U.S. ARMY CORPS OF ENGINEERS

BORING NO. 92-122 DATE: BEGIN 2-22-93 PAGE 1 /1
JOB NO. 146622 COMPLETE 2-22-93 Thin Walled Tube
PROJECT Brazos Island Harbor Project ☒ 3" ☐ 6"
LOCATION along Brownsville Ship channel, Brownsville, TX
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4X4
GROUNDWATER: DEPTH 3.0 ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny & Hot
DRILLER Scott Gregurek LOGGER Iraj Mostamand

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSIS-TENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0		1	0.25	Gray	clay	Soft		
		2	0.00	Gray	clay	Very Soft		. encounter water @ 3'
5		3	0.00	Gray	Clay	Very Soft		
		4	0.00	Gray	clay	Very Soft		
		5	0.00	Gray	clay	Very Soft		
10								
15								
20								
25								
30								
35								

GEOTEST ENGINEERING, INC.

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. 92-122

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	0.25		Yellowish brown,Clay,Soft	CH	38.4										0.13	
2	2 - 4	0.25		Yellowish brown,Clay,Soft	CH	36.2	80.8	110.0	61							0.16	0.37
3	4 - 6	0.25		Gray,Clay,Soft	CH	46.5										0.13	
4	6 - 8	0.25		Gray,Clay,Soft	CH	47.7	72.1	106.5	58	24						0.13	0.27
5	8 - 10	0.25		Gray,Clay,Soft	CH	38.9										0.12	

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 4/1/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-122 SAMPLE NO. 2 DEPTH 2-4 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish Brown,Clay,Soft

Tare No.	KL-19	Height	5.595 in.
Tare plus Wet Specimen	690.79 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	518.62 gm	Initial Area	6.290 sq in.
Water Weight	172.17 gm	Volume	35.194 cu in.
Tare Weight	42.74 gm	Volume of Solids	cu in.
Wet Specimen	1015.95 gm	Void Ratio	
Dry Specimen	746.04 gm	Saturation	%
Water Content	36.18 %	Dry Density	80.8 lb/cu ft

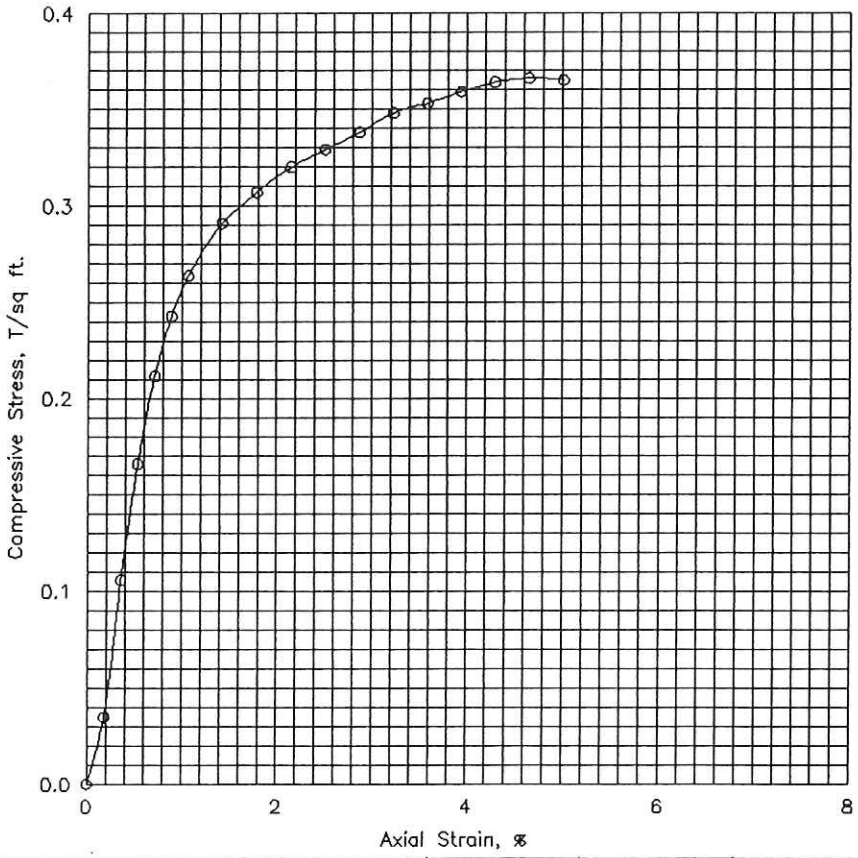
Specific Gravity of Solids
LL = 61 PL = PI =

Proving Ring No. 10170
Proving Ring Constant, K = .311 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	10.0	3.1	.002	6.30	.035
.3	20.	.020	30.0	9.3	.004	6.31	.106
.5	30.	.030	47.0	14.6	.005	6.32	.166
.7	40.	.040	60.0	18.6	.007	6.34	.212
.9	50.	.050	69.0	21.4	.009	6.35	.243
1.0	60.	.060	75.0	23.3	.011	6.36	.264
1.4	80.	.080	83.0	25.8	.014	6.38	.291
1.7	100.	.100	88.0	27.3	.018	6.40	.307
2.0	120.	.120	92.0	28.6	.021	6.43	.320
2.3	140.	.140	95.0	29.5	.025	6.45	.329
2.7	160.	.160	98.0	30.4	.029	6.48	.338
3.0	180.	.180	101.0	31.4	.032	6.50	.348
3.3	200.	.200	103.0	32.0	.036	6.52	.353
3.6	220.	.220	105.0	32.6	.039	6.55	.359
5.0	240.	.240	107.0	33.2	.043	6.57	.364
5.3	260.	.260	108.0	33.5	.046	6.60	.366
5.7	280.	.280	108.0	33.5	.050	6.62	.365

Job No. 14G627

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	36.2 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	80.8			
Time to failure, min		t_f	5.33			
Unconfined compressive strength, T/sq ft		q_u	.37			
Undrained shear strength, T/sq ft		S_u	.18			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Yellowish Brown,Clay,Soft

LL	PL	PI	G_s
61			

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area Brownsville, Texas
Boring No. 92-122 | Sample No. 2
Depth El 2-4 ft | Date 4/1/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

Geotest Engineering, Inc.

PLATE XI-2

PLATE

JOB NO. 14G627 DATE 4/1/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA Brownsville, Texas

BORING NO. 92-122 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish Brown,Clay,Soft

Tare No.	P16	Height	5.595 in.
Tare plus Wet Specimen	492.44 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	347.21 gm	Initial Area	6.290 sq in.
Water Weight	145.23 gm	Volume	35.194 cu in.
Tare Weight	42.78 gm	Volume of Solids	cu in.
Wet Specimen	983.43 gm	Void Ratio	
Dry Specimen	665.80 gm	Saturation	%
Water Content	47.71 %	Dry Density	72.1 lb/cu ft

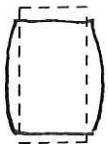
Specific Gravity of Solids
LL = 58 PL = 24 PI = 34

Proving Ring No. 10170
Proving Ring Constant, K = .311 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	1.6	.002	6.30	.018
.3	20.	.020	14.0	4.3	.004	6.31	.050
.5	30.	.030	26.0	8.1	.005	6.32	.092
.7	40.	.040	36.0	11.2	.007	6.34	.127
.9	50.	.050	45.0	14.0	.009	6.35	.159
1.0	60.	.060	52.0	16.2	.011	6.36	.183
1.4	80.	.080	62.0	19.3	.014	6.38	.217
1.7	100.	.100	68.0	21.1	.018	6.40	.237
2.0	120.	.120	72.0	22.4	.021	6.43	.250
2.4	140.	.140	76.0	23.6	.025	6.45	.263
2.7	160.	.160	78.0	24.2	.029	6.48	.269
3.0	180.	.180	78.0	24.2	.032	6.50	.268

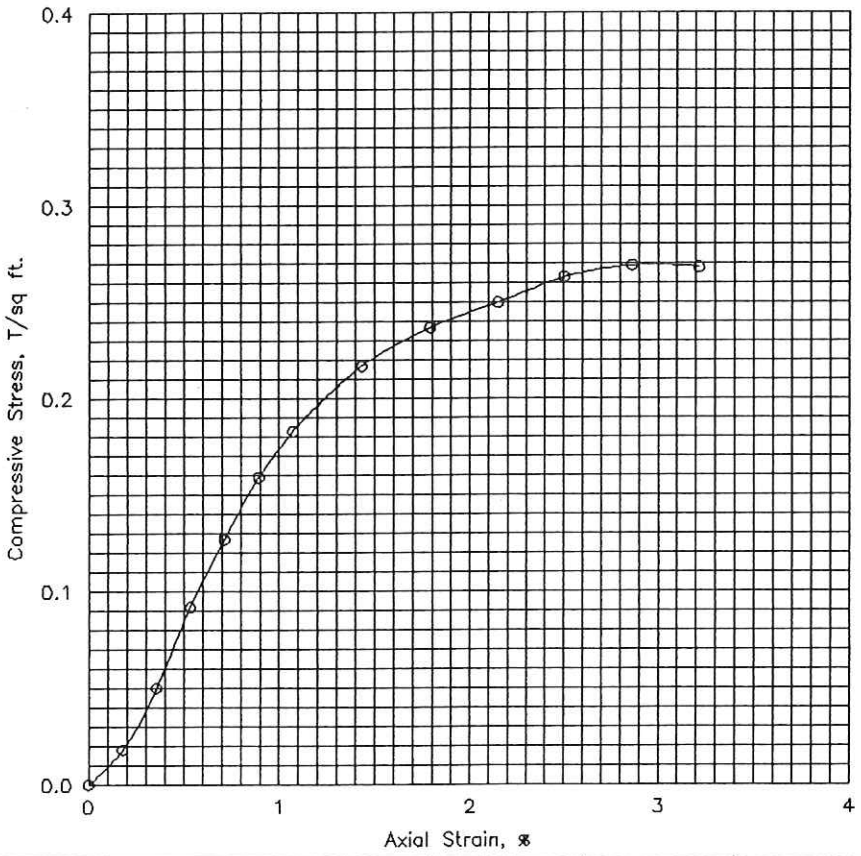
Job No. 14G627

Failure Sketches



Controlled stress

Controlled strain



Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	47.7 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	72.1			
Time to failure, min		t_f	2.67			
Unconfined compressive strength, T/sq ft		q_u	.27			
Undrained shear strength, T/sq ft		S_u	.13			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Yellowish Brown,Clay,Soft

LL	58	PL	24	PI	34	G_s	

Remarks

Project Brazos Island Harbor Project

Brownsville Shipchannel

Area Brownsville, Texas

Boring No. 92-122 | Sample No. 4

Depth El 6-8 ft | Date 4/1/93

UNCONFINED COMPRESSION TEST REPORT

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PLATE XI-2