

## **APPENDIX C GEOTECHNICAL LABORATORY RESULTS**

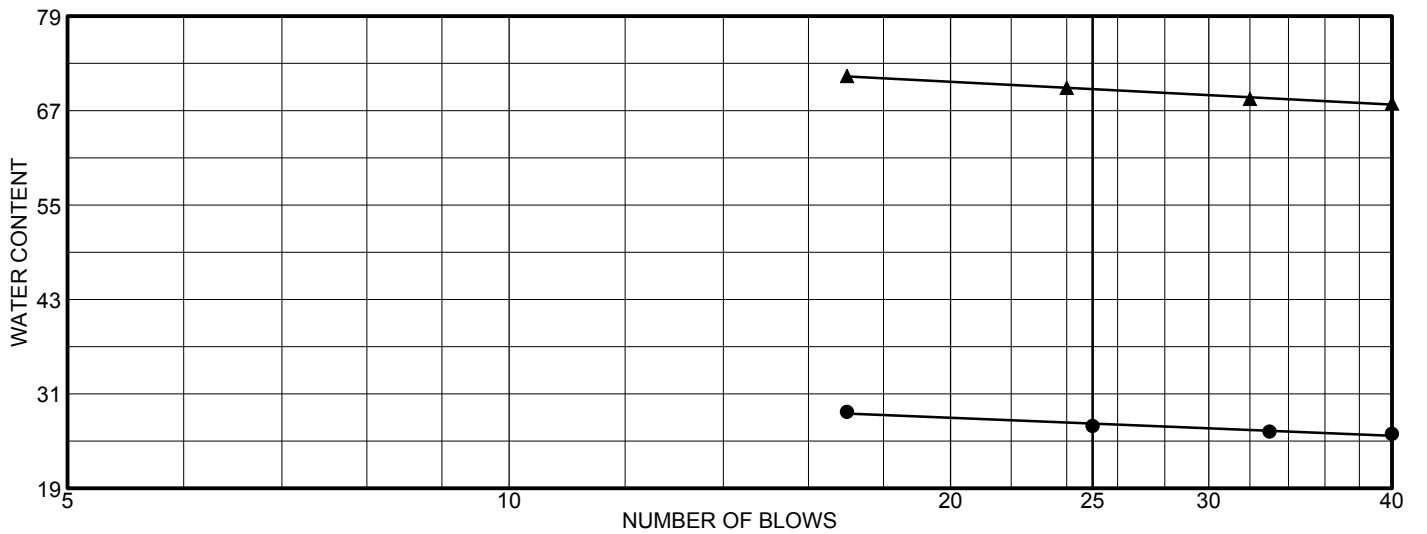
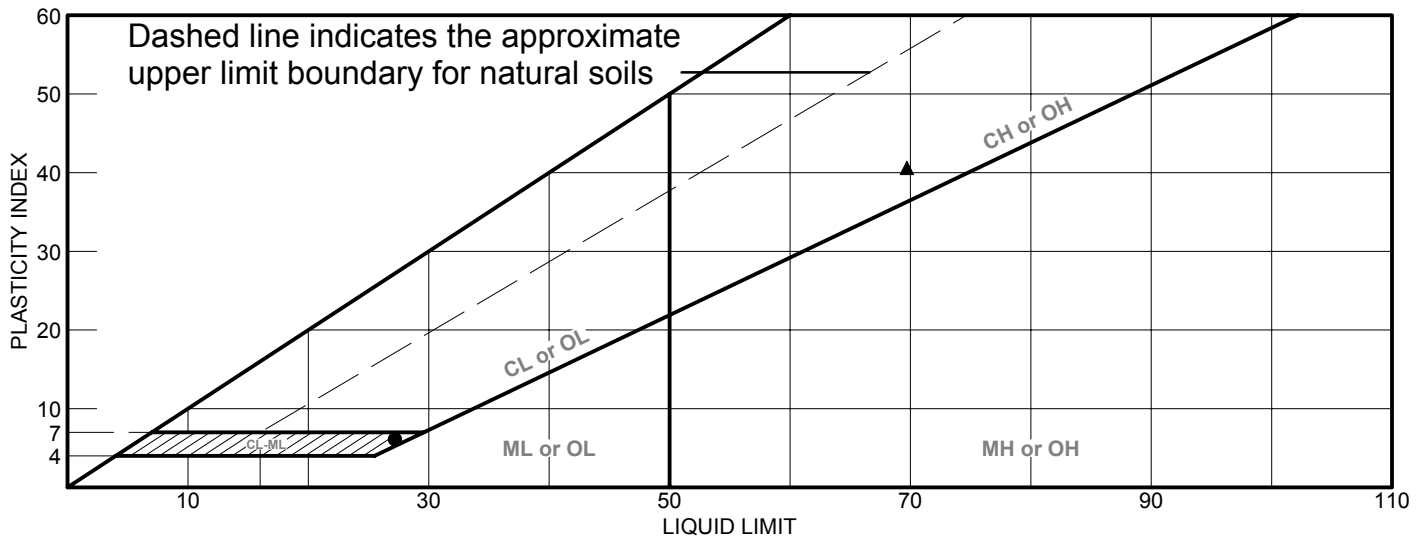
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# Current 2012 Data

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# LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown Silty, Clayey SAND	27.2	21.1	6.1	80.0	39.9	SC-SM
■	Grayish Brown Silty SAND		NP	NP	96.8	26.8	SM
▲	Gray Fat CLAY	69.7	29.1	40.6			

**Project No.** 734-003      **Client:** Terraphase

**Project:** Laney College - 001-09715-00

- Source: 1
- Source: 1
- ▲ Source: 1

**Elev./Depth:** 10-11'  
**Elev./Depth:** 11-12'  
**Elev./Depth:** 20-21'

**Remarks:**

- 
- Could not roll out. Sample slides in bowl. Non-plastic.
- ▲

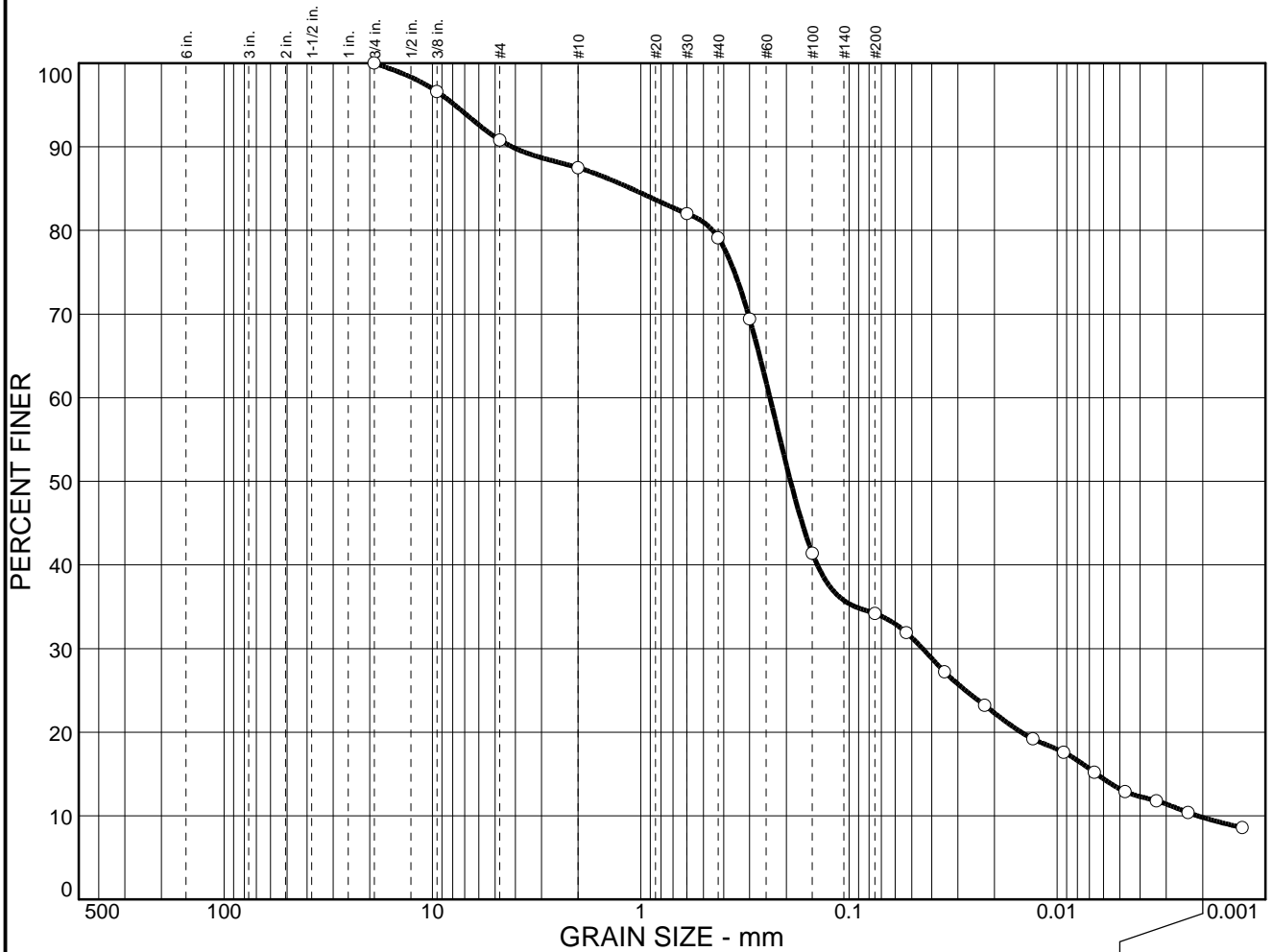
LIQUID AND PLASTIC LIMITS TEST REPORT

## COOPER TESTING LABORATORY

Figure

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# Particle Size Distribution Report



<b>% COBBLES</b>	<b>% GRAVEL</b>	<b>% SAND</b>	<b>% SILT</b>	<b>% CLAY</b>
0.0	9.2	56.6	24.4	9.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4 in.	100.0		
3/8 in.	96.6		
#4	90.8		
#10	87.5		
#30	82.0		
#40	79.1		
#50	69.4		
#100	41.4		
#200	34.2		
#270	31.9		

**Material Description**

Brown Silty, Clayey SAND

**Atterberg Limits**

PL= 21.1      LL= 27.2      PI= 6.1

**Coefficients**

D<sub>85</sub>= 1.11      D<sub>60</sub>= 0.240      D<sub>50</sub>= 0.191  
D<sub>30</sub>= 0.0443      D<sub>15</sub>= 0.0065      D<sub>10</sub>= 0.0021  
C<sub>u</sub>= 113.52      C<sub>c</sub>= 3.88

**Classification**

USCS= SC-SM      AASHTO=

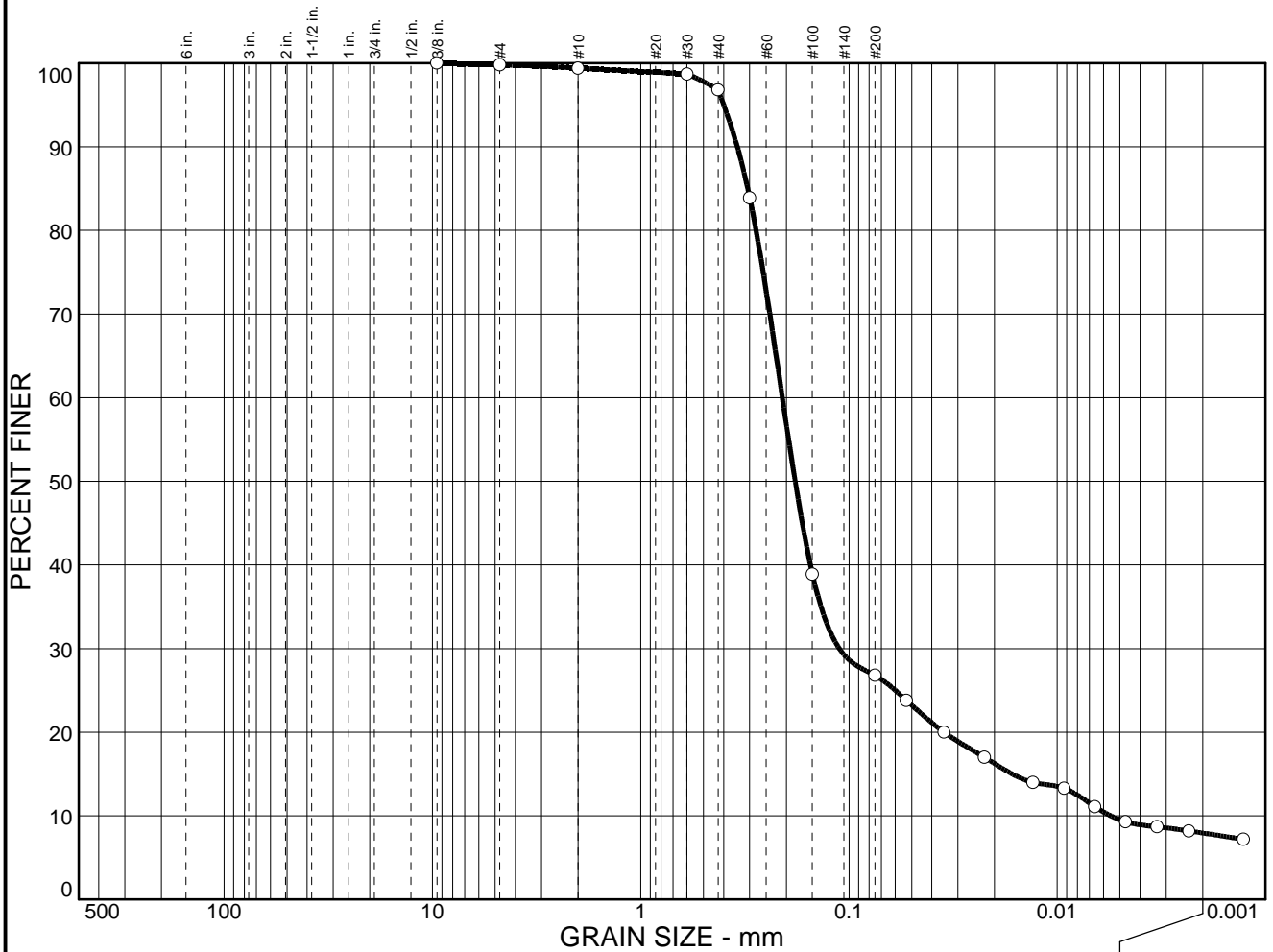
**Remarks**

\* (no specification provided)

**Sample No.:** \_\_\_\_\_      **Source of Sample:** 1      **Date:** 3/28/12  
**Location:** \_\_\_\_\_      **Elev./Depth:** 10-11'

<b>COOPER TESTING LABORATORY</b>	<p><b>Client:</b> Terraphase</p> <p><b>Project:</b> Laney College - 001-09715-00</p> <p><b>Project No:</b> 734-003</p>
	<b>Figure</b>

# Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.2	73.0	18.8	8.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8 in.	100.0		
#4	99.8		
#10	99.4		
#30	98.7		
#40	96.8		
#50	83.9		
#100	38.9		
#200	26.8		
#270	23.8		

**Material Description**

Grayish Brown Silty SAND

**Atterberg Limits**

PL= NP      LL=      PI= NP

**Coefficients**

D<sub>85</sub>= 0.307      D<sub>60</sub>= 0.209      D<sub>50</sub>= 0.182  
 D<sub>30</sub>= 0.111      D<sub>15</sub>= 0.0164      D<sub>10</sub>= 0.0055  
 C<sub>u</sub>= 37.83      C<sub>c</sub>= 10.72

**Classification**

USCS= SM      AASHTO=

**Remarks**

\* (no specification provided)

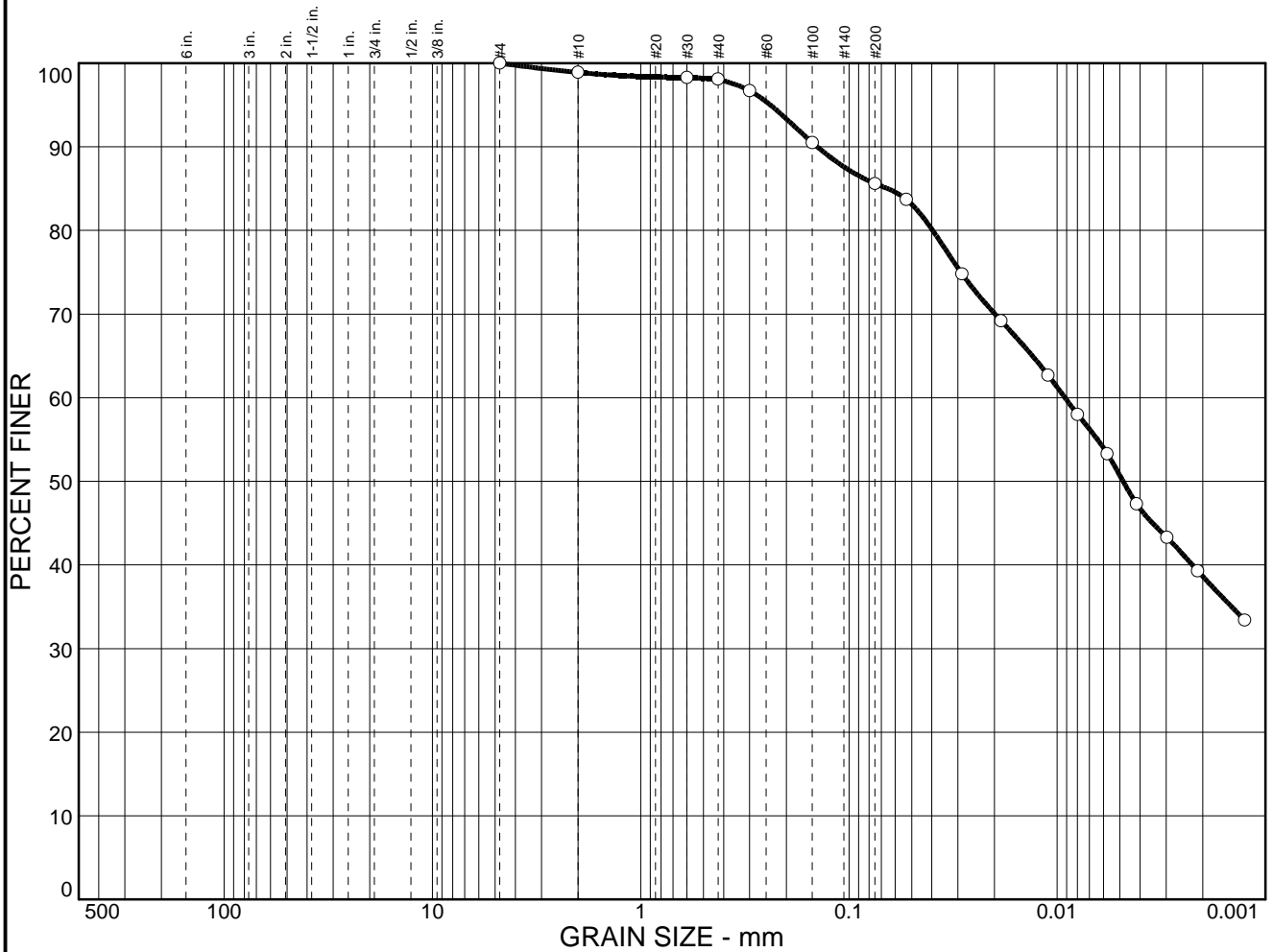
Sample No.:	Source of Sample: 1	Date: 3/28/12
Location:		Elev./Depth: 11-12'

<b>COOPER TESTING LABORATORY</b>	Client: Terraphase Project: Laney College - 001-09715-00 Project No: 734-003
	<b>Figure</b>





# Particle Size Distribution Report



<b>% COBBLES</b>	<b>% GRAVEL</b>	<b>% SAND</b>	<b>% SILT</b>	<b>% CLAY</b>
0.0	0.0	14.4	34.9	50.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	98.9		
#30	98.3		
#40	98.1		
#50	96.7		
#100	90.5		
#200	85.6		
#270	83.7		

**Material Description**

Gray Fat CLAY

**Atterberg Limits**

PL= 29.1      LL= 69.7      PI= 40.6

**Coefficients**

D<sub>85</sub>= 0.0652      D<sub>60</sub>= 0.0092      D<sub>50</sub>= 0.0048  
 D<sub>30</sub>=                  D<sub>15</sub>=                  D<sub>10</sub>=  
 C<sub>u</sub>=                  C<sub>c</sub>=

**Classification**

USCS= CH                  AASHTO=

**Remarks**

\* (no specification provided)

**Sample No.:** \_\_\_\_\_      **Source of Sample:** 1      **Date:** \_\_\_\_\_  
**Location:** \_\_\_\_\_      **Elev./Depth:** 20-21'

<b>COOPER TESTING LABORATORY</b>	<b>Client:</b> Terraphase <b>Project:</b> Laney College - 001-09715-00 <b>Project No:</b> 734-003
	<b>Figure</b>

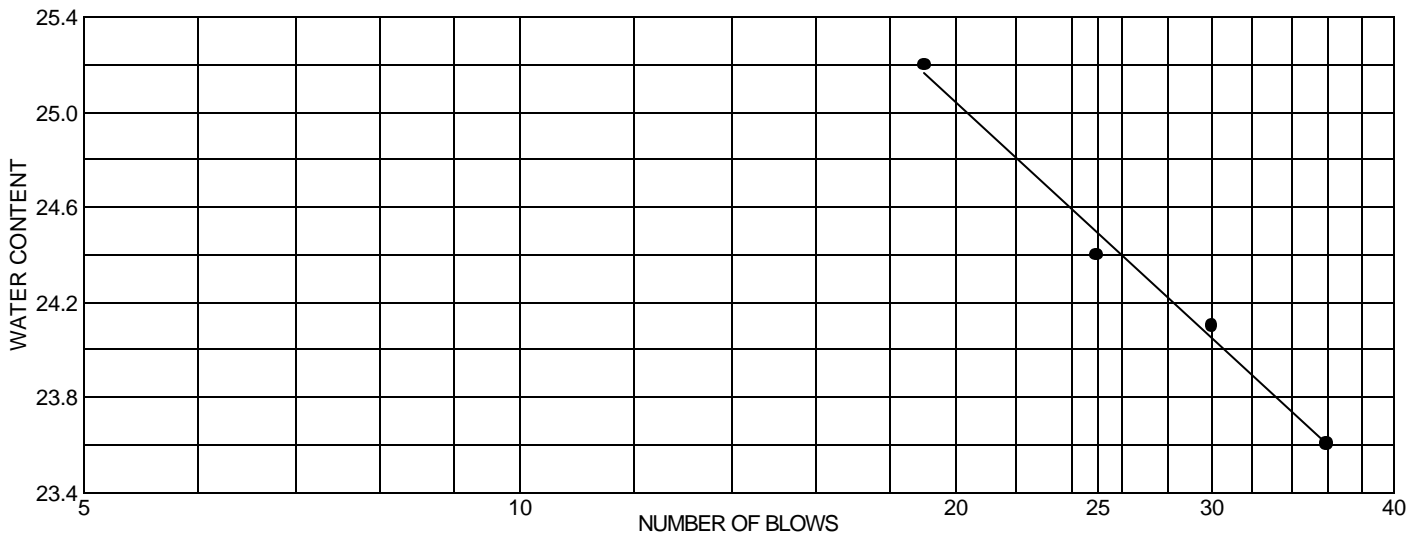
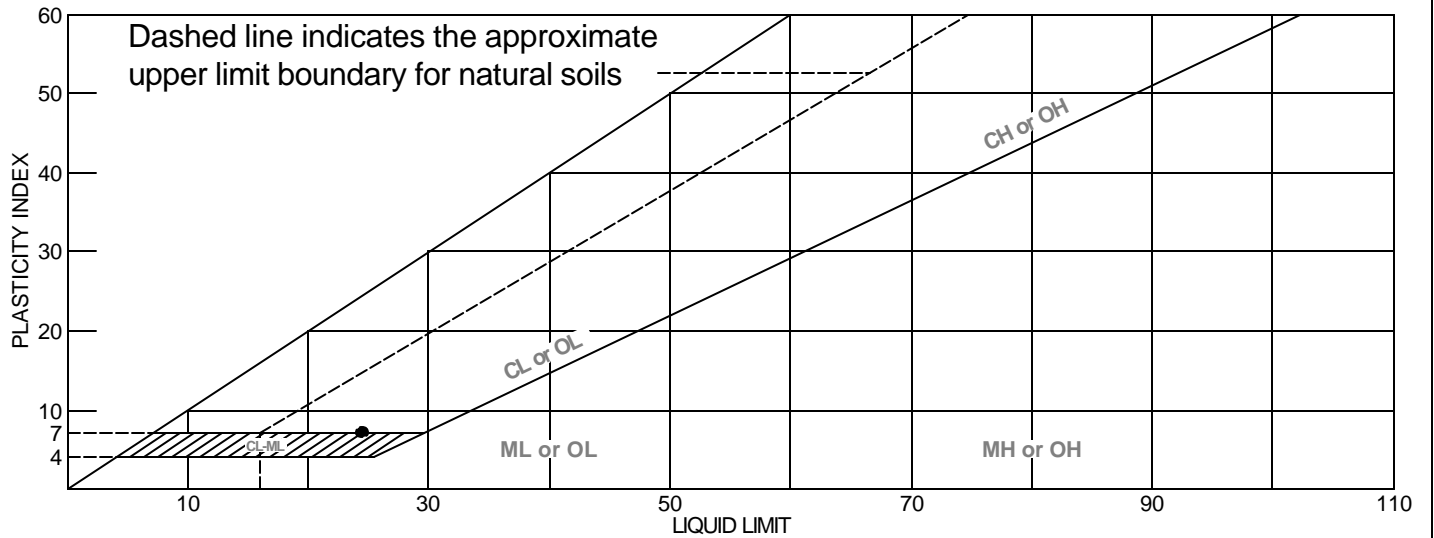


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# 2009 LFR Data

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# LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Brown Silty, Clayey SAND	24.5	17.4	7.1			

**Project No.** 473-031      **Client:** LFR  
**Project:** Laney College - 001-09715-00  
**Source:** Bulk      **Elev./Depth:** 0-3'

**Remarks:**  
 ●

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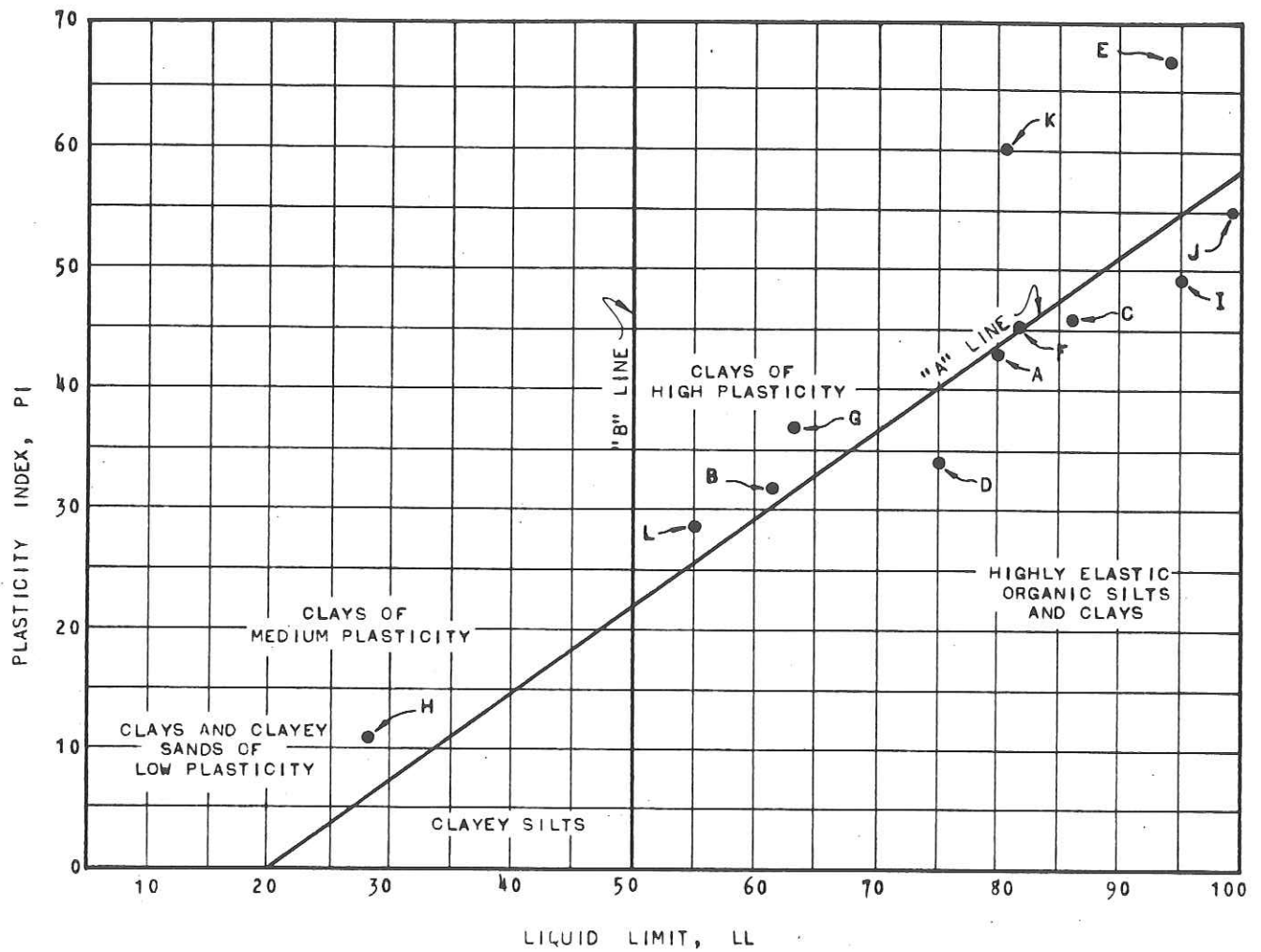




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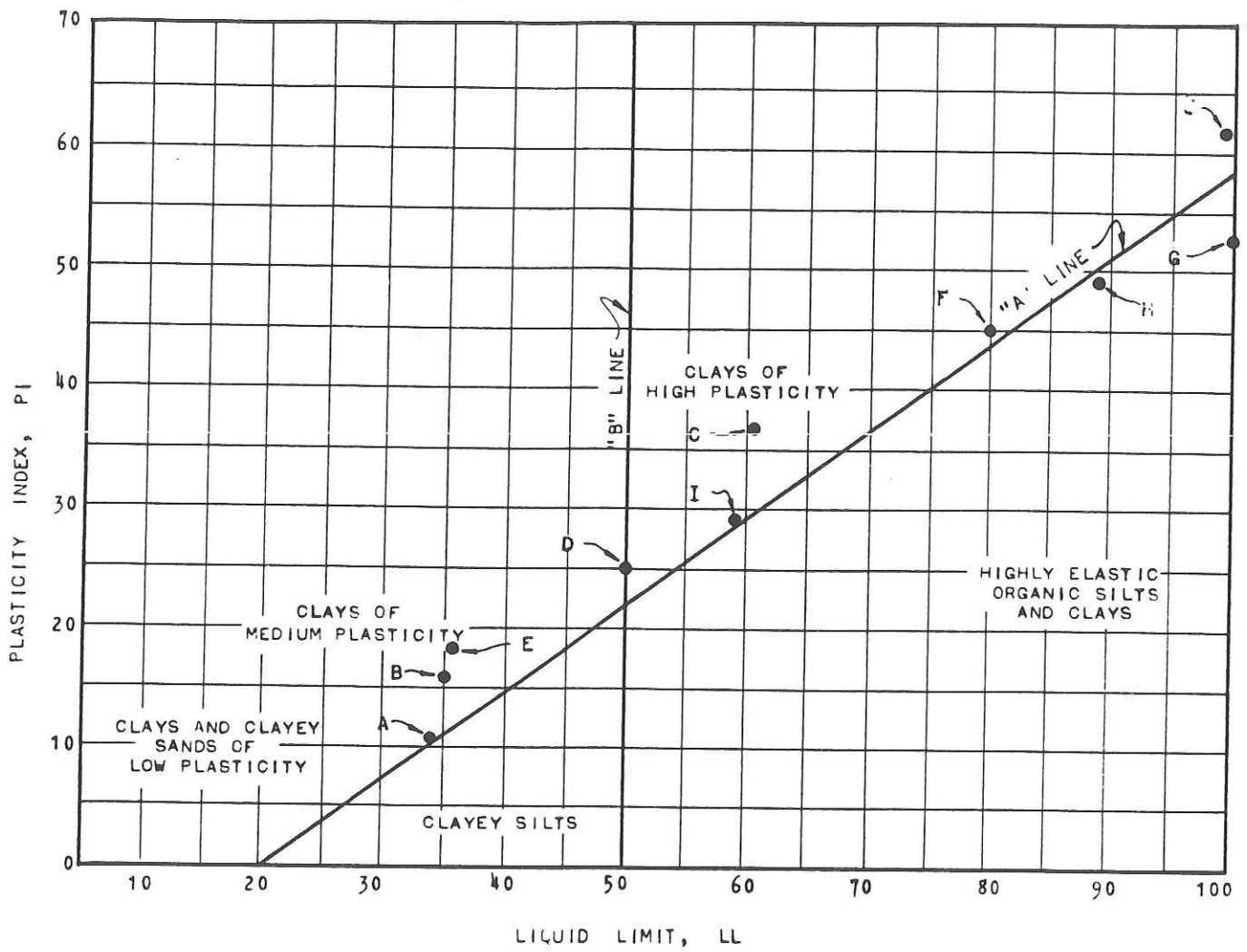
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CLASSIFICATION				TEST RESULTS			
SAMPLE IDENTIFICATION		ATTERBERG LIMITS		GRAIN SIZES - % DRY WEIGHT			
SAMPLE NO.	LETTER DESIGNATION	LIQUID LIMIT	PLASTICITY INDEX	SAND	SILT	CLAY	COLLOIDAL
2-5-4	A	80	43	-	-	-	-
12-4-3	B	62	32	-	-	-	-
12-5-2	C	86	46	-	-	-	-
12-6-4	D	75	34	-	-	-	-
12-7-4	E	94	67	-	-	-	-
12-8-4	F	82	45	-	-	-	-
12-9-2	G	63	37	-	-	-	-
12-11-4	H	28	11	-	-	-	-
13-2-3	I	95	49	-	-	-	-
13-3-4	J	99	55	-	-	-	-
14-5-4	K	81	60	-	-	-	-
14-7-5	L	55	28	-	-	-	-

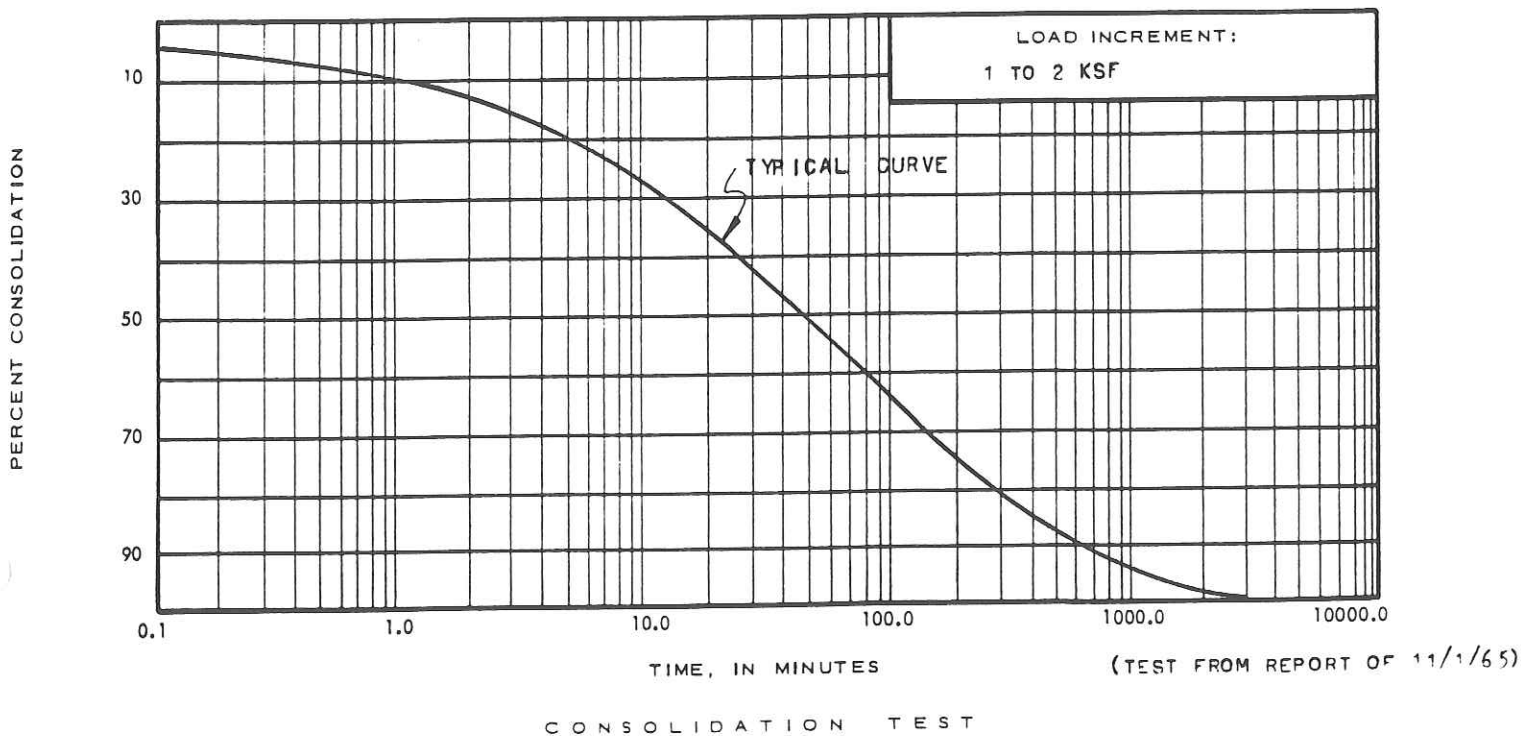
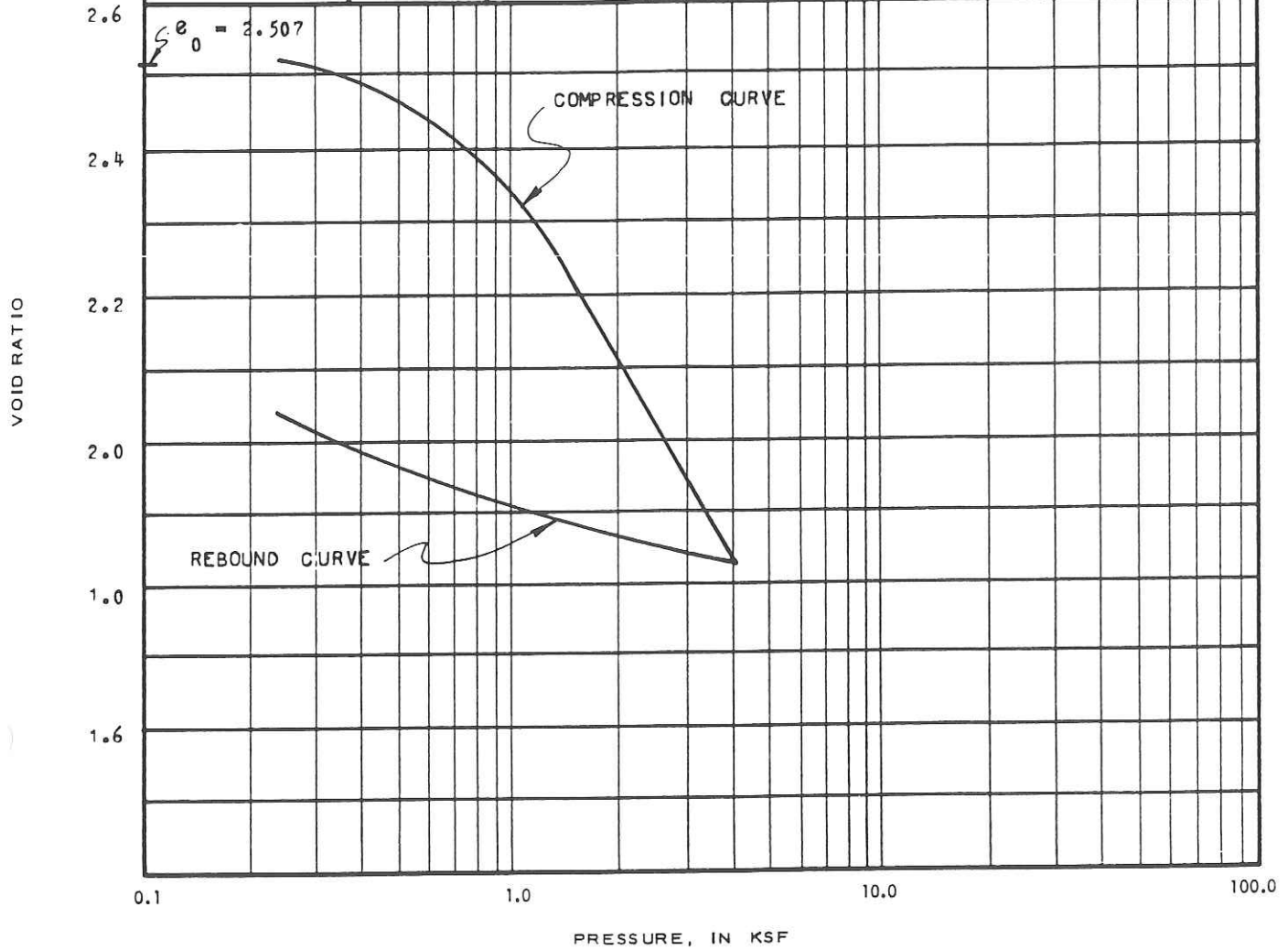
FIG. 29 - PLASTICITY CLASSIFICATION



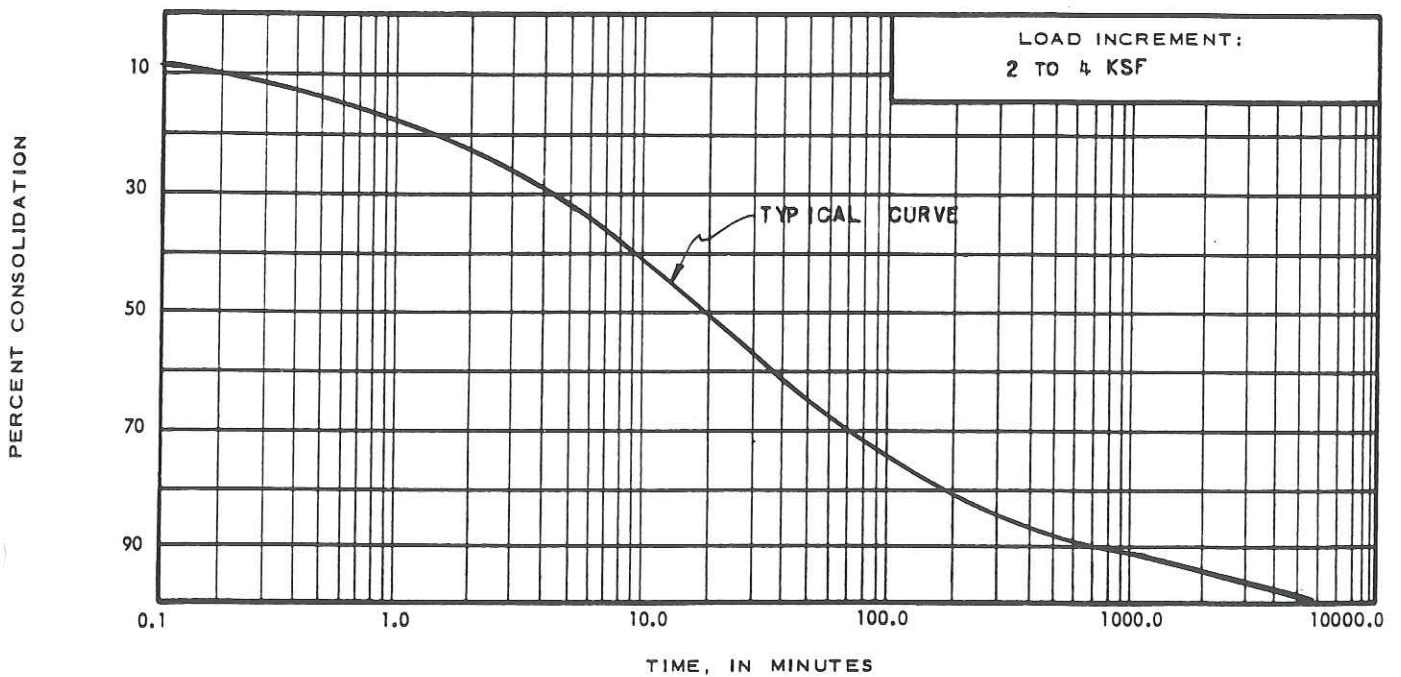
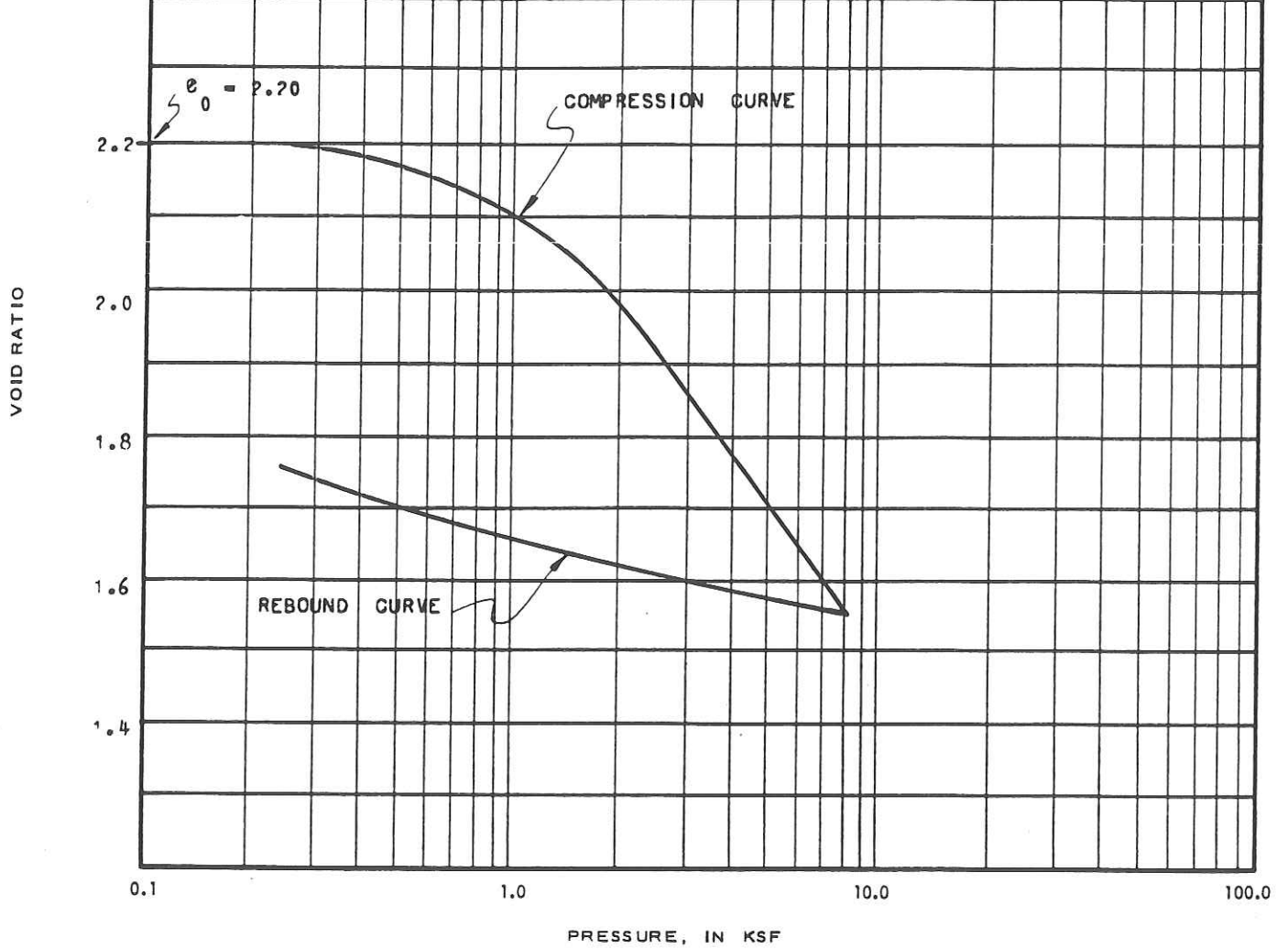
CLASSIFICATION				TEST RESULTS			
SAMPLE IDENTIFICATION		ATTERBERG LIMITS		GRAIN SIZES — % DRY WEIGHT			
SAMPLE NO.	LETTER DESIGNATION	LIQUID LIMIT	PLASTICITY INDEX	SAND	SILT	CLAY	COLLOIDAL
15-4-3	A	34	11	-	-	-	-
15-5-4	B	35	16	-	-	-	-
17-5-4	C	61	37	-	-	-	-
17-6-3	D	50	25	-	-	-	-
17-7-4	E	36	18	-	-	-	-
17-8-4	F	80	45	-	-	-	-
18-5-4	G	100	53	-	-	-	-
18-6-4	H	89	49	-	-	-	-
18-7-4	I	59	29	-	-	-	-
18-8-4	J	99	62	-	-	-	-

FIG. 30 — PLASTICITY CLASSIFICATION

SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
1-3-4						
INITIAL	2.67	92.8	47.5	98.8	.9610	2.43
FINAL		78.2	53.8	99.7	.8483	



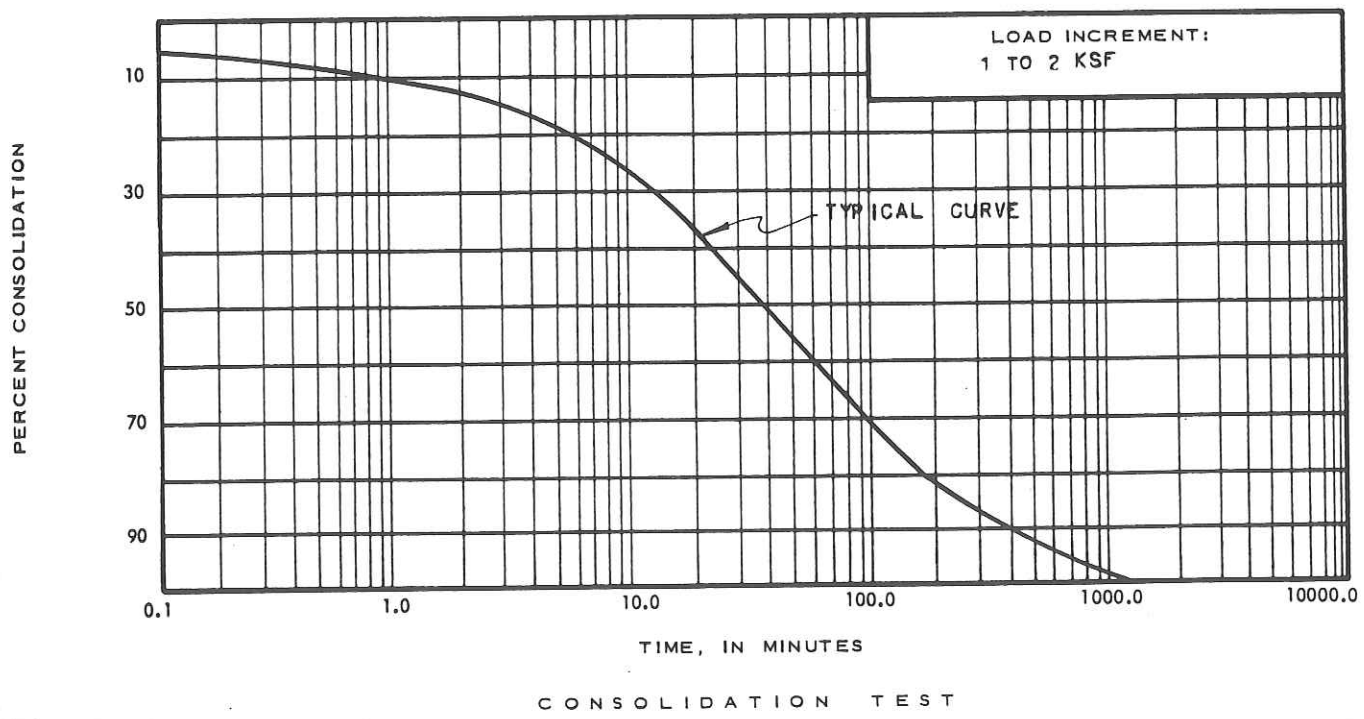
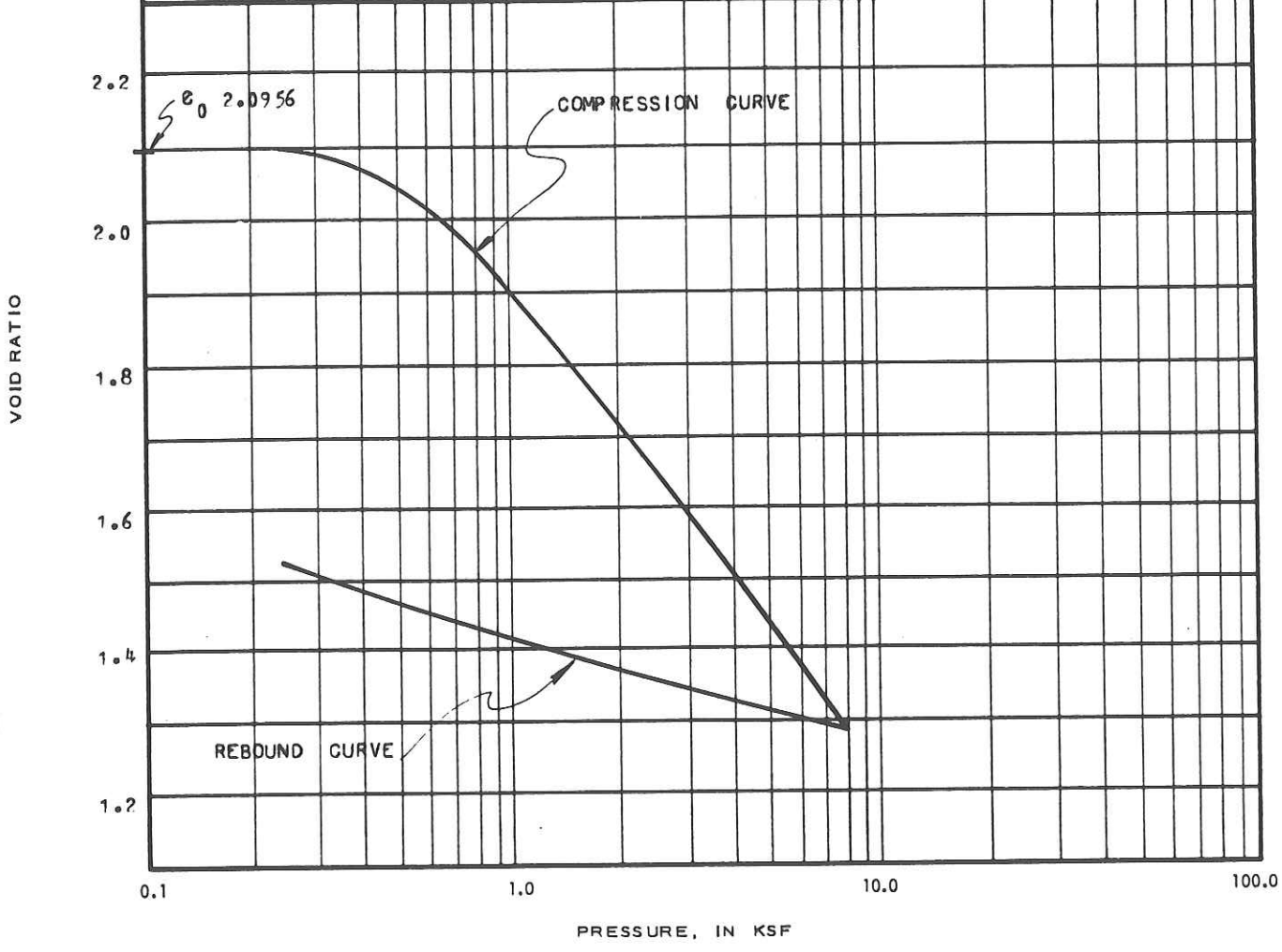
SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
2-5-4						
INITIAL	2.70	78.72	52.65	96.64	.9525	2.43
FINAL		64.65	61.24	99.70	.8190	



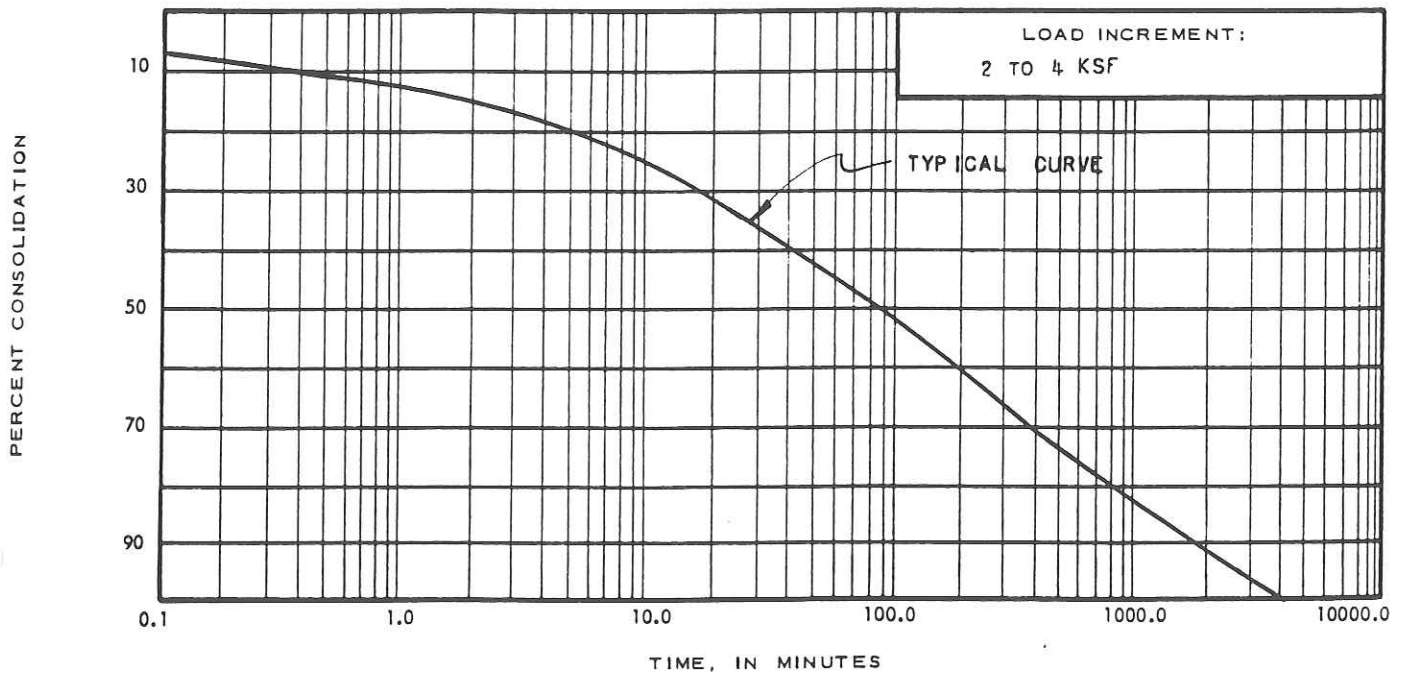
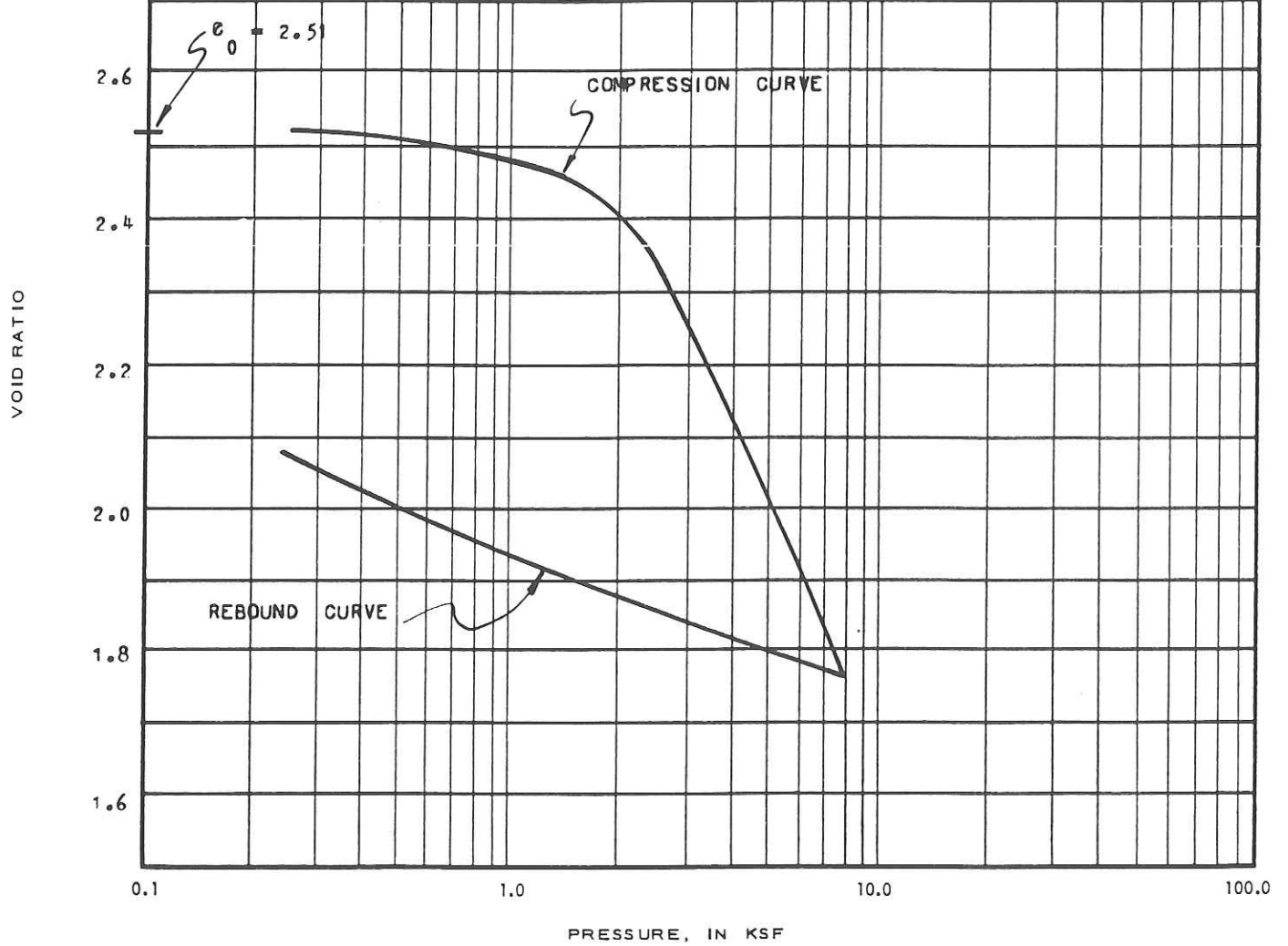
CONSOLIDATION TEST



SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
12-5-2	2.75	75.88	55.42	99.57	.9636	1.80
INITIAL		55.32	68.05	100.0	.7848	
FINAL						

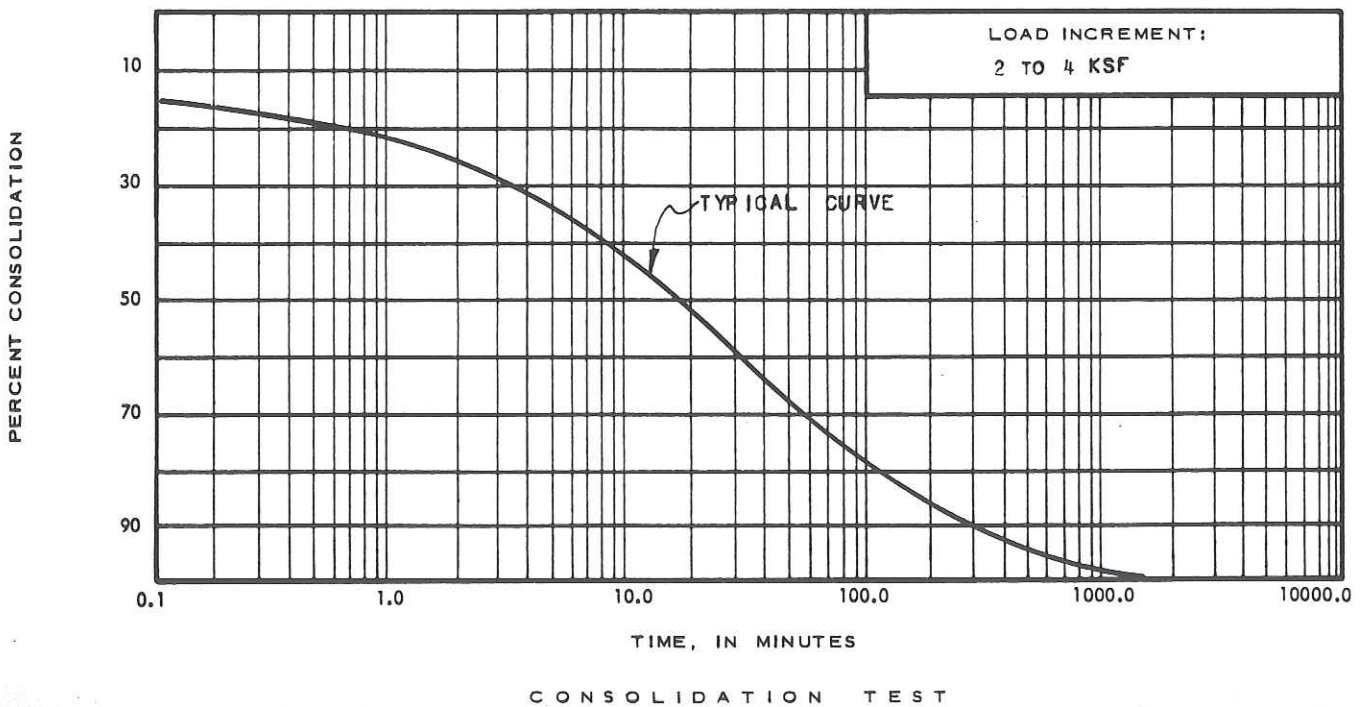
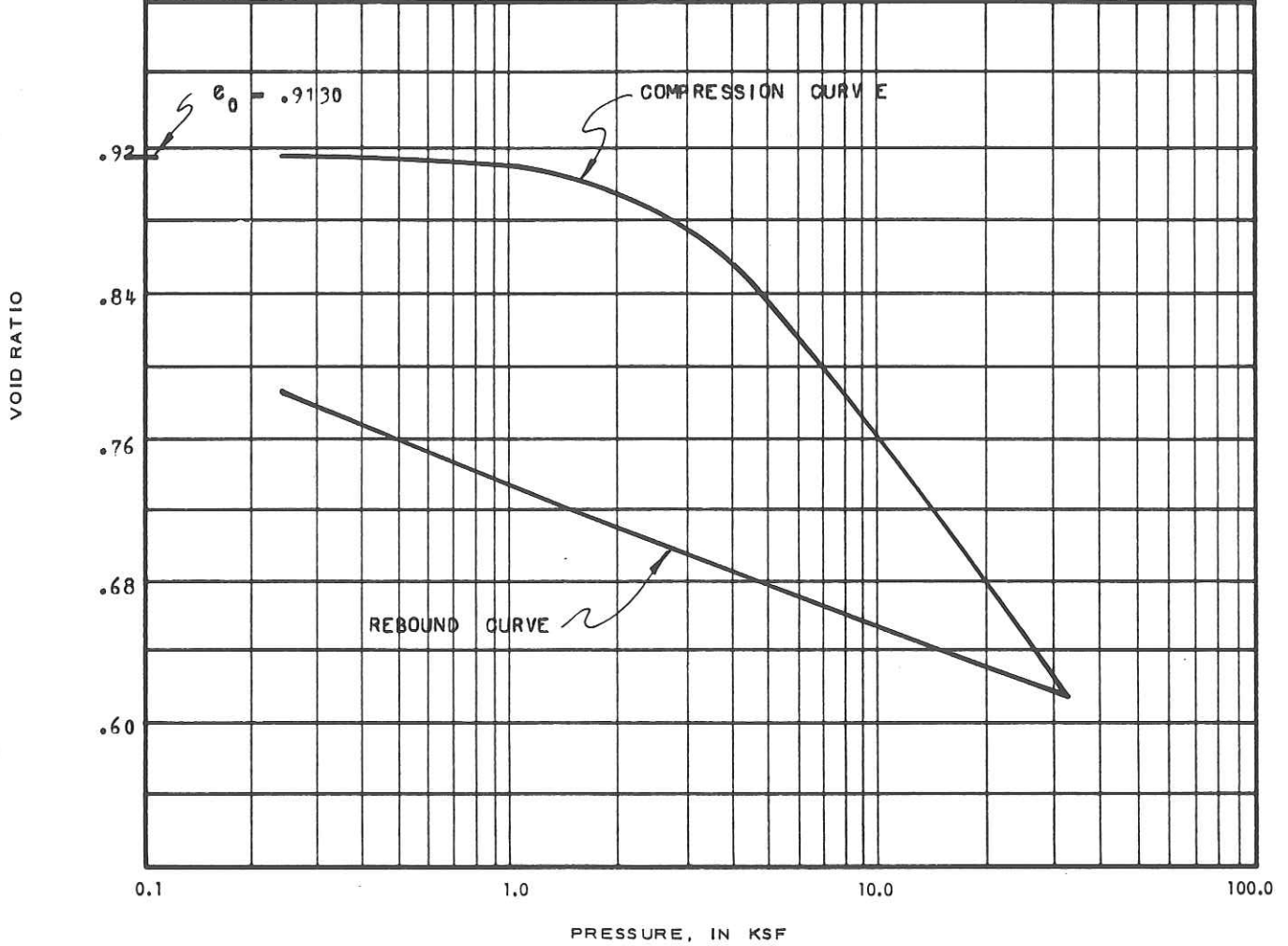


SAMPLE NO. 12-7-4	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
INITIAL	2.63	91.78	46.75	96.16	.9554	2.43
FINAL		79.14	53.24	99.98	.8389	

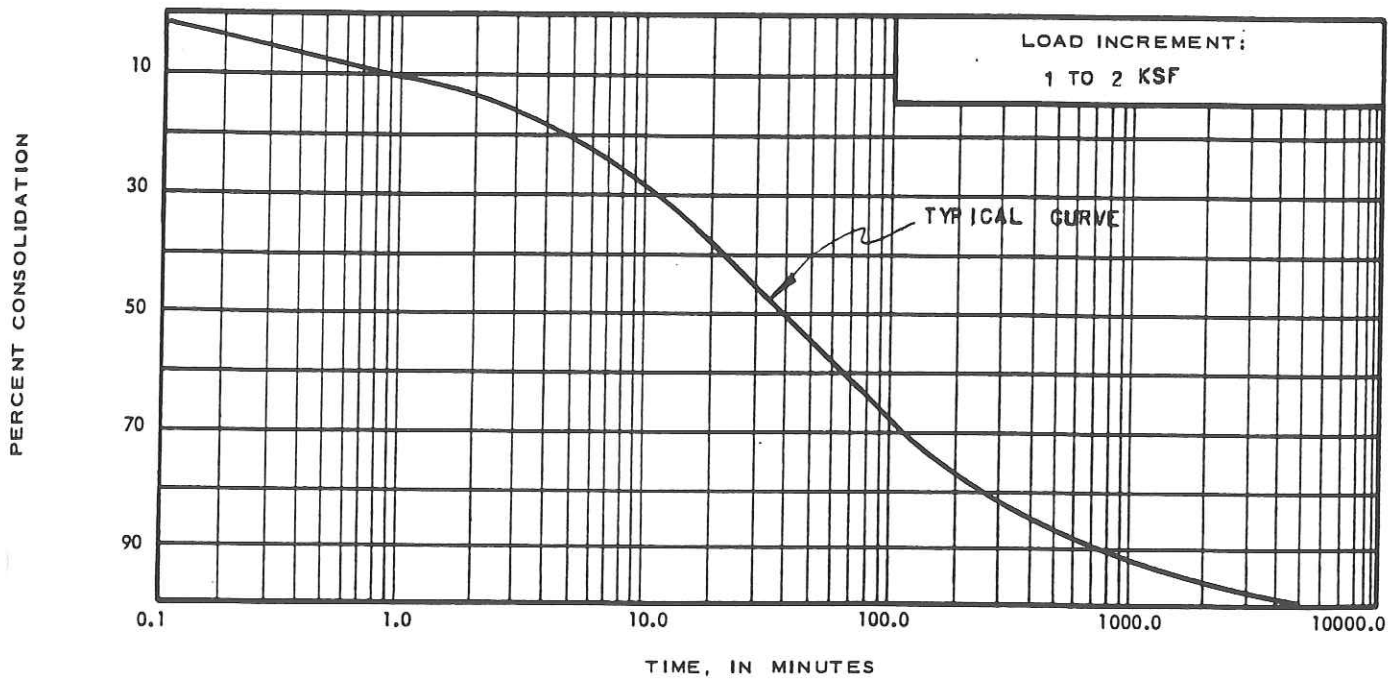
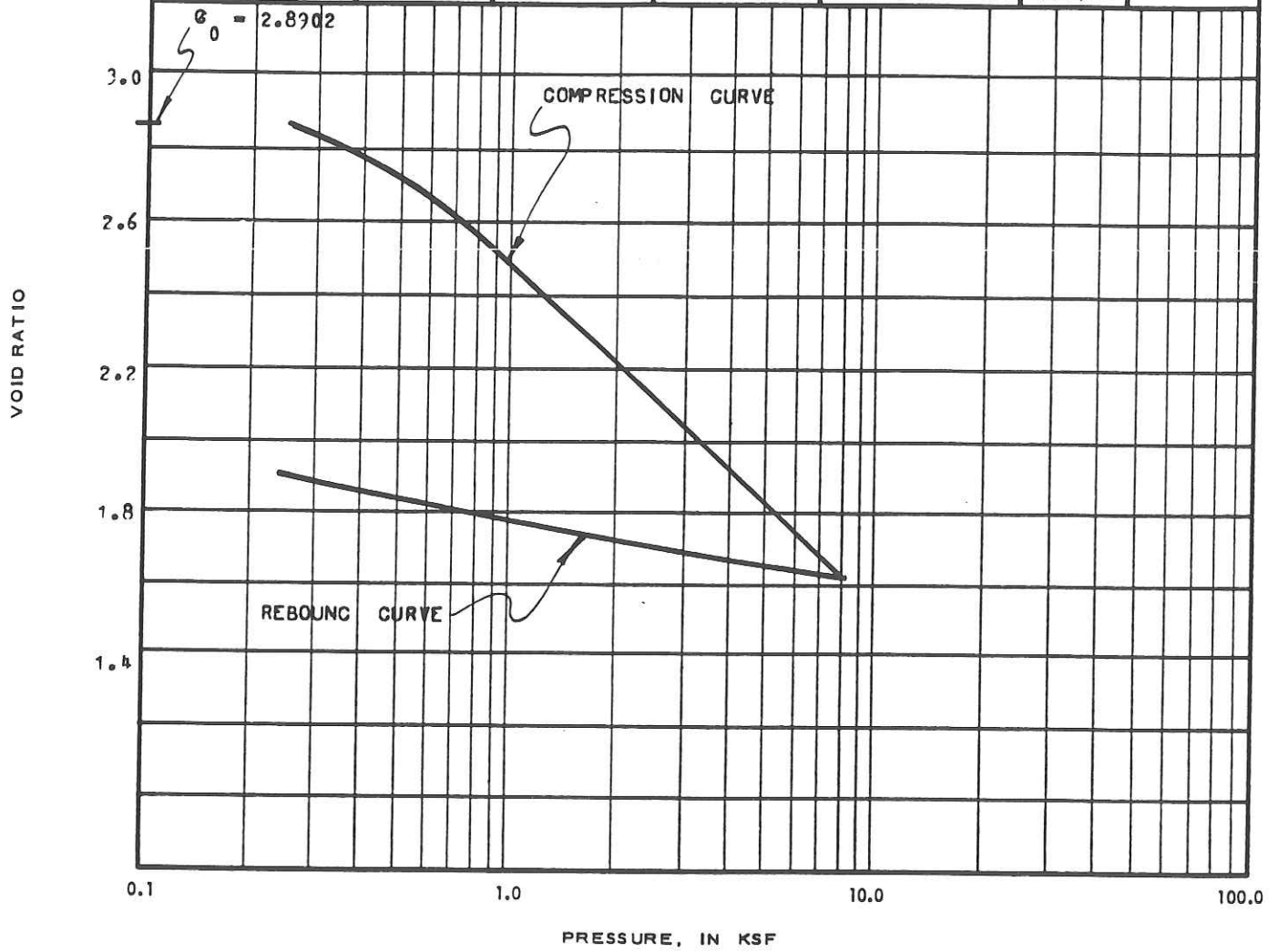


CONSOLIDATION TEST

SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
12-9-2						
INITIAL	2.81	31.13	91.64	95.80	.9157	1.94
FINAL		27.82	98.00	99.78	.8536	



SAMPLE NO. 13-3-9	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
INITIAL	2.75	102.24	44.10	97.28	.8981	1.94
FINAL		68.96	52.17	99.81	.6694	



CONSOLIDATION TEST

SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
15-4-3	2.80	25.3	101.3	97.5	.9191	1.94
INITIAL		22.6	106.9	99.8	.8708	
FINAL						

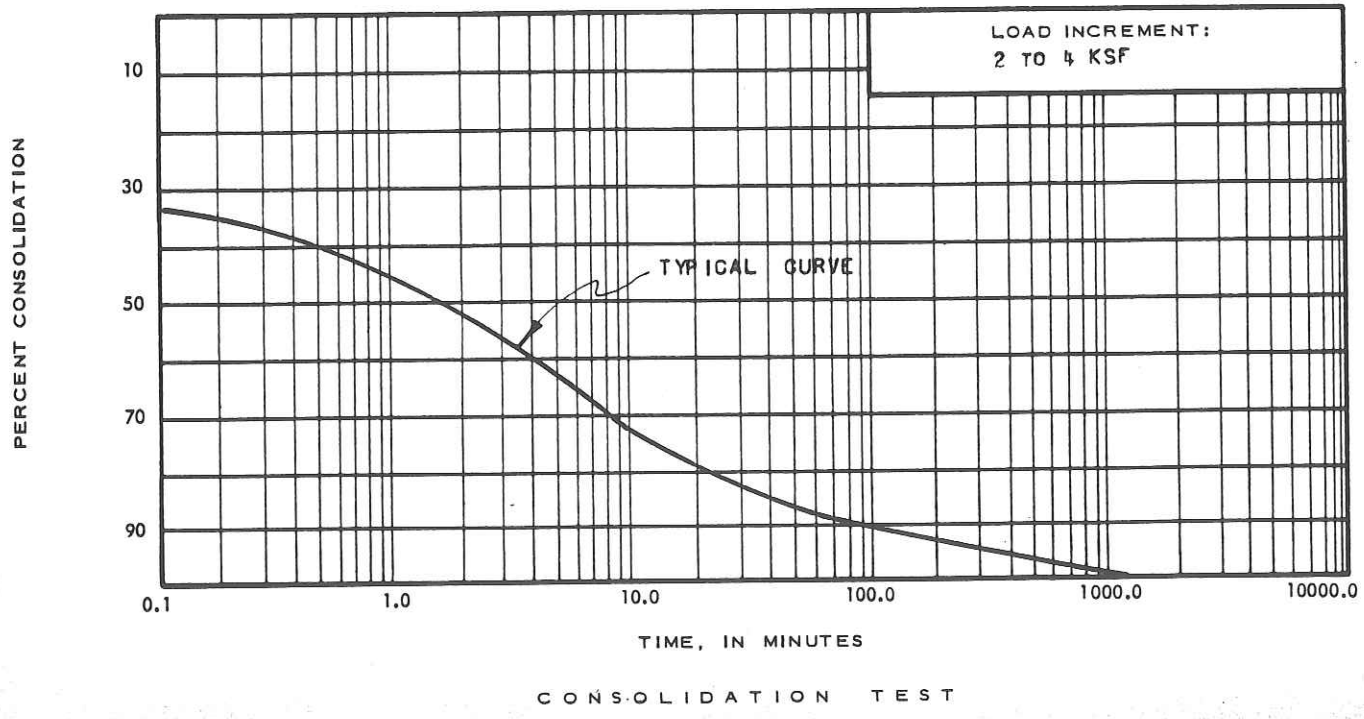
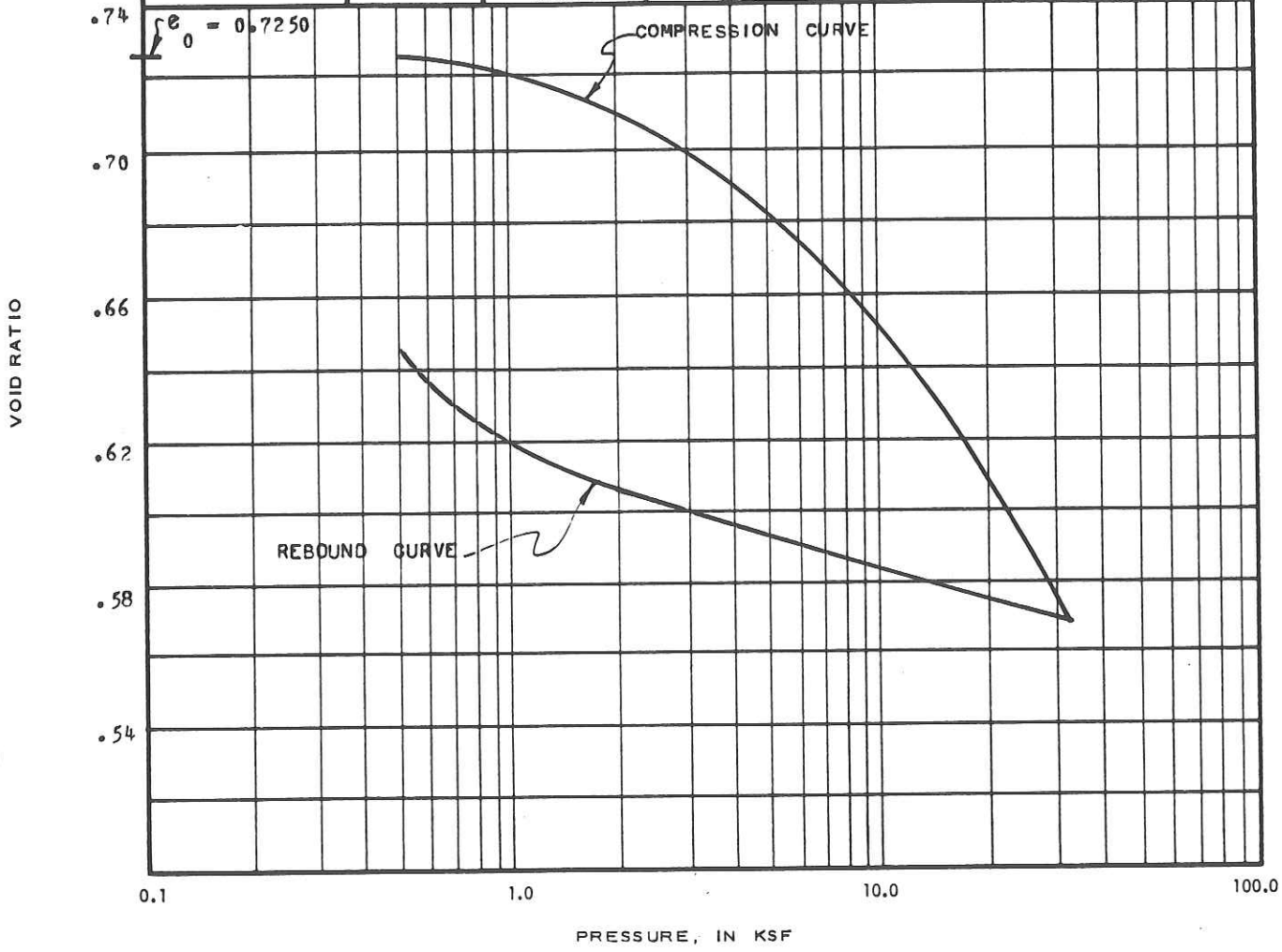
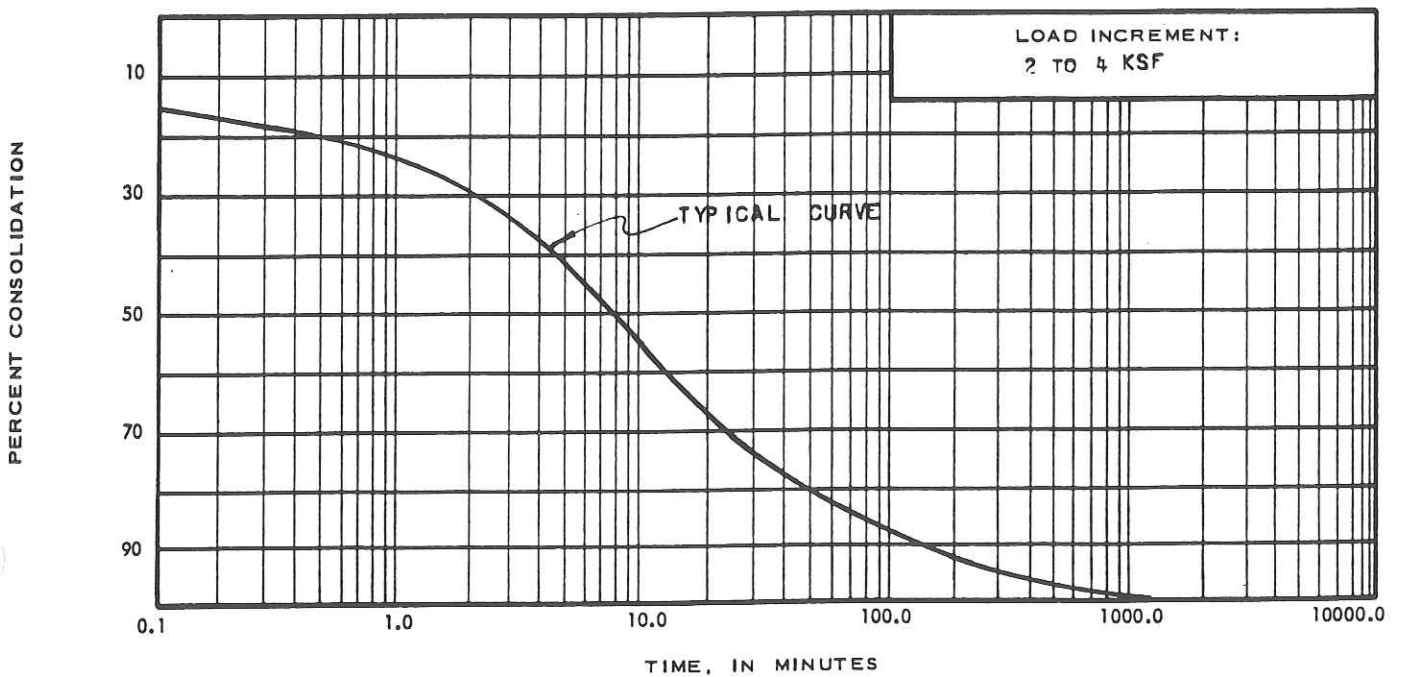
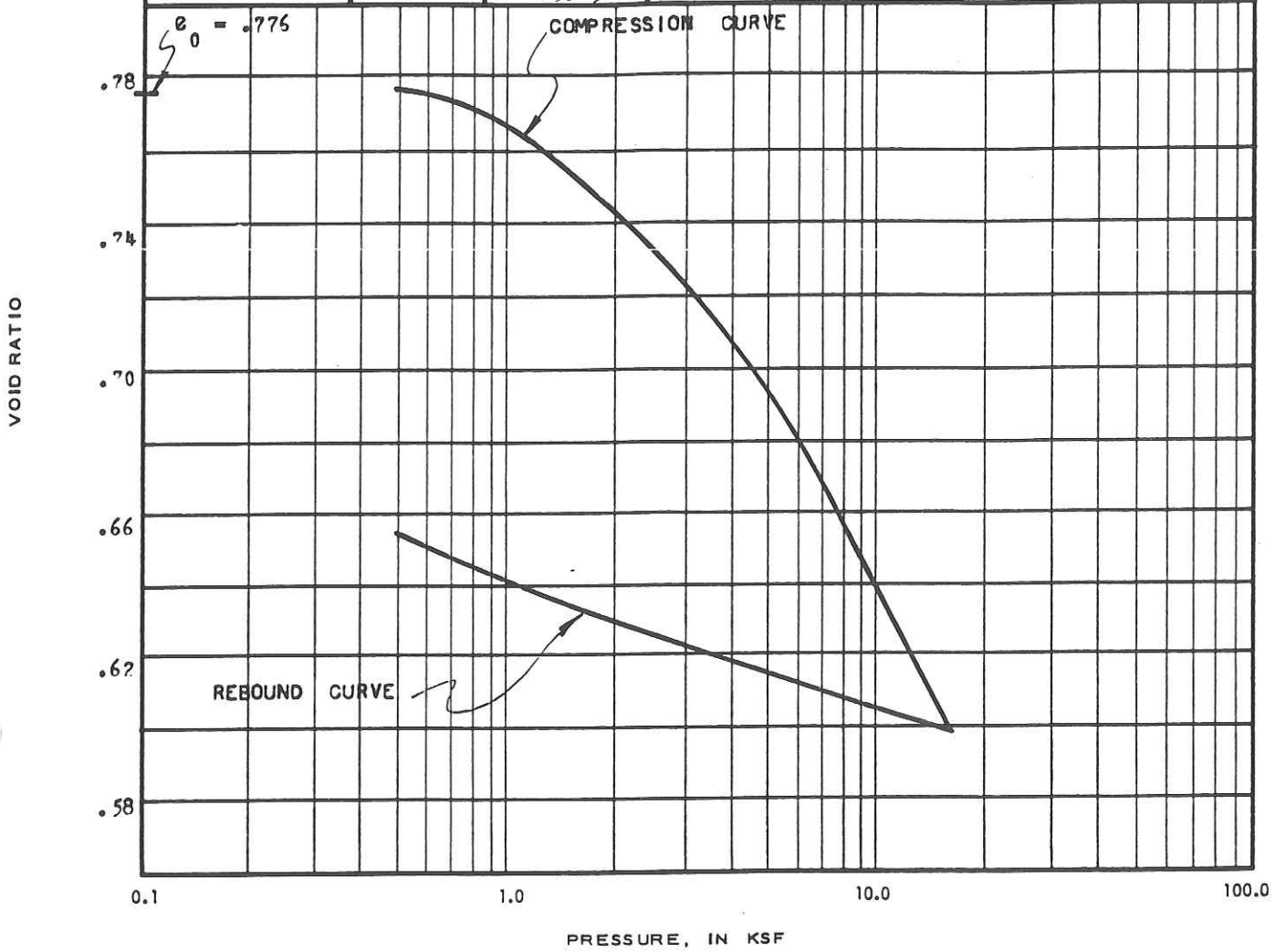


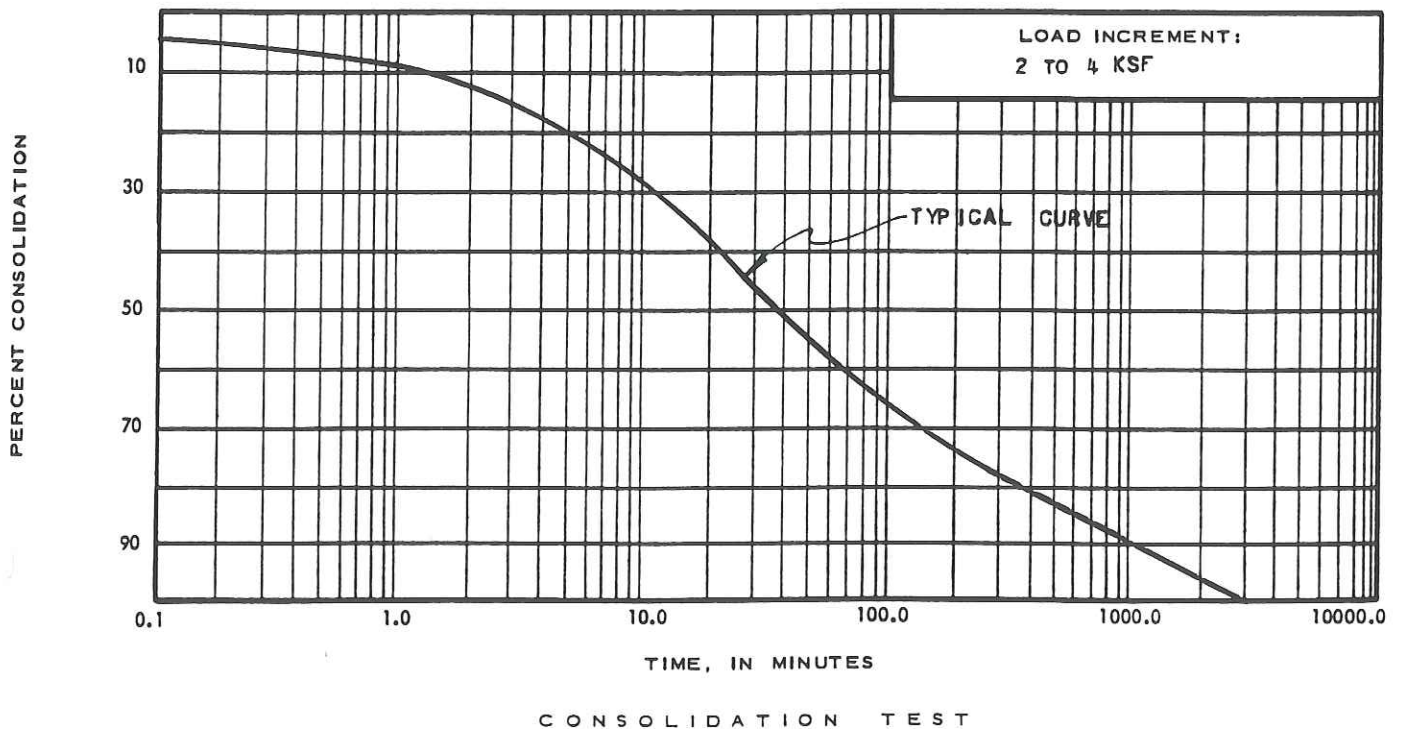
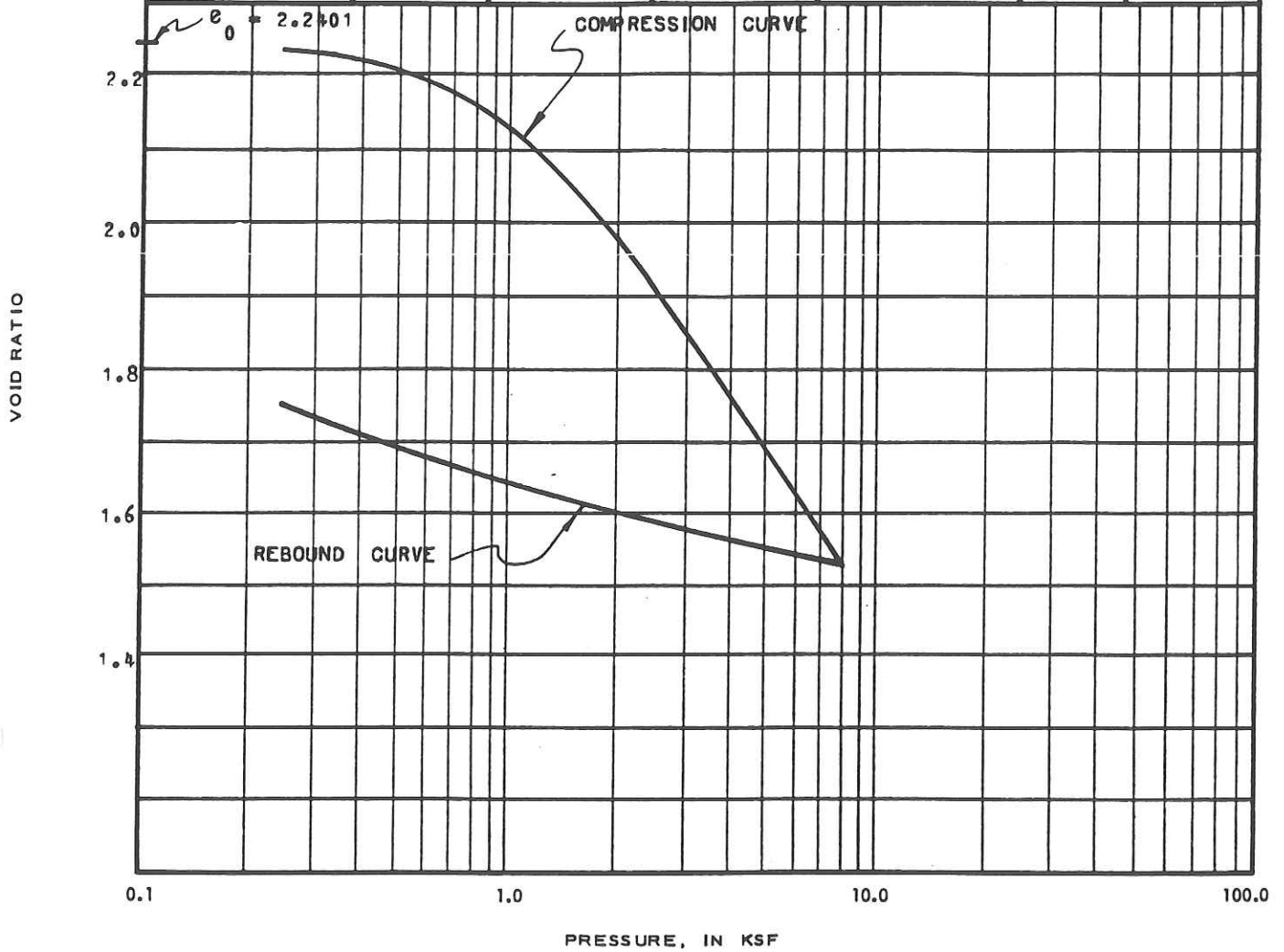
FIG. 37

SAMPLE NO.	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
17-6-3						
INITIAL	2.77	27.70	97.30	98.87	.9221	1.94
FINAL		23.43	104.44	99.09	.8591	



CONSOLIDATION TEST

SAMPLE NO. 18-7-4	SUMMARY OF TEST RESULTS					
	SPECIFIC GRAVITY	MOISTURE CONTENT, (%)	DRY DENSITY, (PCF)	PERCENT OF SATURATION, (%)	HEIGHT (IN.)	DIAMETER (IN.)
INITIAL	2.75	97.13	52.96	99.25	.9612	2.43
FINAL		67.39	62.51	99.92	.8143	



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