Job No. 0401-2906 Completion Date 5/11/90 Time ____ **Field Log of Boring** 90-80

Elevation ____ Location Disposal Area No. 4 Driller D. Findley

Logger K Bowen 1 of 2

Lab. Tests	Soil Sample No.	Depth	Type	Depth (ft)	Sample	Blows	Torvane Penet.	Comments	Description of Material
									SANDY CLAY, stiff
									-w/ shell fragments to 5'
	1	3-5	Q	5			1.5		
	2	5-7	Q				1.5		
	3	7-9	Q				1.25		
	4	9-11	Q	10					(12')
		11-13						No recovery	SAND, very loose, fine
	5	13.5-15	J	15		1-2-1			(18')
	6	18.5-20	J	20		1-1-1			CLAYEY SAND, very loose, fine, (20')
	7	20-22	Q				1.5		SANDY CLAY, stiff
	8	22-24	Q				1.5		- firm to 24'
	9	24-26	Q	25			1.75		
	10	26-28	Q				1.5		
	11	28-30	Q	30			1.75		
	12	30-32	Q				2.5		
	13	32-34	Q				2.5		
	14	34-36	Q	35			4.0		- very stiff below 30'
	15	36-38	Q						
	16	38-40	Q	40					(40')

-CONT'D-

Remarks:

Boring Sealed? w/cuttings

Dry Auger ____ to ____ ft

Wet Rotary 0 to 49 ft

Water First Noticed ____ ft

Depth to Water ____ Caved at ____ Date ____ Time ____ : ____

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Form ONS-02.07(6/87)

Job No. 0401-29006 Completion Date 5/11/90 Time ____ **Field Log of Boring** 90-80

Elevation ____ Location Disposal Area No 4 Driller D. Findley

Logger K. Bowen 2 of 2

Lab. Tests	Soil Sample No.	Soil Sample Depth	Soil Sample Type	Depth (ft)	Sample	Blows	Torvane Penet.	Comments	Description of Material
									SAND, medium-dense, fine
									-w/ shell fragments at 40'
									-clayey sand below 44' (45')
	17	43.5-45	J	45	X	5-5-6			SANDY CLAY, stiff
	18	45-47	Q				1.5		
	19	47-49	Q				1.25		(49')
				50					
				55					
				60					
				65					
				70					
				75					
				80					

Remarks:

Boring Sealed? w/cuttings

Dry Auger ____ to ____ ft

Wet Rotary ____ to ____ ft

Water First Noticed ____ ft

Depth to Water 6.7' Caved at 23.4' Date 5/12 Time 8:05 ; ____

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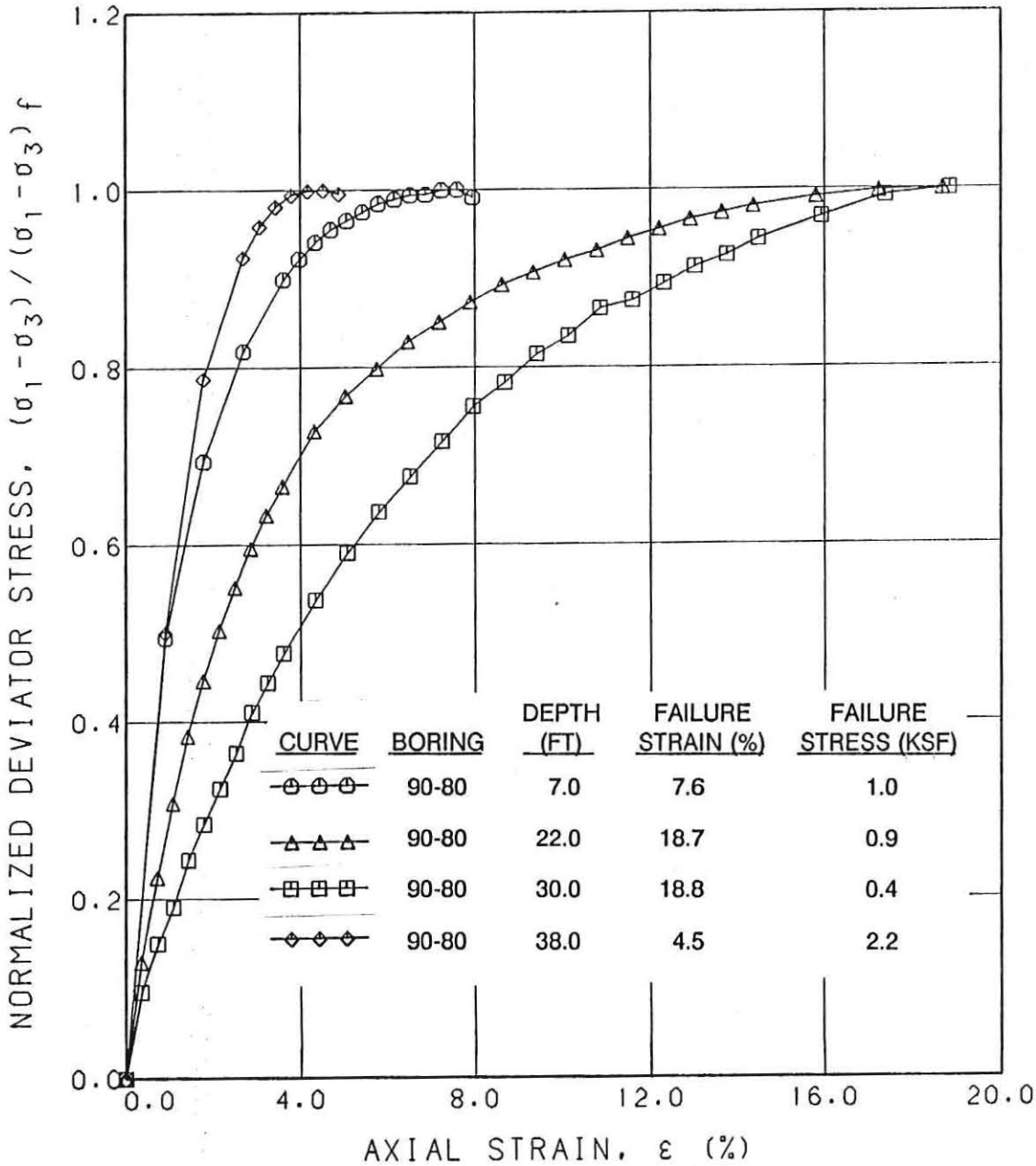
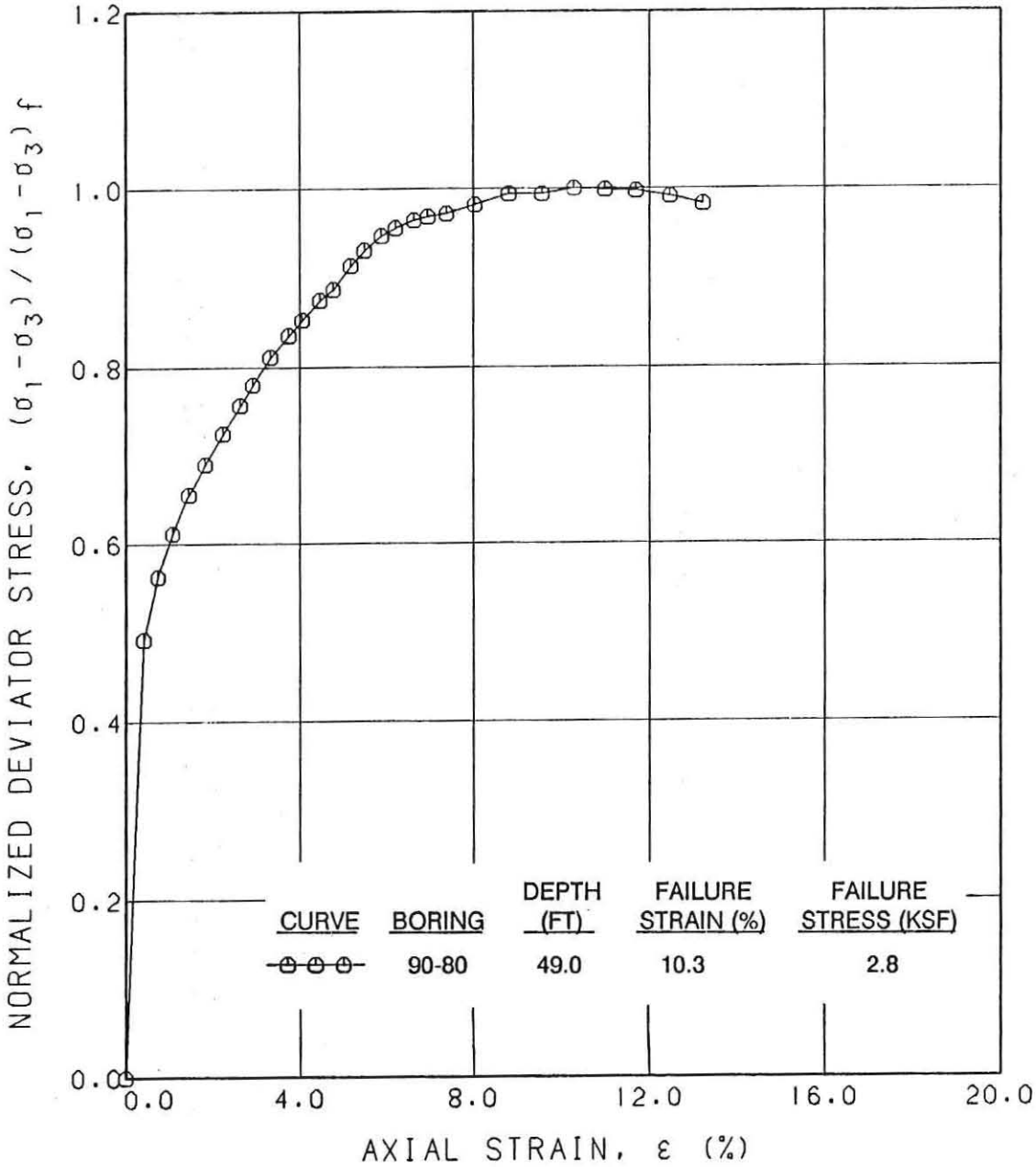
Form ONS-02.07(6/87)

SUMMARY OF TEST RESULTS
Galveston District, Corps of Engineers
Delivery Order No. 0016
Brazos Island Harbor
Brownsville Ship Channel

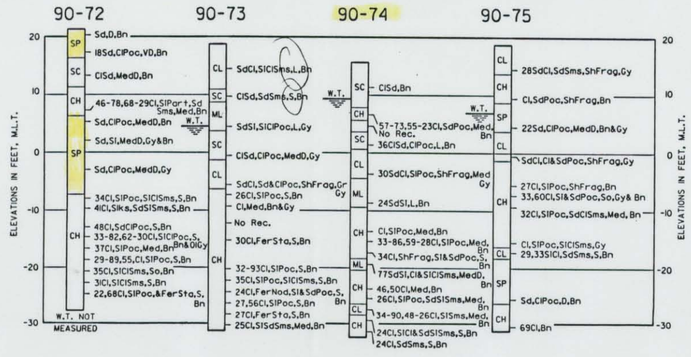
Boring Number	Sample Number	Sample Depth (ft)	Visual Classification	USCS	MC (%)	UDW (pcf)	LL	PL	PI	Gradation, % Passing Sieve No. 4	10	40	200	UNC Su (ksf)	TV Su (ksf)
90-79	1J	0-5	Brown fine SILTY SAND w/clay pckts	SM											
90-79	2Q	5-10	Firm brown CLAY w/ sand pckts, shell frags & ferrous nod	CH	28						100	93	82		
90-79	3Q	10-14	Firm brown CLAY w/ vert sandy clay sms & ferrous nods	CH	35										
90-79	4Q	14.5-15	Firm brown CLAY w/ ferrous nodules	CH	36	87	56	27			100	99	91	0.9	
90-79	5J	15-18	Olive gray fine SILTY SAND w/clay pckts & free water	SM											
90-79	6J	18-20	Olive gray fine SANDY SILT w/ clay pockets	ML							100	96	58		
90-79	7J	20-25	Brown CLAY w/silt pckts & sandy clay seams	CH											
90-79	8Q	25-27	Brown CLAY w/ferrous stains	CH	36	89	70						100		
90-79	9Q	27-29	Sample Not Received in Lab												
90-80	1Q	3-5	Stiff brown CLAY w/ silt partings & pockets	CH	31										
90-80	2Q	5-7	Firm brown CLAY w/ silt pockets	CH	41	75	65	30			100	99	96	0.5	
90-80	3Q	7-9	Firm dk gray and brown CLAY w/si parts & pckts & sa sms	CH	37										
90-80	4Q	9-11	Soft brown CLAY w/ silty clay sms & parts	CH	31										
90-80	5	13.5-15	Olive gray CLAY w/ silt partings	CH						92	87	84	83		
90-80	6	18.5-20	Olive gray CLAY w/ sand pockets	CH											
90-80	7	20-22	Firm brown CLAY w/ ferrous stns & silt pckts	CH	34							100	99	0.5	
90-80	8	22-24	Stiff brown CLAY w/ silt pockets	CH	43										
90-80	9	24-26	Firm brown CLAY w/ silt pockets	CH	39										
90-80	10	26-28	Soft brown CLAY w/ silt pckts & ferrous stns	CH	37										
90-80	11	28-30	Soft brown CLAY w/ silt seams	CL	30	78	39	20			100	99	99	0.2	
90-80	12	30-32	Soft olive gray SILTY CLAY w/ clay pckts & ferrous stns	CH	30										
90-80	13	32-34	Stiff brown CLAY w/ silt pockets	CH	33										
90-80	14	34-36	Stiff brown CLAY w/ ferrous stains	CH	30										
90-80	15	36-38	Stiff brown CLAY	CH	32	89	68	28					100	1.1	
90-80	16	38-40	Sample Not Received in Lab												
90-80	17J	43.5-45	Brown CLAY	CH								100	99		
90-80	18Q	45-47	Sample Not Tested												
90-80	19Q	47-49	Stiff brown CLAY w/ silt pockets	CH	40	77	62	32					100	1.4	



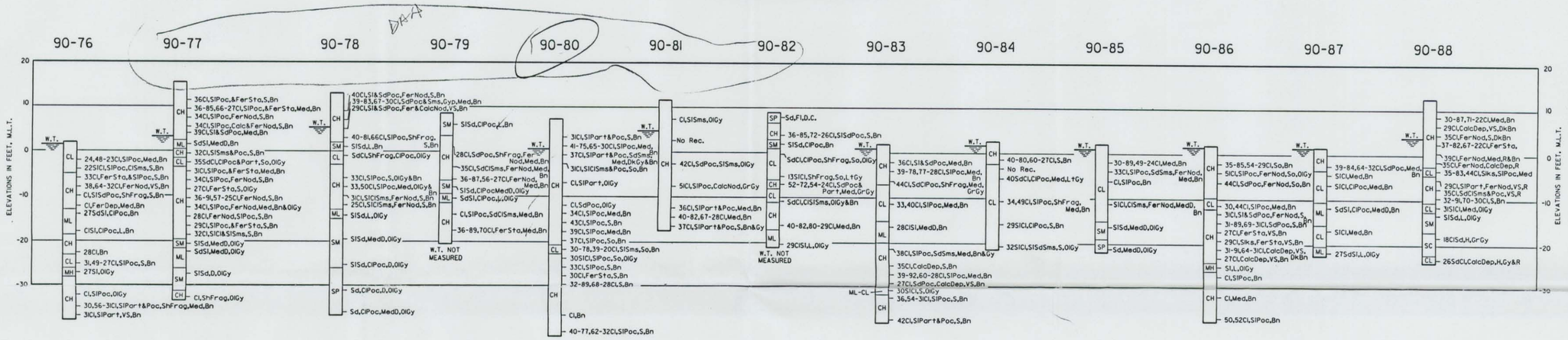
STRESS-STRAIN CURVES
UNCONFINED COMPRESSION TEST



STRESS-STRAIN CURVES
UNCONFINED COMPRESSION TEST



DISPOSAL AREA No. 2



DISPOSAL AREA No. 4

NOTES;

1. SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH MILITARY STANDARD 619B "UNIFIED SOIL CLASSIFICATION SYSTEM FOR ROADS, AIRFIELDS, EMBANKMENTS AND FOUNDATIONS." CONSISTENCY OF SOILS SUCH AS SOFT, MEDIUM, HARD, LOOSE, DENSE, ETC., ARE RELATIVE TERMS BASED ON ESTIMATED UNDISTURBED SHEAR STRENGTH OF THE MATERIAL AS DETERMINED BY VISUAL CLASSIFICATION POCKET PENETROMETER TESTS AND PENETRATION RESISTANCE DURING SAMPLING.
2. FIGURES TO THE RIGHT OF BORING LOGS ARE WATER CONTENTS IN PERCENT OF THE DRY WEIGHT, DRY DENSITY, LIQUID LIMIT, PLASTIC LIMIT, AND BAR LINEAR SHRINKAGE. (MC-UDW),(LL-PL),(B.L.S.)*
3. BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WHERE RECOVERED WITH A 3-INCH DIAMETER THIN WALL SAMPLER WHERE COHESIVE MATERIALS WERE ENCOUNTERED. WHERE COHESIONLESS MATERIALS WERE ENCOUNTERED, DISTURBED SAMPLES WERE TAKEN WITH A SPLIT SPOON SAMPLER DURING PERFORMANCE OF STANDARD PENETRATION TESTING.
4. WATER TABLE LEVELS SHOWN ON BORING LOGS WERE DETERMINED AFTER DRILLING BORINGS BY MEASURING THE TOP OF FLUID LEVELS IN THE BORINGS. INASMUCH AS WET ROTARY DRILLING TECHNIQUES AND DRILLING MUD WERE USED TO DRILL THE HOLES, THE LEVEL OF DRILLING FLUIDS IN THE BORE HOLES MAY NOT HAVE STABILIZED TO THE LEVEL OF THE ACTUAL WATER TABLE. ADDITIONALLY, WATER TABLES IN THE FIELD ARE LIKELY TO FLUCTUATE DEPENDING ON WEATHER CONDITIONS. THEREFORE, SOME VARIATION SHOULD BE ANTICIPATED BETWEEN WATER TABLES INDICATED AND WATER TABLES ENCOUNTERED IN THE FIELD.

VISUAL CLASSIFICATIONS

Bn Brown(ish)	Gr Green(ish)	R Red(dish)	Sta Stain(s)
Calc Calcareous	Gy Gray(ish)	Rec Recovery	V Very
Cl Clay(ey)	Gyp Gypsum	S Stiff	W.T. Water Table
D Dense	H Hard	Sd Sand(y)	
D.C. Driller's Classification	L Loose	Sl Shale	
Dep Deposit(s)	Lt Light	Sh Shell(y)	
Dk Dark	Med Medium	Sl Silty	
Fer Ferrous	Nod Nodules	Slks Slickensides	
Fl Fine(s)	Ol Olive	Sms Seams	
Frag Fragment(s)	Part Particle(s)	So Soft	
	Poc Pocket(s)		

LABORATORY CLASSIFICATION

SP POORLY GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES.
SM SILTY SANDS, SAND-SILT MIXTURES.
SC CLAYEY SANDS, SAND-CLAY MIXTURES.
ML INORGANIC SILTS AND VERY FINE SANDS, WITH SLIGHT PLASTICITY.
CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, LEAN CLAYS.
MH INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS.
CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS.

REVISION	DATE	DESCRIPTION	BY

OFFICE OF THE DISTRICT ENGINEER
U.S. ARMY ENGINEER DISTRICT, GALVESTON
CORPS OF ENGINEERS
GALVESTON, TEXAS

CADD

DRAWN BY: P.B.S.
TRACED BY:
CHECKED BY: J.T.F.
SUBMITTED BY: David S. Campbell, CHIEF, SOILS DESIGN SECTION
APPROVED: David S. Campbell, CHIEF, GEOTECH. & SURVEYS BRANCH
APPROVED: CHIEF, ENGINEERING DIVISION

BRAZOS ISLAND HARBOR, TEXAS
BROWNSVILLE CHANNEL
DREDGING INSHORE REACH NO. 1
DISPOSAL AREAS Nos. 2 & 4
BORING LOGS

DATE: MAY 1992
SCALE: AS SHOWN
SPEC. DATE:
DRAWING NUMBER: F-6
SHEET 13 OF 17
FILE NO. RIO 901-204

Prepared under the direction of
Brink P. Miller, Col., C.E.,
District Engineer