REVIEWED BY LAA DATE 2/14/95
REVIEWED BY JC DATE 2/14/95

3/13/95

SUMMARY OF QUESTIONABLE
ERRONEOUS OR MISSING DATA
FOR
CONTRACT NO. DACW64-94-C-0040
PROJECT: SOILS TESTING, HOUSTON-GALVESTON NAVIGATION CHANNEL

BORING NO.	SAMPLE NO.	COMMENTS ON DRILLING RESULTS
~~93-82~~	5,7	Torvane results given, samples sent to SWD TORVANES WERE DONE IN THE FIELD
93-83	~~7,11,13~~	Torvane results given, samples sent to SWD
	23	Unconfined results recorded on lab summary sheet as .97 on test report sheet as .98
93-85	27	MC ordered, not performed
93-88	6	PP results not given, Unconfined results lab summary sheet as .12 on test report as .11
93-89	2	Blow counts indicate loose instead of very loose
93-93	4	PP (.25) indicates soft instead of medium
93-96	4	Unconfined results recorded on lab summary as .15 on test report .36
	18	Blow counts given, not recorded on field logs

Corrected on my copy LB

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 4 DEPTH 6-8 ft

SPECIMEN NO. 1

CLASSIFICATION
Brown,Clay,Medium stiff,w/sand pockets

Tare No.	KL-27	Height	5.595 in.
Tare plus Wet Specimen	347.91 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	275.24 gm	Initial Area	6.290 sq in.
Water Weight	72.67 gm	Volume	35.194 cu in.
Tare Weight	42.58 gm	Volume of Solids	cu in.
Wet Specimen	1087.28 gm	Void Ratio	
Dry Specimen	828.50 gm	Saturation	%
Water Content	31.23 %	Dry Density	89.7 lb/cu ft

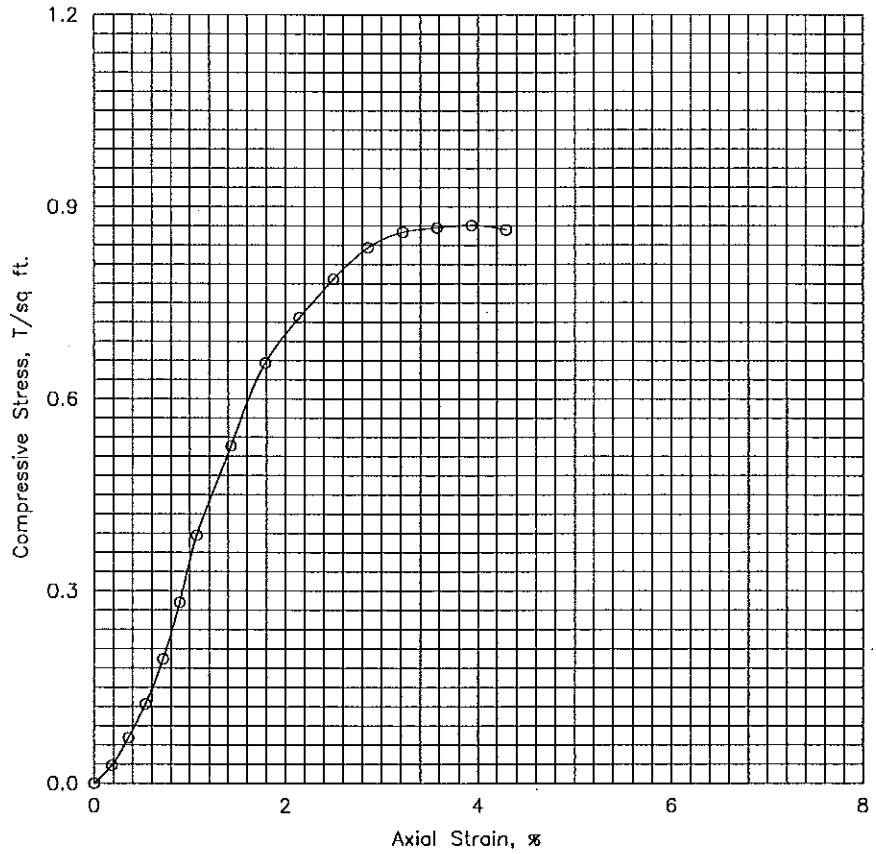
Specific Gravity of Solids
LL = 73 PL = 26 PI = 47

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
.3	20.	.020	20.0	6.2	.004	6.31	.071
.5	30.	.030	35.0	10.9	.005	6.32	.124
.7	40.	.040	55.0	17.1	.007	6.34	.194
.9	50.	.050	80.0	24.8	.009	6.35	.282
1.0	60.	.060	110.0	34.2	.011	6.36	.387
1.4	80.	.080	150.0	46.6	.014	6.38	.526
1.7	100.	.100	188.0	58.4	.018	6.40	.656
2.0	120.	.120	209.0	64.9	.021	6.43	.727
2.3	140.	.140	227.0	70.5	.025	6.45	.787
2.7	160.	.160	242.0	75.2	.029	6.48	.836
3.0	180.	.180	250.0	77.7	.032	6.50	.860
3.3	200.	.200	253.0	78.6	.036	6.52	.867
3.6	220.	.220	255.0	79.2	.039	6.55	.871
4.0	240.	.240	254.0	78.9	.043	6.57	.864

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	31.2 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	89.7			
Time to failure, min		t_f	3.62			
Unconfined compressive strength, T/sq ft		q_u	.87			
Undrained shear strength, T/sq ft		S_u	.44			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Brown,Clay,Medium stiff,w/sand pockets

LL	73	PL	26	PI	47	G_s	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-83 | Sample No. 4

Depth El 6-8 ft | Date 8/22/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 8 DEPTH 15-17 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Very soft

Tare No.	P-5	Height	5.595 in.
Tare plus Wet Specimen	473.44 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	377.38 gm	Initial Area	6.290 sq in.
Water Weight	96.06 gm	Volume	35.194 cu in.
Tare Weight	42.86 gm	Volume of Solids	cu in.
Wet Specimen	1068.98 gm	Void Ratio	
Dry Specimen	830.50 gm	Saturation	%
Water Content	28.72 %	Dry Density	89.9 lb/cu ft
Specific Gravity of Solids			

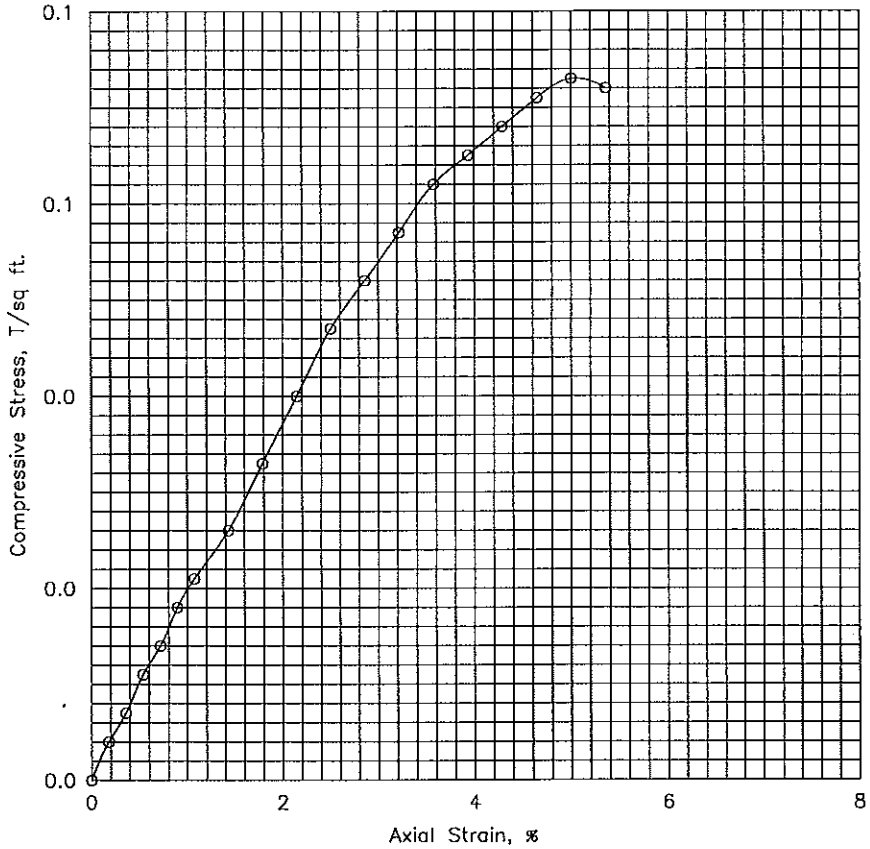
LL = 65 PL = 24 PI = 41

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	1.0	.3	.002	6.30	.004
.3	20.	.020	2.0	.6	.004	6.31	.007
.5	30.	.030	3.0	.9	.005	6.32	.011
.7	40.	.040	4.0	1.2	.007	6.34	.014
.8	50.	.050	5.0	1.6	.009	6.35	.018
1.0	60.	.060	6.0	1.9	.011	6.36	.021
1.3	80.	.080	7.5	2.3	.014	6.38	.026
1.6	100.	.100	9.5	3.0	.018	6.40	.033
2.0	120.	.120	11.5	3.6	.021	6.43	.040
2.3	140.	.140	13.5	4.2	.025	6.45	.047
2.6	160.	.160	15.0	4.7	.029	6.48	.052
3.0	180.	.180	16.5	5.1	.032	6.50	.057
3.3	200.	.200	18.0	5.6	.036	6.52	.062
3.6	220.	.220	19.0	5.9	.039	6.55	.065
3.9	240.	.240	20.0	6.2	.043	6.57	.068
4.2	260.	.260	21.0	6.5	.046	6.60	.071
4.6	280.	.280	21.5	6.7	.050	6.62	.073
4.9	300.	.300	21.5	6.7	.054	6.65	.072

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	28.7 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	89.9			
Time to failure, min		t_f	4.57			
Unconfined compressive strength, T/sq ft		q_u	.07			
Undrained shear strength, T/sq ft		S_u	.04			
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

LL	65	PL	24	PI	41	G_s	

Remarks

Project Houston-Galvaston Navigation Channel	
Area Houston, Texas	
Boring No. 93-83	Sample No. 8
Depth El 15-17 ft	Date 8/22/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 12 DEPTH 23-25 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Soft,Sandy

Tare No.	P-213	Height	5.595 in.
Tare plus Wet Specimen	447.95 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	367.09 gm	Initial Area	6.290 sq in.
Water Weight	80.86 gm	Volume	35.194 cu in.
Tare Weight	42.32 gm	Volume of Solids	cu in.
Wet Specimen	1099.02 gm	Void Ratio	
Dry Specimen	879.94 gm	Saturation	%
Water Content	24.90 %	Dry Density	95.2 lb/cu ft
Specific Gravity of Solids			

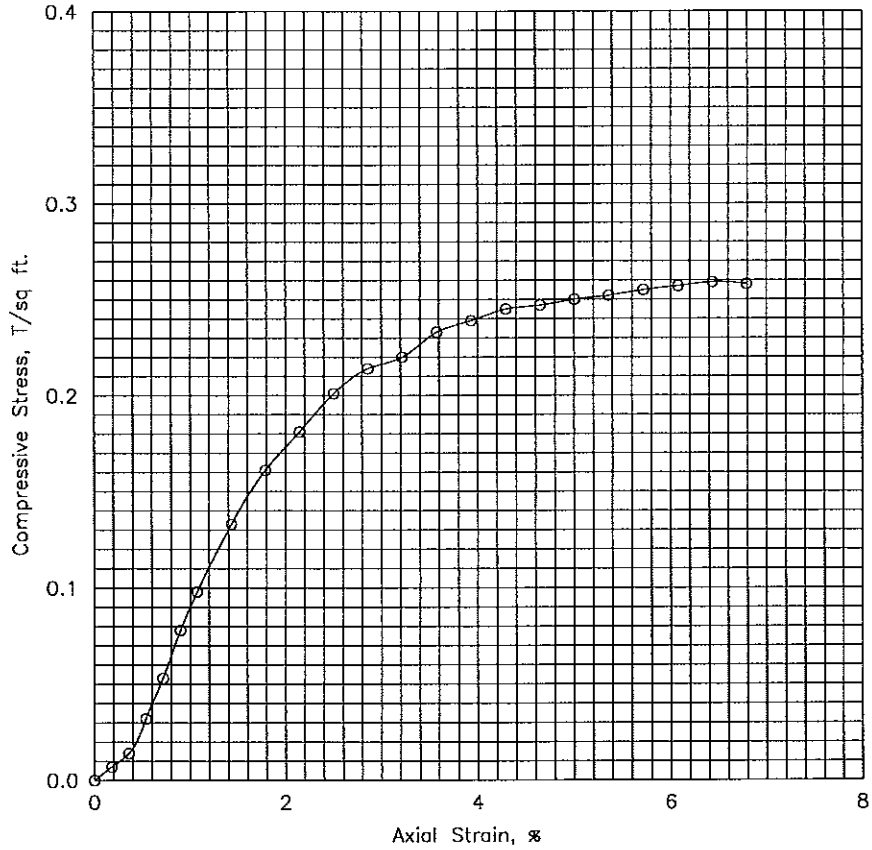
LL = 43 PL = 20 PI = 23

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	2.0	.6	.002	6.30	.007
.3	20.	.020	4.0	1.2	.004	6.31	.014
.5	30.	.030	9.0	2.8	.005	6.32	.032
.7	40.	.040	15.0	4.7	.007	6.34	.053
.9	50.	.050	22.0	6.8	.009	6.35	.078
1.0	60.	.060	28.0	8.7	.011	6.36	.098
1.4	80.	.080	38.0	11.8	.014	6.38	.133
1.8	100.	.100	46.0	14.3	.018	6.40	.161
2.0	120.	.120	52.0	16.2	.021	6.43	.181
2.3	140.	.140	58.0	18.0	.025	6.45	.201
2.7	160.	.160	62.0	19.3	.029	6.48	.214
3.0	180.	.180	64.0	19.9	.032	6.50	.220
3.3	200.	.200	68.0	21.1	.036	6.52	.233
3.6	220.	.220	70.0	21.7	.039	6.55	.239
4.0	240.	.240	72.0	22.4	.043	6.57	.245
4.3	260.	.260	73.0	22.7	.046	6.60	.247
4.6	280.	.280	74.0	23.0	.050	6.62	.250
4.9	300.	.300	75.0	23.3	.054	6.65	.252
5.3	320.	.320	76.0	23.6	.057	6.67	.255
5.6	340.	.340	77.0	23.9	.061	6.70	.257
5.9	360.	.360	78.0	24.2	.064	6.72	.259
6.2	380.	.380	78.0	24.2	.068	6.75	.258

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	24.9 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	95.2			
Time to failure, min		t_f	5.93			
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

LL	43	PL	20	PI	23	G_s

Remarks

Project Houston-Galvaston Navigation Channel	
Area Houston, Texas	
Boring No. 93-83	Sample No. 12
Depth El 23-25 ft	Date 8/22/94
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 16 DEPTH 31-33 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Soft,Sandy

Tare No.	KL-35	Height	5.595 in.
Tare plus Wet Specimen	459.35 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	392.08 gm	Initial Area	6.290 sq in.
Water Weight	67.27 gm	Volume	35.194 cu in.
Tare Weight	42.71 gm	Volume of Solids	cu in.
Wet Specimen	1178.60 gm	Void Ratio	
Dry Specimen	988.31 gm	Saturation	%
Water Content	19.25 %	Dry Density	107.0 lb/cu ft
Specific Gravity of Solids			

LL = 24 PL = 16 PI = 8

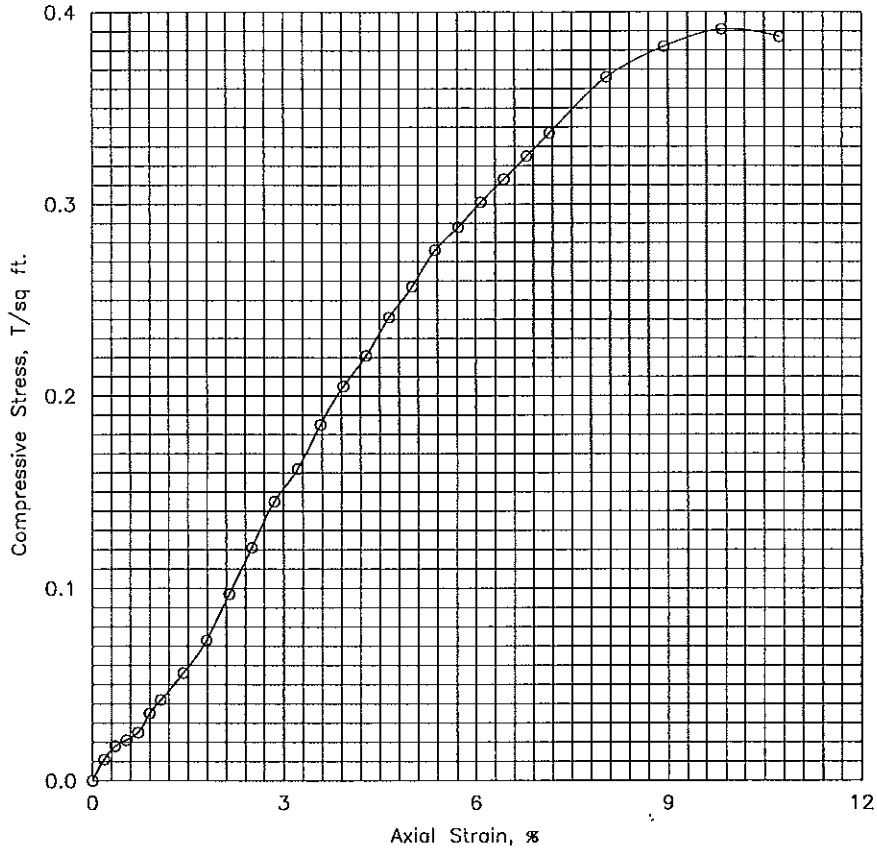
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	3.0	.9	.002	6.30	.011
.3	20.	.020	5.0	1.6	.004	6.31	.018
.5	30.	.030	6.0	1.9	.005	6.32	.021
.7	40.	.040	7.0	2.2	.007	6.34	.025
.8	50.	.050	10.0	3.1	.009	6.35	.035
1.0	60.	.060	12.0	3.7	.011	6.36	.042
1.3	80.	.080	16.0	5.0	.014	6.38	.056
1.6	100.	.100	21.0	6.5	.018	6.40	.073
2.0	120.	.120	28.0	8.7	.021	6.43	.097
2.3	140.	.140	35.0	10.9	.025	6.45	.121
2.6	160.	.160	42.0	13.0	.029	6.48	.145
3.0	180.	.180	47.0	14.6	.032	6.50	.162
3.3	200.	.200	54.0	16.8	.036	6.52	.185
3.6	220.	.220	60.0	18.6	.039	6.55	.205
3.9	240.	.240	65.0	20.2	.043	6.57	.221
4.2	260.	.260	71.0	22.1	.046	6.60	.241
4.6	280.	.280	76.0	23.6	.050	6.62	.257
5.0	300.	.300	82.0	25.5	.054	6.65	.276
5.3	320.	.320	86.0	26.7	.057	6.67	.288
5.6	340.	.340	90.0	28.0	.061	6.70	.301
5.9	360.	.360	94.0	29.2	.064	6.72	.313
6.2	380.	.380	98.0	30.4	.068	6.75	.325
6.6	400.	.400	102.0	31.7	.071	6.77	.337
6.9	450.	.450	112.0	34.8	.080	6.84	.366
7.6	500.	.500	118.0	36.7	.089	6.91	.382

8.4	550.	.550	122.0	37.9	.098	6.98	.391
9.1	600.	.600	122.0	37.9	.107	7.05	.387

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	19.3 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	107.0			
Time to failure, min		t_f	8.35			
Unconfined compressive strength, T/sq ft		q_u	.39			
Undrained shear strength, T/sq ft		S_u	.20			
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

LL	24	PL	16	PI	8	G_s	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-83 | Sample No. 16

Depth El 31-33 ft | Date 8/22/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 20 DEPTH 39-41 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Medium stiff

Tare No.	P-200	Height	5.595 in.
Tare plus Wet Specimen	392.56 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	295.43 gm	Initial Area	6.290 sq in.
Water Weight	97.13 gm	Volume	35.194 cu in.
Tare Weight	42.41 gm	Volume of Solids	cu in.
Wet Specimen	1026.02 gm	Void Ratio	
Dry Specimen	741.41 gm	Saturation	%
Water Content	38.39 %	Dry Density	80.3 lb/cu ft
Specific Gravity of Solids			

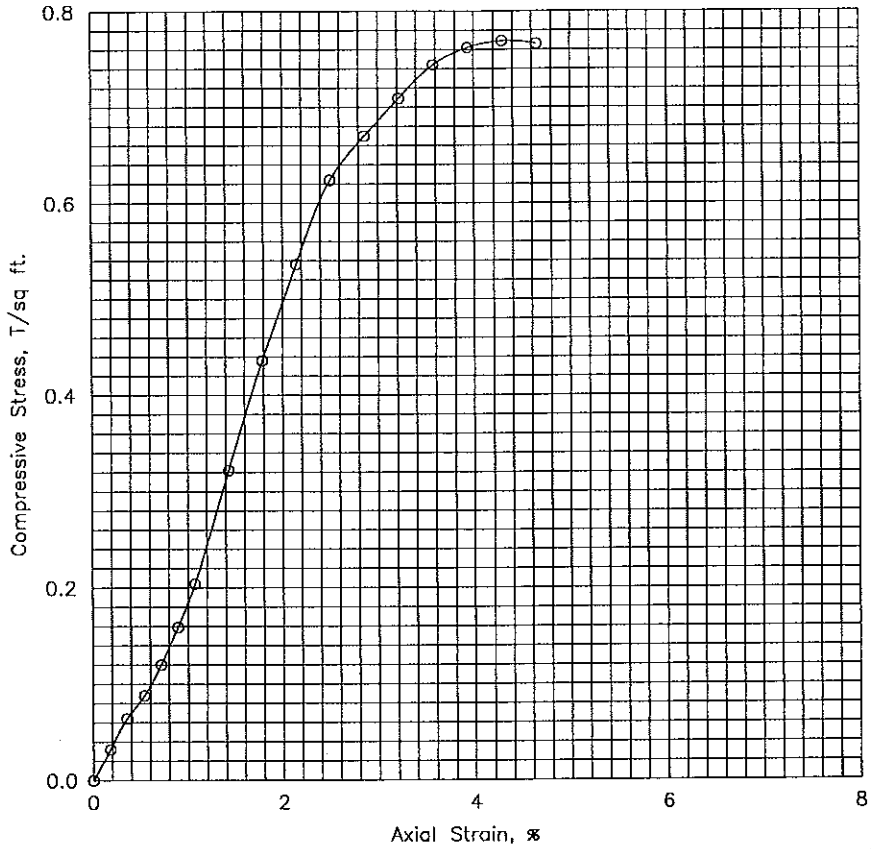
LL = 103 PL = 36 PI = 67

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	9.0	2.8	.002	6.30	.032
.3	20.	.020	18.0	5.6	.004	6.31	.064
.5	30.	.030	25.0	7.8	.005	6.32	.088
.7	40.	.040	34.0	10.6	.007	6.34	.120
.9	50.	.050	45.0	14.0	.009	6.35	.159
1.0	60.	.060	58.0	18.0	.011	6.36	.204
1.4	80.	.080	92.0	28.6	.014	6.38	.322
1.7	100.	.100	125.0	38.8	.018	6.40	.436
2.0	120.	.120	154.0	47.8	.021	6.43	.536
2.3	140.	.140	180.0	55.9	.025	6.45	.624
2.6	160.	.160	194.0	60.3	.029	6.48	.670
3.0	180.	.180	206.0	64.0	.032	6.50	.709
3.3	200.	.200	217.0	67.4	.036	6.52	.744
3.6	220.	.220	223.0	69.3	.039	6.55	.762
4.0	240.	.240	226.0	70.2	.043	6.57	.769
4.3	260.	.260	226.0	70.2	.046	6.60	.766

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.		1			
Type of Specimen		Undisturbed			
Initial: Water content	w_0	38.4 %	%	%	%
Initial: Void ratio	e_0				
Initial: Saturation	S_0	%	%	%	%
Initial: Dry density, lb/cu ft	γ_d	80.3			
Time to failure, min	t_f	3.95			
Unconfined compressive strength, T/sq ft	q_u	.77			
Undrained shear strength, T/sq ft	S_u	.38			
Sensitivity ratio	S_t				
Initial specimen diameter, in.	D_0	2.830			
Initial specimen height, in.	H_0	5.595			

Classification Gray,Clay,Medium stiff

LL	103	PL	36	PI	67	G_s	

Remarks

Project Houston-Galvaston Navigation Channel

Area Houston, Texas

Boring No. 93-83 | Sample No. 20

Depth El 39-41 ft | Date 8/22/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

JOB NO. 14G783-4 DATE 8/22/94

PROJECT Houston-Galvaston Navigation Channel

AREA Houston, Texas

BORING NO. 93-83 SAMPLE NO. 23 DEPTH 45-47 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray,Clay,Medium stiff,Sandy

Tare No.	JM-3	Height	5.595 in.
Tare plus Wet Specimen	432.09 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	363.74 gm	Initial Area	6.290 sq in.
Water Weight	68.35 gm	Volume	35.194 cu in.
Tare Weight	42.42 gm	Volume of Solids	cu in.
Wet Specimen	1186.41 gm	Void Ratio	
Dry Specimen	978.31 gm	Saturation	%
Water Content	21.27 %	Dry Density	105.9 lb/cu ft
Specific Gravity of Solids			

LL = 38 PL = 17 PI = 21

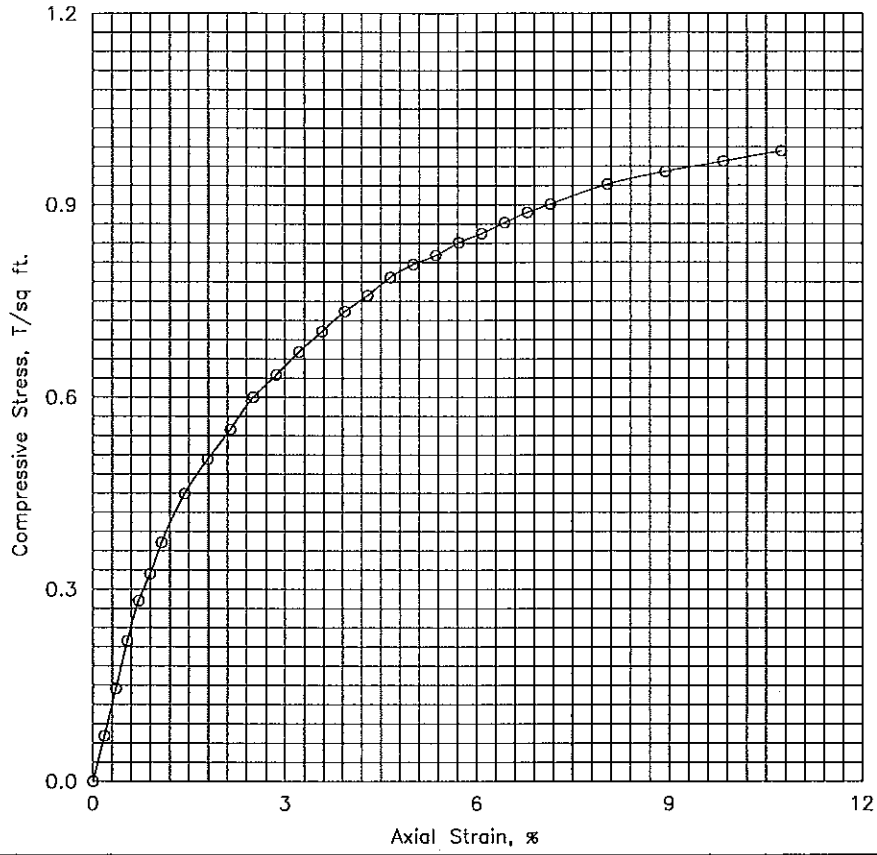
Proving Ring No. 17015
Proving Ring Constant, K = .311 lbs/div.

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	20.0	6.2	.002	6.30	.071
.4	20.	.020	41.0	12.7	.004	6.31	.145
.6	30.	.030	62.0	19.3	.005	6.32	.219
.8	40.	.040	80.0	24.8	.007	6.34	.282
.9	50.	.050	92.0	28.6	.009	6.35	.324
1.1	60.	.060	106.0	32.9	.011	6.36	.373
1.5	80.	.080	128.0	39.8	.014	6.38	.449
1.8	100.	.100	144.0	44.7	.018	6.40	.503
2.1	120.	.120	158.0	49.1	.021	6.43	.550
2.5	140.	.140	173.0	53.7	.025	6.45	.600
2.8	160.	.160	184.0	57.2	.029	6.48	.635
3.1	180.	.180	195.0	60.6	.032	6.50	.671
3.4	200.	.200	205.0	63.7	.036	6.52	.703
3.8	220.	.220	215.0	66.8	.039	6.55	.734
4.1	240.	.240	223.0	69.3	.043	6.57	.759
4.4	260.	.260	232.0	72.1	.046	6.60	.787
4.7	280.	.280	239.0	74.2	.050	6.62	.807
5.0	300.	.300	244.0	75.8	.054	6.65	.821
5.4	320.	.320	251.0	78.0	.057	6.67	.841
5.8	340.	.340	256.0	79.5	.061	6.70	.855
6.0	360.	.360	262.0	81.4	.064	6.72	.872
6.3	380.	.380	268.0	83.2	.068	6.75	.888
6.7	400.	.400	273.0	84.8	.071	6.77	.901
7.5	450.	.450	285.0	88.5	.080	6.84	.932
8.3	500.	.500	294.0	91.3	.089	6.91	.952

9.1	550.	.550	302.0	93.8	.098	6.98	.968
10.0	600.	.600	310.0	96.3	.107	7.05	.984

Job No. 14G783-4

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	21.3 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	105.9			
Time to failure, min		t_f	10.00			
Unconfined compressive strength, T/sq ft		q_u	.98			
Undrained shear strength, T/sq ft		S_u	.49			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Gray,Clay,Medium stiff,Sandy

LL	38	PL	17	PI	21	G_s	

Remarks

Project	Houston-Galvaston Navigation Channel
Area	Houston, Texas
Boring No. 93-83	Sample No. 23
Depth El 45-47 ft	Date 8/22/94

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-83 DATE: BEGIN 7/25/94 PAGE 1 / 2
JOB NO. 946783.1 COMPLETE 7-25-94 Thin Walled Tube
PROJECT HOUSTON-GALVESTON Navigation channel ■ 3" □ 6"
LOCATION Disposal Area NO. 15
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 Scott Gregurek LOGGER H. Jeffs

DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
Torvane Reading 0								
		1		Brown	SAND	Very loose	SILT	
	X	2	1/1/2	Brown	SAND	Very loose	SILT	
5		3	0.75	Brown	CLAY	M.Stiff	SANDY	
0.65 V		4	0.25/0.13	Brown	CLAY	Soft	SILTY	-w/ Sand Pockets
		5		Gray & Brown	SILT	Very loose	Sand	-w/ clay seams
10	X	6	1/1/2	Gray	SILT	Very loose	Sand	-w/clay Seams
0.10 Q		7	0.00/0.02	Gray	CLAY	V.Soft		
15 0.10 V		8	0.00/0.02	Gray	CLAY	V.soft	SANDY	
Q		9	0.00/0.00	Gray	Clay	V.Soft	SANDY	-w/shell Fragments
0.05 20		10	0.00/0.01	Gray	Clay	V.Soft	SANDY	-w/Shell Fragments
0.1 Q		11	0.00/0.02	Gray	Clay	V.Soft	SANDY	-w/Shell Fragments
0.1 V		12	0.00/0.02	Gray	CLAY	V.Soft	SANDY	
25 0.1 Comp		13	0.00/0.02	Gray	CLAY	V.Soft	SANDY	
0.15		14	0.00/0.03	Gray	CLAY	V.Soft	SANDY	
0.2 30		15	0.00/0.04	Gray	CLAY	V.Soft	SANDY	
0.1 V		16	0.00/0.02	Gray	CLAY	V.Soft	SANDY	
0.1		17	0.00/0.02	Gray	CLAY	V.Soft	SANDY	
35 0.15		18	0.00/0.03	Gray	CLAY	V.Soft	SANDY	

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 93-83 DATE: BEGIN 7/25/94 PAGE 2 / 2
JOB NO. 946783.1 COMPLETE 7/25/94 Thin Walled Tube
PROJECT Houston-Galveston Navigation channel ■ 3" □ 6"
LOCATION Disposal Area No. 15
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 Scott Gregurek LOGGER H. Jeffri

Torvane Reading	DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
	35								
0.25			19	0.00/0.05	Gray	CLAY	V. Soft		
0.4			20	0.00/0.08	DK. Gray	CLAY	V. Soft		
0.5			21	0.00/0.10	Gray	CLAY	V. Soft		
			22	1.00	Gray	CLAY	V. Soft	ST	
	45		23	0.5	Gray	CLAY	V. Soft	MD	
			24	1.25	Gray	CLAY	V. Soft	ST	w/sand SMS
	50		25		Gray	SAND	M. Dense	SILTY	
			26	5/10/12	Gray	SAND	M. Dense		
	55		27	3/8/6					
0.4			28	0.00/0.08	Gray	Clay	V. Soft	SANDY	
	60								Torvane Mutiplier 0.2
	65								
	70								

Project: ...n-Galveston Navigation Channel

SUMM... OF LABORATORY TEST RESULTS

Contract No. DACW64-94-C-0040

Boring No. 93-83

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 - 2			Brown,Sand,Very loose,Silty,w/shell fragments	S M												
2	2-3.5		3	Brown,Sand,Very loose,Silty,w/shell fragments	S M												
3	4 - 6	0.75		Brown,Clay,Medium stiff	CH	34.5											
4	6 - 8	0.75		Brown,Clay,Medium stiff,w/sand pockets	CH	31.2	89.7	117.7	73	26	100.0	100.0	100.0	99.8	99.2		0.87
5	8 - 10			Brown,Sand,Very loose,Silty	S M						100.0	100.0	99.9	90.3	34.2		
6	10-11.5		3	Brown,Sand,Very loose,Silty	S M												
7	13-15	0.00		Gray,Clay,Very soft See SWD report 16162	~~CH~~ CL-ML	24.5	100		23	16						0.02 Q=1210	?
8	15-17	0.00		Gray,Clay,Very soft	CH	28.7	89.9	115.7	65	24	100.0	100.0	99.9	99.2	98.8		0.07
9	17-19	0.00		Gray,Clay,Very soft	CH	25.4											
10	19-21	0.00		Gray,Clay,Very soft	CH	25.0											
11	21-23	0.00		Gray,Clay,Very soft,Sandy,w/shell fragments & See SWD report 16162	C L	29.7	92		33	12						0.02 Q=220	
12	23-25	0.25		Gray,Clay,Soft,Sandy	C L	24.9	95.2	119.0	43	20	99.9	99.7	99.3	92.3	65.9		0.26
13	25-27	0.00		Gray,Clay,Very soft,Sandy CONSOL See SWD report 16162	C L	33.6	86		39	13						0.02	
14	27-29	0.00		Gray,Clay,Very soft,Sandy	C L	23.7											
15	29-31	0.00		Gray,Clay,Very soft,Sandy	C L	26.7											
16	31-33	0.25		Gray,Clay,Soft,Sandy	C L	19.3	107.0	127.6	24	16	98.7	98.5	98.2	92.0	65.4		0.39
17	33-35	0.00		Gray,Clay,Very soft,Sandy	C L	28.9											
18	35-37	0.00		Gray,Clay,Very soft,Sandy	C L	34.7											
19	37-39	0.50		Gray,Clay,Medium stiff	C H	45.9											
20	39-41	0.75		Gray,Clay,Medium stiff	C H	38.4	80.3	111.1	103	36	100.0	100.0	100.0	99.9	99.2		0.77

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

Project: on-Galveston Navigation Channel

Contract No. DACW64-94-C-0040

SUMM OF LABORATORY TEST RESULTS

Boring No. 93-83

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)
21	41-43	0.00		Gray,Clay,Very soft	C H	38.5											
22	43-45	1.00		Gray,Clay,Stiff,Sandy	CL	19.5											
23	45-47	0.75		Gray,Clay,Medium stiff,Sandy	CL	21.3	105.9	128.4	38	17	99.5	98.2	96.8	95.0	69.2		~~0.97~~ 0.98
24	47-49	1.25		Gray,Clay,Stiff,Sandy	CL	17.5											
25	49-51			Gray,Sand,Medium dense,Silty	S M	15.1											
26	51-52.5		22	Gray,Sand, Medium dense,Silty	S M												
27	56-57.5		14	Gray,Sand,Medium dense,Silty	S M												
28	58-60	0.00		Gray,Clay,Very soft,Sandy	C L	28.2											

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