

U.S. ARMY CORPS OF ENGINEERS

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Project : Disposal area site adjacent to the Brownsville Ship channel for the
Brazos Island Harbor project near Brownsville, Texas
Contract No. DACW64-92-D-0001 Delivery order No. 0025

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 92-116

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)	LL (%)	P L (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0-2	4.5+		Brown,Clay,Hard,Sandy,w/roots	CL	16.6											
2	2-4	2.50		Gray,Clay,Very stiff,Sandy,w/sand seams	CL	23.7	101.7	125.8	32	15							
3	4-6	1.25		Brown,Clay,Stiff,w/calcareous nodules&sand seams	CH	27.4											
4	6-8	0.75		Brown,Clay,Medium stiff,w/calcareous nodules&sand seams	CH	24.6											
5	8-10	0.75		Brown,Clay,Medium stiff,w/sand seams	CH	28.2	95.1	121.9	54								
6	10-12	2.00		Brown&gray,Clay,Very stiff,Sandy,w/sand seams	CL	21.1											
7	12-14	2.25		Brown&gray,Clay,Very stiff,Sandy,w/sand seams	CL	21.0	106.4	128.8	37								
8	14.5-16	0.25	3	Gray,Clay,Soft,Sandy	CL	22.3											
9	16.5-18		11	Gray,Sand,Medium dense,Silty	S M												
10	18-20	0.75		Dark brown,Clay,Medium stiff,w/sand seams	CH	31.0											
11	20-22	0.75		Gray,Clay,Medium stiff,w/sand seams	CH	31.5											
12	22-24	0.50		Gray,Clay,Medium stiff,w/sand seams	CH	35.2											
13	24-26	0.75		Olive gray,Clay,Medium stiff,w/sand pockets	CH	37.5											
14	26-28	0.50		Olive gray,Clay,Medium stiff,w/sand pockets	CH	35.3											
15	28-30	0.75		Gray,Clay,Medium stiff,w/sand seams	CH	37.6											

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.

Disposed Area #5
Cell B

JOB NO. 14G627

DATE 3/26/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-116

SAMPLE NO. 2

DEPTH 2-4 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, Very soft, w/sand pockets

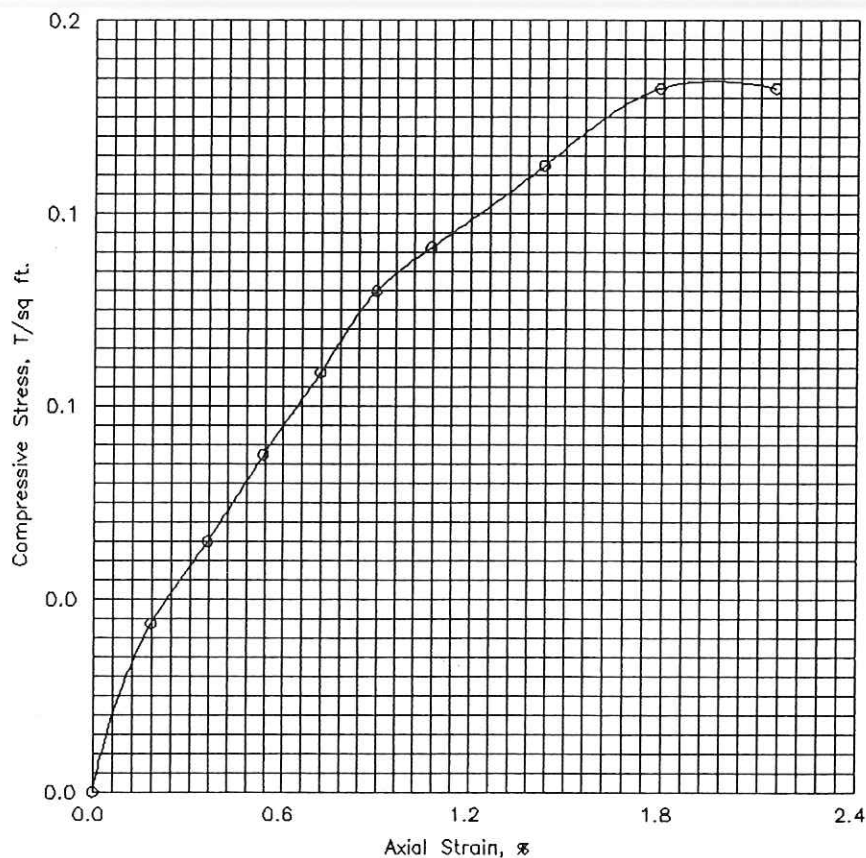
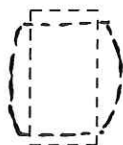
Tare No.	P-218	Height	5.595 in.
Tare plus Wet Specimen	432.40 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	305.49 gm	Initial Area	6.290 sq in.
Water Weight	126.91 gm	Volume	35.194 cu in.
Tare Weight	42.63 gm	Volume of Solids	cu in.
Wet Specimen	1007.64 gm	Void Ratio	
Dry Specimen	679.55 gm	Saturation	%
Water Content	48.28 %	Dry Density	73.6 lb/cu ft
Specific Gravity of Solids			
LL = 58	PL = 23	PI = 35	

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	6.0	4.6	.004	6.31	.052
.5	30.	.030	8.0	6.1	.005	6.32	.070
.6	40.	.040	10.0	7.7	.007	6.34	.087
.8	50.	.050	12.0	9.2	.009	6.35	.104
1.0	60.	.060	13.0	10.0	.011	6.36	.113
1.3	80.	.080	15.0	11.5	.014	6.38	.130
1.6	100.	.100	17.0	13.0	.018	6.40	.146
2.0	120.	.120	17.0	13.0	.021	6.43	.146

Failure Sketches



- ☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	48.3 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	73.6		
Time to failure, min		t_f	1.65		
Unconfined compressive strength, T/sq ft		q_u	.15		
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	58	PL	23	PI	35
Remarks		G.			
		Project Brazos Island Harbor Project			
		Brownsville Shipchannel			
		Area Brownsville, Texas			
		Boring No. 92-116		Sample No. 2	
		Depth 2-4 ft		Date 3/26/93	
UNCONFINED COMPRESSION TEST REPORT					

JOB NO. 14G627

DATE 3/26/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-116

SAMPLE NO. 4

DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, Very soft

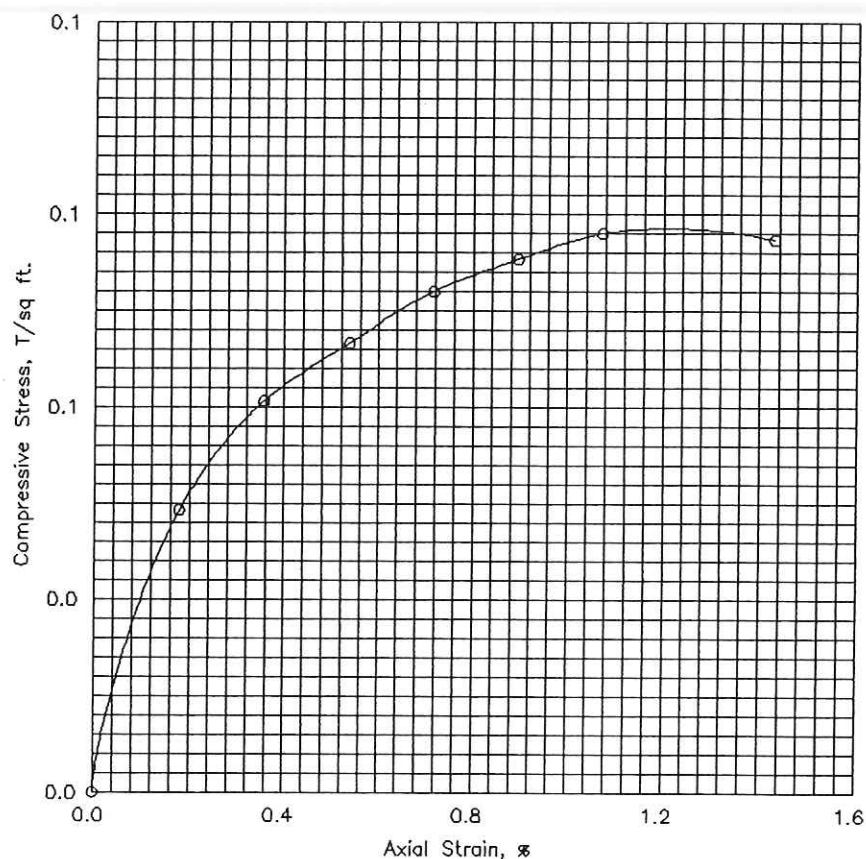
Tare No.	KL-14	Height	5.595 in.
Tare plus Wet Specimen	581.69 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	450.79 gm	Initial Area	6.290 sq in.
Water Weight	130.90 gm	Volume	35.194 cu in.
Tare Weight	42.46 gm	Volume of Solids	cu in.
Wet Specimen	1065.31 gm	Void Ratio	
Dry Specimen	806.70 gm	Saturation	%
Water Content	32.06 %	Dry Density	87.3 lb/cu ft
Specific Gravity of Solids			
LL = 51	PL = 23	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	5.0	3.8	.002	6.30	.044
.3	20.	.020	7.0	5.4	.004	6.31	.061
.5	30.	.030	8.0	6.1	.005	6.32	.070
.7	40.	.040	9.0	6.9	.007	6.34	.078
.9	50.	.050	9.5	7.3	.009	6.35	.083
1.0	60.	.060	10.0	7.7	.011	6.36	.087
1.4	80.	.080	10.0	7.7	.014	6.38	.086

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	32.1 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	87.3		
Time to failure, min		t_f	1.03		
Unconfined compressive strength, T/sq ft		q_u	.09		
Undrained shear strength, T/sq ft		S_u	.04		
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

LL	51	PL	23	PI	28	G_s
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Remarks	Project Brazos Island Harbor Project	
	Brownsville Shipchannel	
	Area Brownsville, Texas	
	Boring No. 92-116	Sample No. 4
	Depth 6-8 ft EI	Date 3/26/93
	UNCONFINED COMPRESSION TEST REPORT	