U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-368 DATE: BEGIN 8-23-93 PAGE 1 of 1
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 1 ft., ELEV. ____ ft., at end of Drilling
WEATHER clear & 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	2.75	Brown & gray	clay	Very stiff	silty	-w/Sa pkts
		2	0.75	Brown & gray	clay	M.stiff	silty	-w/Sa pkts
5		3	0.50	Brown & gray	clay	M.stiff	silty	-w/Sa sms
		4	0.00	Brown & gray	clay	Very soft	silty	-w/Sa sms sample. Bulge on extrudsion 6-8
		5	0.25	Gray	clay	soft	silty	-w/Sa sm & shell Fragments
10		6	0.50	olive gray	clay	M.stiff	silty	
		7	1.50	olive gray	clay	stiff	silty	-w/Fe Nod & Fe st
15		8	1.25	olive gray	clay	stiff	silty	-w/Fe Nod & Fe st
		9	1.50	Brown	clay	stiff	silty	-w/silt parting
		10	1.75	"	"	"	"	" " "
20		11	1.50	Brown	Clay	stiff		-w/silt parting
		12	2.00	Brown	clay	Very stiff		-w/silt parting
25		13	2.25	"	"	" "		" " "
30								
35								

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. 93-368 SAMPLE NO. 5 DEPTH 8-10 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown & gray,Clay,Very soft,Silty,w/sand seams

Tare No.	P-30	Height	5.595 in.
Tare plus Wet Specimen	597.44 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	478.07 gm	Initial Area	6.290 sq in.
Water Weight	119.37 gm	Volume	35.194 cu in.
Tare Weight	42.81 gm	Volume of Solids	cu in.
Wet Specimen	1078.63 gm	Void Ratio	
Dry Specimen	846.48 gm	Saturation	%
Water Content	27.42 %	Dry Density	91.6 lb/cu ft
Specific Gravity of Solids			

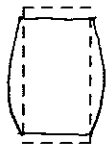
LL = 34 PL = PI =

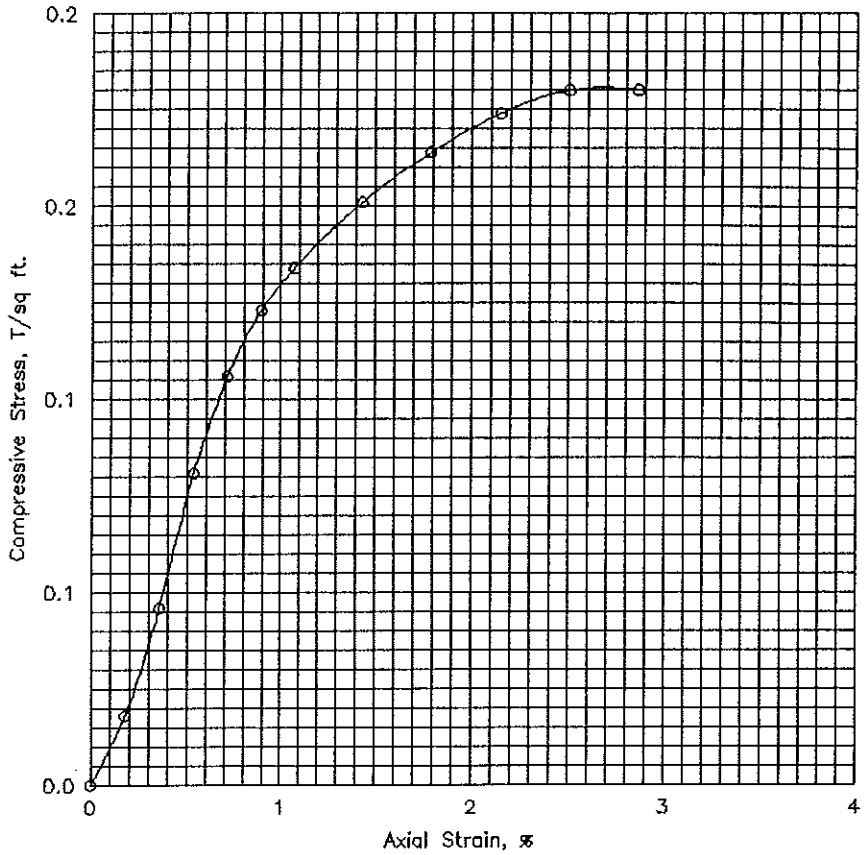
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	5.0	1.6	.002	6.30	.018
.3	20.	.020	13.0	4.0	.004	6.31	.046
.6	30.	.030	23.0	7.1	.005	6.32	.081
.7	40.	.040	30.0	9.3	.007	6.34	.106
.9	50.	.050	35.0	10.9	.009	6.35	.123
1.1	60.	.060	38.0	11.8	.011	6.36	.134
1.4	80.	.080	43.0	13.4	.014	6.38	.151
1.7	100.	.100	47.0	14.6	.018	6.40	.164
2.0	120.	.120	50.0	15.5	.021	6.43	.174
2.3	140.	.140	52.0	16.2	.025	6.45	.180
2.7	160.	.160	52.0	16.2	.029	6.48	.180

Job No. 146719

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	27.4 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	91.6			
Time to failure, min		t_f	2.32			
Unconfined compressive strength, T/sq ft		q_u	.18			
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 Brown & gray,Clay,Very soft,Silty,w/sand seams

LL 34	PL	PI	G_s

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-368 | Sample No. 5
Depth 8-10 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. 93-368 SAMPLE NO. 8 DEPTH 14-16 ft

SPECIMEN NO. 1

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

Tare No.	W-9	Height	5.595 in.
Tare plus Wet Specimen	455.35 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	364.70 gm	Initial Area	6.290 sq in.
Water Weight	90.65 gm	Volume	35.194 cu in.
Tare Weight	42.39 gm	Volume of Solids	cu in.
Wet Specimen	1096.11 gm	Void Ratio	
Dry Specimen	855.50 gm	Saturation	%
Water Content	28.13 %	Dry Density	92.6 lb/cu ft
Specific Gravity of Solids			

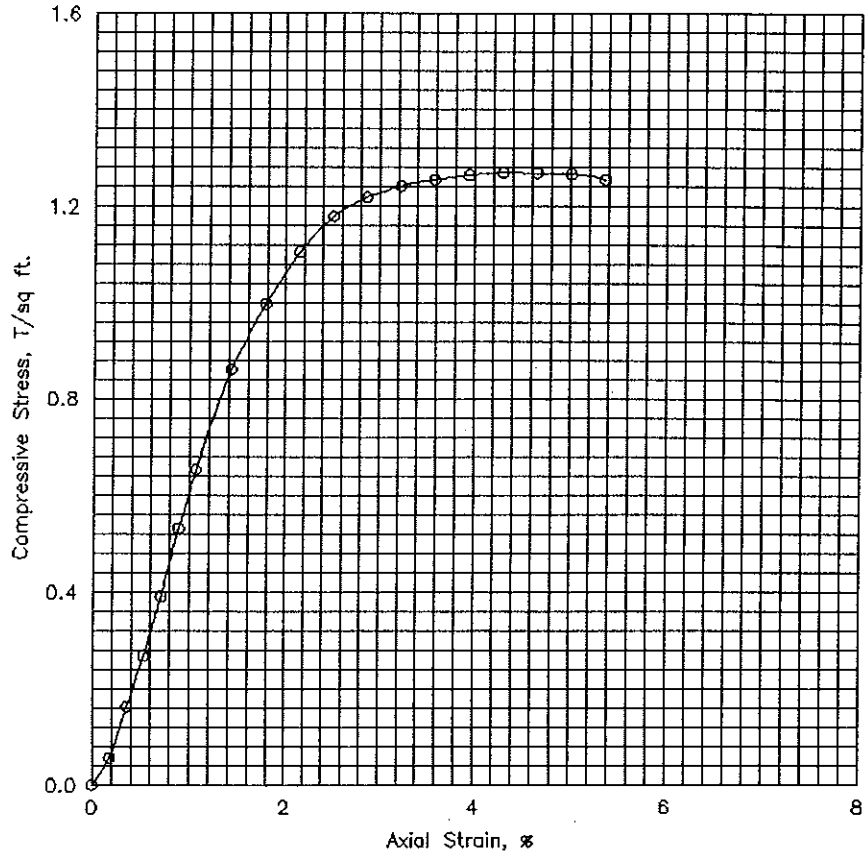
LL = 39 PL = PI =

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	16.0	5.0	.002	6.30	.057
.4	20.	.020	46.0	14.3	.004	6.31	.163
.6	30.	.030	76.0	23.6	.005	6.32	.269
.7	40.	.040	111.0	34.5	.007	6.34	.392
.9	50.	.050	151.0	46.9	.009	6.35	.532
1.1	60.	.060	186.0	57.8	.011	6.36	.654
1.4	80.	.080	246.0	76.4	.014	6.38	.862
1.7	100.	.100	286.0	88.8	.018	6.40	.999
2.0	120.	.120	318.0	98.8	.021	6.43	1.106
2.3	140.	.140	340.0	105.6	.025	6.45	1.179
2.7	160.	.160	353.0	109.6	.029	6.48	1.219
3.0	180.	.180	361.0	112.1	.032	6.50	1.242
3.3	200.	.200	366.0	113.7	.036	6.52	1.255
3.6	220.	.220	370.0	114.9	.039	6.55	1.264
4.0	240.	.240	373.0	115.9	.043	6.57	1.269
4.3	260.	.260	374.0	116.2	.046	6.60	1.268
4.6	280.	.280	375.0	116.5	.050	6.62	1.267
4.9	300.	.300	373.0	115.9	.054	6.65	1.255

Job No. 146719

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	28.1 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	92.6			
Time to failure, min		t_f	3.97			
Unconfined compressive strength, T/sq ft		q_u	1.27			
Undrained shear strength, T/sq ft		S_u	.63			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

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

LL 39	PL	PI	G_s

Remarks

Project Sabine Lake North Disposal Area
Sabine-Neches Waterway
Area Near Port Arthur, Texas
Boring No. 93-368 | Sample No. 8
Depth El 14-16 ft | Date 10/09/93

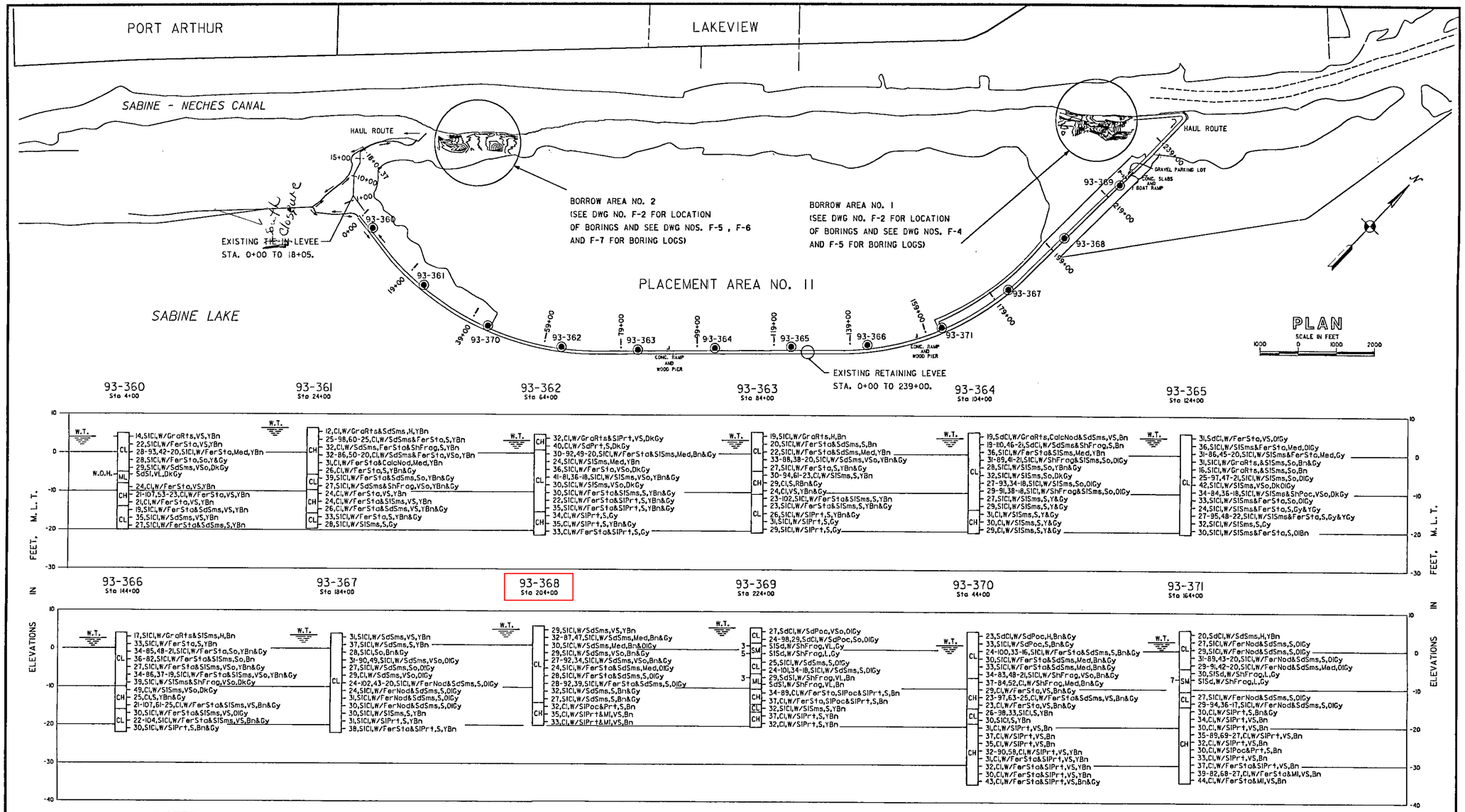
UNCONFINED COMPRESSION TEST REPORT

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),(B.L.S.)• 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
SPEC. 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