U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-302 DATE: BEGIN 7-9-93 PAGE 1 / 1
JOB NO. 146630 COMPLETE 7-9-93 Thin Walled Tube
PROJECT Brazos Island Harbor Project. ■ 3" □ 6"
LOCATION Brownsville ship channel near Brownsville, Tx
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K-4X4
GROUNDWATER: DEPTH 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	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0		1	0.25	Yellowish Brown	Clay	Soft		
		2	0.25	Yellowish Brown	Clay	Soft		
5		3	0.25	Yellowish Brown	Clay	Soft		
		4	0.00	Yellowish Brown	Clay	Very Soft		
		5	0.00	Gray & Brown	Clay	Very Soft	Silty	-Sample Buldge on extrudesion 8'-10'
10		6	0.25	Gray & Brown	Clay	Soft	Silty	
		7	0.25	Gray & Yellowish Brown	Clay	Soft	Silty	-w/Silt Seams
15		8	0.50	Brown & Gray	Clay	M. Stiff		-w/Silt Sms
		9	0.75	Brown & Gray	Clay	M. Stiff		-w/Fe Nod & Fest
	X	10	3/4/5	Gray	Sand	M. Dense	Silty	
20								
25								
30								
35								

GEOTEST ENGINEERING, INC.

Project : Brazos Island Harbor Project, Brownsville Shipchannel near Brownsville, Texas
Contract No. DACW64-92-D-0005 Delivery order No. 0018

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 93-302

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0-2	0.75		Yellowish brown,Clay,Medium stiff	C H	46.3										0.40	
2	2-4	1.00		Yellowish brown,Clay,Stiff	C H	53.2										0.50	
3	4-6	0.25		Yellowish brown,Clay,Soft	C H	53.6	69.0	106.0	67	26	100.0	100.0	100.0	100.0	100.0	0.14	0.25
4	6-8	0.00		Yellowish brown,Clay,Very soft	C H	50.3										0.10	
5	8-10	0.50		Brown & gray,Clay,Medium stiff,Silty,w/silt pockets	C L	39.5										0.30	
6	10-12	0.50		Brown & gray,Clay,Medium stiff,Silty,w/silt pockets	C L	26.3										0.30	
7	12-14	1.25		Yellowish brown,Clay,Stiff,Silty,w/ferrous stains	C L	26.2											
8	14-16	0.75		Yellowish brown,Clay,Medium stiff,w/sand pocket	C H	33.2	85.7	114.1	64	25	100.0	100.0	99.4	98.9	97.9		0.49
9	16-18	1.75		Brown,Clay,Stiff,w/ferrous stains	C H	45.2											
10	18.5-20		10	Gray,Silt,Medium dense,Sandy	M L												

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. 14G634 DATE 8/2/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA near Brownsville, Texas

BORING NO. 93-302 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish brown,Clay,Soft

Tare No.	GE-5	Height	5.595 in.
Tare plus Wet Specimen	417.67 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	286.75 gm	Initial Area	6.290 sq in.
Water Weight	130.92 gm	Volume	35.194 cu in.
Tare Weight	42.51 gm	Volume of Solids	cu in.
Wet Specimen	979.09 gm	Void Ratio	
Dry Specimen	637.42 gm	Saturation	%
Water Content	53.60 %	Dry Density	69.0 lb/cu ft
Specific Gravity of Solids			

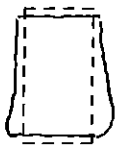
LL = 67 PL = 26 PI = 41

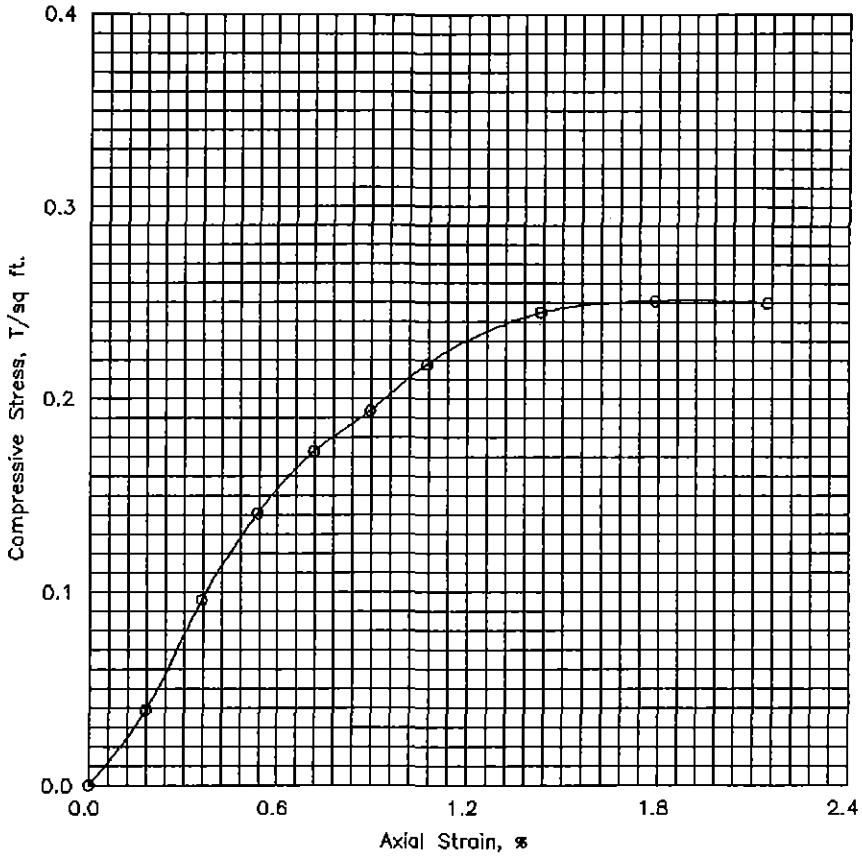
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	11.0	3.4	.002	6.30	.039
.4	20.	.020	27.0	8.4	.004	6.31	.096
.6	30.	.030	40.0	12.4	.005	6.32	.141
.7	40.	.040	49.0	15.2	.007	6.34	.173
.9	50.	.050	55.0	17.1	.009	6.35	.194
1.0	60.	.060	62.0	19.3	.011	6.36	.218
1.4	80.	.080	70.0	21.7	.014	6.38	.245
1.7	100.	.100	72.0	22.4	.018	6.40	.251
2.0	120.	.120	72.0	22.4	.021	6.43	.250

Job No. 14G634

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	53.6 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	69.0			
Time to failure, min		t_f	1.68			
Unconfined compressive strength, T/sq ft		q_u	.25			
Undrained shear strength, T/sq ft		S_u	.13			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Yellowish brown,Clay,Soft

LL	67	PL	26	PI	41	G_s

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area near Brownsville, Texas
Boring No. 93-302 Sample No. 3
Depth El 4-6 ft Date 8/2/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G634 DATE 8/2/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA near Brownsville, Texas

BORING NO. 93-302 SAMPLE NO. 8 DEPTH 14-16 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish brown,Clay,Medium stiff,w/sand pockets

Tare No.	KL-12	Height	5.595 in.
Tare plus Wet Specimen	532.34 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	410.34 gm	Initial Area	6.290 sq in.
Water Weight	122.00 gm	Volume	35.194 cu in.
Tare Weight	42.53 gm	Volume of Solids	cu in.
Wet Specimen	1053.76 gm	Void Ratio	
Dry Specimen	791.29 gm	Saturation	%
Water Content	33.17 %	Dry Density	85.7 lb/cu ft
Specific Gravity of Solids			

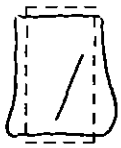
LL = 64 PL = 25 PI = 39

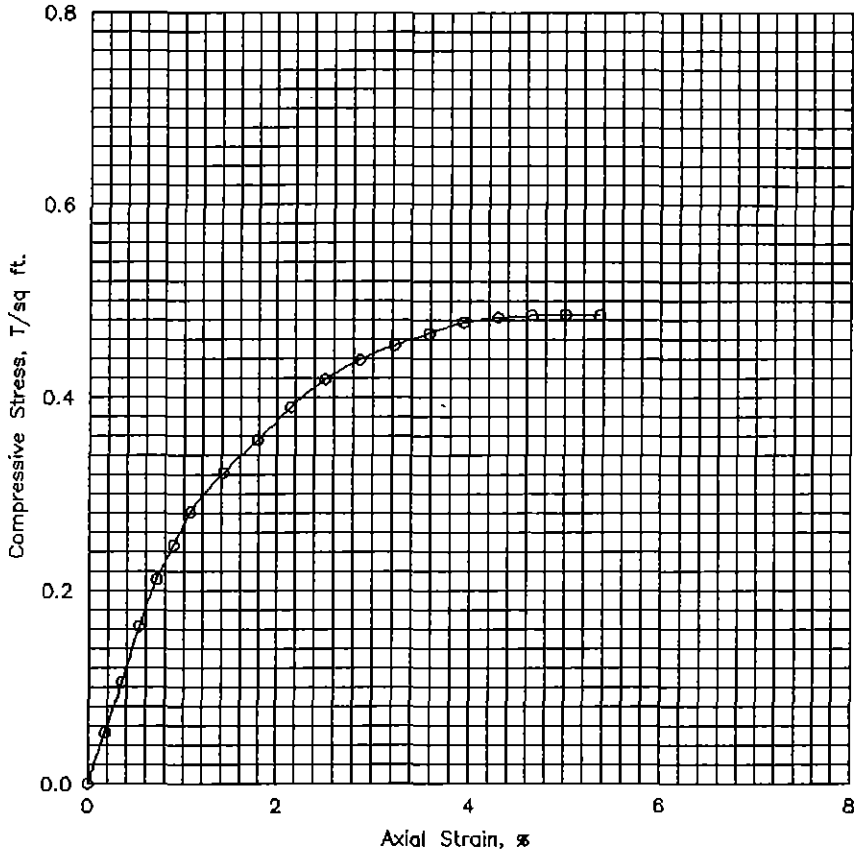
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	15.0	4.7	.002	6.30	.053
.4	20.	.020	30.0	9.3	.004	6.31	.106
.6	30.	.030	46.0	14.3	.005	6.32	.163
.7	40.	.040	60.0	18.6	.007	6.34	.212
.9	50.	.050	70.0	21.7	.009	6.35	.247
1.0	60.	.060	80.0	24.8	.011	6.36	.281
1.4	80.	.080	92.0	28.6	.014	6.38	.322
1.7	100.	.100	102.0	31.7	.018	6.40	.356
2.0	120.	.120	112.0	34.8	.021	6.43	.390
2.4	140.	.140	121.0	37.6	.025	6.45	.419
2.7	160.	.160	127.0	39.4	.029	6.48	.439
3.0	180.	.180	132.0	41.0	.032	6.50	.454
3.3	200.	.200	136.0	42.2	.036	6.52	.466
3.6	220.	.220	140.0	43.5	.039	6.55	.478
4.0	240.	.240	142.0	44.1	.043	6.57	.483
4.3	260.	.260	143.0	44.4	.046	6.60	.485
4.7	280.	.280	144.0	44.7	.050	6.62	.486
4.9	300.	.300	144.0	44.7	.054	6.65	.485

Job No. 14G634

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	33.2 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	85.7			
Time to failure, min		t_f	4.65			
Unconfined compressive strength, T/sq ft		q_u	.49			
Undrained shear strength, T/sq ft		S_u	.24			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Yellowish brown,Clay,Medium stiff,w/sand pockets

LL	64	PL	25	PI	39	G_s	

Remarks

Project Brazos Island Harbor Project
Brownsville Shipchannel
Area near Brownsville, Texas
Boring No. 93-302 Sample No. 8
Depth El 14-16 ft Date 8/2/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

Geotest Engineering, Inc.

PLATE

July - 7 93

B.I.H. DISPOSAL AREA NO. 7

	CORE BORING	COORDINATES X	Y	N.G. ELEV.
1	93-287	2383453.79	111575.35	16.58
2	93-288	2383436.80	111066.77	11.95
3	93-289	2383374.07	110464.25	12.20
4	93-290	2382897.16	110196.68	12.09
5	93-291	2382591.22	109981.03	12.07
6	93-292	2382291.49	109638.88	12.96
7	93-293	2381679.22	108909.68	12.04
8 *	93-294			
9	93-295	2379514.51	108372.33	10.17
10	93-296	2378761.80	107960.82	10.07
11	93-297	2378293.91	107778.32	9.86
12	93-298	2377829.21	107589.17	9.80
13	93-299	2377365.46	107404.67	9.91
14	93-300	2376904.99	107220.19	9.8
15	93-301	2376438.60	107038.62	9.75
16	93-302	2375977.69	106850.65	9.66
17 *	93-303			
18	93-304	2375768.65	107744.19	9.92
19	93-305	2376232.67	107932.15	10.1
20	93-306	2376693.94	108120.23	10.28
21	93-307	2377157.54	108305.60	10.32
22	93-308	2377622.55	108490.28	10.51
23	93-309	2378086.61	108679.32	10.18
24	93-310	2378551.34	108868.16	9.99