U.S. ARMY CORPS OF ENGINEERS

BORING NO. 91-274 DATE: BEGIN 12/31 PAGE 1 / 1
JOB NO. 14G 531 COMPLETE [illegible] Thin Walled Tube
PROJECT [illegible] ☒ 3" ☐ 6"
LOCATION [illegible] Sta 67+00
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG [illegible]
GROUNDWATER: DEPTH 2 ft., ELEV. ____ ft., at end of Drilling
WEATHER [illegible]
DRILLER [illegible] LOGGER [illegible]

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0								
	1		1.0	Gray	Clay	stiff	silt	w/roots
	2		2.5	Tan	Clay	V.stiff	silt	w/roots
5	3		2.0	Tan	Clay	V.stiff	silt	Gray 6'
	4		0.50	Tan	silt	loose	clay	
	5		0.50	Tan	silt	loose	clay	
10	6		0.50	Tan	silt	loose	clay	12'
	7		0.50	Gray	Sand	loose	silt	
15	8	X	1 1/2	Gray	Sand	V. loose	silt	Tan
	9	X	1 1/2	Gray	Sand	V. loose	silt	18'
	10		0.50	Gray	silt	loose	sand	Tan 20'
20	11	X	1.2	Gray	Sand	V loose	silt	Tan
	12	X	1 1/2	Gray	Sand	V loose	silt	Tan
25	13	X	2 1/2	Grey	Sand	V loose	silt	Tan wash
	14	X	1 1/4 1/5	Gray	Sand	loose	silt	Tan
30								Bottom of 91-274 @ 30'
35								

GEOTEST ENGINEERING, INC.

Project : Gulf Intracoastal Waterway, near Sargent Beach, Texas
Contract No. DACW64-92-D-0001 Delivery No. 0005

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 91-274

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	2.00		Dark brown,Clay,Very stiff,w/roots	CH	26.8											
2	2-4	2.00		Brown,Clay,Very stiff,w/silt parting	CH	27.1			54	23							
3	4-6	1.50		Brown,Clay,Stiff,Silty	CL	24.7											
4	6-8	0.75		Brown,Clay,Medium stiff,Silty,w/sand pockets	CL	24.6	103.6	129.1	35	19	99.1	99.0	98.8	98.4	89.8	0.35	0.60
5	8-10	0.50		~~Tan,Silt,Loose,Clayey~~ (from SWD) Lean Clay, Brown, Calc., Shells, Silty Sand pockets	~~ML~~ CL	31.2	94		31	15					97		
6	10-12	0.50		Brown,Clay,Medium stiff,Sandy,w/sand parting	CL	24.2	100.5	124.8	22	13	100.0	100.0	100.0	99.7	81.1	0.20	0.40
7	12-14	0.50		Brown,Clay,Medium stiff,Sandy,w/sand parting	CL	23.7											
8	14.5-16		3	Brown,silt,Very loose,Sandy	ML						100.0	100.0	100.0	98.9	76.4		
9	16.5-18		3	Brown,silt,Very loose,Sandy	ML												
10	18-20	0.50		Brown,Clay,Medium stiff	CH	48.0					100.0	100.0	100.0	99.3	98.6		
11	20.5-22		3	Gray,Sand,very loose,Silty	SM												
12	22.5-24		3	Gray,Sand,very loose,Silty	SM						100.0	100.0	100.0	90.7	27.9		
13	24.5-26		4	Gray,Sand,Loose,Silty	SM												
14	28.5-30		9	Gray,Sand,Loose,Silty	SM						100.0	100.0	100.0	92.9	31.6		

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

JOB NO. 14G533 DATE 1/13/92

PROJECT Gulf Intracostal Waterway near Sargent Beach, Texas

BORING NO. 91-274 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown,Clay,Medium stiff,Silty,w/sand pockets

Tare No.	P-27	Height	5.595 in.
Tare plus Wet Specimen	518.34 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	424.30 gm	Initial Area	6.290 sq in.
Water Weight	94.04 gm	Volume	35.194 cu in.
Tare Weight	42.93 gm	Volume of Solids	cu in.
Wet Specimen	1192.72 gm	Void Ratio	
Dry Specimen	956.79 gm	Saturation	%
Water Content	24.66 %	Dry Density	103.6 lb/cu ft

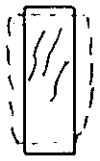
Specific Gravity of Solids
LL = 35 PL = 19 PI = 16

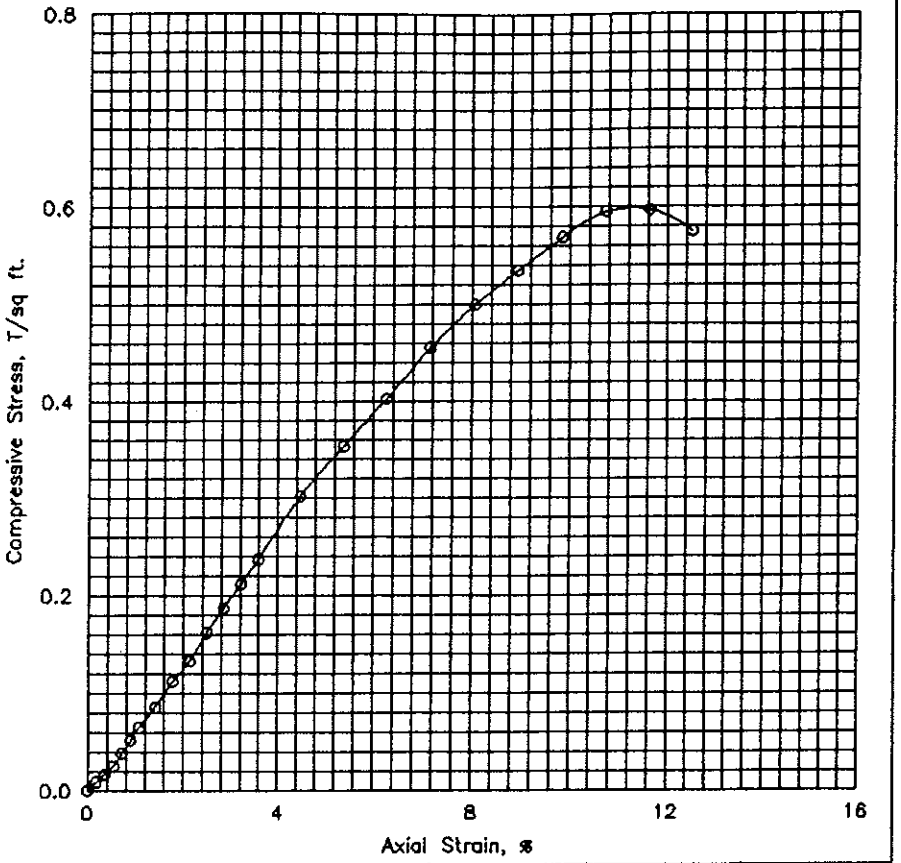
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	1.0	.8	.002	6.30	.009
.3	20.	.020	2.0	1.5	.004	6.31	.017
.5	30.	.030	3.0	2.3	.005	6.32	.026
.7	40.	.040	4.5	3.4	.007	6.34	.039
.9	50.	.050	6.0	4.6	.009	6.35	.052
1.0	60.	.060	7.5	5.7	.011	6.36	.065
1.4	80.	.080	10.0	7.7	.014	6.38	.086
1.7	100.	.100	13.0	10.0	.018	6.40	.112
2.0	120.	.120	15.5	11.9	.021	6.43	.133
2.4	140.	.140	19.0	14.6	.025	6.45	.162
2.7	160.	.160	22.0	16.9	.029	6.48	.187
3.0	180.	.180	25.0	19.1	.032	6.50	.212
3.3	200.	.200	28.0	21.4	.036	6.52	.237
4.2	250.	.250	36.0	27.6	.045	6.58	.302
5.0	300.	.300	42.5	32.6	.054	6.65	.353
5.8	350.	.350	49.0	37.5	.063	6.71	.403
6.6	400.	.400	56.0	42.9	.071	6.77	.456
7.4	450.	.450	62.0	47.5	.080	6.84	.500
8.2	500.	.500	67.0	51.3	.089	6.91	.535
9.0	550.	.550	72.0	55.2	.098	6.98	.569
9.8	600.	.600	76.0	58.2	.107	7.05	.595
10.7	650.	.650	77.0	59.0	.116	7.12	.597
11.4	700.	.700	75.0	57.4	.125	7.19	.575

Job No. 146533

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	24.7 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	103.6			
Time to failure, min		t_f	10.67			
Unconfined compressive strength, T/sq ft		q_u	.60			
Undrained shear strength, T/sq ft		S_u	.30			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brown,Clay,Medium stiff,Silty,w/sand pockets

LL	PL	PI	G_s
35	19	16	

Remarks

Project Gulf Intracostal Waterway

Area Near Sargent Beach, Texas

Boring No. 91-274 | Sample No. 4

Depth 6-8 ft | Date 1/13/92
El

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 3659
1 JUN 65

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G533 DATE 1/13/92

PROJECT Gulf Intracostal Waterway near Sargent Beach, Texas

BORING NO. 91-274 SAMPLE NO. 6 DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown,Clay,Medium stiff,Sandy, w/sand parting

Tare No.	P-216	Height	5.595 in.
Tare plus Wet Specimen	467.52 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	384.79 gm	Initial Area	6.290 sq in.
Water Weight	82.73 gm	Volume	35.194 cu in.
Tare Weight	42.60 gm	Volume of Solids	cu in.
Wet Specimen	1152.57 gm	Void Ratio	
Dry Specimen	928.17 gm	Saturation	%
Water Content	24.18 %	Dry Density	100.5 lb/cu ft

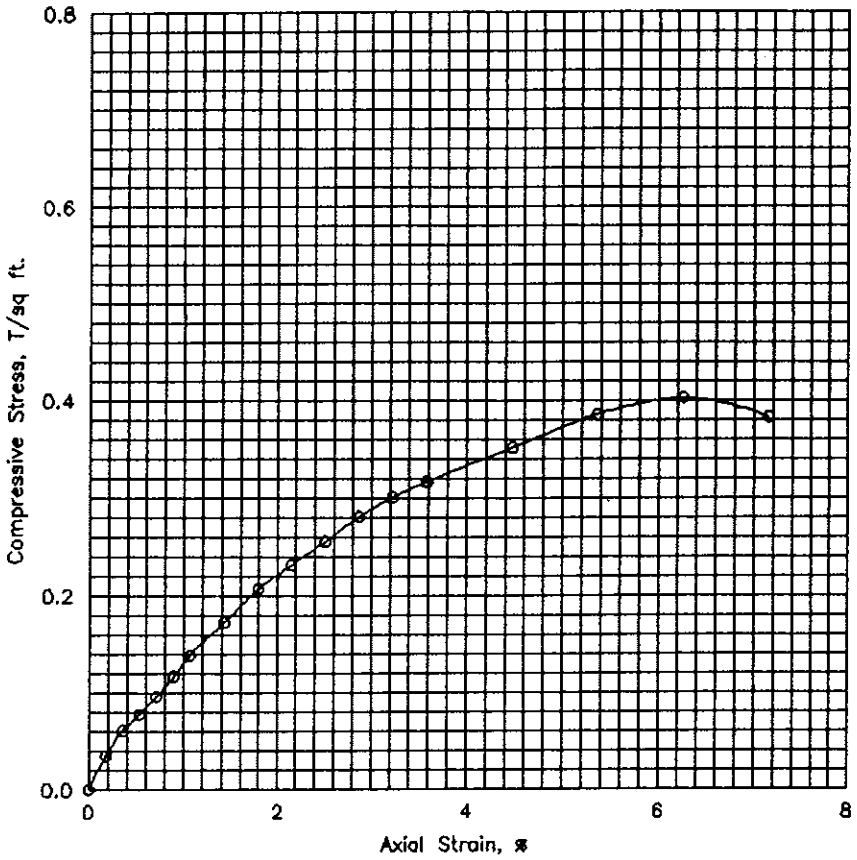
Specific Gravity of Solids
LL = 22 PL = 13 PI = 9

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
.3	10.	.010	4.0	3.1	.002	6.30	.035
.4	20.	.020	7.0	5.4	.004	6.31	.061
.6	30.	.030	9.0	6.9	.005	6.32	.078
.8	40.	.040	11.0	8.4	.007	6.34	.096
.8	50.	.050	13.5	10.3	.009	6.35	.117
1.1	60.	.060	16.0	12.3	.011	6.36	.139
1.4	80.	.080	20.0	15.3	.014	6.38	.173
1.8	100.	.100	24.0	18.4	.018	6.40	.207
2.0	120.	.120	27.0	20.7	.021	6.43	.232
2.4	140.	.140	30.0	23.0	.025	6.45	.256
2.7	160.	.160	33.0	25.3	.029	6.48	.281
3.0	180.	.180	35.5	27.2	.032	6.50	.301
3.4	200.	.200	37.5	28.7	.036	6.52	.317
4.2	250.	.250	42.0	32.2	.045	6.58	.352
5.0	300.	.300	46.5	35.6	.054	6.65	.386
5.9	350.	.350	49.0	37.5	.063	6.71	.403
6.7	400.	.400	47.0	36.0	.071	6.77	.383

Job No. 14G533

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	24.2 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	100.5			
Time to failure, min		t_f	5.95			
Unconfined compressive strength, T/sq ft		q_u	.40			
Undrained shear strength, T/sq ft		S_u	.20			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Brown,Clay,Medium stiff,Sandy, w/sand parting

LL	22	PL	13	PI	9	G_s	

Remarks

Project Gulf Intracostal Waterway

Area Near Sargent Beach, Texas

Boring No. 91-274 | Sample No. 6

Depth El 10-12 ft | Date 1/13/92

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PLATE XI-2