X = 2,388,865.218
Y = 114,621.433

Project : Brazos Island Harbor, Brownsville Ship Channel, Brownsville, Texas

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-92-D-0005 Delivery order No. 0009

Boring No. 92-117 Ground El. 4.4

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	M c (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	0.50		Yellowish brown,Clay,Medium stiff,w/sand seams	CH	32.9										0.30	
2	2 - 4	0.00		Yellowish brown,Clay,Very soft	CH	58.7										0.07	
3	4 - 6	0.00		Yellowish brown,Clay,Very soft	CH	41.2	77.9	109.9	50	22						0.09	0.19
4	6 - 8	0.00		Yellowish brown,Clay,Very soft,w/sand pockets	CH	38.7										0.08	
5	8 - 10	0.00		Gray,Clay,Very soft,w/sand pockets	CH	45.5	74.8	108.8	50							0.08	0.14
6	10 - 12	0.00		Gray,Clay,Very soft,w/sand pockets	CH	45.2										0.10	
7	12 - 14	0.00		Gray,Clay,Very soft,w/sand pockets	CH	35.4	84.5	114.4	55	23						0.08	0.12
8	14 - 16	0.00		Gray,Clay,Very soft,w/sand pockets	CH	36.3										0.10	

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classification, M c : Moisture Content
q u : Unconfined Compressive Strength, W O H : Weight of hammer, W O P : Weight of pipe

Geotest Engineering, Inc.

JOB NO. 14G627 DATE 3/26/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-117 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish Brown,Clay,Very soft

Tare No.	KL-8	Height	5.595 in.
Tare plus Wet Specimen	524.76 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	384.09 gm	Initial Area	6.290 sq in.
Water Weight	140.67 gm	Volume	35.194 cu in.
Tare Weight	42.73 gm	Volume of Solids	cu in.
Wet Specimen	1015.71 gm	Void Ratio	
Dry Specimen	719.30 gm	Saturation	%
Water Content	41.21 %	Dry Density	77.9 lb/cu ft

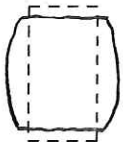
Specific Gravity of Solids
LL = 50 PL = 22 PI = 28

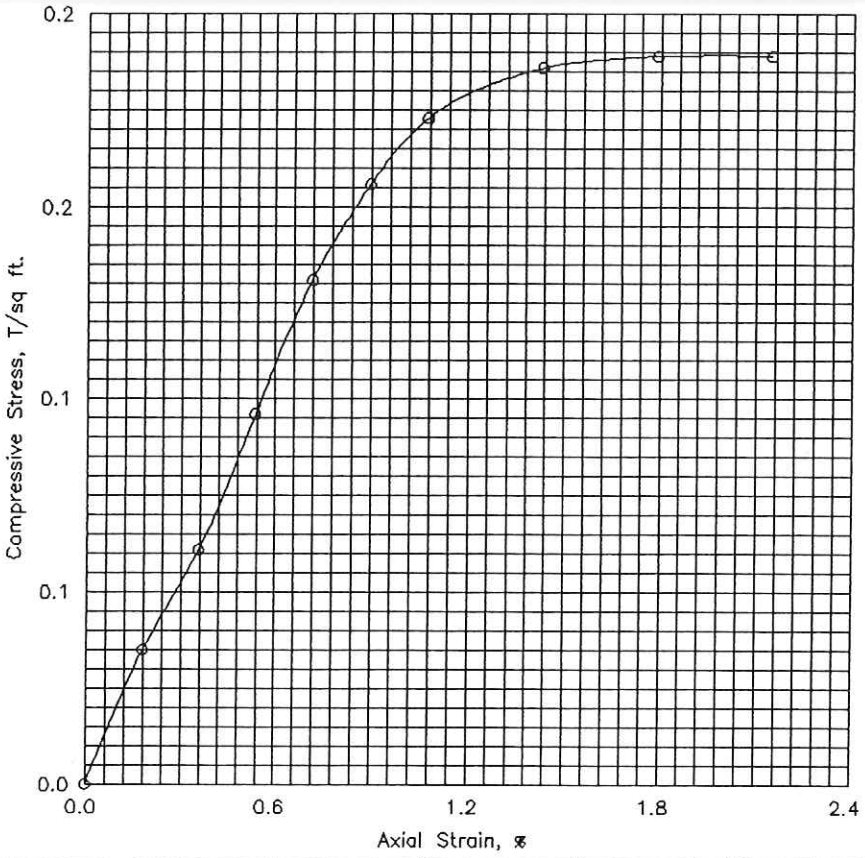
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	4.0	3.1	.002	6.30	.035
.3	20.	.020	7.0	5.4	.004	6.31	.061
.5	30.	.030	11.0	8.4	.005	6.32	.096
.7	40.	.040	15.0	11.5	.007	6.34	.131
.8	50.	.050	18.0	13.8	.009	6.35	.156
1.0	60.	.060	20.0	15.3	.011	6.36	.173
1.3	80.	.080	21.5	16.5	.014	6.38	.186
1.6	100.	.100	22.0	16.9	.018	6.40	.189
2.0	120.	.120	22.0	16.9	.021	6.43	.189

Job No. 146627

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial: Water content	w_0	41.2 %	%	%	%
Initial: Void ratio	e_0				
Initial: Saturation	S_0	%	%	%	%
Initial: Dry density, lb/cu ft	γ_d	77.9			
Time to failure, min	t_f	1.63			
Unconfined compressive strength, T/sq ft	q_u	.19			
Undrained shear strength, T/sq ft	S_u	.09			
Sensitivity ratio	S_t				
Initial specimen diameter, in.	D_0	2.830			
Initial specimen height, in.	H_0	5.595			

Classification Yellowish Brown,Clay,Very soft

LL	PL	PI	G_s
50	22	28	

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area Brownsville, Texas
Boring No. 92-117 Sample No. 3
Depth El 4-6 ft Date 3/26/93

UNCONFINED COMPRESSION TEST REPORT

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PLATE XI-2

PLATE

JOB NO. 14G627 DATE 3/26/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-117 SAMPLE NO. 5 DEPTH 8-10 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft w/sand pockets

Tare No.	KL-28	Height	5.595 in.
Tare plus Wet Specimen	597.86 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	424.27 gm	Initial Area	6.290 sq in.
Water Weight	173.59 gm	Volume	35.194 cu in.
Tare Weight	42.73 gm	Volume of Solids	cu in.
Wet Specimen	1005.23 gm	Void Ratio	
Dry Specimen	690.89 gm	Saturation	%
Water Content	45.50 %	Dry Density	74.8 lb/cu ft

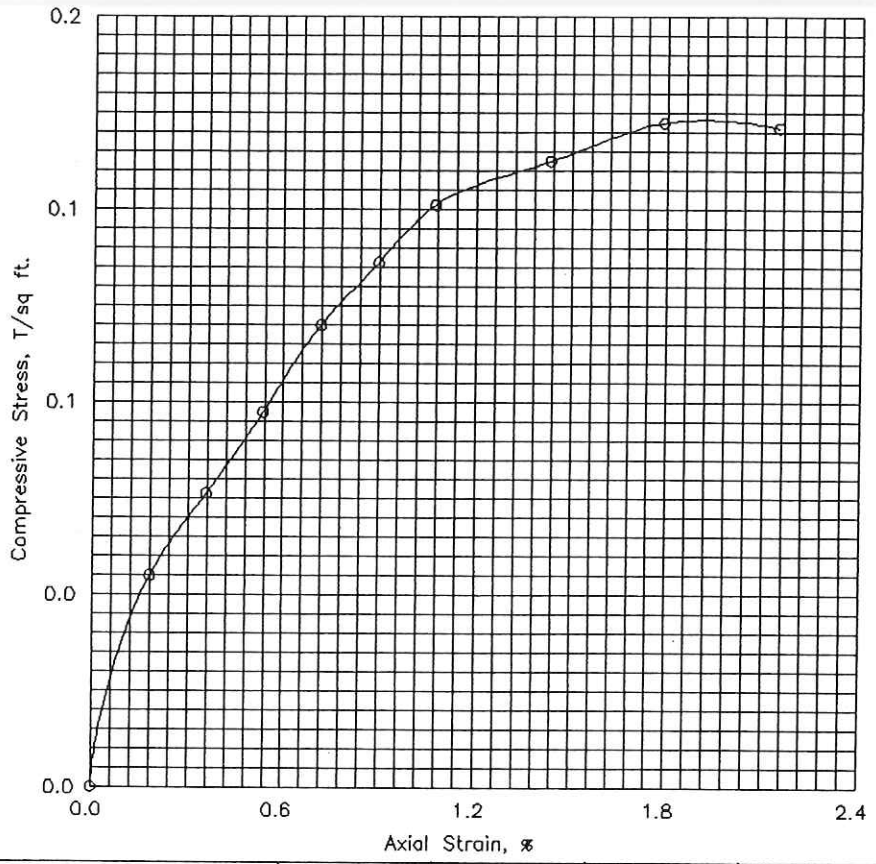
Specific Gravity of Solids
LL = 50 PL = PI =

Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	5.0	3.8	.002	6.30	.044
.3	20.	.020	7.0	5.4	.004	6.31	.061
.5	30.	.030	9.0	6.9	.005	6.32	.078
.7	40.	.040	11.0	8.4	.007	6.34	.096
.9	50.	.050	12.5	9.6	.009	6.35	.109
1.0	60.	.060	14.0	10.7	.011	6.36	.121
1.3	80.	.080	15.0	11.5	.014	6.38	.130
1.6	100.	.100	16.0	12.3	.018	6.40	.138
2.0	120.	.120	16.0	12.3	.021	6.43	.137

Job No. 14G627

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	45.5 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	74.8			
Time to failure, min		t_f	1.63			
Unconfined compressive strength, T/sq ft		q_u	.14			
Undrained shear strength, T/sq ft		S_u	.07			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray,Clay,Very soft w/sand pockets

LL	PL	PI	G_s
50			

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area Brownsville, Texas
Boring No. 92-117 | Sample No. 5
Depth El 8-10 ft | Date 3/26/93

UNCONFINED COMPRESSION TEST REPORT

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1 JUN 65

PLATE XI-2

JOB NO. 14G627 DATE 3/26/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsvill, Texas

BORING NO. 92-117 SAMPLE NO. 7 DEPTH 12-14 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft w/sand pockets

Tare No.	KL-33	Height	5.595 in.
Tare plus Wet Specimen	762.58 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	574.22 gm	Initial Area	6.290 sq in.
Water Weight	188.36 gm	Volume	35.194 cu in.
Tare Weight	42.58 gm	Volume of Solids	cu in.
Wet Specimen	1056.71 gm	Void Ratio	
Dry Specimen	780.26 gm	Saturation	%
Water Content	35.43 %	Dry Density	84.5 lb/cu ft

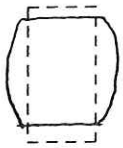
Specific Gravity of Solids
LL = 55 PL = 23 PI = 32

Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

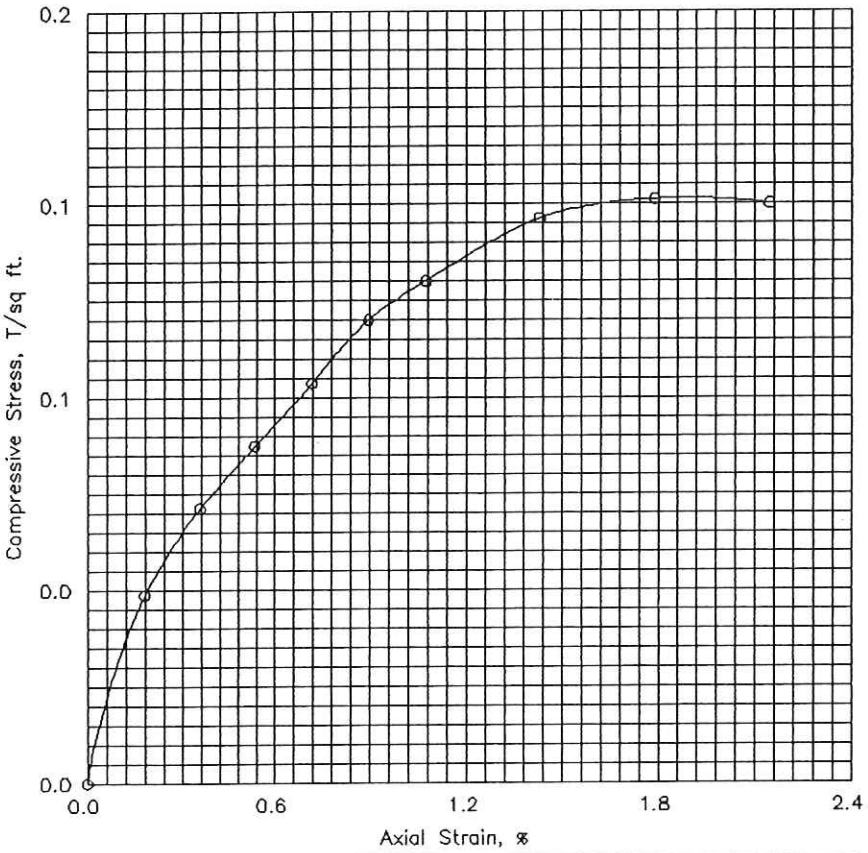
Elapsed Time min.	Dial Reading 0.001"	Cumulative Change in.	Proving Ring Dial Reading	Axial Load lb	Axial Strain	Area Corr. sq in.	Compr. Stress tsf
.0	0.	.000	.0	.0	.000	6.29	.000
.2	10.	.010	4.5	3.4	.002	6.30	.039
.3	20.	.020	6.5	5.0	.004	6.31	.057
.5	30.	.030	8.0	6.1	.005	6.32	.070
.7	40.	.040	9.5	7.3	.007	6.34	.083
.9	50.	.050	11.0	8.4	.009	6.35	.096
1.0	60.	.060	12.0	9.2	.011	6.36	.104
1.3	80.	.080	13.5	10.3	.014	6.38	.117
1.6	100.	.100	14.0	10.7	.018	6.40	.121
1.9	120.	.120	14.0	10.7	.021	6.43	.120

Job No. 146627

Failure Sketches



☐ Controlled stress
☒ Controlled strain



Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	35.4 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	84.5			
Time to failure, min		t_f	1.63			
Unconfined compressive strength, T/sq ft		q_u	.12			
Undrained shear strength, T/sq ft		S_u	.06			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray,Clay,Very soft w/sand pockets

LL	55	PL	23	PI	32	G_s

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area Brownsvill, Texas
Boring No. 92-117 | Sample No. 7
Depth 12-14 ft | Date 3/26/93
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1 JUN 65

PLATE XI-2

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