U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-370 DATE: BEGIN 8-23-93 PAGE 1 / 2
JOB NO. 146638 COMPLETE 8-23-93 Thin Walled Tube
PROJECT Core Drilling for enlargement of The retaining levee ■ 3" □ 6"
LOCATION For The Sabine Lake North Disposal Area, Port Arthur, Texas
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4-4, C-1000
GROUNDWATER: DEPTH 3 1/2 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	4.5+	Brown	clay	Hard	Sandy	-w/sa pkts
		2	1.75	Gray	clay	stiff	sandy	-w/sa pkts
5		3	1.75	Brown & gray	clay	stiff	silty	-w/sa pkts
		4	0.75	olive gray	clay	M.stiff	silty	-w/shell Fragments
		5	0.50	olive gray	clay	M.stiff	silty	-w/shell Fragments
10		6	0.00	Gray & Brown	clay	Very soft	silty	
		7	0.75	Gray & Brown	clay	M.stiff	silty	
15		8	2.25	olive gray & Brown	Clay	Very stiff		-w/Fest
		9	3.75	Brown & gray	clay	Very stiff		-w/sasms & Fest
		10	3.50	Brown & gray	clay	very stiff		-w/sasms & Fest
20		11	1.75	Yellowish Brown	clay	stiff	silty	
		12	1.50	Yellowish Brown	Clay	stiff	silty	
25		13	2.50	Brown	Clay	Very stiff		-w/silt Parting
		14	2.75	Brown	clay	Very stiff		-w/silt Parting
		15	3.00	Brown	clay	Very stiff		-w/silt Parting
30		16	3.25	"	"	" "		" " "
		17	2.00	Brown	clay	Very stiff		-w/silt Parting
35		18	2.25	"	"	" "		" " "

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-370 DATE: BEGIN 8-23-93 PAGE 2 / 2
JOB NO. 146638 COMPLETE 8-23-93 Thin Walled Tube
PROJECT Core Drilling for enlargement of the retaining levee ■ 3" ☐ 6"
LOCATION for the Sabine Lake North Disposal Area, Port Arthur, Texas
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4-4, C-1000
GROUNDWATER: DEPTH 3 1/2 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
35								
		19	2.50	Brown	Clay	Very stiff		-w/silt Parting
		20	2.75	Brown	Clay	Very stiff		-w/silt Parting
40								
45								
50								
55								
60								
65								
70								

SUMMARY OF LABORATORY TEST RESULTS

Project: Sabine lake North Disposal Area Sabine-Neches waterway Near Port Arthur, Texas

Contract No. DACW64-92-D-0005 Delivery Order No. 0025

Boring No.93-370

S#	Depth (ft.)	PP (tsf)	SPT Blows per foot	Visual Classification	U S C	M C (%)	Dry Unit Wt. (pcf)	Wet Unit Wt. (pcf)	LL (%)	PL (%)	Mechanical Analysis % passing #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	qu (tsf)
1	0-2	4.50		Brown and Gray,Clay,Hard,Sandy,w/sand pockets	C L	22.7											
2	2-4	1.50		Brown and Gray,Clay,Stiff,Silty,w/sand pockets	C L	32.9											
3	4-6	1.00		Brown and Gray,Clay,Stiff,Silty,w/ferrous stains and sand seams	C L	24.4	100.4	124.9	33	16	100.0	100.0	98.7	97.7	96.0		1.18
4	6-8	0.50		Brown and Gray,Clay,Medium stiff,Silty,w/ferrous stains and sand seams	C L	30.0											
5	8-10	0.50		Brown and Gray,Clay,Medium stiff,Silty,w/ferrous stains and sand seams	C L	32.5											
6	10-12	0.00		Gray and Brown,Clay,Very soft,Silty,w/shell fragments	C L	33.7	82.9	110.8	48	21	99.6	99.0	98.7	97.7	96.5	0.09	0.20
7	12-14	0.50		Gray and Brown,Clay,Medium stiff,w/shell fragments	C H	36.8	83.9	114.8	52		100.0	100.0	99.5	98.6	96.9		0.56
8	14-16	2.25		Gray and Brown,Clay,Very stiff,w/ferrous stains	C H	28.9											
9	16-18	3.50		Brown and Gray,Clay,Very stiff,w/ferrous stains and sand seams	C H	23.3	97.3	120.0	63	25	100.0	100.0	99.9	99.2	98.6		2.27
10	18-20	3.75		Brown and Gray,Clay,Very stiff,w/ferrous stains	C H	23.1											
11	20-22	1.25		Yellowish Brown,Clay,Stiff,Silty	C L	25.8	97.9	123.1	33		100.0	100.0	99.6	98.6	96.9		1.21
12	22-24	1.50		Yellowish Brown,Clay,Stiff,Silty	C L	29.8											
13	24-26	2.25		Brown,Clay,Very stiff,w/silt partings	C H	30.7											
14	26-28	2.75		Brown,Clay,Very stiff,w/silt partings	C H	36.6											
15	28-30	3.00		Brown,Clay,Very stiff,w/silt partings	C H	34.6											

S#: Sample Number, PP: Pocket Penetrometer Reading, USC: Unified Soil Classification, MC: Moisture Content
qu: Unconfined Compressive Strength, WOH: Weight of Hammer, WOP: Weight of Pipe

GEOTEST ENGINEERING, INC.

SUMMARY OF LABORATORY TEST RESULTS

Project: Sabine lake North Disposal Area Sabine-Neches waterway Near Port Arthur, Texas
Contract No. DACW64-92-D-0005 Delivery Order No. 0025

Boring No.93-370

S#	Depth (ft.)	PP (tsf)	SPT Blows per foot	Visual Classification	U S C	M C (%)	Dry Unit Wt. (pcf)	Wet Unit Wt. (pcf)	LL (%)	PL (%)	Mechanical Analysis % passing					Torvane Shear Strength (tsf)	qu (tsf)
											#4	#10	#40	#100	#200		
16	30-32	3.25		Yellowish Brown,Clay,Very stiff,w/silt partings	C H	31.5	89.8	118.1	58		100.0	100.0	99.9	97.9	96.9		2.32
17	32-34	2.00		Yellowish Brown,Clay,Very stiff,w/ferrous stains and silt partings	C H	30.6											
18	34-36	2.25		Yellowish Brown,Clay,Very stiff,w/ferrous stains and silt partings	C H	32.0											
19	36-38	2.00		Yellowish Brown,Clay,Very Stiff,w/ferrous stains and silt partings	C H	30.3											
20	38-40	2.50		Gray and Brown,Clay,Very stiff,w/ferrous stains and silt partings	C H	42.5											

S#: Sample Number, PP: Pocket Penetrometer Reading, USC: Unified Soil Classification, MC: Moisture Content
qu: Unconfined Compressive Strength, WOH: Weight of Hammer, WOP: Weight of Pipe

GEOTEST ENGINEERING, INC.

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown & gray,Clay,Stiff,Silty,w/ferrous stains & sand seams

Tare No.	P-219	Height	5.595 in.
Tare plus Wet Specimen	407.93 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	336.27 gm	Initial Area	6.290 sq in.
Water Weight	71.66 gm	Volume	35.194 cu in.
Tare Weight	42.72 gm	Volume of Solids	cu in.
Wet Specimen	1154.32 gm	Void Ratio	
Dry Specimen	927.82 gm	Saturation	%
Water Content	24.41 %	Dry Density	100.4 lb/cu ft
Specific Gravity of Solids			

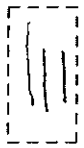
LL = 33 PL = 16 PI = 17

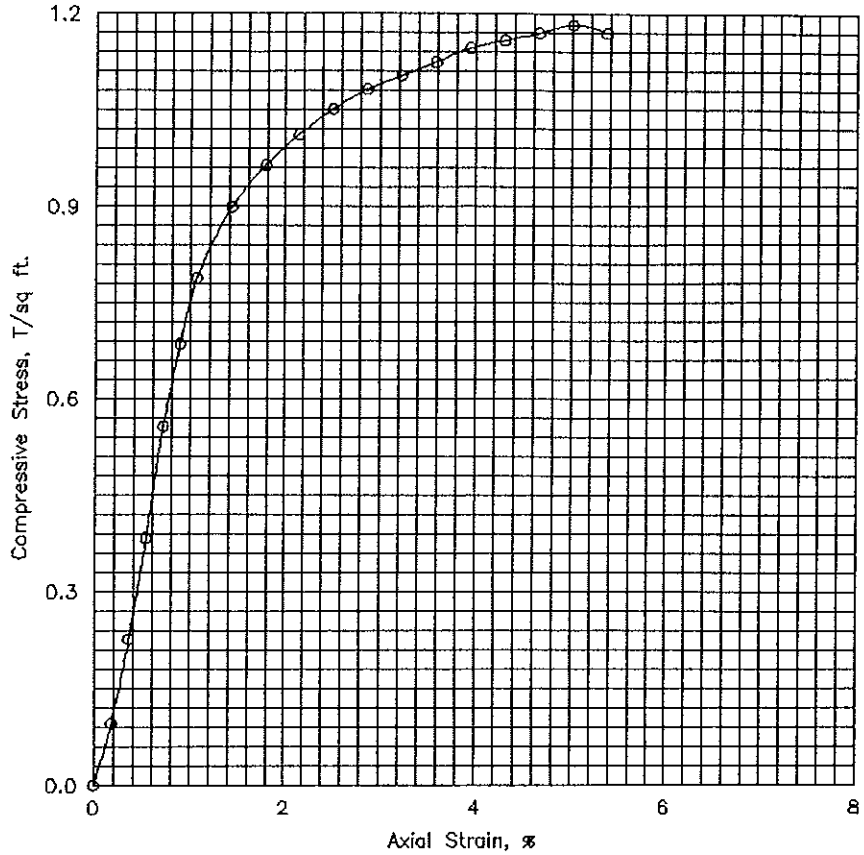
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	11.0	8.4	.002	6.30	.096
.4	20.	.020	26.0	19.9	.004	6.31	.227
.7	30.	.030	44.0	33.7	.005	6.32	.384
.9	40.	.040	64.0	49.0	.007	6.34	.557
1.0	50.	.050	79.0	60.5	.009	6.35	.686
1.4	60.	.060	91.0	69.7	.011	6.36	.789
1.7	80.	.080	104.0	79.7	.014	6.38	.899
2.0	100.	.100	112.0	85.8	.018	6.40	.964
2.3	120.	.120	118.0	90.4	.021	6.43	1.012
2.6	140.	.140	123.0	94.2	.025	6.45	1.051
2.9	160.	.160	127.0	97.3	.029	6.48	1.082
3.2	180.	.180	130.0	99.6	.032	6.50	1.103
3.6	200.	.200	133.0	101.9	.036	6.52	1.124
3.9	220.	.220	136.0	104.2	.039	6.55	1.146
4.2	240.	.240	138.0	105.7	.043	6.57	1.158
4.6	260.	.260	140.0	107.2	.046	6.60	1.170
4.9	280.	.280	142.0	108.8	.050	6.62	1.183
5.3	300.	.300	141.0	108.0	.054	6.65	1.170

Job No. 14G719

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
initial	Water content	w_0	24.4 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	100.4			
Time to failure, min		t_f	4.90			
Unconfined compressive strength, T/sq ft		q_u	1.18			
Undrained shear strength, T/sq ft		S_u	.59			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brown & gray,Clay,Stiff,Silty,w/ferrous stains & sand seams

LL	33	PL	16	PI	17	G_s	

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-370 Sample No. 3
Depth El 4-6 ft Date 10/09/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 6 DEPTH 10-12 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray & brown,Clay,Very soft,Silty,w/shell fragments

Tare No.	P-228	Height	5.595 in.
Tare plus Wet Specimen	549.36 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	421.59 gm	Initial Area	6.290 sq in.
Water Weight	127.77 gm	Volume	35.194 cu in.
Tare Weight	42.52 gm	Volume of Solids	cu in.
Wet Specimen	1023.90 gm	Void Ratio	
Dry Specimen	765.78 gm	Saturation	%
Water Content	33.71 %	Dry Density	82.9 lb/cu ft
Specific Gravity of Solids			

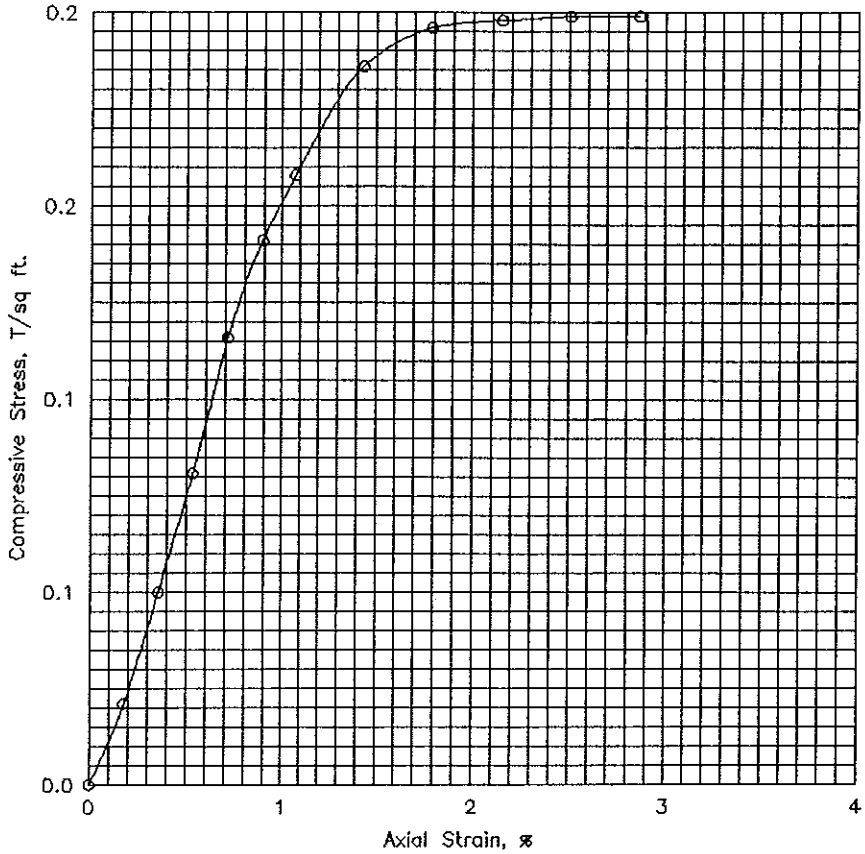
LL = 48 PL = 21 PI = 27

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	6.0	1.9	.002	6.30	.021
.2	20.	.020	14.0	4.3	.004	6.31	.050
.6	30.	.030	23.0	7.1	.005	6.32	.081
.7	40.	.040	33.0	10.2	.007	6.34	.116
.9	50.	.050	40.0	12.4	.009	6.35	.141
1.1	60.	.060	45.0	14.0	.011	6.36	.158
1.4	80.	.080	53.0	16.5	.014	6.38	.186
1.7	100.	.100	56.0	17.4	.018	6.40	.196
2.0	120.	.120	57.0	17.7	.021	6.43	.198
2.3	140.	.140	57.5	17.9	.025	6.45	.199
2.7	160.	.160	57.5	17.9	.029	6.48	.199

Job No. 14G719

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	33.7 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	82.9			
Time to failure, min		t_f	2.33			
Unconfined compressive strength, T/sq ft		q_u	.20			
Undrained shear strength, T/sq ft		S_u	.10			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray & brown,Clay,Very soft,Silty,w/shell fragments

LL	48	PL	21	PI	27	G_s	

Remarks

Project Sabine Lake North Disposal Area
Sabine--Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-370 Sample No. 6
Depth El 10-12 ft Date 10/09/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 7 DEPTH 12-14 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray & brown,Clay,Medium stiff,w/shell fragments

Tare No.	GE-9	Height	5.595 in.
Tare plus Wet Specimen	465.95 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	352.00 gm	Initial Area	6.290 sq in.
Water Weight	113.95 gm	Volume	35.194 cu in.
Tare Weight	42.42 gm	Volume of Solids	cu in.
Wet Specimen	1060.10 gm	Void Ratio	
Dry Specimen	774.88 gm	Saturation	%
Water Content	36.81 %	Dry Density	83.9 lb/cu ft
Specific Gravity of Solids			

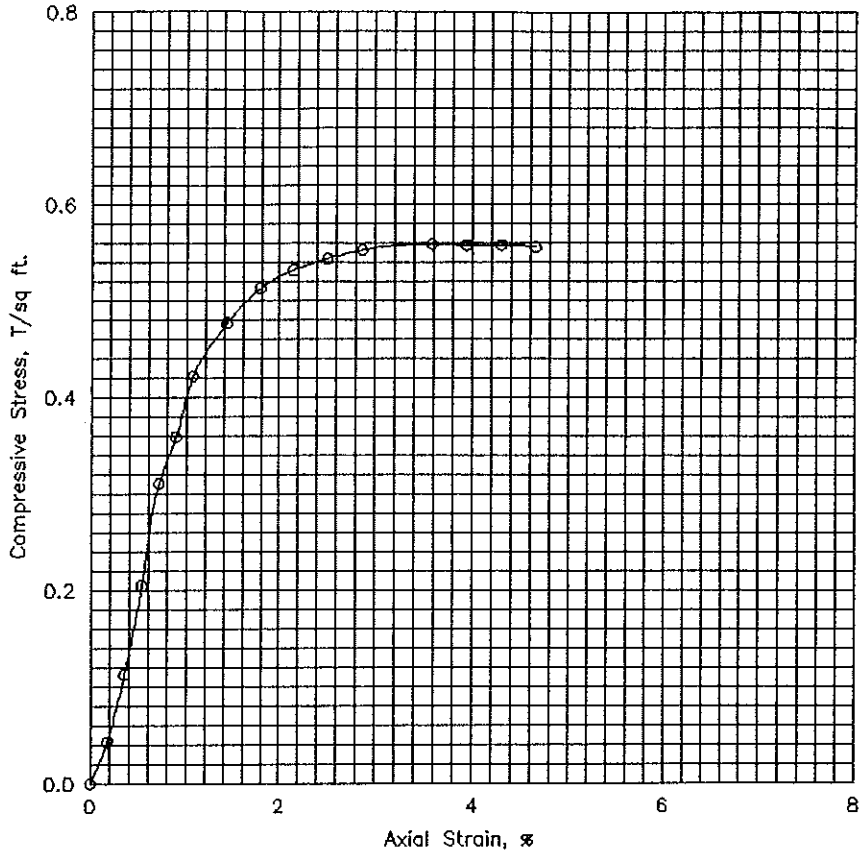
LL = 52 PL = PI =

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	12.0	3.7	.002	6.30	.043
.3	20.	.020	32.0	9.9	.004	6.31	.113
.5	30.	.030	58.0	18.0	.005	6.32	.205
.7	40.	.040	88.0	27.3	.007	6.34	.311
.9	50.	.050	102.0	31.7	.009	6.35	.359
1.0	60.	.060	120.0	37.3	.011	6.36	.422
1.4	80.	.080	136.0	42.2	.014	6.38	.477
1.7	100.	.100	147.0	45.7	.018	6.40	.513
2.0	120.	.120	153.0	47.5	.021	6.43	.532
2.3	140.	.140	157.0	48.8	.025	6.45	.544
2.9	160.	.160	160.0	49.7	.029	6.48	.553
3.3	200.	.200	163.0	50.6	.036	6.52	.559
3.6	220.	.220	163.5	50.8	.039	6.55	.558
3.9	240.	.240	164.0	50.9	.043	6.57	.558
4.2	260.	.260	164.0	50.9	.046	6.60	.556

Job No. 14G719

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	36.8 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	83.9			
Time to failure, min		t_f	3.25			
Unconfined compressive strength, T/sq ft		q_u	.56			
Undrained shear strength, T/sq ft		S_u	.28			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray & brown,Clay,Medium stiff,w/shell fragments

LL	52	PL		PI		G_s

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-370 Sample No. 7
Depth 12-14 ft Date 10/09/93
El
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 9 DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown & gray,Clay,Very stiff,w/ferrous stains & sand seams

Tare No.	100	Height	5.595 in.
Tare plus Wet Specimen	459.30 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	382.72 gm	Initial Area	6.290 sq in.
Water Weight	76.58 gm	Volume	35.194 cu in.
Tare Weight	53.10 gm	Volume of Solids	cu in.
Wet Specimen	1107.32 gm	Void Ratio	
Dry Specimen	898.56 gm	Saturation	%
Water Content	23.23 %	Dry Density	97.3 lb/cu ft
Specific Gravity of Solids			

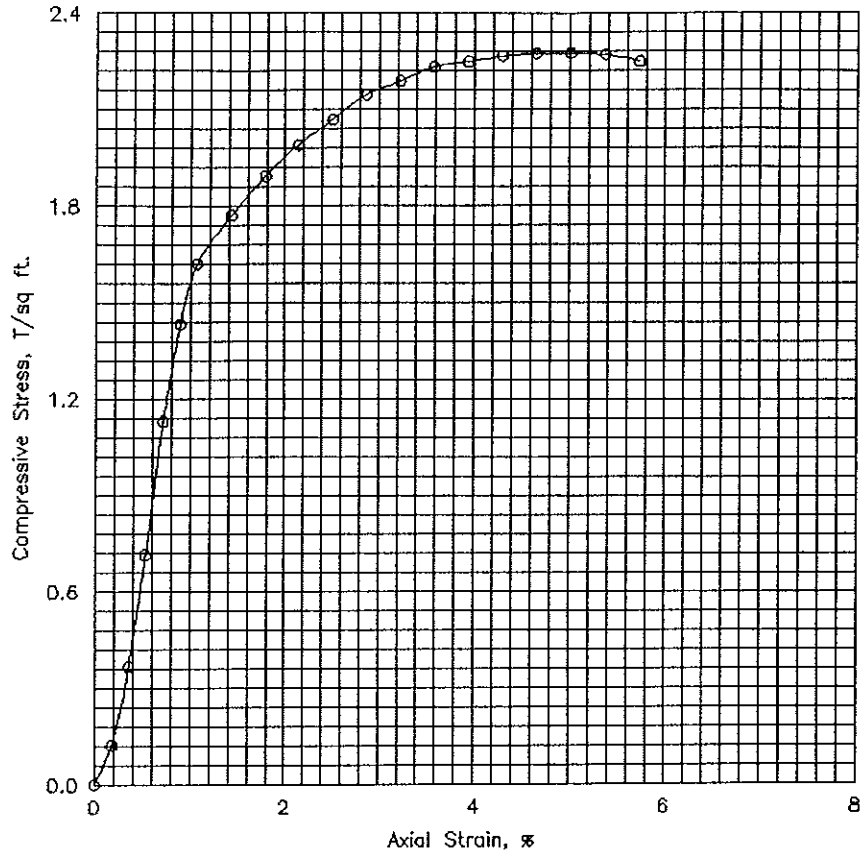
LL = 63 PL = 25 PI = 38

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	14.0	10.7	.002	6.30	.123
.3	20.	.020	42.0	32.2	.004	6.31	.367
.5	30.	.030	82.0	62.8	.005	6.32	.715
.7	40.	.040	130.0	99.6	.007	6.34	1.132
.9	50.	.050	165.0	126.4	.009	6.35	1.434
1.0	60.	.060	187.0	143.2	.011	6.36	1.622
1.4	80.	.080	205.0	157.0	.014	6.38	1.772
1.7	100.	.100	220.0	168.5	.018	6.40	1.894
2.0	120.	.120	232.0	177.7	.021	6.43	1.991
2.3	140.	.140	242.0	185.4	.025	6.45	2.069
2.6	160.	.160	252.0	193.0	.029	6.48	2.146
3.0	180.	.180	258.0	197.6	.032	6.50	2.189
3.3	200.	.200	264.0	202.2	.036	6.52	2.232
3.6	220.	.220	267.0	204.5	.039	6.55	2.249
3.9	240.	.240	270.0	206.8	.043	6.57	2.266
4.2	260.	.260	272.0	208.4	.046	6.60	2.274
4.6	280.	.280	273.0	209.1	.050	6.62	2.274
4.9	300.	.300	273.5	209.5	.054	6.65	2.269
5.2	320.	.320	272.0	208.4	.057	6.67	2.248

Job No. 146719

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	23.2 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	97.3			
Time to failure, min		t_f	4.23			
Unconfined compressive strength, T/sq ft		q_u	2.27			
Undrained shear strength, T/sq ft		S_u	1.14			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brown & gray,Clay,Very stiff,w/ferrous stains & sand seams

LL	63	PL	25	PI	38	G_s	

Remarks

Project	Sabine Lake North Disposal Area
	Sabine-Neches Waterway
Area	Near Port Arthur, Texas
Boring No. 93-370	Sample No. 9
Depth 16-18 ft El	Date 10/09/93
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 11 DEPTH 20-22 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish brown,Clay,Stiff,Silty

Tare No.	W-14	Height	5.595 in.
Tare plus Wet Specimen	383.23 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	313.32 gm	Initial Area	6.290 sq in.
Water Weight	69.91 gm	Volume	35.194 cu in.
Tare Weight	42.34 gm	Volume of Solids	cu in.
Wet Specimen	1137.56 gm	Void Ratio	
Dry Specimen	904.27 gm	Saturation	%
Water Content	25.80 %	Dry Density	97.9 lb/cu ft
Specific Gravity of Solids			

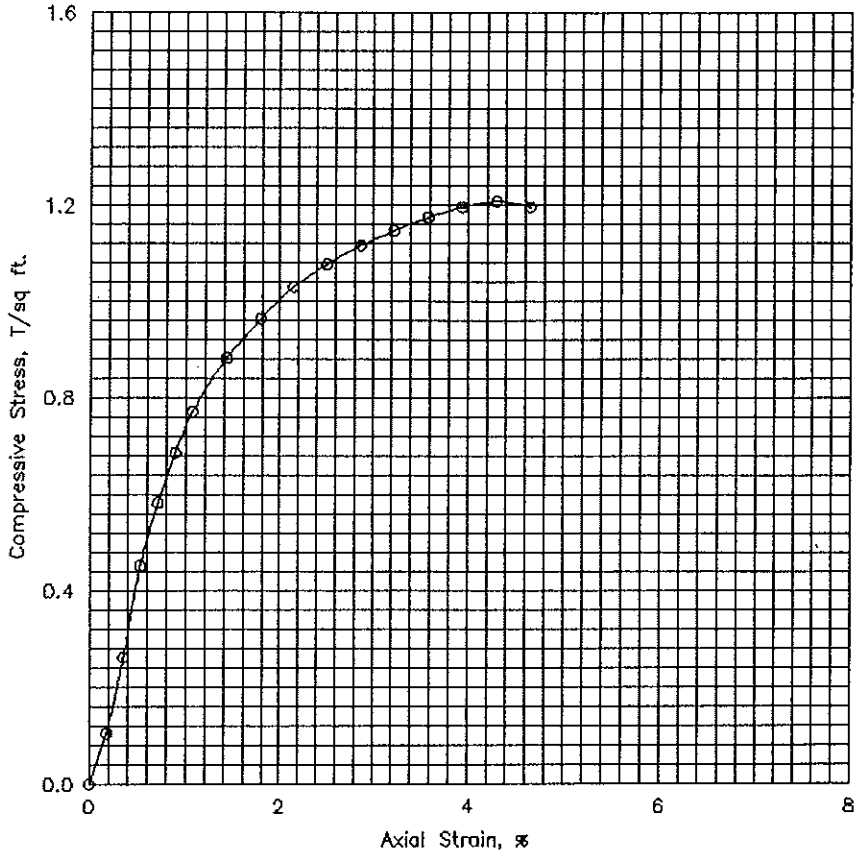
LL = 33 PL = PI =

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	12.0	9.2	.002	6.30	.105
.4	20.	.020	30.0	23.0	.004	6.31	.262
.6	30.	.030	52.0	39.8	.005	6.32	.453
.7	40.	.040	67.0	51.3	.007	6.34	.583
.9	50.	.050	79.0	60.5	.009	6.35	.686
1.1	60.	.060	89.0	68.2	.011	6.36	.772
1.4	80.	.080	102.0	78.1	.014	6.38	.882
1.7	100.	.100	112.0	85.8	.018	6.40	.964
2.0	120.	.120	120.0	91.9	.021	6.43	1.030
2.3	140.	.140	126.0	96.5	.025	6.45	1.077
2.7	160.	.160	131.0	100.3	.029	6.48	1.116
3.0	180.	.180	135.0	103.4	.032	6.50	1.146
3.3	200.	.200	139.0	106.5	.036	6.52	1.175
3.6	220.	.220	142.0	108.8	.039	6.55	1.196
4.0	240.	.240	144.0	110.3	.043	6.57	1.208
4.3	260.	.260	143.0	109.5	.046	6.60	1.196

Job No. 146719

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	25.8 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	97.9			
Time to failure, min		t_f	3.97			
Unconfined compressive strength, T/sq ft		q_u	1.21			
Undrained shear strength, T/sq ft		S_u	.60			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Yellowish brown,Clay,Stiff,Silty

LL	33	PL		PI		G_s

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-370 | Sample No. 11
Depth 20-22 ft | Date 10/09/93
El

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G719 DATE 10/09/93

PROJECT Sabine Lake North Disposal Area
Sabine-Neches Waterway

AREA Near Port Arthur, Texas

BORING NO. 93-370 SAMPLE NO. 16 DEPTH 30-32 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish brown,Clay,Very stiff,w/silt partings

Tare No.	P-230	Height	5.595 in.
Tare plus Wet Specimen	433.99 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	340.29 gm	Initial Area	6.290 sq in.
Water Weight	93.70 gm	Volume	35.194 cu in.
Tare Weight	42.70 gm	Volume of Solids	cu in.
Wet Specimen	1090.86 gm	Void Ratio	
Dry Specimen	829.64 gm	Saturation	%
Water Content	31.49 %	Dry Density	89.8 lb/cu ft
Specific Gravity of Solids			

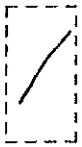
LL = 58 PL = PI =

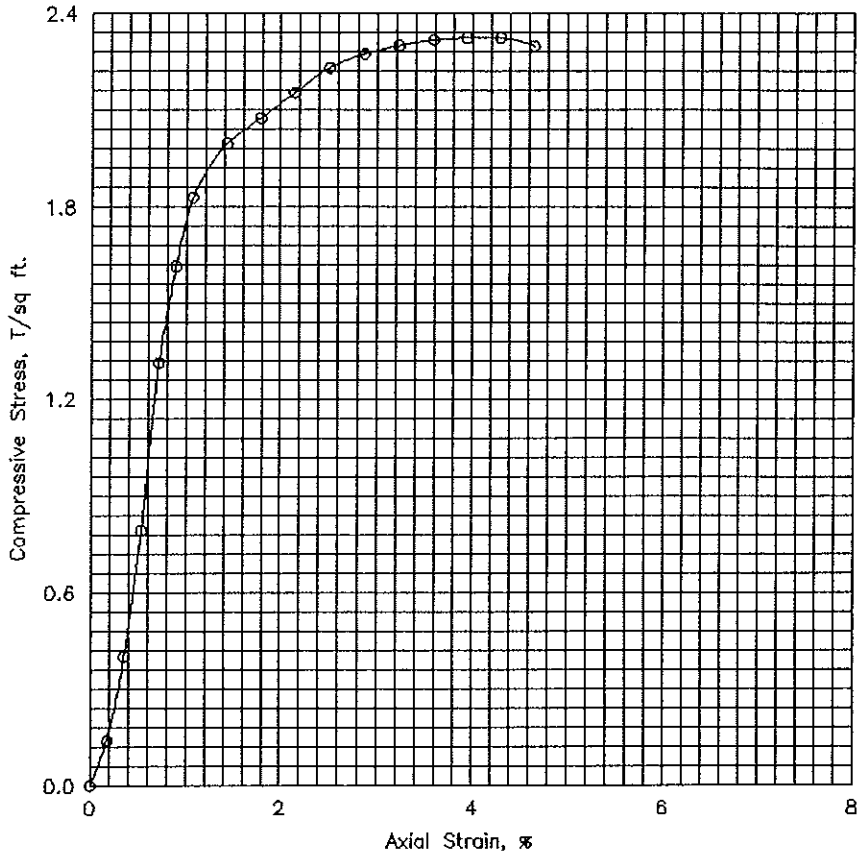
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	16.0	12.3	.002	6.30	.140
.4	20.	.020	46.0	35.2	.004	6.31	.402
.6	30.	.030	91.0	69.7	.005	6.32	.794
.8	40.	.040	151.0	115.7	.007	6.34	1.314
.9	50.	.050	186.0	142.5	.009	6.35	1.616
1.1	60.	.060	211.0	161.6	.011	6.36	1.830
1.4	80.	.080	231.0	176.9	.014	6.38	1.996
1.8	100.	.100	241.0	184.6	.018	6.40	2.075
2.0	120.	.120	251.0	192.3	.021	6.43	2.154
2.3	140.	.140	261.0	199.9	.025	6.45	2.231
2.7	160.	.160	267.0	204.5	.029	6.48	2.274
3.0	180.	.180	271.0	207.6	.032	6.50	2.300
3.3	200.	.200	274.0	209.9	.036	6.52	2.317
3.7	220.	.220	276.0	211.4	.039	6.55	2.325
4.0	240.	.240	277.0	212.2	.043	6.57	2.325
4.3	260.	.260	275.0	210.6	.046	6.60	2.299

Job No. 14G719

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	31.5 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	89.8			
Time to failure, min		t_f	3.65			
Unconfined compressive strength, T/sq ft		q_u	2.32			
Undrained shear strength, T/sq ft		S_u	1.16			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Yellowish brown,Clay,Very stiff,w/silt partings

LL 58	PL	PI	G_s

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-370 | Sample No. 16
Depth El 30-32 ft | Date 10/09/93

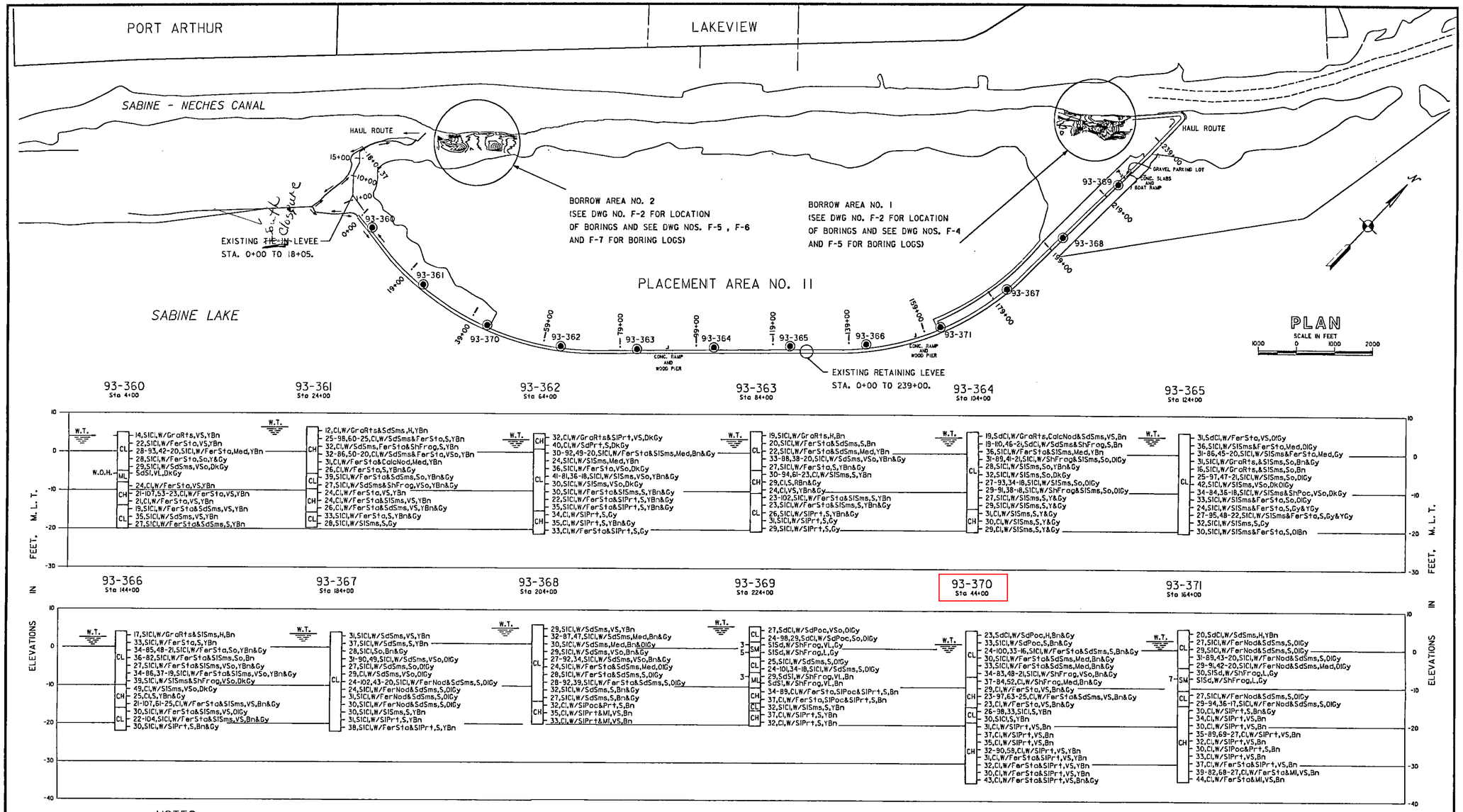
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE



NOTES;

1. SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH MILITARY STANDARD 619B "UNIFIED SOIL CLASSIFICATION SYSTEM FOR ROADS, AIRFIELDS, EMBANKMENTS, AND FOUNDATIONS." CONSISTENCY OF SOILS SUCH AS SOFT, MEDIUM, HARD, LOOSE, DENSE, ETC., ARE RELATIVE TERMS BASED ON ESTIMATED UNDISTURBED SHEAR STRENGTH OF THE MATERIAL AS DETERMINED BY VISUAL CLASSIFICATION POCKET PENETROMETER TESTS AND PENETRATION RESISTANCE DURING SAMPLING.
2. FIGURES TO THE RIGHT OF BORING LOGS ARE WATER CONTENTS IN PERCENT OF THE DRY WEIGHT, DRY DENSITY, LIQUID LIMIT, PLASTIC LIMIT, AND BAR LINEAR SHRINKAGE. (MC-LDW,LL-PL,I,BL.L.SJ) FIGURES TO THE LEFT OF BORING LOGS ARE BLOWS PER FOOT OF PENETRATION FROM STANDARD PENETRATION TESTING.
3. BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WHERE RECOVERED WITH A 3-INCH DIAMETER THIN WALL SAMPLER WHERE COHESIVE MATERIALS WERE ENCOUNTERED. WHERE COHESIONLESS MATERIALS WERE ENCOUNTERED, DISTURBED SAMPLES WERE TAKEN WITH A SPLIT SPOON SAMPLER DURING PERFORMANCE OF STANDARD PENETRATION TESTING.
4. WATER TABLE LEVELS SHOWN ON BORING LOGS WERE DETERMINED AFTER DRILLING BORINGS BY MEASURING THE TOP OF FLUID LEVELS IN THE BORINGS. INASMUCH AS WET ROTARY DRILLING TECHNIQUES AND DRILLING MUD WERE USED TO DRILL THE HOLES, THE LEVEL OF DRILLING FLUIDS IN THE BORE HOLES MAY NOT HAVE STABILIZED TO THE LEVEL OF THE ACTUAL WATER TABLE. ADDITIONALLY, WATER TABLES IN THE FIELD ARE LIKELY TO FLUCTUATE DEPENDING ON WEATHER CONDITIONS. THEREFORE, SOME VARIATION SHOULD BE ANTICIPATED BETWEEN WATER TABLES INDICATED AND WATER TABLES ENCOUNTERED IN THE FIELD.

VISUAL CLASSIFICATIONS

Bn Brown(ish)	Nod Nodules	Sl Silt(y)
Calc Calcerous	Ol Olive	Sms Seams
Cl Clay	Poc Pocket(s)	So Soft
Dk Dark	Prt Parting	Sta Stain(s)
Fer Ferrous	R Red	V Very
Frag Fragment(s)	Rts Root(s)	W/ With
Gra Grass	S Stiff	W.T. Water Table
Gy Gray(ish)	Sd Sand(y)	W.O.H. Weight Of Hammer
H Hard	Sh Shell(y)	Y Yellow(ish)
L Loose		
Med Medium		
Mi Mica		

LABORATORY CLASSIFICATION

CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.
CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, LEAN CLAYS.
ML INORGANIC SILTS AND VERY FINE SANDS, WITH SLIGHT PLASTICITY.
SM SILTY SANDS, SAND-SILT MIXTURES.

REVISION	DATE	DESCRIPTION	BY

OFFICE OF THE DISTRICT ENGINEER
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

DRAWN BY: * J.G.
DESIGNED BY: * G.M.
CHECKED BY: * G.M./L.A.A.
SUBMITTED BY: *
CHIEF, GEOTECH & SURVEYS SECTION
APPROVED: *
CHIEF, DESIGN BRANCH
APPROVED: *
CHIEF, ENGINEERING DIVISION
DATE: JULY 1995
* AS REQUIRED BY ENGINEER CIRCULAR NO. 1110-1-1032)
SCALE: AS SHOWN
EFFEC. DATE:

SABINE - NECHES WATERWAY, TEXAS
SABINE - NECHES CANAL
REHABILITATION OF PLACEMENT AREA NO. 11

PLAN AND BORING LOGS

Prepared under the direction of
Robert B. Gatlin, Col., C.E.,
District Engineer

DRAWING NUMBER
F-1
SHEET 23 OF 32 FILE NO. SN 103-336