

JOB NO. 14G783-4

DATE 8/24/94

PROJECT Houston-Galveston Navigation
Channel

AREA Houston, Texas

BORING NO. 93-92

SAMPLE NO. 6

DEPTH 14-16 ft

SPECIMEN NO. 1

CLASSIFICATION

Gray, Clay, Soft, Sandy, w/ shell fragments

Tare No.	W-6	Height	5.595 in.
Tare plus Wet Specimen	335.90 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	238.50 gm	Initial Area	6.290 sq in.
Water Weight	97.40 gm	Volume	35.194 cu in.
Tare Weight	42.53 gm	Volume of Solids	cu in.
Wet Specimen	997.16 gm	Void Ratio	
Dry Specimen	666.10 gm	Saturation	%
Water Content	49.70 %	Dry Density	72.1 lb/cu ft
Specific Gravity of Solids			
LL = 31	PL = 18	PI = 13	

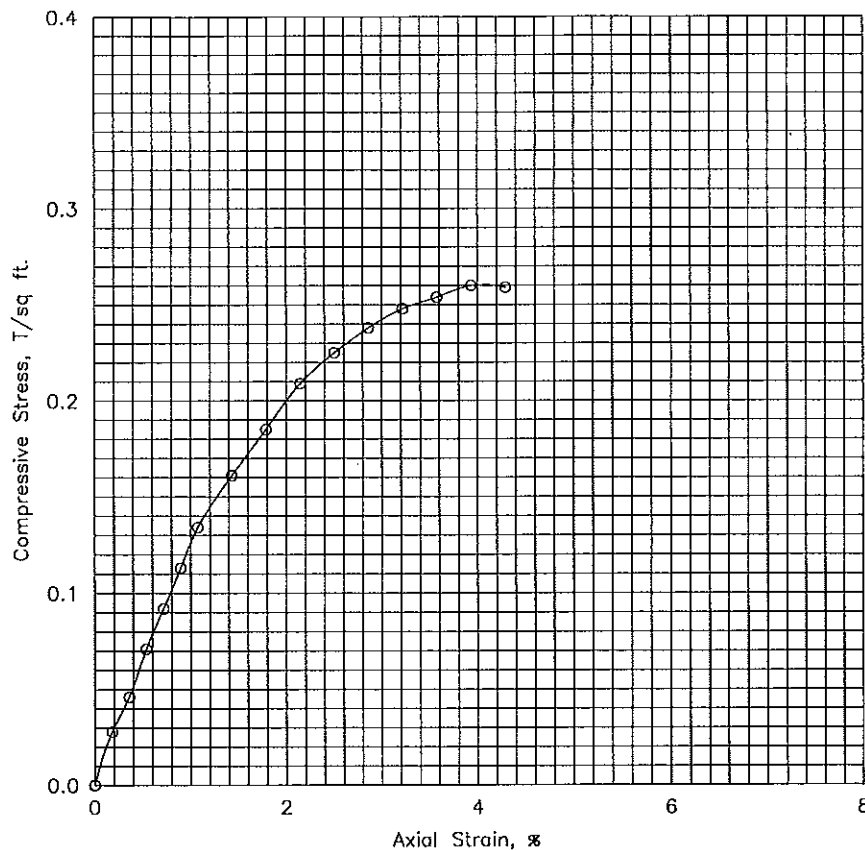
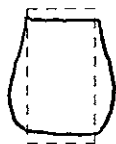
Proving Ring No. 17015

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	8.0	2.5	.002	6.30	.028
.4	20.	.020	13.0	4.0	.004	6.31	.046
.6	30.	.030	20.0	6.2	.005	6.32	.071
.8	40.	.040	26.0	8.1	.007	6.34	.092
.9	50.	.050	32.0	9.9	.009	6.35	.113
1.1	60.	.060	38.0	11.8	.011	6.36	.134
1.4	80.	.080	46.0	14.3	.014	6.38	.161
1.8	100.	.100	53.0	16.5	.018	6.40	.185
2.1	120.	.120	60.0	18.6	.021	6.43	.209
2.5	140.	.140	65.0	20.2	.025	6.45	.225
2.8	160.	.160	69.0	21.4	.029	6.48	.238
3.1	180.	.180	72.0	22.4	.032	6.50	.248
3.4	200.	.200	74.0	23.0	.036	6.52	.254
3.7	220.	.220	76.0	23.6	.039	6.55	.260
4.1	240.	.240	76.0	23.6	.043	6.57	.259

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial	Water content	w_0	49.7 %	%	%
	Void ratio	e_0			
	Saturation	S_0	%	%	%
	Dry density, lb/cu ft	γ_d	72.1		
Time to failure, min		t_f	3.73		
Unconfined compressive strength, T/sq ft		q_u	.26		
Undrained shear strength, T/sq ft		S_u	.13		
Sensitivity ratio		S_t			
Initial specimen diameter, in.		D_0	2.830		
Initial specimen height, in.		H_0	5.595		
Classification Gray, Clay, Soft, Sandy, w/ shell fragments					
LL	31	PL	18	PI	13
G _s					
Remarks		Project Houston--Galveston Navigation			
		Channel			
		Area Houston, Texas			
		Boring No. 93-92		Sample No. 6	
		Depth 14-16 ft		Date 8/24/94	
		UNCONFINED COMPRESSION TEST REPORT			

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET		SAMPLE NO.	PEN./TORVANE	SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
BORING NO. <u>93-92</u> DATE: BEGIN <u>7-20-94</u> PAGE <u>1 / 2</u> JOB NO. <u>946783-1</u> COMPLETE <u>7-20-94</u> Thin Walled Tube PROJECT <u>HOUSTON GALVESTON Navigation Channel</u> ☒ 3" ☐ 6" LOCATION <u>D-5036 AREA NO. 15</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Adco K4x4, C-1000 Marsh Buggy</u> GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>SUNNY and Hot 90°</u> DRILLER <u>Scott</u> LOGGER <u>Willie</u>									
Torvane Reading									
0		1	2.5		Gray	Clay	V. soft	Sandy	N-Sand Layer & roots
0-10		2	0.0 0.02		Brown	Clay	Very soft	Sandy	N-Sand pockets
5	X	3	1 1/8		Gray	Sand	M. Dense	Silty fine	
10	X	4	1/4 in.		Gray	Sand	Very loose		
0-10		5	0.0 0.02		Gray	Clay	Very soft	SANDY	
0-10	✓	6	0.0 0.02		Gray	Clay	Soft	Sandy	
0-10		7	0.0 0.02		Gray	Clay	Very soft	Sandy	W-SHELL & CLAY pockets
20	X	8	2 3/8		Gray	Sand	loose	Silty	W/shell fragments
25	X	9	1 1/2		Gray	Sand	loose	Clayey	
0-20		10	0.0 0.04		Gray	Clay	Very soft	Sandy	
0-15		11	0.0 0.04		Gray	Clay	Very soft	Sandy	W/Large shell
30	X	12	1 1/2		Gray	Sand	Very loose	Clay	
35	X	13	1 3/8		Gray	Sand	M. Dense	Clayey	

U.S. ARMY CORPS OF ENGINEERS

DEPTH, FEET	SAMPLE NO.	PEN./TORVANE	BORING NO. <u>93-92</u> DATE: BEGIN <u>7-20-94</u> PAGE <u>2 1 2</u> JOB NO. <u>946783.1</u> COMPLETE <u>7-20-94</u> Thin Walled Tube PROJECT <u>Houston-Galveston Navigation channel</u> ☒ 3" ☐ 6" LOCATION <u>DISPOSAL AREA # 15</u> ELEVATION OF HOLE _____ MANUFACTURER'S DESIGNATION OF DRILL RIG <u>Ardea K4x4, C-1000 Marsh Buggy</u> GROUNDWATER: DEPTH <u>0</u> ft., ELEV. _____ ft., at end of Drilling WEATHER <u>SUNNY AND HOT 98°</u> DRILLER <u>Scott</u> LOGGER <u>Willie Barnes</u>			SPT.-BLOW COUNT		
			COLOR	MATERIAL TYPE	CONSISTENCY		SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
-35-								
-40-	X		14 1/4	Gray	Sand	M. Dense	Clayey	
-45-								Torvane Multiplier 0.2 W.O.H: Weight of Hammer
-50-								
-55-								
-60-								
-65-								
-70-								

Project: Galveston-Galveston Navigation Channel

SUMMARY OF LABORATORY TEST RESULTS

Contract No. DACW64-94-C-0040Boring No. 93-92

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					Torvane Shear Strength (tsf)	q u (tsf)
											#4	#10	#40	#100	#200		
1	0 - 2	1.75		Gray & brown, Clay, Stiff, Sandy, w/shell fragments	C L	41.2											
2	2 - 4	0.00		Gray & brown, Clay, Very soft, Sandy, w/sand pockets	C L	30.0											
3	4-5.5		13	Gray, Sand, Medium dense, Silty, w/shell fragments	S M						99.6*	99.5*	98.0	60.6	31.8		
4	9-10.5		W.O.H	Gray, Sand, Very loose, Silty, w/shell fragments	S M												
5	12-14	0.25		Gray, Clay, Soft, Sandy, w/shell fragments	C L	40.2											
6	14-16	0.25		Gray, Clay, Soft, Sandy, w/shell fragments	C L	49.7	72.0	107.9	31	18	100.0	99.9	98.9	96.1	80.0		0.26
7	16-18	0.25		Gray, Clay, Soft, Sandy, w/shell fragments	C L	42.7											
8	18-19.5		9	Gray, Sand, Loose, Silty, w/shell fragments	S M												
9	23-24.5		4	Gray, Sand, Loose, Silty, w/shell fragments	SM						97.8*	97.3*	95.9*	81.9	37.7		
10	25-27	0.00		Gray, Clay, Very soft, Sandy, w/shell fragments	C L	29.2	89.5	115.7	29	14	96.7*	96.4*	94.6*	79.4	52.4		
11	27-29	0.00		Gray, Clay, Very soft, Sandy, w/shell fragments	C L	33.1											
12	29-30.5		3	Gray, Sand, Very loose, Silty	S M												
13	34-35.5		11	Gray, Sand, Medium dense, Silty	S M						99.9	99.8	94.6	53.8	27.7		
14	38.5-40		12	Gray, Sand, Medium dense, Silty	S M												

S # : Sample Number, P P : Pocket Penetrometer Reading, U S C : Unified Soil Classification, 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