

Job No. C401-2906 Completion Date 5/14/90 Time _____ Field Log of Boring 90-77

Elevation _____ Location Disposal Area No. 4 Driller R. Aguilar

Lab. Tests	Soil Sample			Depth (ft)	Sample	Blows	Torvane Penet.	Logger <u>W. Cutshall</u> <u>1 of 2</u>	
	No.	Depth	Type					Comments	Description of Material
									CLAY, very stiff, light brown
	1	3-5	Q				2.25		- Stiff from 5' to 7'
	2	5-7	Q	5			1.25		
	3	7-9	Q				2.25		
	4	9-11	Q	10			1.0		- Stiff below 9.0'
	5	11-13	Q				1.5		
	6	13-15	J						
	7	13-15	J	15			-		SAND, light brown, fine (12.5')
	8	15-17	Q				1.25		
	9	17-19	Q				1.0		
	10	19-21	Q	20			1.0		CLAYEX SAND, (21')
	11	21-23	Q	*			2.25		
	12	23-25	Q	* 25			1.75		
	13	25-27	Q	*			2.25		SANDY CLAY, very stiff, bluish-gray and light brown - Stiff, 23' to 25'
	14	27-29	Q	*			1.0		
	15	29-31	Q	30			3.0		
	16	31-33	Q				1.0/3.0		- Stiff, 27' to 29'
	17	33-35	Q	35			2.5		
	18	35-37	J				1.0		
	19	37-38.5	J		X 6/8/12				SAND, medium dense, light brown, fine (35')
				40					

- Cont'd -

Remarks: Casing set to 5' depth

* These samples contained excessive cutting.

Depth to Water 12.2' Cased at _____ Date 5/14/90 Time _____ ; _____

Boring Sealed? w/cuttings
Dry Auger _____ to _____ ft
Wet Rotary Q to 49 ft
Water First Noticed _____ ft

Job No. 0401-2906 Completion Date 5/14/90 Time _____ Field Log of Boring 90-77

Elevation _____ Location Disposal Area No 4 Driller R. Aguilar

Lab. Tests	Soil Sample			Depth (ft)	Sample	Blows	Torvane Penet.	Logger <u>W. Cutshall</u>	
	No.	Depth	Type					Comments	Description of Material
									SAND, dense, brown, fine
	20	42.5	J		X	20/60/19			
				45					
	21	47.5	J		X	4/4/5			
				50					
				55					
				60					
				65					
				70					
				75					
				80					

— loose clayey sand bet 47' (49')

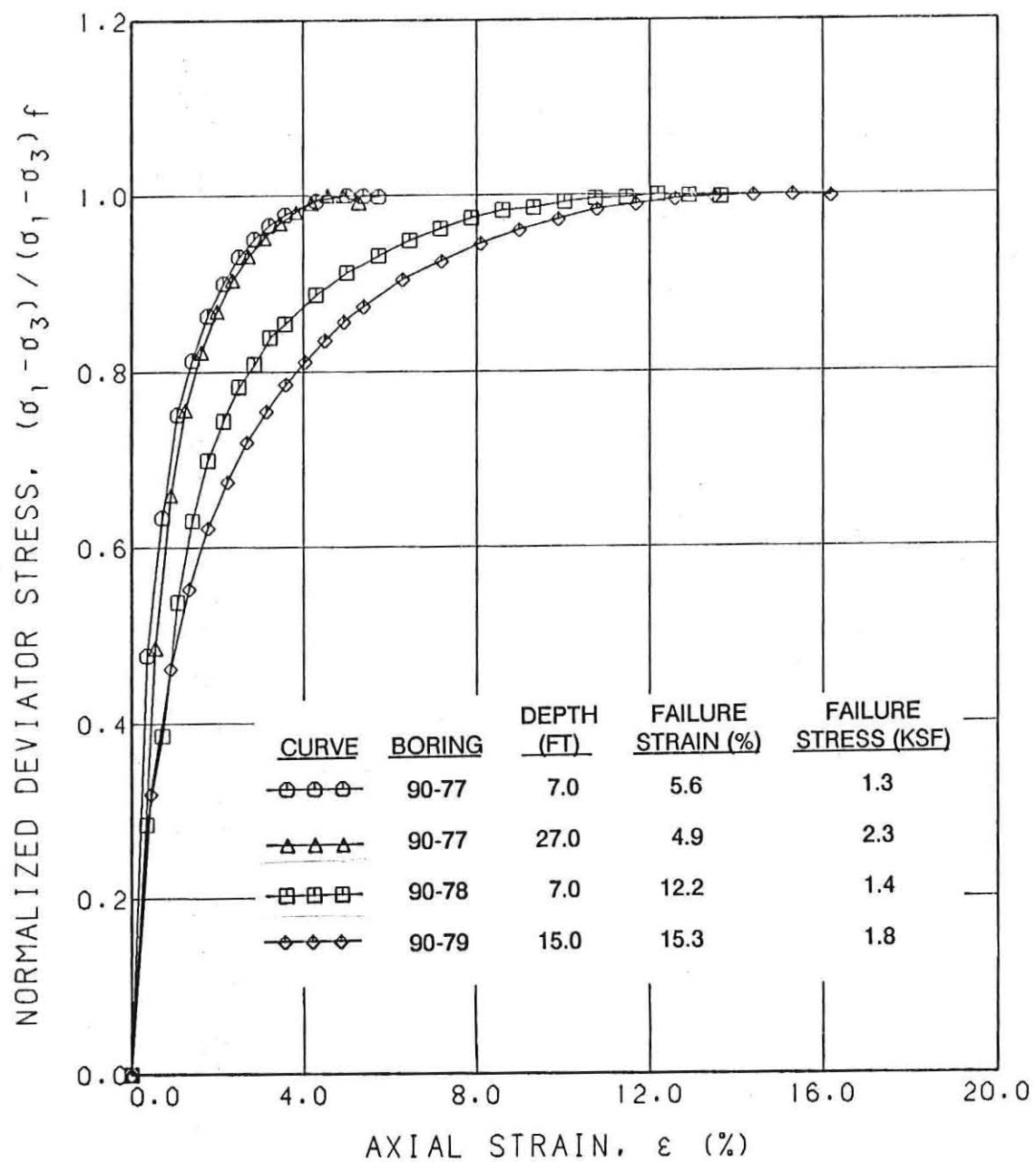
Remarks:

Boring Sealed? w/cuttings
 Dry Auger _____ to _____ ft
 Wet Rotary 2 to 49 ft
 Water First Noticed _____ ft

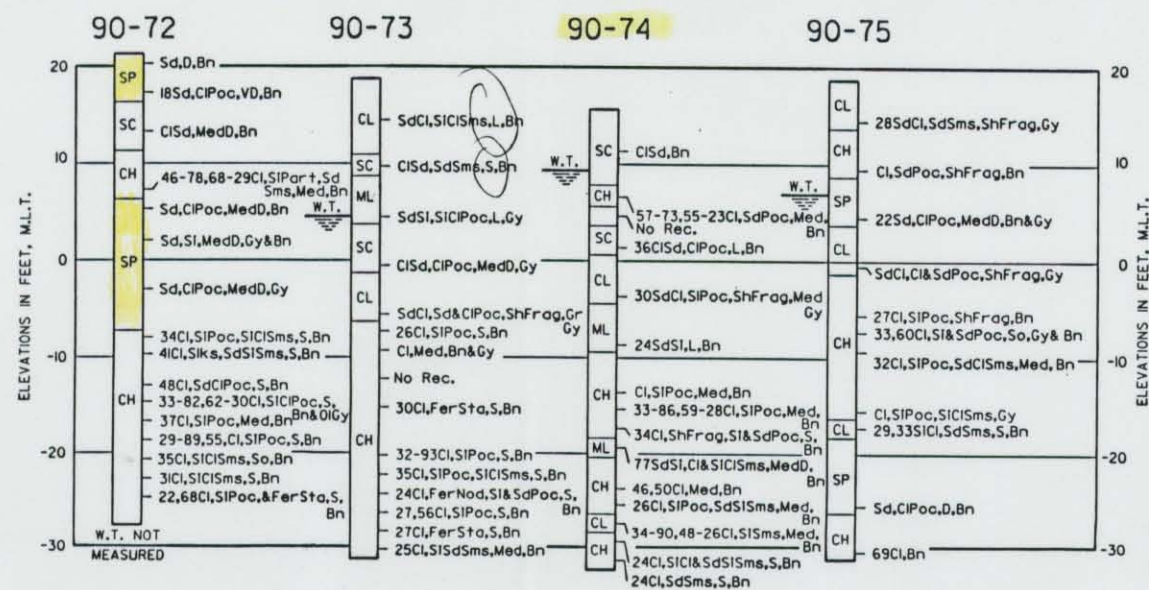
Depth to Water 12.2' Caved at _____ Date 5/14/90 Time _____ ; _____

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

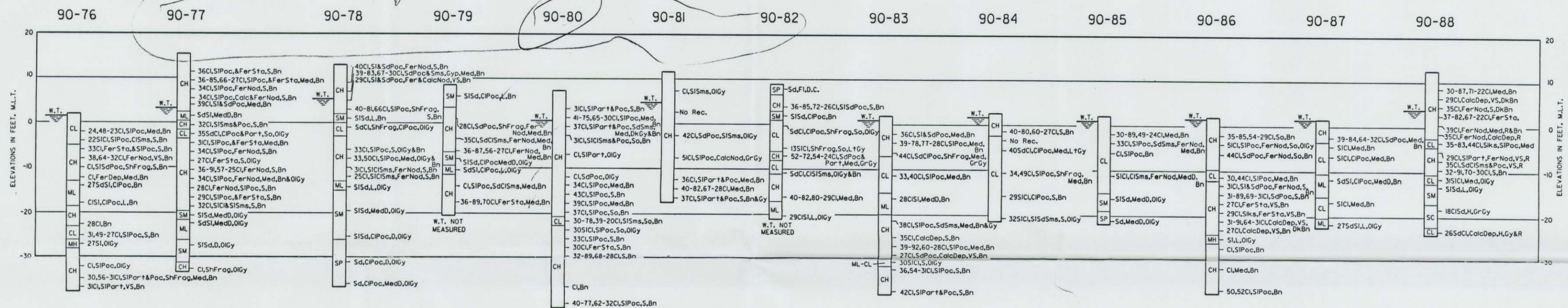
Boring Number	Sample Number	Sample Depth (ft)	Visual Classification	USCS	MC (%)	UDW (pcf)	LL	PL	PI	Gradation, % Passing Sieve No. 4 10 40 200	UNC Su (ksf)	TV Su (ksf)
90-77	1Q	3-5	Stiff brown CLAY w/ silt pkcts & ferrous stns	CH	36							
90-77	2Q	5-7	<i>Med</i> Firm brown CLAY w/ few si pkcts & fe stns	CH	36	85	66	27		100	0.7	0.5
90-77	3Q	7-9	Stiff brown CLAY w/ silt pkcts & ferrous nods	CH	34							
90-77	4Q	9-11	Stiff brown CLAY w/ silt pockets, calc & fe nodules	CH	34		74					
90-77	5Q	11-12.8	Firm brown CLAY w/ silt pkcts, sa pkcts & fe stns	CH	39							
90-77	6J	12.8-13	Brown fine SANDY SILT	ML						100 69 54		
90-77	8Q	15-17	Stiff brown CLAY w/ si sms & pkcts and fe stns	CH	32							
90-77	9Q	17-19	<i>Soft</i> Olive gray SANDY CLAY w/clay pockets and partings	CL	35					100 98 89		0.4
90-77	10Q	19-21	Firm brown CLAY w/ silt pkcts & ferrous stns	CH	31							
90-77	11Q	21-23	Stiff brown CLAY w/ silt pkcts & ferrous nods	CH	34							
90-77	12Q	23-25	Stiff olive gray CLAY w/ ferrous stains	CH	27							
90-77	13Q	25-27	Stiff brown CLAY w/ ferrous nodules	CH	36	91	57	25		100 99 99 99	1.2	
90-77	14Q	27-29	Firm brown and ol gray CLAY w/ silt pkcts & ferrous nods	CH	34							
90-77	15Q	29-31	Stiff brown CLAY w/ ferrous nods & silt pkcts	CH	28							
90-77	16Q	31-33	Stiff brown CLAY w/ ferrous stns & silt pkcts	CH	29							
90-77	17Q	33-35	Stiff brown CLAY w/ si cl & si sms	CH	32		58			100		
90-77	18J	35-37	Olive gray fine SILTY SAND w/free water	SM								
90-77	19J	37-38.5	Olive gray fine SANDY SILT w/free water	ML						100 89		
90-77	20J	42-43.5	Olive gray fine SILTY SAND w/free water	SM								
90-77	21J	47.5-49	Olive gray CLAY w/fe stains and shell frags	CH								



STRESS-STRAIN CURVES
UNCONFINED COMPRESSION TEST



DISPOSAL AREA No. 2



DISPOSAL AREA No. 4

NOTES:

- SOILS HAVE BEEN CLASSIFIED IN ACCORDANCE WITH MILITARY STANDARD 698B "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.
- 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-UOW), (LL-PL), (B.L.S.)
- BORINGS WERE DRILLED USING WET ROTARY DRILLING TECHNIQUES AND UNDISTURBED SAMPLES WERE 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.
- 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 Brownish	Gr Green(ish)	R Reddish	Sta Stains)
Cdc Colorous	Gy Gray(ish)	Rec Recovery	Y Very
Cl Clay(ey)	Gyp Gypsum	S Stiff	W.T. Water Table
D Dense	H Hard	Sh Shale	
D.C. Driller's	L Loose	Sh Shelly	
Classification	Lt Light	SI Silty	
Dep. Deposit(s)	Med Medium	Sks Sickenalides	
Dk Dark	Nod Nodules	So Soft	
Fer Ferrous	Ol Olive		
Fl Fine(s)	Port Partic(s)		
Frag Fragment(s)	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			
DRAWN BY P.B.S.		BRAZOS ISLAND HARBOR, TEXAS BROWNSVILLE CHANNEL DREDGING INSHORE REACH NO. 1 DISPOSAL AREAS Nos. 2 & 4 BORING LOGS	
CHECKED BY J.T.F.		SUBMITTED BY David Campbell DIST. ENGINEER	
APPROVED BY David Campbell DIST. ENGINEER		DATE MAY 1992	
Prepared under the direction of Brink P. Miller, Col., C.E. District Engineer			
SCALE AS SHOWN		SPEC. DATE	
DRAWING NUMBER F-6		SHEET 13 OF 17 FILE NO. RIO 901-204	