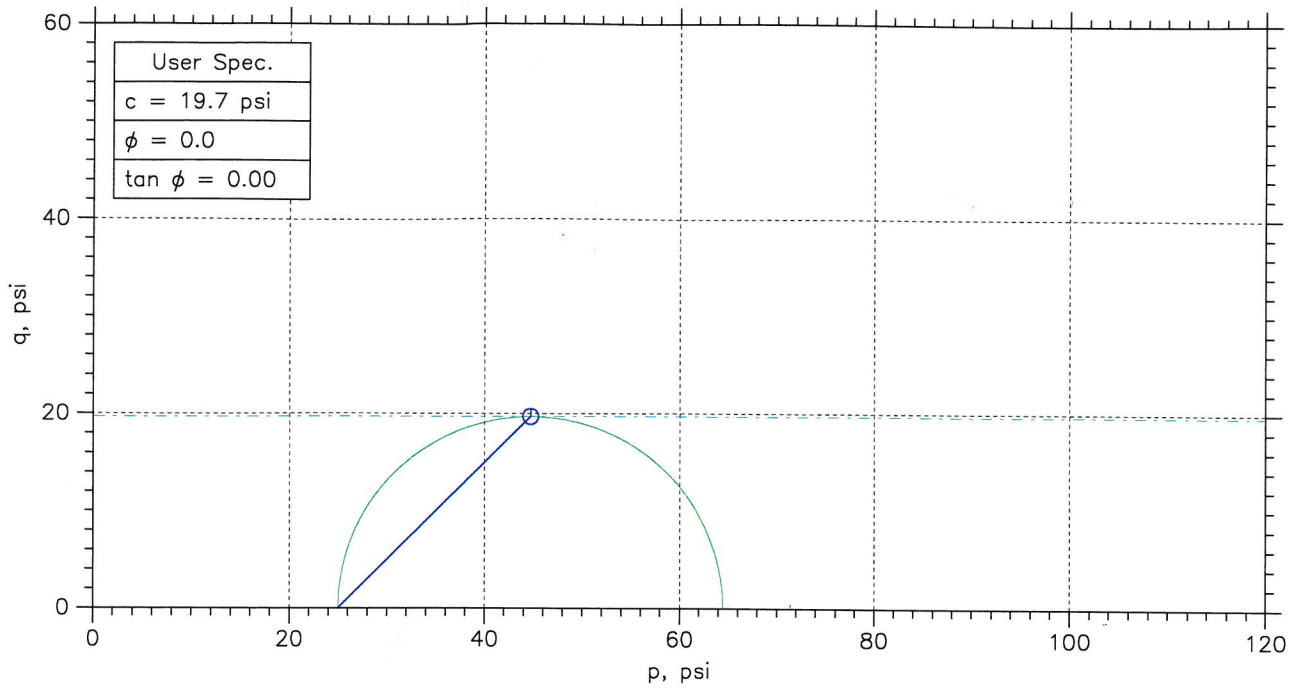
Tested By Rin

**Compressive Stress Axial Strain Curve**



Before Test		Specimen			
		A	B	C	D
Water Content (%)			24.49		
Dry Density (pcf)			100.000		
Saturation (%)			99.17		
Void Ratio			0.65		
Diameter (in)			2.861		
Height (in)			4.502		
Test Data		A	B	C	D
Unconfined Strength (psi)			12.529		
Undrained Shear Strength (tsf)			0.451		
Undrained Shear Strength (psi)			6.265		
Rate of Strain (in/min)			0.200000		
Strain at Failure (%)			8.38		
Description					
Project Information			Specimen Description		
Project Num	08H0120E				
Project	I-74 Mississippi River Bridge		RW03-2-3-3	Brn. & gray vf. sandy silt / so. clay.	
Depth	7.0-7.5				
Sample #	3-3				
Client			Test Variables		
			Specific Gravity	2.65	
			Liquid Limit:		
			Plastic Limit:		
Remarks					

# UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850

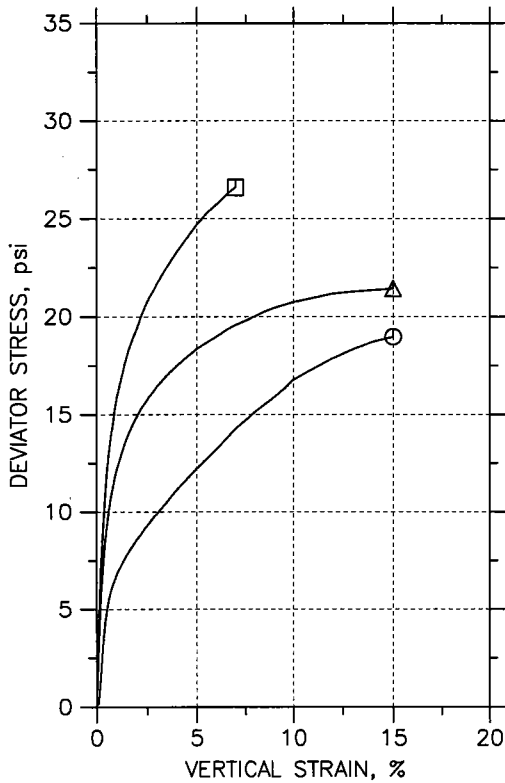
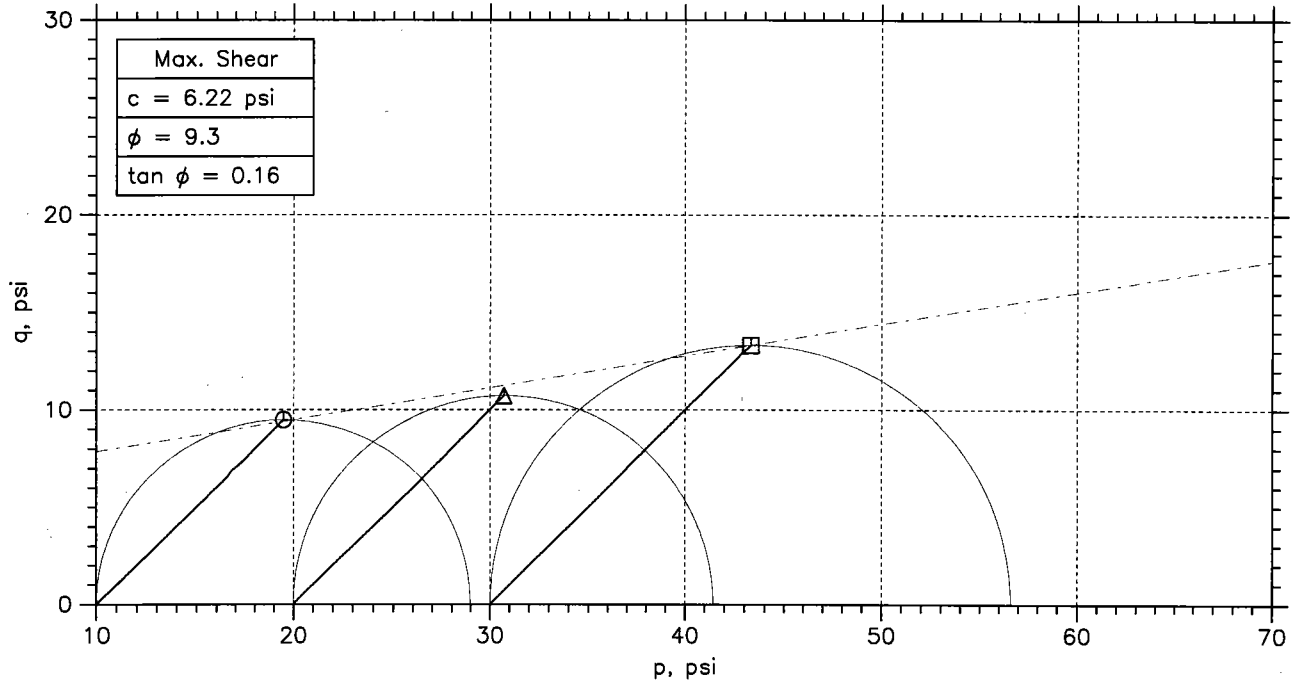


Symbol	⊙		
Sample No.	3-2		
Test No.	1		
Depth	6.5-7.0		
Tested by	RIN		
Test Date	8/6/10		
Checked by	JCC		
Check Date			
Diameter, in	2.87		
Height, in	5.534		
Water Content, %	22.5		
Dry Density, pcf	103.5		
Saturation, %	99.7		
Void Ratio	0.598		
Confining Stress, psi	25		
Undrained Strength, psi	19.73		
Max. Dev. Stress, psi	39.46		
Strain at Failure, %	14.9		
Strain Rate, %/min	1		
Estimated Specific Gravity	2.65		
Liquid Limit	0		
Plastic Limit	0		
Plasticity Index	0		

	Project: I-74 Mississippi River				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW03-2				
	Sample Type: Tube				
	Description: Gray vf. sandy silt / so. clay.				
Remarks: 2500 # Load Cell Loadtrac II # 258112 LVDT55306					

Phase calculations based on start of test.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST



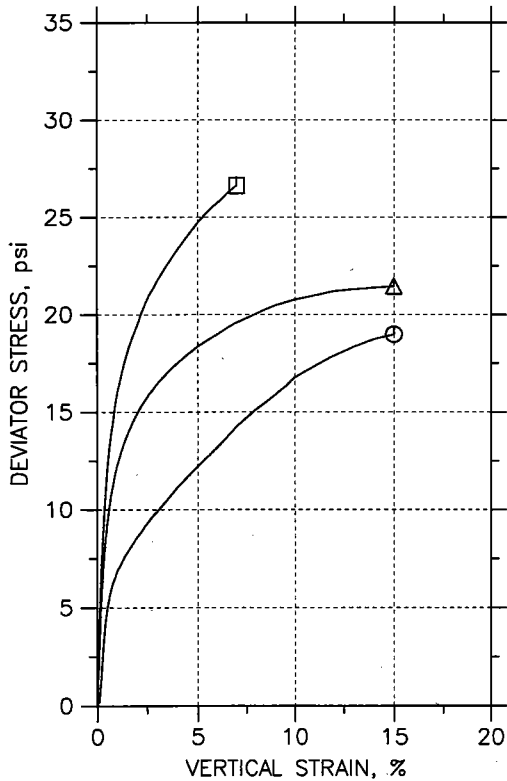
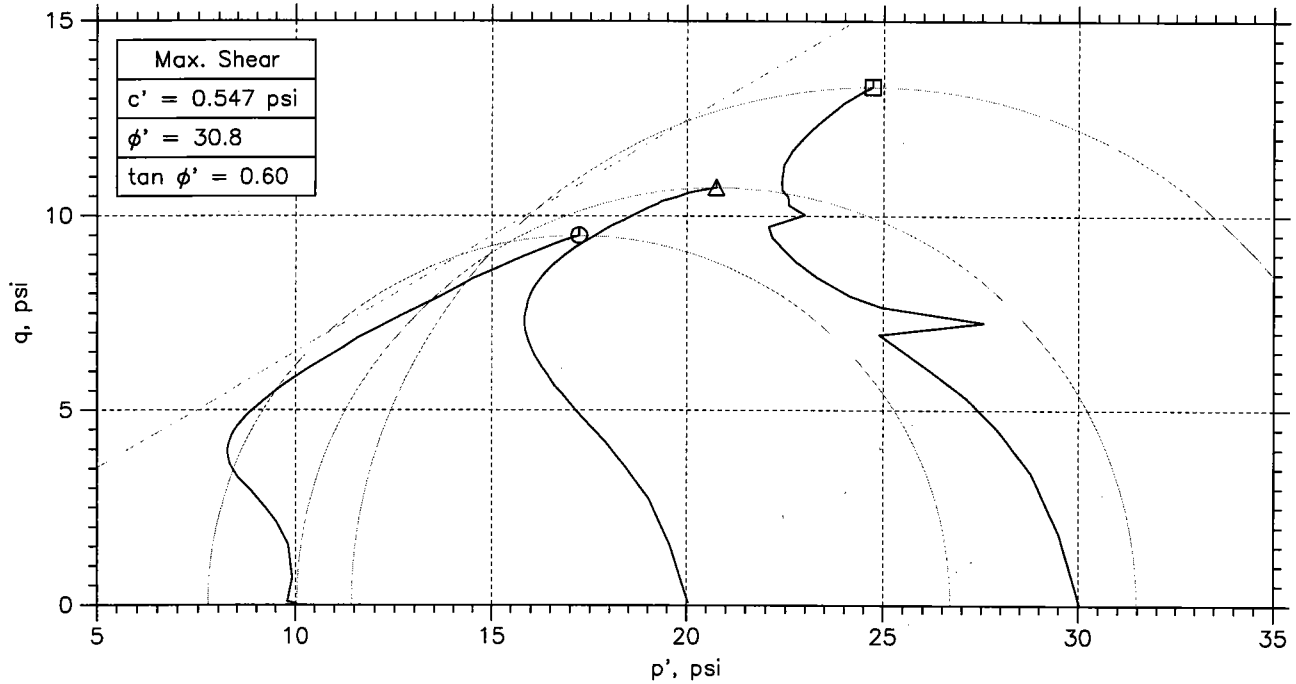
Symbol	○	△	□	
Sample No.	4-1	4-2	4-4	
Test No.	1 of 3	2 of 3	3 of 3	
Depth	8.0-8.5	8.5-9.0	9.2-9.7	
Initial	Diameter, in	2.835	2.86	2.841
	Height, in	5.823	5.839	5.825
	Water Content, %	24.4	25.4	26.1
	Dry Density, pcf	102.4	97.62	98.84
	Saturation, %	105.3	96.8	102.8
Before Shear	Void Ratio	0.615	0.695	0.674
	Water Content, %	23.5	22.9	23.3
	Dry Density, pcf	101.9	103.	102.4
	Saturation*, %	100.0	100.0	100.0
	Void Ratio	0.623	0.607	0.616
	Back Press., psi	22.01	21.97	22.01
	Ver. Eff. Cons. Stress, psi	9.981	20.03	29.98
	Shear Strength, psi	9.482	10.72	13.3
	Strain at Failure, %	15	15	7
	Strain Rate, %/min	0.0625	0.0625	0.0625
	B-Value	0.95	0.98	0.96
	Estimated Specific Gravity	2.65	2.65	2.65
	Liquid Limit	0	0	0
	Plastic Limit	0	0	0

	Project: I-74 Mississippi River Br				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW03-2				
	Sample Type: Tube				
	Description: Brn. & gray vf. sandy silty clay				
	Remarks: 2500 # Load Cell Loadtrac II # 258112    FlowTrac II 13610 & 13610B & LVDT55306				

Phase calculations based on start of test.

\* Saturation is set to 100% for phase calculations.

# CONSOLIDATED UNDRAINED TRIAXIAL TEST



Symbol	○	△	□	
Sample No.	4-1	4-2	4-4	
Test No.	1 of 3	2 of 3	3 of 3	
Depth	8.0-8.5	8.5-9.0	9.2-9.7	
Initial	Diameter, in	2.835	2.86	2.841
	Height, in	5.823	5.839	5.825
	Water Content, %	24.4	25.4	26.1
	Dry Density, pcf	102.4	97.62	98.84
	Saturation, %	105.3	96.8	102.8
Before Shear	Void Ratio	0.615	0.695	0.674
	Water Content, %	23.5	22.9	23.3
	Dry Density, pcf	101.9	103.	102.4
	Saturation*, %	100.0	100.0	100.0
	Void Ratio	0.623	0.607	0.616
Back Press., psi	22.01	21.97	22.01	
Ver. Eff. Cons. Stress, psi	9.981	20.03	29.98	
Shear Strength, psi	9.482	10.72	13.3	
Strain at Failure, %	15	15	7	
Strain Rate, %/min	0.0625	0.0625	0.0625	
B-Value	0.95	0.98	0.96	
Estimated Specific Gravity	2.65	2.65	2.65	
Liquid Limit	0	0	0	
Plastic Limit	0	0	0	

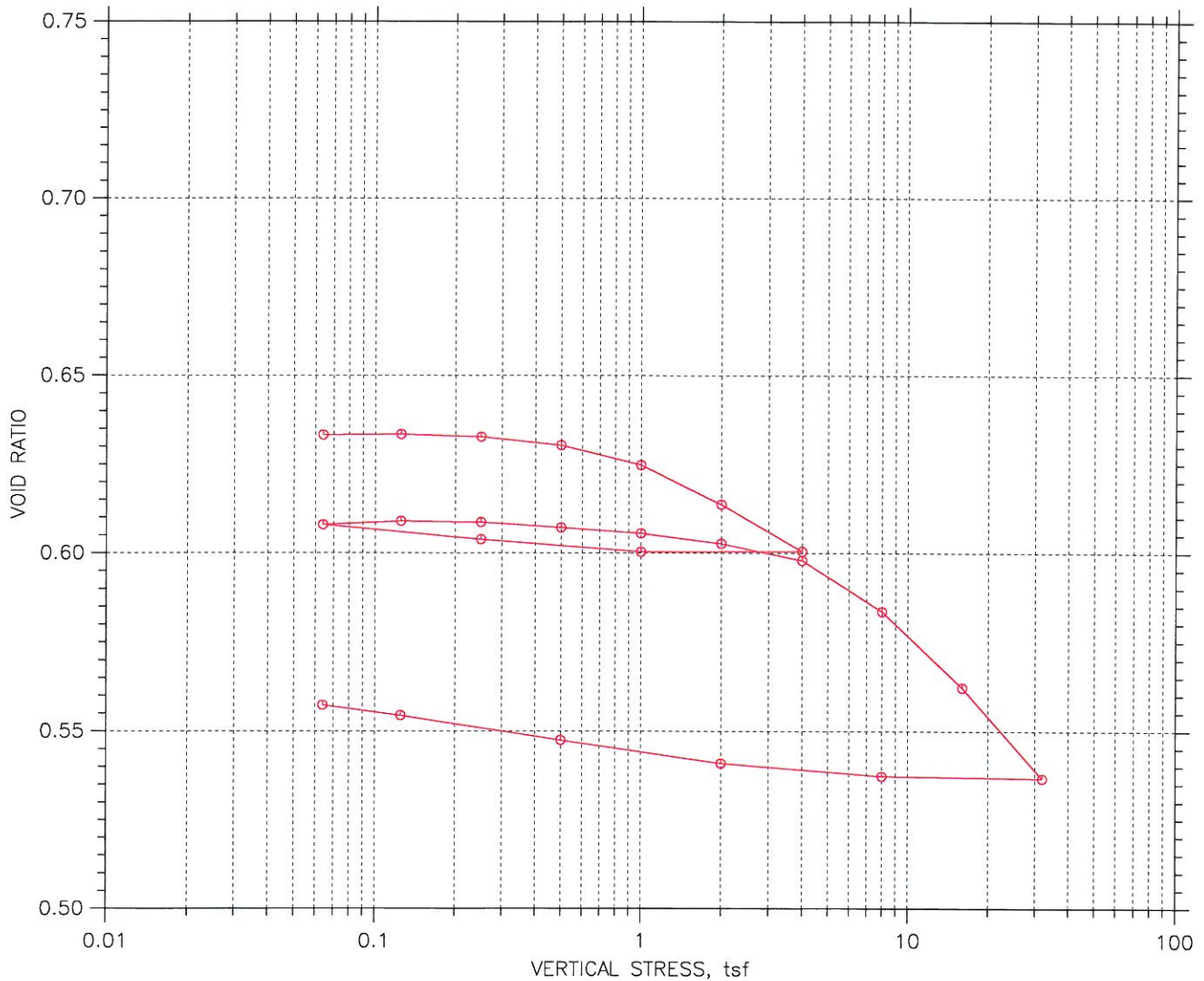
	Project: I-74 Mississippi River Br				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW03-2				
	Sample Type: Tube				
	Description: Brn. & gray vf. sandy silty clay				
Remarks: 2500 # Load Cell Loadtrac II # 258112 FlowTrac II 13610 & 13610B & LVDT55306					

Phase calculations based on start of test.

\* Saturation is set to 100% for phase calculations.

# CONSOLIDATION TEST DATA

## SUMMARY REPORT



		Before Test	After Test
Overburden Pressure: 0 tsf		24.59	21.82
Preconsolidation Pressure: 0 tsf		101.3	106.2
Compression Index: 2.54639e-313		103.06	103.78
Diameter: 2.499 in	Height: 0.996 in	0.63	0.56
LL: 0	PL: 0	PI: 0	GS: 2.65

	Project: 174	Location: Quad Cities	Project No.: 08H0120E
	Boring No.: RW03-2	Tested By: Rin	Checked By: JCC
	Sample No.: 4-3	Test Date: 8/3/10	Depth: 9.0-9.2
	Test No.: 1	Sample Type: Tube	Elevation:
	Description: Red. & gray vf. sandy silty clay.		
	Remarks:		

CONSOLIDATION TEST DATA

Project: I74  
 Boring No.: RW03-2  
 Sample No.: 4-3  
 Test No.: 1

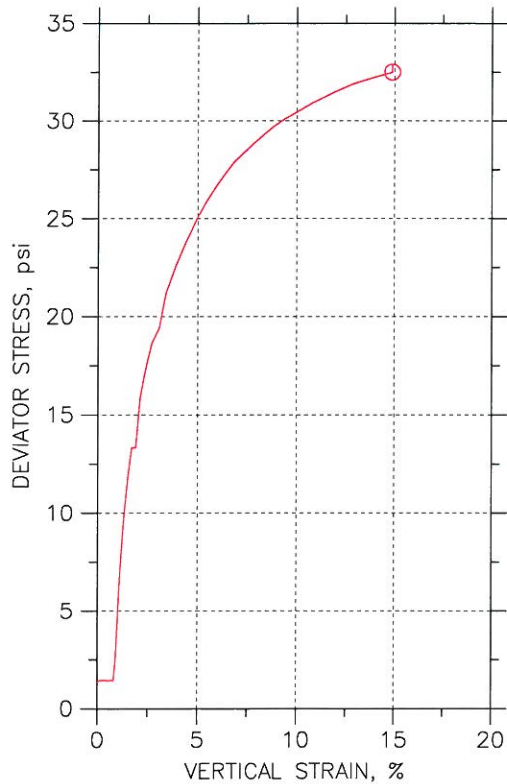
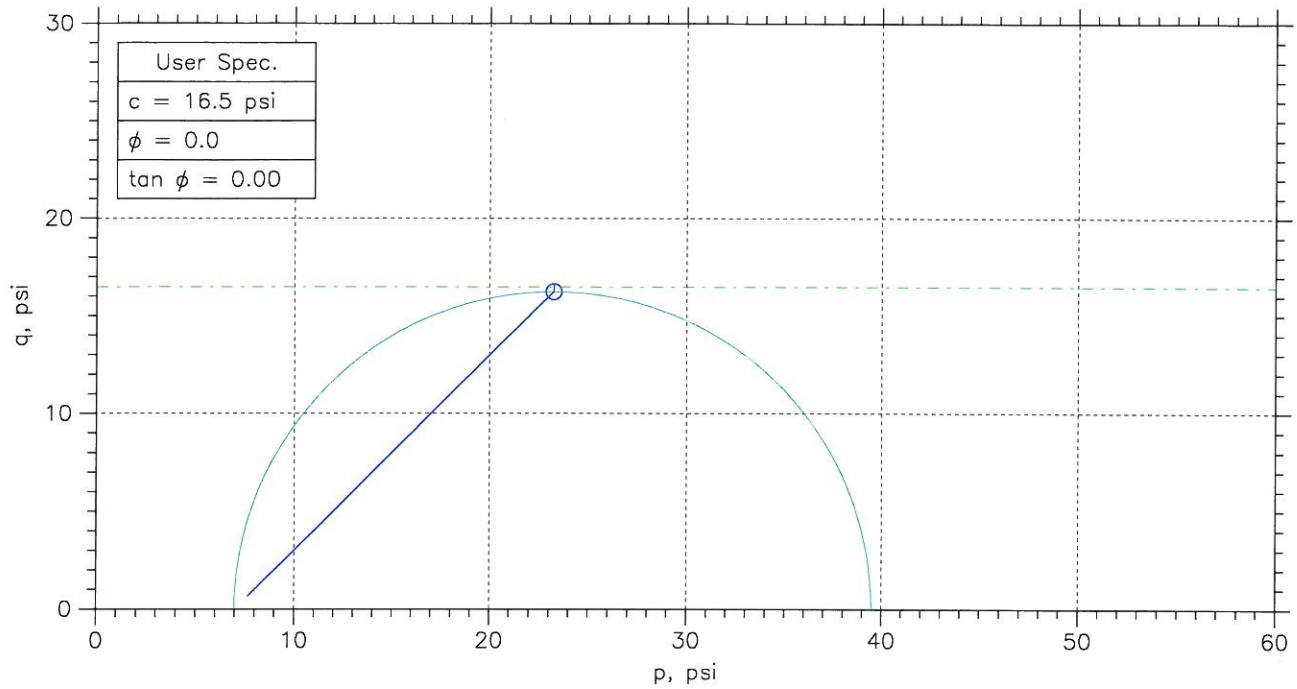
Location: Quad Cities  
 Tested By: Rin  
 Test Date: 8/3/10  
 Sample Type: Tube

Project No.: 08H0120E  
 Checked By: JCC  
 Depth: 9.0-9.2  
 Elevation:

Soil Description: Red. & gray vf. sandy silty clay.  
 Remarks:

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in <sup>2</sup> /sec	Log in <sup>2</sup> /sec	Ave. in <sup>2</sup> /sec
1	0.064	-0.0004536	0.633	-0.05	0.0	1.4	0.00e+000	5.83e-004	5.83e-004
2	0.125	-0.0005591	0.633	-0.06	14.4	0.0	5.67e-005	0.00e+000	5.67e-005
3	0.25	-0.0001238	0.633	-0.01	1.9	0.0	4.25e-004	0.00e+000	4.25e-004
4	0.5	0.001302	0.630	0.13	1.8	1.3	4.53e-004	6.38e-004	5.30e-004
5	1	0.004732	0.625	0.48	0.9	0.5	8.87e-004	1.61e-003	1.14e-003
6	2	0.01146	0.614	1.15	0.5	0.5	1.76e-003	1.66e-003	1.71e-003
7	4	0.01949	0.600	1.96	0.4	0.3	2.15e-003	2.46e-003	2.30e-003
8	1	0.01957	0.600	1.97	0.1	0.1	6.76e-003	1.50e-002	9.32e-003
9	0.25	0.01744	0.604	1.75	1.8	0.5	4.46e-004	1.70e-003	7.07e-004
10	0.064	0.01493	0.608	1.50	3.5	3.2	2.23e-004	2.46e-004	2.34e-004
11	0.125	0.01432	0.609	1.44	0.2	0.0	4.84e-003	0.00e+000	4.84e-003
12	0.25	0.01451	0.609	1.46	0.4	0.0	2.21e-003	0.00e+000	2.21e-003
13	0.5	0.01543	0.607	1.55	0.3	0.5	2.31e-003	1.64e-003	1.92e-003
14	1	0.01642	0.605	1.65	0.5	0.3	1.58e-003	2.55e-003	1.95e-003
15	2	0.01816	0.603	1.82	0.3	0.0	2.43e-003	0.00e+000	2.43e-003
16	4	0.02103	0.598	2.11	0.3	0.1	2.30e-003	8.23e-003	3.59e-003
17	8	0.02978	0.584	2.99	0.5	0.3	1.70e-003	2.39e-003	1.99e-003
18	16	0.04281	0.562	4.30	0.3	0.3	2.19e-003	2.82e-003	2.47e-003
19	32	0.05842	0.537	5.87	0.2	0.2	3.17e-003	4.02e-003	3.55e-003
20	8	0.05805	0.537	5.83	0.0	0.0	3.65e-002	8.64e-002	5.13e-002
21	2	0.05587	0.541	5.61	0.2	0.2	3.19e-003	4.48e-003	3.73e-003
22	0.5	0.05185	0.547	5.21	1.8	1.4	4.01e-004	5.31e-004	4.57e-004
23	0.125	0.04762	0.554	4.78	6.5	0.0	1.14e-004	0.00e+000	1.14e-004
24	0.064	0.04585	0.557	4.60	36.4	28.1	2.04e-005	2.64e-005	2.30e-005

# UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850



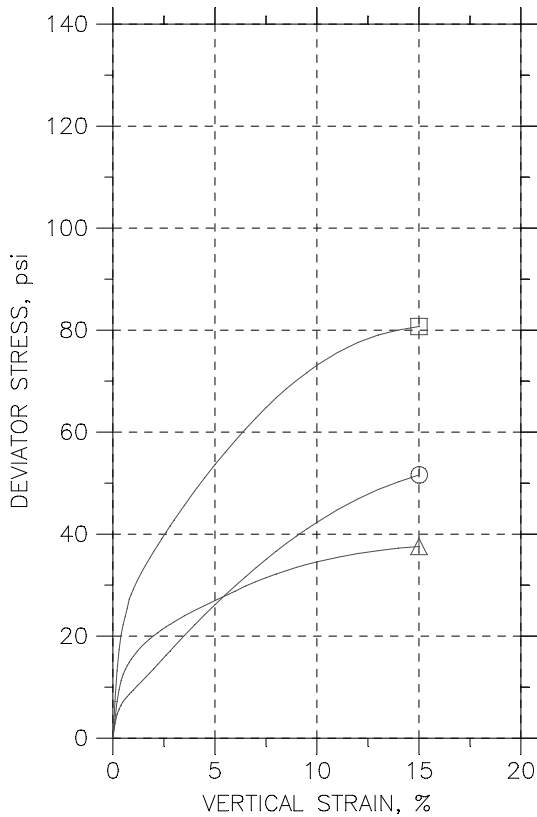
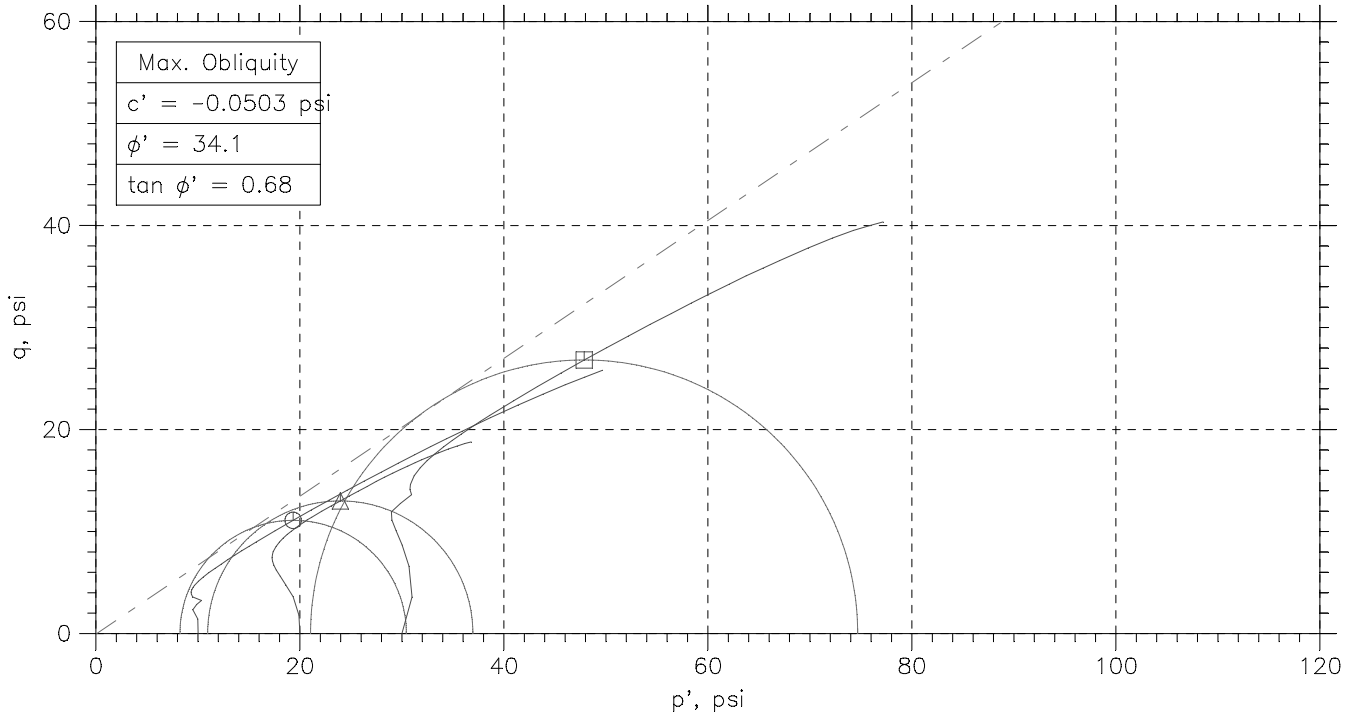
Symbol	⊙			
Sample No.	3-2			
Test No.	1			
Depth	6.5-7.0			
Tested by	RIN			
Test Date	8/6/10			
Checked by	JCC			
Check Date				
Diameter, in	2.849			
Height, in	5.758			
Water Content, %	20.9			
Dry Density, pcf	106.8			
Saturation, %	100.6			
Void Ratio	0.549			
Confining Stress, psi	7			
Undrained Strength, psi	16.24			
Max. Dev. Stress, psi	32.49			
Strain at Failure, %	14.9			
Strain Rate, %/min	1			
Estimated Specific Gravity	2.65			
Liquid Limit	0			
Plastic Limit	0			
Plasticity Index	0			

	Project: I-74 Mississippi River				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW18-1				
	Sample Type: Tube				
	Description: Yel. brn. & gray vf. sandy silt.				
Remarks: 2500 # Load Cell Loadtrac II # 258112 LVDT55306					

Phase calculations based on start of test.



# CONSOLIDATED UNDRAINED TRIAXIAL TEST



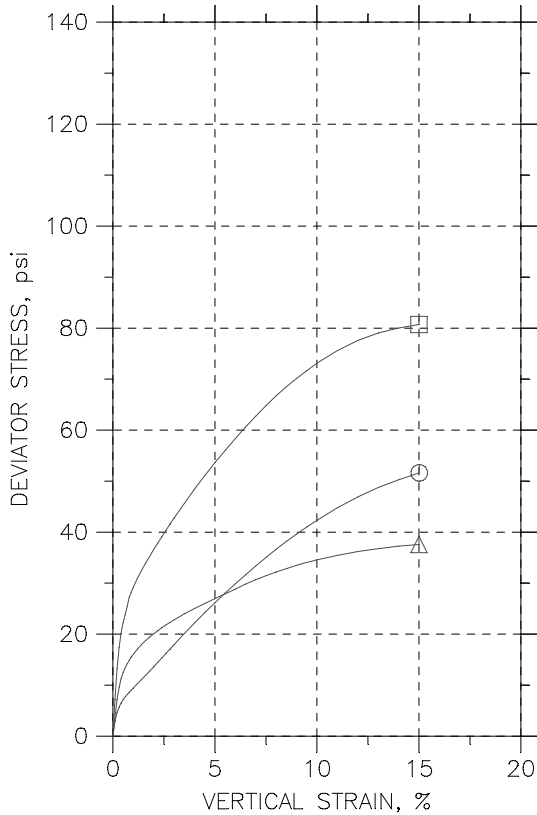
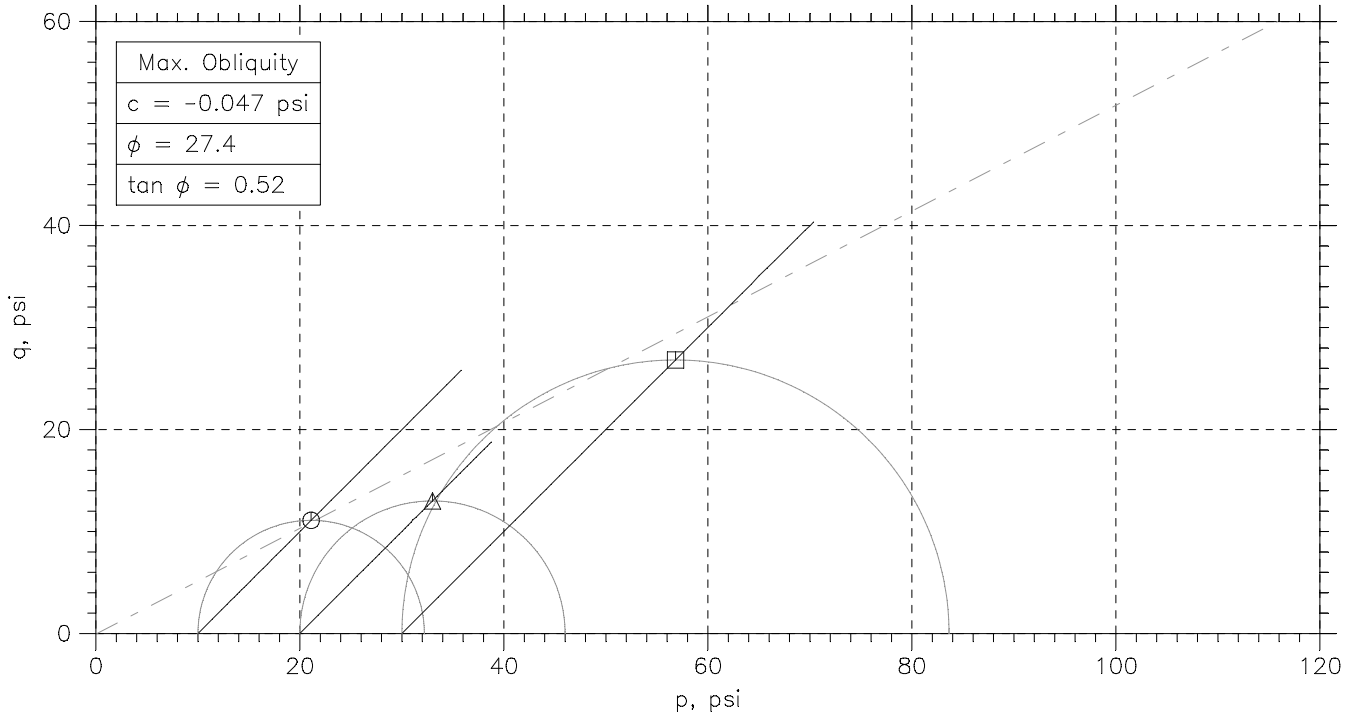
Symbol	⊙	△	□	
Sample No.	4-2	4-3	4-4	
Test No.	1 of 3	2 of 3	3 of 3	
Depth	8.3-8.8	8.8-9.3	9.3-9.8	
Initial	Diameter, in	2.853	2.86	2.848
	Height, in	5.621	5.863	5.677
	Water Content, %	23.1	23.3	22.3
	Dry Density, pcf	104.4	103.4	104.8
	Saturation, %	104.6	102.8	102.1
Before Shear	Void Ratio	0.585	0.6	0.578
	Water Content, %	23.0	22.7	21.4
	Dry Density, pcf	102.8	103.3	105.7
	Saturation*, %	100.0	100.0	100.0
	Void Ratio	0.609	0.601	0.566
	Back Press., psi	42.02	52.	21.99
	Ver. Eff. Cons. Stress, psi	9.98	19.99	30.01
	Shear Strength, psi	25.81	18.79	40.36
	Strain at Failure, %	15	15	15
	Strain Rate, %/min	0.0625	0.0625	0.0625
	B-Value	0.95	0.96	0.96
	Estimated Specific Gravity	2.65	2.65	2.65
	Liquid Limit	0	0	0
	Plastic Limit	0	0	0

	Project: I-74 Mississippi River Br				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW18-01				
	Sample Type: Tube				
	Description: Yel. brn. & gray vf.-f. sandy silt.				
Remarks: 2500 # Load Cell Loadtrac II # 258112 FlowTrac II 13610 & 13610B & LVDT55306					

Phase calculations based on start of test.

\* Saturation is set to 100% for phase calculations

# CONSOLIDATED UNDRAINED TRIAXIAL TEST



Symbol	⊙	△	□	
Sample No.	4-2	4-3	4-4	
Test No.	1 of 3	2 of 3	3 of 3	
Depth	8.3-8.8	8.8-9.3	9.3-9.8	
Initial	Diameter, in	2.853	2.86	2.848
	Height, in	5.621	5.863	5.677
	Water Content, %	23.1	23.3	22.3
	Dry Density, pcf	104.4	103.4	104.8
	Saturation, %	104.6	102.8	102.1
Before Shear	Void Ratio	0.585	0.6	0.578
	Water Content, %	23.0	22.7	21.4
	Dry Density, pcf	102.8	103.3	105.7
	Saturation*, %	100.0	100.0	100.0
	Void Ratio	0.609	0.601	0.566
	Back Press., psi	42.02	52.	21.99
	Ver. Eff. Cons. Stress, psi	9.98	19.99	30.01
	Shear Strength, psi	25.81	18.79	40.36
	Strain at Failure, %	15	15	15
	Strain Rate, %/min	0.0625	0.0625	0.0625
	B-Value	0.95	0.96	0.96
	Estimated Specific Gravity	2.65	2.65	2.65
	Liquid Limit	0	0	0
	Plastic Limit	0	0	0

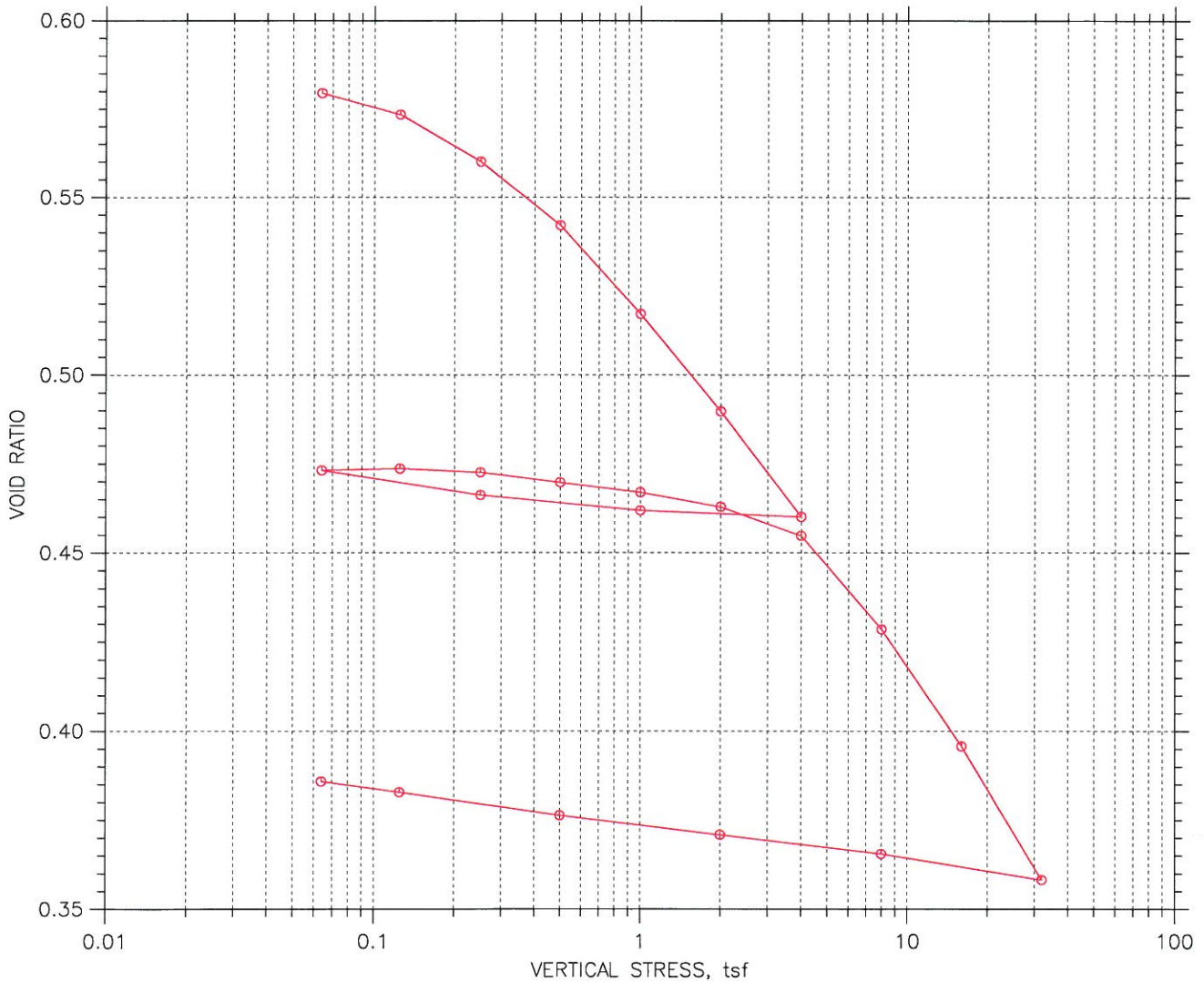
	Project: I-74 Mississippi River Br				
	Location: Quad Cities				
	Project No.: 08H0120E				
	Boring No.: RW18-01				
	Sample Type: Tube				
	Description: Yel. brn. & gray vf.-f. sandy silt.				
Remarks: 2500 # Load Cell Loadtrac II # 258112 FlowTrac II 13610 & 13610B & LVDT55306					

Phase calculations based on start of test.

\* Saturation is set to 100% for phase calculations

# CONSOLIDATION TEST DATA

## SUMMARY REPORT



		Before Test	After Test
Overburden Pressure: 0 tsf		20.74	15.75
Preconsolidation Pressure: 0 tsf		104.6	119.4
Compression Index: 2.54639e-313		94.51	108.15
Diameter: 2.5 in	Height: 0.998 in	0.58	0.39
LL: 0	PL: 0		
PI: 0	GS: 2.65		

	Project: 174	Location: Quad Cities	Project No.: 08H0120E
	Boring No.: RW18-01	Tested By: RIN	Checked By: JCC
	Sample No.: 4-1	Test Date: 8/3/10	Depth: 8.0-8.3
	Test No.: 1	Sample Type: Tube	Elevation:
	Description: Yel. brn. & gray vf.-f. sandy silt.		
	Remarks: LT107 2000# 2009 Calibration		

CONSOLIDATION TEST DATA

Project: I74  
 Boring No.: RW18-01  
 Sample No.: 4-1  
 Test No.: 1

Location: Quad Cities  
 Tested By: RIN  
 Test Date: 8/3/10  
 Sample Type: Tube

Project No.: 08H0120E  
 Checked By: JCC  
 Depth: 8.0-8.3  
 Elevation:

Soil Description: Yel. brn. & gray vf.-f. sandy silt.  
 Remarks: LT107 2000# 2009 Calibration

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. in <sup>2</sup> /sec	Log in <sup>2</sup> /sec	Ave. in <sup>2</sup> /sec
1	0.064	0.00139	0.579	0.14	0.1	0.1	6.71e-003	9.51e-003	7.87e-003
2	0.125	0.005207	0.573	0.52	3.5	0.0	2.32e-004	0.00e+000	2.32e-004
3	0.25	0.01361	0.560	1.36	3.4	0.0	2.37e-004	0.00e+000	2.37e-004
4	0.5	0.02494	0.542	2.50	2.0	1.2	3.90e-004	6.50e-004	4.87e-004
5	1	0.04072	0.517	4.08	0.9	0.0	8.42e-004	0.00e+000	8.42e-004
6	2	0.058	0.490	5.81	0.5	0.0	1.64e-003	0.00e+000	1.64e-003
7	4	0.07668	0.460	7.68	0.5	0.0	1.57e-003	0.00e+000	1.57e-003
8	1	0.07557	0.462	7.57	0.0	0.0	7.73e-002	7.88e-002	7.80e-002
9	0.25	0.07283	0.466	7.30	0.2	0.1	3.05e-003	1.38e-002	4.99e-003
10	0.064	0.06845	0.473	6.86	1.9	0.0	3.78e-004	0.00e+000	3.78e-004
11	0.125	0.06816	0.474	6.83	0.1	0.1	8.04e-003	1.32e-002	9.99e-003
12	0.25	0.06882	0.473	6.90	0.2	0.0	3.15e-003	0.00e+000	3.15e-003
13	0.5	0.07059	0.470	7.07	0.2	0.0	3.01e-003	2.60e-002	5.39e-003
14	1	0.07236	0.467	7.25	0.1	0.0	1.10e-002	3.84e-002	1.71e-002
15	2	0.07492	0.463	7.51	0.0	0.0	2.23e-002	6.58e-002	3.33e-002
16	4	0.08004	0.455	8.02	0.1	0.0	6.11e-003	5.86e-002	1.11e-002
17	8	0.09658	0.429	9.68	0.2	0.0	3.96e-003	4.22e-002	7.24e-003
18	16	0.1173	0.396	11.75	0.1	0.0	1.12e-002	5.91e-002	1.88e-002
19	32	0.1409	0.358	14.12	0.1	0.0	1.06e-002	5.06e-002	1.75e-002
20	8	0.1363	0.366	13.66	0.0	0.0	6.27e-002	0.00e+000	6.27e-002
21	2	0.133	0.371	13.32	0.0	0.0	3.68e-002	0.00e+000	3.68e-002
22	0.5	0.1295	0.376	12.98	0.5	0.0	1.36e-003	0.00e+000	1.36e-003
23	0.125	0.1254	0.383	12.57	1.9	0.0	3.32e-004	0.00e+000	3.32e-004
24	0.064	0.1235	0.386	12.38	13.4	0.0	4.69e-005	0.00e+000	4.69e-005