U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-331 DATE: BEGIN 7-13-93 PAGE 1 / 1
JOB NO. 14G630 COMPLETE 7-13-93 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 Pordeo 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	2.25	Brown	clay	Very stiff		-w/sa layer
		2	6/8/6	Brown	Sand	M. Dense	Silt	-w/clay seams
5		3	2.25	Brown	clay	Very stiff	Silty	-w/silt partting
		4	2.50	Brown	clay	Very stiff		-w/silt partting
		5	2.25	Gray	clay	Very stiff		-w/organic material
10		6	1.75	Gray	clay	stiff		-w/mica
		7	2.25	Gray & Brown	clay	Very stiff		-w/Fe st & mica
15		8	1.00	Brown	clay	stiff	Silt	-w/Fe st
		9	1.75	olive gray	clay	stiff	Sand	
		10	2.50	olive gray	clay	Very stiff	Sand	-w/Fe st
20								
25								
30								
35								

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. 93-331

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	1.50		Brown,Clay,Stiff,w/sand seams	CH	33.8											
2	2.5 - 4		14	Brown,Sand,Medium dense,Silty,w/clay seams	SM												
3	4 - 6	1.25		Yellowish brown,Clay,Stiff,w/sand seams	CH	29.0											
4	6 - 8	2.50		Brown,Clay,Very stiff,w/silt partings	CH	35.4	85.4	115.5	82		100.0	100.0	100.0	99.4	98.1		2.65
5	8 - 10	1.75		Dark gray,Clay,Stiff	CH	28.8											
6	10 - 12	1.25		Dark gray,Clay,Stiff,w/mica	CH	30.4											
7	12 - 14	1.25		Dark gray,Clay,Stiff,Silty,w/mica&ferrous nodules	CL	28.5	93.1	119.6	42								
8	14 - 16	1.00		Brown&gray,Clay,Stiff,Silty,w/ferrous nodules	CL	31.4											
9	16 - 18	1.75		Olive gray,Clay,Stiff,Sandy,w/calcareous nodules	CL	18.2			32								
10	18 - 20	2.25		Olive gray,clay,Very stiff,Sandy,w/calcareous nodules	CL	21.1											

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. 93-331 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown, Clay, Very stiff, w/silt partings

Tare No.	P226	Height	5.595 in.
Tare plus Wet Specimen	582.09 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	441.21 gm	Initial Area	6.290 sq in.
Water Weight	140.88 gm	Volume	35.194 cu in.
Tare Weight	42.70 gm	Volume of Solids	cu in.
Wet Specimen	1067.32 gm	Void Ratio	
Dry Specimen	788.55 gm	Saturation	%
Water Content	35.35 %	Dry Density	85.4 lb/cu ft
Specific Gravity of Solids			

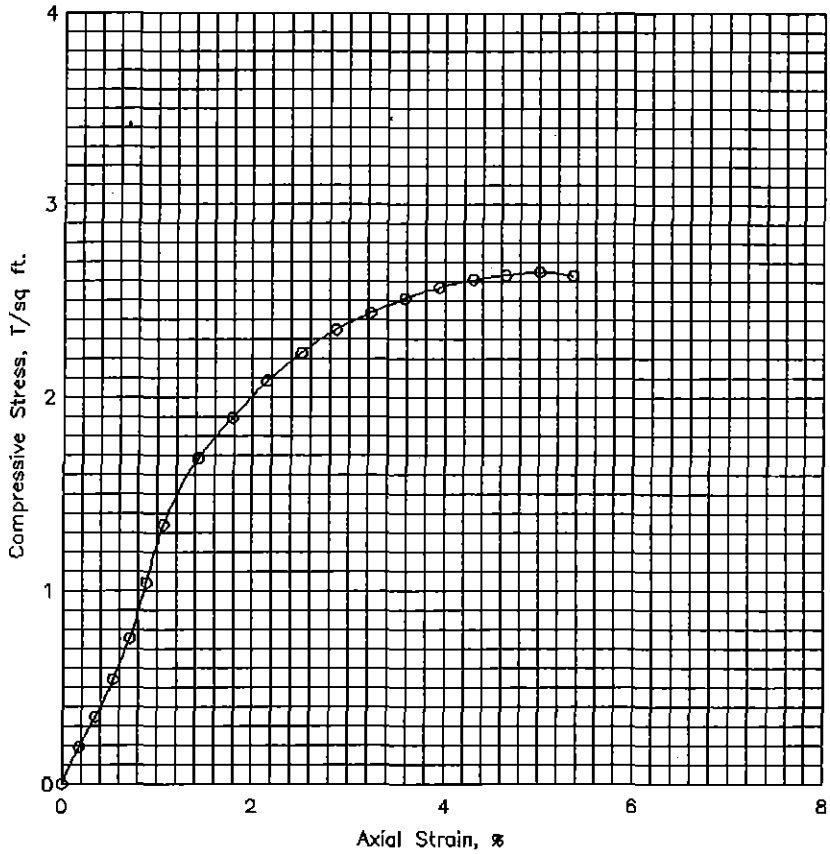
LL = 82 PL = PI =

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	22.0	16.9	.002	6.30	.193
.3	20.	.020	40.0	30.6	.004	6.31	.349
.5	30.	.030	62.0	47.5	.005	6.32	.541
.7	40.	.040	87.0	66.6	.007	6.34	.757
.9	50.	.050	120.0	91.9	.009	6.35	1.043
1.1	60.	.060	155.0	118.7	.011	6.36	1.344
1.4	80.	.080	195.0	149.4	.014	6.38	1.685
1.7	100.	.100	220.0	168.5	.018	6.40	1.894
2.0	120.	.120	243.0	186.1	.021	6.43	2.085
2.4	140.	.140	261.0	199.9	.025	6.45	2.231
2.7	160.	.160	276.0	211.4	.029	6.48	2.351
3.0	180.	.180	287.0	219.8	.032	6.50	2.435
3.3	200.	.200	297.0	227.5	.036	6.52	2.511
3.7	220.	.220	305.0	233.6	.039	6.55	2.569
4.0	240.	.240	311.0	238.2	.043	6.57	2.610
4.3	260.	.260	315.0	241.3	.046	6.60	2.634
4.6	280.	.280	318.0	243.6	.050	6.62	2.649
4.9	300.	.300	317.0	242.8	.054	6.65	2.630

Job No. 14G634

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial: Water content	w_o	35.4 %	%	%	%
Initial: Void ratio	e_o				
Initial: Saturation	S_o	%	%	%	%
Initial: Dry density, lb/cu ft	γ_d	85.4			
Time to failure, min	t_f	4.60			
Unconfined compressive strength, T/sq ft	q_u	2.65			
Undrained shear strength, T/sq ft	S_u	1.32			
Sensitivity ratio	S_t				
Initial specimen diameter, in.	D_o	2.830			
Initial specimen height, in.	H_o	5.595			

Classification Brown, Clay, Very stiff, w/silt partings

LL 82	PL	PI	G_s

Remarks

Project Brazos Island Harbor Project	
Brownsville Shipchannel	
Area near Brownsville, Texas	
Boring No. 93-331	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