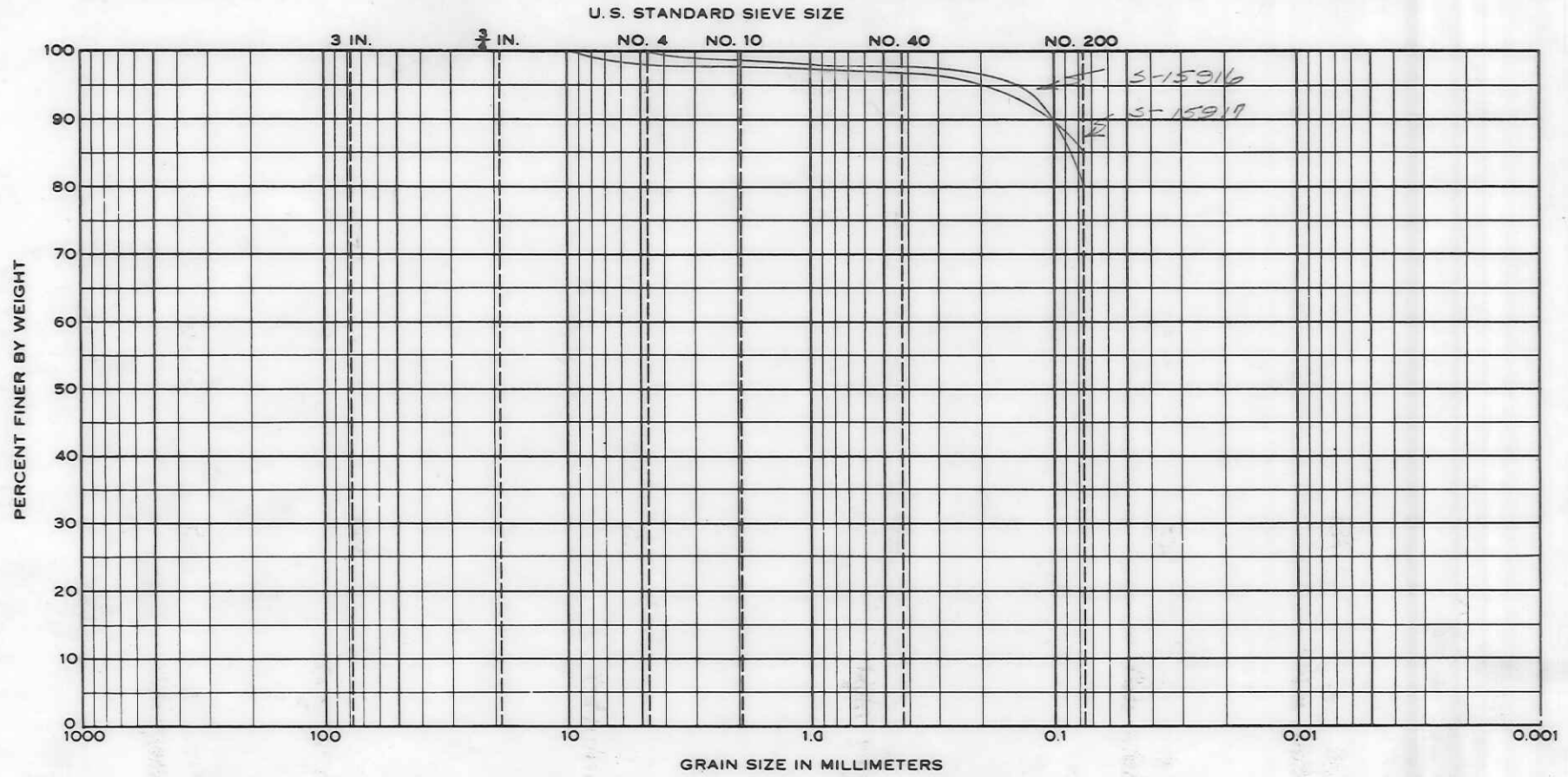


COBBLES	GRAVEL		SAND			SILT OR CLAY
	Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Elev or Depth	Classification	Nat WC	LL	PL	PI	LS
S-15916	2.0-4.0	CLAY (CH)	31.6	54	17	37	17
S-15917	8.0-10.0	CLAY (CH)	33.8	62	16	46	21

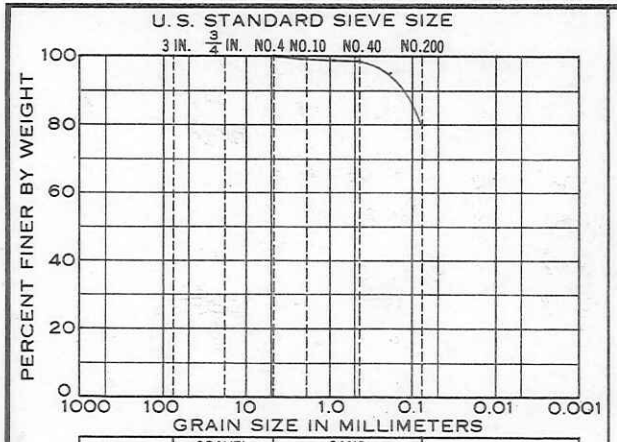
GRADATION CURVES

Project Texas City
Foundation Material
Area
Boring No. GST-1
Date MAY 63

Plate No. 1

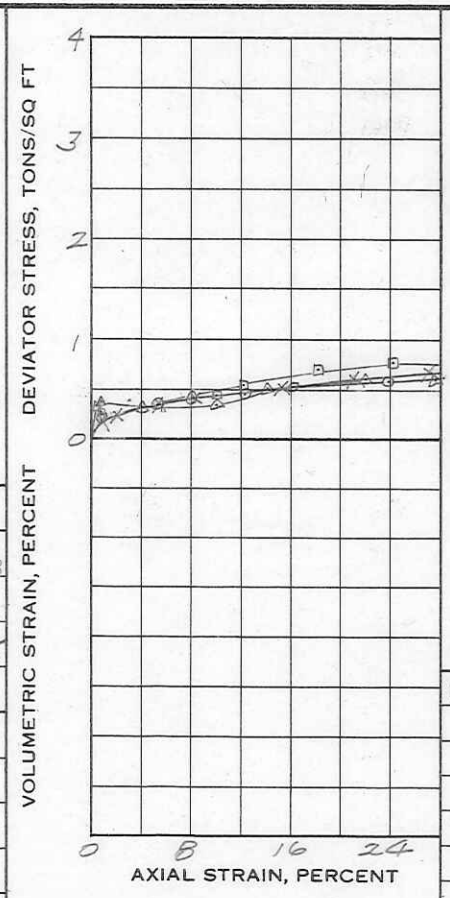
SWDGL Report No. 83132

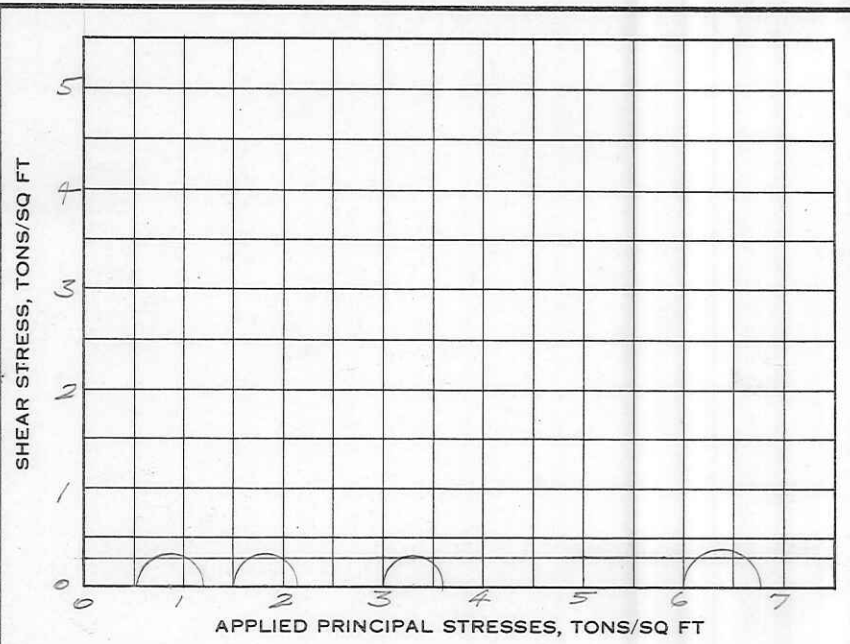
EM FORM 1 DEC 51 2087 (Translucent) (EM 1110-2-1803)



COBBLES	GRAVEL C	GRAVEL F	SAND C	SAND M	SAND F	SILT OR CLAY

	Test No.	(x) 1	(o) 2	(Δ) 3	(□) 4
INITIAL	Water Content, W_o %	30.6	31.6	32.6	30.8
	Dry Density Lbs/Cu Ft	91	91	88	91
	Void Ratio, e_o	.840	.852	.908	.855
	Saturation, S_o %	98	100	96	97
BEFORE TEST	W.C. after Saturation, W_s %				
	Saturation, S %				
	Consol Pressure T/Sq Ft				
	W.C. after Consol, W_c %				
	Void Ratio after Consol, e_c				
AT FAILURE	Maj Prin Stress, σ_1 T/Sq Ft	1.18	2.11	3.60	6.75
	Min Prin Stress, σ_{III} T/Sq Ft	0.5	1.5	3.0	6.0
	Water Content, W_f %				
	Void Ratio, e_f				
Specimen Diameter Inches		1.4	1.4	1.4	1.4
Initial Height Inr		3.0	3.0	3.0	3.0
Test Time to Failure Min		30	28	27	24





Remarks:

Type of Test – Q
Constant STRAIN 0.03 in/min
Control
UU Consolidated, UU Drained

Type of Specimen Undisturbed

Ø = 0.4 °	Tan Ø = .007	c = 0.3 T/Sq Ft

Classification CLAY (CH)

LL 54	G 2.69
PL 17	D_{10}

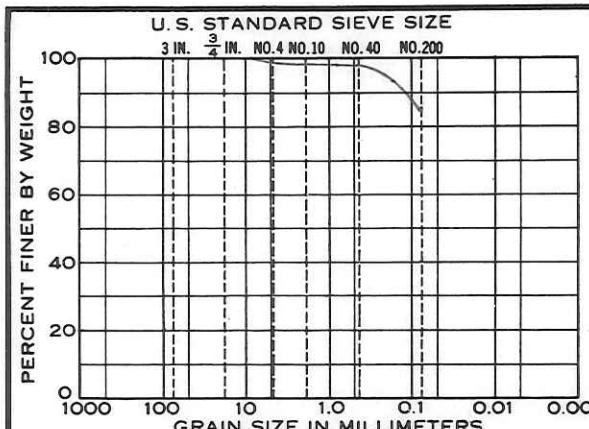
Project Texas City
Foundation Material
Area
Boring No. GST-1 | Sample No. S-15916
~~Elev or~~ Depth 2.0-4.0 | Date MAY 63

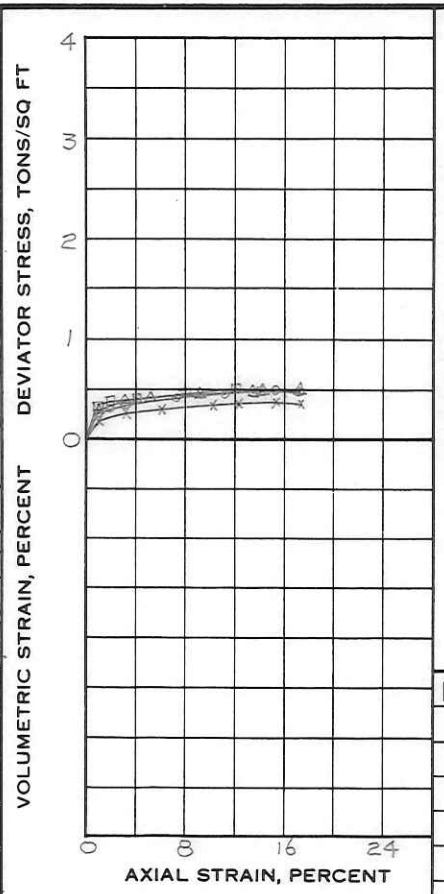
TRIAXIAL COMPRESSION TEST REPORT

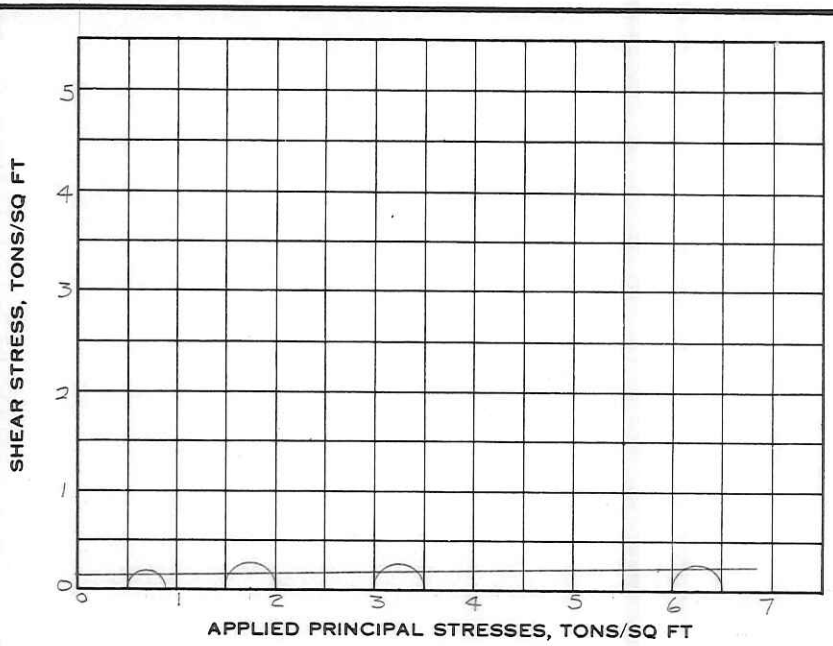
Plate No. 9

CWDGL Report No. 8316

ENG FORM 1 DEC 51 2089
GPO 83-22462







	Test No.	(X) 1	(O) 2	(Δ) 3	(□) 4
INITIAL	Water Content, W_0 %	33.8	32.7	34.5	34.7
	Dry Density Lbs/Cu Ft	87	89	85	86
	Void Ratio, e_0	.930	.900	.973	.964
	Saturation, S_0 %	98	98	95	97
BEFORE TEST	W.C. after Saturation, W_s %				
	Saturation, S %				
	Consol Pressure T/Sq Ft				
	W.C. after Consol, W_c %				
	Void Ratio after Consol e_c				
AT FAILURE	Maj Prin Stress, σ_1 T/Sq Ft	0.87	2.00	3.49	6.50
	Min Prin Stress, σ_{III} T/Sq Ft	0.5	1.5	3.0	6.0
	Water Content, W_F %				
	Void Ratio, e_F				
Specimen Diameter Inches		1.4	1.4	1.4	1.4
Initial Height Inc		3.0	3.0	3.0	3.0
Test Time to Failure Min		15	15	14	12

Type of Test – Q
Constant Strain, 0.03 in/min.
Control
U_n Consolidated, U_n Drained

Type of Specimen Undisturbed

Ø = 0.7 °	Tan Ø = .012	c = 0.2 T/Sq Ft

Classification CLAY (CH)

LL 62	G 2.69
PL 16	D_{10}

Remarks:

Project Texas City
Foundation Material
Area
Boring No. 6ST-1 Sample No. S-15917
Elev or Depth 8.0 – 10.0 Date MAY 63

TRIAXIAL COMPRESSION TEST REPORT

SWDGL Report No. 8312

Plate No. 6

ENG FORM 1 DEC 51 2089

(EM 1110-2-1803) (Translucent)

Texas City
Hydraulic Fill Investigation
(Point Comfort)

LOG OF BORING NO. 6 ST-1

TYPE: 6 IN Shelby Tube LOCATION: EL. +5.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL (SURF EL.)	BLOWS PER FT.	UNIT DRY WT. LBS/CU.FT.	POCKET PENETROMETER TONS / SQ. FT. (0.5, 1.0, 1.5, 2.0, 2.5, 3.0) / PLASTIC LIMIT — WATER CONTENT, % — LIQUID LIMIT (10, 20, 30, 40, 50, 60)	ELEVATION FT.
	CL		Gray Sandy Clay 0-18-82		90.8	30 Medium to Stiff	
5					96.7		
	CL		Gray to Brown Gray Sandy Clay 0-18-82		89.6		
10					88.4		
					91.3		
	CL		Green *Gravelly Sandy Clay *Cal. Conc. 0-19-70				
15			Brown Gray Sandy Clayey Silt LS=3.0 0-37-[illegible]		103.3	24 Stiff to v/stiff	
					98.5		
20			Driller's classification: Same as Below.				
	SM		Brown Silty Sand LS=0.0 0-84-16		106.8	21	
25					102.8		
					103.9		
	CL		Gray Sandy Clay 0-75-25		115.8	18 v/stiff to Hard	4.0 3.75
30					115.8		
	SM		Gray Silty Sand 0-75-25		105.4	21	
35			Brown Silty Sand LS=0 0-84-16		105.7		
	GC		Gray Clayey Sandy *Gravel *Calc. Conc. LS=8.0 37-35-28		124.5	17	4.5+
40	SP		Gray Gravelly Sand *Calc. Conc. LS=0 29-68-3			19	
			Driller's classification: Same as Above.				
45	MH		Brown Gray Silt 0-4-96		85.5	38 v/stiff	LL=97
			*Bentonitic reaction to benzidine test				
50							

COMPLETION DEPTH 46'
DATE 23 Jan. 63

DEPTH TO WATER IN BORING

DATE 19 Feb. 63

SWN 266(C)
22 AUG 62

Fill in place for tests when

HOLE NO. 6ST-1

DEPARTMENT OF THE ARMY
DIVISION Southwestern
INSTALLATION Galv Dist, Eng Div

DRILLING LOG

1. PROJECT: Texas City - Hydraulic Fill
SHEET OF
2. LOCATION (Coordinates or Station): (Point Comfort, Texas)
3. DRILLING AGENCY: U. S. Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file No.): 6ST-1
5. NAME OF DRILLER: Smith
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED; DEGREES WITH VERTICAL
7. THICKNESS OF OVERBURDEN
8. DEPTH DRILLED INTO ROCK
9. TOTAL DEPTH OF HOLE: 46.0
10. SIZE AND TYPE OF BIT: Shelby Tube - 6"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 3 Jars; UNDISTURBED 18 Cont
14. TOTAL NO. CORE BOXES
15. ELEV. GROUND WATER
16. DATE HOLE: STARTED 21 Jan; COMPLETED 23 Jan 1963
17. ELEV. TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING (%)
19. SIGNATURE OF INSPECTOR

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (drilling time, water loss, depth of weathering, etc., if significant)	
0.0	2.0		Gray sandy clay cal nod fill med			Cont. 1	0.75
2.0	4.0		Brown gray sandy clay cal nod, fill, stiff			Cont. 2	1.5
4.0	6.0		Gray sandy clay cal nod fill, v/stiff			Cont. 3	2.0
6.0	8.0		Same as above, fill, v/soft			Cont. 4	0.0
8.0	10.0		Same as above, fill, v/soft			Cont. 5	0.25
10.0	12.0		Brown and gray sandy clay cal nod, med			Cont. 6	0.5
12.0	14.0		Green clayey sand cal nod v/stiff			Cont. 7	3.5
14.0	16.0		Brown gray clayey sand, cal nod, v/stiff			Cont. 8	2.5
16.0	18.0		Brown Gray clayey sand, cal nod, stiff			Cont. 9	1.5
18.0	20.0		Same as below				
20.0	22.0		Brown med sand cal nod shell			Jar 1	
22.0	24.0		Brown fine sand, v/soft			Cont. 10	
24.0	26.0		Same as above, v/soft			Cont. 11	
26.0	28.0		Gray fine sand clay balls cal nod, v/soft			Cont. 12	0.0
28.0	30.0		Gray sandy clay cal nod hard			Cont. 13	4.5
30.0	32.0		Gray sandy clay v/sandy cal nod, v/stiff			Cont. 14	3.75
32.0	34.0		Fine gray sand, v/soft			Cont. 15	0.0
34.0	36.0		Same as above, v/soft			Cont. 16	0.0
36.0	38.0		Gray sand, sandstone of cal nod, v/soft			Jar 2	
38.0	40.0		Gray clayey sand sandstone hard			Cont. 17	4.5
40.0	42.0		Fine gray sand sandstone cal nod, soft			Jar 3	
42.0	44.5		Same as above, washed away				
44.5	46.0		Brown gray fat clay cal v/stiff			Cont. 18	3.5
			Bottomed in above No water at	10.0			

WD FORM 263b-B
JAN 54

COMPUTATION SHEET

Subject HYDRAULIC FILL INVESTIGATION - MATAGORDA CHANNEL FILL

Project ..... Computed by ..... Date Cl

BORING GST-1	DEPTH	MATERIAL DESCRIPTION	AVERAGE UDW	AVERAGE MC	AVERAGE PENTROMETER READING, TSF	AVERAGE PENTROMETER SHEAR STRE	AVERAGE VLTH, #/ft²	AVERAGE VANE SHEAR STRENGTH, #/ft²	SIDE SLOPE AT BORING LOCATION CHANNEL SIDE	BACK SIDE
	0-9	GRAY SANDY CLAY (CL)	91	30	0.75	750		657	1 ON 12	1 ON 11
	9-12	GRAY SANDY CLAY (CL)	89	33	0.40	400		1101		
	12-14	GREEN GRAVELLY SANDY CLAY (CL)	—	19	2.00	2000		1230		
	14-18	BROWN SANDY CLAYEY SILT (CL-ML)	101	24	1.75	1750		1554		
BORING GST-2	0-2	GRAY TO RED SANDY CLAY (CL)	90	30	0.75	750		1166	1 ON 15	1 ON 18
	2-14	RED CLAY (CH)	85	36	0.80	800		799		
BORING GST-3	0-4	RED CLAY (CH)	87	33	0.88	880		680	1 ON 15	1 ON 10
	4-8	RED CLAY (CL)	91	31	0.50	500		777		
	8-12	GRAY CLAY (CH)	86	35	1.00	1000		906		
	12-14	GRAY CLAY (CH)	93	30	2.00	2000		1230		
BORING GST-4	0-6	GRAY SANDY CLAY (CH)	90	32	0.42	420		691	1 ON 23	—
	6-14	GRAY SANDY CLAY (CL)	93	31	0.81	810		825		
BORING GST-5	0-14	GRAY SANDY CLAY (CH)	—	36	—	—		1015	1 ON 13	—
	14-22	GRAY SANDY CLAY (CH)	—	36	—	—		1745		
BORING 4A-6 (FIELD LOG)	0-14	CLAY	—	—	—	—		901	—	—
	14-19	CLAY	—	—	—	—		1403		

TEXAS CITY HURRICANE FLOOD PROTECTION
HYDRAULIC FILL STR. INVESTIGATION
HYDRAULIC DREDGED FILL NEAR POINT COMFORT
MATAGORDA BAY

2 April 1963
VEB

Boring No.	Applic. Borings	Time Fill In Place When Tested	Top Elev.	Nat. Gr. Elev.	Natural Materials	Field U. C. Str.	Vane Shear Strength
6ST-1	43 & 44	About 2 weeks	+5.7	-4.0	Gray to red very stiff clay (CH) W = 27 γ_d = 98 γ_m = 125	0.75 1.50 2.0 0.0 0.25 Ave.= 0.90 T/□'	0.0 to 9.0' 475 543 777 712 777 Ave. 657 #/□' 11.0' on 1200 to 1500#/□'
6ST-2	41 & 44	About 2 Weeks	+5.5	-5.0	Gray to red very stiff to hard clay (CH) W = 27 γ_d = 98 γ_m = 125	0.75 0.50 0.50 0.75 0.75 1.00 0.71 T/□'	0.0-13.0 0.0-13.0' 1166 907 583 777 971 1036 518 Ave. 851#/□'
6ST-3	40 & 41	About 2 weeks	+5.6	-5.1	Rust to gray clay, stiff (CH) W = 27 γ_d = 98 γ_m = 125	0.75 1.25 0.50 0.0 0.50 0.60 T/□'	0.0-9.0 11.0-13.0 648 1230#/□' 712 712 842 1036 777 Ave. 788#/□'
6ST-4	39 38 & 37	About 2 weeks	+5.5	-5.0	Gray clay stiff to hard (CH) W = 26 γ_d = 99 γ_m = 125	0.75 0.25 0.25 1.00 1.50 0.75 T/□'	712 11.0-13.0 712 971#/□' 648 971 648 712 971 Ave. 768#/□'
6ST-5 6ST-5A	33 34 & 35	About 2 weeks	+9.0	-5.2	Gray clay stiff to hard (CH) W = 26 γ_d = 99 γ_m = 125	None	#5 #5A 0.0-13.0 471 518 15'-21' 548 543 1745#/□' 1036 712 1554 1360 1554 971 907 1230 1036 971 1015#/□' 901#/□' Ave= 958#/□' 1405#/□'

Ave. for 1, 2, 3 and 4 = 766#/□'
Bay strength ϕ = 0.0° C = .35 T/□ (DM ϕ = 0.0 C = 0.25)