LOG OF BORING NO. 88-59

DISPOSAL AREA NO. 23
NEDERLAND, TEXAS

TYPE: Wet Rotary

LOCATION: See Plate 1

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	BLOWS PER FT	UNIT DRY WT LB/CU FT	UNDRAINED SHEAR STRENGTH, KSF (⊠ Penetrometer, ⊕ Torvane) 0.2 0.4 0.6 1.2 1.6 2.0 2.4 2.8	PLASTIC LIMIT / WATER CONTENT, % / LIQUID LIMIT 10 20 30 40 50 60 70	PENETROMETER
	1Q*		FILL: CLAY, firm, dark gray with organic material (2')					1.50
	2Q							1.00
5			CLAY, very soft, gray and olive gray with organic material					
	3Q		- firm to 4'					.50
10			- soft 4-8', and 28-29.5'					
	4Q		- organic odor at 6.5', 7', 10 and 15'					
	5Q							
15	6Q		- light gray 20-20.5'					
			- sand pockets 26-28'					
	7Q		- firm below 29.5'					
	8Q							
20	9Q							
25	10Q							
	11Q*							
	12Q		(30')					1.10
30								
35								
40								
45								
50								

* Sample 1 = 7 in.
Sample 11 = 5 in.

Driller: A. Clark
Technician: P. Cupp
Equipment: Failing 250 on Ardco Buggy

COMPLETION DEPTH: 30'
DATE: May 25, 1988

DEPTH TO WATER IN BORING: BOREHOLE PLUGGED DURING COMPLETION

CAVED AT: —
DATE: MAY 25, 1988

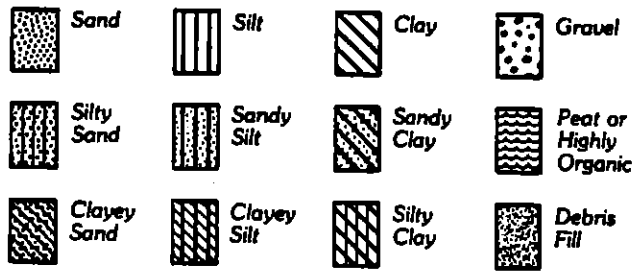
McCLELLAND ENGINEERS

PLATE 2

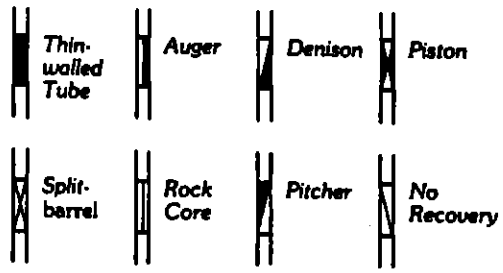
Job No. : ____ Date : ____ Drafted : ____ Form MET-1.00 (5/84)

TERMS AND SYMBOLS USED ON BORING LOGS

SOIL TYPES

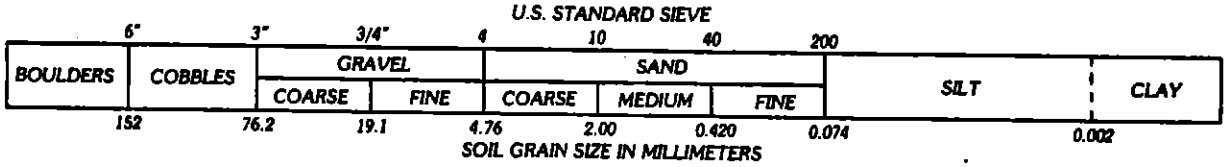


SAMPLER TYPES



SOIL GRAIN SIZE

U.S. STANDARD SIEVE



STRENGTH OF COHESIVE SOILS [1]

Consistency	Undrained Shear Strength, Kips Per Sq Ft
Very Soft	less than 0.25
Soft	0.25 to 0.50
Firm	0.50 to 1.00
Stiff	1.00 to 2.00
Very Stiff	2.00 to 4.00
Hard	greater than 4.00

DENSITY OF GRANULAR SOILS [2,3]

Descriptive Term	*Relative Density, %
Very Loose	less than 15
Loose	15 to 35
Medium Dense	35 to 65
Dense	65 to 85
Very Dense	greater than 85

*Estimated from sampler driving record

SPLIT-BARREL SAMPLER DRIVING RECORD

Blows Per Foot	Description
25	25 blows drove sampler 12 inches, after initial 6 inches of seating.
50/7"	50 blows drove sampler 7 inches, after initial 6 inches of seating.
Ref/3"	50 blows drove sampler 3 inches during initial 6-inch seating interval.

Note : To avoid damage to sampling tools, driving is limited to 50 blows during or after seating interval.

SOIL STRUCTURE [1]

Slickensided	Having planes of weakness that appear slick and glossy. The degree of slickensidedness depends upon the spacing of slickensides and the ease of breaking along these planes.
Fissured	Containing shrinkage or relief cracks, often filled with fine sand or silt; usually more or less vertical.
Pocket	Inclusion of material of different texture that is smaller than the diameter of the sample.
Parting	Inclusion less than 1/8 inch thick extending through the sample.
Seam	Inclusion 1/8 inch to 3 inches thick extending through the sample.
Layer	Inclusion greater than 3 inches thick extending through the sample.
Laminated	Soil sample composed of alternating partings or seams of different soil type.
Interlayered	Soil sample composed of alternating layers of different soil type.
Intermixed	Soil sample composed of pockets of different soil type and layered or laminated structure is not evident.
Calcareous	Having appreciable quantities of carbonate.

REFERENCES :

(1) ASTM D 2488
(2) ASCE Manual 56 (1976)
(3) ASTM D 2049

Information on each boring log is a compilation of subsurface conditions and soil or rock classifications obtained from the field as well as from laboratory testing of samples. Strata have been interpreted by commonly accepted procedures. The stratum lines on the logs may be transitional and approximate in nature. Water level measurements refer only to those observed at the times and places indicated, and may vary with time, geologic condition or construction activity.

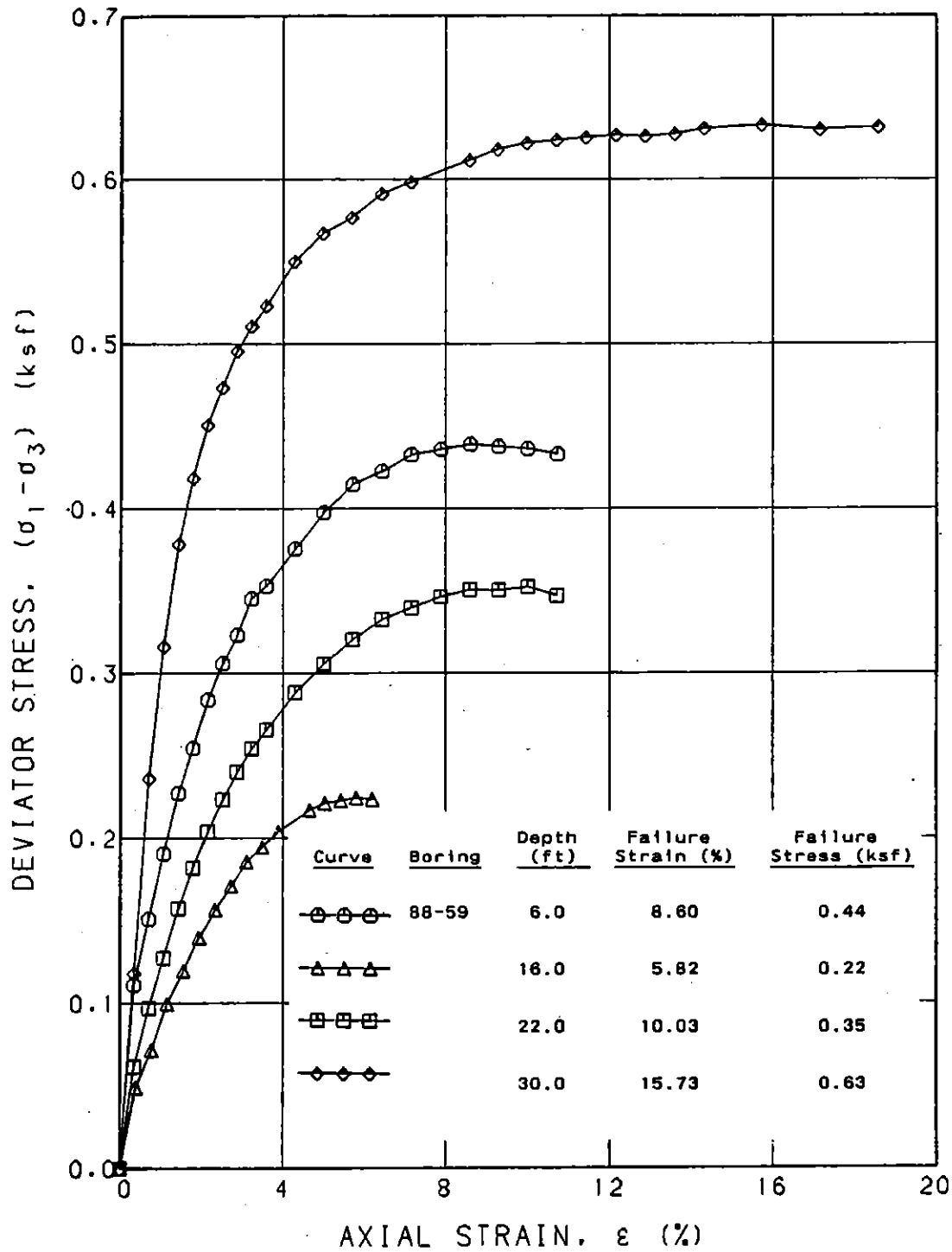
BORING NUMBER	SAMPLE NUMBER/TYPE	SAMPLE DEPTH (FT)	VISUAL CLASSIFICATION	UNIFIED SOIL CLASSIFICATION	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (PCF)	SPECIFIC GRAVITY OF SOLIDS	LIQUID LIMIT	PLASTIC LIMIT	BAR LINEAR SHRINKAGE (%)	PERCENT FINER BY WEIGHT (ABBEVIATED MECHANICAL SIEVE ANALYSIS)					COMPLETE MECHANICAL ANALYSIS	HYDROMETER ANALYSIS	STANDARD COMPACTION TEST	MODIFIED COMPACTION TEST	UNDRAINED SHEAR STRENGTH(KSF)*	TORVANE SHEAR (KSF)
											3/8"	#4	#10	#40	#200						
88-59	1Q	0-0.6'	Stiff gray clay with organic material & odor	CH	61																
	2Q	0.6-4'	Stiff dark gray clay with grass & organic material & odor	CH	80																
	3Q	6-8'	Very soft dark gray clay with organic material & grass	CH	85	49		297	42											0.22	0.60
	4Q	10-12'	Very soft dark gray organic clay with odor	CH	349																
	5Q	12-14'	Very soft dark gray organic clay with grass	CH	385																
	6Q	14-16'	Very soft dark gray organic clay with grass	CH	206	26		313	75											0.11	0.38
	7Q	16-18'	Very soft dark gray organic clay with odor	CH	289																
	8Q	18-20'	Very soft olive gray organic clay with organic odor	CH	199																
	9Q	20-22'	Very soft dark gray organic clay	CH	267	21														0.18	0.34
	10Q	24-26'	Very soft dark organic clay with grass & organic odor	CH	246																
	11Q	26-28'	Soft olive gray clay with organic material	CH	52	70		55	19												0.30
	12Q	28-30'	Soft gray clay	CH	45	79														0.32	

*Based on Uncontined Compression Test Results

SUMMARY OF TEST RESULTS
Delivery Order No. 0016
Disposal Area No. 23
Nederland, Texas

McClelland engineers

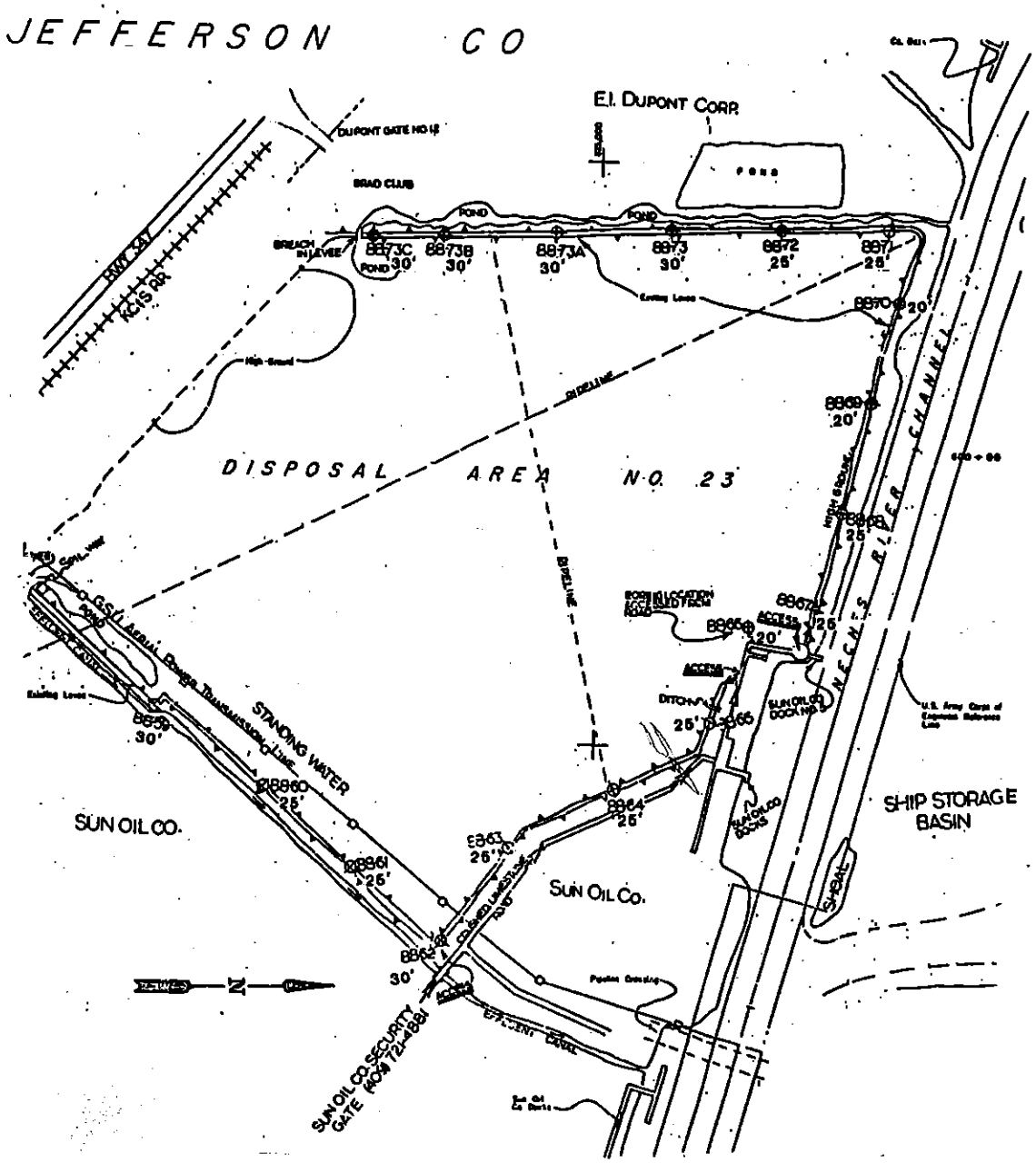
PLATE 1



STRESS-STRAIN CURVES
UNCONFINED COMPRESSION TEST
BORING 88-59

Job No.: 1288-2405 Form DFT-1.00 (12/81)

Drafted: _____ Date: _____ Checked: _____ Date: _____ Approved: _____ Date: _____



PLAN OF BORINGS

0 1500 3000 feet

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PLATE 1