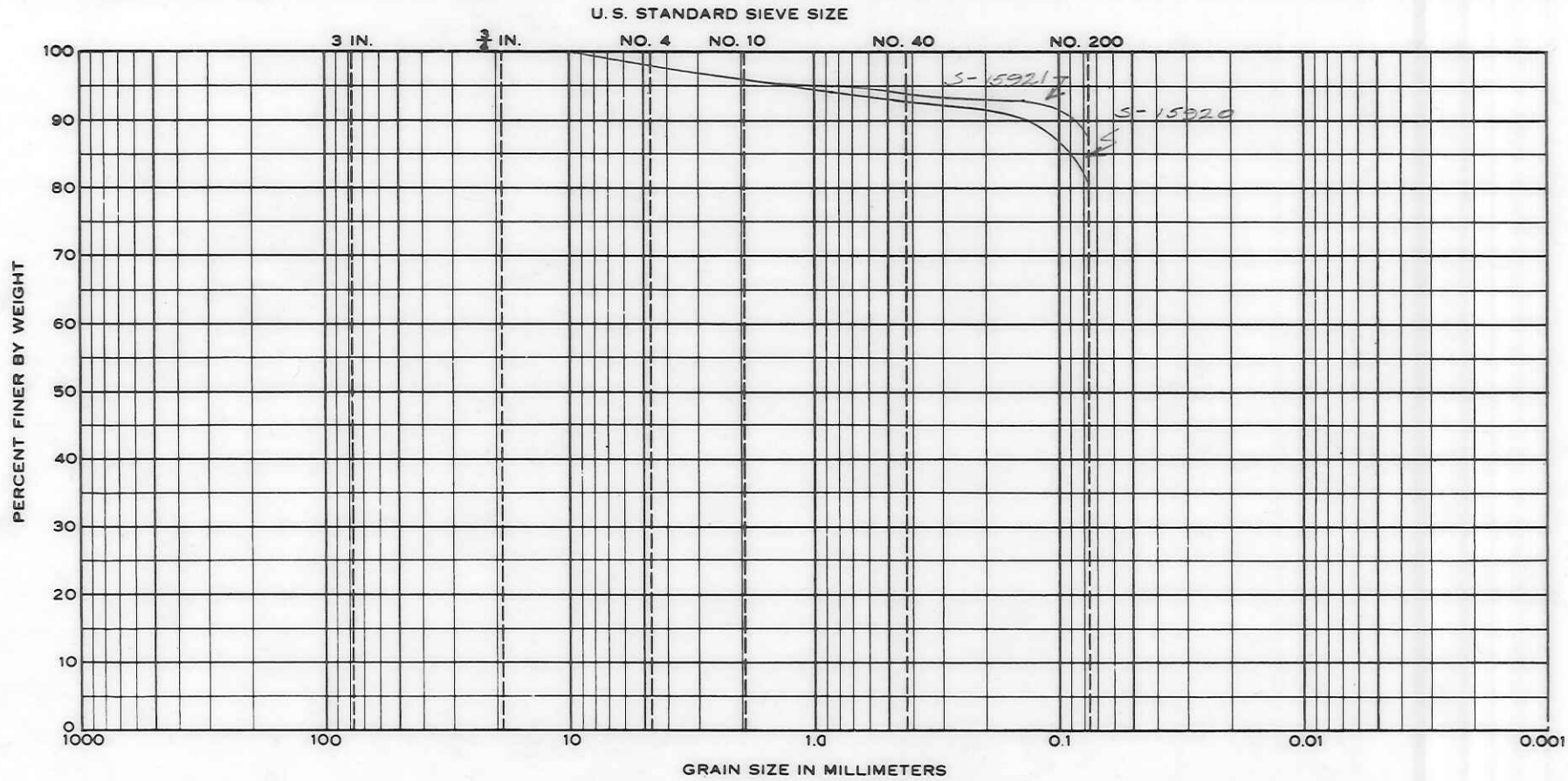


COBBLES	GRAVEL		SAND			SILT OR CLAY
	Coarse	Fine	Coarse	Medium	Fine	

Sample No.	Elev or Depth	Classification	NatWC	LL	PL	PI	LS
S-15920	2.0-4.0	CLAY (CH)	31.5	54	17	37	20
S-15921	8.0-10.0	CLAY (CH)	32.2	55	16	39	19

Project Texas City

Foundation Material

Area

Boring No. GST-4

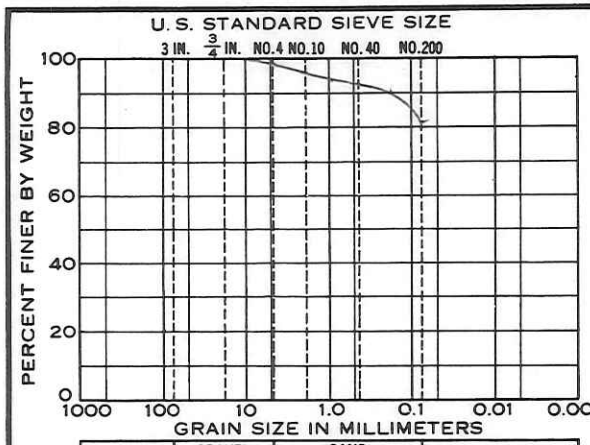
Date MAY 63

GRADATION CURVES

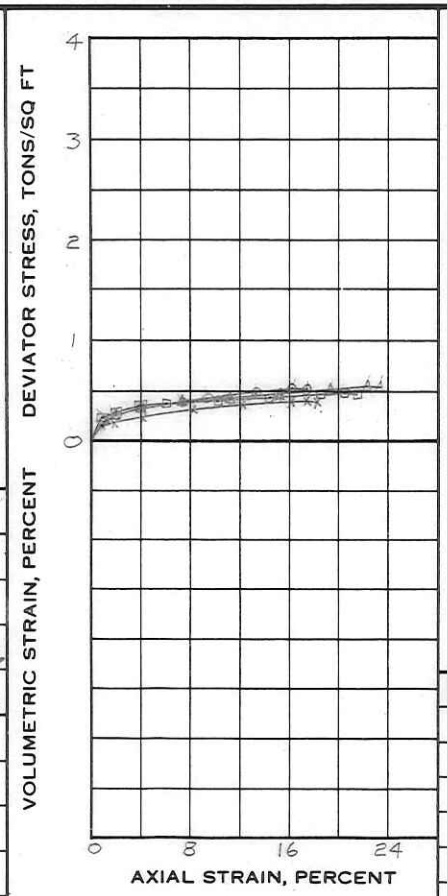
ENG FORM 1 DEC 51 2087 (Translucent) (EM 1110-2-1803)

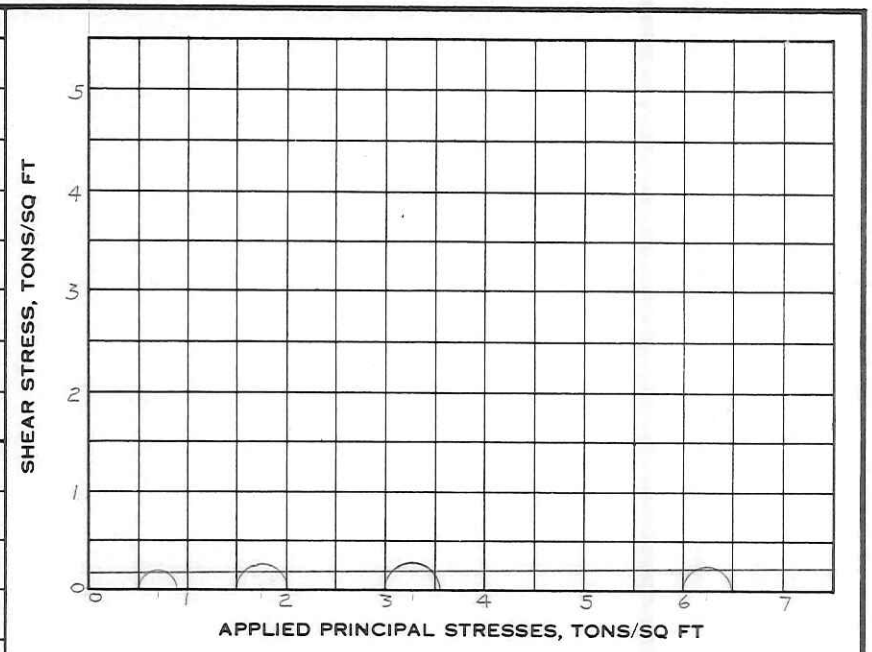
Plate No. 4

SWDGL Report No. 8312



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 %	32.1	29.7	28.6	32.1
	Dry Density Lbs/Cu Ft	89	92	94	89
	Void Ratio, e_o	.897	.829	.778	.886
	Saturation, S_o %	96	96	99	98
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	0.90	2.02	3.55	6.49
	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	2.9
Test Time to Failure Min		17	16	22	21

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

Type of Specimen Undisturbed

ϕ = 0.4 °	Tan ϕ = .007	c = 0.2 T/Sq Ft

Classification CLAY (CH)

LL 54	G 2.69
PL 17	D_{10}

Remarks:

Project Texas City
Foundation Material
Area
Boring No. 6ST-4 Sample No. S-15920
Elev or Depth 2.0 – 4.0 Date MAY 63

TRIAXIAL COMPRESSION TEST REPORT

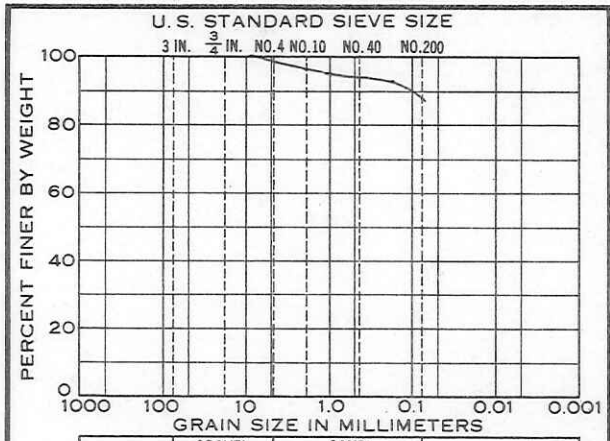
Plate No. 9

EDS FORM 1 DEC 91 2089

(EM 1110-2-1803)

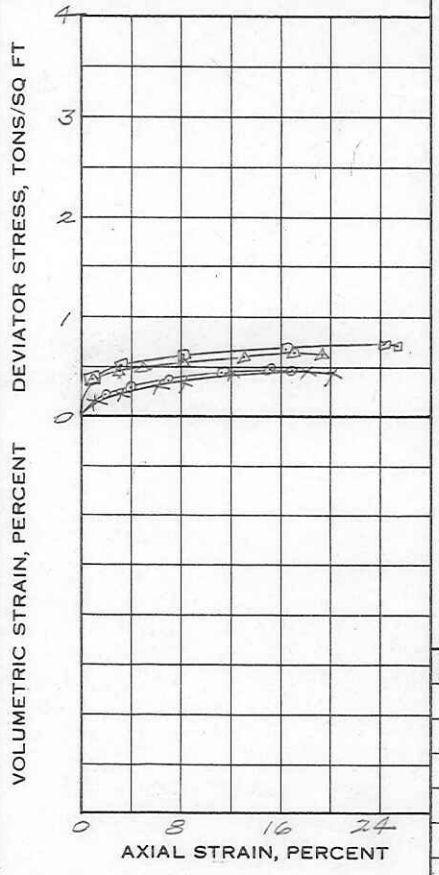
(Translucent)

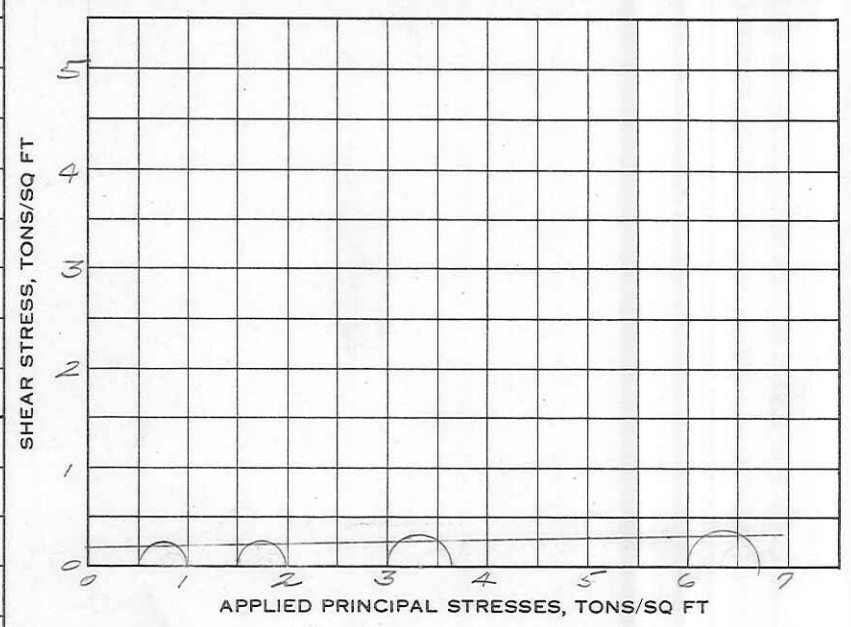
SWDGL Report No. 8312



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

	Test No.	(X) 1	(○) 2	(△) 3	(□) 4
INITIAL	Water Content, W_o %	31.6	30.1	31.2	30.2
	Dry Density Lbs/Cu Ft	91	92	91	92
	Void Ratio, e_o	.836	.819	.850	.836
	Saturation, S_o %	100	99	99	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	0.96	1.97	3.65	6.73
	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	2.9
Test Time to Failure Min		18	15	17	24





Remarks:

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

Type of Specimen **Undisturbed**

Ø = 1.3 °	Tan Ø = .023	c = 0.2 T/Sq Ft

Classification CLAY (CH)

LL 55	G 2.69
PL 16	D_{10}

Project Texas City
Foundation Material
Area
Boring No. GST-4 Sample No. S-15921
~~Elev~~ or Depth 80-10.0 Date MAY 68

TRIAXIAL COMPRESSION TEST REPORT

Plate No. 10

SWDGL Report No. 83/2

ENG FORM 1 DEC 51 2089
GPO 83-22462

[illegible]
TEXAS CITY HYDRAULIC FILL INVESTIGATION

LOG OF BORING NO. 6 ST-3

TYPE: 6 IN SHELBY TUBE

LOCATION: EL +5.6,

SURF EL:

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	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.
	CH		0-10-90 Red to Gray Clay		85.8		
					88.1	33 MEDIUM	
5	CL		2-10-88 Red to Gray Clay		89.5		
					92.0	31 MEDIUM	
10			0-10-90 Gray to Tan Clay		85.3		
					86.8		
	CH				86.0	32 MEDIUM TO STIFF	
15			0-9-91 Tan Gray Clay		92.6		
20							
25							
30							
35							
40							
45							
50							

COMPLETION DEPTH 18.0 ft
DATE 31 Jan 1963

DEPTH TO WATER IN BORING

DATE [illegible]

SWN 266(C)
22 AUG 62

HOLE NO. 6ST-3

DEPARTMENT OF THE ARMY DIVISION Southwestern INSTALLATION Galv Dist, Eng Div **DRILLING LOG**	1. PROJECT Point Comfort, Matagorda Sh Ch — SHEET OF 2. LOCATION (Coordinates or Station) 3. DRILLING AGENCY U. S. Army Corps of Engineers
4. HOLE NO. (As shown on drawing title and file No.) 6ST-3	5. NAME OF DRILLER Smith

6. DIRECTION OF HOLE			7. THICKNESS OF OVER-BURDEN	8. DEPTH DRILLED INTO ROCK	9. TOTAL DEPTH OF HOLE
☐ VERTICAL	☐ INCLINED	DEGREES WITH VERTICAL			18.0

10. SIZE AND TYPE OF BIT	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	12. MANUFACTURER'S DESIGNATION OF DRILL
Shelby Tube - 6"		

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		14. TOTAL NO. CORE BOXES	15. ELEV. GROUND WATER	16. DATE HOLE	
DISTURBED 1 Jar	UNDISTURBED 8 Cont			STARTED 30 Jan	COMPLETED 31 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		Red gray sandy clay shell fill med			Cont. 1	0.75
2.0	4.0		Gray sandy clay shell, fill stiff			Cont. 2	1.25
4.0	6.0		Red gray sandy clay shell fill soft			Cont. 3	0.50
6.0	8.0		Red silty clay shell cal nod fill, v/soft			Cont. 4	0.0 } TQ
8.0	10.0		Gray sandy clay cal nod or gravel, fill, soft			Cont. 5	0.50
10.0	12.0		Red gray sandy clay fill stiff			Cont. 6	1.5
12.0	14.0		Gray red sandy clay cal nod shell fill stiff			Cont. 7	1.0
14.0	16.0		Tan gray sandy clay v/stiff			Cont. 8	2.75
16.0	18.0		Same as above, v/stiff			Jar 1	2.5
			Bottomed in above				

Fill in Bore 6 weeks when tested

ENG FORM 1836 1 MAR 61 (EM 1110-1-1801) TRANSLUCENT PREVIOUS EDITION MAY BE USED UNTIL EXHAUSTED. PROJECT Pt. Comfort HOLE NO. 6ST-3

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)