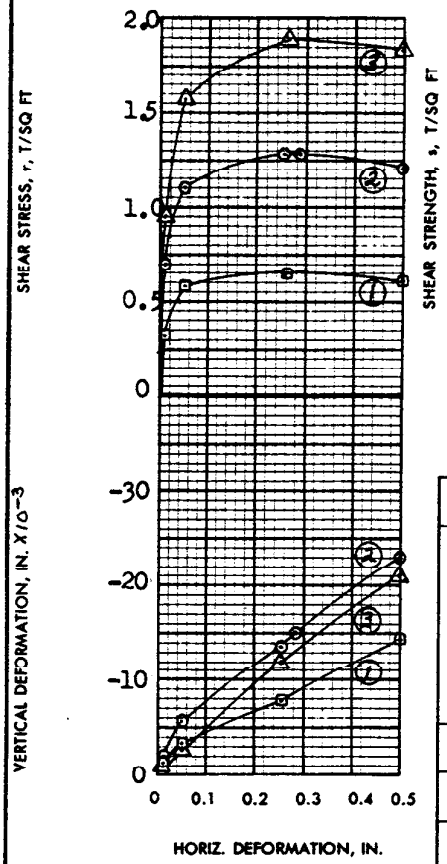
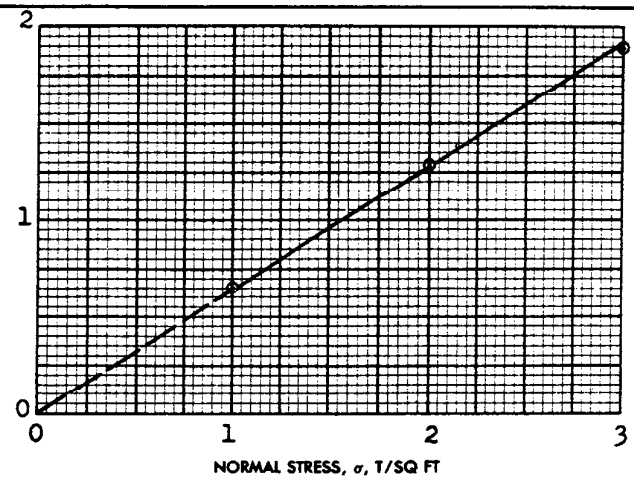




SHEAR STRENGTH PARAMETERS

ϕ' = 33°

TAN ϕ' = 0.649

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	
INITIAL	WATER CONTENT	w_o	32.2 %	31.7 %	31.9%	%
	VOID RATIO	e_o	0.879	0.871	0.867	
	SATURATION	S_o	97.8 %	97.2 %	98.2%	%
	DRY DENSITY, LB/CU FT	γ_d	88.7	89.1	89.3	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	<1	<1	<1	
FINAL	WATER CONTENT	w_f	30.0 %	29.9 %	27.7%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	0.65	1.28	1.89	
ACTUAL TIME TO FAILURE, MIN		t_f	1470	1590	1470	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 0.551 IN. THICK

CLASSIFICATION SILT (ML), dark gray, contains a trace of fine sand & organic matter

LL — PL — PI — G_s 2.67

REMARKS

PROJECT MISS. RIVER - GULF OUTLET

NEW SHIP LOCK - GDM

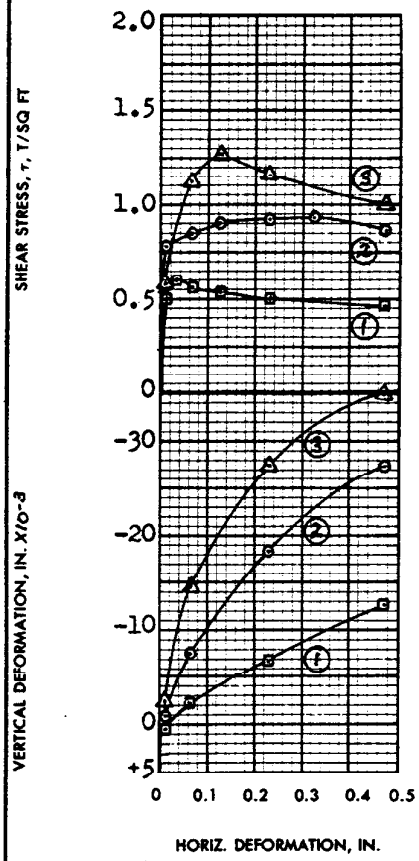
AREA

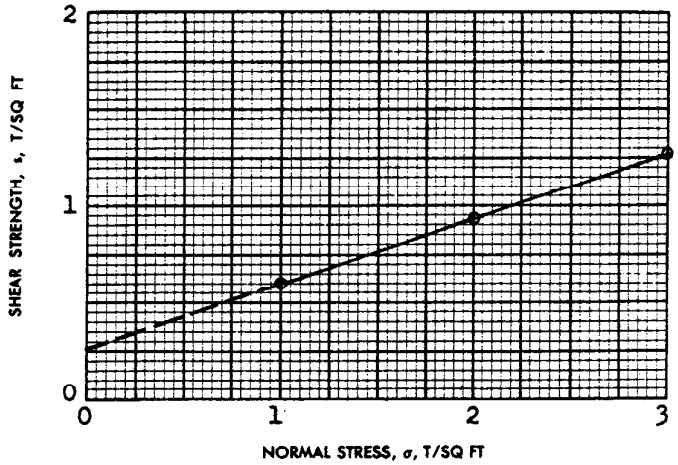
BORING NO. 4-UL — SAMPLE NO. 27-B

DEPTH 104.6 — DATE 20 July 1968

WJH **DIRECT SHEAR TEST REPORT**

ENG FORM 1 JUN 65 **2092** *(EM 1110-2-1906)* PREVIOUS EDITIONS ARE OBSOLETE *(TRANSLUCENT)* USAEWES SOILS TEST SECTION PLATE IX-3





TEST NO.			1	2	3	
INITIAL	WATER CONTENT	w_o	40.5%	39.5%	37.5%	%
	VOID RATIO	e_o	1.09	1.09	1.03	
	SATURATION	S_o	100+%	98.6%	99.0%	%
	DRY DENSITY, LB/CU FT	γ_d	81.2	81.2	83.8	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	<1	<1	<1	
FINAL	WATER CONTENT	w_f	39.0%	38.7%	35.9%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	0.60	0.93	1.27	
ACTUAL TIME TO FAILURE, MIN		t_f	240	1920	780	
RATE OF STRAIN, IN./MIN			.00017	.00017	.00017	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 19°

TAN ϕ' = 0.344

c' = 0.26 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED	3.00	IN. SQUARE	0.562 IN. THICK
CLASSIFICATION	PLASTIC CLAY (CH), gray, contains pockets of sand			
LL 73	PL 22	PI 51		G. 2.72

REMARKS

PROJECT MISS. RIVER - GULF OUTLET

NEW SHIP LOCK - GDM

AREA

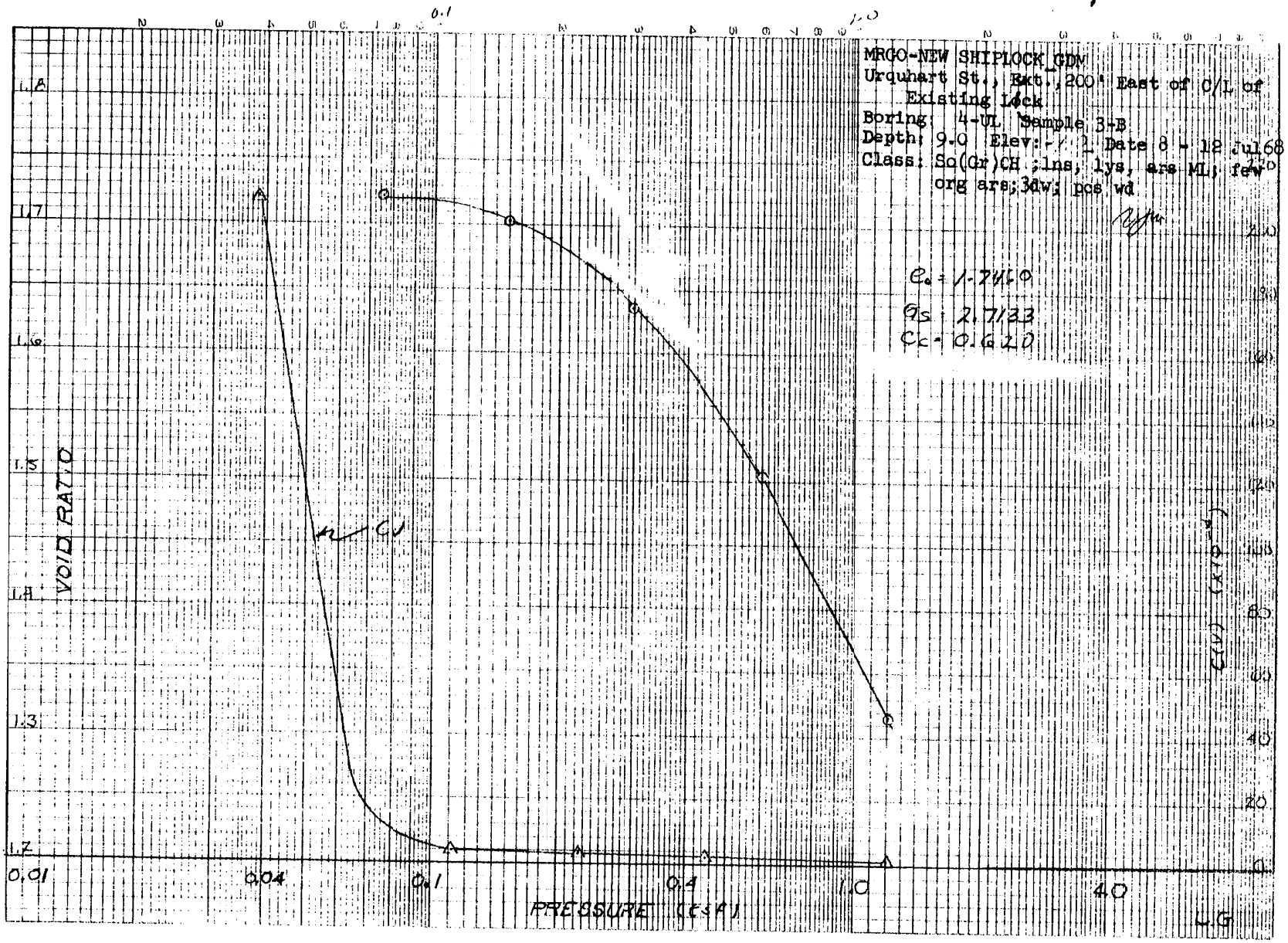
BORING NO. 4-UL | SAMPLE NO. 34-D

DEPTH 134.8 | DATE 22 July 1968

GDA **DIRECT SHEAR TEST REPORT**

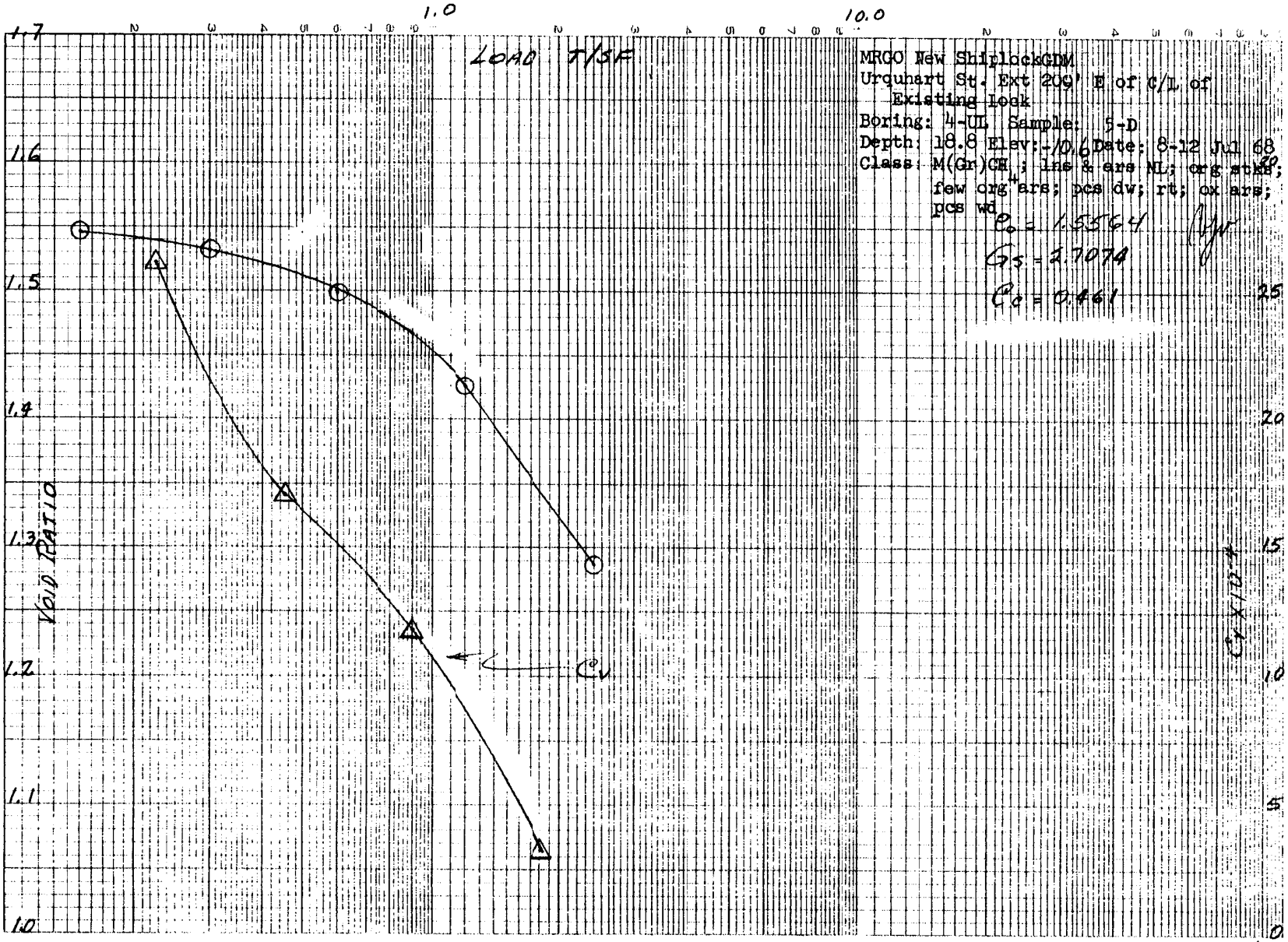
ENG FORM 1 JUN 65 **2092** *(EM 1110-2-1906)* PREVIOUS EDITIONS ARE OBSOLETE *(TRANSLUCENT)* USAEWES SOILS TEST SECTIO

GPO : 1966 OF—214-945 PLATE IX-3


MRGO-NEW SHIPLOCK GDM
Urquhart St., Ext., 200' East of C/L of Existing Lock
Boring: 4-UL Sample 3-B
Depth: 9.0 Elev: Date 8 - 12 Jul 68
Class: Sc(Gr)CH ;lns, lys, ars ML; few org ars; 3dw; pcs wd
e_o = 1.7460
G_s = 2.7133
C_c = 0.620
VOID RATIO
PRESSURE (tsf)
0.01
0.04
0.1
0.4
1.0
4.0
1.8
1.7
1.6
1.5
1.4
1.3
1.2
C(V) (x10⁻⁴)
L.G

NO. 340-310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MADE IN U.S.A.



MRGO New Shiplock CDM
Urquhart St. Ext 209' E of C/L of
Existing Lock
Boring: 4-UL Sample: 5-D
Depth: 18.8 Elev: -10.6 Date: 8-12 Jul 68
Class: M(Gr)CH ; lns & ars NL; org stks;
few org ars; pcs dw; rt; ox ars;
pcs wd

e_o = 1.5564

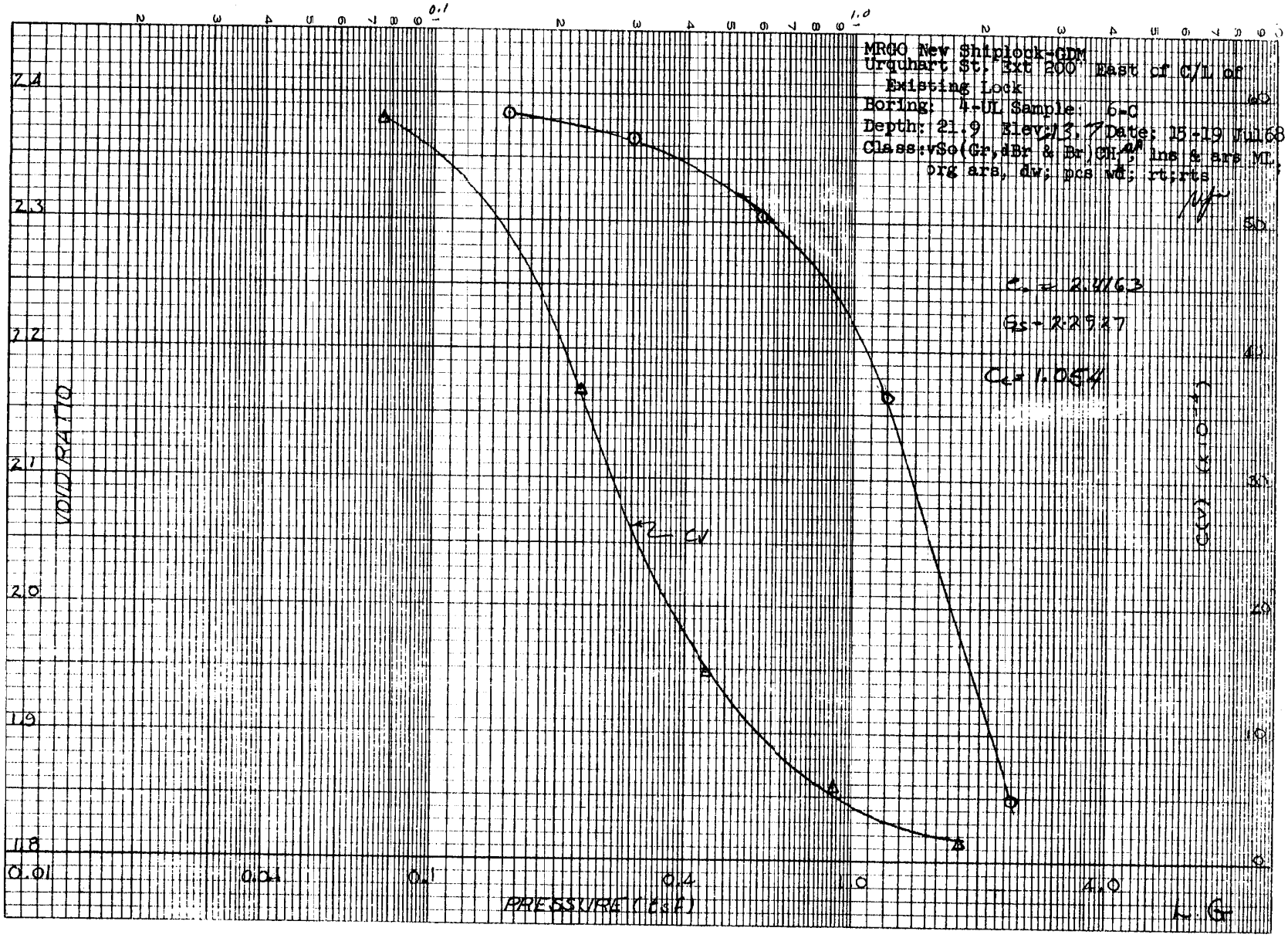
G_s = 2.7074

C_c = 0.461

EK

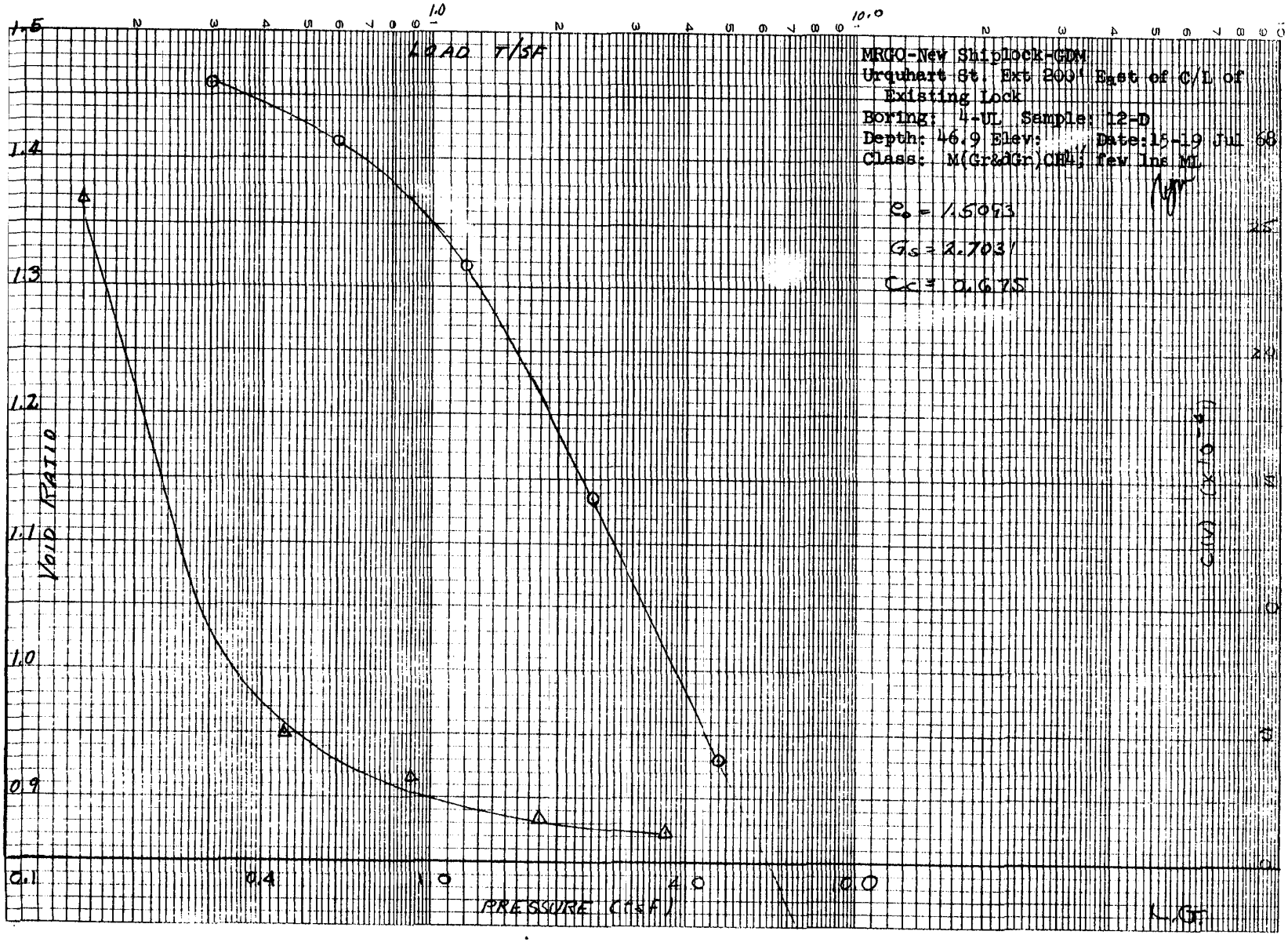
NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MADE IN U. S. A.



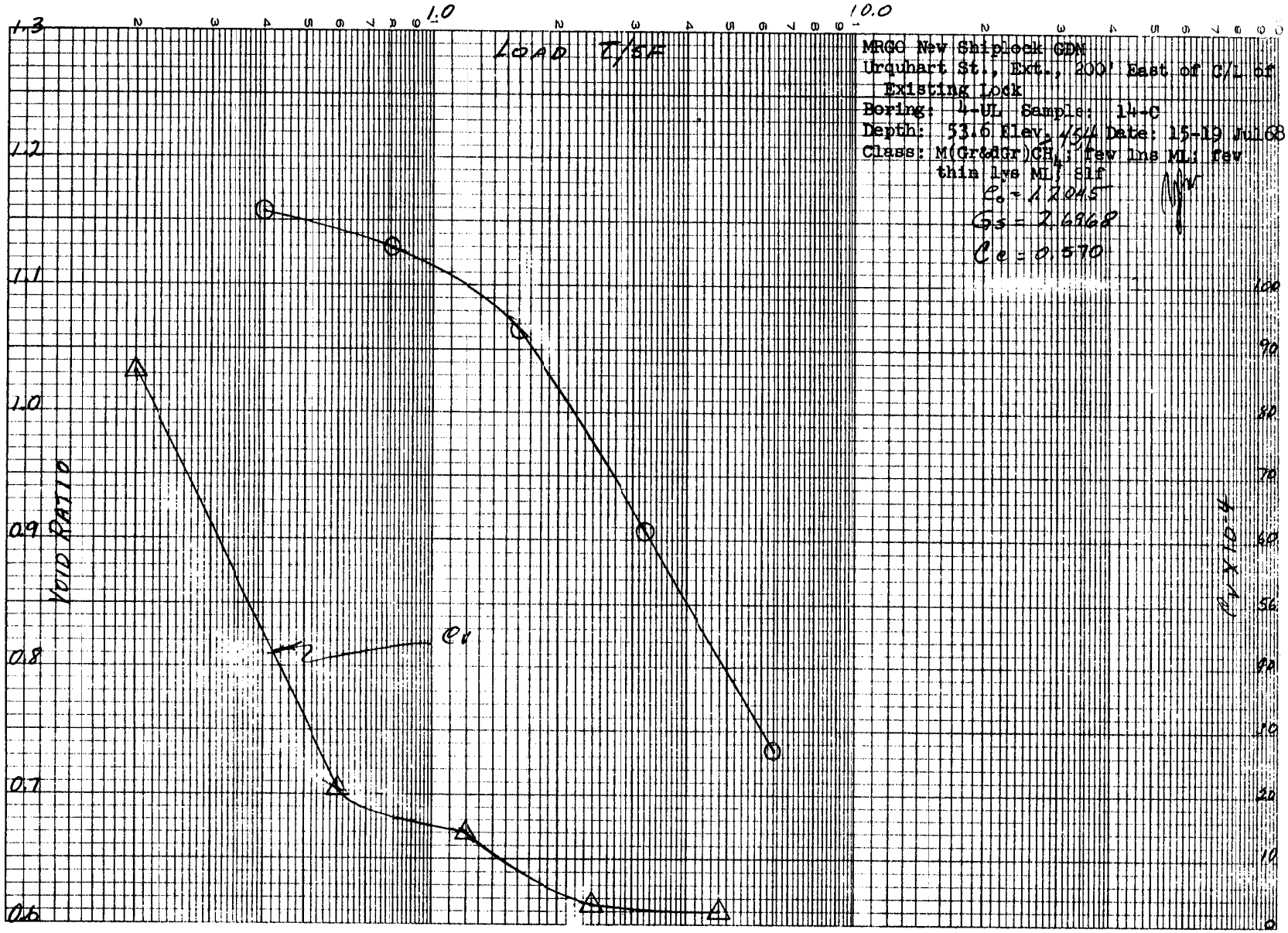
NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MADE IN U. S. A.



NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

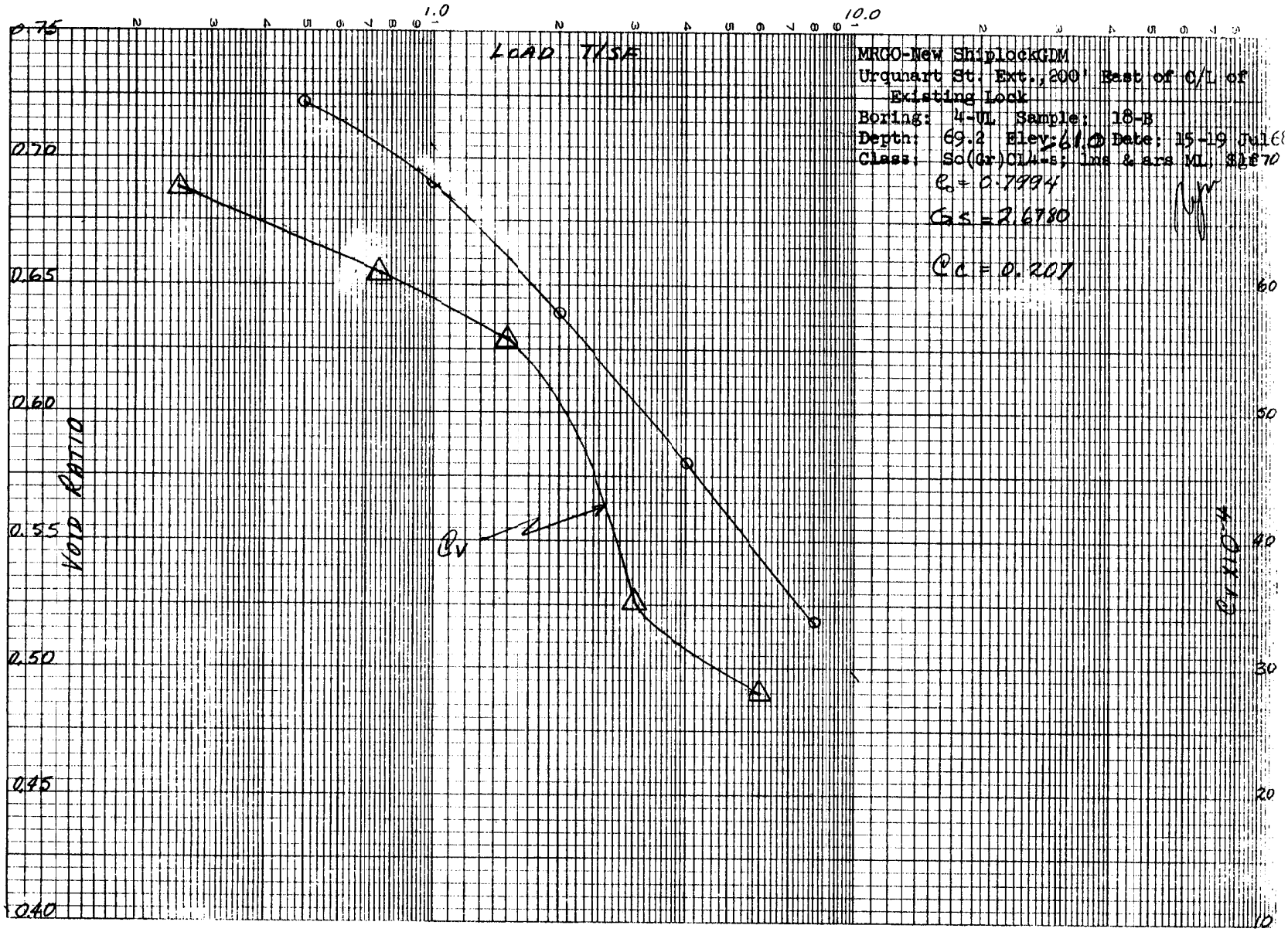
EUGENE DIETZGEN CO.
MADE IN U. S. A.



MRGO New Shiplock GDN
Urquhart St., Ext., 200' East of C/L of
Existing Lock
Boring: 4-UL Sample: 14-C
Depth: 53.6 Elev. 454 Date: 15-19 Jul 68
Class: M(Gr&dGr)CH_4; few lns ML; few
thin lys ML; slf
e_o = 1.2045
Gs = 2.6968
Ce = 0.570

NO. 343-L31U DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

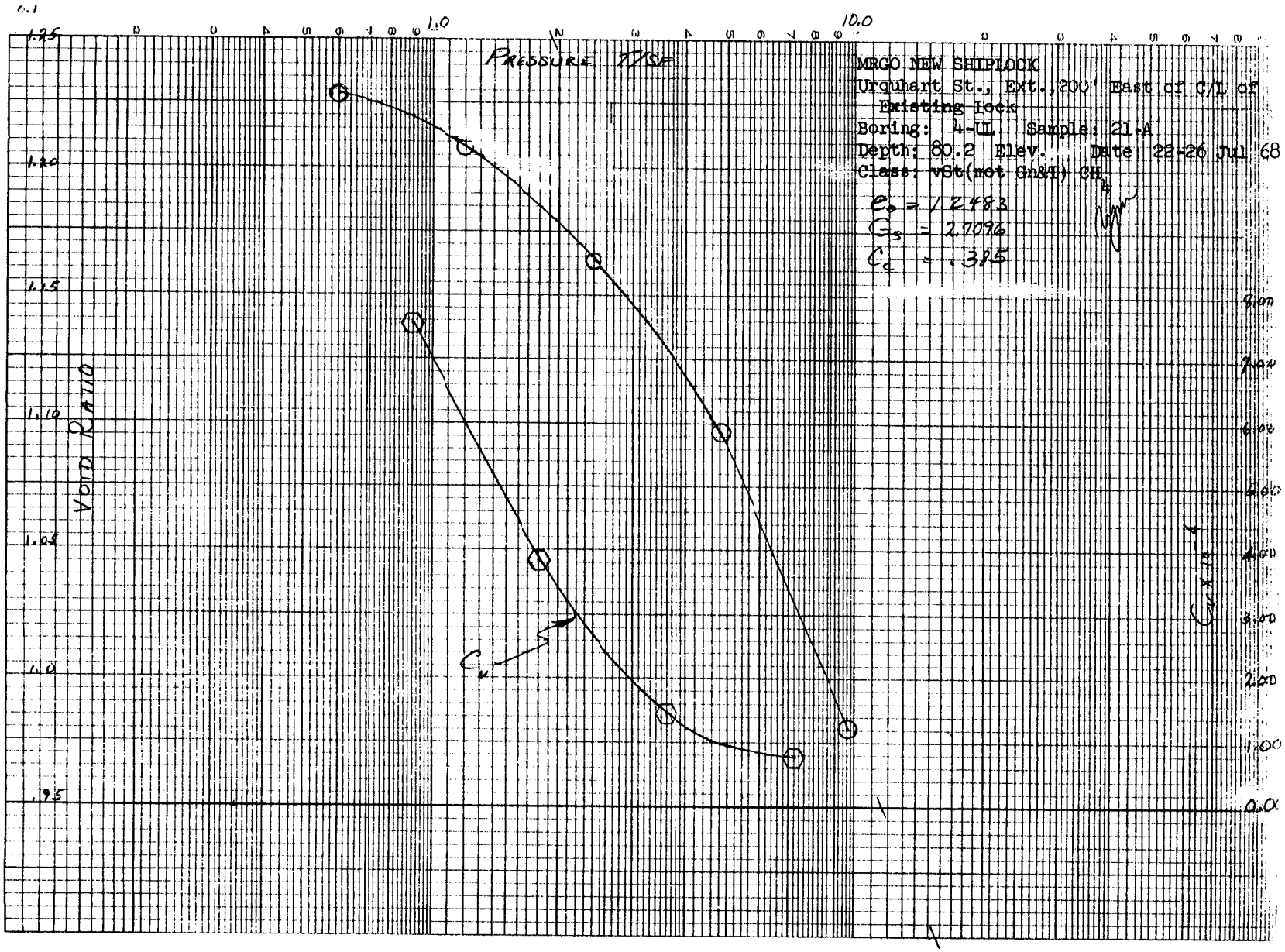
EUGENE DIETZGEN CO.
MADE IN U. S. A.



EK

NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

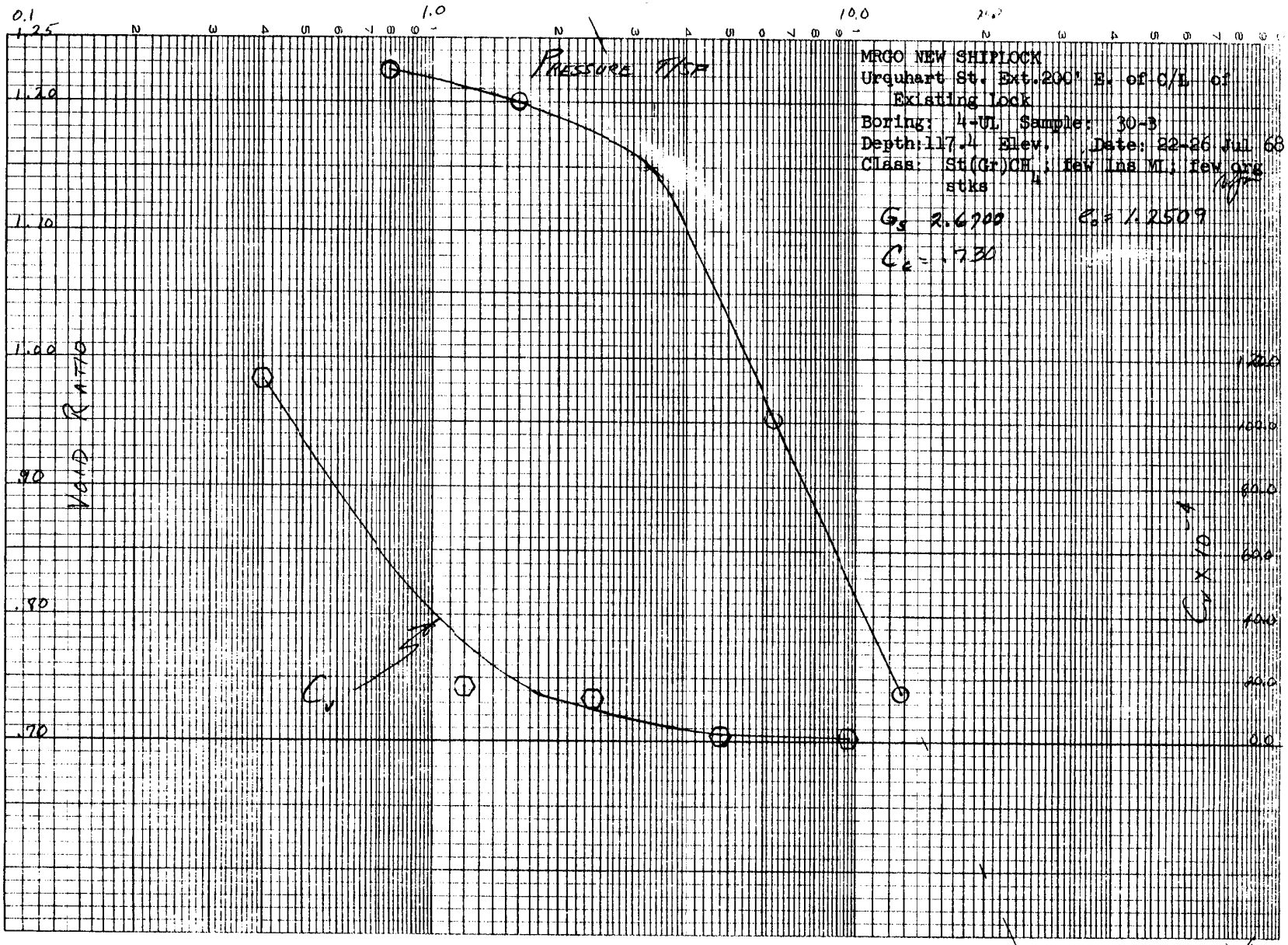
EUGENE DIETZGEN CO.
MADE IN U. S. A.



H

NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MADE IN U. S. A.

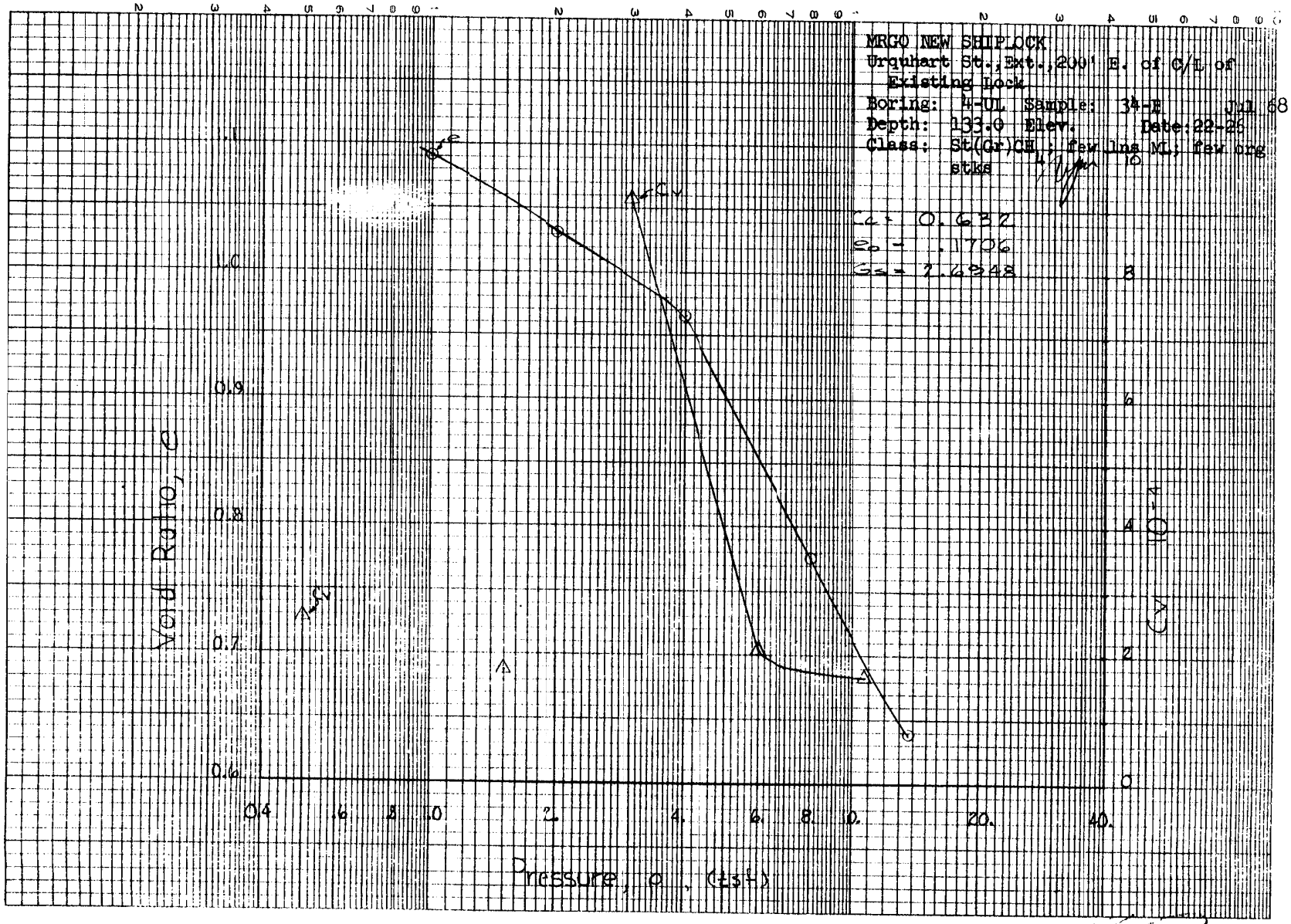


MRGO NEW SHIPLOCK
Urquhart St. Ext.200' E. of C/L of Existing Lock
Boring: 4-UL Sample: 30-3
Depth: 117.4 Elev. Date: 22-26 Jul 68
Class: St(Gr)CH; few Ins ML; few org stks

G_s 2.6900 e_o = 1.2509
C_c = .730

NO. 340-L10 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

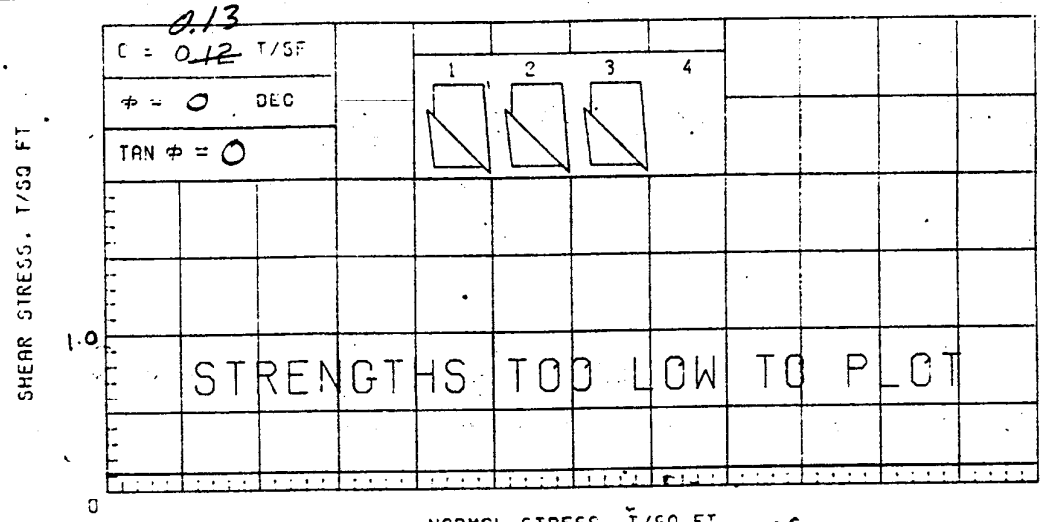
EUGENE DIETZGEN CO.
MADE IN U. S. A.



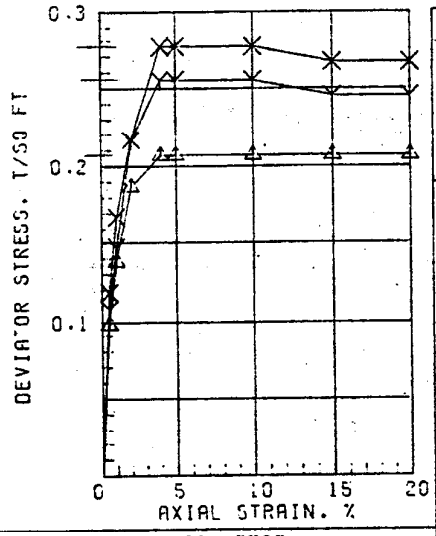
C = ~~0.12~~ 0.13 T/SF

ϕ = 0 DEG

TAN ϕ = 0



γ_{sat} = 89.7



SPECIMEN NO.		Δ1	Y2	X3	AVG.
INITIAL	WATER CONTENT, %	97.1	99.4	116.6	101.0
	DRY DENSITY, PCF	44.5	47.4	39.9	43.6
	SATURATION, %	95.5	95.9	95.4	95.6
	VOID RATIO	2.641	2.425	3.177	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.21	0.26	0.29	0.25
TIME TO FAILURE, MIN.		9	9	9	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.41	1.41	1.41	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH). GRAY: ORGANIC MATTER

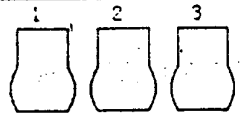
LL 132	PL 38	PI 94	GS 2.60 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK
	IHNC SITE
	BORING NO. 2-SCU / SAMPLE NO. 3-C
	DEPTH/ELEV 9.9/-17.9 / TECH. KOC
	LABORATORY USAE WES / DATE 01 JUL 81
	TRIAXIAL COMPRESSION TEST REPORT

C = ~~0.14~~ 0.15 T/SF

Φ = 0 DEG

TAN Φ = 0



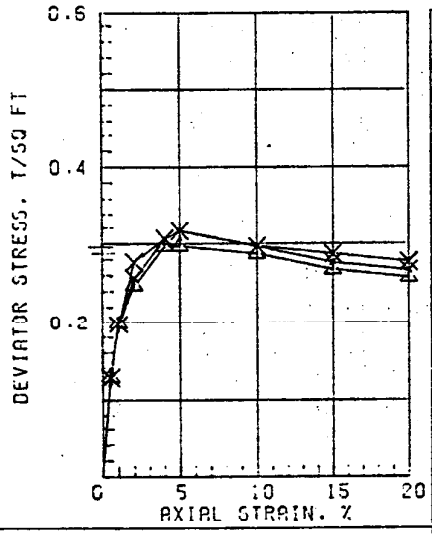
SHEAR STRESS, T/SQ FT

STRENGTHS TOO LOW TO PLOT

0

NORMAL STRESS, T/SQ FT

γsat = 106.6



SPECIMEN NO.		X1	Y2	X3	AVG.
INITIAL	WATER CONTENT, %	50.8	49.9	50.8	50.5
	DRY DENSITY, PCF	70.1	71.0	70.1	70.4
	SATURATION, %	98.0	98.0	98.0	98.1
	VOID RATIO	1.395	1.395	1.395	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.30	0.32	0.32	0.313
TIME TO FAILURE, MIN.		8	10	10	
RATE OF STRAIN INCR.,%					
INITIAL DIAMETER, IN.		1.41	1.41	1.41	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SHELL FRAGMENTS; SMALL SILT POCKETS

LL 52	PL 16	PI 36	GS 2.69 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT M.R.G.O. - NEW SHIPLOCK

IHNC SITE

BORING NO. 2-SCU | SAMPLE NO. 7-5

DEPTH/ELEV 24.9/-32.9 | TECH. KOC

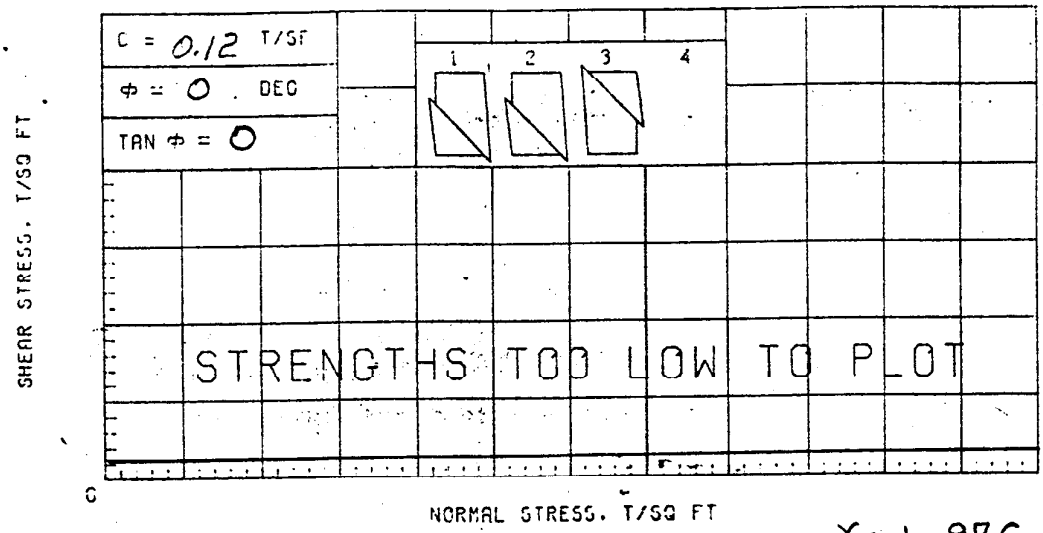
LABORATORY USAE WES | DATE 01 JUL 81

TRIAXIAL COMPRESSION TEST REPORT

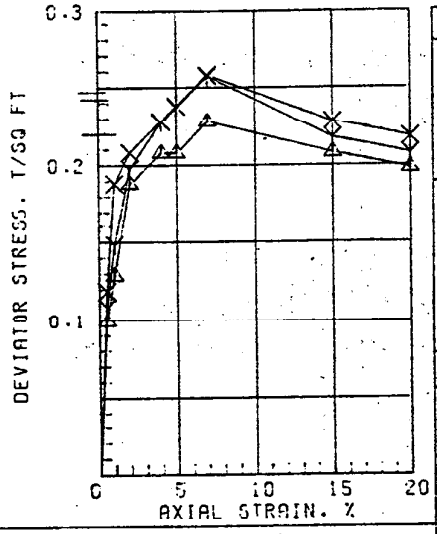
C = 0.12 T/SF

Φ = 0 DEG

TAN Φ = 0



γ_{sat} = 97.6



	SPECIMEN NO.	△1	Y2	X3	AVG.
INITIAL	WATER CONTENT, %	73.5	75.4	74.3	74.4
	DRY DENSITY, PCF	56.7	55.2	55.6	55.8
	SATURATION, %	100+	99.2	98.9	99.3
	VOID RATIO	1.975	2.052	2.030	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
	MIN PRIN. STRESS, TSF	0.5	1.5	3.0	
	MAX. DEV. STRESS, TSF	0.21	0.26	0.26	0.243
	TIME TO FAILURE, MIN.	8	14	14	
	RATE OF STRAIN INCR.%				
	INITIAL DIAMETER, IN.	1.41	1.41	1.41	
	INITIAL HEIGHT, IN.	3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY

LL 82	PL 26	PI 55	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT M.R.G.O. - NEW SHIPLOCK

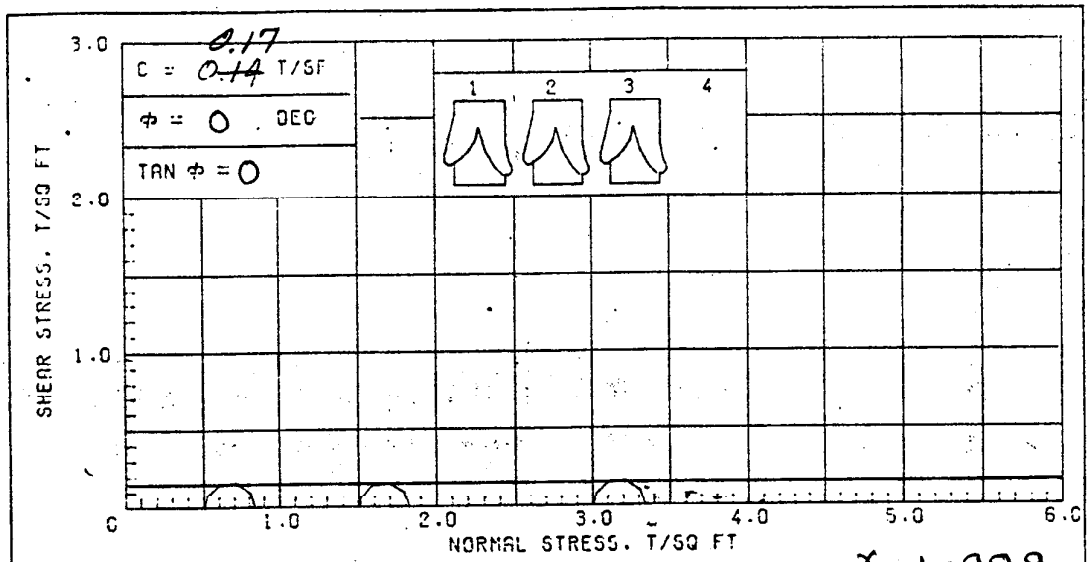
IHNC SITE

BORING NO. 2-SCU — SAMPLE NO. 9-C

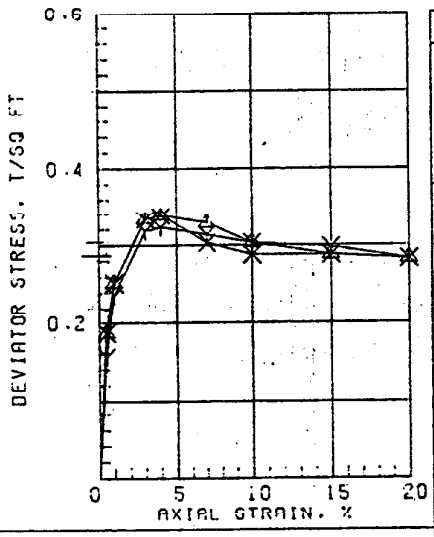
DEPTH/ELEV 33.9/-41.8 — TECH. KOC

LABORATORY USAE WES — DATE 01 JUL 81

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat} = 98.9$



	SPECIMEN NO.	Δ1	Y2	X3	AVG.
INITIAL	WATER CONTENT, %	71.4	72.6	72.5	72.2
	DRY DENSITY, PCF	57.9	57.3	57.3	57.5
	SATURATION, %	100+	100+	100+	100
	VOID RATIO	1.909	1.941	1.941	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
	MIN PRIN. STRESS, TSF	0.5	1.5	3.0	
	MAX. DEV. STRESS, TSF	0.34	0.32	0.34	.333
	TIME TO FAILURE, MIN.	7	19	19	
	RATE OF STRAIN INCR.%		7	14	
	INITIAL DIAMETER, IN.	1.39	1.39	1.39	
	INITIAL HEIGHT, IN.	3.00	3.00	3.00	

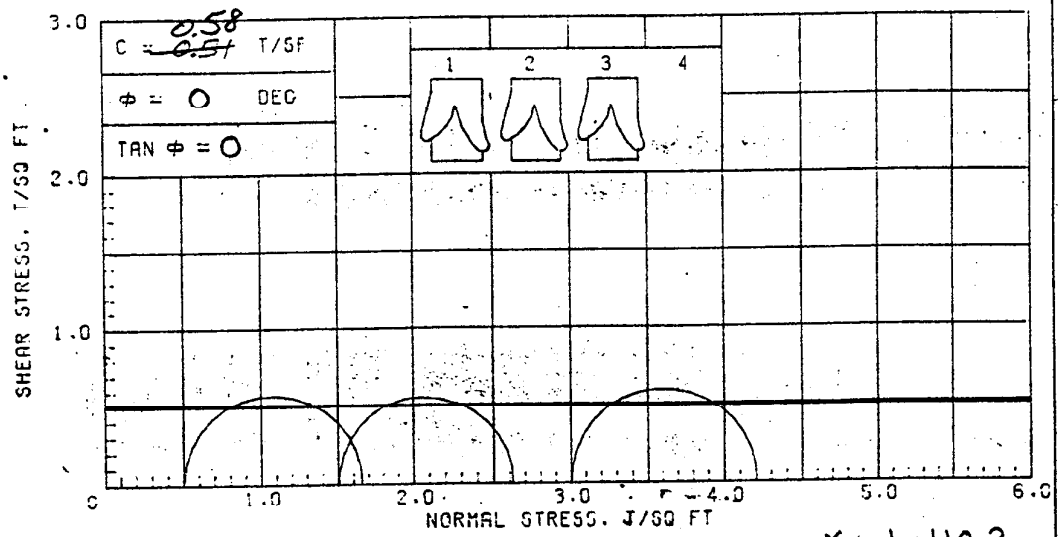
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT LENSES

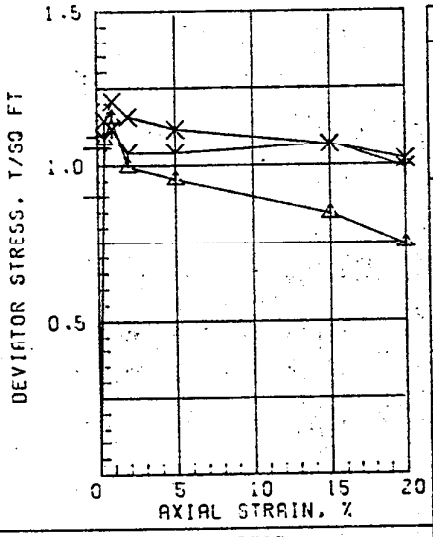
LL 72	PL 24	PI 48	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK
	IHNC SITE
	BORING NO. 2-SCU / SAMPLE NO. 11-C
	DEPTH/ELEV 41.9/-49.9 / TECH. PJR
	LABORATORY USAE WES / DATE 01 JUL 81

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat} = 110.2$



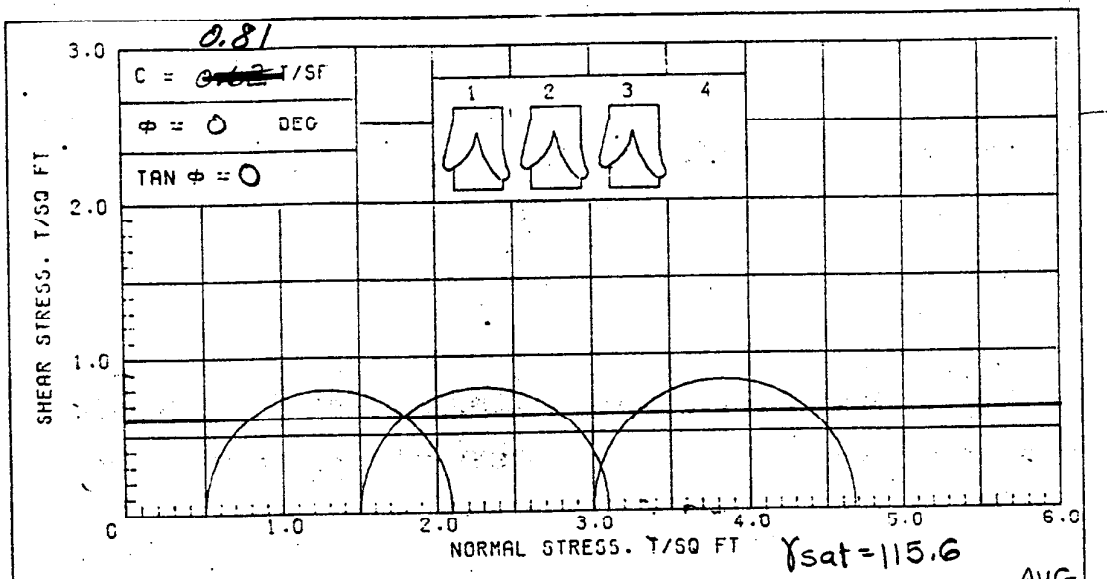
	SPECIMEN NO.	Δ1	Y2	X3	AVG 4
INITIAL	WATER CONTENT, %	46.5	47.1	47.1	46.9
	DRY DENSITY, PCF	75.3	74.8	74.9	75.0
	SATURATION, %	100+	100+	100+	100.0
	VOID RATIO	1.239	1.254	1.250	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
	MIN PRIN. STRESS, TSF	0.5	1.5	3.0	
	MAX. DEV. STRESS, TSF	1.15	1.12	1.21	1.16
	TIME TO FAILURE, MIN.	2	5	9	
	RATE OF STRAIN INCR.,%		2	5	
	INITIAL DIAMETER, IN.	1.40	1.39	1.39	
	INITIAL HEIGHT, IN.	3.00	3.00	3.00	

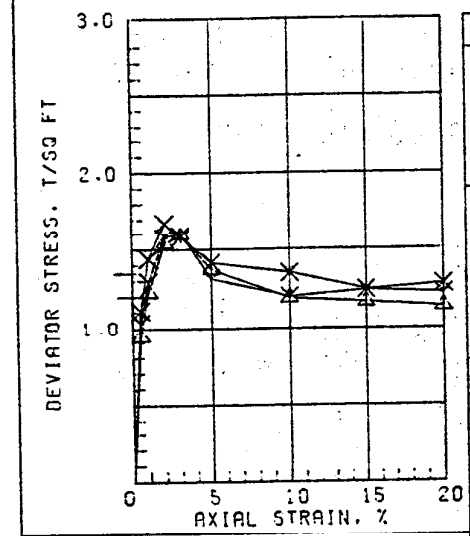
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), LIGHT GRAY; SLICKENSIDED

LL 94	PL 29	PI 65	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK	
	IHNC SITE	
	BORING NO. 2-SCU	SAMPLE NO. 19-C
	DEPTH/ELEV 74.4/-82.4	TECH. PJR
	LABORATORY USAE WES	DATE 01 JUL 81
	TRIAXIAL COMPRESSION TEST REPORT	





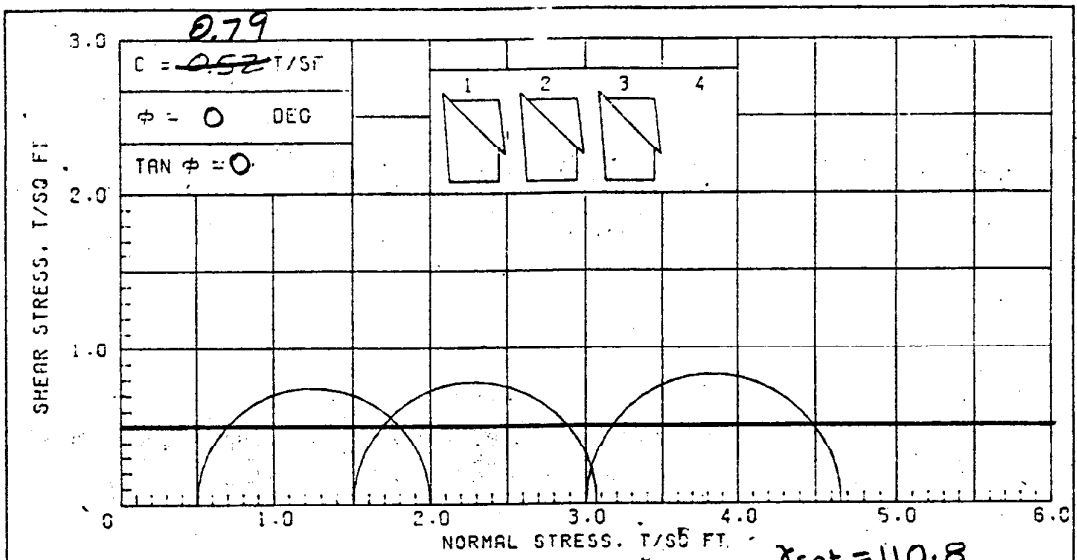
	SPECIMEN NO.	△1	Y2	X3	AVG 4
INITIAL	WATER CONTENT, %	36.5	37.8	37.2	37.2
	DRY DENSITY, PCF	94.6	93.9	94.2	84.2
	SATURATION, %	99.3	100+	100+	99.8
	VOID RATIO	0.992	1.011	1.003	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		1.59	1.60	1.68	1.623
TIME TO FAILURE, MIN.		5	14	9	
RATE OF STRAIN INCR.%			10		
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

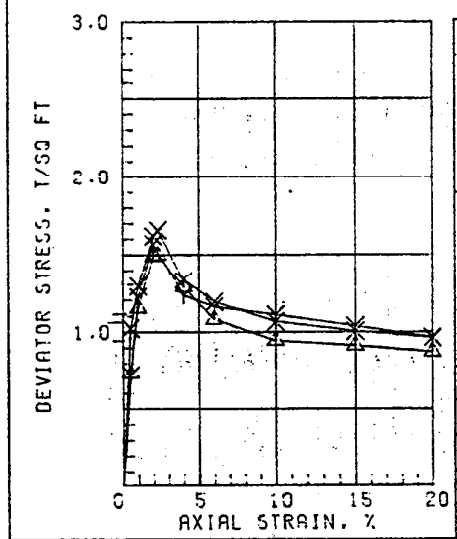
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT PARTINGS

LL 59	PL 17	PI 41	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.C. - NEW SHIPLOCK	
	IHNC SITE	
	BORING NO. 2-SCU	SAMPLE NO. 25-C
	DEPTH/ELEV 97.8/-105.0	TECH. PJR
	LABORATORY USAE WES	DATE 01 JUL 81
	TRIAXIAL COMPRESSION TEST REPORT	



γsat = 110.8



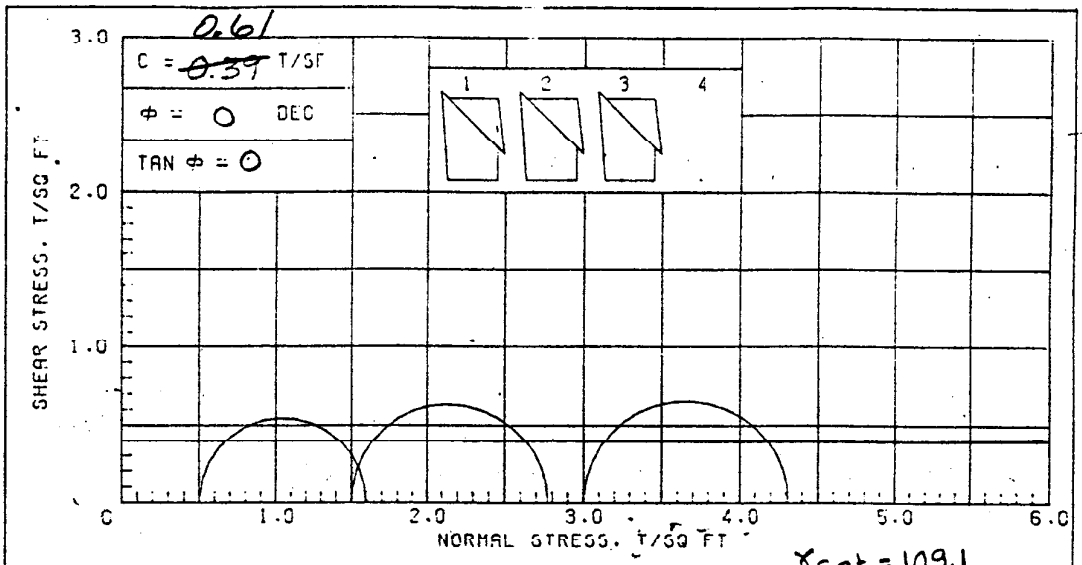
	SPECIMEN NO.	Δ1	Y2	X3	AVG. 4
INITIAL	WATER CONTENT, %	44.3	43.3	42.5	43.4
	DRY DENSITY, PCF	76.2	76.9	77.3	76.8
	SATURATION, %	98.9	98.0	97.2	98.0
	VOID RATIO	1.211	1.193	1.181	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
	MIN PRIN. STRESS, TSF	0.5	1.5	3.0	
	MAX. DEV. STRESS, TSF	1.50	1.57	1.66	1.577
	TIME TO FAILURE, MIN.	22	20	22	
	RATE OF STRAIN INCR.%	3	4	4	
	INITIAL DIAMETER, IN.	1.39	1.39	1.39	
	INITIAL HEIGHT, IN.	3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

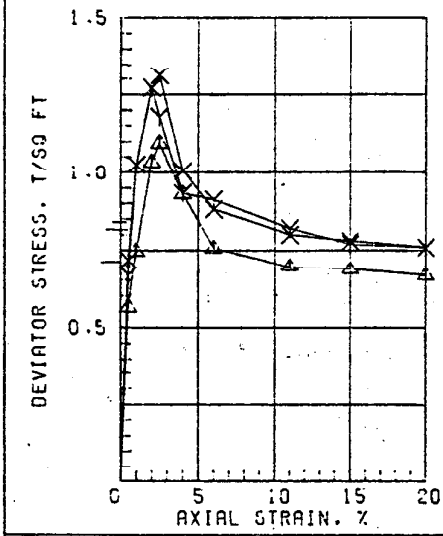
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; 1/32" SILT SEAMS

LL 70	PL 23	PI 47	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK	
	IHNC SITE	
	BORING NO. 2-SCU	SAMPLE NO. 28-C
	DEPTH/ELEV 109.9/-117.9	TECH. JAL
	LABORATORY USAE WES	DATE 01 JUL 81
	TRIAXIAL COMPRESSION TEST REPORT	



γ_{sat} = 109.1



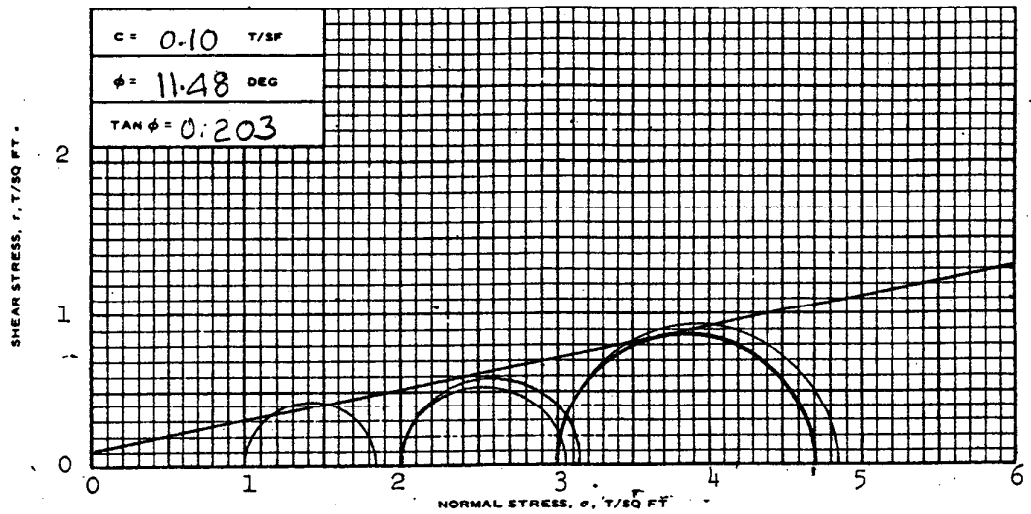
SPECIMEN NO.		Δ1	Y2	X3	AVG. 4
INITIAL	WATER CONTENT, %	47.4	46.0	45.0	46.7
	DRY DENSITY, PCF	73.6	74.2	74.8	74.2
	SATURATION, %	99.1	99.5	99.9	99.2
	VOID RATIO	1.291	1.273	1.253	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		1.09	1.27	1.31	1.223
TIME TO FAILURE, MIN.		16	16	17	
RATE OF STRAIN INCR.%		4	4	4	
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

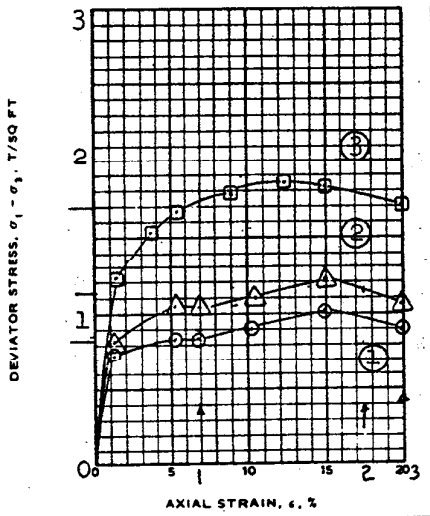
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; WITH 1/32" SILT SEAMS

LL 71	PL 20	PI 51	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK
	IHNC SITE
	BORING NO. 2-SCU / SAMPLE NO. 32-C
	DEPTH/ELEV 126.4/-134.4 / TECH. JAL
	LABORATORY USAE WES / DATE 02 JUL 81
	TRIAXIAL COMPRESSION TEST REPORT





SPECIMEN NO.			1	2	3	
INITIAL	WATER CONTENT, %	w_o	57.6	57.1	58.1	
	DRY DENSITY LB/ CU FT	γ_{d_o}	64.4	65.2	64.5	
	SATURATION, %	S_o	95.8	96.9	96.7	
	VOID RATIO	e_o	1.635	1.603	1.634	
BEFORE SHEAR	WATER CONTENT, %	w_c	53.2	49.0	44.8	
	DRY DENSITY LB/CU FT	γ_{d_c}	69.9	73.9	75.6	
	SATURATION, %	S_c	100+	100+	97.9*	
	VOID RATIO	e_c	1.428	1.299	1.245	
	FINAL BACK PRESSURE, T/SQ FT	u_o	5.76	5.76	5.76	
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.0	2.0	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	0.84 .83	1.04 1.13	1.84 1.7	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	347	347	833	
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT}$				
INITIAL DIAMETER, IN.		D_o	1.40	1.39	1.39	
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	

CONTROLLED- STRAIN TEST

DESCRIPTION OF SPECIMENS PLASTIC CLAY (CH), GRAY; WITH SILT LENSES

LL 87	PL 24	PI 63	G_s 2.72(EST)	TYPE OF SPECIMEN UNDISTURBED	TYPE OF TEST R

REMARKS: *PORE PRESSURE RESPONSE INDICATED 100% SATURATION

PROJECT M.R.G.O. - NEW SHIPLOCK IHNC SITE

BORING NO. 2-SCU SAMPLE NO. 12-B

DEPTH/ELEV 44.8/-52.8

LABORATORY USAEWES DATE 21 JULY 1981

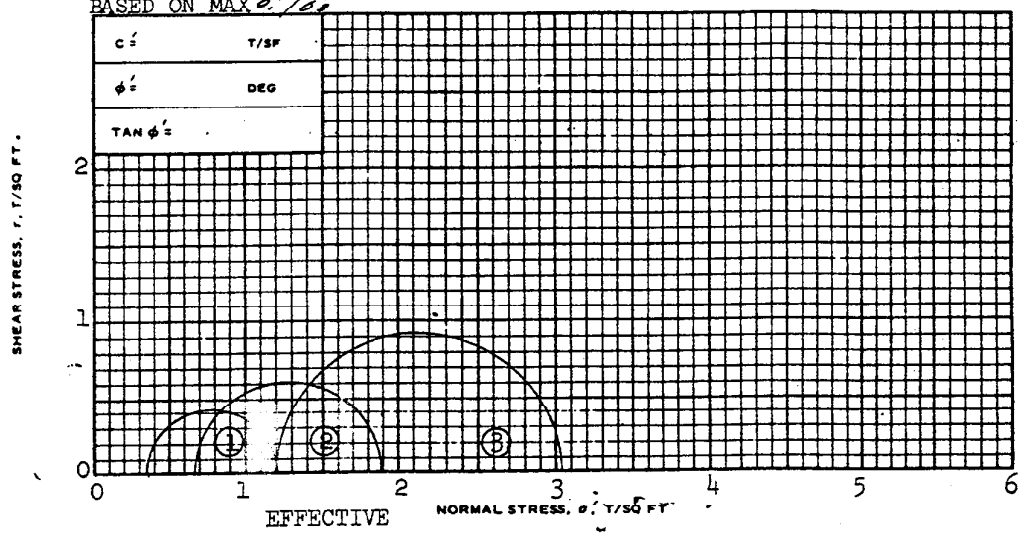
SHEET 1 OF 2

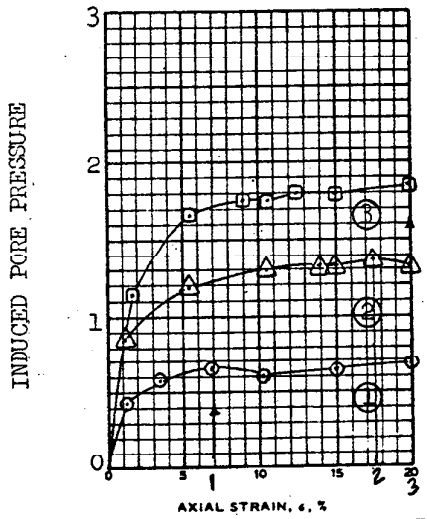
JMS TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE TRANSLUCENT (EM 1110-2-1906)

BASED ON MAX σ_1'/σ_3'

c' =	T/SF
ϕ' =	DEG
TAN ϕ' =	





SPECIMEN NO.			1	2	3	
INITIAL	WATER CONTENT, %	w_o				
	DRY DENSITY LB/ CU FT	γd_o				
	SATURATION, %	S_o				
	VOID RATIO	e_o				
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γd_c				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	0.35	0.67	1.20	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	0.84	1.21	1.84	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f				
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT}$				
INITIAL DIAMETER, IN.		D_o				
INITIAL HEIGHT, IN.		H_o				

CONTROLLED- TEST

DESCRIPTION OF SPECIMEN

LL	PL	PI	G_s	TYPE OF SPECIMEN	TYPE OF TEST

REMARKS:

PROJECT M.R.G.O. - NEW SHIPLOCK
IHNC SITE

BORING NO. 2-SCU SAMPLE NO. 12-B

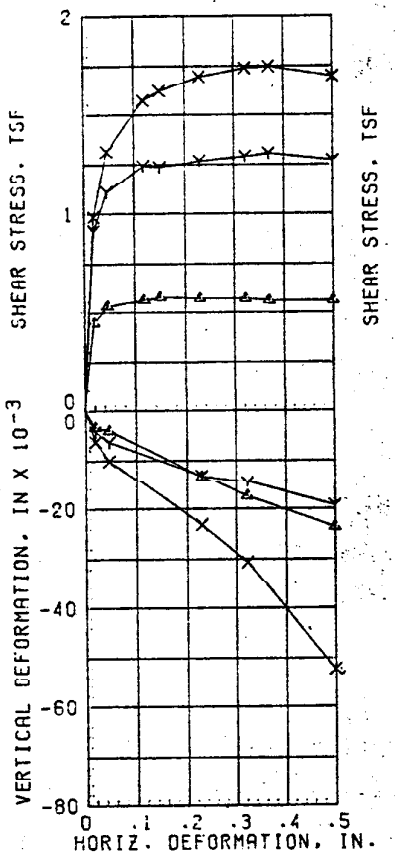
DEPTH/ELEV 44.8/-52.8

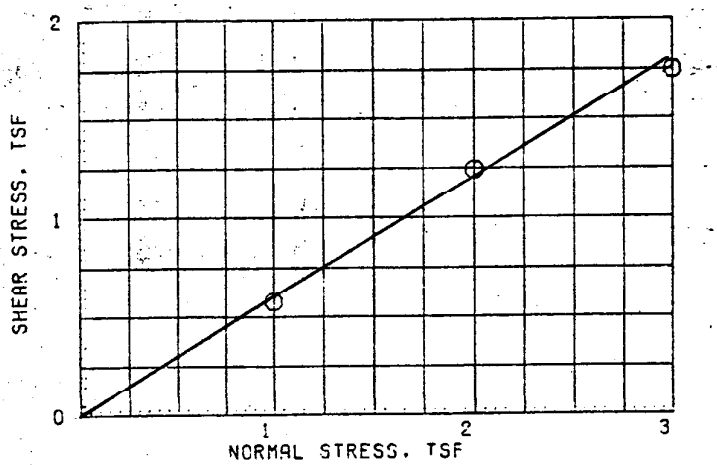
LABORATORY USAEWES DATE 21 JULY 1981

SHEET 2 OF 2

JMS TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE TRANSLUCENT (EM 1110-2-1906)





ϕ = 30.71°

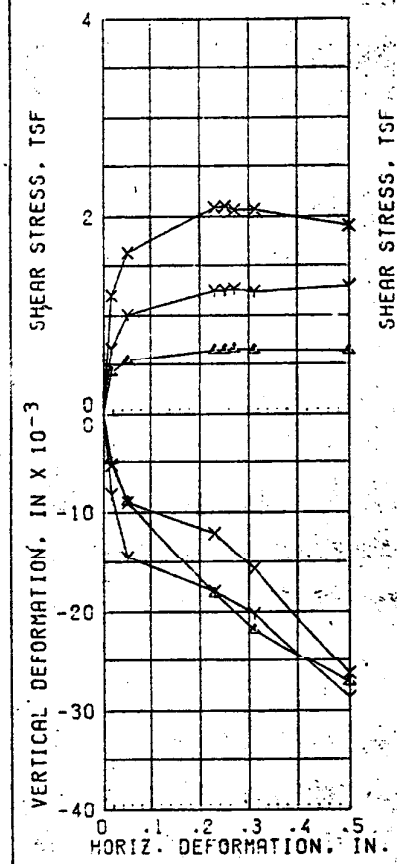
TAN ϕ = 0.594

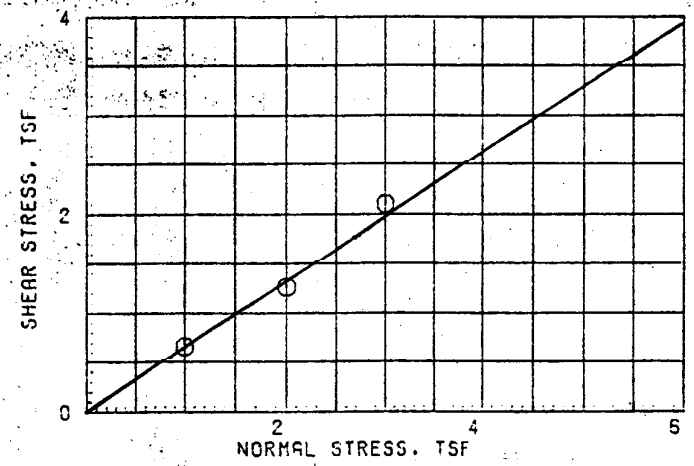
C = 0

	TEST NO.	1 △	2 Y	3 X	
INITAL	WATER CONTENT, %	21.2	22.8	23.2	
	VOID RATIO	0.678	0.706	0.658	
	SATURATION, %	83.0	86.1	93.9	
	DRY DENSITY, PCF	98.9	97.3	100.1	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	26.0	24.9	24.0	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.58	1.24	1.75	
TIME TO FAILURE, MIN		826	549	2035	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.594 IN. THICK
CLASSIFICATION SILTY SAND (SM) LIGHT GRAY; WITH 1/4" SHELLS		
LL / PL / PI	GS 2.66 (EST)	
REMARKS:	PROJECT M.R.G.O. - NEW SHIPLOCK	
	IHNC SITE	
	BORING NO. 2-SCU	SAMPLE 13-C
	DEPTH/ELEV 49.8/-57.8	DATE 10 AUG 81

DIRECT SHEAR TEST REPORT





ϕ = 33.56°

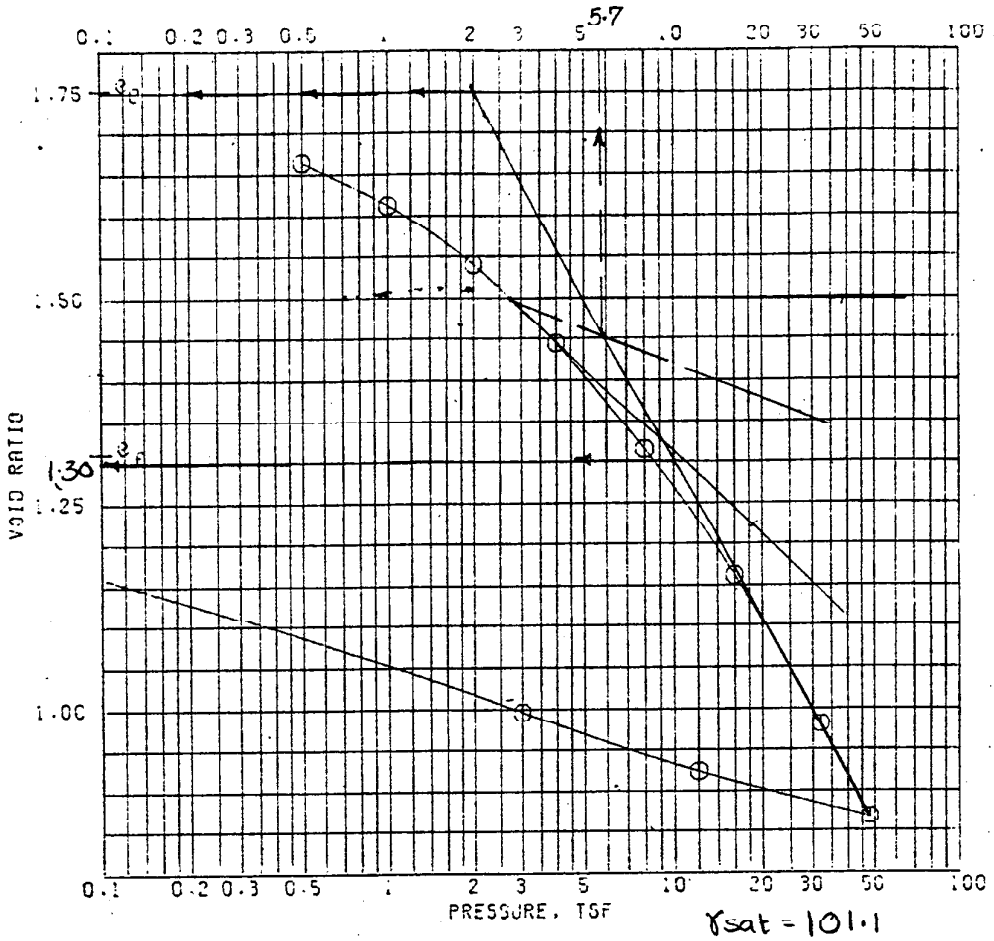
TAN ϕ = 0.663

C = 0

	TEST NO.	1 △	2 Y	3 X	
INITIAL	WATER CONTENT, %	15.8	17.6	15.9	
	VOID RATIO	0.590	0.668	0.563	
	SATURATION, %	71.3	70.3	74.5	
	DRY DENSITY, PCF	104.4	99.5	106.2	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	14.7	16.0	15.5	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.66	1.29	2.10	
TIME TO FAILURE, MIN		1495	1495	1390	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF			–		

TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.584 IN. THICK
CLASSIFICATION SILTY SAND (SM), LIGHT GRAY; WITH 1/2" SHELLS		
LL / PL / PI	GS 2.66 (EST)	
REMARKS:	PROJECT M.R.G.C. - NEW SHIPLOCK	
	IHNC SITE	
	BORING NO. 2-SCU	SAMPLE 15-C
	DEPTH/ELEV 57.9/-65.9	DATE 12 AUG 81

DIRECT SHEAR TEST REPORT



$\gamma_{sat} = 101.1$

$C_v = \frac{1.75 - 1.30}{\log 10 - \log 2} = \frac{0.45}{0.699} = 0.644$

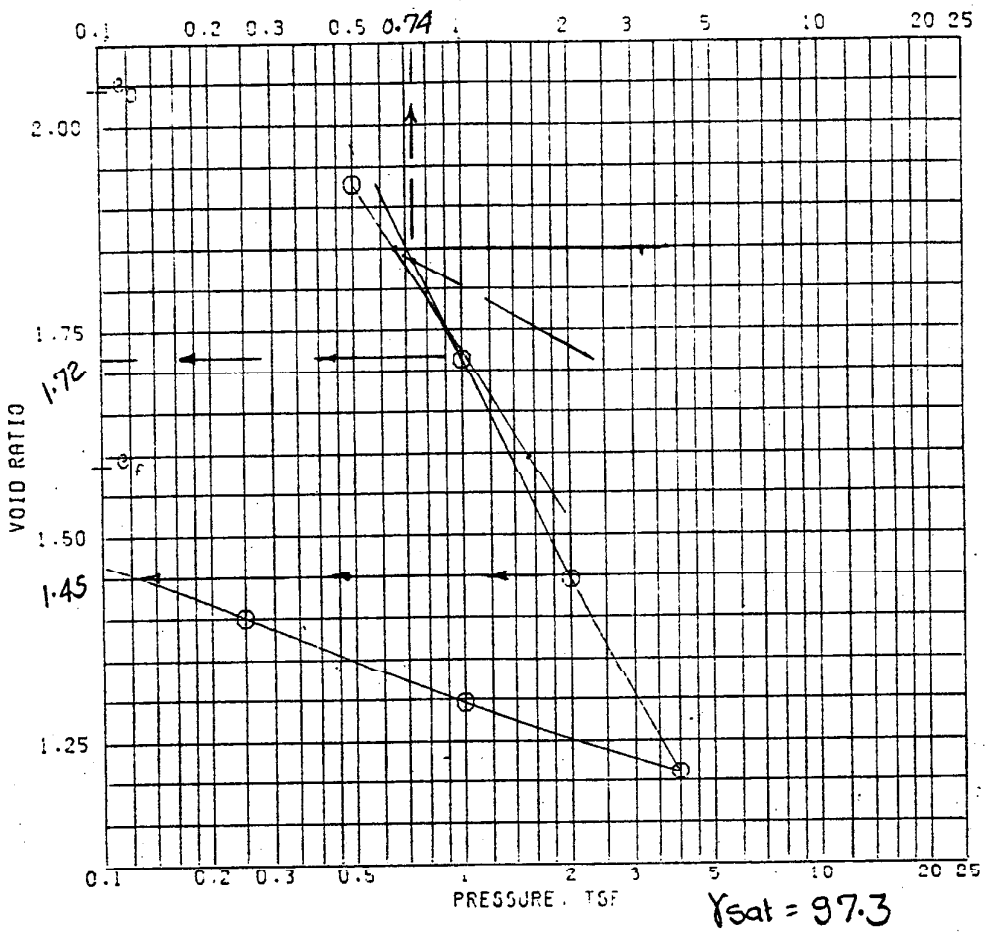
			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	54.3	44.4
PRECONSOL. PRESSURE, TSF	5.70	DRY DENSITY, PCF	61.3	73.0
COMPRESSION INDEX	0.64	SATURATION, %	84.6	91.6
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.751	1.310
DIA. IN 4.44	HT. IN 1.107	BACK PRESSURE, TSF		

CLASSIFICATION ORGANIC CLAY (OH), GRAY

LL 221	PL 97	PI 124	PROJECT M.R.G.O. - NEW SHIPLOCK
GS 2.70 (EST)	C_{10}		IHNC SITE
REMARKS			BORING NO. 2-SCU / SAMPLE NO. 2-B
ELEV. -12.8			DEPTH/ELEV 4.8/-12.8 / DATE 23 SEP 81
Pc = 5.7			CONSOLIDATION TEST REPORT
Cc = 0.64			

SHEET 1 OF 13

Encl 2



$C_c = \frac{1.72 - 1.45}{\log 2 - \log 1} = 0.90$

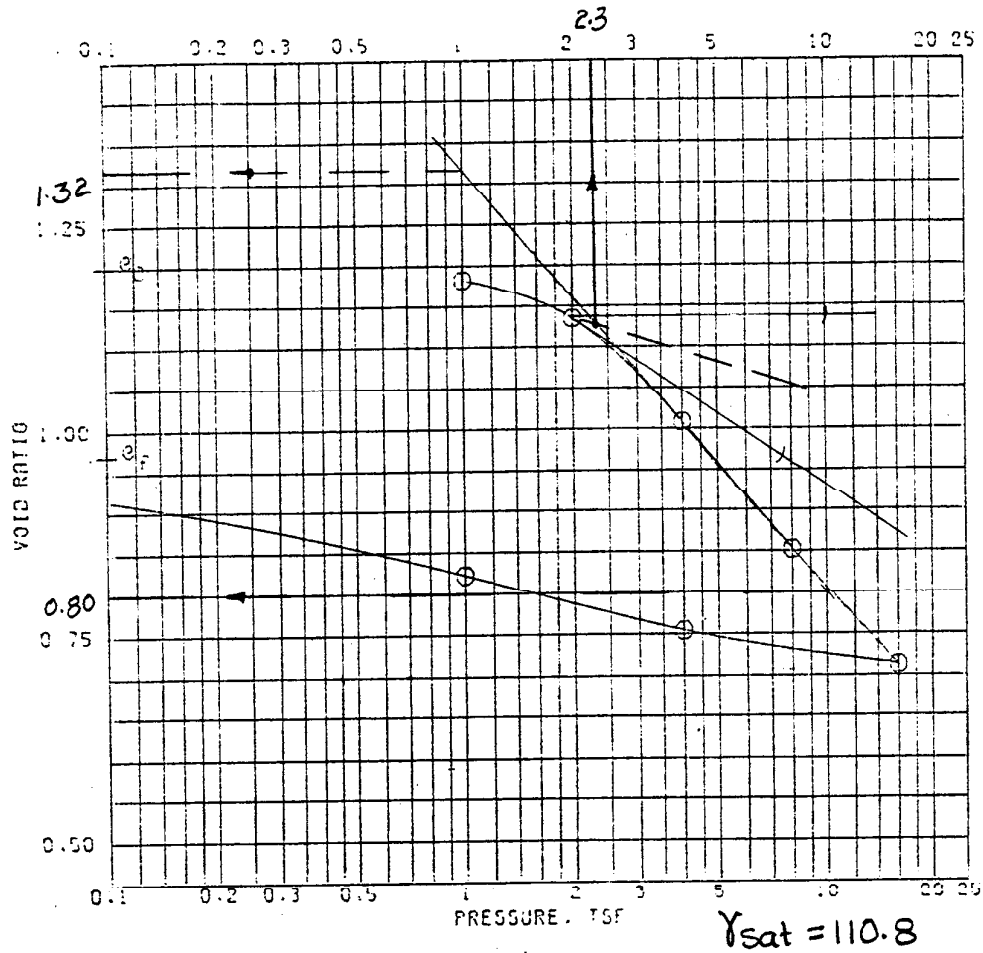
$\gamma_{sat} = 97.3$

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	74.3	58.9
PRECONSOL. PRESSURE, TSF	0.74	DRY DENSITY, PCF	55.4	65.2
COMPRESSION INDEX	0.90	SATURATION, %	98.2	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	2.042	1.586
DIA. IN 4.44	HT. IN 1.120	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY

LL 91	PL 28	PI 63	PROJECT M.R.G.O. - NEW SHIPLOCK
GS 2.70 (EST)	D_{10}		IHNC SITE
REMARKS			BORING NO. 2-SCU / SAMPLE NO. 9-D
Elev. -42.7			DEPTH/ELEV 34.7/-42.7 / DATE 23 SEP 81
P_c = 0.74			CONSOLIDATION TEST REPORT
C_c = 0.90			

SHEET 1 OF 2



1.32
- .80
.52

$\gamma_{sat} = 110.8$

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	44.1	37.1
PRECONSOL. PRESSURE, TSF	2.30	DRY DENSITY, PCF	76.7	85.6
COMPRESSION INDEX	0.52	SATURATION, %	99.3	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.199	0.969
DIA. IN 4.44	HT. IN 1.125	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY & TAN MOTTLED

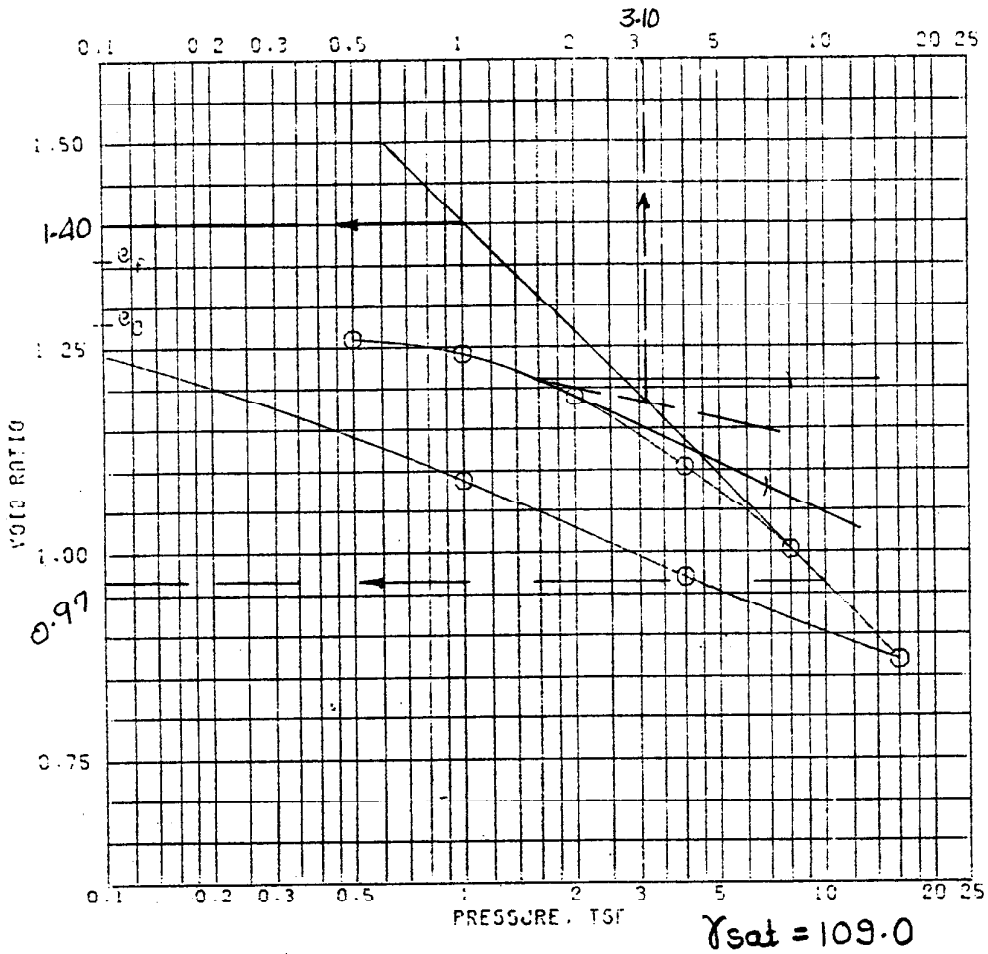
LL 71	PL 20	PI 51	PROJECT M.R.O.O - NEW SHIPLOCK
GS 2.70 (EST)	D_{10}		IHNC SITE
REMARKS		BORING NO 2-SCU	SAMPLE NO. 12-C
		DEPTH/ELEV 45.7/-53.7	DATE 23 SEP 92

EL.-53.7

$P_c = 2.30$

$C_c = 0.52$

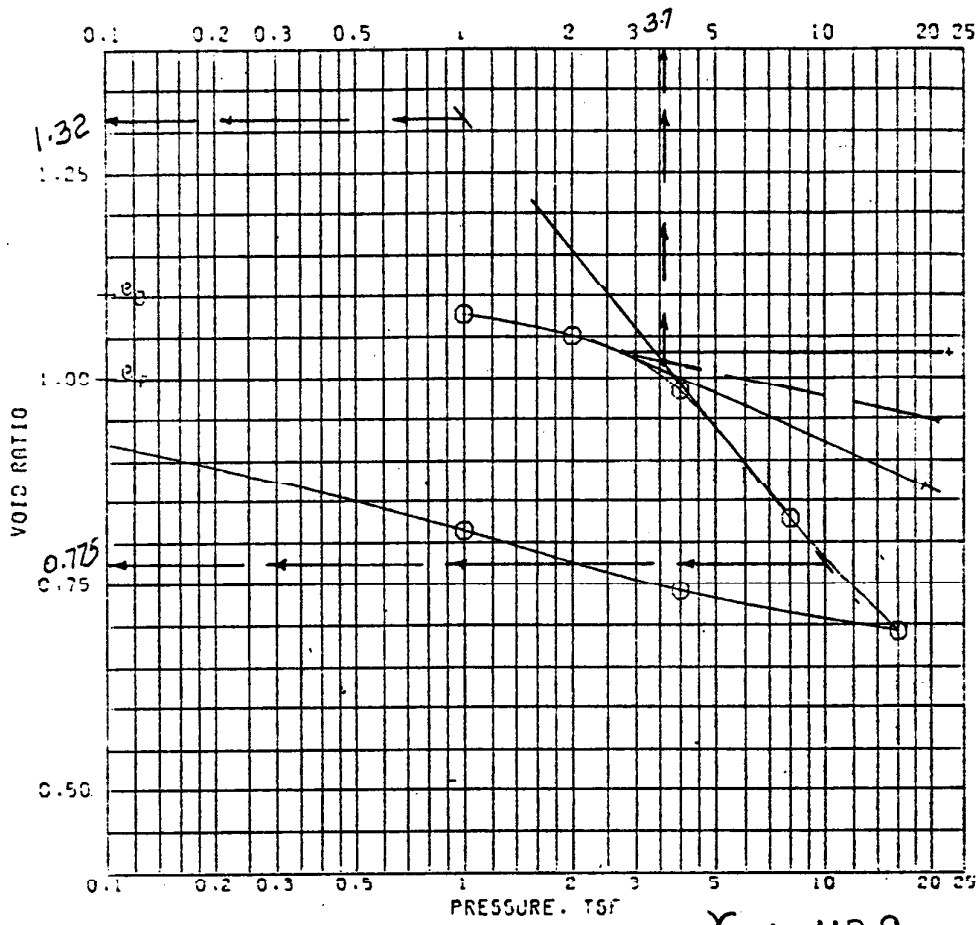
CONSOLIDATION TEST REPORT



1.40
- .97
.43

γ_{sat} = 109.0

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	45.0	53.6
PRECONSOL. PRESSURE, TSF	3.10	DRY DENSITY, PCF	74.0	71.5
COMPRESSION INDEX	0.43	SATURATION, %	97.0	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.279	1.356
DIA. IN 4.44	HT. IN 1.130	BACK PRESSURE, TSF		
CLASSIFICATION PLASTIC CLAY (CH), GRAY & TAN MOTTLED; SILT LENSES				
LL 100	PL 23	PI 77	PROJECT M.R.G.O. - NEW SHIPLOCK	
GS 2.70 (EST)	D_{10}		IHNC SITE	
REMARKS EL.-81.0		BORING NO. 2-SCU	SAMPLE NO. 19-B	
Pc = 3.10		DEPTH/ELEV 73.0/-81.0	DATE 23 SEP 92	
Cc = 0.43		CONSOLIDATION TEST REPORT		



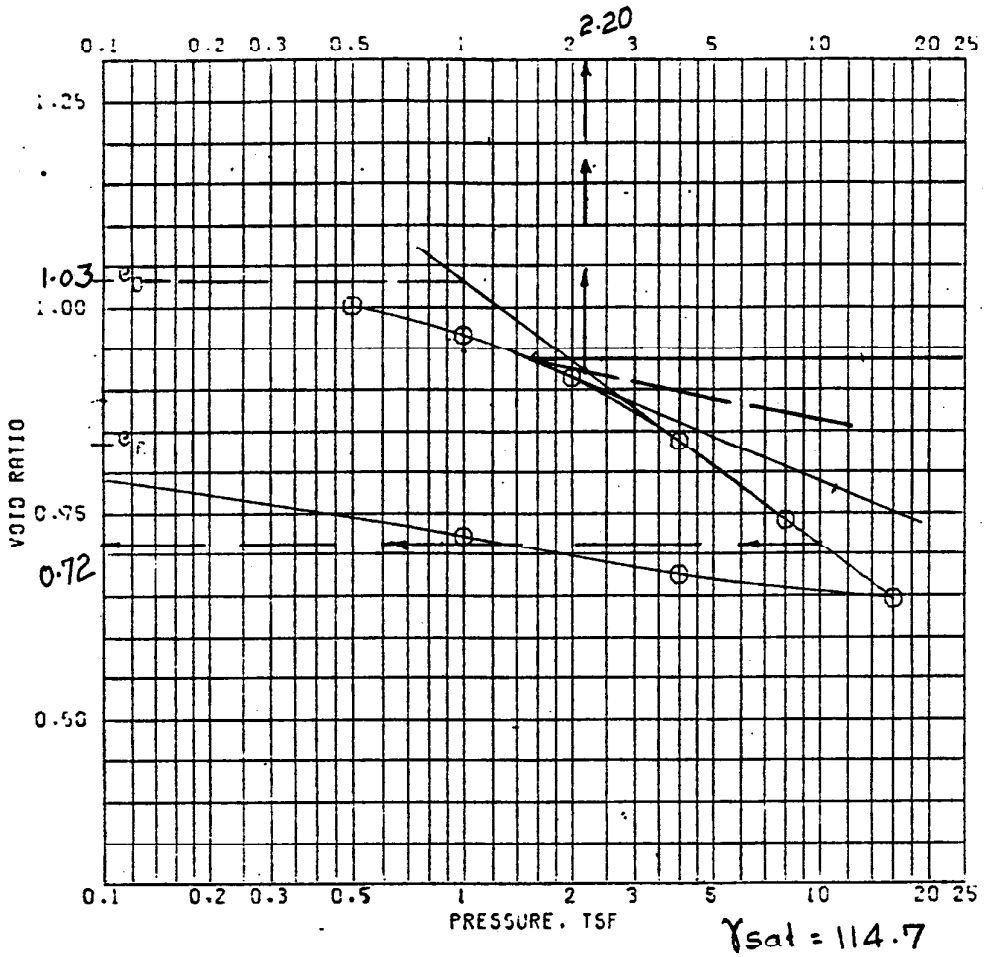
1.320
-.775
.545

$\gamma_{sat} = 112.9$

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	40.2	37.5
PRECONSOL. PRESSURE, TSF	3.70	DRY DENSITY, PCF	80.2	94.3
COMPRESSION INDEX	0.55	SATURATION, %	99.5	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.101	1.000
DIA. IN 4.44	HT. IN 1.112	BACK PRESSURE, TSF		

CLASSIFICATION CLAY (CL), GRAY; SILT LENSES

LL 44	PL 17	PI 27	PROJECT M.R.G.C. - NEW SHIPLOCK
GS 2.70 (EST)	D_{10}		IHNC SITE
REMARKS ELEV.-137.0			BORING NO. 2-SCU / SAMPLE NO. 33-B
Pc = 3.70			DEPTH/ELEV 139.0/137.0 / DATE 25 SEP 91
Cc = 0.55			CONSOLIDATION TEST REPORT



$\gamma_{sat} = 114.7$

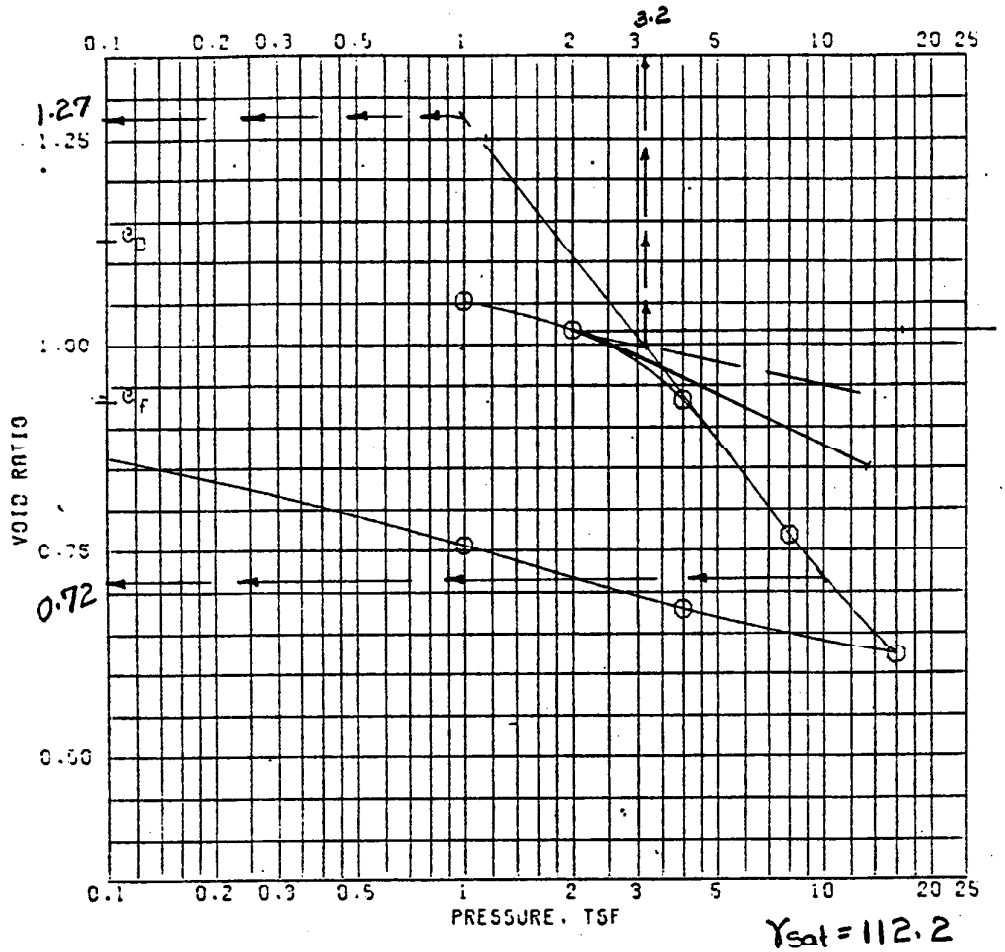
1.03
-0.72
0.31

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	36.9	31.9
PRECONSOL. PRESSURE, TSF	2.20	DRY DENSITY, PCF	93.0	91.9
COMPRESSION INDEX	0.31	SATURATION, %	96.5	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.031	0.934
DIA. IN 4.44	HT. IN 1.136	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY; SANDY SILT LAYER

LL 50	PL 18	PI 32	PROJECT M.R.G.O. - NEW SHIPLOCK	
GS 2.70 (EST)	D_{10}		IHNC SITE	
REMARKS ELEV.-122.4			BORING NO. 2-SCU	SAMPLE NO. 29-C
$p_c = 2.20$			DEPTH/ELEV 114.4/-122.4	DATE 24 SEP 81
$C_c = 0.30$			CONSOLIDATION TEST REPORT	

SHEET 1 OF 11



$\gamma_{sat} = 112.2$

$\frac{1.27 - 0.72}{0.55}$

	BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		
PRECONSOL. PRESSURE, TSF	3.20	
COMPRESSION INDEX	0.55	
WATER CONTENT, %	41.5	37.7
DRY DENSITY, PCF	79.2	87.3
SATURATION, %	99.5	100 +
VOID RATIO	1.127	0.931
BACK PRESSURE, TSF		

TYPE SPECIMEN	UNDISTURBED
DIA. IN 4.44	HT. IN 1.124
CLASSIFICATION	SILTY CLAY (CL), GRAY
LL 33 PL 20 PI 13	PROJECT M.R.G.O. - NEW SHIPLOCK
GS 2.70 (EST) D_{10}	IHNC SITE
REMARKS	BORING NO. 2-SCU / SAMPLE NO. 26-C
ELEV. 110.4	DEPTH/ELEV 102.4/-110.4 / DATE 24 SEP 81
Pc = 3.20	CONSOLIDATION TEST REPORT
Cc = 0.55	

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