U.S. ARMY CORPS OF ENGINEERS

BORING NO. 91-287 DATE: BEGIN 12/30/91 PAGE 1 / 1
JOB NO. 146 531 COMPLETE 12/30/91 Thin Walled Tube
PROJECT GIWW ☒ 3" ☐ 6"
LOCATION Sargent beach Sta 182+00
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Failing CFD2
GROUNDWATER: DEPTH 0 ft., ELEV. ft., at end of Drilling
WEATHER Cool Cloudy
DRILLER D Gearan LOGGER L Crowell

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
0	1		0.25	Tan	clay	soft	silt	w/Roots
	2		0.75	Tan	clay	Medium stiff	silt	w/Roots gray
5	3		0.00	Gray	clay	Very soft	silt	
	4		0.25	Gray	clay	soft	silt	
10	5		0.25	Gray	clay	soft	silt	
	6		0.25	Gray	clay	soft	silt	Tan
	7		0.75	Tan	clay	Medium stiff	silt	Gray
15	8		1.0	Tan	clay	stiff	silt	Gray
	9		0.75	Tan	clay	Medium stiff	silt	Gray
20	10		1.5	Tan	clay	stiff	silt	Gray
	11		2.0	Tan	clay	Very stiff	silt	Gray
	12		1.5	Tan	clay	stiff	silt	Gray
25	13		1.0	Tan	clay	stiff	silt	Gray
								Bottom of 91-287 @ 26'
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. 91-287

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	0.50		Brown,Clay,Medium stiff,w/silt seams and roots	CH	40.0										0.20	
2	2-4	0.75		Brown & gray,Clay,Medium stiff	CH	36.8										0.30	
3	4-6	0.50		Gray & yellowish gray,Clay,Medium stiff,w/ferrous stains	CH	32.8										0.20	
4	6-8	0.00		Gray & yellowish gray,Clay,Very soft,Silty,w/sand pockets	CL	31.4	90.4	118.8	48	19	100.0	99.5	99.5	99.0	90.3	0.09	0.19
5	8-10	0.25 -.5		Gray,Clay,Soft,Silty SWD	~~CL~~ CH	45.5	76		70	20					95		c = 410
6	10-12	0.25		Gray & yellowish gray,Clay,Soft,w/calcareous nodules	CH	47.2	73.9	108.8								0.13	0.27
7	12-14	0.50		Brown,Clay,Medium stiff,w/ferrous stains and blocky structure	CH	43.6			88							0.25	
8	14-16	1.00		Brown,Clay,Stiff,w/silt seams and blocky structure	CH	41.2											
9	16-18	1.00		Brown & gray,Clay,Stiff,w/silt seams and blocky structure,slickensided	CH	46.1											
10	18-20	1.50		Brown,Clay,Stiff,w/blocky structure,slickensided	CH	35.9											
11	20-22	1.75		Brown,Clay,Stiff,w/blocky structure	CH	32.4			66								
12	22-24	1.75		Brown,Clay,Stiff,w/blocky structure	CH	39.6											
13	24-26	1.00		Brown,Clay,Stiff,w/ferrous stains,slickensided	CH	41.3											

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 1/30/92

PROJECT Gulf Intracostal Waterway near Sargent Beach, Texas

BORING NO. 91-287 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray & yellowish gray,Clay,Very soft,Silty,w/sand pockets

Tare No.	P-4	Height	5.595 in.
Tare plus Wet Specimen	411.39 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	323.29 gm	Initial Area	6.290 sq in.
Water Weight	88.10 gm	Volume	35.194 cu in.
Tare Weight	42.83 gm	Volume of Solids	cu in.
Wet Specimen	1097.07 gm	Void Ratio	
Dry Specimen	834.83 gm	Saturation	%
Water Content	31.41 %	Dry Density	90.4 lb/cu ft
Specific Gravity of Solids			

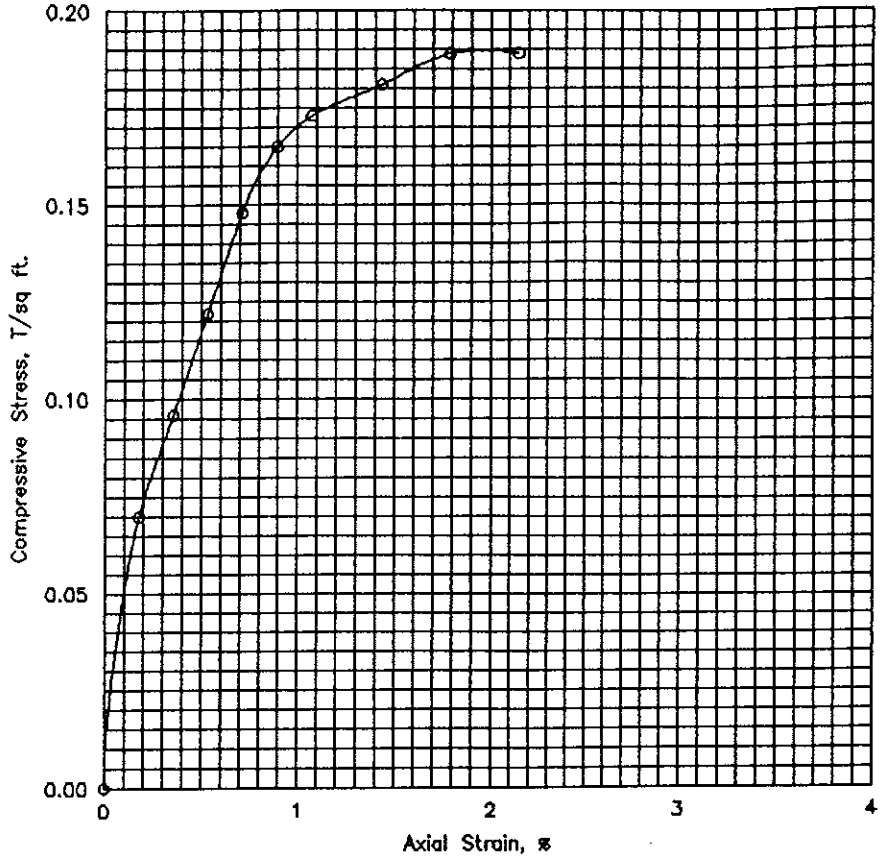
LL = 48 PL = 19 PI = 29

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	8.0	6.1	.002	6.30	.070
.3	20.	.020	11.0	8.4	.004	6.31	.096
.5	30.	.030	14.0	10.7	.005	6.32	.122
.7	40.	.040	17.0	13.0	.007	6.34	.148
.9	50.	.050	19.0	14.6	.009	6.35	.165
1.0	60.	.060	20.0	15.3	.011	6.36	.173
1.3	80.	.080	21.0	16.1	.014	6.38	.181
1.6	100.	.100	22.0	16.9	.018	6.40	.189
1.9	120.	.120	22.0	16.9	.021	6.43	.189

Job No. 14G533

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	31.4 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	90.4			
Time to failure, min		t_f	1.60			
Unconfined compressive strength, T/sq ft		q_u	.19			
Undrained shear strength, T/sq ft		S_u	.09			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray & yellowish gray,Clay,Very soft,Silty,w/sand pockets

LL	48	PL	19	PI	29	G_s	

Remarks

Project Gulf Intracostal Waterway

Area Near Sargent Beach, Texas

Boring No. 91-287 | Sample No. 4

Depth El 6-8 ft | Date 1/30/92

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

JOB NO. 14G533 DATE 1/30/92

PROJECT Gulf Intracostal Waterway near Sargent Beach, Texas

BORING NO. 91-287 SAMPLE NO. 6 DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray & yellowish gray,Clay,Soft,w/calcareous nodules

Tare No.	P-213	Height	5.595 in.
Tare plus Wet Specimen	474.09 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	335.55 gm	Initial Area	6.290 sq in.
Water Weight	138.54 gm	Volume	35.194 cu in.
Tare Weight	42.26 gm	Volume of Solids	cu in.
Wet Specimen	1005.15 gm	Void Ratio	
Dry Specimen	682.68 gm	Saturation	%
Water Content	47.24 %	Dry Density	73.9 lb/cu ft
Specific Gravity of Solids			

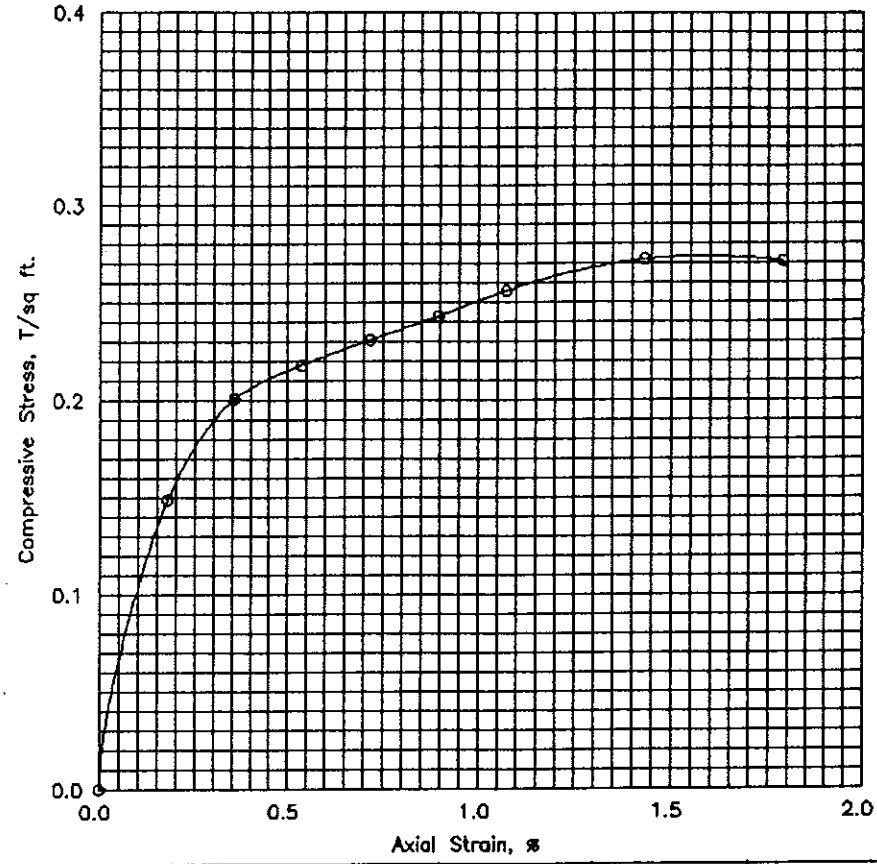
LL = PL = PI =

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	17.0	13.0	.002	6.30	.149
.3	20.	.020	23.0	17.6	.004	6.31	.201
.5	30.	.030	25.0	19.1	.005	6.32	.218
.7	40.	.040	26.5	20.3	.007	6.34	.231
.9	50.	.050	28.0	21.4	.009	6.35	.243
1.0	60.	.060	29.5	22.6	.011	6.36	.256
1.3	80.	.080	31.5	24.1	.014	6.38	.272
1.6	100.	.100	31.5	24.1	.018	6.40	.271

Job No. 14G533

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	47.2 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	73.9			
Time to failure, min		t_f	1.33			
Unconfined compressive strength, T/sq ft		q_u	.27			
Undrained shear strength, T/sq ft		S_u	.14			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Gray & yellowish gray,Clay,Soft,w/calcareous nodules

LL	PL	PI	G_s

Remarks

Project Gulf Intracostal Waterway

Area Near Sargent Beach, Texas

Boring No. 91-287 | Sample No. 6

Depth El 10-12 ft | Date 1/30/92

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.