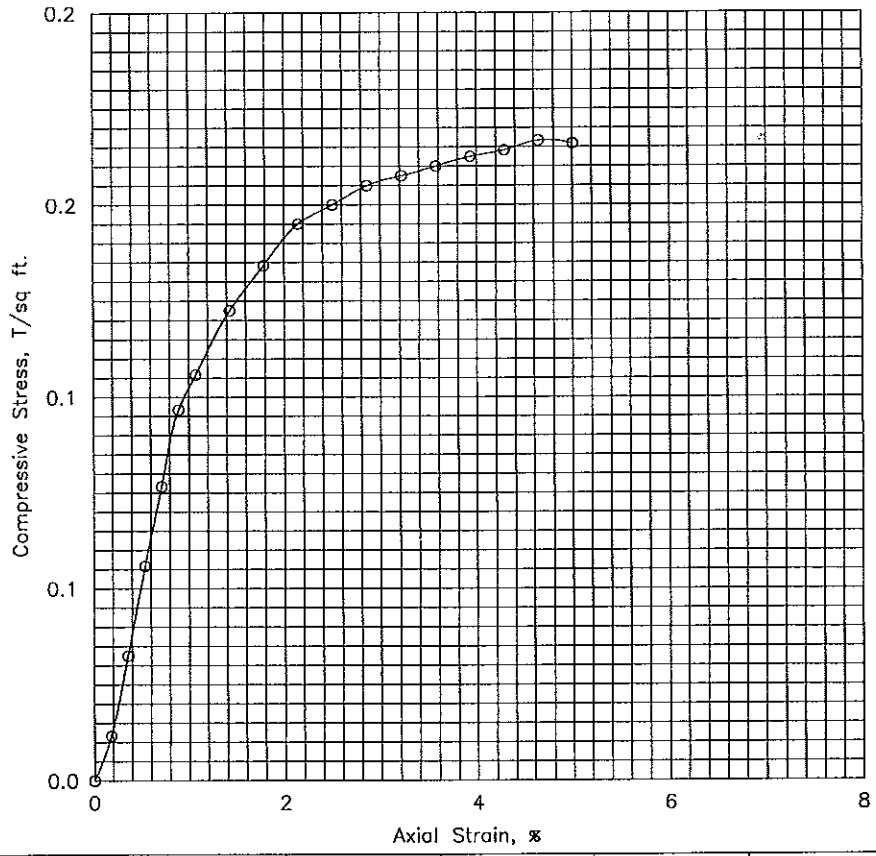
Job No. 94G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	55.5 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	68.2			
Time to failure, min		t_f	4.50			
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,Clay,Very soft,w/shell fragments

LL	87	PL	29	PI	58	G_s	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-111 | Sample No. 5

Depth El 16-18 ft | Date 9/12/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

JOB NO. 94G783-4 DATE 9/12/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-111 SAMPLE NO. 5 DEPTH 16-18 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft,w/shell fragments

Tare No.	GE-7	Height	5.595 in.
Tare plus Wet Specimen	387.84 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	264.56 gm	Initial Area	6.290 sq in.
Water Weight	123.28 gm	Volume	35.194 cu in.
Tare Weight	42.43 gm	Volume of Solids	cu in.
Wet Specimen	980.00 gm	Void Ratio	
Dry Specimen	630.23 gm	Saturation	%
Water Content	55.50 %	Dry Density	68.2 lb/cu ft
Specific Gravity of Solids			

LL = 87 PL = 29 PI = 58

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	4.0	1.2	.002	6.30	.014
.3	20.	.020	11.0	3.4	.004	6.31	.039
.6	30.	.030	19.0	5.9	.005	6.32	.067
.8	40.	.040	26.0	8.1	.007	6.34	.092
1.1	50.	.050	33.0	10.2	.009	6.35	.116
1.3	60.	.060	36.0	11.2	.011	6.36	.127
1.6	80.	.080	42.0	13.0	.014	6.38	.147
1.9	100.	.100	46.0	14.3	.018	6.40	.161
2.2	120.	.120	50.0	15.5	.021	6.43	.174
2.6	140.	.140	52.0	16.2	.025	6.45	.180
2.9	160.	.160	54.0	16.8	.029	6.48	.186
3.2	180.	.180	55.0	17.1	.032	6.50	.189
3.5	200.	.200	56.0	17.4	.036	6.52	.192
3.8	220.	.220	57.0	17.7	.039	6.55	.195
4.1	240.	.240	58.0	18.0	.043	6.57	.197
4.5	260.	.260	59.0	18.3	.046	6.60	.200
4.8	280.	.280	59.0	18.3	.050	6.62	.199

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-111 DATE: BEGIN 8/1/94 PAGE 1 / 2
JOB NO. 946783-1 COMPLETE 8/1/94 Thin Walled Tube
PROJECT HOUSTON-GALVESTON Navigation Channel ■ 3" ☐ 6"
LOCATION Disposal Area No. 15 and 16
~~ELEVATION OF HOLE~~
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4X4, C-1000 Marsh Buggy
GROUNDWATER: DEPTH ~~0~~ ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny / Hot
DRILLER DAVID GRESUREK LOGGER Willie Barnes / Rusty Tuchan

Torvane Reading	DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
	0	X	1	3/4/5	Light Gray	SAND	LOOSE	SILTY	WITH/ROOTS
	5	X	2	2/3/2	LIGHT GRAY	SAND	LOOSE	SILTY	
	10	X	3	4/4/3	GRAY	SAND	LOOSE	SILTY	CLAY AT 14'
0.55	15		4	0.00/.11	GRAY	CLAY	VERY SOFT	SANDY	
0.55			5	0.00/.11	GRAY	CLAY	VERY SOFT	SANDY	
0.6			6	0.00/.12	GRAY	CLAY	VERY SOFT	SANDY	Sand at Bottom of Sample
	20	X	7	3/3/4	GRAY	SAND	LOOSE	SILTY	W/SHELL FRAGMENTS
	25	X	8	2/3/6	GRAY	SAND	LOOSE	SILTY	W/SHELL FRAGMENTS
	30	X	9	3/4/5	GRAY	SAND	LOOSE	SILTY	W/SHELL FRAGMENTS
.25			10	0.00/0.05	GRAY	CLAY	VERY SOFT	SANDY	W/SHELL FRAGMENTS
.25	35		11	0.00/0.05	GRAY	CLAY	VERY SOFT	SANDY	W/SHELL FRAGMENTS - sand at Bottom of Sample

GEOTEST ENGINEERING, INC.

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-111 DATE: BEGIN 8/1/94 PAGE 2 / 2
JOB NO. 946783.1 COMPLETE 8/1/94 Thin Walled Tube
PROJECT Houston-Galveston Navigation channel ■ 3" ☐ 6"
LOCATION Disposal Area No. 15 and 16
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG Ardco K4X4, C-1000 Marsh Buggy
GROUNDWATER: DEPTH ____ ft., ELEV. ____ ft., at end of Drilling
WEATHER Sunny/Hot
DRILLER DAVID Gregurek LOGGER Willie Barnes/Rusty Tuchan

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35								
	X	12	1/2/3	GRAY	SAND	LOOSE	SILTY	
40								
	X	13	2/2/4	GRAY	SAND	LOOSE	SILTY	W/SHELL FRAGMENTS
45								
	X	14	4/5/10	GRAY	SAND	MEDIUM DENSE	SILTY	W/SHELL FRAGMENTS
50								
	X	15	8/9/10	Light GRAY	SAND	MEDIUM DENSE	SILTY	W/SHELL FRAGMENTS
55								
	X	16	10/11/16	LIGHT GRAY	SAND	MEDIUM DENSE	SILTY	W/SHELL FRAGMENTS
	X	17	11/10/14	GRAY	SAND	MEDIUM DENSE	SILTY	W/SHELL FRAGMENTS
60								Torvane Multiplier 0.2
65								
70								

GEOTEST ENGINEERING, INC.

Project: Houston-Galveston Navigation Channel

Contract No. DACW64-94-C-0040

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 93-111

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0-1.5		9	Gray,Sand,Loose,Silty,w/shell fragments	S M												
2	5-6.5		5	Gray,Sand,Loose,Silty,w/shell fragments	S M												
3	10-11.5		7	Gray,Sand,Loose,Silty,w/shell fragments	SP-SM						97.5*	94.2*	92.7*	48.8	8.1		
4	14-16	0.00		Gray,Clay,Very soft,w/shell fragments	C H	57.3											
5	16-18	0.00		Gray,Clay,Very soft,w/shell fragments	C H	55.5	68.2	106.1	87.0	29.0	100.0	100.0	100.0	100.0	100.0		0.20
6	18-20	0.00		Gray,Clay,Very soft,w/shell fragments	C H	64.8											
7	20-21.5		7	Gray,Sand,loose,Silty,w/shell fragments	S M												
8	25-26.5		9	Gray,Sand,loose,Silty,w/shell fragments	S M						99.7*	97.8*	93.5*	47.2	22.4		
9	30-31.5		9	Gray,Sand,loose,Silty,w/shell fragments	S M												
10	32-34	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	29.3											
11	34-36	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments	C L	24.4											
12	36-37.5		5	Gray,Sand,loose,Silty,w/shell fragments	S M												
13	41-42.5		6	Gray,Sand,loose,Silty,w/shell fragments	S M												
14	46-47.5		15	Gray,Sand,Medium dense,Silty,w/shell fragments	S M												
15	51-52.5		19	Gray,Sand,Medium dense,Silty,w/shell fragments	S M												
16	56-57.5		27	Gray,Sand,Medium dense,Silty,w/shell fragments	S M												
17	58.5-60		24	Gray,Sand,Medium dense,Silty,w/shell fragments	S M												

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
* : Material retained are shell fragments

pc7,excel,original.xls

Geotest Engineering, Inc.