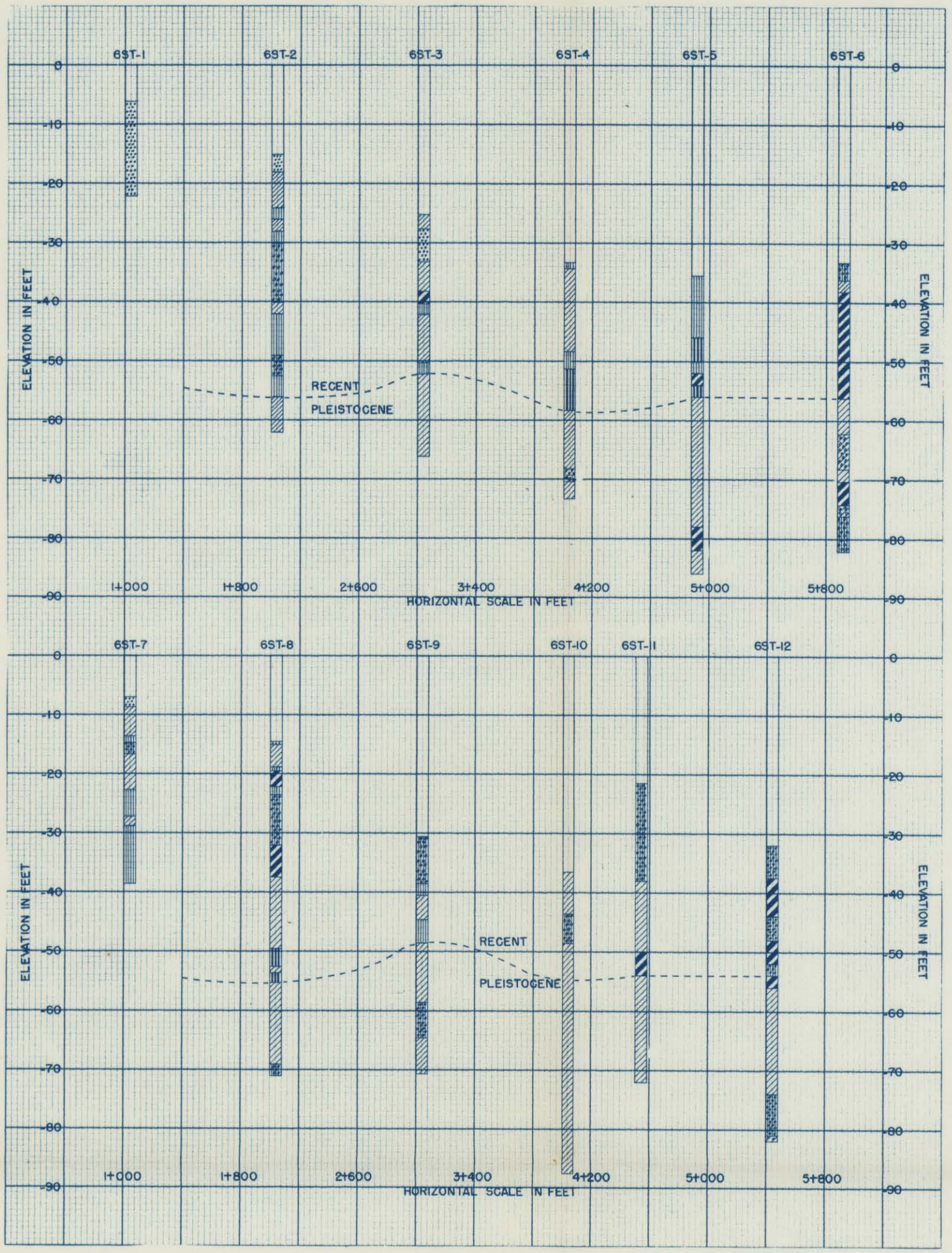


LEGEND

- WATER
- POORLY-GRADED SANDS
- SILTY SANDS
- CLAYEY SANDS
- INORGANIC SILTS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
- INORGANIC SILTS OR ELASTIC SILTS
- LEAN CLAYS, SILTY CLAYS, & SANDY CLAYS
- FAT CLAYS OF HIGH PLASTICITY

RECENT

RECENT-PLEISTOCENE CONTACT, FAIR CORRELATIONS

PLEISTOCENE

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

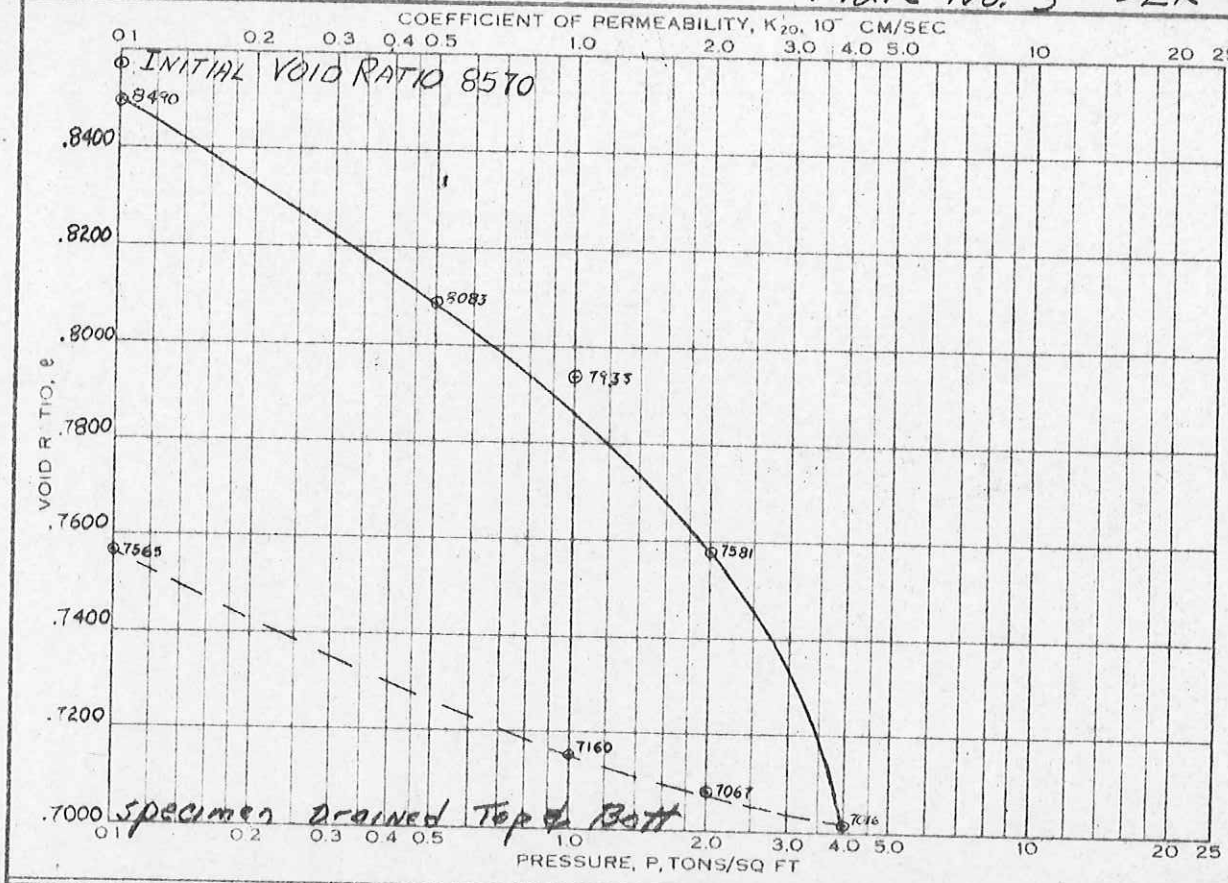
DRAWN BY: M.D.S.	PORT ISABEL, TEXAS
GEOLOGY BY: M.D.S.	BRAZOS ISLAND HARBOR JETTIES
CHECKED BY: R.E.M.	GEOLOGIC CROSS SECTIONS
SUBMITTED BY: Ralph E. Mercier CHIEF, GEOLOGY SUB-SECTION	
CHIEF, FDN. & MTLS. BRANCH	CHIEF ENGINEERING DIVISION
	DATE 3 JAN. 1963
	SCALE: AS SHOWN
	SPEC. DATE
	DRAWING NUMBER
	PLATE NO. 2
	FILE NO.

BRAZOS ISLAND HARBOR, TEXAS
SUMMARY OF UNCONFINED COMPRESSION DATA

TABLE NO. 1

DISTRICT SERIAL NO	HOLE NO	DEPTH FT.	MECHANICAL ANALYSIS Gr	Sa	Fines	LL	bar LS	NATURAL WATER CONTENT, %	U.D.W. p.c.f.	% STRAIN @ MAX. STRESS	MAX. STRESS LBS./sq. ft.	POCKET PENET.	CLASSIFICATION
62-6222	6ST-4	40.0-42.0	0	1	99	39.6	15.0	43.6	76.3	11.96	1496 748	.25	G,Cl(CL), So
62-6229	6ST-4	56.0-58.0	0	1	99	56.3	13.0	33.6	85.8	10.50	2349 1175	.50	G,Si(MH), med
62-6235	6ST-4	68.0-70.0	0	21	79	40.9	12.0	22.8	102.5	4.20	3474 1737	3.25	G,SaCl(CL), v/st
62-6246	6ST-5	54.0-56.0	0	1	99	52.8	14.0	45.9	75.0	14.75	2236 1118	1.5	G,Cl(CH), St
62-6253	6ST-5	68.0-70.0	0	12	88	47.5	14.0	27.7	96.9	3.50	2276 1138	2.0	G,Cl(CL), v/st.
62-6258	6ST-5	78.0-80.0	0	5	95	29.5	7.5	22.6	100.6	3.50	5520 2760	3.50	Ru,Cl(CL), v/st
62-6264	6ST-6	40.0-42.0	0	0	100	51.0	19.0	51.2	72.7	10.50	1243 622	0.0	G,Cl(CH), v/so
62-6272	6ST-6	58.0-60.0	0	23	77	36.8	12.0	21.3	105.0	2.80	6103 3052	3.50	G,SaCl(CL), v/st
62-6253	6ST-9	44.0-46.0	0	0	100	33.0	7.0	33.3	91.3	14.75	930 465	0.0	G,Cl(CL), v/so
62-6239	6ST-9	56.0-58.0	0	42	58	25.3	5.0	22.5	104.3	8.40	* 1432 716	.25	Lt G,SaCl(CH), So
62-6353	6ST-10	54.0-56.0	0	25	75	38.4	9.0	32.3	84.9	11.20	* 2173 1087	.75	G,SaCl(CL), med
62-6363	6ST-10	74.0-76.0	0	10	90	36.2	9.0	21.5	105.2	2.10	1343 672	3.0	G,Cl(CL), v/st
62-6380	6ST-11	52.0-54.0	0	4	96	53.0	15.0	49.8	73.7	9.1	2707 1354	.75	D,Cl(CH), med
62-6385	6ST-11	62.0-64.0	0	24	76	41.3	12.0	20.1	108.0	4.2	3049 1525	3.0	G,SaCl(CL), v/st
62-6398	6ST-12	50.0-52.0	0	0	100	66.2	18.0	37.9	83.4	2.8	1206 603	1.25	G,Cl(CH), st.
62-6404	6ST-12	62.0-64.0	0	36	64	35.3	10.0	22.3	103.9	5.6	4341 2171	1.75	G,SaCl(CL), st.

Plate No. 3 DLR 946



TEST DATA

Type of Specimen: undisturbed

Overburden Pressure, P_0 Tons/Sq Ft

Preconsol Pressure, P_c Tons/Sq Ft

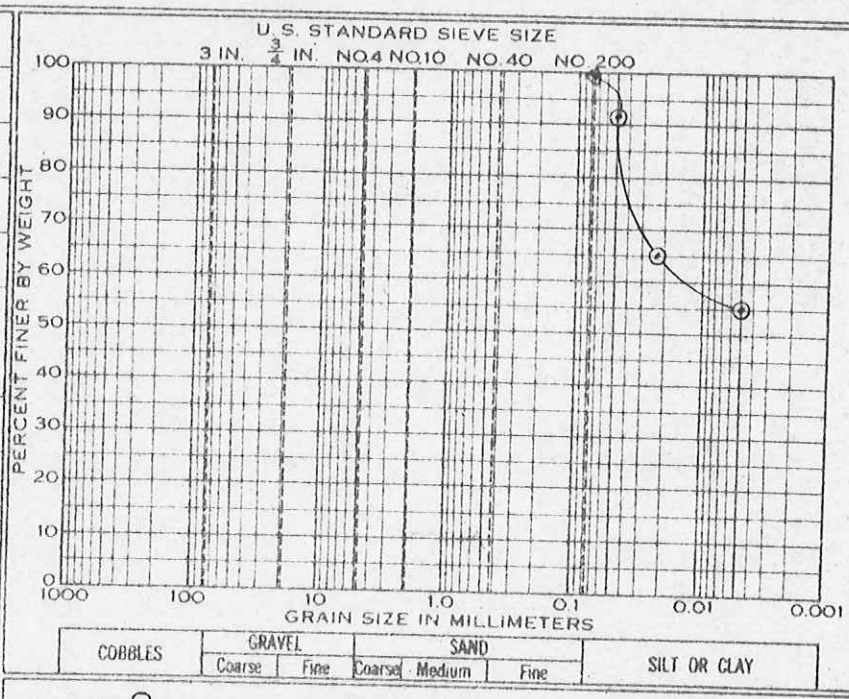
Compression Index, C_c

Permeability at Initial e

K_{20} _____ x 10^{-} Cm/Sec

_____ Ft/Min

Initial Ht.	1.158 in.	Diam.	4.0 in.
Initial Saturation, S_0	%		100
Final Saturation, S_f	%		100
Initial Dry Density	Lbs/Cu Ft		90.5
Initial Water Content, W_0	%		35.3



Remarks:

Project BRAZOS ISLAND HARBOR

Area

Boring No. 6ST-5

Sample No. 62-6242

Elev or Depth 46.0-48.0

Date DEC. 1962

Classification Gray Clay (CL)

LL 44.1

G 2.69

PL 22.5

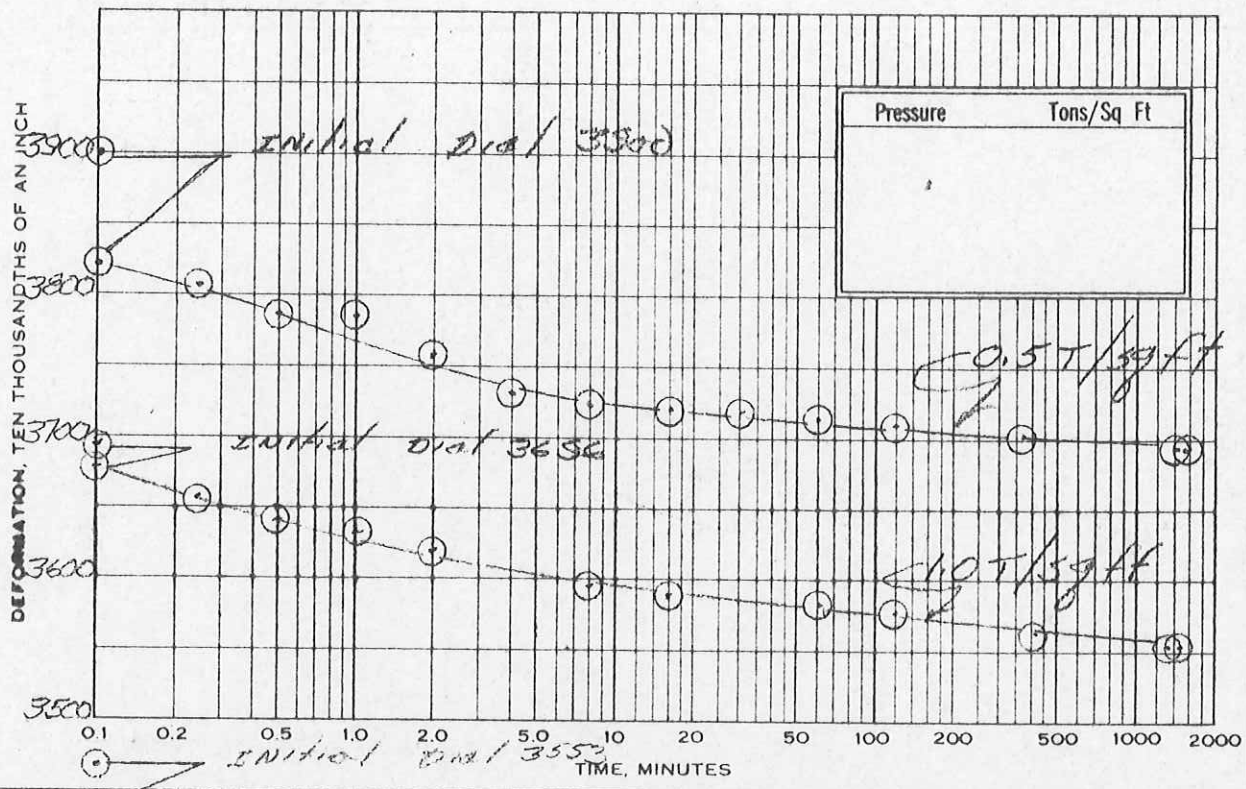
D_{10}

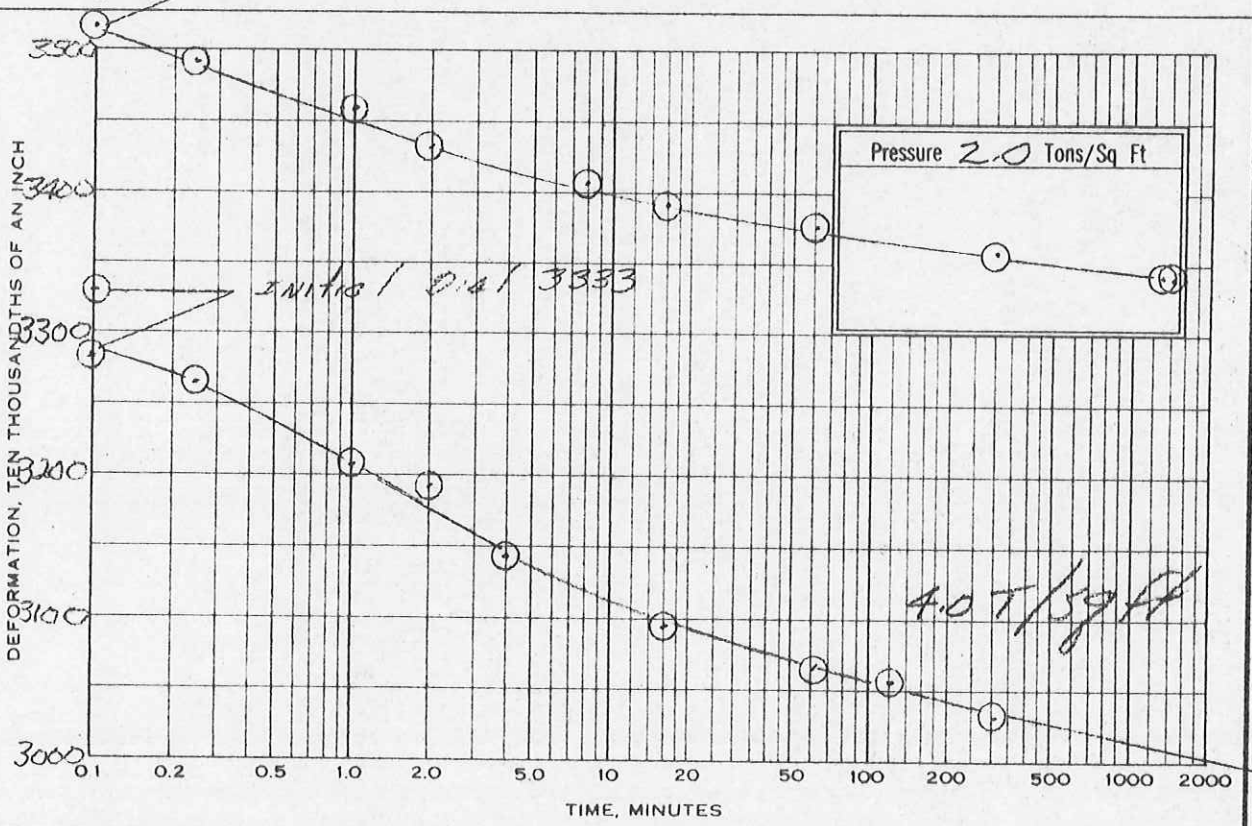
CONSOLIDATION TEST REPORT

ENG FORM 2090

(EM 1110-2-1803)

Plate No. 4 DLR 946





2781 @ 4237'

Project BRAZOS ISLAND HARBOR

Area

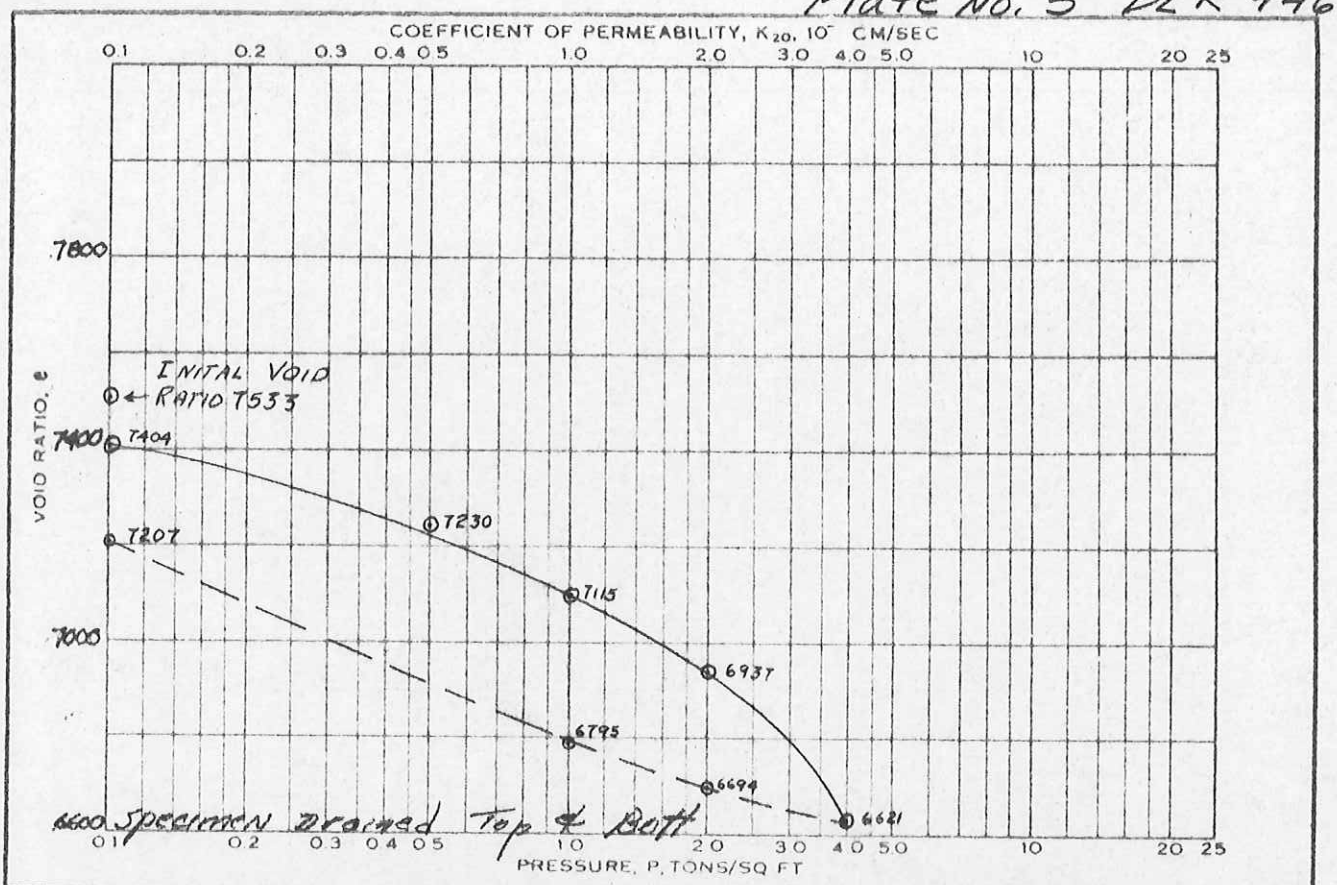
Boring No. 65T-5	Sample No. 62-642	Elev or Depth 460-480	Date Dec 1962

44.1

CONSOLIDATION TEST-TIME CURVES

ENG FORM 2088 (Translucent) (EM 1110-2-1803)

Plate No. 5 DLR 946



TEST DATA

Type of Specimen: Undisturbed

Overburden Pressure, P_o Tons/Sq Ft

Preconsol Pressure, P_c Tons/Sq Ft

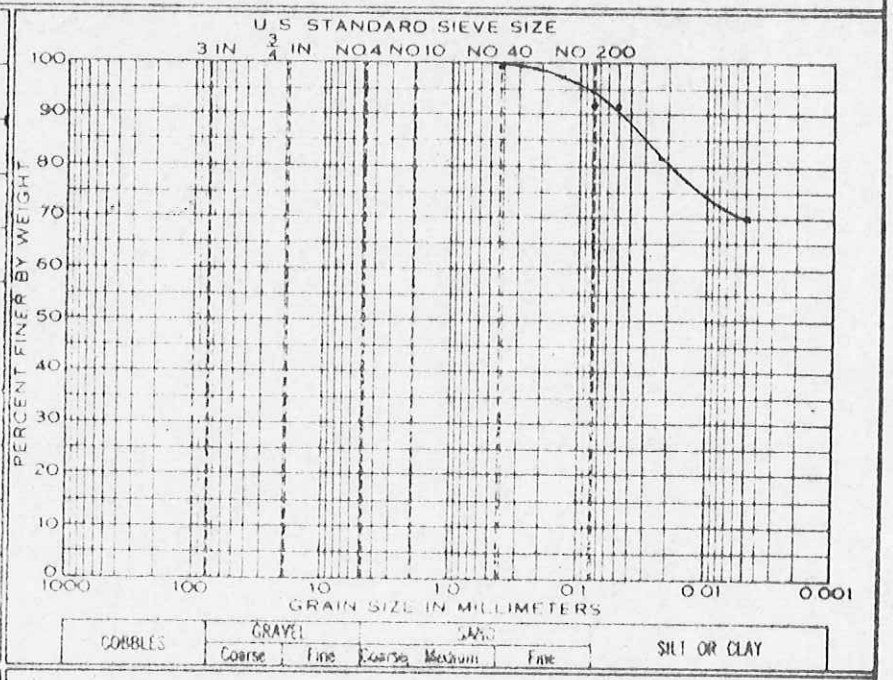
Compression Index, C_c

Permeability at Initial e

K_{20} ____ x 10^{-} Cm/Sec

Ft/Min

Initial Ht.	1.166 in.	Diam	4.0 in
Initial Saturation, S_o	%	100	
Final Saturation, S_f	%	100	
Initial Dry Density	Lbs/Cu Ft	95.8	
Initial Water Content, W_o	%	29.1	



Remarks:

Project: BRAZOS ISLAND HARBOR

Area

Boring No. 65T-5 Sample No. 62-6252

Elev or Depth 66.0-68.0 Date DEC. 1962

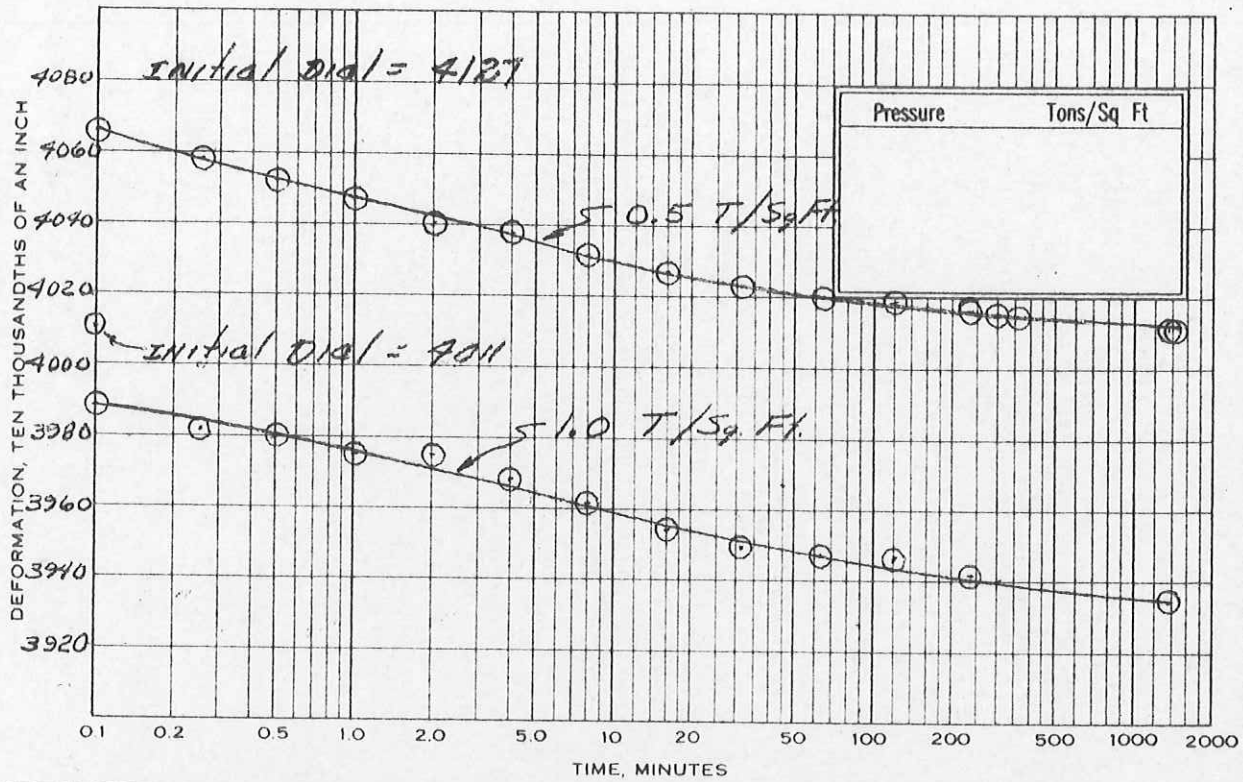
Classification Gray Clay (CH) Hard

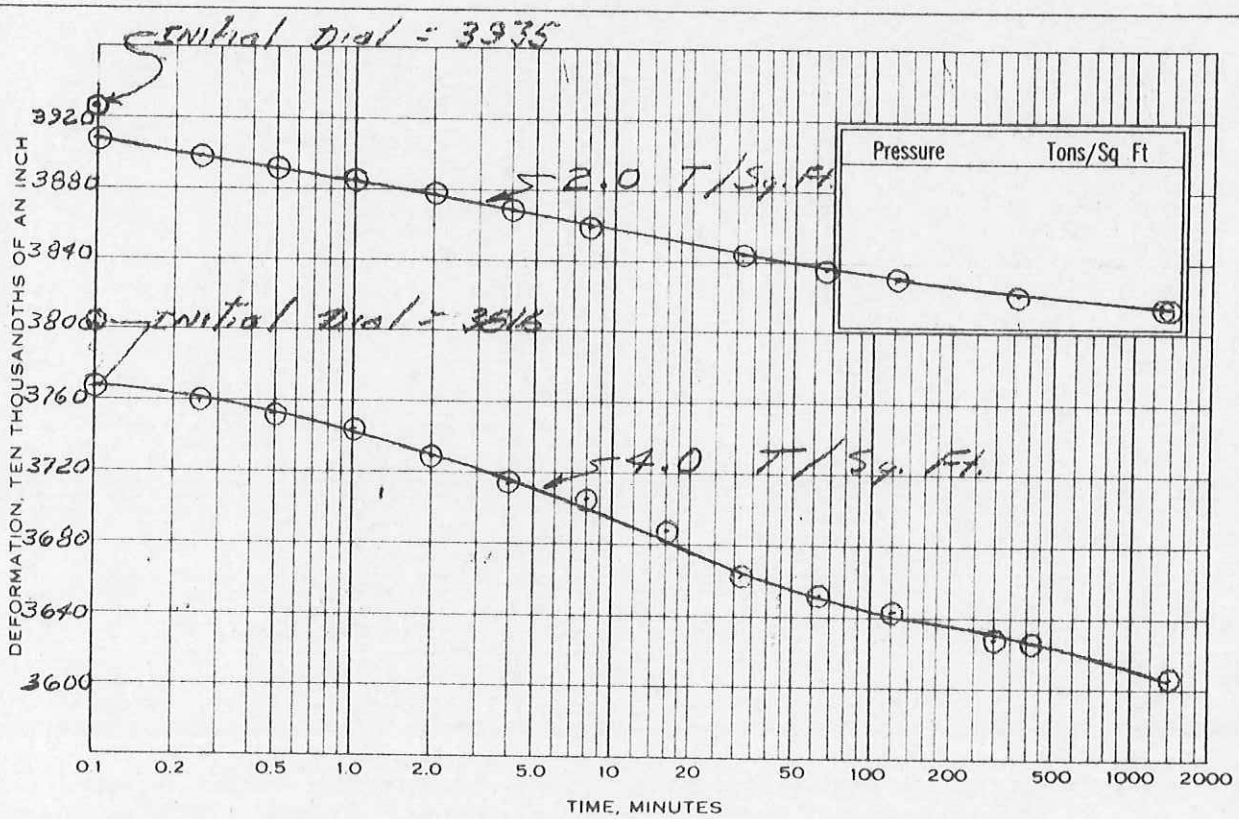
LL	60.8	G	2.69
PL	21.6	D_{10}	

CONSOLIDATION TEST REPORT

ENG FORM 1 DEC 71 2090

Plate No. 6 DLR 946





Project	Brazos Island Harbor		
Area			
Boring No. 65T-5	Sample No. 62-6252	Elev or Depth 66.0-68.0	Date Dec. 1962

CONSOLIDATION TEST-TIME CURVES

ENG FORM 2088 (Translucent) (EM 1110-2-1803)

Brazos Island Harbor Jetty

TEST DATA SUMMARY

Sheet ____ of ____

FEATURE Log of Soil Boring

BORING NO.	SAMPLE NO.	DEPTH OR ELEV OF SAMPLE	LABORATORY CLASSIFICATION	MECHANICAL ANALYSIS GRAVEL %	SAND %	FINES %	D_{15}*	ATTERBERG LIMITS LL	PL*	SPECIFIC GRAVITY G	NATURAL WATER CONTENT %	NATURAL DRY DENSITY LBS CU FT	COMPACTION DATA OPTIMUM WATER %	MAXIMUM DRY DENSITY LBS CU FT	SHEAR DATA INITIAL e	DRY DENSITY LBS CU FT	W %	W_F %	S_F %	TYPE TEST	SPECIMEN SIZE INCHES	TEST	σ_{III} T/SQ FT	σ_I T/SQ FT	C T/SQ FT	Ø DEGREES	PERMEABILITY e	K FT/MIN	CONSOLIDATION DATA P_o T/SQ FT	P_c T/SQ FT	C_c	t_{50}*	REMARKS
EST 5	-62-	0.0											Water																				
		37.5	SP										Gray Sand w/shell (Drillers Classification)																				
		40.0																															
	6239		Same as	6240	ML						28.9		Gray Silt (ML)																				
		42.0																															
	6240		ML	0	11	89	0.75		1.0		25.2 (29)	104.6	Gray Silt (ML)							Medium to Stiff													
	6241	44.0	Same as	6240	ML		1.0				32.1	90.5	Gray Silt (ML)																				
		46.0																															
	6242		CL	0	0	100	1.25	44.1	9.0		38.6	86.2	Gray Clay (CL)						Stiff														
		48.0																															
	6243		MH	0	0	100	1.75	54.0	13.0		35.1	89.7	Brown Silt (MH)							Stiff													
		50.0																															
	6244		Same as	6243	MH		1.0				37.5 (36)	83.0	Brown Silt (MH)																				
		52.0																															
	6245		CL-ML	0	1	99	1.0		3.0		26.5	89.9	Gray Clayey Silt (CL-ML)								Stiff												
		54.0																															
	6246		CH	0	1	99	1.5	52.8	14.0		45.9	75.4	Gray Clay (CH)						Stiff														
		56.0																															
	6247		Same as	6243	MH		1.75				36.0	82.1	Gray Silt (MH)								Stiff												
		58.0																															
	6248		CL	0	2	98	0.75	34.7	12.0		39.6 (33)	79.7	Gray Clay (CL)						Medium														
		60.0																															
	6249		CL	0	11	89	1.0	35.8	16.0		31.2	87.0	Gray Clay (CL)						Stiff							Medium to Stiff							
		62.0																															
	6250		Same as	6249	UV		1.50				29.0	94.1	Gray Clay (CL)						Stiff														
	6251	64.0	Same as	6248	UV		3.25				25.8	98.5	Gray Clay (CL)						Very Stiff														
		66.0																															
	6252		CH	0	8	92	4.5	60.8	20.0		25.1	99.7	Gray Clay (CH)						Hard														
		68.0																															
	6253		Same as	6254	UV		2.0				27.0	96.3	Gray Sandy Clay (CL)						Very Stiff														
		70.0																															
	6254		CL	0	27	73	4.5	34.6	13.0		19.5	105.0	Gray Sandy Clay (CL)						Hard														
		72.0																															
	6255		Same as	6254	UV		4.5				20.9	105.9	Gray Sandy Clay (CL)						Hard							v/stiff to Hard							
		74.0																															
	6256		CL	0	18	82	3.25	41.4	15.0		23.3 (23)	101.1	Gray Sandy Clay (CL)						Very Stiff														
		76.0																															
	6257		Same as	6256	UV		2.75				21.4	104.0	Gray Sandy Clay (CL)						Very Stiff														
		78.0																															
	6258		CL	0	5	95	3.50	29.5	7.5		22.6	102.6	Rusty Clay (CL)						Very Stiff														
		80.0																															
	6259		CH	0	2	98	4.0	51.7	18.0		28.3 (25)	97.3	Gray & Brown Clay (CH)						Hard							v/stiff to Hard							
		82.0																															
	6260		Same as	6259			3.0				22.0	102.5	Gray & Brown Clay (CH)						Very Stiff														
		84.0																															

* Values at Pressure T/SQ FT

- Triaxial Compression
UC - Unconfined Compression

DS - Direct Shear
UU - Unconsolidated Undrained

- Consolidated Drained
CU - Consolidated Undrained

Brazos Island Harbor Jetty

TEST DATA SUMMARY

Sheet ____ of ____

FEATURE Log of Soil Boring

BORING NO.	SAMPLE NO.	DEPTH OR ELEV OF SAMPLE	LABORATORY CLASSIFICATION	MECHANICAL ANALYSIS: GRAVEL %	SAND %	FINES %	D_{10} *	ATTERBERG LIMITS: LL	PL	SPECIFIC GRAVITY G	NATURAL WATER CONTENT %	NATURAL DRY DENSITY LBS/CU FT	COMPACTION DATA: OPTIMUM WATER %	MAXIMUM DRY DENSITY LBS/CU FT	SHEAR DATA: INITIAL e	DRY DENSITY LBS/CU FT	W %	W_f %	S_f %	TYPE TEST	SPECIMEN SIZE INCHES	TEST	σ_m T/SQ FT	σ_1 T/SQ FT	C T/SQ FT	Ø DEGREES	PERMEABILITY: e	K FT/MIN	CONSOLIDATION DATA: P_o T/SQ FT	P_c T/SQ FT	C_c	t_{50} *	REMARKS
6ST-62-5	6261	84.0	CL	0	30	70	3.50	33.3	12.0		18.7 (18)	109.9	Gray & Brown Sandy Clay (CL) Very Stiff																				
		86.0																															
	6262	88.0	Same as 6261				3.25				18.3	112.0	Gray Sandy Clay (CL) Very Stiff Bottomed in Heave																				

* Values at Pressure T/SQ FT

Triaxial Compression
UC - Unconfined Compression

D - Direct Shear
U - Unconsolidated Undrained

- Consolidated Drained
CU - Consolidated Undrained

ENG FORM 2086