U.S. ARMY CORPS OF ENGINEERS

BORING NO. 92-209 DATE: BEGIN 1-14-93 PAGE 1 / 2
JOB NO. 14G621 COMPLETE 1-14-93 Thin Walled Tube
PROJECT WALLISVILLE LAKE ☐ 3" ☑ 6"
LOCATION LEVEE ROAD
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG FAILING CFD-2
GROUNDWATER: DEPTH 0 ft., ELEV. ____ ft., at end of Drilling
WEATHER MOSTLY CLOUDY
DRILLER DEMSEY GEAREN LOGGER JOHN A. GENTRY

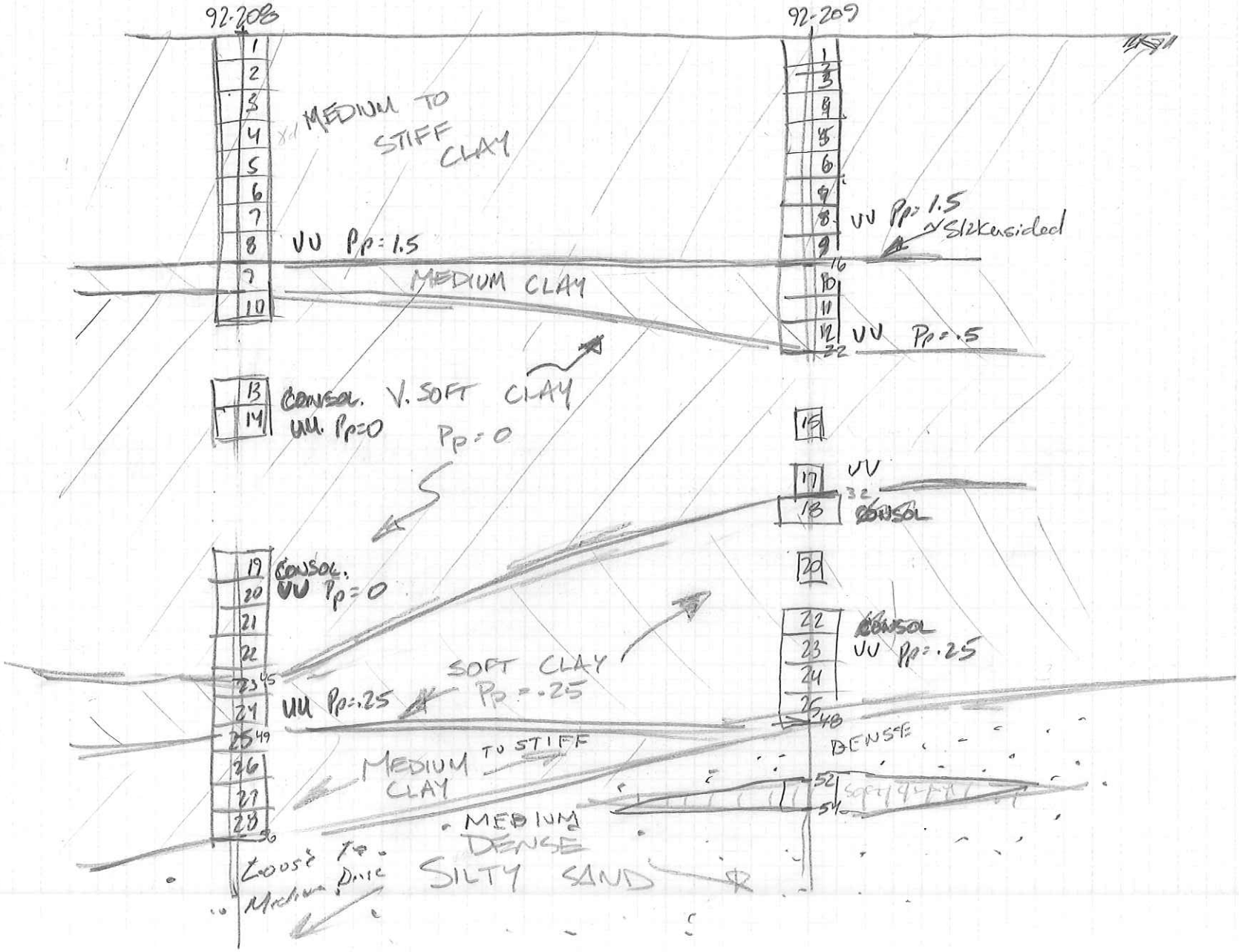
	DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
JAR	0		1		BROWN	SAND			BASE MATERIAL 0-1½'
			2	4.5+	GRAY	CLAY	HARD		-w/Shell & Shell Fragments 0-1½'
			3	1.0	GRAY	CLAY	STIFF		
	5		4	1.75	DARK GRAY	"	"		*+LIGHT GRAY 4'-10'
			5	1.75	"	"	"		
			6	1.75	"	"	"		-w/Calc & Fe Nod 8'-12'
	10		7	0.75	GRAY	CLAY	MEDIUM STIFF		-w/ Sa SM(s) 10'-12'
			8	1.5	"	"	STIFF		*LIGHT GRAY +TAN 10'-16'
	15		9	1.5	"	"	"		-w/Sa LAYER 14'-24'
			10	0.75	GRAY	CLAY	MEDIUM STIFF		
			11	0.5	"	"	"		
	20		12	0.5	"	"	"		
			13	0	GRAY	CLAY	VERY SOFT		PUSH 6" TUBE N/R 24-26' PUSH 3" TUBE 24'-26'
JAR	25		14	0	"	"	"		-w/odor 24'-32'
			15	0	"	"	"		
JAR		X	16	W.O.P	GRAY	"	"		PUSH 6" & 3" TUBE N/R 28-30'
	30		17	0	"	"	"		PUSH 3" TUBE 30-32' PUSH 6" TUBE 32-34'
			18	0.25	GRAY	CLAY	SOFT		
JAR	35	X	19	W.O.P	"	"	VERY SOFT		PUSH 6" & 3" TUBE 34-36' N/R

U.S. ARMY CORPS OF ENGINEERS

BORING NO. 92-209 DATE: BEGIN 1-14-93 PAGE 2 / 2
JOB NO. 14C 621 COMPLETE 1-14-93 Thin Walled Tube
PROJECT WALLISVILLE LAKE ☐ 3" ☑ 6"
LOCATION LEVEE ROAD
ELEVATION OF HOLE
MANUFACTURER'S DESIGNATION OF DRILL RIG FAILING CFD-2
GROUNDWATER: DEPTH 0 ft., ELEV. ____ ft., at end of Drilling
WEATHER MOSTLY CLOUDY
DRILLER DEMSEY GEAREN LOGGER JOHN A. GENTRY

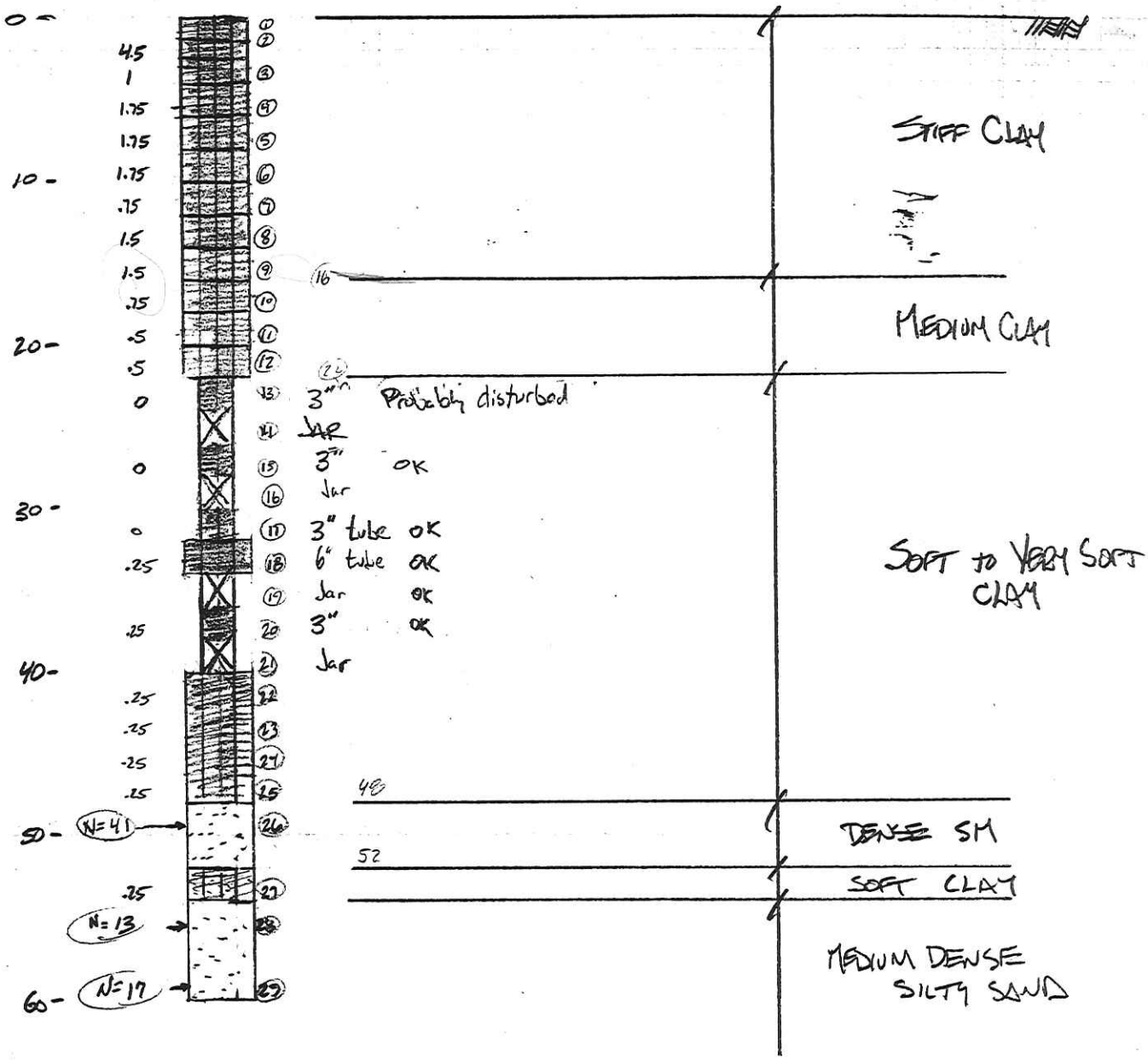
DEPTH, FEET	SAMPLE	SAMPLE NO.	PEN./TORVANE SPT.-BLOW COUNT	COLOR	MATERIAL TYPE	CONSISTENCY	SECONDARY CONSTITUENTS	STRUCTURAL FEATURES AND COMMENTS
35								
		20	0.25	GRAY	CLAY	SOFT		PUSH 6" TUBE N/R 38-40'
JAR	X	21	WOP	GRAY	CLAY	SOFT		PUSH 6" TUBE 40'-48'
40								W/Sa LAYER 40'-48'
		22	0.25	GRAY	CLAY	SOFT		
		23	0.25	GRAY	CLAY	"		
45		24	0.25	GRAY	CLAY	"		
		25	0.5	GRAY	CLAY	MEDIUM STIFF		SAND AT 48'
JAR	X	26	12 18 23	GRAY	SAND	DENSE	SILTY	-w/GRAVEL 48½-52'
50								CLAY AT 52'
		27	0.25	GRAY	CLAY	SOFT		-w/Sa LAYER 52'-54'
JAR	X	28	5 5 8	GRAY	SAND	MEDIUM DENSE	SILTY	-w/GRAVEL 52'-54'
55								-w/GRAVEL 54½-60'
JAR	X	29	7 11 16	"	"	"	"	
60								Bottom of 92-209 @ 60'
								W.O.P weight of pipe
65								
70								

GEOTEST ENGINEERING, INC.



BY ..... DATE .....
CHKD. BY ..... DATE .....
SUBJECT .....
SHEET NO. ..... OF .....
JOB NO. .....

BORING 92-209



BY_____ DATE_____ SUBJECT_____ SHEET NO._____ OF_____

CHKD. BY_____ DATE_____ JOB NO._____

JOB NO. 14G624 DATE 2/11/93

PROJECT Trinity River & Tributaries
Lake Wallisville, Texas

AREA near Wallisville, Texas

BORING NO. 92-209 SAMPLE NO. 8 DEPTH 12-14 ft

SPECIMEN NO. 1

CLASSIFICATION
Gray & yellowish gray,Clay,Stiff,w/calc nod

Tare No.	P205	Height	5.595 in.
Tare plus Wet Specimen	846.59 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	656.38 gm	Initial Area	6.290 sq in.
Water Weight	190.21 gm	Volume	35.194 cu in.
Tare Weight	42.75 gm	Volume of Solids	cu in.
Wet Specimen	1145.02 gm	Void Ratio	
Dry Specimen	874.08 gm	Saturation	%
Water Content	31.00 %	Dry Density	94.6 lb/cu ft
Specific Gravity of Solids			

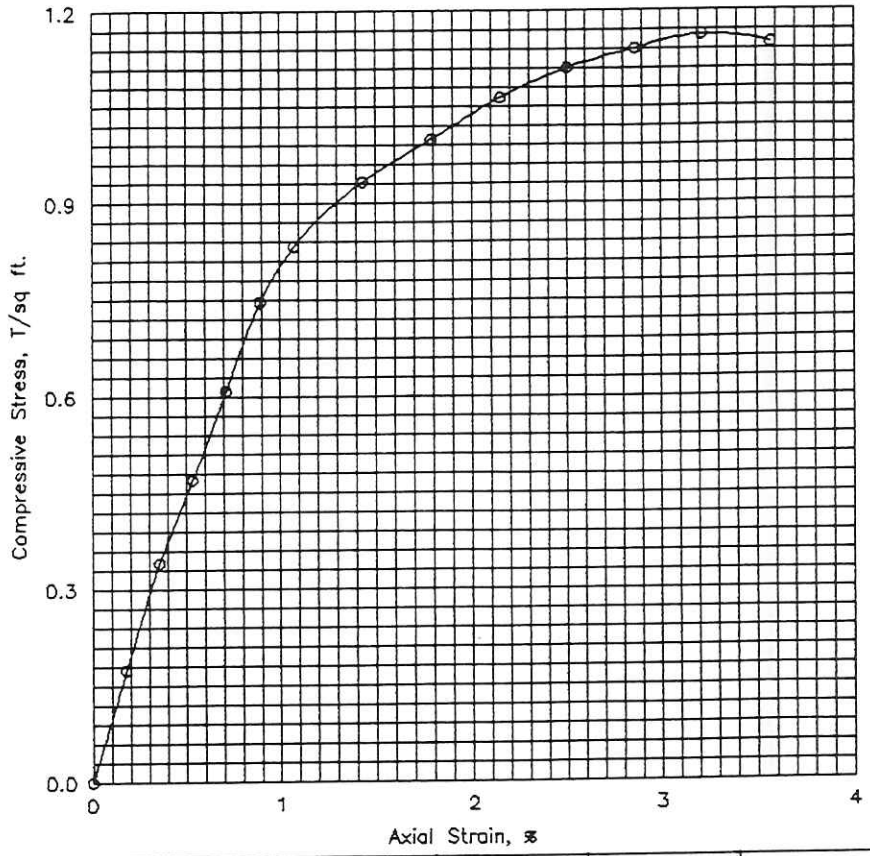
LL = 68 PL = 26 PI = 42

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	39.0	29.9	.004	6.31	.341
.6	30.	.030	54.0	41.4	.005	6.32	.471
.8	40.	.040	70.0	53.6	.007	6.34	.609
1.0	50.	.050	86.0	65.9	.009	6.35	.747
1.1	60.	.060	96.0	73.5	.011	6.36	.833
1.5	80.	.080	108.0	82.7	.014	6.38	.933
1.8	100.	.100	116.0	88.9	.018	6.40	.999
2.1	120.	.120	124.0	95.0	.021	6.43	1.064
2.5	140.	.140	130.0	99.6	.025	6.45	1.111
2.8	160.	.160	134.0	102.6	.029	6.48	1.141
3.1	180.	.180	137.0	104.9	.032	6.50	1.163
3.4	200.	.200	136.0	104.2	.036	6.52	1.150

Job No. 14G624

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	31.0 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	94.6			
Time to failure, min		t_f	3.07			
Unconfined compressive strength, T/sq ft		q_u	1.16			
Undrained shear strength, T/sq ft		S_u	.58			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Gray & yellowish gray,Clay,Stiff,w/calc nod

LL	68	PL	26	PI	42	G_s	

Remarks

Project Trinity River & Tributaries
Lake Wallisville, Texas
Area near Wallisville, Texas
Boring No. 92-209 Sample No. 8
Depth El 12-14 ft Date 2/11/93

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G624 DATE 2/11/93

PROJECT Trinity River & Tributaries
Lake Wallisville, Texas

AREA near Wallisville, Texas

BORING NO. 92-209 SAMPLE NO. 12 DEPTH 20-22 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark Gray,Clay,Very soft,w/organic material and odor

Tare No.	P207	Height	5.595 in.
Tare plus Wet Specimen	712.34 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	439.11 gm	Initial Area	6.290 sq in.
Water Weight	273.23 gm	Volume	35.194 cu in.
Tare Weight	42.84 gm	Volume of Solids	cu in.
Wet Specimen	928.10 gm	Void Ratio	
Dry Specimen	549.33 gm	Saturation	%
Water Content	68.95 %	Dry Density	59.5 lb/cu ft
Specific Gravity of Solids			

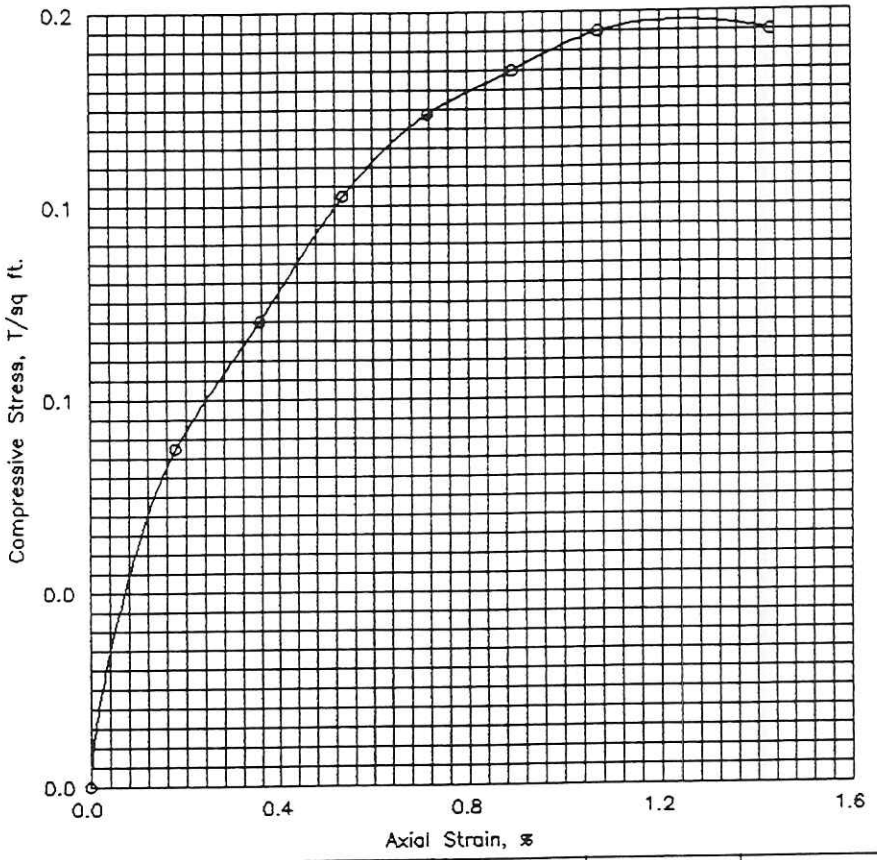
LL = 115 PL = 47 PI = 68

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	8.0	6.1	.002	6.30	.070
.3	20.	.020	11.0	8.4	.004	6.31	.096
.5	30.	.030	14.0	10.7	.005	6.32	.122
.7	40.	.040	16.0	12.3	.007	6.34	.139
.9	50.	.050	17.0	13.0	.009	6.35	.148
1.1	60.	.060	18.0	13.8	.011	6.36	.156
1.5	80.	.080	18.0	13.8	.014	6.38	.156

Job No. 14G624

Failure Sketches



☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	69.0 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	59.5			
Time to failure, min		t_f	1.13			
Unconfined compressive strength, T/sq ft		q_u	.16			
Undrained shear strength, T/sq ft		S_u	.08			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Dark Gray,Clay,Very soft,w/organic material and odor

LL	115	PL	47	PI	68	G_s	

Remarks

Project Trinity River & Tributaries	
Lake Wallisville, Texas	
Area near Wallisville, Texas	
Boring No. 92-209	Sample No. 12
Depth 20-22 ft El	Date 2/11/93
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 3659
1 JUN 65

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G624 DATE 2/11/93

PROJECT Trinity River & Tributaries
Lake Wallisville, Texas

AREA near Wallisville, Texas

BORING NO. 92-209 SAMPLE NO. 17 DEPTH 30-32 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark Gray,Clay,Soft,w/organic material and odor

Tare No.	P28	Height	5.595 in.
Tare plus Wet Specimen	612.90 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	364.35 gm	Initial Area	6.290 sq in.
Water Weight	248.55 gm	Volume	35.194 cu in.
Tare Weight	42.73 gm	Volume of Solids	cu in.
Wet Specimen	887.93 gm	Void Ratio	
Dry Specimen	500.86 gm	Saturation	%
Water Content	77.28 %	Dry Density	54.2 lb/cu ft
Specific Gravity of Solids			

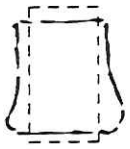
LL = 127 PL = 51 PI = 76

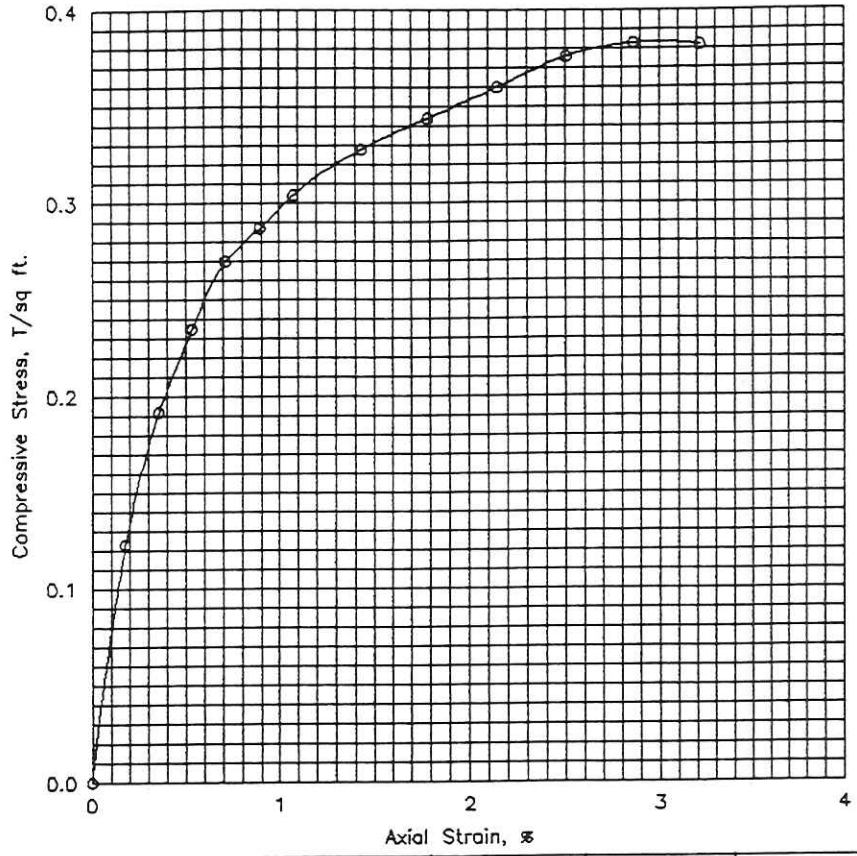
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	14.0	10.7	.002	6.30	.123
.3	20.	.020	22.0	16.9	.004	6.31	.192
.6	30.	.030	27.0	20.7	.005	6.32	.235
.7	40.	.040	31.0	23.7	.007	6.34	.270
.9	50.	.050	33.0	25.3	.009	6.35	.287
1.1	60.	.060	35.0	26.8	.011	6.36	.304
1.5	80.	.080	38.0	29.1	.014	6.38	.328
1.8	100.	.100	40.0	30.6	.018	6.40	.344
2.1	120.	.120	42.0	32.2	.021	6.43	.360
2.4	140.	.140	44.0	33.7	.025	6.45	.376
2.7	160.	.160	45.0	34.5	.029	6.48	.383
3.1	180.	.180	45.0	34.5	.032	6.50	.382

Job No. 14G624

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_0	77.3 %	%	%	%
	Void ratio	e_0				
	Saturation	S_0	%	%	%	%
	Dry density, lb/cu ft	γ_d	54.2			
Time to failure, min		t_f	2.73			
Unconfined compressive strength, T/sq ft		q_u	.38			
Undrained shear strength, T/sq ft		S_u	.19			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_0	2.830			
Initial specimen height, in.		H_0	5.595			

Classification Dark Gray,Clay,Soft,w/organic material and odor

LL	127	PL	51	PI	76	G_s	

Remarks

Project Trinity River & Tributaries	
Lake Wallisville, Texas	
Area near Wallisville, Texas	
Boring No. 92-209	Sample No. 17
Depth El 30-32 ft	Date 2/11/93
UNCONFINED COMPRESSION TEST REPORT	

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

JOB NO. 14G624 DATE 2/11/93

PROJECT Trinity River & Tributaries
Lake Wallisville, Texas

AREA near Wallisville, Texas

BORING NO. 92-209 SAMPLE NO. 23 DEPTH 42-44 ft

SPECIMEN NO. 1

CLASSIFICATION
Dark Gray,Clay,Medium stiff,w/organic material and odor

Tare No.	P226	Height	5.595 in.
Tare plus Wet Specimen	502.36 gm	Average Diameter	2.830 in.
Tare plus Dry Specimen	311.33 gm	Initial Area	6.290 sq in.
Water Weight	191.03 gm	Volume	35.194 cu in.
Tare Weight	42.77 gm	Volume of Solids	cu in.
Wet Specimen	926.47 gm	Void Ratio	
Dry Specimen	541.38 gm	Saturation	%
Water Content	71.13 %	Dry Density	58.6 lb/cu ft
Specific Gravity of Solids			

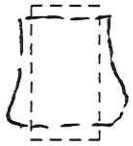
LL = 100 PL = 44 PI = 56

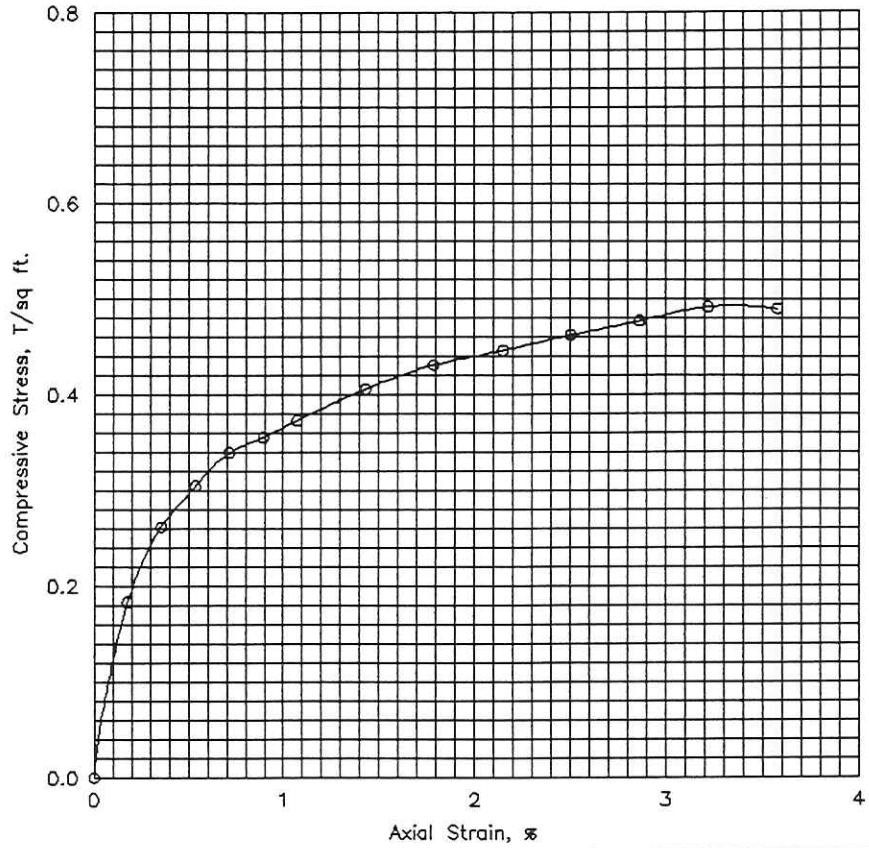
Proving Ring No. 10170
Proving Ring Constant, K = .766 lbs/div.

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	21.0	16.1	.002	6.30	.184
.3	20.	.020	30.0	23.0	.004	6.31	.262
.5	30.	.030	35.0	26.8	.005	6.32	.305
.7	40.	.040	39.0	29.9	.007	6.34	.340
.9	50.	.050	41.0	31.4	.009	6.35	.356
1.1	60.	.060	43.0	32.9	.011	6.36	.373
1.5	80.	.080	47.0	36.0	.014	6.38	.406
1.8	100.	.100	50.0	38.3	.018	6.40	.431
2.0	120.	.120	52.0	39.8	.021	6.43	.446
2.4	140.	.140	54.0	41.4	.025	6.45	.462
2.8	160.	.160	56.0	42.9	.029	6.48	.477
3.1	180.	.180	58.0	44.4	.032	6.50	.492
3.4	200.	.200	58.0	44.4	.036	6.52	.490

Job No. 14G624

Failure Sketches





☐ Controlled stress
☒ Controlled strain

Test No.			1			
Type of Specimen			Undisturbed			
Initial	Water content	w_o	71.1 %	%	%	%
	Void ratio	e_o				
	Saturation	S_o	%	%	%	%
	Dry density, lb/cu ft	γ_d	58.6			
Time to failure, min		t_f	3.08			
Unconfined compressive strength, T/sq ft		q_u	.49			
Undrained shear strength, T/sq ft		S_u	.25			
Sensitivity ratio		S_t				
Initial specimen diameter, in.		D_o	2.830			
Initial specimen height, in.		H_o	5.595			

Classification Dark Gray,Clay,Medium stiff,w/organic material and odor

LL	100	PL	44	PI	56	G_s	

Remarks

Project Trinity River & Tributaries
Lake Wallisville, Texas
Area near Wallisville, Texas
Boring No. 92-209 Sample No. 23
Depth 42-44 ft Date 2/11/93
El

UNCONFINED COMPRESSION TEST REPORT

ENG FORM 1 JUN 65 3659

PLATE XI-2

Geotest Engineering, Inc.

PLATE

Project : Trinity River and Tributaries, Texas
Lake Wallisville
Contract No. DACW64-92-D-0005 Delivery order No. 0006

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 92-209 STA 34+04 ELEV. 7.6

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
1	0 - 1.5			Brown,Sand,Loose,Silty,w/clay lumps&shell fragments	S M	29.8											
2	1.5 - 2	4.5+		Gray,Clay,Hard,Sandy,w/shell fragments (lime stabilized base material)	C L	32.0											
3	2 - 4	2.25		Gray&olive gray,Clay,Very stiff,w/shell fragments,Slickensided	C H	27.0											
4	4 - 6	1.50		Gray&olive gray,Clay,Stiff,w/shell fragments,Slickensided	C H	35.0											
5	6 - 8	1.50		Gray&olive gray,Clay,Stiff,w/shell fragments, Slickensided	C H	22.5											
6	8 - 10	1.50		Gray&dark gray,Clay,Stiff	C H	27.2											
7	10 - 12	0.75		Gray&yellowish gray,Clay,Medium stiff,w/ calcareous nodules	C H	22.3											
8	12 - 14	1.25		Gray&yellowish gray,Clay,Stiff,w/calcareous nodules	C H	31.0	94.6	123.9	68	26	100.0	99.6	98.7	98.6	98.3		1.16
9	14 - 16	1.50		Dark gray,Clay,Stiff	C H	37.6											
10	16 - 18	1.00		Dark gray,Clay,Stiff,w/sand pockets&orgainc material and odor	O H	48.1											
11	18 - 20	0.50		Dark gray,Clay,~~Very soft~~ Medium,w/organic material and odor	O H	57.6											
12	20 - 22	0.00		Dark gray,Clay,Very soft,w/organic material and odor	O H	69.0	59.5	100.5	115	47	100.0	100.0	100.0	100.0	100.0		0.16
13	22 - 24	0.00		Dark gray,Clay,Very soft,w/organic material and odor	O H	54.9											
14	24 - 26	0.00		Dark gray,Clay,Very soft,w/odor	C H												
15	26 - 28	0.00		Dark gray,Clay,Very soft,w/organic material and odor	O H	65.7											
16	28.5 - 30	0.00	W.O.P	Dark gray,Clay,Very soft,w/organic material and odor	O H												
17	30 - 32	0.25		Darl gray,.Clay,Soft,w/organic material and odor	O H	77.3	54.2	96.1	127	51	100.0	100.0	100.0	100.0	100.0		0.38

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

Geotest Engineering, Inc.

Project : Trinity River and Tributaries, Texas
Lake Wallisville
Contract No. DACW64-92-D-0005 Delivery order No. 0006

SUMMARY OF LABORATORY TEST RESULTS

Boring No. 92-209

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 #4	#10	#40	#100	#200	Torvane Shear Strength (tsf)	q u (tsf)
18	32 - 34	0.00		Dark gray,Clay,Very soft,w/organic material and odor	OH	80.7											
19	34.5 - 36	0.00	W.O.P	Dark gray,Clay,Very soft,w/organic material and odor	OH												
20	36 - 38	0.00		Dark gray,Clay,Very soft,w/organic material and odor	OH	73.2											
21	38.5 - 40	0.00	W.O.P	Dark gray,Clay,Very soft,w/organic material and odor	OH												
22	40 - 42	0.00		Dark gray,Clay,Very soft,w/organic material and odor	OH	60.9											
23	42 - 44	0.50		Dark gray,Clay,Medium stiff,w/organic material and odor	OH	71.1	58.6	100.3	100	44	100.0	100.0	100.0	100.0	100.0		0.49
24	44 - 46	0.25		Dark gray,Clay,Soft,w/sand parting & organic material and odor	OH	64.1											
25	46 - 48	0.25		Dark gray,Clay,Soft,w/sand parting & organic material and odor	OH	65.9											
26	48.5 - 50		41	Gray,Sand,Dense,Silty	S M												
27	52 - 54	0.25		Dark gray,Clay,Soft,w/sand parting&sand pockets & organic material and odor	OH	59.2											
28	54.5 - 56		13	Gray,Sand,Medium dense,Silty	S M						100.0	96.7	63.9	18.2	13.3		
29	58.5 - 60		27	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 : Unconfined Compressive Strength, W O H : Weight of hammer, W O P : Weight of pipe

Geotest Engineering, Inc.

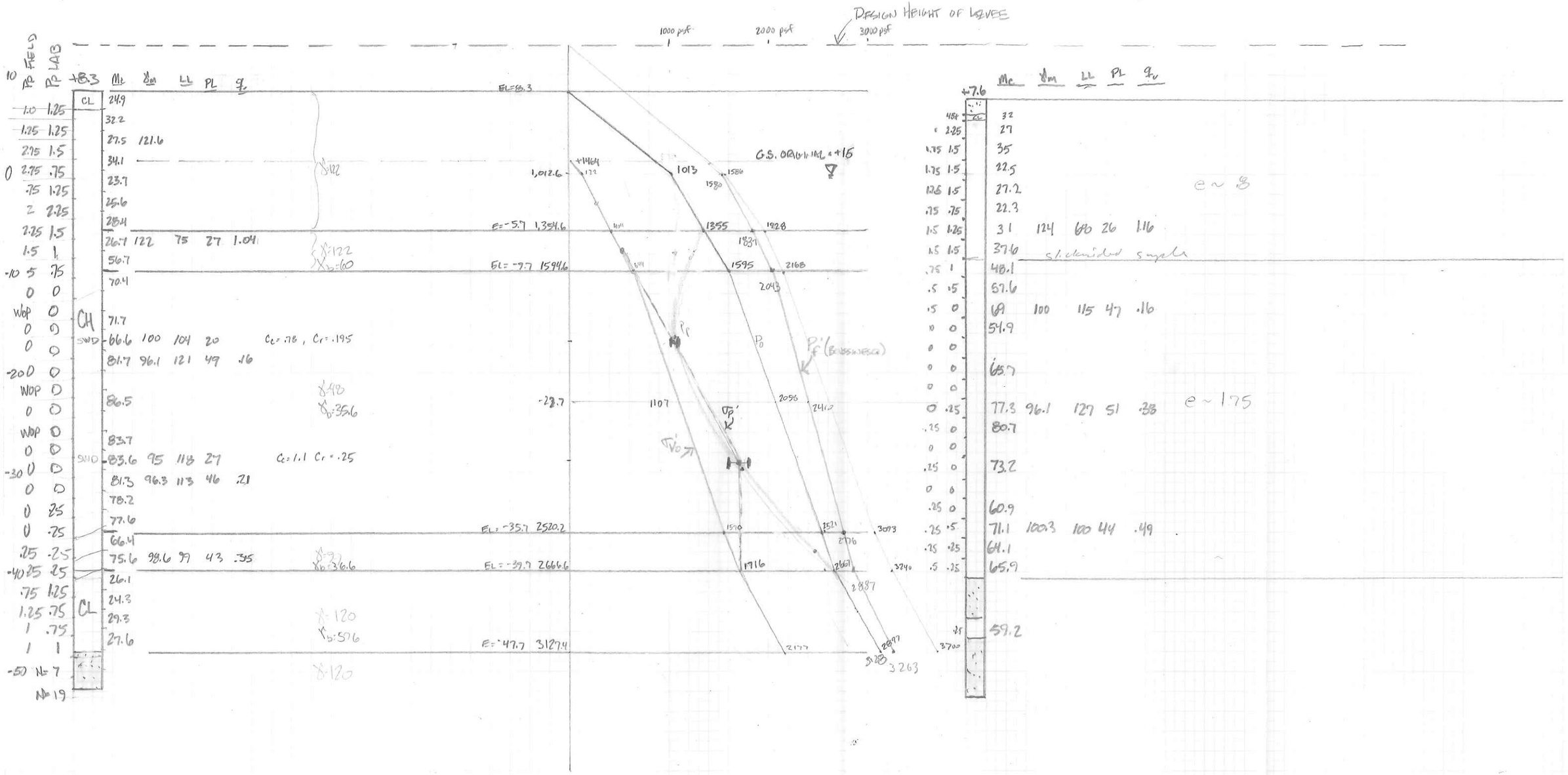
BY_____ DATE_____ SUBJECT_____ SHEET NO._____ OF_____

CHKD. BY_____ DATE_____ JOB NO._____

BORING 92-208 92-209

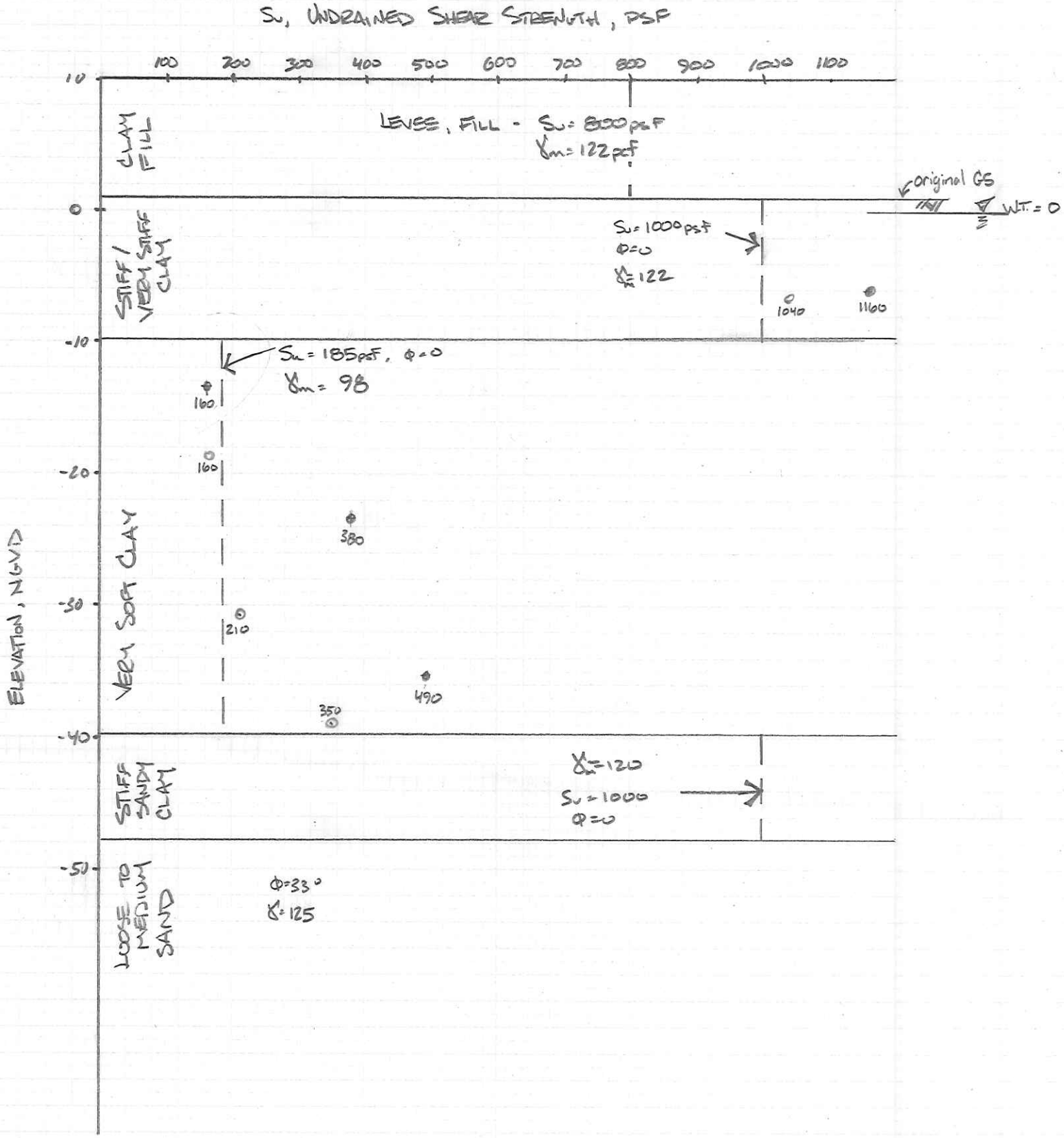
STATION 32+00 34+04

12' (122)



Su FROM UNCONFINED COMPRESSION TESTS

○ 92-208 ● 92-209



BY..... DATE..... SUBJECT WALLISVILLE, TEXAS SHEET NO. ..... OF .....

CHKD. BY..... DATE..... EAST ACCESS ROAD JOB NO. .....