U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-328 DATE: BEGIN 7-11-93 PAGE 1 / 1
JOB NO. 146630 COMPLETE 7-11-93 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
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	2.75	Brown	clay	Very stiff		-w/Sa pkts & Sa sms
		2	2.50	Brown	clay	Very stiff		-w/Sa pkts & Sa sms
5		3	2.25	Brown	clay	Very stiff		-w/Sa sms
		4	2.75	Brown	clay	Very stiff		-w/Sa sms
		5	2.50	Brown	clay	Very stiff		-w/Sa sms Sa @ 10
10	X	6	4/3/9	Brown	Sand	M. Dense	Silty	
15	X	7	5/6/10	Brown	Sand	M. Dense	Silty	
	X	8	6/8/9	Brown	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. 93-328

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	2.50		Brown,Clay,Very stiff,w/sand pockets&sand seams	CH	24.3											
2	2 - 4	2.75		Brown,Clay,Very stiff,w/sand pockets&sand seams	CH	22.9			50								
3	4 - 6	2.50		Brown,Clay,Very stiff,w/sand seams	CH	23.7											
4	6 - 8	1.75		Brown,Clay,Stiff,w/sand pockets	CH	23.5	99.3	122.6	52	21	100.0	100.0	97.9	95.9	94.6		1.05
5	8 - 10	1.50		Brown,Clay,Stiff,w/sand pockets	CH	23.8											
6	10.5 - 12		12	Brown,Sand,Medium dense,Silty	SM												
7	13.5 - 15		16	Brown,Sand,Medium dense,Silty	SM						99.8	99.7	95.1	75.4	43.6		
8	18.5 - 20		17	Brown,Sand,Medium dense,Silty	SM												

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 8/6/93

PROJECT Brazos Island Harbor Project
Brownsville Shipchannel

AREA near Brownsville, Texas

BORING NO. 93-328 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown, Clay, Stiff, w/sand pockets

Tare No.	W-3	Height	5.595 in.
Tare plus Wet Specimen	455.66 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	377.16 gm	Initial Area	6.290 sq in.
Water Weight	78.50 gm	Volume	35.194 cu in.
Tare Weight	42.72 gm	Volume of Solids	cu in.
Wet Specimen	1132.97 gm	Void Ratio	
Dry Specimen	917.59 gm	Saturation	%
Water Content	23.47 %	Dry Density	99.3 lb/cu ft
Specific Gravity of Solids			

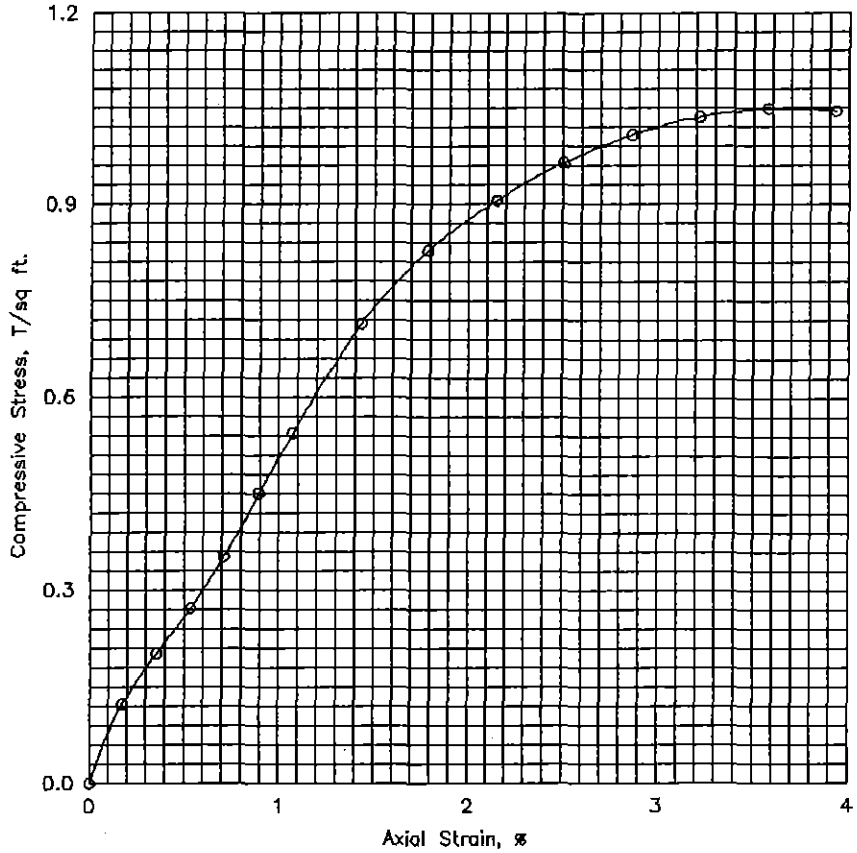
LL = 52 PL = 21 PI = 31

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	35.0	10.9	.002	6.30	.124
.4	20.	.020	57.0	17.7	.004	6.31	.202
.6	30.	.030	77.0	23.9	.005	6.32	.272
.7	40.	.040	100.0	31.1	.007	6.34	.353
.9	50.	.050	128.0	39.8	.009	6.35	.451
1.1	60.	.060	155.0	48.1	.011	6.36	.545
1.5	80.	.080	204.0	63.4	.014	6.38	.715
1.9	100.	.100	237.0	73.6	.018	6.40	.828
2.2	120.	.120	260.0	80.8	.021	6.43	.905
2.5	140.	.140	278.0	86.3	.025	6.45	.964
2.9	160.	.160	292.0	90.7	.029	6.48	1.008
3.2	180.	.180	301.0	93.5	.032	6.50	1.036
3.5	200.	.200	306.0	95.0	.036	6.52	1.049
3.8	220.	.220	306.0	95.0	.039	6.55	1.045

Job No. 14G634

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	23.5 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	99.3			
Time to failure, min		t_f	3.53			
Unconfined compressive strength, T/sq ft		q_u	1.05			
Undrained shear strength, T/sq ft		S_u	.52			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brown, Clay, Stiff, w/sand pockets

LL	52	PL	21	PI	31	G_s	

Remarks

Project Brazos Island Harbor Project	
Brownsville Shipchannel	
Area near Brownsville, Texas	
Boring No. 93-328	Sample No. 4
Depth El 6-8 ft	Date 8/6/93
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

B.I.H. DISPOSAL AREA NO. 8

	CORE BORING	COORDINATES X	Y	N.G. ELEV.
1	93-320	2363789.02	103773.22	12.56
2	93-321	2364323.55	103856.25	9.41
3	93-322	2364764.46	104067.99	17.49
4	93-323	2365237.93	104221.76	17.20
5	93-324	2365607.00	104552.24	15.75
6	93-325	2366123.53	104592.72	20.84
7	93-326	2366578.71	104834.40	15.89
8	93-327	2367088.58	104956.07	22.68
9	93-328	2367537.78	105191.97	23.08
10	93-329	2368014.21	105329.11	20.39
11	93-330	2368466.83	105561.97	12.21
12	93-331	2368574.14	104635.29	14.01
13	93-332	2368510.00	103633.81	14.13
14	93-333	2368542.26	102633.47	12.65
15	93-334	2368568.39	101634.32	11.91
16	93-335	2368538.72	100684.38	10.40
17	93-336	2368042.63	100675.22	10.87
18	93-337	2367237.44	100708.14	10.50
19	93-338	2367249.00	101707.25	10.60
20	93-339	2367245.36	102206.57	10.8
21	93-340	2367221.53	102747.93	13.44
22	93-341	2366605.67	102743.50	12.20
23	93-342	2365903.77	102710.82	12.98
24	93-343	2365205.46	102690.67	12.29