Project: Sabine Lake North Disposal Area No. 11
Near Port Arthur , Texas
Contract No. DACW64-93-D-0005 Delivery Order No. 0014

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 94-69

S #	Depth (ft)	P P (tsf)	SPT Blows per Foot	Visual Classification	U S C	Mc (%)	Dry Unit Wt (pcf)	Wet Unit Wt (pcf)	L L (%)	PL (%)	Mechanical Analysis % Passing					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	1.50		Gray,Clay,Stiff,w/calcareous nodules and grass roots	C H	33.2											
2	2 - 4	2.75		Gray,Clay,Very stiff,w/calcareous nodules	C H	24.2											
3	4 - 6	3.50		Brownish gray,Clay,Very stiff,w/calcareous nodules and ferrous stains	C H	20.4	105.5	127.0	55	21	100.0	99.9	98.3	95.4	90.9		3.34
4	6 - 8	2.25		Brownish gray,Clay,Very stiff,w/calcareous nodules ferrous stains and sand pockets	C H	24.7											
5	8 - 10	1.50		Gray,Clay,Stiff,w/calcareous nodules ferrous stains and sand pockets	C H	27.3	98.7	125.6	54	23	100.0	99.9	98.4	95.1	89.6		
6	10 - 12	0.75		Yellowish gray,Clay,Medium stiff,w/sand seams	C H	36.0											
7	12 - 14	1.25		Yellowish gray,Clay,Stiff	C H	26.8											
8	14 - 16	1.50		Yellowish gray,Clay,Stiff	C H	27.3	96.6	122.9	67	26	100.0	99.9	99.0	96.6	93.1		1.12
9	16 - 18	2.25		Olive gray,Clay,Very stiff	C H	25.4											
10	18 - 20	2.75		Olive gray,Clay,Very stiff	C H	21.4											
11	20 - 22	1.25		Olive gray,Clay,Stiff,Sandy,w/calcareous nodules and ferrous stains	C L	23.1											
12	22 - 24	1.50		Gray,Clay,Stiff,Sandy,w/ferrous stains and sand seams	C L	23.7	103.2	127.6	37	19	100.0	99.8	97.3	73.2	66.8		1.14
13	24 - 26	2.50		Olive gray,Clay,Very stiff,Sandy,w/ferrous stains and sand seams	C L	27.6											

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classifcation, M c : Moisture Content
q u : Uncogined Compressive Strength, W O H : Weight of hammer, W O P : Weight of Pipe

JOB NO. 14G727-14 DATE 5/12/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-69 SAMPLE NO. 12 DEPTH 22-24 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Stiff,Sandy,w/ferrous stains and sand seams

Tare No.	W-14	Height	5.595 in.
Tare plus Wet Specimen	752.34 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	616.23 gm	Initial Area	6.290 sq in.
Water Weight	136.11 gm	Volume	35.194 cu in.
Tare Weight	42.39 gm	Volume of Solids	cu in.
Wet Specimen	1179.08 gm	Void Ratio	
Dry Specimen	953.03 gm	Saturation	%
Water Content	23.72 %	Dry Density	103.2 lb/cu ft
Specific Gravity of Solids			

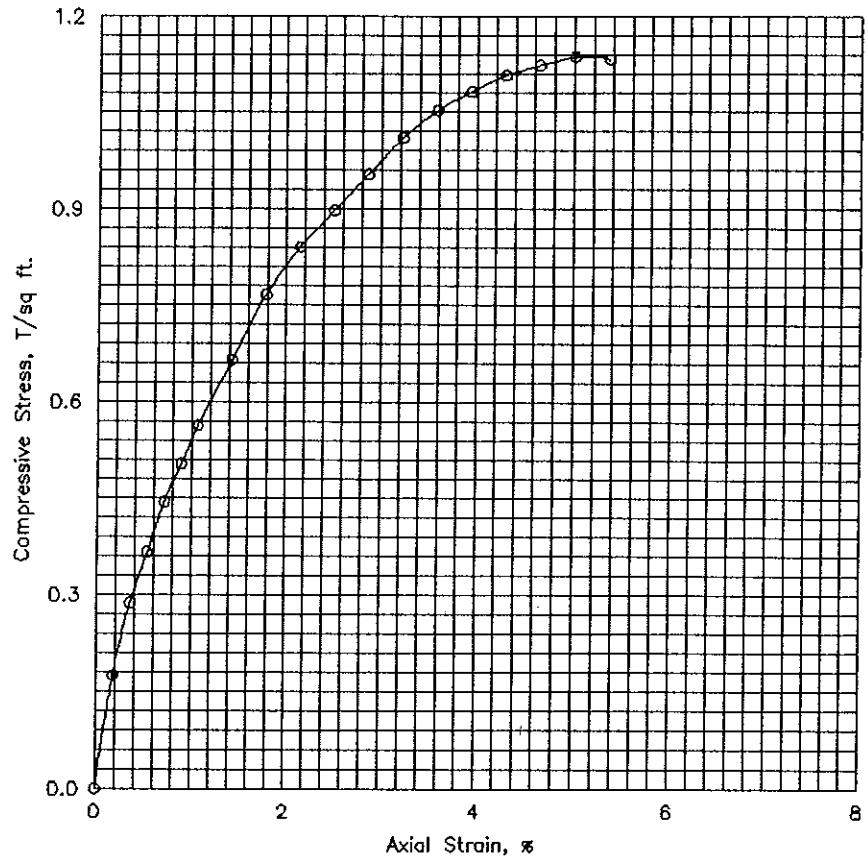
LL = 37 PL = 19 PI = 18

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	20.0	15.3	.002	6.30	.175
.4	20.	.020	33.0	25.3	.004	6.31	.288
.5	30.	.030	42.0	32.2	.005	6.32	.366
.7	40.	.040	51.0	39.1	.007	6.34	.444
.9	50.	.050	58.0	44.4	.009	6.35	.504
1.1	60.	.060	65.0	49.8	.011	6.36	.564
1.4	80.	.080	77.0	59.0	.014	6.38	.665
1.7	100.	.100	89.0	68.2	.018	6.40	.766
2.0	120.	.120	98.0	75.1	.021	6.43	.841
2.3	140.	.140	105.0	80.4	.025	6.45	.898
2.7	160.	.160	112.0	85.8	.029	6.48	.954
3.0	180.	.180	119.0	91.2	.032	6.50	1.010
3.3	200.	.200	124.5	95.4	.036	6.52	1.053
3.6	220.	.220	128.5	98.4	.039	6.55	1.082
4.0	240.	.240	132.0	101.1	.043	6.57	1.108
4.3	260.	.260	134.5	103.0	.046	6.60	1.124
4.6	280.	.280	136.5	104.6	.050	6.62	1.137
4.9	300.	.300	136.5	104.6	.054	6.65	1.133

Job No. 14G727-14

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	23.7 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	103.2			
Time to failure, min		t_f	4.60			
Unconfined compressive strength, T/sq ft		q_u	1.14			
Undrained shear strength, T/sq ft		S_u	.57			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Gray,Clay,Stiff,Sandy,w/ferrous stains and sand seams

LL	37	PL	19	PI	18	G_s	

Remarks

Project Sabine Lake North Disposal Area	
No. 11	
Area Near Port Arthur, Texas	
Boring No. 94-69	Sample No. 12
Depth El 22-24 ft	Date 5/12/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G727-14 DATE 5/12/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-69 SAMPLE NO. 3 DEPTH 4-6 ft

SPECIMEN NO. 1

CLASSIFICATION
Brownish gray,Clay,Very stiff,w/calcareous nodules and ferrous stains

Tare No.	Kl-24	Height	5.595 in.
Tare plus Wet Specimen	730.37 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	613.83 gm	Initial Area	6.290 sq in.
Water Weight	116.54 gm	Volume	35.194 cu in.
Tare Weight	42.56 gm	Volume of Solids	cu in.
Wet Specimen	1173.11 gm	Void Ratio	
Dry Specimen	974.34 gm	Saturation	%
Water Content	20.40 %	Dry Density	105.5 lb/cu ft
Specific Gravity of Solids			

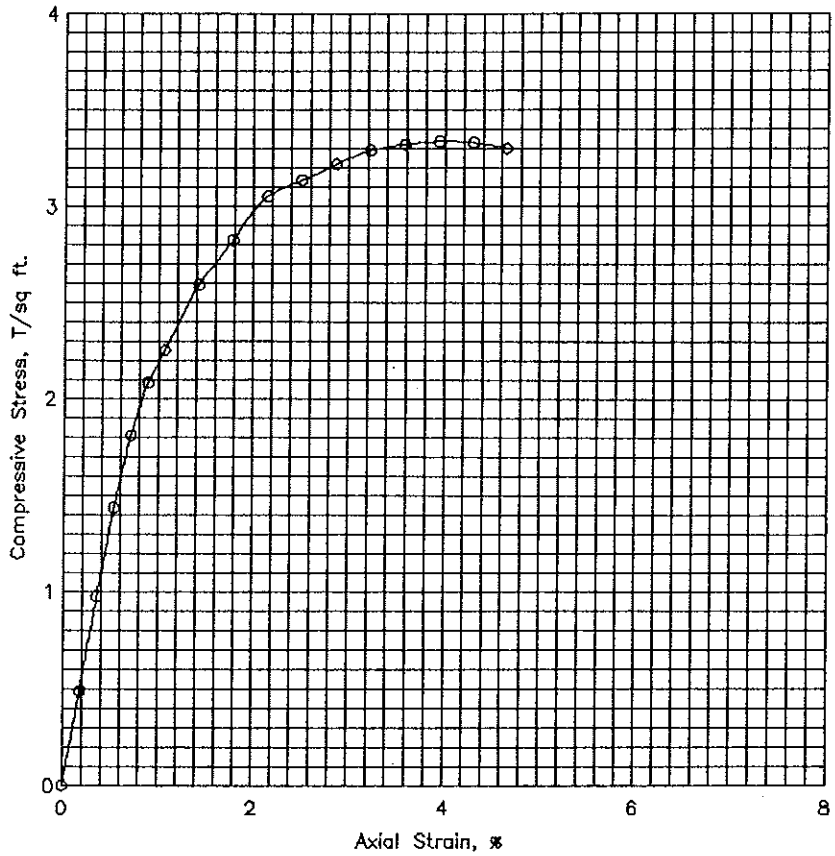
LL = 55 PL = 21 PI = 34

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	56.0	42.9	.002	6.30	.490
.4	20.	.020	112.0	85.8	.004	6.31	.979
.6	30.	.030	165.0	126.4	.005	6.32	1.439
.7	40.	.040	208.0	159.3	.007	6.34	1.811
.9	50.	.050	240.0	183.8	.009	6.35	2.086
1.1	60.	.060	260.0	199.2	.011	6.36	2.255
1.4	80.	.080	300.0	229.8	.014	6.38	2.593
1.7	100.	.100	328.0	251.2	.018	6.40	2.824
2.0	120.	.120	356.0	272.7	.021	6.43	3.054
2.4	140.	.140	367.0	281.1	.025	6.45	3.137
2.7	160.	.160	378.0	289.5	.029	6.48	3.220
3.0	180.	.180	388.0	297.2	.032	6.50	3.293
3.3	200.	.200	393.0	301.0	.036	6.52	3.323
3.7	220.	.220	396.5	303.7	.039	6.55	3.340
4.0	240.	.240	397.0	304.1	.043	6.57	3.332
4.3	260.	.260	395.0	302.6	.046	6.60	3.302

Job No. 14G727-14

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	20.4 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	105.5			
Time to failure, min		t_f	3.65			
Unconfined compressive strength, T/sq ft		q_u	3.34			
Undrained shear strength, T/sq ft		S_u	1.67			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brownish gray,Clay,Very stiff,w/calcareous nodules and ferrous stains

LL	55	PL	21	PI	34	G_s	

Remarks

Project Sabine Lake North Disposal Area	
No. 11	
Area Near Port Arthur, Texas	
Boring No. 94-69	Sample No. 3
Depth El 4-6 ft	Date 5/12/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G727-14 DATE 5/12/94

PROJECT Sabine Lake North Disposal Area
No. 11

AREA Near Port Arthur, Texas

BORING NO. 94-69 SAMPLE NO. 8 DEPTH 14-16 ft

SPECIMEN NO. 1

CLASSIFICATION
Yellowish gray,Clay,Stiff

Tare No.	IM-4	Height	5.595 in.
Tare plus Wet Specimen	527.78 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	423.81 gm	Initial Area	6.290 sq in.
Water Weight	103.97 gm	Volume	35.194 cu in.
Tare Weight	42.58 gm	Volume of Solids	cu in.
Wet Specimen	1135.70 gm	Void Ratio	
Dry Specimen	892.34 gm	Saturation	%
Water Content	27.27 %	Dry Density	96.6 lb/cu ft

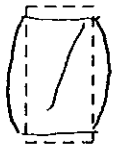
Specific Gravity of Solids
LL = 67 PL = 26 PI = 41

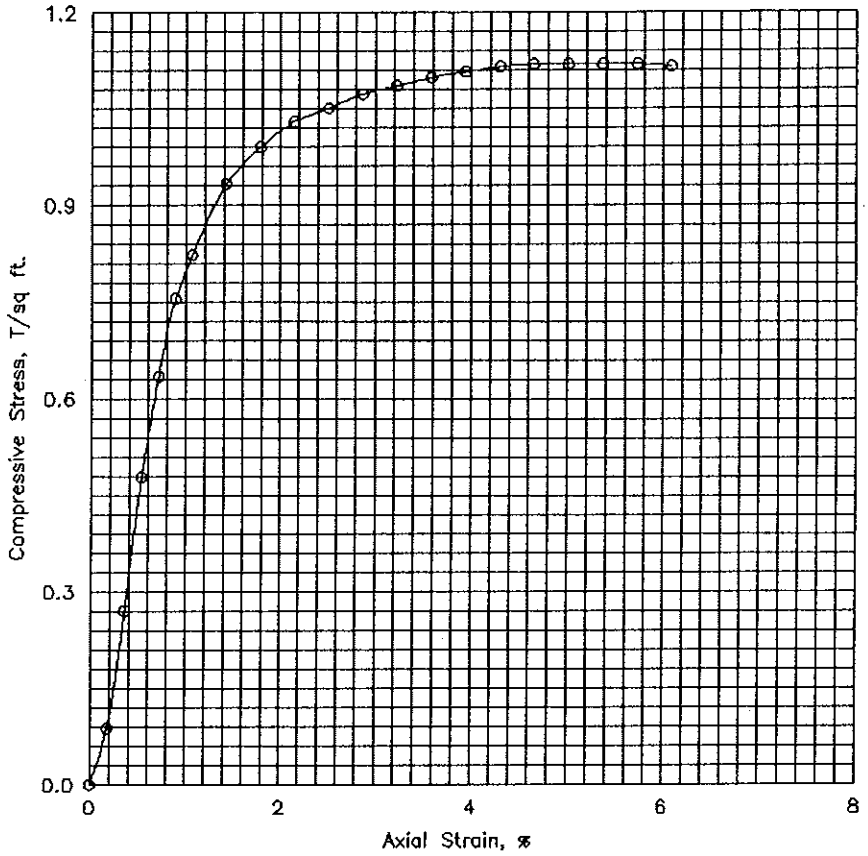
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	10.0	7.7	.002	6.30	.088
.4	20.	.020	31.0	23.7	.004	6.31	.271
.6	30.	.030	55.0	42.1	.005	6.32	.480
.7	40.	.040	73.0	55.9	.007	6.34	.635
.9	50.	.050	87.0	66.6	.009	6.35	.756
1.1	60.	.060	95.0	72.8	.011	6.36	.824
1.4	80.	.080	108.0	82.7	.014	6.38	.933
1.8	100.	.100	115.0	88.1	.018	6.40	.990
2.1	120.	.120	120.0	91.9	.021	6.43	1.030
2.4	140.	.140	123.0	94.2	.025	6.45	1.051
2.7	160.	.160	126.0	96.5	.029	6.48	1.073
3.0	180.	.180	128.0	98.0	.032	6.50	1.086
3.3	200.	.200	130.0	99.6	.036	6.52	1.099
3.7	220.	.220	131.5	100.7	.039	6.55	1.108
4.0	240.	.240	133.0	101.9	.043	6.57	1.116
4.3	260.	.260	134.0	102.6	.046	6.60	1.120
4.6	280.	.280	134.5	103.0	.050	6.62	1.120
4.9	300.	.300	135.0	103.4	.054	6.65	1.120
5.3	320.	.320	135.5	103.8	.057	6.67	1.120
5.6	340.	.340	135.5	103.8	.061	6.70	1.116

Job No. 14G727-14

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	27.3 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	96.6			
Time to failure, min		t_f	4.28			
Unconfined compressive strength, T/sq ft		q_u	1.12			
Undrained shear strength, T/sq ft		S_u	.56			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Yellowish gray,Clay,Stiff

LL	67	PL	26	PI	41	G_s	

Remarks

Project Sabine Lake North Disposal Area
No. 11
Area Near Port Arthur, Texas
Boring No. 94-69 Sample No. 8
Depth El 14-16 ft Date 5/12/94

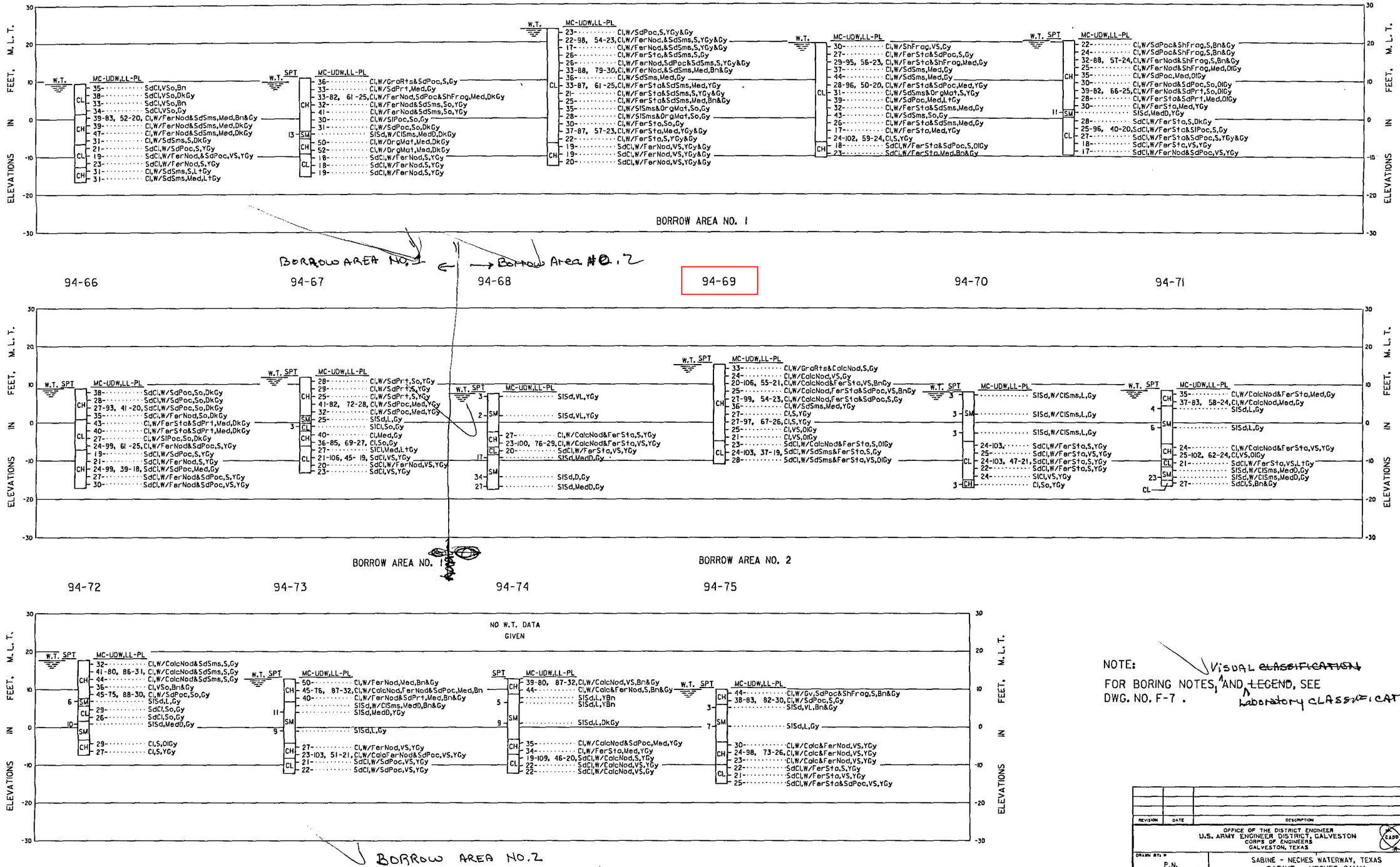
UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE



NOTE:
FOR BORING NOTES, VISUAL ~~CLASSIFICATION~~ AND ~~LEGEND~~ Laboratory CLASSIFICATION, SEE DWG. NO. F-7 .

REVISION	DATE	DESCRIPTION	BY

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

DRAWN BY: P.N.
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

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

BORING LOGS

BORROW AREAS NOS. 1 & 2

DATE: JULY 1995
1" = AS REQUIRED BY ENGINEER (CIRCULAR NO. 80-1-952)
SCALE: AS SHOWN
SPEC. DATE:

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

DRAWING NUMBER
F-5

SHEET 27 OF 32 FILE NO. SN 103-338