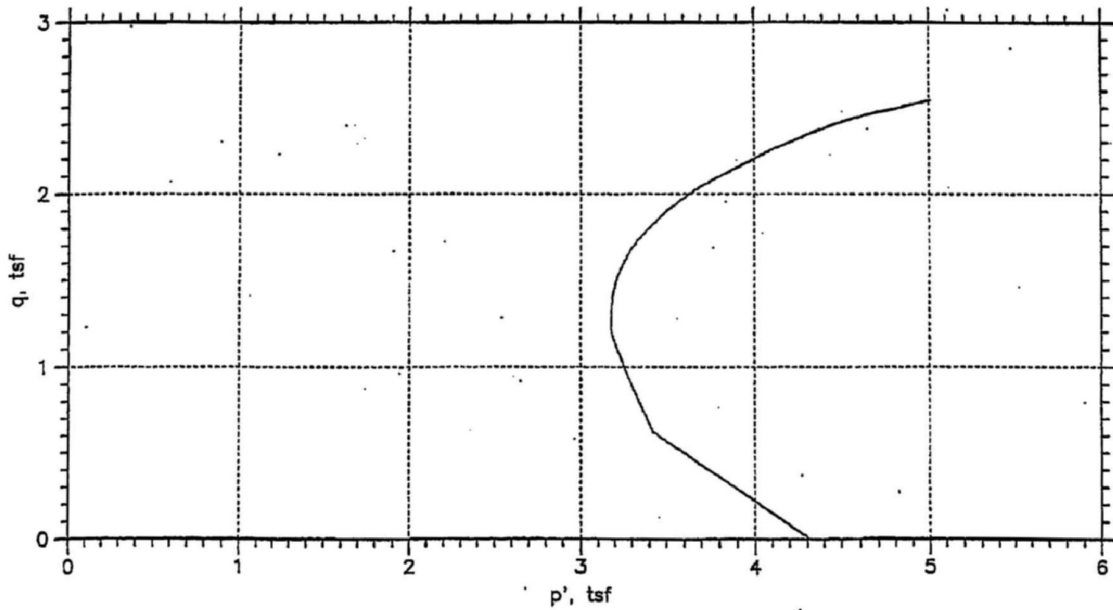
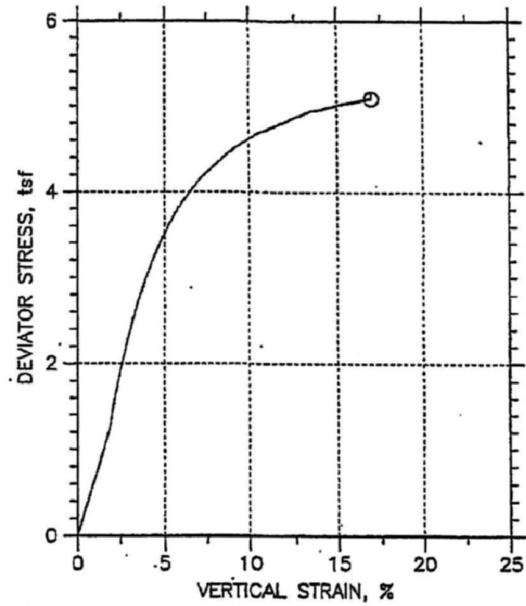
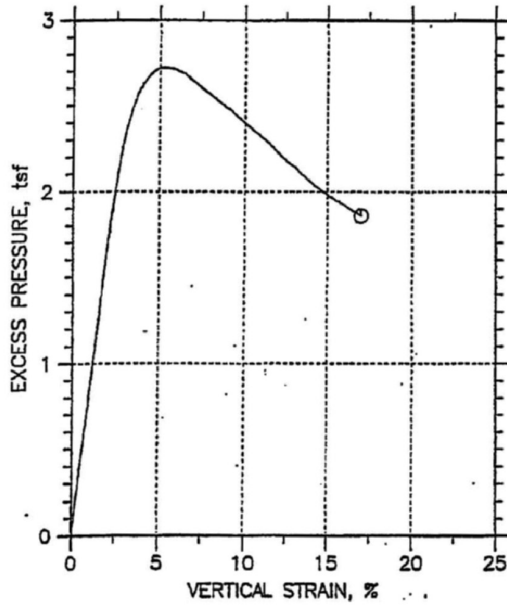


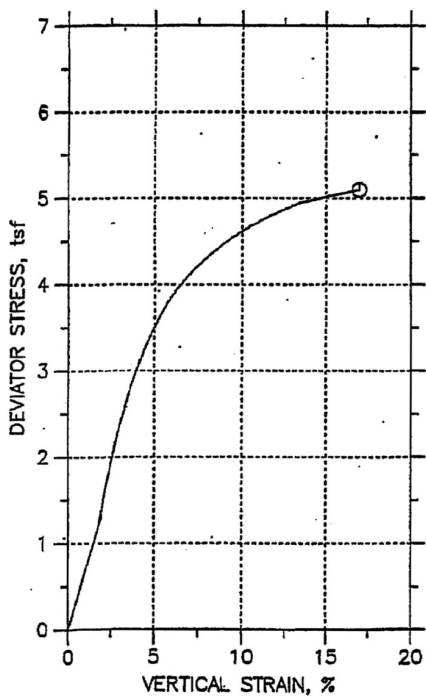
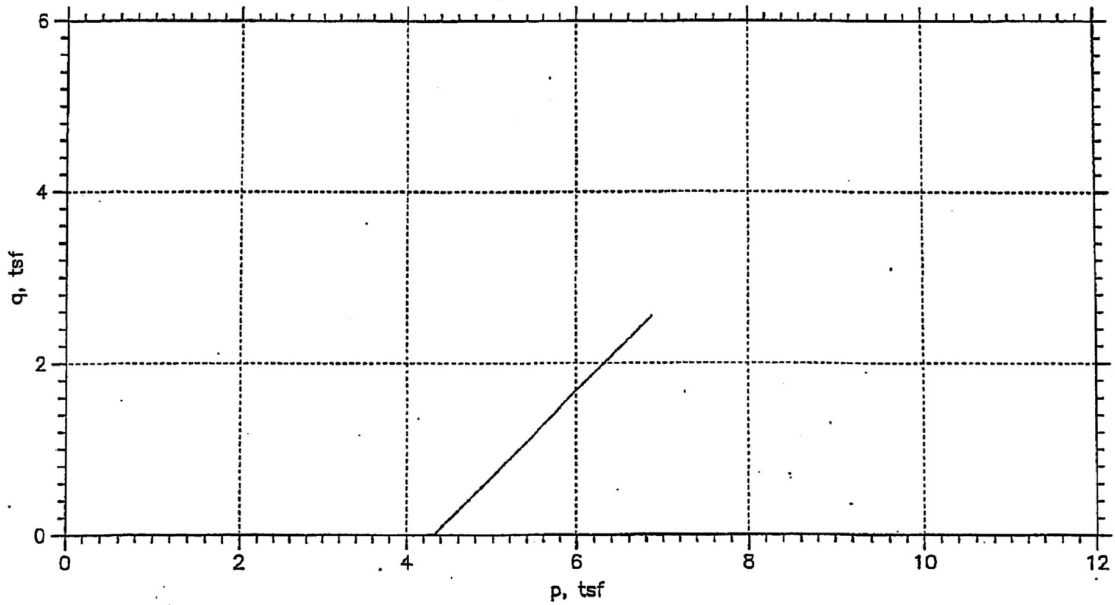
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Project: Exelon Texas COL Victoria	Location: B-2174UD, UD-4	Project No.: 6468071777
Boring No.: B-2174UD	Tested By: HJ	Checked By: JW
Sample No.: UD-4	Test Date: 3/26/08	Depth: 90-90.9 Ft. <i>JW</i>
Test No.: 8436.1	Sample Type: Undisturbed	Elevation: N/A <i>3/31/08</i>
Description: Light Greenish Sandy Lean CLAY (CL)		
Remarks: ASTM D4767-04		

Mon, 31-MAR-2008 12:54:29

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

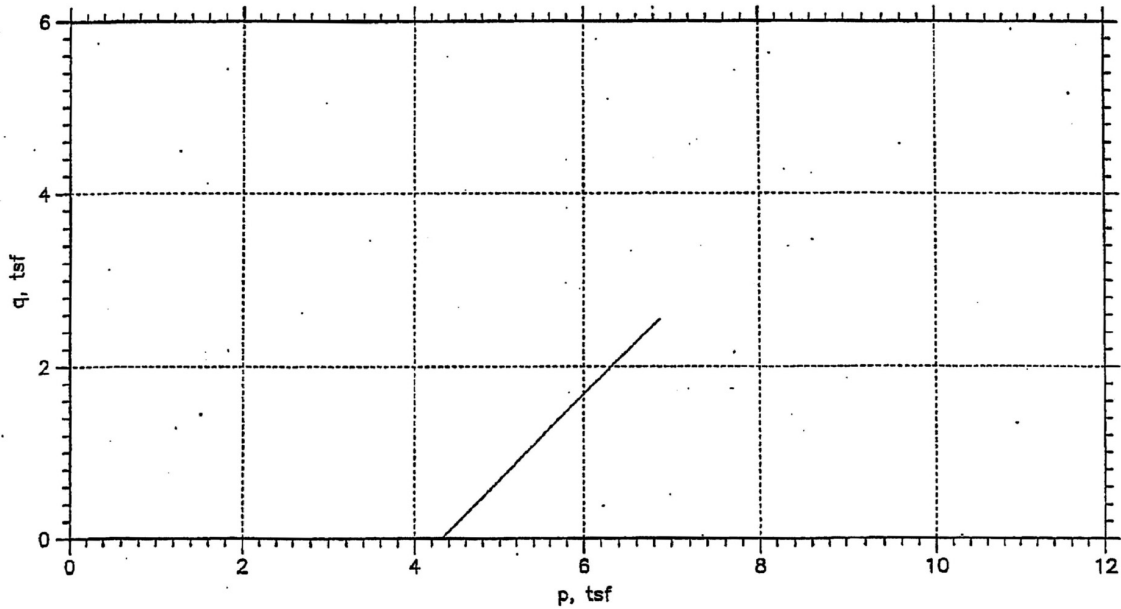
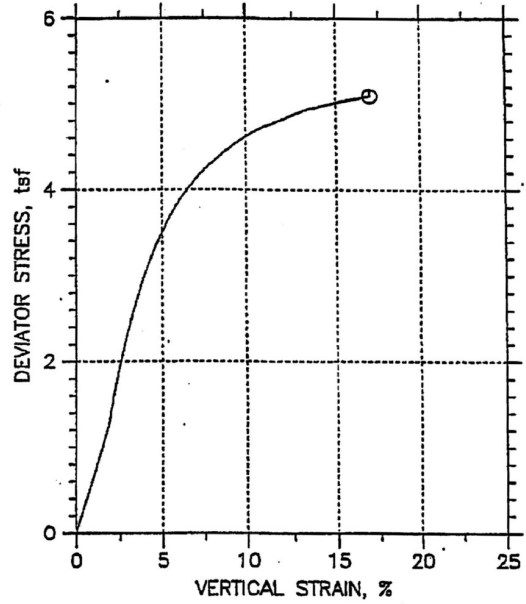
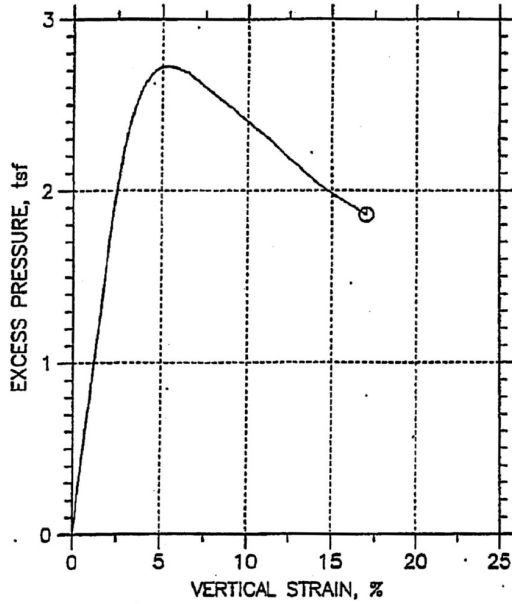


Symbol	⊙			
Sample No.	UD-4			
Test No.	8436.1			
Depth	90-90.9 Ft.			
Initial	Diameter, in	2.853		
	Height, in	5.957		
	Water Content, %	15.6		
	Dry Density, pcf	118.1		
Before Shear	Saturation, %	95.9		
	Void Ratio	0.443		
	Water Content, %	16.0		
	Dry Density, pcf	118.7		
Before Shear	Saturation*, %	100.0		
	Void Ratio	0.436		
Before Shear	Back Press., tsf	11.52		
	Ver. Eff. Cons. Stress, tsf	4.32		
	Shear Strength, tsf	2.547		
	Strain at Failure, %	17		
	Strain Rate, %/min	0.1		
	B-Value	0.96		
	Measured Specific Gravity	2.73		
	Liquid Limit	39		
	Plastic Limit	18		

MACTEC	Project: Exelon Texas COL Victoria				
	Location: B-2174UD, UD-4				
	Project No.: 6468071777				
	Boring No.: B-2174UD				
	Sample Type: Undisturbed				
	Description: Light Greenish Sandy Lean CLAY (CL)				
Remarks: ASTM D4767-04					

Mon, 31-MAR-2008 12:54:42 Phase calculations based on start and end of test.
 * Saturation is set to 100% for phase calculations.

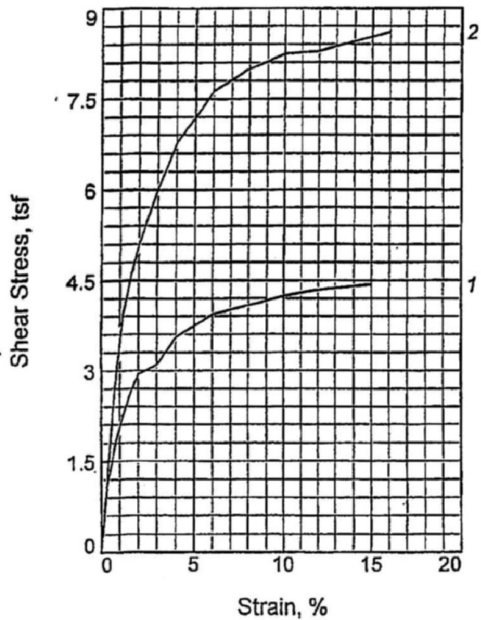
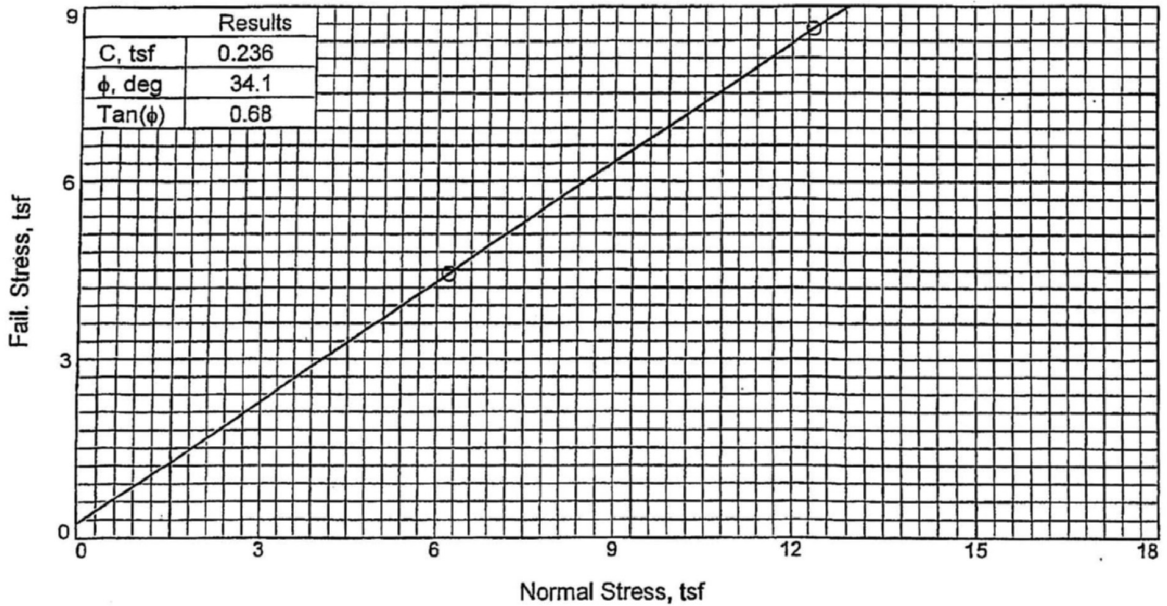
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Project: Exelon Texas COL Victoria	Location: B-2174UD, UD-4	Project No.: 6468071777
Boring No.: B-2174UD	Tested By: HJ	Checked By: JW <i>[Signature]</i>
Sample No.: UD-4	Test Date: 3/26/08	Depth: 90-90.9 Ft.
Test No.: 8436.1	Sample Type: Undisturbed	Elevation: N/A <i>3/31/08</i>
Description: Light Greenish Sandy Lean CLAY (CL)		
Remarks: ASTM D4767-04		

Mon, 31-MAR-2008 12:54:42

Direct Shear Test Results – UD Samples



	1	2	
Sample No.	1	2	
Initial	Water Content, %	19.2	15.7
	Dry Density, pcf	99.3	102.8
	Saturation, %	75.4	66.9
	Void Ratio	0.6843	0.6272
	Diameter, in.	2.50	2.50
At Test	Height, in.	1.00	1.01
	Water Content, %	22.7	18.7
	Dry Density, pcf	104.0	111.5
	Saturation, %	100.0	100.2
	Void Ratio	0.6089	0.5011
Normal Stress, tsf	Diameter, in.	2.50	2.50
	Height, in.	0.96	0.93
Normal Stress, tsf	6.200	12.380	
Fail. Stress, tsf	4.430	8.610	
Strain, %	15.0	16.0	
Ult. Stress, tsf			
Strain, %			
Strain rate, in./min.	0.01	0.01	

Sample Type: Undisturbed
Description: Light Yellowish Brown Silty SAND (SM) (Visual)
 LL= ND PL= ND PI= ND
Specific Gravity= 2.68
Remarks: ASTM D 3080-04. ND=Not determined.
 Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
Lab No. 8438

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Location: B-2174UD
Sample Number: UD-8 **Depth:** 145-147 Ft.
 Proj. No.: 6468-07-1777 **Date:** 1/23/08
DIRECT SHEAR TEST REPORT
MACTEC ENGINEERING AND CONSULTING, INC.

Tested By: BM

Checked By: JW/HJ

JW/HJ
4/2/08

DSC
5-1-08

DIRECT SHEAR TEST

4/2/2008

Date: 1/23/08
 Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project No.: 6468-07-1777
 Location: B-2174UD
 Depth: 145-147 Ft. Sample Number: UD-8
 Description: Light Yellowish Brown Silty SAND (SM) (Visual)
 Remarks: ASTM D 3080-04. ND=Not determined. Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Type of Sample: Undisturbed
 Specific Gravity=2.68 LL=ND PL= ND PI=ND

Parameters for Specimen No. 1

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	118.820		164.490
Moisture content: Dry soil+tare, gms.	100.950		135.570
Moisture content: Tare, gms.	8.090		8.310
Moisture, %	19.2	22.7	22.7
Moist specimen weight, gms.	153.4		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.00	0.96	
Net decrease in height, in.		0.04	
Wet Density, pcf	118.5	127.6	
Dry density, pcf	99.3	104.0	
Void ratio	0.6843	0.6089	
Saturation, %	75.4	100.0	

Test Readings for Specimen No. 1

Normal stress = 6.2 tsf
 Strain rate, in./min. = 0.01
 Fail. Stress = 4.430 tsf at reading no. 13

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	56.00	56.0	0.2	0.821
2	0.0100	82.00	82.0	0.4	1.203
3	0.0200	124.00	124.0	0.8	1.819
4	0.0300	154.00	154.0	1.2	2.259
5	0.0400	180.00	180.0	1.6	2.640
6	0.0500	200.00	200.0	2.0	2.934
7	0.0750	211.00	211.0	3.0	3.095
8	0.1000	242.00	242.0	4.0	3.550
9	0.1500	268.00	268.0	6.0	3.931
10	0.2000	278.00	278.0	8.0	4.078
11	0.2500	289.00	289.0	10.0	4.239
12	0.3000	296.00	296.0	12.0	4.342
13	0.3750	302.00	302.0	15.0	4.430

MACTEC Engineering and Consulting, Inc.

Parameters for Specimen No. 2

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	118.070		156.320
Moisture content: Dry soil+tare, gms.	103.210		132.960
Moisture content: Tare, gms.	8.290		8.300
Moisture, %	15.7	18.7	18.7
Moist specimen weight, gms.	154.2		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.93	
Net decrease in height, in.		0.08	
Wet Density, pcf	118.9	132.3	
Dry density, pcf	102.8	111.5	
Void ratio	0.6272	0.5011	
Saturation, %	66.9	100.2	

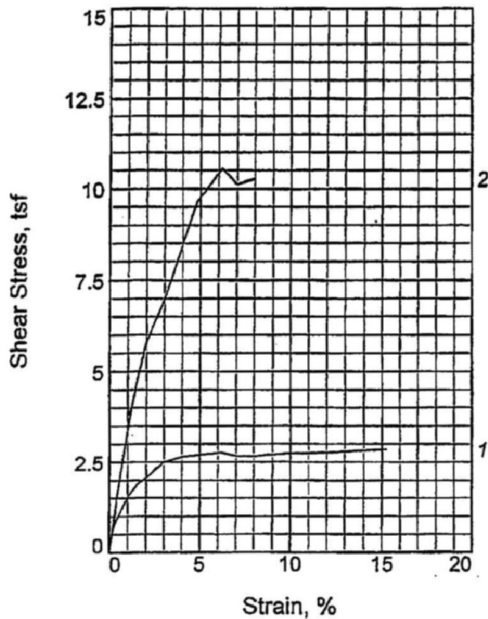
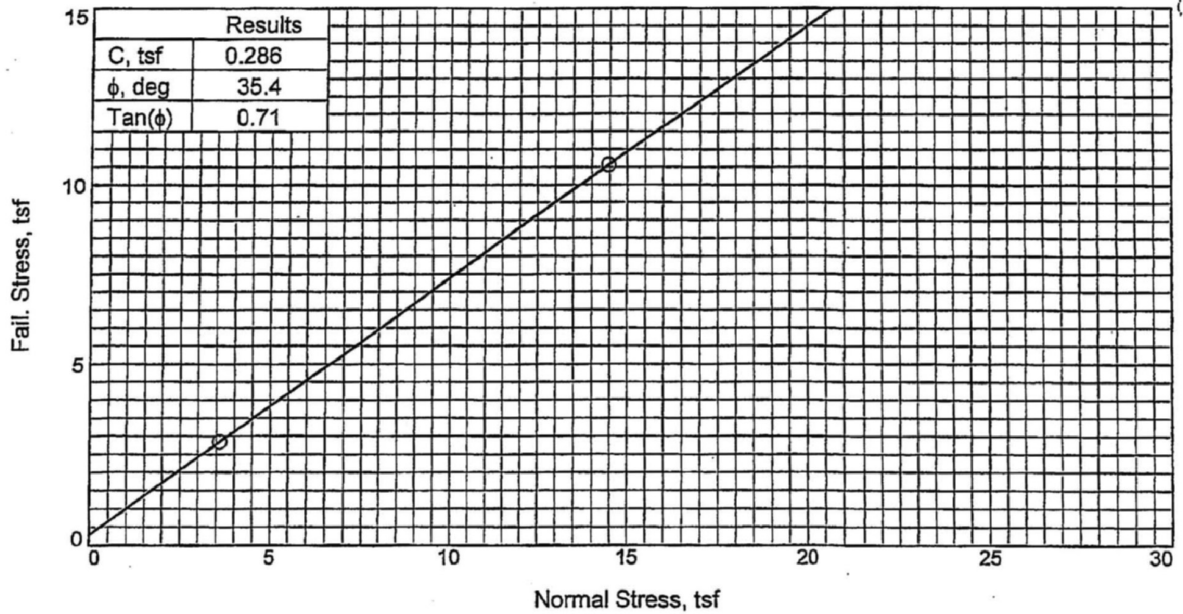
Test Readings for Specimen No. 2

Normal stress = 12.38 tsf

Strain rate, in./min. = 0.01

Fail. Stress = 8.610 tsf at reading no. 13

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	40.00	40.0	0.2	0.587
2	0.0100	104.00	104.0	0.4	1.525
3	0.0200	196.00	196.0	0.8	2.875
4	0.0300	270.00	270.0	1.2	3.960
5	0.0400	312.00	312.0	1.6	4.576
6	0.0500	346.00	346.0	2.0	5.075
7	0.0750	409.00	409.0	3.0	5.999
8	0.1000	461.00	461.0	4.0	6.762
9	0.1500	520.00	520.0	6.0	7.627
10	0.2000	545.00	545.0	8.0	7.994
11	0.2500	562.00	562.0	10.0	8.243
12	0.3000	565.00	565.0	12.0	8.287
13	0.4000	587.00	587.0	16.0	8.610



Sample No.	1	2	
Initial	Water Content, %	17.6	13.8
	Dry Density, pcf	110.1	109.5
	Saturation, %	88.5	67.9
	Void Ratio	0.5416	0.5514
	Diameter, in.	2.50	2.50
	Height, in.	1.01	1.01
At Test	Water Content, %	17.3	16.4
	Dry Density, pcf	115.5	109.5
	Saturation, %	100.2	81.1
	Void Ratio	0.4698	0.5514
	Diameter, in.	2.50	2.50
	Height, in.	0.96	1.01
Normal Stress, tsf	3.605	14.470	
Fail. Stress, tsf	2.846	10.561	
Strain, %	15.2	6.2	
Ult. Stress, tsf			
Strain, %			
Strain rate, in./min.	0.01	0.01	

Sample Type: Undisturbed
Description: Light Gray Silty SAND (SM) (Visual)
 LL= NV PL= NP PI= NP
Specific Gravity: 2.72
Remarks: ASTM D 3080-04. ND=Not determined.
 Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
Lab No. 8439

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Location: B-2174UD
Sample Number: UD-10 **Depth:** 183-185 Ft
 Proj. No.: 6458-07-1777 **Date:** 1/19/08
DIRECT SHEAR TEST REPORT
MACTEC ENGINEERING AND CONSULTING, INC.

Remarks: Some of the data points measured are not shown to allow for plotting of failure plane.

Tested By: BM

Checked By: JW/HJ

JW 7/11/08

KAW 7/11/08

DIRECT SHEAR TEST

7/10/2008

Date: 1/19/08
 Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project No.: 6468-07-1777
 Location: B-2174UD
 Depth: 183-185 Ft **Sample Number:** UD-10
 Description: Light Gray Silty SAND (SM) (Visual)
 Remarks: ASTM D 3080-04. ND=Not determined. Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Type of Sample: Undisturbed
 Specific Gravity=2.72 LL=NV PL= NP PI=NP

Parameters for Specimen No. 1

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	172.650		168.410
Moisture content: Dry soil+tare, gms.	147.410		143.570
Moisture content: Tare, gms.	4.210		0.000
Moisture, %	17.6	17.3	17.3
Moist specimen weight, gms.	168.4		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.96	
Net decrease in height, in.		0.05	
Wet Density, pcf	129.6	135.5	
Dry density, pcf	110.1	115.5	
Void ratio	0.5416	0.4698	
Saturation, %	88.5	100.2	

Test Readings for Specimen No. 1

Normal stress = 3.605 tsf
 Strain rate, in./min. = 0.01
 Fail. Stress = 2.846 tsf at reading no. 14

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	43.00	43.0	0.2	0.631
2	0.0100	63.00	63.0	0.4	0.924
3	0.0200	90.00	90.0	0.8	1.320
4	0.0300	114.00	114.0	1.2	1.672
5	0.0400	131.00	131.0	1.6	1.921
6	0.0500	140.00	140.0	2.0	2.053
7	0.0750	170.00	170.0	3.0	2.494
8	0.1000	180.00	180.0	4.0	2.640
9	0.1550	188.00	188.0	6.2	2.758
10	0.1750	182.00	182.0	7.0	2.670
11	0.2000	182.00	182.0	8.0	2.670
12	0.2500	187.00	187.0	10.0	2.743
13	0.3000	188.00	188.0	12.0	2.758

MACTEC Engineering and Consulting, Inc.

Test Readings for Specimen No. 1

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
14	0.3800	194.00	194.0	15.2	2.846

Parameters for Specimen No. 2

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	113.730		161.650
Moisture content: Dry soil+tare, gms.	100.960		138.820
Moisture content: Tare, gms.	8.190		0.000
Moisture, %	13.8	16.4	16.4
Moist specimen weight, gms.	161.7		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	1.01	
Net decrease in height, in.		0.00	
Wet Density, pcf	124.5	127.5	
Dry density, pcf	109.5	109.5	
Void ratio	0.5514	0.5514	
Saturation, %	67.9	81.1	

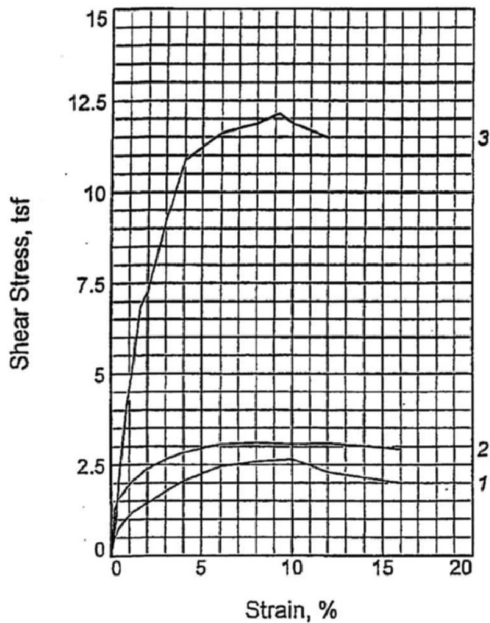
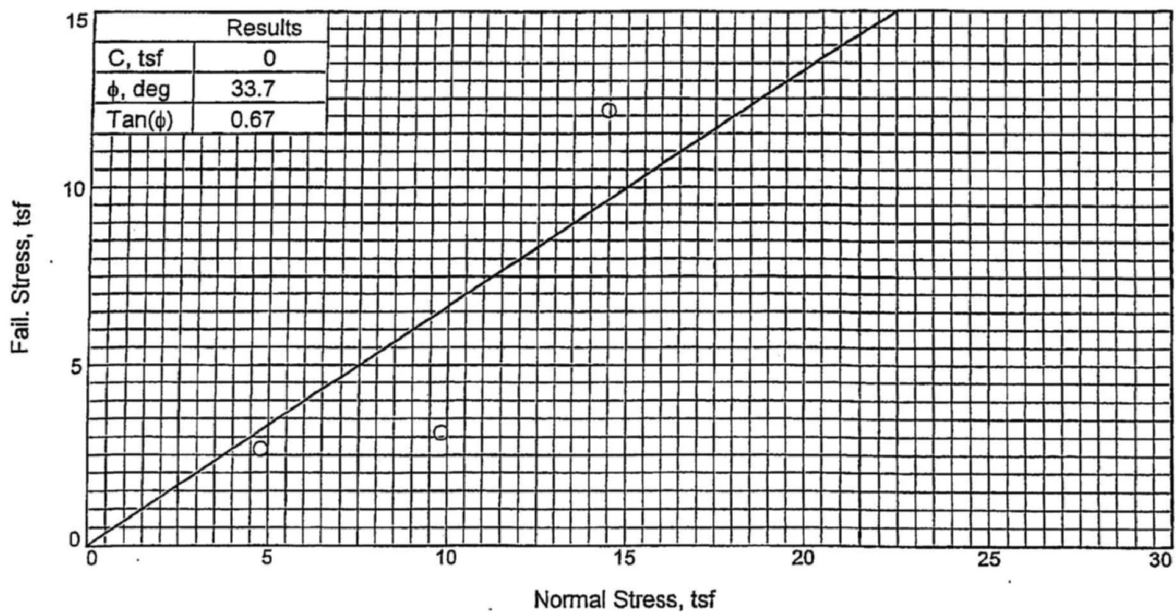
Test Readings for Specimen No. 2

Normal stress = 14.47 tsf

Strain rate, in./min. = 0.01

Fail. Stress = 10.561 tsf at reading no. 10

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	48.00	48.0	0.2	0.704
2	0.0100	104.00	104.0	0.4	1.525
3	0.0200	189.00	189.0	0.8	2.772
4	0.0300	270.00	270.0	1.2	3.960
5	0.0400	338.00	338.0	1.6	4.958
6	0.0500	396.00	396.0	2.0	5.808
7	0.0750	476.00	476.0	3.0	6.982
8	0.1000	575.00	575.0	4.0	8.434
9	0.1200	657.00	657.0	4.8	9.637
10	0.1550	720.00	720.0	6.2	10.561
11	0.1750	690.00	690.0	7.0	10.121
12	0.2000	700.00	700.0	8.0	10.267



Sample No.	1	2	3	
Initial	Water Content, %	23.0	18.2	16.7
	Dry Density, pcf	101.5	109.3	114.9
	Saturation, %	97.0	93.7	100.8
	Void Ratio	0.6292	0.5140	0.4403
	Diameter, in.	2.50	2.50	2.50
	Height, in.	1.00	1.01	1.01
At Test	Water Content, %	17.9	13.9	12.1
	Dry Density, pcf	112.2	120.3	125.2
	Saturation, %	100.0	98.6	99.4
	Void Ratio	0.4751	0.3748	0.3215
	Diameter, in.	2.50	2.50	2.50
	Height, in.	0.91	0.92	0.92
Normal Stress, tsf	4.790	9.830	14.470	
Fail. Stress, tsf	2.655	3.110	12.145	
Strain, %	10.0	8.0	9.2	
Ult. Stress, tsf				
Strain, %				
Strain rate, in./min.	0.01	0.01	0.01	

Sample Type: Undisturbed
Description: Greenish Gray Clayey SAND (SC)
 (Visual)
 LL= ND PL= ND PI= ND
 Specific Gravity= 2.65
Remarks: ASTM D 3080-04. ND=Not Determined.
 Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Lab No. 8440

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Location: B-2174UD
Sample Number: UD-15 **Depth:** 265-267 Ft.
Proj. No.: 6468-07-1777 **Date:** 2/14/08
DIRECT SHEAR TEST REPORT
MACTEC ENGINEERING AND CONSULTING, INC.

Tested By: BM

Checked By: JW/HJ

JW/HJ
4/2/08

DSC
5-1-08

DIRECT SHEAR TEST

4/2/2008

Date: 2/14/08
 Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project No.: 6468-07-1777
 Location: B-2174UD
 Depth: 265-267 Ft. Sample Number: UD-15
 Description: Greenish Gray Clayey SAND (SC) (Visual)
 Remarks: ASTM D 3080-04. ND=Not Determined. Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Type of Sample: Undisturbed
 Specific Gravity=2.65 LL=ND PL= ND PI=ND

Parameters for Specimen No. 1

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	115.250		163.170
Moisture content: Dry soil+tare, gms.	95.230		139.630
Moisture content: Tare, gms.	8.340		8.290
Moisture, %	23.0	17.9	17.9
Moist specimen weight, gms.	161.7		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.00	0.91	
Net decrease in height, in.		0.10	
Wet Density, pcf	124.9	132.3	
Dry density, pcf	101.5	112.2	
Void ratio	0.6292	0.4751	
Saturation, %	97.0	100.0	

Test Readings for Specimen No. 1

Normal stress = 4.79 tsf
 Strain rate, in./min. = 0.01
 Fail. Stress = 2.655 tsf at reading no. 11

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	34.00	34.0	0.2	0.499
2	0.0100	50.00	50.0	0.4	0.733
3	0.0200	68.00	68.0	0.8	0.997
4	0.0300	81.00	81.0	1.2	1.188
5	0.0400	91.00	91.0	1.6	1.335
6	0.0500	98.00	98.0	2.0	1.437
7	0.0750	120.00	120.0	3.0	1.760
8	0.1000	140.00	140.0	4.0	2.053
9	0.1500	167.00	167.0	6.0	2.450
10	0.2000	176.00	176.0	8.0	2.582
11	0.2500	181.00	181.0	10.0	2.655
12	0.3000	157.00	157.0	12.0	2.303
13	0.4000	136.00	136.0	16.0	1.995

MACTEC Engineering and Consulting, Inc.

Parameters for Specimen No. 2

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	125.550		167.480
Moisture content: Dry soil+tare, gms.	107.510		148.000
Moisture content: Tare, gms.	8.250		8.290
Moisture, %	18.2	13.9	13.9
Moist specimen weight, gms.	168.2		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.92	
Net decrease in height, in.		0.09	
Wet Density, pcf	129.1	137.1	
Dry density, pcf	109.3	120.3	
Void ratio	0.5140	0.3748	
Saturation, %	93.7	98.6	

Test Readings for Specimen No. 2

Normal stress = 9.83 tsf

Strain rate, in./min. = 0.01

Fail. Stress = 3.110 tsf at reading no. 10

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	92.00	92.0	0.2	1.349
2	0.0100	106.00	106.0	0.4	1.555
3	0.0200	125.00	125.0	0.8	1.833
4	0.0300	140.00	140.0	1.2	2.053
5	0.0400	152.00	152.0	1.6	2.229
6	0.0500	162.00	162.0	2.0	2.376
7	0.0750	180.00	180.0	3.0	2.640
8	0.1000	193.00	193.0	4.0	2.831
9	0.1500	209.00	209.0	6.0	3.066
10	0.2000	212.00	212.0	8.0	3.110
11	0.2500	209.00	209.0	10.0	3.066
12	0.3000	211.00	211.0	12.0	3.095
13	0.4000	200.00	200.0	16.0	2.934

Parameters for Specimen No. 3

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	135.290		176.190
Moisture content: Dry soil+tare, gms.	117.060		158.130
Moisture content: Tare, gms.	8.180		8.410
Moisture, %	16.7	12.1	12.1
Moist specimen weight, gms.	173.8		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.92	
Net decrease in height, in.		0.08	
Wet Density, pcf	134.1	140.3	
Dry density, pcf	114.9	125.2	
Void ratio	0.4403	0.3215	
Saturation, %	100.8	99.4	

Test Readings for Specimen No. 3

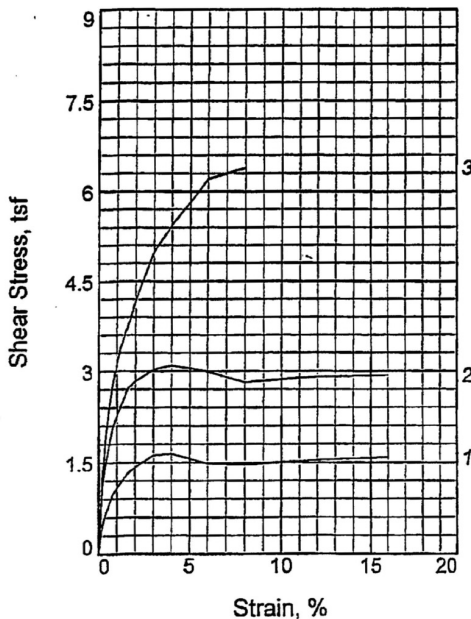
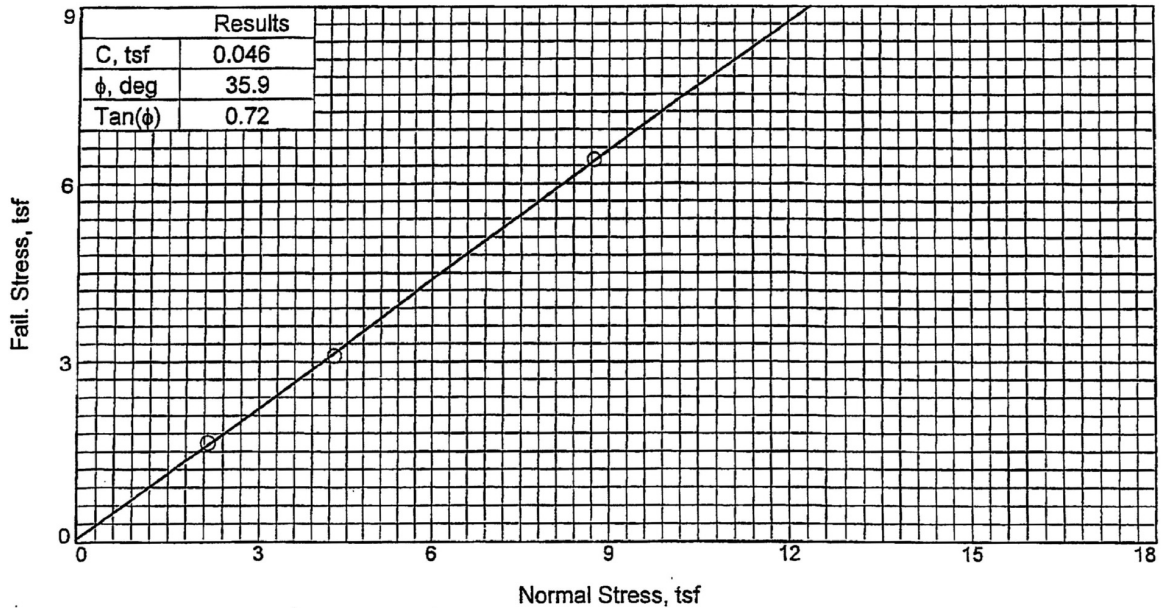
Normal stress = 14.47 tsf

Strain rate, in./min. = 0.01

Fail. Stress = 12.145 tsf at reading no. 11

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	47.00	47.0	0.2	0.689
2	0.0100	128.00	128.0	0.4	1.877
3	0.0200	272.00	272.0	0.8	3.990
4	0.0300	350.00	350.0	1.2	5.134
5	0.0400	464.00	464.0	1.6	6.806
6	0.0500	494.00	494.0	2.0	7.246
7	0.0750	628.00	628.0	3.0	9.211
8	0.1000	741.00	741.0	4.0	10.869
9	0.1500	792.00	792.0	6.0	11.617
10	0.2000	810.00	810.0	8.0	11.881
11	0.2300	828.00	828.0	9.2	12.145
12	0.2500	810.00	810.0	10.0	11.881
13	0.3000	783.00	783.0	12.0	11.485

MACTEC Engineering and Consulting, Inc.



Sample No.	1	2	3	
Initial	Water Content, %	17.7	18.7	16.7
	Dry Density, pcf	102.3	101.1	107.1
	Saturation, %	72.9	74.6	77.5
	Void Ratio	0.6596	0.6801	0.5855
	Diameter, in.	2.50	2.50	2.50
	Height, in.	1.01	1.02	1.01
At Test	Water Content, %	21.3	22.8	19.6
	Dry Density, pcf	107.6	105.2	111.5
	Saturation, %	100.4	101.1	102.2
	Void Ratio	0.5775	0.6142	0.5227
	Diameter, in.	2.50	2.50	2.50
	Height, in.	0.96	0.98	0.97
Normal Stress, tsf	2.160	4.280	8.750	
Fail. Stress, tsf	1.643	3.095	6.395	
Strain, %	4.0	4.0	8.0	
Ult. Stress, tsf				
Strain, %				
Strain rate, in./min.	0.18	0.18	0.18	

Sample Type: Undisturbed
Description: Very Pale Brown Poorly Graded SAND with silt (SP-SM) (Visual)
 LL= NV PL= *NP* PI= NP
Specific Gravity= 2.72
Remarks: ASTM D3080-04. ND=Not Determined.
 Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
Lab No. 8184B

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Location: B-2182UD
Sample Number: UD-12B **Depth:** 95-97.5 Ft
 Proj. No.: 6468-07-1777 **Date:** 12/17/07
DIRECT SHEAR TEST REPORT
MACTEC ENGINEERING AND CONSULTING, INC.

Remarks: Some of the data points measured are not shown to allow for plotting of failure plane.

Tested By: BM

Checked By: JW/HJ

JW

7/11/08

KAW 7/11/08

DIRECT SHEAR TEST

7/10/2008

Date: 12/17/07
Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468-07-1777
Location: B-2182UD
Depth: 95-97.5 Ft **Sample Number:** UD-12B
Description: Very Pale Brown Poorly Graded SAND with silt (SP-SM) (Visual)
Remarks: ASTM D3080-04. ND=Not Determined. Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
Type of Sample: Undisturbed
Specific Gravity=2.72 **LL=**NV **PL=** NP **PI=**NP

Parameters for Specimen No. 1			
Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	104.830		164.440
Moisture content: Dry soil+tare, gms.	90.320		137.020
Moisture content: Tare, gms.	8.200		8.350
Moisture, %	17.7	21.3	21.3
Moist specimen weight, gms.	156.7		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.96	
Net decrease in height, in.		0.05	
Wet Density, pcf	120.4	130.6	
Dry density, pcf	102.3	107.6	
Void ratio	0.6596	0.5775	
Saturation, %	72.9	100.4	

Test Readings for Specimen No. 1

Normal stress = 2.16 tsf
 Strain rate, in./min. = 0.18
 Fail. Stress = 1.643 tsf at reading no. 8

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	32.00	32.0	0.2	0.469
2	0.0100	46.00	46.0	0.4	0.675
3	0.0200	67.00	67.0	0.8	0.983
4	0.0300	79.00	79.0	1.2	1.159
5	0.0400	90.00	90.0	1.6	1.320
6	0.0500	97.00	97.0	2.0	1.423
7	0.0750	110.00	110.0	3.0	1.613
8	0.1000	112.00	112.0	4.0	1.643
9	0.1500	101.00	101.0	6.0	1.481
10	0.2000	100.00	100.0	8.0	1.467
11	0.3000	105.00	105.0	12.0	1.540
12	0.4000	108.00	108.0	16.0	1.584

MACTEC Engineering and Consulting, Inc.

Parameters for Specimen No. 2

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	114.700		168.470
Moisture content: Dry soil+tare, gms.	97.970		138.680
Moisture content: Tare, gms.	8.290		8.250
Moisture, %	18.7	22.8	22.8
Moist specimen weight, gms.	157.6		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.02	0.98	
Net decrease in height, in.		0.04	
Wet Density, pcf	119.9	129.2	
Dry density, pcf	101.1	105.2	
Void ratio	0.6801	0.6142	
Saturation, %	74.6	101.1	

Test Readings for Specimen No. 2

Normal stress = 4.28 tsf

Strain rate, in./min. = 0.18

Fail. Stress = 3.095 tsf at reading no. 8

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	76.00	76.0	0.2	1.115
2	0.0100	104.00	104.0	0.4	1.525
3	0.0200	142.00	142.0	0.8	2.083
4	0.0300	164.00	164.0	1.2	2.406
5	0.0400	185.00	185.0	1.6	2.714
6	0.0500	193.00	193.0	2.0	2.831
7	0.0750	206.00	206.0	3.0	3.022
8	0.1000	211.00	211.0	4.0	3.095
9	0.1500	204.00	204.0	6.0	2.992
10	0.2000	192.00	192.0	8.0	2.816
11	0.3000	198.00	198.0	12.0	2.904
12	0.4000	200.00	200.0	16.0	2.934

Parameters for Specimen No. 3

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	139.660		170.210
Moisture content: Dry soil+tare, gms.	120.870		143.630
Moisture content: Tare, gms.	8.250		8.250
Moisture, %	16.7	19.6	19.6
Moist specimen weight, gms.	162.6		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.97	
Net decrease in height, in.		0.04	
Wet Density, pcf	125.0	133.4	
Dry density, pcf	107.1	111.5	
Void ratio	0.5855	0.5227	
Saturation, %	77.5	102.2	

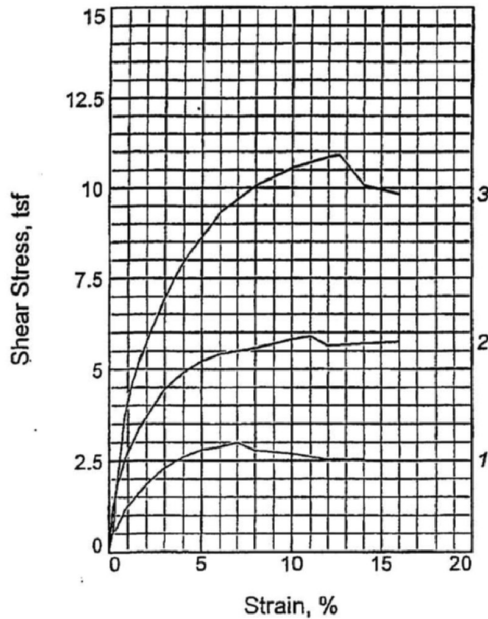
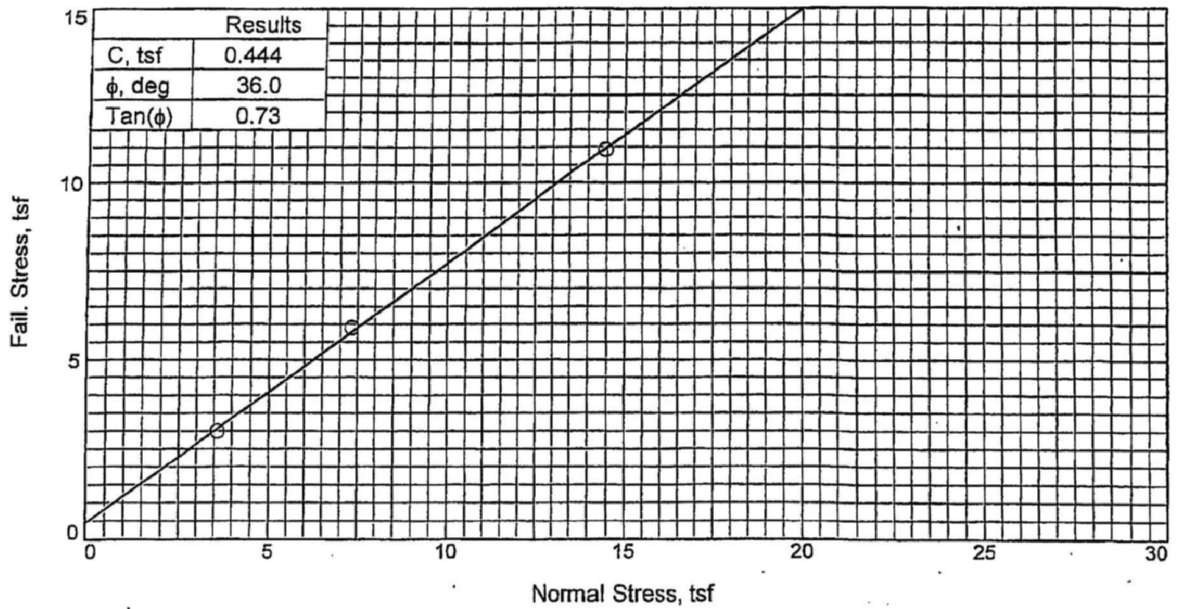
Test Readings for Specimen No. 3

Normal stress = 8.75 tsf

Strain rate, in./min. = 0.18

Fail. Stress = 6.395 tsf at reading no. 10

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	84.00	84.0	0.2	1.232
2	0.0100	136.00	136.0	0.4	1.995
3	0.0200	192.00	192.0	0.8	2.816
4	0.0300	231.00	231.0	1.2	3.388
5	0.0400	256.00	256.0	1.6	3.755
6	0.0500	284.00	284.0	2.0	4.166
7	0.0750	340.00	340.0	3.0	4.987
8	0.1000	371.00	371.0	4.0	5.442
9	0.1500	423.00	423.0	6.0	6.204
10	0.2000	436.00	436.0	8.0	6.395



Sample No.	1	2	3	
Initial	Water Content, %	14.4	15.9	14.9
	Dry Density, pcf	102.9	105.2	113.0
	Saturation, %	61.5	72.1	82.9
	Void Ratio	0.6262	0.5903	0.4812
	Diameter, in.	2.50	2.50	2.50
	Height, in.	1.01	1.01	1.01
At Test	Water Content, %	14.9	16.8	13.3
	Dry Density, pcf	112.5	113.1	122.8
	Saturation, %	81.9	94.0	98.1
	Void Ratio	0.4876	0.4798	0.3622
	Diameter, in.	2.50	2.50	2.50
	Height, in.	0.92	0.94	0.93
Normal Stress, tsf	3.605	7.340	14.465	
Fail. Stress, tsf	2.992	5.896	10.927	
Strain, %	7.0	11.0	12.6	
Ult. Stress, tsf				
Strain, %				
Strain rate, in./min.	0.01	0.01	0.01	

Sample Type: Undisturbed
Description: Very Pale Brown Silty SAND (SM)
 (Visual)
 LL= ND PL= ND PI= ND
 Specific Gravity= 2.68
Remarks: ASTM D-3080-04. ND=Not Determined.
 Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Lab No. 8443

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Location: B-2182UD
Sample Number: UD-16 **Depth:** 180-182.5 Ft.
 Proj. No.: 6468-07-1777 **Date:** 12/13/07
DIRECT SHEAR TEST REPORT
MACTEC ENGINEERING AND CONSULTING, INC.

Tested By: BM Checked By: JW/HJ

JW/HJ
4/2/08

DSC
5-1-08

DIRECT SHEAR TEST

4/2/2008

Date: 12/13/07
 Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project No.: 6468-07-1777
 Location: B-2182UD
 Depth: 180-182.5 Ft. Sample Number: UD-16
 Description: Very Pale Brown Silty SAND (SM) (Visual)
 Remarks: ASTM D-3080-04. ND=Not Determined. Lever arm mechanical shear device was used to perform the test. Samples sheared to the limitation of the machine.
 Type of Sample: Undisturbed
 Specific Gravity=2.68 LL=ND PL= ND PI=ND

Parameters for Specimen No. 1

Specimen Parameter	Initial	Consolidated	Final
Moisture content: Moist soil+tare, gms.	131.240		153.040
Moisture content: Dry soil+tare, gms.	116.820		133.190
Moisture content: Tare, gms.	16.540		0.000
Moisture, %	14.4	14.9	14.9
Moist specimen weight, gms.	153.0		
Diameter, in.	2.50	2.50	
Area, in. ²	4.91	4.91	
Height, in.	1.01	0.92	
Net decrease in height, in.		0.09	
Wet Density, pcf	117.7	129.2	
Dry density, pcf	102.9	112.5	
Void ratio	0.6262	0.4876	
Saturation, %	61.5	81.9	

Test Readings for Specimen No. 1

Normal stress = 3.605 tsf
 Strain rate, in./min. = 0.01
 Fail. Stress = 2.992 tsf at reading no. 12

No.	Horizontal Def. Dial in.	Load Dial	Load lbs.	Strain %	Shear Stress tsf
0	0.0000	0.00	0.0	0.0	0.000
1	0.0050	37.00	37.0	0.2	0.543
2	0.0100	45.00	45.0	0.4	0.660
3	0.0200	76.00	76.0	0.8	1.115
4	0.0300	94.00	94.0	1.2	1.379
5	0.0400	110.00	110.0	1.6	1.613
6	0.0500	126.00	126.0	2.0	1.848
7	0.0700	151.00	151.0	2.8	2.215
8	0.0850	165.00	165.0	3.4	2.420
9	0.1000	177.00	177.0	4.0	2.596
10	0.1250	190.00	190.0	5.0	2.787
11	0.1500	196.00	196.0	6.0	2.875
12	0.1750	204.00	204.0	7.0	2.992
13	0.2000	189.00	189.0	8.0	2.772

MACTEC Engineering and Consulting, Inc.