LAKE PONTCHARTRAIN, LA.
AND VICINITY

LAKE PONTCHARTRAIN HIGH LEVEL PLAN

DESIGN MEMORANDUM NO. 19A
GENERAL DESIGN

LONDON AVENUE OUTFALL CANAL

ORLEANS PARISH

IN TWO VOLUMES
VOLUME II

US Army Corps of Engineers
New Orleans District

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

JANUARY 1989

SERIAL NO. 33

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A - GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

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LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A
GENERAL DESIGN
LONDON AVE. OUTFALL CANAL
INDEX AND VICINITY MAP
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
DATE JAN. 1989 FILE NO. H-2-30288

PLATE 1

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

APPENDIX A
A/E BORING LOGS

GEOTECHNICAL INVESTIGATION
ORLEANS LEVEE DISTRICT
LONDON AVENUE OUTFALL CANAL
OLB PROJECT NO. 2049-0269
NEW ORLEANS, LOUISIANA

VOLUME II

FOR
THE BOARD OF LEVEE COMMISSIONERS OF THE ORLEANS LEVEE DISTRICT
NEW ORLEANS, LOUISIANA

BURK & ASSOCIATES, INC.
ENGINEERS, PLANNERS & ENVIRONMENTAL SCIENTISTS
NEW ORLEANS, LOUISIANA

By
Eustis Engineering Company
Metairie, Louisiana

4 March 1986

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

LOCATION OF BORINGS

Boring Number	Station Number	Location
B-1	0+85	Levee Crown
B-2	7+60	Levee Crown
B-3	11+60	Levee Crown
B-4	14+70	Levee Crown
B-5	19+60	Levee Crown
B-6	24+60	Levee Crown
B-7	29+60	Levee Crown
B-8	34+60	Levee Crown
B-9	39+60	Levee Crown
B-10	44+60	Levee Crown
B-11	50+35	Levee Crown
B-12	55+00	Levee Crown
B-13	60+00	Levee Crown
B-14	65+00	Levee Crown
B-15	69+85	Levee Crown
B-16	74+75	Levee Crown
B-17	79+75	Levee Crown
B-18	84+75	Levee Crown
B-19	86+35	Levee Crown
B-20	89+75	Levee Crown
B-21	94+75	Levee Crown
B-22	99+75	Levee Crown
B-23	101+20	Levee Crown
B-24	104+75	Levee Crown
B-25	109+75	Levee Crown
B-26	114+75	Levee Crown
B-27	121+35	Levee Toe
B-28	124+75	Levee Toe
B-29	127+50	Levee Toe
B-30	134+00	Levee Toe
B-31	139+00	Levee Toe
B-32	143+00	Levee Toe
B-33	149+00	Levee Toe

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

LOCATION OF BORINGS (Cont'd) (Sheet 2 of 3)

Boring Number	Station Number	Location
B-34	154+00	Levee Toe
B-35	159+00	Levee Toe
B-36	1+95	Levee Crown
B-37	7+10	Levee Crown
B-38	11+60	Levee Crown
B-39	13+70	Levee Crown
B-40	21+40	Levee Crown
B-41	24+60	Levee Crown
B-42	29+60	Levee Crown
B-43	34+60	Levee Crown
B-44	39+60	Levee Crown
B-45	44+60	Levee Crown
B-46	50+65	Levee Crown
B-47	55+00	Levee Crown
B-48	60+00	Levee Crown
B-49	65+00	Levee Crown
B-50	69+85	Levee Crown
B-51	74+75	Levee Crown
B-52	79+75	Levee Crown
B-53	84+75	Levee Crown
B-54	89+75	Levee Crown
B-55	94+75	Levee Crown
B-56	99+75	Levee Crown
B-57	102+95	Levee Crown
B-58	104+75	Levee Crown
B-59	109+75	Levee Crown
B-60	114+75	Levee Crown
B-61	119+75	Levee Crown
B-62	124+75	Levee Crown
B-63	128+60	Levee Crown
B-64	134+00	Levee Toe
B-65	139+00	Levee Toe
B-66	143+00	Levee Toe
B-67	149+00	Levee Toe
B-68	154+00	Levee Toe

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

LOCATION OF BORINGS (Cont'd) (Sheet 3 of 3)

Boring Number	Station Number	Location
B-69	159+00	Levee Toe
B-70	Not Taken	Canal Centerline
B-71	Not Taken	Canal Centerline
B-72	Not Taken	Canal Centerline
B-73	19+60	Canal Centerline
B-74	24+60	Canal Centerline
B-75	29+60	Canal Centerline
B-76	34+60	Canal Centerline
B-77	39+60	Canal Centerline
B-78	44+60	Canal Centerline
B-79	50+35	Canal Centerline
B-80	55+00	Canal Centerline
B-81	60+00	Canal Centerline
B-82	65+00	Canal Centerline
B-83	69+85	Canal Centerline
B-84	74+75	Canal Centerline
B-85	79+75	Canal Centerline
B-86	86+35	Canal Centerline
B-87	89+75	Canal Centerline
B-88	94+75	Canal Centerline
B-89	99+75	Canal Centerline
B-90	104+75	Canal Centerline
B-91	109+75	Canal Centerline
B-92	114+75	Canal Centerline
B-93	121+35	Canal Centerline
B-94	124+75	Canal Centerline
B-95	128+60	Canal Centerline
B-96	134+00 (East)	Canal Centerline
B-97	139+00 (East)	Canal Centerline
B-98	145+00 (East)	Canal Centerline
B-99	147+00 (East)	Canal Centerline
B-100	153+00 (East)	Canal Centerline
B-101	159+00 (East)	Canal Centerline

NOTE: Locations of canal borings is approximate.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 1 Soil Technician A. Croal, Jr. Date 3 October 1985

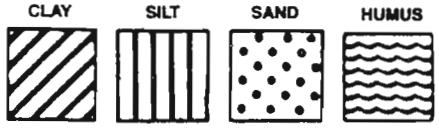
Ground Elev. 4.0 Ngvd Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 0485	*STANDARD PENETRATION TEST	
1	1.7	2.5	0.0	2.5	Very stiff gray & brown clay w/shells,		
					brick fragments, clayey silt pockets		
					& grass roots		
2	4.7	5.5	2.5	6.0	Soft tan & gray clay w/silt pockets		
3	7.7	8.5	6.0		Medium stiff gray clay w/silt pockets		
					& few brick fragments		
4	10.7	11.5			Medium stiff gray clay w/sandy silt		
					pockets, shells & brick fragments		
5	13.7	14.5			Medium stiff gray clay w/shells, brick		
					fragments & organic matter		
6	18.2	19.0		20.0	Medium stiff to stiff gray clay w/sandy		
					silt pockets, trace of organic		
					matter & brick fragments		
7	22.2	23.0	20.0	23.0	Loose gray clayey silt		
8	23.0	24.5	23.0		Medium dense gray silty sand	5	20
9	25.5	27.0			Ditto	5	23
10	28.0	29.5		30.0	Ditto	7	24
11	33.2	34.0	30.0		Medium stiff gray clay w/clayey silt		
					lenses		
12	38.2	39.0			Medium stiff gray clay		
13	43.2	44.5		46.5	Medium stiff gray clay w/clayey silt		
					& few silty sand lenses		
14	48.2	49.0	46.5	52.0	Loose gray fine sand w/clay pockets		
					& shell fragments		
					(Continued)		

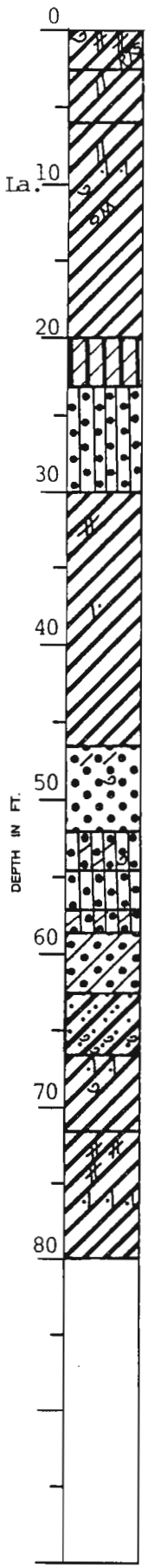
*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 1 (Cont'd) Soil Technician A. Croal, Jr. Date 3 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
15	53.2	54.0	52.0	54.5	Loose gray silty sand w/clay pockets,		
					lenses & shell fragments		
16	54.5	56.0	54.5	57.0	Medium dense gray silty sand	5	25
17	57.0	58.5	57.0	58.5	Loose gray silty sand w/clay layers	1	7
18	59.5	61.0	58.5	62.5	Very loose gray clayey sand	2	3
19	63.2	64.0	62.5	66.5	Soft gray sandy clay w/sand pockets,		
					thin shell layers & shell fragments		
20	68.2	69.0	66.5	71.5	Medium stiff gray clay w/sandy silt		
					pockets & shell fragments		
21	73.2	74.0	71.5		Stiff greenish-gray clay w/clayey silt		
					pockets & lenses		
22	76.7	77.5		80.0	Stiff greenish-gray clay w/clayey silt		
					lenses, layers & sandy silt layers		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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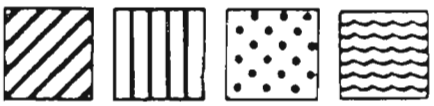
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 2 Soil Technician George Hardee Date 5 October 1985
Ground Elev. 4.4 Datum NGVD Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 7+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff tan & gray clay w/sandy silt		
					pockets & shells		
2	4.5	5.5		6.0	Stiff tan & gray clay w/silt pockets		
3	7.5	8.5	6.0	9.0	Medium stiff brown & gray clay		
					w/clayey silt pockets		
4	10.5	11.5	9.0		Medium stiff to soft tan & gray silty		
					clay w/clay pockets		
5	13.5	14.5		16.0	Soft gray & tan silty clay w/clay		
					layers		
6	18.5	19.5	16.0	20.0	Medium stiff gray clay w/organic matter		
					& silty clay layers		
7	23.0	24.0	20.0	24.5	Soft gray silty clay w/sandy silt		
					lenses & layers		
8	29.0	29.5	24.5	29.5	Loose gray silty sand w/clay layers		
9	33.5	34.5	29.5		Soft gray clay w/clayey silt lenses		
					& layers		
10	38.5	39.5			Ditto		
11	43.5	44.5		46.0	Medium stiff gray clay w/clayey silt		
					lenses & layers		
12	48.5	49.5	46.0	52.5	Loose gray clayey sand w/shells & clay		
					pockets		
13	53.5	54.5	52.5	56.0	Very soft gray sandy clay w/sand		
					pockets & lenses & shells		
14	57.0	58.0	56.0		Medium dense gray fine sand w/silt		
					& shells		
15	58.5	60.0		60.5	Medium dense gray fine sand	8	25

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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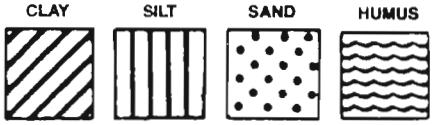
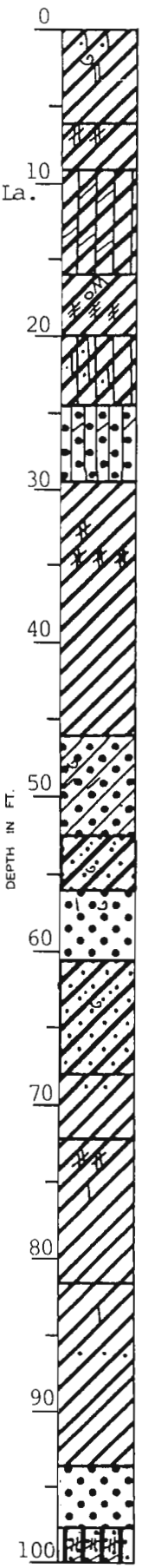
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 2 (Cont'd) **Soil Technician** George Hardee **Date** 5 October 1985
Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
16	61.0	62.5	60.5		Medium stiff gray sandy clay	3	4
17	63.5	64.5		68.0	Medium stiff gray sandy clay w/sand		
					pockets & shell fragments		
18	68.5	69.5	68.0	72.0	Medium stiff gray & brown clay w/sand		
					pockets		
19	73.5	74.5	72.0		Very stiff gray & tan clay w/clayey		
					silt pockets		
20	78.5	79.5		81.5	Very stiff gray & tan clay w/silt		
					lenses		
21	83.5	84.5	81.5		Stiff greenish-gray & tan clay w/silt		
					lenses		
22	88.5	89.5			Ditto		
23	92.5	93.5		93.5	Stiff greenish-gray & tan clay w/sand		
					layers		
24	95.0	96.5	93.5	97.5	Dense gray fine sand	12	40
25	98.5	100.0	97.5	100.0	Medium compact gray sandy silt w/clayey	6	30
					silt & clay layers		

DEPTH IN FT.

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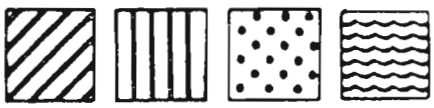
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

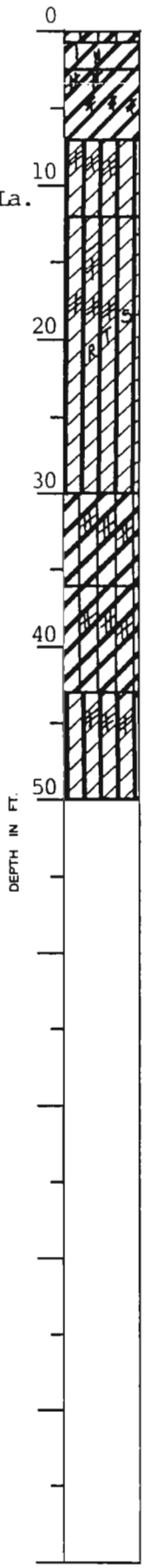
LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 3 Soil Technician George Hardee Date 5 October 1985
Ground Elev. 5.3 Datum ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 11+60	*STANDARD PENETRATION TEST	
			0.0	0.7	Medium stiff gray & tan silty clay		
					w/roots & shells		
1	1.5	2.5	0.7	2.5	Very stiff tan & gray clay w/silt		
					lenses & pockets		
2	4.5	5.5	2.5	7.0	Stiff tan & gray clay w/clayey silt		
					pockets & silty clay layers		
3	7.5	8.5	7.0		Loose tan & gray clayey silt w/silty		
					clay layers		
4	10.5	11.5		12.0	Loose tan & gray clayey silt		
5	13.5	14.5	12.0		Very loose to loose gray clayey silt		
					w/clay & silty clay lenses		
6	18.5	19.5			Very loose to loose gray clayey silt		
					w/silty clay layers		
7	23.5	24.5			Very loose to loose gray clayey silt		
					w/roots & silty clay layers		
8	28.5	29.5		30.0	Very loose to loose gray clayey silt		
					w/silty clay layers		
9	33.5	34.5	30.0	36.0	Soft gray silty clay w/clayey silt		
					layers		
10	38.5	39.5	36.0	43.0	Soft gray silty clay w/clayey silt		
					layers		
11	43.5	44.5	43.0		Medium compact gray clayey silt		
					w/silty clay layers		
12	48.5	49.5		50.0	Ditto		



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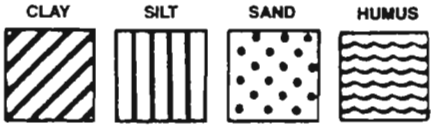
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY Sheet 1 of 2
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 4 Soil Technician George Hardee Date 7 October 1985
Ground Elev. 4.2 Datum Ngvd. Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION 14+70	*STANDARD PENETRATION TEST	
			0.0	0.2	Asphalt & gravel		
1	1.5	2.5	0.2		Stiff tan & gray silty clay w/clay		
					pockets, brick fragments & clayey		
					silt layers		
2	4.5	5.5		6.0	Stiff tan & gray silty clay w/clayey		
					silt layers & some gravel		
3	7.5	8.5	6.0	9.0	Medium stiff tan & gray clay w/clayey		
					silt pockets		
4	10.5	11.5	9.0		Soft gray & tan silty clay w/clayey		
					silt layers & lenses		
5	13.5	14.5			Soft gray & tan silty clay w/clayey		
					silt layers & roots		
6	17.0	18.0		19.5	Soft gray & tan silty clay w/roots &		
					clayey silt layers		
7	20.5	21.0	19.5		Soft gray silty clay w/roots, clayey		
					silt lenses & clay pockets		
8	23.5	24.5			Very soft gray silty clay w/clayey silt		
					& clay lenses		
9	28.5	29.5		31.5	Soft gray silty clay w/clayey silt &		
					clay layers		
10	33.5	34.5	31.5		Very loose gray clayey silt w/silty		
					clay lenses & pockets		
11	38.5	39.5			Loose gray clayey silt w/clay & silty		
					clay layers		
12	43.5	44.5		46.0	Loose gray clayey silt w/clay layers		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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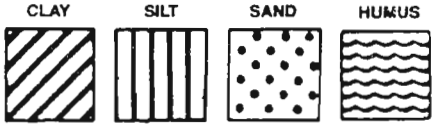
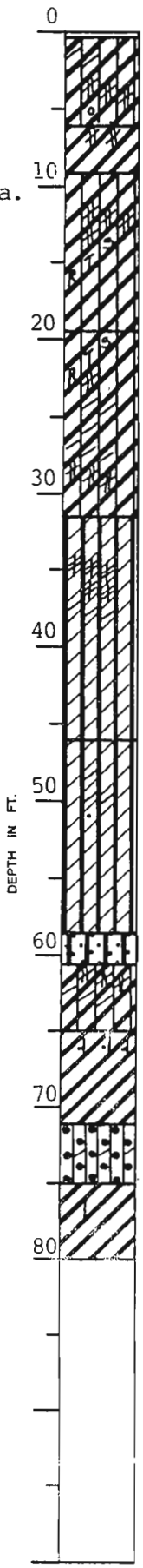
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 4 (Cont'd) Soil Technician George Hardee Date 7 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
13	48.5	49.5	46.0		Medium compact gray clayey silt		
					w/alternating clay lenses		
14	53.0	54.0			Ditto		
15	57.5	58.5		58.5	Medium compact gray clayey silt w/clay		
					pockets & trace of sand		
16	58.5	60.0	58.5	60.5	Medium compact gray sandy silt	5	22
17	61.0	62.5	60.5		Medium stiff gray silty clay	2	6
18	63.5	65.0		65.0	Medium stiff gray silty clay w/clayey	3	14
					silt & clay layers		
19	68.5	69.5	65.0	71.0	Stiff gray clay w/sandy silt layers		
20	74.5	75.0	71.0	75.0	Medium dense gray silty sand w/clay		
					layers		
21	78.5	79.5	75.0	80.0	Medium stiff greenish-gray & tan clay		
					w/silt lenses		

DEPTH IN FT.

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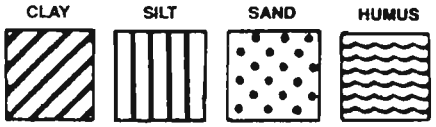
Remarks: _____



Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 5 **Soil Technician** George Hardee **Date** 8 October 1985

Ground Elev. 4.7 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 1960	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Medium stiff tan & gray silty clay		
					w/cinders		
2	5.0	5.5	2.5	6.0	Medium compact miscellaneous fill		
					(cinders, brick fragments & clay		
					pockets)		
3	7.5	8.5	6.0		Stiff tan & gray clay w/clayey silt		
					pockets		
4	10.5	11.5		12.0	Stiff tan & gray clay w/silt pockets		
					& silty clay layers		
5	13.5	14.5	12.0		Soft tan & gray silty clay w/clayey		
					silt pockets		
6	18.5	19.5		20.0	Soft tan & gray silty clay w/clay		
					pockets		
7	23.5	24.5	20.0	27.0	Soft gray silty clay w/clayey silt		
					lenses & roots		
8	28.5	29.5	27.0	31.0	Loose gray sandy silt w/silty clay		
					& clayey silt layers		
9	33.5	34.5	31.0	36.0	Loose gray silty sand w/clayey silt		
					layers		
10	38.5	39.5	36.0	42.5	Medium stiff dark gray clay w/silt		
					lenses		
11	43.5	44.5	42.5	46.0	Loose to medium dense gray silty sand		
					w/clay layers		
12	49.0	49.5	46.0	50.0	Loose gray clayey sand w/shells &		
					clay pockets		

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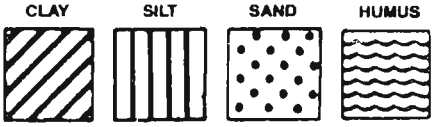
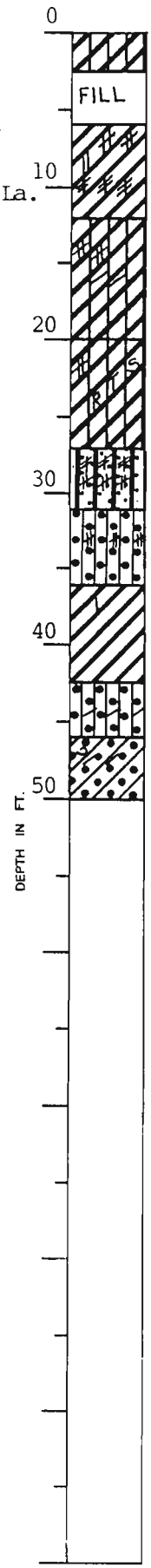
Remarks:



Predominant type shown heavy. Modifying type shown light.



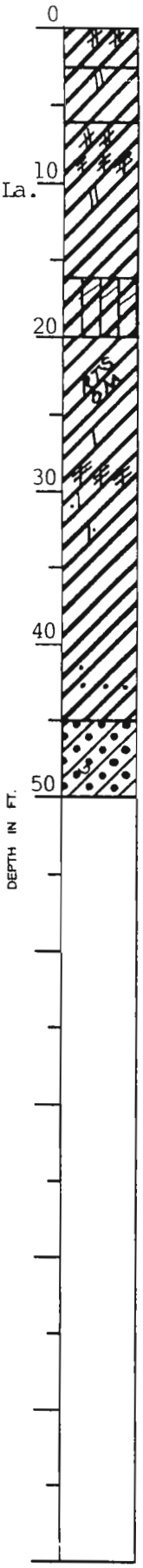
LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 6 Soil Technician George Hardee Date 7 October 1985
Ground Elev. 6.0 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 24+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Stiff tan & gray clay w/clayey silt		
					pockets		
2	4.5	5.5	2.5	6.0	Stiff tan & gray clay w/silt pockets		
3	7.5	8.5	6.0		Medium stiff tan & gray clay w/clayey		
					silt pockets & silty clay layers		
4	10.5	11.5			Medium stiff tan & gray clay w/silt		
					pockets		
5	13.5	14.5		16.0	Ditto		
6	18.5	19.5	16.0	20.0	Medium stiff tan & gray silty clay		
					w/clay layers		
7	23.5	24.5	20.0		Soft gray clay w/roots & trace of		
					organic matter		
8	28.5	29.5			Soft gray clay w/silt lenses & silty		
					clay layers		
9	33.5	34.5			Soft gray clay w/sandy silt & silty		
					sand lenses		
10	38.5	39.5			Soft gray clay w/silt lenses		
11	43.5	44.5		45.0	Soft gray clay w/sand lenses & layers		
12	48.5	49.5	45.0	50.0	Loose gray clayey sand w/shells		



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Remarks:

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 7 Soil Technician George Hardee Date 8 October 1985

Ground Elev. 6.2 Datum NGVD Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 29+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff tan & gray clay w/clayey silt		
					pockets & gravel		
2	4.5	5.5		6.0	Stiff tan & gray clay w/silt pockets		
3	7.5	8.5	6.0	9.5	Medium stiff gray silty clay w/organic		
					matter & clay layers		
4	10.5	11.5	9.5		Medium stiff gray & tan silty clay		
5	13.5	14.5			Medium stiff tan & gray silty clay		
					w/silt pockets		
6	18.5	19.5		21.0	Medium stiff tan & gray silty clay		
					w/silty clay layers		
7	23.5	24.5	21.0	24.5	Medium stiff gray clay w/roots &		
					organic matter		
8	28.5	29.5	24.5		Soft gray clay w/silt lenses		
9	33.5	34.5			Soft gray clay w/silty sand lenses &		
					layers		
10	38.5	39.5		43.0	Ditto		
11	43.5	44.5	43.0		Loose gray silty sand w/clay pockets		
					& shells		
12	48.5	49.5		50.0	Ditto		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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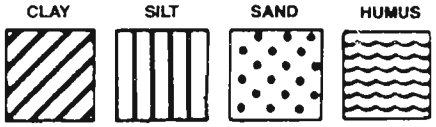
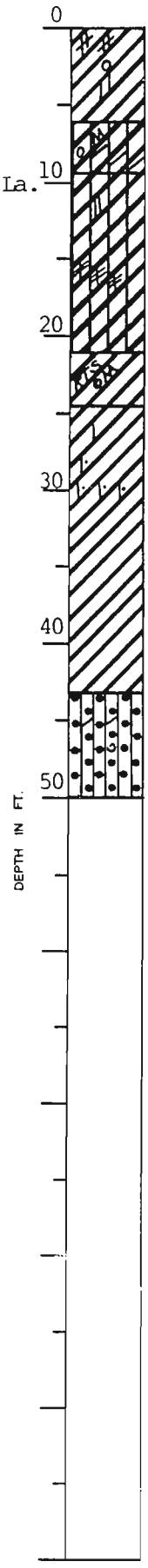
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

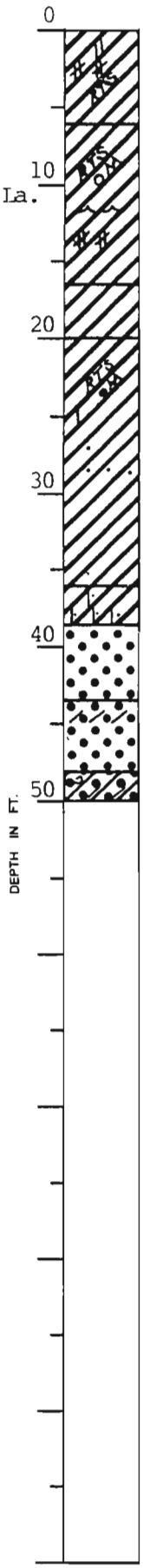
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 8 Soil Technician George Hardee Date 8 October 1985

Ground Elev. 5.9 Datum NGVD Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 34+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff gray & brown clay w/silt pockets		
2	4.5	5.5		6.0	Stiff gray & brown clay w/clayey silt		
					pockets & roots		
3	8.5	9.0	6.0		Medium stiff gray & tan clay w/roots		
					& organic matter		
4	11.0	11.5			Medium stiff gray & tan clay w/roots		
					& humus pockets		
5	13.5	14.5		16.5	Medium stiff gray & tan clay w/clayey		
					silt pockets & large roots		
6	18.5	19.5	16.5	20.0	Stiff gray & tan clay		
7	23.5	24.5	20.0		Soft gray clay w/roots & organic matter		
8	28.5	29.5			Soft gray clay w/silt lenses		
9	33.5	34.5		36.0	Soft gray clay w/sand lenses & layers		
10	37.0	38.0	36.0	38.5	Soft gray clay w/silty sand lenses &		
					layers		
11	38.5	40.0	38.5		Medium dense gray fine sand	7	25
12	41.0	42.5		43.5	Ditto	8	29
13	44.0	45.5	43.5	48.0	Very loose gray fine sand w/clay layers	2	4
14	48.5	50.0	48.0	50.0	Very loose gray clayey sand w/shells	1	1
					& clay pockets		



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 9 **Soil Technician** George Hardee **Date** 9 October 1985

Ground Elev. 6.0 **Datum** N.G.V.D. **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 39+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Medium stiff tan & gray clay w/clayey		
					silt pockets & organic matter		
2	4.5	5.5	2.5		Medium stiff gray & tan clay w/clayey		
					silt pockets, sandy silt lenses &		
					organic matter		
3	7.5	8.5		9.0	Medium stiff gray & tan clay w/clayey		
					silt pockets, sandy silt lenses &		
					organic matter (fill)		
4	10.5	11.5	9.0		Medium stiff gray clay w/roots		
5	13.5	14.5			Medium stiff gray clay w/silt pockets		
6	17.0	18.0		18.0	Soft gray clay w/roots & organic matter		
7	18.5	20.0	18.0		Medium dense gray fine sand	2	16
8	21.0	22.5		23.0	Ditto	5	17
9	23.5	25.0	23.0	25.0	Dense gray fine sand	9	41
10	26.0	27.5	25.5		Medium dense gray fine sand	7	19
11	28.5	30.0			Ditto	9	24
12	33.5	35.0			Ditto	5	24
13	38.5	40.0		43.0	Medium dense gray fine sand w/shells	4	16
14	43.5	45.0	43.0		Loose gray clayey sand w/shells	2	2
15	49.5	50.0		50.0	Ditto		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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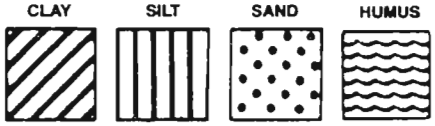
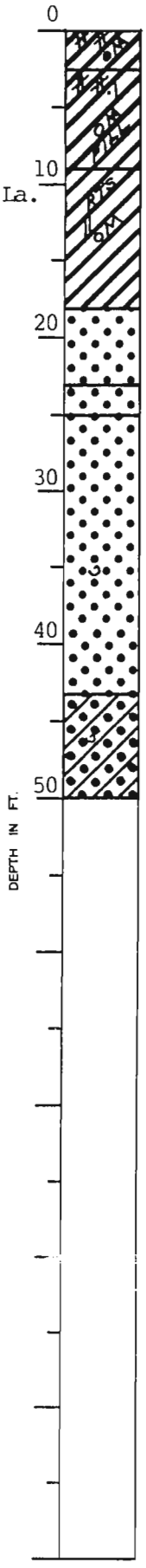
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

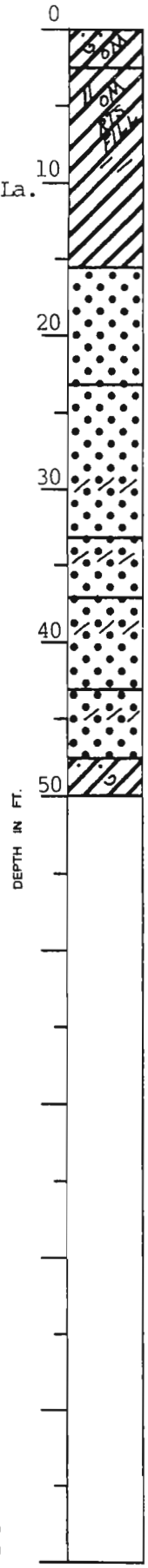
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 10 Soil Technician George Hardee Date 9 October 1985

Ground Elev. 6.1 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION AA+60	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Stiff tan & gray clay w/sand pockets,		
					shells & organic matter		
2	4.5	5.5	2.5		Medium stiff gray & tan clay w/silt		
					pockets & organic matter		
3	7.5	8.5			Soft gray & tan clay w/organic matter		
					& roots (fill)		
4	10.5	11.5			Medium stiff gray & tan clay w/roots		
5	13.5	14.5		15.5	Soft gray & tan clay w/soft clay		
					pockets, silt pockets & roots		
6	16.0	17.5	15.5		Dense gray fine sand	7	38
7	18.5	20.0			Ditto	9	44
8	21.0	22.5		23.0	Ditto	3	40
9	23.5	25.0	23.0		Medium dense gray fine sand	7	30
10	28.5	30.0		33.0	Medium dense gray fine sand w/clay	7	23
					layers		
11	33.5	35.0	33.0	37.0	Loose gray fine sand w/clay layers	7	8
12	38.5	40.0	37.0	43.0	Dense gray fine sand w/clay layers	10	32
13	43.5	45.0	43.0	47.5	Loose gray fine sand w/clay layers	2	8
14	48.5	50.0	47.5	50.0	Medium stiff gray clay w/sand pockets		
					& shells		



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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 11 **Soil Technician** J. R. Eustis **Date** 9 October 1985

Ground Elev. 6.4 NGVD **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 50+35	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Very stiff gray & tan clay w/silty clay		
					layers & small roots (fill)		
2	5.0	5.5			Stiff to very stiff gray & tan clay		
					w/clayey sand pockets & lenses &		
					trace of gravel (fill)		
3	8.0	8.5		9.0	Stiff gray & tan clay w/sand pockets		
					& lenses & wood (fill)		
4	11.0	11.5	9.0	12.0	Medium stiff gray clay w/silt pockets		
					& lenses, wood & pockets of organic		
					matter		
5	13.5	14.0	12.0	15.0	Soft to medium stiff gray clay w/much		
					wood		
6	15.0	15.5	15.0	15.5	Loose gray fine sand w/clay layers		
7	15.5	17.0	15.5	17.5	Very dense gray fine sand	6	57
8	18.0	19.5	17.5	20.0	Dense gray fine sand	12	45
9	20.5	22.0	20.0		Very dense gray fine sand	18	50=11"
10	23.5	25.0			Very dense gray fine sand w/few shell	11	50=11"
					fragments		
11	28.5	30.0		33.0	Very dense gray fine sand	19	50
12	33.5	35.0	33.0		Dense gray fine sand w/many shell	7	32
					fragments		
13	38.5	40.0		43.0	Ditto	12	46
14	43.5	45.0	43.0	48.0	Very dense gray fine sand	30	50=6"
15	48.5	50.0	48.0	50.0	Loose gray clayey sand w/clay layers	11	8
					& shell fragments		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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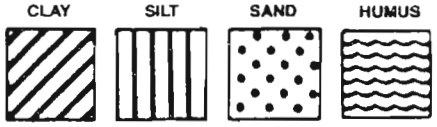
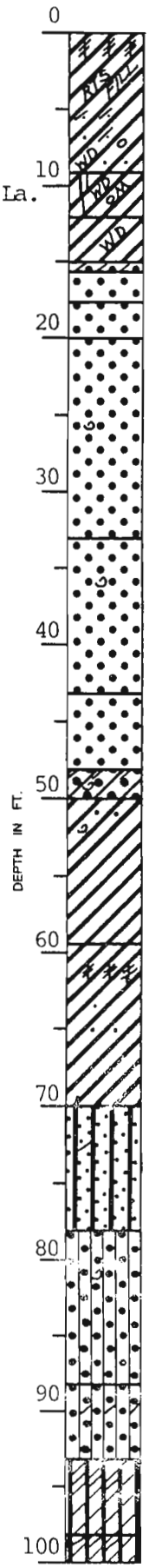
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 11 (Cont'd) Soil Technician J. R. Eustis Date 9 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
16	54.0	54.5	50.0		Stiff gray clay w/sand pockets & few		
					shell fragments		
17	59.0	59.5		59.5	Medium stiff gray clay w/sand pockets		
					& few shell fragments		
18	64.0	64.5	59.5		Very stiff greenish-gray & tan clay		
					w/silty clay layers		
19	69.0	69.5		70.0	Stiff greenish-gray & tan clay w/sand		
					lenses & pockets		
20	72.5	73.0	70.0		Medium compact tan sandy silt w/few		
					clay lenses		
21	73.5	75.0		78.0	Ditto	8	25
22	78.5	80.0	78.0		Dense gray silty fine sand w/trace of	12	46
					shell fragments		
23	83.5	85.0		88.0	Ditto	7	34
24	88.5	90.0	88.0	93.0	Medium dense gray silty fine sand	20	27
					w/clay layers		
25	93.5	95.0	93.0	98.0	Compact gray clayey silt w/clay layers	4	33
26	98.5	100.0	98.0	100.0	Medium compact gray clayey silt w/clay	5	14
					layers		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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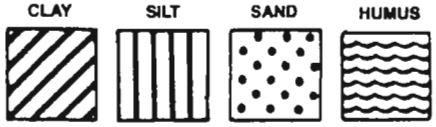

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 12 **Soil Technician** George Hardee **Date** 17 October 1985

Ground Elev. 6.3 **Datum** NGVD **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 55+00	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Soft gray & tan clay w/clayey sand		
					layers & pockets		
2	4.5	5.5	2.5	6.0	Stiff gray & tan clay w/large sand		
					pockets		
3	7.5	8.5	6.0	9.0	Medium stiff gray & tan clay w/organic		
					matter, silty sand layers & pockets		
4	11.5	12.0	9.0	14.0	Medium stiff gray clay w/roots & silty		
					clay pockets & wood		
5	14.5	15.0	14.0		Dense gray fine sand w/clay pockets		
6	15.0	16.5		17.0	Dense gray fine sand	2	46
7	17.5	19.0	17.0	20.0	Very dense gray fine sand	19	50=10"
8	20.5	22.0	20.0	23.0	Dense gray fine sand	9	36
9	23.5	25.0	23.0		Very dense gray fine sand w/shells	16	50=11"
10	28.5	30.0			Ditto	15	50=10"
11	33.5	35.0			Very dense gray fine sand	15	50=11"
12	38.5	40.0		42.0	Very dense gray fine sand w/shells	10	50=10"
13	43.5	45.0	42.0	48.0	Dense gray fine sand w/clay layers	6	45
14	48.5	50.0	48.0	50.0	Soft gray clay w/sand pockets	1	2

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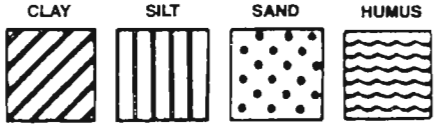
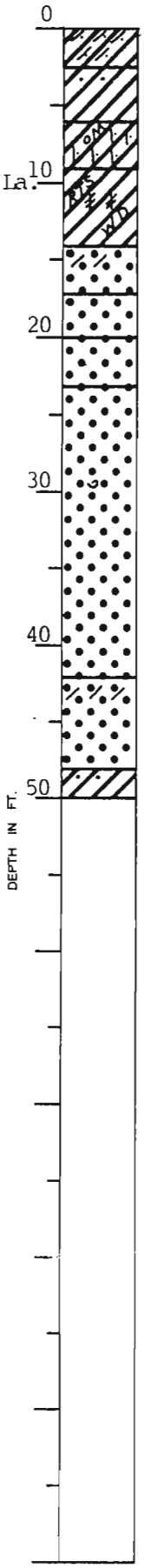
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 13 Soil Technician George Hardee Date 17 October 1985
Ground Elev. 5.4 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 60 +00	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.0	Medium stiff gray & tan clay w/organic		
					matter & silt & sand pockets		
2	4.5	5.5	3.0	6.0	Medium stiff gray & tan clay w/roots,		
					organic matter & sand pockets		
3	7.5	8.5	6.0	9.0	Soft gray clay w/roots & organic matter		
4	10.5	11.5	9.0	13.0	Soft dark gray clay w/roots, silt		
					pockets & organic matter		
5	14.5	15.0	13.0		Soft gray & tan clay w/roots & wood		
6	16.0	17.0		17.0	Soft gray & tan clay w/large roots &		
					decayed wood		
7	17.0	18.5	17.0		Medium dense gray fine sand	5	22
8	20.0	21.5			Ditto	6	21
9	23.5	25.0		29.0	Ditto	7	29
10	28.5	30.0	29.0	31.5	Dense gray fine sand	8	32
11	33.5	35.0	31.5	39.0	Medium dense gray fine sand	8	27
12	38.5	40.0	39.0		Dense gray fine sand w/shell fragments	7	39
13	43.5	45.0		47.5	Dense gray fine sand	8	31
14	48.5	50.0	47.5	50.0	Loose gray fine sand w/clay layers	3	6

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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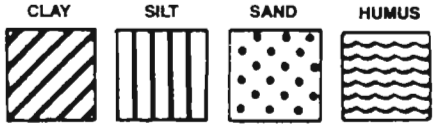
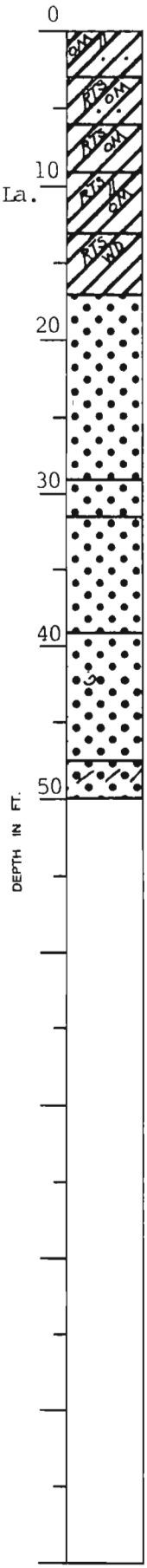
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 14 Soil Technician George Hardee Date 17 October 1985
Ground Elev. 4.5 Datum NGVD Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 65+00	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Medium stiff gray & tan clay w/organic		
					matter & silt pockets		
2	4.5	5.5		6.0	Medium stiff gray & tan clay w/organic		
					matter, roots & sand pockets		
3	7.5	8.5	6.0	9.0	Medium stiff dark gray clay w/organic		
					matter & clayey silt layers		
4	11.5	12.0	9.0	12.0	Medium stiff gray clay w/large roots		
5	13.5	14.5	12.0		Soft gray & tan clay w/roots		
6	17.0	18.0		18.0	Soft gray clay w/roots & organic matter		
7	18.0	19.5	18.0		Medium dense gray fine sand	3	11
8	21.0	22.5			Ditto	3	18
9	23.5	25.0			Ditto	4	19
10	28.5	30.0		33.0	Ditto	6	24
11	33.5	35.0	33.0	38.0	Dense gray fine sand	14	38
12	38.5	40.0	38.0	44.0	Very dense gray fine sand	15	50=9"
13	43.5	45.0	44.0	48.0	Medium dense gray fine sand w/clay	12	24
					layers		
14	48.5	50.0	48.0	50.0	Very loose gray clayey sand	1	3

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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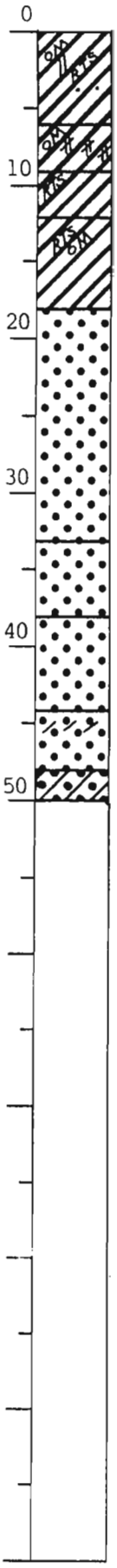
Remarks:



CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. West 15 **Soil Technician** A. Croal, Jr. **Date** 17 October 1985

Ground Elev. 4.8 **Datum** NGVD **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION 69+85	*STANDARD PENETRATION TEST	
1	1.7	2.5	0.0	2.5	Medium stiff tan & gray clay w/silt		
					pockets & grass roots		
2	4.7	5.5	2.5	5.5	Medium stiff tan & gray clay w/sand		
					pockets & roots		
3	7.7	8.5	5.5		Soft dark gray clay w/silty sand		
					layers, organic matter & roots		
4	10.7	11.5		12.0	Soft dark gray clay w/organic matter		
					& roots		
5	13.7	14.5	12.0	15.0	Soft gray clay w/roots		
6	15.5	17.0	15.0		Medium dense gray fine sand w/clay	3	20
					pockets & roots		
7	18.0	19.5		20.5	Medium dense gray fine sand w/clay	10	14
					layers		
8	20.5	22.0	20.5		Very dense gray fine sand	50=6"	(Seat)
9	23.5	25.0			Ditto	25	50=8"
10	28.5	30.0			Ditto	20	50=6"
11	33.5	35.0			Very dense gray fine sand w/few shell	18	50=8"
					fragments & trace of silt		
12	38.5	40.0			Very dense gray fine sand	23	50=6"
13	43.5	45.0		46.0	Very dense gray fine sand w/few shell	2	50=10"
					fragments		
14	48.5	50.0	46.0	50.0	Medium dense gray fine sand w/clay	3	12
					pockets & shell fragments		
15	53.2	54.0	50.0		Medium stiff gray clay w/silty sand		
					pockets & few shell fragments		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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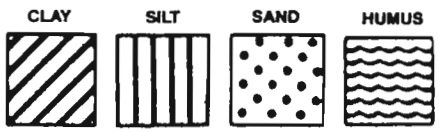
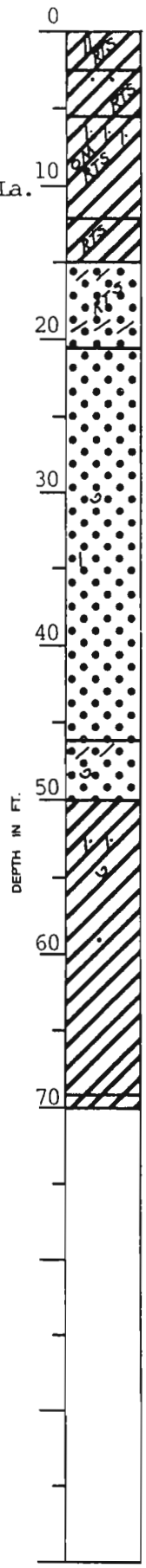
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 15 (Cont'd) **Soil Technician** A. Croal, Jr. **Date** 17 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
16	58.2	59.0			Medium stiff gray clay w/few silty sand		
					pockets & few shell fragments		
17	63.2	64.0		66.0	Medium stiff gray clay w/shell		
					fragments		
18	68.2	69.0	66.0	69.0	Stiff gray clay w/shell fragments &		
					trace of sand		
19	69.5	70.0	69.0	70.0	Stiff green clay		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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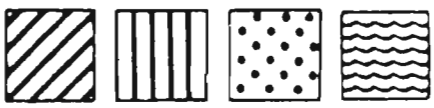
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

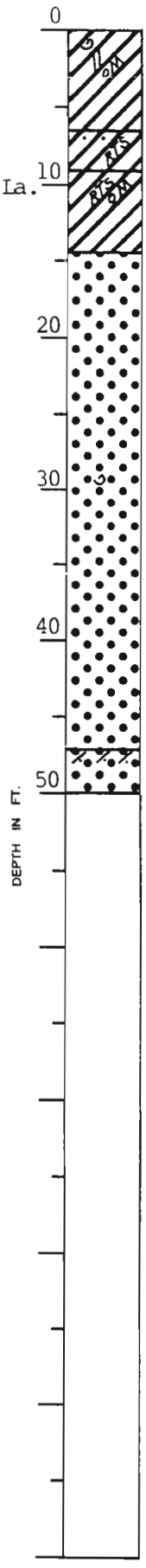
LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 16 Soil Technician George Hardee Date 25 October 1985
Ground Elev. 4.5 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 74+75	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Very stiff gray clay w/shells & brick		
					fragments		
2	4.5	5.5		6.5	Very stiff gray clay w/silt pockets &		
					organic matter		
3	7.5	8.5	6.5	9.0	Very stiff gray & tan clay w/sand		
					pockets & roots		
4	11.0	11.5	9.0	14.5	Soft dark gray clay w/roots & organic		
					matter		
5	14.5	15.0	14.5		Very dense gray fine sand		
6	15.0	16.5			Ditto	16	50=9"
7	17.5	19.0			Ditto	15	50=10"
8	20.0	21.5			Ditto	16	50=10"
9	23.5	25.0			Ditto	23	50=8"
10	28.5	30.0			Very dense gray fine sand w/shells	30	50=5"
11	33.5	35.0			Very dense gray fine sand	32	50=5"
12	38.5	40.0			Very dense gray fine sand w/shells	22	50=7"
13	43.5	45.0		47.0	Very dense gray fine sand	20	50=9"
14	48.5	50.0	47.0	50.0	Medium dense gray fine sand w/clayey	2	13
					sand layers		



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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

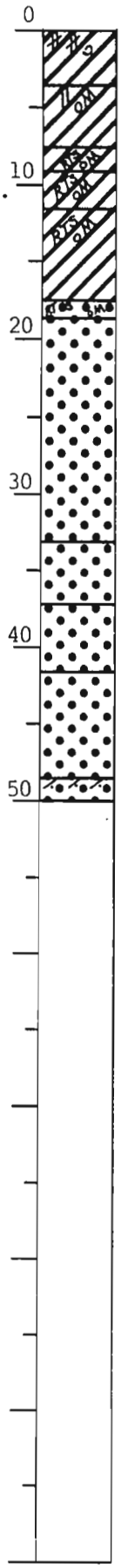
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 17 **Soil Technician** George Hardee **Date** 25 October 1985

Ground Elev. 5.4 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 79+75	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.5	Stiff brown & gray clay w/clayey silt		
					pockets, shells & brick fragments		
2	4.5	5.5	3.5	7.5	Medium stiff gray clay w/silt pockets		
					& organic matter		
3	8.0	8.5	7.5	9.0	Medium stiff brown & gray clay w/roots		
					& organic matter		
4	11.0	11.5	9.0	11.5	Soft black clay w/roots & organic matter		
5	13.5	14.5	11.5	17.5	Soft gray clay w/roots & organic matter		
6	18.0	18.5	17.5	18.5	Loose gray fine sand w/roots & organic		
					matter		
7	18.5	20.0	18.5		Dense gray fine sand	6	33
8	21.0	22.5			Ditto	8	41
9	24.0	25.5			Ditto	11	37
10	28.5	30.0		33.0	Ditto	11	39
11	33.5	35.0	33.0	37.0	Very dense gray fine sand	20	50=10"
12	38.5	40.0	37.0	41.5	Dense gray fine sand	12	32
13	43.5	45.0	41.5	48.5	Medium dense gray fine sand	5	18
14	48.5	50.0	48.5	50.0	Loose gray fine sand w/clayey sand	6	5
					layers		



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CLAY SILT SAND HUMUS

Remarks:

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

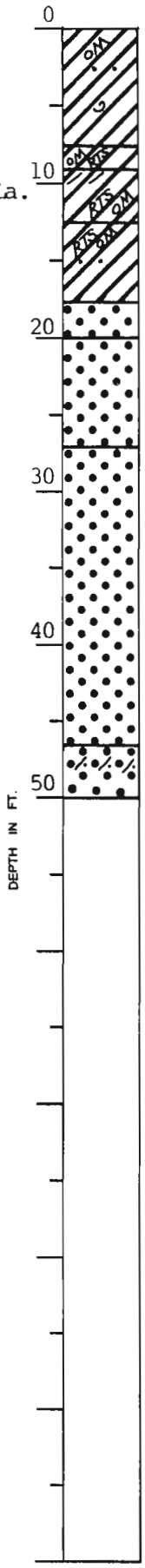
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 18 **Soil Technician** George Hardee **Date** 25 October 1985

Ground Elev. 4.7 **Datum** NGVD **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 84+75	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Very stiff gray clay w/organic matter		
					& sand pockets		
2	5.0	5.5		7.5	Stiff gray clay w/organic matter, sand		
					pockets & shells		
3	8.0	8.5	7.5	9.0	Medium stiff brown & gray clay w/roots		
					& organic matter		
4	10.5	11.5	9.0	12.5	Soft brown & gray clay w/clay pockets,		
					roots & wood		
5	13.5	14.5	12.5		Soft gray clay w/roots & organic matter		
6	16.5	17.5		17.5	Soft gray clay w/sand pockets		
7	17.5	19.0	17.5	20.0	Dense gray fine sand	11	42
8	20.5	22.0	20.0		Medium dense gray fine sand	3	18
9	23.5	25.0		27.0	Ditto	5	25
10	28.5	30.0	27.0		Dense gray fine sand	12	50
11	33.5	35.0			Ditto	16	50
12	38.5	40.0			Ditto	11	30
13	43.5	45.0		46.5	Ditto	5	32
14	48.5	50.0	46.5	50.0	Loose gray fine sand w/clayey sand	3	9
					layers		



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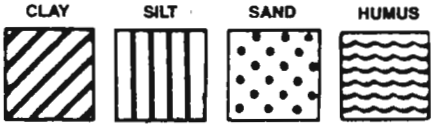
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 19 Soil Technician A. J. Mayeux Date 18 October 1985
Ground Elev. 6.0 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 86+35	*STANDARD PENETRATION TEST	
			0.0		Stiff gray & tan clay w/fill		
1	2.0	2.5			Stiff gray & tan clay w/sand pockets		
					& roots		
2	5.0	5.5		7.0	Medium stiff gray & tan clay w/sand		
					lenses, pockets & roots		
3	8.0	8.5	7.0	9.0	Very soft gray clay w/organic clay		
					layers, wood & organic matter		
	11.0	11.5	9.0	12.0	Wood w/organic matter & clay		
4	14.0	14.5	12.0	17.5	Soft gray clay w/some organic matter		
5	17.5	19.0	17.5	19.5	Medium dense gray sand	5	21
6	20.0	21.5	19.5	22.5	Loose gray sand w/clay layers	3	9
7	22.5	24.0	22.5		Medium dense gray sand	3	23
8	25.0	26.5			Ditto	2	24
9	28.5	30.0		33.0	Ditto	6	21
10	33.5	35.0	33.0	37.0	Dense gray sand	13	40
11	38.5	40.0	37.0		Medium dense gray sand w/shell	7	21
					fragments		
12	43.5	45.0		48.0	Ditto	4	22
13	48.5	50.0	48.0	51.0	Very loose gray clayey sand w/shell	2	5
					fragments		
14	53.5	55.0	51.0	56.0	Very loose gray clayey sand w/shell	1	3
					fragments & clay layers		
15	58.5	60.0	56.0		Medium stiff gray clay w/shell	3	7
					fragments & silt lenses		
16	64.0	64.5			Medium stiff gray clay w/trace of sand		
17	69.0	69.5			Stiff gray clay w/sand pockets		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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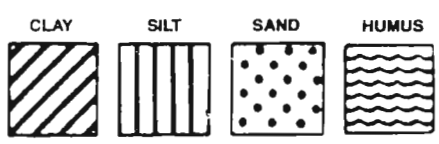
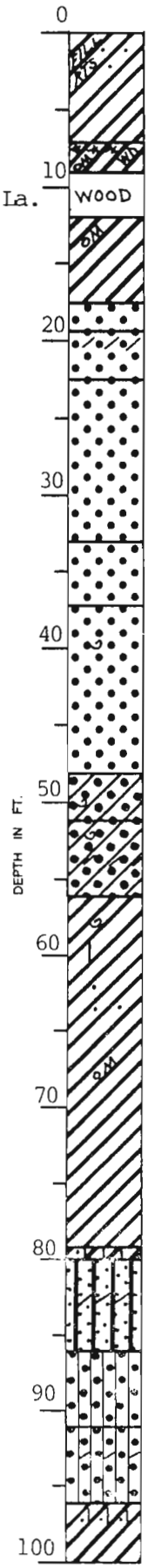
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 19 (Cont'd) Soil Technician A. J. Mayeux Date 18 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
18	74.0	74.5		79.0	Stiff gray clay w/some organic matter & shell fragments		
19	79.0	79.5	79.0	80.0	Medium stiff greenish-gray silty clay w/fine sand		
20	80.0	81.5	80.0		Medium compact greenish-gray sandy silt	6	19
21	82.5	84.0		86.0	Medium compact greenish-gray sandy silt w/clay layers	7	10
22	88.5	90.0	86.0	91.0	Dense gray silty sand	10	42
23	93.5	95.0	91.0	96.0	Medium dense gray silty sand w/clay layers	7	17
24	98.5	100.0	96.0	100.0	Medium stiff gray clay w/sandy silt layers	5	12

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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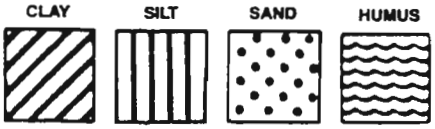
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

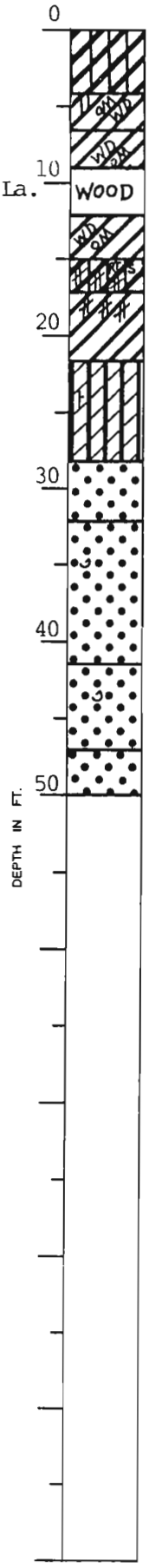
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 20 **Soil Technician** A. J. Mayeux **Date** 18 October 1985

Ground Elev. 5.5 **Datum** NGVD **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 89+75	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Medium stiff brown & gray silty clay		
2	5.0	5.5	4.0	6.5	Medium stiff gray & tan clay w/silt		
					pockets, organic matter & wood		
3	8.0	8.5	6.5	9.0	Medium stiff dark gray clay w/wood &		
					organic matter		
	11.0	11.5	9.0	12.0	Wood w/clay & organic matter		
4	12.5	13.0	12.0	15.0	Soft dark gray clay w/wood & organic		
					matter		
5	15.5	16.0	15.0	17.0	Soft gray silty clay w/clayey silt		
					layers & roots		
6	19.0	19.5	17.0	21.5	Very soft gray clay w/clayey silt		
					layers		
7	24.0	24.5	21.5	28.0	Very loose gray clayey silt w/silty		
					sand lenses		
8	28.0	29.5	28.0		Medium dense gray sand	4	18
9	30.0	31.5		32.0	Ditto	5	24
10	32.0	33.5	32.0		Dense gray sand w/shell fragments	15	45
11	34.5	36.0			Ditto	13	37
12	38.5	40.0		41.5	Ditto	6	33
13	43.5	45.0	41.5	47.0	Medium dense gray sand w/shell	7	18
					fragments		
14	48.5	50.0	47.0	50.0	Loose gray sand	2	8



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CLAY SILT SAND HUMUS

Remarks:

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

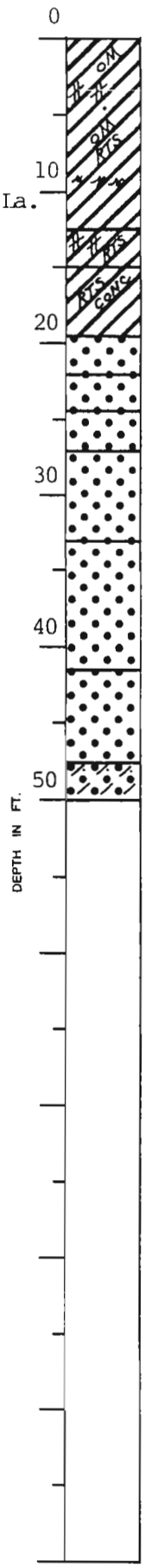
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 21 **Soil Technician** George Hardee **Date** 19 October 1985

Ground Elev. 6.0 **Datum** Ngvd **Gr. Water Depth**

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 94 + 75	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Stiff brown & gray clay w/organic		
					matter & clayey silt pockets & some		
					sand		
2	5.0	5.5			Medium stiff brown & gray clay		
					w/organic matter & sand pockets		
3	7.5	8.5			Soft brown & gray clay w/organic matter		
					& roots		
4	10.5	11.5		12.5	Soft brown & gray clay w/organic matter		
					& organic clay layers		
5	13.5	14.5	12.5	15.0	Soft gray clay w/clayey silt pockets		
					& roots		
6	18.5	19.5	15.0	19.5	Soft gray clay w/roots & few		
					concretions		
7	20.0	21.5	19.5	22.0	Very loose gray fine sand	4	4
8	22.5	24.0	22.0	24.5	Loose gray fine sand	2	8
9	25.0	26.0	24.5	27.0	Very dense gray fine sand	13	50=9"
10	28.5	30.0	27.0	33.0	Medium dense gray fine sand	5	20
11	33.5	35.0	33.0		Very dense gray fine sand	13	50=10"
12	38.5	40.0		41.5	Ditto	9	51
13	43.5	45.0	41.5	47.5	Medium dense gray fine sand	5	19
14	48.5	50.0	47.5	50.0	Loose gray fine sand w/clayey sand	2	6
					& clay layers		



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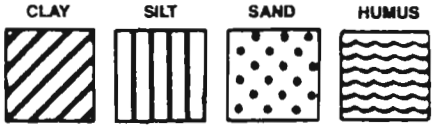

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 22 **Soil Technician** George Hardee **Date** 19 October 1985

Ground Elev. 5.2 **Datum** NGVD **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 99+75	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	4.0	Stiff brown & gray clay w/clayey silt &		
					clayey sand pockets & roots		
2	5.0	5.5	4.0	6.0	Medium dense tan & gray silty sand		
					w/clay layers & roots		
3	7.5	8.5	6.0	9.0	Stiff gray clay w/organic matter, roots		
					& wood		
4	10.5	11.5	9.0	12.0	Wood w/organic matter, roots & dark		
					gray clay		
5	13.5	14.5	12.0	16.0	Soft gray clay w/organic matter & roots		
6	18.5	19.5	16.0		Very loose gray silty sand w/clay		
					lenses & roots		
7	20.0	21.5		23.0	Very loose gray silty sand	1	3
8	22.5	24.0	23.0		Medium dense gray fine sand	1	14
9	25.0	26.5			Ditto	5	15
10	28.5	30.0		33.0	Ditto	7	28
11	33.5	35.0	33.0		Dense gray fine sand	15	41
12	38.5	40.0		41.5	Ditto	8	32
13	43.5	45.0	41.5		Medium dense gray fine sand w/clay	2	11
					layers		
14	48.5	50.0		50.0	Medium dense gray fine sand w/silt	9	12

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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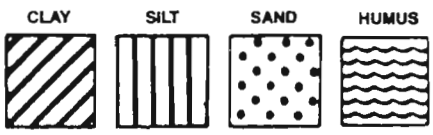
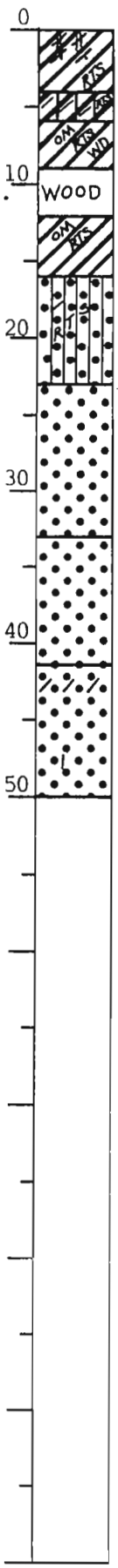
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

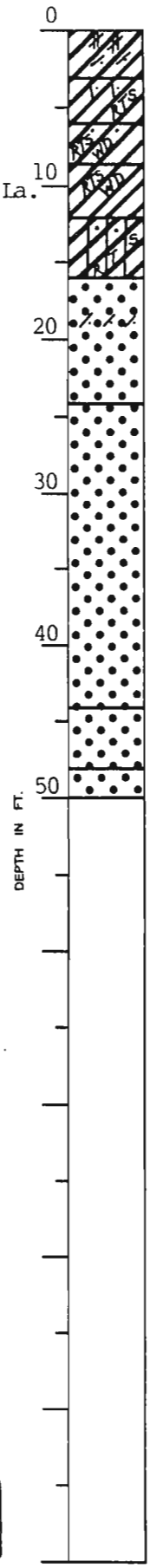
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 23 **Soil Technician** George Hardee **Date** 19 October 1985

Ground Elev. 5.0 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 101 +20	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.0	Stiff brown & gray clay w/clayey silt		
					& clayey sand pockets		
2	5.0	5.5	3.0	6.0	Very soft dark brown & gray clay		
					w/silty sand pockets & roots		
3	7.5	8.5	6.0	8.5	Soft dark gray clay w/sand pockets,		
					roots & wood		
4	10.5	11.5	8.5	12.0	Soft dark brown & gray clay w/roots		
					& wood		
5	13.5	14.5	12.0	16.0	Soft gray silty clay w/sand pockets		
					& roots		
6	16.0	17.5	16.0		Loose gray fine sand	1	7
7	18.5	20.0			Very loose gray fine sand w/clayey	1	1
					sand layers		
8	21.0	22.5		24.0	Ditto	1	3
9	23.5	25.0	24.0		Medium dense gray fine sand	1	14
10	28.5	30.0			Ditto	4	14
11	33.5	35.0			Ditto	3	27
12	38.5	40.0		44.0	Ditto	7	29
13	43.5	45.0	44.0	48.0	Dense gray fine sand	4	38
14	48.5	50.0	48.0	50.0	Loose gray fine sand	7	7



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CLAY SILT SAND HUMUS

Remarks:

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

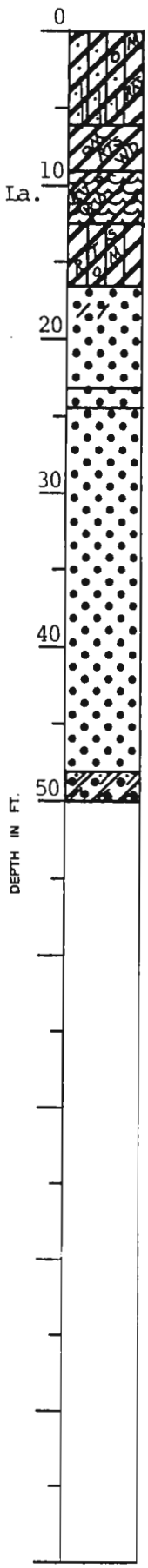
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 24 Soil Technician George Hardee Date 18 October 1985

Ground Elev. 5.0 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 104+75	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Stiff gray & tan silty clay w/organic		
					matter & sand pockets & layers		
2	5.0	6.0		6.0	Soft gray & tan silty clay w/sandy silt		
					layers, pockets, organic matter &		
					roots		
3	8.5	9.0	6.0	9.0	Soft gray clay w/organic matter, roots		
					& wood		
4	10.5	11.5	9.0	12.5	Medium stiff brown organic clay		
					w/roots & wood		
5	13.5	14.5	12.5	16.5	Soft gray silty clay w/roots & organic		
					matter		
6	18.5	19.5	16.5		Very loose gray fine sand w/clay		
					pockets		
7	20.0	21.5		23.0	Ditto	1	3
8	22.5	24.0	23.0	24.5	Loose gray fine sand	1	10
9	25.0	26.5	24.5		Medium dense gray fine sand	2	12
10	28.5	30.0			Ditto	4	19
11	33.5	35.0			Ditto	6	29
12	38.5	40.0			Ditto	8	21
13	43.5	45.0		48.0	Ditto	6	28
14	48.5	50.0	48.0	50.0	Loose gray clayey sand w/sandy clay	3	5
					& clay layers		



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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 25 Soil Technician George Hardee Date 18 October 1985

Ground Elev. 4.7 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION 109 + 75	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.0	Loose tan & gray clayey silt w/shells,		
					gravel & clay pockets		
2	5.0	5.5	3.0	6.0	Stiff brown & gray silty clay w/humus,		
					roots & trace of sand		
3	7.5	8.5	6.0		Soft dark brown & gray organic clay		
					w/roots, humus pockets & shells		
4	11.0	11.5		12.0	Soft dark gray organic clay w/roots,		
					silt pockets, wood & humus pockets		
					(fill)		
5	13.5	14.5	12.0	16.0	Soft gray clay w/roots, organic matter		
					& humus pockets		
6	19.0	19.5	16.0		Loose gray fine sand w/clay layers		
7	23.5	24.5			Loose gray fine sand w/clay pockets		
8	25.0	26.5		27.5	Ditto	3	5
9	27.5	29.0	27.5		Medium dense gray fine sand	3	15
10	30.5	32.0			Ditto	8	21
11	33.5	35.0		38.0	Ditto	5	22
12	38.5	40.0	38.0	42.0	Dense gray fine sand	15	37
13	43.5	45.0	42.0	47.0	Medium dense gray fine sand	7	10
14	48.5	50.0	47.0	50.0	Loose gray fine sand w/clay layers	3	5

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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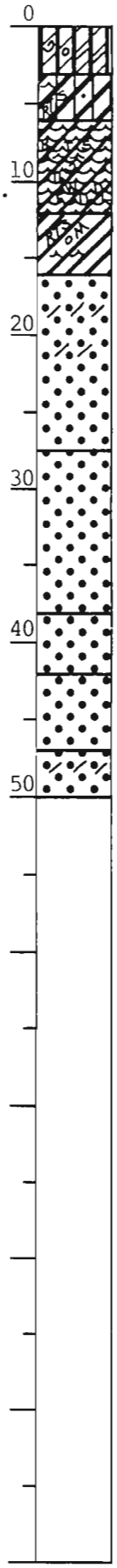
Remarks: _____



CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 26 **Soil Technician** George Hardee **Date** 21 October 1985

Ground Elev. 4.8 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 1/4+75	*STANDARD PENETRATION TEST	
			0.0	0.5	Compact miscellaneous fill (shells,		
					gravel & clay pockets)		
1	2.0	2.5	0.5		Medium stiff brown & gray silty clay		
					w/organic matter & trace of sand		
2	5.0	5.5		6.0	Medium stiff tan & gray silty clay		
					w/clayey silt layers, lenses, gravel		
					& roots (fill)		
3	7.5	8.5	6.0	9.0	Medium stiff dark gray clay w/clayey		
					silt layers		
4	10.5	11.5	9.0	11.5	Soft dark gray clay w/roots, wood,		
					organic clay pockets & humus layers		
5	14.0	14.5	11.5	15.0	Loose dark brown humus w/roots &		
					wood		
6	18.5	19.5	15.0		Very loose gray fine sand w/roots,		
					clayey silt & clay layers		
7	24.5	25.0		25.0	Very loose gray fine sand w/trace of		
					clay		
8	25.0	26.5	25.0	27.0	Loose gray fine sand	2	9
9	27.5	29.0	27.0		Medium dense gray fine sand	4	21
10	30.0	31.5			Ditto	8	26
11	33.5	35.0			Ditto	6	13
12	38.5	40.0		43.5	Ditto	10	24
13	43.5	45.0	43.5		Loose gray fine sand	1	6
14	48.5	49.5		50.0	Loose gray fine sand w/clay pockets		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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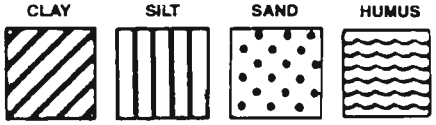
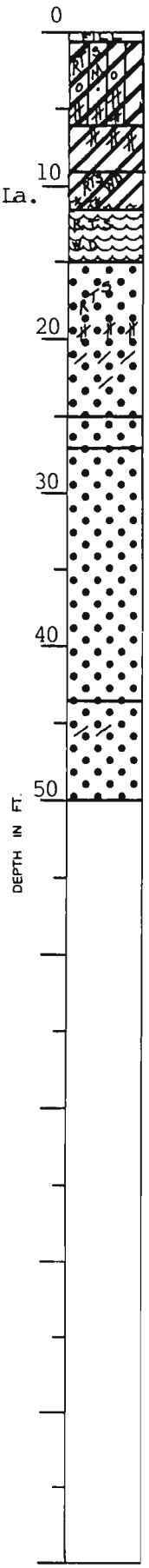
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 27 **Soil Technician** George Hardee **Date** 21 October 1985

Ground Elev. +3 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 121 +35 F.S toe	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	2.5	Medium stiff tan & gray clay w/sand		
					pockets		
2	5.0	5.5	2.5	6.0	Medium dense tan & gray silty sand		
					w/clayey sand layers & pockets		
3	8.0	8.5	6.0	9.5	Stiff gray & brown clay w/sand pockets		
4	11.0	11.5	9.5		Loose gray silty sand w/clay pockets,		
					organic matter & roots		
5	13.5	14.5		15.0	Loose gray silty sand w/roots, clay		
					pockets & layers		
6	16.0	17.0	15.0	17.0	Medium stiff gray clay		
			17.0	18.5	Wood		
7	19.5	20.5	18.5		Soft dark gray organic clay w/roots		
					& humus layers		
8	23.5	24.5		25.0	Very soft dark gray organic clay		
					w/humus layers		
9	30.0	31.0	25.0	33.0	Loose gray fine sand	3	7
10	32.5	34.0	33.0		Medium dense gray fine sand	3	19
11	35.0	36.5			Ditto	4	22
12	37.5	39.0			Ditto	6	21
13	40.0	41.5		43.0	Ditto	5	23
14	43.5	45.0	43.0	48.0	Dense gray fine sand	11	43
15	48.5	50.0	48.0		Loose gray fine sand	3	5
16	53.5	54.5		54.5	Loose gray fine sand w/clay layers		
17	58.5	59.5	54.5	63.5	Medium stiff gray clay w/clayey sand		
					pockets & shell fragments		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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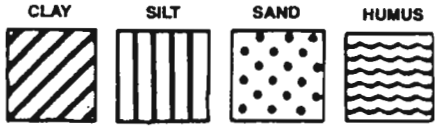
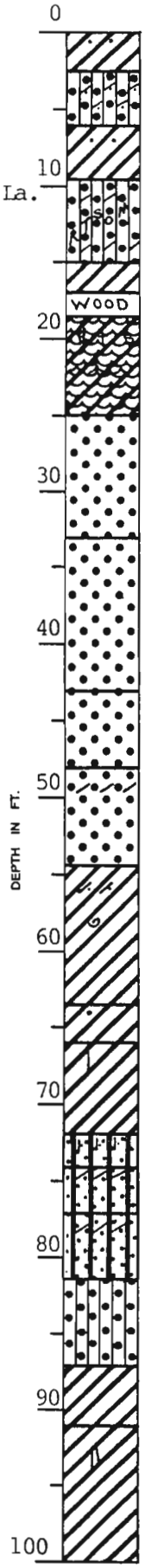
Remarks:



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 27 (Cont'd) **Soil Technician** George Hardee **Date** 21 October 1985
Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
18	63.5	64.5	63.5	66.0	Stiff greenish-gray clay w/trace of		
					sand		
19	68.5	69.5	66.0	72.0	Stiff greenish-gray & tan clay w/trace		
					of silt		
20	72.5	73.5	72.0	74.0	Medium compact tan sandy silt w/silty		
					sand layers		
21	73.5	75.0	74.0	77.0	Compact tan sandy silt w/clay layers	9	39
22	78.5	80.0	77.0	81.5	Medium compact tan sandy silt w/clay	7	25
					layers		
23	83.5	85.0	81.5	87.0	Very dense tan & gray silty sand	25	50=7"
24	88.5	90.0	87.0	91.0	Stiff gray & tan clay	4	9
25	93.5	94.5	91.0		Stiff gray clay w/silt pockets		
26	98.5	99.5		100.0	Ditto		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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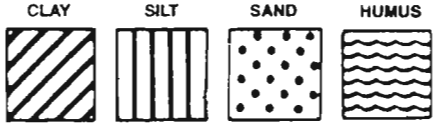


Predominant type shown heavy. Modifying type shown light.

Remarks: _____

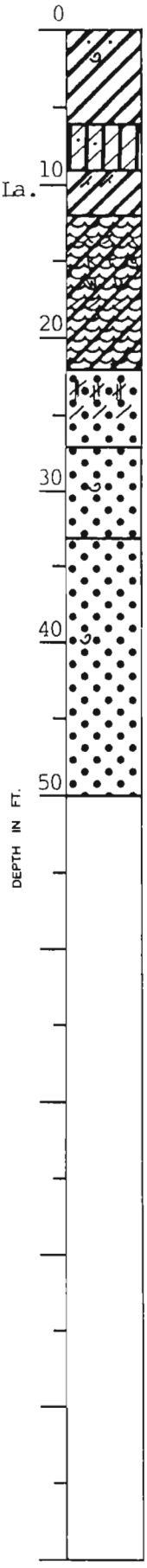
LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 28 Soil Technician George Hardee Date 22 October 1985
Ground Elev. 3.0 Datum Ngvd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 124+75	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff tan & gray clay w/sand pockets		
					& shell fragments		
2	4.5	5.5		6.0	Very stiff brown & gray clay w/sand		
					pockets & decayed shells		
3	7.5	8.5	6.0	9.0	Medium compact gray & brown clayey silt		
					w/fine sand		
4	10.5	11.5	9.0	12.0	Medium stiff tan & gray clay w/clayey		
					sand pockets		
5	13.5	14.5	12.0		Soft dark brown & gray organic clay		
					w/humus layers, roots & wood		
6	19.5	20.0			Soft dark brown & gray organic clay		
					w/roots, wood & clay layers		
7	21.0	22.0		22.0	Soft dark brown & gray organic clay		
					w/roots		
8	23.5	24.5	22.0		Loose gray fine sand w/clayey silt		
					& clay layers		
9	25.0	26.5		27.0	Loose gray fine sand	3	6
10	27.5	29.0	27.0		Very loose gray fine sand	2	4
11	30.0	31.5		33.0	Very loose gray fine sand w/shells	2	3
12	43.5	34.0	33.0		Medium dense gray fine sand	2	15
13	35.5	37.0			Ditto	6	22
14	38.5	40.0			Medium dense gray fine sand w/shells	4	16
15	43.5	45.0			Medium dense gray fine sand	3	15
16	48.5	50.0		50.0	Ditto	4	23



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 29 Soil Technician George Hardee Date 22 October 1985
Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 127+50	*STANDARD PENETRATION TEST	
			0.0	3.0	Compact miscellaneous fill (shells,		
					clay, sand & cement		
1	4.5	5.5	3.0	6.0	Very stiff brown & gray clay w/clayey		
					sand, clayey silt pockets & gravel		
2	8.0	8.5	6.0	8.5	Stiff tan & gray clay w/clayey silt		
					pockets		
3	9.0	9.5	8.5	9.5	Soft gray clay w/silt lenses		
			9.5	12.5	Wood		
4	15.0	16.0	12.5		Loose brown humus w/roots		
5	19.5	20.0		20.0	Ditto		
6	24.0	24.5	20.0		Loose gray fine sand w/roots		
7	25.0	26.5		27.0	Loose gray fine sand	3	7
8	27.5	29.0	27.0	29.5	Very loose gray fine sand w/clay layers	2	2
9	30.0	31.5	29.5		Medium dense gray fine sand	3	13
10	33.5	35.0			Ditto	2	14
11	38.5	40.0		43.0	Ditto	7	21
12	43.5	45.0	43.0		Very loose gray fine sand w/clayey sand	2	2
					pockets		
13	47.0	48.0		48.0	Very loose gray fine sand		
14	48.5	50.0	48.0	52.0	Medium dense gray fine sand	7	23
15	53.5	55.0	52.0		Medium stiff gray clay w/sand pockets	1	3
					& shells		
16	58.5	59.5		63.5	Ditto		
17	63.5	64.5	63.5	65.0	Stiff gray silty clay		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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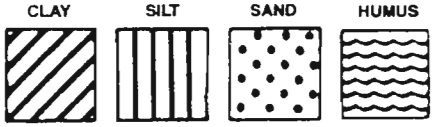
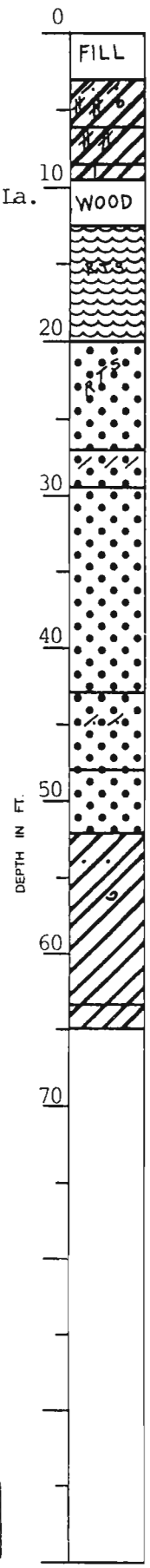
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

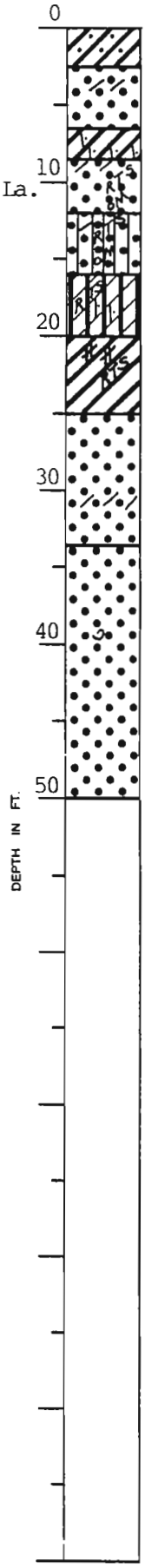
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 30 **Soil Technician** George Hardee **Date** 23 October 1985

Ground Elev. 3.0 **Datum** Ngvd **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION 134+00	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	2.5	Stiff brown & gray clay w/sand pockets & layers		
2	5.5	6.0	2.5	6.5	Medium dense tan fine sand w/clay pockets		
3	7.5	8.5	6.5	8.5	Soft brown & gray clay w/alternating silty sand lenses & layers		
4	10.5	11.5	8.5	12.0	Loose gray & tan fine sand w/clay pockets, roots & organic matter		
5	14.0	14.5	12.0	16.0	Loose gray silty sand w/roots, some clay & organic matter		
6	18.5	19.5	16.0	20.0	Very loose gray clayey silt w/roots & silty sand pockets		
7	23.5	24.5	20.0	25.0	Soft gray clay w/clayey silt pockets & decayed roots		
8	25.0	26.5	25.0		Loose gray fine sand	3	6
9	27.5	29.0			Loose gray fine sand w/clay layers	1	5
10	30.0	31.5		33.5	Loose gray fine sand	3	9
11	33.5	35.0	33.5		Medium dense gray fine sand	2	17
12	38.5	40.0			Medium dense gray fine sand w/shells	7	25
13	43.5	45.0			Medium dense gray fine sand	2	21
14	48.5	50.0		50.0	Ditto	8	27



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Remarks:

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 31 Soil Technician George Hardee Date 23 October 1985

Ground Elev. 4.2 Datum NGVd Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 139+00	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Medium dense tan fine sand w/clay		
					layers & silt		
2	5.5	6.0			Ditto		
3	8.5	9.0			Medium dense tan fine sand w/clay		
					layers & shells		
4	11.5	12.0		12.0	Ditto		
5	12.5	14.0	12.0		Very loose to loose gray clayey silt	2	2
					w/clay layers		
6	15.0	16.5		18.0	Very loose to loose gray clayey silt	1	3
7	17.5	19.0	18.0		Medium compact gray sandy silt	1	12
8	20.0	21.5		23.0	Medium compact gray sandy silt w/roots	3	11
9	23.5	25.0	23.0		Loose gray fine sand	1	6
10	28.5	30.0			Ditto	1	6
11	33.5	35.0		35.0	Ditto	2	10
12	38.5	40.0	35.0		Medium dense gray fine sand w/shells	4	25
13	43.5	45.0			Medium dense gray fine sand	4	18
14	48.5	50.0		50.0	Medium dense gray fine sand w/silt	6	12

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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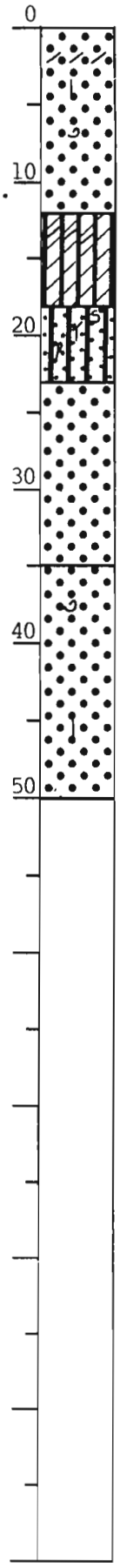
Remarks: _____



CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 32 Soil Technician George Hardee Date 23 October 1985
Ground Elev. 4.7 Datum NGVD Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION 143+00	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.0	Medium dense tan silty sand w/clay		
					layers & shells		
2	5.0	5.5	3.0	6.0	Medium dense tan fine sand w/shells		
3	6.0	7.5	6.0	8.0	Loose tan fine sand w/clay pockets &	1	4
					shells		
4	8.5	10.0	8.0	10.5	Loose gray fine sand w/clayey sand	1	7
					pockets		
5	11.0	12.5	10.5	12.5	Soft gray clay w/silty fine sand	1	5
					layers & few shell fragments		
6	14.5	15.5	12.5		Medium dense gray silty sand w/few clay		
					lenses & shells		
7	18.5	19.5		23.0	Ditto		
8	23.5	24.5	23.0	25.5	Very soft gray clay w/clayey silt &		
					silty sand lenses & pockets		
9	28.5	29.5	25.5		Very loose gray fine sand w/clay		
					pockets		
10	30.0	31.5			Ditto	1	3
11	32.5	34.0			Ditto	1	3
12	35.0	36.5		36.5	Ditto	2	5
13	38.5	40.0	36.5	40.0	Loose gray fine sand w/shells	3	10
14	43.5	45.0	40.0		Medium dense gray fine sand	3	21
15	48.5	50.0		50.0	Ditto	9	24

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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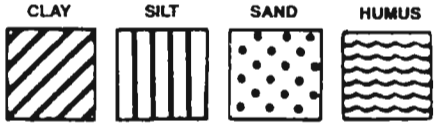
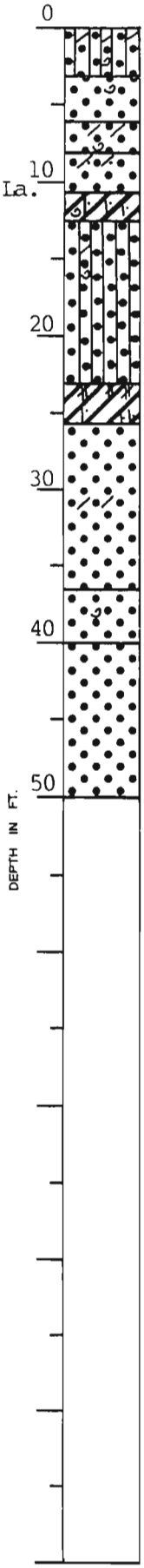
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 33 **Soil Technician** George Hardee **Date** 24 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.0	2.5	0.0		Loose tan fine sand w/silt	3	9
2	3.5	5.0		6.0	Loose tan fine sand w/clay pockets &	3	6
					shells		
3	6.0	7.5	6.0		Soft tan & gray clay w/clayey sand	1	5
					pockets		
4	8.5	9.5		10.5	Soft tan & gray clay w/clayey sand		
					pockets & shells		
5	12.5	13.0	10.5		Very loose gray fine sand w/clay		
					pockets		
6	13.0	14.5			Ditto	1	3
7	15.5	17.0		18.5	Very loose gray fine sand w/silty sand	1	2
					& clay layers		
8	18.0	19.5	18.5		Medium dense gray fine sand w/clay	1	10
					layers		
9	20.5	22.0		23.0	Medium dense gray fine sand	4	11
10	23.5	25.0	23.0	27.5	Very loose gray silty sand w/clayey	1	3
					silt layers		
11	28.5	30.0	27.5		Soft gray clay	1	1
12	33.5	34.5		37.5	Medium stiff gray clay w/clayey silt		
					pockets		
13	39.5	40.0	37.5		Medium dense gray fine sand w/shells		
14	40.0	41.5			Medium dense gray fine sand	4	12
15	43.5	45.0		48.0	Ditto	5	27
16	48.5	50.0	48.0	50.0	Loose gray clayey sand	1	7

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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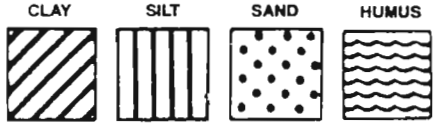
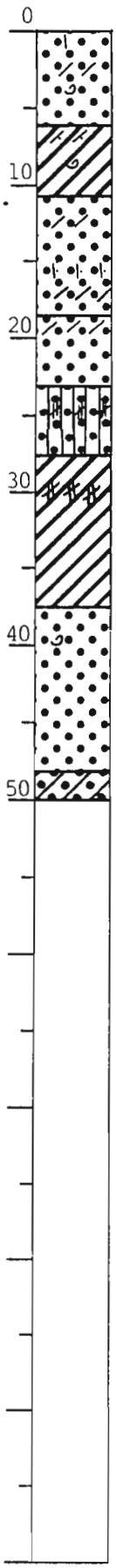
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 34 Soil Technician George Hardee Date 24 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.0	2.5	0.0		Medium dense tan clayey sand w/shells	5	18
2	3.5	5.0		5.5	Medium dense tan clayey sand	5	11
3	6.0	7.5	5.5		Medium stiff tan & gray clay w/sand	2	5
					pockets		
4	8.5	9.5		10.5	Soft tan & gray clay w/silty sand		
					pockets		
5	11.5	12.5	10.5		Soft gray clay w/silt pockets		
6	14.5	15.5		15.5	Soft gray clay w/clayey sand layers		
7	18.5	19.5	15.5		Medium dense gray silty fine sand		
					w/clay lenses & shell fragments		
8	23.5	24.5		26.0	Medium dense gray silty fine sand		
					w/shells & sand layers		
9	28.5	29.5	26.0	31.0	Loose gray silty sand w/shells, clay		
					lenses & pockets		
10	33.5	34.5	31.0		Soft gray clay w/clayey sand pockets		
					& shells		
11	38.5	39.5		41.0	Soft gray clay w/silty sand pockets		
12	43.0	43.5	41.0		Medium dense gray fine sand w/shells		
13	43.5	45.0			Ditto	2	13
14	48.5	50.0		50.0	Medium dense gray fine sand	4	19

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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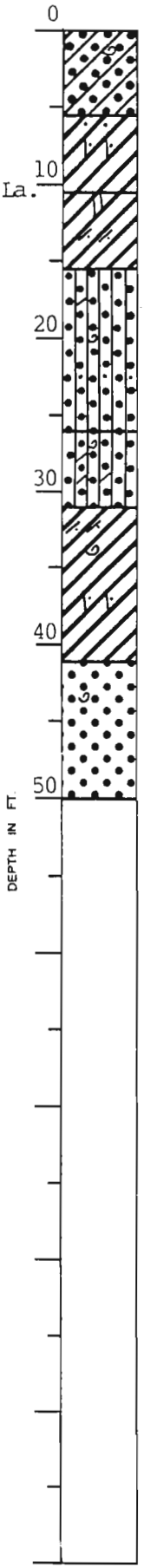
Remarks: _____



CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 35 **Soil Technician** George Hardee **Date** 24 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	3.0	0.0	3.0	Very stiff tan & gray clay w/clayey		
					silt layers, shells & brick (fill)		
2	3.5	5.0	3.0		Medium dense tan & gray clayey sand	8	20
					w/gravel & shells		
3	6.0	7.5		8.0	Medium dense tan & gray clayey sand	7	17
					w/sandy clay layers		
4	8.5	9.5	8.0	10.0	Alternating lenses of medium stiff tan		
					& gray silty clay & medium dense tan		
					silty sand & decayed shells		
5	12.0	13.0	10.0	13.0	Soft tan & gray clay w/sand pockets		
					& shell fragments		
6	13.0	14.5	13.0		Loose gray silty sand w/clayey silt	2	6
					layers		
7	15.5	17.0		17.0	Ditto	2	5
8	19.5	20.0	17.0		Very loose gray fine sand w/clayey		
					sand pockets		
9	20.0	21.5		22.0	Very loose gray fine sand w/clay	1	2
					layers		
10	22.5	24.0	22.0	26.0	Soft gray clay	1	3
11	28.5	29.5	26.0	32.5	Very loose gray clayey silt w/silty		
					sand layers & shell fragments		
12	33.5	34.5	32.5		Soft gray clay w/clayey sand pockets		
13	38.5	39.5		42.0	Soft gray clay w/clayey silt lenses		
					& silty sand pockets		
14	42.5	43.5	42.0		Medium dense gray fine sand w/clayey		
					sand pockets & shells		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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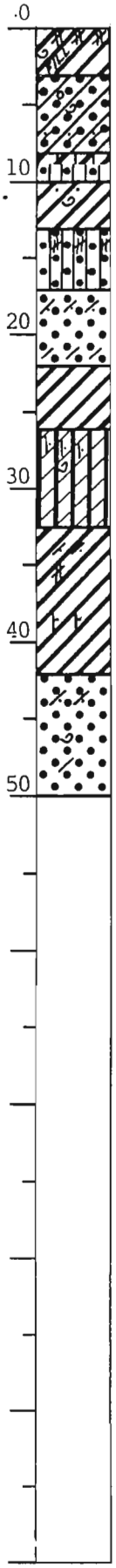
Remarks: _____



CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 35 (Cont'd) Soil Technician George Hardee Date 24 October 1985
Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
15	44.0	45.5			Medium dense gray fine sand	4	11
16	48.5	50.0		50.0	Medium dense gray fine sand w/trace of clay	2	19

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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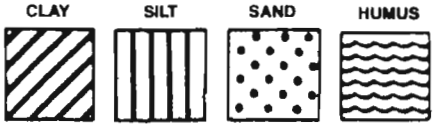
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 36 **Soil Technician** A. J. Mayeux **Date** 26 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Loose gray & tan clayey silt		
					w/miscellaneous fill		
2	5.0	5.5	4.0	7.0	Medium stiff tan & gray silty clay		
3	8.0	8.5	7.0		Medium stiff gray silty clay w/organic		
					matter		
4	11.0	11.5		12.5	Ditto		
5	14.0	14.5	12.5	16.0	Stiff tan & gray clay w/silt pockets		
6	19.0	19.5	16.0	21.0	Medium stiff gray & tan silty clay		
7	24.0	24.5	21.0	26.5	Soft gray clay w/silt pockets		
8	26.5	28.0	26.5	29.0	Medium dense gray silty sand	3	21
9	29.0	30.5	29.0	31.0	Medium dense gray silty sand w/clay	7	18
					layers		
10	31.5	33.0	31.0		Loose gray silty sand w/clay layers	3	8
11	34.0	35.5		35.5	Ditto	2	6
12	39.0	39.5	35.5		Medium stiff gray clay w/silt lenses		
13	44.0	44.5			Ditto		
14	49.0	49.5		50.0	Ditto		
15	54.0	54.5	50.0	56.0	Soft gray sandy clay w/shell fragments		
16	51.5	58.0	56.0	58.5	Very loose gray silty sand w/clay		
					lenses & shell fragments		
17	58.5	60.0	58.5		Medium dense gray sand w/shell	3	14
					fragments		
18	61.0	62.5		63.0	Ditto	4	13
19	64.0	64.5	63.0	67.0	Loose gray clayey sand w/clay pockets		
					& shell fragments		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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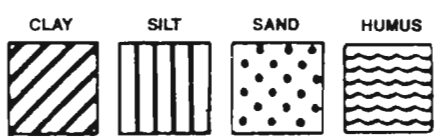
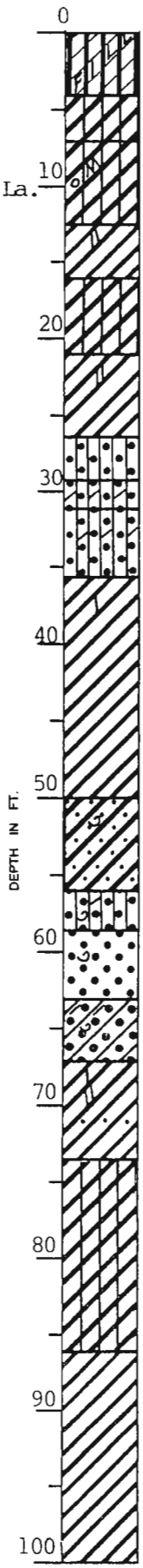
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 36 (Cont'd) Soil Technician A. J. Mayeux Date 26 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
20	69.0	69.5	67.0	73.5	Medium stiff gray & tan clay w/silt		
					lenses & pockets & sand layers		
21	74.0	74.5	73.5		Stiff greenish-gray silty clay		
22	79.0	79.5			Ditto		
23	84.0	84.5		86.0	Ditto		
24	89.0	89.5	86.0		Stiff greenish-gray & tan clay		
25	94.0	94.5			Very stiff greenish-gray & tan clay		
26	99.0	99.5		100.0	Ditto		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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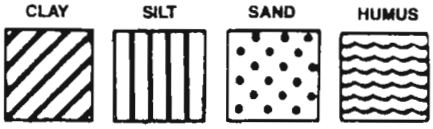

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 37 **Soil Technician** S. Porta **Date** 25 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Soft gray silty clay w/grass roots		
2	2.5	3.0	1.0	4.0	Stiff gray & tan clay w/silt pockets		
					& shells		
3	5.5	6.0	4.0		Medium stiff gray & tan clay w/silt		
					pockets		
4	8.5	9.0		9.5	Ditto		
5	11.5	12.0	9.5	14.0	Soft tan & gray clay w/vertical sand		
					lenses		
6	14.5	15.0	14.0	16.0	Medium stiff gray clay w/trace of		
					organic matter		
7	19.5	20.0	16.0	24.0	Soft gray clay w/clayey silt layers		
8	24.5	25.0	24.0		Loose gray silty fine sand w/clay		
					layers		
9	25.0	26.5		28.0	Ditto	5	8
10	28.0	29.5	28.0		Soft gray clay w/silt lenses	1	
11	34.5	35.0			Ditto		
12	39.5	40.0		41.0	Soft gray clay w/sand lenses & layers		
13	44.5	45.0	41.0	47.0	Loose gray clayey sand w/clay layers		
					& shells		
14	49.5	50.0	47.0	51.0	Soft gray sandy clay w/large silty sand		
					pockets & shells		
15	52.5	53.0	51.0	56.0	Loose gray silty sand w/shells		
16	53.0	54.5	56.0		Ditto	4	8
17	56.0	57.5		57.5	Loose gray sand & shells w/clay layers	3	3
18	59.5	60.0	57.5	62.0	Very loose gray clayey sand w/shells		
					(Continued)		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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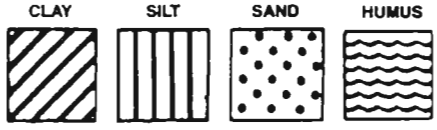
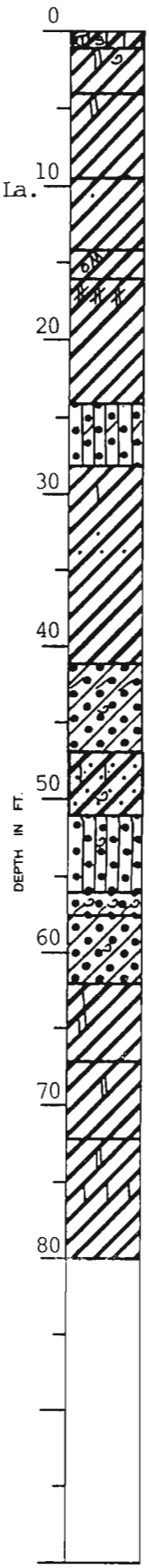
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 37 Soil Technician S. Porta Date 25 October 1985
Ground Elev. (Cont'd) Datum Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
19	64.5	65.0	62.0	67.0	Medium stiff gray & tan clay w/silt		
					lenses & pockets		
20	69.5	70.0	67.0	72.0	Very stiff greenish-gray & tan clay		
					w/silt pockets		
21	74.5	75.0	72.0		Stiff gray & tan clay w/silt pockets		
					& layers		
22	79.5	80.0		80.0	Ditto		

DEPTH IN FT.

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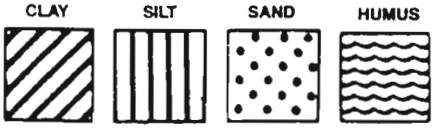

Predominant type shown heavy. Modifying type shown light.

Remarks:

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 38 Soil Technician R. Elkins Date 26 October 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.5	Stiff gray & tan clay w/sand, grass		
					roots & few brick fragments		
2	4.5	5.5	3.5		Soft gray & tan silty clay		
					w/concretions		
3	7.5	8.5		9.5	Ditto		
4	10.5	11.5	9.5	12.0	Medium stiff gray & tan silty clay		
					w/roots		
5	13.5	14.5	12.0	15.0	Loose gray sandy silt w/trace of clay		
6	18.0	19.0	15.0	20.0	Medium compact gray sandy silt w/clay		
					layers & decayed wood		
7	23.0	24.0	20.0		Loose gray clayey silt w/silty clay		
					layers		
8	28.0	29.0		30.0	Loose gray clayey silt w/sand layers		
9	33.0	34.0	30.0		Soft gray & tan clay w/sandy silt		
					layers		
10	38.0	39.0		41.0	Soft gray & tan clay w/sand lenses		
11	43.0	44.0	41.0	46.0	Medium compact gray clayey silt w/sand		
					lenses		
12	48.0	49.0	46.0	50.0	Loose gray clayey silt w/clay layers		
					& shell fragments		

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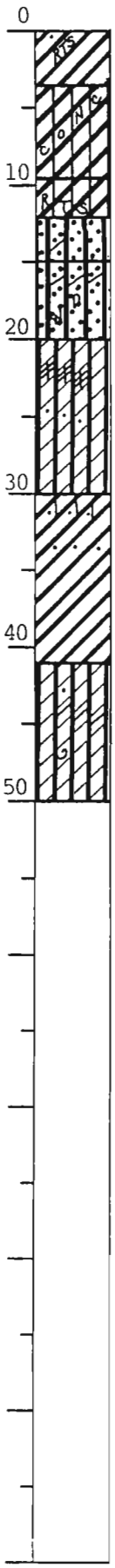

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 39 **Soil Technician** S. Porta **Date** 5 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Medium stiff gray silty clay w/grass		
					roots		
2	2.5	3.0	1.0	4.5	Medium stiff gray & tan clay w/clayey		
					silt pockets, few roots & fill		
3	5.5	6.0	4.5	7.5	Medium stiff brown & gray clay w/clayey		
					silt pockets & fill		
4	8.5	9.0	7.5	11.0	Medium stiff gray & tan silty clay		
					w/roots		
5	11.5	12.0	11.0	13.5	Very soft gray silty clay w/clay layers		
6	14.5	15.0	13.5	17.0	Medium compact gray clayey silt		
7	19.5	20.0	17.0	21.0	Loose gray sandy silt w/clay layers		
8	24.5	25.0	21.0	27.0	Soft gray silty clay w/clay layers		
9	29.5	30.0	27.0		Loose gray sandy silt w/silty clay		
					layers		
10	34.5	35.0			Ditto		
11	39.5	40.0			Ditto		
12	43.5	45.0			Ditto		
13	45.0	46.5			Ditto	2	7
14	47.5	49.0			Ditto	2	8
15	50.0	51.5			Loose gray sandy silt w/clay layers	1	9
16	53.5	55.0			Ditto	1	6
17	58.5	60.0			Ditto	1	4
18	63.5	65.0			Ditto	2	6
19	68.5	70.0		73.5	Ditto	2	11
20	73.5	75.0	73.5		Medium stiff greenish-gray fissured		
					clay w/clayey silt pockets		

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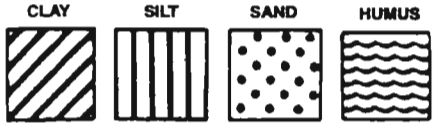
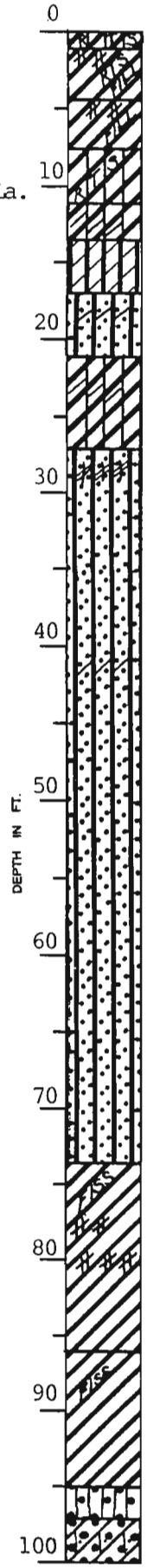


Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 39 (Cont'd) **Soil Technician** S. Porta **Date** 5 November 1985
Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
21	79.5	80.0			Medium stiff greenish-gray fissured		
					clay		
22	84.5	85.0		86.0	Medium stiff greenish-gray fissured		
					clay w/clayey silt layers		
23	89.5	90.0	86.0		Medium stiff tan & gray fissured clay		
24	94.5	95.0		95.0	Stiff tan & gray fissured clay		
25	95.0	96.5	95.0	97.0	Medium dense gray silty sand	4	29
26	98.5	100.0	97.0	100.0	Medium dense gray clayey sand w/silty	5	16
					sand layers		

DEPTH IN FT.

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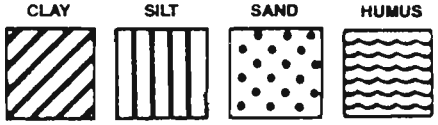
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 40 Soil Technician George Hardee Date 7 November 1985

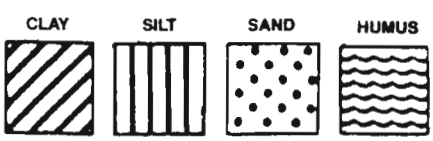
Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.0	Medium stiff tan silty clay w/clay		
					pockets, organic matter, brick &		
					fragments (fill)		
2	4.0	5.0	3.0		Stiff tan & gray clay w/cinders, clayey		
					silt & clay pockets (fill)		
3	6.5	7.5		8.5	Medium stiff tan & gray clay w/clayey		
					silt pockets & roots (fill)		
4	9.0	10.0	8.5	11.0	Stiff tan & gray clay w/clayey silt		
					pockets		
5	11.5	12.5	11.0		Medium stiff tan & gray clay w/clayey		
					silt pockets		
6	14.0	15.0			Ditto		
7	16.5	17.5			Ditto		
8	19.0	20.0		20.0	Ditto		
9	21.5	22.5	20.0	23.0	Medium stiff gray silty clay w/clayey		
					silt layers & lenses		
10	24.0	25.0	23.0	25.0	Soft gray silty clay w/clayey silt &		
					clay pockets		
11	28.5	29.5	25.0		Loose gray sandy silt w/clay lenses		
12	31.5	32.5		33.5	Loose gray sandy silt w/silty clay		
					& clay layers		
13	34.0	35.0	33.5	36.0	Medium stiff gray clay w/clayey silt		
					& sandy silt lenses		
14	36.5	37.5	36.0		Medium stiff gray clay w/sandy silt		
					lenses		
15	39.0	40.0			Ditto		

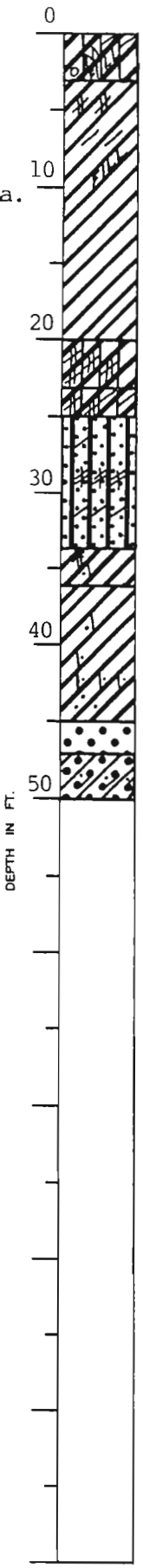
*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY Sheet 2 of 2

SOIL AND FOUNDATION CONSULTANTS

METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements

Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.

Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 40 (Cont'd) **Soil Technician** George Hardee **Date** 7 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
16	41.5	42.5			Soft gray clay w/silty sand lenses &		
					layers		
17	44.0	45.0		45.0	Soft gray clay w/sand lenses & pockets		
18	45.0	46.5	45.0	47.0	Medium dense gray fine sand	7	11
19	48.5	50.0	47.0	50.0	Loose gray clayey sand w/sandy clay	2	5
					layers		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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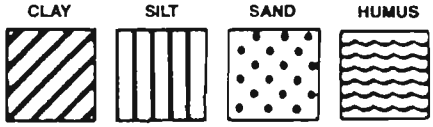
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS

METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements

Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

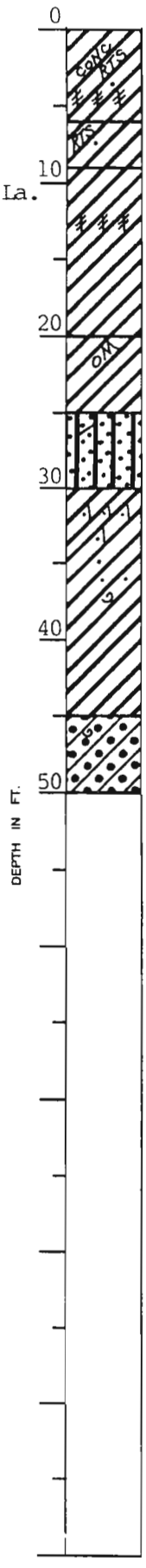
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.

Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 41 **Soil Technician** R. Elkins **Date** 26 October 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff gray & tan clay w/concretions,		
					roots & sand		
2	4.5	5.5		6.0	Medium stiff gray & tan clay w/silty		
					clay layers & roots		
3	7.5	8.5	6.0	9.0	Very stiff gray & tan clay w/roots		
					& sand lenses		
4	10.5	11.5	9.0		Medium stiff gray & tan clay		
5	13.5	14.5			Ditto		
6	18.0	19.0		20.0	Medium stiff gray & tan clay w/silty		
					clay layers		
7	23.0	24.0	20.0	25.0	Medium stiff gray clay w/organic matter		
8	28.0	29.0	25.0	30.0	Loose gray sandy silt w/trace of clay		
9	33.0	34.0	30.0		Very soft gray clay w/large sandy silt		
					layers & lenses		
10	38.0	39.0			Ditto		
11	43.0	44.0		45.0	Soft gray clay w/sand lenses, pockets		
					& shell fragments		
12	48.0	49.0	45.0	50.0	Loose gray clayey sand w/shell		
					fragments		



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

CLAY SILT SAND HUMUS

Remarks: _____

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS

METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements

Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.

Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 42 Soil Technician S. Porta Date 5 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Medium stiff brown & gray clay w/silt		
					& organic matter & roots		
2	2.5	3.0	1.0		Stiff gray & tan clay w/roots & trace		
					of gravel		
3	5.5	6.0			Stiff gray & tan clay w/silt pockets		
4	8.5	9.0			Ditto		
5	11.5	12.0			Medium stiff gray & tan clay w/silt		
					pockets		
6	14.5	15.0			Stiff gray & tan clay		
7	19.5	20.0		21.0	Stiff tan & gray clay w/silt pockets		
8	24.5	25.0	21.0	26.0	Medium stiff gray clay w/trace of		
					organic matter		
9	29.5	30.0	26.0		Soft gray clay		
10	34.5	35.0			Ditto		
11	39.5	40.0		40.0	Soft gray clay w/silty sand lenses		
					& layers		
12	40.0	41.5	40.0	43.0	Soft gray clay	1	21
13	42.5	44.0	43.0	46.0	Soft gray clay w/sand layers	2	1
14	49.5	50.0	46.0	50.0	Loose gray clayey sand w/shells		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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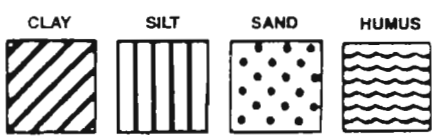
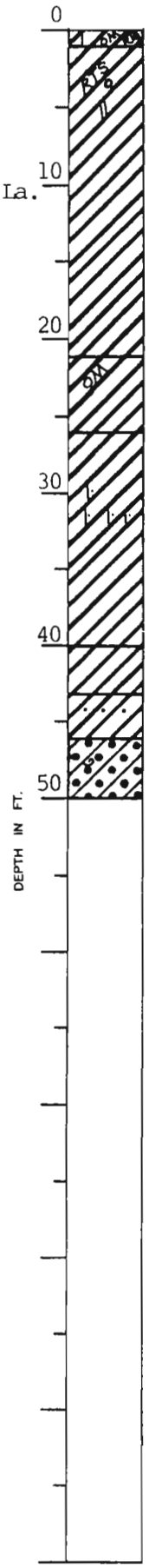
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

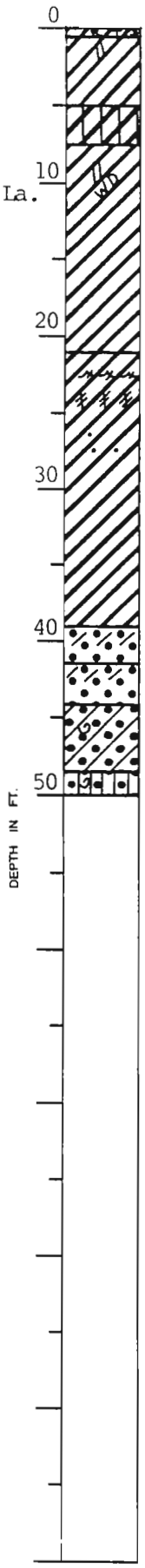
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 43 Soil Technician S. Porta Date 5 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	0.5	Medium stiff gray & tan clay w/grass		
					roots		
2	2.5	3.0	0.5	5.0	Stiff brown & gray clay w/silt pockets		
3	5.5	6.0	5.0	7.5	Medium stiff gray & tan silty clay		
4	8.5	9.0	7.5		Medium stiff gray & tan clay w/silt		
					pockets		
5	11.5	12.0			Medium stiff gray & tan clay w/wood		
6	14.5	15.0			Medium stiff gray & tan clay		
7	19.5	20.0		21.0	Medium stiff gray & tan clay w/silt		
					pockets		
8	24.5	25.0	21.0		Soft gray clay w/organic clay layers		
9	29.5	30.0			Soft gray clay w/silty clay layers		
10	34.5	35.0			Medium stiff gray clay w/fine sand		
					lenses & pockets		
11	38.5	39.0		39.0	Soft gray clay w/fine sand lenses		
12	39.0	40.5	39.0	41.5	Dense gray sand w/clay layers	5	31
13	41.5	43.0	41.5	44.0	Medium dense gray sand w/clay layers	7	24
14	44.0	45.5	44.0		Loose gray clayey sand w/shells	6	12
15	46.5	48.0		48.5	Ditto	1	4
16	49.5	50.0	48.5	50.0	Loose gray silty sand w/many shell		
					fragments		



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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 44 **Soil Technician** George Hardee **Date** 7 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0	3.5	Medium stiff gray & brown clay w/clayey		
					sand pockets & trace of organic		
					matter		
2	4.5	5.5	3.5	6.0	Loose tan fine sand w/clay layers		
3	8.0	8.5	6.0	9.0	Soft tan & gray clay w/sand pockets		
4	11.5	12.0	9.0	12.0	Soft gray clay w/roots & organic		
					matter		
5	14.5	15.0	12.0	16.5	Medium stiff gray & tan clay w/roots		
6	16.5	18.0	16.5	18.5	Medium dense gray fine sand	2	21
7	19.0	20.5	18.5	21.0	Dense gray fine sand	10	43
8	21.5	23.0	21.0	23.0	Medium dense gray fine sand w/clay	5	20
					layers		
9	24.5	26.0	23.0	28.0	Dense gray fine sand	15	39
10	28.5	30.0	28.0	34.0	Medium dense gray fine sand	10	25
11	33.5	35.0	34.0		Dense gray fine sand	10	32
12	38.5	40.0		42.5	Dense gray fine sand w/shells	11	43
13	43.5	45.0	42.5		Loose gray clayey sand	1	4
14	48.5	49.5		50.0	Loose gray clayey sand w/shells, clay		
					pockets & layers		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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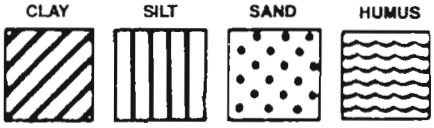
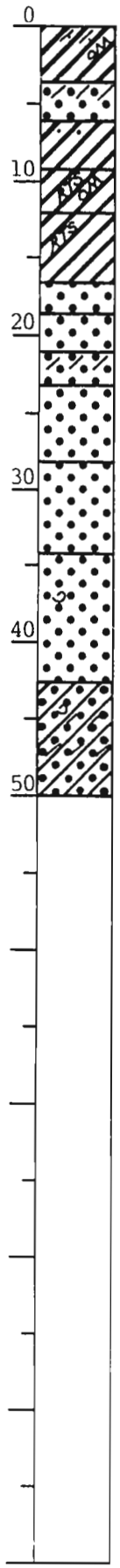
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 45 Soil Technician George Hardee Date 8 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Medium stiff tan & gray fissured clay		
					w/silt pockets		
2	4.5	5.5			Medium stiff tan & gray fissured clay		
3	7.5	8.5		9.5	Soft tan & gray fissured clay w/large		
					sand pockets		
			9.5	10.5	Wood		
4	11.5	12.5	10.5		Soft gray & tan clay		
5	14.5	15.5		16.0	Medium stiff gray & tan clay		
6	16.0	17.5	16.0	18.0	Loose gray fine sand	1	6
7	18.5	20.0	18.0	20.5	Dense gray fine sand	17	47
8	21.0	22.5	20.5		Medium dense gray fine sand	10	18
9	23.5	25.0			Medium dense gray fine sand w/clay	6	20
					layers		
10	28.5	30.0		33.0	Ditto	8	29
11	33.5	35.0	33.0	38.0	Dense gray fine sand	10	35
12	38.5	40.0	38.0	41.5	Very dense gray fine sand w/shells	11	50=10"
13	43.5	45.0	41.5	47.0	Medium dense gray fine sand	1	16
14	48.5	50.0	47.0	50.0	Loose gray clayey sand	2	3

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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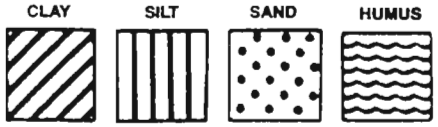
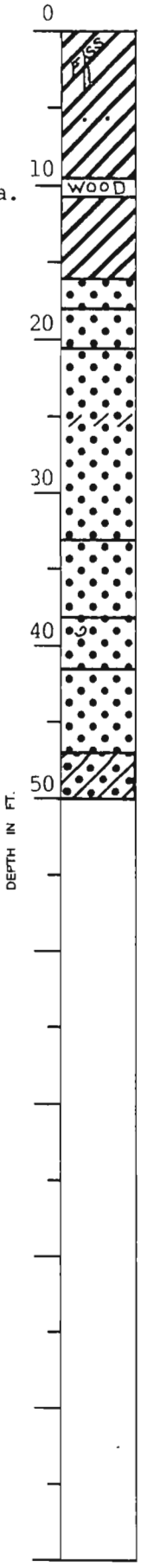
Remarks: 5" Diameter Boring



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 46 Soil Technician George Hardee Date 8 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	1.5	2.5	0.0		Stiff gray & brown clay w/clayey sand		
					pockets & layers		
2	4.5	5.5		6.0	Medium stiff gray & brown clay w/clayey		
					sand pockets & layers		
3	7.5	8.5	6.0	9.0	Medium stiff tan & gray clay w/trace		
					of organic matter		
			9.0	10.5	Wood		
4	11.5	12.5	10.5	13.0	Very soft gray clay w/roots & organic		
					matter		
5	14.0	15.0	13.0	16.0	Soft gray & tan clay w/roots		
6	16.0	17.5	16.0	18.0	Medium dense gray fine sand	1	15
7	18.5	20.0	18.0		Dense gray fine sand	9	42
8	21.0	22.5			Ditto	14	45
9	23.5	25.0		27.0	Ditto	12	39
10	28.5	30.0	27.0	33.0	Medium dense gray fine sand w/clay	9	24
					layers & shells		
11	33.5	35.0	33.0	36.5	Very dense gray fine sand	14	50=10"
12	38.5	40.0	36.5		Medium dense gray fine sand w/clay	2	24
					layers		
13	43.5	45.0		47.0	Ditto	7	30
14	48.5	50.0	47.0	51.5	Soft gray sandy clay w/clay layers	1	3
15	53.5	54.5	51.5		Medium stiff gray clay w/sand pockets		
					& shells		
16	58.5	59.5		59.5	Ditto		
17	63.5	64.5	59.5		Stiff tan & gray clay w/fissures		
18	68.5	69.5		70.0	Stiff tan & gray clay		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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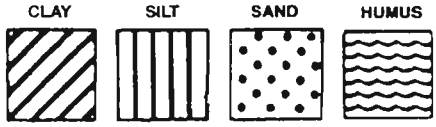
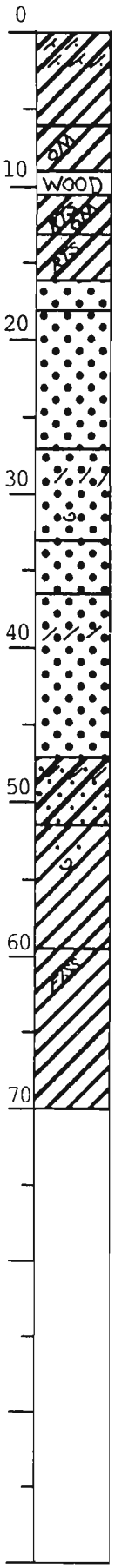
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 47 Soil Technician A. Croal, Jr. Date 11 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	0.5	Stiff dark gray clay w/trace of fine		
					gravel & grass roots		
2	1.2	2.0	0.5	2.5	Soft tan & gray clay w/fine sand layers		
3	3.2	4.0	2.5	4.0	Medium stiff brown & gray clay w/silt		
					pockets & sand lenses		
4	5.2	6.0	4.0	7.0	Soft tan & gray clay w/fine sand &		
					clayey sand layers		
5	7.7	8.5	7.0	9.0	Soft gray clay w/roots & wood		
6	10.7	11.5	9.0	11.5	Extremely soft gray & tan clay w/fine		
					sand pockets & layers		
7	12.0	13.5	11.5	14.5	Dense gray & tan fine sand	5	38
8	14.5	16.0	14.5		Very dense gray & tan fine sand	7	50=9"
9	18.5	20.0		21.0	Ditto	8	50=10"
10	21.0	22.5	21.0	23.5	Dense gray & tan fine sand	10	46
11	23.5	25.0	23.5		Very dense gray & tan fine sand w/many	8	50=11"
					shell fragments		
12	28.5	30.0			Ditto	15	50=9"
13	33.5	35.0			Ditto	13	50=10"
14	38.5	40.0		43.0	Ditto	10	50=8"
15	43.5	45.0	43.0	47.0	Dense gray & tan fine sand w/shell	4	31
					fragments		
16	48.5	50.0	47.0	50.0	Very soft gray & tan clay w/fine sand	0	1
					pockets & few shell fragments		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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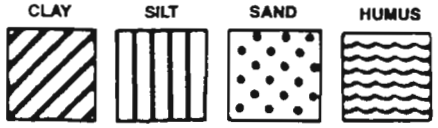
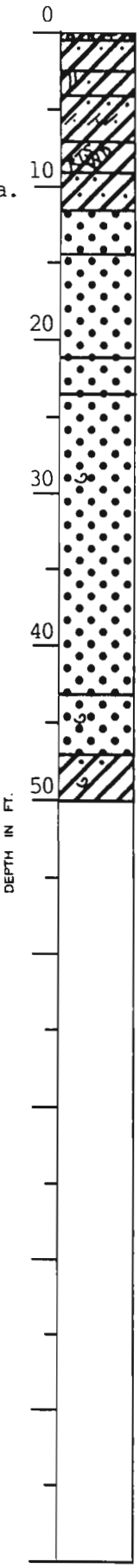
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 48 **Soil Technician** A. Croal, Jr. **Date** 11 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Very stiff dark gray clay w/grass roots		
2	1.7	2.5	1.0		Stiff gray clay w/sand pockets		
3	4.7	5.5		6.0	Stiff brown & gray clay w/sandy clay		
					& clayey silt pockets		
4	7.7	8.5	6.0	9.0	Soft gray & tan clay w/fine sand layers		
5	10.7	11.5	9.0	12.0	Extremely soft gray clay w/roots &		
					organic matter		
6	13.7	14.5	12.0	15.0	Soft gray clay w/roots & organic matter		
7	17.7	18.5	15.0	18.5	Soft gray clay w/organic matter & large		
					roots		
8	18.5	20.0	18.5		Medium dense gray fine sand	1	14
9	21.0	22.5			Ditto	6	25
10	23.5	25.0			Ditto	4	23
11	26.0	27.5		28.5	Ditto	4	26
12	28.5	30.0	28.5	32.0	Dense gray fine sand	5	38
13	33.5	35.0	32.0		Medium dense gray fine sand	12	26
14	38.5	40.0		43.5	Medium dense gray fine sand w/shell	5	24
					fragments		
15	43.5	45.0	43.5	47.0	Very dense gray fine sand	13	50=9"
16	48.5	50.0	47.0	50.0	Loose gray clayey sand w/clay pockets	2	6
					& few shell fragments		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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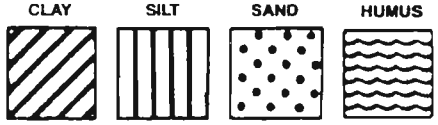
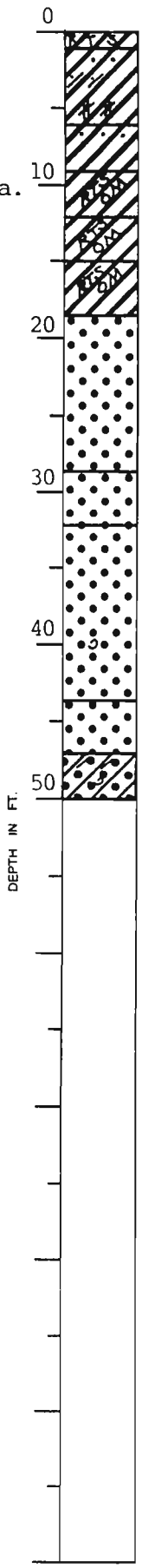
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

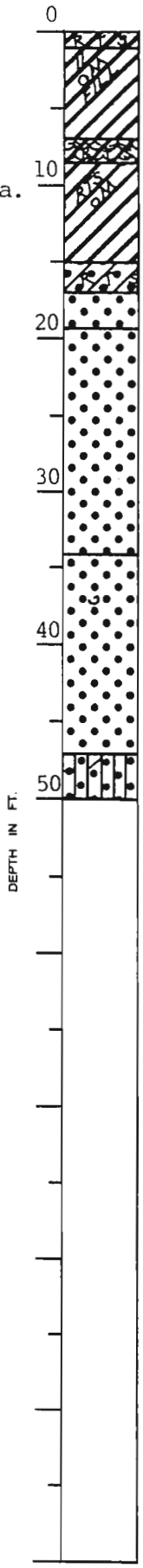
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 49 Soil Technician A. Croal, Jr. Date 12 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Stiff dark gray clay w/grass roots		
2	1.7	2.5	1.0		Medium stiff tan & gray clay w/silt		
					pockets & brick fragments		
3	4.7	5.5		7.0	Medium stiff tan & gray clay w/silt		
					pockets & trace of organic matter		
					(fill)		
4	7.7	8.5	7.0	8.5	Soft gray & brown organic clay w/humus		
					layers, organic matter & roots		
5	10.7	11.5	8.5		Soft gray clay w/roots & wood		
6	13.7	14.5		15.0	Soft gray clay		
7	17.0	17.5	15.0	17.0	Very loose to loose gray clayey sand		
					w/roots		
8	18.0	18.5	17.0	19.5	Medium dense gray fine sand	3	30
9	19.5	21.0	19.5		Dense gray fine sand	6	37
10	22.0	23.5			Ditto	11	47
11	24.5	26.0			Ditto	7	50
12	28.5	30.0		34.0	Ditto	3	32
13	33.5	35.0	34.0		Very dense gray fine sand	6	50=8"
14	38.5	40.0			Very dense gray fine sand w/few shell	18	50=8"
					fragments		
15	43.5	45.0		47.0	Very dense gray fine sand	4	50=10"
16	48.5	50.0	47.0	50.0	Medium dense gray silty sand w/clay	7	21



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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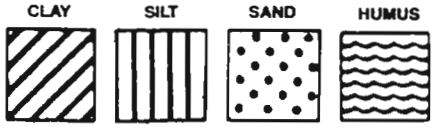

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY Sheet 1 of 2
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 50 **Soil Technician** A. Croal, Jr. **Date** 13 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Very stiff gray & brown clay w/fine		
					sand lenses, pockets & shell		
					fragments		
2	1.7	2.5	1.0	3.0	Loose tan fine sand		
3	2.5	4.0	3.0	5.0	Medium compact brown & gray clayey silt	3	14
					w/fine sand lenses		
4	5.0	6.5	5.0	6.5	Medium stiff to stiff gray clay w/sandy	2	8
					silt lenses & layers		
5	8.2	9.0	6.5	9.0	Soft dark gray clay w/silt pockets &		
					trace of organic matter		
6	10.7	11.5	9.0	12.5	Soft dark gray clay w/organic matter		
					& roots		
7	13.7	14.5	12.5		Very soft gray clay w/organic matter		
					& wood		
8	18.2	19.0		21.8	Soft gray clay w/organic matter & roots		
9	21.7	22.5	21.8		Loose to medium dense gray fine sand		
10	22.5	24.0			Medium dense gray fine sand	4	26
11	25.0	26.5			Ditto	4	23
12	27.5	29.0			Ditto	3	19
13	30.0	31.5		34.0	Ditto	8	25
14	33.5	35.0	34.0	39.0	Dense gray fine sand w/shell fragments	9	32
15	38.5	40.0	39.0	41.0	Very dense gray fine sand	12	50=11"
16	43.5	45.0	41.0		Medium dense gray silty sand w/few	6	26
					shell fragments		
17	48.5	50.0		53.5	Medium dense gray silty sand	5	27
18	53.5	55.0	53.5	57.5	Loose gray silty sand	3	10

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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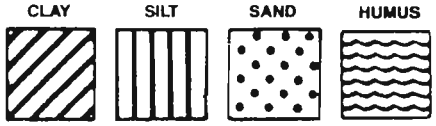
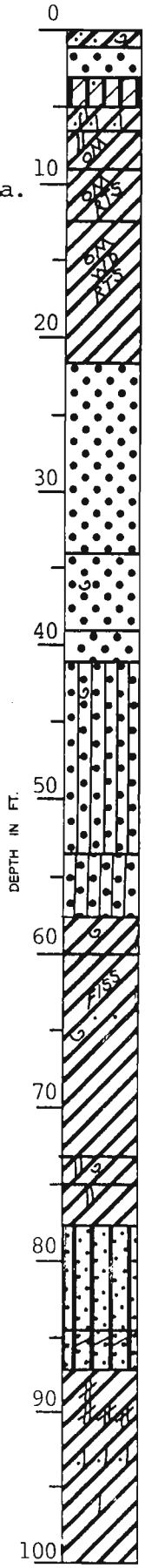
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 50 (Cont'd) **Soil Technician** A. Croal, Jr. **Date** 13 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
19	58.5	60.0	57.5	60.0	Soft gray clay w/shell fragments	2	4
20	63.2	64.0	60.0	66.0	Medium stiff gray fissured clay w/sand		
					pockets & few shell fragments &		
					vertical fissures.		
21	68.2	69.0	66.0	73.0	Stiff gray clay w/few shell fragments		
22	73.2	74.0	73.0	75.0	Stiff greenish-gray clay w/silt		
					pockets & shells		
23	76.7	77.5	75.0	77.5	Very stiff greenish-gray & tan clay		
					w/few silt pockets		
24	77.5	79.0	77.5		Compact gray sandy silt	9	44
25	80.0	81.5			Ditto	8	35
26	82.5	84.0		84.5	Medium compact gray sandy silt	6	21
27	85.0	86.5	84.5	87.0	Very loose gray sandy silt w/clay	2	2
					layers		
28	88.5	90.0	87.0		Medium stiff gray clay w/clayey silt	2	6
					lenses & layers		
29	91.7	92.5			Medium stiff gray clay w/sandy silt		
				qu	layers		
30	96.7	97.5	qu	100.0	Stiff gray clay w/silt lenses		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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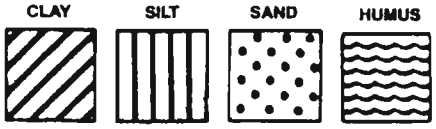
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 51 **Soil Technician** A. Croal, Jr. **Date** 12 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	0.0	0.5	0.0	1.0	Stiff brown & gray clay w/shell		
					fragments & grass roots		
2	1.7	2.5	1.0	3.0	Medium stiff tan & gray clay w/fine		
					sand & clayey sand pockets		
3	4.7	5.5	3.0	6.5	Medium stiff black & gray clay w/roots		
					& organic matter		
4	7.7	8.5	6.5	9.0	Medium stiff tan & gray clay w/sand		
					layers & trace of organic matter		
5	10.7	11.5	9.0	12.5	Soft gray clay w/roots & organic matter		
6	13.7	14.5	12.5	16.0	Loose gray fine sand w/clayey sand		
					layers, trace of organic matter &		
					few roots		
7	16.0	17.5	16.0	19.0	Medium dense gray fine sand	2	28
8	18.5	20.0	19.0	21.5	Dense gray fine sand	4	36
9	21.0	22.5	21.5		Very dense gray fine sand	8	50=10"
10	23.5	25.0			Ditto	10	50=10"
11	26.0	27.5			Ditto	15	50=9"
12	28.5	30.0			Very dense gray fine sand w/few shell	11	50=8"
					fragments		
13	33.5	35.0			Very dense gray fine sand	9	50=9"
14	38.5	40.0		42.0	Ditto	12	50=9"
15	43.5	45.0	42.0	47.0	Dense gray fine sand	14	41
16	48.5	50.0	47.0	50.0	Loose gray silty sand w/few clay	2	10
					pockets & trace of clay		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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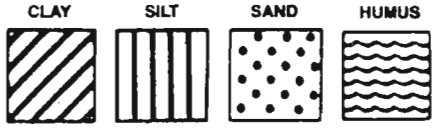
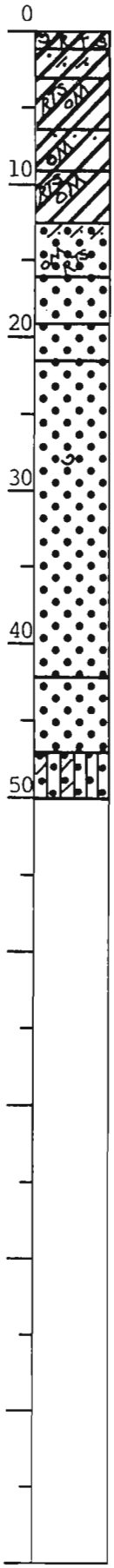
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

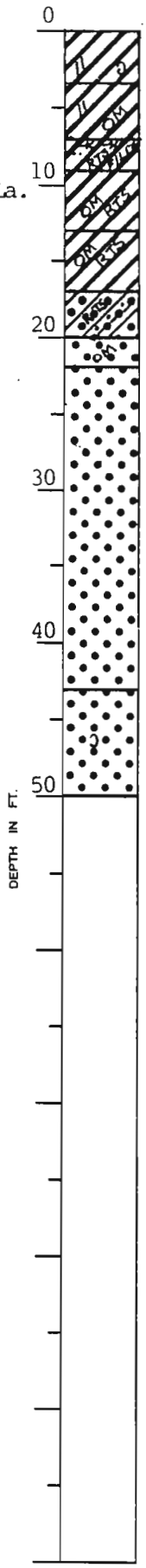
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 52 **Soil Technician** A. J. Mayeux **Date** 4 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.5	Stiff gray & tan clay w/silt pockets &		
					shell fragments		
2	5.0	5.5	3.5	7.0	Medium stiff gray & tan clay w/silt		
					pockets & trace of organic matter		
3	8.0	8.5	7.0	9.0	Soft gray clay w/organic clay layers,		
					sand pockets & roots (fill)		
4	11.0	11.5	9.0	13.0	Very soft gray clay w/organic matter &		
					roots		
5	14.0	14.5	13.0	17.0	Soft gray clay w/organic matter & roots		
6	19.0	19.5	17.0	20.0	Very loose dark gray & gray clayey sand		
					w/sandy clay layers & roots		
7	20.0	21.5	20.0	22.0	Medium dense gray sand w/organic matter	2	14
8	22.5	24.0	22.0		Dense gray sand	7	32
9	25.0	26.5			Ditto	6	30
10	28.5	30.0			Ditto	5	42
11	33.5	35.0			Ditto	7	37
12	38.5	40.0		43.0	Ditto	8	35
13	43.5	45.0	43.0		Loose gray sand w/shell fragments	1	5
14	48.5	50.0		50.0	Ditto	2	6



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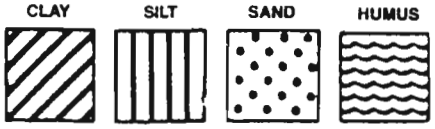
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 53 **Soil Technician** A. J. Mayeux **Date** 4 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Medium stiff gray & tan clay w/sand		
					lenses & pockets & trace of organic		
					matter		
2	5.5	6.0			Medium stiff gray & tan clay w/sand		
					pockets		
3	8.0	8.5		9.0	Medium stiff gray & tan clay w/vertical		
					sand layers, organic matter & bricks		
	11.0	11.5	9.0	11.5	Wood w/organic matter & clay		
4	14.0	14.5	11.5	15.0	Soft gray & tan clay w/decayed roots		
5	15.0	16.5	15.0	17.0	Loose gray sand	1	5
6	17.5	19.0	17.0		Medium dense gray sand	2	13
7	20.0	21.5			Ditto	4	19
8	23.5	25.0		28.0	Ditto	2	15
9	28.5	30.0	28.0		Dense gray sand	5	35
10	33.5	35.0			Ditto	10	48
11	38.5	40.0		41.5	Ditto	7	32
12	43.5	45.0	41.5	47.0	Medium dense gray sand w/shell	5	19
					fragments		
13	48.5	50.0	47.0	52.0	Loose gray sand w/shell fragments	2	8
14	53.5	55.0	52.0	56.5	Medium stiff gray clay w/sand layers	1	4
15	59.0	59.5	56.5	62.0	Stiff gray & tan clay w/sand pockets &		
					shell fragments		
16	64.0	64.5	62.0	66.0	Stiff gray clay w/sand pockets		
17	69.0	69.5	66.0	70.0	Medium stiff gray clay w/shell		
					fragments		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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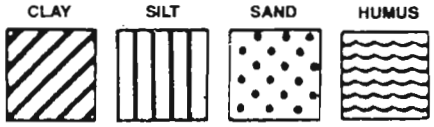
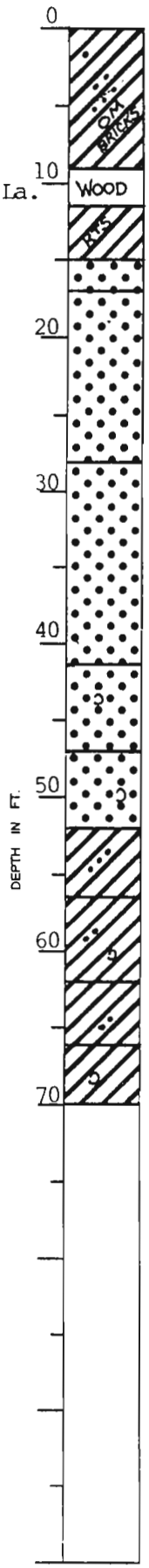
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

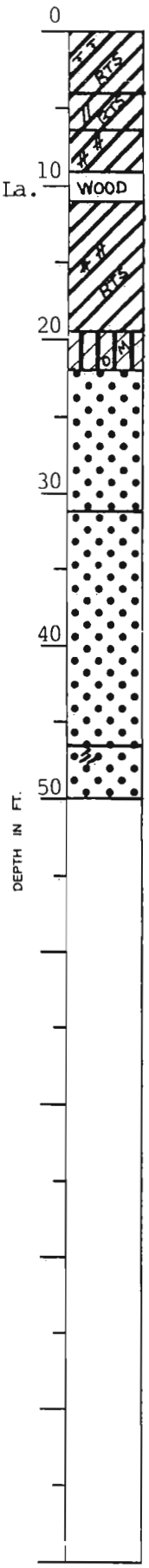
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 54 Soil Technician A. J. Mayeux Date 6 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Very stiff brown & gray clay w/clayey		
					sand pockets & roots		
2	5.0	5.5	4.0	6.5	Medium stiff gray clay w/silt pockets &		
					roots		
3	8.0	8.5	6.5	9.0	Medium stiff gray & tan clay w/clayey		
					silt pockets		
			9.0	11.0	Wood w/some clay		
4	14.0	14.5	11.0		Soft gray clay w/clayey silt pockets &		
					roots		
5	19.0	19.5		19.5	Soft gray clay w/roots		
6	20.0	21.5	19.5	22.0	Loose gray clayey silt w/trace of	3	8
					organic matter		
7	22.5	24.0	22.0		Medium dense gray sand	3	15
8	25.0	26.5			Ditto	4	16
9	28.5	30.0		31.0	Ditto	5	30
10	33.5	35.0	31.0		Dense gray sand	7	37
11	38.5	40.0			Ditto	9	38
12	43.5	45.0		46.5	Ditto	8	33
13	48.5	50.0	46.5	50.0	Loose gray sand w/clay layers	1	4



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

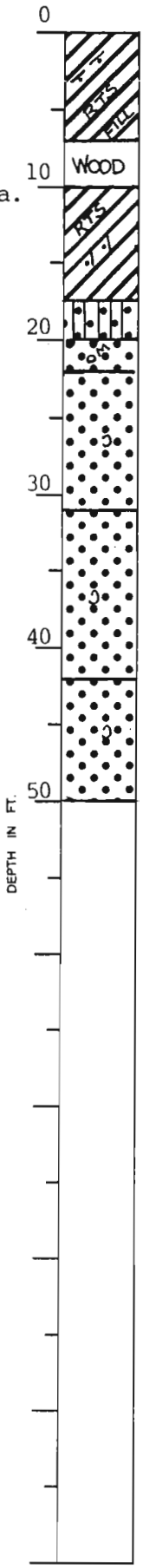
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 55 Soil Technician A. J. Mayeux Date 6 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Medium stiff gray & brown clay w/clayey		
					sand pockets, roots & fill		
2	5.0	5.5		7.0	Medium stiff gray & brown clay w/clayey		
					silt pockets & roots		
			7.0	10.0	Wood w/clay & organic matter		
3	11.0	11.5	10.0		Soft gray clay w/roots & fine sandy		
					silt pockets		
4	14.0	14.5		17.5	Soft gray clay w/roots		
5	19.0	19.5	17.5	20.0	Medium dense gray silty sand		
6	20.0	21.5	20.0	22.0	Loose gray sand w/trace of organic	1	5
					matter		
7	22.5	24.0	22.0		Medium dense gray sand w/shell	4	17
					fragments		
8	25.0	26.5			Ditto	4	20
9	28.5	30.0		31.0	Ditto	4	26
10	33.5	35.0	31.0		Dense gray sand w/shell fragments	10	40
11	38.5	40.0		42.0	Ditto	8	39
12	43.5	45.0	42.0		Medium dense gray sand w/shell	4	13
					fragments		
13	48.5	50.0		50.0	Ditto	2	10



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CLAY SILT SAND HUMUS

Remarks: _____

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

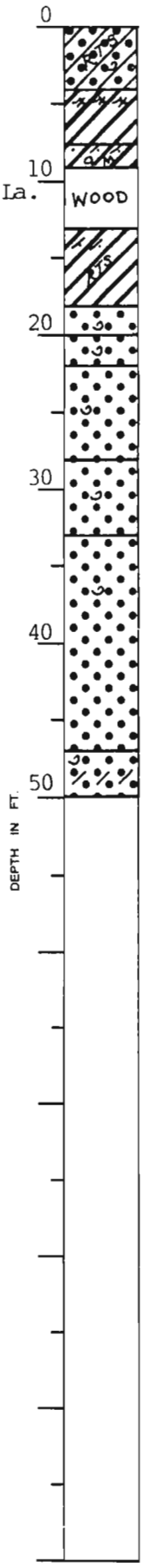
EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 56 Soil Technician A. J. Mayeux Date 5 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth _____

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	3.0	0.0	4.0	Medium stiff brown & gray clayey sand		
					w/roots & few shell fragments		
2	5.0	6.0	4.0	7.5	Soft brown & gray clay w/organic clay		
					layers		
3	8.0	9.0	7.5	9.0	Soft dark gray & brown clay w/sand		
					lenses, clayey sand pockets & trace		
					of organic matter		
	11.0	11.5	9.0	13.0	Wood w/clay & organic matter		
4	14.0	15.0	13.0	18.0	Extremely soft gray clay w/clayey sand		
					pockets & roots		
5	18.0	19.0	18.0	20.0	Very loose gray sand w/shell fragments		
6	20.0	21.5	20.0	22.0	Loose gray sand w/shell fragments	2	5
7	22.5	24.0	22.0		Medium dense gray sand w/shell	2	12
					fragments		
8	25.0	26.5		28.0	Ditto	5	18
9	28.5	30.0	28.0	33.0	Dense gray sand w/shell fragments	7	42
10	33.5	35.0	33.0		Very dense gray sand w/shell fragments	9	54
11	38.5	40.0			Ditto	8	56
12	43.5	45.0		47.0	Ditto	13	50=10"
13	48.5	50.0	47.0	50.0	Medium dense gray sand w/shell	2	11
					fragments & clay layers		



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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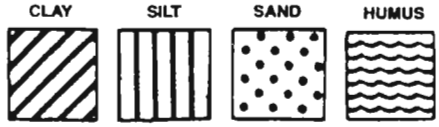
Remarks: 5" Diameter Boring



Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 57 Soil Technician A. J. Mayeux Date 9 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.5	Medium dense brown & gray clayey sand		
					w/roots & few shell fragments		
2	5.0	5.5	4.5	7.0	Medium compact gray clayey silt w/sandy		
					silt layers & clay pockets		
3	7.0	8.5	7.0		Very loose gray sand w/clay layers	0	1
4	9.0	10.5			Ditto	0	1
5	11.5	13.0			Ditto	0	3
6	14.0	15.5		18.5	Ditto	1	2
7	18.5	20.0	18.5	23.0	Medium dense gray sand w/shell	2	11
					fragments		
8	23.5	25.0	23.0	27.0	Dense gray sand w/shell fragments	7	34
9	28.5	30.0	27.0		Medium dense gray sand w/shell	7	20
					fragments		
10	33.5	35.0		36.5	Ditto	7	12
11	38.5	40.0	36.5	41.0	Soft gray sandy clay w/shell fragments	0	2
12	44.0	44.5	41.0		Medium stiff gray clay w/trace of sand		
					& shell fragments		
13	49.0	49.5			Medium stiff gray clay w/sand pockets		
					& shell fragments		
14	54.0	54.5		57.5	Medium stiff gray clay w/fine sandy		
					silt pockets		
15	59.0	59.5	57.5	62.5	Stiff dark gray organic clay		
16	64.0	64.5	62.5	66.0	Stiff greenish-gray silty clay w/fine		
					sand		
17	67.0	67.5	66.0	68.5	Stiff greenish-gray & tan clay w/silt		
					lenses		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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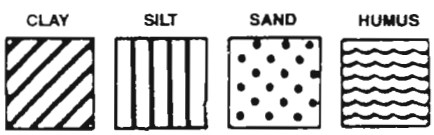
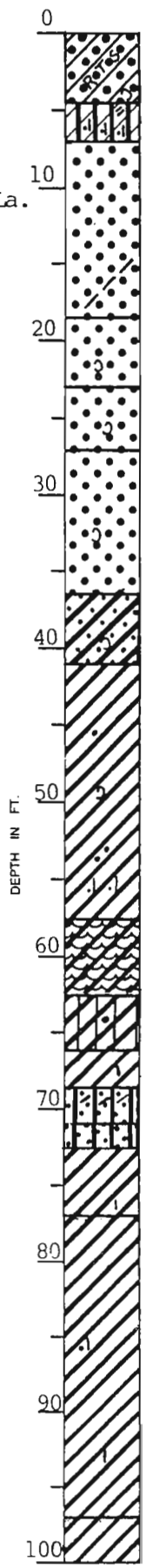
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 57 (Cont'd) Soil Technician A. J. Mayeux Date 9 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
18	68.5	70.0	68.5	71.0	Loose greenish-gray sandy silt w/clay	2	7
					layers		
19	71.0	72.5	71.0	72.5	Medium compact greenish-gray sandy	4	12
					silt		
20	73.5	75.0	72.5	77.0	Medium stiff gray clay w/silt lenses	1	5
21	79.0	79.5	77.0		Stiff gray clay w/fine sandy silt		
					lenses		
22	84.0	84.5			Ditto		
23	89.0	89.5			Stiff gray clay w/silt lenses		
24	94.0	94.5		97.0	Ditto		
25	99.0	99.5	97.0	100.0	Medium stiff gray clay		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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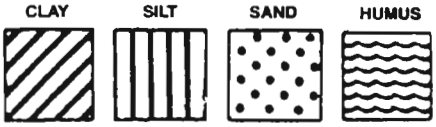
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 58 Soil Technician A. J. Mayeux Date 7 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Stiff gray & brown clay w/clayey sand		
					pockets		
2	5.0	5.5	4.0	7.0	Medium stiff gray clay w/clayey sand		
					pockets		
3	8.0	8.5	7.0	9.5	Wood w/some clay		
4	11.0	11.5	9.5	13.0	Soft dark gray clay w/many roots		
5	14.0	14.5	13.0	16.0	Very soft gray clay w/clayey sand		
					pockets, roots & wood		
6	19.0	19.5	16.0	20.0	Dense gray silty sand w/clay pockets		
7	20.0	21.5	20.0		Loose gray sand w/shell fragments	1	5
8	22.5	24.0		25.0	Ditto	1	7
9	25.0	26.5	25.0		Medium dense gray sand w/shell	4	22
					fragments		
10	28.5	30.0			Ditto	4	22
11	33.5	35.0			Ditto	6	21
12	38.5	40.0		43.0	Ditto	5	15
13	43.5	45.0	43.0	47.0	Loose gray sand w/shell fragments	5	10
14	48.5	50.0	47.0	50.0	Very loose gray sand w/shell fragments	1	4
					& clay layers		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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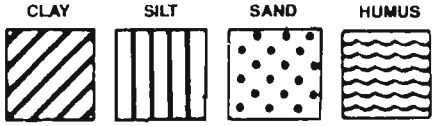
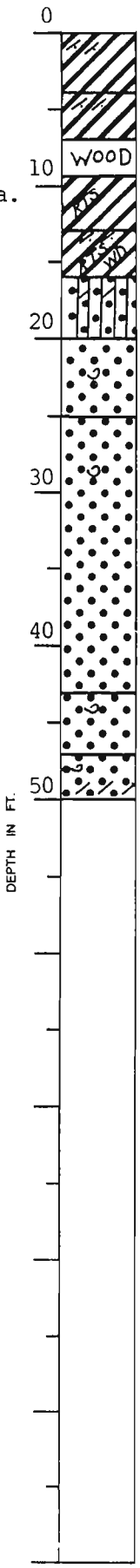
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 59 Soil Technician A. J. Mayeux Date 7 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Soft brown & gray clay w/clayey sand		
					pockets, roots & some fill		
2	5.0	5.5		7.0	Medium stiff dark gray & brown clay		
					w/clayey sand pockets & roots		
	8.0	8.5	7.0	10.0	Wood w/organic matter & some clay		
3	11.0	11.5	10.0	15.0	Medium compact gray sandy silt w/clay		
					layers & wood		
4	15.0	16.5	15.0		Loose gray sand w/shell fragments	2	5
5	17.5	19.0			Ditto	2	7
6	20.0	21.5		22.5	Ditto	2	4
7	22.5	24.0	22.5		Medium dense gray sand	3	12
8	25.0	26.5			Ditto	3	12
9	28.5	30.0			Ditto	3	15
10	33.5	35.0		38.0	Ditto	5	26
11	38.5	40.0	38.0	41.0	Loose gray sand w/shell fragments	2	9
12	43.5	45.0	41.0	47.0	Loose gray sand	2	5
13	49.0	49.5	47.0	50.0	Medium stiff gray fissured clay		
					w/clayey sand pockets & shell		
					fragments		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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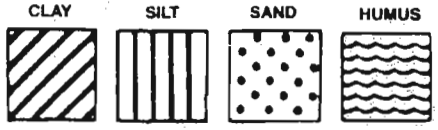
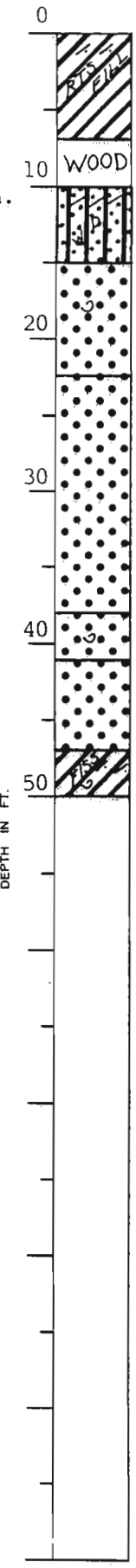
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 60 **Soil Technician** A. J. Mayeux **Date** 7 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.5	Stiff brown & gray clay w/clayey sand		
					pockets & roots		
2	5.0	5.5	4.5	8.0	Soft gray & tan clay w/organic clay		
					layers & roots		
3	8.0	8.5	8.0	10.0	Extremely soft brown humus w/organic		
					clay layers & roots		
4	11.0	11.5	10.0	16.0	Soft brown organic clay w/humus layers,		
					wood & roots		
5	17.0	17.5	16.0	19.0	Very loose gray sand w/organic matter		
6	20.0	21.5	19.0	22.5	Very loose gray sand	1	2
7	22.5	24.0	22.5	24.5	Loose gray sand	1	6
8	25.0	26.5	24.5		Medium dense gray sand w/shell	2	11
					fragments		
9	28.5	30.0			Ditto	2	14
10	33.5	35.0			Ditto	2	11
11	38.5	40.0		42.0	Ditto	5	13
12	43.5	45.0	42.0		Very loose gray clayey sand w/shell	0	2
					fragments		
13	49.0	49.5		50.0	Ditto		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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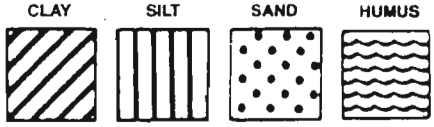
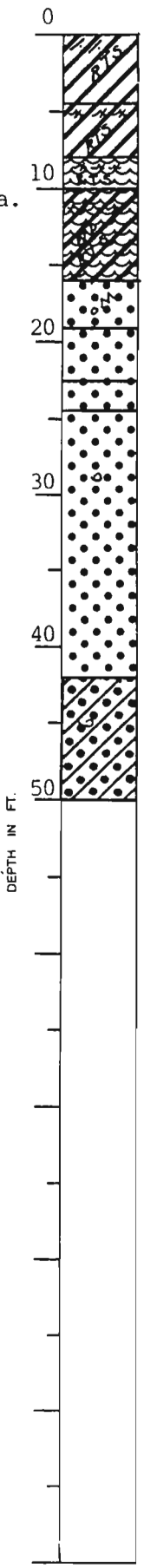
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 61 **Soil Technician** A. J. Mayeux **Date** 10 December 1985

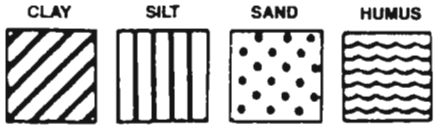
Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Very compact tan & gray clayey silt		
					w/clay pockets & roots		
2	5.0	5.5	4.0	7.0	Dense tan & gray clayey sand w/clay		
					lenses & roots		
3	8.0	8.5	7.0	10.0	Soft gray silty clay w/clayey sand		
					pockets & trace of organic matter		
4	11.0	11.5	10.0	13.0	Medium stiff dark gray clay w/organic		
					matter & wood		
5	14.0	14.5	13.0	17.5	Stiff brown organic clay w/humus layers		
6	19.0	19.5	17.5	20.0	Soft gray silty clay w/alternating		
					clayey silt & sandy silt layers		
7	20.0	21.5	20.0		Very loose gray clayey sand	1	4
8	22.5	24.0		25.5	. Ditto	0	2
9	25.0	26.5	25.5		Loose gray sand w/shell fragments	1	7
10	28.5	30.0		30.0	Ditto	2	10
11	33.5	35.0	30.0	37.5	Medium dense gray sand w/shell	4	15
					fragments		
12	38.5	40.0	37.5	41.5	Dense gray sand	6	34
13	43.5	45.0	41.5	48.0	Loose gray clayey sand w/shell	1	4
					fragments		
14	49.0	49.5	48.0	50.0	Soft gray clay w/clayey sand pockets &		
					shell fragments		
15	54.0	54.5	50.0	59.0	Medium stiff gray clay w/sand pockets &		
					& shell fragments		
16	59.0	59.5	59.0	62.5	Stiff greenish-gray & tan clay w/trace		
					of sand		

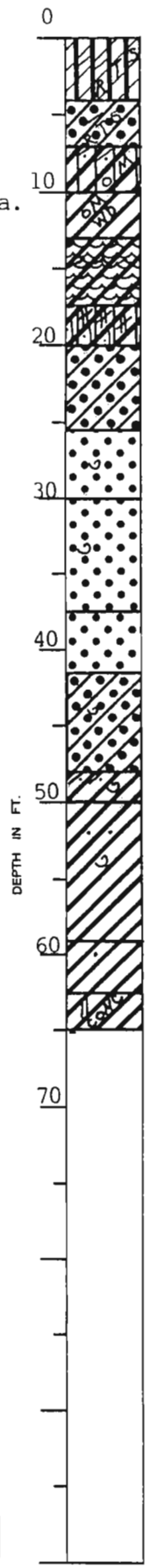
*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 61 (Cont'd) Soil Technician A. J. Mayeux Date 10 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
17	64.0	64.5	62.5	65.0	Very stiff tan & gray clay w/silt		
					pockets & concretions		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

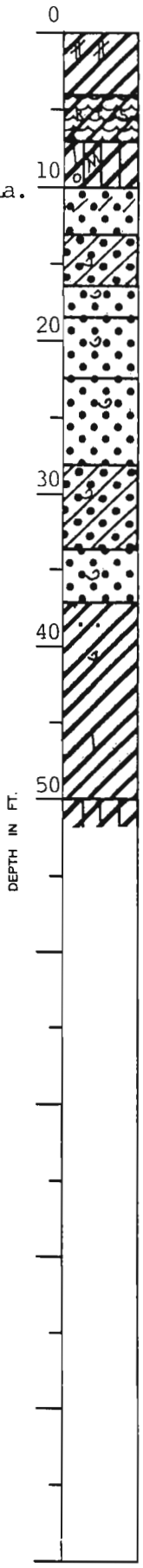
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 62 Soil Technician A. J. Mayeux Date 7 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.0	Medium stiff tan & gray clay w/clayey		
					silt pockets		
2	5.0	5.5	4.0	7.0	Soft brown organic clay w/many roots		
3	8.0	8.5	7.0	10.0	Very soft gray silty clay w/silt lenses		
					& organic matter		
4	11.0	11.5	10.0	13.0	Very loose gray sand w/clay layers		
5	13.5	15.0	13.0	16.5	Very loose gray clayey sand w/shell	1	3
					fragments		
6	18.0	18.5	16.5	18.5	Very loose gray sand w/shell fragments		
7	18.5	20.0	18.5		Loose gray sand w/shell fragments	4	10
8	21.0	22.5		22.5	Ditto	3	10
9	23.5	25.0	22.5		Medium dense gray sand w/shell fragments	3	14
10	26.0	27.5		28.0	Ditto	5	17
11	28.5	30.0	28.0		Loose gray clayey sand w/shell fragments	3	9
12	32.0	32.5		33.5	Ditto		
13	33.5	35.0	33.5	37.0	Dense gray sand w/shell fragments	8	34
14	38.5	40.0	37.0		Medium stiff gray clay w/sand pockets	2	5
					& shell fragments		
15	44.0	44.5			Ditto		
16	49.0	49.5		50.0	Medium stiff gray clay w/trace of silt		
			50.0		Stiff greenish-gray silty clay		



*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 63 **Soil Technician** A. J. Mayeux **Date** 8 November 1985

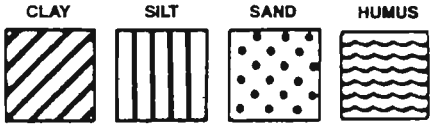
Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.5	Medium stiff tan & gray clay w/sand		
					layers & pockets & organic matter		
					(fill)		
2	5.0	5.5	3.5	7.5	Stiff gray clay w/clayey sand pockets		
					& lenses		
3	8.0	8.5	7.5	10.0	Soft brown & gray clay w/dense clayey		
					sand layers & few shell fragments		
4	11.0	11.5	10.0	12.0	Soft brown & gray silty clay w/fine		
					sand & silt pockets & layers		
5	14.0	14.5	12.0	16.5	Medium stiff dark gray clay w/humus		
					& wood (fill)		
6	19.0	19.5	16.5	23.0	Soft gray clay w/roots, wood & organic		
					matter		
7	24.0	24.5	23.0		Medium dense gray silty sand w/clay		
					lenses		
8	29.0	29.5		33.5	Ditto		
9	33.5	35.0	33.5		Medium dense gray sand w/shell	3	17
					fragments		
10	36.0	37.5			Ditto	8	25
11	38.5	40.0			Ditto	3	19
12	41.0	42.5		43.5	Ditto	3	15
13	43.5	43.0	43.5	46.0	Dense gray sand w/shell fragments	5	32
14	48.5	50.0	46.0	53.0	Medium dense gray sand w/shell fragments	5	16
15	53.5	55.0	53.0		Medium stiff gray clay w/fine sand	1	4
					pockets & shell fragments		
16	59.0	59.5		62.5	Ditto		

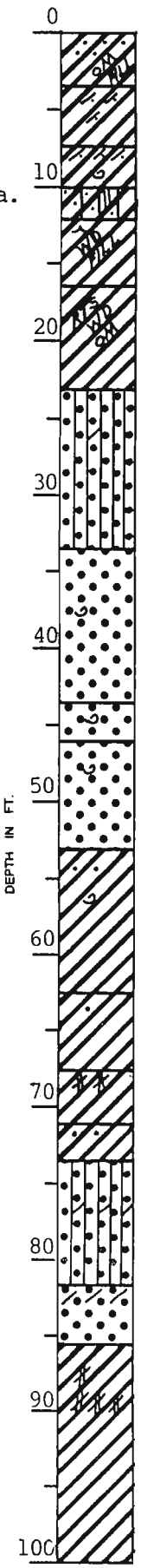
*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

WHILE THIS LOG OF BORING IS CONSIDERED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT ITS RESPECTIVE LOCATION ON THE DATE SHOWN, IT IS NOT WARRANTED THAT IT IS REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvments
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 63 (Cont'd) Soil Technician A. J. Mayeux Date 8 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
17	64.0	64.5	62.5	67.5	Stiff greenish-gray clay w/trace of		
					sand		
18	69.0	69.5	67.5	71.0	Stiff greenish-gray & tan clay w/clayey		
					silt pockets		
19	73.0	73.5	71.0	73.5	Very stiff tan & gray clay w/sand		
					pockets		
20	73.5	75.0	73.5		Dense tan silty sand w/clay layers	6	36
21	78.5	80.0		81.5	Ditto	6	33
22	83.5	85.0	81.5	85.5	Medium dense tan & gray sand w/clay	5	14
					layers		
23	89.0	89.5	85.5		Medium stiff gray clay w/clayey silt		
					lenses & layers		
24	94.0	94.5			Ditto		
25	99.0	99.5		100.0	Ditto		

DEPTH IN FT.

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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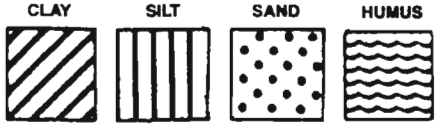
CLAY SILT SAND HUMUS



Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk and Associates, Inc., New Orleans, Louisiana

Boring No. 64 **Soil Technician** A. J. Mayeux **Date** 8 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.5	Very stiff brown & gray silty clay		
					w/some organic matter		
2	5.0	5.5	3.5	7.0	Medium stiff gray clay w/many sand		
					pockets & roots		
3	8.0		7.0	10.0	Medium stiff brown & gray silty clay		
					w/sand pockets & organic matter		
4	11.0	11.5	10.0	13.0	Medium stiff gray clay w/sandy clay		
					layers & pockets		
5	14.0	14.5	13.0	16.0	Extremely soft gray clay w/vertical		
					clayey sand layers & organic matter		
6	16.0	17.5	16.0		Very loose gray clayey sand w/shell	3	3
					fragments		
7	18.5	20.0		21.0	Ditto	1	4
8	21.0	22.5	21.0		Loose gray clayey sand w/shell fragments	1	5
9	23.5	25.0		25.0	Ditto	1	6
10	28.5	30.0	25.0	31.5	Very loose gray clayey sand w/shell	1	4
					fragments & clay layers		
11	33.5	35.0	31.5		Medium dense gray sand	3	12
12	38.5	40.0			Ditto	6	26
13	43.5	45.0			Ditto	6	25
14	48.5	50.0		50.0	Ditto	5	22

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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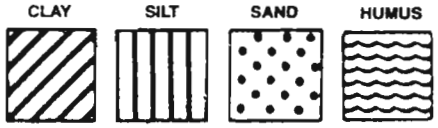
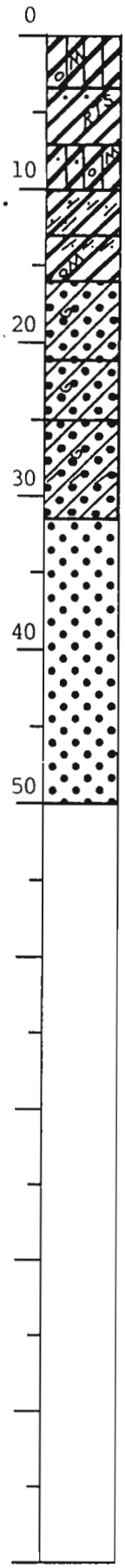
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 65 Soil Technician A. J. Mayeux Date 3 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	3.0	0.0	3.0	Stiff brown & gray silty clay w/sandy		
					silt pockets & roots		
2	5.0	6.0	3.0	6.0	Stiff gray & tan fissured clay w/roots		
					& silt		
3	8.0	9.0	6.0	9.0	Medium stiff gray & tan clay w/sand		
					pockets		
4	11.0	12.0	9.0		Soft gray sandy clay w/sand lenses &		
					layers		
	14.0	15.0		16.0	Ditto		
5	16.0	17.0	16.0	18.0	Very loose gray sand w/clay layers		
6	18.0	19.5	18.0		Loose gray sand w/clay layers	1	4
7	21.0	22.5			Ditto	1	4
8	23.5	25.0			Ditto	1	4
9	26.0	27.5		27.5	Ditto	1	3
10	28.5	30.0	27.5	33.5	Very loose gray sand w/shell fragments	0	1
					& clay layers		
11	33.5	35.0	33.5		Loose gray sand w/shell fragments	0	4
12	38.5	40.0		43.0	Ditto	2	7
13	43.5	45.0	43.0		Medium dense gray sand w/shell	3	12
					fragments		
14	48.5	50.0		50.0	Ditto	5	13

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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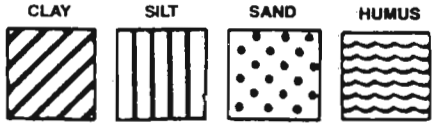
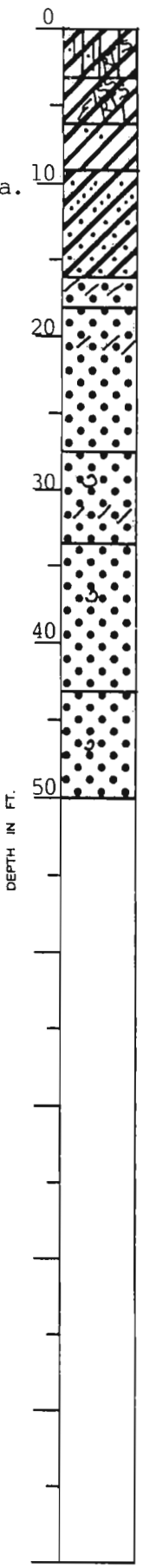
Remarks: 5" Diameter Boring



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS

METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements

Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.

Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 66 Soil Technician A. J. Mayeux Date 3 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.0	Compact brownish-gray clayey silt		
					w/roots, trace of sand & few shells		
2	5.0	5.5	3.0	7.0	Loose brownish-gray clayey silt w/sand		
					& shells		
3	8.0	8.5	7.0	10.0	Medium stiff brownish-gray clay		
					w/clayey sand pockets		
4	11.0	11.5	10.0	13.0	Very soft gray clay w/shell fragments		
					& clayey sand layers & pockets		
5	14.0	14.5	13.0		Loose gray silty sand w/clay pockets &		
					shell fragments		
6	19.0	19.5			Loose gray silty sand w/many shells		
7	24.0	24.5		27.5	Loose gray silty sand w/silty clay		
					layers		
8	29.0	29.5	27.5		Very loose gray sand w/shell fragments		
					& clay layers		
9	30.0	31.5		32.5	Ditto	1	2
10	32.5	34.0	32.5		Loose gray sand w/shell fragments &	1	5
					clay layers		
11	35.0	36.5			Ditto	1	4
12	38.5	40.0		43.0	Ditto	1	5
13	43.5	45.0	43.0		Medium dense gray sand w/shell	4	19
					fragments		
14	48.5	50.0		50.0	Ditto	4	17

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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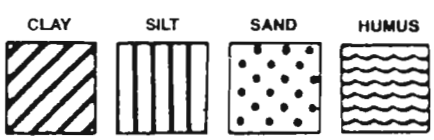
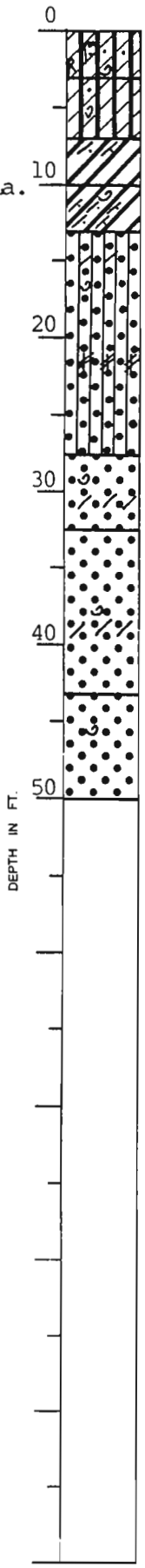
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

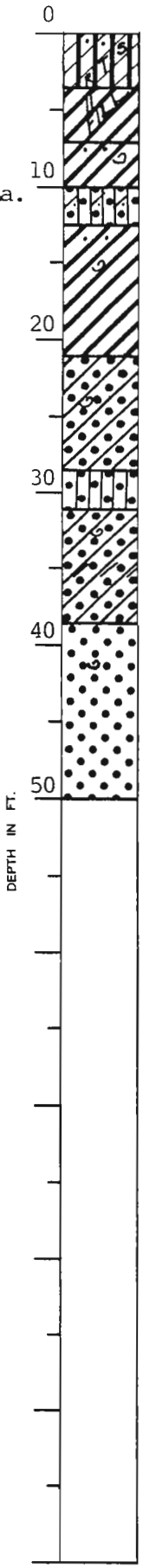
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 67 Soil Technician A. J. Mayeux Date 3 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	3.5	Very compact brownish-gray clayey silt		
					w/sand pockets & roots		
2	5.0	5.5	3.5	7.0	Stiff brownish-gray clay w/silt		
					pockets & some fill		
3	8.0	8.5	7.0	10.0	Soft gray & tan clay w/sand pockets &		
					shell fragments		
4	11.0	11.5	10.0	12.5	Loose gray silty sand w/clayey sand		
					layers		
5	14.0	14.5	12.5		Soft gray clay w/sand pockets & shell		
					fragments		
6	19.0	19.5		21.0	Soft gray clay		
7	24.0	24.5	21.0	28.5	Loose gray clayey sand w/shells		
8	28.5	30.0	28.5	31.0	Loose gray silty sand	2	7
9	31.5	33.0	31.0		Very loose gray clayey sand w/shell	0	2
					fragments & clay layers		
10	35.0	36.5		38.5	Ditto	0	3
11	38.5	40.0	38.5		Medium dense gray sand w/shell	3	13
					fragments		
12	43.5	45.0			Ditto	2	11
13	48.5	50.0		50.0	Ditto	4	25



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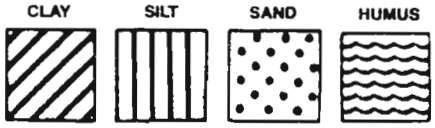

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY

SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 68 **Soil Technician** A. J. Mayeux **Date** 2 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	SAMPLE Depth — Feet To	DEPTH STRATUM Feet From	DEPTH STRATUM Feet To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0	4.5	Extremely stiff brown & gray silty clay		
					w/sand pockets & roots		
2	5.0	5.5	4.5	8.0	Loose brown & gray clayey silt w/clay		
					layers & shells		
3	8.0	8.5	8.0		Soft dark gray silty clay w/clayey silt		
					layers & shell fragments		
	11.0	11.5		11.5	Ditto		
4	14.0	14.5	11.5		Soft gray clay w/silt pockets		
5	19.0	19.5		21.0	Soft gray clay w/sand pockets & shell		
					fragments		
6	24.0	24.5	21.0	28.5	Very loose gray clayey silt w/shells		
7	29.0	29.5	28.5	34.0	Very loose gray clayey sand w/large		
					shell fragments & sandy clay layers		
8	34.0	34.5	34.0	37.0	Medium stiff gray clay w/sand pockets		
9	39.0	39.5	37.0	40.0	Loose gray clayey sand w/shell		
					fragments		
10	40.0	41.5	40.0		Loose gray sand w/shell fragments	2	10
11	42.5	44.0			Ditto	2	7
12	45.0	46.5		48.0	Ditto	3	9
13	48.5	50.0	48.0	50.0	Medium dense gray sand w/shell	2	12
					fragments		

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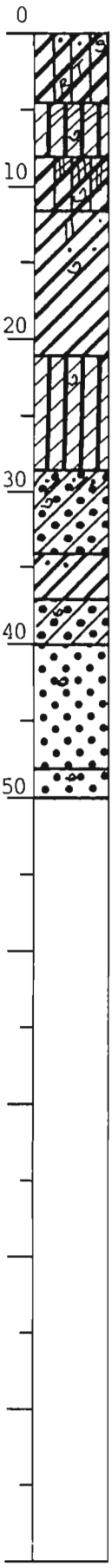

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. 69 Soil Technician A. J. Mayeux Date 2 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
1	2.0	2.5	0.0		Medium compact tan & gray clayey silt		
					w/shell fragments		
2	5.0	5.5		7.5	Ditto		
3	8.0	8.5	7.5	10.0	Medium compact brown & gray clayey silt		
					w/shell fragments		
4	11.0	11.5	10.0	12.0	Medium stiff gray clay w/silt lenses		
5	12.0	13.5	12.0		Very loose gray sand w/shell fragments	1	3
6	15.0	16.5		17.0	Ditto	2	5
7	18.5	20.0	17.0		Very loose gray silty sand w/clay	0	1
					pockets & layers & shell fragments		
8	24.0	24.5			Ditto		
9	29.0	29.5		31.0	Ditto		
10	34.0	34.5	31.0	36.0	Soft gray clay w/sand pockets		
11	39.0	39.5	36.0	41.0	Soft gray clay w/silt lenses		
12	44.0	44.5	41.0	44.5	Loose gray silty sand w/sandy clay		
					layers & pockets & shell fragments		
13	44.5	46.0	44.5		Medium dense gray sand w/shell	4	11
					fragments		
14	48.5	50.0		50.0	Ditto	5	19

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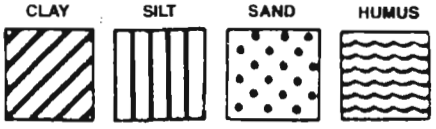

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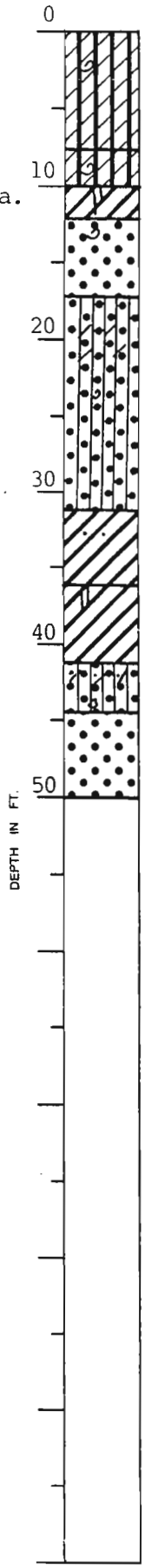

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ **Soil Technician** A. J. Mayeux **Date** 12 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 73		
			0.0	10.0	Water		
1	11.5	12.0	10.0	12.0	Very soft black muck		
			12.0		Concrete		
					BORING 74		
			0.0	10.0	Water		
1	11.5	12.0	10.0	13.5	Extremely soft black muck		
2	15.5	16.0	13.5	18.0	Medium stiff gray & tan clay w/trace of silt		
3	19.0	19.5	18.0	20.0	Loose gray clayey silt		

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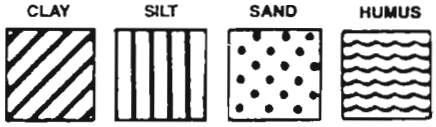
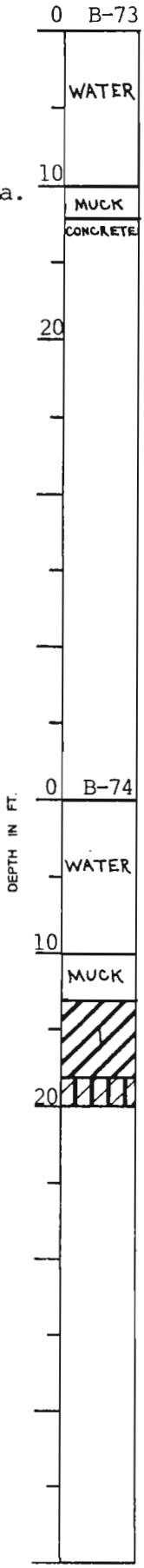


Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician A. J. Mayeux Date 12 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 75		
			0.0	9.5	Water		
			9.5	10.0	Extremely soft black muck		
1	12.5	13.0	10.0		Medium stiff gray & tan clay w/clayey		
					silt pockets		
2	15.5	16.0			Ditto		
3	19.0	19.5		20.0	Ditto		
					BORING 76		
			0.0	10.0	Water		
			10.0	10.5	Extremely soft black muck		
1	11.5	12.0	10.5	13.0	Medium stiff gray & tan clay w/clayey		
					silt pockets		
2	15.0	15.5	13.0	17.0	Medium stiff gray clay w/roots &		
					organic matter		
3	19.0	19.5	17.0	20.0	Soft to medium stiff gray clay with		
					organic matter		

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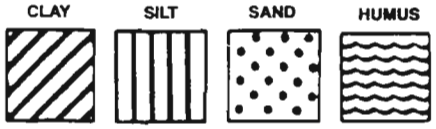

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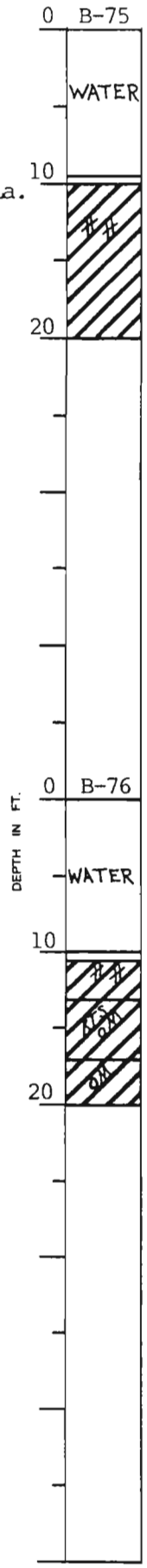

LOG OF BORING

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SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

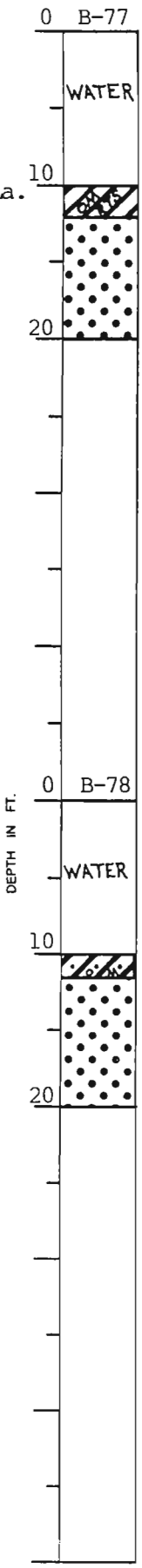
Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeux Date 11 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 77		
			0.0	10.0	Water		
1	10.5	11.5	10.0	12.0	Extremely soft gray clay w/organic		
					matter & roots		
2	14.0	14.5	12.0		Loose to medium dense gray sand		
3	17.0	17.5			Ditto		
4	19.5	20.0		20.0	Ditto		
					BORING 78		
			0.0	10.0	Water		
1	10.0	11.0	10.0	11.5	Extremely soft dark gray sandy clay		
					w/some organic matter		
2	14.0	14.5	11.5		Medium dense gray sand		
3	17.0	17.5			Ditto		
4	19.5	20.0		20.0	Ditto		



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CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.

Remarks: _____

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeaux Date 11 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 79		
			0.0	10.0	Water		
1	10.5	11.0	10.0	11.5	Loose dark gray sand w/organic matter		
2	14.5	15.0	11.5		Medium dense gray sand		
3	17.0	17.5			Ditto		
4	19.5	20.0		20.0	Ditto		
					BORING 80		
			0.0	11.0	Water		
1	11.5	12.0	11.0	12.5	Loose gray sand w/trace of organic matter		
2	14.5	15.0	12.5		Loose to medium dense dark gray sand		
3	17.5	18.0			Ditto		
4	20.5	21.0		21.0	Ditto		

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CLAY SILT SAND HUMUS

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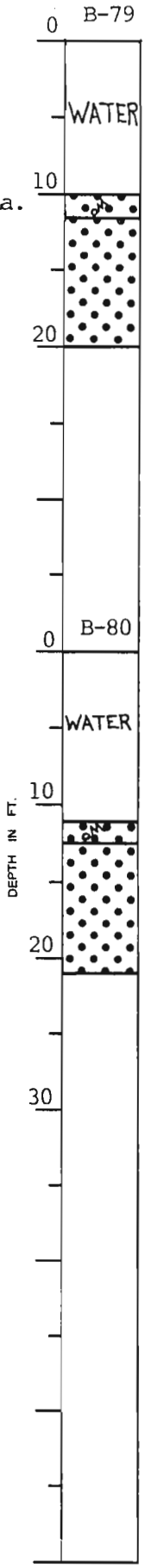

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeux Date 10-11 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 81		
			0.0	11.0	Water		
1	11.0	12.0	11.0	13.5	Very soft gray organic clay w/silty		
					sand layers		
2	14.0	14.5	13.5		Medium dense gray sand		
3	17.0	18.0			Ditto		
4	20.5	21.0		21.0	Ditto		
					BORING 82		
			0.0	10.0	Water		
1	10.0	11.0	10.0		Loose gray clayey sand w/organic matter		
2	13.0	13.5		13.5	Loose gray clayey sand		
3	15.0	15.5	13.5		Loose gray sand		
4	19.5	20.0		20.0	Ditto		

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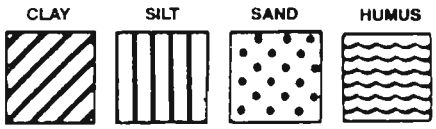

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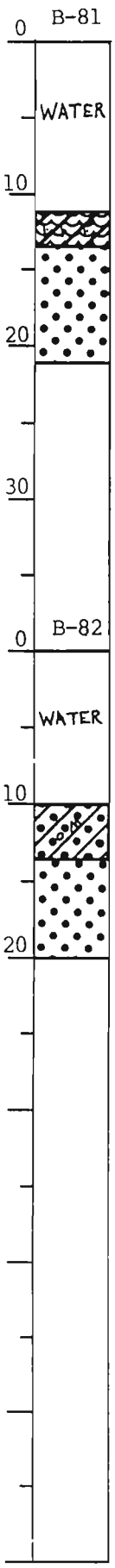

LOG OF BORING

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SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeaux Date 10 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 83		
			0.0	10.0	Water		
1	11.0	12.0	10.0	13.5	Very soft gray clay w/sand pockets &		
					roots		
2	14.5	15.0	13.5	16.0	Loose gray sand		
3	17.0	17.5	16.0		Medium dense gray sand		
4	19.5	20.0		20.0	Ditto		
					BORING 84		
			0.0	11.0	Water		
1	11.0	12.0	11.0	12.0	Extremely soft dark gray clay w/organic		
					matter & sand		
2	14.5	15.0	12.0	15.0	Loose dark gray clayey sand		
3	17.5	18.0	15.0		Very loose gray sand		
4	20.5	21.0		21.0	Ditto		

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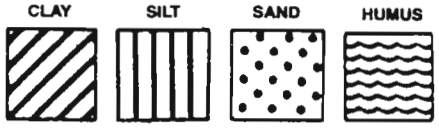
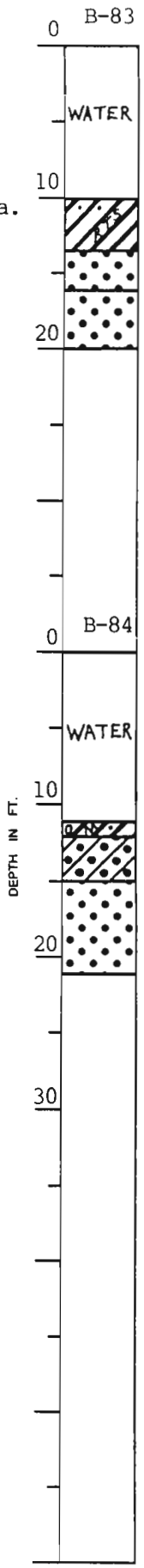


Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeaux Date 10 December 1985
Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 85		
			0.0	11.0	Water		
1	11.0	12.0	11.0	12.5	Extremely soft gray clay w/much organic		
					matter & sand		
2	13.5	14.0	12.5	15.0	Loose gray clayey sand		
3	17.5	18.0	15.0		Loose gray sand		
4	20.5	21.0		21.0	Ditto		
					BORING 86		
			0.0	12.5	Water		
1	12.5	13.5	12.5	13.5	Very soft gray clay		
2	14.5	15.0	13.5	15.0	Loose gray clayey sand		
3	17.0	17.5	15.0		Medium dense gray sand		
4	19.5	20.0			Ditto		
5	22.0	22.5		22.5	Ditto		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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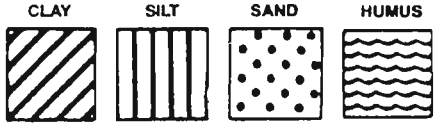
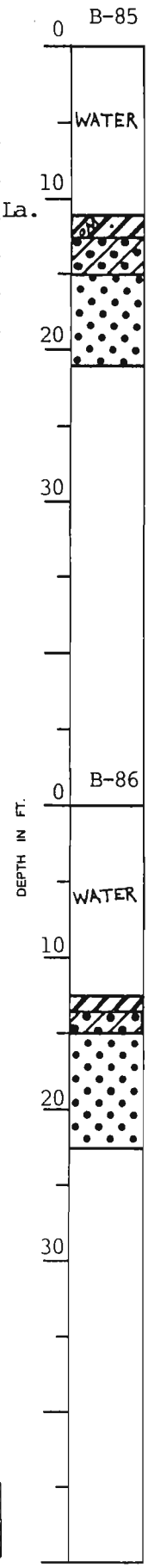
Remarks: _____



Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeaux Date 9 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 87		
			0.0	11.0	Water		
1	12.0	12.5	11.0	13.0	Very soft gray clay w/clayey silt		
					layers, organic matter & roots		
2	14.0	15.0	13.0	16.5	Soft gray clay w/clayey sand pockets &		
					roots		
3	17.0	18.0	16.5		Loose gray sand		
4	20.0	21.0		21.0	Ditto		
					BORING 88		
			0.0	11.0	Water		
1	12.0	12.5	11.0	13.0	Very soft gray clay w/organic matter		
					& wood		
2	14.5	15.0	13.0	15.5	Loose gray clayey sand		
3	17.0	18.0	15.5		Loose gray sand		
4	20.5	21.0		21.0	Ditto		

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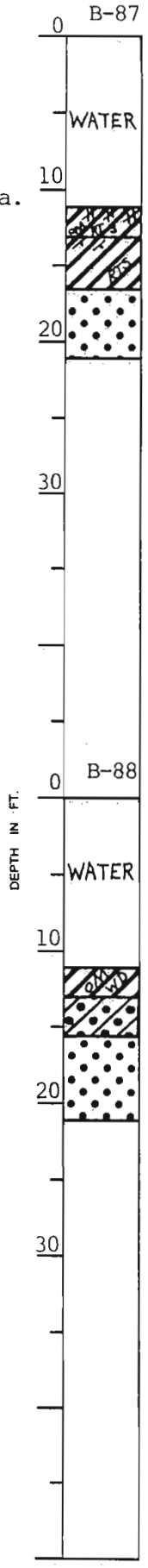
Remarks: _____

CLAY SILT SAND HUMUS

Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ **Soil Technician** R. Mayeaux **Date** 6 & 9 December 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 89		
			0.0	10.0	Water		
1	10.5	11.0	10.0	11.0	Very soft gray clay w/many roots		
2	12.0	12.5	11.0	14.0	Extremely soft dark gray clay w/some		
					organic matter		
3	14.5	15.0	14.0	16.0	Loose gray sand w/some clay layers		
4	17.0	17.5	16.0		Loose gray sand		
5	19.5	20.0		20.0	Ditto		
					BORING 90		
			0.0	10.0	Water		
1	11.5	12.0	10.0	13.0	Loose gray clayey sand w/cinders & fill		
2	14.0	14.5	13.0		Loose gray clayey sand w/wood		
3	16.5	17.0		18.0	Loose gray clayey sand w/shell		
					fragments		
4	19.5	20.0	18.0	20.0	Very loose gray silty sand w/shell		
					fragments		

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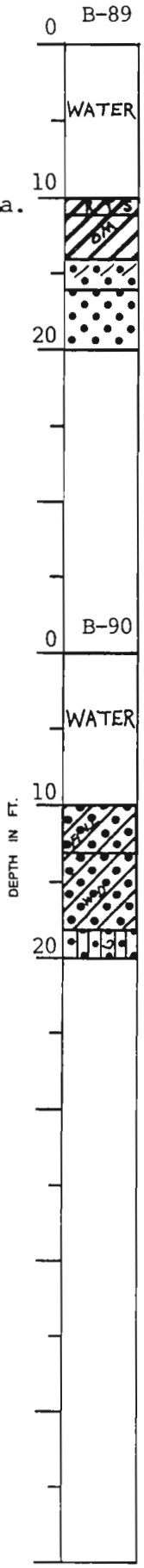

LOG OF BORING

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SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Mayeux Date 6 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 91		
			0.0	10.0	Water		
1	11.0	11.5	10.0	13.0	Very soft brown humus w/clay layers &		
					wood		
2	14.0	14.5	13.0		Very loose gray sand		
3	16.5	17.0			Ditto		
4	19.5	20.0		20.0	Ditto		
					BORING 92		
			0.0	11.0	Water		
1	11.5	12.0	11.0	13.5	Very soft gray clay w/organic clay		
					layers & roots		
2	14.5	15.0	13.5	15.5	Loose gray silty sand w/clay layers		
3	17.0	17.5	15.5		Loose gray clayey sand		
4	20.0	21.0		21.0	Ditto		

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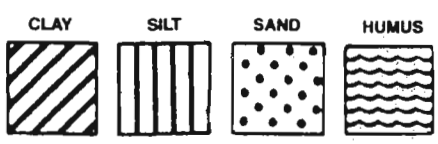

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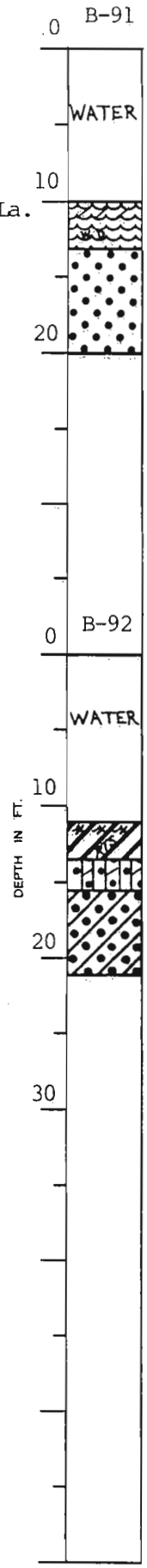

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ **Soil Technician** R. Elkins **Date** 27 November 1985

Ground Elev. _____ **Datum** _____ **Gr. Water Depth** See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 93		
			0.0	12.0	Water		
1	13.5	14.0	12.0		Extremely soft gray clay w/trace of		
					sand		
2	15.5	16.0		16.5	Ditto		
3	17.5	18.0	16.5	18.0	Soft gray silty clay w/sand pockets		
4	19.5	20.0	18.0		Loose gray clayey sand w/shell		
					fragments		
5	21.5	22.0		22.0	Ditto		
					BORING 94		
			0.0	13.0	Water		
1	14.5	15.0	13.0		Very loose gray silty sand w/shells		
2	16.5	17.0			Very loose gray silty sand		
3	18.5	19.0			Ditto		
4	20.5	21.0			Ditto		
5	22.5	23.0		23.0	Ditto		

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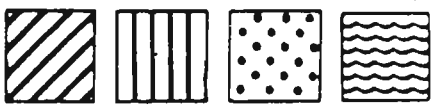
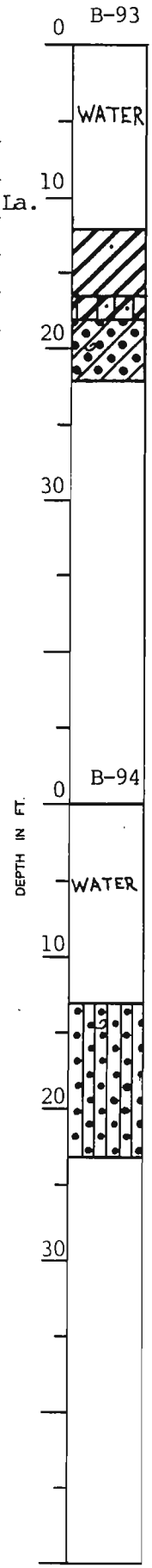


Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana
For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Elkins & A. J. Mayeux Date 13 Nov. & 17 Dec. 1985

Ground Elev. _____ Datum _____ Gr. Water Depth _____

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 95		
			0.0	11.5	Water		
1	13.5	14.0	11.5	11.8	Very loose gray fine sand		
2	15.5	16.0	11.8	14.5	Extremely soft gray clay w/organic matter		
3	17.5	18.0	14.5	16.5	Loose gray clayey sand w/shell fragments		
4	19.5	20.0	16.5	18.5	Very loose gray fine sand w/clay pockets & shells		
5	21.5	22.0	18.5		Loose gray fine sand w/trace of clay & shells		
				22.0	Loose gray fine sand		
					BORING 96		
			0.0	9.0	Water		
			9.0	10.0	Extremely soft black muck		
1	11.0	11.5	10.0	13.0	Very soft black muck		
2	13.0	13.5	13.0	15.0	Very soft gray clay		
3	16.0	16.5	15.0	17.0	Soft gray clay w/clayey sand pockets & trace of organic matter		
4	18.5	19.0	17.0	19.0	Loose gray clayey sand		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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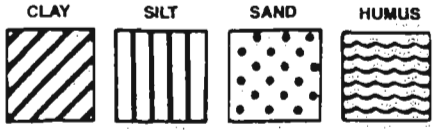
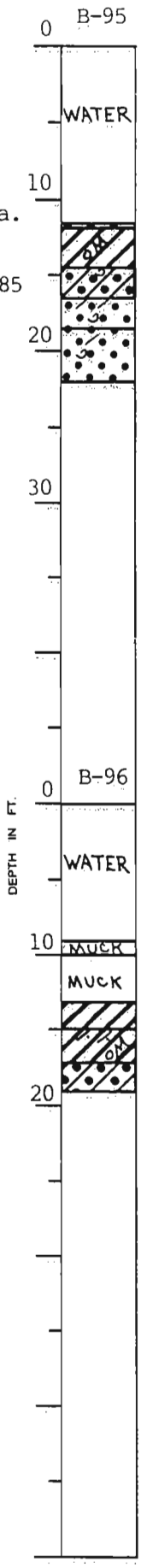


Predominant type shown heavy. Modifying type shown light.



LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician A. J. Mayeux Date 17 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 97		
			0.0	8.0	Water		
			8.0	9.0	Extremely soft black muck		
1	11.0	11.5	9.0	12.0	Extremely soft gray sandy clay		
2	13.5	14.0	12.0		Medium dense gray clayey sand		
3	17.5	18.0		18.0	Ditto		
					BORING 98		
			0.0	6.0	Water		
1	8.0	8.5	6.0	12.5	Loose gray sand w/organic matter		
2	12.5	13.0	12.5	15.0	Extremely soft gray clay w/trace of organic matter		
3	15.5	16.0	15.0	16.0	Ditto		

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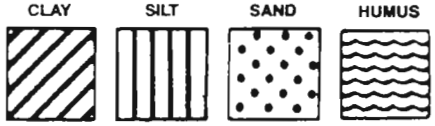

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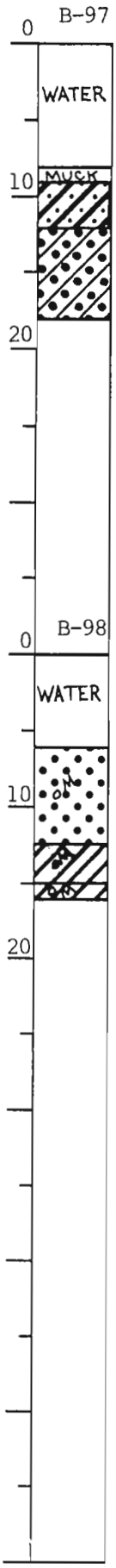

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SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

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Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician A. J. Mayeux Date 17 December 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 99		
			0.0	8.0	Water		
1	9.0	9.5	8.0	12.0	Extremely soft gray clay w/organic		
					matter & sand pockets		
2	13.0	13.5	12.0		Extremely soft gray clay		
3	17.0	17.5		18.0	Extremely soft gray clay		
					BORING 100		
			0.0	12.0	Water		
1	12.0	12.5	12.0	13.0	Extremely soft gray clay w/muck		
2	14.5	15.0	13.0	15.0	Very soft gray clay w/sand pockets		
3	17.0	17.5	15.0	18.0	Loose gray clayey sand w/shell		
					fragments		
4	19.0	19.5	18.0	20.0	Medium compact gray clayey silt w/fine		
					sand & shell fragments		
5	21.5	22.0	20.0	22.0	Loose to medium dense gray sand		

*Number in first column indicates number of blows of 140-lb. hammer dropped 30 in. required to seat 2-in. O. D. splitspoon sampler 6 in. Number in second column indicates number of blows of 140-lb. hammer dropped 30 in. required to drive 2-in. O. D. splitspoon sampler 1 ft. after seating 6 in.

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Remarks: _____

CLAY SILT SAND HUMUS

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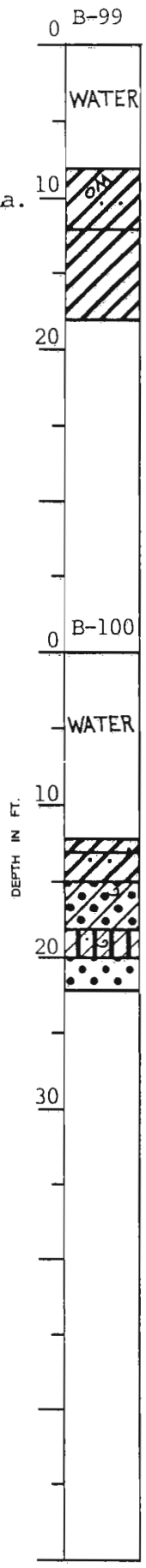

LOG OF BORING

EUSTIS ENGINEERING COMPANY
SOIL AND FOUNDATION CONSULTANTS
METAIRIE, LA.

B-101

Name of Project: London Avenue Canal, Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269, New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District, New Orleans, La.
Burk & Associates, Inc., New Orleans, Louisiana

Boring No. _____ Soil Technician R. Elkins Date 13 November 1985

Ground Elev. _____ Datum _____ Gr. Water Depth See Text

Sample No.	SAMPLE Depth — Feet From	To	DEPTH STRATUM Feet From	To	VISUAL CLASSIFICATION	*STANDARD PENETRATION TEST	
					BORING 101		
			0.0	15.0	Water		
			15.0	17.0	Loose gray silty sand w/shells & clay		
					pockets		
1	18.5	19.0	17.0	19.0	Medium compact gray clayey silt w/silty		
					clay layers, shells & sand pockets		

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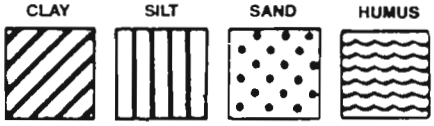
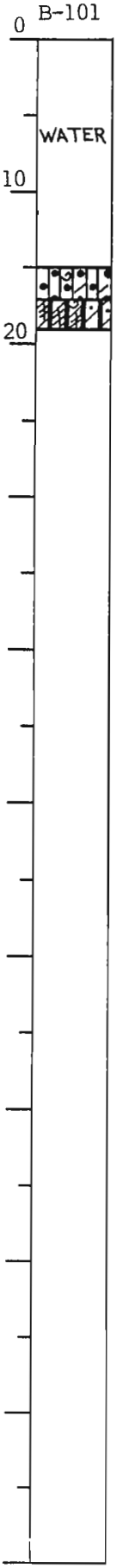


Predominant type shown heavy. Modifying type shown light.



LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

APPENDIX A-1
A/E
SUMMARY BORING TEST RESULTS

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 1

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.7	Soft gray & tan clay w/silt pockets	32.6	84.9	112.6	810*
4	10.7	Medium stiff gray clay w/sandy silt pockets	36.5	83.7	114.2	1265
6	18.2	Medium stiff gray clay w/sandy silt pockets & roots	35.5	84.5	114.6	1625
11	33.2	Medium stiff gray clay w/clayey silt lenses	67.5	59.7	100.0	1055
12	38.2	Ditto	63.7	61.9	101.3	1230
13	43.2	Medium stiff gray clay w/clayey sand lenses	61.0	62.0	99.8	1230
15	53.2	Loose gray silty sand w/clay pockets, lenses & shell fragments	33.6	86.1	115.1	630*
19	63.2	Soft gray sandy clay w/sand pockets & shell fragments	31.4	90.5	118.9	720*
20	68.2	Medium stiff gray clay w/sandy silt pockets & shell fragments	49.0	72.3	107.7	1020
21	73.2	Stiff greenish-gray clay w/clayey silt pockets	29.9	91.8	119.3	2625

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 2

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	1.5	Stiff tan & gray clay w/sandy silt pockets	25.9	93.5	117.7	2345			
3	7.5	Medium stiff brownish-gray clay w/clayey silt pockets	31.0	89.5	117.2	1795			
5	13.5	Soft gray & tan silty clay w/clay layers	30.5	90.6	118.2	810	41	18	23
7	23.0	Soft gray silty clay w/sandy silt lenses & layers	39.0	80.6	112.1	590	42	20	22
9	33.5	Soft gray clay w/clayey silt lenses & layers	48.7	70.7	105.2	595			
11	43.5	Medium stiff gray clay	63.4	61.2	100.1	1115	77	22	55
13	53.5	Very soft gray sandy clay w/sand pockets, lenses & shell fragments	30.3	----	-----	----			
17	63.5	Medium stiff gray sandy clay w/sand pockets & shell fragments	28.1	94.6	121.2	1025			
19	73.5	Very stiff gray & tan clay w/clayey silt pockets	28.5	90.6	116.5	4170*			
21	83.5	Stiff greenish-gray & tan clay w/silt lenses	40.7	80.1	112.7	2840			
23	92.5	Stiff greenish-gray & tan clay w/sand layers	39.6	81.3	113.5	2810			

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New Orleans, Louisiana

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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
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SUMMARY OF LABORATORY TEST RESULTS

BORING 3

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Stiff tan & gray clay w/clayey silt pockets	29.0	90.1	116.2	2260
4	10.5	Loose tan & gray clayey silt	33.9	89.2	119.4	860*
7	23.5	Loose gray clayey silt w/silty clay layers	31.9	89.1	117.5	960*
9	33.5	Soft gray silty clay w/clayey silt layers	35.9	85.2	115.8	635
10	38.5	Ditto	35.8	86.2	117.0	850
12	48.5	Medium compact gray clayey silt w/silty clay layers	28.8	92.0	118.5	1060*

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SUMMARY OF LABORATORY TEST RESULTS

BORING 4

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Stiff tan & gray silty clay w/clayey silt layers & some gravel	23.5	96.8	119.5	2245
3	7.5	Medium stiff gray & tan clay w/clayey silt pockets	33.7	85.7	114.5	1525
4	10.5	Soft gray & tan silty clay w/clayey silt layers & lenses	33.7	86.9	116.2	625
6	17.0	Soft gray & tan silty clay w/roots	35.8	85.8	116.5	445*
8	23.5	Very soft gray silty clay w/clayey silt lenses & clay pockets	35.9	84.6	115.0	450
10	33.5	Very loose gray clayey silt w/silty clay lenses & pockets	33.7	88.7	118.6	415*
12	43.5	Loose gray clayey silt w/clay layers	38.0	82.5	113.9	870*
14	53.0	Medium compact gray clayey silt w/alternating clay lenses	29.7	89.3	115.8	1455*
19	68.5	Stiff gray clay w/sandy silt layers	54.1	68.3	105.3	2935
21	78.5	Medium stiff greenish-gray & tan clay w/silt lenses	35.9	83.8	113.9	1915*

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

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SUMMARY OF LABORATORY TEST RESULTS

BORING 5

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Medium stiff tan & gray silty clay	23.0	90.4	111.2	1870*
3	7.5	Stiff tan & gray clay w/clayey silt pockets	29.9	91.8	119.2	3150
5	13.5	Soft tan & gray silty clay w/clayey silt pockets	37.5	82.3	113.1	690
7	23.5	Soft gray silty clay w/clayey silt lenses	37.2	85.7	117.6	750
10	38.5	Medium stiff dark gray clay w/silt lenses	73.4	55.3	95.9	1215

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SUMMARY OF LABORATORY TEST RESULTS

BORING 6

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Stiff tan & gray clay w/clayey silt pockets	25.2	91.7	114.8	2075
3	7.5	Medium stiff gray & tan clay w/clayey silt pockets	36.8	79.7	109.0	1080
5	13.5	Ditto	29.1	92.0	118.7	1905
7	23.5	Soft gray clay w/trace of organic matter	69.3	58.1	98.4	870
9	33.5	Soft gray clay w/sandy silt & silty sand lenses	55.2	66.8	103.6	775
11	43.5	Soft gray clay w/sand layers	85.8	49.6	92.2	865

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SUMMARY OF LABORATORY TEST RESULTS

BORING 7

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
2	4.5	Stiff tan & gray clay w/clayey silt pockets	29.2	91.5	118.2	3040			
4	10.5	Medium stiff gray & tan silty clay	35.7	84.2	114.3	1805	80	25	55
6	18.5	Ditto	33.6	87.0	116.2	1805			
8	28.5	Soft gray clay w/silt lenses	70.9	57.1	97.6	795	96	28	68
10	38.5	Soft gray clay w/silty sand lenses	69.2	57.2	96.7	810			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 8

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Soft gray & brown clay w/clayey silt pockets	36.9	74.0	101.3	905*
4	11.0	Medium stiff gray & tan clay w/roots	39.3	80.4	112.0	1310
5	13.5	Medium stiff gray & tan clay w/clayey silt pockets & roots	34.6	84.5	113.8	1260
7	23.5	Soft gray clay w/some organic matter	76.4	53.7	94.7	740
9	33.5	Soft gray clay	62.8	61.9	100.8	930
10	37.0	Soft gray clay w/silty sand layers	71.5	55.8	95.8	780

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SUMMARY OF LABORATORY TEST RESULTS

BORING 9

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Medium stiff tan & gray clay w/clayey silt pockets & roots	38.7	78.3	108.6	1145
2	4.5	Medium stiff tan & gray clay w/clayey silt pockets & sandy silt lenses	42.6	73.1	104.3	1310
4	10.5	Medium stiff gray clay w/roots	52.7	68.9	105.2	1180
6	17.0	Soft gray clay w/roots	75.7	54.5	95.7	710

BORING 10

1	1.5	Stiff tan & gray clay w/sand pockets & roots	43.4	93.6	134.2	2440
3	7.5	Soft gray & tan clay w/organic matter, brick fragments, concretions & roots	51.3	69.9	105.7	510
5	13.5	Soft gray & tan clay w/silt & very soft clay pockets & roots	53.7	68.5	105.3	995

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BORING 11

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	5.0	Stiff tan & gray clay w/clayey sand pockets & roots	24.5	94.9	118.2	3815
4	11.0	Medium stiff gray clay w/organic matter & roots	68.9	56.3	95.2	1330
16	54.0	Stiff gray clay w/sand pockets & shell fragments	58.1	64.6	102.1	2355
17	59.0	Medium stiff gray clay w/sand pockets & shell fragments	46.2	74.1	108.4	1415
18	64.0	Very stiff greenish-gray & tan clay	37.0	84.2	115.4	4855
19	69.0	Stiff greenish-gray & tan clay	46.8	74.6	109.5	2865

BORING 12

1	1.5	Soft gray & tan clay w/clayey sand layers & pockets	33.9	82.0	109.8	1750
2	4.5	Stiff gray & tan clay w/sand pockets	36.5	78.7	107.4	3240
3	7.5	Medium stiff gray & tan clay w/silty sand layers & pockets	29.5	----	-----	----
4	11.5	Medium stiff gray clay w/roots, silty clay pockets & wood	75.1	----	-----	----

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SUMMARY OF LABORATORY TEST RESULTS

BORING 13

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Medium stiff gray & tan clay w/sand pockets & roots	44.7	72.7	105.2	1890
2	4.5	Ditto	50.1	68.9	103.4	1490
3	7.5	Soft gray clay	49.9	70.1	105.1	910
4	10.5	Soft dark gray clay w/silt pockets & trace of organic matter	96.5	43.6	85.7	855
5	14.5	Soft gray clay w/roots & wood	106.8	----	-----	----
6	16.0	Soft gray & tan clay w/roots & decayed wood	76.7	54.3	95.9	695

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BORING 14

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Medium stiff gray & tan clay w/silt pockets & roots	33.8	80.0	107.0	1525
2	4.5	Medium stiff gray & tan clay w/sand pockets & roots	44.6	72.8	105.2	1850
3	7.5	Medium stiff dark gray clay w/clayey silt layers & roots	37.9	76.7	105.7	1680
4	11.5	Medium stiff gray clay w/large roots	64.0	----	-----	----
5	13.5	Soft gray & tan clay w/roots	73.2	56.0	97.0	730
6	17.0	Soft gray clay w/roots & organic matter	82.9	51.0	93.4	690

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SUMMARY OF LABORATORY TEST RESULTS

BORING 15

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.7	Medium stiff gray & tan clay w/silt pockets & roots	43.7	73.9	106.2	1715
2	4.7	Medium stiff gray & tan clay w/sand pockets & roots	54.0	65.2	100.5	1935
3	7.7	Soft dark gray clay w/silty sand layers & roots	53.5	60.1	92.3	590*
4	10.7	Soft dark gray clay w/organic matter & roots	92.9	45.7	88.1	690
5	13.7	Soft gray clay w/roots	70.8	57.2	97.6	630
16	58.2	Medium stiff gray clay w/silty sand pockets & shell fragments	46.1	73.7	107.7	1755
18	68.2	Stiff gray clay w/trace of sand	47.8	73.3	108.3	2570

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SUMMARY OF LABORATORY TEST RESULTS

BORING 16

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	PL	PI
2	4.5	Very stiff gray clay w/silt pockets & roots	42.0	74.4	105.6	4570	134	29	105
3	7.5	Very stiff gray & tan clay w/sand pockets	40.6	75.4	106.0	4550			
4	11.0	Soft dark gray clay w/organic matter	89.1	45.7	86.4	845			

BORING 17

1	2.0	Stiff brownish-gray clay w/clayey silt pockets, roots & brick fragments	32.7	80.5	106.8	2835*			
2	4.5	Medium stiff gray clay w/silt pockets & organic matter	44.0	68.4	98.5	1885			
3	8.0	Medium stiff brownish-gray clay w/organic matter	59.4	52.3	83.4	1580*			
4	11.0	Soft black flocculated clay w/organic matter	50.7	64.1	96.6	830*	108	28	80
5	13.5	Soft gray clay w/roots	81.7	51.5	93.5	780			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 18

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
2	5.0	Stiff gray clay w/sand pockets & shells	26.6	90.2	114.1	3240			
3	8.0	Medium stiff brown & gray clay w/organic matter & roots	74.1	42.9	74.8	1710*			
4	10.5	Soft brown & gray clay w/organic matter & many roots	76.4	----	-----	----			
5	13.5	Soft gray clay w/roots	58.4	64.1	101.5	755			
6	16.5	Soft gray clay w/sand pockets & organic matter	47.0	72.6	106.8	900	72	23	49

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SUMMARY OF LABORATORY TEST RESULTS

BORING 19

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff tan & gray clay w/sand pockets & roots	32.7	84.4	112.0	2050
2	5.0	Medium stiff gray & tan clay w/sand lenses, pockets & roots	32.3	86.7	114.8	1380
3	8.0	Very soft gray clay w/organic clay layers, roots & wood	104.7	42.3	86.5	445
4	14.0	Soft gray clay w/roots	68.3	58.6	98.5	945
16	64.0	Medium stiff gray clay w/trace of sand	51.8	69.3	105.1	1305
17	69.0	Stiff gray clay w/sand pockets	41.7	78.0	110.5	2055
18	74.0	Stiff gray clay w/trace of organic matter & shell fragments	60.1	63.0	100.9	3225
19	79.0	Medium stiff greenish-gray silty clay w/fine sand	21.2	103.5	125.4	1015

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BORING 20

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Medium stiff brown & gray silty clay	28.9	84.3	108.7	1470
2	5.0	Medium stiff gray & tan clay w/silt pockets & decayed wood	48.5	68.4	101.6	1365
3	8.0	Medium stiff dark gray clay w/organic matter, wood & roots	66.0	----	-----	----
4	12.5	Soft dark gray clay w/roots w/roots & organic matter	73.8	55.1	95.8	545
5	15.5	Soft gray silty clay w/clayey silt layers & roots	39.2	79.9	111.3	390
6	19.0	Very soft gray clay w/clayey silt layers, silty fine sand pockets & roots	38.9	83.2	115.5	----
7	24.0	Very loose gray clayey silt w/silty sand lenses	33.6	85.2	113.8	205*

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BORING 21

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff brown & gray clay w/clayey silt pockets & some sand	28.1	86.3	110.5	2045
2	5.0	Medium stiff brownish-gray clay w/sand pockets	40.7	76.5	107.6	1750
3	7.5	Soft brown & gray clay w/organic matter, roots & wood	178.6	26.7	74.2	520
4	10.5	Soft brown & gray clay w/humus & organic clay layers	124.0	33.6	75.3	530*
5	13.5	Soft gray clay w/clayey silt pockets & roots	37.9	81.4	112.3	840
6	18.5	Soft gray clay w/roots & few concretions	59.8	64.1	102.5	850

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BORING 22

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Stiff brownish-gray clay w/clayey silt & clayey sand pockets & roots	35.7	81.5	110.6	2760
2	5.0	Medium dense tan & gray silty sand w/clay layers & roots	31.2	78.7	103.2	1445*
3	7.5	Stiff gray clay w/organic matter, roots & decayed wood	77.9	48.6	86.4	2550
4	10.5	Wood w/some dark gray clay, organic matter & roots	213.3	----	-----	----
5	13.5	Soft gray clay w/roots & organic matter	52.6	69.1	105.5	710
6	18.5	Very loose gray silty sand w/clay lenses & roots	26.8	98.2	124.5	195*

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BORING 23

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Stiff brownish-gray clay w/clayey sand & clayey silt pockets & roots	30.3	88.0	114.6	2995
2	5.0	Very soft dark brown & gray clay w/silty sand pockets & roots	82.1	48.3	88.0	485
3	7.5	Soft dark gray clay w/sand pockets, organic matter & decayed wood	60.4	59.0	94.6	995
4	10.5	Soft dark brown & gray clay w/organic matter & decayed wood	106.6	38.6	79.8	785
5	13.5	Soft gray silty clay w/roots & sand pockets	35.6	84.4	114.4	855

BORING 24

1	2.0	Stiff gray & tan silty clay w/sand layers, pockets & roots	18.1	104.1	122.9	2910
2	5.0	Soft gray & tan clay w/sandy silt layers, pockets, roots & organic matter	44.0	70.4	101.3	970
4	10.5	Medium stiff brown organic clay w/wood & roots	154.3	32.0	81.3	1450
5	13.5	Soft gray silty clay w/roots	35.0	83.5	112.8	845

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BORING 25

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Loose tan & gray clayey silt w/roots	21.0	94.2	114.0	785*
2	5.0	Medium stiff brown & gray silty clay w/humus, roots & trace of sand	66.8	46.9	78.2	1170*
3	7.5	Soft dark brown & gray organic clay w/roots	271.1	18.9	70.1	575
4	11.0	Soft dark gray organic clay w/silt pockets, wood & roots	95.1	----	-----	----
5	13.5	Soft gray clay w/organic matter & roots	66.5	59.2	98.5	595

BORING 26

1	2.0	Medium stiff brown & gray silty clay w/trace of sand & roots	30.8	79.0	103.4	1030*
2	5.0	Medium stiff gray & tan silty clay w/clayey silt layers, lenses, gravel & roots	30.4	86.5	112.8	1065*
3	7.5	Medium stiff dark gray clay w/clayey silt layers & roots	75.8	51.6	90.7	1320
4	10.5	Soft dark gray clay w/roots, organic clay layers & wood	66.3	54.3	90.3	730
5	14.0	Loose dark brown humus w/roots & wood	317.7	----	-----	----

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New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 27 (Sheet 1 of 2)

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Medium stiff tan & gray clay w/sand pockets & roots	36.9	82.1	112.4	1960			
2	5.0	Medium dense tan & gray silty sand w/clayey sand layers & pockets	18.5	----	-----	----			
3	8.0	Stiff gray & brown clay w/sand pockets	28.6	87.0	111.9	3330			
4	11.0	Loose gray silty sand w/clay pockets, organic matter & roots	35.0	80.6	108.8	500*			
6	16.0	Medium stiff gray clay	70.0	57.8	98.2	1035			
7	19.5	Soft dark gray organic clay w/humus layers & roots	193.4	24.5	71.8	940	243	69	174
8	23.5	Very soft dark gray organic clay w/humus layers	149.2	31.3	78.0	460			
17	58.5	Medium stiff gray clay w/clayey sand pockets & shell fragments	47.7	72.1	106.5	1825	68	20	48

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

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SUMMARY OF LABORATORY TEST RESULTS

BORING 27
(Cont'd)

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
18	63.5	Stiff greenish-gray clay w/trace of sand	31.5	89.1	117.2	2625			
19	68.5	Stiff greenish-gray & tan clay w/trace of silt	32.1	89.3	118.0	3310			
25	93.5	Stiff gray clay w/silt pockets	47.9	71.3	105.3	2250	73	21	52
26	98.5	Ditto	37.1	83.6	114.6	2205			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 28

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	1.5	Stiff tan & gray clay w/sand pockets, roots & shell fragments (fill)	36.3	82.0	111.8	2020
2	4.5	Very stiff brownish-gray clay w/sand pockets & decayed shells	29.0	90.8	117.2	4935
3	7.5	Medium compact grayish-brown clayey silt w/fine sand	32.6	75.3	99.9	1355*
4	10.5	Medium stiff gray & tan clay w/clayey sand pockets	30.8	88.7	116.1	1425
5	13.5	Soft dark brown & gray organic clay w/roots & wood	131.2	34.0	78.5	670
7	21.0	Soft dark brownish-gray organic clay w/roots	155.1	30.1	76.9	780

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SUMMARY OF LABORATORY TEST RESULTS

BORING 29

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	4.5	Very stiff brownish-gray clay w/clayey sand & clayey silt pockets & gravel	31.1	----	------	----
2	8.0	Stiff tan & gray clay w/clayey silt pockets	28.9	86.6	111.6	2280
4	15.0	Loose brown humus w/roots	242.8	20.5	70.4	560
16	58.5	Medium stiff gray clay w/sand pockets	49.6	71.1	106.4	1325
17	63.5	Stiff gray silty clay	25.2	97.6	122.1	3075

BORING 30

1	1.5	Stiff brownish-gray clay w/sand pockets	30.3	93.4	121.8	2235*
3	7.5	Soft brownish-gray clay w/alternating silty sand lenses & layers	36.7	77.8	106.4	875*
5	14.0	Loose gray silty sand w/some clay	29.7	89.7	116.4	760*
6	18.5	Very loose gray clayey silt w/silty sand pockets & roots	40.7	80.0	112.6	180*
7	23.5	Soft gray clay w/clayey silt pockets & roots	47.8	71.5	105.7	875

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SUMMARY OF LABORATORY TEST RESULTS

BORING 32

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
5	11.0	Soft gray clay w/silty fine sand layers & few shell fragments	66.4	----	-----	-----
6	14.5	Medium dense gray silty sand w/few clay lenses & shell fragments	28.6	93.9	120.7	1130*
8	23.5	Very soft gray clay w/clayey silt & silty sand lenses & layers	50.2	70.5	106.0	345*

BORING 33

4	8.5	Soft gray & tan clay w/clayey sand pockets	57.0	65.2	102.3	515
12	33.5	Medium stiff gray clay w/clayey silt pockets	52.8	68.9	105.3	1150

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SUMMARY OF LABORATORY TEST RESULTS

BORING 34

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
4	8.5	Soft tan & gray clay w/silty sand pockets	34.3	85.4	114.7	755*	42	15	27
5	11.5	Soft gray clay w/silt pockets	49.3	71.7	107.0	550			
6	14.5	Soft gray clay w/clayey sand layers	55.1	67.1	104.1	520	101	29	72
7	18.5	Medium dense gray silty fine sand w/clay lenses & shell fragments	31.6	91.3	120.1	1795*			
9	28.5	Loose gray silty sand w/clay lenses, pockets & shells	28.6	96.2	123.8	355*			
10	33.5	Soft gray clay w/many clayey sand pockets	38.9	80.2	111.4	765*			
11	38.5	Soft gray clay w/silty sand pockets	62.1	61.5	99.6	915*	99	25	74

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SUMMARY OF LABORATORY TEST RESULTS

BORING 35

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Very stiff tan & gray clay w/clayey silt layers (fill)	21.8	----	-----	----
4	8.5	Medium stiff gray & tan silty clay w/silty sand layers & decayed shells	24.8	93.8	117.0	1355*
5	12.0	Soft gray & tan clay w/sand pockets & shell fragments	33.1	----	-----	----
11	28.5	Very loose gray clayey silt w/silty sand layers & shell fragments	40.2	81.4	114.2	225*
12	33.5	Soft gray clay w/clayey sand pockets	54.0	68.0	104.7	900
13	38.5	Soft gray clay w/clayey silt lenses & silty sand pockets	58.9	64.4	102.4	895

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SUMMARY OF LABORATORY TEST RESULTS

BORING 36

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Loose gray & tan clayey silt w/roots & concretions	20.5	95.4	115.0	Ø=13° c=185*			
3	8.0	Medium stiff gray silty clay w/organic matter	29.8	87.8	113.9	1170			
5	14.0	Stiff tan & gray clay w/silt pockets	27.9	94.8	121.2	2705	56	21	35
7	24.0	Soft gray clay w/silt pockets	56.0	65.5	102.2	610			
13	44.0	Medium stiff gray clay	76.0	54.4	95.7	1035**	109	27	82
16	57.5	Very loose gray silty sand w/clay lenses & shell fragments	25.9	96.8	121.9	Ø= 6° c= 60*	24	19	5
19	64.0	Loose gray clayey sand w/clay pockets & shell fragments	29.4	91.3	118.1	535*			
20	69.0	Medium stiff gray & tan clay w/silt lenses & pockets	53.9	68.1	104.8	1860			
22	79.0	Stiff greenish-gray & tan clay	29.4	92.6	119.8	3525			
25	94.0	Very stiff greenish-gray & tan clay	34.5	86.1	115.8	4125			

*Unconsolidated Undrained Triaxial Compression Test - Multiple Stage;
Ø = Angle of internal friction; c = Cohesion in psf.

**Unconsolidated Undrained Triaxial Compression Test - One Specimen;
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SUMMARY OF LABORATORY TEST RESULTS

BORING 37

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	2.5	Stiff gray & tan clay w/silt pockets	27.7	91.4	116.8	2520
3	5.5	Medium stiff tan & gray clay w/silt pockets	28.3	93.4	119.8	1690
5	11.5	Soft gray & tan clay w/vertical sand lenses	46.3	73.2	107.1	540*
7	19.5	Soft gray clay w/clayey silt layers	43.4	75.5	108.2	730
11	34.5	Soft gray clay	67.5	59.2	99.2	670
14	49.5	Soft gray sandy clay w/large silty sand pockets & shells	32.6	86.9	115.3	545
19	64.5	Medium stiff gray & tan clay w/silt lenses	55.1	67.5	104.7	1585
21	74.5	Stiff gray & tan clay	30.6	91.4	119.4	3095

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SUMMARY OF LABORATORY TEST RESULTS

BORING 38

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Soft tan & gray silty clay w/concretions	29.0	88.4	114.0	940
4	10.5	Medium stiff gray & tan silty clay w/roots	32.0	88.6	116.9	1765
7	23.0	Loose gray clayey silt	32.3	88.4	117.0	645*
9	33.0	Soft gray & tan clay w/sandy silt layers	32.8	87.3	115.9	595*
11	43.0	Medium compact gray clayey silt	32.6	88.8	117.8	1285*

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SUMMARY OF LABORATORY TEST RESULTS

BORING 39

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
2	2.5	Medium stiff gray & tan clay w/clayey silt pockets, few roots & fill	36.9	81.3	111.4	1820			
3	5.5	Medium stiff brown & gray clay w/clayey silt pockets & fill	38.5	78.1	108.2	1650*	79	25	54
4	8.5	Medium stiff tan & gray silty clay w/roots	27.5	95.0	121.2	1650			
5	11.5	Very soft gray silty clay w/clay layers	41.4	79.3	112.1	420			
6	14.5	Medium compact gray clayey silt	29.7	92.0	119.3	1105*	28	24	4
7	19.5	Loose gray sandy silt w/clay layers	32.0	92.1	121.6	----			
8	24.5	Soft gray silty clay w/clay layers	30.8	89.2	116.7	975	35	20	15
20	73.5	Medium stiff greenish-gray fissured clay w/clayey silt pockets	21.8	97.2	118.4	1935*			
22	84.5	Medium stiff greenish-gray fissured clay w/clayey silt layers	27.8	93.4	119.3	1035*			
24	94.5	Stiff gray & tan fissured clay	36.4	84.4	115.1	2960			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 40

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.0	Stiff tan & gray clay w/clayey silt pockets (fill)	23.9	97.7	121.0	3960
3	6.5	Medium stiff tan & gray clay w/clayey silt pockets & roots (fill)	26.5	91.0	115.1	1550*
4	9.0	Stiff gray & tan clay w/clayey silt pockets	29.6	91.7	118.8	2965
5	11.5	Medium stiff gray & tan clay w/clayey silt pockets	34.2	86.0	115.5	1340
6	14.0	Ditto	36.7	82.6	112.9	1295
7	16.5	Ditto	35.0	84.8	114.5	1610
8	19.0	Ditto	34.3	86.1	115.6	1530
9	21.5	Medium stiff gray silty clay w/clayey silt layers & lenses	35.4	83.6	113.2	1045
10	24.0	Soft gray silty clay	35.2	84.7	114.6	670
11	28.5	Loose gray sandy silt w/clay lenses	27.7	92.0	117.5	980*
13	34.0	Medium stiff gray clay w/clayey silt lenses	42.3	77.0	109.6	1175
14	36.5	Medium stiff gray clay	61.5	62.5	100.9	1460
16	41.5	Soft gray clay w/silty sand layers	47.3	70.9	104.4	810*

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SUMMARY OF LABORATORY TEST RESULTS

BORING 41

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Medium stiff tan & gray clay w/silty clay layers & roots	28.5	91.7	117.8	1865
4	10.5	Medium stiff tan & gray clay	34.5	84.8	114.1	1870
6	18.0	Medium stiff gray & tan clay w/silty clay layers	36.3	84.0	114.5	1065
7	23.0	Medium stiff gray clay w/organic matter	57.3	65.4	102.9	1385
9	33.0	Very soft gray clay w/thick sandy silt layers & lenses	36.9	80.2	109.9	465*
11	43.0	Soft gray clay w/sand lenses, pockets & shell fragments	52.1	66.1	100.5	700

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SUMMARY OF LABORATORY TEST RESULTS

BORING 42

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	2.5	Stiff gray & tan clay w/roots & trace of gravel	26.7	92.3	116.9	3485
3	5.5	Stiff tan & gray clay w/silt pockets	30.8	89.9	117.6	2960
4	8.5	Ditto	33.1	87.7	116.8	2025
5	11.5	Medium stiff gray & tan clay w/silt pockets	34.1	86.9	116.5	1705
6	14.5	Stiff gray & tan clay	35.8	83.8	113.8	2145
7	19.5	Stiff gray & tan clay w/silt pockets	38.2	82.4	113.8	2030
8	24.5	Medium stiff gray clay w/trace of organic matter	66.3	59.5	98.9	1275
9	29.0	Soft gray clay	71.4	57.3	98.2	905
10	34.5	Ditto	73.3	56.3	97.6	810
11	39.5	Soft gray clay w/silty sand lenses & layers	66.6	59.0	98.4	580*

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BORING 43

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	2.5	Stiff brown & gray clay w/silt pockets	30.9	85.2	111.6	3985
3	5.5	Medium stiff gray & tan silty clay	31.9	89.7	118.4	1680
4	8.5	Medium stiff gray & tan clay w/silt pockets	34.4	86.6	116.4	1010
5	11.5	Ditto	33.8	86.5	115.7	1510
6	14.5	Medium stiff gray & tan clay	42.6	78.1	111.3	1625
7	19.5	Medium stiff gray & tan clay w/silt pockets	40.3	80.2	112.6	1150
8	24.5	Soft gray clay w/organic clay layers	105.6	42.5	87.3	700
9	29.5	Soft gray clay w/silty clay layers	68.4	59.1	99.6	845
10	34.5	Medium stiff gray clay	73.8	56.3	97.8	1070
11	38.5	Soft gray clay w/fine sand lenses	81.3	52.0	94.2	800*
16	49.5	Loose gray silty sand w/many shell fragments	26.8	----	-----	----

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

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BORING 44

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	1.5	Medium stiff gray & brown clay w/clayey sand pockets & trace of organic matter	31.5	83.9	110.3	1710			
3	8.0	Soft gray & tan clay w/sand layers & pockets	33.5	----	-----	----			
4	11.5	Soft gray clay w/organic matter, roots & clayey sand pockets	68.8	----	-----	----			
5	14.5	Medium stiff gray & tan clay w/roots	48.8	----	-----	----			
14	48.5	Loose gray clayey sand w/shell fragments	35.4	82.5	111.7	500*			

BORING 45

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	1.5	Medium stiff tan & gray fissured clay w/silt pockets	29.7	86.7	112.5	1695	100	27	73
2	4.5	Medium stiff tan & gray fissured clay	43.8	74.9	107.6	1180			
3	7.5	Soft tan & gray fissured clay w/sand layers	48.8	71.6	106.5	670*	84	26	58
4	11.5	Soft gray & tan clay	57.0	66.5	104.5	730			
5	14.5	Medium stiff gray & tan clay	50.1	71.8	107.8	1125	84	25	59

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BORING 46

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	4.5	Medium stiff gray & brown clay w/clayey sand layers	34.2	82.1	110.1	1995
3	7.5	Medium stiff gray & tan clay w/trace of organic matter	50.9	69.5	104.9	1100
4	11.5	Very soft gray clay w/organic matter & roots	77.7	53.2	94.6	485
5	14.0	Soft gray & tan clay	58.9	64.6	102.7	975
15	53.5	Medium stiff gray clay w/sand lenses & pockets	66.4	58.5	97.4	1880
16	58.5	Stiff gray clay w/trace of sand	48.1	72.2	106.9	2240
17	63.5	Stiff greenish-gray & tan fissured clay w/clayey silt pockets	37.9	82.0	113.1	2195

BORING 47

2	1.2	Soft gray & tan clay w/thick sand layers	37.3	78.4	107.6	910
3	3.2	Medium stiff brown & gray clay w/silt pockets & sand lenses	43.3	72.0	103.2	1340
4	5.2	Soft tan & gray clay w/sand lenses & pockets	28.1	91.0	116.6	855*
5	7.7	Soft gray clay w/roots	72.6	55.8	96.3	600
6	10.7	Extremely soft gray & tan clay w/thick sand layers, pockets & roots	44.5	75.5	109.1	195

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SUMMARY OF LABORATORY TEST RESULTS

BORING 48

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	1.7	Stiff gray clay w/sand pockets & roots	30.6	87.3	114.0	2300*
3	4.7	Stiff brown & gray clay w/sand pockets & roots	41.0	75.2	106.0	2635
4	7.7	Soft gray & tan clay w/thick sand layers	24.7	84.1	104.8	570*
5	10.7	Extremely soft gray clay w/roots, organic matter & wood	97.5	44.7	88.3	155
6	13.7	Soft gray clay w/roots	58.7	64.0	101.6	990
7	17.7	Soft gray clay w/organic matter & large roots	58.0	----	-----	----

BORING 49

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	1.7	Medium stiff gray & tan clay w/silt pockets	40.8	76.7	107.9	1640
3	4.7	Medium stiff gray & tan clay w/silt pockets & trace of organic matter	43.1	72.5	103.8	1425
4	7.7	Soft brown & gray organic clay w/large roots	302.3	----	-----	----
5	10.7	Soft gray & tan clay w/large roots	67.2	----	-----	----
6	13.7	Soft gray clay w/roots	65.8	61.9	102.6	565

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

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SUMMARY OF LABORATORY TEST RESULTS

BORING 50

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
5	8.2	Soft dark gray clay w/silt pockets & organic matter	51.6	64.1	97.2	805			
6	10.7	Soft dark gray clay w/much organic matter & roots	104.2	41.7	85.2	700	161	45	116
7	13.7	Very soft gray clay w/organic matter & wood	80.7	----	-----	----			
8	18.2	Soft gray clay w/trace of organic matter	84.3	50.6	93.2	580			
20	63.2	Medium stiff gray fissured clay w/sand pockets & partings	44.6	72.7	105.2	1545			
21	68.2	Stiff gray clay w/shell fragments	44.5	75.3	108.8	2430	80	25	55
22	73.2	Stiff greenish-gray clay w/silt pockets & shell fragments	31.6	87.7	115.5	2300			
23	76.7	Stiff greenish-gray & tan clay w/silt pockets	28.8	89.3	115.1	2500	71	22	49
29	91.7	Medium stiff gray clay w/sandy silt layers	46.0	75.8	110.6	1625	74	23	51
30	96.7	Stiff gray clay w/silt lenses	37.9	83.6	115.3	2800			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 51

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	1.7	Medium stiff gray & tan clay w/many sand lenses & layers	22.6	90.4	110.8	1070*
3	4.7	Medium stiff black & gray clay w/roots & organic matter	42.6	72.4	103.2	1275
4	7.7	Medium stiff tan & gray clay w/sand lenses & layers	52.7	68.0	103.8	1210
5	10.7	Soft gray clay w/roots & organic matter	75.0	55.2	96.6	720

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SUMMARY OF LABORATORY TEST RESULTS

BORING 52

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff gray & tan clay w/silt pockets & shell fragments	35.9	84.3	114.5	2255
2	5.0	Medium stiff gray & tan clay w/silt pockets & trace of organic matter	65.2	59.8	98.7	1020
3	8.0	Soft gray clay w/organic clay layers, sand pockets & roots (fill)	67.0	----	-----	----
4	11.0	Very soft gray clay w/much organic matter & roots	164.2	29.1	76.8	350
5	14.0	Soft gray clay w/organic matter & roots	91.2	48.2	92.2	550
6	19.0	Very loose dark gray & gray clayey sand w/vertical sandy clay layers & roots	48.1	68.6	101.6	345*

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SUMMARY OF LABORATORY TEST RESULTS

BORING 53

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Medium stiff gray & tan clay w/sand lenses, pockets & trace of organic matter	35.3	82.3	111.4	1545*
2	5.5	Medium stiff gray & tan clay w/sand pockets	42.2	74.0	105.3	1510
3	8.0	Medium stiff gray & tan clay w/vertical sand layers, organic matter & brick	44.4	----	-----	----
4	14.0	Soft gray & tan clay w/decayed roots	87.0	----	-----	----
15	59.0	Stiff gray & tan clay w/sand pockets & shell fragments	45.2	75.3	109.3	2055
16	64.0	Stiff gray clay w/sand pockets	54.3	68.2	105.2	2155
17	69.0	Medium stiff gray clay w/shell fragments	54.6	67.8	104.8	1705

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SUMMARY OF LABORATORY TEST RESULTS

BORING 54

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Very stiff brown & gray clay w/clayey sand pockets & roots	29.7	91.2	118.3	4640
2	5.0	Medium stiff gray clay w/silt pockets & roots	52.7	67.6	103.2	1685
3	8.0	Medium stiff gray & tan clay w/clayey silt pockets	30.2	91.8	119.5	1330
4	14.0	Soft gray clay w/clayey silt pockets & roots	45.6	75.7	110.2	790
5	19.0	Soft gray clay w/roots	73.6	56.1	97.3	520

BORING 55

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Medium stiff gray & brown clay w/clayey sand pockets, roots & fill	38.9	80.3	111.6	1675
2	5.0	Medium stiff gray & brown clay w/clayey silt pockets & roots	49.7	70.5	105.5	1310
3	11.0	Soft gray clay w/roots & fine sandy silt pockets	46.5	72.2	105.8	575
4	14.0	Soft gray clay w/roots	58.7	64.0	101.5	700
5	19.0	Medium dense gray silty sand	23.9	----	-----	----

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SUMMARY OF LABORATORY TEST RESULTS

BORING 56

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Medium stiff brown & gray clay w/clayey sand pockets	33.8	83.4	111.6	1690			
2	5.0	Soft brown & gray clay w/organic clay layers	94.1	46.1	89.5	540	124	34	90
3	8.0	Soft dark gray & brown clay w/sand lenses, clayey sand pockets & trace of organic matter	68.6	57.8	97.4	780			
4	14.0	Extremely soft gray clay w/clayey sand pockets & roots	63.4	62.8	102.5	155	79	24	55

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BORING 57

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Medium dense brown & gray clayey sand w/roots & few shell fragments	18.9	----	-----	----			
2	5.0	Medium compact gray clayey silt w/sandy silt layers & clay pockets	27.9	92.5	118.3	1200*			
12	44.0	Medium stiff gray clay w/trace of sand & shell fragments	66.3	59.8	99.5	1760			
13	49.0	Medium stiff gray clay w/sand pockets & shell fragments	49.5	71.2	106.4	1080	71	21	50
14	54.0	Medium stiff gray clay w/fine sandy silt pockets	43.7	76.6	110.1	1260			
15	59.0	Stiff dark gray organic clay	101.2	43.3	87.1	3015	163	42	121
16	64.0	Stiff greenish-gray silty clay w/fine sand	19.1	109.1	129.9	3495			
17	67.0	Stiff greenish-gray & tan clay w/silt lenses	31.5	90.7	119.3	3590			
21	79.0	Stiff gray clay w/fine sandy silt lenses	37.7	83.5	115.0	2370*			
23	89.0	Stiff gray fissured clay w/silt lenses	44.7	77.0	111.5	3885	76	22	54
25	99.0	Medium stiff gray fissured clay w/silt lenses	45.4	75.5	109.8	1560			

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BORING 58

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff gray & brown clay w/clayey sand pockets	33.8	86.6	115.9	3455
2	5.0	Medium stiff gray clay w/clayey sand pockets	34.5	83.6	112.4	1410
4	11.0	Soft dark gray clay w/many roots	62.5	60.6	98.4	920
5	14.0	Very soft gray clay w/clayey sand pockets, roots & wood	37.7	----	-----	----
6	19.0	Dense gray silty sand w/clay pockets	23.1	103.2	127.0	2220*

BORING 59

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Soft brown & gray clay w/clayey sand pockets, roots & some fill	34.9	84.4	113.8	865
2	5.0	Medium stiff dark gray & brown clay w/clayey sand pockets & roots	39.9	76.5	107.0	1365
3	11.0	Medium compact gray sandy silt w/clay layers & wood	32.5	----	-----	----
13	49.0	Medium stiff gray fissured clay w/clayey sand pockets & shell fragments	65.4	60.5	100.0	1815

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BORING 60

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff brown & gray clay w/clayey sand pockets & roots	34.0	86.1	115.4	2160
2	5.0	Soft gray & tan clay w/organic clay layers & roots	62.9	59.6	97.1	910
3	8.0	Extremely soft brown humus w/organic clay layers & roots	296.4	18.0	71.5	195
4	11.0	Soft brown organic clay w/humus layers, wood & roots	122.8	----	-----	----

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BORING 61

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Very compact tan & gray clayey silt w/clay pockets & roots	17.5	104.9	123.2	3190*
2	5.0	Dense tan & gray clayey sand w/clay lenses & roots	17.0	101.5	118.7	2025*
3	8.0	Soft gray silty clay w/clayey sand pockets & trace of organic matter	39.6	79.3	110.7	675
4	11.0	Medium stiff dark gray clay w/organic matter & wood	78.5	52.4	93.5	1175
5	14.0	Stiff brown organic clay w/humus layers	240.1	20.0	68.2	3720
6	19.0	Soft gray silty clay w/alternating clayey silt & sandy silt layers	26.7	98.5	124.8	555
14	49.0	Soft gray clay w/clayey sand pockets & shell fragments	46.2	74.0	108.2	850
15	54.0	Medium stiff gray clay w/sand pockets & few shell fragments	46.3	73.9	108.1	1650
16	59.0	Stiff greenish-gray & tan clay w/trace of sand	27.0	96.5	122.6	3100
17	64.0	Very stiff tan & gray clay w/silt pockets & concretions	30.5	92.3	120.5	4225

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SUMMARY OF LABORATORY TEST RESULTS

BORING 62

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Medium stiff gray & tan clay w/clayey silt pockets	45.8	72.4	105.5	1475
2	5.0	Soft brown organic clay w/many roots	179.7	27.4	76.5	625
3	8.0	Very soft gray silty clay w/organic matter & roots	48.7	71.7	106.6	390
15	44.0	Medium stiff gray clay w/sand pockets & few shell fragments	55.2	65.8	102.1	1515
16	49.0	Medium stiff gray clay w/trace of silt	49.1	71.3	106.3	1325

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SUMMARY OF LABORATORY TEST RESULTS

BORING 63

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Medium stiff tan & gray clay w/sand lenses & layers (fill)	20.2	96.5	116.0	1105*			
2	5.0	Stiff tan & gray clay w/clayey sand pockets & lenses	29.6	87.8	113.8	2940			
3	8.0	Soft brown & gray clay w/dense clayey sand layers & few shell fragments	28.1	86.3	110.6	950*	60	18	42
4	11.0	Soft brown & gray silty clay w/fine sand & silt pockets & layers	30.0	89.3	116.1	610*			
5	14.0	Medium stiff dark gray clay w/some organic matter (fill)	73.8	49.5	86.1	1150*			
6	19.0	Soft gray clay w/humus layers & silt pockets	55.6	64.2	99.9	820	57	16	41
7	24.0	Medium dense gray silty sand w/clay lenses	27.3	94.0	119.7	4900*			

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SUMMARY OF LABORATORY TEST RESULTS

BORING 63
(Cont'd)

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
16	59.0	Medium stiff gray clay w/trace of fine sand & few shell fragments	51.7	69.1	104.8	1290			
17	64.0	Stiff greenish-gray clay w/trace of sand	24.6	98.4	122.7	2800			
18	69.0	Stiff greenish-gray & tan clay w/clayey silt pockets	27.3	94.3	120.0	3810*			
23	89.0	Medium stiff gray clay w/clayey silt lenses & layers	44.9	75.7	109.7	1655	43	16	27
25	99.0	Ditto	37.8	82.3	113.4	1345			

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BORING 64

Sample No.	Depth in Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Very stiff brown & gray silty clay w/roots	21.5	----	-----	----
2	5.0	Medium stiff gray clay w/many sand pockets & roots	22.8	83.3	102.3	1080*
3	8.0	Medium stiff brown & gray silty clay w/sand pockets	31.1	86.5	113.4	1205
4	11.0	Medium stiff gray clay w/sandy clay layers & pockets	34.6	85.0	114.5	1115
5	14.0	Extremely soft gray clay w/vertical clayey sand layers & trace of organic matter	68.7	57.9	97.2	205*

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BORING 65

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Stiff brown & gray silty clay w/sandy silt pockets & roots	19.9	92.8	111.3	2900*
2	5.0	Stiff gray & tan fissured clay w/roots & silt	30.2	83.2	108.3	3145*
3	8.0	Medium stiff gray & tan clay w/silt pockets	33.6	84.3	112.6	1435
4	11.0	Soft gray clay w/sand lenses & layers	56.5	66.7	104.4	605

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BORING 66

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
1	2.0	Compact brownish-gray clayey silt w/roots, trace of sand & few shells	11.9	105.9	118.5	2080*			
2	5.0	Loose brown & gray clayey silt w/sand & shells	20.8	88.8	107.3	560*			
3	8.0	Medium stiff brown & gray clay w/clayey sand pockets	46.6	73.5	107.8	1265	90	27	63
4	11.0	Very soft gray clay w/clayey sand layers, pockets & shell fragments	33.7	85.6	114.5	365			
5	14.0	Loose gray silty sand w/clay pockets & shell fragments	26.7	97.8	123.9	605*	24	19	5
6	19.0	Loose gray silty sand w/many shells	65.6	----	-----	----			
7	24.0	Loose gray silty sand w/silty clay layers	30.2	92.7	120.7	545*			

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BORING 67

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Very compact brown & gray clayey silt w/sand pockets & roots	15.8	107.7	124.7	4890*
2	5.0	Stiff brown & gray clay with sandy silt pockets & shell fragments	24.3	98.1	121.9	3980
3	8.0	Extremely soft gray & tan clay w/sand pockets & shell fragments	34.4	----	-----	----
4	11.0	Loose gray silty sand w/clayey sand layers	26.4	----	-----	----
5	14.0	Soft gray clay w/sand pockets & shell fragments	53.0	67.3	102.9	510
6	19.0	Soft gray clay	100.6	44.8	90.0	715

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BORING 68

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
1	2.0	Extremely stiff brown & gray silty clay w/sand pockets & roots	19.8	102.3	122.6	9675*
2	5.0	Loose brown & gray clayey silt w/clay layers & shells (fill)	27.6	93.6	119.4	960*
3	8.0	Soft dark gray silty clay w/clayey silt layers & shell fragments	30.5	88.1	114.9	810*
4	14.0	Soft gray clay w/silt pockets	64.7	60.6	99.9	920
5	19.0	Soft gray clay w/sand pockets & shell fragments	45.5	74.7	108.7	805
7	29.0	Very loose gray clayey sand w/large shell fragments & sandy clay layers	27.7	97.1	124.0	415*
8	34.0	Medium stiff gray clay w/sand pockets	52.1	68.4	104.0	1090
9	39.0	Loose gray clayey sand w/shell fragments	23.3	----	-----	----

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BORING 69

Sample No.	Depth In Feet	Classification	Water Content Percent	Density PCF Dry	Density PCF Wet	Unconfined Compressive Strength PSF
2	5.0	Medium compact tan & gray clayey silt w/shell fragments	14.6	----	-----	----
3	8.0	Medium compact brown & gray clayey silt w/shell fragments	24.2	96.1	119.4	1535*
4	11.0	Medium stiff gray clay w/silt lenses	53.2	67.7	103.8	1035
8	24.0	Very loose gray silty sand w/clay pockets, layers & shell fragments	40.7	80.7	113.5	75*
10	34.0	Soft gray clay w/sand pockets	36.3	84.4	115.0	690
11	39.0	Soft gray clay w/silt lenses	64.8	61.1	100.7	785
12	44.0	Loose gray silty sand w/sandy clay layers, pockets & shell fragments	25.4	----	-----	----

*Unconsolidated Undrained Triaxial Compression Test - One Specimen; Confined at the approximate overburden pressure.

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
New Orleans, Louisiana

For: The Board of Levee Commissioners of the Orleans Levee District
New Orleans, Louisiana

Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 74

Sample No.	Depth In Feet	Classification	Water Content Percent
1	11.5	Extremely soft black muck	68.1
2	15.5	Medium stiff gray & tan clay w/trace of silt	45.6
3	19.0	Loose gray clayey silt	38.7

BORING 75

1	12.5	Medium stiff gray & tan clay w/clayey silt pockets	34.7
2	15.5	Ditto	36.8

BORING 76

1	11.5	Medium stiff gray & tan clay w/clayey silt pockets & roots	54.2
3	19.0	Medium stiff gray clay w/organic matter & roots	125.7

BORING 77

1	10.5	Extremely soft gray sandy clay w/organic matter & roots	54.9
3	17.0	Loose to medium dense gray sand	22.9

BORING 78

1	10.0	Extremely soft dark gray sandy clay w/some organic matter	79.8
2	14.0	Medium dense gray sand	13.9

Geotechnical Investigation
London Avenue Canal
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New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 79

Sample No.	Depth In Feet	Classification	Water Content Percent
1	10.5	Loose dark gray sand w/organic matter	43.6
3	17.0	Medium dense gray sand	24.3

BORING 80

1	11.5	Loose gray sand w/trace of organic matter	25.4
3	17.5	Loose to medium dense dark gray sand	26.3

BORING 81

1	11.0	Very soft gray organic clay w/silty sand layers	79.9
2	14.0	Medium dense gray sand	22.9

BORING 82

1	10.0	Loose gray clayey sand w/organic matter	49.6
2	13.0	Loose gray clayey sand	36.2
3	15.0	Loose gray sand	27.2

BORING 83

1	11.0	Very soft gray clay w/sand pockets & roots	75.9
2	14.5	Loose gray sand	29.9
4	19.5	Medium dense gray sand	24.0

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
Orleans Levee Board Project No. 2049-0269
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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 84

Sample No.	Depth In Feet	Classification	Water Content Percent
1	11.0	Extremely soft dark gray clay w/organic matter & sand	108.1
2	14.5	Loose dark gray clayey sand	31.0
3	17.5	Very loose gray sand	33.1

BORING 85

1	11.0	Extremely soft gray clay w/much organic matter & sand	76.5
2	13.5	Loose gray clayey sand w/roots	41.1
4	20.5	Loose gray sand	27.8

BORING 86

1	12.5	Very soft gray clay w/some sand	95.1
2	14.5	Loose gray clayey sand	34.2
3	17.0	Medium dense gray sand	23.5

BORING 87

1	12.0	Very soft gray clay w/clayey silt layers, organic matter & roots	43.4
2	14.0	Soft gray clay w/clayey sand pockets & roots	66.1
3	17.0	Loose gray sand	28.3

Geotechnical Investigation
London Avenue Canal
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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 88

Sample No.	Depth In Feet	Classification	Water Content Percent
1	12.0	Very soft gray clay w/organic matter & sand	95.5
2	14.5	Loose gray clayey sand	25.0
4	20.5	Loose gray sand	28.3

BORING 89

1	10.5	Very soft gray clay w/many roots	74.4
2	12.0	Extremely soft dark gray sandy clay w/some organic matter	83.9
4	17.0	Loose gray sand	29.0

BORING 90

1	11.5	Loose gray clayey sand w/cinders & fill	33.3
2	14.0	Loose gray clayey sand w/wood	35.0
3	16.5	Loose gray clayey sand w/shell fragments	26.8
4	19.5	Very loose gray silty sand w/shell fragments	26.3

BORING 91

1	11.0	Very soft brown humus w/clay layers & wood	231.8
2	14.0	Very loose gray sand	26.3
3	16.5	Very loose gray clayey sand	27.2
4	19.5	Very loose gray clayey sand w/shell fragments	31.1

Geotechnical Investigation
London Avenue Canal
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Orleans Levee Board Project No. 2049-0269
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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 92

Sample No.	Depth In Feet	Classification	Water Content Percent
1	11.5	Very soft gray clay w/organic clay layers & roots	103.4
2	14.5	Very loose gray silty sand w/clay layers	28.0
3	17.0	Loose gray clayey sand	27.0
4	20.0	Loose gray clayey sand w/shell fragments	24.8

BORING 93

1	13.5	Extremely soft gray clay w/trace of sand	96.4
3	17.5	Soft gray silty clay w/sand pockets	46.4
5	21.5	Loose gray clayey sand w/shell fragments	24.2

BORING 94

2	16.5	Very loose gray silty sand	24.2
4	20.5	Ditto	25.7

BORING 95

2	15.5	Extremely soft gray clay w/organic matter	109.1
3	17.5	Loose gray clayey sand w/shell fragments	25.4
5	21.5	Loose gray fine sand w/trace of clay & shell fragments	20.8

Geotechnical Investigation
London Avenue Canal
Levee and Floodwall Improvements
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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 96

Sample No.	Depth In Feet	Classification	Water Content Percent
1	11.0	Extremely soft black muck	168.2
3	15.0	Soft gray clay w/clayey sand pockets & trace of organic matter	63.6
4	18.5	Loose gray clayey sand	23.6

BORING 97

1	11.0	Extremely soft gray sandy clay	52.4
3	17.5	Medium dense gray clayey sand	23.8

BORING 98

1	8.0	Loose gray sand w/organic matter	40.8
3	15.5	Extremely soft gray clay w/trace of organic matter	116.2

BORING 99

1	9.0	Extremely soft gray clay w/organic matter & sand pockets	117.0
3	17.0	Extremely soft gray clay	90.0

Geotechnical Investigation
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Burk & Associates, Inc., Engineers, Planners & Environmental Scientists
New Orleans, Louisiana

SUMMARY OF LABORATORY TEST RESULTS

BORING 100

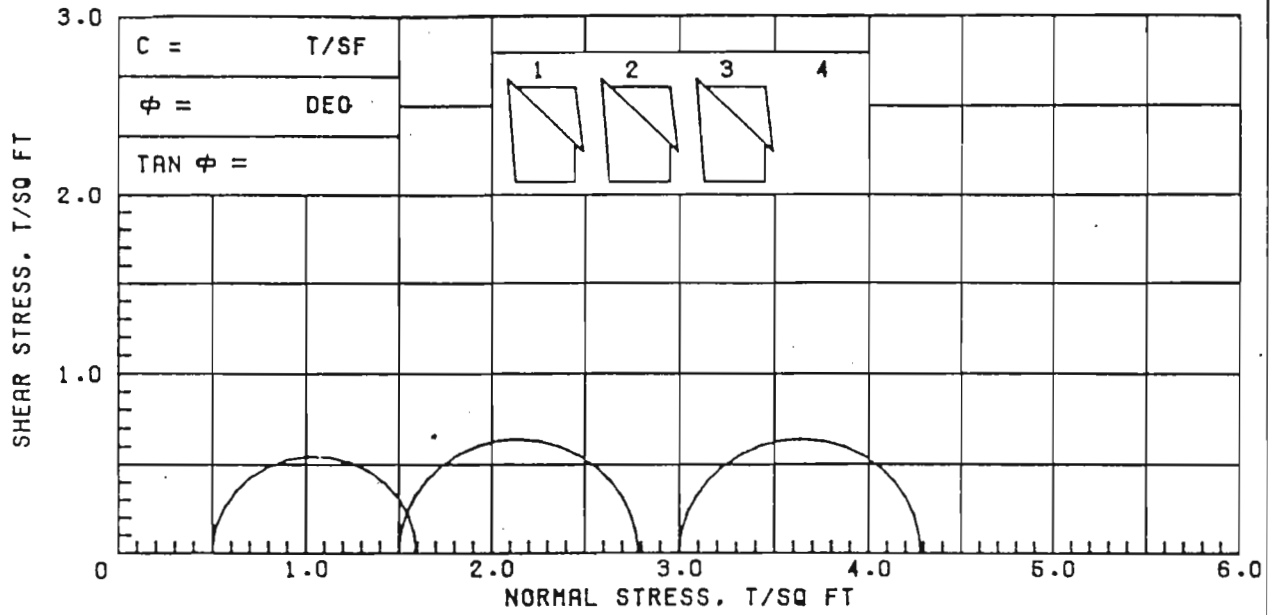
Sample No.	Depth In Feet	Classification	Water Content Percent
2	14.5	Very soft gray clay w/sand pockets	55.9
4	19.0	Medium compact gray clayey silt w/fine sand & shell fragments	32.7

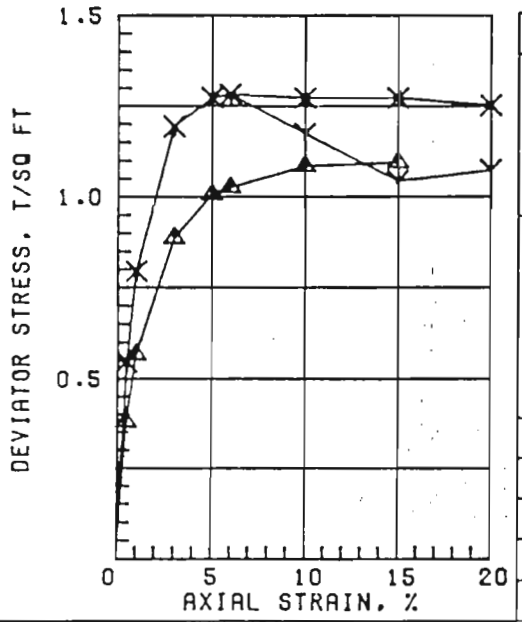
BORING 101

1	18.5	Medium compact gray clayey silt w/silty clay layers, shells & sand pockets	28.0

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

APPENDIX A-2
A/E SOIL TEST DATA REPORTS





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	34.1	33.2	34.0	
	DRY DENSITY, PCF	84.3	85.9	85.4	
	SATURATION, %	92.0	93.1	94.4	
	VOID RATIO	1.000	0.963	0.973	
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		1.10	1.28	1.28	
TIME TO FAILURE, MIN.		30	12	12	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

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

LL 61	PL 20	PI 41	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

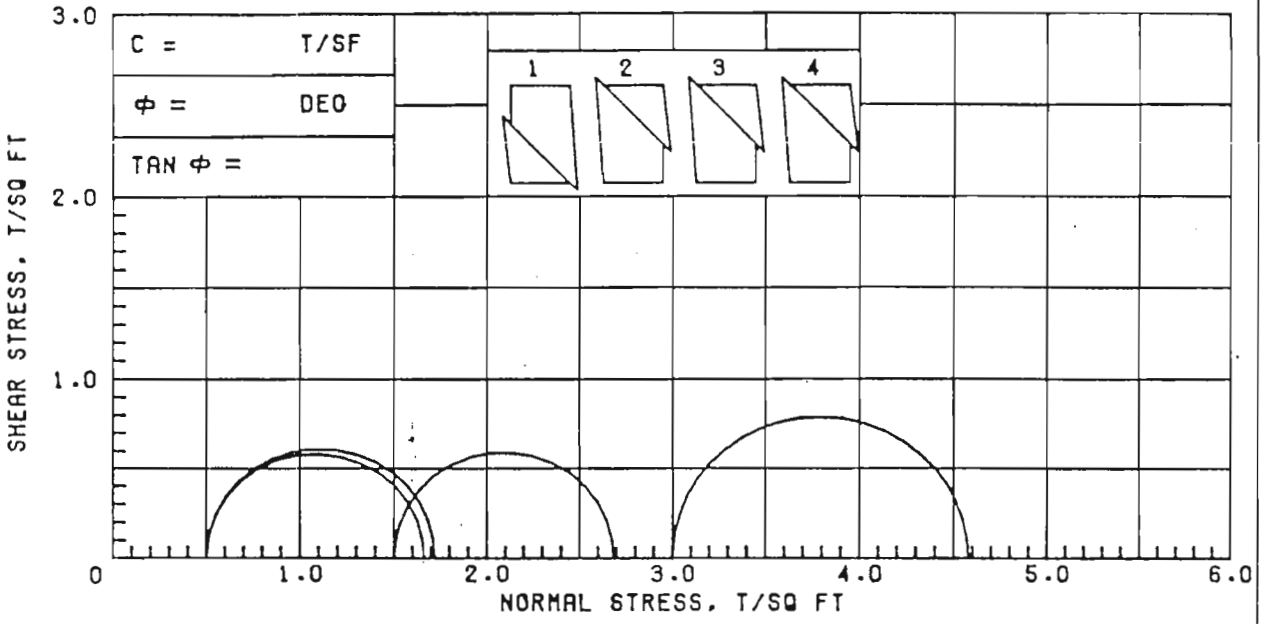
PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

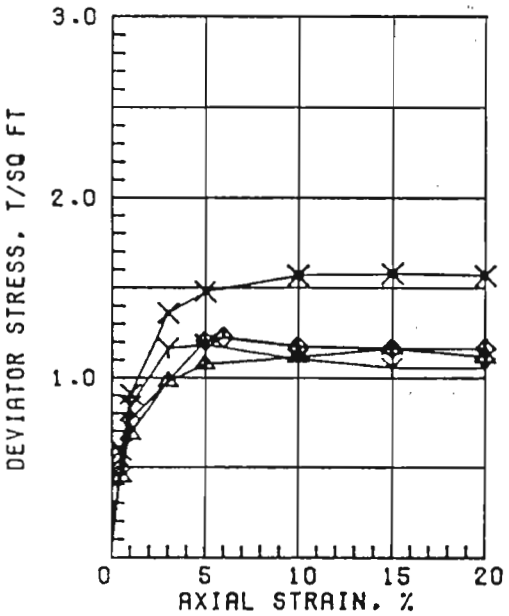
BORING NO. 1-LUG | SAMPLE NO. 2-B
DEPTH/ELEV 4.7/4.7 | TECH. KOC
LABORATORY USAE WES | DATE 24 AUG 84

TRIAXIAL COMPRESSION TEST REPORT

Encl 2

Enclosure 2





SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	30.1	31.9	31.0	30.4
	DRY DENSITY, PCF	88.2	86.8	88.2	88.4
	SATURATION, %	89.1	91.5	92.0	90.5
	VOID RATIO	0.912	0.942	0.910	0.907
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	0.5
MAX. DEV. STRESS, TSF		1.16	1.18	1.58	1.22
TIME TO FAILURE, MIN.		30	10	30	12
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.41	1.41	1.41	1.41
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

CONTROLLED-STRAIN TEST

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

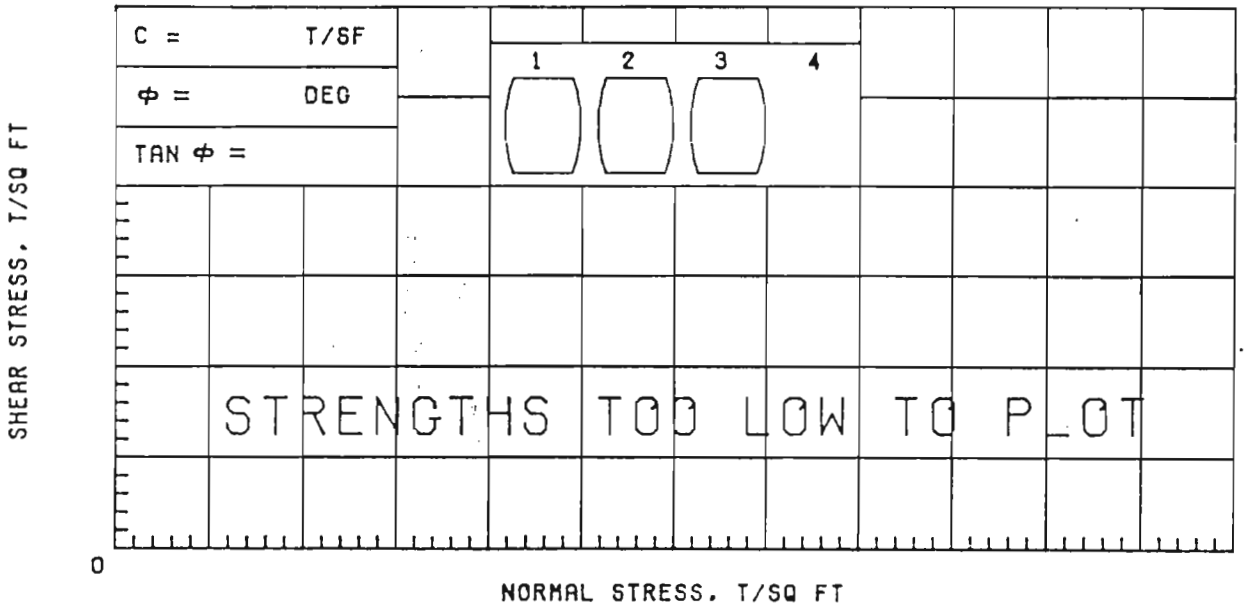
LL	PL	PI	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

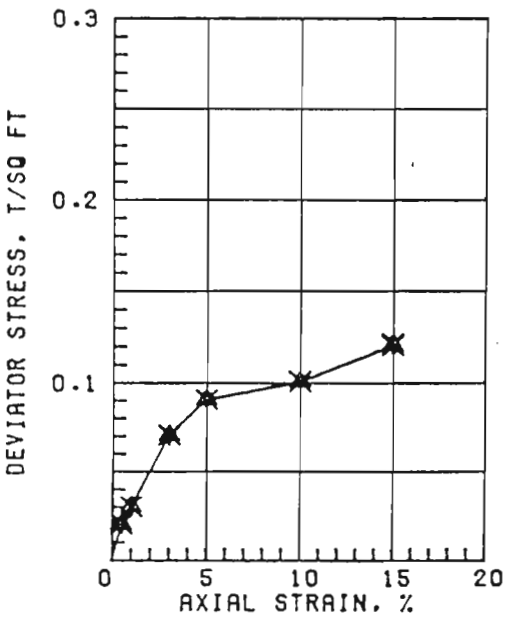
REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG | SAMPLE NO. 2-C
DEPTH/ELEV 5.8/3.6 | TECH. KOC
LABORATORY USAE WES | DATE 10 SEP 84

TRIAXIAL COMPRESSION TEST REPORT





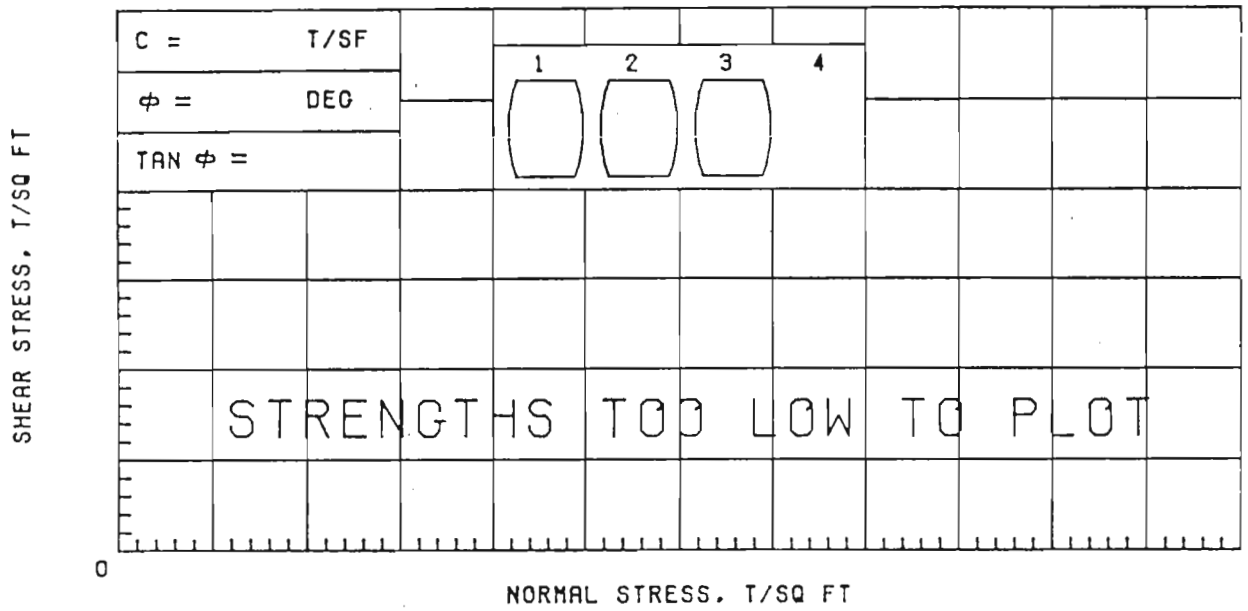
SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	34.3	34.4	34.7	
	DRY DENSITY, PCF	83.4	83.6	82.4	
	SATURATION, %	90.7	91.3	89.5	
	VOID RATIO	1.022	1.017	1.047	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.12	0.12	0.12	
TIME TO FAILURE, MIN.		30	30	30	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.40	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

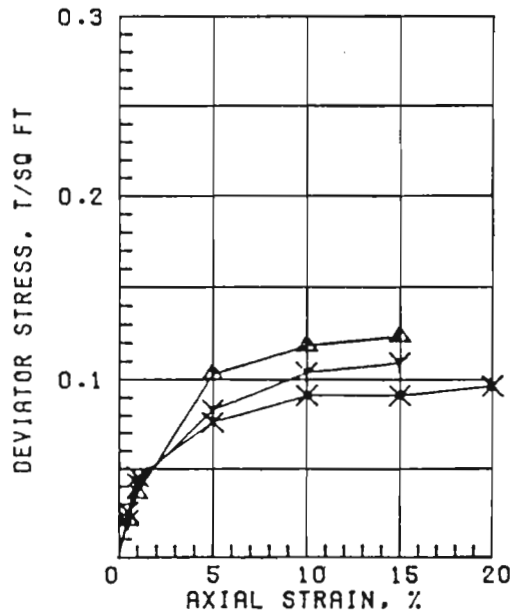
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY; SHELL PARTICLES

LL 33	PL 17	PI 16	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUO	SAMPLE NO. 4-B
	DEPTH/ELEV 11.8/-2.4	TECH. KOC
	LABORATORY USAE WES	DATE 11 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	34.3	36.7	33.8	
	DRY DENSITY, PCF	88.4	86.6	88.9	
	SATURATION, %	100+	100+	100+	
	VOID RATIO	0.892	0.931	0.882	
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		0.12	0.11	0.09	
TIME TO FAILURE, MIN.		30	30	20	
RATE OF STRAIN INCR,%					
INITIAL DIAMETER, IN.		1.38	1.37	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: SILT (ML), DARK GRAY

LL	PL	PI	OS 2.68 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

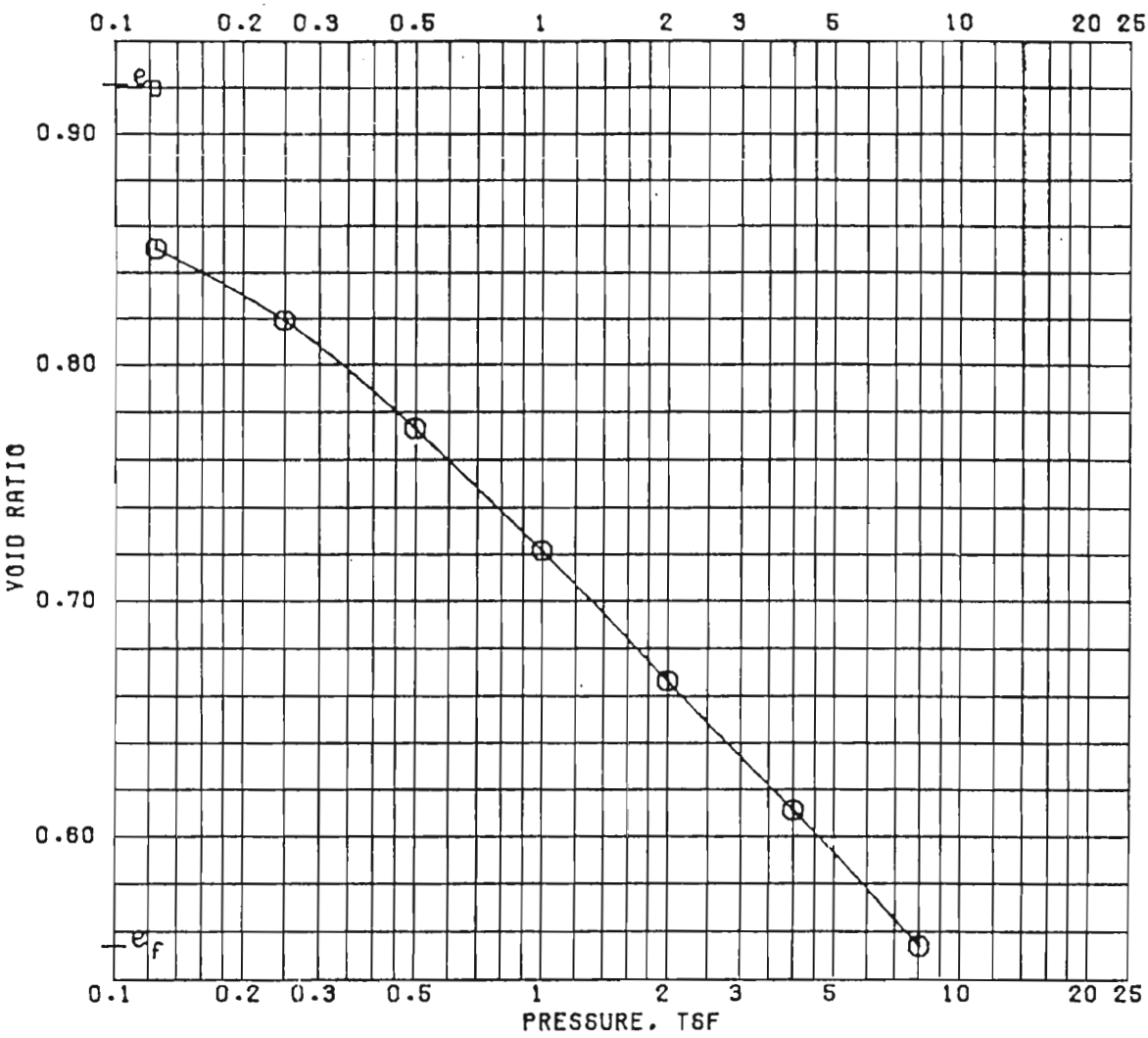
PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG | SAMPLE NO. 5-B

DEPTH/ELEV 15.8/-6.4 | TECH. PJR

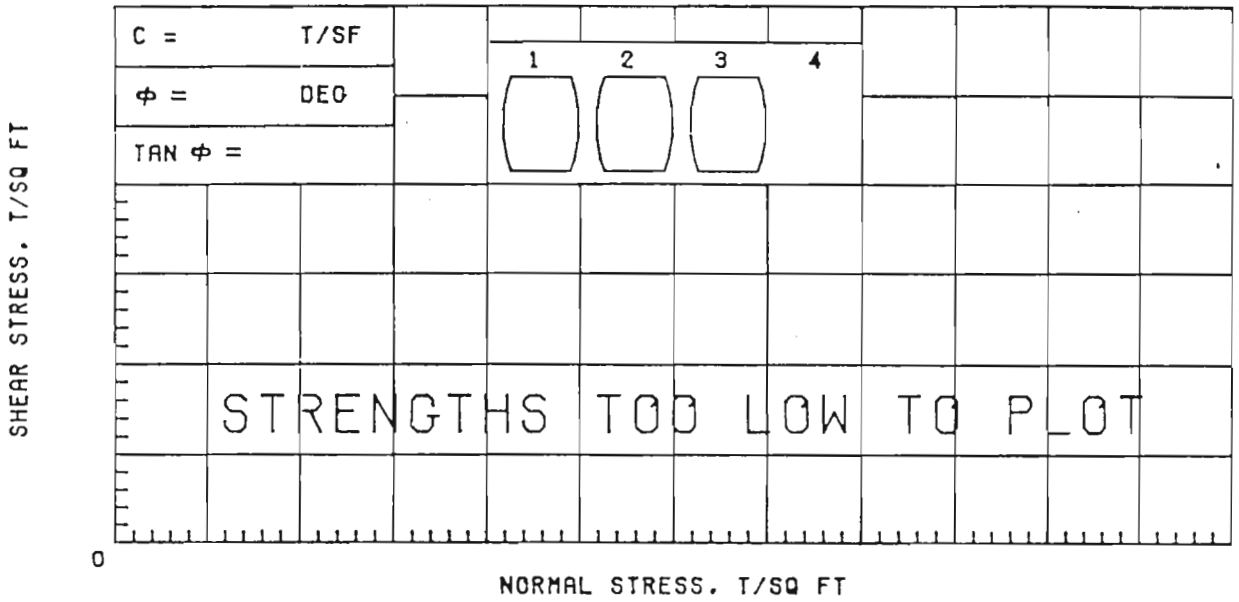
LABORATORY USAE WES | DATE 11 SEP 84

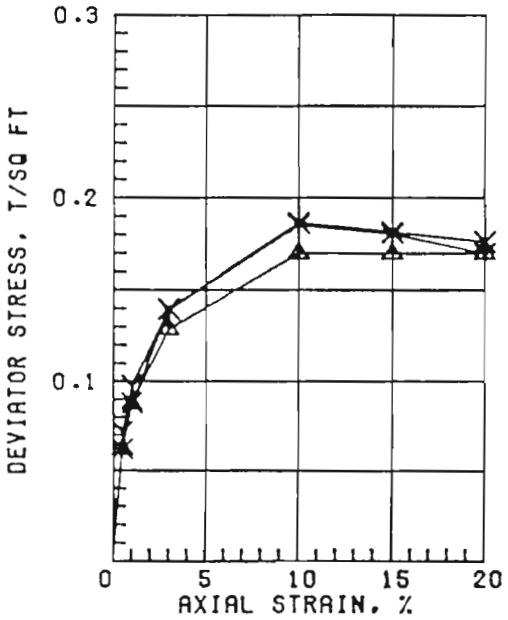
TRIAXIAL COMPRESSION TEST REPORT



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	32.9	20.3
PRECONSOL. PRESSURE, TSF		DRY DENSITY, PCF	87.8	108.5
COMPRESSION INDEX		SATURATION, %	96.4	99.1
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	0.921	0.553
DIA. IN 4.44	HT. IN 1.116	BACK PRESSURE, TSF		
CLASSIFICATION	PLASTIC CLAY (CH), GRAY; SILT LENSES			
LL / PL / PI		PROJECT LK. PONT. LA. & VIC. HURR. PROT.		
GS 2.70 (EST)	D_{10}	ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUO	SAMPLE NO. 5-B	
		DEPTH/ELEV 16.1/-6.7	DATE 21 SEP 84	

CONSOLIDATION TEST REPORT





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	34.4	34.2	34.8	
	DRY DENSITY, PCF	87.4	87.5	87.3	
	SATURATION, %	100+	100+	100+	
	VOID RATIO	0.922	0.919	0.924	
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		0.17	0.19	0.19	
TIME TO FAILURE, MIN.		20	20	20	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.38	1.38	1.38	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: CLAYEY SILT (ML), DARK GRAY

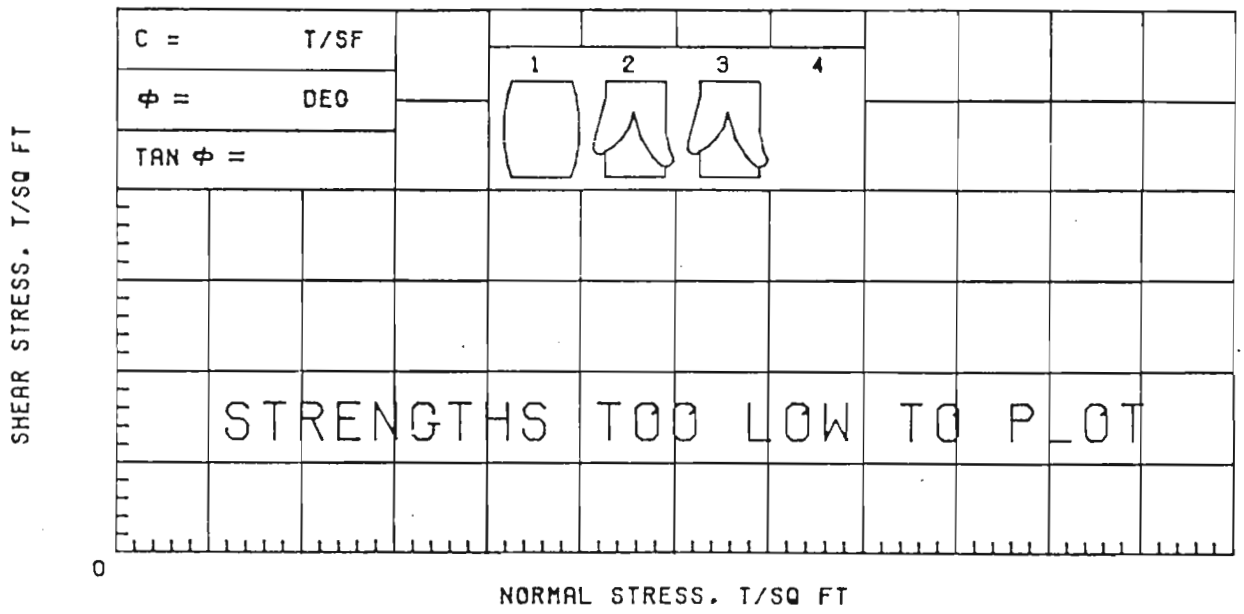
LL	PL	PI	OS 2.69 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

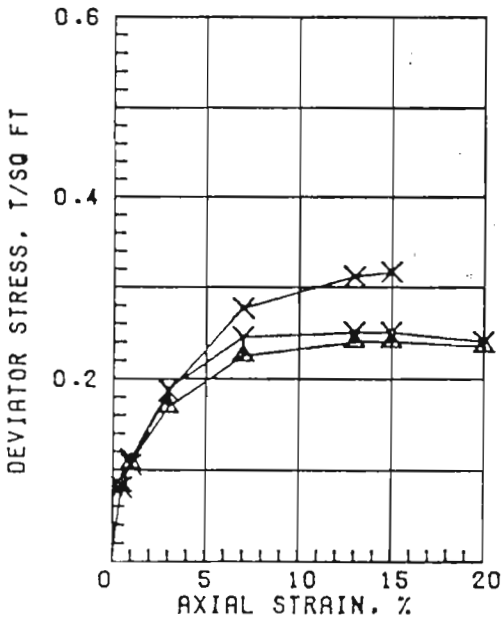
REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUO | SAMPLE NO. 5-C
DEPTH/ELEV 16.5/-7.1 | TECH. PJR
LABORATORY USAE WES | DATE 12 SEP 84

TRIAXIAL COMPRESSION TEST REPORT





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	41.2	40.1	38.4	
	DRY DENSITY, PCF	79.5	80.3	81.3	
	SATURATION, %	99.6	98.8	96.9	
	VOID RATIO	1.113	1.091	1.067	
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		0.24	0.25	0.32	
TIME TO FAILURE, MIN.		26	26	35	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: SILTY CLAY (CL), DARK GRAY

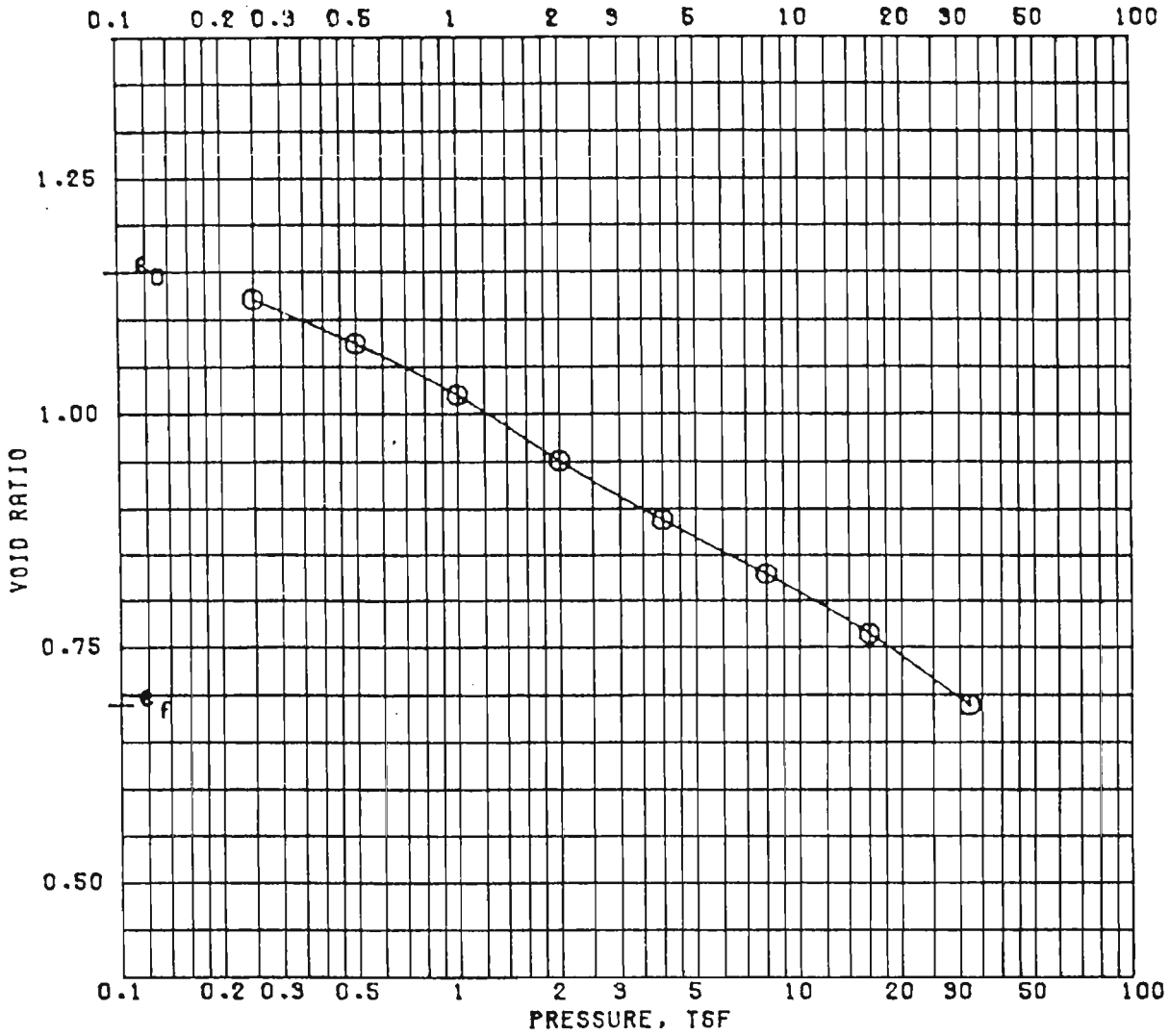
LL 37	PL 23	PI 14	GS 2.69 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

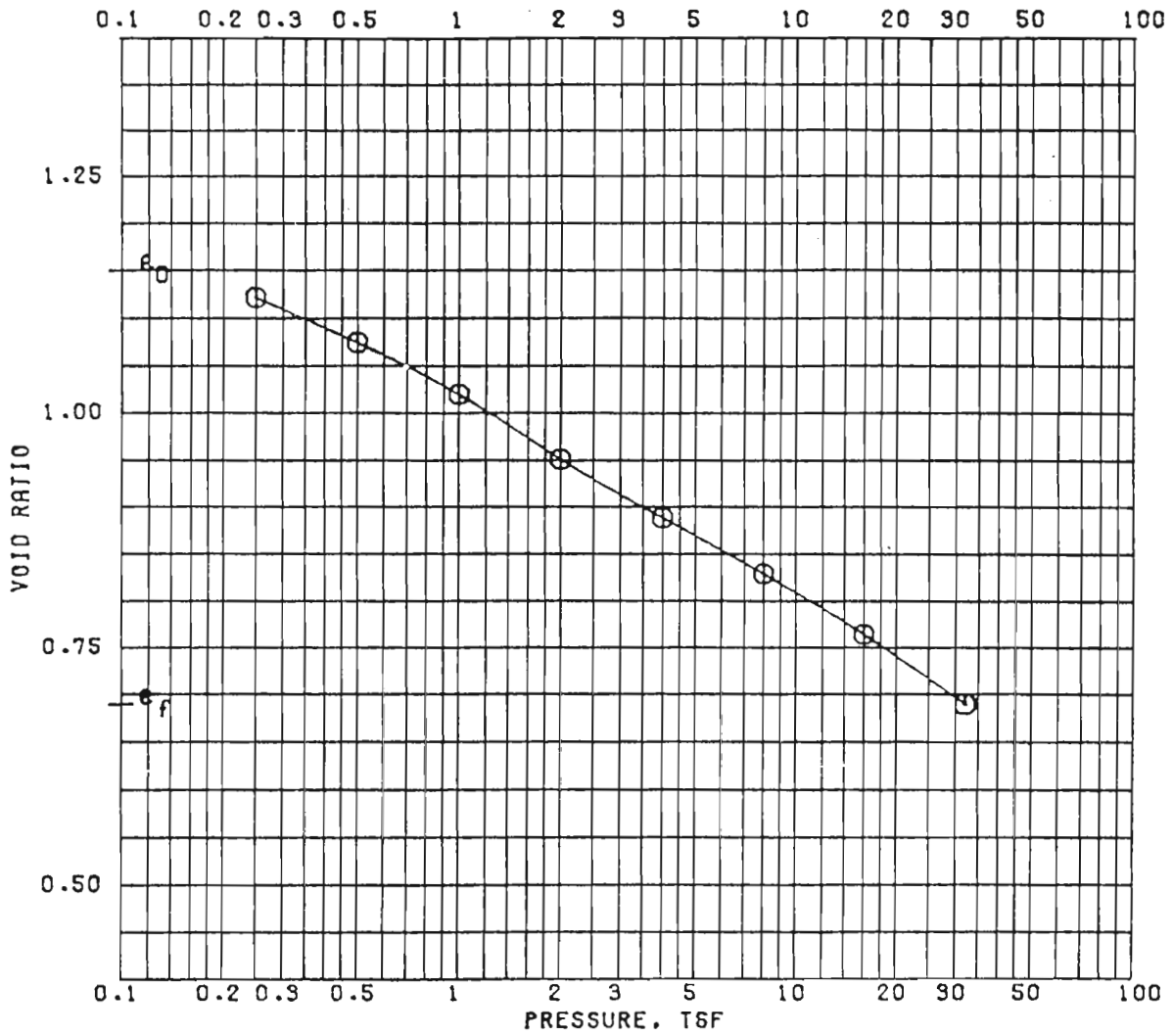
BORING NO. 1-LUG | SAMPLE NO. 6-B
DEPTH/ELEV 19.6/-10.2 | TECH. PJR
LABORATORY USAE WES | DATE 12 SEP 84

TRIAXIAL COMPRESSION TEST REPORT



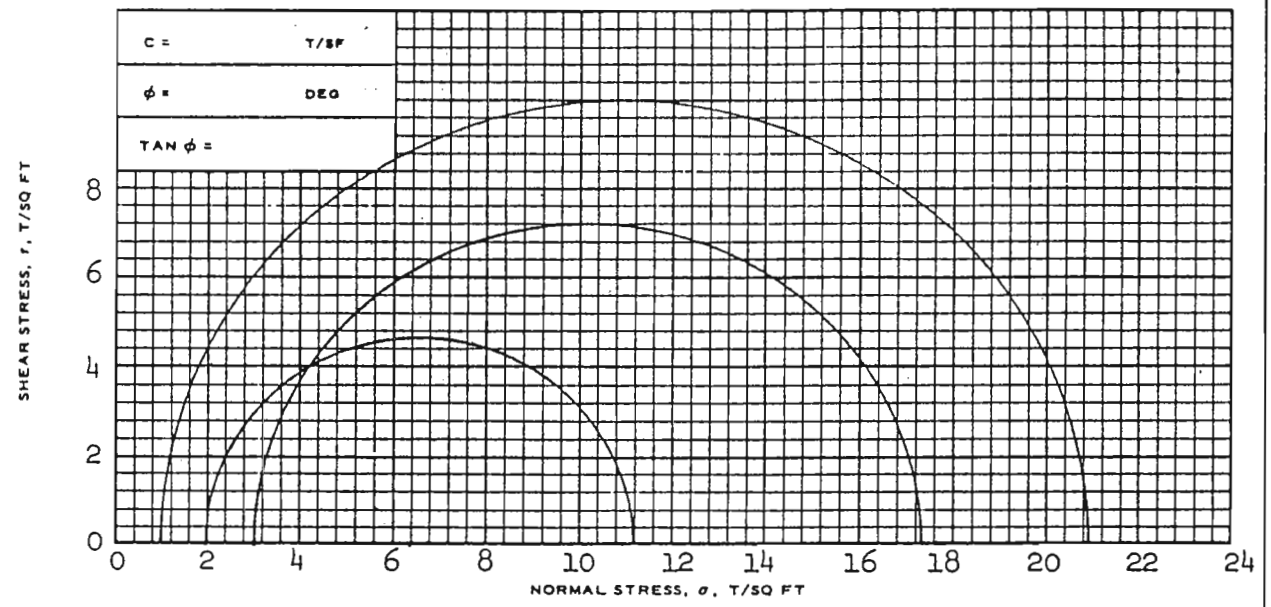
			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	38.3	24.8
PRECONSOL. PRESSURE, TSF		DRY DENSITY, PCF	78.5	99.9
COMPRESSION INDEX		SATURATION, %	90.0	97.4
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.148	0.687
DIA. IN 4.44	HT. IN 1.160	BACK PRESSURE, TSF		
CLASSIFICATION	CLAY (CL), GRAY			
LL / PL / PI		PROJECT	LK. PONT. LA. & VIC. HURR. PROT.	
GS 2.70 (EST)	D_{10}	ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUO	SAMPLE NO. 6-C	
		DEPTH/ELEV 20.9/-11.5	DATE 23 AUG 84	

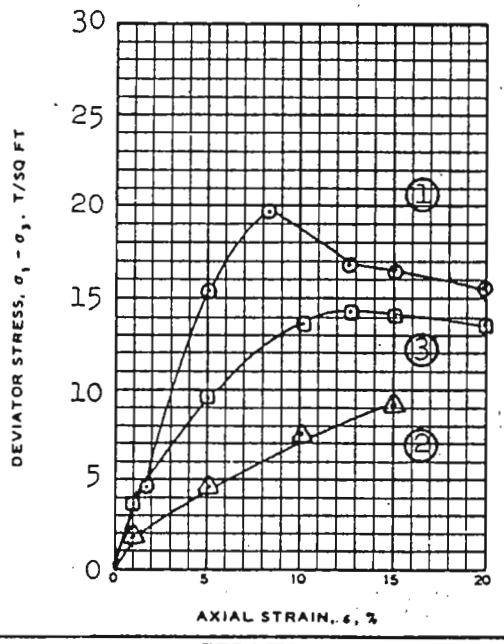
CONSOLIDATION TEST REPORT



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	38.3	24.8
PRECONSOL. PRESSURE, TSF		DRY DENSITY, PCF	78.5	99.9
COMPRESSION INDEX		SATURATION, %	90.0	97.4
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.148	0.687
DIA. IN 4.44	HT. IN 1.160	BACK PRESSURE, TSF		
CLASSIFICATION	CLAY (CL), GRAY			
LL / PL / PI		PROJECT	LK. PONT. LA. & VIC. HURR. PROT.	
GS 2.70 (EST)	D_{10}	ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUG	SAMPLE NO. 6-C	
		DEPTH/ELEV 20.9/-11.5	DATE 23 AUG 84	

CONSOLIDATION TEST REPORT





SPECIMEN NO.			1	2	3
INITIAL	WATER CONTENT, %	w_o	22.0	23.4	21.8
	DRY DENSITY LB/ CU FT	γ_{d_o}	105.4	100.1	105.3
	SATURATION, %	s_o	100+	93.5	99.2
	VOID RATIO	e_o	0.587	0.671	0.589
BEFORE SHEAR	WATER CONTENT, %	w_c	24.0	23.9	23.4
	DRY DENSITY LB/CU FT	γ_{d_c}	107.0	103.6	108.5
	SATURATION, %	s_c	100+	100+	100+
	VOID RATIO	e_c	0.563	0.615	0.543
	FINAL BACK PRESSURE, T/SQ FT	u_o	4.32	4.32	4.32
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.0	2.0	3.0
MAXIMUM DEVIATOR STRESS, T/SQ FT	$(\sigma_1 - \sigma_3)_{MAX}$		19.86	9.19	14.29
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	646	1154	977
ULTIMATE DEVIATOR STRESS, T/SQ FT	$(\sigma_1 - \sigma_3)_{ULT}$				
INITIAL DIAMETER, IN.		D_o	1.37	1.38	1.40
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00

CONTROLLED- STRAIN TEST

DESCRIPTION OF SPECIMENS SANDY SILT (ML), GRAY; SHELL PARTICLES

LL | PL | PI | G_s 2.68

TYPE OF SPECIMEN UNDISTURBED | TYPE OF TEST $\overline{R}$

REMARKS: (EST)

PROJECT LK. PONT. LA. & VIC. HURR. PROT.

ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG | SAMPLE NO. 7-B

DEPTH/ELEV 24.5/-15.1

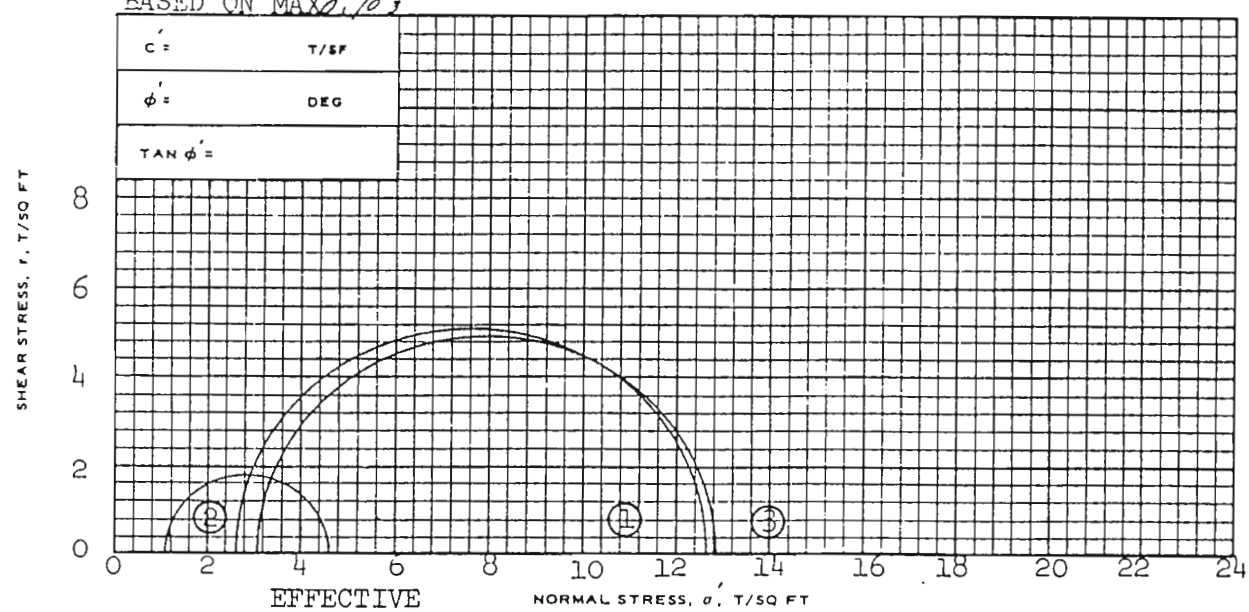
LABORATORY USAEWES | DATE 29 AUG 1984

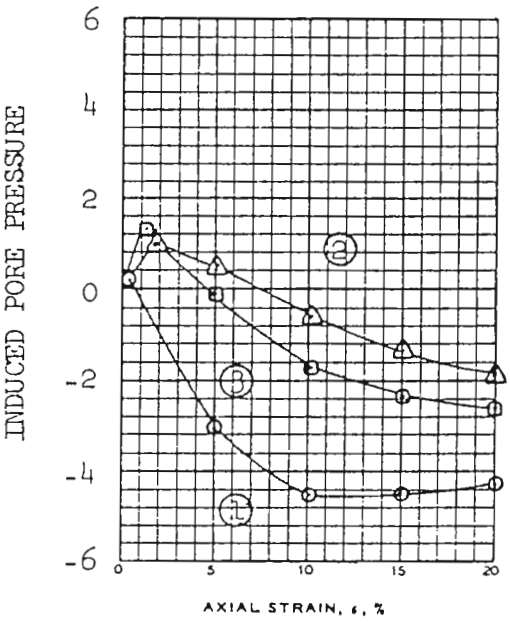
SHEET 1 OF 2

JMS TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089
REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE

BASED ON MAX σ_1/σ_3





SPECIMEN NO.			1	2	3
INITIAL	WATER CONTENT, %	w_o			
	DRY DENSITY LB/ CU FT	γ_{d_o}			
	SATURATION, %	S_o			
	VOID RATIO	e_o			
BEFORE SHEAR	WATER CONTENT, %	w_c			
	DRY DENSITY LB./CU FT	γ_{d_c}			
	SATURATION, %	S_c			
	VOID RATIO	e_c			
	FINAL BACK PRESSURE, T/SQ FT	u_o			
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	2.62	1.09	3.06
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	10.04	3.46	9.75
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 SPECIMENS

LL	PL	PI	G_s

TYPE OF SPECIMEN

TYPE OF TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG SAMPLE NO. 7-B

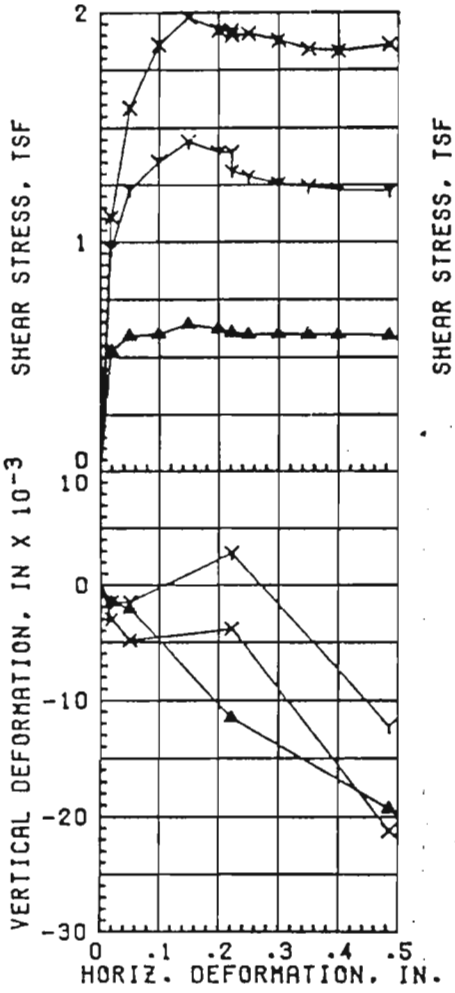
DEPTH/ELEV 24.5/-15.1

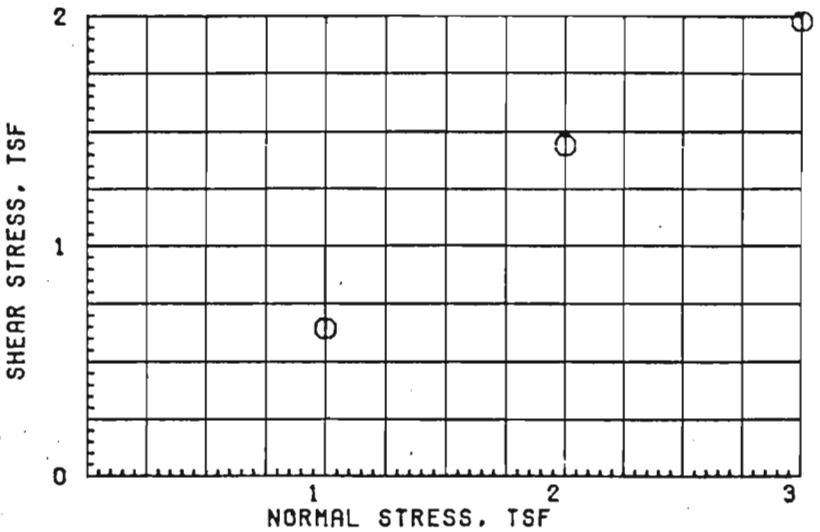
LABORATORY USAEWES DATE 29 AUG 1984

SHEET 2 OF 2

JMS TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089
REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE





ϕ = _____

TAN ϕ = _____

C = _____

	TEST NO.	1 ▲	2 Y	3 X	
INITAL	WATER CONTENT, %	24.3	22.5	23.6	
	VOID RATIO	0.656	0.691	0.707	
	SATURATION, %	98.7	87.0	89.1	
	DRY DENSITY, PCF	100.6	98.5	97.6	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	22.9	21.9	21.1	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.64	1.44	1.98	
TIME TO FAILURE, MIN		853	853	853	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

TYPE SPECIMEN UNDISTURBED | 3.00 IN. SQUARE | 0.756 IN. THICK

CLASSIFICATION SANDY SILT (ML), GRAY; SHELL PARTICLES

LL	PL	PI		GS 2.67 (EST)

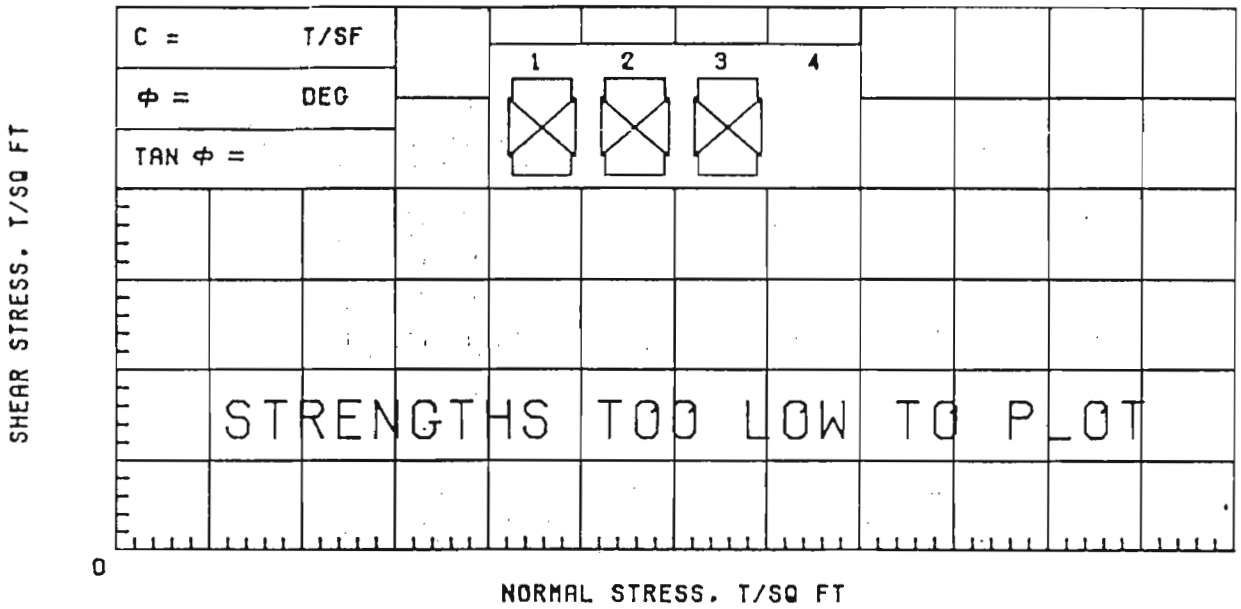
REMARKS:

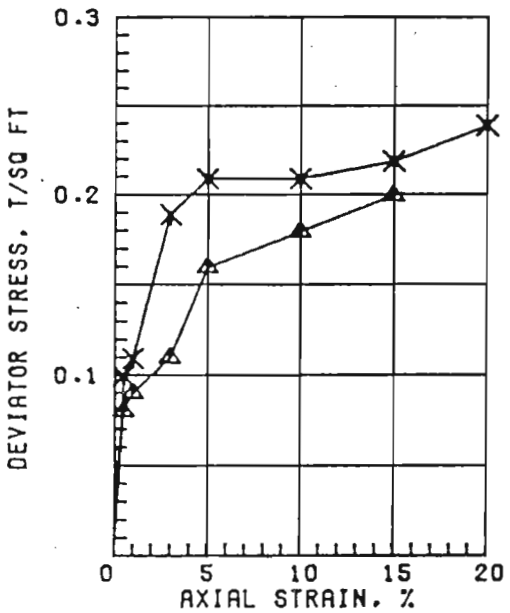
PROJECT LAKE PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG | SAMPLE 8-B

DEPTH/ELEV 28.2/-18.8 | DATE 26 SEP 84

DIRECT SHEAR TEST REPORT





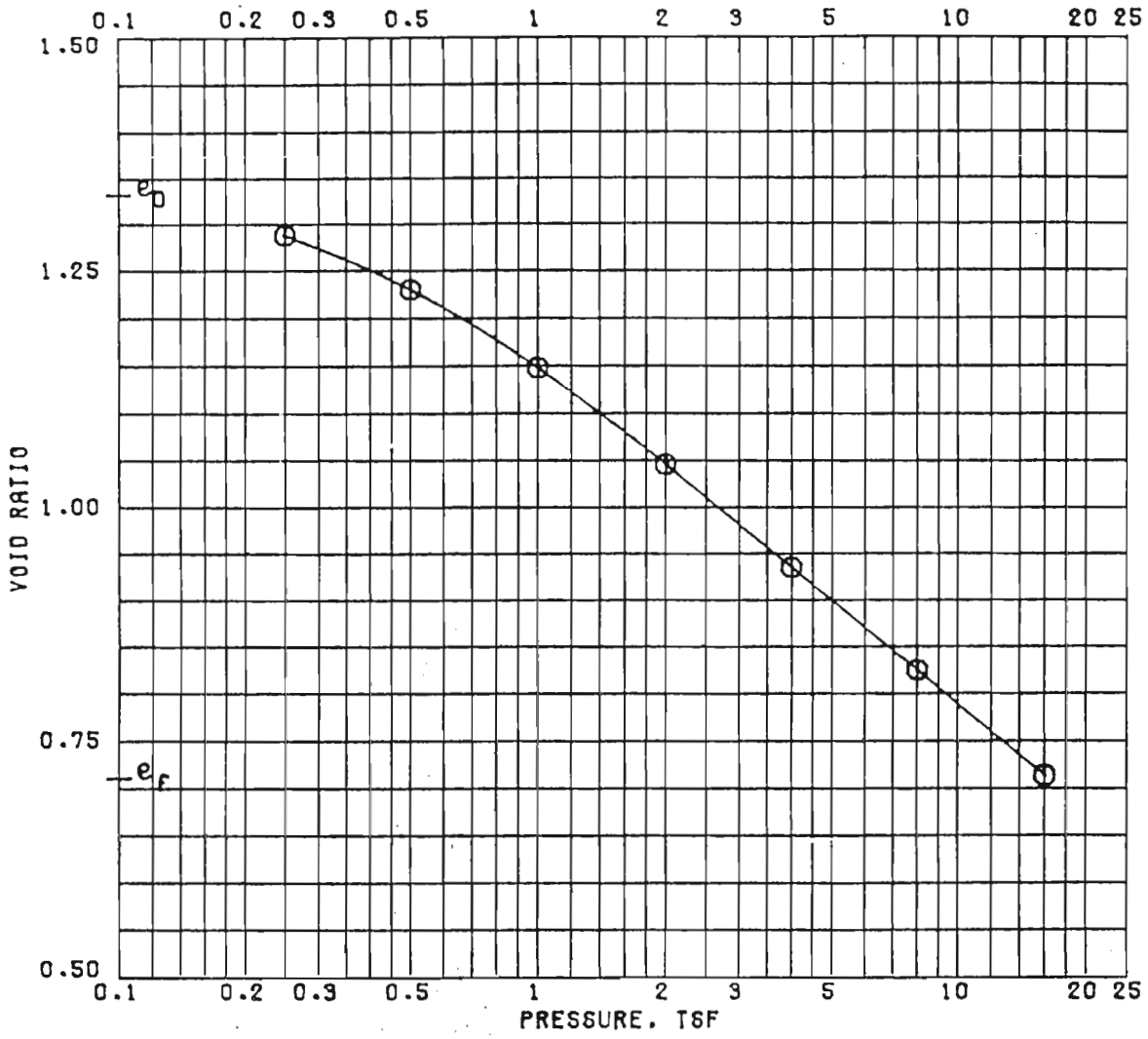
SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	42.1	35.0	39.0	
	DRY DENSITY, PCF	77.0	83.1	79.7	
	SATURATION, %	95.6	91.8	94.4	
	VOID RATIO	1.189	1.029	1.115	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.20	0.21	0.21	
TIME TO FAILURE, MIN.		30	10	10	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

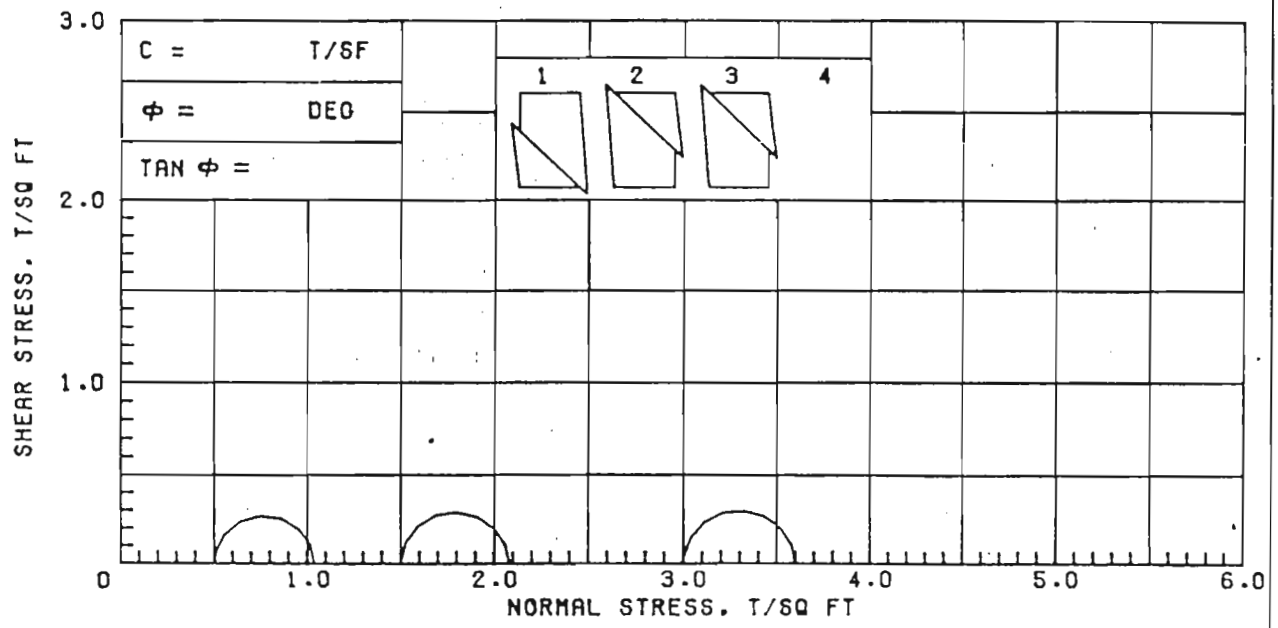
DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY

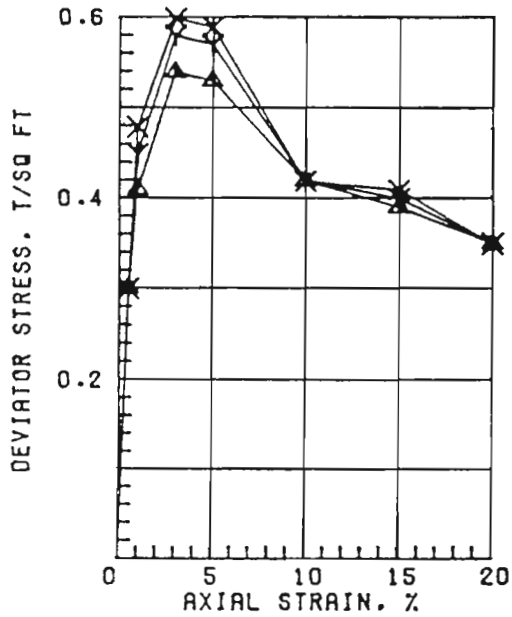
LL 30	PL 14	PI 16	OS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 8-C
	DEPTH/ELEV 29.3/-19.9	TECH. KOC
	LABORATORY USAE WES	DATE 12 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	45.9	28.4
PRECONSOL. PRESSURE, TSF		DRY DENSITY, PCF	72.3	98.6
COMPRESSION INDEX		SATURATION, %	93.1	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.331	0.709
DIA. IN 4.44	HT. IN 1.138	BACK PRESSURE, TSF		
CLASSIFICATION	PLASTIC CLAY (CH), GRAY; FINE SAND POCKETS			
LL / PL / PI		PROJECT	LK. PONT. LA. & VIC. HURR. PROT.	
OS 2.70 (EST)	D_{10}	ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUO	SAMPLE NO. 8-D	
		DEPTH/ELEV 30.0/-20.6	DATE 23 AUG 84	
		CONSOLIDATION TEST REPORT		





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	86.5	69.9	67.8	
	DRY DENSITY, PCF	59.8	60.0	59.7	
	SATURATION, %	98.6	100+	100+	
	VOID RATIO	1.821	1.811	1.825	
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		0.54	0.58	0.60	
TIME TO FAILURE, MIN.		6	6	6	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

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

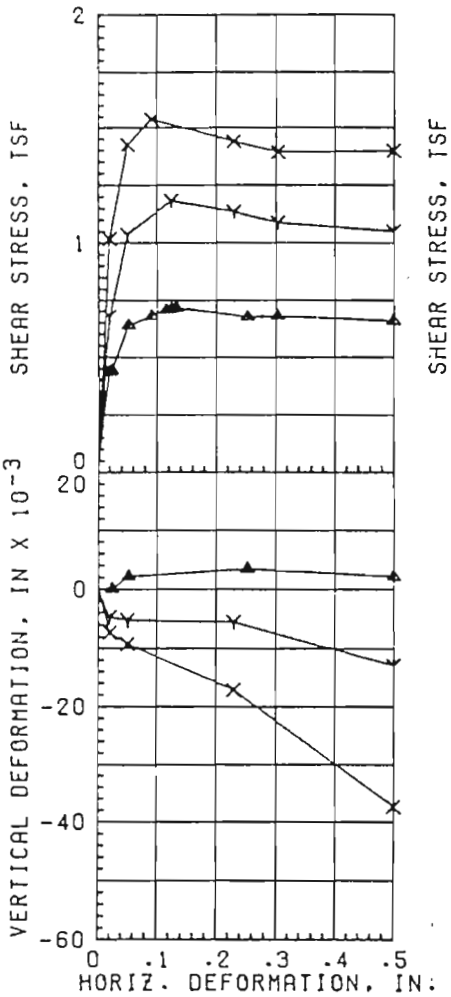
LL 85	PL 24	PI 61	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

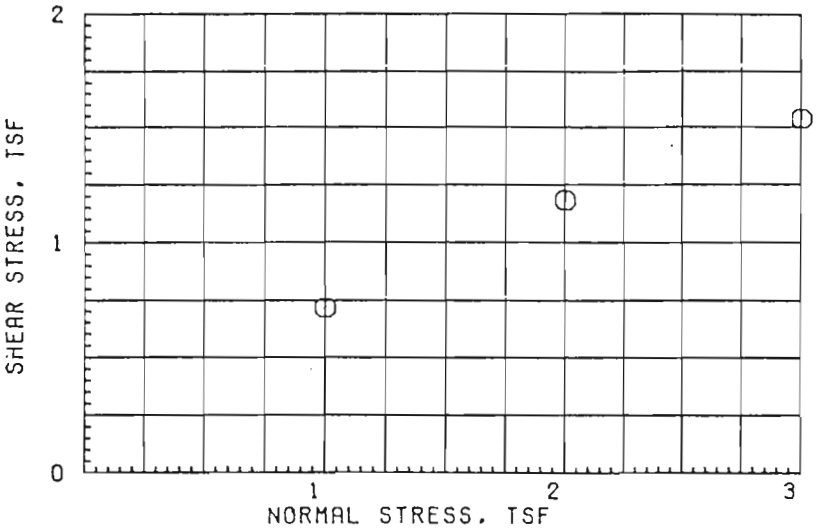
REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUO | SAMPLE NO. 9-C
DEPTH/ELEV 33.1/-23.7 | TECH. KOC
LABORATORY USAE WES | DATE 12 SEP 84

TRIAXIAL COMPRESSION TEST REPORT





ϕ = _____

TAN ϕ = _____

C = _____

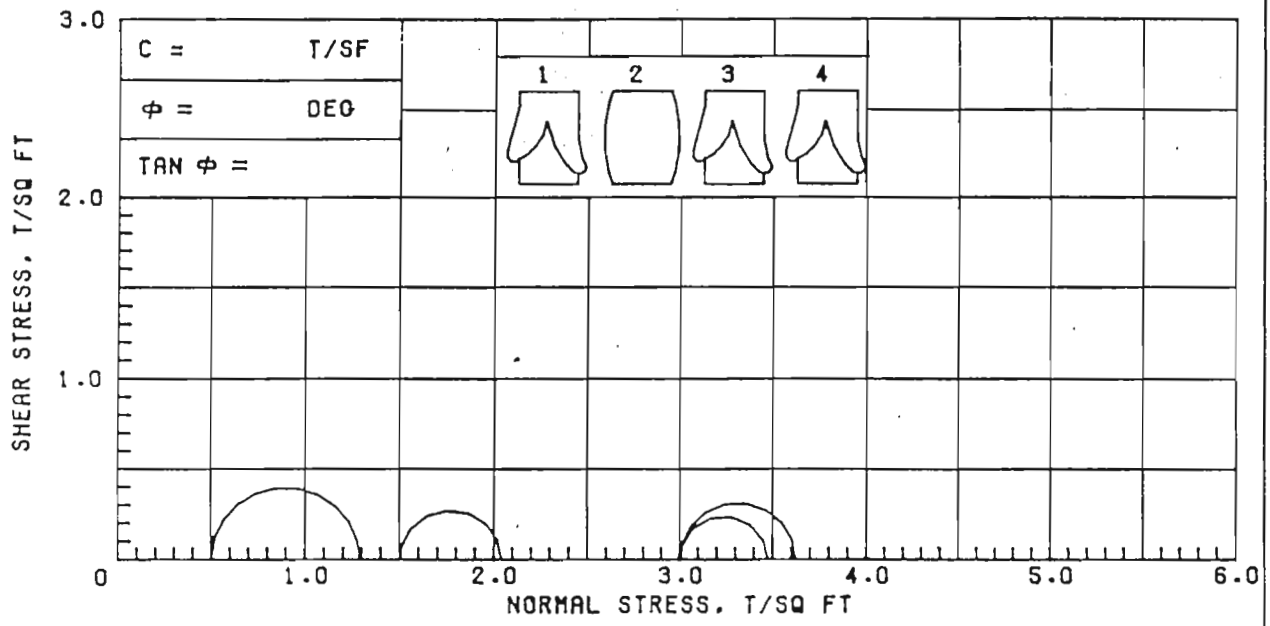
TEST NO.		1 △	2 Y	3 X	
INITAL	WATER CONTENT, %	22.5	24.4	25.0	
	VOID RATIO	0.686	0.746	0.782	
	SATURATION, %	87.7	87.2	85.2	
	DRY DENSITY, PCF	98.8	95.4	93.5	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	24.2	23.6	23.7	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.72	1.18	1.54	
TIME TO FAILURE, MIN		736	690	508	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

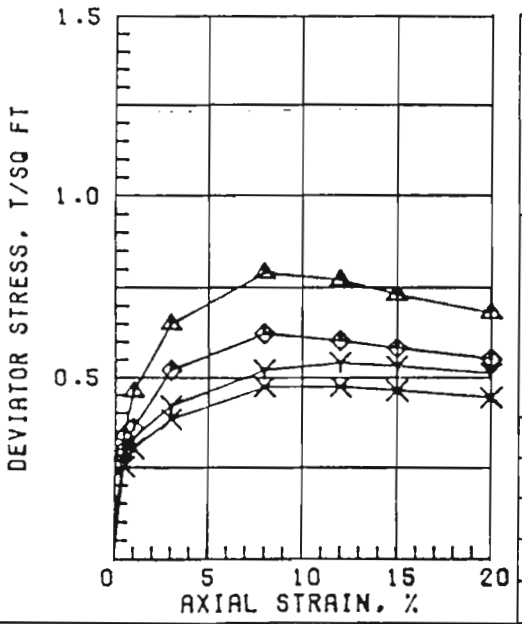
TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.553 IN. THICK
CLASSIFICATION SILTY SAND (SM), GRAY; SHELL PARTICLES		

LL	PL	PI		GS 2.67 (EST)

REMARKS;	PROJECT LAKE PONT. LA. & VIC. HURR. PROT.
	ORLEANS PARISH OUTFALL CANALS
	BORING NO. 1-LUG / SAMPLE 10-B
	DEPTH/ELEV 36.3/-26.9 / DATE 27 AUG 84

DIRECT SHEAR TEST REPORT





SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	41.0	41.4	43.9	43.4
	DRY DENSITY, PCF	79.2	78.9	76.9	77.9
	SATURATION, %	98.1	98.3	99.4	100+
	VOID RATIO	1.129	1.137	1.192	1.165
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	3.0
MAX. DEV. STRESS, TSF		0.79	0.54	0.47	0.62
TIME TO FAILURE, MIN.		15	36	22	36
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.39	1.39
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY; SHELL PARTICLES

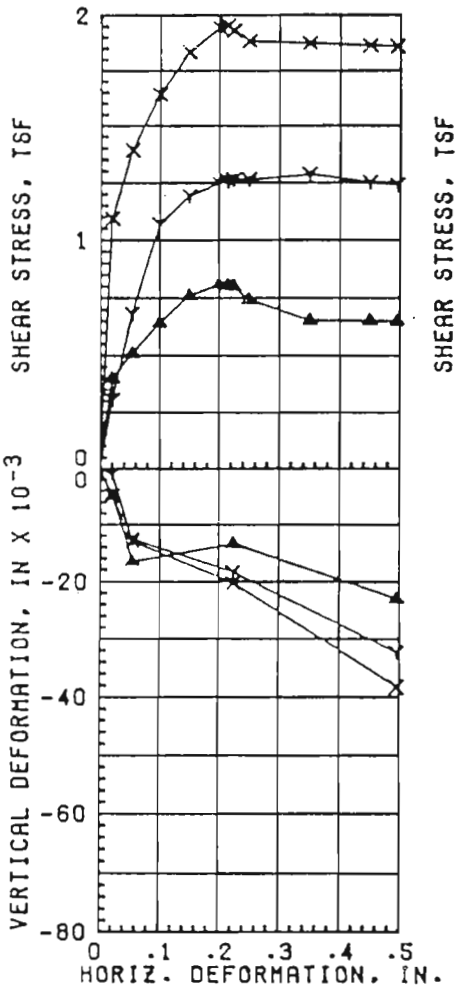
LL 34	PL 16	PI 18	OS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

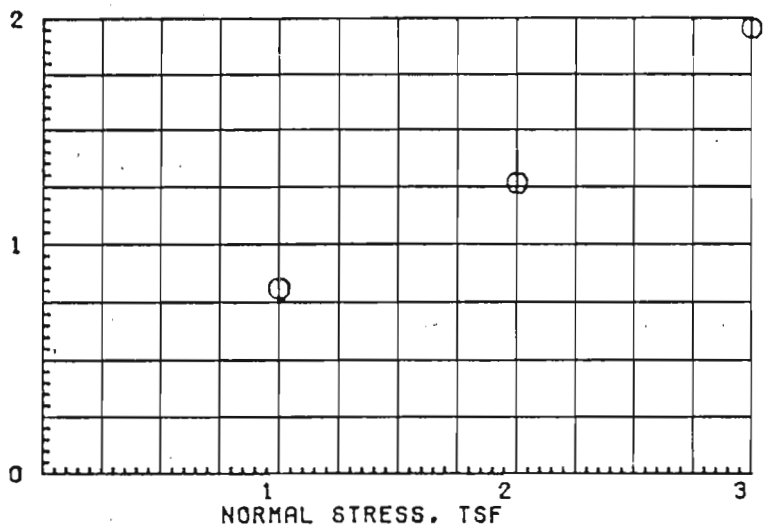
REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG | SAMPLE NO. 16-B
DEPTH/ELEV 60.0/-50.6 | TECH. PJR
LABORATORY USAE WES | DATE 13 SEP 84

TRIAXIAL COMPRESSION TEST REPORT





ϕ = _____

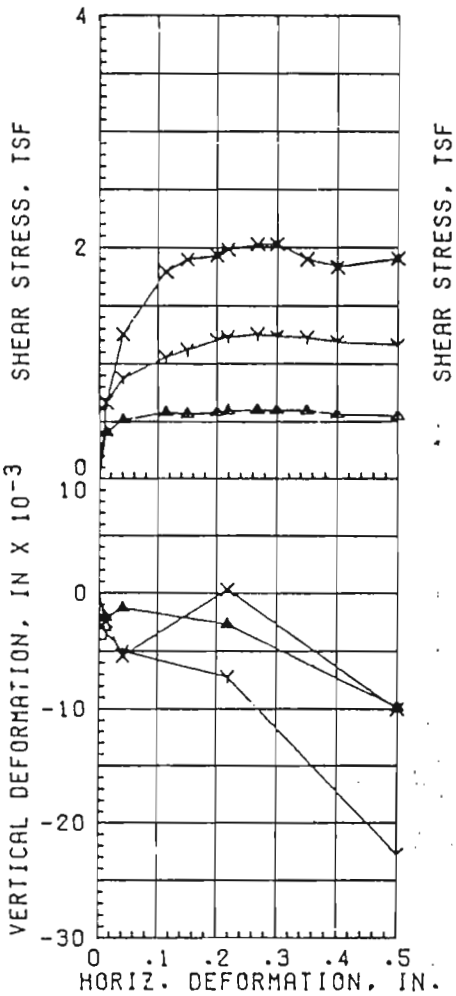
TAN ϕ = _____

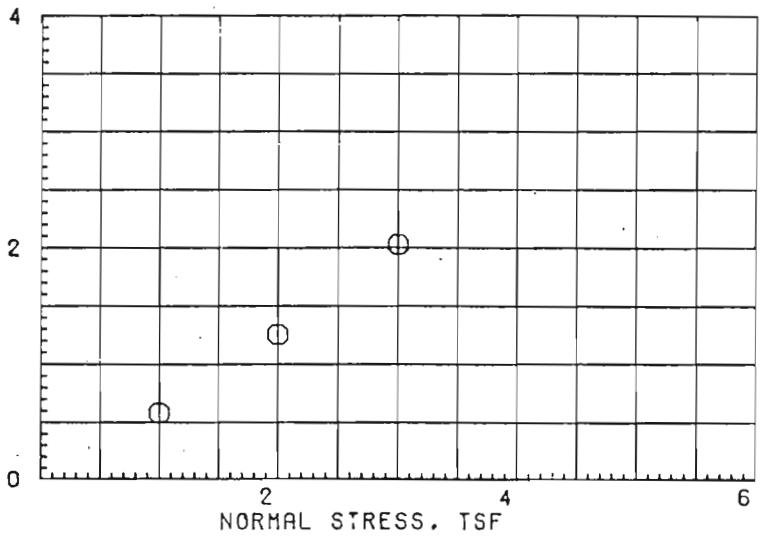
C = _____

TEST NO.		1 ▲	2 Y	3 X	
INITAL	WATER CONTENT, %	25.9	25.8	24.8	
	VOID RATIO	0.717	0.745	0.730	
	SATURATION, %	96.7	92.6	90.8	
	DRY DENSITY, PCF	97.1	95.5	96.3	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	23.9	26.8	25.7	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.81	1.26	1.95	
TIME TO FAILURE, MIN		1114	1248	1197	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.756 IN. THICK
CLASSIFICATION SILTY SAND (SM), GRAY; SHELL PARTICLES		
LL / PL / PI		GS 2.67 (EST)
REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 3-LUO	SAMPLE 3-B
	DEPTH/ELEV 8.0/3.2	DATE 25 SEP 84

DIRECT SHEAR TEST REPORT





ϕ = _____

TAN ϕ = _____

C = _____

TEST NO.		1 △	2 Y	3 X	
INITAL	WATER CONTENT, %	28.2	28.8	29.6	
	VOID RATIO	0.842	0.829	0.843	
	SATURATION, %	89.5	92.6	93.7	
	DRY DENSITY, PCF	90.5	91.1	90.4	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	32.4	31.5	31.0	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.58	1.25	2.03	
TIME TO FAILURE, MIN		626	1469	1469	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

TYPE SPECIMEN UNDISTURBED | 3.00 IN. SQUARE | 0.756 IN. THICK

CLASSIFICATION SILTY SAND (SM), GRAY

LL | PL | PI | | GS 2.67 (EST)

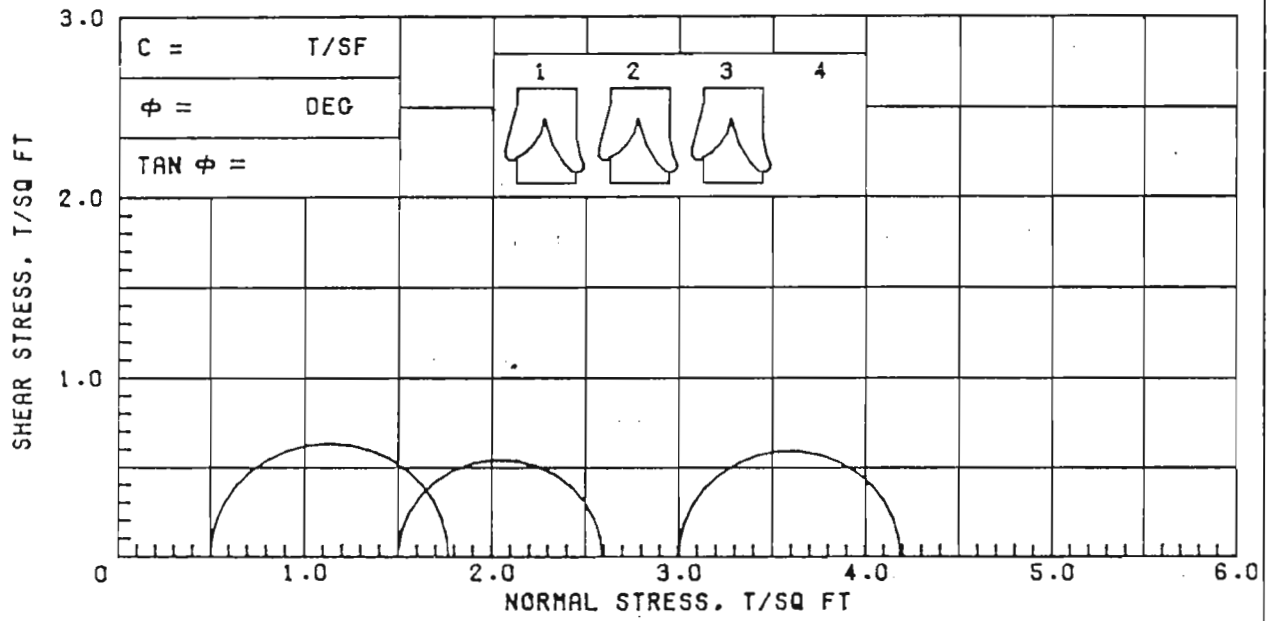
REMARKS:

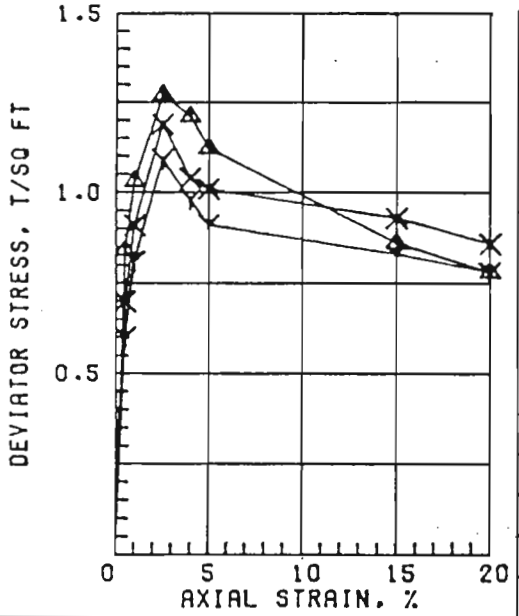
PROJECT LAKE PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUG | SAMPLE 12-B

DEPTH/ELEV 44.0/-39.2 | DATE 01 OCT 84

DIRECT SHEAR TEST REPORT





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	48.8	54.4	52.9	
	DRY DENSITY, PCF	71.9	67.7	68.7	
	SATURATION, %	98.1	98.6	98.3	
	VOID RATIO	1.343	1.490	1.454	
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		1.27	1.09	1.19	
TIME TO FAILURE, MIN.		6	28	23	
RATE OF STRAIN INCR,%			5	5	
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY

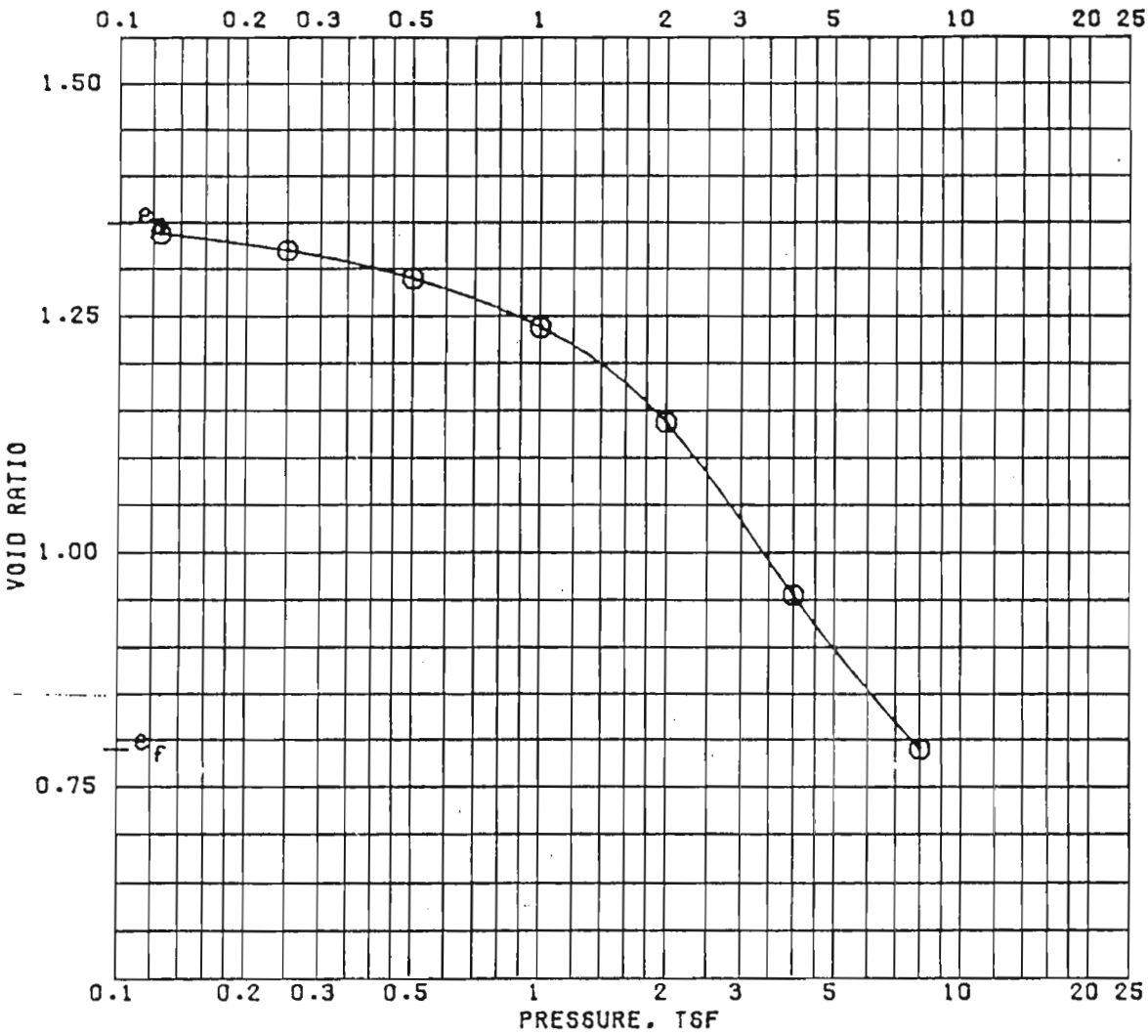
LL 63	PL 21	PI 42	OS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUO | SAMPLE NO. 14-B
DEPTH/ELEV 52.0/-47.2 | TECH. PJR
LABORATORY USAE WES | DATE 13 SEP 84

TRIAXIAL COMPRESSION TEST REPORT



	BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF	WATER CONTENT, %	47.6	30.0
PRECONSOL. PRESSURE, TSF	DRY DENSITY, PCF	71.8	94.3
COMPRESSION INDEX	SATURATION, %	95.4	100 +
TYPE SPECIMEN UNDISTURBED	VOID RATIO	1.348	0.788
DIA. IN 4.44 HT. IN 1.116	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY; FINE SAND POCKETS; SHELL PARTICLES

LL	PL	PI
GS 2.70 (EST)	D_{10}	

PROJECT LK. PONT. LA. & VIC. HURR. PROT.

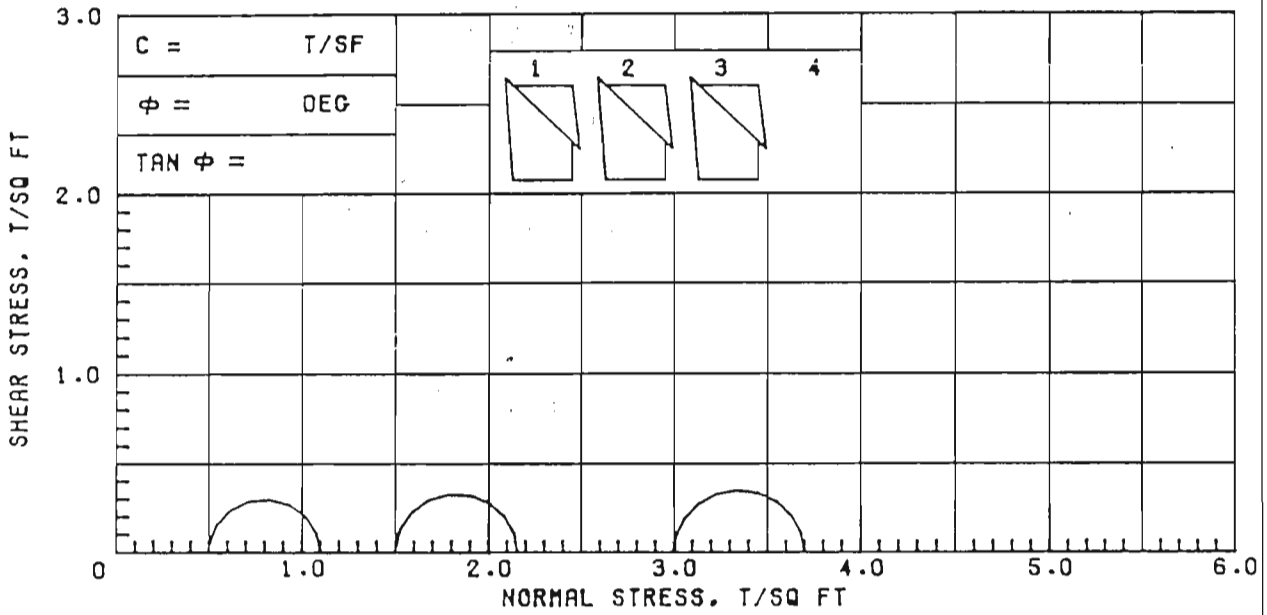
ORLEANS PARISH OUTFALL CANALS

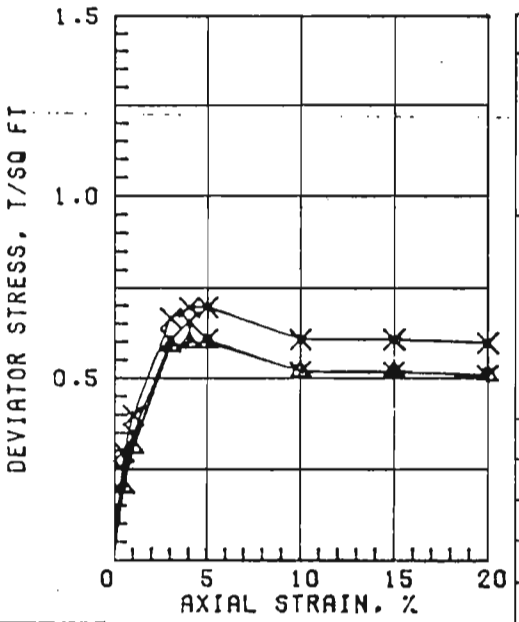
REMARKS

BORING NO. B-LUO SAMPLE NO. 14-C

DEPTH/ELEV 53.4/-48.8 DATE 25 SEP 84

CONSOLIDATION TEST REPORT





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	44.2	43.9	44.1	
	DRY DENSITY, PCF	75.2	75.9	76.1	
	SATURATION, %	96.0	97.2	98.0	
	VOID RATIO	1.243	1.220	1.215	
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		0.60	0.66	0.70	
TIME TO FAILURE, MIN.		8	8	8	
RATE OF STRAIN INCR,%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SHELL PARTICLES

LL 56	PL 20	PI 36	OS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

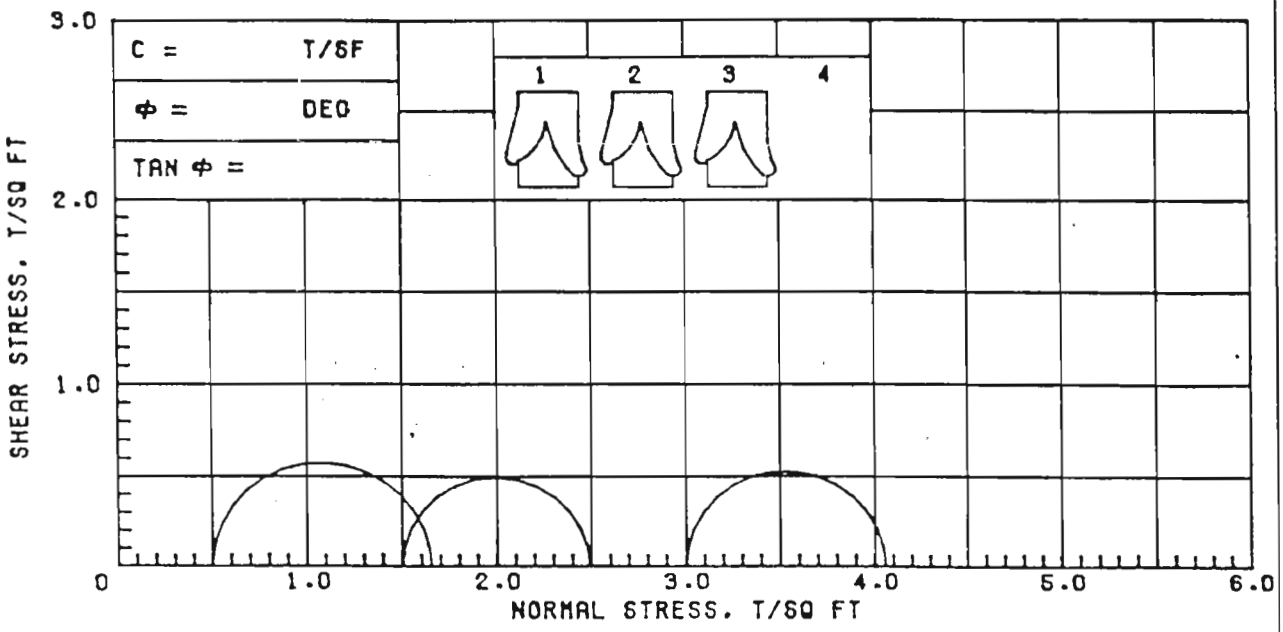
PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

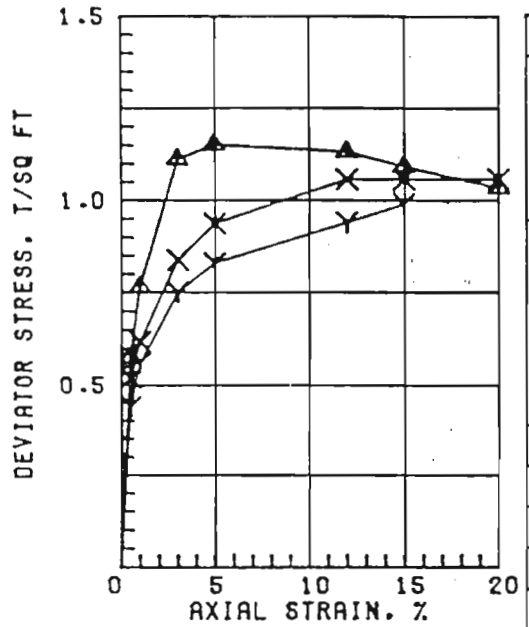
BORING NO. 3-LUO — SAMPLE NO. 15-B

DEPTH/ELEV 56.2/-51.4 — TECH. KOC

LABORATORY USAE WES — DATE 13 SEP 84

TRIAXIAL COMPRESSION TEST REPORT





SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	40.1	45.2	43.9	
	DRY DENSITY, PCF	80.0	76.2	77.2	
	SATURATION, %	97.7	100+	100+	
	VOID RATIO	1.108	1.212	1.184	
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	0.99	1.06	
TIME TO FAILURE, MIN.		10	55	39	
RATE OF STRAIN INCR,%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

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

LL 93	PL 30	PI 63	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUO — SAMPLE NO. 16-B

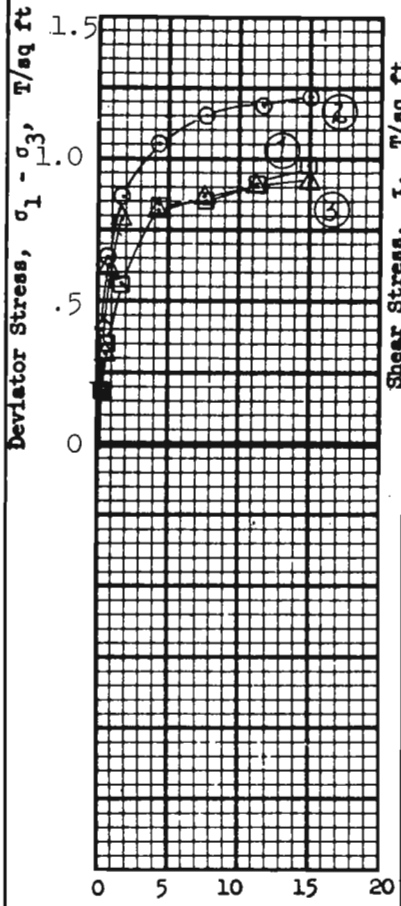
DEPTH/ELEV 60.3/-55.5 — TECH. PJR

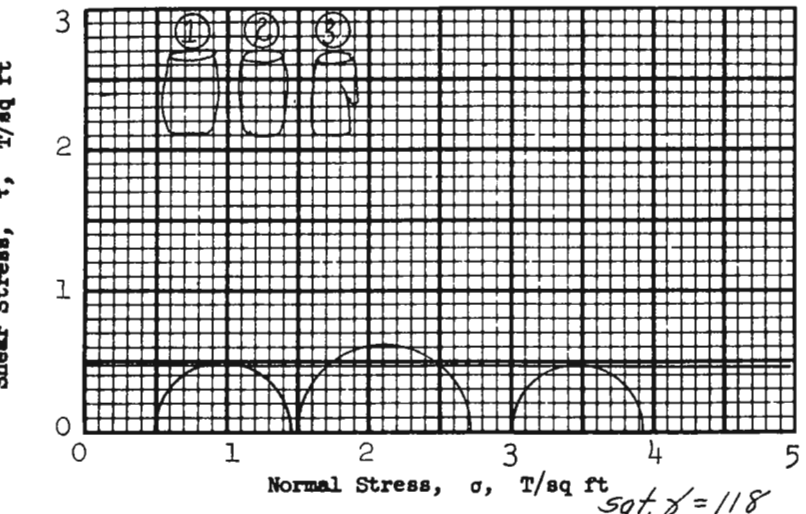
LABORATORY USAE WES — DATE 14 SEP 84

TRIAXIAL COMPRESSION TEST REPORT

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

APPENDIX A-3
CORPS OF ENGINEERS SOIL TEST
DATA REPORTS





Sat. γ = 118

Test No.			1	2	3	Avg.
Initial	Water content	w_o	28.4 %	29.1 %	32.2 %	29.9 %
	Void ratio	e_o	0.867	0.864	0.898	
	Saturation	S_o	87.5 %	89.9 %	95.7 %	%
	Dry density, lb/cu ft	γ_d	89.3	89.4	87.8	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.97	1.22	0.92	
Time to failure, min		t_f	95	95	95	
Rate of strain, percent/min			0.158	0.158	0.158	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.39	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.47 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification LEAN CLAY(CL),gray, contains rootlets and silt lenses, crumbly				
LL 47	PL 15	PI 32		G_s 2.67

Remarks _____

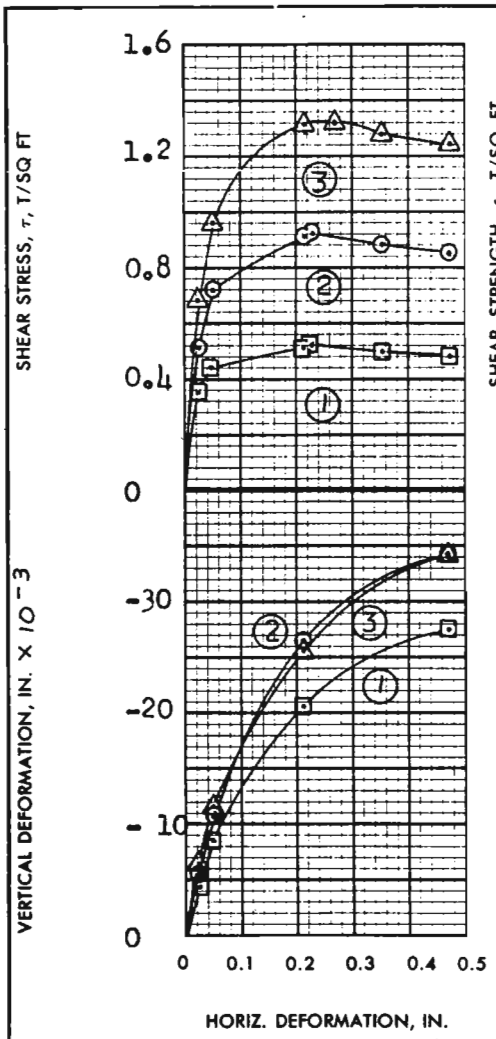
Project LK.PONT.,LA. &VIC.-HURR.PROT.-ORLEANS PAR.LKFRNT.LEV.WEST OF IHNC,GDM#2,SUPP.#5,

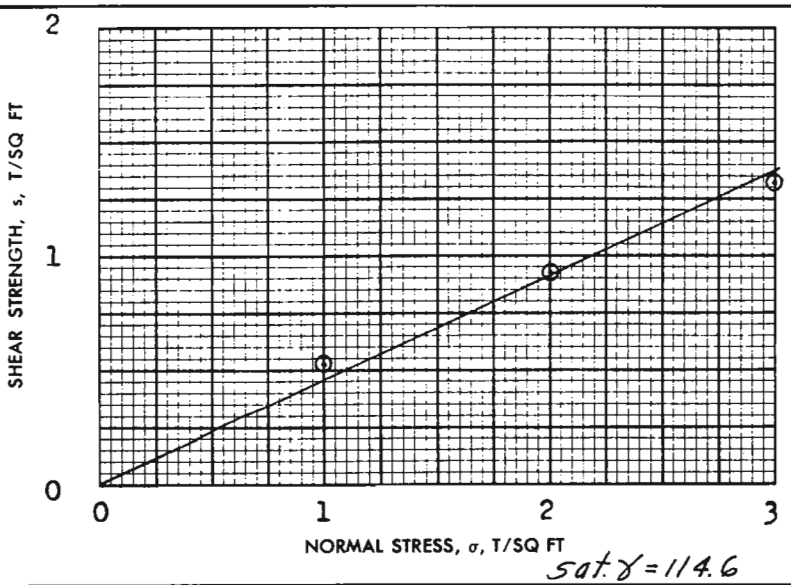
Area OUTFALL CANALS(ALONG LONDON AVE.CANAL)1971

Boring No. 1-LUW | Sample No. 2-B

Depth El -1.7 | Date 23 March 1971

TES TRIAXIAL COMPRESSION TEST REPORT





sat. γ = 114.6

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	39.2 %	38.1 %	37.6%	38.3 %
	VOID RATIO	e_o	1.07	1.05	1.04	
	SATURATION	S_o	99.6 %	98.7%	98.3 %	%
	DRY DENSITY, LB/CU FT	γ_d	82.1	82.6	83.1	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	3	5	6	
FINAL	WATER CONTENT	w_f	34.6 %	32.0 %	28.4 %	%
	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}	0.52	0.92	1.32	
ACTUAL TIME TO FAILURE, MIN		t_f	1380	1380	1620	
RATE OF STRAIN, IN./MIN			.00017	.00017	.00017	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 25°

TAN ϕ' = 0.460

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.540 IN. THICK

CLASSIFICATION: PLASTIC CLAY(CH),gray, contains gravel

LL 65 | PL 23 | PI 42 | G_s 2.72

REMARKS: Gravel size up to 1/2" in dia. in unused portion of sample

PROJECT: LK.PONT.LA.,& VIC.-HURR.PROT.-ORLEANS PARISH LKFTNT.LEV.,WEST OF IHNC,GDM # 2,

AREA: SUPP. # 5,OUTFALL CANALS(ALONG LONDON AVE.)

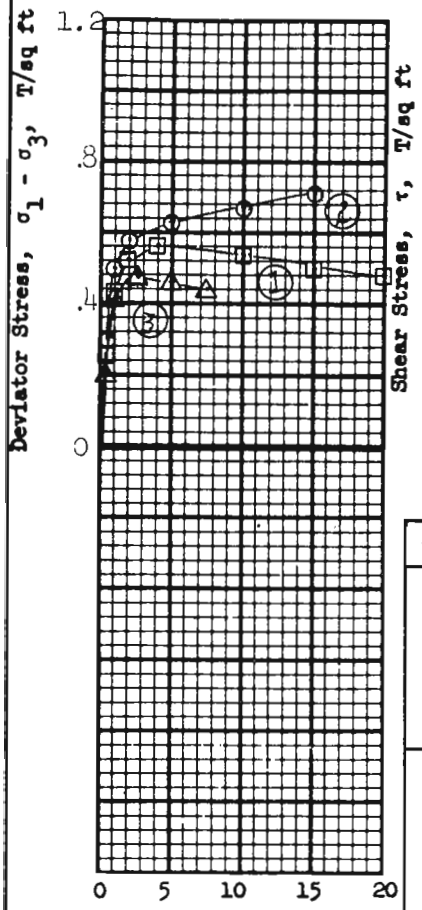
BORING NO. 1-LUW | SAMPLE NO. 3-C

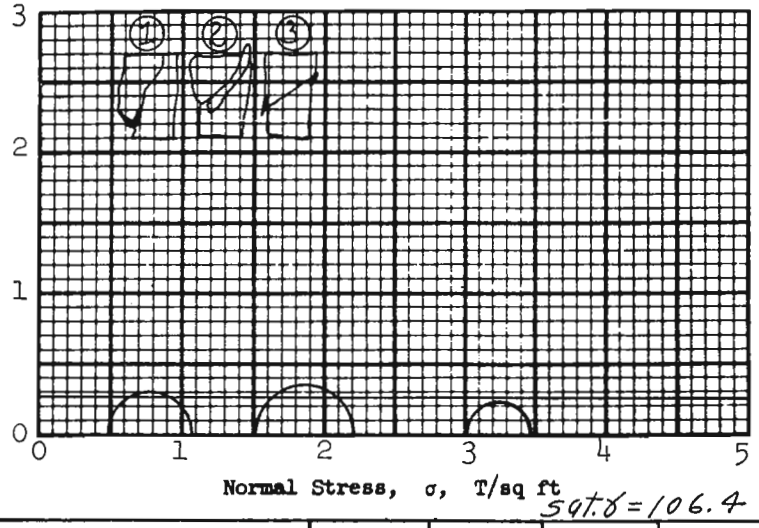
~~DEPTH~~ EL - 6.6 | DATE 6 April 1971

GDA

DIRECT SHEAR TEST REPORT

USAEWES SOILS TEST SECTION





Sat. $\gamma = 106.4$

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.26 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Test No.			1	2	3	Avg.
Initial	Water content	w_o	59.9 %	37.4 %	61.0 %	52.8 %
	Void ratio	e_o	1.62	0.994	1.69	
	Saturation	S_o	99.1 %	100+ %	96.7 %	%
	Dry density, lb/cu ft	γ_d	63.8	83.9	62.3	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.56	0.71	0.47	
Time to failure, min		t_f	12	94	17	
Rate of strain, percent/min			0.337	0.159	0.155	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.39	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray, contains scattered small decayed wood*				
LL 68	PL 18	PI 50		G_s 2.68

Remarks *fragments

Insufficient material for check test

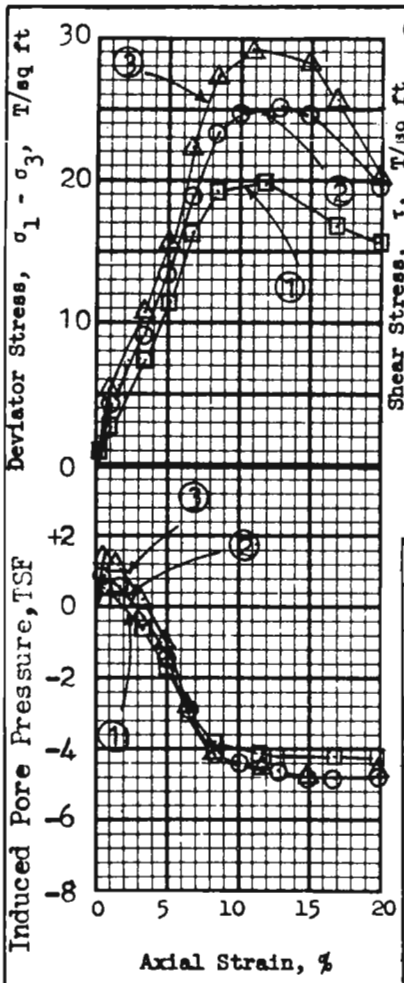
Project LK. PONT., LA. & VIC.-HURR. PROT.-ORLEANS PAR. LKFRNT. LEV., WEST OF HNC, GDM#2, SUPP. NO. 5,

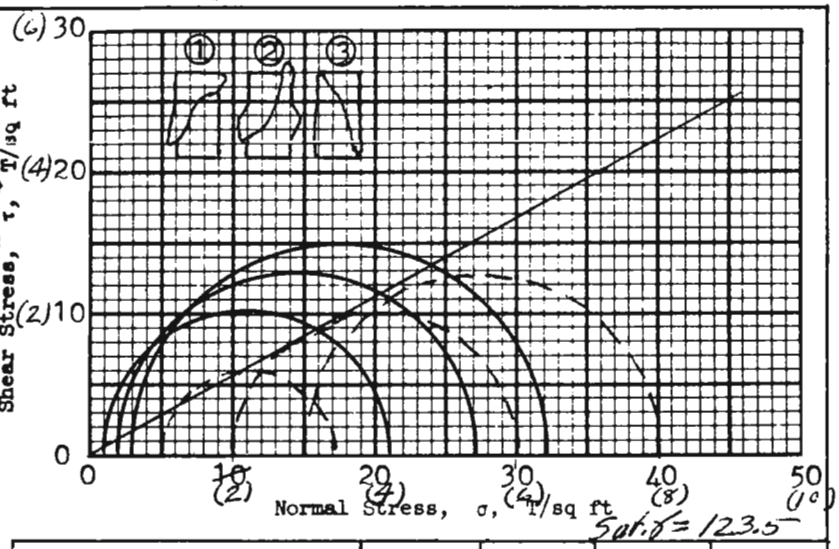
Area OUTFALL CANALS (ALONG LONDON AVE. CANAL)

Boring No. 1-LUW | Sample No. 4-C

Depth or El -10.6 | Date 24 March 1971

JMS TRIAXIAL COMPRESSION TEST REPORT





Test No.			1	2	3	Avg.
Initial	Water content	w_o	27.2 %	26.5 %	25.6 %	26.4 %
	Void ratio	e_o	0.758	0.738	0.715	
	Saturation	S_o	96.9 %	97.0 %	96.7 %	%
	Dry density, lb/cu ft	γ_d	95.9	97.0	98.3	
Before Shear	Water content	w_c	26.6 %	26.0 %	25.1 %	%
	Void ratio	e_c	0.729	0.703	0.661	
	Saturation	S_c	98.5 %	99.8 %	102.5 %	%
	Final back pressure, PSI	u_o	60	60	60	
	Dry Density Lbs/cu.ft.	γ_d	97.5	99.0	101.5	
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	1.0	2.0	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	19.90	25.08	29.18	
Time to failure, min		t_f	155	170	154	
Rate of strain, percent/min			0.076	0.076	0.077	
$(\sigma_1-\sigma_3)$ at max. pore pressure			2.5	4.0	5.5	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 29 °

tan ϕ = 0.550

c = 0 T/sq ft

Method of saturation BP

☐ Controlled stress

☒ Controlled strain

Type of test R | Type of specimen UNDISTURBED

Classification SILTY SAND (SM), gray

LL - | PL - | PI - | | G_s 2.70

Remarks See attached plot for effective values

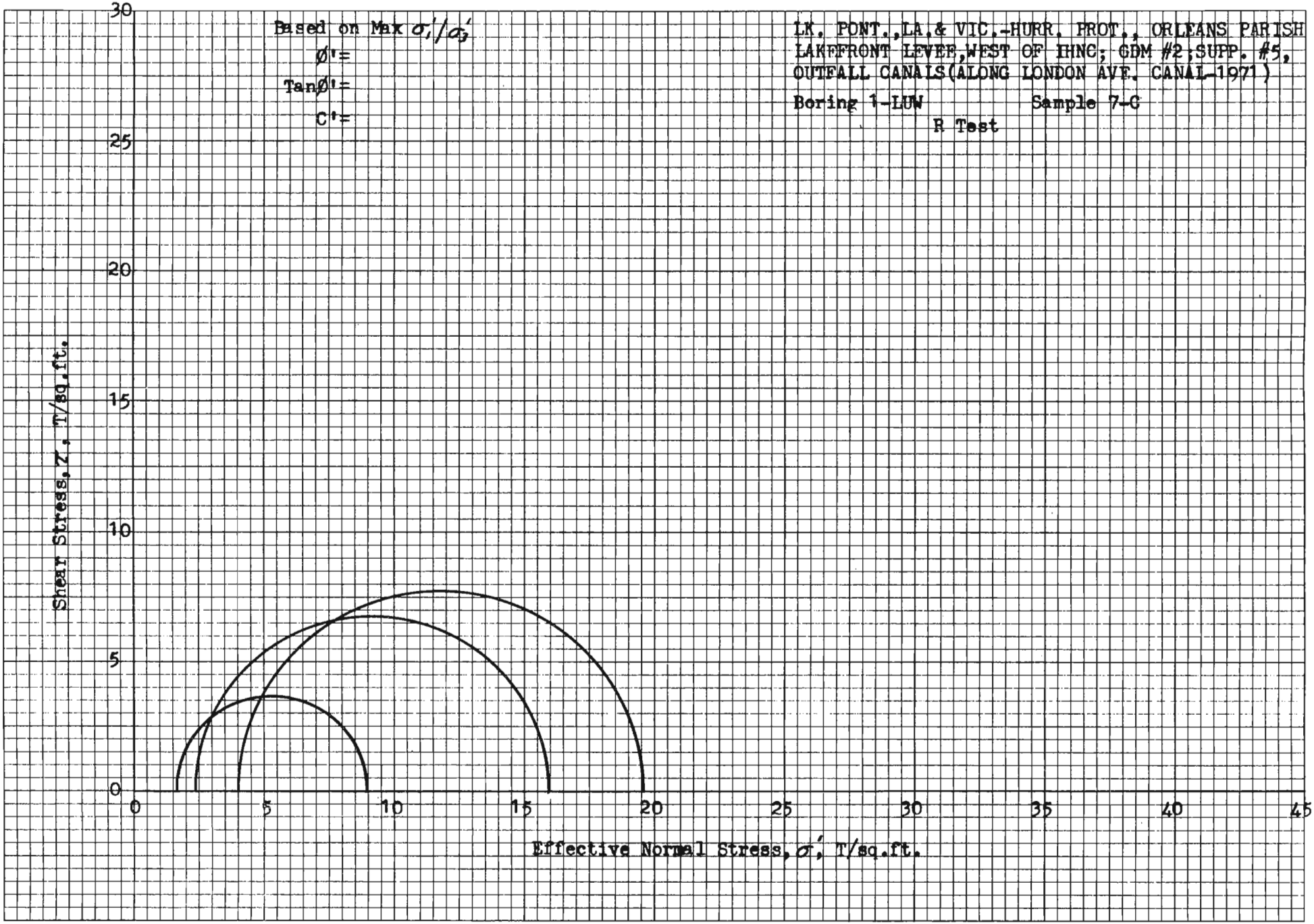
Project LK.PONT.,LA.& VIC.-HURR. PROT. ORLEANS PARIS LK. FRONT. LEVEE,WEST OF IHNC, GDM #2; SUPP.#5,OUTFALL CANALS(ALONG LONDON AVE.CANAL'71

Boring No. 1-LUW | Sample No. 7-C

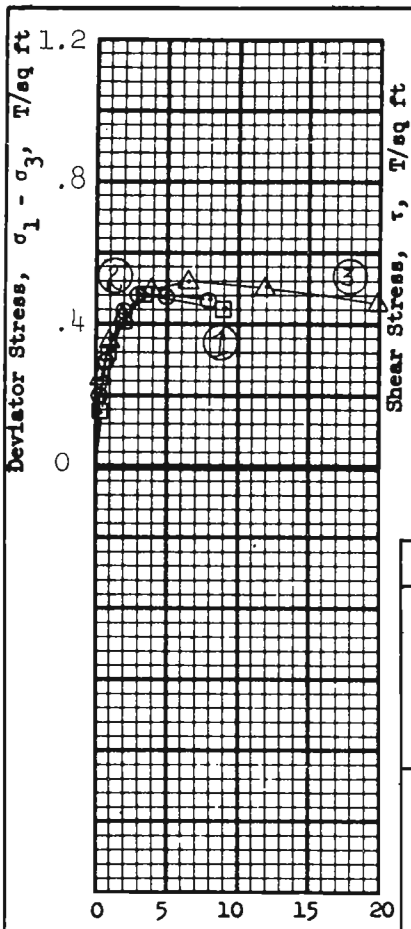
~~Depth~~ El -22.6 | Date 30 March,1971

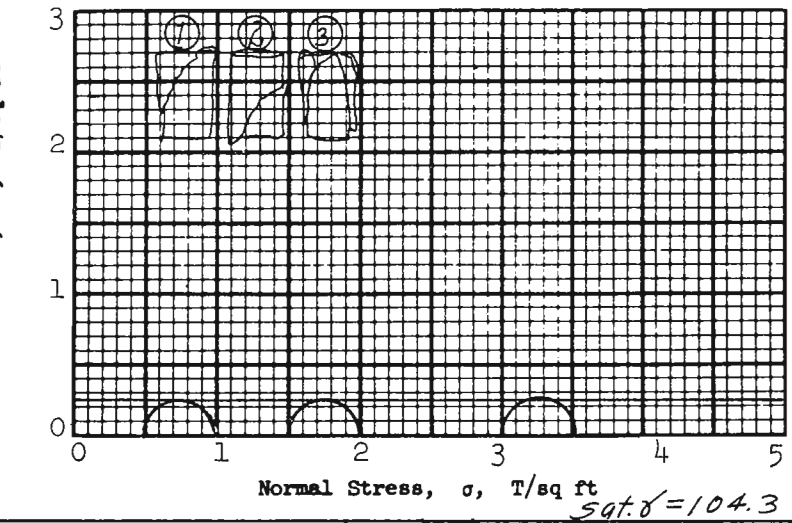
JAL TRIAXIAL COMPRESSION TEST REPORT

Sheet 1 of 2


Based on Max σ1'/σ3'
Ø' =
TanØ' =
C' =
LK. PONT.,LA.& VIC.-HURR. PROT., ORLEANS PARISH
LAKEFRONT LEVEE,WEST OF IHNC; GDM #2;SUPP. #5,
OUTFALL CANALS(ALONG LONDON AVE. CANAL-1971)
Boring 1-LUN
Sample 7-C
R Test
Shear Stress, τ, T/sq.ft.
Effective Normal Stress, σ', T/sq.ft.
0
5
10
15
20
25
30
35
40
45

5





Sqt. $\delta = 104.3$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	57.8 %	57.6 %	57.1 %	57.5 %
	Void ratio	e_o	1.59	1.58	1.56	
	Saturation	S_o	99.2 %	99.5 %	99.9 %	%
	Dry density, lb/cu ft	γ_d	65.9	66.0	66.5	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.48	0.48	0.52	
Time to failure, min		t_f	19	16	41	
Rate of strain, percent/min			0.188	0.190	0.159	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.24 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray				
LL 75	PL 24	PI 51		G_s 2.73

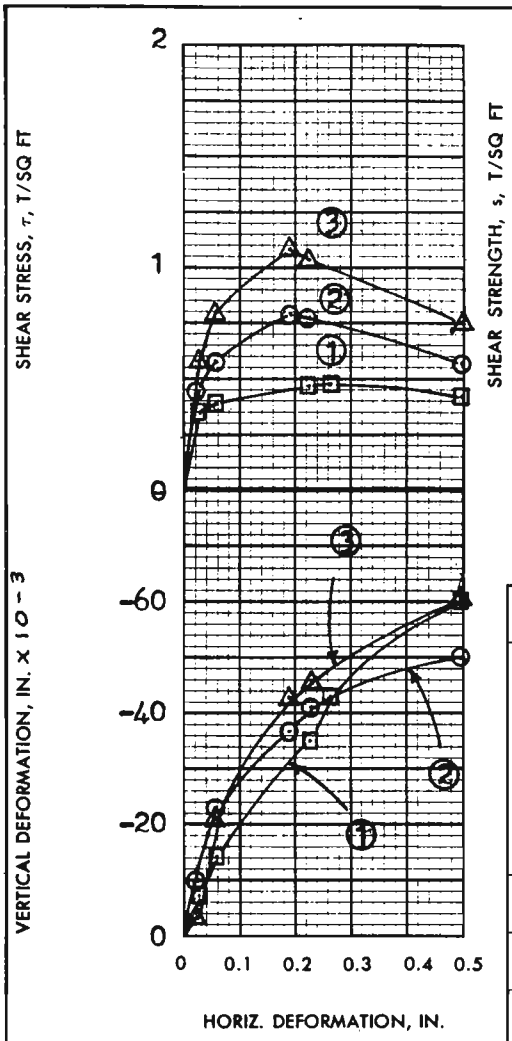
Remarks _____

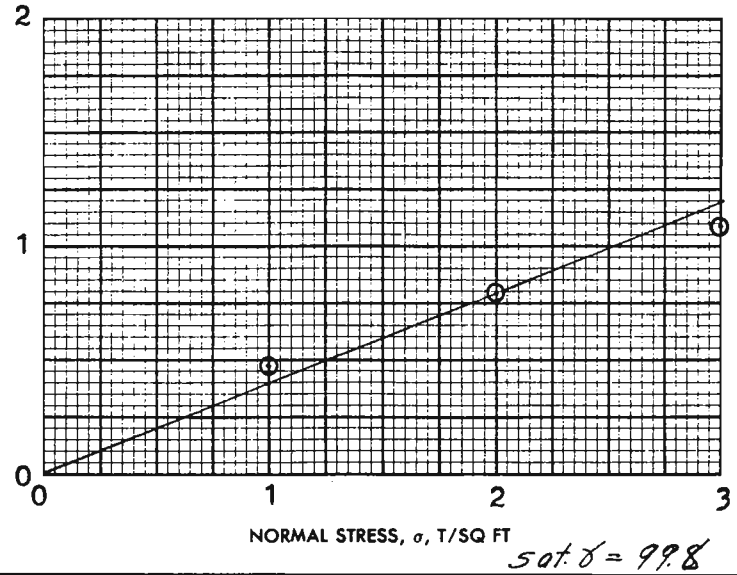
Project LK.PONT., LA.&VIC.-HURR. PROT.-ORLEANS PAR. LKFRNT. LEV. WEST OF IHNC, GDM#2, SUPP. NO. Area 5, OUTFALL CANALS (ALONG LONDON AVE. CANAL)

Boring No. 1-LUW | Sample No. 9-D

Depth El -31.6 | Date 24 March 1971

OHR **TRIAXIAL COMPRESSION TEST REPORT**





sat. γ = 99.8

SHEAR STRENGTH PARAMETERS

ϕ' = 22°

TAN ϕ' = 0.395

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	66.2%	63.4%	65.2%	64.9 %
	VOID RATIO	e_o	1.88	1.80	1.79	
	SATURATION	S_o	94.7%	94.7%	98.0%	%
	DRY DENSITY, LB/CU FT	γ_d	58.4	59.9	60.2	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	2	4	7	
FINAL	WATER CONTENT	w_f	65.6%	53.8%	48.2%	%
	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}	0.48	0.79	1.08	
ACTUAL TIME TO FAILURE, MIN		t_f	1500	1110	1110	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 1&2 0.550, 3 0.625 IN. THICK

CLASSIFICATION PLASTIC CLAY (CH), dark gray, contains a trace of organic matter

LL	PL	PI		G_s
92	27	65		2.69

REMARKS

PROJECT LK. PONT.,LA.& VIC.-HURR. PROT. ORLEANS

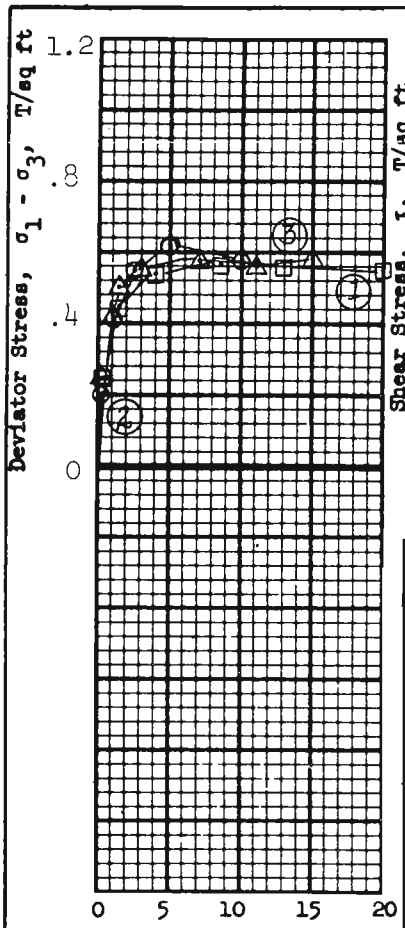
PARIS LAKEFRONT LEVEE,WEST OF IHNC, GDM #2

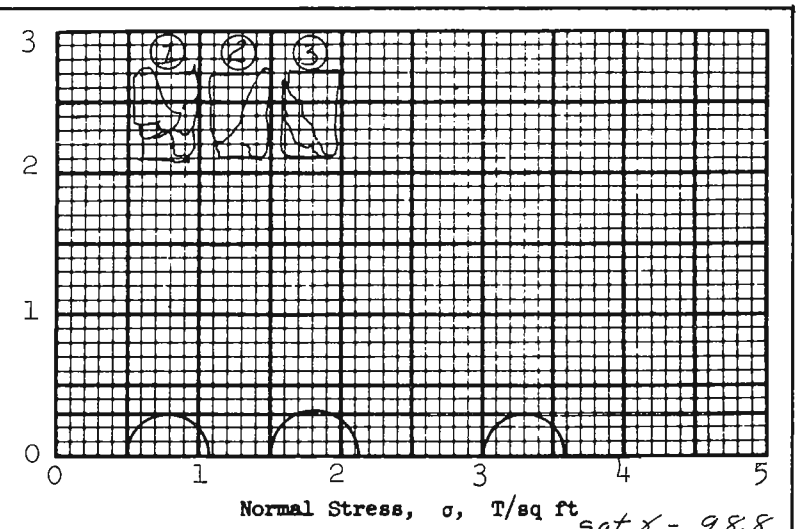
SUPP.#5,OUTFALL CANALS(ALONG LONDON AVE.CANAL) '71

BORING NO. 1-LUW — SAMPLE NO. 10-C

~~DEPTH~~ EL -34.5 — DATE 7 April,1971

BWG **DIRECT SHEAR TEST REPORT**





Sat. γ = 98.8

Test No.			1	2	3	Avg.
Initial	Water content	w_o	71.9 %	68.9 %	69.8 %	70.2 %
	Void ratio	e_o	2.01	1.94	1.96	
	Saturation	S_o	97.6 %	97.0 %	97.2 %	%
	Dry density, lb/cu ft	γ_d	56.6	58.0	57.5	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.57	0.62	0.58	
Time to failure, min		t_f	47	13	31	
Rate of strain, percent/min			0.179	0.385	0.227	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.29 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray				
LL 103	PL 29	PI 74		G_s 2.73

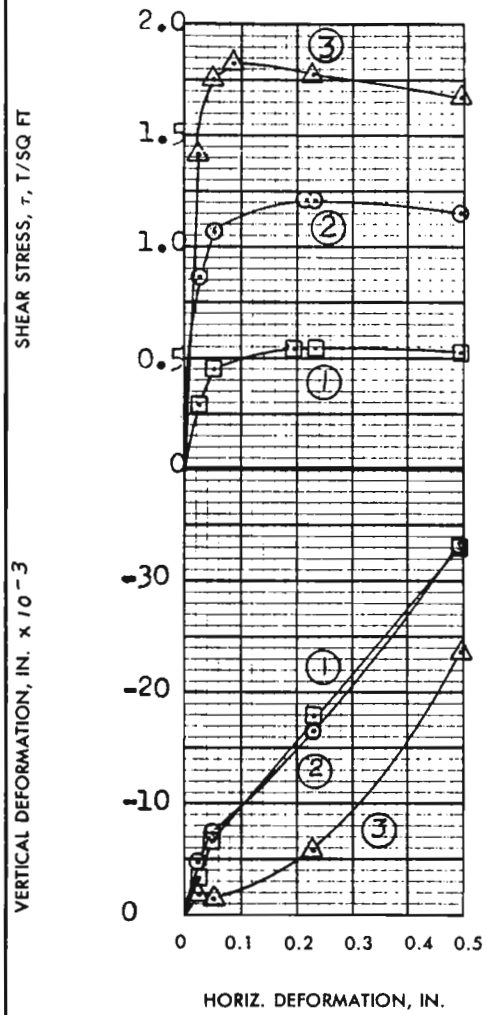
Remarks _____

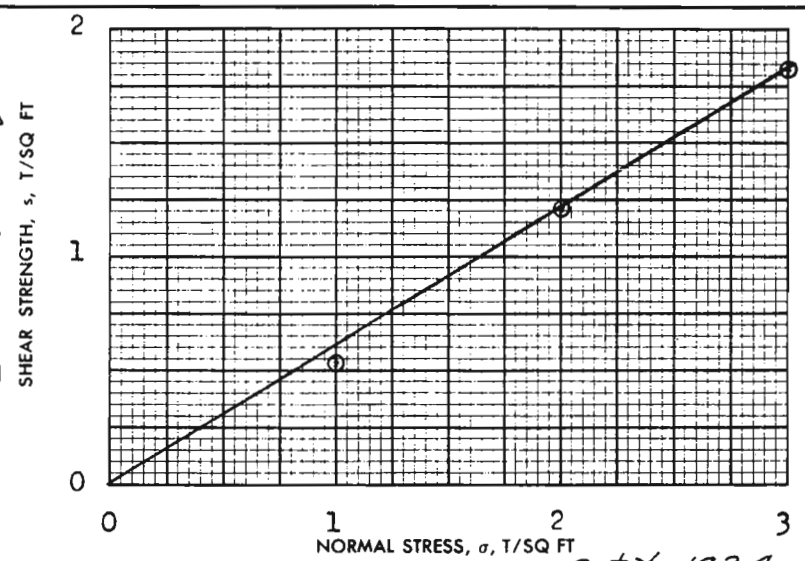
Project LK.PONT.,LA.&VIC.-HURR. PROT.-ORLEANS PAR. LKFRNT.LEV.WEST OF IHNC,GDM NO.2,SUPP.#5,

Area OUTFALL CANALS(ALONG LONDON AVE.CANAL)

Boring No. 1-LUW	Sample No. 10-D
Depth El -35.4	Date 25 March 1971

OHR TRIAXIAL COMPRESSION TEST REPORT





Sat. γ = 122.4

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	26.4 %	25.8 %	26.5 %	26.2 %
	VOID RATIO	e_o	0.795	0.771	0.741	
	SATURATION	S_o	89.7 %	90.3 %	96.5 %	%
	DRY DENSITY, LB/CU FT	γ_d	93.9	95.2	96.8	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	26.2 %	24.7 %	24.0 %	%
	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}	0.54	1.21	1.82	
ACTUAL TIME TO FAILURE, MIN		t_f	1140	1260	540	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 31°

TAN ϕ' = 0.605

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN UNDISTURBED 3.00 IN. SQUARE 0.540 IN. THICK

CLASSIFICATION SILTY SAND(SM),gray, contains clay pockets

LL - PL - PI - G_s 2.70

REMARKS

PROJECT LK.PONT.LA.,& VIC.-HURR. PROT. - ORLEANS PARISH LKFRNT.LEV.,WEST OF IHNC,GDM # 2,

AREA SUPP. # 5,OUT FALL CANALS(ALONG LONDON AVE.)

BORING NO. 1-LUW SAMPLE NO. 14-C

~~DEPTH~~ EL - 50.1 DATE 7 April 1971

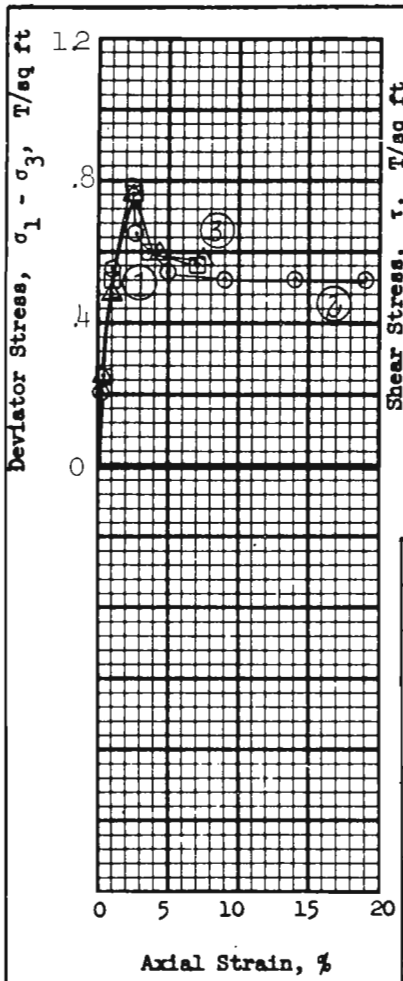
GDA

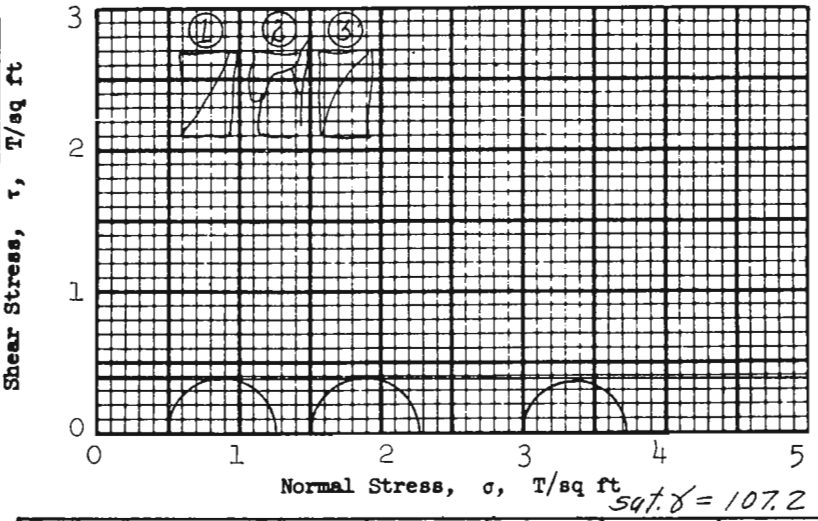
DIRECT SHEAR TEST REPORT

GRAINES SOILS TEST SECTION

ENG FORM 2092 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT) GPO : 1966 OF—214-945

PLATE IX-3





sat. γ = 107.2

Test No.			1	2	3	Avg.
Initial	Water content	w_o	52.6 %	52.0 %	52.6 %	52.4 %
	Void ratio	e_o	1.46	1.44	1.44	
	Saturation	S_o	99.1 %	99.3%	100+ %	%
	Dry density, lb/cu ft	γ_d	69.9	70.4	70.3	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.76	0.78	0.73	
Time to failure, min		t_f	38	15	23	
Rate of strain, percent/min			0.654	0.161	0.109	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.38 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH),gray, contains scattered shell fragments*				
LL 72	PL 23	PI 49		G_s 2.75

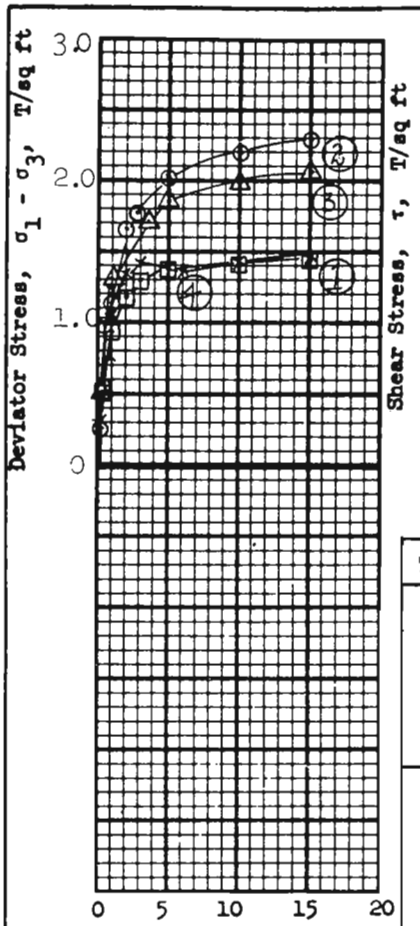
Remarks *and silt lenses

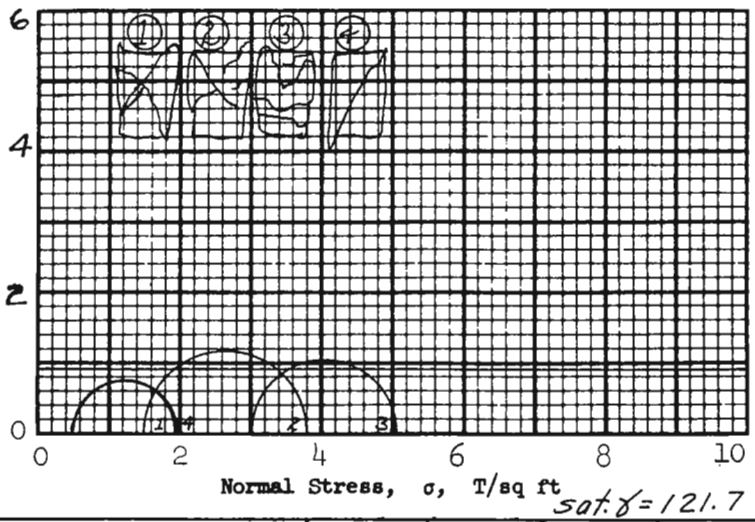
Project LK.PONT.,LA.&VIC.-HURR. PROT.-ORLEANS PARISH LKFRNT.LEV.,WEST OF IHNC,GDM#2,SUPP.#3,

Area OUTFALL CANALS(ALONG LONDON AVE.CANAL)1971

Boring No. 1-LUW	Sample No. 17-B
Depth El -61.5	Date 25 March 1971

JMS TRIAXIAL COMPRESSION TEST REPORT





sat. γ = 121.7

Test No.			1	2	3	4	Avg.
Initial	Water content	w_o	29.1 %	28.6 %	29.6 %	28.1%	28.9
	Void ratio	e_o	0.800	0.800	0.837	0.808	
	Saturation	S_o	98.6 %	96.9 %	95.8 %	94.2 %	
	Dry density, lb/cu ft	γ_d	94.0	94.1	92.1	94.6	
Before Shear	Water content	w_c	%	%	%	%	
	Void ratio	e_c					
	Saturation	S_c	%	%	%	%	
	Final back pressure, T/sq ft	u_o					
Final	Water content	w_f	%	%	%	%	
	Void ratio	e_f					
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	0.5	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.44	2.30	2.05	1.47	
Time to failure, min		t_f	86	28	31	54	
Rate of strain, percent/min			0.174	0.536	0.484	0.280	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$					
Initial diameter, in.		D_o	1.40	1.39	1.40	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.91 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification LEAN CLAY(CL), greenish gray

LL 46 | PL 18 | PI 28 | | G_s 2.71

Remarks _____

Project LK. PONT., LA. & VIC. - HURR. PROT. - ORLEANS PAR. LKFRNT. LEV. WEST OF IHNC, GDM#2, SUPP. #5,

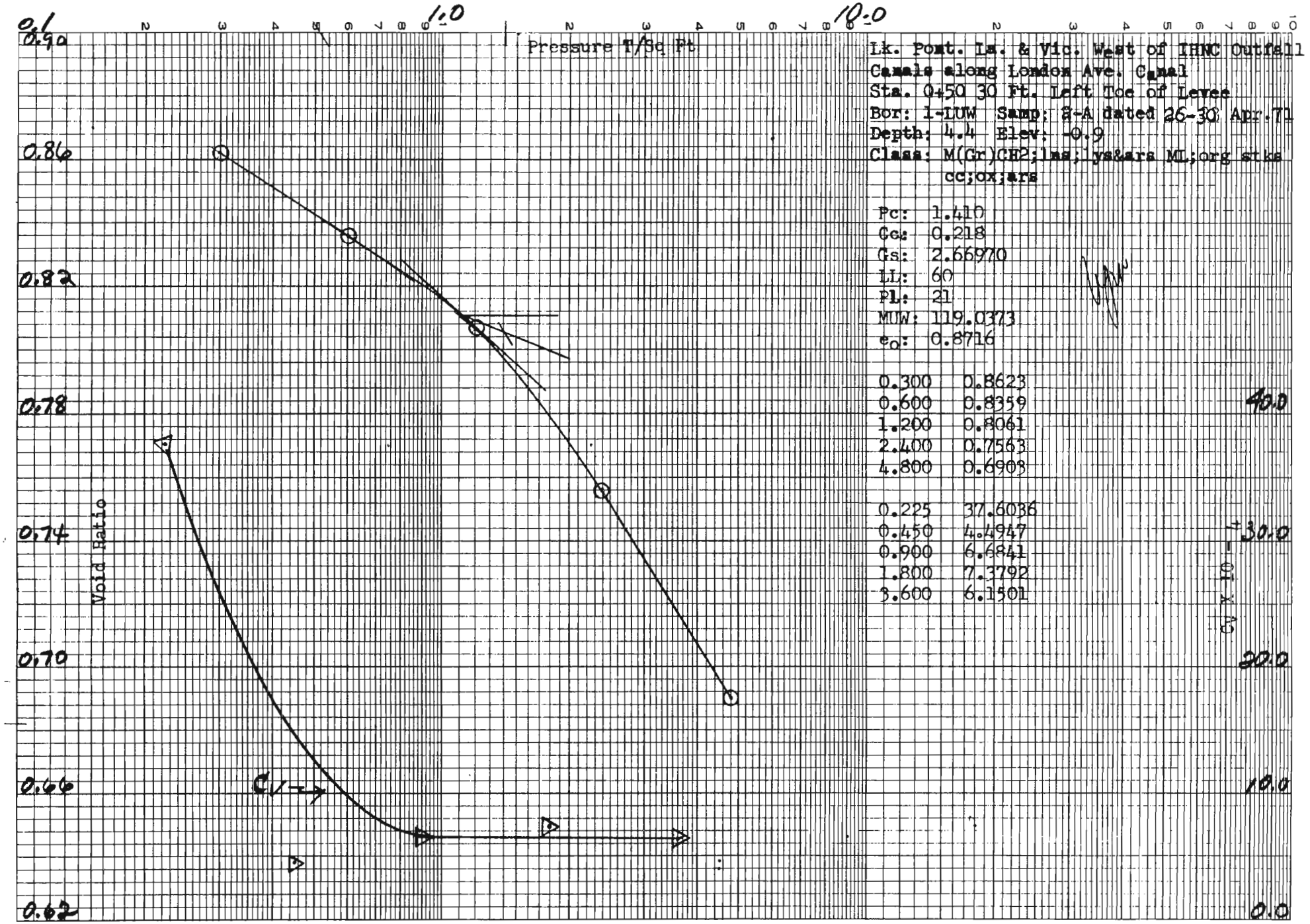
Area OUTFALL CANALS (ALONG LONDON AVE. CANAL)

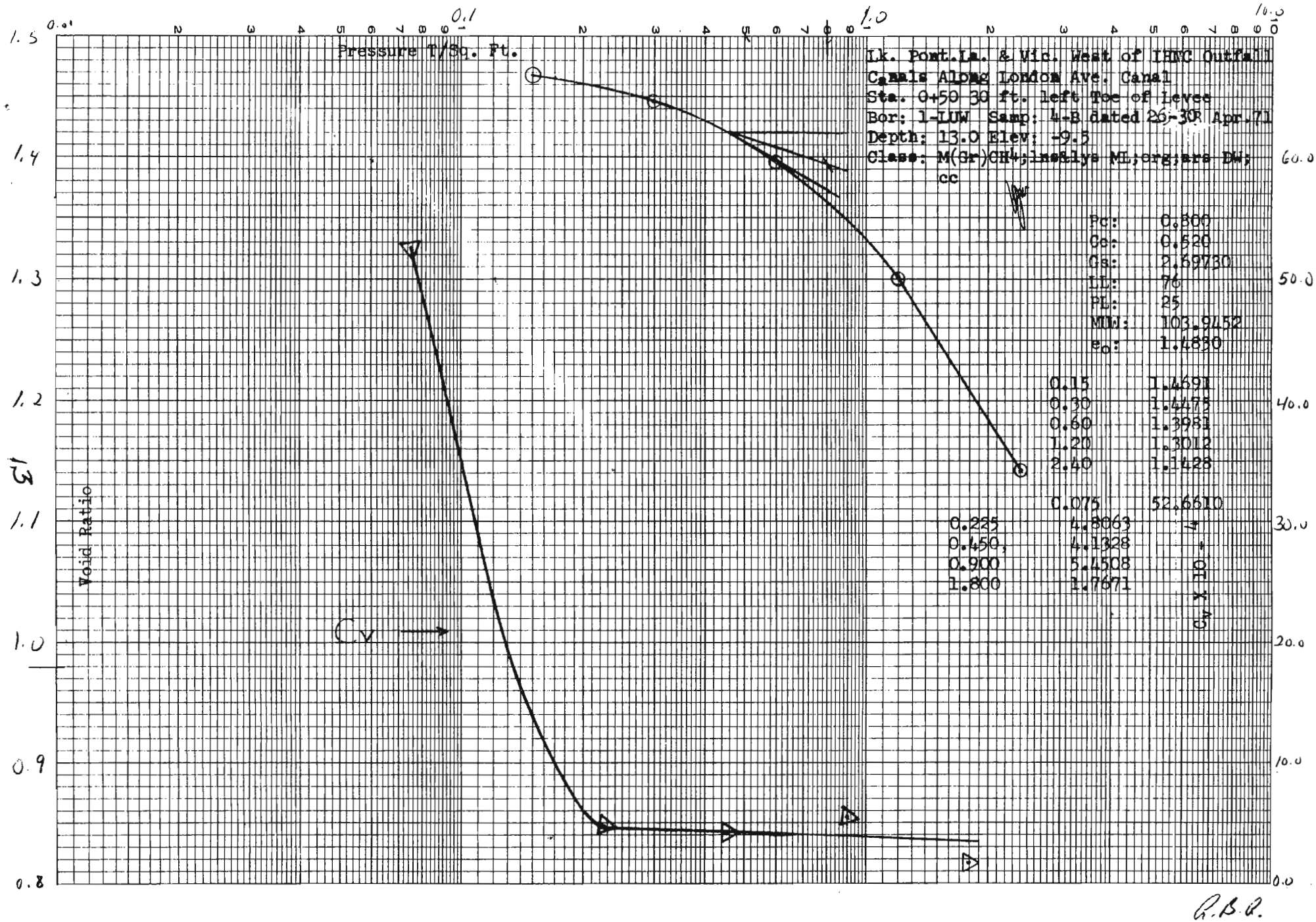
Boring No. 1-LUW | Sample No. 18-D

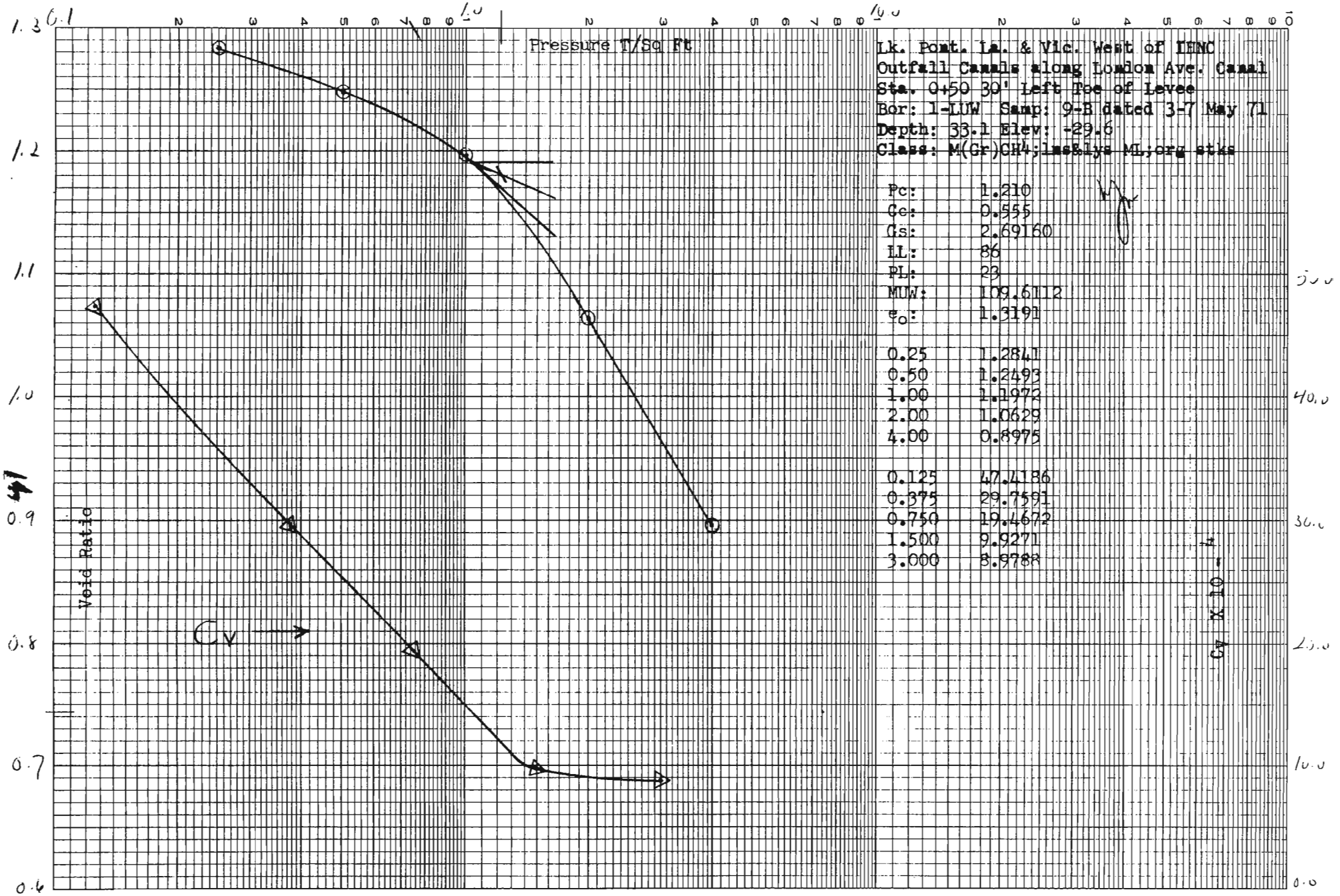
~~Depth~~ El -66.4 | Date 26 March 1971

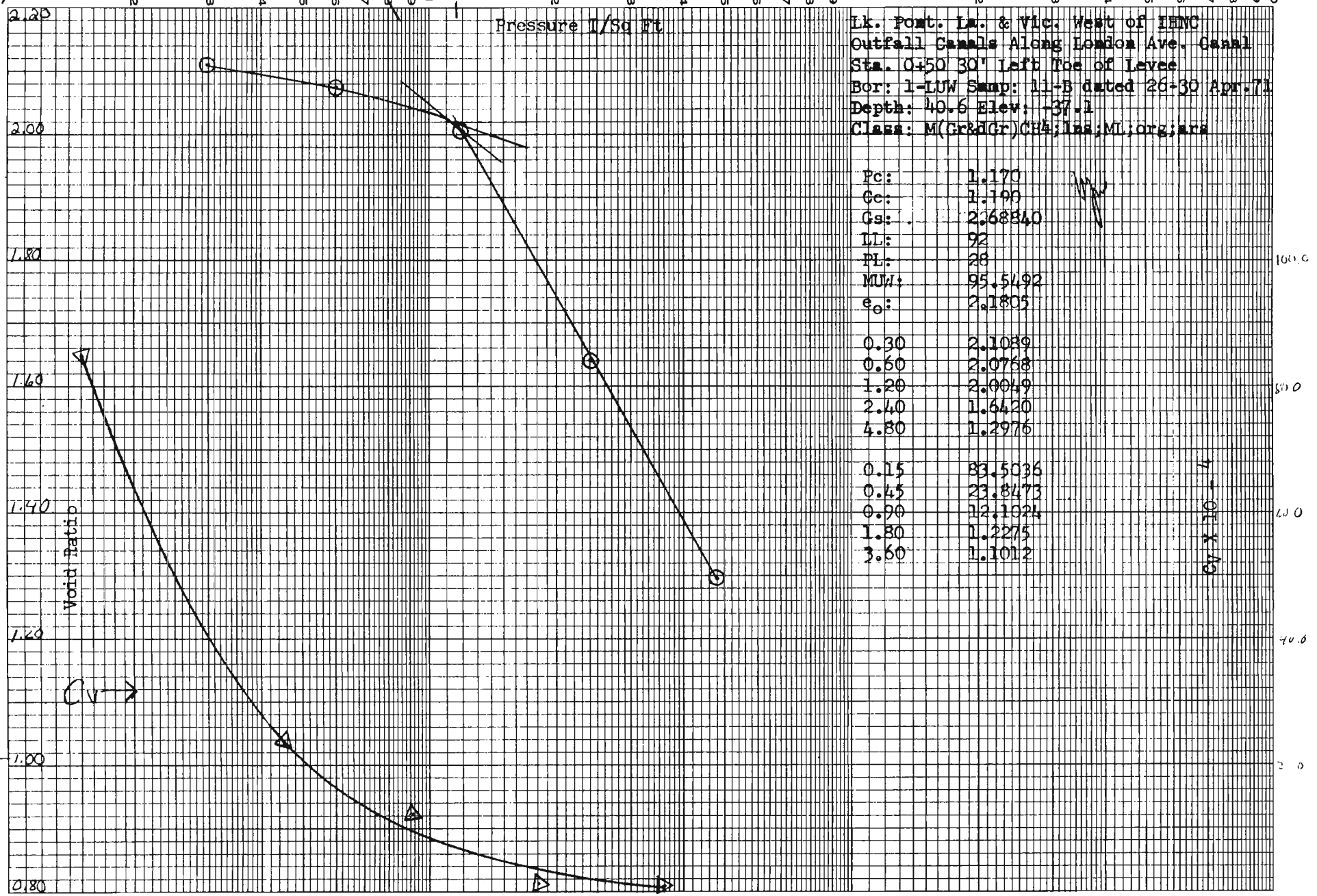
QHR

TRIAXIAL COMPRESSION TEST REPORT


Pressure T/Sq Ft
1.0
10.0
0.90
0.86
0.82
0.78
0.74
0.70
0.66
0.62
Void Ratio
Cv x 10⁻³
40.0
30.0
20.0
10.0
0.0
Lk. Pont. La. & Vic. West of IHNC Outfall Canals along London Ave. Canal
Sta. 0+50 30 Ft. Left Toe of Levee
Bor: 1-LUW Samp: 8-A dated 26-30 Apr. 71
Depth: 4.4 Elev: -0.9
Class: M(Gr)CH2;las;lys&ars ML;org stks cc;ox;ars
Pc: 1.410
Cc: 0.218
Gs: 2.66970
LL: 60
Pl: 21
MUW: 119.0373
e0: 0.8716
0.300 0.8623
0.600 0.8359
1.200 0.8061
2.400 0.7563
4.800 0.6903
0.225 37.6036
0.450 4.4947
0.900 6.6841
1.800 7.3792
3.600 6.1501


Pressure T/Sq. Ft.
Void Ratio
Cv
Lk. Pont.La. & Vic. West of IHNC Outfall
Canals Along London Ave. Canal
Sta. 0+50 30 ft. left Toe of Levee
Bor: 1-LUW Samp: 4-B dated 26-30 Apr.71
Depth: 13.0 Elev: -9.5
Class: M(Gr)CH4;lns&lys ML;org;ars DW;
cc
Pc: 0.800
Cc: 0.520
Gs: 2.69730
LL: 76
PL: 25
MUW: 103.9452
e0: 1.4830
0.15 1.4691
0.30 1.4475
0.60 1.3981
1.20 1.3012
2.40 1.1428
0.075 52.6610
0.225 4.8063
0.450 4.1328
0.900 5.4508
1.800 1.7671
Cv X 10 - 4
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0.01
0.1
1.0
10.0
13
R.B.R.

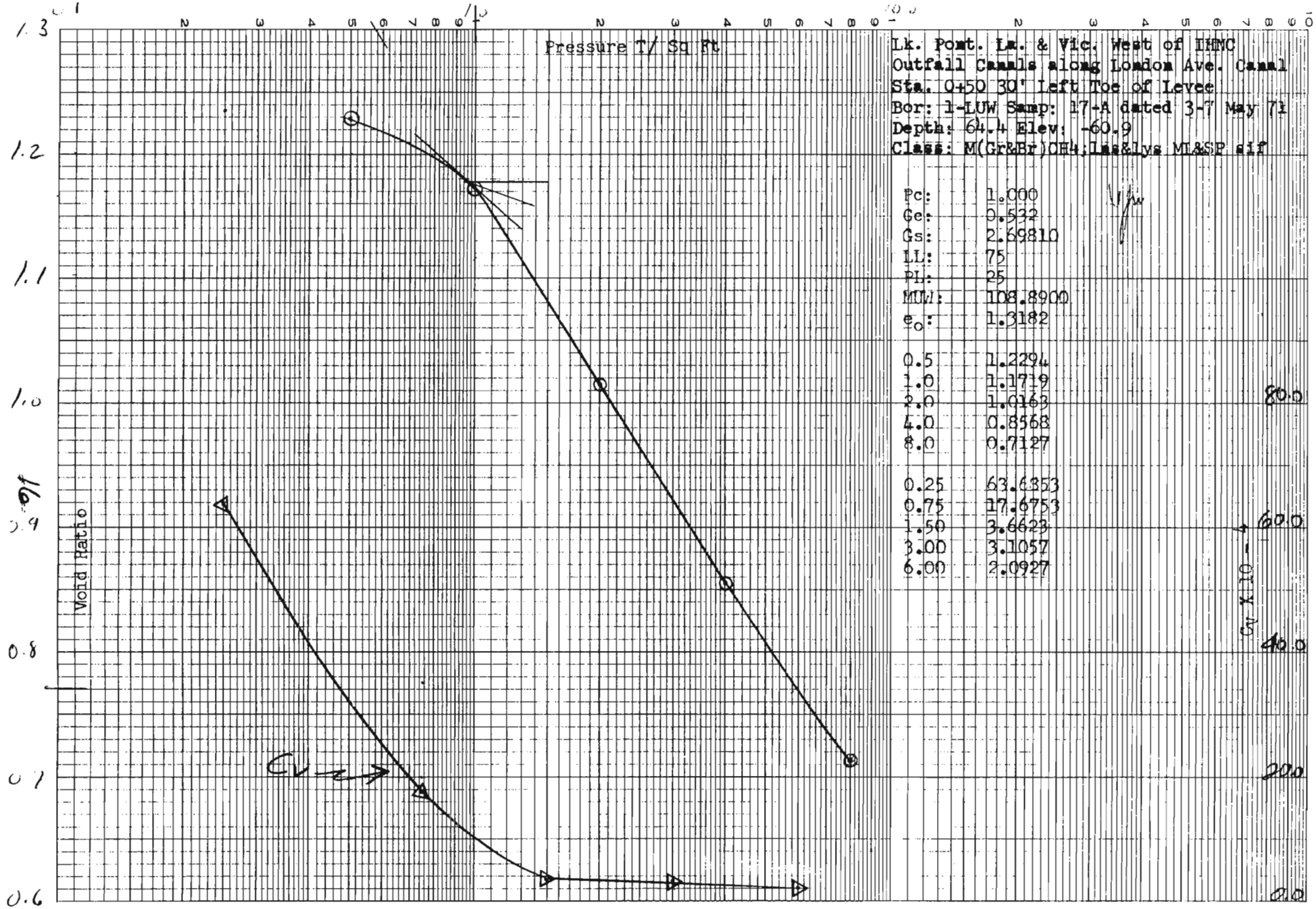

Pressure T/Sq Ft
Void Ratio
Cv
Cv x 10⁻⁴ ft²/min
Lk. Pont. La. & Vic. West of IENC
Outfall Canals along London Ave. Canal
Sta. 0+50 30' Left Toe of Levee
Bor: 1-LUW Samp: 9-B dated 3-7 May 71
Depth: 33.1 Elev: -29.6
Class: M(Gr)CH4;las&lys ML;org stks
Pc: 1.210
Cc: 0.555
Gs: 2.69160
LL: 86
PL: 23
MUW: 109.6112
eo: 1.3191
0.25 1.2841
0.50 1.2493
1.00 1.1972
2.00 1.0629
4.00 0.8975
0.125 47.4186
0.375 29.7591
0.750 19.4672
1.500 9.9271
3.000 8.9788



Lk. Pont. La. & Vic. West of IHNC
Outfall Canals Along London Ave. Canal
Sta. 0+50 30' Left Toe of Levee
Bor: 1-LUW Samp: 11-B dated 26-30 Apr.71
Depth: 40.6 Elev: -37.1
Class: M(Gr&dGr)CH4;lns;ML;org;ars

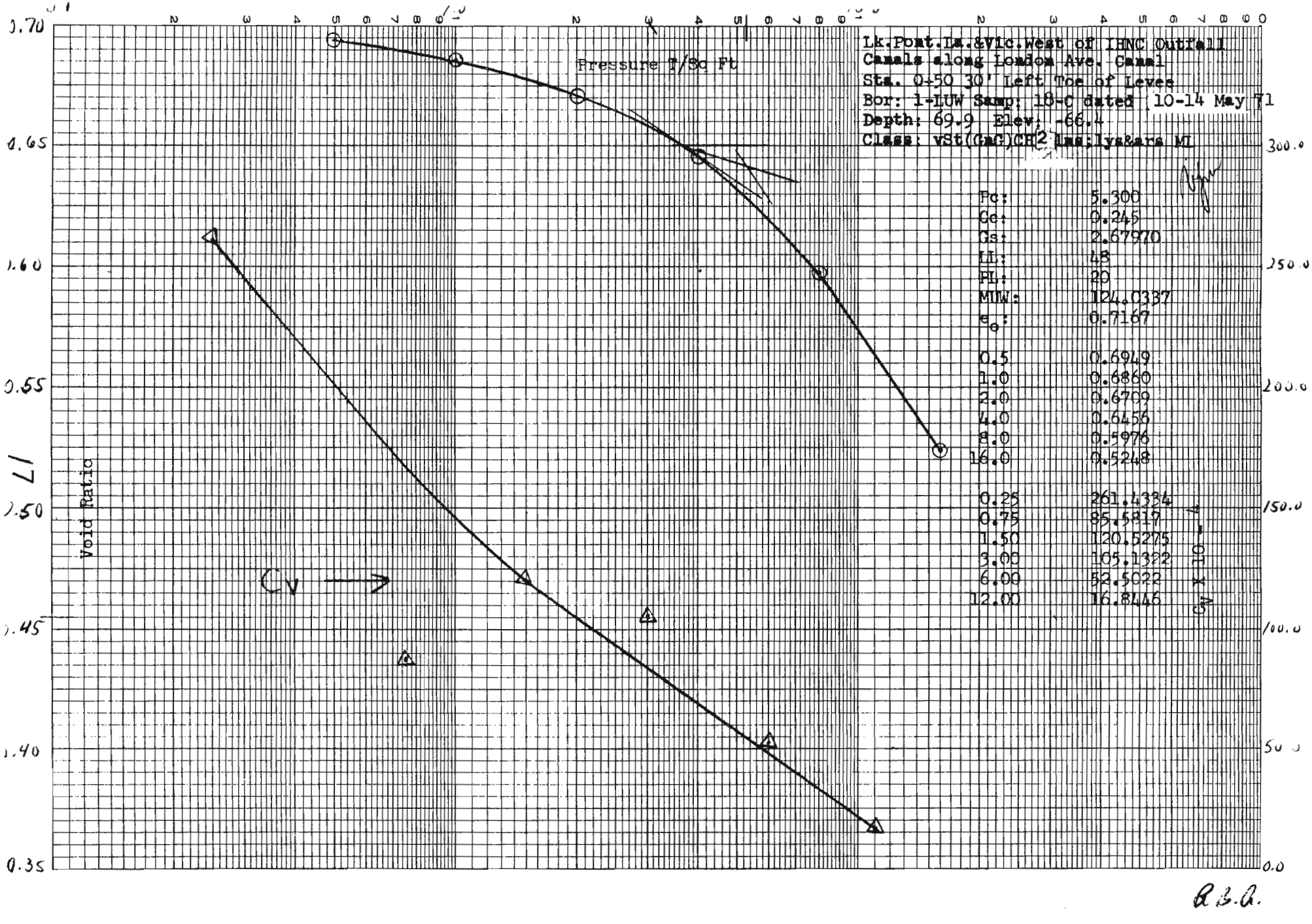
Pc:	1.170
Cc:	1.190
Gs:	2.68840
LL:	92
PL:	28
MUW:	95.5492
e_o:	2.1805
0.30	2.1089
0.60	2.0768
1.20	2.0049
2.40	1.6420
4.80	1.2976
0.15	83.5036
0.45	23.8473
0.90	12.1024
1.80	1.2275
3.60	1.1012

15

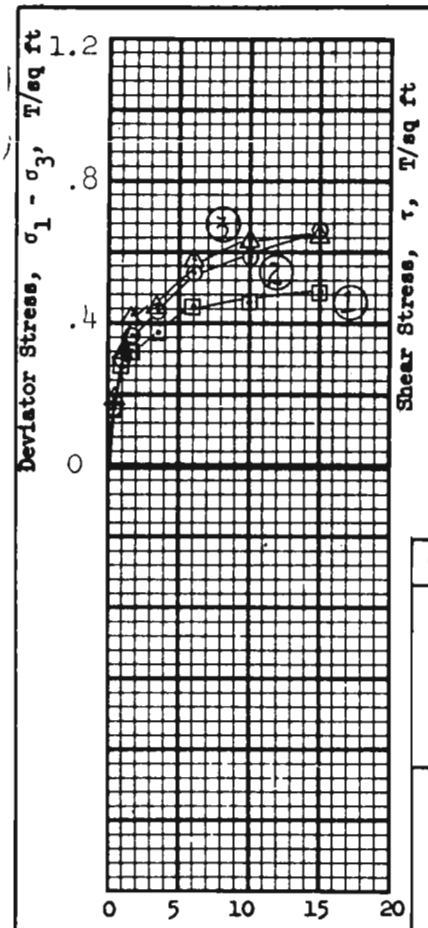


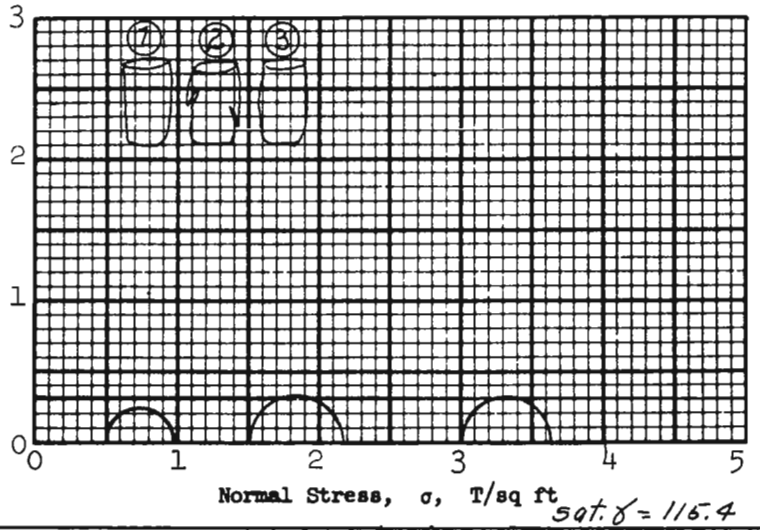
Lk. Pont. La. & Vic. West of IHNC
Outfall Canals along London Ave. Canal
Sta. 0+50 30' Left Toe of Levee
Bor: 1-LUW Samp: 17-A dated 3-7 May 71
Depth: 64.4 Elev: -60.9
Class: M(Gr&Br)CH4;lns&lys ML&SP sif

Pc:	1.000
Ge:	0.532
Gs:	2.69810
LL:	75
PL:	25
MUW:	108.8900
e_o:	1.3182
0.5	1.2294
1.0	1.1719
2.0	1.0163
4.0	0.8568
8.0	0.7127
0.25	63.6353
0.75	17.6753
1.50	3.6623
3.00	3.1057
6.00	2.0927


Lk.Pont.La.&Vic.West of IHNC Outfall
Canals along London Ave. Canal
Sta. 0+50 30' Left Toe of Levee
Bor: 1-LUW Samp: 18-C dated 10-14 May 71
Depth: 69.9 Elev: -66.4
Class: vSt(GmC)CH 2 Lns:lys&ars ML
Pc: 5.300
Cc: 0.249
Gs: 2.67970
LL: 48
PL: 20
MUW: 124.0337
e0: 0.7167
0.5 0.6949
1.0 0.6860
2.0 0.6709
4.0 0.6456
8.0 0.5976
16.0 0.5248
0.25 261.4334
0.75 85.5819
1.50 120.5275
3.00 105.1322
6.00 52.5022
12.00 16.8446
Pressure T/Sq Ft
Void Ratio
Cv
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
300.0
250.0
200.0
150.0
100.0
50.0
0.0

R.B.A.





Sat. γ = 115.4

Test No.			1	2	3	Avg.
Initial	Water content	w_o	35.4 %	33.3 %	36.6 %	35.0 %
	Void ratio	e_o	1.01	0.942	1.03	
	Saturation	S_o	94.6 %	95.4 %	95.9%	%
	Dry density, lb/cu ft	γ_d	83.6	86.8	82.9	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.49	0.66	0.64	
Time to failure, min		t_f	94	94	94	
Rate of strain, percent/min			0.160	0.160	0.160	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.32 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains 1/2" dia. gravel and large*

LL 59 | PL 19 | PI 40 | G_s 2.70

Remarks *pieces of decayed wood

Project LK. PONT., LA. & VIC.-HURR. PROT.-ORLEANS PAR. LKFRNT. LEV. WEST OF IHNC, GDM#2, SUPP.#5.

Area OUTFALL CANALS (ALONG LONDON AVE. CANAL) 1971

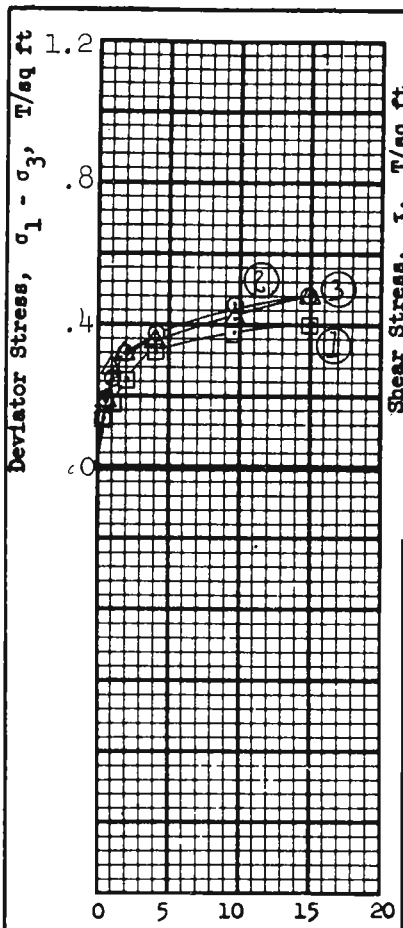
Boring No. 2-LUE | Sample No. 4-B

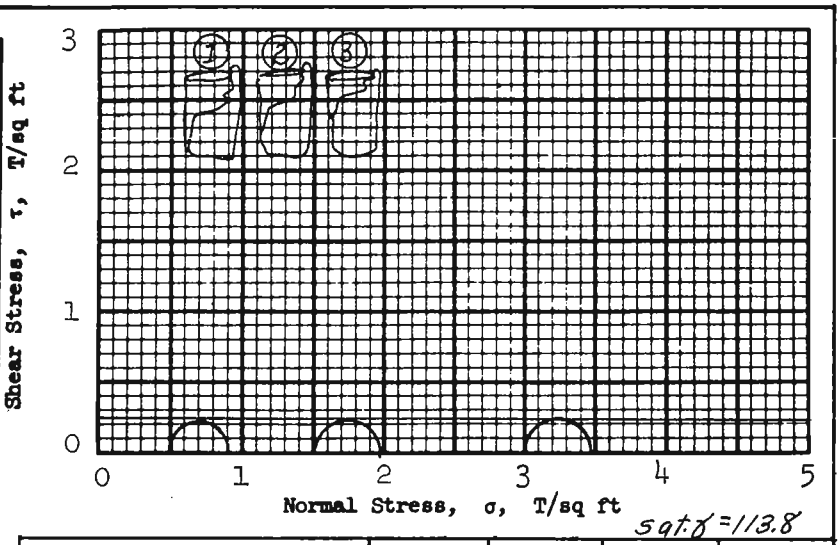
Depth El -1.9 | Date 25 March 1971

TES TRIAXIAL COMPRESSION TEST REPORT

ENG FORM 2089 1 JUN 65 (EM 1110-2-1902) PREVIOUS EDITIONS ARE OBSOLETE

18 TRANSLUCENT





sat. γ = 113.8

Test No.			1	2	3	Avg.
Initial	Water content	w_o	40.5 %	39.9 %	36.9 %	39.1 %
	Void ratio	e_o	1.09	1.06	0.992	
	Saturation	S_o	99.6 %	100+ %	99.7%	%
	Dry density, lb/cu ft	γ_d	80.2	81.1	84.0	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{max}$		0.40	0.48	0.48	
Time to failure, min		t_f	64	64	64	
Rate of strain, percent/min			0.234	0.234	0.234	
Ult deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{ult}$					
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.23 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH),gray, contains 1/2" dia.graveland large*

LL 56 | PL 18 | PI 38 | G_s 2.68

Remarks pieces of decayed wood

Project LK.PONT.,LA.&VIC.-HURR.PROT.-ORLEANS PAR. LKFRNT. LEV.WEST OF IHNC.GDM#2,SUPP.#5,

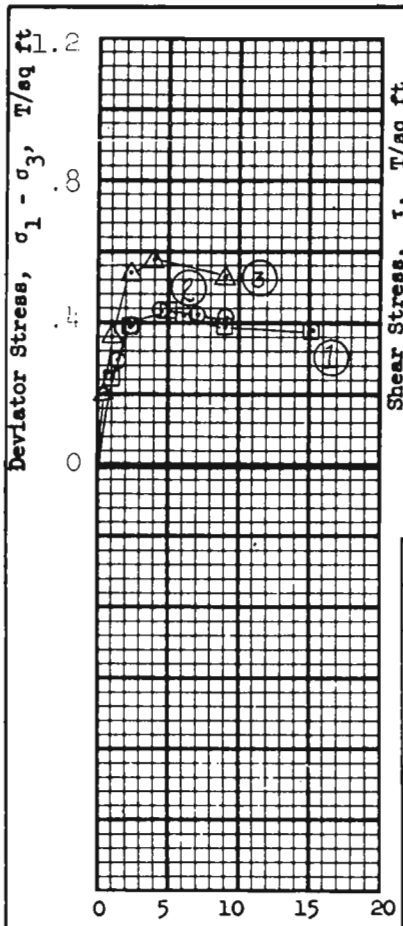
Area OUTFALL CANALS(ALONG LONDON AVE.CANAL)1971

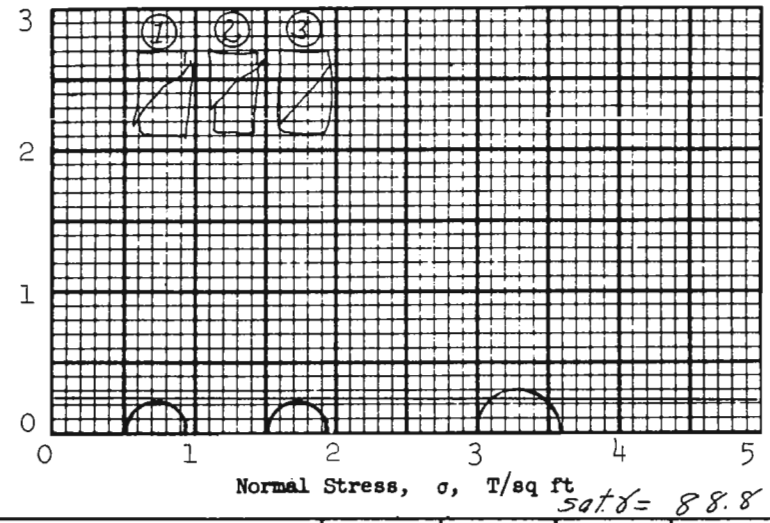
Boring No. 2-LUE | Sample No. 5-B

Depth-El -6.0 | Date 25 March 1971

TES TRIAXIAL COMPRESSION TEST REPORT

USAEWES SOILS MECH BRANCH





sat. γ = 88.8

Test No.			1	2	3	Avg.
Initial	Water content	w_o	108.2 %	110.5%	91.8 %	103.5 %
	Void ratio	e_o	2.90	3.00	2.42	
	Saturation	S_o	96.6 %	95.4 %	98.2 %	%
	Dry density, lb/cu ft	γ_d	41.5	40.4	47.2	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.43	0.43	0.58	
Time to failure, min		t_f	22	41	23	
Rate of strain, percent/min			0.183	0.111	0.176	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.24 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q **Type of specimen** UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains numerous pieces of decayed*

LL 138	PL 32	PI 106		G_s 2.59

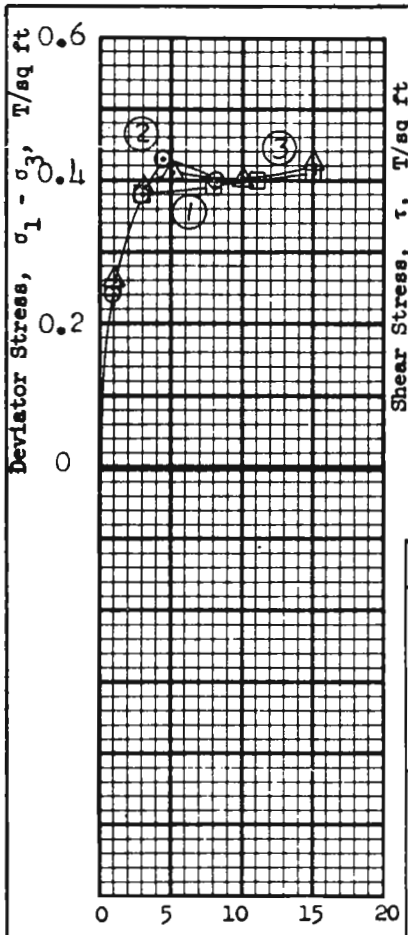
Remarks *wood

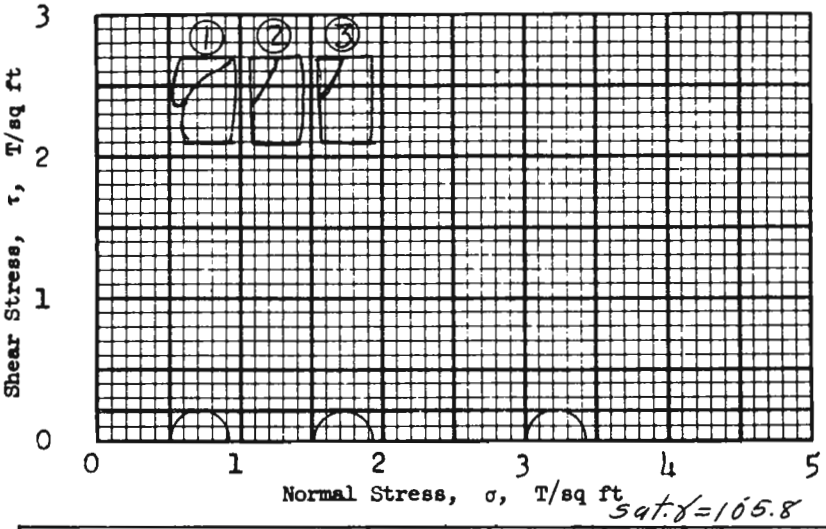
Project LK. PONT., LA&VIC.-HURR. PROT-ORLEANS PAR. LKFRNT. LEV., WEST OF IHNC, GDM#2, SUPP.#5,

Area OUTFALL CANALS (ALONG LONDON AVE. CANAL)

Boring No. 2-LUE	Sample No. 6-D
~~Depth~~ El -11.7	Date 25 March 1971

JMS **TRIAXIAL COMPRESSION TEST REPORT**





Sat. γ = 105.8

Test No.			1	2	3	Avg.
Initial	Water content	w_o	54.3 %	53.7 %	53.5 %	53.7 %
	Void ratio	e_o	1.51	1.51	1.49	
	Saturation	S_o	98.5%	97.4%	98.4%	%
	Dry density, lb/cu ft	γ_d	68.1	68.2	68.8	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.41	0.43	0.42	
Time to failure, min		t_f	87	31	113	
Rate of strain, percent/min			0.172	0.140	0.133	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.41	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.21 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains 1/2" silt seam

LL 67 | PL 19 | PI 48 | | G_s 2.74

Remarks _____

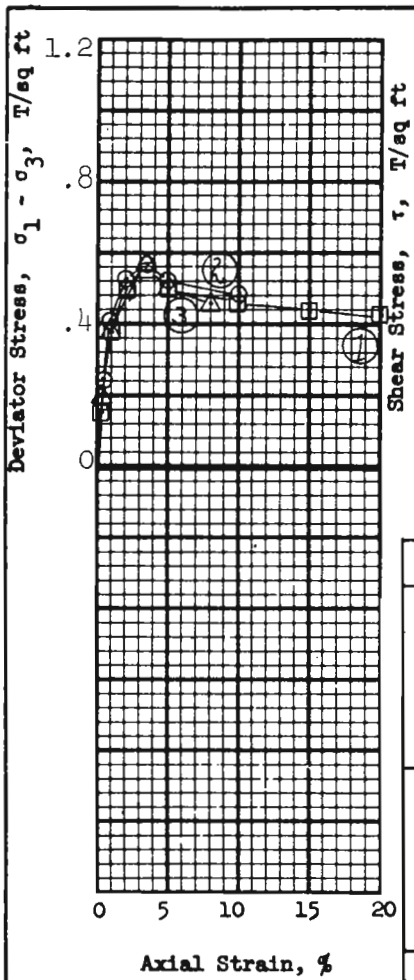
Project LK. PONT. LA. & VIC. - HURR. PROT. - ORLEANS PARISH LKFRNT. LEV, WEST OF IHNC, CDM # 2, SUPP.

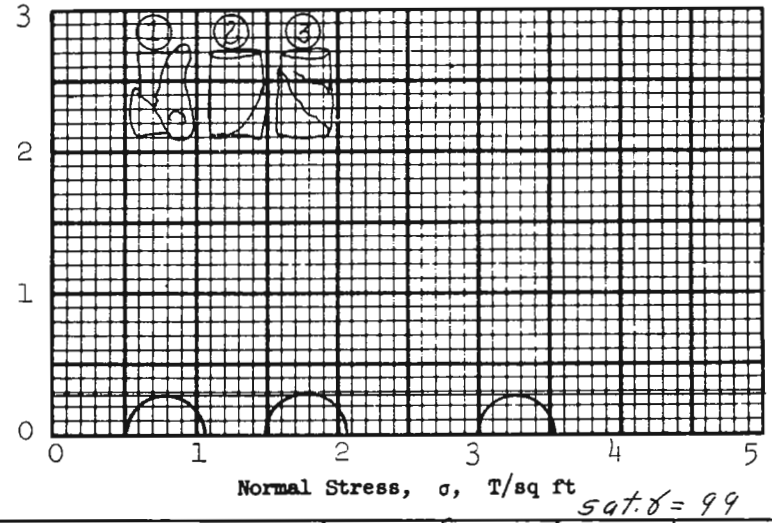
Area # 5, OUTFALL CANALS (ALONG LONDON AVE CANAL)

Boring No. 2-LUE | Sample No. 11-A

~~Depth~~ El - 29.3 | Date 26 March 1971

JMS TRIAXIAL COMPRESSION TEST REPORT





sat. δ = 99

Test No.			1	2	3	Avg.
Initial	Water content	w_o	70.1 %	69.1 %	71.5 %	70.2%
	Void ratio	e_o	1.92	1.90	1.95	
	Saturation	S_o	98.9 %	98.6 %	99.4 %	%
	Dry density, lb/cu ft	γ_d	58.0	58.4	57.4	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.55	0.56	0.52	
Time to failure, min		t_f	6	25	29	
Rate of strain, percent/min			0.541	0.133	0.114	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	140	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.27 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains a silt seam

LL 85 | PL 27 | PI 58 | | G_s 2.71

Remarks _____

Project LK.PONT.,LA.&VIC.-HURR. PROT.-ORLEANS PAR.LKFRNT.LEV.,WEST OF IHNC,GDM NO.2,SUPP.#5,

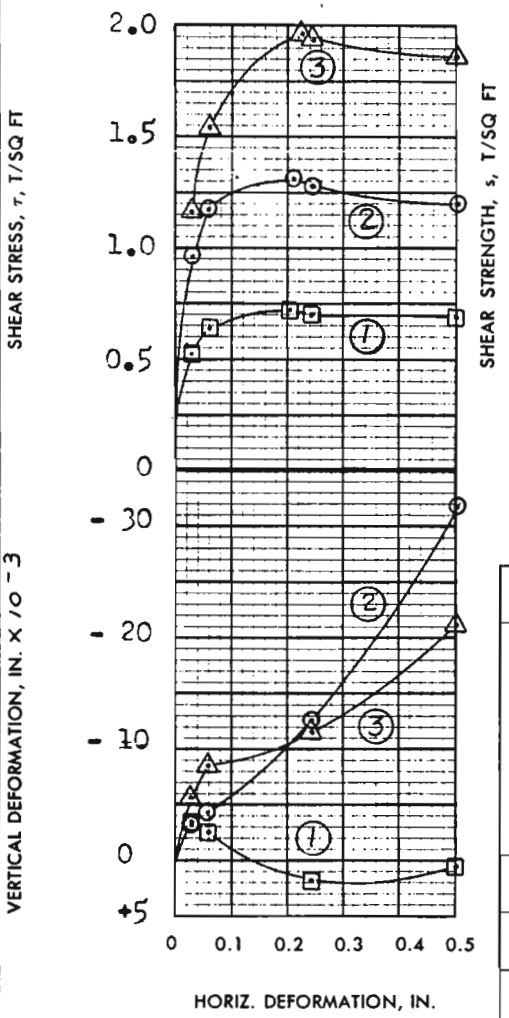
Area OUTFALL CANALS(ALONG LONDON AVE.CANAL)

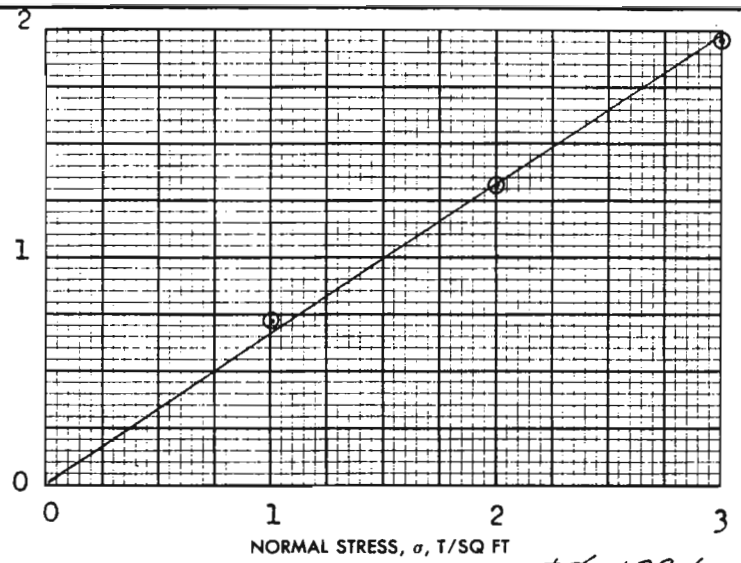
Boring No. 2-LJE | Sample No. 12-D

Depth El -35.9 | Date 26 March 1971

OHR

TRIAXIAL COMPRESSION TEST REPORT





Sat. γ = 123.6

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	25.9%	25.0%	27.4%	26.1%
	VOID RATIO	e_o	0.706	0.710	0.713	
	SATURATION	S_o	97.9%	94.0%	100+%	%
	DRY DENSITY, LB/CU FT	γ_d	97.7	97.5	97.3	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	25.2%	25.1%	24.3%	%
	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}	0.73	1.31	1.96	
ACTUAL TIME TO FAILURE, MIN		t_f	1110	1140	1230	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' =$ 33°

TAN $\phi' =$ 0.655

$c' =$ 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 0.550 IN. THICK

CLASSIFICATION SILTY SAND(SM),gray, contains Clay(CH) lenses and 1/4" dia. shells

LL _ PL _ PI _ G_s 2.67

REMARKS

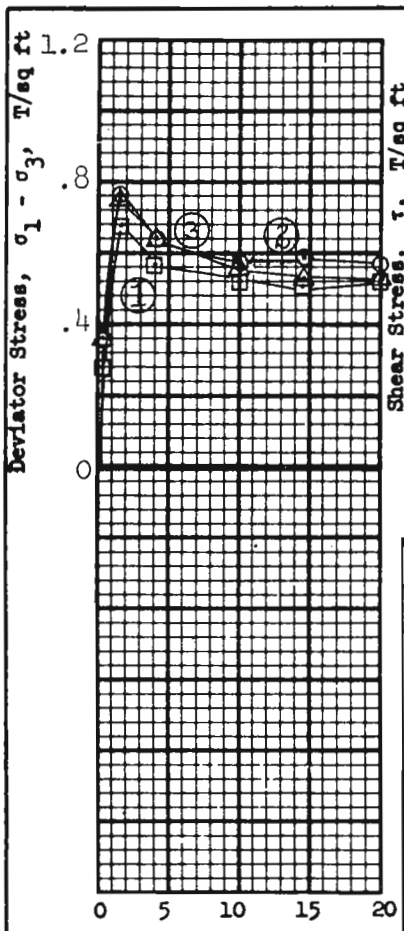
PROJECT LK.PONT.LA.,& VIC.- HURR. PROT.-ORLEANS PARISH LKFRNT. LEV.,WEST OF HNC, GDM # 2,

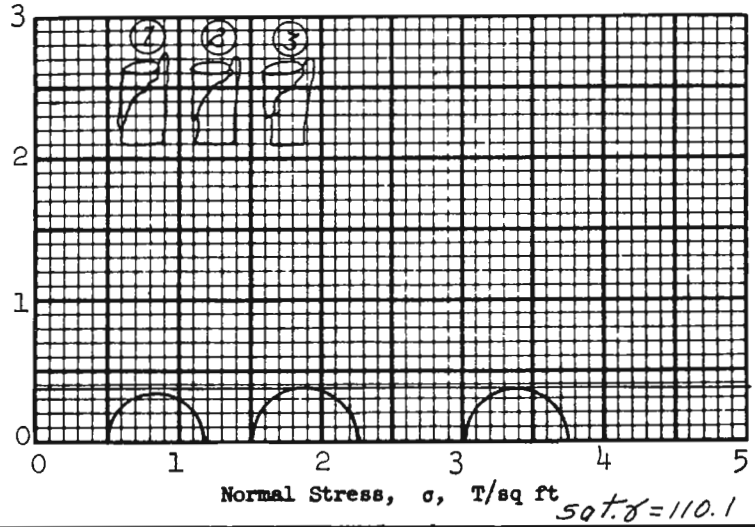
AREA SUPP. # 5, OUTFALL CANALS(ALONG LONDON AVE.)

BORING NO. 2-LUE SAMPLE NO. 16-B

~~DEPTH~~ EL - 50.0 DATE 6 April 1971

BWG **DIRECT SHEAR TEST REPORT**





Sat. γ = 110.1

Test No.			1	2	3	Avg.
Initial	Water content	w_o	47.8 %	44.1 %	44.7 %	45.5 %
	Void ratio	e_o	1.29	1.21	1.22	
	Saturation	S_o	100+ %	98.8 %	99.3 %	%
	Dry density, lb/cu ft	γ_d	73.8	76.4	76.3	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.68	0.77	0.75	
Time to failure, min		t_f	12	12	12	
Rate of strain, percent/min			0.153	0.153	0.153	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.38	1.38	1.39	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.37 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains layers of fine sand with shell*

LL 50 | PL 15 | PI 35 | G_s 2.71

Remarks *fragments

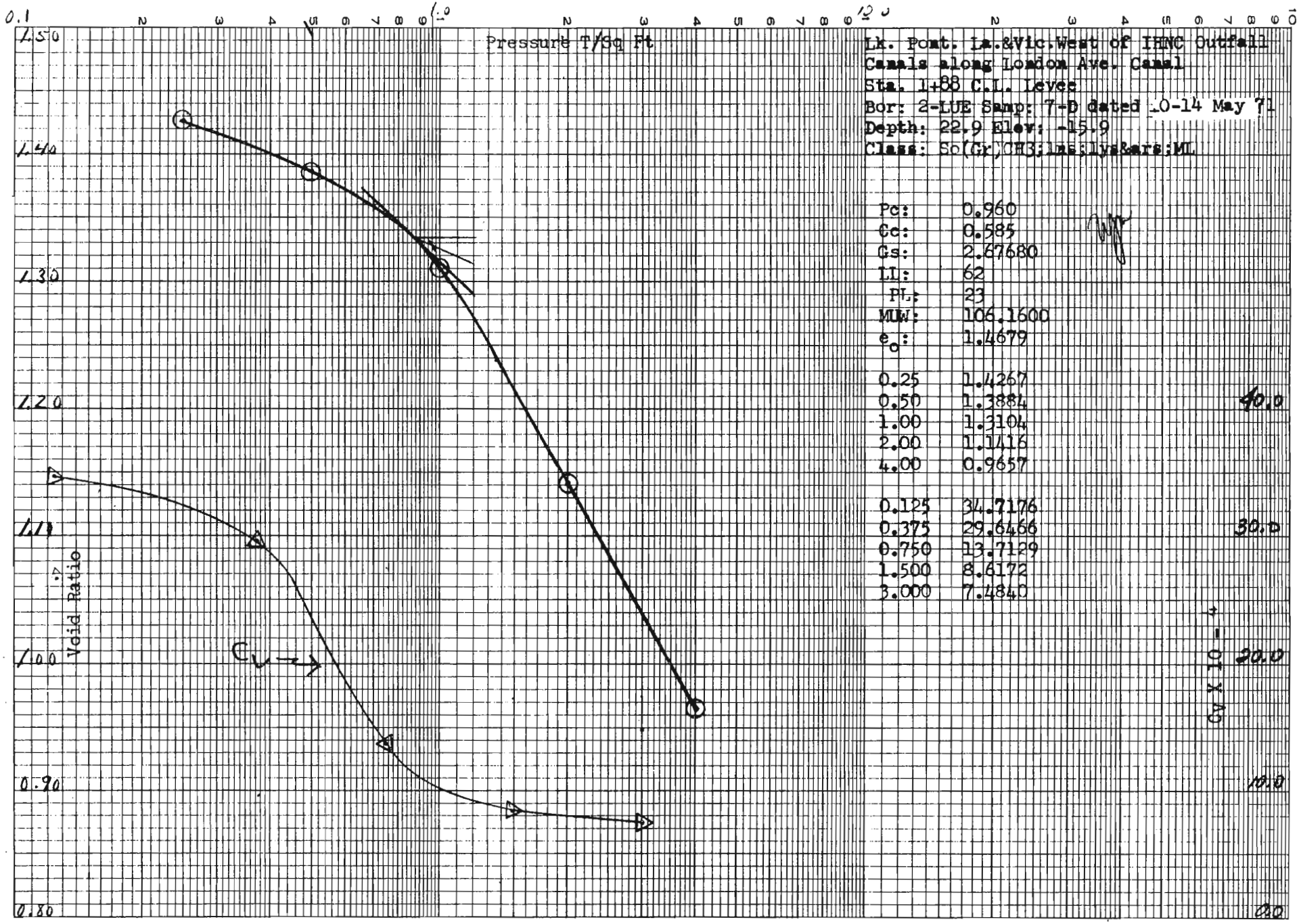
Project LK. PONT., LA. & VIC. - HURR. PROT. - ORLEANS PAR. LKFRNT. LEV. WEST OF IHNC, GDM#2, SUPP.#5, 1971

Area OUTFALL CANALS (ALONG LONDON AVE. CANAL)

Boring No. 2-LUE | Sample No. 18-D

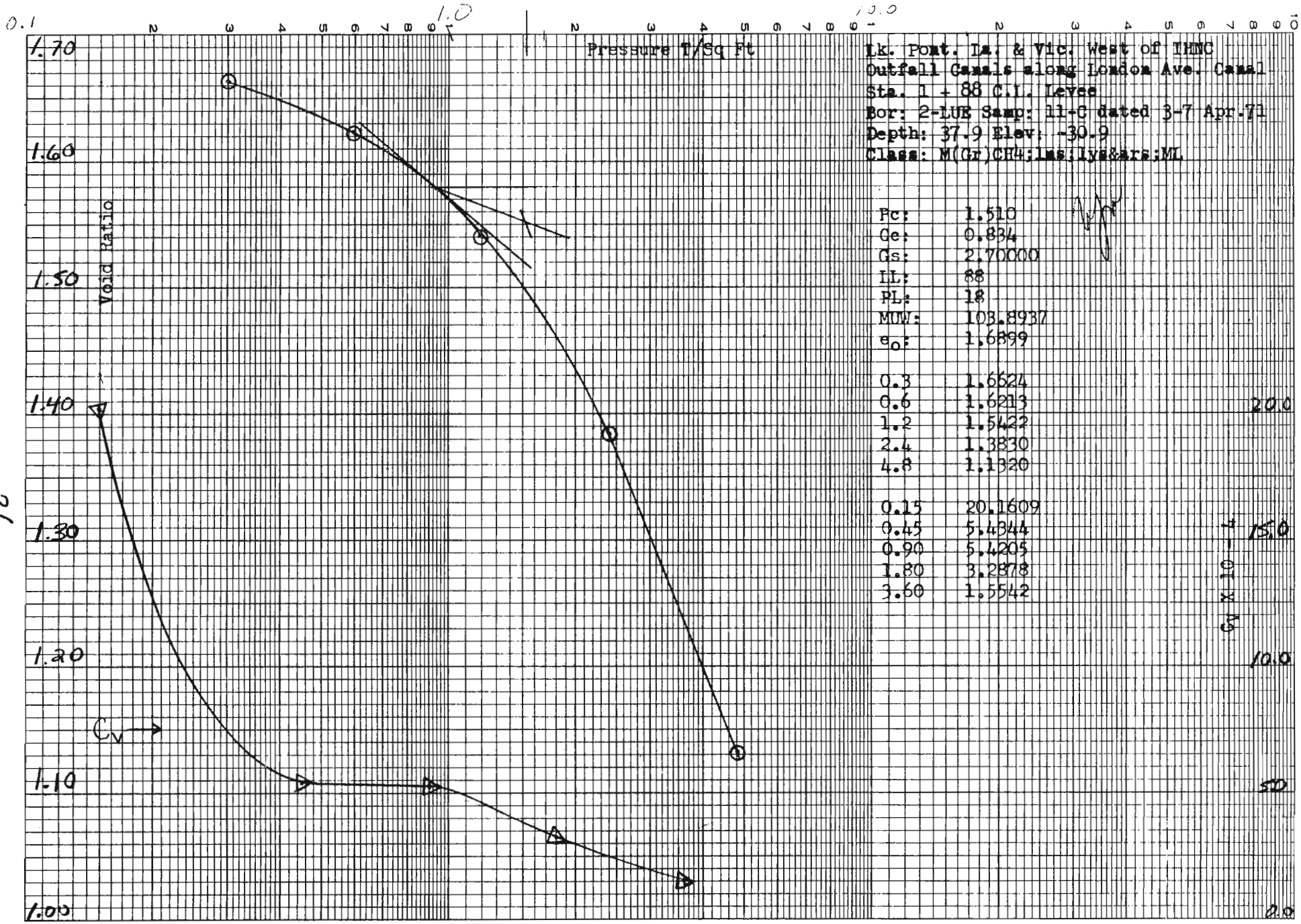
~~Depth~~ El -60.0 | Date 26 March 1971

TES TRIAXIAL COMPRESSION TEST REPORT

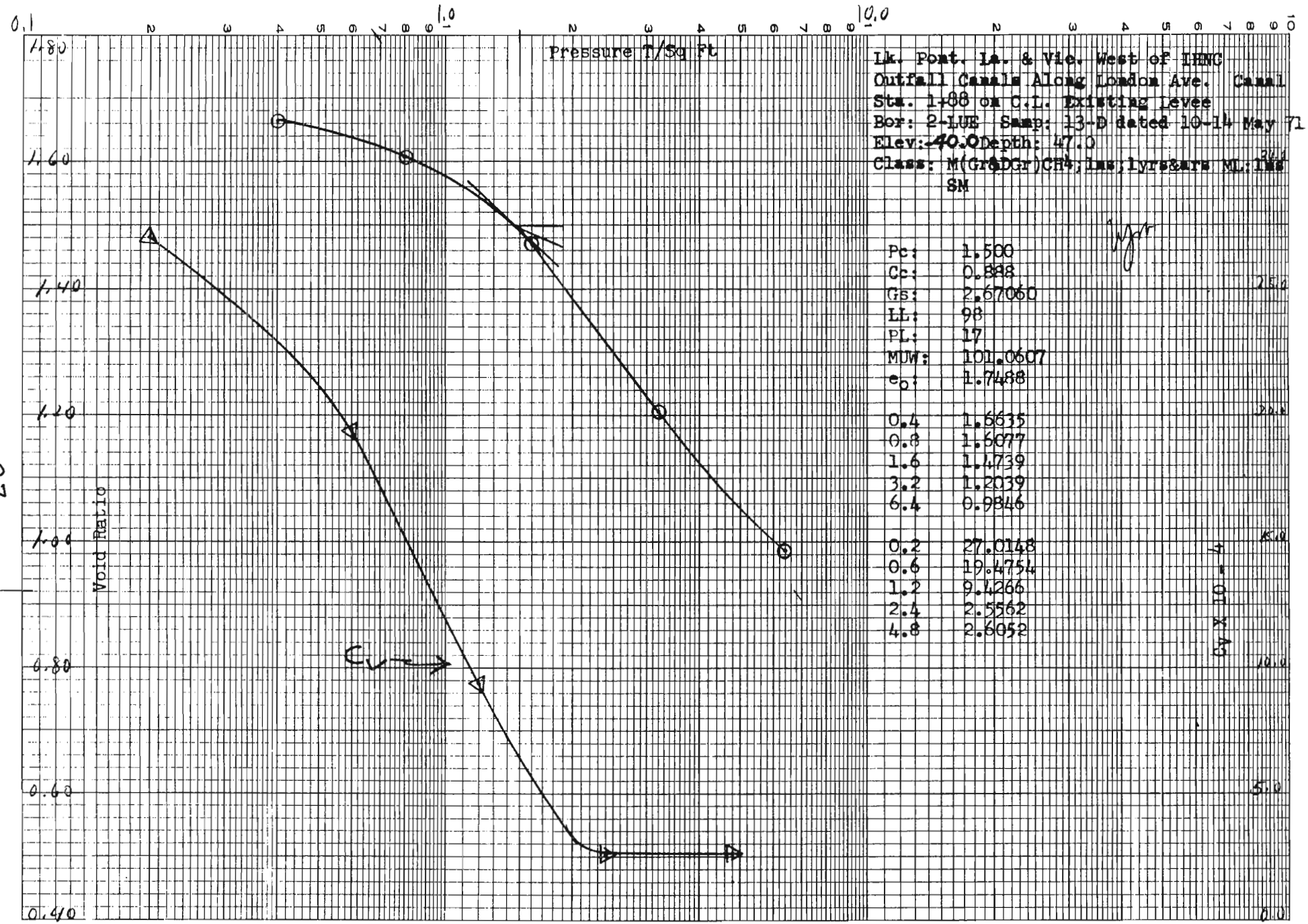

Pressure T/Sq Ft
Void Ratio
Lk. Pont. La.&Vic.West of IHNC Outfall Canals along London Ave. Canal
Sta. 1+88 C.L. Levee
Bor: 2-LUE Samp: 7-D dated 10-14 May 71
Depth: 22.9 Elev: -15.9
Class: So(Gr)CH3;lns;lys&ars;ML
Pc: 0.960
Cc: 0.585
Cs: 2.67680
LL: 62
PL: 23
MW: 106.1600
e0: 1.4679
0.25 1.4267
0.50 1.3884
1.00 1.3104
2.00 1.1416
4.00 0.9657
0.125 34.7176
0.375 29.6466
0.750 13.7129
1.500 8.6172
3.000 7.4840
40.0
30.0
20.0
10.0
0.0
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80

25

G.B.G.

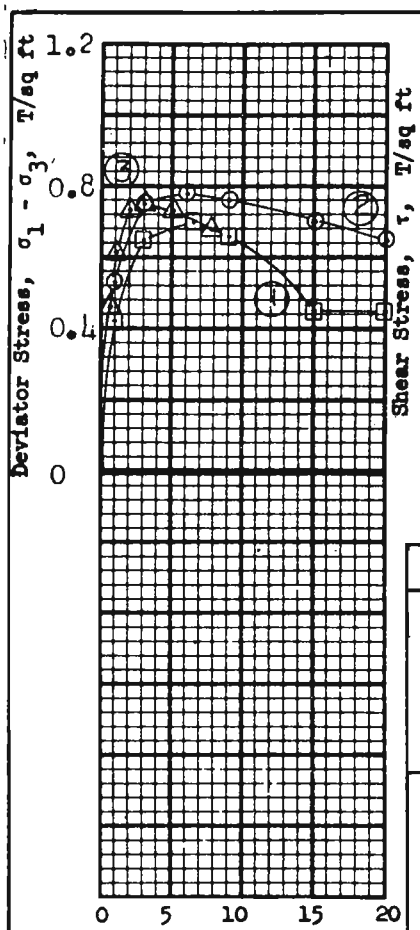

Void Ratio
Pressure T/Sq Ft
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0.1
1.0
10.0
20.0
15.0
10.0
5.0
0.0
Cv
Lk. Pont. La. & Vic. West of THMC
Outfall Canals along London Ave. Canal
Sta. 1 + 88 C.L. Levee
Bor: 2-LUE Samp: 11-C dated 3-7 Apr.71
Depth: 37.9 Elev: -30.9
Class: M(Gr)CH4;las;lys&ars;ML
Pc: 1.510
Ge: 0.834
Gs: 2.70000
LL: 88
PL: 18
MUW: 103.8937
eo: 1.6899
0.3 1.6624
0.6 1.6213
1.2 1.5422
2.4 1.3830
4.8 1.1320
0.15 20.1609
0.45 5.4344
0.90 5.4205
1.80 3.2878
3.60 1.5542

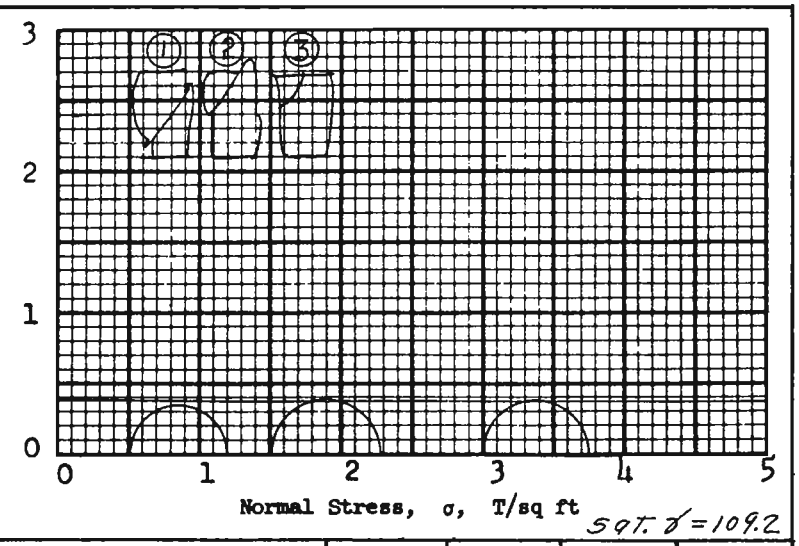
26


Pressure T/Sq Ft
Void Ratio
Cv
Cv X 10 - 4
Lk. Pont. La. & Vic. West of IHNC
Outfall Canals Along London Ave. Canal
Sta. 1+88 on C.L. Existing Levee
Bor: 2-LUE Samp: 13-D dated 10-14 May 71
Elev: -40.0 Depth: 47.0
Class: M(Gr&DGr)CH4;1ms;1yrs&ars ML:1ms
SM
Pc: 1.500
Cc: 0.888
Gs: 2.67060
LL: 98
PL: 17
MUW: 101.0607
e0: 1.7488
0.4 1.6635
0.8 1.6077
1.6 1.4739
3.2 1.2039
6.4 0.9846
0.2 27.0148
0.6 19.4754
1.2 9.4266
2.4 2.5562
4.8 2.6052

27

A.B.A.





SQT. $\delta = 109.2$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	46.3%	48.3%	45.7 %	46.8 %
	Void ratio	e_o	1.29	1.35	1.27	
	Saturation	S_o	97.6 %	97.3 %	97.9 %	%
	Dry density, lb/cu ft	γ_d	74.3	72.4	74.8	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{max}$		0.70	0.78	0.75	
Time to failure, min		t_f	29	33	25	
Rate of strain, percent/min			0.220	0.181	0.118	
Ult deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{ult}$					
Initial diameter, in.		D_o	1.39	1.39	1.39	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.37 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), light gray, contains iron oxide and a small*

LL 99 | PL 23 | PI 76 | | G_s 2.72

Remarks *amount of decayed vegetation

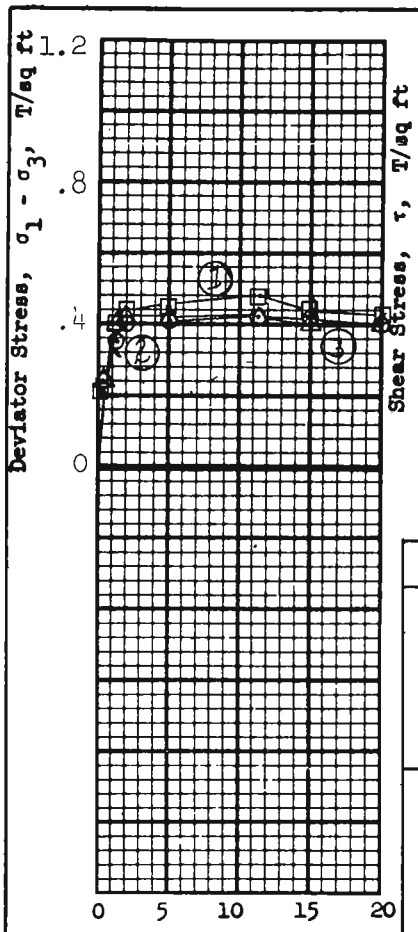
Project LK.PONT.LA.&VIC.-HURR.PROT.-ORLEANS PAR.LKFRNT.LEV.,WEST OF IHNC-GDM#2,SUPP.#5,

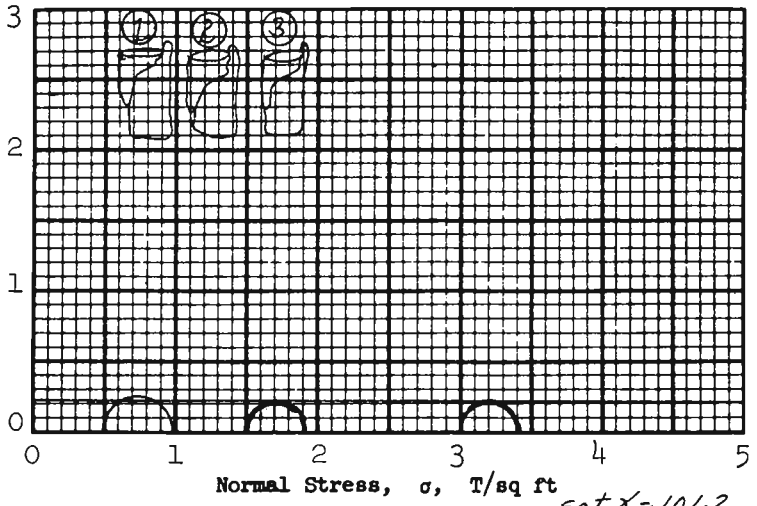
Area OUTFALL CANALS(ALONG LONDON.AVE.CANAL)71

Boring No. 3-LUW | Sample No. 1-B

~~Depth~~ El + 0.4 | Date 19 March 1971

JMS TRIAXIAL COMPRESSION TEST REPORT





Sat. γ = 101.2

Test No.			1	2	3	Avg.
Initial	Water content	w_o	63.5 %	63.8 %	63.8 %	63.7 %
	Void ratio	e_o	1.74	1.74	1.74	
	Saturation	S_o	98.5 %	99.0 %	99.0 %	%
	Dry density, lb/cu ft	γ_d	61.6	61.5	61.6	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.48	0.42	0.42	
Time to failure, min		t_f	55	55	10	
Rate of strain, percent/min			0.205	0.205	0.205	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.39	1.39	1.39	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.22 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray, contains a trace of organic matter				
LL 112	PL 25	PI 87		G_s 2.70

Remarks _____

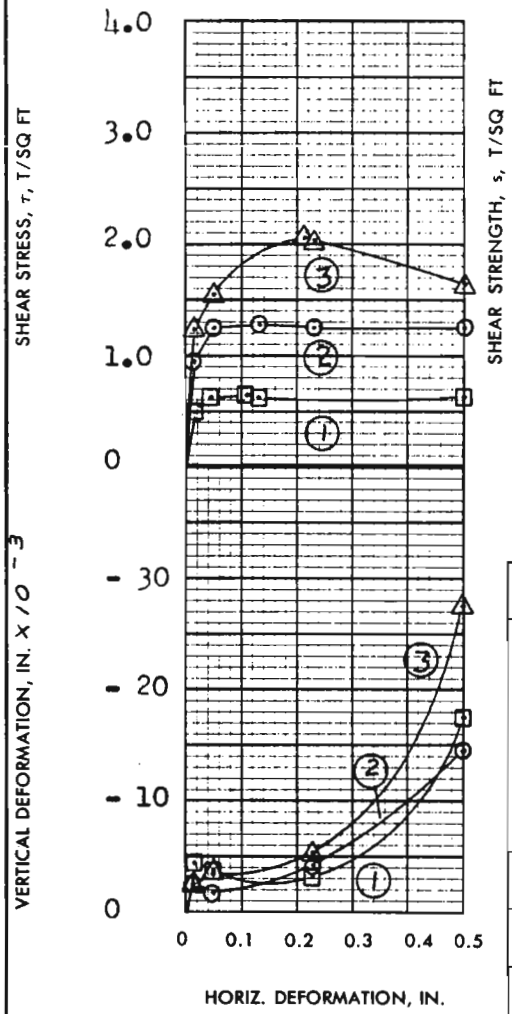
Project LK. PONT. LA. & VIC.-HURR. ORLEANS PAR. LKFRNT. LEV. WEST OF IHNC-GDM#2, SUPP.#5; OUT-

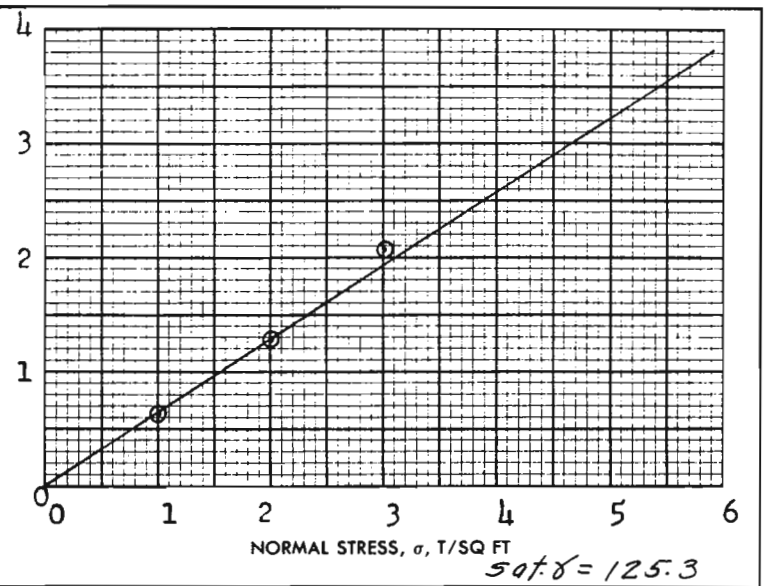
Area FALL CANALS (ALONG LONDON AVE. CANAL) 1971

Boring No. 3-LUW | Sample No. 2-C

Depth / El -4.0 | Date 19 March 1971

TES TRIAXIAL COMPRESSION TEST REPORT





Sat. γ = 125.3

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	21.0 %	20.7%	20.5 %	20.7%
	VOID RATIO	e_o	0.644	0.679	0.655	
	SATURATION	S_o	87.1 %	81.4 %	83.6%	%
	DRY DENSITY, LB/CU FT	γ_d	101.4	99.3	100.7	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	17.9 %	17.8 %	21.7%	%
	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}	0.63	1.29	2.08	
ACTUAL TIME TO FAILURE, MIN		t_f	690	810	1230	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 33°

TAN ϕ' = 0.645

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED		3.00 IN. SQUARE	0.550 IN. THICK
CLASSIFICATION	SAND(SP),light tan, contains 1/2" dia. shells and shell fragments			
LL –	PL –	PI –		G_s 2.67

REMARKS

PROJECT LK.PONT.LA.,&VIC.-HURR.PROT.-ORLEANS

PARISH LKFRNT.LEV.,WEST OF IHNC-GDM#2,SUPP.#5,

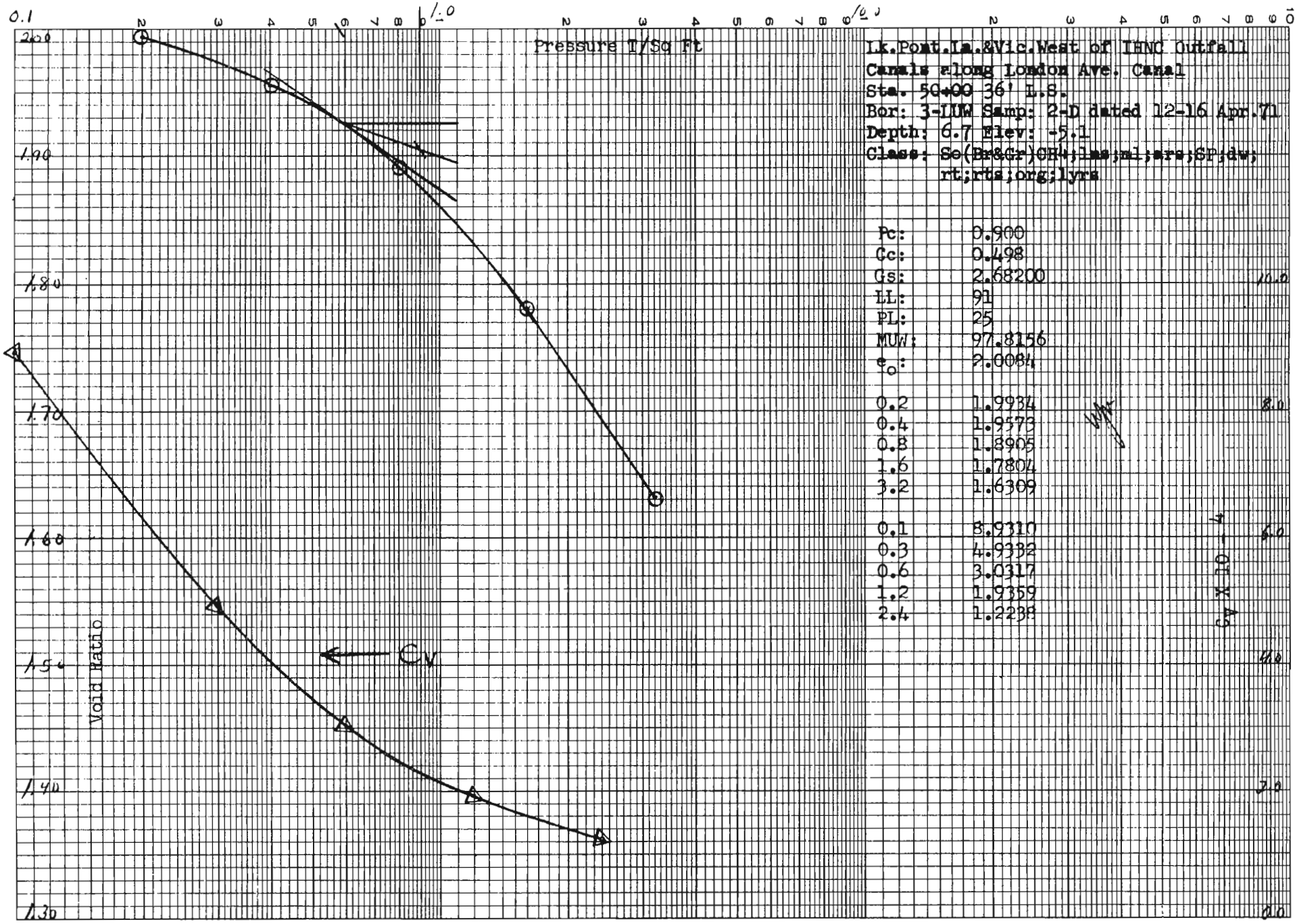
AREA OUTFALL CANALS(ALONG LONDON AVE.CANAL)1971

BORING NO. 3-LUW SAMPLE NO. 4-C

~~DEPTH~~ EL - 12.5 DATE 24 March 1971

BWG

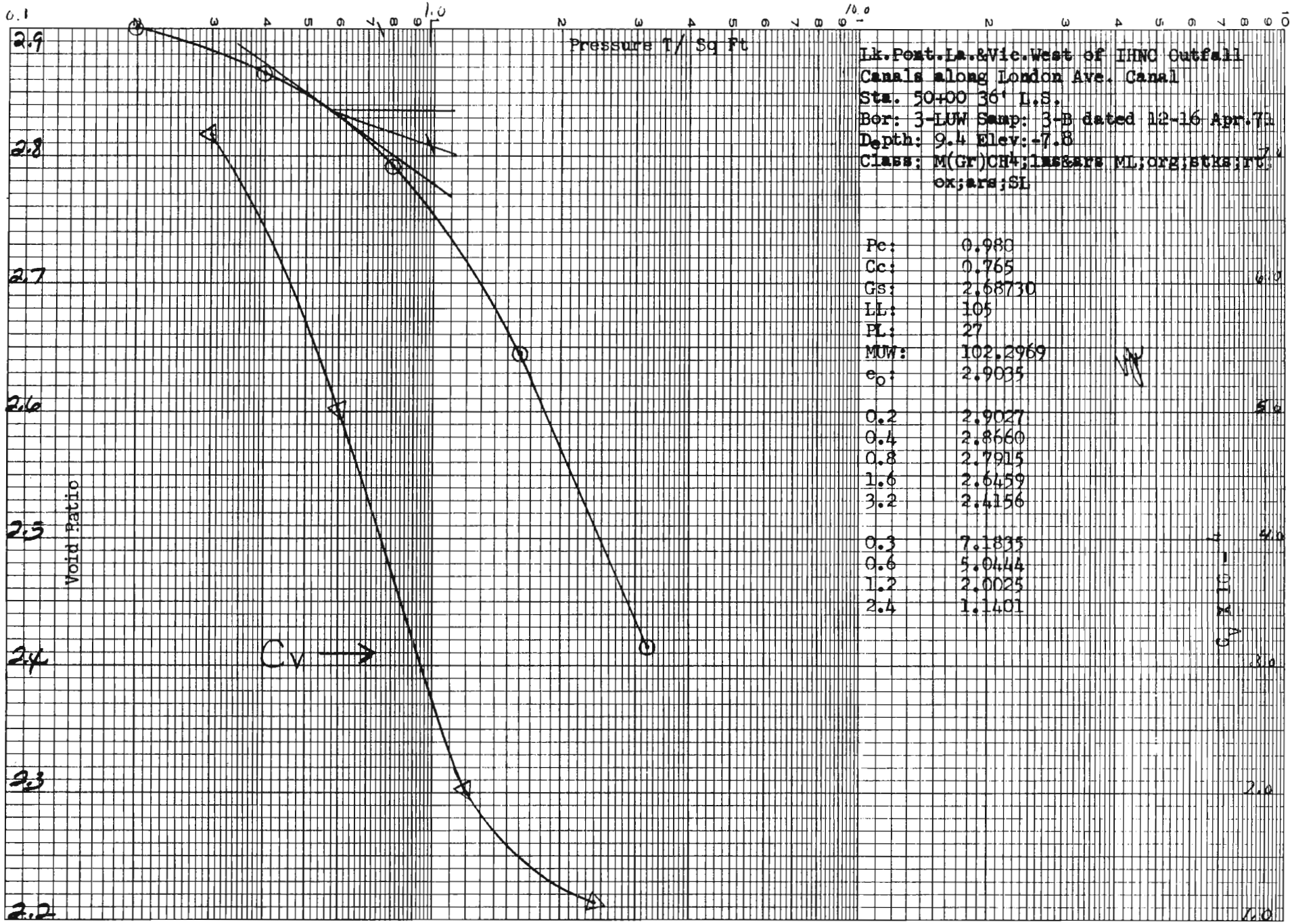
DIRECT SHEAR TEST REPORT



Lk.Pont.La.&Vic.West of IHNC Outfall
Canals along London Ave. Canal
Sta. 50+00 36' L.S.
Bor: 3-LUW Samp: 2-D dated 12-16 Apr.71
Depth: 6.7 Elev: -5.1
Class: So(Br&Gr)CH4;lns;ml;ars;SP;dw;
rt;rts;org;lyrs

Pc:	0.900
Cc:	0.498
Gs:	2.68200
LL:	91
PL:	25
MUW:	97.8156
e_o:	2.0084
0.2	1.9934
0.4	1.9573
0.8	1.8905
1.6	1.7804
3.2	1.6309
0.1	8.9310
0.3	4.9332
0.6	3.0317
1.2	1.9359
2.4	1.2238

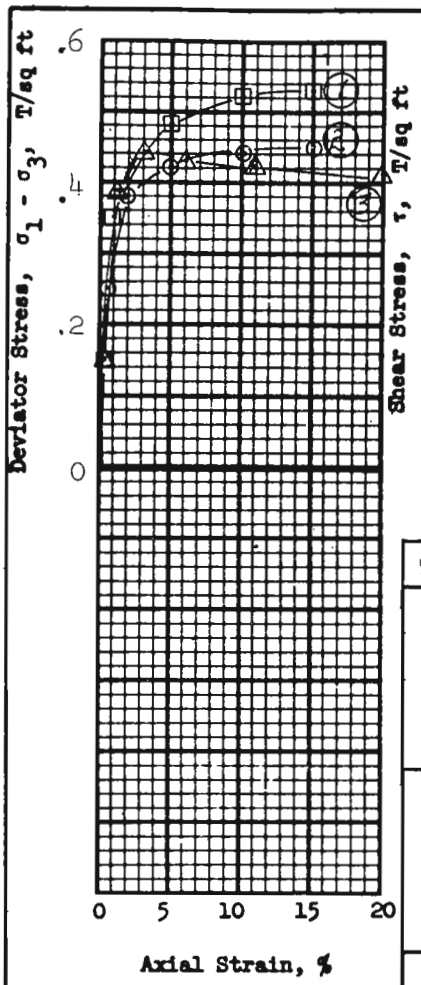
O.B.V.

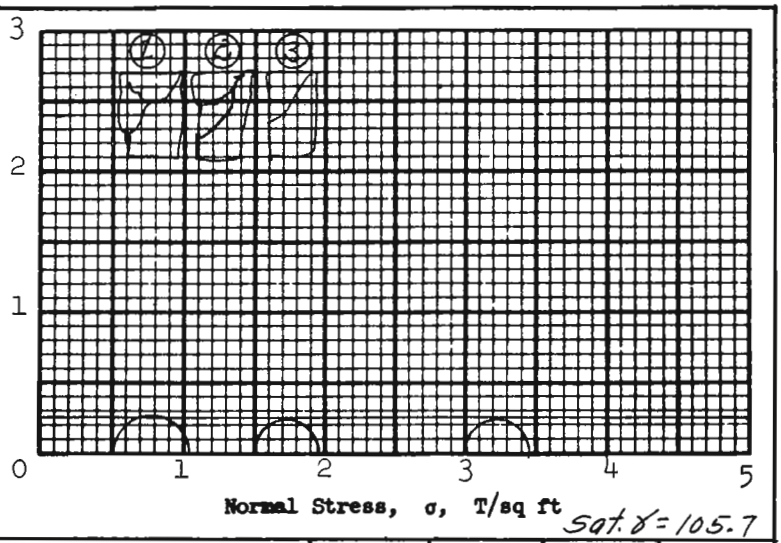


Lk.Pont.La.&Vic.West of IHNC Outfall
Canals along London Ave. Canal
Sta. 50+00 36' L.S.
Bor: 3-LUW Samp: 3-B dated 12-16 Apr.71
Depth: 9.4 Elev: -7.8
Class: M(Gr)CH4;lms&ars ML;org;stks;rt;
ox;ars;SL

Pc:	0.980
Cc:	0.765
Gs:	2.68730
LL:	105
PL:	27
MUW:	102.2969
e_o:	2.9035
0.2	2.9027
0.4	2.8660
0.8	2.7915
1.6	2.6459
3.2	2.4156
0.3	7.1835
0.6	5.0444
1.2	2.0025
2.4	1.1401

Q B A





Sat. γ = 105.7

Test No.			1	2	3	Avg.
Initial	Water content	w_o	51.5 %	55.7 %	58.9 %	55.4 %
	Void ratio	e_o	1.44	1.59	1.64	
	Saturation	S_o	99.1 %	97.0 %	99.5 %	%
	Dry density, lb/cu ft	γ_d	70.9	66.8	65.4	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.53	0.45	0.44	
Time to failure, min		t_f	100	100	20	
Rate of strain, percent/min			0.15	0.15	0.15	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.24 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, trace of organic matter

LL 91 | PL 24 | PI 67 | G_s 2.77

Remarks _____

Project LK. PONT. LA.& VIC.-HURR. PROT.(70)

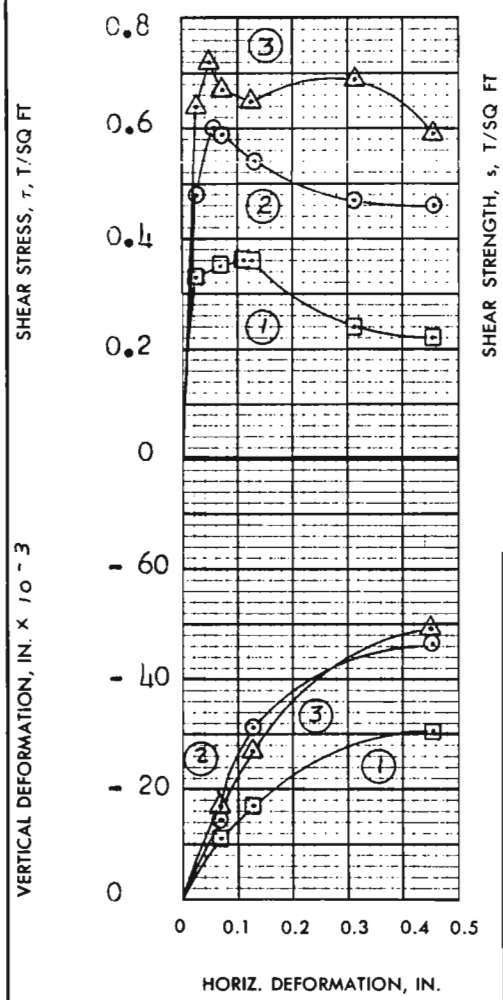
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC.

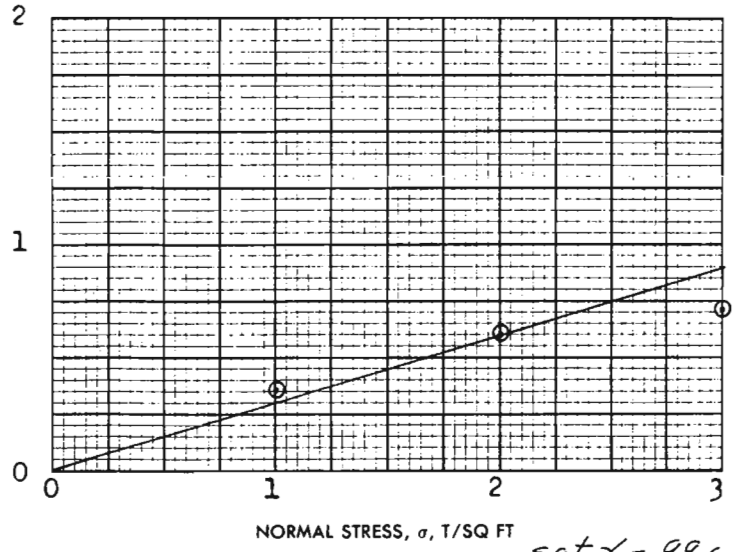
Area GDM NO.2, SUPP NO.5 OUTFALL CANALS

Boring No. 4-LUE | Sample No. 1-D

Depth El -5.4 | Date 14 Jan.1971

JMS TRIAXIAL COMPRESSION TEST REPORT





sat. γ = 99.6

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	69.0 %	71.2 %	70.5 %	70.2 %
	VOID RATIO	e_o	1.93	1.98	1.95	
	SATURATION	S_o	98.7 %	99.2 %	99.8 %	%
	DRY DENSITY, LB/CU FT	γ_d	58.8	57.8	58.4	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	1	2	4	
FINAL	WATER CONTENT	w_f	64.9 %	60.1 %	59.8 %	%
	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}	0.36	0.60	0.72	
ACTUAL TIME TO FAILURE, MIN		t_f	330	150	120	
RATE OF STRAIN, IN./MIN			.00034	.00034	.00034	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' =$ 18°

TAN $\phi' =$ 0.30

$c' =$ 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.540 IN. THICK

CLASSIFICATION: PLASTIC CLAY(CH),gray, fissured, contains finely divided organic *

LL 110 | PL 37 | PI 73 | G_s 2.76

REMARKS: *matter and rootlets

PROJECT: LK. PONT.LA.,& VIC.-HURR. PROT.-(70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

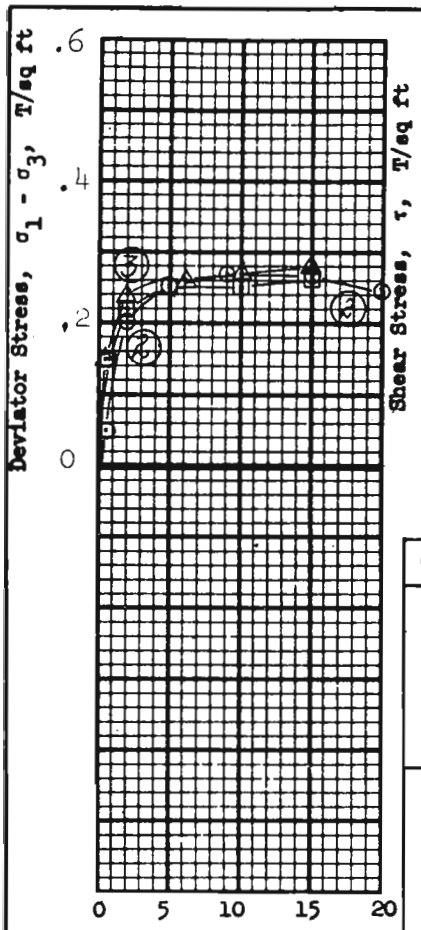
AREA: GDM # 2,SUPP.# 5 OUTFALL CANALS

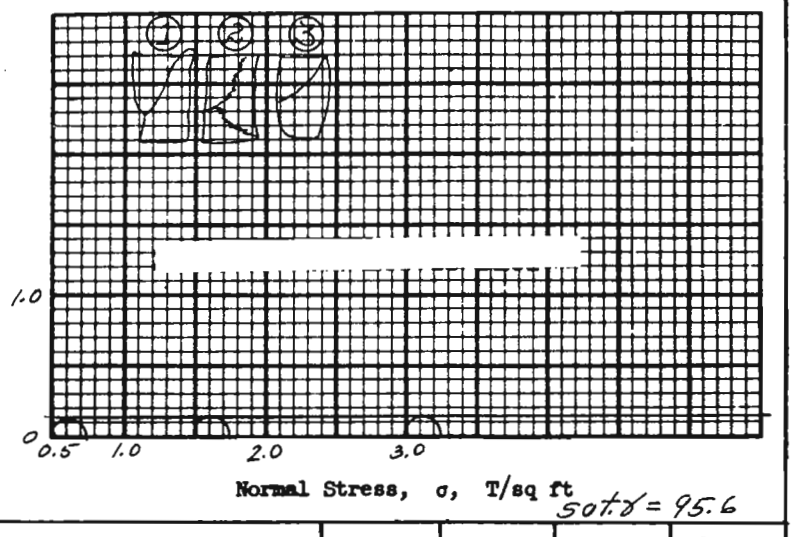
BORING NO. 4-LUE | SAMPLE NO. 2-C

DEPTH EL - 8.6 | DATE 8 March 1971

GDA

DIRECT SHEAR TEST REPORT





Sat. γ = 95.6

Test No.			1	2	3	Avg.
Initial	Water content	w_o	83.2 %	79.8 %	78.0 %	80.3 %
	Void ratio	e_o	2.25	2.16	2.13	
	Saturation	S_o	99.5 %	99.4 %	98.5 %	%
	Dry density, lb/cu ft	γ_d	51.6	53.1	53.7	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.26	0.27	0.28	
Time to failure, min		t_f	100	45	88	
Rate of strain, percent/min			0.15	0.20	0.17	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.14 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED		
Classification PLASTIC CLAY(CH), gray, with root fragments up to 1/4" in dia.			
LL 93	PL 27	PI 66	G_s 2.69

Remarks _____

Project LK. PONT. LA. & VIC. -HURR. PROT. (70)

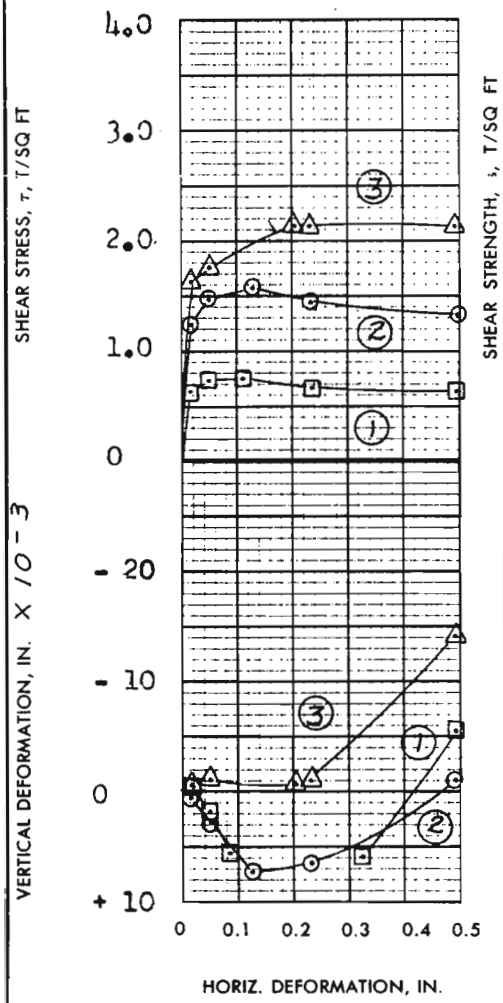
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC.

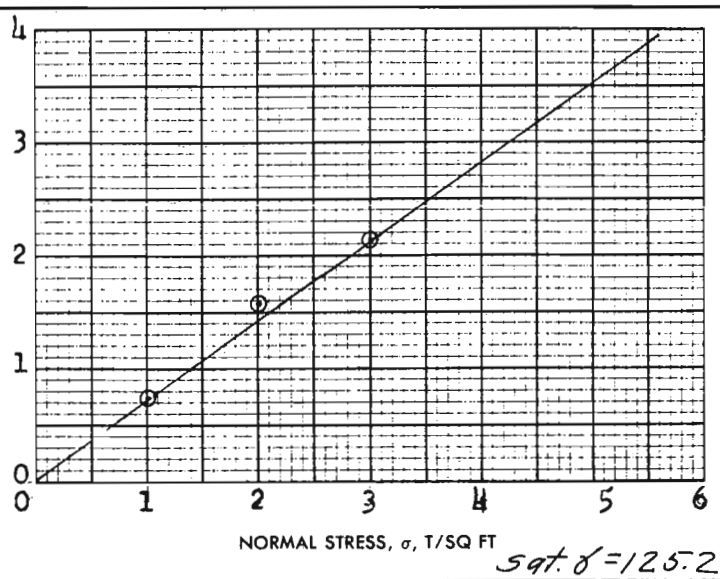
Area GDM NO. 2, SUPP. NO. 5, (OUTFALL CANALS)

Boring No. 4-LUE | Sample No. 2-D

Depth El -9.5 | Date 18 Jan. 1971

JS TRIAXIAL COMPRESSION TEST REPORT





Sat. δ = 125.2

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	22.0 %	21.6 %	21.9 %	21.8 %
	VOID RATIO	e_o	0.673	0.637	0.670	
	SATURATION	S_o	87.3 %	90.5 %	87.3 %	%
	DRY DENSITY, LB/CU FT	γ_d	99.6	101.8	99.8	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	22.6 %	21.6 %	20.7 %	%
	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}	0.74	1.59	2.13	
ACTUAL TIME TO FAILURE, MIN		t_f	660	750	1140	
RATE OF STRAIN, IN./MIN			.00017	.00017	.00017	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 35°

TAN ϕ' = 0.710

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.550 IN. THICK

CLASSIFICATION: SILTY SAND(SM), gray

LL - PL - PI - G_s 2.67

REMARKS

PROJECT: LK, PONT. LA., & VIC. - HURR. PROT. (70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

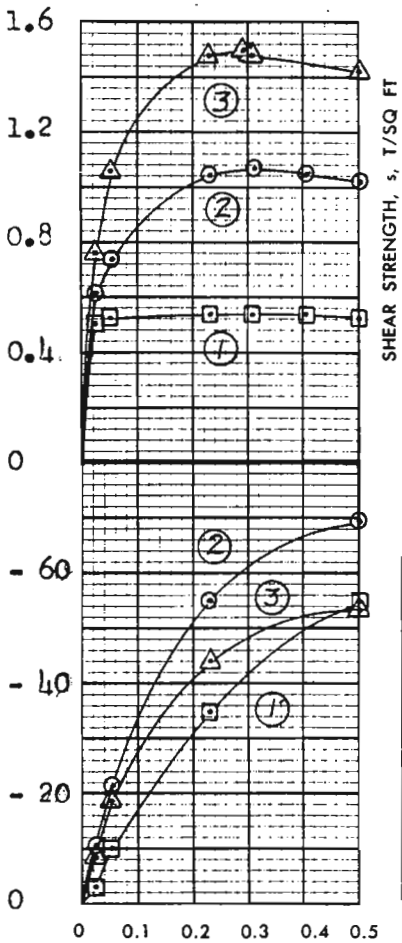
AREA: GDM # 2, SUPP. # 5 OUTFALL CANALS

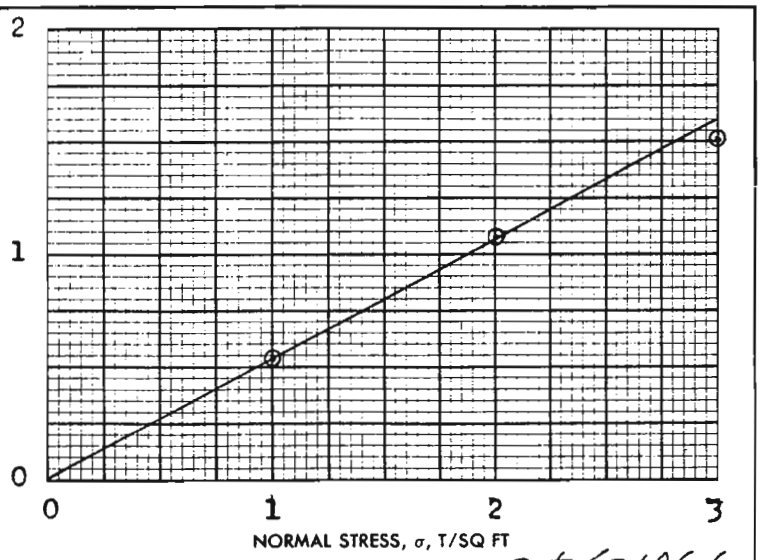
BORING NO. 4-LUE — SAMPLE NO. 3-B2

DEPTH EL - 11.7 — DATE 10 Feb. 1971

BWG

DIRECT SHEAR TEST REPORT





Sat. γ = 106.6

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	48.7 %	51.0 %	48.6 %	49.4%
	VOID RATIO	e_o	1.38	1.39	1.34	
	SATURATION	S_o	94.6 %	98.3 %	97.2 %	%
	DRY DENSITY, LB/CU FT	γ_d	70.2	69.9	71.6	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	< 1	< 1	61	
FINAL	WATER CONTENT	w_f	51.9 %	42.6 %	38.0 %	%
	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}	0.54	1.07	1.50	
ACTUAL TIME TO FAILURE, MIN		t_f	1680	1740	1620	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 28°

TAN ϕ' = 0.535

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.550 IN. THICK

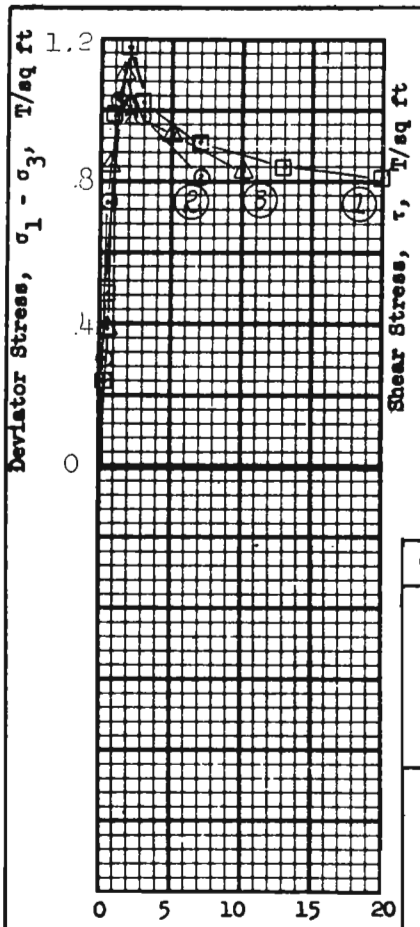
CLASSIFICATION: PLASTIC CLAY(CH), gray, contains shell fragments and fine sand

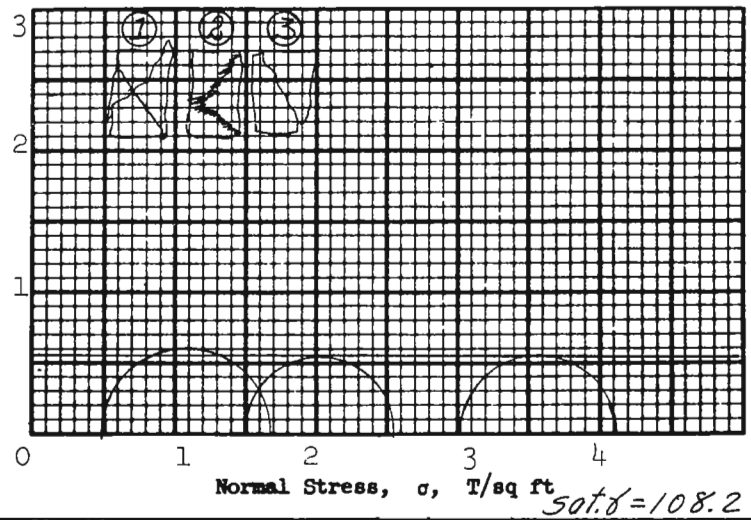
LL 65 | PL 19 | PI 46 | G_s 2.68

REMARKS

PROJECT: LK. PONT. LA., & VIC.-HURR. PROT. (70)
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,
AREA: GDM # 2, SUPP. # 5 OUTFALL CANALS
BORING NO. 4-LUE | SAMPLE NO. 10-C
DEPTH EL -45.8 | DATE 11 Feb. 1971
BWG

DIRECT SHEAR TEST REPORT





Sat. γ = 108.2

Test No.			1	2	3	Avg.
Initial	Water content	w_o	44.7 %	52.9%	47.4%	48.3%
	Void ratio	e_o	1.24	1.45	1.30	
	Saturation	S_o	97.7 %	98.9 %	98.8 %	%
	Dry density, lb/cu ft	γ_d	75.5	69.0	73.5	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.18	1.03	1.11	
Time to failure, min		t_f	8	14	18	
Rate of strain, percent/min			0.19	0.09	0.08	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.55 T/sq ft

Method of saturation _____

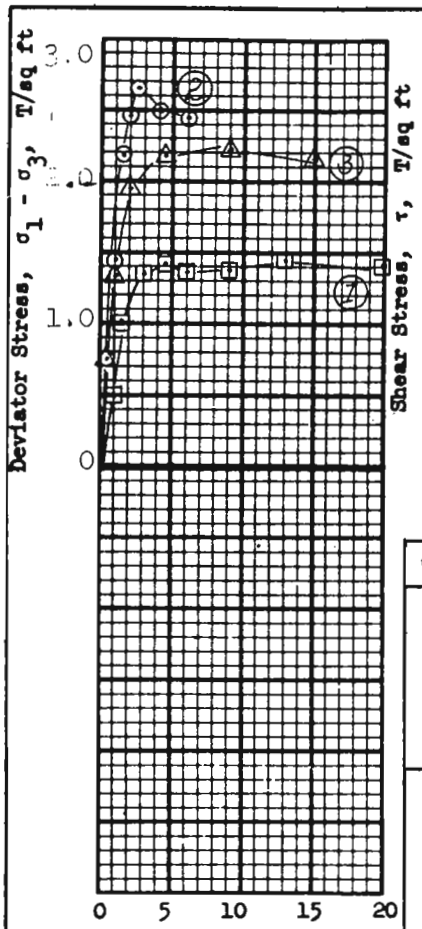
☐ Controlled stress

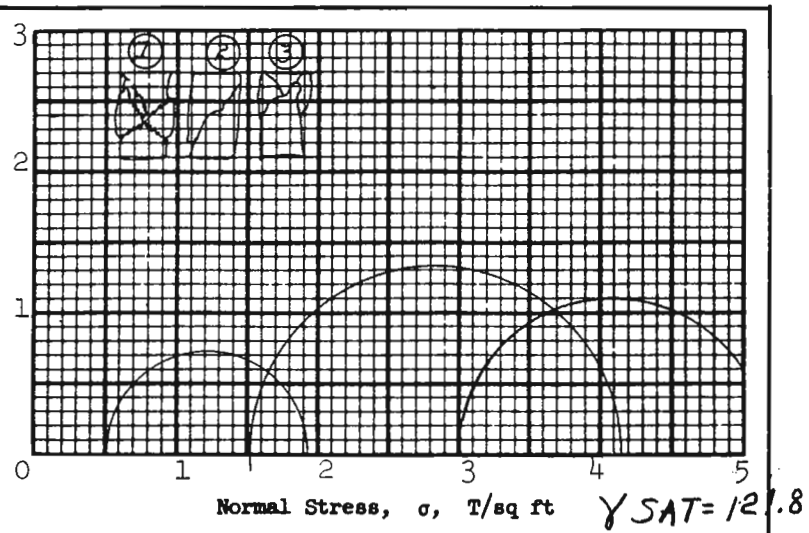
☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray, scattered 1/4" pockets of fine sand				
LL 67	PL 19	PI 48		G_s 2.71

Remarks _____

Project LK. PONT. LA. & VIC. -HURR. PROT. (70)
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;
Area GDM NO. 2, SUPP NO. 5 (OUTFALL CANALS)
Boring No. 4-LUE | Sample No. 11-C
Depth El -50.3 | Date 19 Jan. 1971
JMS **TRIAXIAL COMPRESSION TEST REPORT**





γ SAT = 121.8

Test No.			1	2	3	AVG
Initial	Water content	w_o	30.4 %	26.3 %	29.2 %	28.6 %
	Void ratio	e_o	0 899	0.796	0.838	
	Saturation	S_o	93.0 %	90.9 %	95.8 %	93.2 %
	Dry density, lb/cu ft	γ_d	90.4	95.7	93.4	93.2
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.43	2.65	2.21	
Time to failure, min		t_f	100	63	113	
Rate of strain, percent/min			0.13	0.04	0.08	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 1.05 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray and tan mottled				
LL 55	PL 24	PI 31		G_s 2.75

Remarks _____

Project LK. PONT., LA. & VIC. - HURR. PONT. (70)

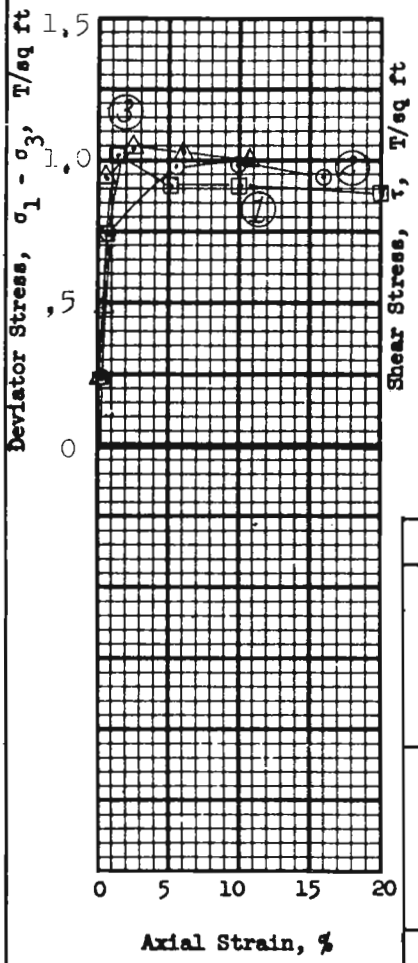
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;

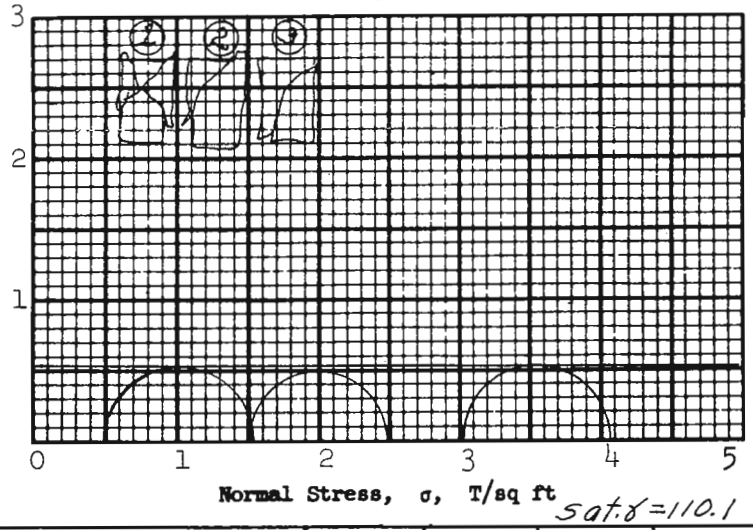
Area GDM NO.2, SUPP. NO.5, (OUTFALL CANALS)

Boring No. 4-LUE	Sample No. 13-C
Depth El -58.3	Date 20 Jan. 1971

JMS

TRIAXIAL COMPRESSION TEST REPORT





Sat. δ = 110.1

Test No.			1	2	3	Avg.
Initial	Water content	w_o	47.6 %	46.7 %	46.8 %	47.0 %
	Void ratio	e_o	1.33	1.31	1.32	
	Saturation	S_o	99.1 %	98.7 %	98.2 %	%
	Dry density, lb/cu ft	γ_d	74.1	75.0	74.5	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.03	0.99	1.08	
Time to failure, min		t_f	8	118	30	
Rate of strain, percent/min			0.16	0.085	0.082	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.42	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.52 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray and tan mottled, slickensided				
LL 102	PL 33	PI 69		G_s 2.77

Remarks _____

Project LK. PONT. LA.&VIC.-HURR. PROT.(70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

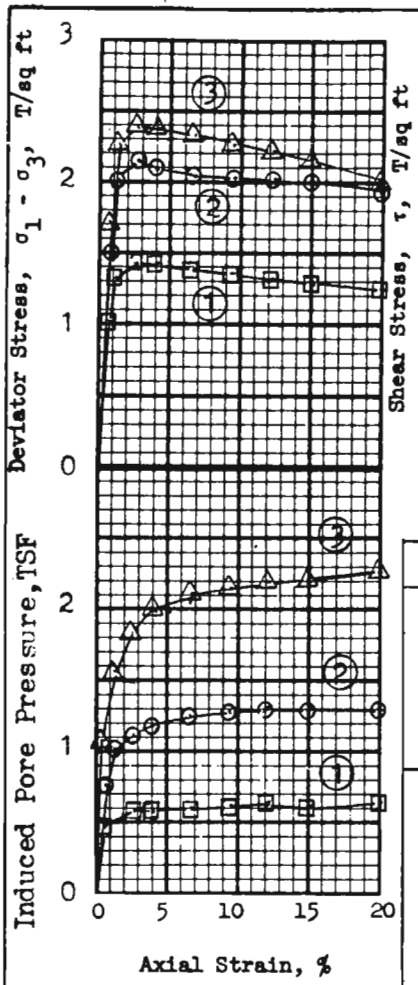
Area GDM NO.2, SUPP. NO.5 OUTFALL CANALS

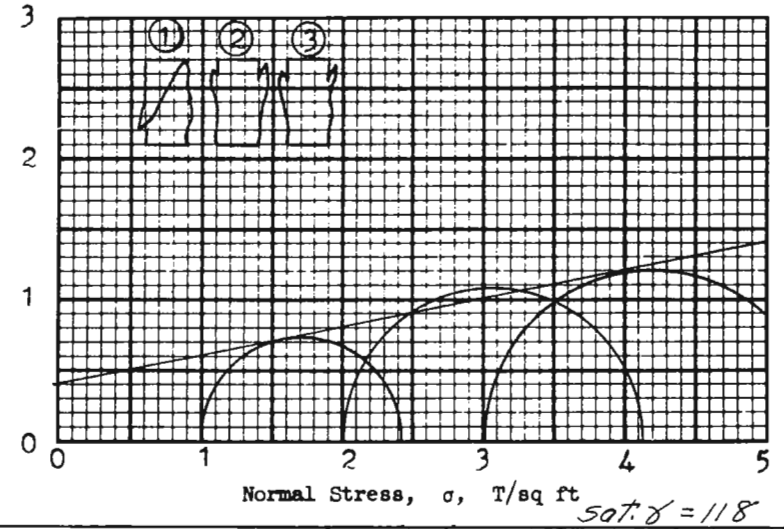
Boring No. 4-LUE | Sample No. 14-C

Depth El -62 3 | Date 1 Feb. 1971

JMS

TRIAXIAL COMPRESSION TEST REPORT





sat. γ = 118

Test No.			1	2	3	Avg.
Initial	Water content	w_o	35.8 %	33.8 %	34.0 %	34.5 %
	Void ratio	e_o	0.962	0.900	0.905	
	Saturation	S_o	100+ %	100+ %	100+ %	%
	Dry density, lb/cu ft	γ_d	85.9	88.7	88.5	
Before Shear	Water content	w_c	34.1 %	31.4 %	30.4 %	%
	Void ratio	e_c	0.907	0.834	0.814	
	Saturation	S_c	100+ %	100+ %	100+ %	%
	Final back pressure, PSI	u_o	70	70	70	
	Dry Density Lbs/cu.ft.	γ_d	88.4	91.9	92.9	
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	1.0	2.0	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.42	2.13	2.39	
Time to failure, min		t_f	43	43	43	
Rate of strain, percent/min			0.063	0.063	0.063	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 11 °

tan ϕ = 0.194

c = 0.40 T/sq ft

Method of saturation BP

☐ Controlled stress

☒ Controlled strain

Type of test R	Type of specimen UNDISTURBED		
Classification Alternate seams of PLASTIC CLAY(CH)and CLAYEY SILT(ML),gray			
LL 37	PL 18	PI 19	G_s 2.70

Remarks See attached plot for effective values

Project LK. PONT.,LA. & VIC.-HURR. PROT. (70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;

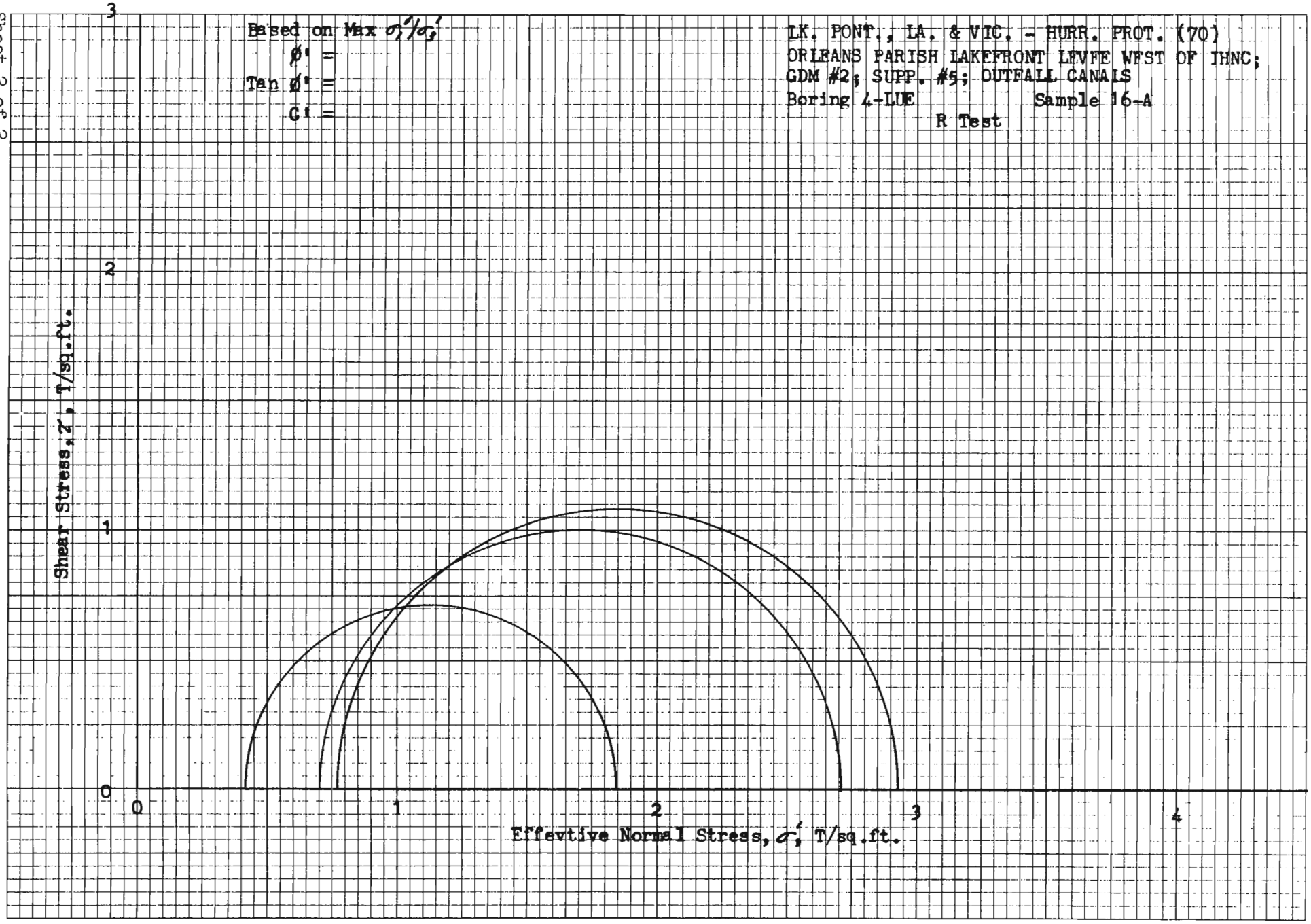
Area GDM #2; SUPP. #5; OUTFALL CANALS

Boring No. 4-LUE | Sample No. 16-A

~~Depth~~ El -68.4 | Date 14 January, 1971

JAL TRIAXIAL COMPRESSION TEST REPORT

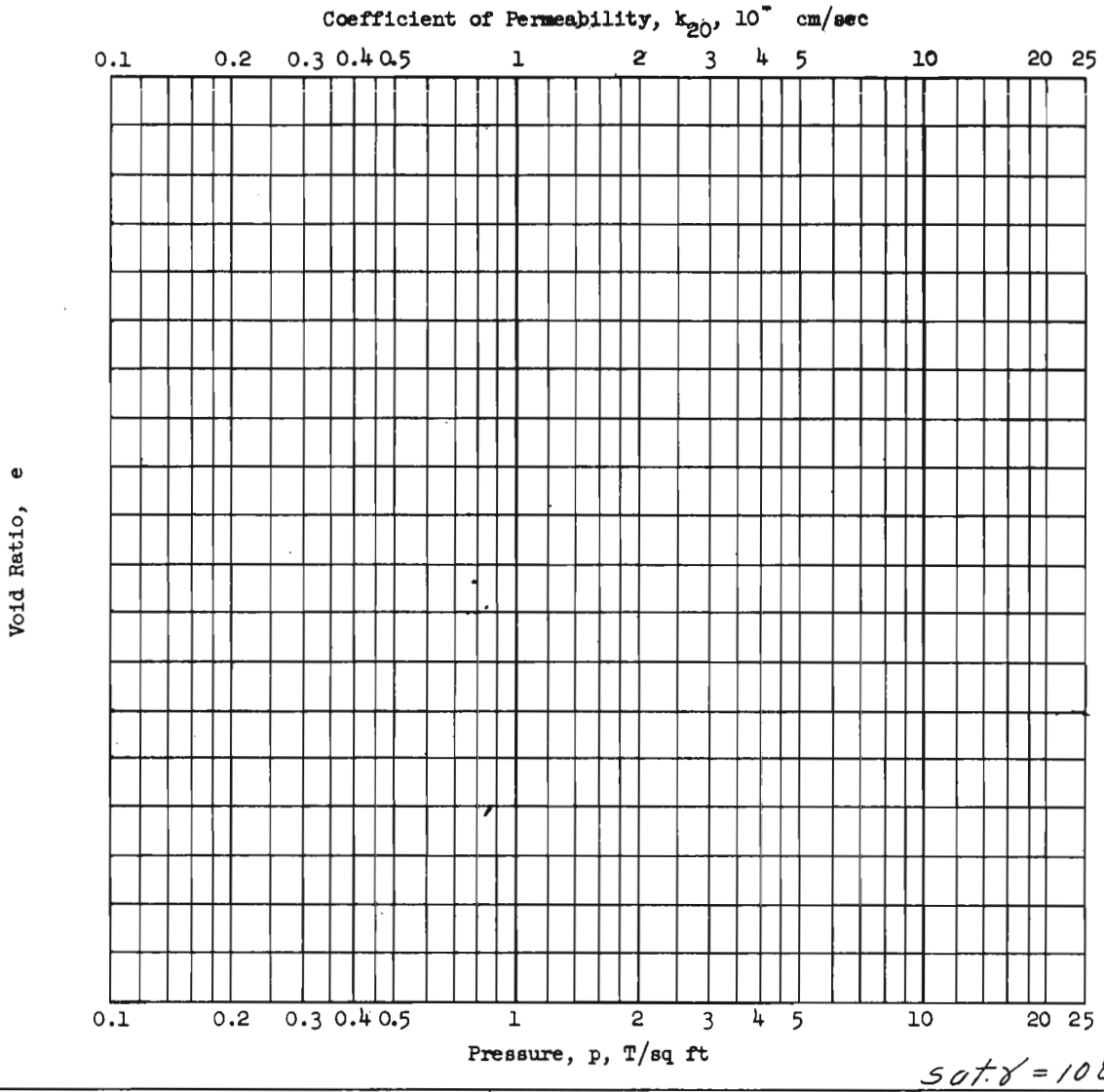
Sheet 1 of2



Sheet 2 of 2

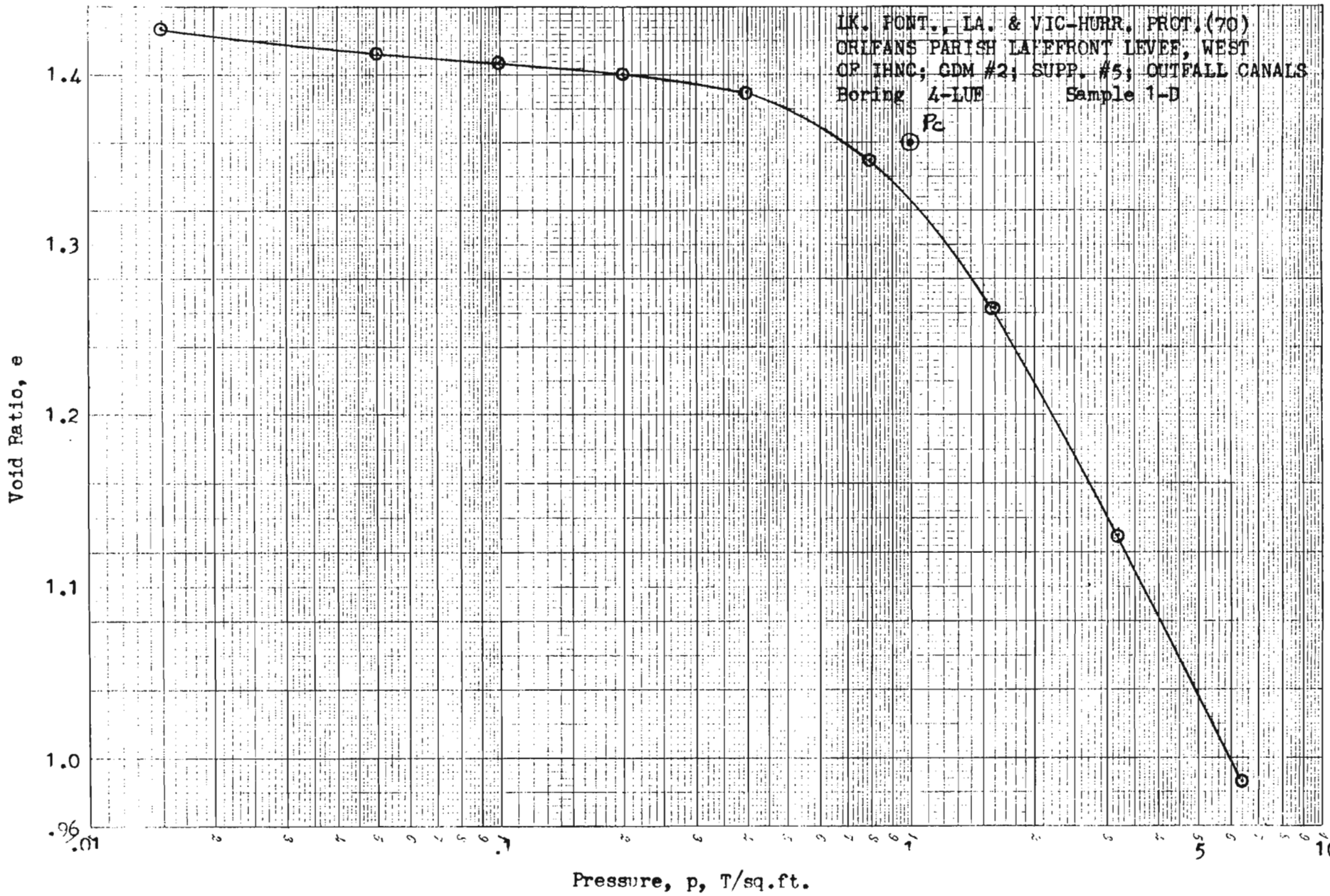
42

USAEWES SOILS TEST SECTION

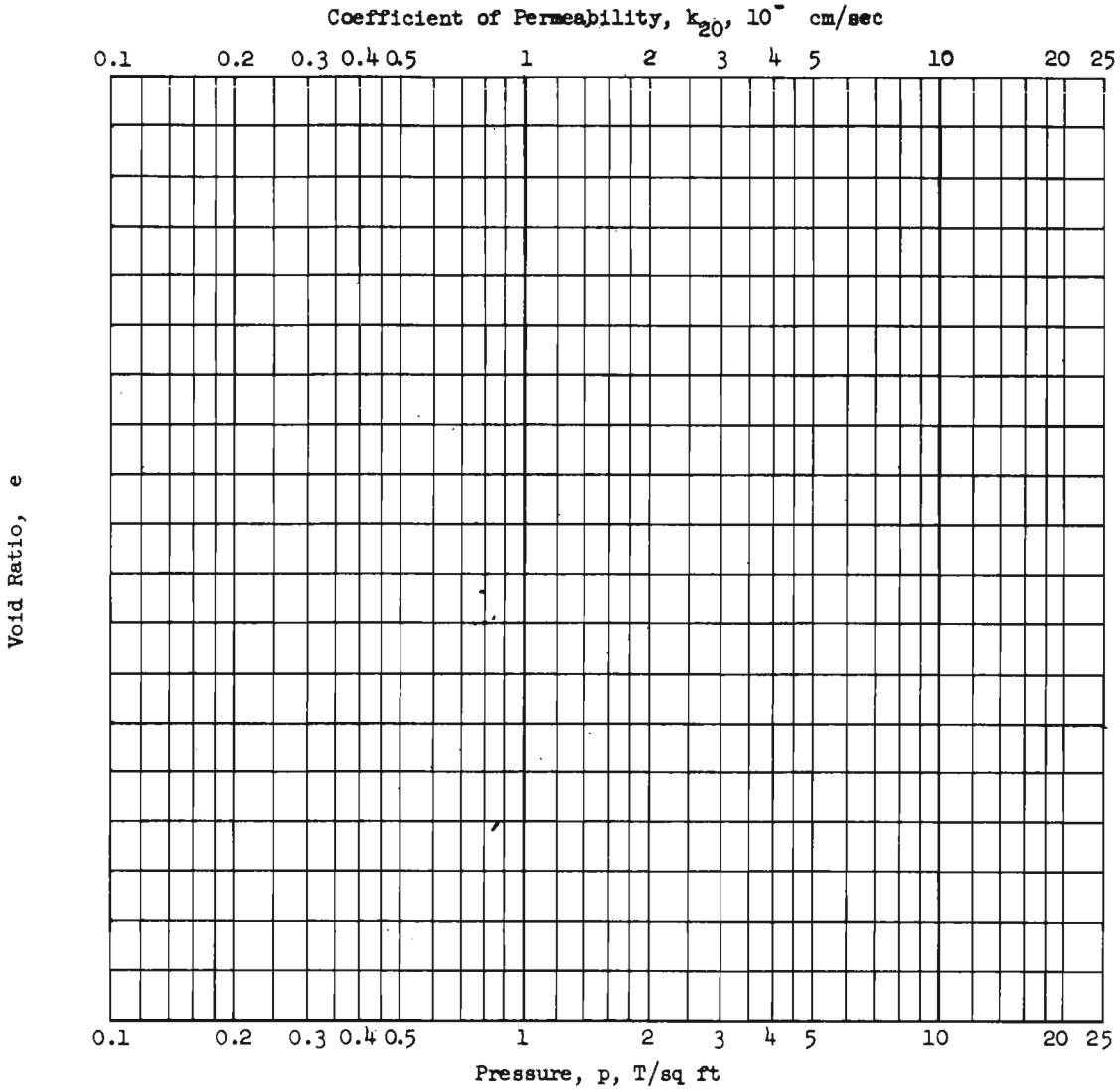


sat. γ = 108

Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.164 in.	Water Content, w_o	50.0 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.43	e_f	
Preconsol. Pressure, p_c 1.00 T/sq ft		Saturation, S_o	97.2 %	S_f	%
Compression Index, C_c 0.52		Dry Density, γ_d	71.3 lb/ft^3		
Classification PLASTIC CLAY(CH)*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.77 From Q	Project LK. PONT.,LA. & VIC.-HURR. PROT.(70)			
PL -	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
Remarks * tan and gray		Area GDM #2; SUPP. #5; OUTFALL CANALS			
See attached plot for pressure		Boring No. 4-LUE		Sample No. 1-D	
vs void ratio curve		~~Depth~~ El -5.4		Date 24 February, 1971	
		JDB **CONSOLIDATION TEST REPORT**			


LK. PONT., LA. & VIC-HURR. PROT.(70)
ORLEANS PARISH LAKEFRONT LEVEE, WEST
OF IHNC; GDM #2; SUPP. #5; OUTFALL CANALS
Boring 4-LUE Sample 1-D
Pc
Void Ratio, e
1.4
1.3
1.2
1.1
1.0
.96
.01
.1
1
5
10
Pressure, p, T/sq.ft.

44



Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.159 in.	Water Content, w_o	%	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o		e_f	
Preconsol. Pressure, p_c 0.74 T/sq ft		Saturation, S_o	%	S_f	%
Compression Index, C_c 0.99		Dry Density, γ_d	lb/ft^3		
Classification PLASTIC CLAY(CH) *		k_{20} at e_o =	$\times 10^{-}$ cm/sec		

LL -	G_s 2.69
PL -	D_{10}

* Remarks gray, contains 1/8" to 1/2" dia. roots

See attached plot for pressure vs void ratio curve

Project LK. PONT.,LA.&VIC.-HURR. PROT.(70)

ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC

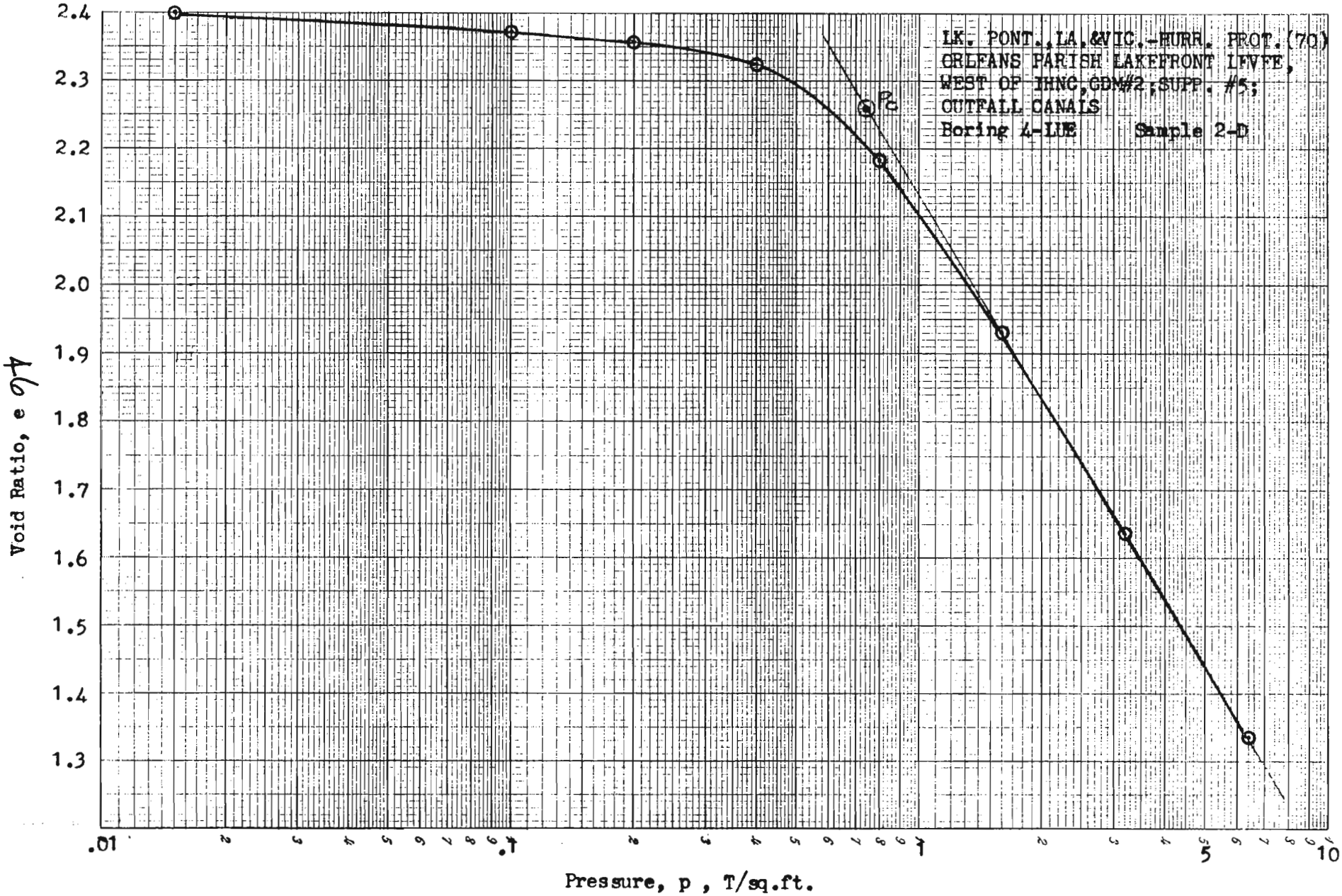
Area GDM #2; SUPP. #5; OUTFALL CANALS

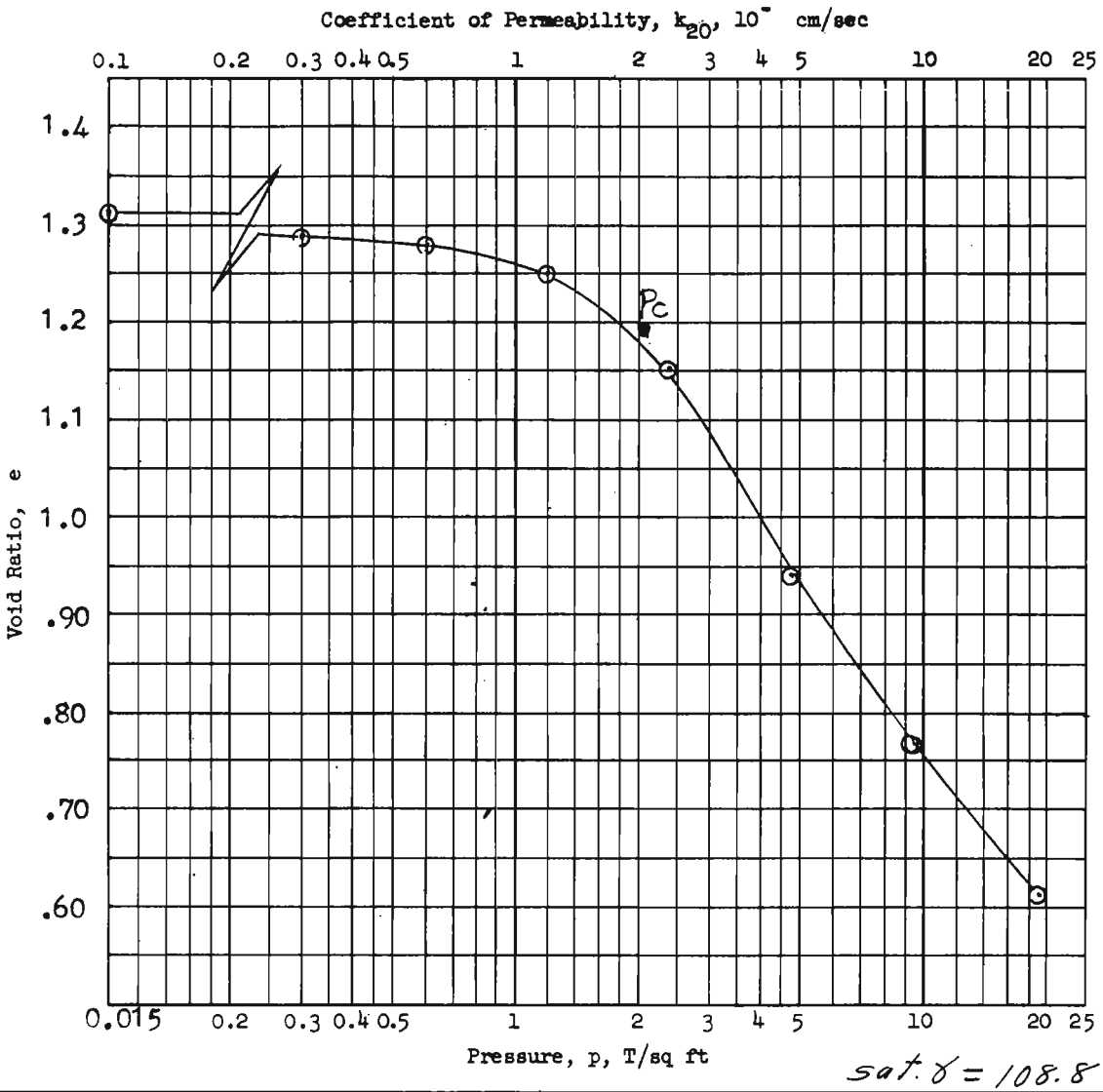
Boring No. 4-LUE | Sample No. 2-D

~~Depth~~ El -9.5 | Date 26 February, 1971

JDB **CONSOLIDATION TEST REPORT**

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. *(TRANSLUCENT)* 0 3424

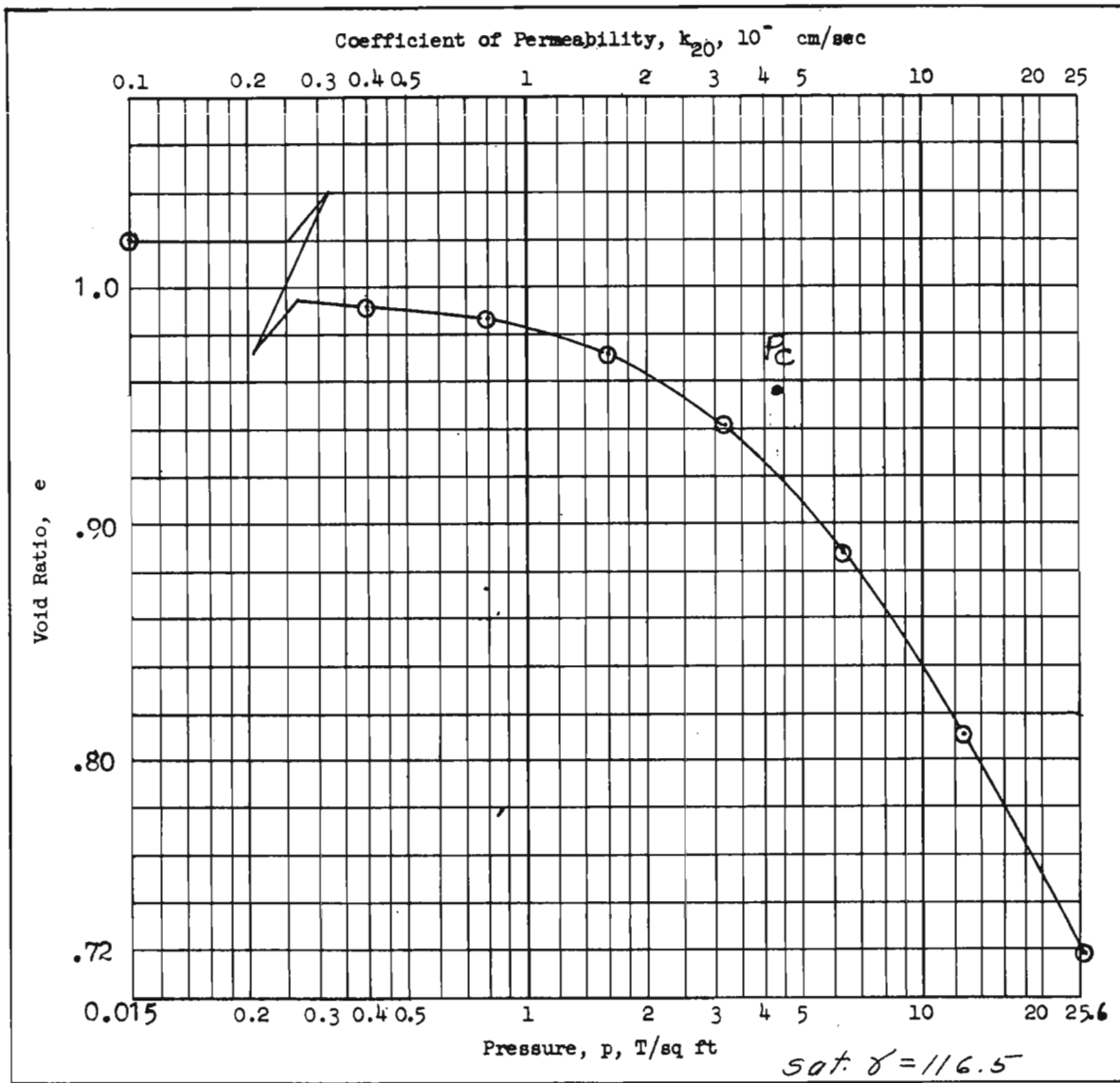

LK. PONT.,LA.&VIC.-HURR. PROT.(70)
ORLEANS PARISH LAKEFRONT LEVEE,
WEST OF IHNC,CDM#2,SUPP. #5;
OUTFALL CANALS
Boring 4-LUE Sample 2-D
Pc
Void Ratio, e
Pressure, p , T/sq.ft.
2.4
2.3
2.2
2.1
2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
.01
.1
1
5
10



sat. γ = 108.8

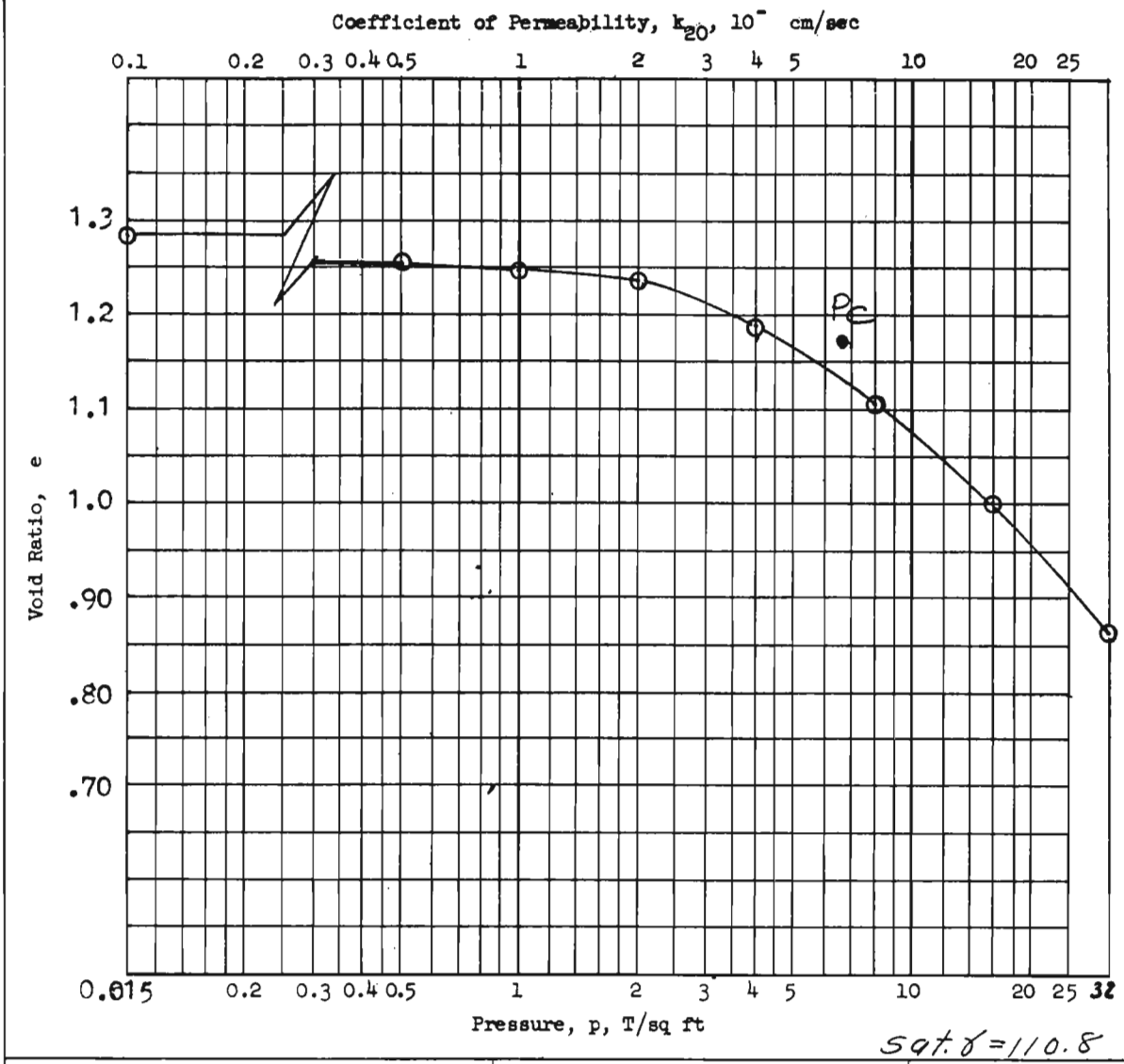
Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.149 in.	Water Content, w_o	47.9 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.31	e_f	
Preconsol. Pressure, p_c 2.10 T/sq ft		Saturation, S_o	99.2 %	S_f	%
Compression Index, C_c 0.70		Dry Density, γ_d	73.4 lb/ft^3		
Classification PLASTIC CLAY(CH),*		k_{20} at e_o =	× 10^{-} cm/sec		
LL 56	G_s 2.72	Project LK. PONT.,LA. & VIC.-HURR. PROT.(70)			
PL 17	D_{10}	ORLEANS PARISH LAKFFRONT LEVFE, WEST OF IHNC			
*Remarks greenish-gray, contains small shells		Area GDM #2; SUPP. #5; OUTFALL CANALS			
		Boring No. 4-LUE		Sample No. 11-D	
		~~Depth~~ El -51.0		Date 26 February,1971	
		JDB **CONSOLIDATION TEST REPORT**			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. *(TRANSLUCENT)* 0 3424



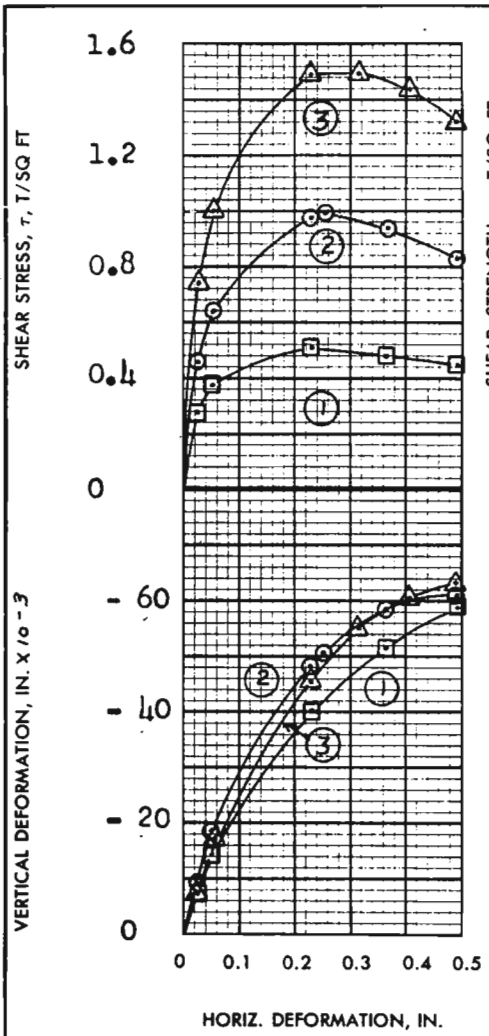
Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.162 in.	Water Content, w_o	35.8 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.02	e_f	
Preconsol. Pressure, p_c 4.40 T/sq ft		Saturation, S_o	96.5 %	S_f	%
Compression Index, C_c 0.31		Dry Density, γ_d	85.0 lb/ft^3		
Classification PLASTIC CLAY(CH),*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.75 From Q	Project LK. PONT.,LA.& VIC.-HURR. PROT.(70)			
PL -	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
* Remarks mottled tan and gray,		Area GDM #2; SUPP. #5; OUTFALL CANALS			
slickensided		Boring No. 4-LUE	Sample No. 13-C		
		~~Depth~~ El -58.3	Date 1 March,1971		
		JDB CONSOLIDATION TEST REPORT			

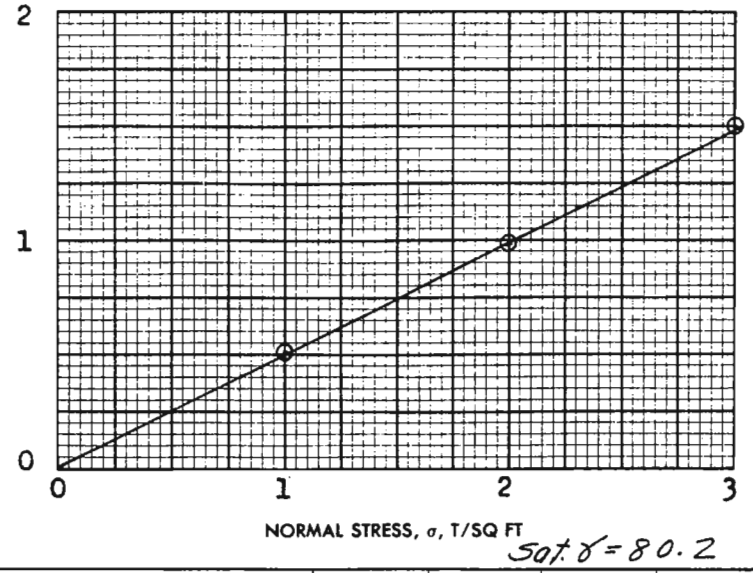
ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT) 0 3424



Sat. γ = 110.8

Type of Specimen	UNDISTURBED			Before Test		After Test	
Diam 4.25 in.	Ht 1.164 in.		Water Content, w_o	45.5 %	w_f	%
Overburden Pressure, p_o	T/sq ft		Void Ratio, e_o	1.28	e_f	
Preconsol. Pressure, p_c	6.80 T/sq ft		Saturation, S_o	98.0 %	S_f	%
Compression Index, C_c	0.46		Dry Density, γ_d	75.7 lb/ft^3		
Classification	PLASTIC CLAY(CH), *		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.77 From Q		Project	LK.PONT.,LA.& VIC.-HURR. PROT.(70)		
PL -	D_{10}		ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC;			
* Remarks	mottled tan and gray,		Area	GDM #2; SUPP. #5; OUTFALL CANALS		
slightly slickensided			Boring No.	4-LUE	Sample No.	14-C
			~~Depth~~ El	-62.3	Date	1 March, 1971
			JDB	CONSOLIDATION TEST REPORT		





Sat. γ = 80.2

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	158.2%	175.4%	169.6%	167.7%
	VOID RATIO	e_o	3.79	4.46	4.37	
	SATURATION	S_o	100+ %	96.3 %	95.1 %	%
	DRY DENSITY, LB/CU FT	γ_d	31.9	28.0	28.5	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	6	10	10	
FINAL	WATER CONTENT	w_f	101.9%	117.8%	94.8 %	%
	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}	0.51	0.99	1.50	
ACTUAL TIME TO FAILURE, MIN		t_f	1320	1440	1800	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 27°

TAN ϕ' = 0.495

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 1=0.550 2&3=0.748 IN. THICK

CLASSIFICATION: PLASTIC CLAY(CH), dark gray, highly organic

LL	PL	PI		G_s
181	46	135		2.45

REMARKS

PROJECT: LK.PONT.LA.,& VIC.-HURR. PROT.-1971

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

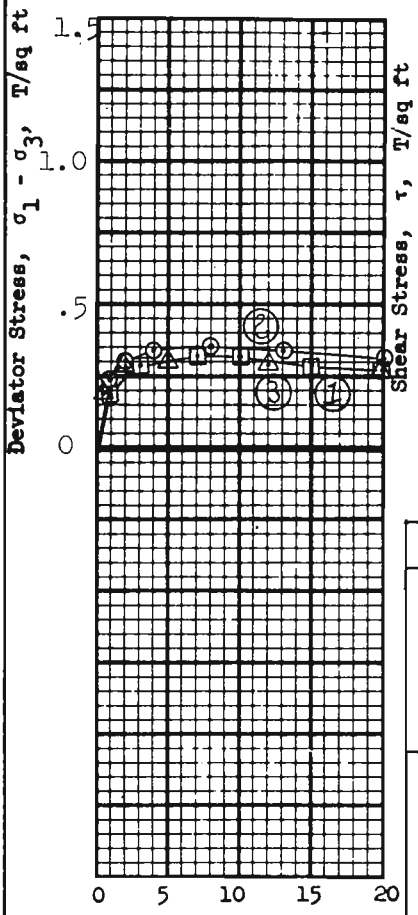
AREA: (OUTFALL CANALS) LONDON AVE.CANAL

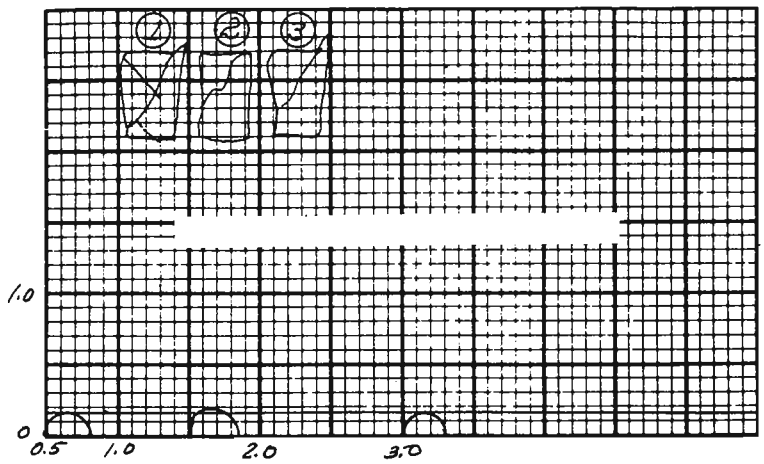
BORING NO. 5-LUW — SAMPLE NO. 4-C

DEPTH EL - 8.2 — DATE 3 March 1971

BWG

DIRECT SHEAR TEST REPORT





Sat γ = 100.4

Test No.			1	2	3	Avg.
Initial	Water content	w_o	68.1 %	63.1 %	68.7 %	66.6 %
	Void ratio	e_o	1.87	1.71	1.86	
	Saturation	S_o	98.0 %	99.3 %	99.4 %	%
	Dry density, lb/cu ft	γ_d	59.3	62.0	58.7	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.32	0.35	0.30	
Time to failure, min		t_f	31	39	13	
Rate of strain, percent/min			0.225	0.206	0.375	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.42	1.42	1.42	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.16 T/sq ft

Method of saturation _____

[ ] Controlled stress

[x] Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY(CH), gray, contains finely divided organic matter				
LL 101	PL 23	PI 78		G_s 2.69

Remarks _____

Project LK. PONT., LA. & VIC.-HURR. PROT.- 1971

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

Area (OUTFALL CANALS) LONDON AVE. CANAL

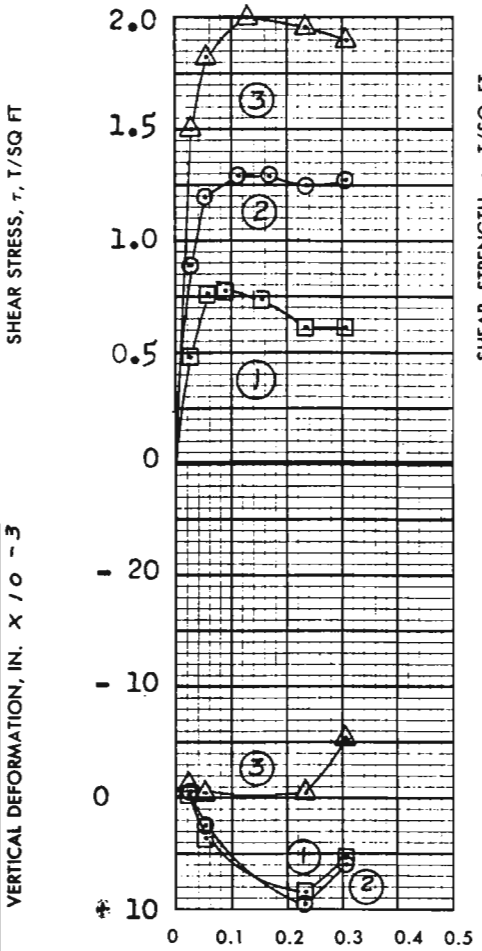
Boring No. 5-LUW | Sample No. 4-D

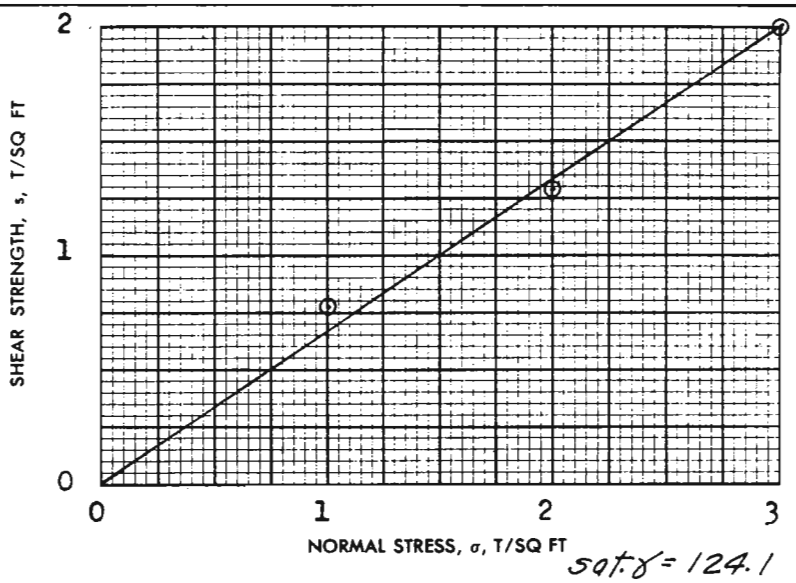
~~Depth~~ El -9.1 | Date 25 Feb. 1971

JMS TRIAXIAL COMPRESSION TEST REPORT

ENG FORM 2089 1 JUN 65 (EM 1110-2-1902) PREVIOUS EDITIONS ARE OBSOLETE. USAEWES SOILS TEST SECTION

51 TRANSLUCENT





sat. γ = 124.1

TEST NO.			1	2	3	
INITIAL	WATER CONTENT	w_o	24.0%	24.3%	23.7 %	%
	VOID RATIO	e_o	0.684	0.696	0.692	
	SATURATION	S_o	93.7 %	93.2 %	91.4%	%
	DRY DENSITY, LB/CU FT	γ_d	99.0	98.3	98.5	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	22.0 %	22.5 %	19.5 %	%
	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}	0.77	1.29	2.00	
ACTUAL TIME TO FAILURE, MIN		t_f	540	660	720	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' =$ 34°

TAN $\phi' =$ 0.67

$c' =$ 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 0.540 IN. THICK

CLASSIFICATION SILTY SAND(SM),gray, contains shell fragments

LL - | PL - | PI - | G_s 2.67

REMARKS

PROJECT LK.PONT.LA.,&VIC.-HURR. PROT.-1971

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

AREA (OUTFALL CANALS)LONDON AVE. CANAL

BORING NO. 5-LUW | SAMPLE NO. 8-C

DEPTH EL - 24.1 | DATE 2 March 1971

GDA

DIRECT SHEAR TEST REPORT

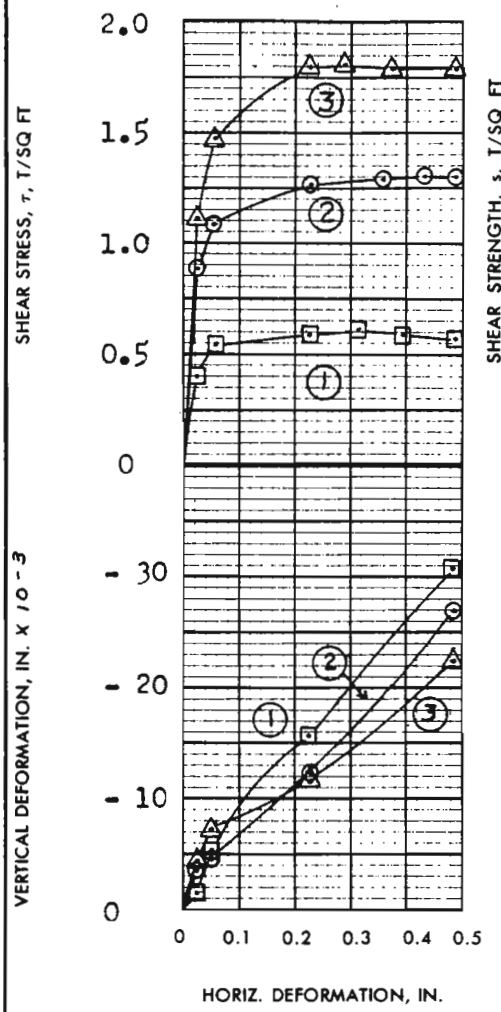
U.S. ARMY SOILS TEST SECTION

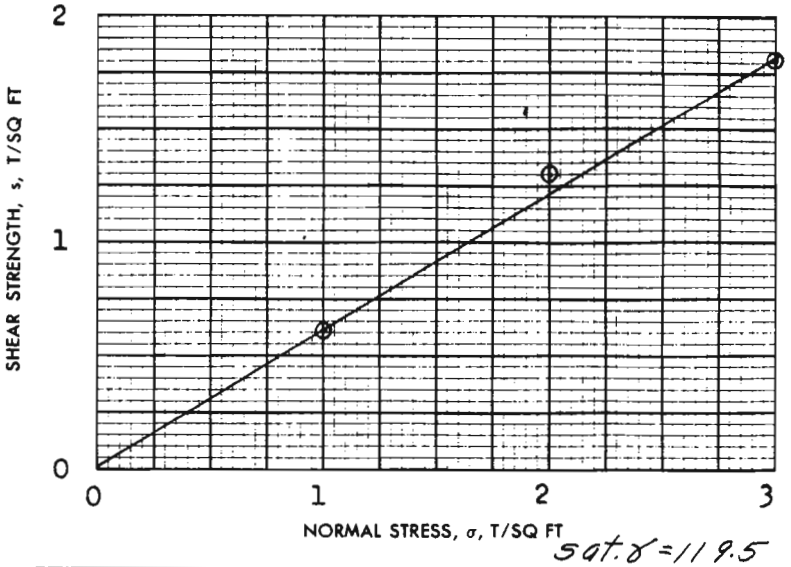
ENG FORM 2092 1 JUN 65 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

52

GPO : 1966 OF—214-945

PLATE IX-3





Sat. γ = 119.5

SHEAR STRENGTH PARAMETERS

ϕ' = 31°

TAN ϕ' = 0.61

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	32.3 %	29.9 %	30.9 %	31.0 %
INITIAL	VOID RATIO	e_o	0.849	0.791	0.825	
INITIAL	SATURATION	S_o	100+ %	100+ %	99.6 %	%
INITIAL	DRY DENSITY, LB/CU FT	γ_d	89.8	92.7	91.0	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	26.7 %	25.6 %	25.8 %	%
FINAL	VOID RATIO	e_f				
FINAL	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	0.61	1.30	1.81	
ACTUAL TIME TO FAILURE, MIN		t_f	1800	2460	1560	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.540 IN. THICK
CLASSIFICATION	SILTY SAND(SM),gray, contains pockets of plastic clay		
LL -	PL -	PI -	G_s 2.66

REMARKS

PROJECT LK.PONT.LA.,& VICINITY-HURR.PROT.-1971

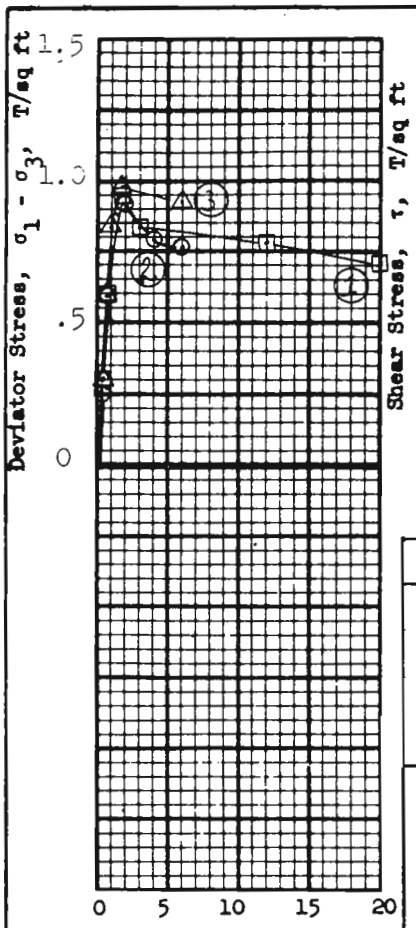
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

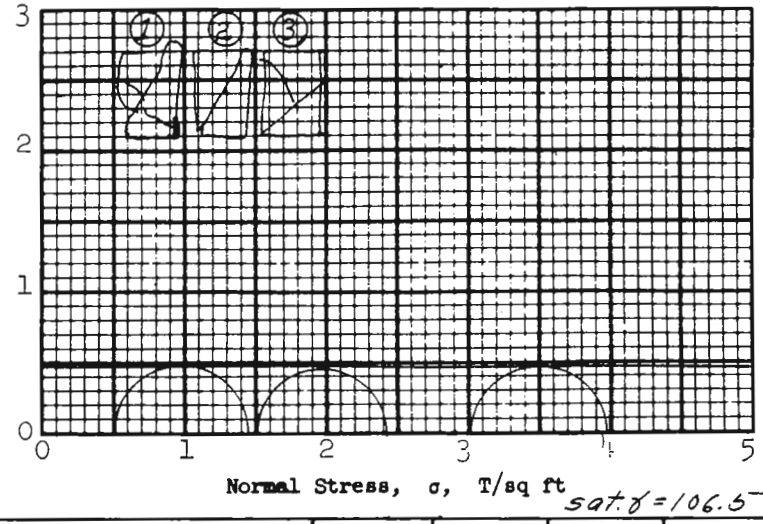
AREA (OUTFALL CANALS)LONDON AVE.CANAL

BORING NO. 5-LUW SAMPLE NO. 13-B

DEPTH EL - 44.6 DATE 3 March 1971

GDA **DIRECT SHEAR TEST REPORT**





sat. γ = 106.5

Test No.			1	2	3	Avg.
Initial	Water content	w_o	53.0 %	51.8 %	50.2 %	51.7 %
	Void ratio	e_o	1.47	1.42	1.38	
	Saturation	S_o	97.7 %	98.9 %	98.6 %	%
	Dry density, lb/cu ft	γ_d	68.6	70.0	71.0	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.95	0.92	0.98	
Time to failure, min		t_f	12	21	22	
Rate of strain, percent/min			0.154	0.095	0.082	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.47 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED
Classification	PLASTIC CLAY(CH),gray, contains small shells and lenses of*
LL 69	PL 19
PI 50	G_s 2.71

Remarks *silty sand

Project LAKE PONT.,LA.&VIC.-HURR. PROT-1971

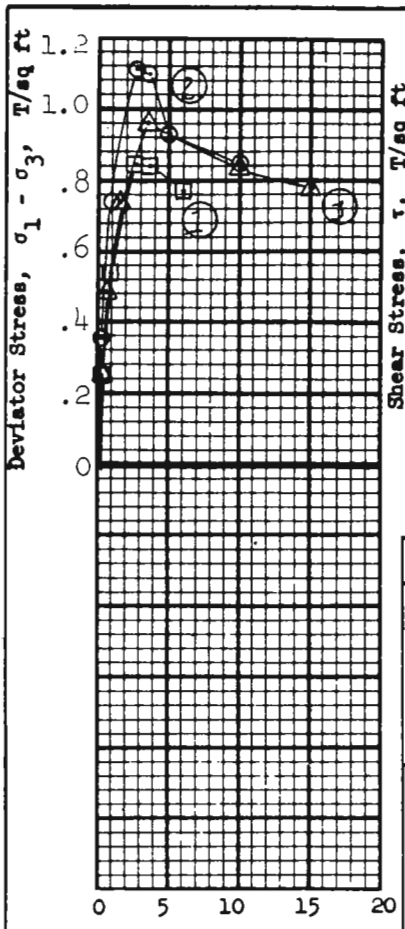
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

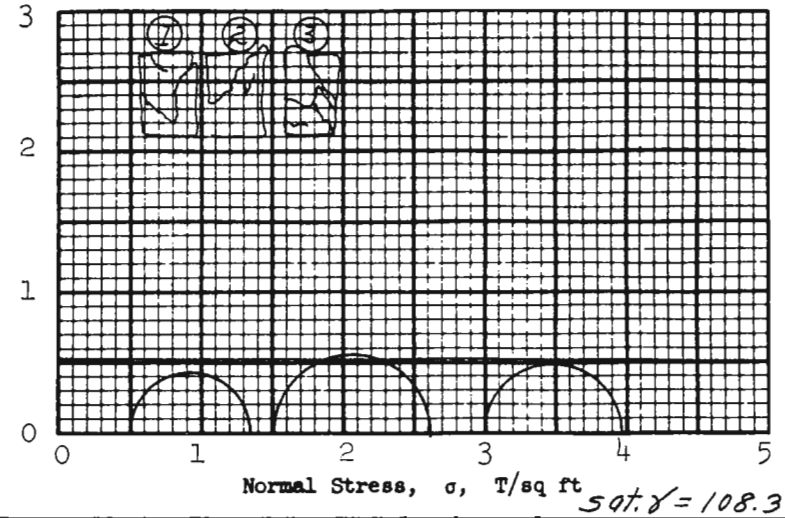
Area (OUTFALL CANALS)LONDON AVE. CANAL(GDMNO.2)

Boring No. 5-LUW | Sample No. 15-C

Depth El -53.4 | Date 26 Feb. 1971

JMS TRIAXIAL COMPRESSION TEST REPORT





Sat. γ = 108.3

Test No.			1	2	3	Avg.
Initial	Water content	w_o	51.5 %	46.9 %	49.2 %	49.2 %
	Void ratio	e_o	1.42	1.29	1.37	
	Saturation	S_o	99.0 %	99.2 %	98.0 %	%
	Dry density, lb/cu ft	γ_d	70.5	74.4	72.0	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.85	1.11	0.96	
Time to failure, min		t_f	30	27	23	
Rate of strain, percent/min			0.087	0.102	0.150	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.52 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains shell fragments

LL 61 | PL 16 | PI 45 | | G_s 2.73

Remarks _____

Project LAKE PONT., LA. & VIC.-HURR. PROT.-1971

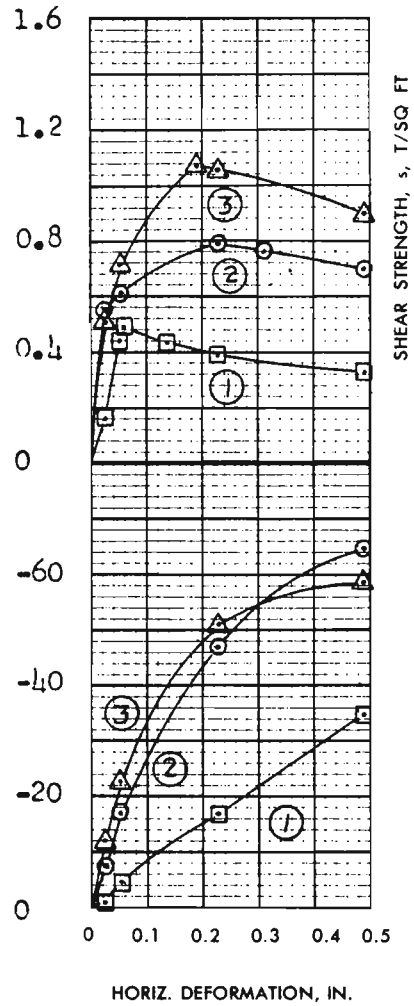
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

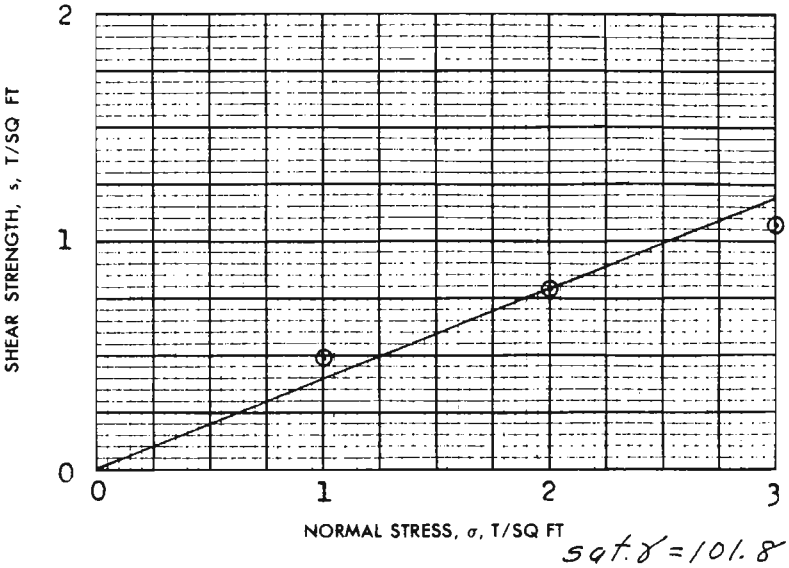
Area (OUTFALL CANALS) LONDON AVE. (GDM#2, SUPP.#5)

Boring No. 5-LUW | Sample No. 17-D

Depth El -62.1 | Date 26 Feb. 1971

OHR TRIAXIAL COMPRESSION TEST REPORT





sat. γ = 101.8

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	65.6 %	64.3 %	64.7 %	64.9 %
	VOID RATIO	e_o	1.74	1.71	1.73	
	SATURATION	S_o	100+ %	100+ %	100+ %	%
	DRY DENSITY, LB/CU FT	γ_d	61.4	62.1	61.7	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	2	3	3	
FINAL	WATER CONTENT	w_f	63.7 %	52.6 %	48.6 %	%
	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}	0.49	0.79	1.07	
ACTUAL TIME TO FAILURE, MIN		t_f	390	1320	1140	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 22°

TAN ϕ' = 0.395

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.540 IN. THICK

CLASSIFICATION: PLASTIC CLAY(CH),gray

LL 108 | PL 25 | PI 83 | G_s 2.70

REMARKS

PROJECT: LK.PONT.LA.,&VIC.-HURR.PROT.-1971

ORLEANS PARISH LK.FT. LEVEE,WEST OF IHNC,(OUT-

AREA: FALL CANALS) LONDON AVE.CANAL(GDM#2,SUPP#5)

BORING NO. 5-LUW | SAMPLE NO. 18-C

DEPTH EL - 65.2 | DATE 9 March,1971

GDA

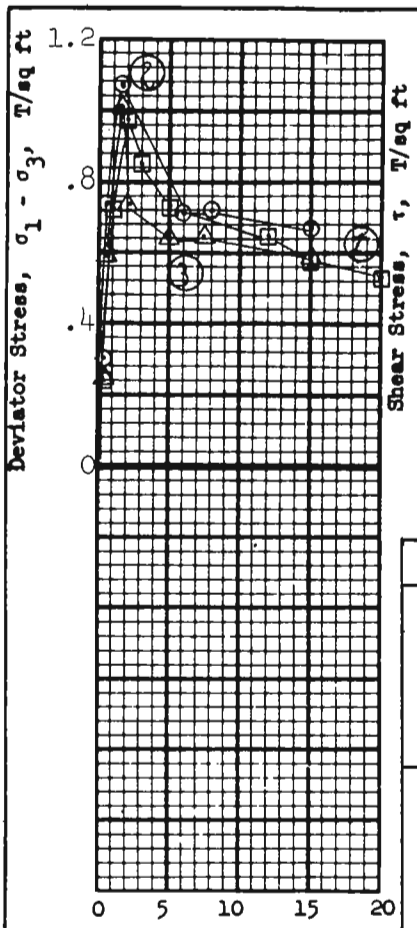
DIRECT SHEAR TEST REPORT

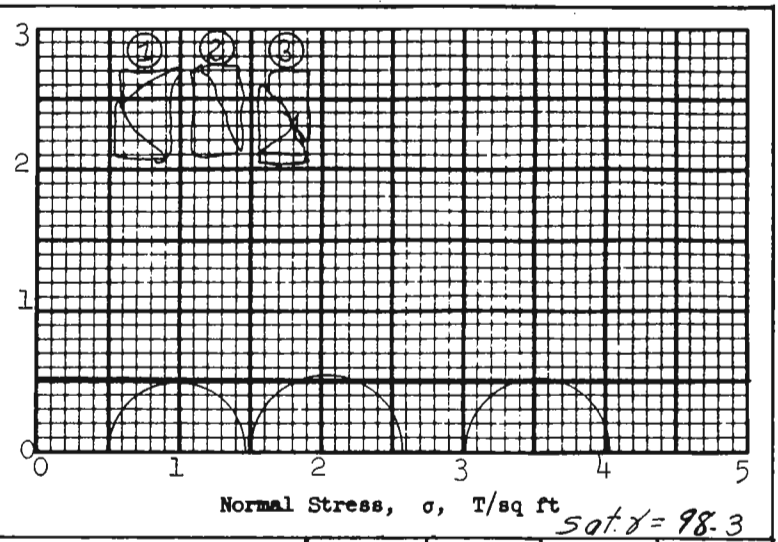
USAED NEW ORLEANS

ENG FORM 1 JUN 65 2092 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

GPO : 1966 OF—214-945

PLATE IX-3





sat. γ = 98.3

Test No.			1	2	3	Avg.
Initial	Water content	w_o	71.5 %	70.4%	71.8%	71.2 %
	Void ratio	e_o	1.93	1.90	1.90	
	Saturation	S_o	99.3 %	99.3%	100+ %	%
	Dry density, lb/cu ft	γ_d	57.1	57.6	57.2	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.98	1.07	1.01	
Time to failure, min		t_f	13	14	18	
Rate of strain, percent/min			0.158	0.112	0.084	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.42	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.51 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains small shells From

LL | PL | PI | | G_s 2.68 Cons

Remarks _____

Project LK. PONT., LA.&VIC.-HURR. PROT.-1971

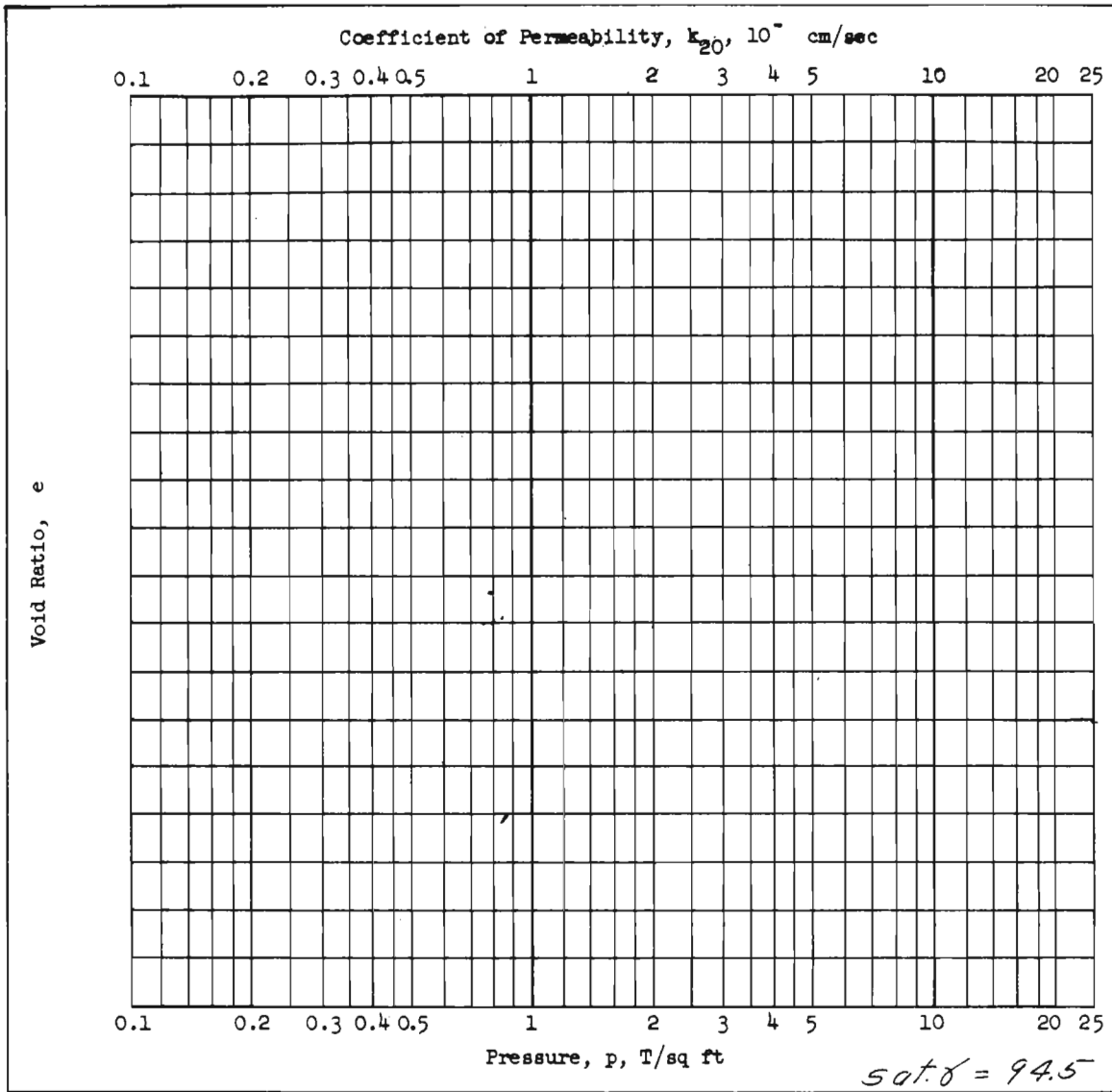
ORLEANS PARISH L.F. LEVEE WEST OF IHNC, (OUT-

Area FALL CANALS) LONDON AVE. CANAL (GDM#2; SUPP.#

Boring No. 5-LUW | Sample No. 18-D

Depth El -66.3 | Date 26 Feb. 1971

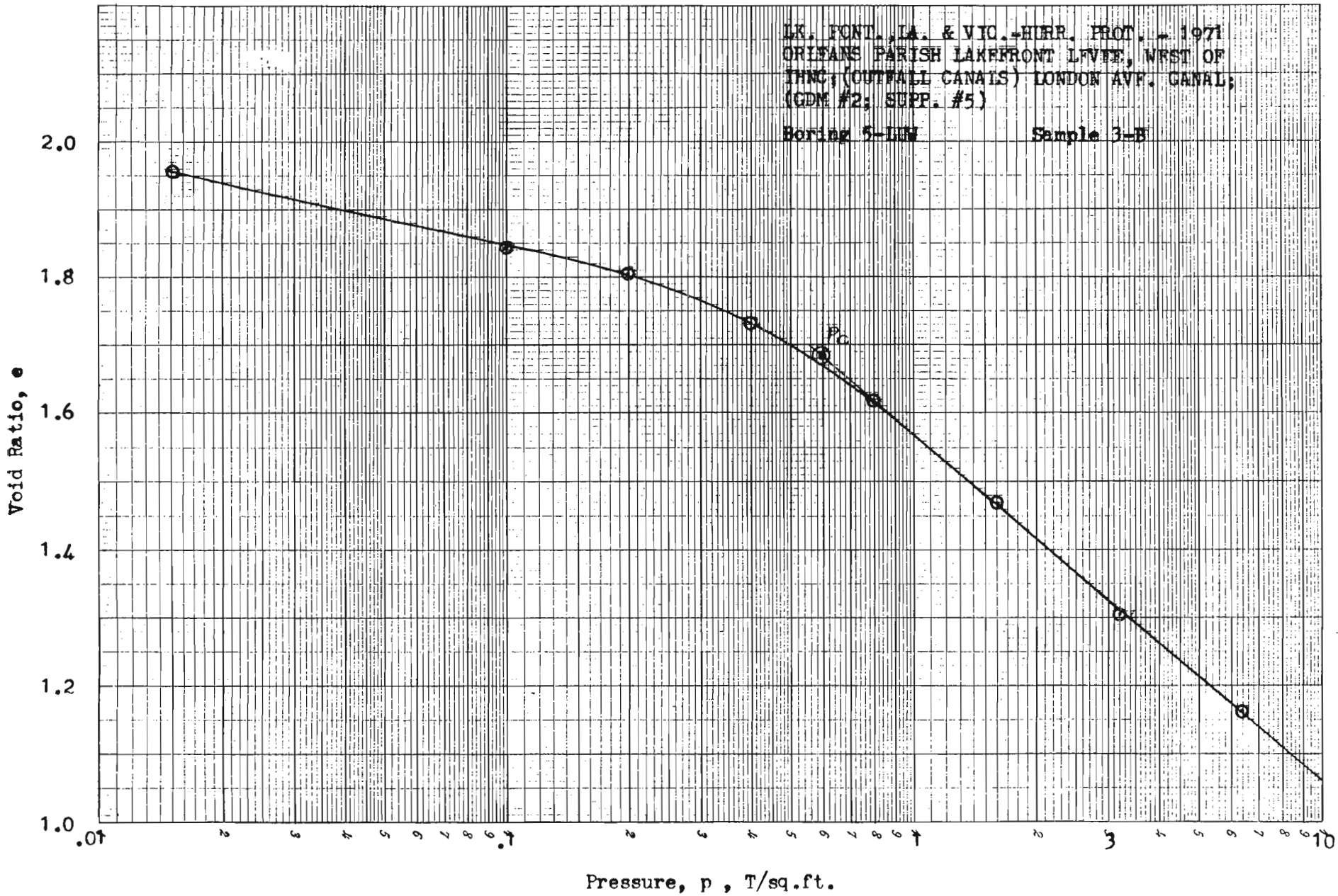
FAM TRIAXIAL COMPRESSION TEST REPORT

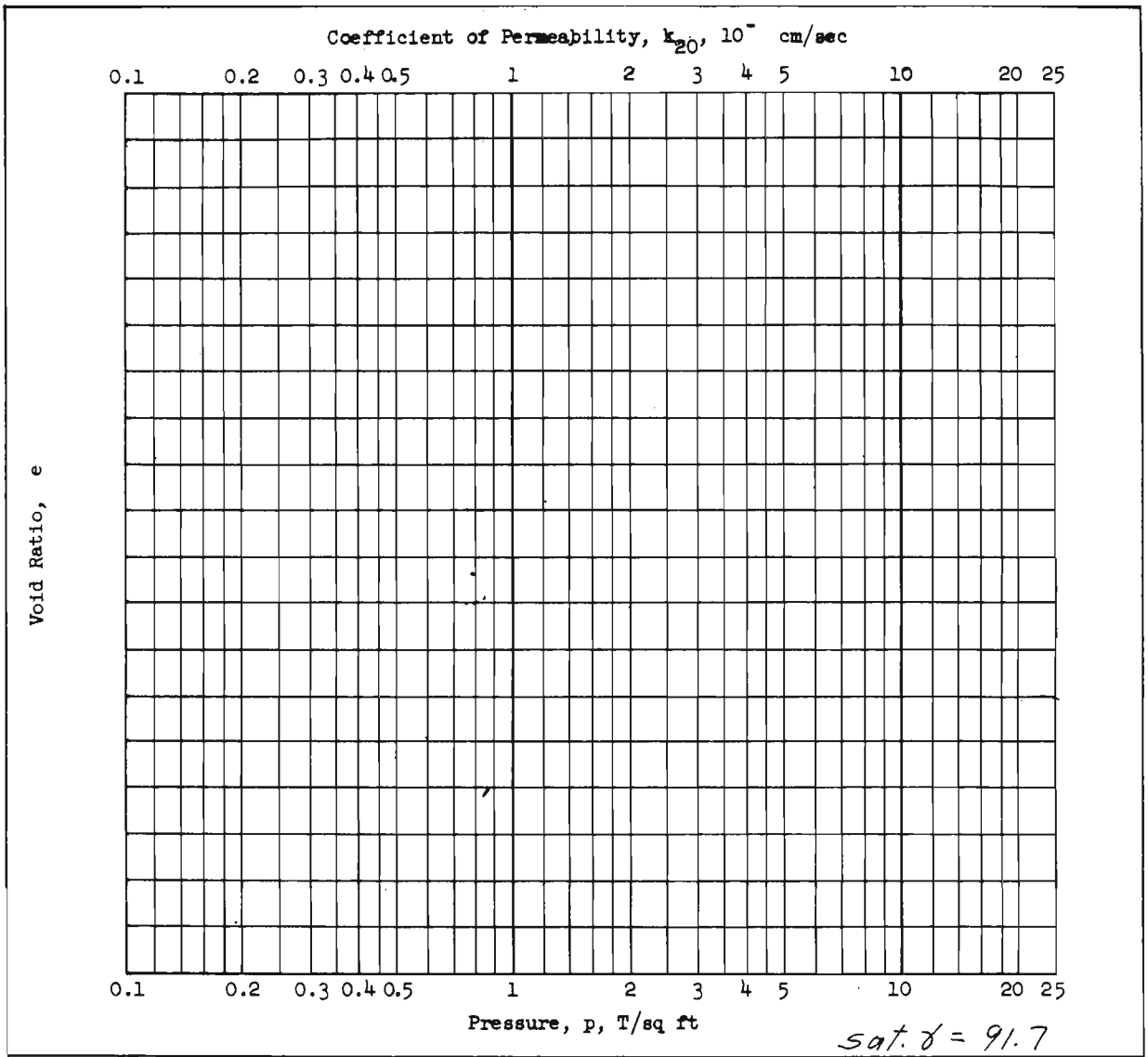


Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.162 in.	Water Content, w_o	72.9 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.96	e_f	
Preconsol. Pressure, p_c 0.6 / T/sq ft		Saturation, S_o	93.8 %	S_f	%
Compression Index, C_c 0.54		Dry Density, γ_d	53.2 lb/ft^3		
Classification PLASTIC CLAY (CH) *		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL 62	G_s 2.52	Project LK. PONT.,LA.& VIC.-HURR. PROT.-1971;			
PL 27	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
* Remarks black, contains roots		(OUTFALL CANALS)LONDON AVE.CANAL(GDM#2;SUPP.#5)			
and decayed wood fragments		Boring No. 5-LUW		Sample No. 3-B	
See attached plot for pressure		~~Depth~~ El -3.7		Date 3 March,1971	
vs void ratio curve		JDB **CONSOLIDATION TEST REPORT**			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

USAEWES SOILS TEST SECTION G 3424


LK. PONT., LA. & VIC.-HURR. PROT. - 1971
ORLEANS PARISH LAKEFRONT LEVEE, WEST OF
INNC; (OUTFALL CANALS) LONDON AVE. CANAL;
(GDM #2; SUPP. #5)
Boring 5-LLW
Sample 3-B
Pc
Void Ratio, e
2.0
1.8
1.6
1.4
1.2
1.0
.01
.1
1
3
10
Pressure, p , T/sq.ft.

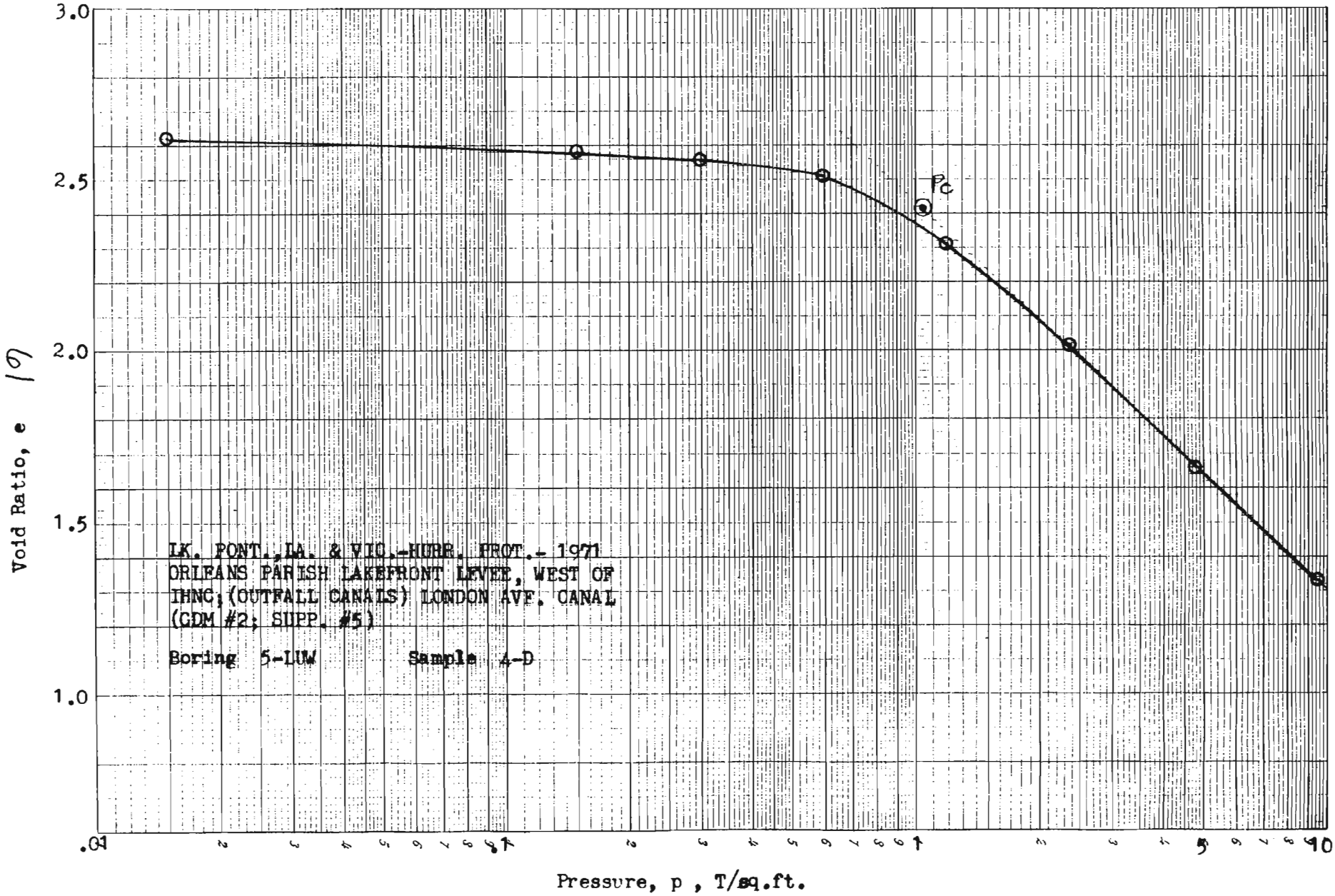


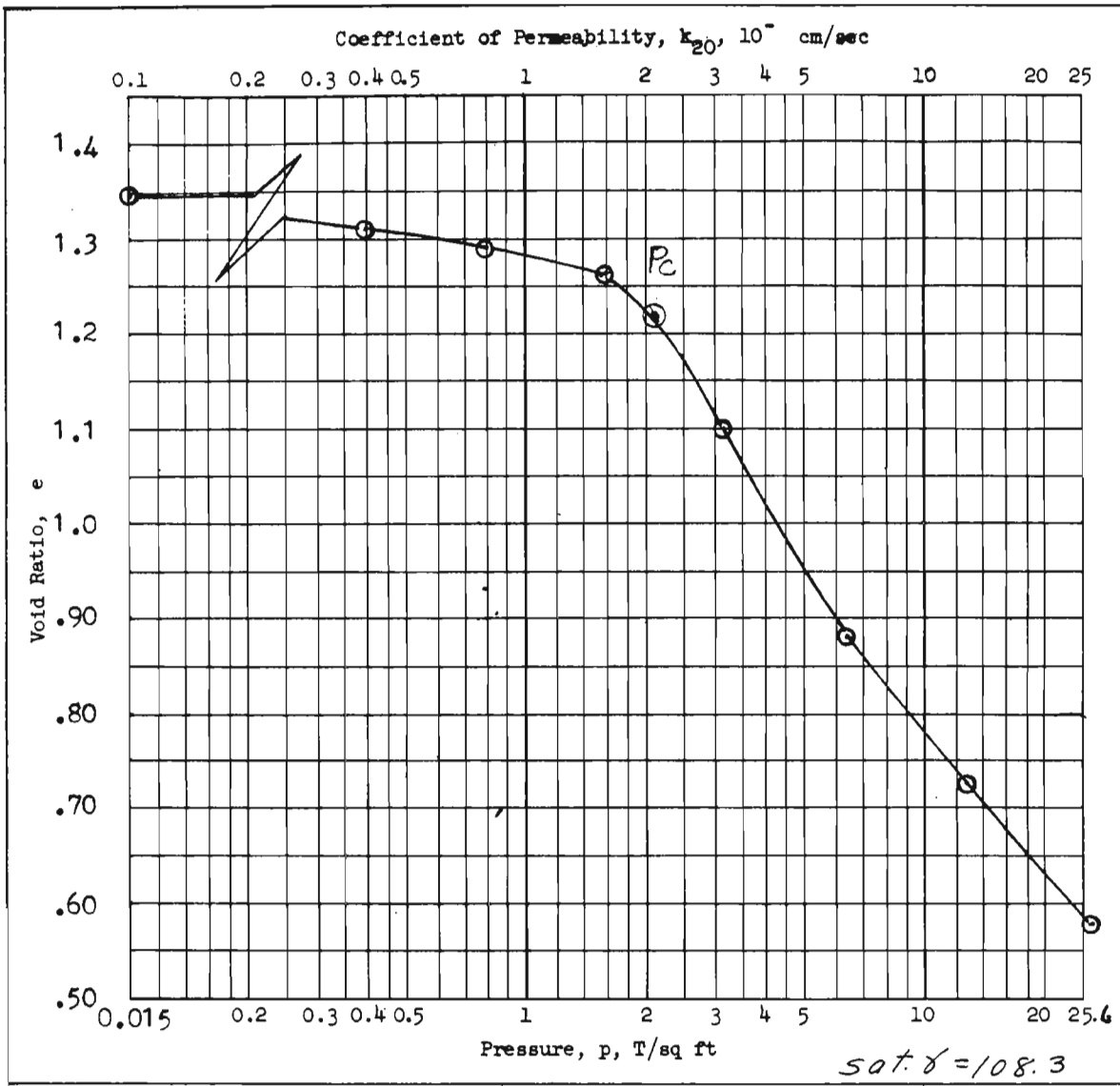
sat. γ = 91.7

Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.166 in.	Water Content, w_o	94.1 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	2.62	e_f	
Preconsol. Pressure, p_c 1.03 T/sq ft		Saturation, S_o	96.4 %	S_f	%
Compression Index, C_c 1.16		Dry Density, γ_d	46.4 lb/ft^3		
Classification PLASTIC CLAY(CH),*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.69 From Q	Project LK. PONT.,LA&VIC.-HURR.PROT.-1971			
PL -	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
* Remarks black, contains ½" dia.		(OUTFALL CANALS) LONDON AVE. CANAL(GDM#2;SUPP.#5)			
roots and organic matter		Boring No. 5-LUW	Sample No. 4-D		
See attached plot for pressure		~~Depth~~ El -9.1	Date 4 March,1971		
vs void ratio curve		JDB **CONSOLIDATION TEST REPORT**			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. *(TRANSLUCENT)*

G 3424 DUGGAS SOILS TEST SECTION


3.0
2.5
2.0
1.5
1.0
Void Ratio, e
Pc
LK. PONT., LA. & VIC.-HURR. PROT.- 1971
ORLEANS PARISH LAKEFRONT LEVEE, WEST OF
IHNC, (OUTFALL CANALS) LONDON AVE. CANAL
(CDM #2; SUPP. #5)
Boring 5-LUW
Sample A-D
.01
.1
1
10
Pressure, p , T/sq.ft.



sat. γ = 108.3

Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.166 in.	Water Content, w_o	49.2 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.35	e_f	
Preconsol. Pressure, p_c 2.20 T/sq ft		Saturation, S_o	99.3 %	S_f	%
Compression Index, C_c 0.73		Dry Density, γ_d	72.4 lb/ft^3		
Classification PLASTIC CLAY (CH)*		k_{20} at e_o =	x 10^{-} cm/sec		
LL 72	G_s 2.72				
PL 23	D_{10}				

Project LK.PONT.,LA.& VIC.-HURR. PROT.-1971

ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC

(OUTFALL CANALS)LONDON AVE. CANAL(GDM#2;SUPP.#5)

Remarks * gray

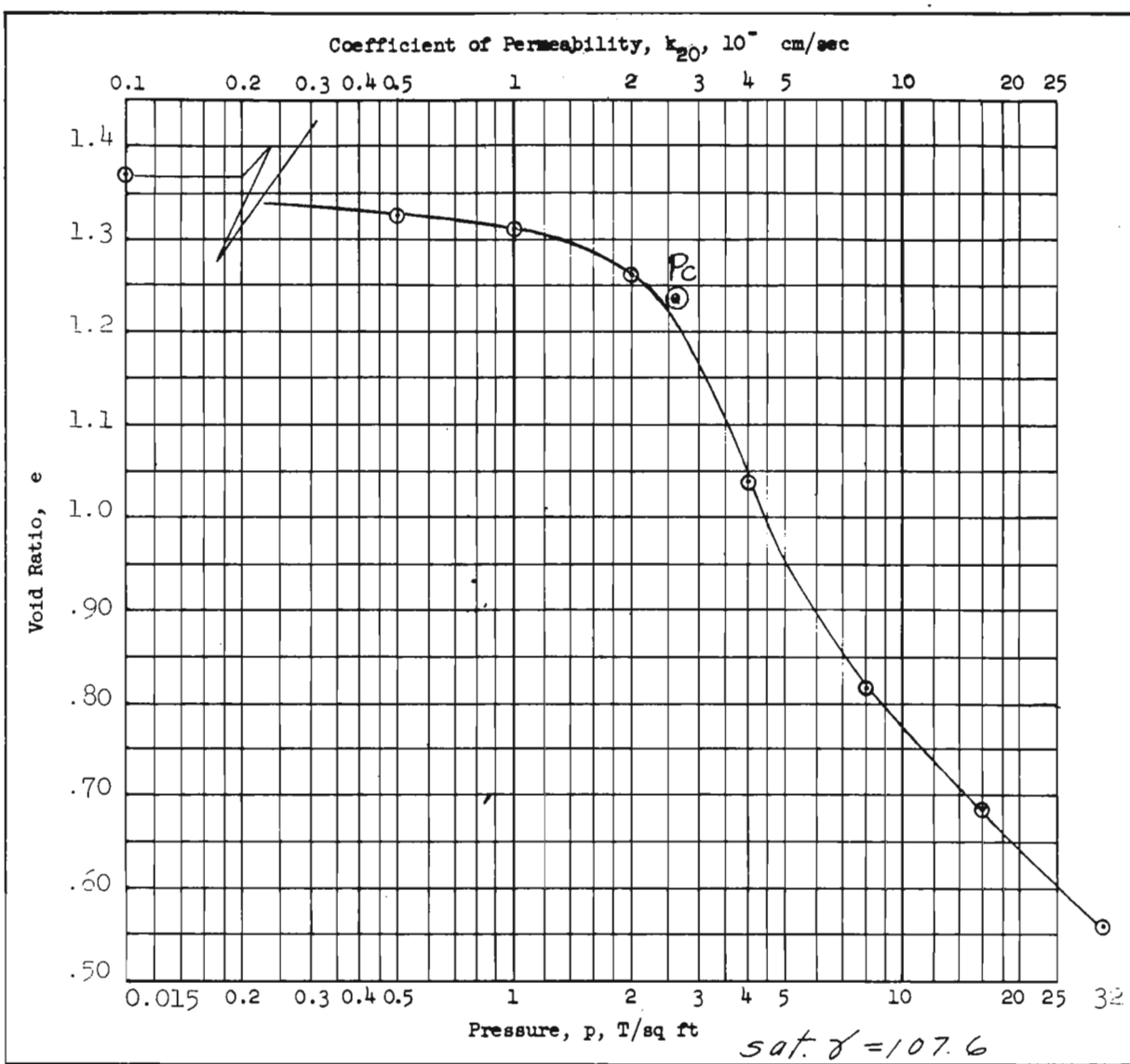
Boring No. 5-LUW Sample No. 15-D

~~Depth~~ El -54.6 Date 4 March,1971

JDB **CONSOLIDATION TEST REPORT**

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

62 USAEWES SOILS TEST 3424

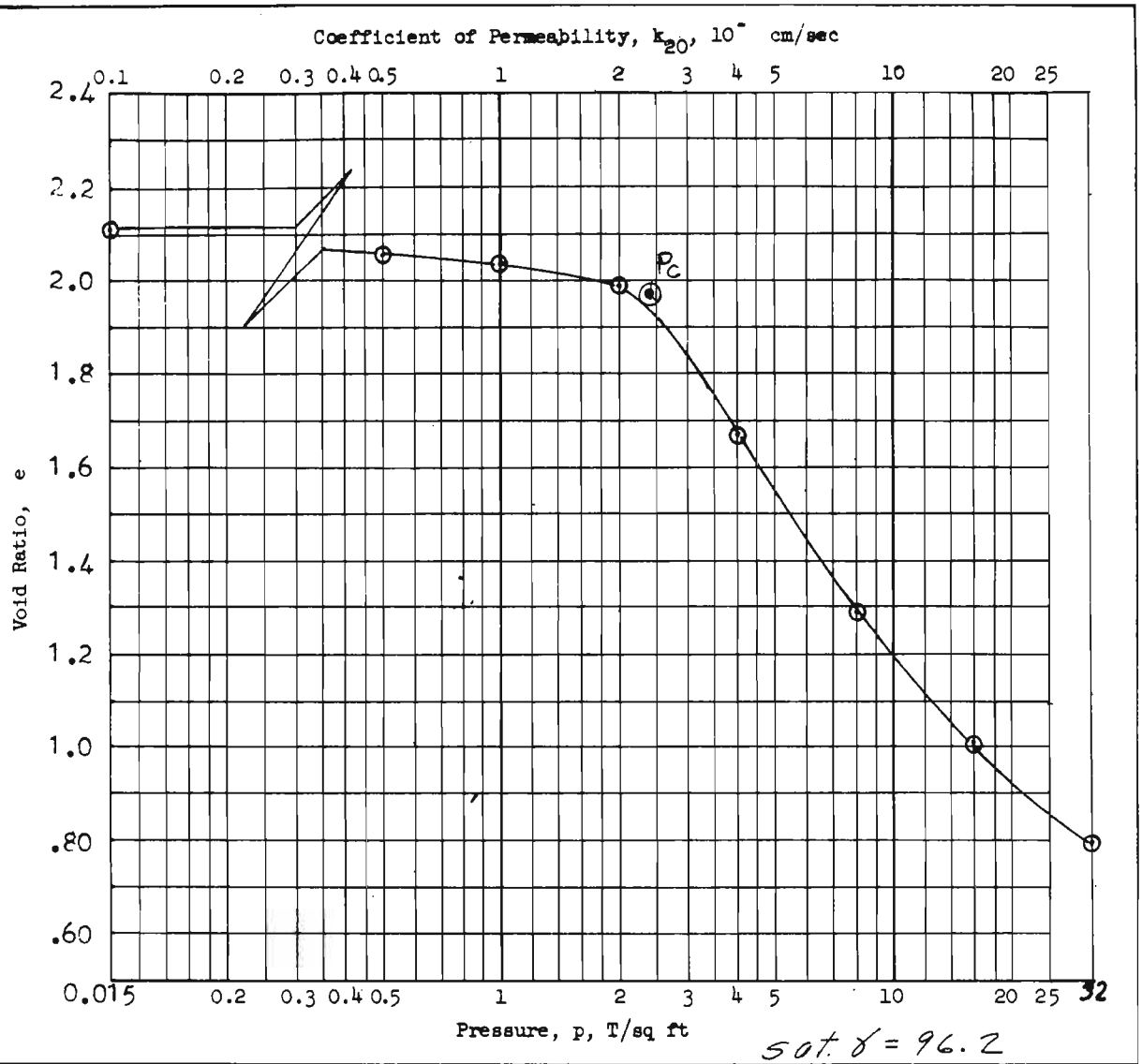


Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.162 in.	Water Content, w_o	49.9 %	w_f	20.8 %
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.37	e_f	
Preconsol. Pressure, p_c 2.55 T/sq ft		Saturation, S_o	98.9 %	S_f	%
Compression Index, C_c .33		Dry Density, γ_d	71.5 lb/ft^3		
Classification PLASTIC CLAY(CH),*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL 55	G_s 2.71	Project LAKE PONT.LA.,&VIC.-HURR. PROT.-1971			
PL 17	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC			
Remarks *gray, contains shell		Area (OUTFALL CANALS)LONDON AVE.CANAL(GDM#2,SUPP.#5)			
fragments		Boring No. 5-LUW		Sample No. 17-C	
		~~Depth~~ El -61.7		Date 8 March 1971	
		CONSOLIDATION TEST REPORT			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

63

0 3424



Sat. γ = 96.2

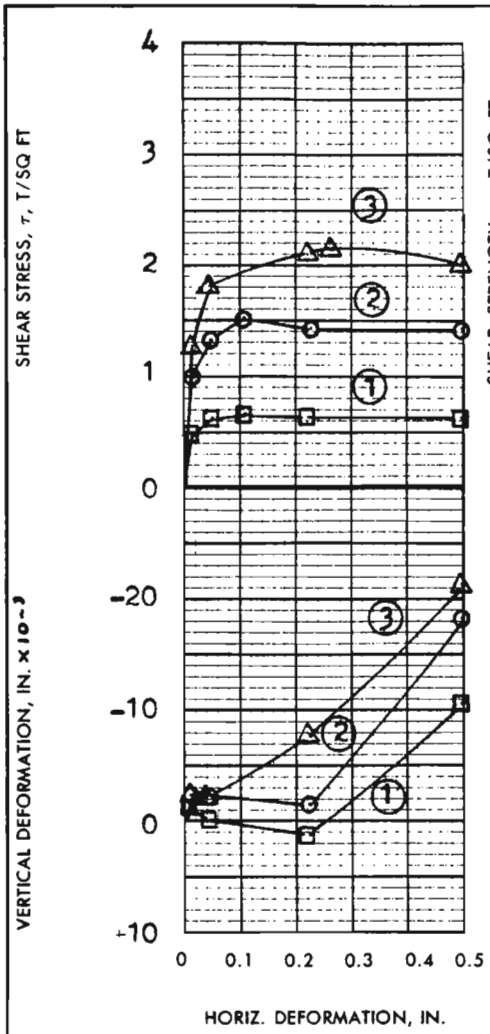
Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.151 in.	Water Content, w_o	77.0 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	2.11	e_f	
Preconsol. Pressure, p_c 2.44 T/sq ft		Saturation, S_o	97.7 %	S_f	%
Compression Index, C_c 1.30		Dry Density, γ_d	53.8 lb/ft^3		
Classification PLASTIC CLAY(CH)*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL 115	G_s 2.68	Project LK.PONT.,LA.& VIC.-HURR. PROT.-1971;			
PL 32	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
* Remarks dark brown, contains		(OUTFALL CANALS)LONDON AVE.CANAL(GDM#2;SUPP.#5)			
organic matter		Boring No. 5-LUW	Sample No. 18-D		
		~~Depth~~ El -66.3	Date 8 March,1971		
		JDB **CONSOLIDATION TEST REPORT**			

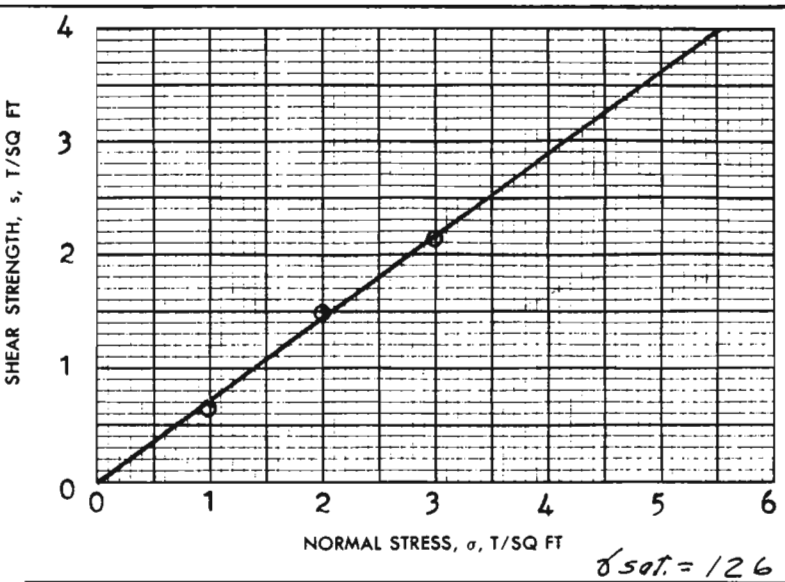
ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. *(TRANSLUCENT)*

64

C 3424

...SOILS TEST SECTION





$\gamma_{sat.} = 126$

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	25.6 %	24.3 %	22.1 %	24 %
	VOID RATIO	e_o	0.667	0.628	0.617	
	SATURATION	S_o	100+ %	100+ %	95.3 %	%
	DRY DENSITY, LB/CU FT	γ_d	99.6	102.0	102.7	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	22.6 %	23.8 %	22.2 %	%
	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}	0.68	1.51	2.15	
ACTUAL TIME TO FAILURE, MIN		t_f	690	690	1530	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 35.5

TAN ϕ' = 0.714

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.550 IN. THICK
CLASSIFICATION	SAND (SP), gray		
LL -	PL -	PI -	G_s 2.66

REMARKS

PROJECT LK. PONT., LA. & VIC.-HURR. PROT. (70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;

AREA GDM #2; SUPP. #5 OUTFALL CANALS

BORING NO. 6-LUE | SAMPLE NO. 4-C

~~DEPTH~~ EL -5.0 | DATE 12 January, 1971

GWG

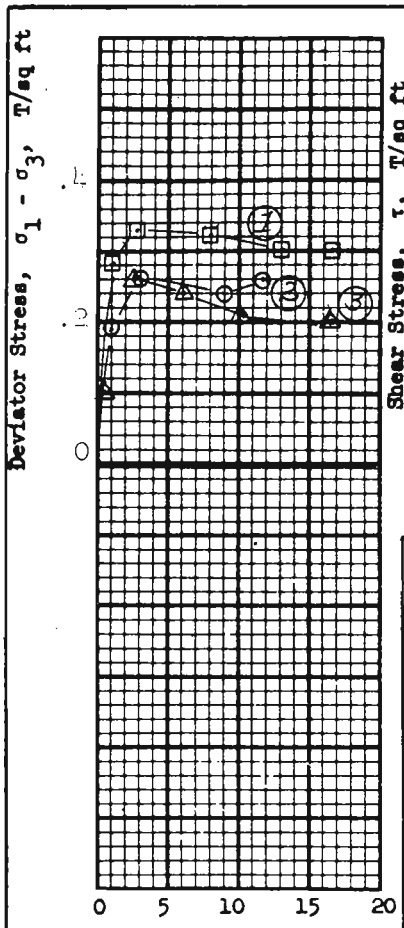
DIRECT SHEAR TEST REPORT

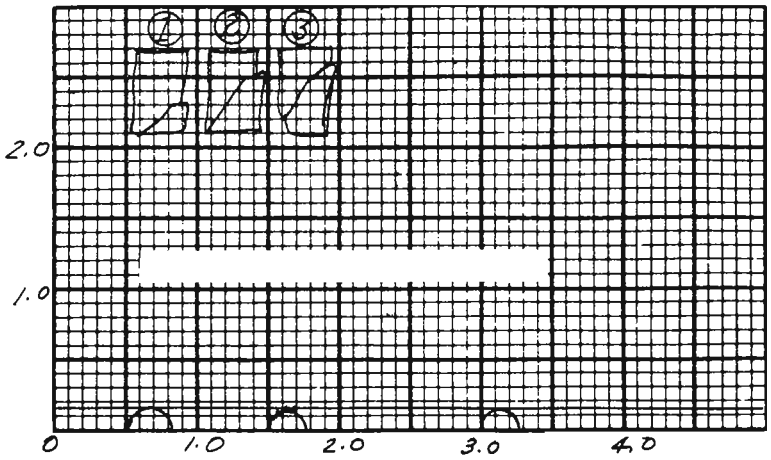
USAEWES SOILS TEST SECTION

ENG FORM 1 JUN 65 2092 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

65

PLATE IX-3





$\gamma_{sat.} = 97$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	79.0 %	71.2 %	77.7 %	76.0 %
	Void ratio	e_o	2.13	1.92	2.10	
	Saturation	S_o	99.8 %	99.8 %	99.5 %	%
	Dry density, lb/cu ft	γ_d	53.6	57.5	54.1	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.33	0.26	0.26	
Time to failure, min		t_f	15	37	50	
Rate of strain, percent/min			0.17	0.07	0.05	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.14 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q	Type of specimen UNDISTURBED			
Classification PLASTIC CLAY (CH), gray				
LL 81	PL 27	PI 54		G_s 2.69

Remarks _____

Project LK. PONT. LA. & VIC. HURR. PROT.(70)

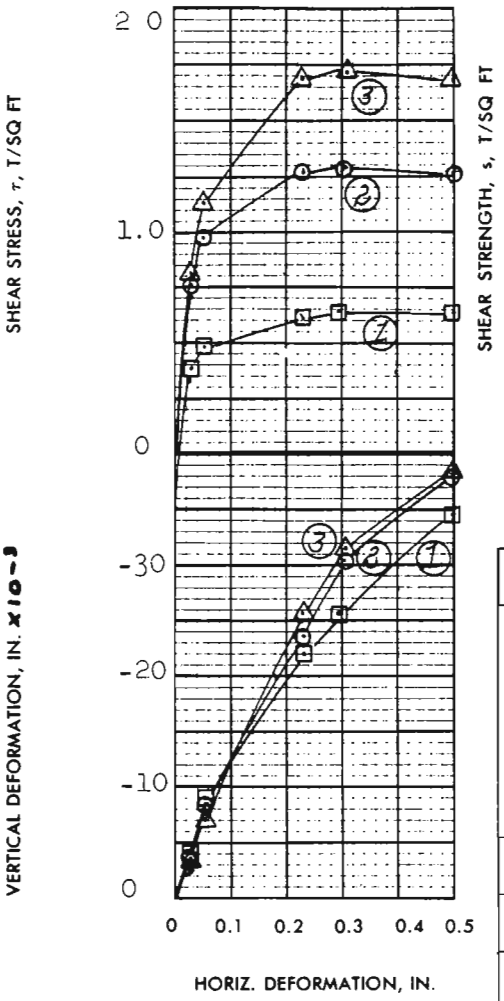
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

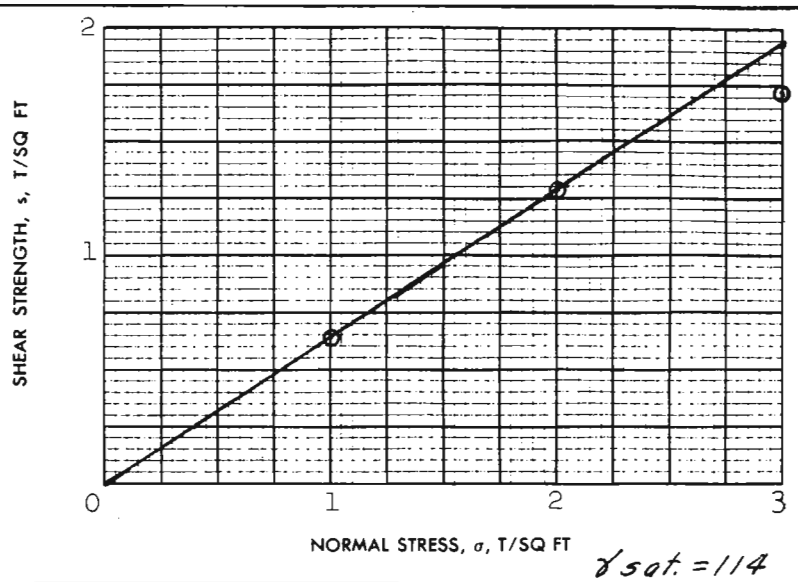
Area GDM NO.2,SUPP. NO. 5, OUTFALL CANALS

Boring No. 6- LUE | Sample No. 5-D

Depth El -9.4 | Date 18 Dec. 1970

GDA **TRIAXIAL COMPRESSION TEST REPORT**





γsat. = 114

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	32.8%	38.2%	40.7%	37.2%
	VOID RATIO	e_o	0.952	0.997	1.13	
	SATURATION	S_o	92.3 %	100+ %	96.5 %	%
	DRY DENSITY, LB/CU FT	γ_d	85.7	83.8	78.4	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	<1	<1	2	
FINAL	WATER CONTENT	w_f	26.9%	27.1%	28.7%	%
	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}	0.64	1.29	1.72	
ACTUAL TIME TO FAILURE, MIN		t_f	1680	1740	1740	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 33°

TAN ϕ' = 0.649

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

TYPE OF SPECIMEN UNDISTURBED 3.00 IN. SQUARE 1.&2. 0.550 3. 0.625 IN. THICK

CLASSIFICATION SILTY CLAY(CL),gray, contains sand laminations and 3/4" dia. shell*

LL 31 PL 19 PI 12 G_s 2.68

REMARKS *in unused portion of sample

PROJECT :LK. PONT.LA.& VIC. -HURR. PROT.(70)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;

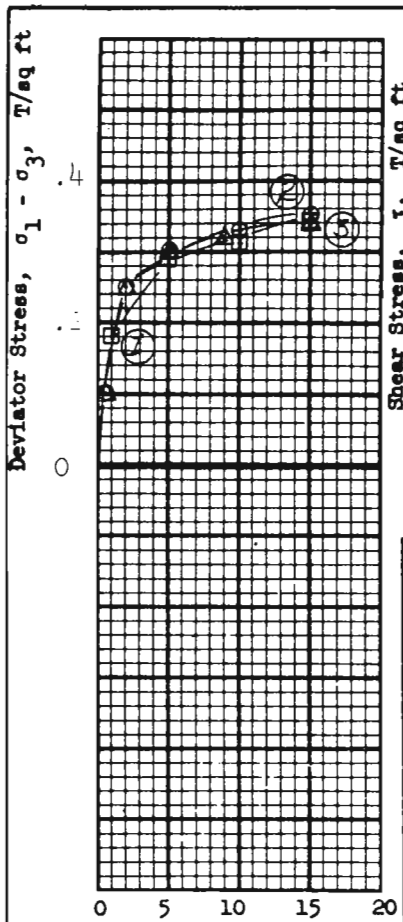
AREA GDM NO.2, SUPP.NO.5; OUTFALL CANALS

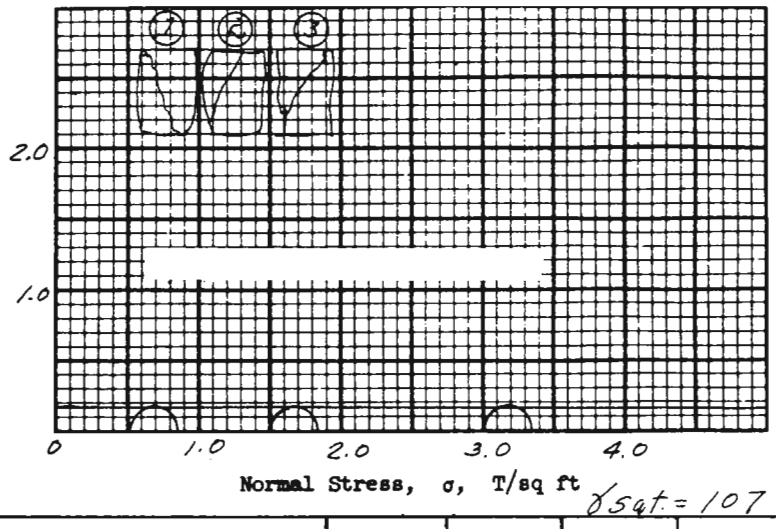
BORING NO. 6-LUE SAMPLE NO. 6-C

~~DEPTH~~ EL -12.6 DATE 14 Jan. 1971

BWG **DIRECT SHEAR TEST REPORT**

ENG FORM 1 JUN 65 2092 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT) 67 PLATE IX-3





$\gamma_{Sat.} = 107$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	45.1 %	53.0 %	60.7 %	52.9 %
	Void ratio	e_o	1.21	1.47	1.64	
	Saturation	S_o	100+ %	98.1 %	100+ %	%
	Dry density, lb/cu ft	γ_d	76.7	68.8	64.4	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.34	0.35	0.34	
Time to failure, min		t_f	157	69	60	
Rate of strain, percent/min			0.10	0.22	0.25	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0°

tan ϕ = 0

c = 0.172 T/sq ft

Method of saturation

☐ Controlled stress

☒ Controlled strain

Type of test Q **Type of specimen** UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains 1" stratum of Silty Clay and*

LL 66 **PL** 22 **PI** 44 **G_s** 2.72

Remarks *1/8" to 3/4" dia. shells

Specimens patched where shells removed

Project LK. PONT. LA.&VIC. HURR. PROT.(70)

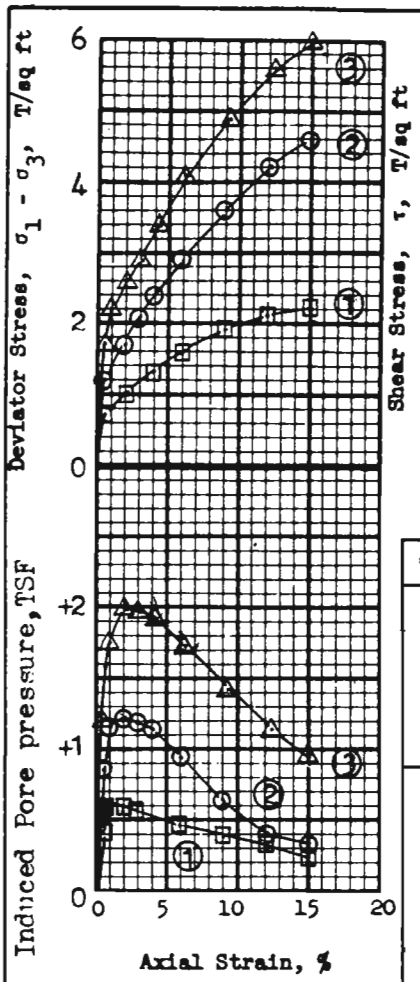
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC

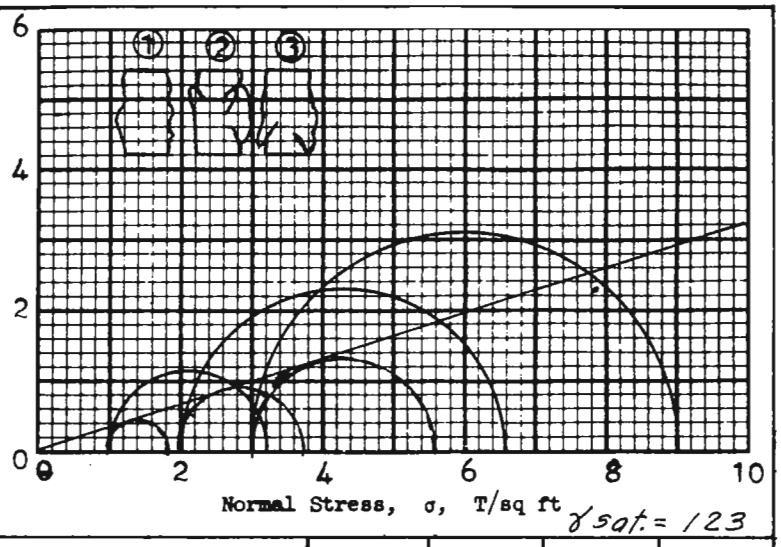
Area GDM NO. 2, SUPPNO.5, OUTFALL CANALS

Boring No. 6-LUE **Sample No.** 8-B1

~~Depth~~ El -19.4 **Date** 21 Dec. 1970

JMS **TRIAXIAL COMPRESSION TEST REPORT**





$\gamma_{sat.} = 123$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	27.4 %	25.0 %	26.3 %	26.2 %
	Void ratio	e_o	0.729	0.696	0.713	
	Saturation	S_o	100+ %	95.9 %	98.5 %	%
	Dry density, lb/cu ft	γ_d	96.4	98.3	97.3	
Before Shear	Water content	w_c	24.7 %	22.5 %	21.9 %	%
	Void ratio	e_c	0.697	0.652	0.539	
	Saturation	S_c	94.6* %	92.1* %	100+ %	%
	Final back pressure, PSI	u_o	110	110	110	
	Dry Density Lbs/cu.ft.	γ_d	98.2	100.9	108.3	
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	1.0	2.0	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	2.19	4.55	5.98	
Time to failure, min		t_f	250	250	242	
Rate of strain, percent/min			0.060	0.060	0.062	
$(\sigma_1-\sigma_3)$ at max. pore pressure			0.8	1.7	2.6	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.38	1.38	1.39	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 16 °

tan ϕ = 0.295

c = 0 T/sq ft

Method of saturation BP

☐ Controlled stress

☒ Controlled strain

Type of test R | Type of specimen UNDISTURBED

Classification SAND (SP), dark gray, contains hard white shell fragments

LL - | PL - | PI - | | G_s 2.67

* Remarks Pore pressure response indicated 100% saturation

See attached plot for Effective values

Portion of sample allowed to drain before trimming. Specs. slumped due to patching when shells were removed

Project LK. PONT., LA. & VIC.-HURR. PROT. (70)

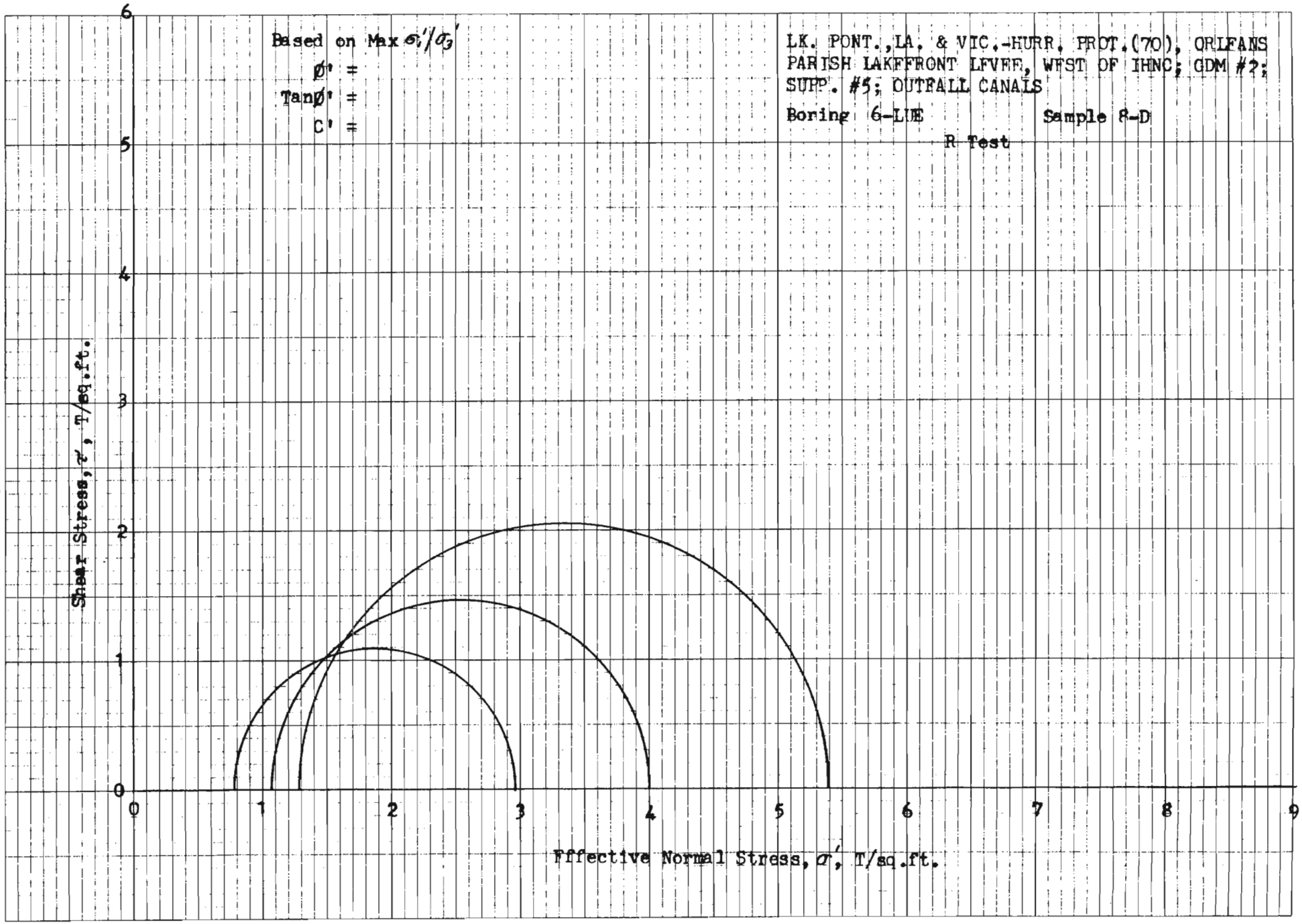
ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC

Area GDM #2; SUPP. #5, OUTFALL CANALS

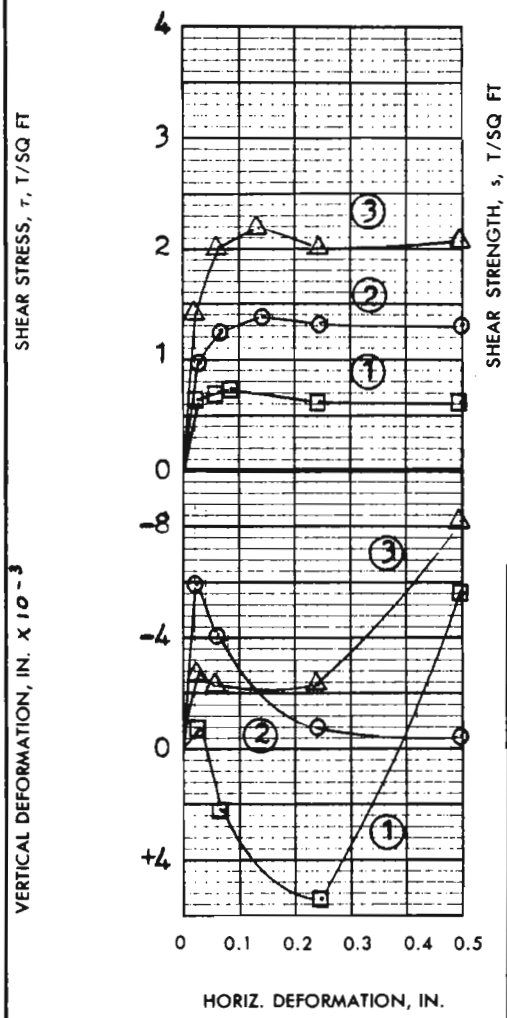
Boring No. 6-LUE | Sample No. 8-D

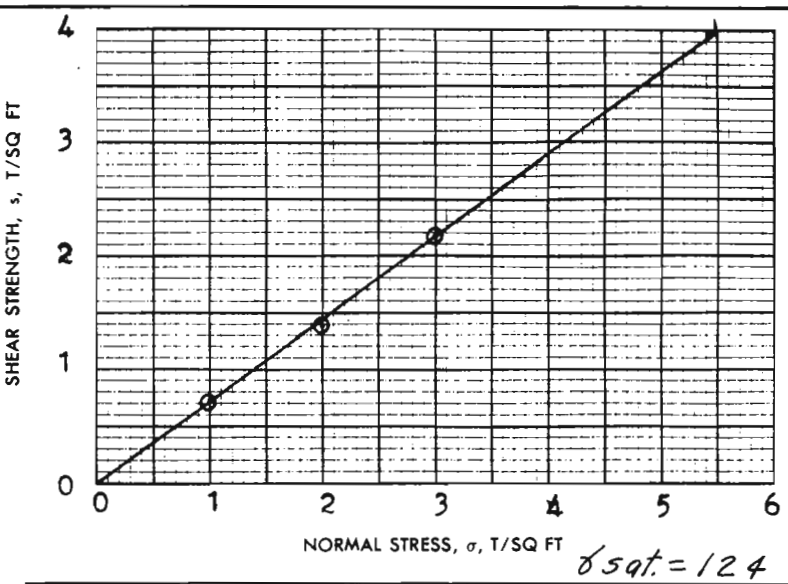
~~Depth~~ El -21.4 | Date 12 February, 1971

PJR TRIAXIAL COMPRESSION TEST REPORT


Based on Max σ1'/σ3'
Ø' =
TanØ' =
C' =
LK. PONT.,LA. & VIC.-HURR. PROT.(70), ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC; GDM #2; SUPP. #5; OUTFALL CANALS
Boring 6-LUE
Sample 8-D
R Test
Shear Stress, τ', T/sq.ft.
Effective Normal Stress, σ', T/sq.ft.
0
1
2
3
4
5
6
7
8
9

QL





$\gamma_{sat.} = 124$

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	23.5 %	23.1 %	23.1%	23.2 %
	VOID RATIO	e_o	0.688	0.688	0.703	
	SATURATION	S_o	90.9 %	89.3 %	87.4%	%
	DRY DENSITY, LB/CU FT	γ_d	98.4	98.4	97.5	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	23.8 %	24.3%	24.8%	%
	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}	0.72	1.39	2.19	
ACTUAL TIME TO FAILURE, MIN		t_f	510	780	720	
RATE OF STRAIN, IN./MIN			.00019	.00019	.00019	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' = 36^0$

TAN $\phi' = 0.720$

$c' = 0$ T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.550 IN. THICK

CLASSIFICATION: SILTY SAND(SM), gray, contains 3/4" dia. shells and shell fragments

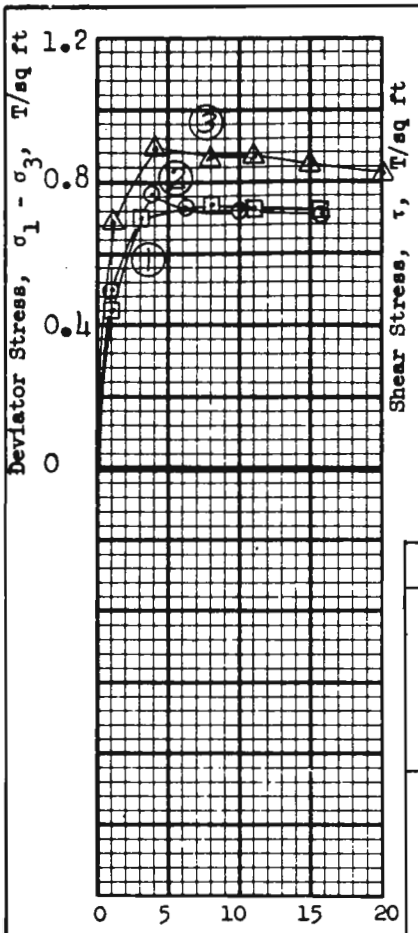
LL - | PL - | PI - | G_s 2.66

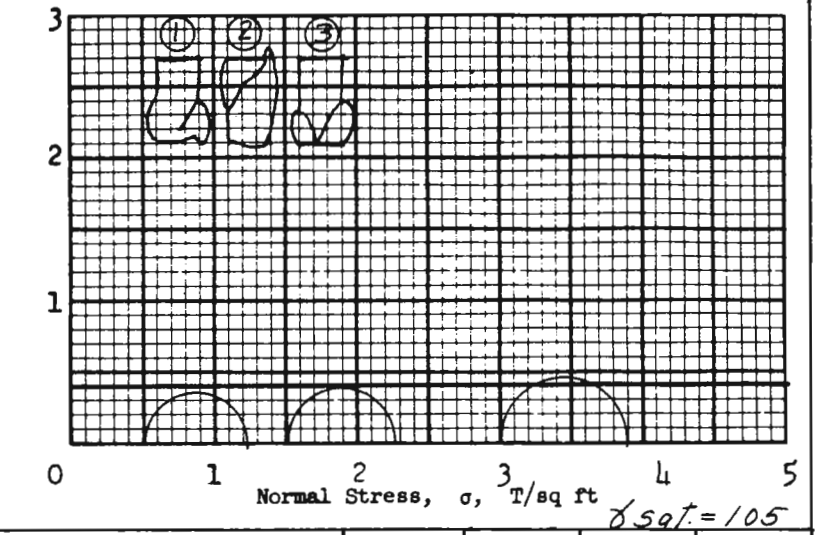
REMARKS

PROJECT: LK. PONT., LA. & VIC. - HURR. PROT. (70)
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC;
AREA: GDM #2, SUPP. #5; OUTFALL CANALS
BORING NO. 6-LUE | SAMPLE NO. 11-B
~~DEPTH~~ EL -31.6 | DATE 18 January, 1971

EWG

DIRECT SHEAR TEST REPORT





$\phi_{sat.} = 10.5°$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	53.4 %	55.2 %	56.1 %	54.9 %
	Void ratio	e_o	1.43	1.48	1.50	
	Saturation	S_o	100+ %	100+ %	100+ %	%
	Dry density, lb/cu ft	γ_d	68.8	67.5	66.8	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	0.74	0.77	0.89	
Time to failure, min		t_f	47	17	17	
Rate of strain, percent/min			0.17	0.22	0.24	
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0°

tan ϕ = 0

c = 0.40 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), gray, contains shell fragments

LL 68 | PL 25 | PI 43 | | G_s 2.68

Remarks _____

Project LK. PONT. LA., & VIC. - HURR. PROT.

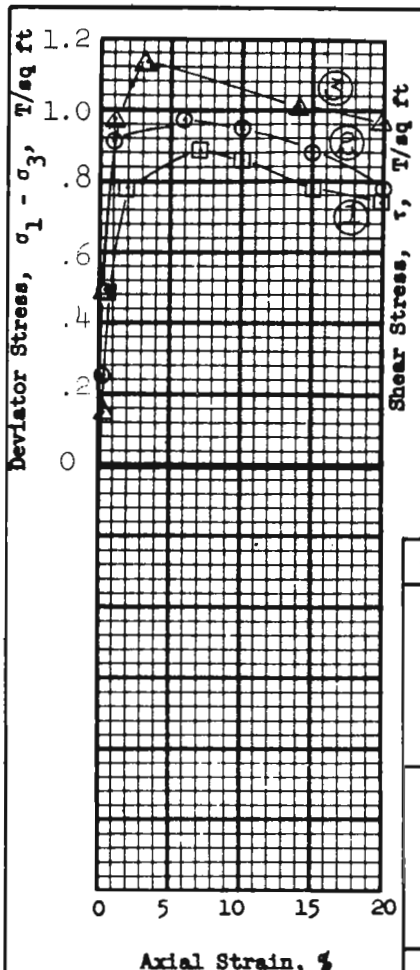
(70) ORLEANS PARISH LAKE FRONT LEVEE WEST OF

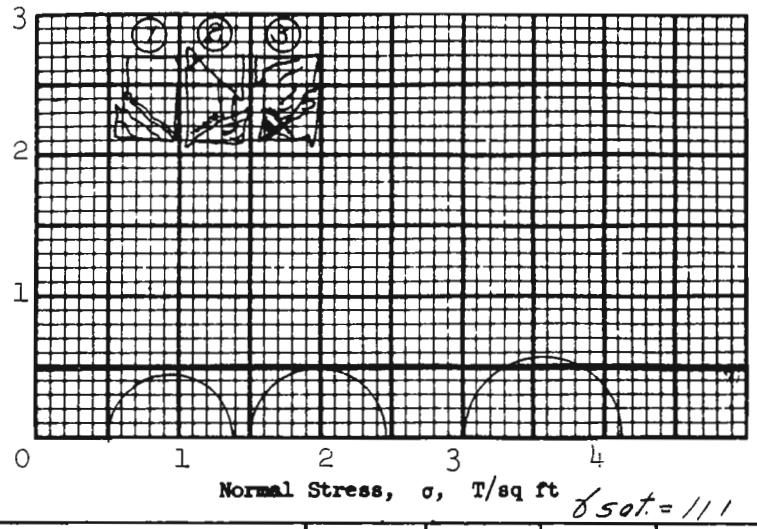
Area IHNC; GDM # 2, SUPP. # 5 (OUTFALL CANALS)

Boring No. 6-LUE | Sample No. 14 - D

~~Depth~~ El - 45.5 | Date 21 Dec. 1970

GDA TRIAXIAL COMPRESSION TEST REPORT





$\phi_{sat.} = 11.1$

Test No.			1	2	3	Avg.
Initial	Water content	w_o	43.8 %	46.1 %	43.9 %	44.6 %
	Void ratio	e_o	1.26	1.32	1.27	
	Saturation	S_o	97.0 %	97.4 %	96.4 %	%
	Dry density, lb/cu ft	γ_d	77.2	75.0	76.8	
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	
Max deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{max}$		0.89	0.98	1.13	
Time to failure, min		t_f	27	19	13	
Rate of strain, percent/min			0.26	0.31	0.26	
Ult deviator stress, T/sq ft	$(\sigma_1-\sigma_3)_{ult}$					
Initial diameter, in.		D_o	1.41	1.41	1.41	
Initial height, in.		H_o	3.00	3.00	3.00	

Shear Strength Parameters

ϕ = 0°

tan ϕ = 0

c = 0.50 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), mottled tan and gray

LL 109 | PL 29 | PI 80 | | G_s 2.79

Remarks _____

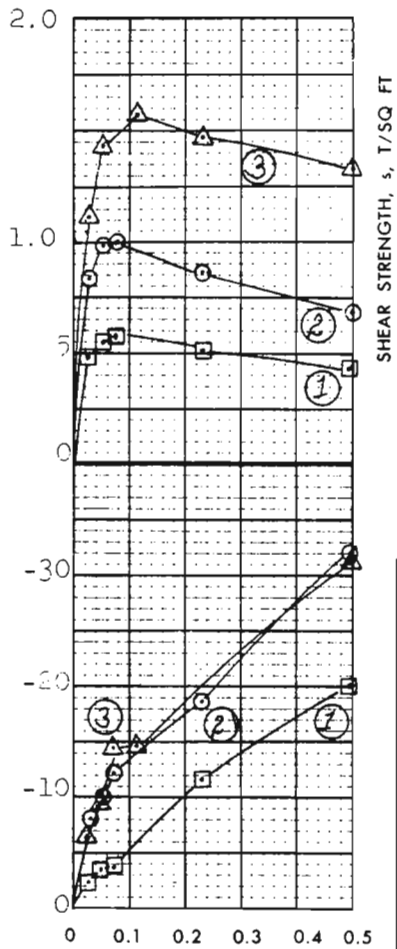
Project LK. PONT. LA.&VIC. HURR. PROT.(70)
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

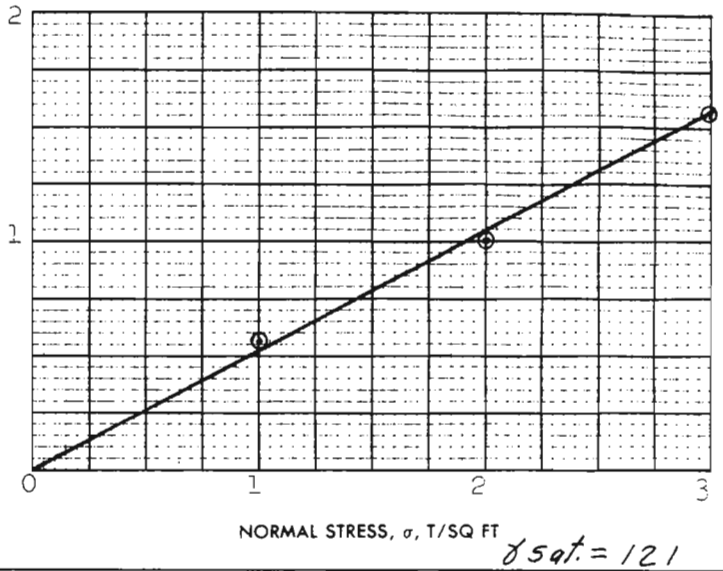
Area GDM, NO. 2, SUPP. NO. 5 OUTFALL CANALS

Boring No. 6-LUE | Sample No. 17-B

Depth El -55.8 | Date 21 Dec. 1970

FAM TRIAXIAL COMPRESSION TEST REPORT





$\gamma_{sat.} = 121$

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	29.8 %	30.3%	29.8%	30.0%
	VOID RATIO	e_o	0.831	0.850	0.847	
	SATURATION	S_o	97.9 %	97.3%	96.0%	%
	DRY DENSITY, LB/CU FT	γ_d	93.1	92.1	92.3	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	30.1%	29.1%	28.8%	%
	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}	0.56	1.00	1.57	
ACTUAL TIME TO FAILURE, MIN		t_f	480	480	678	
RATE OF STRAIN, IN./MIN			.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' = 28^0$

TAN $\phi' = 0.523$

$c' = 0$ T/SQ FT

☐ CONTROLLED STRESS

☐ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.550 IN. THICK

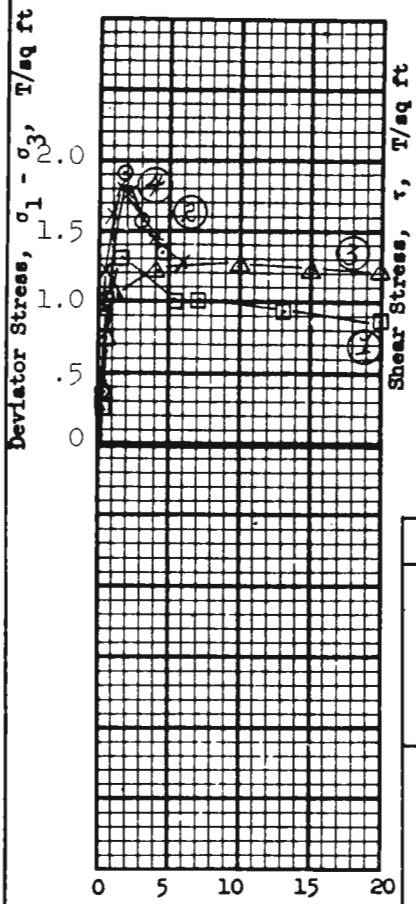
CLASSIFICATION SILTY CLAY(CL),gray and tan, contains iron oxide concretions, fissured

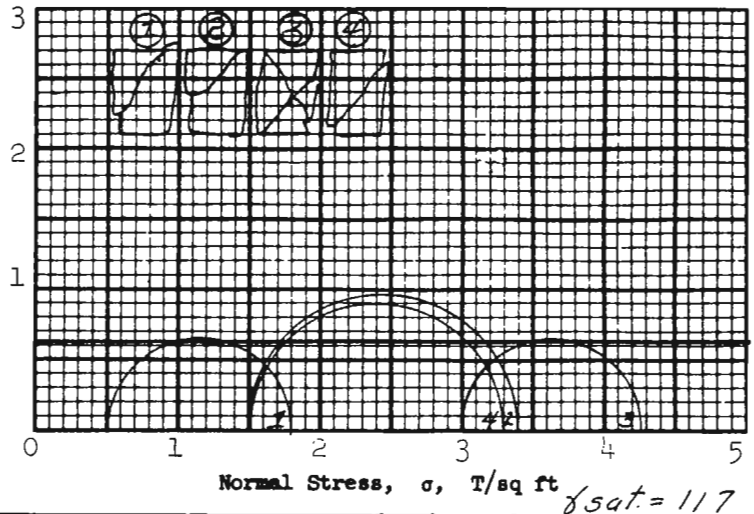
LL	PL	PI		G_s
42	20	22		2.73

REMARKS

PROJECT LK. PONT.LA.&VIC.-HURR. PROT.(70)
ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,
AREA GDM NO.2,SUPP. NO.5,OUTFALL CANALS
BORING NO. 6-LUE SAMPLE NO. 19-A
DEPTH EL -63.2 DATE 20 Jan. 1971
BWG

DIRECT SHEAR TEST REPORT





$\gamma_{sat} = 117$

Test No.			1	2	3	4
Initial	Water content	w_o	37.1 %	36.5 %	36.0 %	35.5 %
	Void ratio	e_o	1.04	1.02	1.01	0.997
	Saturation	S_o	98.5 %	98.8 %	98.4 %	98.3 %
	Dry density, lb/cu ft	γ_d	84.3	85.3	85.8	86.3
Before Shear	Water content	w_c	%	%	%	%
	Void ratio	e_c				
	Saturation	S_c	%	%	%	%
	Final back pressure, T/sq ft	u_o				
Final	Water content	w_f	%	%	%	%
	Void ratio	e_f				
Minor principal stress, T/sq ft		σ_3	0.5	1.5	3.0	1.5
Max deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{max}$	1.30	1.90	1.26	1.80
Time to failure, min		t_f	13	18	146	16
Rate of strain, percent/min			0.12	0.09	0.07	0.10
Ult deviator stress, T/sq ft		$(\sigma_1-\sigma_3)_{ult}$				
Initial diameter, in.		D_o	1.40	1.40	1.40	1.41
Initial height, in.		H_o	3.00	3.00	3.00	3.00

Shear Strength Parameters

ϕ = 0 °

tan ϕ = 0

c = 0.64 T/sq ft

Method of saturation _____

☐ Controlled stress

☒ Controlled strain

Type of test Q | Type of specimen UNDISTURBED

Classification PLASTIC CLAY(CH), tan

LL 81 | PL 27 | PI 54 | | G_s 2.76

Remarks _____

Project LK. PONT. LA.&VIC. HURR. PROT. (7C)

ORLEANS PARISH LAKEFRONT LEVEE WEST OF IHNC,

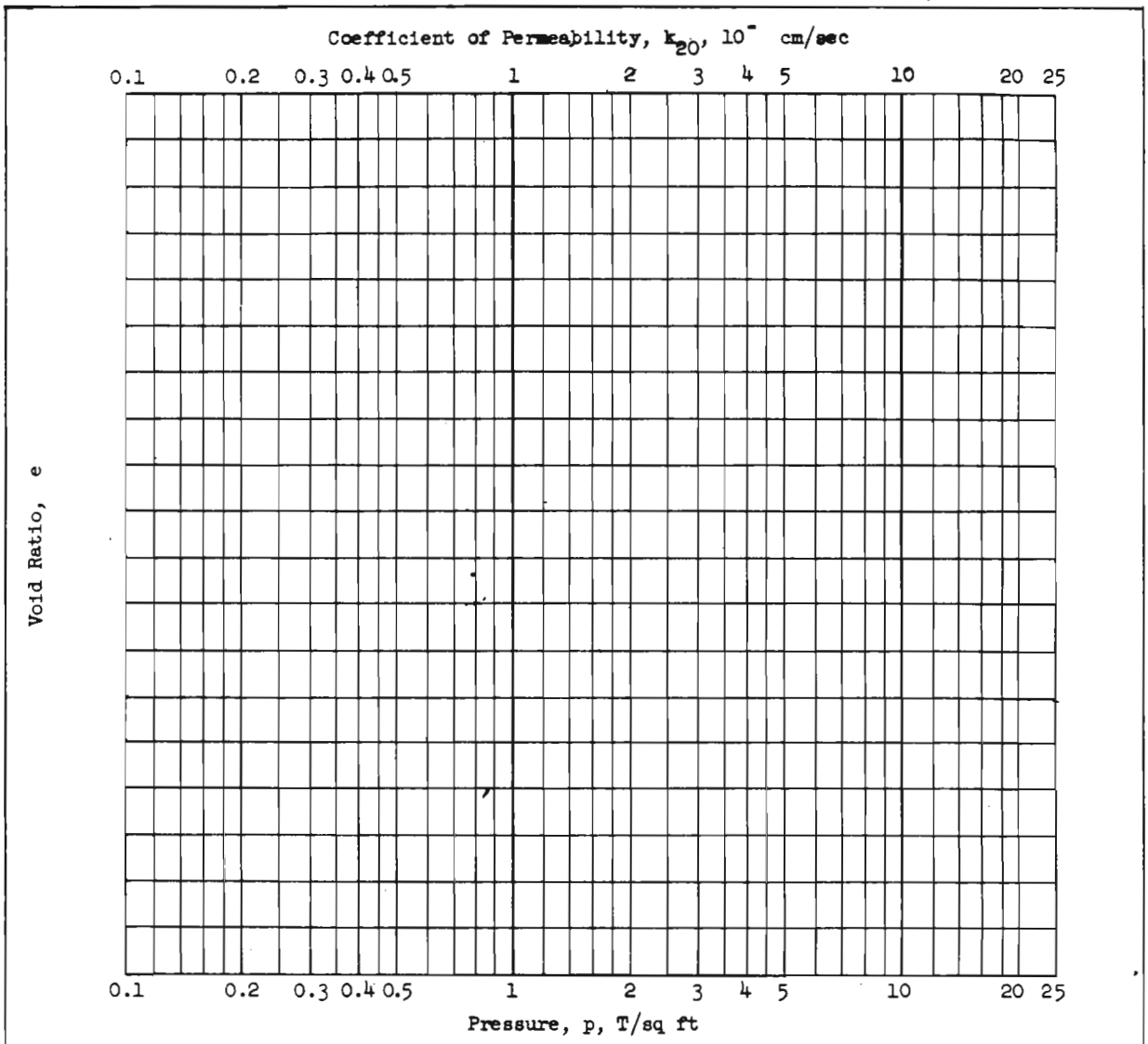
Area GDM NO. 2, SUPP NO. 5, OUTFALL CANALS

Boring No. 6-LUE | Sample No. 19-C

Depth El -65.0 | Date 22 Dec. 1970

JMS

TRIAXIAL COMPRESSION TEST REPORT



Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.165 in.	Water Content, w_o	35.4 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	0.956	e_f	
Preconsol. Pressure, p_c .68 T/sq ft		Saturation, S_o	99.7 %	S_f	%
Compression Index, C_c .2012		Dry Density, γ_d	85.9 lb/ft^3		
Classification LEAN CLAY (CL), tan*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL 44	G_s 2.69	Project LK. PONT.,LA. & VIC.-HURR. PROT.(70)			
PL 18	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC;			
Remarks * and gray, contains 1"		Area GDM #2; SUPP. #5; OUTFALL CANALS			
sand pockets		Boring No. 6-LUE		Sample No. 1-B2	
See attached plot for pressure		~~Depth~~ El 2.9		Date 27 Jan.,1971	
vs void ratio curve		JDB CONSOLIDATION TEST REPORT			

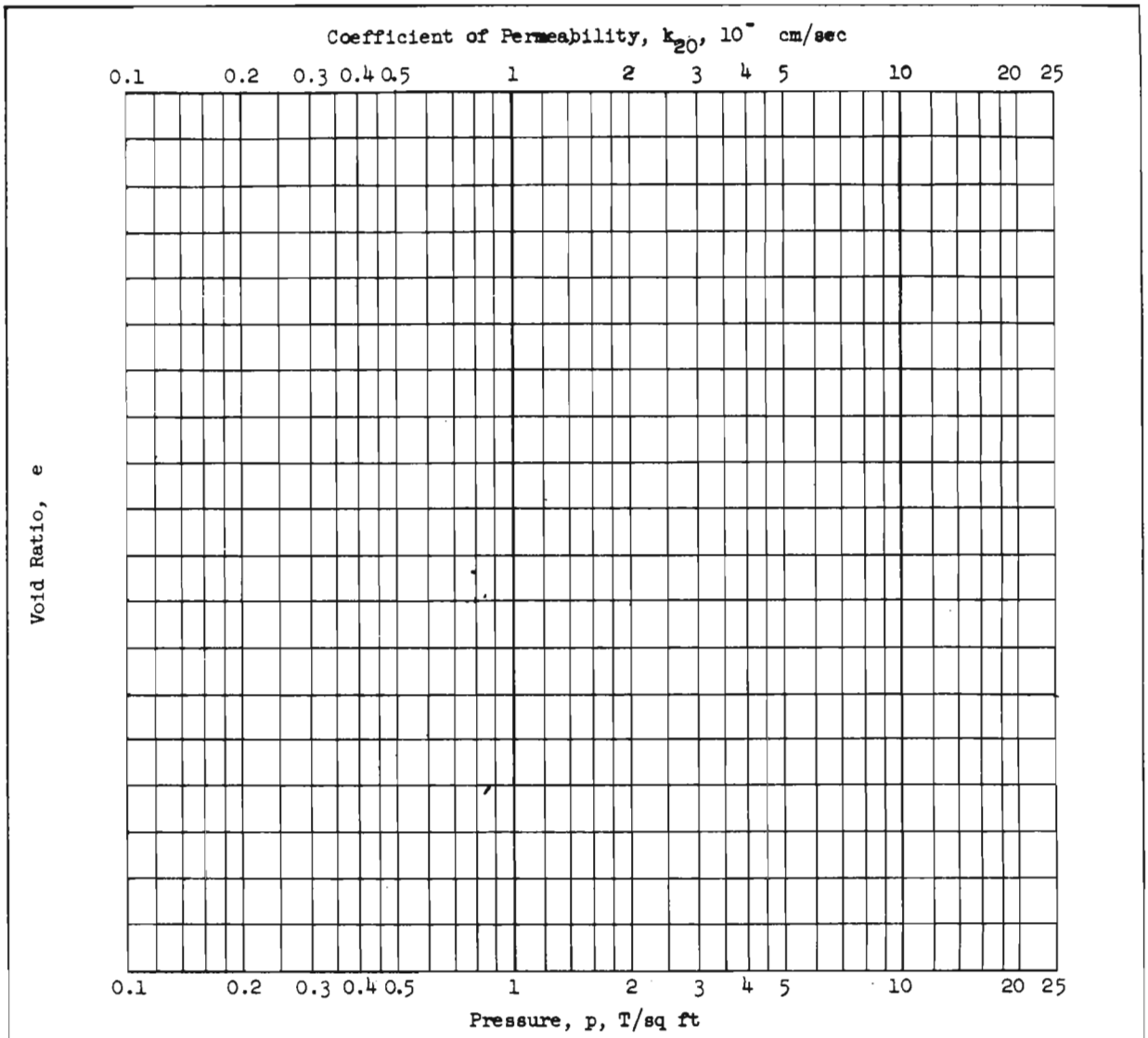
ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

76

0 3424

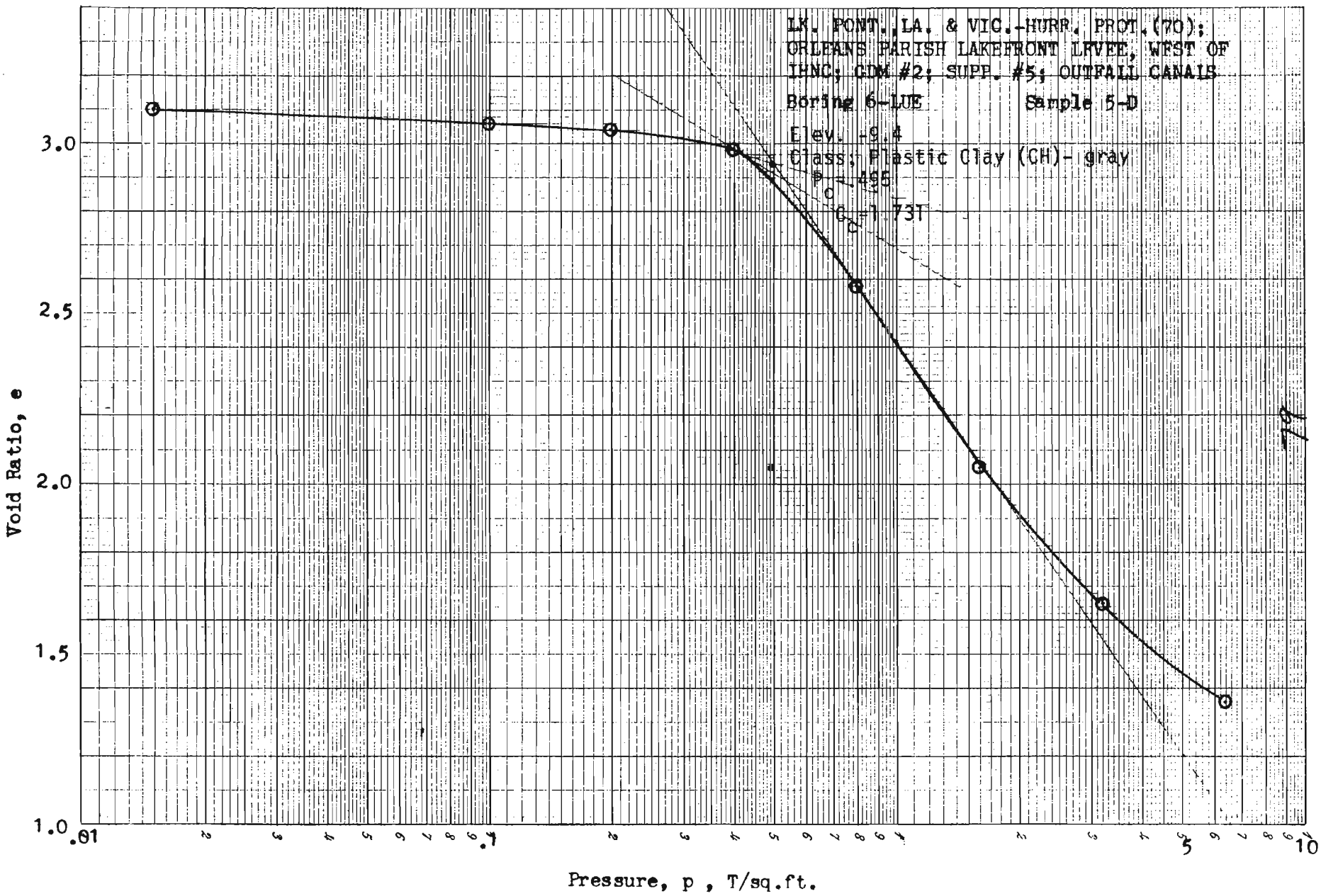
USAEWES SOILS TEST SECTION

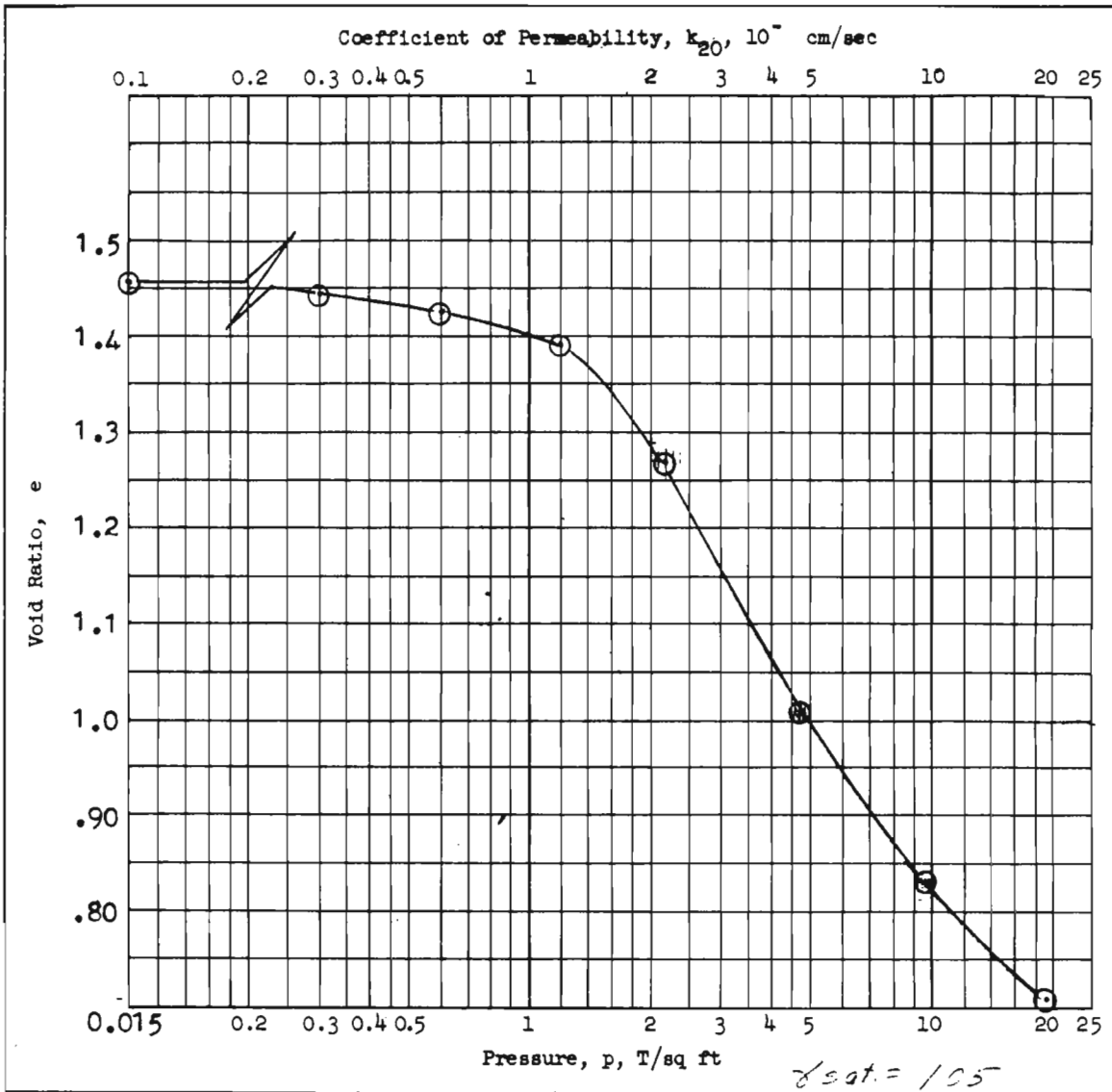
LK. PONT., LA. & VIC. - HURR. PROT. (70)
ORLEANS PARISH LAKEFRONT LEVEE, WEST OF
IHNC; GDM #2; SUPP. #5; OUTFALL CANALS
Boring 6-LUE
Sample 1-B2
Elev., 2.9
Class; Lean clay (CL), tan & gray, contains
1" sand pockets
p_c = .68
C_c = .2012
Void Ratio, e
.95
.90
.85
.80
.75
.01
.1
1
3
10
Pressure, p , T/sq.ft.



Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.161 in.	Water Content, w_o	115.0 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	3.10	e_f	
Preconsol. Pressure, p_c . 475 T/sq ft		Saturation, S_o	99.8 %	S_f	%
Compression Index, C_c 1.73		Dry Density, γ_d	40.9 lb/ft^3		
Classification PLASTIC CLAY(CH), *		k_{20} at e_o =	x 10^{-} cm/sec		
LL 132	G_s 2.69 Est.	Project LK. PONT.,LA. & VIC.-HURR. PROT.(70)			
PL 33	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
Remarks * gray		Area GDM #2; SUPP. #5; OUTFALL CANALS			
See attached plot for pressure		Boring No. 6-LUE	Sample No. 5-D		
vs void ratio curve		~~Depth~~ El -9.4	Date 18 February, 1971		
		JDB **CONSOLIDATION TEST REPORT**			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. *(TRANSLUCENT)* 0 3424


LK. PONT., LA. & VIC.-HURR. PROT.(70); ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC; CDM #2; SUPP. #5; OUTFALL CANALS
Boring 6-LUE
Sample 5-D
Elev. -9.4
Class; Plastic Clay (CH)- gray
p_c = 1.495
C_c = 1.731
Void Ratio, e
3.0
2.5
2.0
1.5
1.0
.01
.1
5
10
Pressure, p , T/sq.ft.



Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.164 in.	Water Content, w_o	54.3 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.45	e_f	
Preconsol. Pressure, p_c 1.74 T/sq ft		Saturation, S_o	100 %	S_f	%
Compression Index, C_c .865		Dry Density, γ_d	68.1 lb/ft^3		
Classification PLASTIC CLAY(CH)*		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.68 From Q	Project LK. PONT., LA. & VIC.-HURR. PROT.(70)			
PL -	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF			
* Remarks grayish green, contains		Area IHNC; GDM #2; SUPP. #5; OUTFALL CANALS			
shell fragments		Boring No. 6-LUE		Sample No. 14-D	
		~~Depth~~ El -45.5		Date 28 Jan.,1971	
		JDB CONSOLIDATION TEST REPORT			

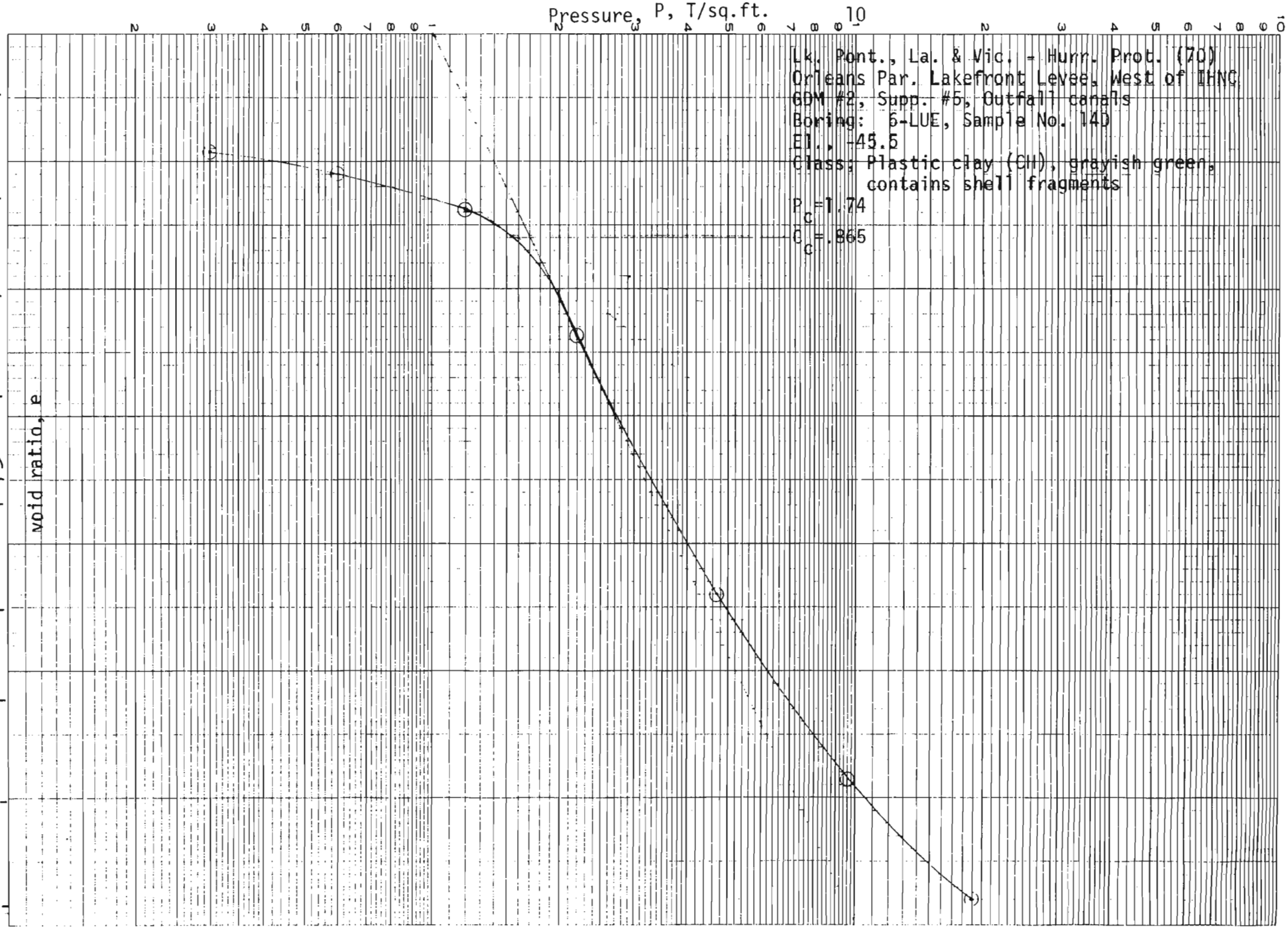
ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

80

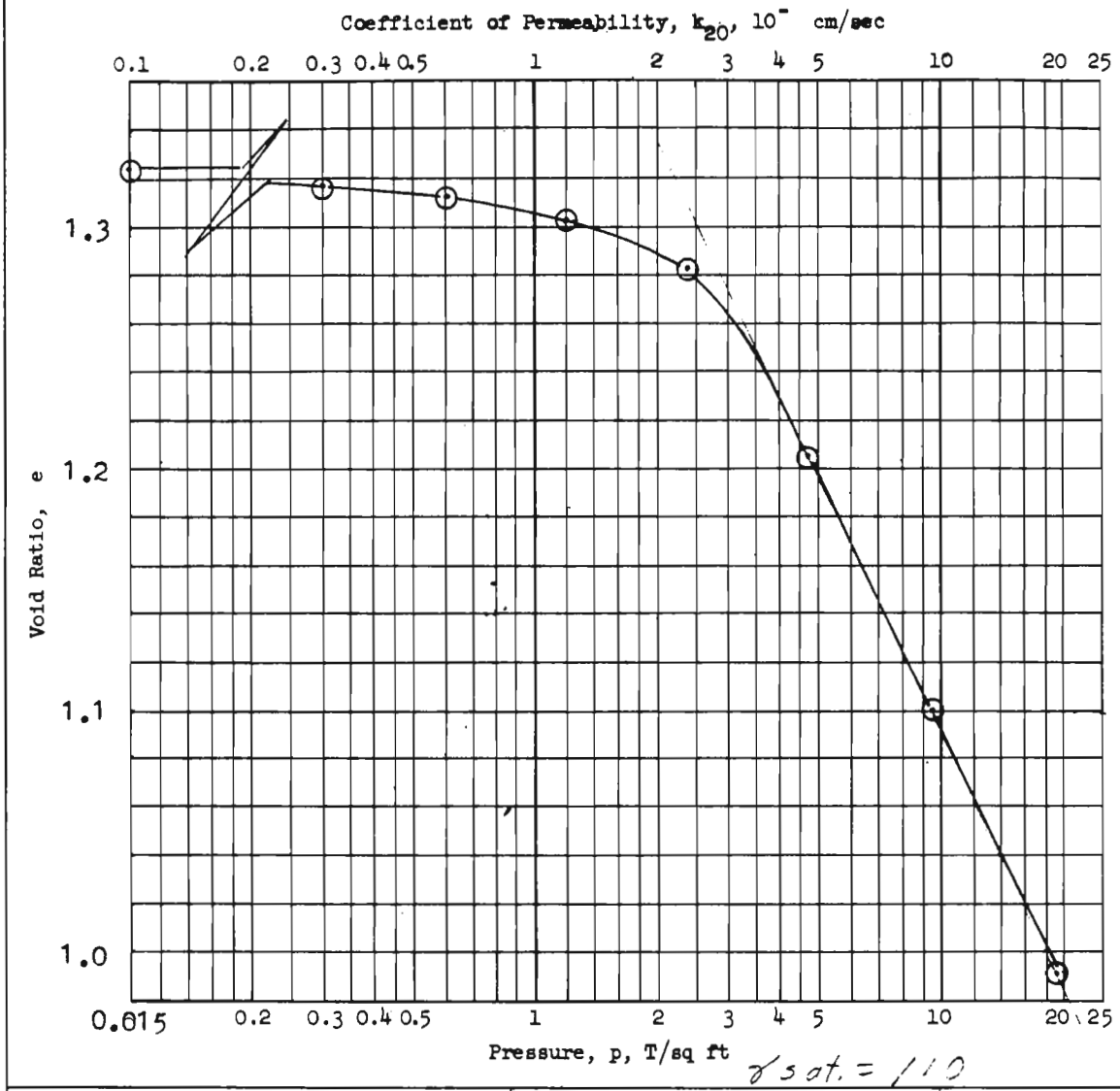
USAEWES SOILS TEST SECTION

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

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



18



$\gamma_{sat.} = 110$

Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.168 in.	Water Content, w_o	46.8 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	1.32	e_f	
Preconsol. Pressure, p_c 2.98 T/sq ft		Saturation, S_o	98.6 %	S_f	%
Compression Index, C_c .403		Dry Density, γ_d	74.9 lb/ft^3		
Classification PLASTIC CLAY (CH) *		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL -	G_s 2.79 From Q	Project LK. PONT., LA. & VIC.-HURR. PROT. (70)			
PL -	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE, WEST OF IHNC			
Remarks * mottled tan and gray		Area GDM #2; SUPP. #5; OUTFALL CANALS			
		Boring No. 6-LUE	Sample No. 17-B		
		~~Depth~~ El -55.8	Date 2 Feb., 1971		
		JDB CONSOLIDATION TEST REPORT			

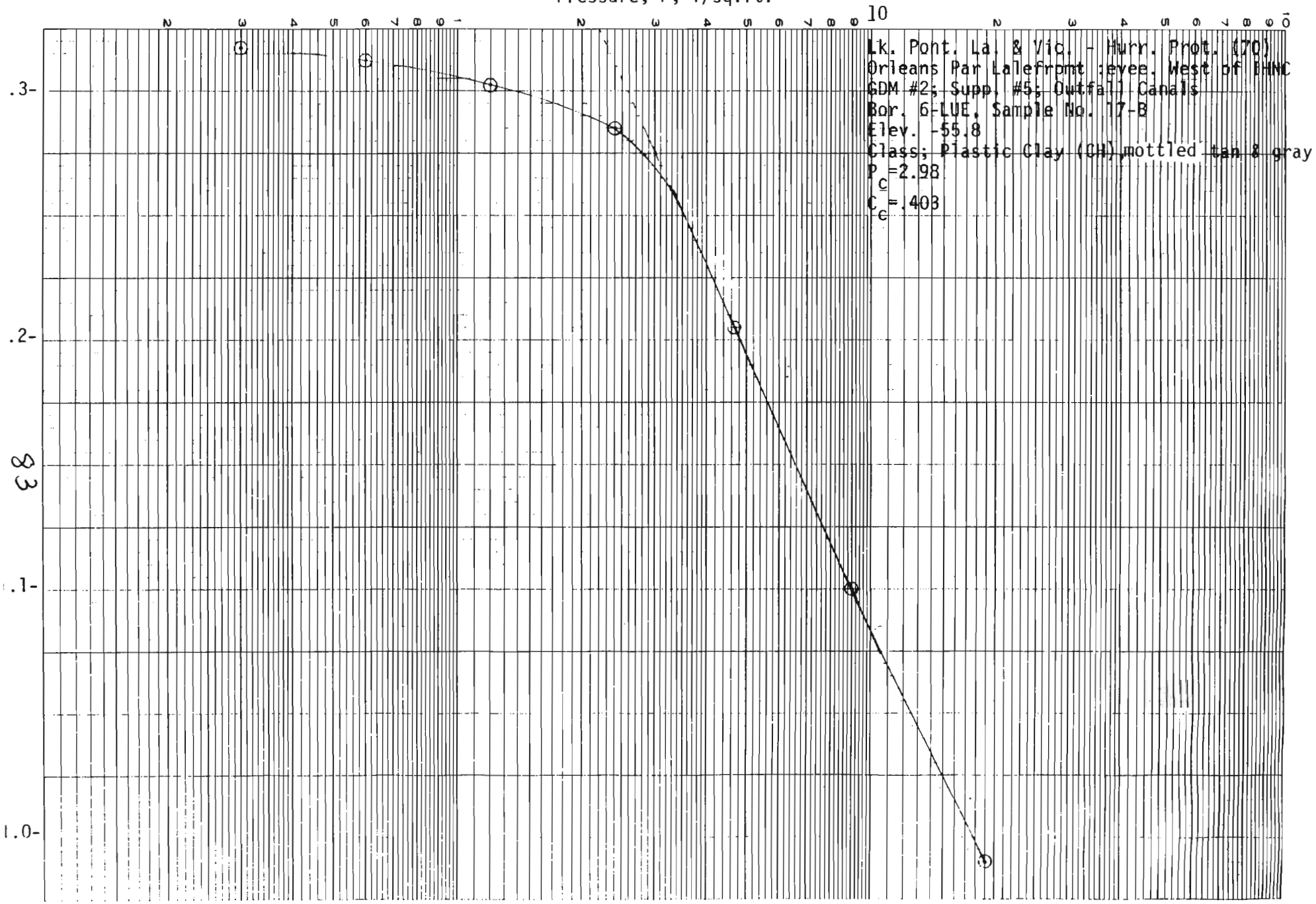
ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

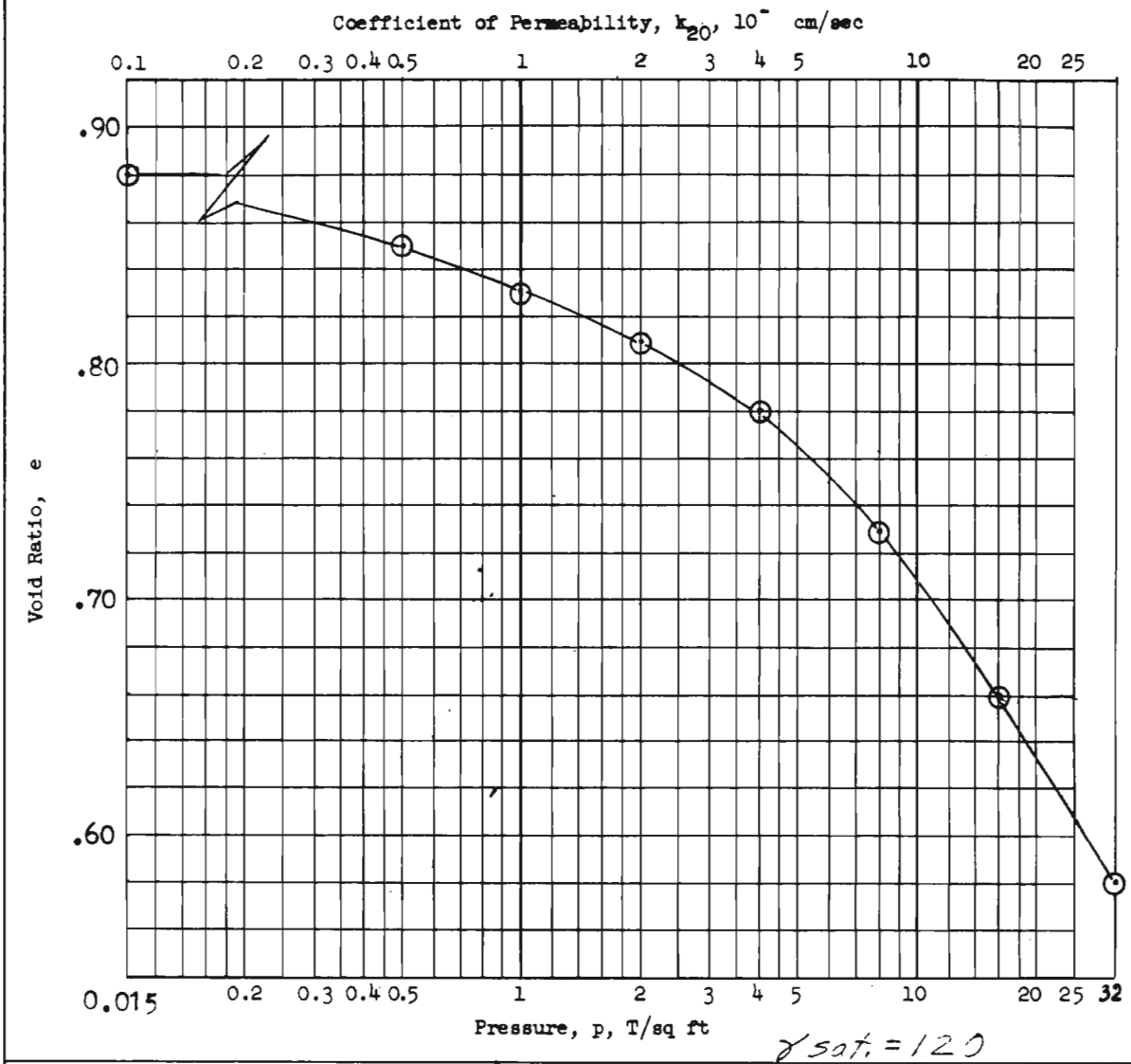
82

G 3424

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

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





$\gamma_{sat.} = 120$

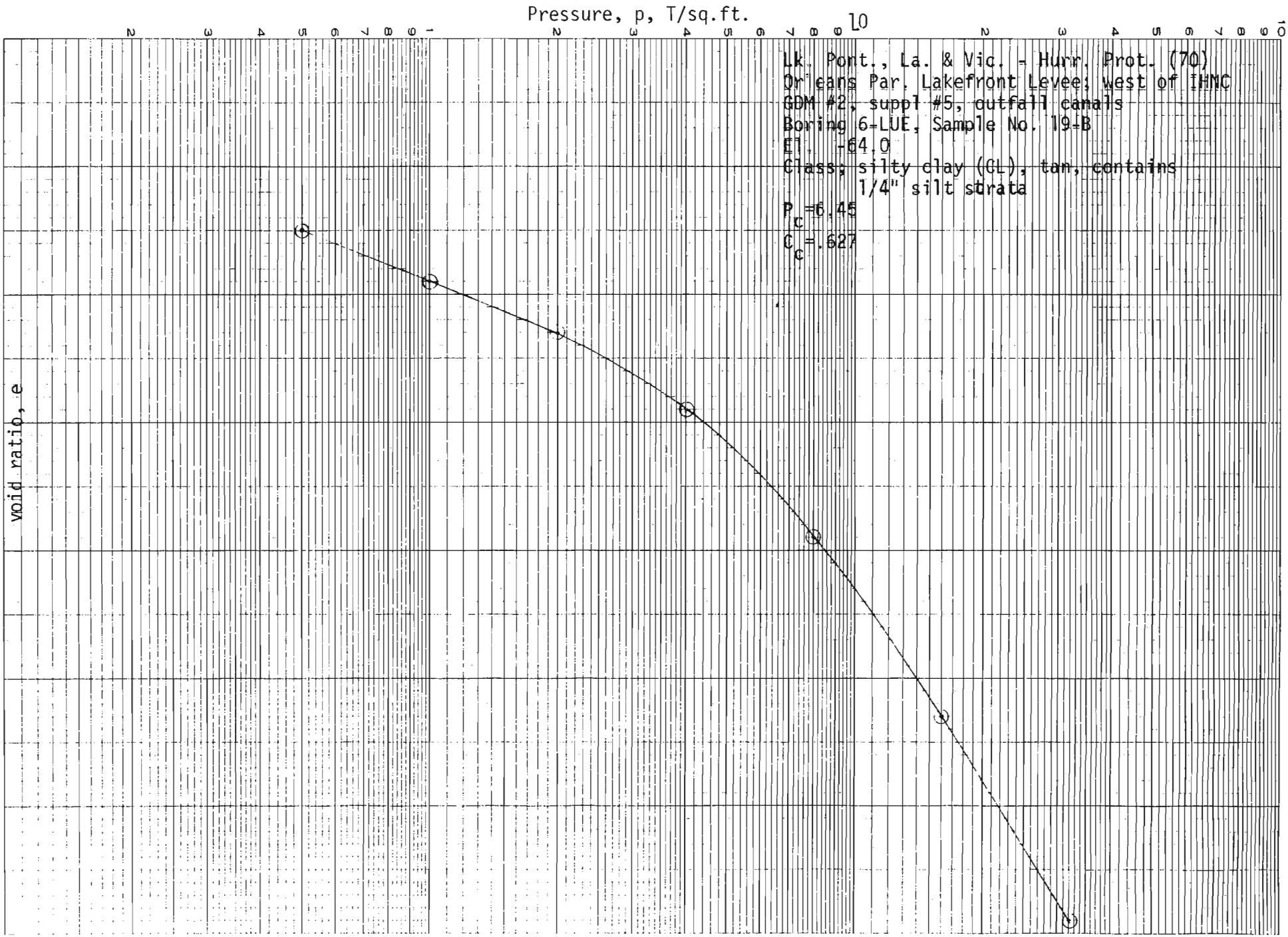
Type of Specimen UNDISTURBED		Before Test		After Test	
Diam 4.25 in.	Ht 1.160 in.	Water Content, w_o	31.8 %	w_f	%
Overburden Pressure, p_o T/sq ft		Void Ratio, e_o	0.882	e_f	
Preconsol. Pressure, p_c 6.45 T/sq ft		Saturation, S_o	98.5 %	S_f	%
Compression Index, C_c .627		Dry Density, γ_d	90.5 lb/ft^3		
Classification SILTY CLAY (CL), *		k_{20} at e_o =	$\times 10^{-}$ cm/sec		
LL 36	G_s 2.73	Project LK. PONT., LA. & VIC.-HURR. PROT.(70)			
PL 19	D_{10}	ORLEANS PARISH LAKEFRONT LEVEE; WEST OF IHNC			
* Remarks tan, contains $\frac{1}{4}$"		Area GDM #2; SUPP. #5; OUTFALL CANALS			
silt strata		Boring No. 6-LUE	Sample No. 19-B		
		Depth El -64.0	Date 2 February, 1971		
		JDS CONSOLIDATION TEST REPORT			

ENG FORM 2090 1 MAY 63 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

G 3424

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

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



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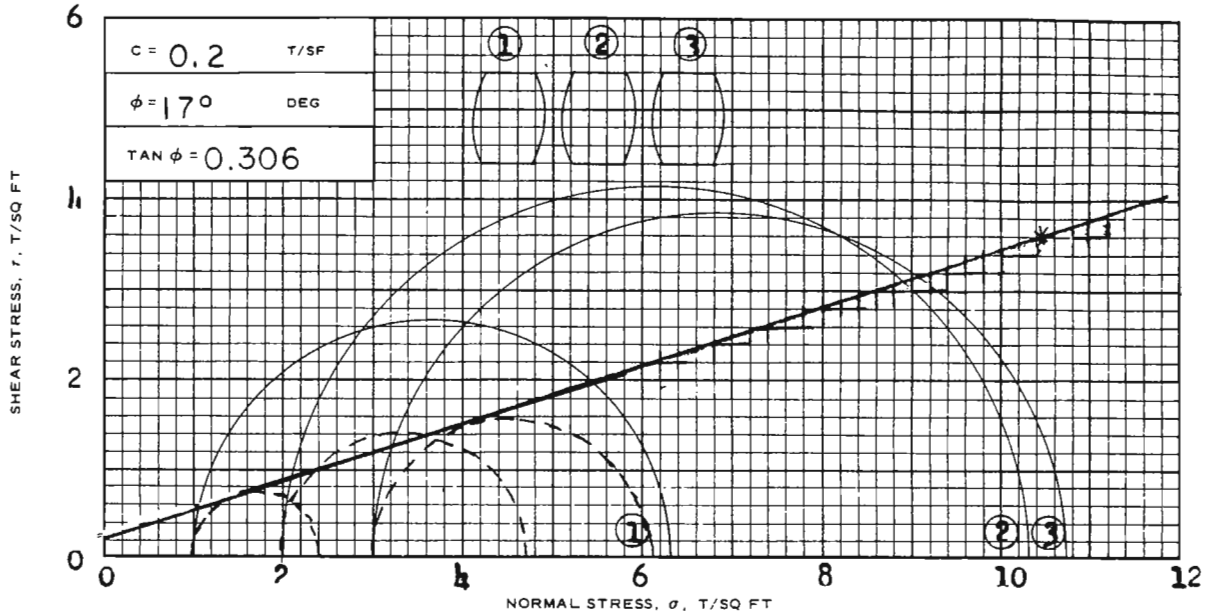
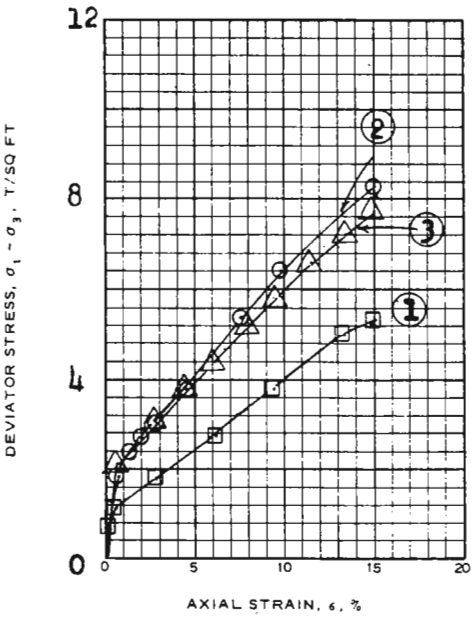




Sat, γ = 120.7

SPECIMEN NO.			1	2	3	Avg.
INITIAL	WATER CONTENT, %	w_o	30.2	30.6	31.2	30.7
	DRY DENSITY LB/ CU FT	γ_{d_o}	92.8	93.0	91.4	
	SATURATION, %	S_o	100+	100+	100+	
	VOID RATIO	e_o	0.803	0.799	0.830	
BEFORE SHEAR	WATER CONTENT, %	w_c	28.5	28.0	28.7	
	DRY DENSITY LB/CU FT	γ_{d_c}	96.0	97.5	96.7	
	SATURATION, %	S_c	100+	100+	100+	
	VOID RATIO	e_c	0.743	0.716	0.730	
	FINAL BACK PRESSURE, T/SQ FT	u_o	5.83	4.82	4.82	
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.0	2.0	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	5.31	8.29	7.71	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	60	70	59	
* $(\sigma' - \sigma^*)$ at max. pore pressure			1.4	2.75	3.05	
INITIAL DIAMETER, IN.		D_o	1.39	1.38	1.39	
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	

CONTROLLED- Strain TEST

DESCRIPTION OF SPECIMENS CLAYEY SILT(ML),gray;numerous shells up to 3/4" size

LL - PL - PI - Gs 2.68

TYPE OF SPECIMEN UNDISTURBED TYPE OF TEST R

REMARKS: See attached plot for effective values

Portion of sample allowed to drain before trimming

PROJECT LK.PONT.,LA.&VIC.-HURR.PROT.ORLEANS PARISH,OUTFALL CANALS,LONDON AVENUE CANAL

BORING NO. 1-ULP SAMPLE NO. 3-C

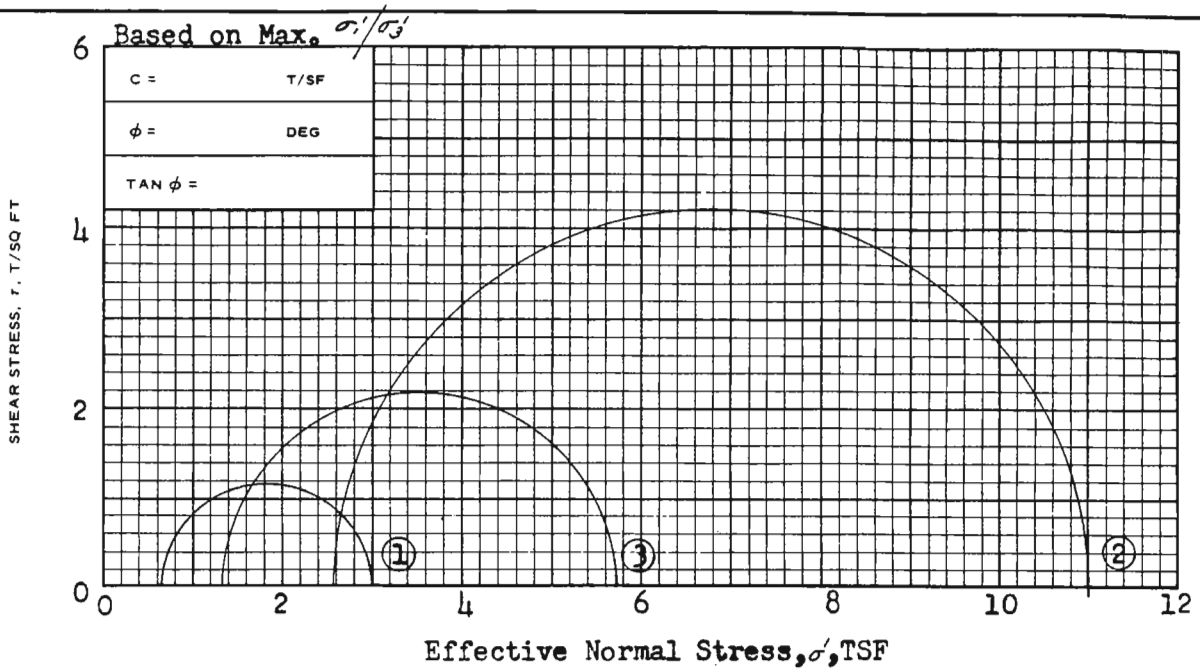
DEPTH/ELEV 8.8/-7.0

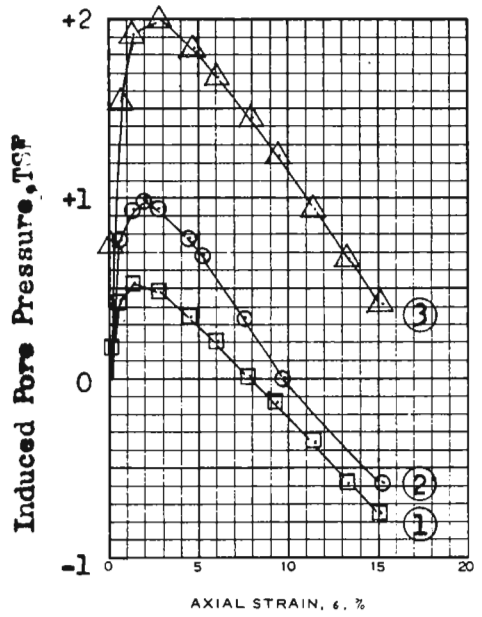
LABORATORY USAEWES DATE 23 May,1973

Sheet 1 of 2

TRIAXIAL COMPRESSION TEST REPORT

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





SPECIMEN NO.						
INITIAL	WATER CONTENT, %	w_o				
	DRY DENSITY LB/ CU FT	γ_{d_o}				
	SATURATION, %	S_o				
	VOID RATIO	e_o				
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γ_{d_c}				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3				
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$				
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 SPECIMENS

LL	PL	PI	Gs	TYPE OF SPECIMEN	TYPE OF TEST

REMARKS:

PROJECT LK. PONT.,LA.&VIC.,HURR. PROT.ORLEANS PARISH,OUTFALL CANALS,LONDON AVENUE CANAL

BORING NO. 1-ULP SAMPLE NO. 3-C

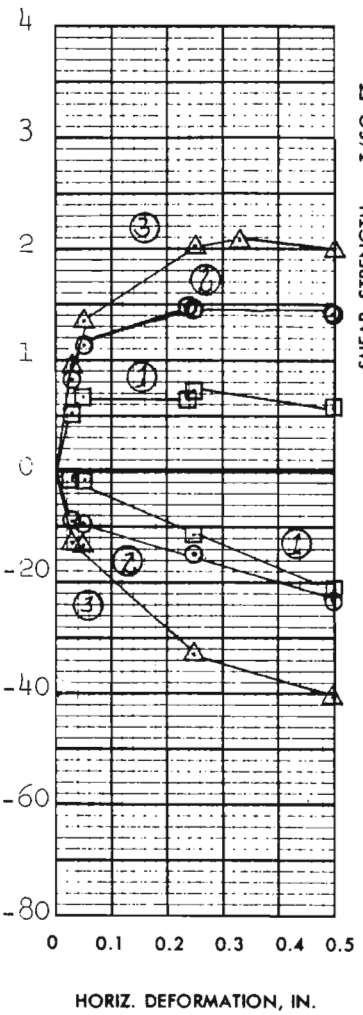
DEPTH/ELEV 8.8/-7.0

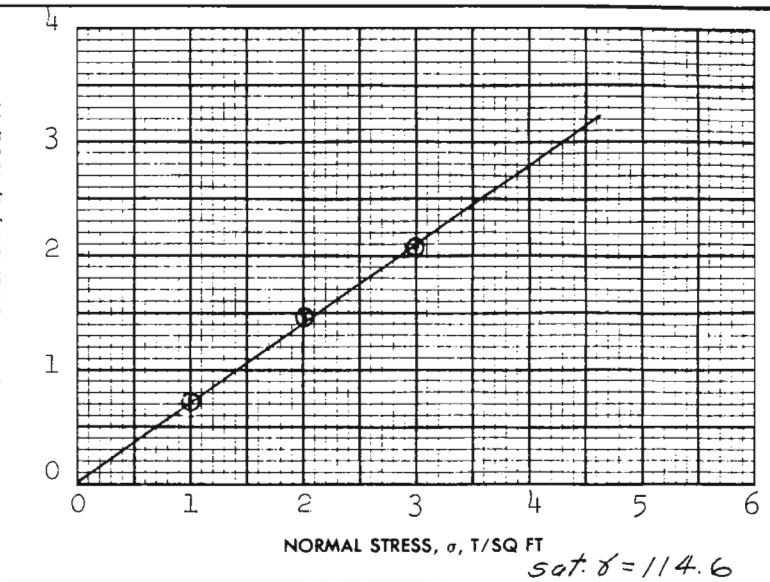
LABORATORY USAEWES DATE 23 May 1973

Sheet 2 of 2

TES TRIAXIAL COMPRESSION TEST REPORT

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





sat. γ = 114.6

SHEAR STRENGTH PARAMETERS

ϕ' = 35°

TAN ϕ' = 0.700

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	41.8%	40.1%	42.6%	41.5%
INITIAL	VOID RATIO	e_o	1.01	1.02	1.13	
INITIAL	SATURATION	S_o	100+ %	100+ %	100+ %	%
INITIAL	DRY DENSITY, LB/CU FT	γ_d	82.6	82.3	78.0	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	33.5%	32.4%	33.8%	%
FINAL	VOID RATIO	e_f				
FINAL	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	0.71	1.48	2.08	
ACTUAL TIME TO FAILURE, MIN		t_f	1260	1260	1680	
RATE OF STRAIN, IN./MIN			.00020	.00020	.00020	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN: UNDISTURBED — 3.00 IN. SQUARE — 0.062 IN. THICK

CLASSIFICATION: SANDY SILT(ML),dark gray;decayed wood

LL - | PL - | PI - | G_s 2.66

REMARKS

PROJECT: LK. PONT.,LA.& VIC.,HURRICANE PROTECTION. ORLEANS PARISH OUTFALL CANALS-LONDON AVENUE

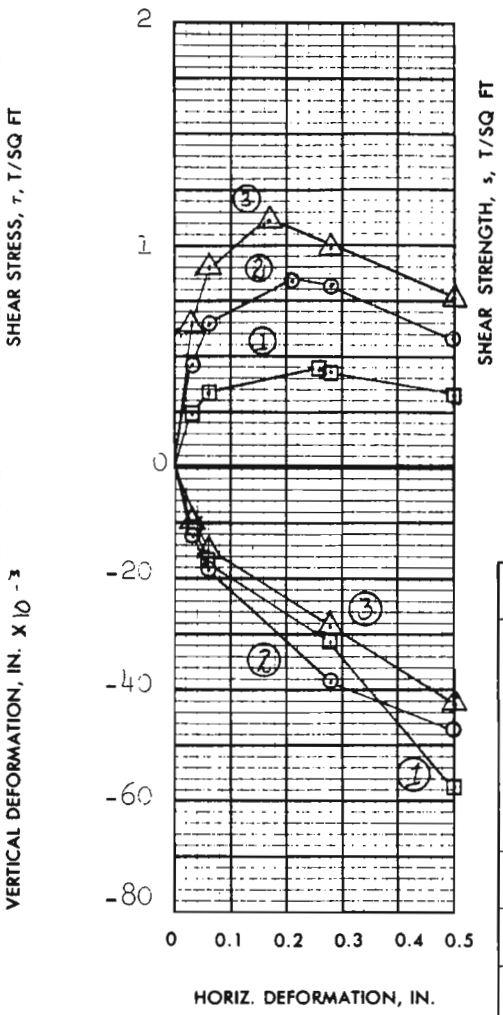
AREA: CANAL

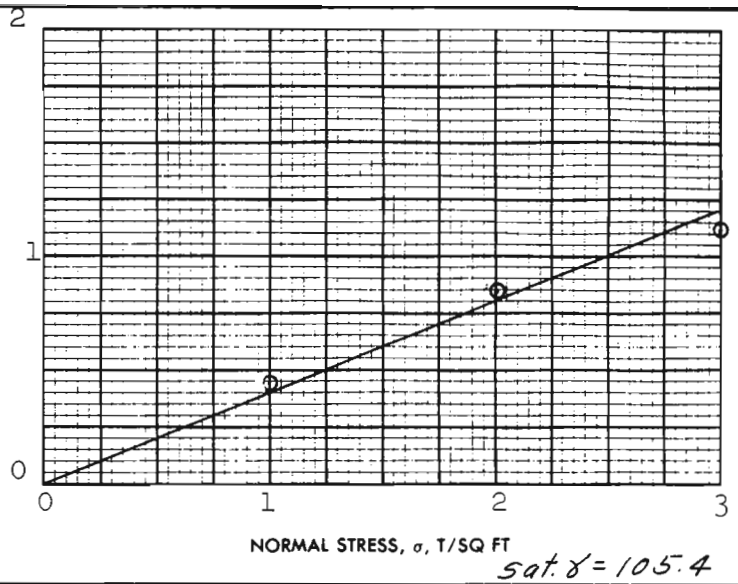
BORING NO.: 1-ULP | SAMPLE NO.: 4-C

DEPTH EL: 13.9-11.2 | DATE: 7 May 1973

RCH

DIRECT SHEAR TEST REPORT





Sat. γ = 105.4

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	56.5%	55.6 %	55.3 %	55.8 %
	VOID RATIO	e_o	1.54	1.51	1.52	
	SATURATION	S_o	100+%	100+%	99.3 %	%
	DRY DENSITY, LB/CU FT	γ_d	67.2	68.0	67.6	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	2	4	3	
FINAL	WATER CONTENT	w_f	46.3%	39.3%	35.3%	%
	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}	0.44	0.84	1.11	
ACTUAL TIME TO FAILURE, MIN		t_f	1260	1020	840	
RATE OF STRAIN, IN./MIN			.00021	.00021	.00021	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

$\phi' =$ 22°

TAN $\phi' =$ 0.404

$c' =$ 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 0.620 IN. THICK

CLASSIFICATION PLASTIC CLAY(CH), gray

LL 73 | PL 24 | PI 49 | G_s 2.73

REMARKS

PROJECT LK. PONT. LA. & VIC., HURRICANE PROTECTION

ORLEANS PARISH OUTFALL CANALS

AREA LONDON AVENUE CANAL

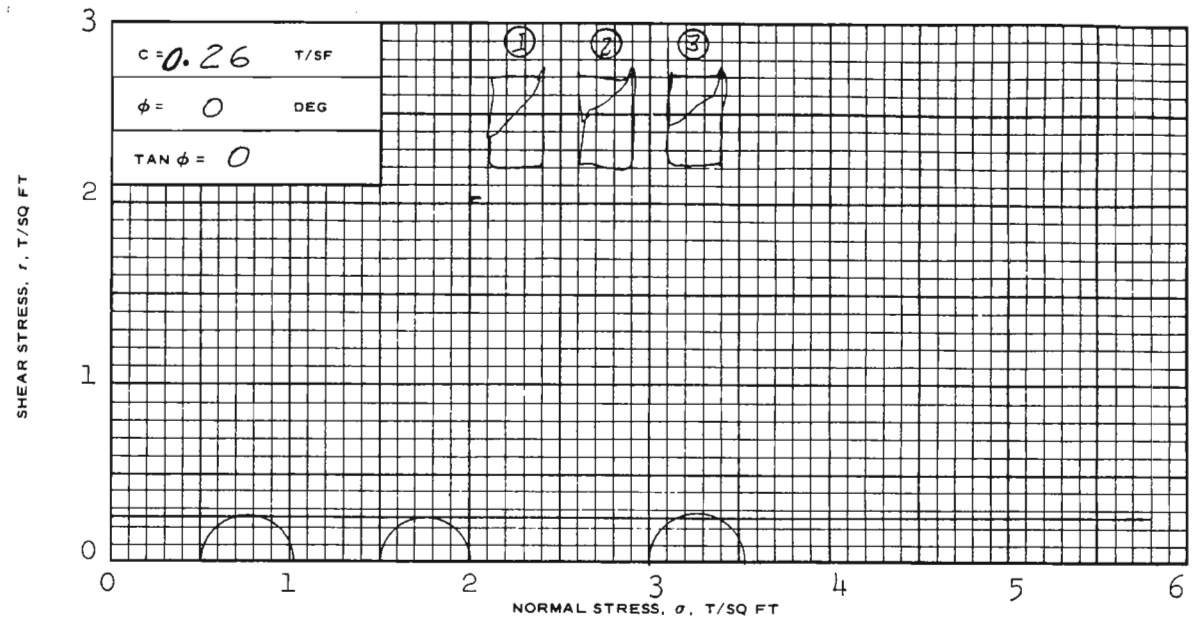
BORING NO. 1-ULP | SAMPLE NO. 7-C

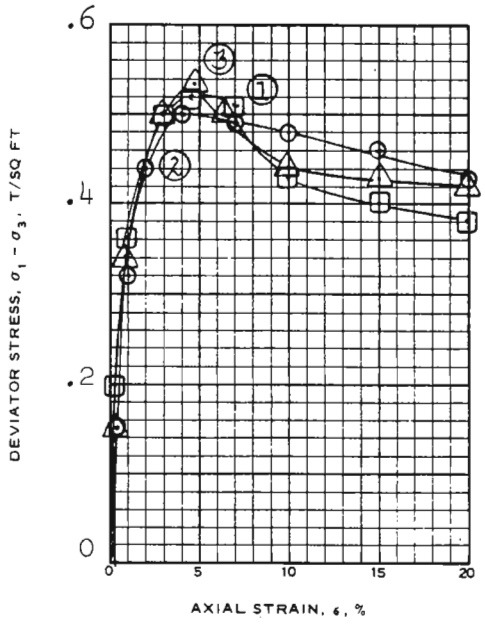
DEPTH EL 24.8/23.0 | DATE 15 May 1973

RCH

DIRECT SHEAR TEST REPORT

89





sat. γ = 102.7

SPECIMEN NO.			1	2	3	Avg.
INITIAL	WATER CONTENT, %	w_o	61.4	63.2	61.6	62.1
	DRY DENSITY LB/ CU FT	γ_{d_o}	64.0	62.7	63.4	
	SATURATION, %	S_o	100+	100+	100+	
	VOID RATIO	e_o	1.63	1.69	1.66	
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γ_{d_c}				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	0.5	1.5	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	0.52	0.50	0.53	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	10	10	7	
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT}$				
INITIAL DIAMETER, IN.		D_o	1.40	1.40	1.40	
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	

CONTROLLED- strain TEST

DESCRIPTION OF SPECIMENS PLASTIC CLAY(CH),gray;pockets of sand

LL	PL	PI	G_s
69	27	42	2.70

TYPE OF SPECIMEN UNDISTURBED TYPE OF TEST Q

REMARKS:

PROJECT LK.PONT.LA.&VIC.-HURR. PROT., ORLEANS PARISH OUTFALL CANALS-LONDON AV. CANA

BORING NO. 1-ULP SAMPLE NO. 7-D

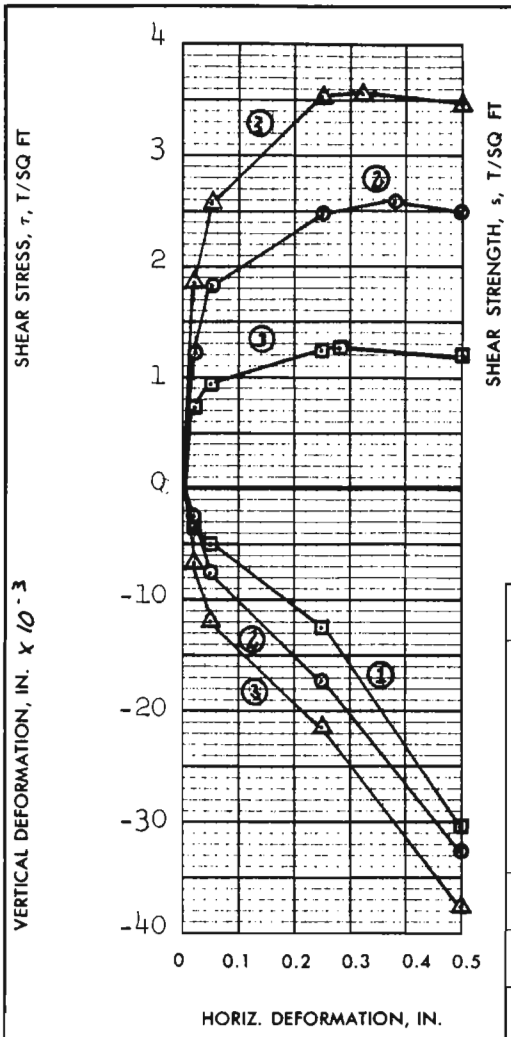
DEPTH/ELEV 25.7/-23.9

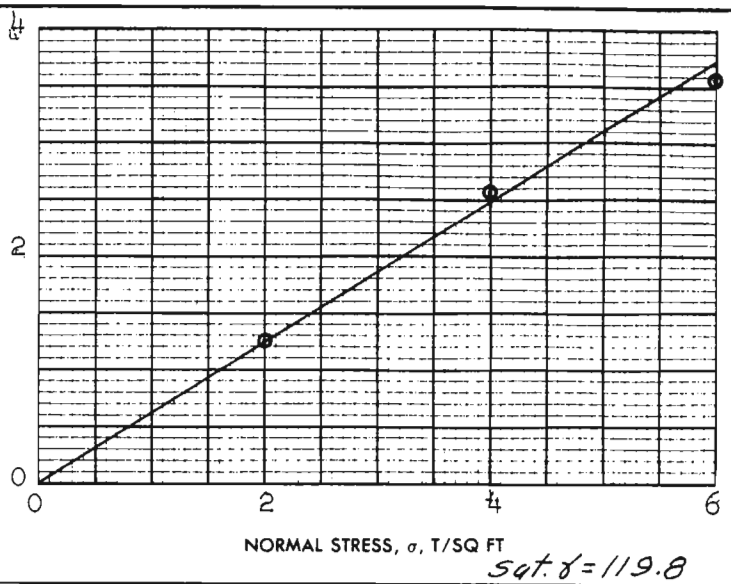
LABORATORY USAEWES DATE 21 May 1973

JMS TRIAXIAL COMPRESSION TEST REPORT

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

90





Sat. γ = 119.8

SHEAR STRENGTH PARAMETERS

ϕ' = 31.5°

TAN ϕ' = 0.613

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	31.1 %	31.2%	31.2%	31.2 %
	VOID RATIO	e_o	0.808	0.832	0.838	
	SATURATION	S_o	100+ %	100+%	99.4%	%
	DRY DENSITY, LB/CU FT	γ_d	92.2	91.0	90.7	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}				
FINAL	WATER CONTENT	w_f	23.9 %	23.6%	23.3%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	2.0	4.0	6.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	1.25	2.58	3.57	
ACTUAL TIME TO FAILURE, MIN		t_f	1440	1920	1620	
RATE OF STRAIN, IN./MIN			.00020	.00020	.00020	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.620 IN. THICK
CLASSIFICATION	SILTY SAND(SM),gray		
LL -	PL -	PI -	G_s 2.67

REMARKS

PROJECT LK.PONT.,LA.&VIC.,HURRICANE PROTECTION, ORLEANS PARISH OUTFALL CANALS,LONDON AVENUE

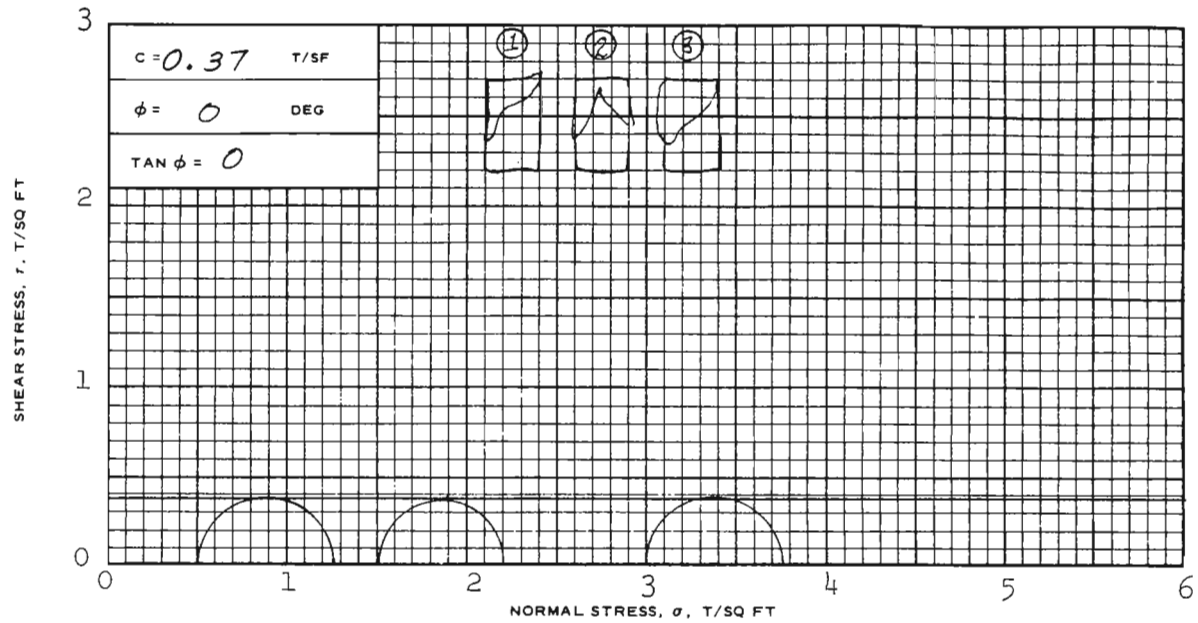
AREA CANAL

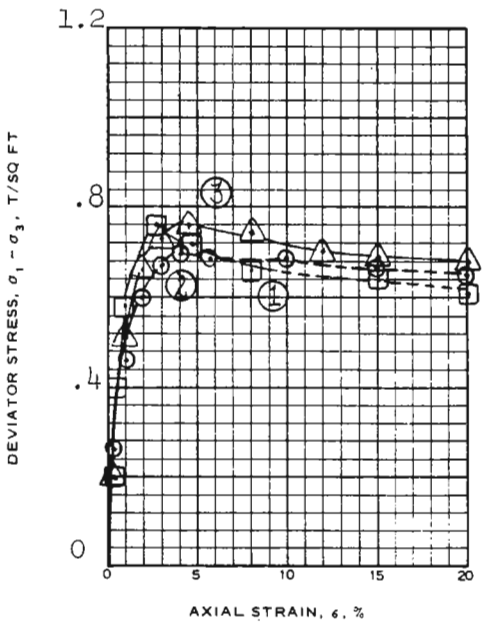
BORING NO. 1-ULP | SAMPLE NO. 10-C

DEPTH 37.2/-35.4 | DATE 17 May 1973

RCH

DIRECT SHEAR TEST REPORT





Sat. γ = 108.4

SPECIMEN NO.			1	2	3	Avg.
INITIAL	WATER CONTENT, %	w_o	51.7	48.1	46.5	48.8
	DRY DENSITY LB/ CU FT	γ_{d_o}	70.7	73.3	74.6	
	SATURATION, %	s_o	100+	99.9	99.6	
	VOID RATIO	e_o	1.38	1.30	1.26	
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γ_{d_c}				
	SATURATION, %	s_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	0.5	1.5	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	0.76	0.70	0.76	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	9	34	27	
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;scattered small pockets of sand

LL 65	PL 20	PI 45	G_s 2.70	TYPE OF SPECIMEN UNDISTURBED	TYPE OF TEST Q

REMARKS: --- Rate of strain increased.

PROJECT LK.PONT.LA.&VIC. HURRICANE PROTECTION ORLEANS PARISH OUTFALL CANALS-LONDON AV. CAN.

BORING NO. 1-ULP SAMPLE NO. 13-D

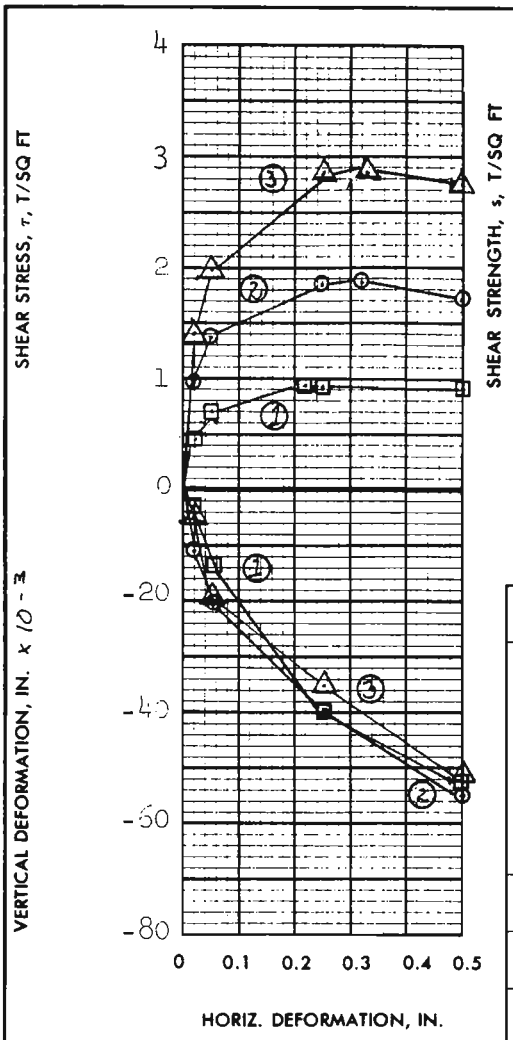
DEPTH/ELEV 50.0/-48.2

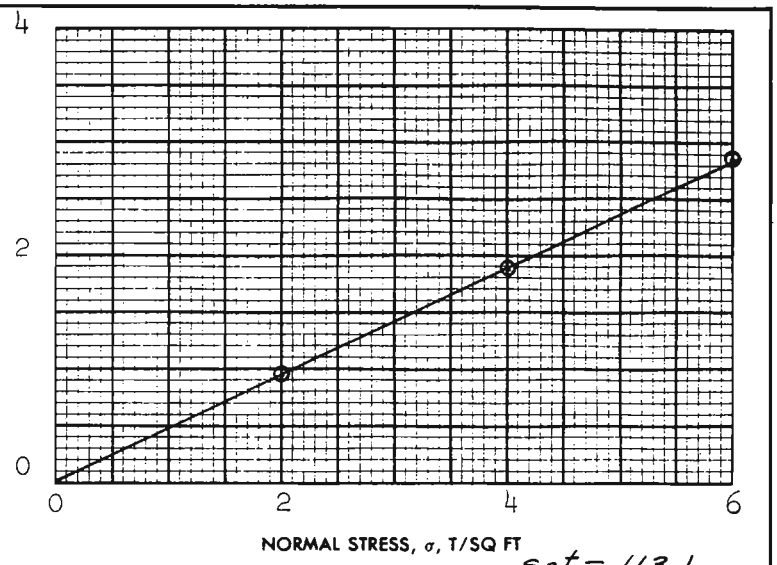
LABORATORY USAEWES DATE 24 May 1973

JMS

TRIAXIAL COMPRESSION TEST REPORT

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





Sat. = 113.1

SHEAR STRENGTH PARAMETERS

ϕ' = 25.5°

TAN ϕ' = 0.477

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	40.9 %	41.0%	40.8%	40.9 %
	VOID RATIO	e_o	1.10	1.11	1.09	
	SATURATION	S_o	100+ %	99.7 %	100+ %	%
	DRY DENSITY, LB/CU FT	γ_d	80.4	79.8	80.6	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	4	7	12	
FINAL	WATER CONTENT	w_f	30.1 %	26.3%	21.8%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	2.0	4.0	6.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	0.94	1.86	2.85	
ACTUAL TIME TO FAILURE, MIN		t_f	1140	1620	1680	
RATE OF STRAIN, IN./MIN			.00020	.00020	.00020	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

TYPE OF SPECIMEN UNDISTURBED — 3.00 IN. SQUARE — 1&2 0.620, 3=0.748 IN. THICK

CLASSIFICATION PLASTIC CLAY(CH),dark gray;shell fragments and a few sand pockets

LL 55 | PL 20 | PI 35 | G_s 2.70

REMARKS

PROJECT LK.PONT.,LA.&VIC.,HURRICANE PROTECTION, ORLEANS PARISH OUTFALL CANALS

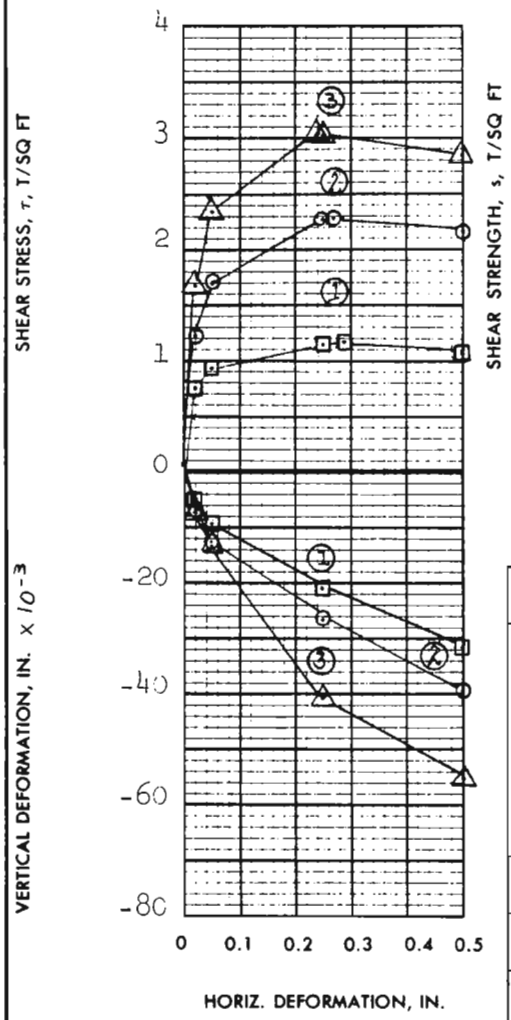
AREA LONDON AVENUE CANAL

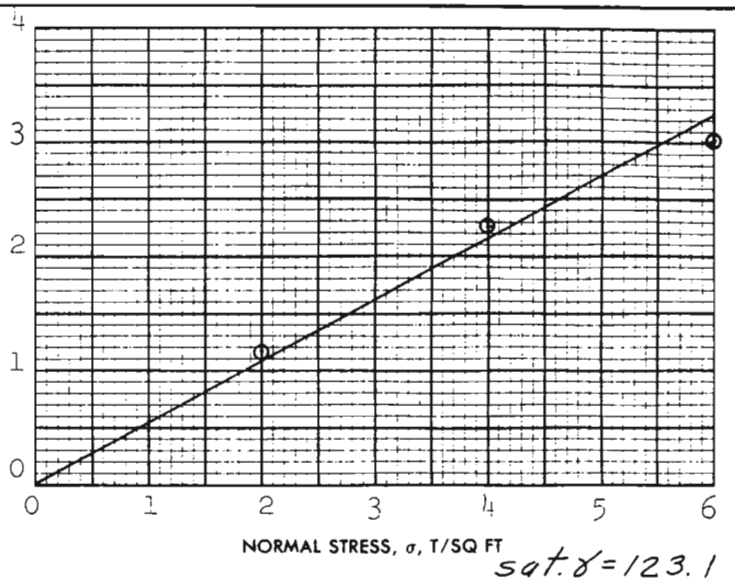
BORING NO. 1-ULP | SAMPLE NO. 14-B

DEPTH EL 52.3-50.5 | DATE 22 May 1973

RCH

DIRECT SHEAR TEST REPORT





sat. γ = 123.1

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	26.1%	25.6%	23.2%	25.0%
	VOID RATIO	e_o	0.731	0.703	0.681	
	SATURATION	S_o	99.4 %	100+%	100+ %	%
	DRY DENSITY, LB/CU FT	γ_d	97.0	98.6	99.9	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	< 1	< 1	< 1	
FINAL	WATER CONTENT	w_f	26.1 %	25.6 %	23.2%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	2.0	4.0	6.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	1.17	2.28	3.03	
ACTUAL TIME TO FAILURE, MIN		t_f	1500	1380	1260	
RATE OF STRAIN, IN./MIN			.00020	.00020	.00020	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 28.5°

TAN ϕ' = 0.543

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.620 IN. THICK
CLASSIFICATION	SILTY CLAY(CL),grayish brown;a few fine sand lenses		
LL 35	PL 22	PI 13	G_s 2.69

REMARKS

PROJECT LK.PONT.,LA.&VIC.,HURRICANE PROTECTION,
ORLEANS PARISH OUTFALL CANALS-LONDON AVE.CANAL

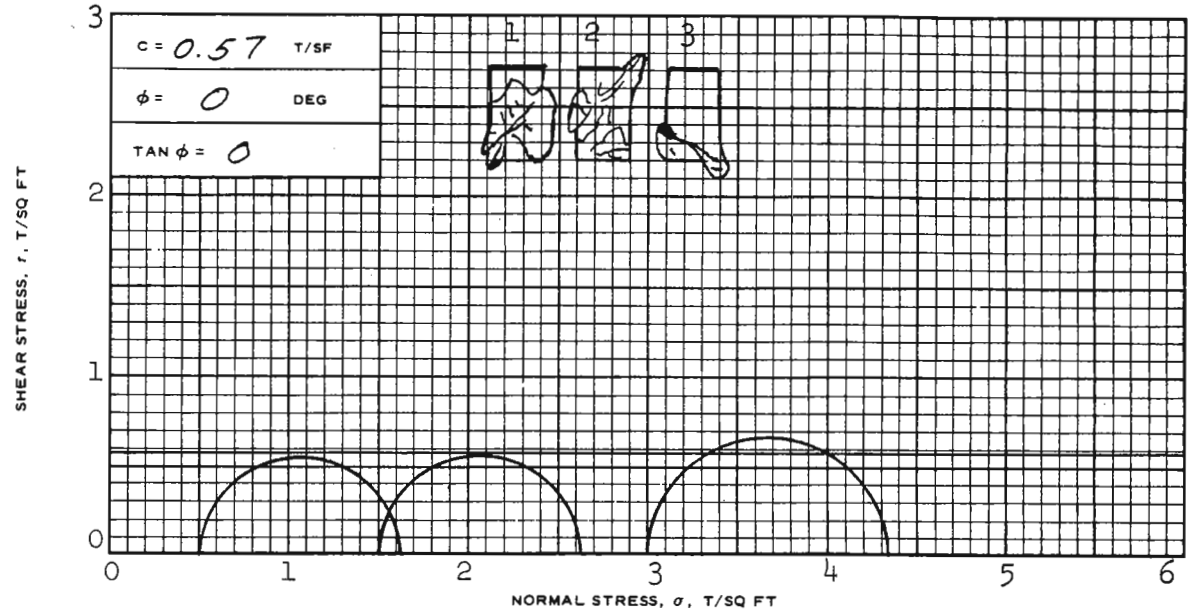
AREA

BORING NO. 1-ULP | SAMPLE NO. 15-D

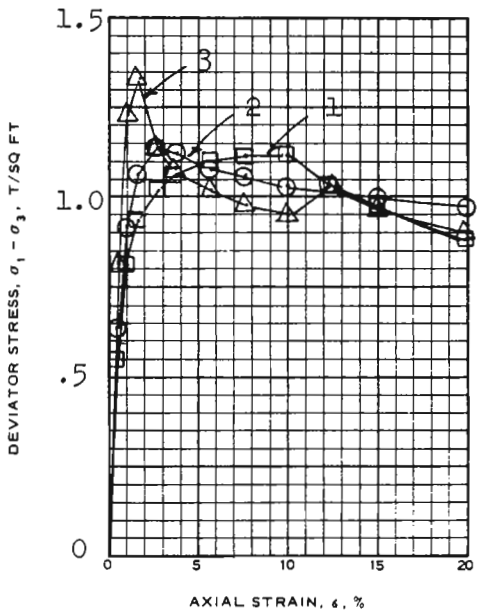
DEPTH EL 57.7/-55.9 | DATE 9 July 1973

RCH

DIRECT SHEAR TEST REPORT



sat γ = 116.0



SPECIMEN NO.			1	2	3	Avg.
INITIAL	WATER CONTENT, %	w_o	36.1	37.5	35.8	36.5
	DRY DENSITY LB/ CU FT	γ_{d_o}	84.7	83.2	84.6	
	SATURATION, %	S_o	96.1	97.3	95.6	
	VOID RATIO	e_o	1.03	1.06	1.03	
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γ_{d_c}				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	0.5	1.5	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	1.12	1.14	1.33	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	40	15	8	
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT}$				
INITIAL DIAMETER, IN.		D_o	1.40	1.40	1.40	
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	

CONTROLLED- strain TEST

DESCRIPTION OF SPECIMENS PLASTIC CLAY(CH),light yellowish gray;a few small silt lenses and fissured layers

LL	PL	PI	Gs
84	27	57	2.75

TYPE OF SPECIMEN UNDISTURBED TYPE OF TEST Q

REMARKS:

PROJECT LK.PONT.,LA.&VIC.-HURRICANE PROT.

ORLEANS PARISH,OUTFALL CANALS, LONDON AV.CAN.

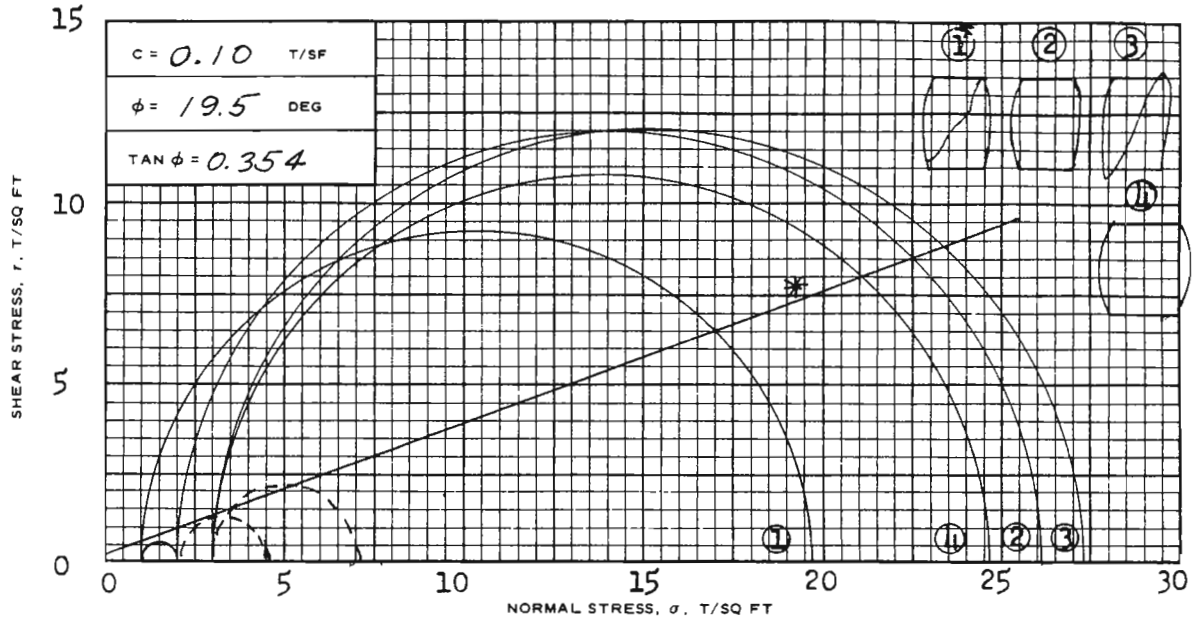
BORING NO. 1-ULP SAMPLE NO. 16-B

DEPTH/ELEV 60.2/-58.4

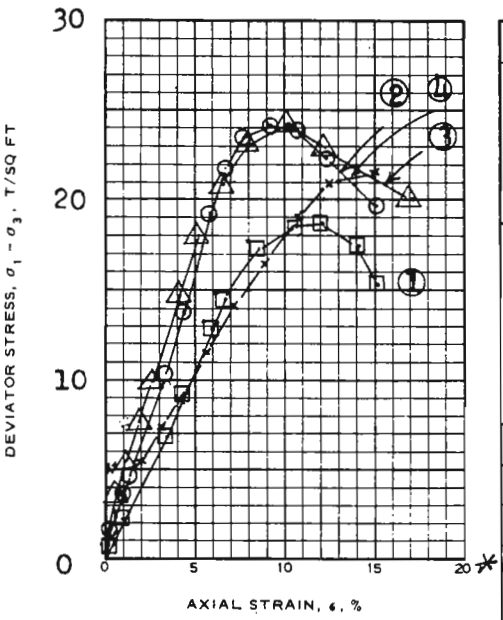
LABORATORY USAEWES DATE 29 May 1973

PJR TRIAXIAL COMPRESSION TEST REPORT

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



Sat. γ = 123.2



SPECIMEN NO.			1	2	3	4
INITIAL	WATER CONTENT, %	w_o	26.7	26.5	26.6	29.1
	DRY DENSITY LB/ CU FT	γ_{d_o}	97.1	97.5	97.3	93.8
	SATURATION, %	s_o	97.9	98.1	98.0	98.6
	VOID RATIO	e_o	0.736	0.729	0.732	0.797
BEFORE SHEAR	WATER CONTENT, %	w_c	26.3	25.5	25.8	28.5
	DRY DENSITY LB/CU FT	γ_{d_c}	98.5	99.8	99.3	96.6
	SATURATION, %	s_c	100	100	100	100+
	VOID RATIO	e_c	0.711	0.689	0.697	0.745
	FINAL BACK PRESSURE, T/SQ FT	u_o	4.10	4.10	4.10	4.10
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.0	2.0	3.0	3.0
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	18.66	24.10	24.23	21.56
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	62	48	62	62
* $(\sigma^1 - \sigma^3)$ at max. pore pressure			1.0	2.6	3.9	3.7
INITIAL DIAMETER, IN.		D_o	1.40	1.39	1.39	1.40
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	3.00

CONTROLLED- Strain TEST

DESCRIPTION OF SPECIMENS SILT(ML),tan;small iron oxide deposits

LL —— PL —— PI —— G_s 2.70

TYPE OF SPECIMEN UNDISTURBED TYPE OF TEST R

REMARKS: See attached plot for effective values

Portion of sample allowed to drain before trimming

PROJECT LK.PONT.,LA&VIC.-HURR. PROT.ORLEANS PARISH,OUTFALL CANALS,LONDON AVENUE CANAL

BORING NO. 1-ULP SAMPLE NO. 17-D

DEPTH/ELEV 65.5/-63.8

LABORATORY USAEWES DATE 22 May,1973

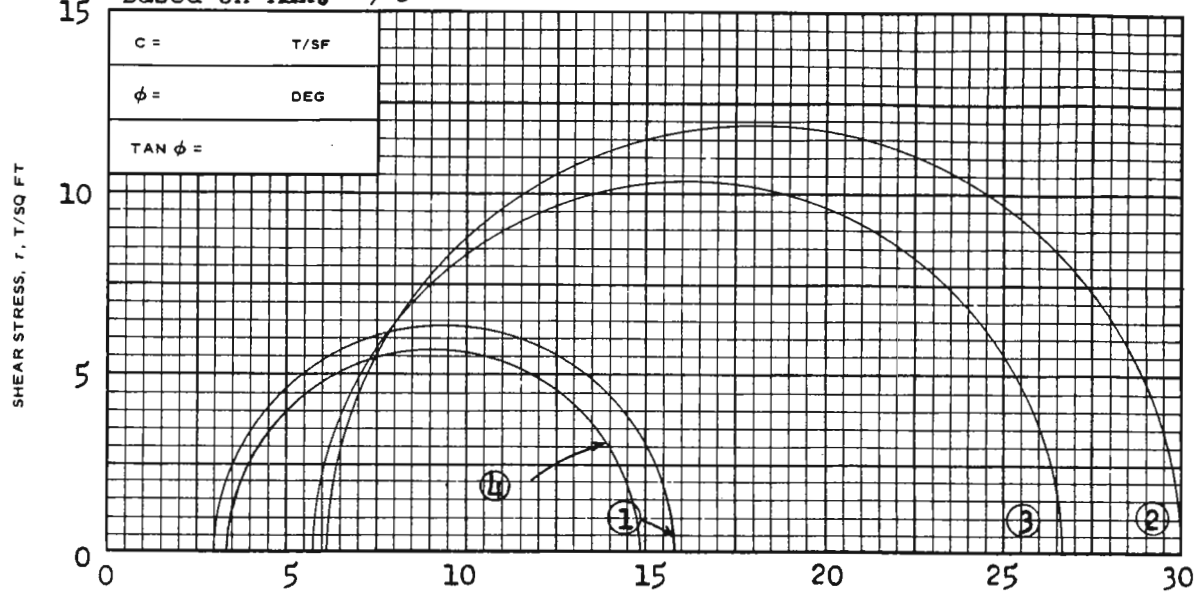
Sheet 1 of 2

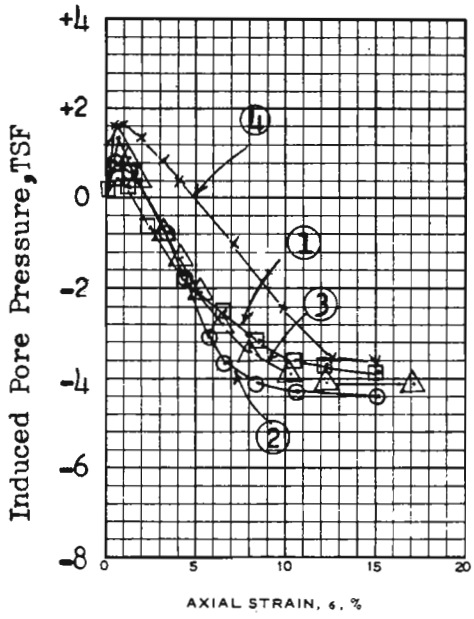
TES TRIAXIAL COMPRESSION TEST REPORT

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.						
INITIAL	WATER CONTENT, %	w_o				
	DRY DENSITY LB/ CU FT	γ_{d_o}				
	SATURATION, %	S_o				
	VOID RATIO	e_o				
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB/CU FT	γ_{d_c}				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3				
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$				
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 SPECIMENS

LL	PL	PI	Gs	TYPE OF SPECIMEN	TYPE OF TEST

REMARKS:

PROJECT LK. PONT., LA. & VIC.-HURR. PROT. ORLEANS PARISH, OUTFALL CANALS, LONDON AVENUE CANAL

BORING NO. 1-ULP SAMPLE NO. 17-D

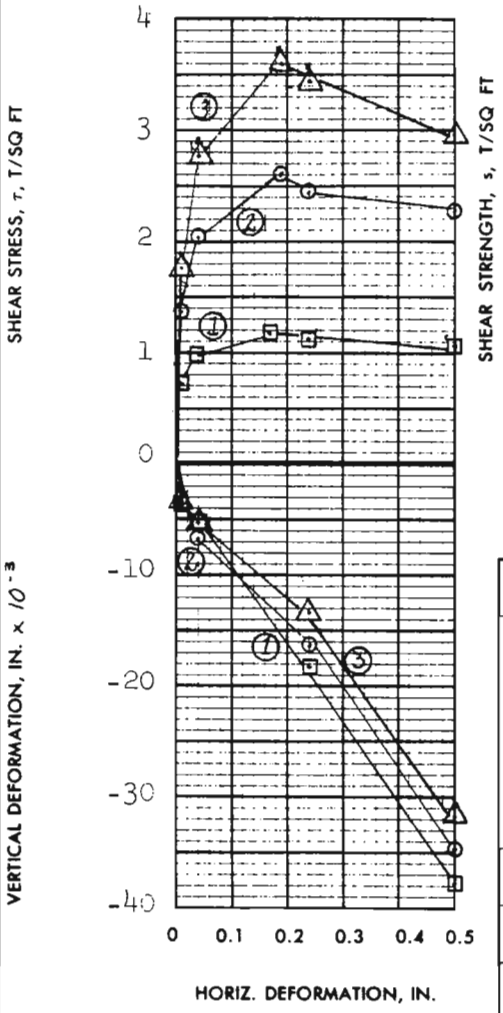
DEPTH/ELEV 65.5/-63.8

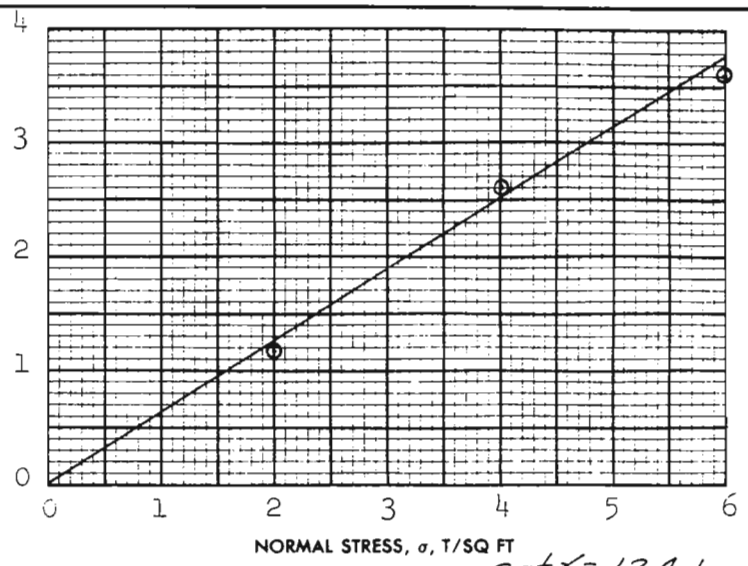
LABORATORY USAEWES DATE 22 May, 1973

Sheet 2 of 2

TEST TRIAXIAL COMPRESSION TEST REPORT

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





sat. γ = 124.1

TEST NO.			1	2	3	Avg.
INITIAL	WATER CONTENT	w_o	26.3 %	27.4%	27.0%	26.9 %
	VOID RATIO	e_o	0.730	0.709	0.707	
	SATURATION	S_o	96.6%	100+%	100+ %	%
	DRY DENSITY, LB/CU FT	γ_d	96.7	97.9	98.0	
VOID RATIO AFTER CONSOLIDATION		e_c				
TIME FOR 50 PERCENT CONSOLIDATION, MIN		t_{50}	> 1	> 1	> 1	
FINAL	WATER CONTENT	w_f	24.6 %	23.5%	24.0%	%
	VOID RATIO	e_f				
	SATURATION	S_f	%	%	%	%
NORMAL STRESS, T/SQ FT		σ	2.0	4.0	6.0	
MAXIMUM SHEAR STRESS, T/SQ FT		τ_{max}	1.18	2.60	3.60	
ACTUAL TIME TO FAILURE, MIN		t_f	960	1080	1080	
RATE OF STRAIN, IN./MIN			.00020	.00020	.00020	
ULTIMATE SHEAR STRESS, T/SQ FT		τ_{ult}				

SHEAR STRENGTH PARAMETERS

ϕ' = 32°

TAN ϕ' = 0.625

c' = 0 T/SQ FT

☐ CONTROLLED STRESS

☒ CONTROLLED STRAIN

TYPE OF SPECIMEN	UNDISTURBED	3.00 IN. SQUARE	0.620 IN. THICK
CLASSIFICATION	SANDY CLAY(CL), brownish gray		
LL 30	PL 19	PI 11	G_s 2.68

REMARKS

PROJECT LK.PONT.,LA.&VIC., HURRICANE PROTECTION

ORLEANS PARISH OUTFALL CANALS-LONDON AVE. CANAL

AREA

BORING NO. 1-ULP SAMPLE NO. 19-B

DEPTH EL 72.3/70.5 DATE 5 July 1973

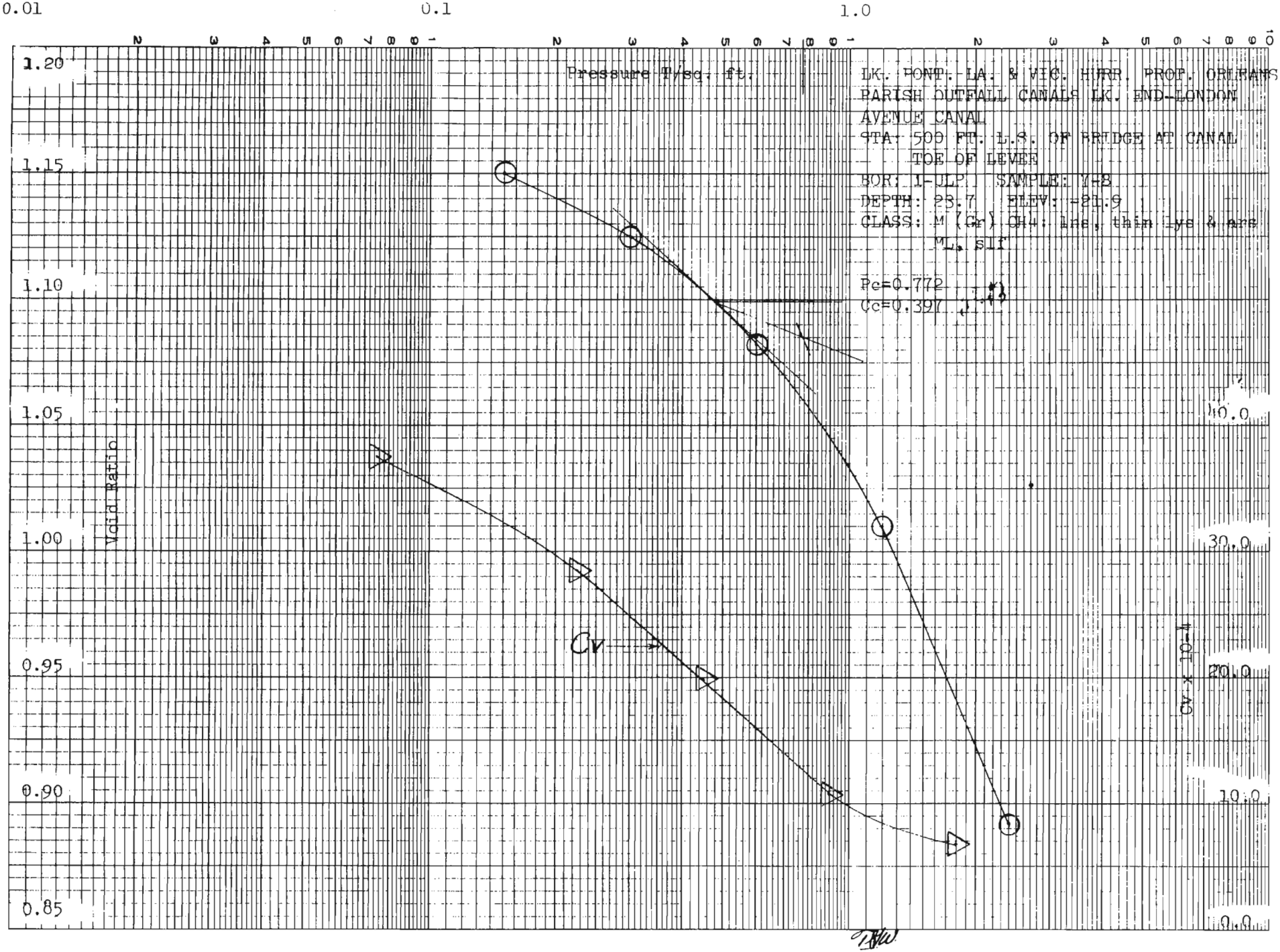
RCH

DIRECT SHEAR TEST REPORT

ENG FORM 1 JUN 65 2092 (EM 1110-2-1906) PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT) GPO : 1966 OF—214-945

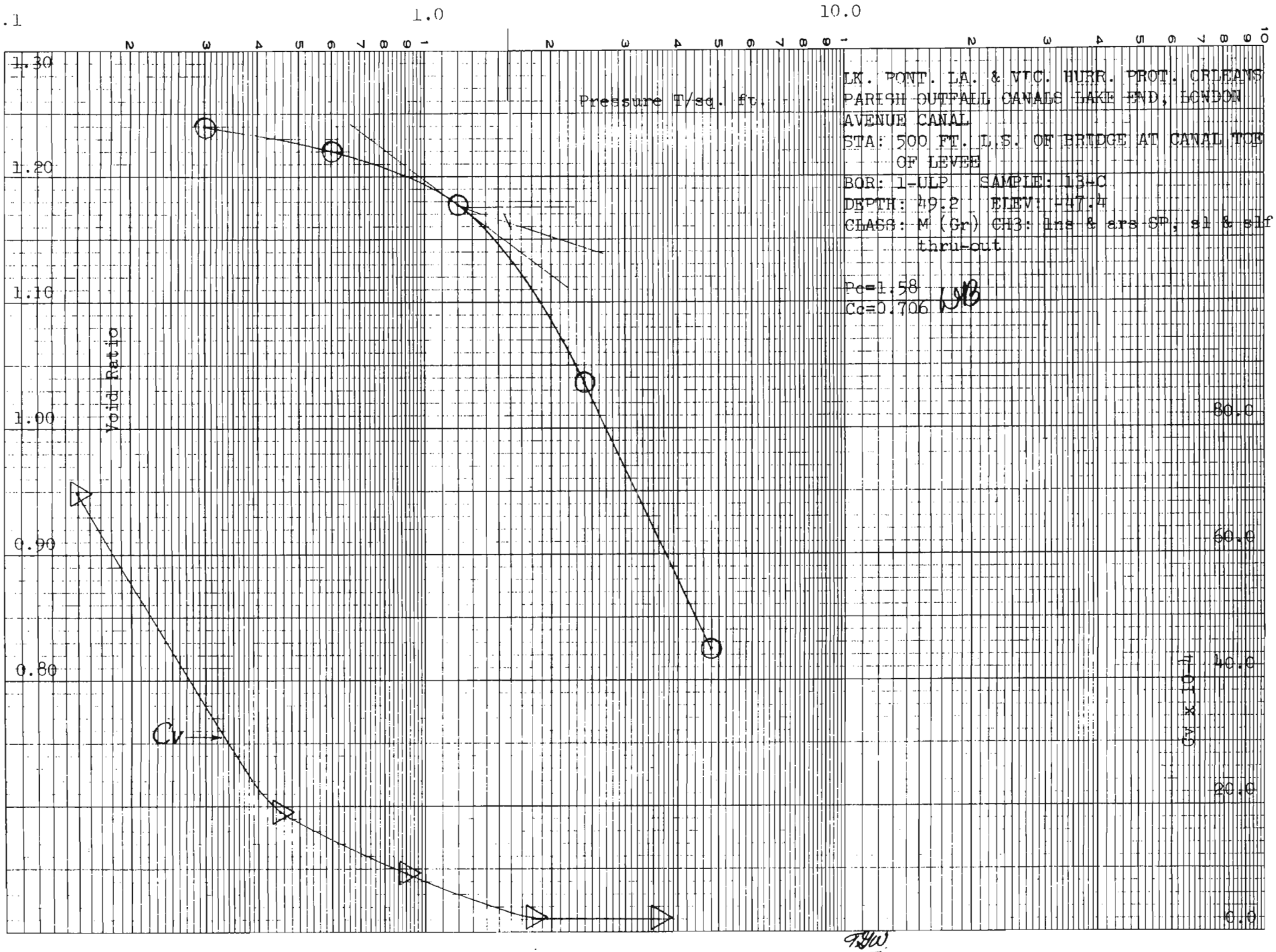
NO. 340-L310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

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.



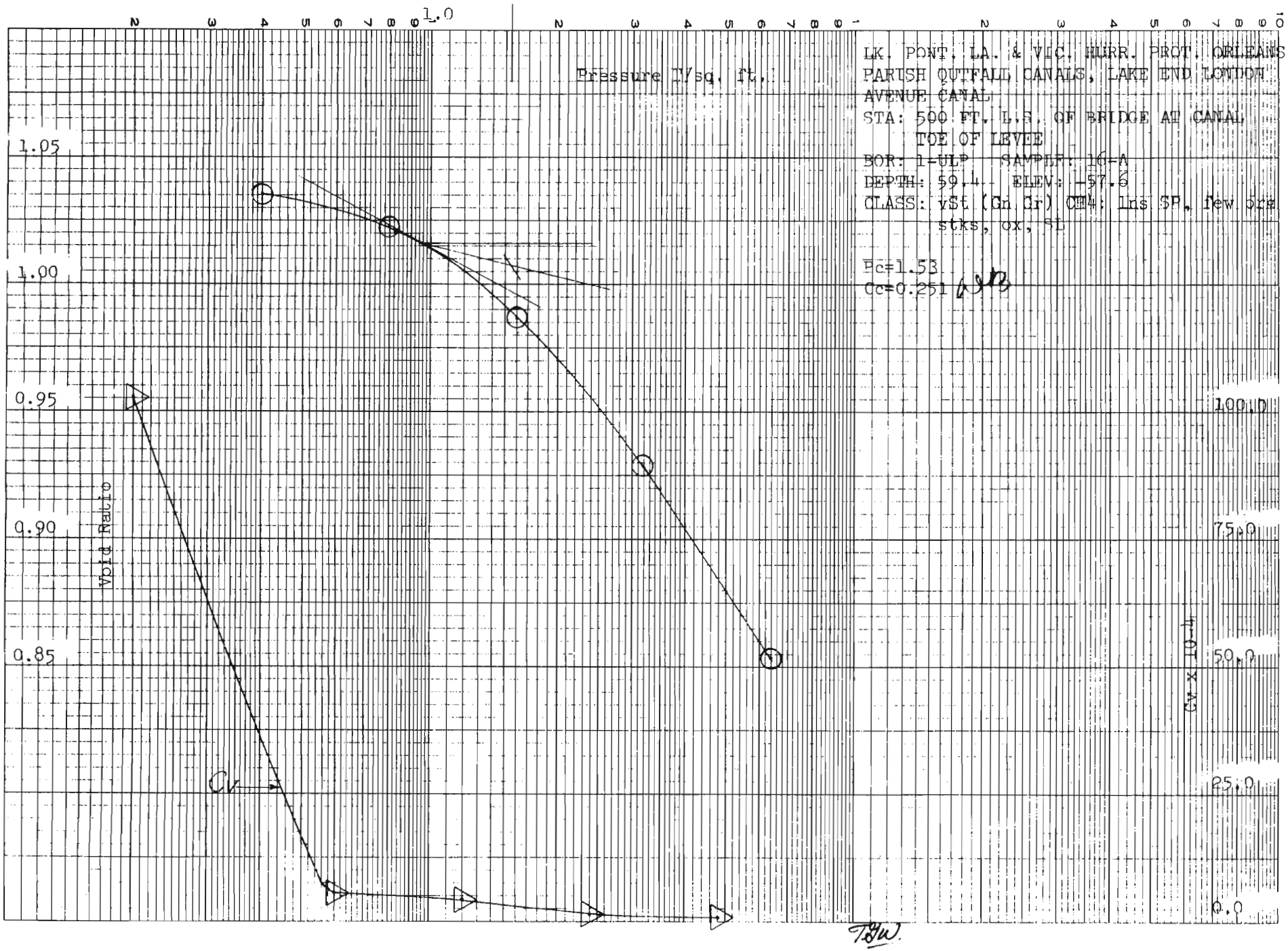
LK. PONT. LA. & VIC. HURR. PROT. ORLEANS PARISH OUTFALL CANALS LAKE END, LONDON AVENUE CANAL
STA: 500 FT. L.S. OF BRIDGE AT CANAL TOE OF LEVEE
BOR: 1-ULP SAMPLE: 13-C
DEPTH: 49.2 ELEV: -47.4
CLASS: M (Gr) CH3: lns & ers SP, sl & slf thru-out

Pc=1.58 tsf
Cc=0.706

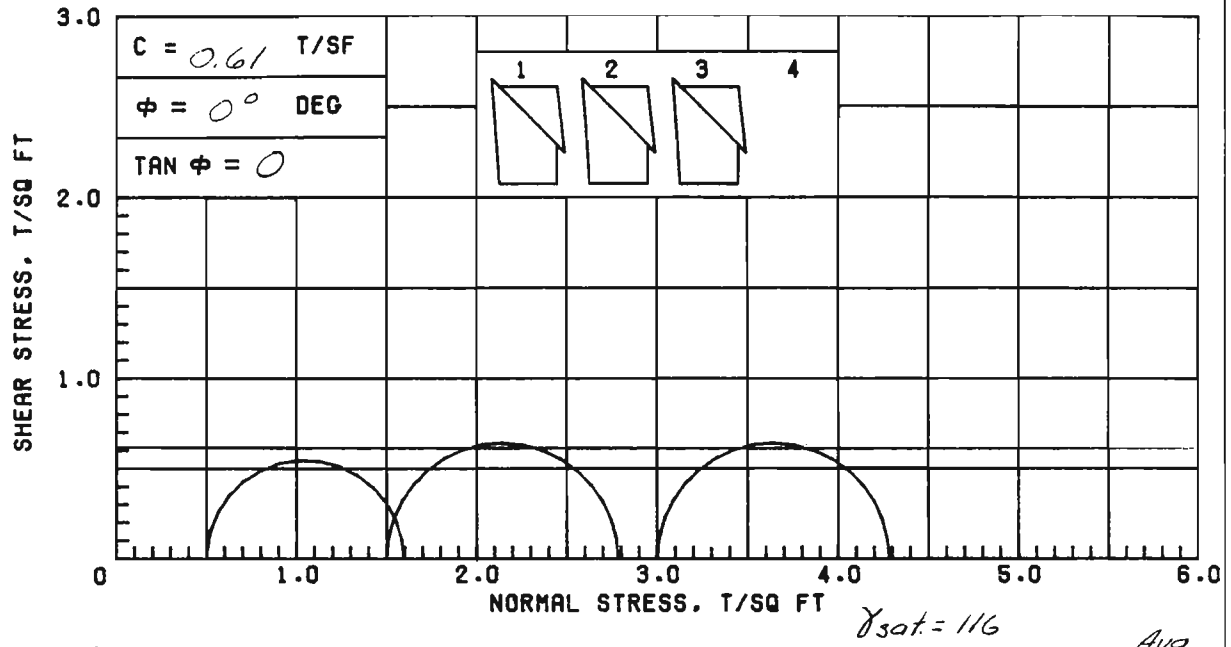
100

NO. 340-C310 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH

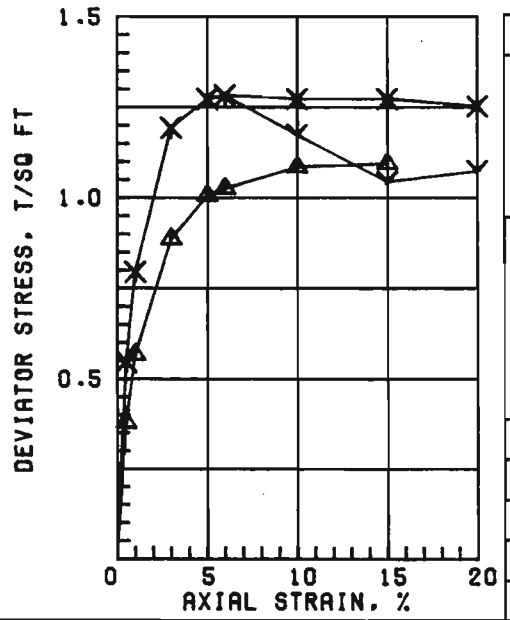
EUGENE DIETZGEN CO.
MADE IN U. S. A.



101



$\gamma_{sat.} = 116$



SPECIMEN NO.		Δ1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	34.1	33.2	34.0	33.8
	DRY DENSITY, PCF	84.3	85.9	85.4	
	SATURATION, %	92.0	93.1	94.4	
	VOID RATIO	1.000	0.963	0.973	
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		1.10	1.28	1.28	
TIME TO FAILURE, MIN.		30	12	12	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

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

LL 61	PL 20	PI 41	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

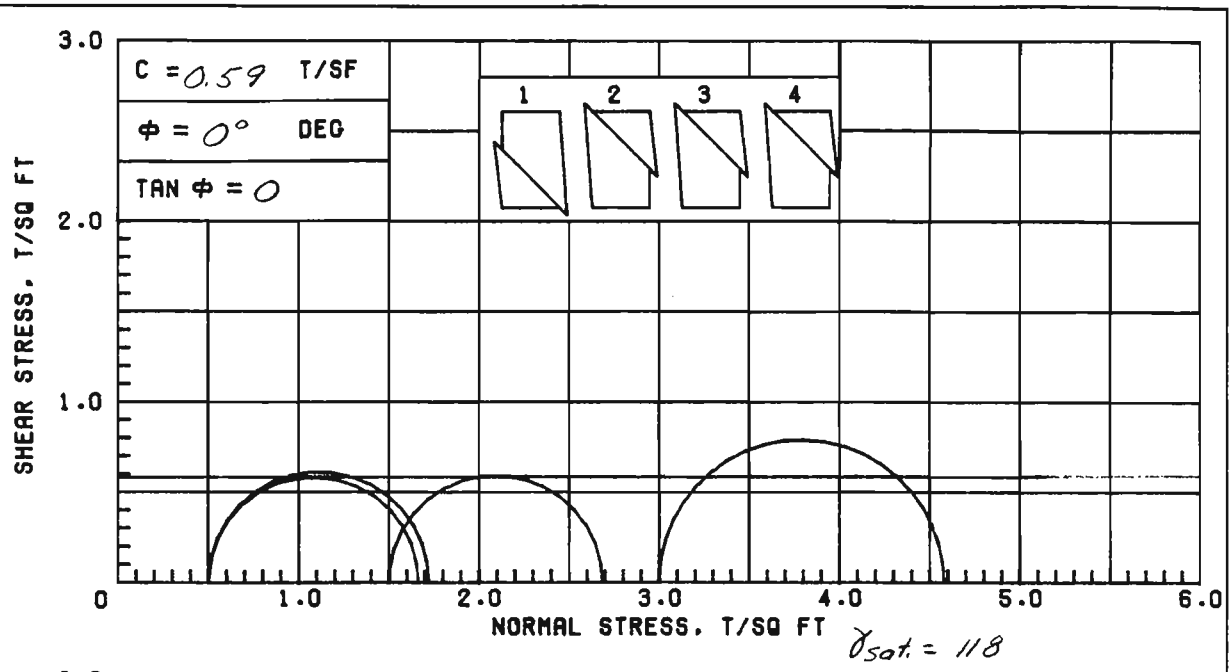
REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG	SAMPLE NO. 2-B
DEPTH/ELEV 4.7/4.7	TECH. KOC
LABORATORY USAE WES	DATE 24 AUG 84

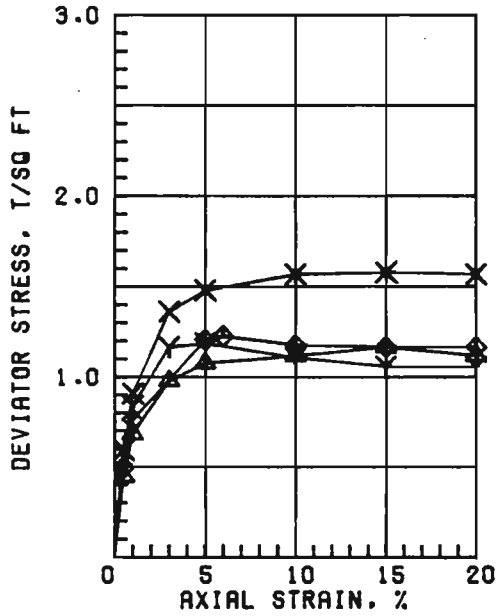
TRIAXIAL COMPRESSION TEST REPORT

incl 2



$\gamma_{sat.} = 118$

Avg. 30.



SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	30.1	31.9	31.0	30.4
	DRY DENSITY, PCF	88.2	86.8	88.2	88.4
	SATURATION, %	89.1	91.5	92.0	90.5
	VOID RATIO	0.912	0.942	0.910	0.907
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	0.5
MAX. DEV. STRESS, TSF		1.16	1.18	1.58	1.22
TIME TO FAILURE, MIN.		30	10	30	12
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.41	1.41	1.41	1.41
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

CONTROLLED-STRAIN TEST

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

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

REMARKS:

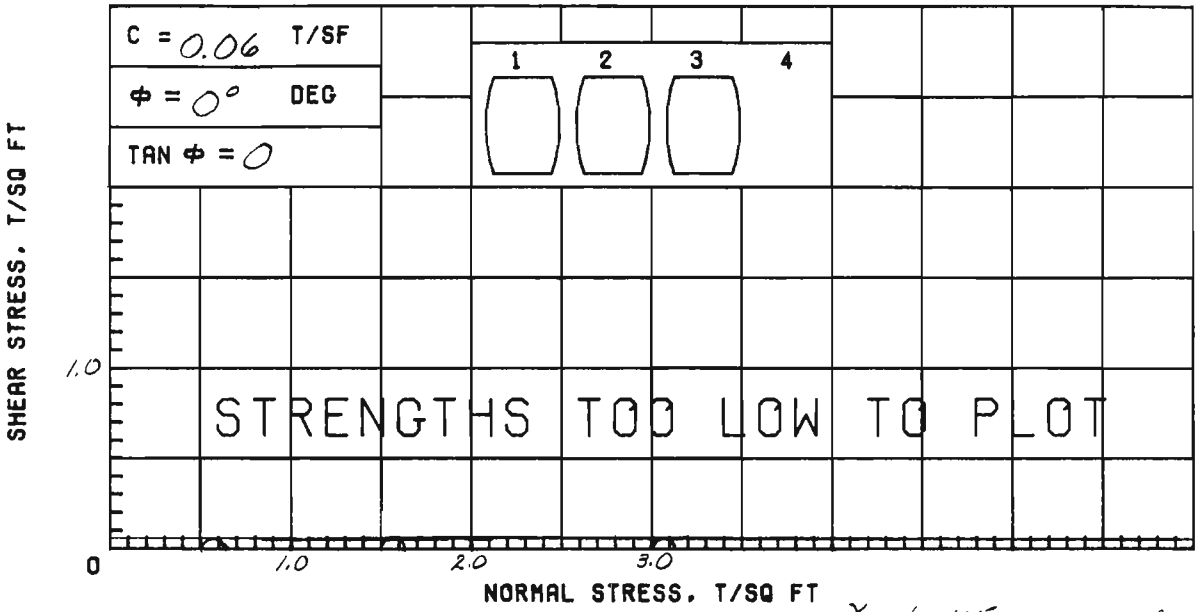
PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUO | SAMPLE NO. 2-C

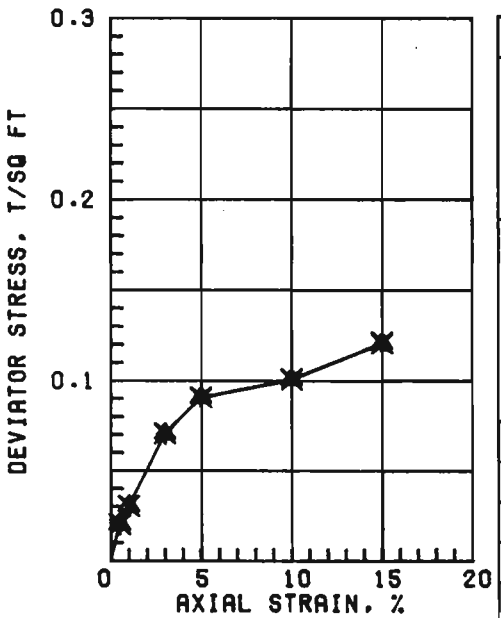
DEPTH/ELEV 5.8/3.6 | TECH. KOC

LABORATORY USAE WES | DATE 10 SEP 84

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat.} = 115$ Avg.



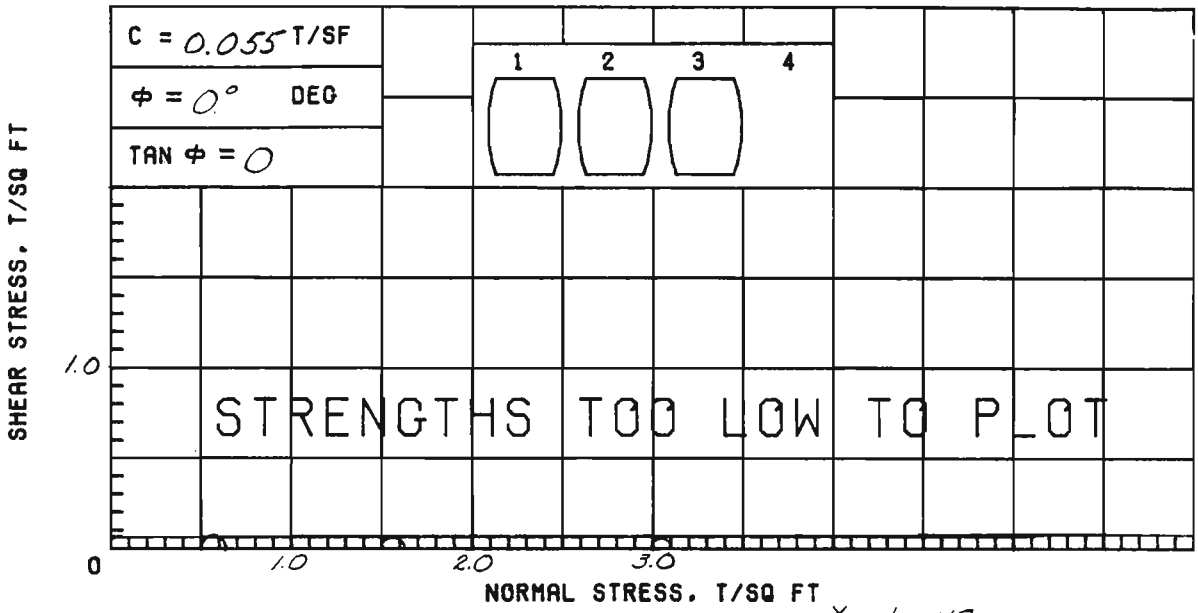
SPECIMEN NO.		Δ1	Y2	X3	4
INITIAL	WATER CONTENT, %	34.3	34.4	34.7	34.5
	DRY DENSITY, PCF	83.4	83.6	82.4	
	SATURATION, %	90.7	91.3	89.5	
	VOID RATIO	1.022	1.017	1.047	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.12	0.12	0.12	
TIME TO FAILURE, MIN.		30	30	30	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.40	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

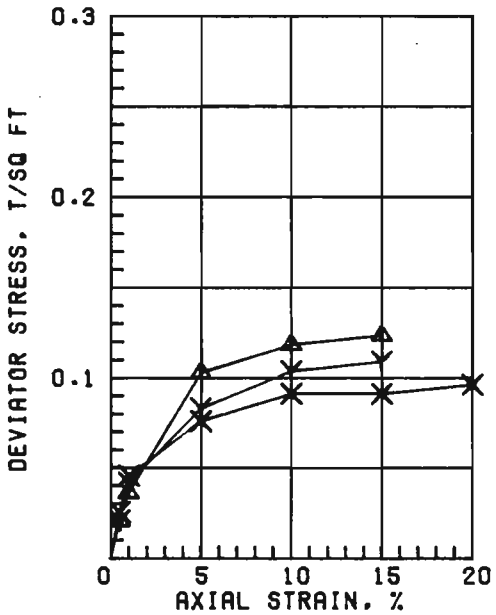
DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY; SHELL PARTICLES

LL 33	PL 17	PI 16	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUO	SAMPLE NO. 4-B
	DEPTH/ELEV 11.8/-2.4	TECH. KOC
	LABORATORY USAE WES	DATE 11 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



γsat. = 119



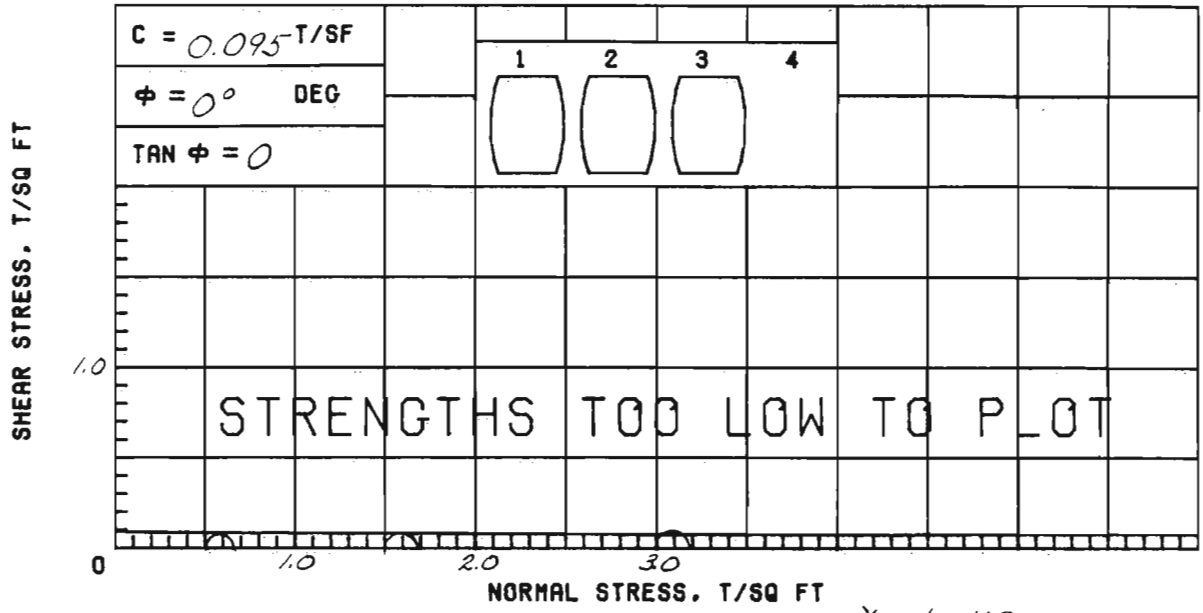
SPECIMEN NO.		Δ1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	34.3	36.7	33.8	34.9
	DRY DENSITY, PCF	88.4	86.6	88.9	
	SATURATION, %	100+	100+	100+	
	VOID RATIO	0.892	0.931	0.882	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.12	0.11	0.09	
TIME TO FAILURE, MIN.		30	30	20	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.38	1.37	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

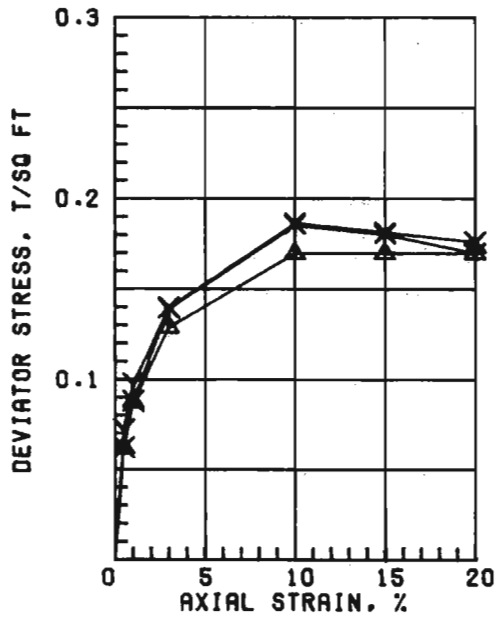
DESCRIPTION OF SPECIMENS: SILT (ML), DARK GRAY

LL	PL	PI	GS 2.68 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 5-8
	DEPTH/ELEV 15.8/-6.4	TECH. PJR
	LABORATORY USAE WES	DATE 11 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



$\gamma_{sat.} = 118$



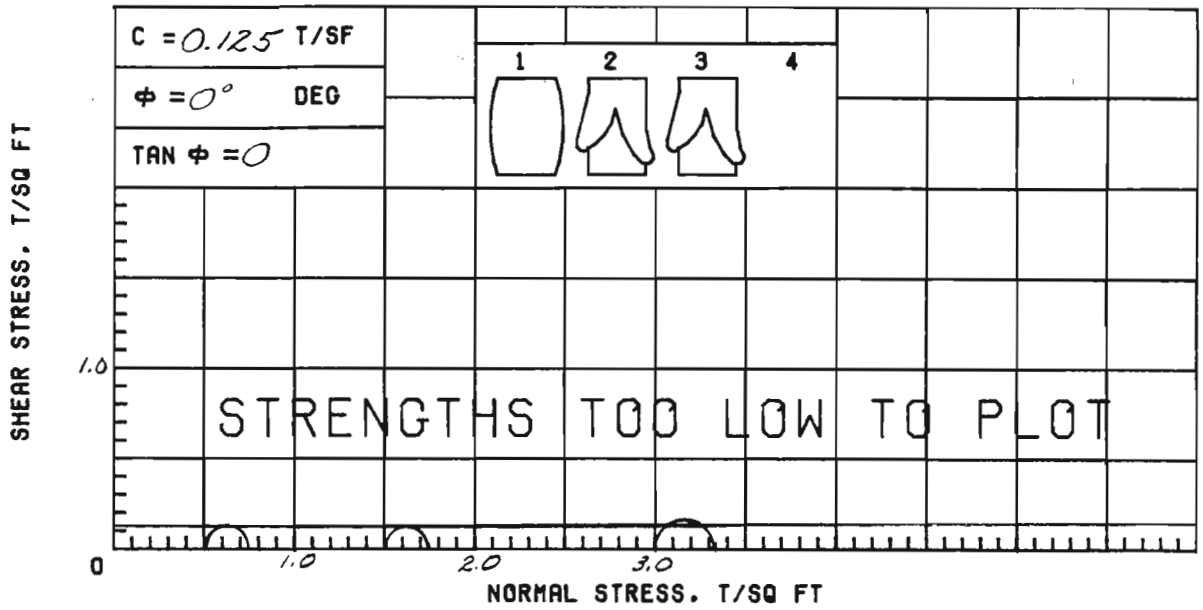
SPECIMEN NO.		▲1	Y2	X3	4 (Avg.)
INITIAL	WATER CONTENT, %	34.4	34.2	34.8	34.5
	DRY DENSITY, PCF	87.4	87.5	87.3	
	SATURATION, %	100+	100+	100+	
	VOID RATIO	0.922	0.919	0.924	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.17	0.19	0.19	
TIME TO FAILURE, MIN.		20	20	20	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.38	1.38	1.38	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

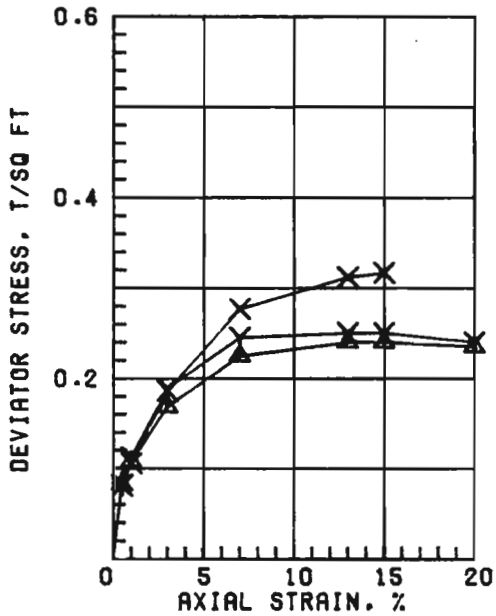
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: CLAYEY SILT (ML), DARK GRAY

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

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 5-C
	DEPTH/ELEV 16.5/-7.1	TECH. PJR
	LABORATORY USAE WES	DATE 12 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	





$\gamma_{sat.} = 113$

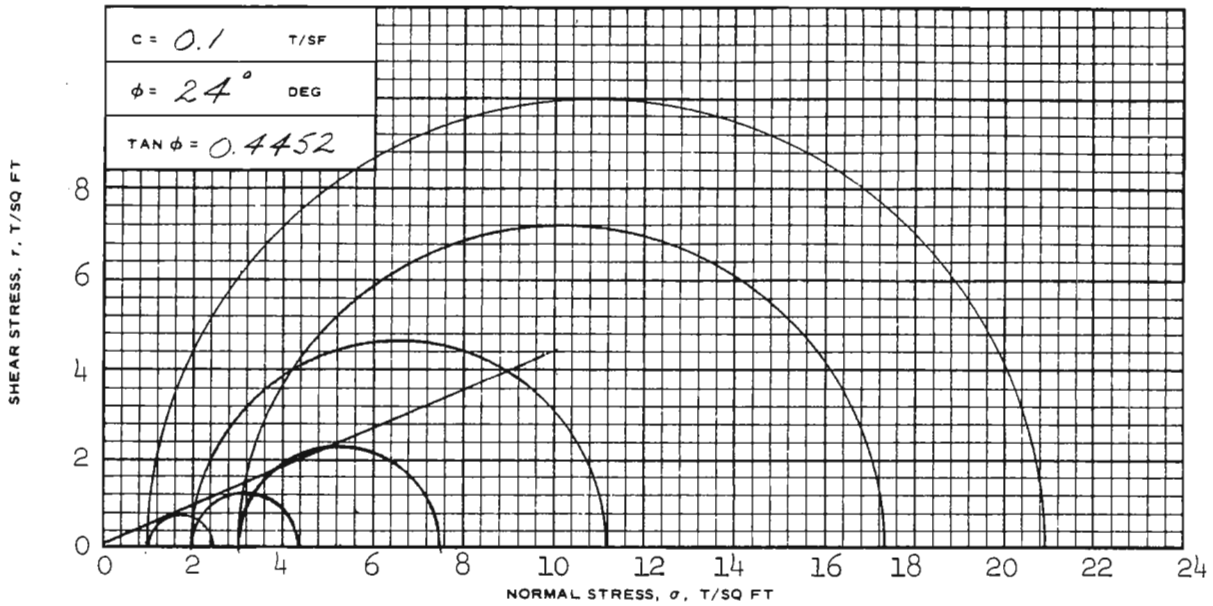
SPECIMEN NO.		▲1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	41.2	40.1	38.4	39.9
	DRY DENSITY, PCF	79.5	80.3	81.3	
	SATURATION, %	99.6	98.8	96.9	
	VOID RATIO	1.113	1.091	1.067	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.24	0.25	0.32	
TIME TO FAILURE, MIN.		26	26	35	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

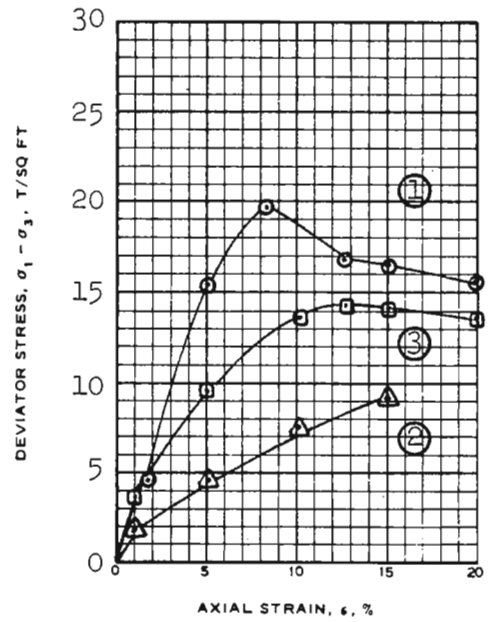
DESCRIPTION OF SPECIMENS: SILTY CLAY (CL), DARK GRAY

LL 37	PL 23	PI 14	GS 2.69 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 6-B
	DEPTH/ELEV 19.6/-10.2	TECH. PJR
	LABORATORY USAE WES	DATE 12 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



$\gamma_{sat.} = 127$



SPECIMEN NO.			1	2	3	Avg.
INITIAL	WATER CONTENT, %	w_o	22.0	23.4	21.8	22.4
	DRY DENSITY LB/ CU FT	γ_{d_o}	105.4	100.1	105.3	
	SATURATION, %	S_o	100+	93.5	99.2	
	VOID RATIO	e_o	0.587	0.671	0.589	
BEFORE SHEAR	WATER CONTENT, %	w_c	24.0	23.9	23.4	
	DRY DENSITY LB./CU FT	γ_{d_c}	107.0	103.6	108.5	
	SATURATION, %	S_c	100+	100+	100+	
	VOID RATIO	e_c	0.563	0.615	0.543	
	FINAL BACK PRESSURE, T/SQ FT	u_o	4.32	4.32	4.32	
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	1.0	2.0	3.0	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	19.86	9.19	14.29	
TIME TO $(\sigma_1 - \sigma_3)_{MAX}$, MIN		t_f	646	1154	977	
ULTIMATE DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{ULT}$	1.50	2.30	4.50	
INITIAL DIAMETER, IN.		D_o	1.37	1.38	1.40	
INITIAL HEIGHT, IN.		H_o	3.00	3.00	3.00	

CONTROLLED- STRAIN TEST

DESCRIPTION OF SPECIMENS SANDY SILT (ML), GRAY; SHELL PARTICLES

LL	PL	PI	G_s 2.68

TYPE OF SPECIMEN UNDISTURBED TYPE OF TEST $\overline{R}$

REMARKS: (EST)

PROJECT LK. PONT. LA. & VIC. HURR. PROT.

ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG SAMPLE NO. 7-B

DEPTH/ELEV 24.5/-15.1

LABORATORY USAEWES DATE 29 AUG 1984

SHEET 1 OF 2

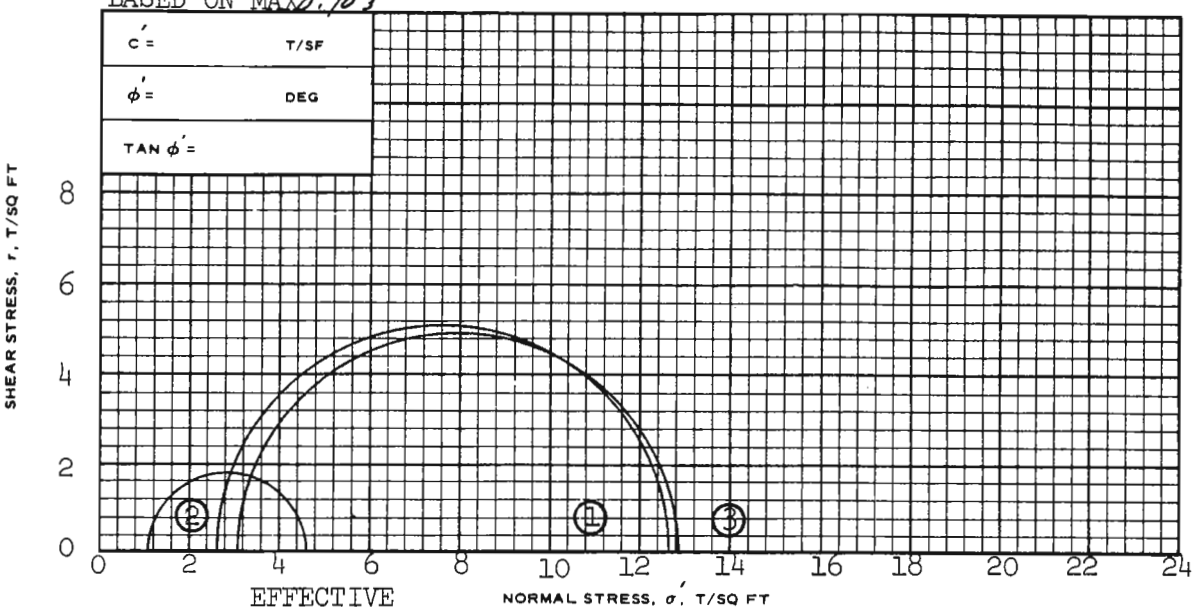
JMS

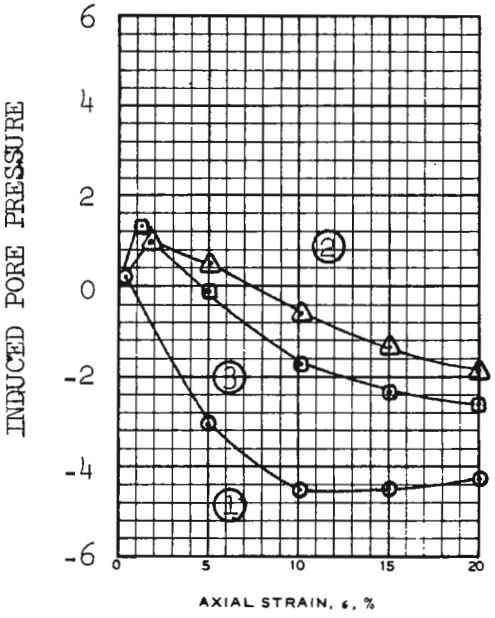
TRIAXIAL COMPRESSION TEST REPORT

ENG FORM NO. 2089
REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE

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	γ_{d_o}				
	SATURATION, %	S_o				
	VOID RATIO	e_o				
BEFORE SHEAR	WATER CONTENT, %	w_c				
	DRY DENSITY LB./CU FT	γ_{d_c}				
	SATURATION, %	S_c				
	VOID RATIO	e_c				
	FINAL BACK PRESSURE, T/SQ FT	u_o				
MINOR PRINCIPAL STRESS, T/SQ FT		σ_3	2.62	1.09	3.06	
MAXIMUM DEVIATOR STRESS, T/SQ FT		$(\sigma_1 - \sigma_3)_{MAX}$	10.04	3.46	9.75	
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 SPECIMENS

LL	PL	PI	Gs	TYPE OF SPECIMEN	TYPE OF TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 1-LUG SAMPLE NO. 7-B

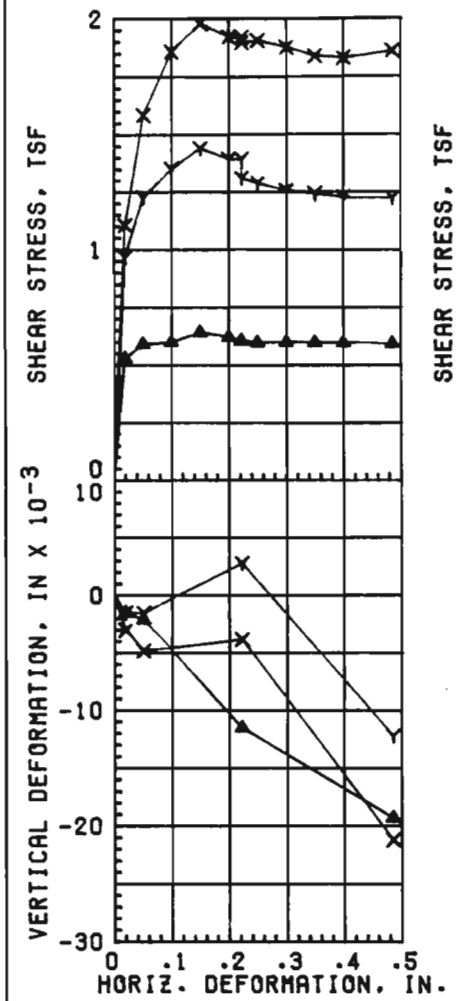
DEPTH/ELEV 24.5/-15.1

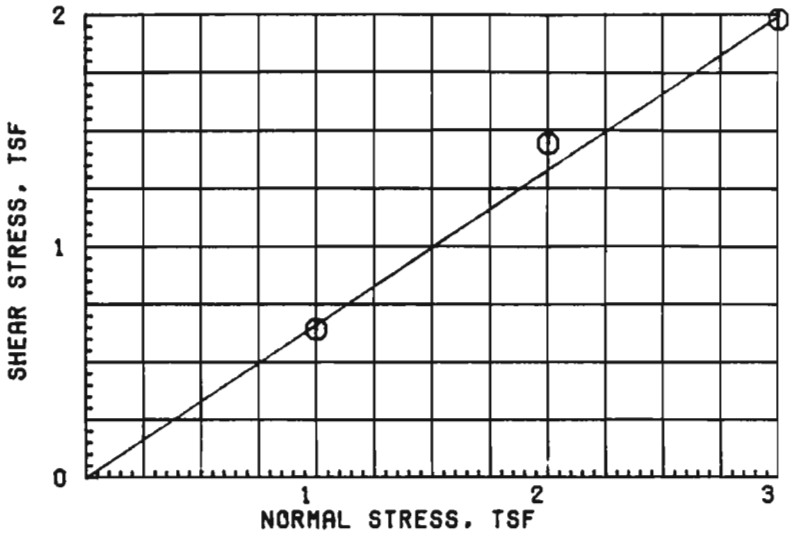
LABORATORY USAEWES DATE 29 AUG 1984

SHEET 2 OF 2

JMS **TRIAXIAL COMPRESSION TEST REPORT**

ENG FORM NO. 2089 REV JUNE 1970 PREVIOUS EDITION IS OBSOLETE





$\gamma_{sat.} = 124$

$\phi = 33.5^{\circ}$

TAN $\phi = 0.6619$

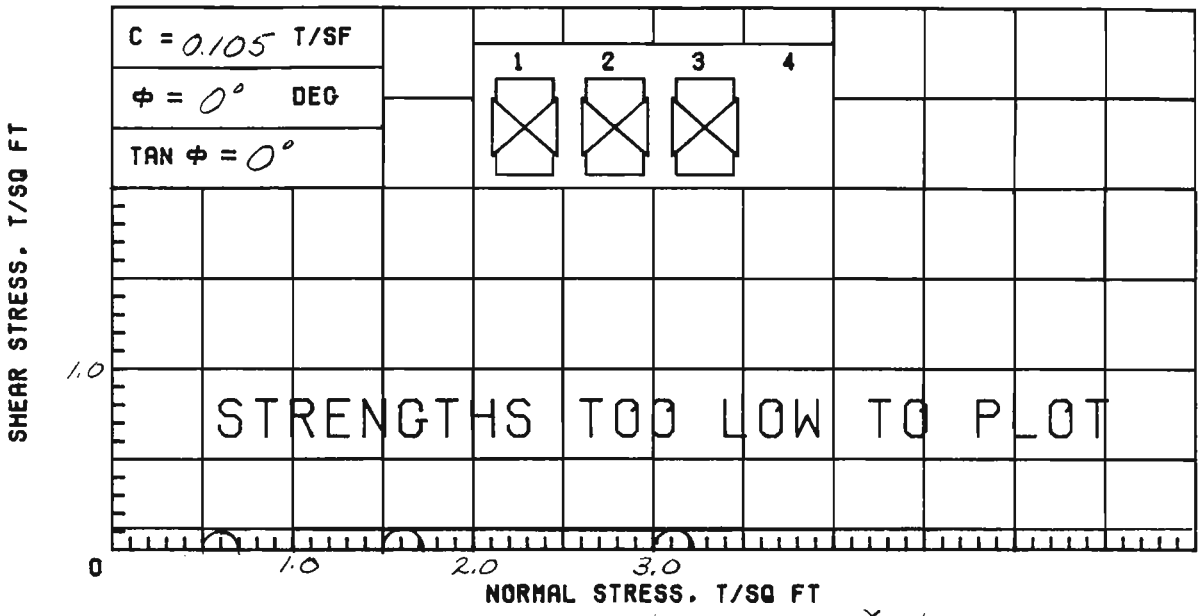
C = 0

TEST NO.		1 ▲	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	24.3	22.5	23.6	23.5
	VOID RATIO	0.656	0.691	0.707	
	SATURATION, %	98.7	87.0	89.1	
	DRY DENSITY, PCF	100.6	98.5	97.6	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	22.3	21.9	21.1	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.64	1.44	1.98	
TIME TO FAILURE, MIN		853	853	853	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

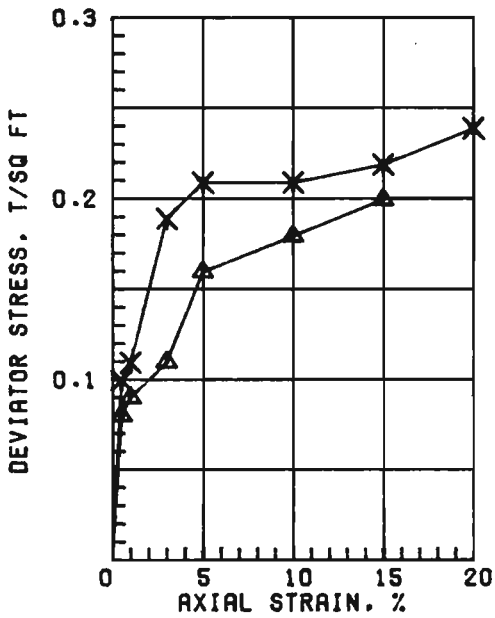
TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.756 IN. THICK
CLASSIFICATION SANDY SILT (ML), GRAY; SHELL PARTICLES		

LL	PL	PI		GS 2.67 (EST)

REMARKS;	PROJECT LAKE PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE 8-B
	DEPTH/ELEV 28.2/-18.8	DATE 26 SEP 84
	DIRECT SHEAR TEST REPORT	



$\gamma_{sat.} = 113$



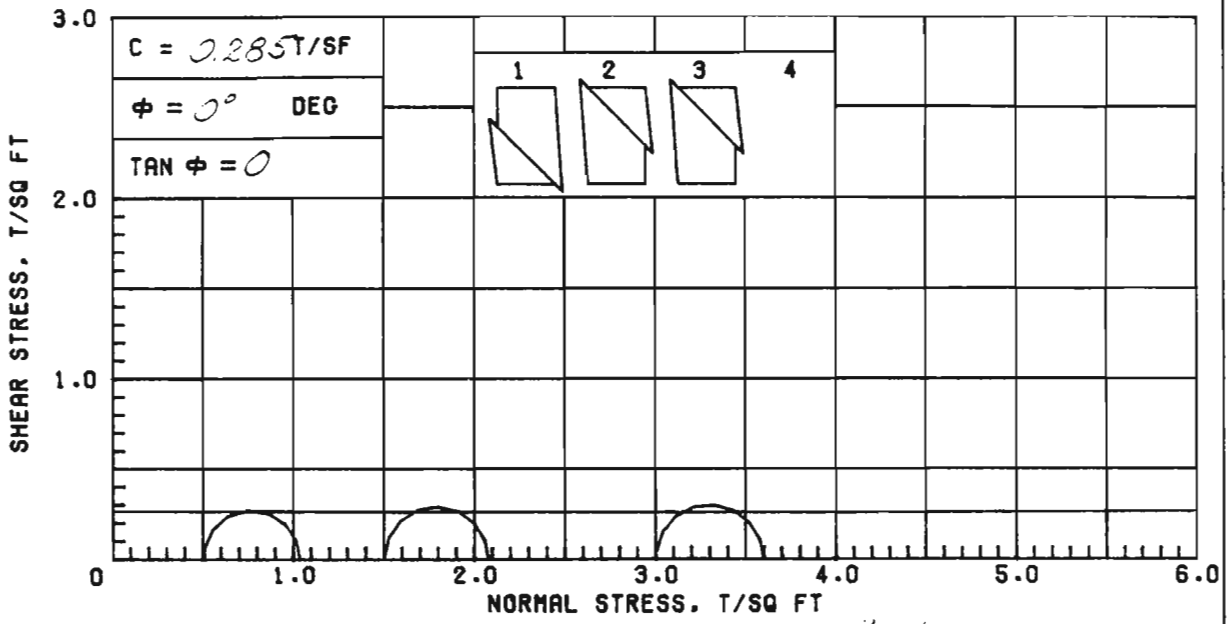
SPECIMEN NO.		Δ1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	42.1	35.0	39.0	38.7
	DRY DENSITY, PCF	77.0	83.1	79.7	
	SATURATION, %	95.6	91.8	94.4	
	VOID RATIO	1.189	1.029	1.115	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.20	0.21	0.21	
TIME TO FAILURE, MIN.		30	10	10	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

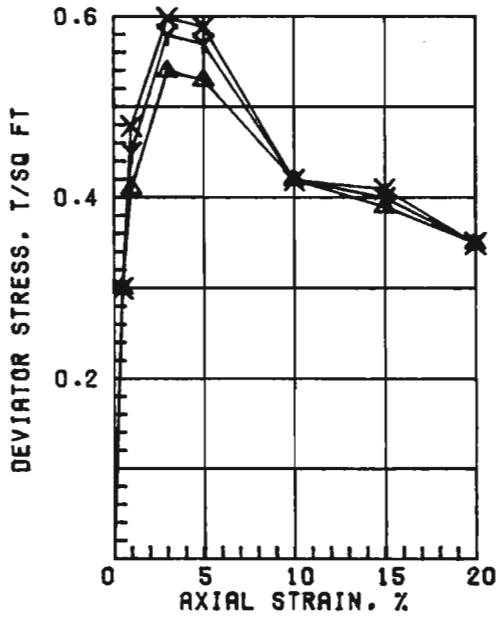
DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY

LL 30	PL 14	PI 16	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 8-C
	DEPTH/ELEV 29.3/-19.9	TECH. KOC
	LABORATORY USAE WES	DATE 12 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



$\gamma_{sat.} = 101$



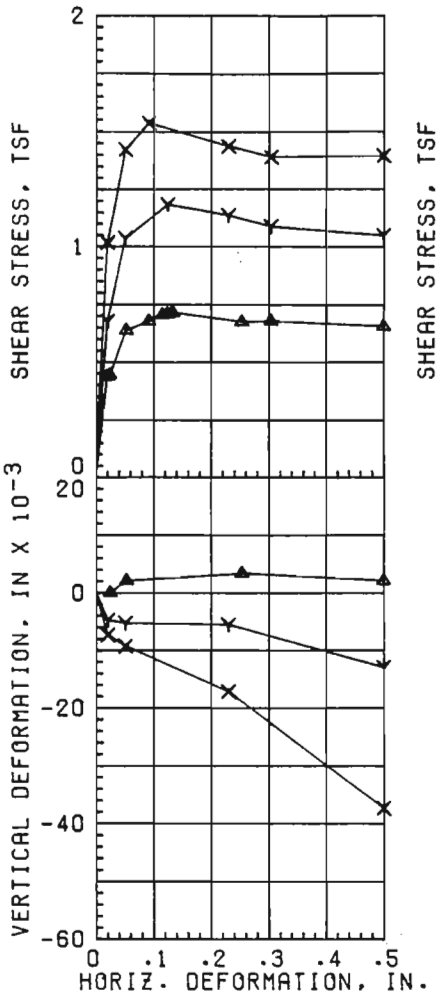
SPECIMEN NO.		Δ1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	66.5	69.9	67.8	68.1
	DRY DENSITY, PCF	59.8	60.0	59.7	
	SATURATION, %	98.6	100+	100+	
	VOID RATIO	1.821	1.811	1.825	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		0.54	0.58	0.60	
TIME TO FAILURE, MIN.		6	6	6	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

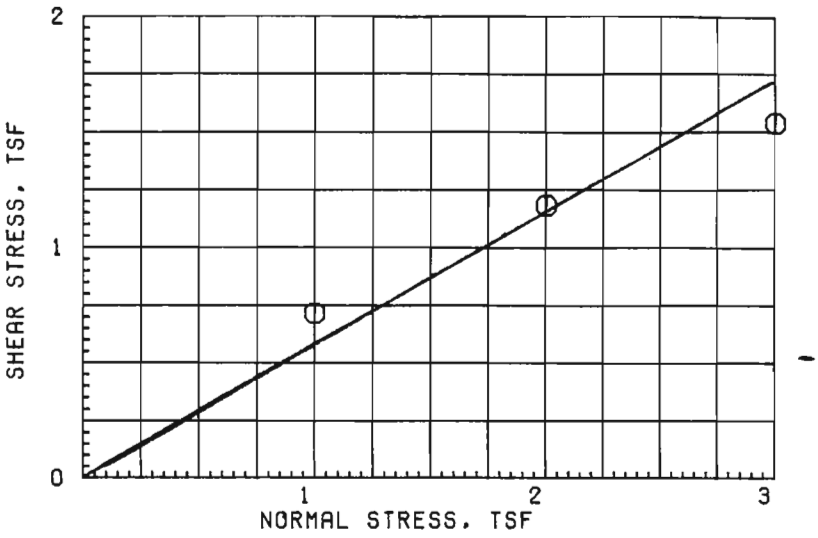
CONTROLLED-STRAIN TEST

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

LL 85	PL 24	PI 61	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 9-C
	DEPTH/ELEV 33.1/-23.7	TECH. KOC
	LABORATORY USAE WES	DATE 12 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	





$\gamma_{sat.} = 122$

	TEST NO.	1 ▲	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	22.5	24.4	25.0	24.0
	VOID RATIO	0.686	0.746	0.782	
	SATURATION, %	87.7	87.2	85.2	
	DRY DENSITY, PCF	98.8	95.4	93.5	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	24.2	23.6	23.7	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.72	1.18	1.54	
TIME TO FAILURE, MIN		736	690	508	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

$\Phi = 30°$

TAN $\Phi = 0.5774$

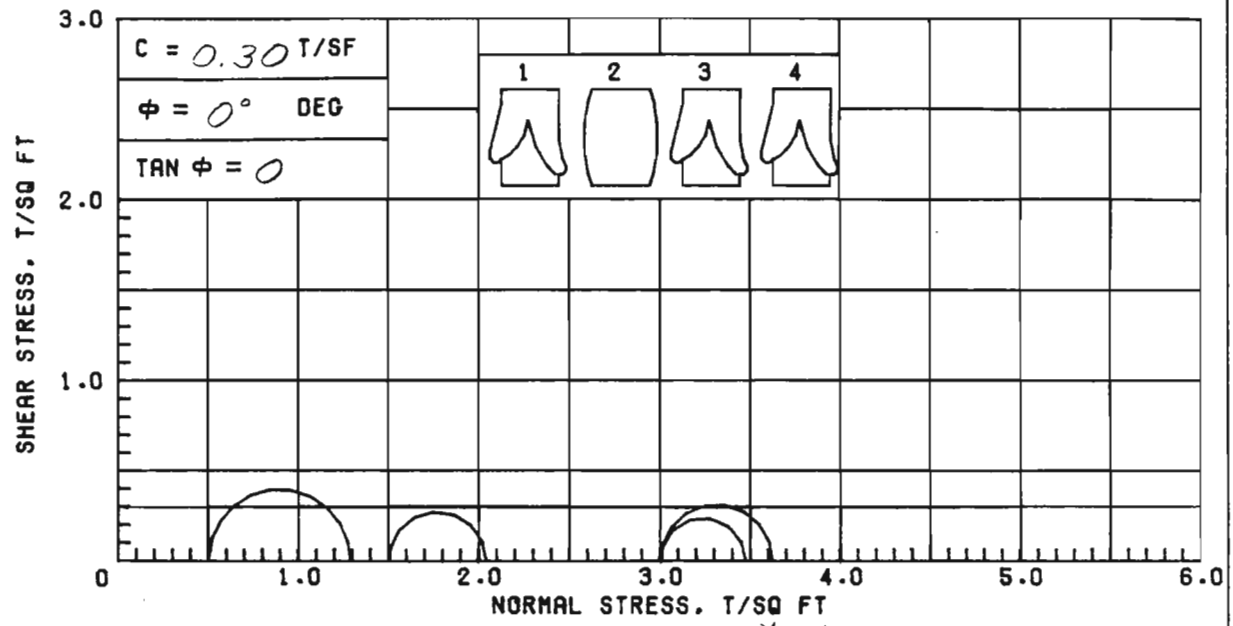
$C = 0$

TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.553 IN. THICK
CLASSIFICATION SILTY SAND (SM), GRAY; SHELL PARTICLES		

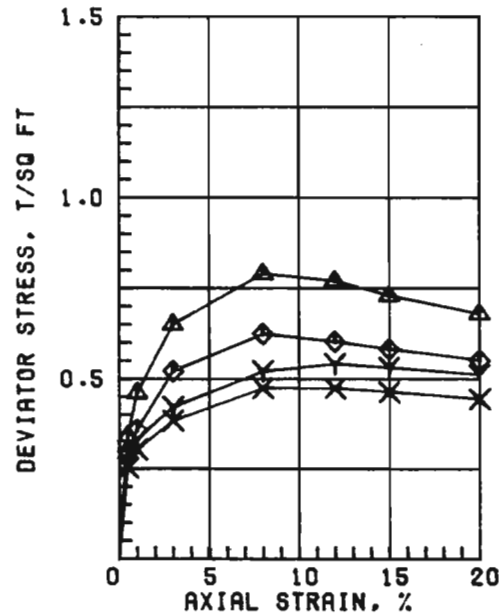
LL	PL	PI		GS 2.67 (EST)

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT.
	ORLEANS PARISH OUTFALL CANALS
	BORING NO. 1-LUG / SAMPLE 10-B
	DEPTH/ELEV 36.3/-26.9 / DATE 27 AUG 84

DIRECT SHEAR TEST REPORT



$\gamma_{sat.} = 112$



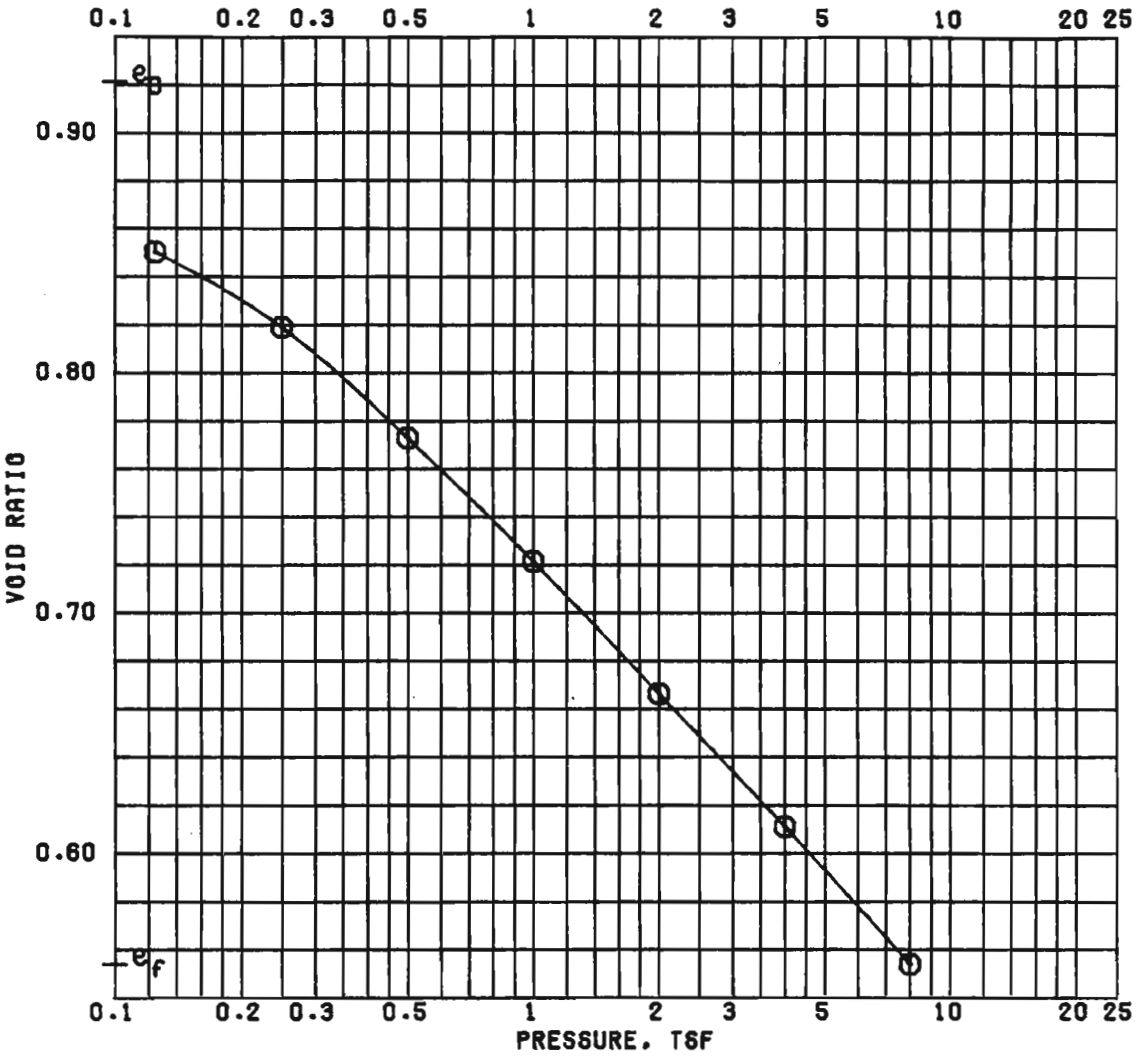
SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	41.0	41.4	43.9	43.4
	DRY DENSITY, PCF	79.2	78.9	76.9	77.9
	SATURATION, %	98.1	98.3	99.4	100+
	VOID RATIO	1.129	1.137	1.192	1.165
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	3.0
MAX. DEV. STRESS, TSF		0.79	0.54	0.47	0.62
TIME TO FAILURE, MIN.		15	36	22	36
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.39	1.39
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: CLAY (CL), GRAY; SHELL PARTICLES

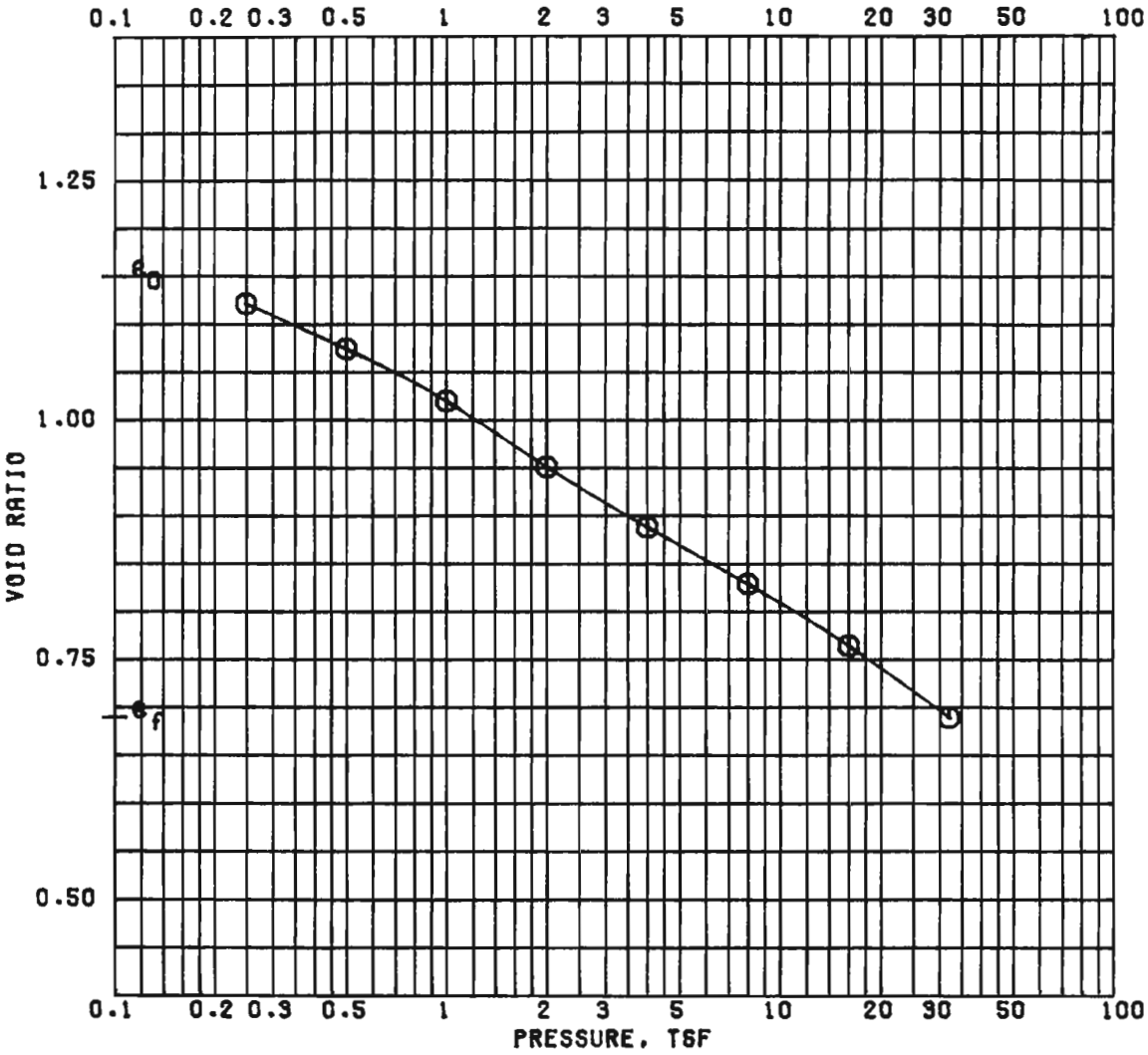
LL 34	PL 16	PI 18	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 1-LUG	SAMPLE NO. 16-B
	DEPTH/ELEV 60.0/-50.6	TECH. PJR
	LABORATORY USAE WES	DATE 13 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	32.9	20.3
PRECONSOL. PRESSURE, TSF	0.30	DRY DENSITY, PCF	87.8	108.5
COMPRESSION INDEX	0.18	SATURATION, %	96.4	99.1
TYPE SPECIMEN: UNDISTURBED		VOID RATIO	0.921	0.553
DIA. IN 4.44 / HT. IN 1.116		BACK PRESSURE, TSF		
CLASSIFICATION: PLASTIC CLAY (CH), GRAY; SILT LENSES				
LL / PL / PI		PROJECT: LK. PONT. LA. & VIC. HURR. PROT.		
GS 2.70 (EST) / D_{10}		ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUG	SAMPLE NO. 5-B	
		DEPTH/ELEV 16.1/-6.7	DATE 21 SEP 84	
		CONSOLIDATION TEST REPORT		

SHEET 1 OF 9

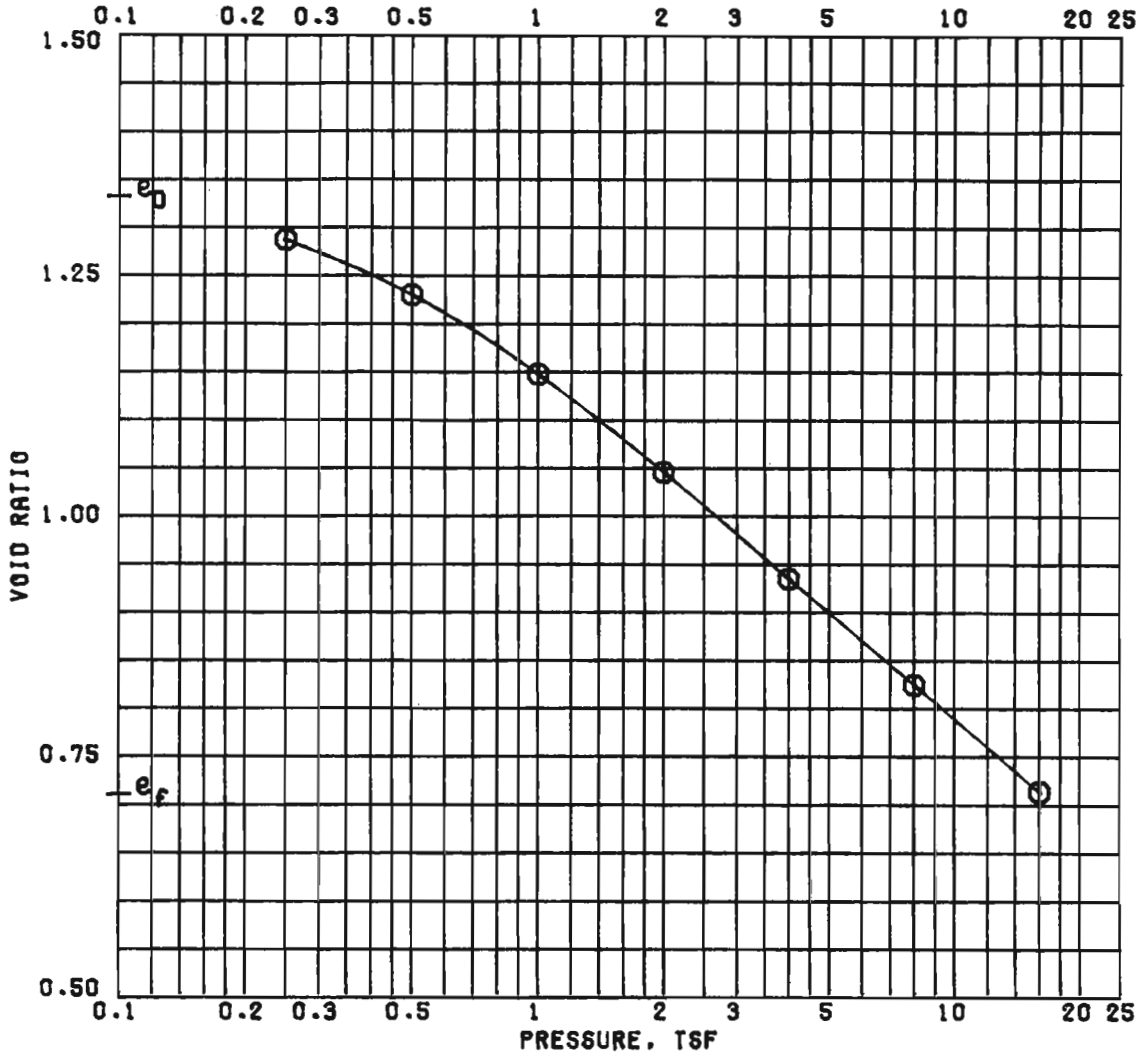


			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	38.3	24.8
PRECONSOL. PRESSURE, TSF	0.72	DRY DENSITY, PCF	78.5	99.9
COMPRESSION INDEX	0.23	SATURATION, %	90.0	97.4
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.148	0.687
DIA. IN 4.44	HT. IN 1.160	BACK PRESSURE, TSF		

CLASSIFICATION	CLAY (CL), GRAY		
LL	PL	PI	PROJECT LK. PONT. LA. & VIC. HURR. PROT.
GS 2.70 (EST)	D_{10}		ORLEANS PARISH OUTFALL CANALS
REMARKS		BORING NO. 1-LUG	SAMPLE NO. 6-C
		DEPTH/ELEV 20.9/-11.5	DATE 23 AUG 84

CONSOLIDATION TEST REPORT

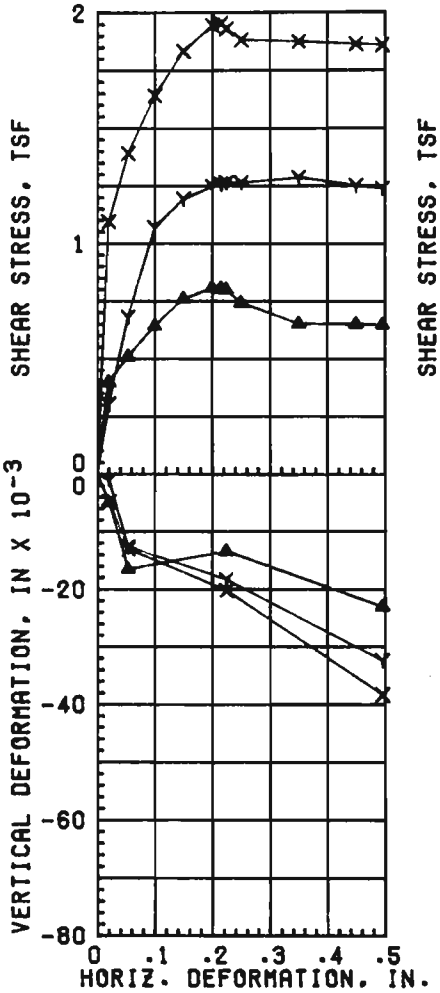
SHEET 1 OF 10

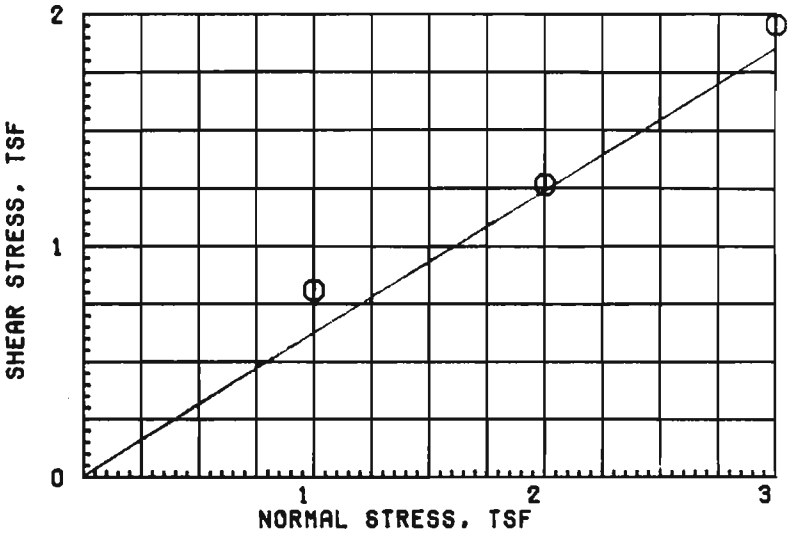


			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	45.9	28.4
PRECONSOL. PRESSURE, TSF	0.72	DRY DENSITY, PCF	72.3	98.6
COMPRESSION INDEX	0.38	SATURATION, %	93.1	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.331	0.709
DIA. IN 4.44	HT. IN 1.138	BACK PRESSURE, TSF		
CLASSIFICATION	PLASTIC CLAY (CH), GRAY; FINE SAND POCKETS			
LL / PL / PI		PROJECT	LK. PONT. LA. & VIC. HURR. PROT.	
GS 2.70 (EST)	D_{10}	ORLEANS PARISH OUTFALL CANALS		
REMARKS		BORING NO. 1-LUG	SAMPLE NO. 8-D	
		DEPTH/ELEV 30.0/-20.6	DATE 23 AUG 84	

CONSOLIDATION TEST REPORT

SHEET 1 OF 9





$\gamma_{sat.} = 123$

TEST NO.		1 ▲	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	25.9	25.8	24.8	25.5
	VOID RATIO	0.717	0.745	0.730	
	SATURATION, %	96.7	92.6	90.8	
	DRY DENSITY, PCF	97.1	95.5	96.3	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	23.9	26.8	25.7	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.81	1.26	1.95	
TIME TO FAILURE, MIN		1114	1248	1197	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

$\Phi = 32°$

TAN $\Phi = 0.6249$

$C = 0$

TYPE SPECIMEN UNDISTURBED | 3.00 IN. SQUARE | 0.756 IN. THICK

CLASSIFICATION SILTY SAND (SM), GRAY; SHELL PARTICLES

LL	PL	PI		GS 2.67 (EST)

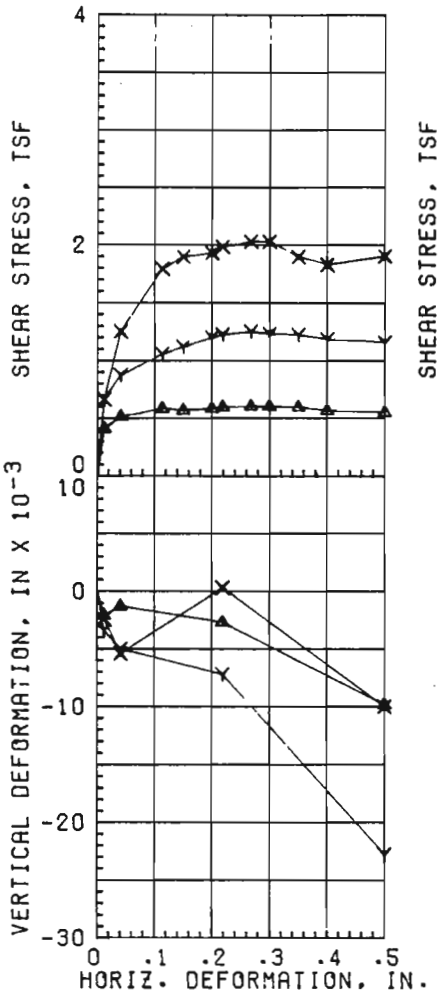
REMARKS:

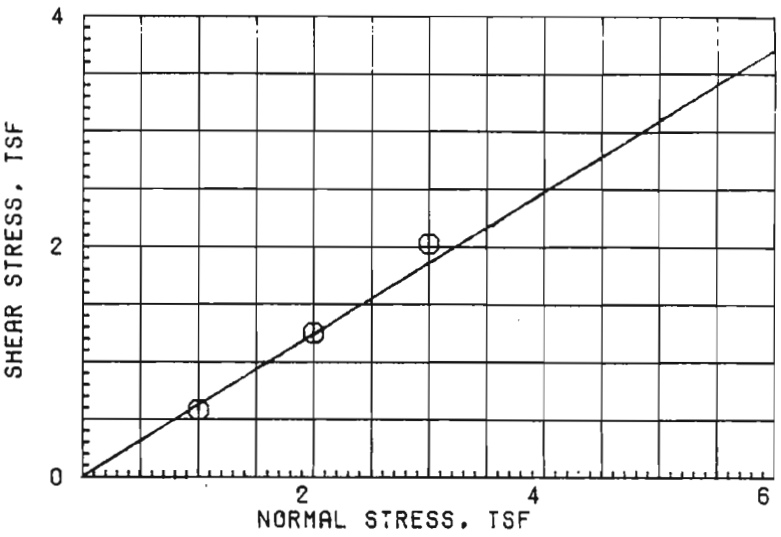
PROJECT LAKE PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUG | SAMPLE 3-B

DEPTH/ELEV 8.0/3.2 | DATE 25 SEP 84

DIRECT SHEAR TEST REPORT





ϕ = 31.5°

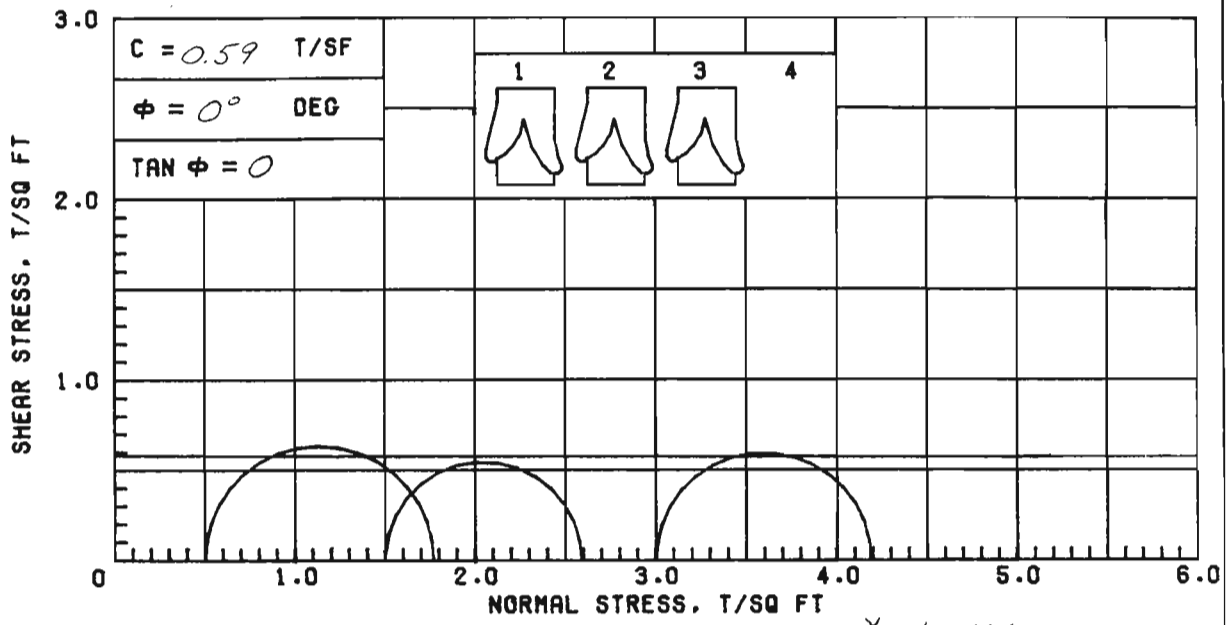
TAN ϕ = 0.6128

C = 0

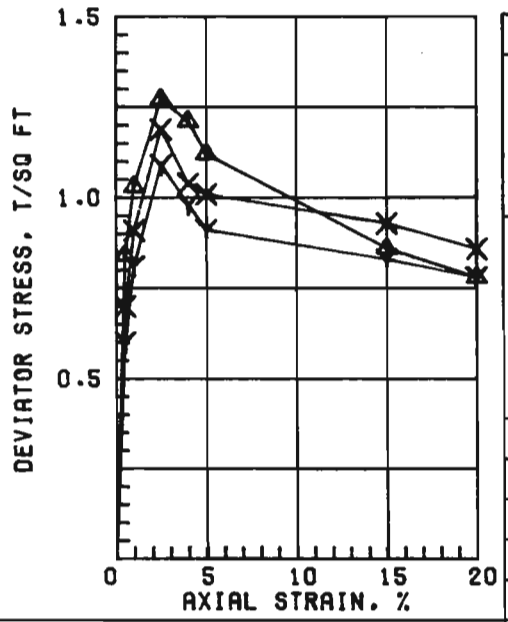
$\gamma_{sat.}$ = 119

TEST NO.		1 ▲	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	28.2	28.8	29.6	28.9
	VOID RATIO	0.842	0.829	0.843	
	SATURATION, %	89.5	92.6	93.7	
	DRY DENSITY, PCF	90.5	91.1	90.4	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	32.4	31.5	31.0	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.58	1.25	2.03	
TIME TO FAILURE, MIN		626	1469	1469	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

TYPE SPECIMEN UNDISTURBED	3.00 IN. SQUARE	0.756 IN. THICK
CLASSIFICATION SILTY SAND (SM), GRAY		
LL / PL / PI	GS 2.67 (EST)	
REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 3-LUG	SAMPLE 12-B
	DEPTH/ELEV 44.0/-39.2	DATE 01 OCT 84
	DIRECT SHEAR TEST REPORT	



$\gamma_{sat.} = 106$ Avg.



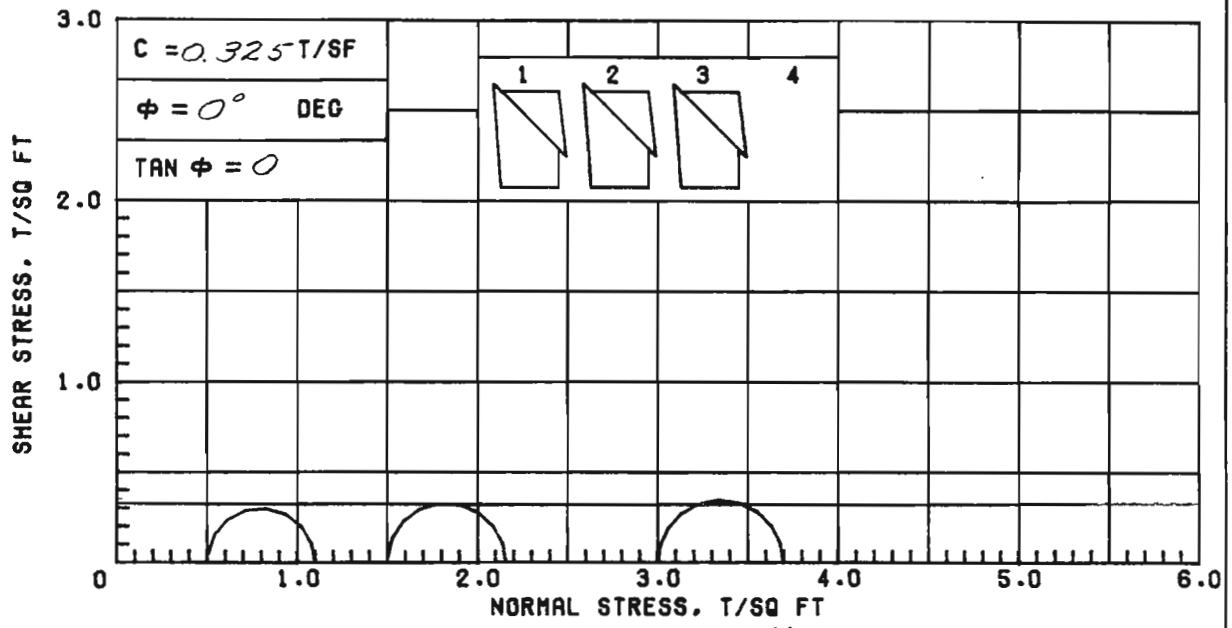
SPECIMEN NO.		Δ1	Y2	X3	4
INITIAL	WATER CONTENT, %	48.8	54.4	52.9	52.0
	DRY DENSITY, PCF	71.9	67.7	68.7	
	SATURATION, %	98.1	98.6	98.3	
	VOID RATIO	1.343	1.490	1.454	
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	
MAX. DEV. STRESS, TSF		1.27	1.09	1.19	
TIME TO FAILURE, MIN.		6	28	23	
RATE OF STRAIN INCR.%			5	5	
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

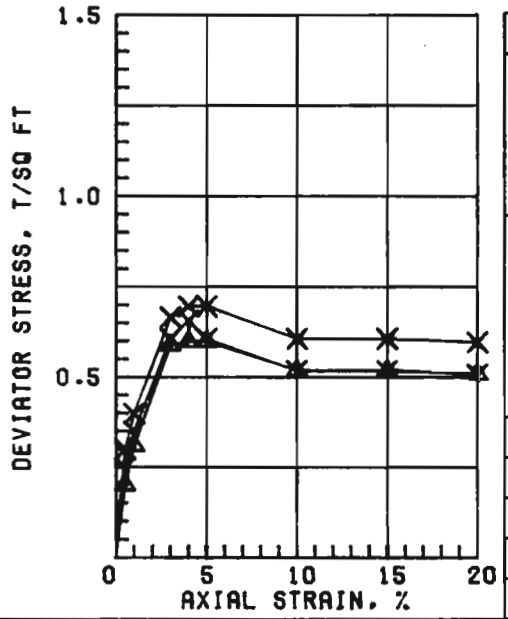
CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY

LL 63	PL 21	PI 42	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK. PONT. LA. & VIC. HURR. PROT.	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 3-LUG	SAMPLE NO. 14-B
	DEPTH/ELEV 52.0/-47.2	TECH. PJR
	LABORATORY USAE WES	DATE 13 SEP 84
	TRIAXIAL COMPRESSION TEST REPORT	





$\gamma_{sat.} = 110$ Avg.

SPECIMEN NO.		Δ1	Y2	X3	4
INITIAL	WATER CONTENT, %	44.2	43.9	44.1	44.1
	DRY DENSITY, PCF	75.2	75.9	76.1	
	SATURATION, %	96.0	97.2	98.0	
	VOID RATIO	1.243	1.220	1.215	
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		0.60	0.66	0.70	
TIME TO FAILURE, MIN.		8	8	8	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SHELL PARTICLES

LL 56	PL 20	PI 36	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

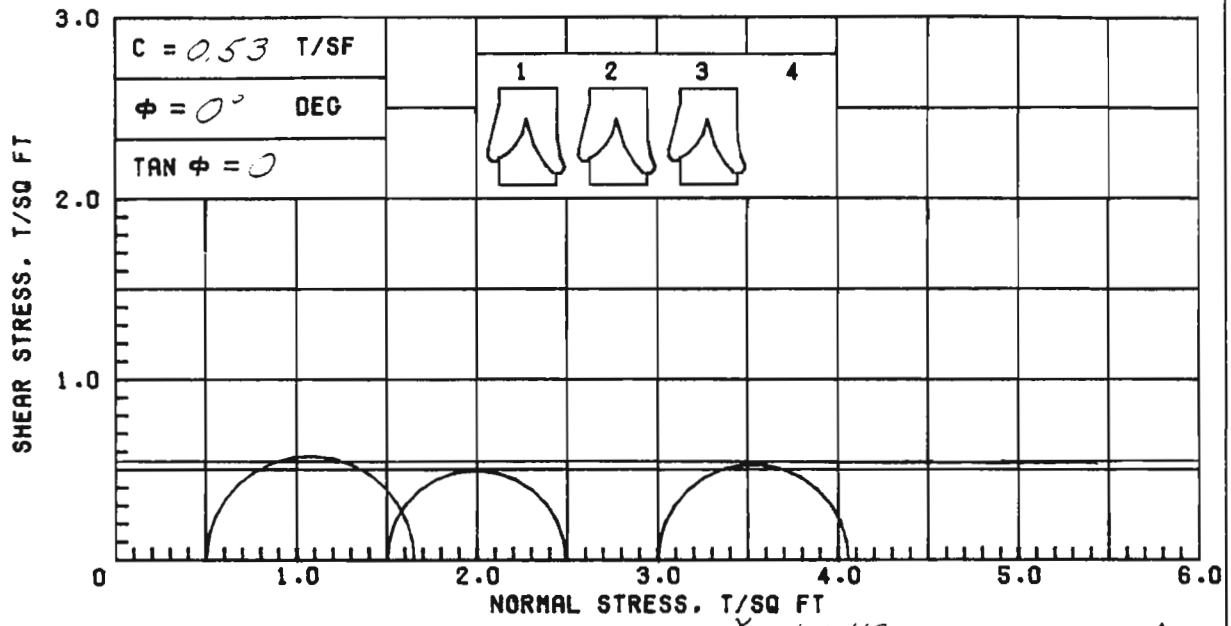
PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUG | SAMPLE NO. 15-B

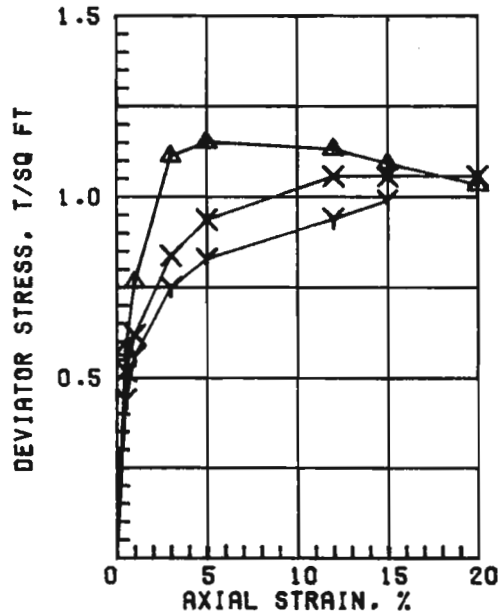
DEPTH/ELEV 56.2/-51.4 | TECH. KOC

LABORATORY USAE WES | DATE 13 SEP 84

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat.} = 112$ Avg.



SPECIMEN NO.		Δ1	Y2	X3	4
INITIAL	WATER CONTENT, %	40.1	45.2	43.9	43.1
	DRY DENSITY, PCF	80.0	76.2	77.2	
	SATURATION, %	97.7	100+	100+	
	VOID RATIO	1.108	1.212	1.184	
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	0.99	1.06	
TIME TO FAILURE, MIN.		10	55	39	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

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

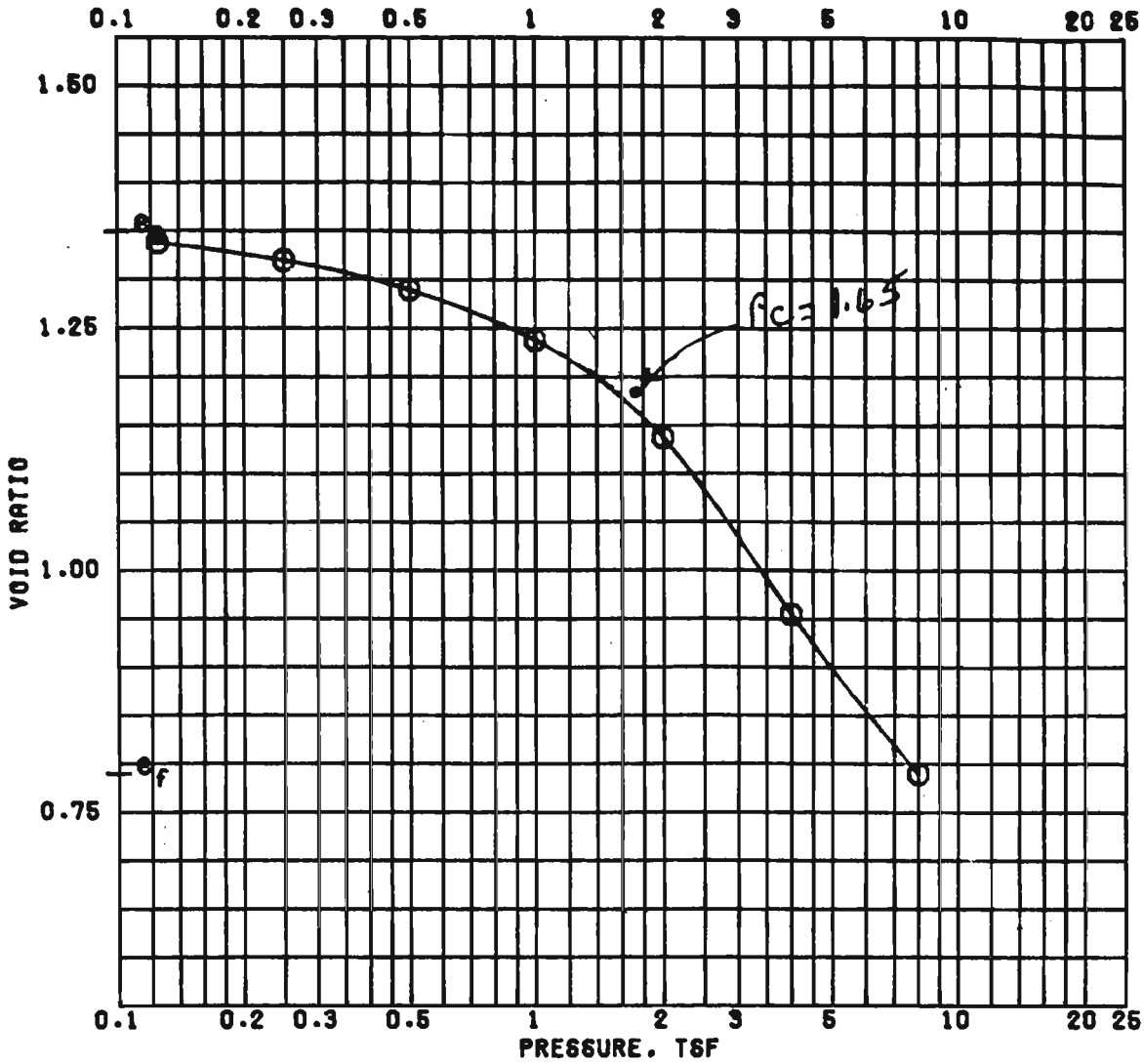
LL 93	PL 30	PI 63	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK. PONT. LA. & VIC. HURR. PROT.
ORLEANS PARISH OUTFALL CANALS

BORING NO. 3-LUG | SAMPLE NO. 16-B
DEPTH/ELEV 60.3/-55.5 | TECH. PJR
LABORATORY USAE WES | DATE 14 SEP 84

TRIAXIAL COMPRESSION TEST REPORT



	BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		
PRECONSOL. PRESSURE, TSF 1.65	WATER CONTENT, % 47.6	30.0
COMPRESSION INDEX	DRY DENSITY, PCF 71.8	94.3
TYPE SPECIMEN UNDISTURBED	SATURATION, % 95.4	100 +
DIA. IN 4.44 HT. IN 1.116	VOID RATIO 1.348	0.788
	BACK PRESSURE, TSF	

CLASSIFICATION PLASTIC CLAY (CH), GRAY; FINE SAND POCKETS; SHELL PARTICLES

LL	PL	PI
GS 2.70 (EST)	D_{10}	

PROJECT LK. PONT. LA. & VIC. HURR. PROT.

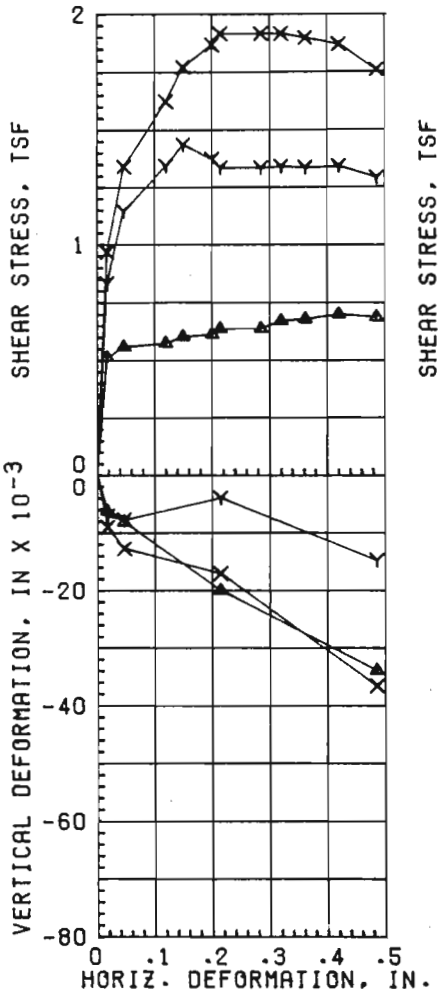
ORLEANS PARISH OUTFALL CANALS

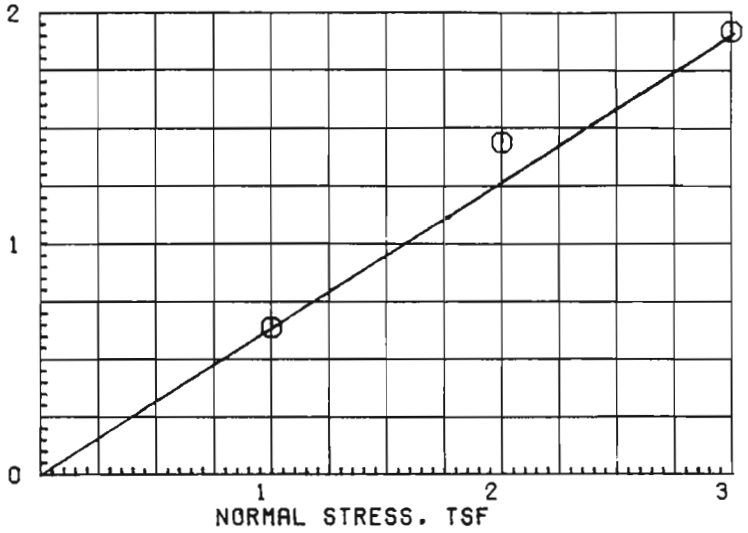
REMARKS

BORING NO. B-LUO SAMPLE NO. 14-C

DEPTH/ELEV 53.4/-48.6 DATE 25 SEP 84

CONSOLIDATION TEST REPORT





$\gamma_{sat.} = 124$

	TEST NO.	1 ▲	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	23.3	23.1	23.4	23.3
	VOID RATIO	0.705	0.710	0.723	
	SATURATION, %	89.1	87.7	87.5	
	DRY DENSITY, PCF	98.8	98.5	97.8	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		< 1	< 1	< 1	
FINAL	WATER CONTENT, %	24.5	24.7	24.8	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.64	1.44	1.92	
TIME TO FAILURE, MIN		1221	852	1221	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

$\Phi = 32°$

TAN $\Phi = 0.6249$

$C = 0$

TYPE SPECIMEN UNDISTURBED | 3.00 IN. SQUARE | 0.553 IN. THICK

CLASSIFICATION SILTY SAND (SM), GRAY

LL	PL	PI		GS 2.70 (EST)

REMARKS:

PROJECT LK PONT. LA. & VIC. HURR. PROT

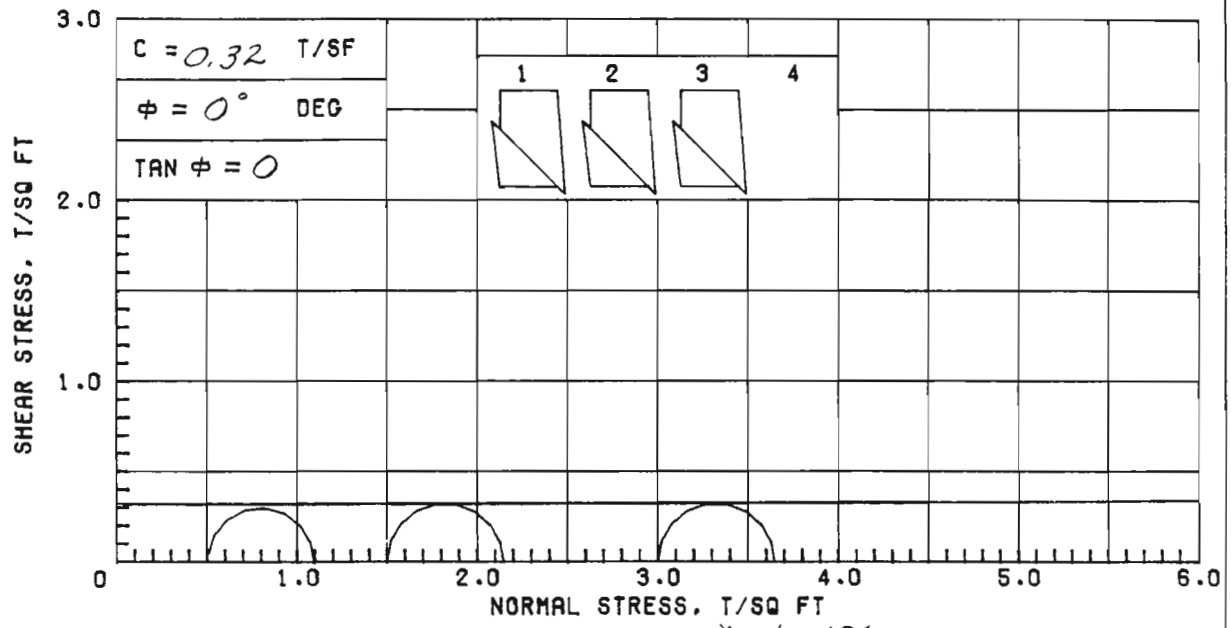
ORLEANS PARISH OUTFALL CANALS

BORING NO. 4-LUG | SAMPLE 5C

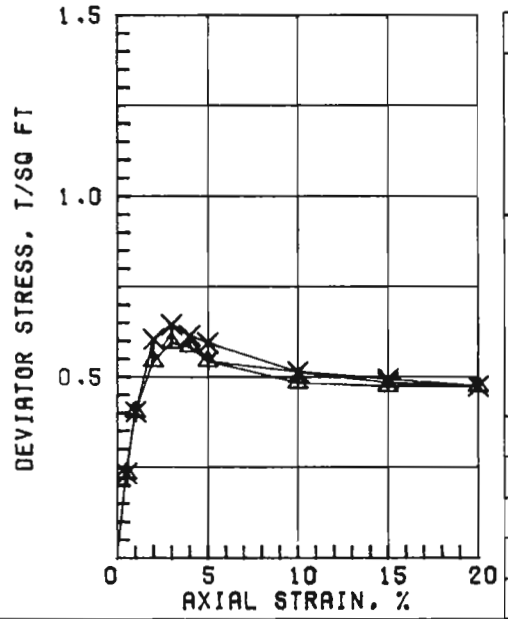
DEPTH/ELEV 16.7/-18.5 | DATE 08 JAN 85

DIRECT SHEAR TEST REPORT

124



$\gamma_{sat.} = 106$



SPECIMEN NO.		Δ1	Y2	X3	Avg. 4
INITIAL	WATER CONTENT, %	52.8	51.8	51.6	52.1
	DRY DENSITY, PCF	69.0	69.9	69.8	
	SATURATION, %	98.7	99.2	98.4	
	VOID RATIO	1.444	1.410	1.415	
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		0.59	0.64	0.64	
TIME TO FAILURE, MIN.		6	6	6	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

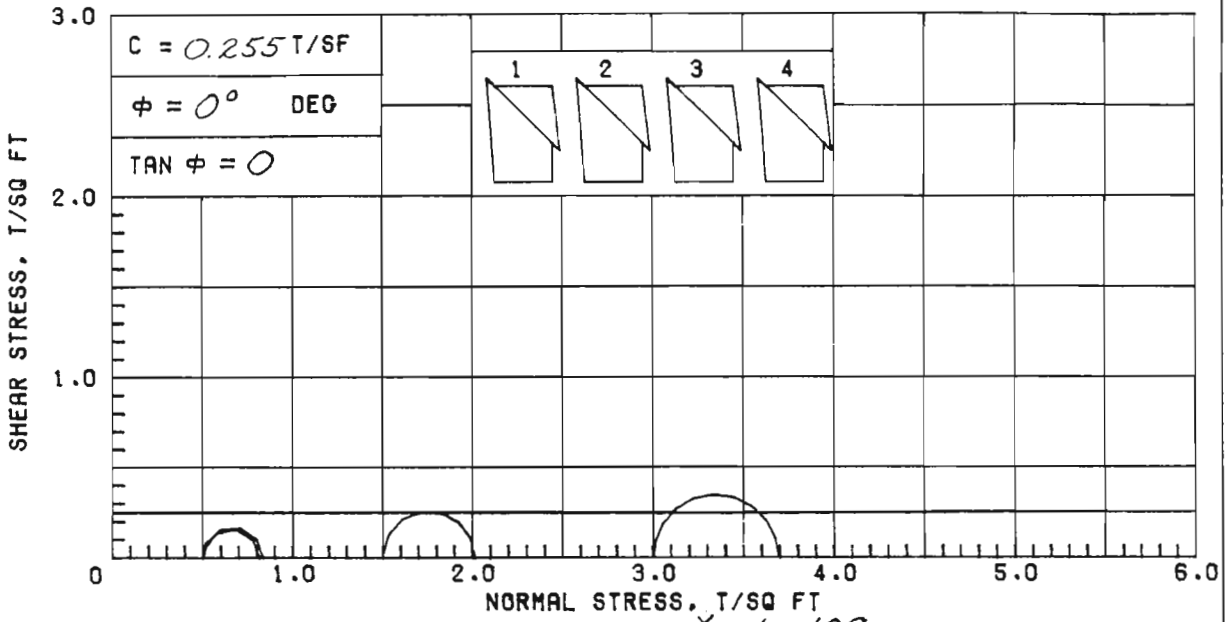
C = 0.32

CONTROLLED-STRAIN TEST

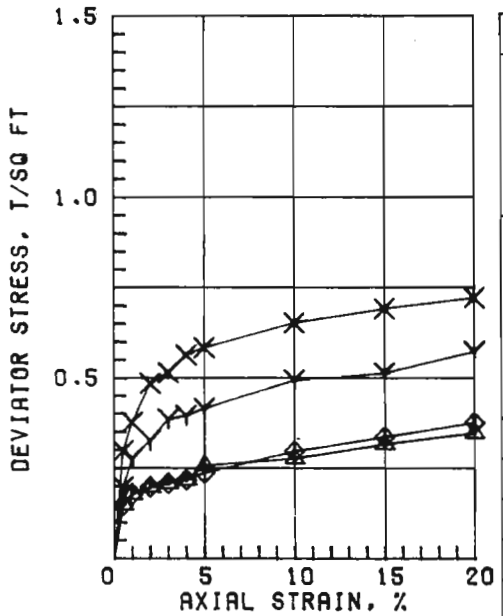
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; 1/2" SILT SEAM

LL 61	PL 18	PI 43	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LK PONT LA & VIC HURR PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 4-LUG	SAMPLE NO. 13-B
	DEPTH/ELEV 48.2/-50	TECH. KOC
	LABORATORY USAE WES	DATE 14 DEC 84
	TRIAXIAL COMPRESSION TEST REPORT	



$\gamma_{sat.} = 109$



SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	49.5	47.5	48.9	45.5
	DRY DENSITY, PCF	72.2	73.4	72.2	75.8
	SATURATION, %	100+	99.0	98.9	100+
	VOID RATIO	1.336	1.296	1.336	1.222
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	0.5
MAX. DEV. STRESS, TSF		0.32	0.51	0.69	0.34
TIME TO FAILURE, MIN.		30	30	30	30
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.41	1.41	1.41	1.41
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

Avg 47

C = 0.25

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY & BROWN MOTTLED

LL 115	PL 25	PI 90	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK PONT LA & VIC HURR PROT

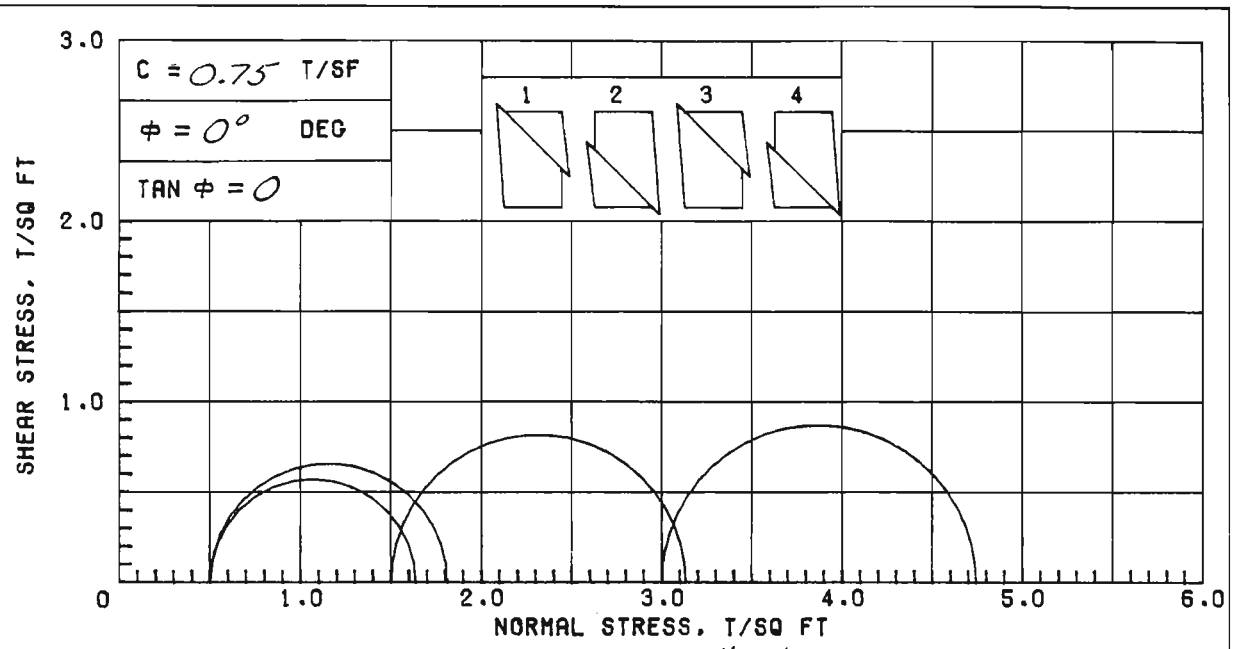
ORLEANS PARISH OUTFALL CANALS

BORING NO. 4-LUG | SAMPLE NO. 15-B

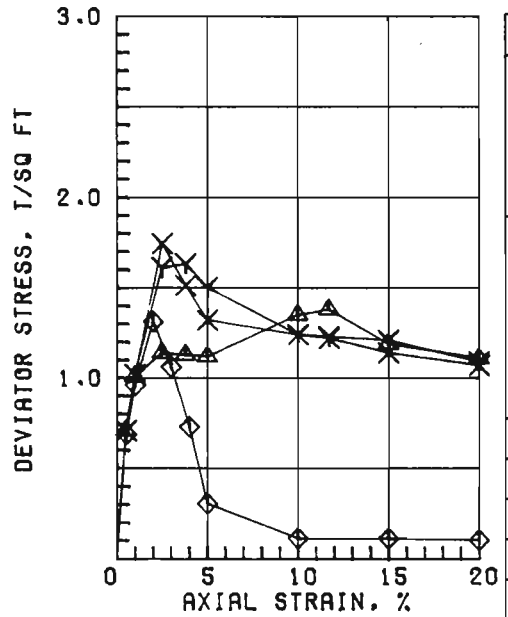
DEPTH/ELEV 56.3/-58.1 | TECH. KOC

LABORATORY USAE WES | DATE 14 DEC 84

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat.} = 118$



SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	35.4	35.9	36.4	36.5
	DRY DENSITY, PCF	87.3	86.7	87.3	84.6
	SATURATION, %	100+	100+	100+	99.3
	VOID RATIO	0.931	0.945	0.932	0.992
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	0.5
MAX. DEV. STRESS, TSF		1.14	1.63	1.74	1.31
TIME TO FAILURE, MIN.		5	8	5	4
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	1.39
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

Avg 36.0

C = 0.75

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), BROWN

LL 73	PL 24	PI 49	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

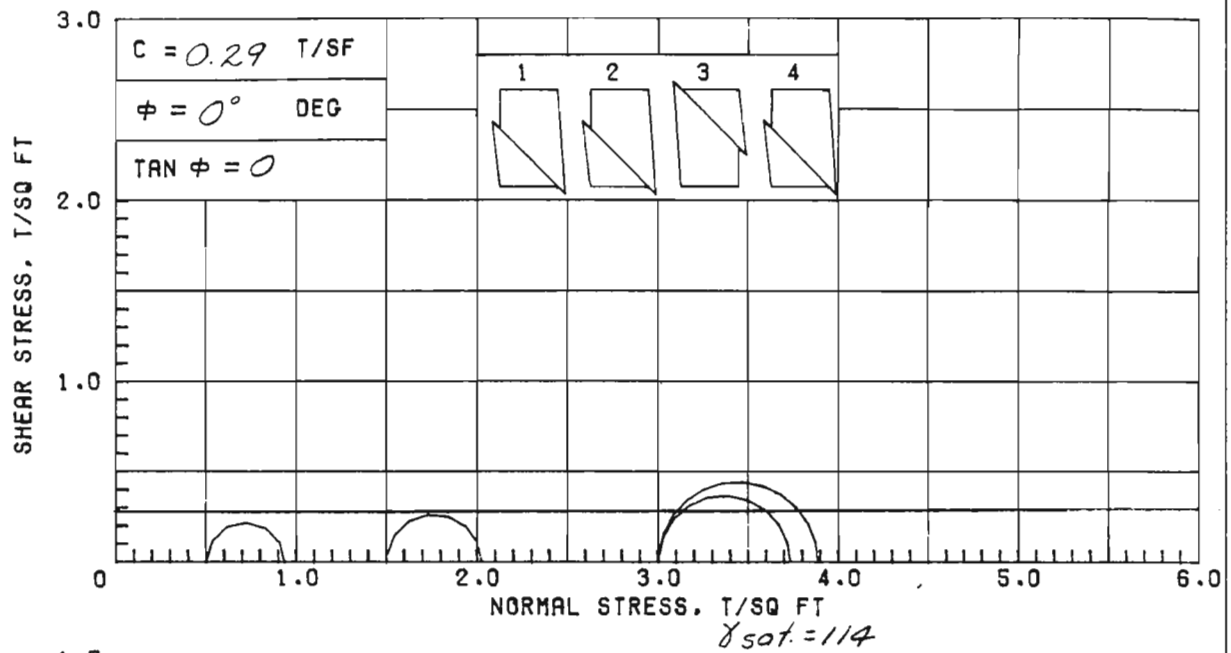
PROJECT LK PONT LA & VIC HURR PROT
ORLEANS PARISH OUTFALL CANALS

BORING NO. 4-LUG | SAMPLE NO. 17-C

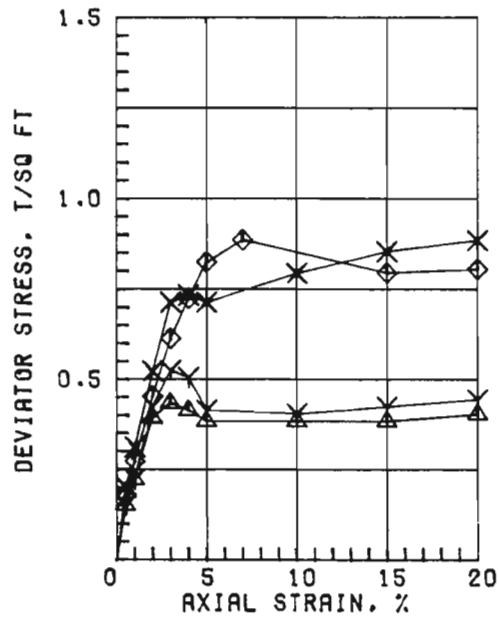
DEPTH/ELEV 65.2/-67.0 | TECH. KOC

LABORATORY USAE WES | DATE 17 DEC 84

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{sat.} = 114$



SPECIMEN NO.		△1	Y2	X3	◇4
INITIAL	WATER CONTENT, %	44.4	44.3	35.5	34.6
	DRY DENSITY, PCF	77.5	77.2	85.2	84.7
	SATURATION, %	100+	100+	98.0	94.4
	VOID RATIO	1.175	1.184	0.978	0.990
BEFORE SHEAR	WATER CONTENT, %				
	DRY DENSITY, PCF				
	SATURATION, %				
	VOID RATIO				
	BACK PRESS., TSF				
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	3.0
MAX. DEV. STRESS, TSF		0.43	0.52	0.73	0.89
TIME TO FAILURE, MIN.		6	6	8	14
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.40	1.40
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00

Avg 39

C = 0.29

CONTROLLED-STRAIN TEST

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

LL 54	PL 19	PI 35	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK PONT LA & VIC HURR PROT

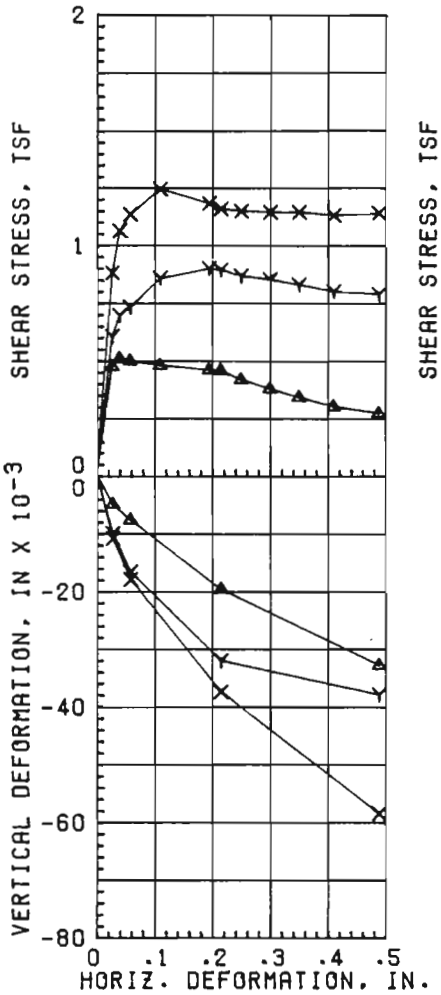
ORLEANS PARISH OUTFALL CANALS

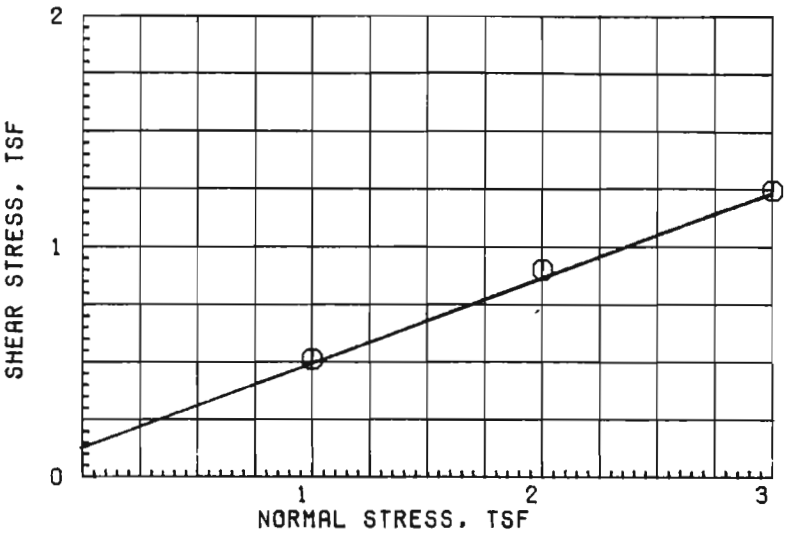
BORING NO. 4-LUG | SAMPLE NO. 23-C

DEPTH/ELEV 89.2/-91.0 | TECH. KOC

LABORATORY USAE WES | DATE 17 DEC 84

TRIAXIAL COMPRESSION TEST REPORT





$\gamma_{sat.} = 115$

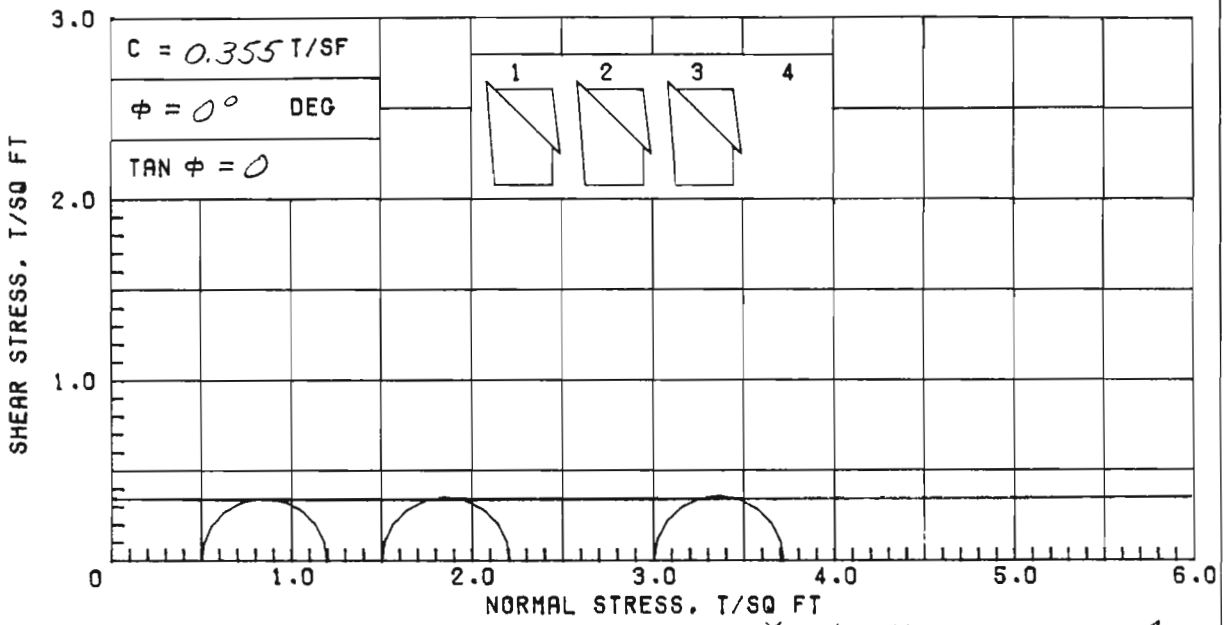
TEST NO.		1 △	2 Y	3 X	Avg.
INITAL	WATER CONTENT, %	34.5	35.9	34.5	35.0
	VOID RATIO	1.005	1.020	0.987	
	SATURATION, %	92.8	95.1	94.5	
	DRY DENSITY, PCF	84.0	83.4	84.8	
VOID RATIO AFTER CONSOL					
FIFTY PERCENT CONSOL, MIN		2	< 1	< 1	
FINAL	WATER CONTENT, %	35.0	31.9	31.1	
	VOID RATIO				
	SATURATION, %				
NORMAL STRESS, TSF		1.0	2.0	3.0	
MAXIMUM SHEAR STRESS, TSF		0.51	0.90	1.25	
TIME TO FAILURE, MIN		226	1101	622	
RATE OF STRAIN, IN/MIN		.00018	.00018	.00018	
ULTIMATE SHEAR STRESS, TSF					

Φ = 20°

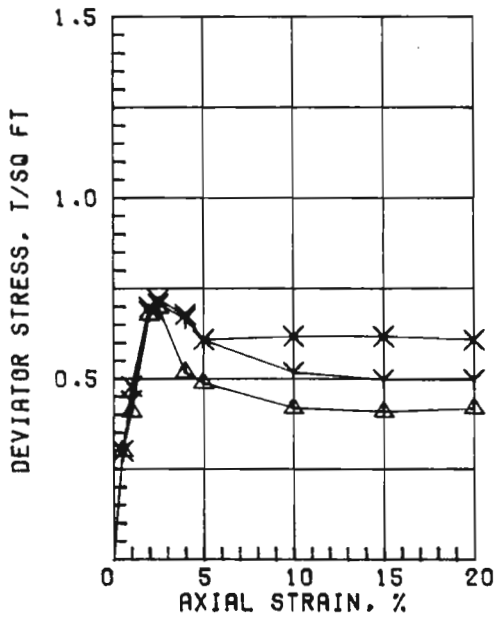
TAN Φ = 0.3640

C = 0.13

TYPE SPECIMEN UNDISTURBED			3.00 IN. SQUARE	0.553 IN. THICK
CLASSIFICATION CLAY (CL), GRAY; SILT POCKETS				
LL 42	PL 17	PI 25		GS 2.70 (EST)
REMARKS;		PROJECT LK PONT. LA. & VIC. HURR. PROT		
		ORLEANS PARISH OUTFALL CANALS		
		BORING NO. 4-LUG		SAMPLE 24C
		DEPTH/ELEV 93.2/-95		DATE 09 JAN 85
		DIRECT SHEAR TEST REPORT		



$\gamma_{sat.} = 111$ Avg.



SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	44.0	42.8	44.1	43.6
	DRY DENSITY, PCF	77.2	78.2	76.3	
	SATURATION, %	100+	100+	98.5	
	VOID RATIO	1.184	1.155	1.209	
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		0.70	0.71	0.72	
TIME TO FAILURE, MIN.		5	5	5	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

C = 0.35

CONTROLLED-STRAIN TEST

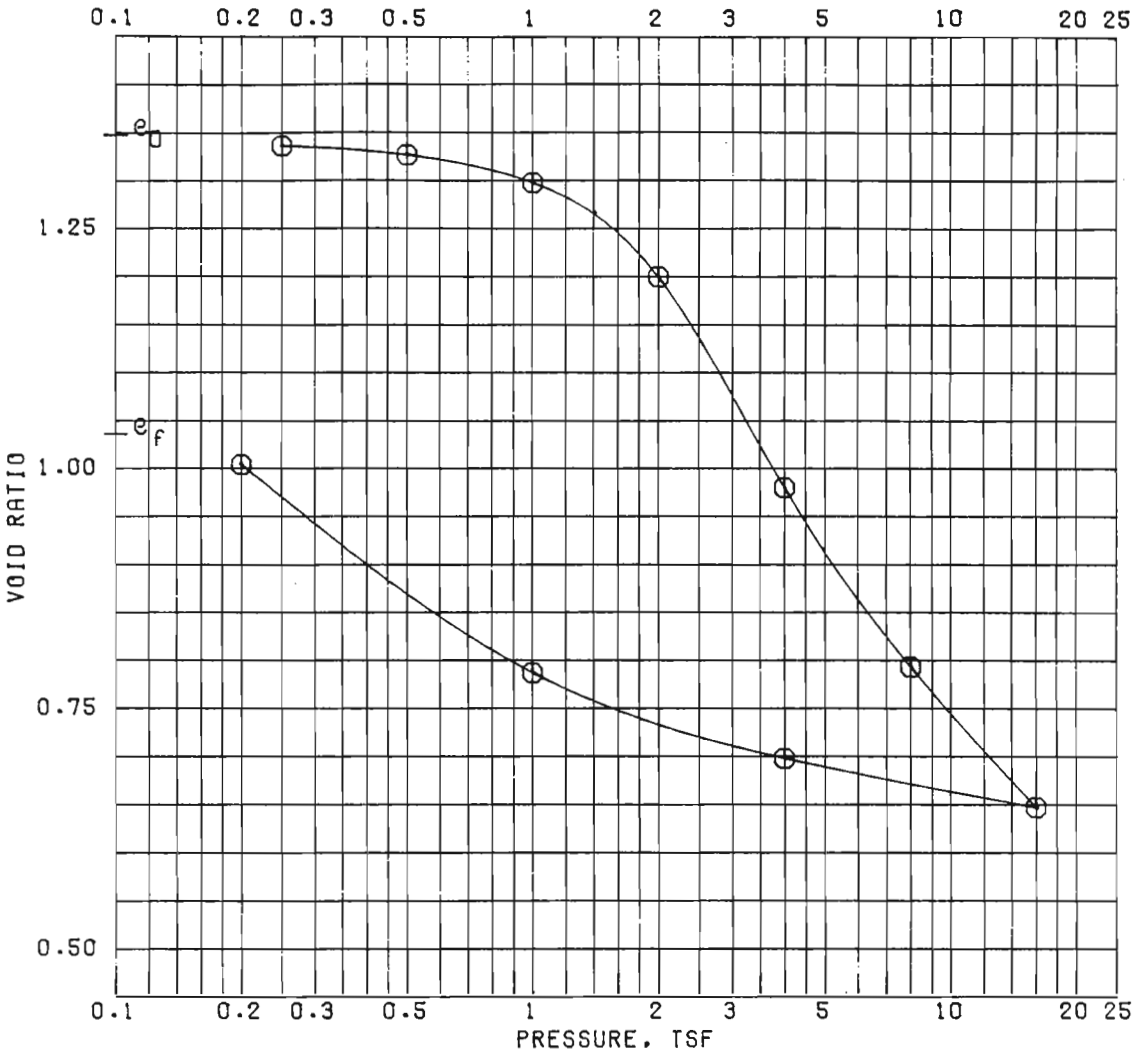
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; ORGANIC MATERIAL

LL 63	PL 19	PI 44	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

PROJECT LK PONT LA & VIC HURR PROT
ORLEANS PARISH OUTFALL CANALS
BORING NO. 4-LUG | SAMPLE NO. 25-B
DEPTH/ELEV 95.7/-97.5 | TECH. KOC
LABORATORY USAE WES | DATE 18 DEC 84

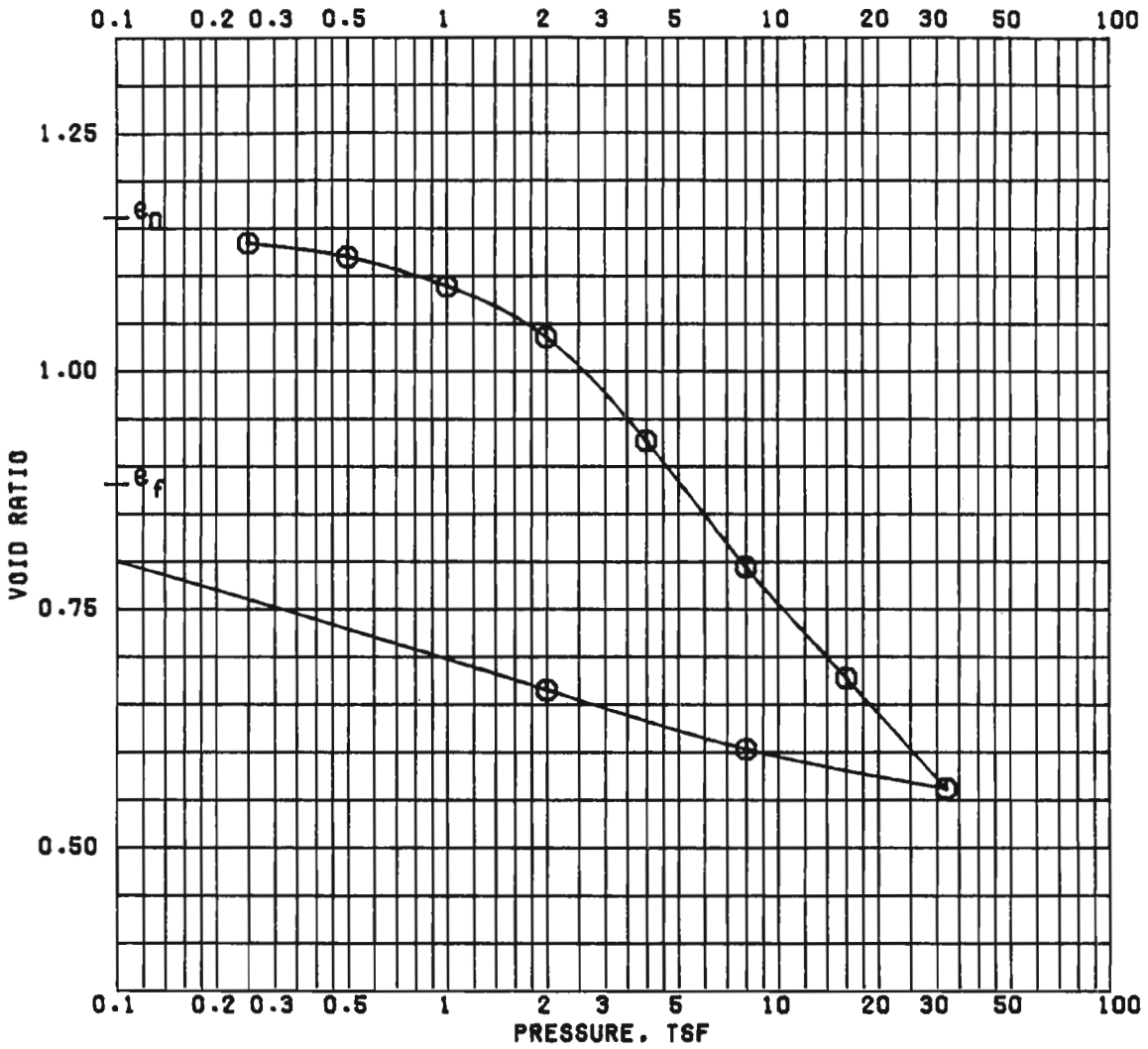
TRIAXIAL COMPRESSION TEST REPORT



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	48.2	38.5
PRECONSOL. PRESSURE, TSF	1.80	DRY DENSITY, PCF	71.9	82.9
COMPRESSION INDEX	0.77	SATURATION, %	96.6	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.346	1.034
DIA. IN 4.44	HT. IN 1.113	BACK PRESSURE, TSF		

CLASSIFICATION	PLASTIC CLAY (CH), GRAY		
LL	PL	PI	PROJECT LK PONT LA & VIC HURR PROT
GS 2.70 (EST)	D_{10}		ORLEANS PARISH OUTFALL CANALS
REMARKS		BORING NO. 4-LUG	SAMPLE NO. 13-C
		DEPTH/ELEV 48.8/-50.6	DATE 18 DEC 84

CONSOLIDATION TEST REPORT



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	44.5	32.7
PRECONSOL. PRESSURE, TSF	2.3	DRY DENSITY, PCF	78.0	89.7
COMPRESSION INDEX	0.54	SATURATION, %	100 +	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.160	0.879
DIA. IN 4.44	HT. IN 1.117	BACK PRESSURE, TSF		

CLASSIFICATION CLAY (CL), GRAY

LL	PL	PI
GS 2.70 (EST)	D_{10}	

PROJECT LK PONT. LA. & VIC. HURR. PROT

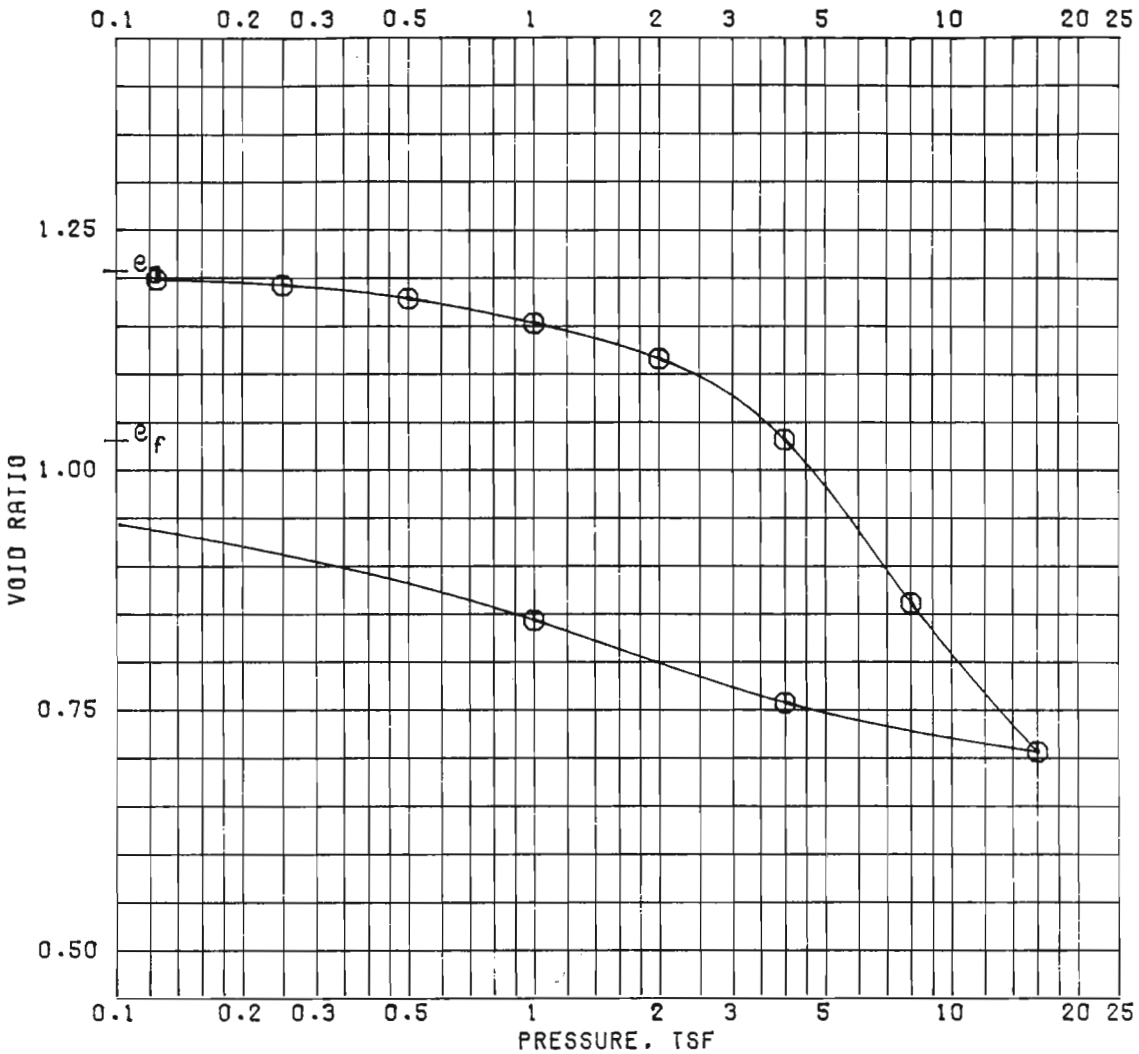
ORLEANS PARISH OUTFALL CANALS

REMARKS

BORING NO. 4-LUO SAMPLE NO. 23-B

DEPTH/ELEV 88.4/-90.2 DATE 05 DEC 84

CONSOLIDATION TEST REPORT



			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	43.8	38.9
PRECONSOL. PRESSURE, TSF	3.70	DRY DENSITY, PCF	76.4	83.1
COMPRESSION INDEX	0.58	SATURATION, %	98.1	100 +
TYPE SPECIMEN	UNDISTURBED	VOID RATIO	1.205	1.030
DIA. IN 4.44	HT. IN 1.128	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY

LL	PL	PI

PROJECT LK PONT LA & VIC HURR PROT

ORLEANS PARISH OUTFALL CANALS

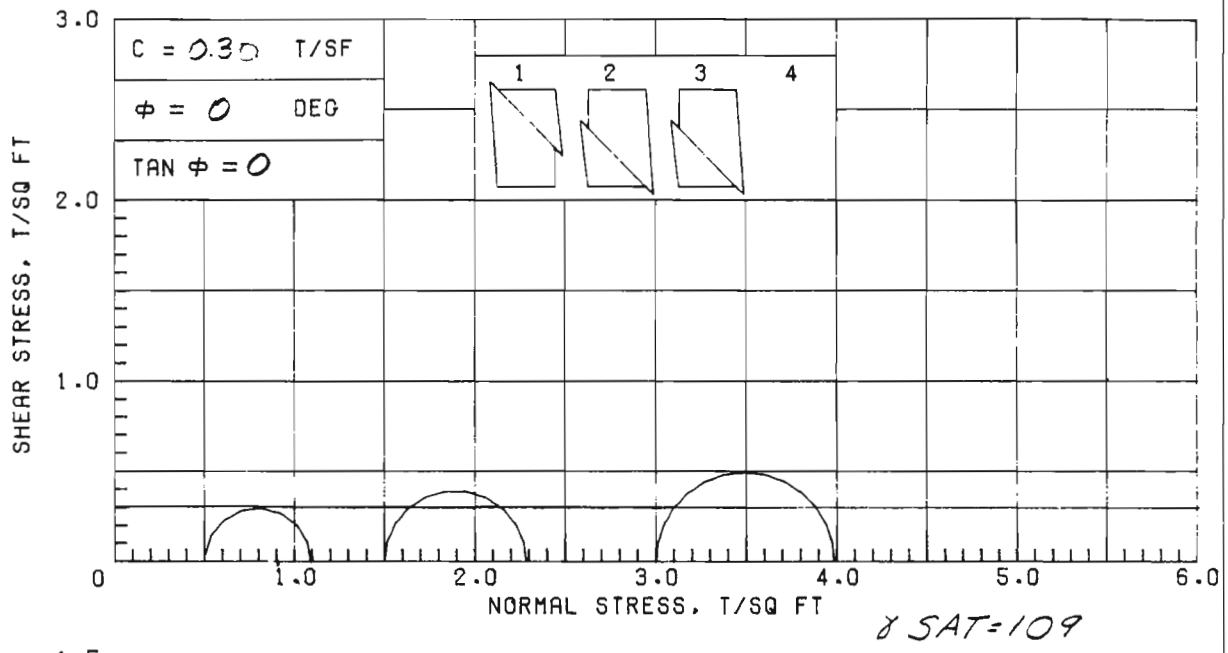
GS 2.70 (EST) D_{10}

REMARKS

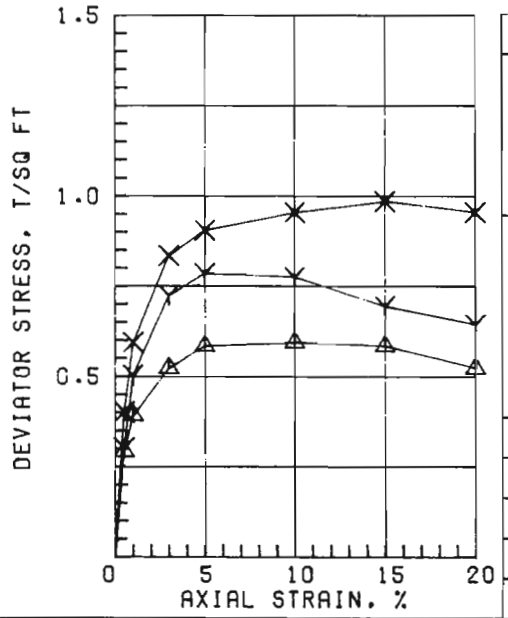
BORING NO. 4-LUG SAMPLE NO. 27-C

DEPTH/ELEV 104.8/-106.6 DATE 12 DEC 84

CONSOLIDATION TEST REPORT



γ SAT=109



SPECIMEN NO.		Δ1	Y2	X3	4
INITIAL	WATER CONTENT, %	43.9	44.3	40.3	
	DRY DENSITY, PCF	74.0	73.0	75.7	
	SATURATION, %	92.8	91.4	88.6	
	VOID RATIO	1.278	1.309	1.228	
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		0.59	0.78	0.99	
TIME TO FAILURE, MIN.		20	10	30	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

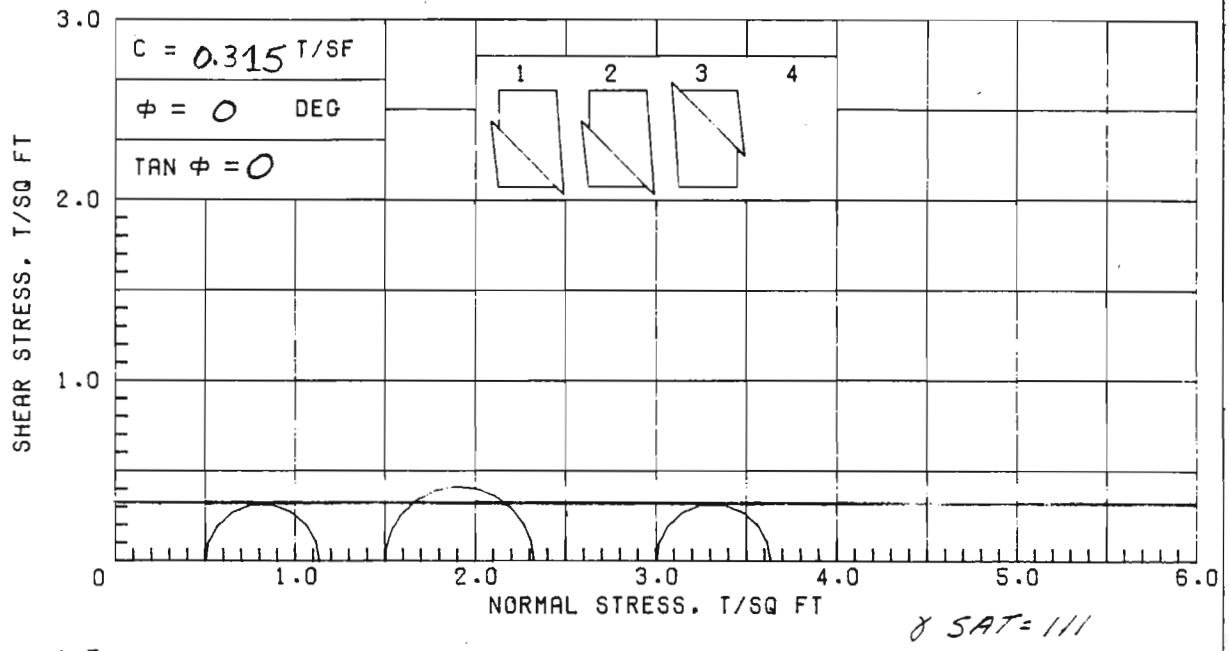
AVG 42.8

CONTROLLED-STRAIN TEST

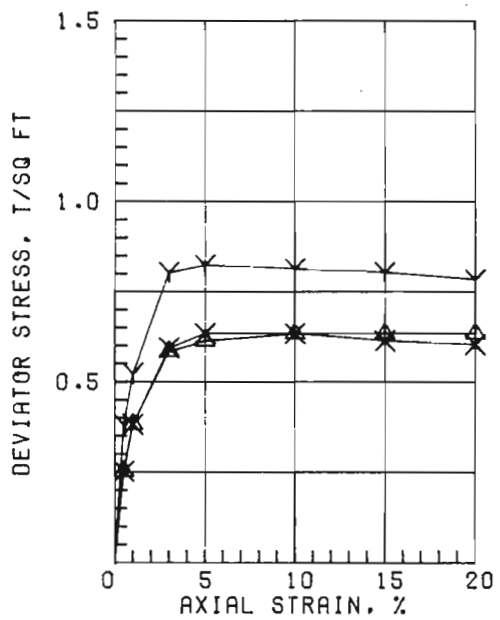
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT POCKETS

LL 78	PL 23	PI 55	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 5-LUG	SAMPLE NO. 1-C
	DEPTH/ELEV 2.3/3.2	TECH. KOC
	LABORATORY USAE WES	DATE 27 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γ SAT = 111



SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	38.6	37.8	42.6	
	DRY DENSITY, PCF	75.9	81.3	74.4	
	SATURATION, %	85.3	95.2	90.9	
	VOID RATIO	1.222	1.072	1.266	
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		0.63	0.82	0.63	
TIME TO FAILURE, MIN.		20	10	10	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.40	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

AVG. 39.7

CONTROLLED-STRAIN TEST

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

LL 63	PL 22	PI 41	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

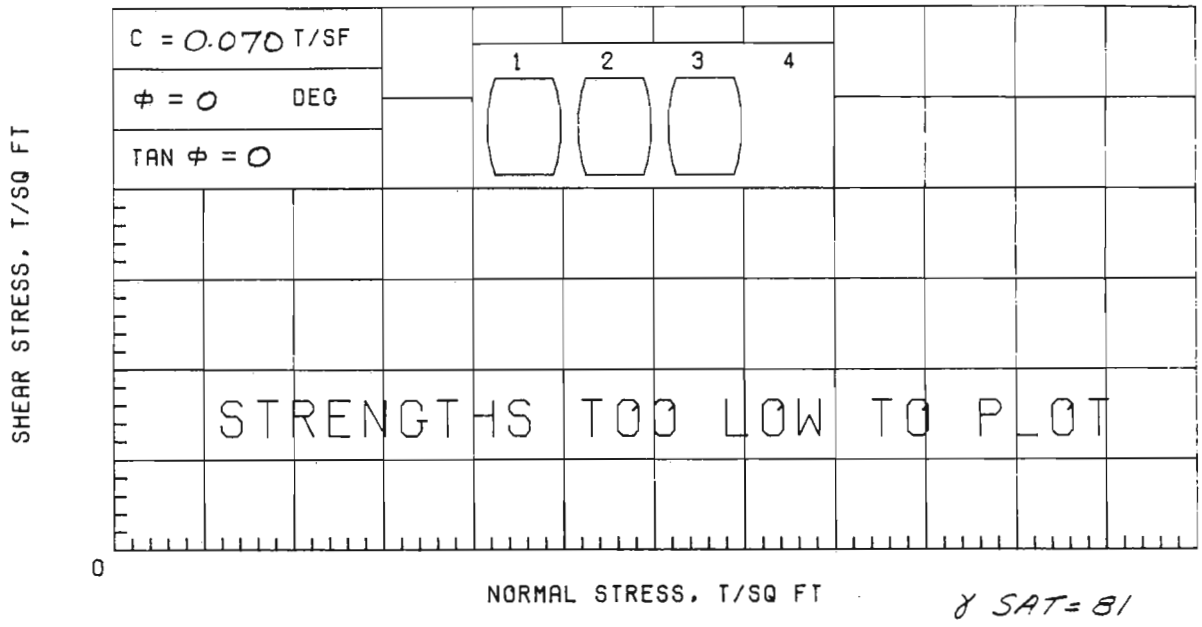
PROJECT LAKE PONT. LA. & VIC. HURR. PROT
ORLEANS PARISH OUTFALL CANALS

BORING NO. S-LUG | SAMPLE NO. 2-B

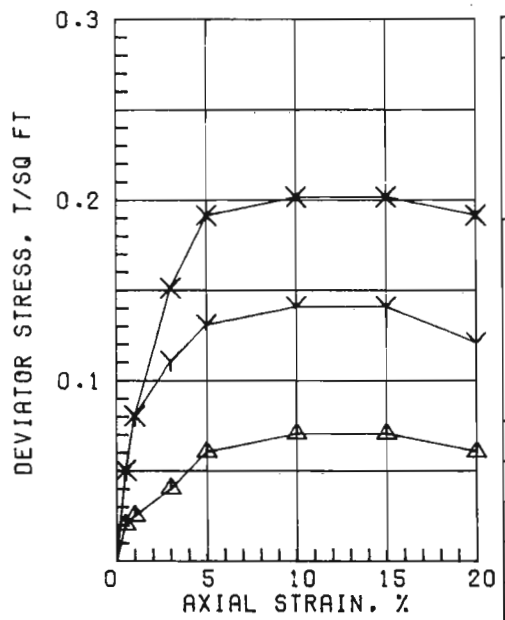
DEPTH/ELEV 6.2/-07 | TECH. KOC

LABORATORY USAE WES | DATE 27 JAN 86

TRIAXIAL COMPRESSION TEST REPORT



γ SAT = 81



SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	167.4	147.1	173.9	
	DRY DENSITY, PCF	28.2	32.1	27.3	
	SATURATION, %	91.0	93.4	90.7	
	VOID RATIO	4.968	4.253	5.176	
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		0.07	0.14	0.20	
TIME TO FAILURE, MIN.		20	20	20	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

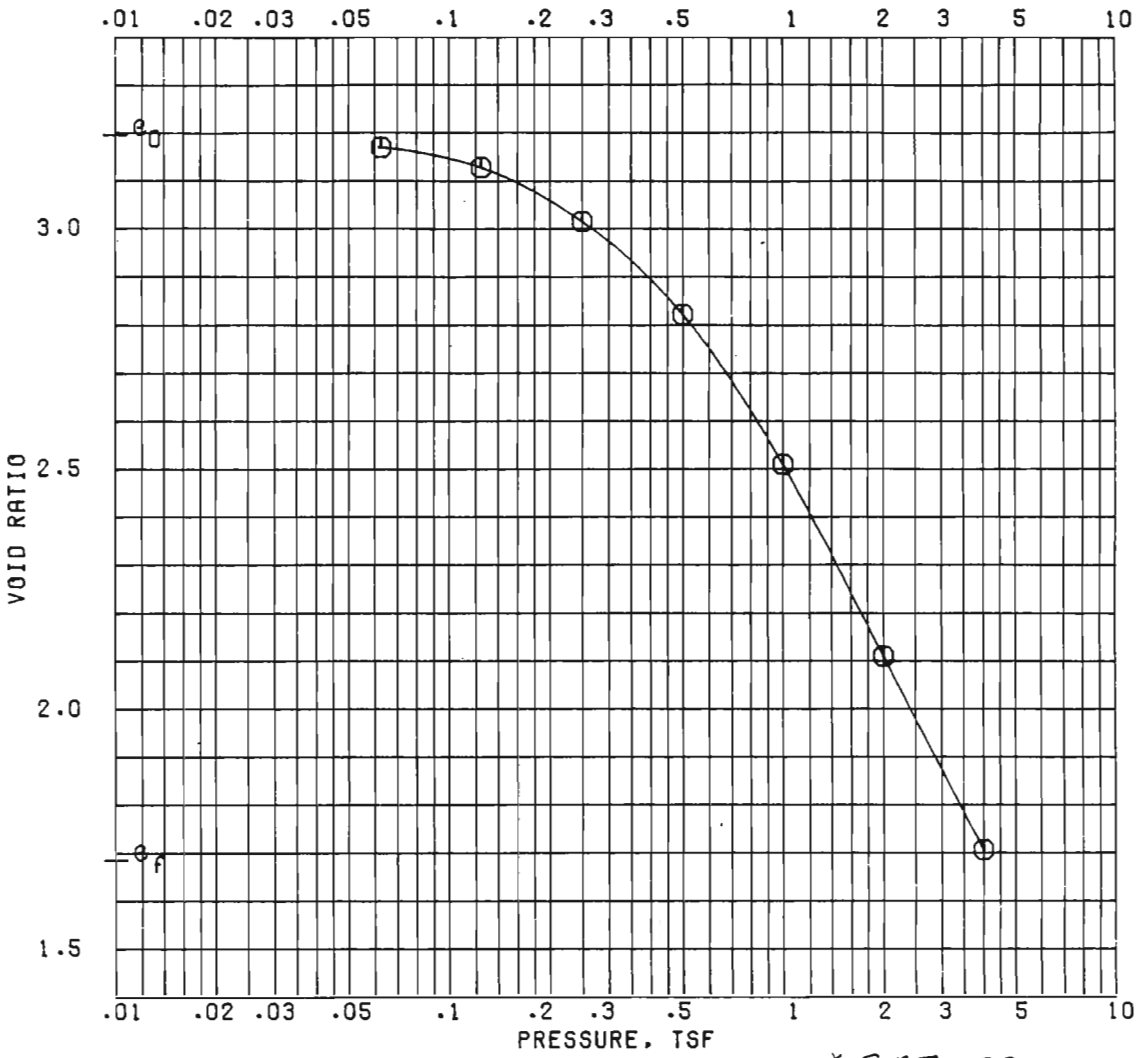
AVG. 162.8

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), BROWN; ROOTS TO 1/2"

LL 132	PL 35	PI 97	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 5-LUG	SAMPLE NO. 3-B
	DEPTH/ELEV 9.6 / -4.1	TECH. KOC
	LABORATORY USAE WES	DATE 28 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



δ SAT = 88

	BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		
PRECONSOL. PRESSURE, TSF 0.42		
COMPRESSION INDEX 1.33		
TYPE SPECIMEN UNDISTURBED		
DIA. IN 4.44 HT. IN 1.120		
WATER CONTENT, %	112.0	62.6
DRY DENSITY, PCF	40.2	62.9
SATURATION, %	94.8	100 +
VOID RATIO	3.192	1.681
BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), BROWN; ROOTLETS

LL PL . PI

GS 2.70 (EST) D_{10}

REMARKS

PROJECT LAKE PONT. LA. & VIC. HURR. PROT

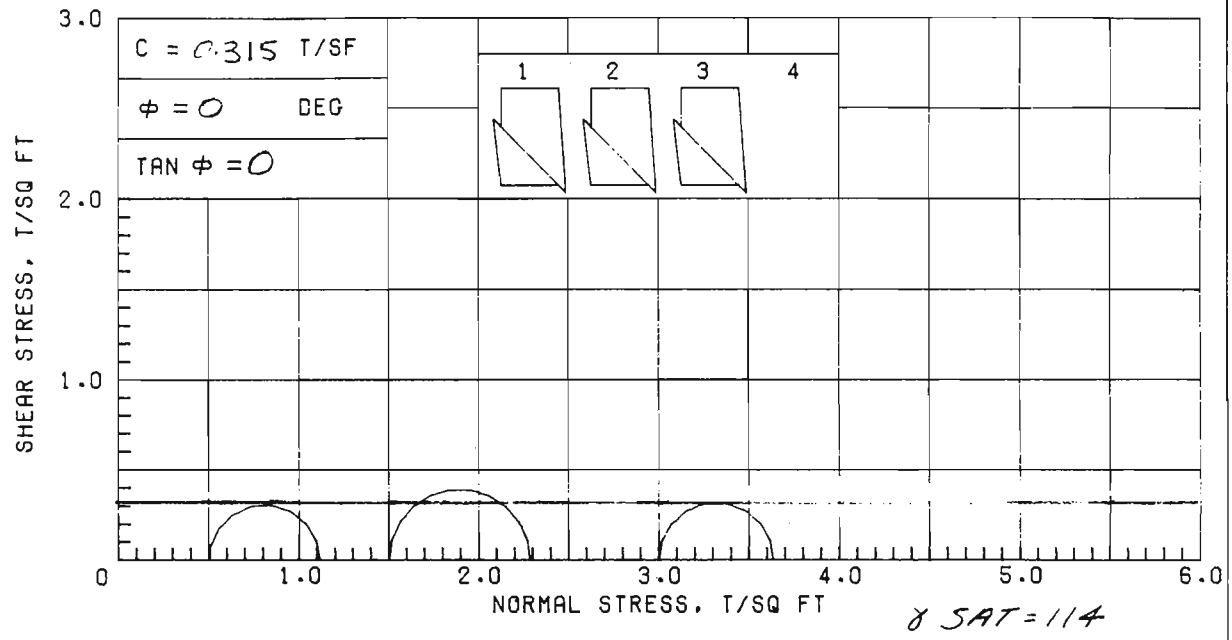
ORLEANS PARISH OUTFALL CANALS

BORING NO. 5-LUG SAMPLE NO. 3-C

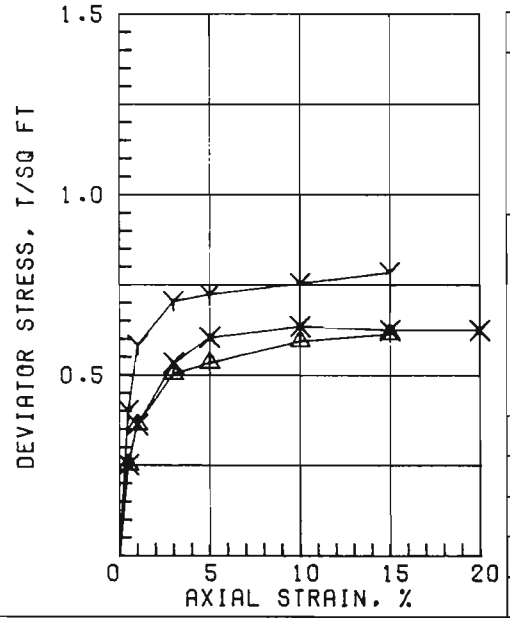
DEPTH/ELEV 10.5 / -5.0 DATE 13 FEB 86

CONSOLIDATION TEST REPORT

SHEET 1 OF 8



γ SAT = 114



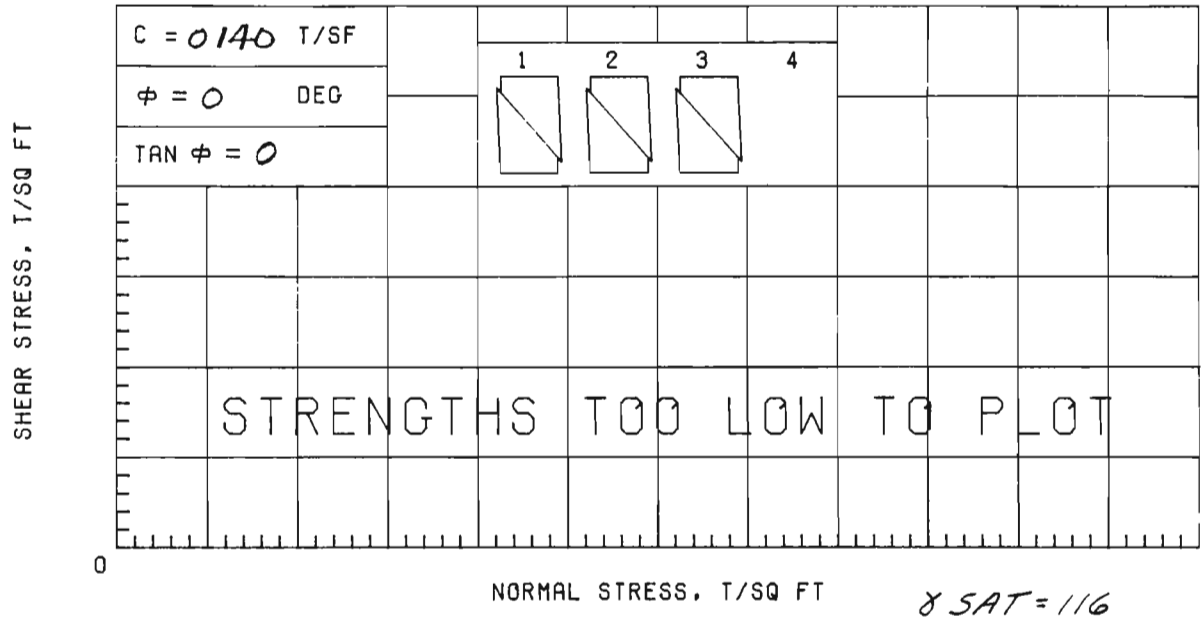
SPECIMEN NO.		Δ1	Y2	X3	4	AVG.
INITIAL	WATER CONTENT, %	37.2	34.9	40.6		37.6
	DRY DENSITY, PCF	81.5	85.0	78.0		
	SATURATION, %	93.9	95.9	94.5		
	VOID RATIO	1.069	0.982	1.160		
BEFORE SHEAR	WATER CONTENT, %					
	DRY DENSITY, PCF					
	SATURATION, %					
	VOID RATIO					
	BACK PRESS., TSF					
MIN PRIN. STRESS, TSF		0.5	1.5	3.0		
MAX. DEV. STRESS, TSF		0.61	0.78	0.63		
TIME TO FAILURE, MIN.		30	30	20		
RATE OF STRAIN INCR.%						
INITIAL DIAMETER, IN.		1.39	1.40	1.39		
INITIAL HEIGHT, IN.		3.00	3.00	3.00		

CONTROLLED-STRAIN TEST

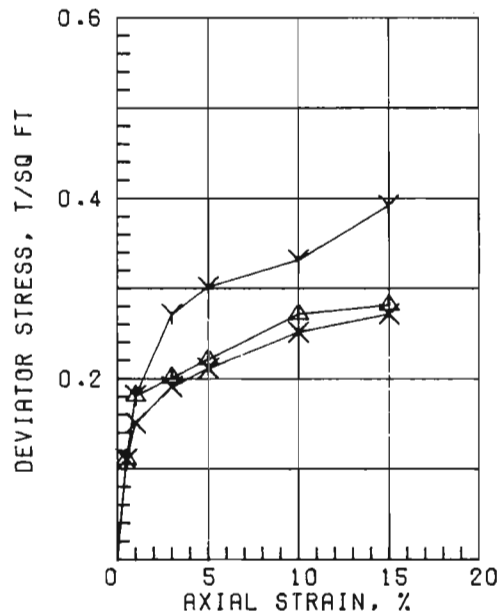
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT SEAMS

LL 60	PL 18	PI 42	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 6-LUG	SAMPLE NO. 2-B
	DEPTH/ELEV 6.0 / +0.3	TECH. KOC
	LABORATORY USAE WES	DATE 29 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γ SAT = 116



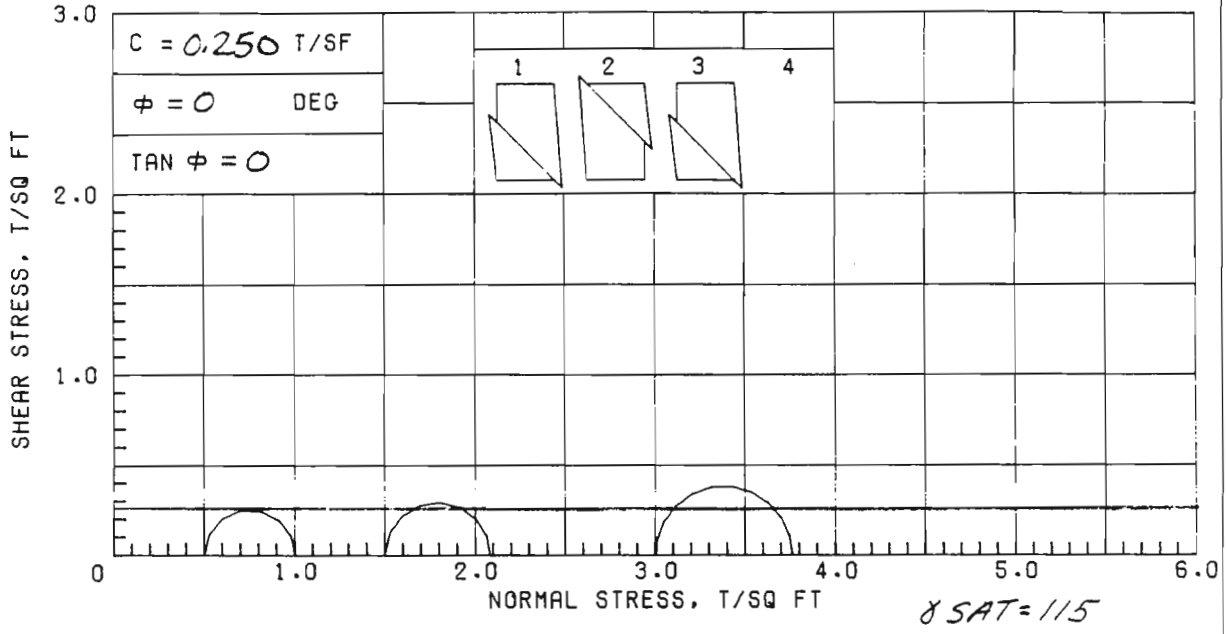
SPECIMEN NO.		△1	Y2	X3	4	AVG.
INITIAL	WATER CONTENT, %	33.0	32.7	33.3		33.0
	DRY DENSITY, PCF	84.4	86.0	85.9		
	SATURATION, %	89.4	92.0	93.5		
	VOID RATIO	0.996	0.960	0.962		
BEFORE SHEAR	WATER CONTENT, %					
	DRY DENSITY, PCF					
	SATURATION, %					
	VOID RATIO					
	BACK PRESS., TSF					
MIN PRIN. STRESS, TSF		0.5	1.5	3.0		
MAX. DEV. STRESS, TSF		0.28	0.39	0.27		
TIME TO FAILURE, MIN.		30	30	30		
RATE OF STRAIN INCR.%						
INITIAL DIAMETER, IN.		1.40	1.40	1.40		
INITIAL HEIGHT, IN.		3.00	3.00	3.00		

CONTROLLED-STRAIN TEST

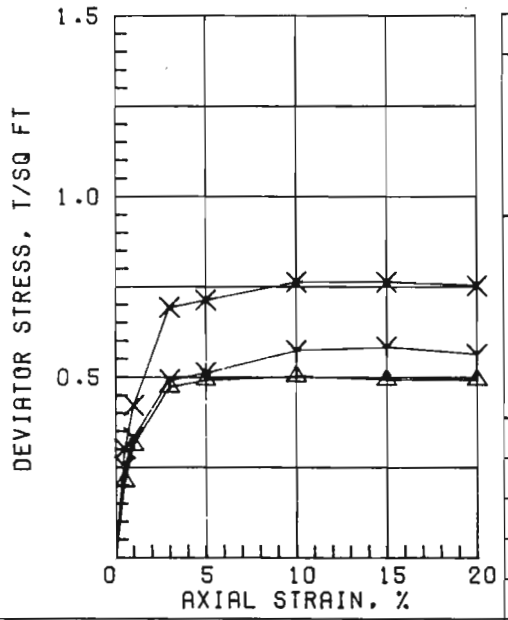
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT POCKETS; FRIABLE

LL 48	PL 17	PI 31	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
LIMITS ON MIXTURE OF MATERIAL.	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 6-LUG	SAMPLE NO. 3-C
	DEPTH/ELEV 10.6 / -4.3	TECH. KOC
	LABORATORY USAE WES	DATE 29 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γ SAT = 115



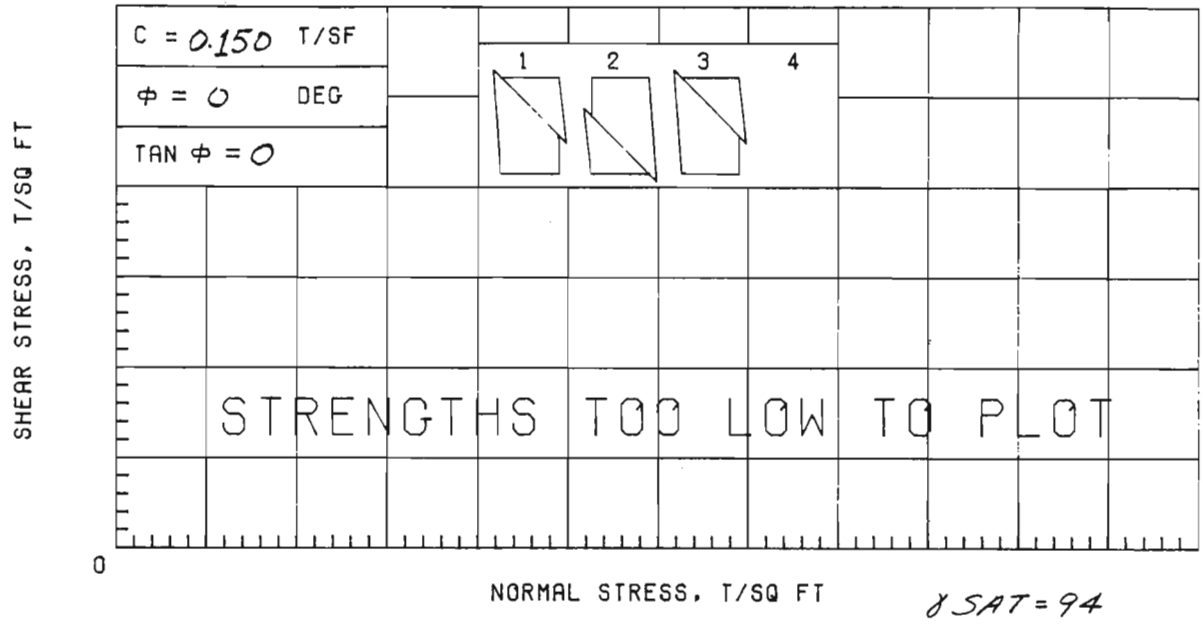
SPECIMEN NO.		△1	Y2	X3	4	AVG.
INITIAL	WATER CONTENT, %	37.5	38.1	33.6		36.4
	DRY DENSITY, PCF	81.1	82.2	87.1		
	SATURATION, %	93.9	98.0	97.1		
	VOID RATIO	1.078	1.050	0.934		
BEFORE SHEAR	WATER CONTENT, %					
	DRY DENSITY, PCF					
	SATURATION, %					
	VOID RATIO					
	BACK PRESS., TSF					
MIN PRIN. STRESS, TSF		0.5	1.5	3.0		
MAX. DEV. STRESS, TSF		0.50	0.58	0.76		
TIME TO FAILURE, MIN.		20	30	20		
RATE OF STRAIN INCR,%						
INITIAL DIAMETER, IN.		1.40	1.40	1.40		
INITIAL HEIGHT, IN.		3.00	3.00	3.00		

CONTROLLED-STRAIN TEST

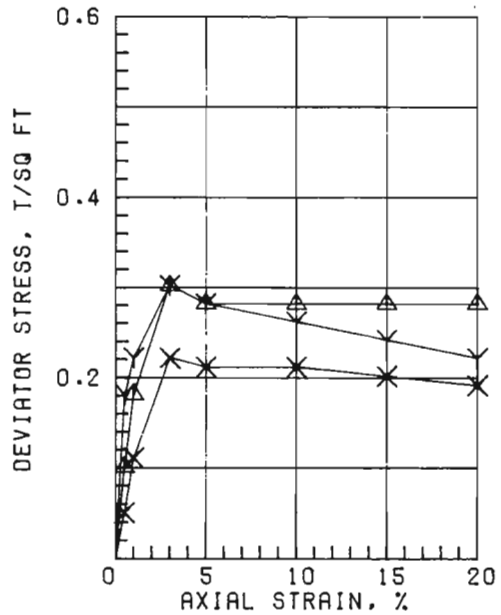
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; SILT POCKETS; FRIABLE

LL 61	PL 20	PI 41	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 6-LUG	SAMPLE NO. 4-C
	DEPTH/ELEV 14.4 / -8.1	TECH. KOC
	LABORATORY USAE WES	DATE 30 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γSAT = 94



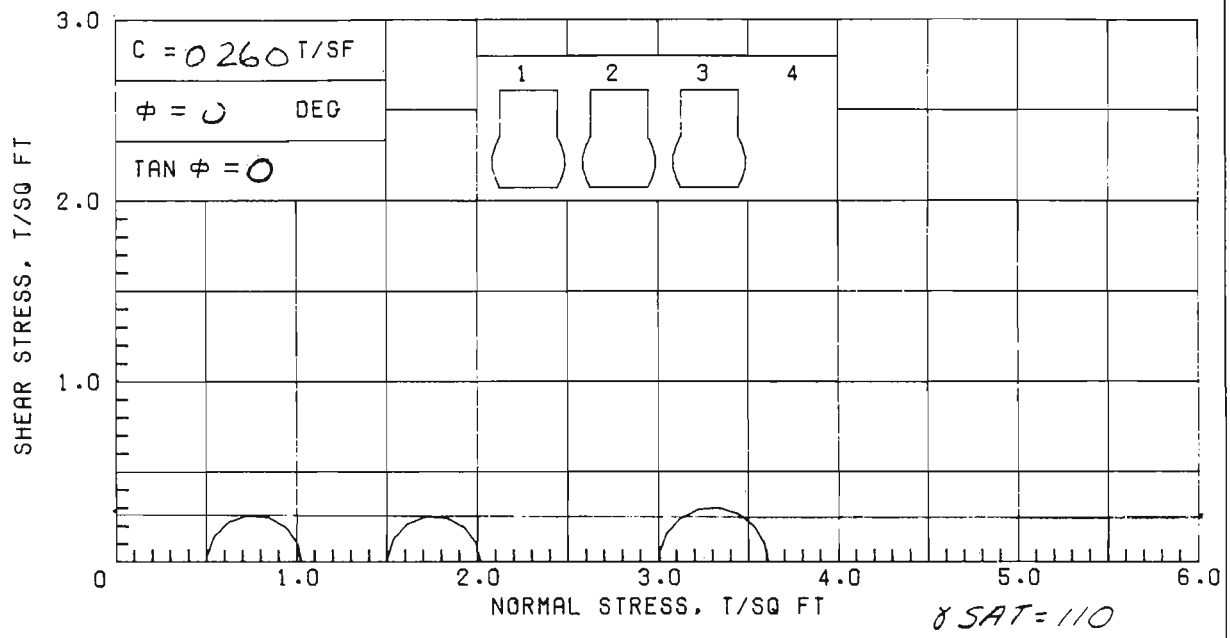
SPECIMEN NO.		Δ1	Y2	X3	4	AVG.
INITIAL	WATER CONTENT, %	82.1	88.1	84.9		85.0
	DRY DENSITY, PCF	51.7	49.0	50.1		
	SATURATION, %	98.2	97.5	97.1		
	VOID RATIO	2.258	2.440	2.361		
BEFORE SHEAR	WATER CONTENT, %					
	DRY DENSITY, PCF					
	SATURATION, %					
	VOID RATIO					
	BACK PRESS., TSF					
MIN PRIN. STRESS, TSF		0.5	1.5	3.0		
MAX. DEV. STRESS, TSF		0.30	0.30	0.22		
TIME TO FAILURE, MIN.		6	18	18		
RATE OF STRAIN INCR.%			6	6		
INITIAL DIAMETER, IN.		1.39	1.39	1.39		
INITIAL HEIGHT, IN.		3.00	3.00	3.00		

CONTROLLED-STRAIN TEST

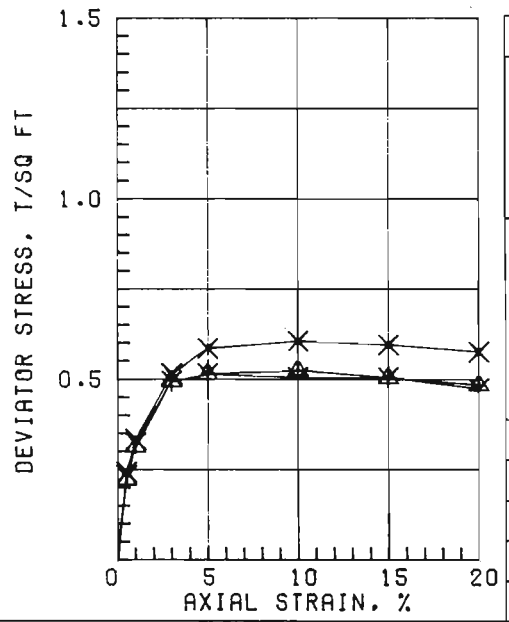
DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY

LL 121	PL 29	PI 92	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 6-LUG	SAMPLE NO. 6-C
	DEPTH/ELEV 22.5 +16.2	TECH. KOC
	LABORATORY USAE WES	DATE 30 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γ SAT = 110



SPECIMEN NO.		△1	Y2	X3	4
INITIAL	WATER CONTENT, %	45.4	46.6	41.4	
	DRY DENSITY, PCF	74.2	72.9	79.9	
	SATURATION, %	96.3	95.9	100+	
	VOID RATIO	1.273	1.312	1.109	
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		0.52	0.51	0.61	
TIME TO FAILURE, MIN.		20	10	20	
RATE OF STRAIN INCR.%					
INITIAL DIAMETER, IN.		1.39	1.39	1.39	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	

AVG 44.5

CONTROLLED-STRAIN TEST

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

LL 47	PL 19	PI 28	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:

LIMITS ON MIXTURE OF MATERIAL.

PROJECT LAKE PONT. LA. & VIC. HURR. PROT

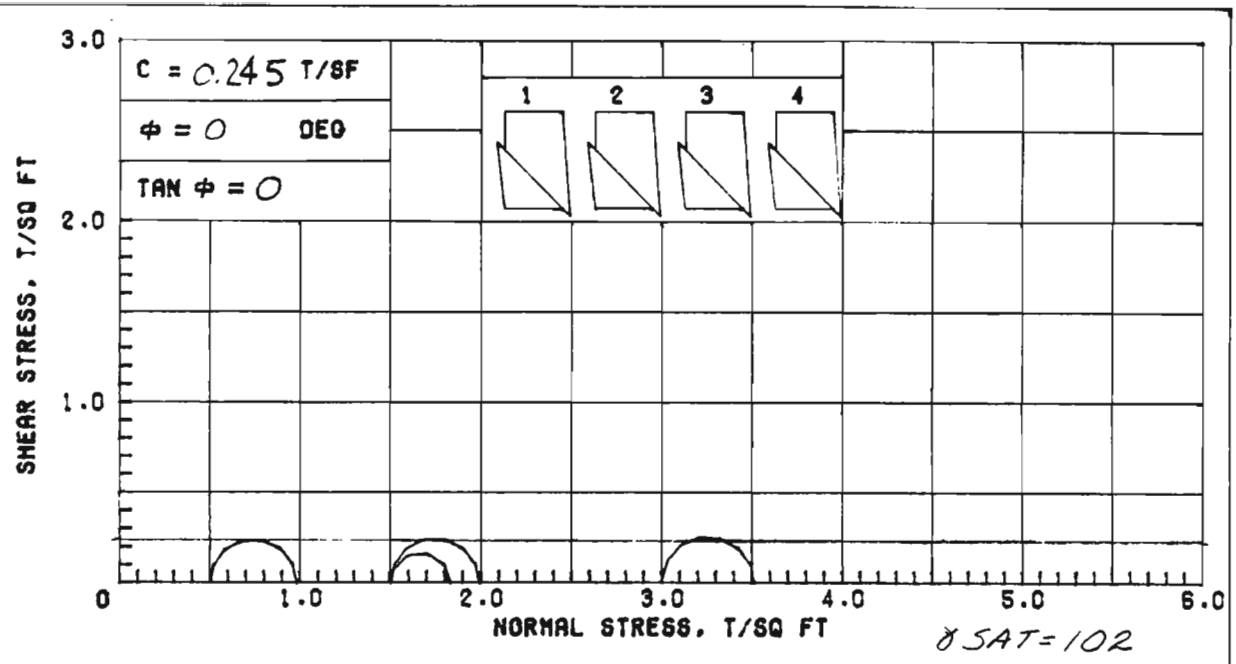
ORLEANS PARISH OUTFALL CANALS

BORING NO. 6-LUG | SAMPLE NO. 7-C

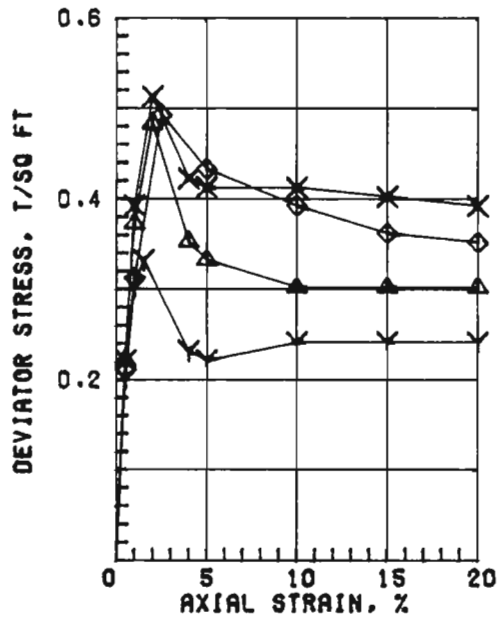
DEPTH/ELEV 26.6 / -20.3 | TECH. KOC

LABORATORY USAE WES | DATE 31 JAN 86

TRIAXIAL COMPRESSION TEST REPORT



$\gamma_{SAT} = 102$



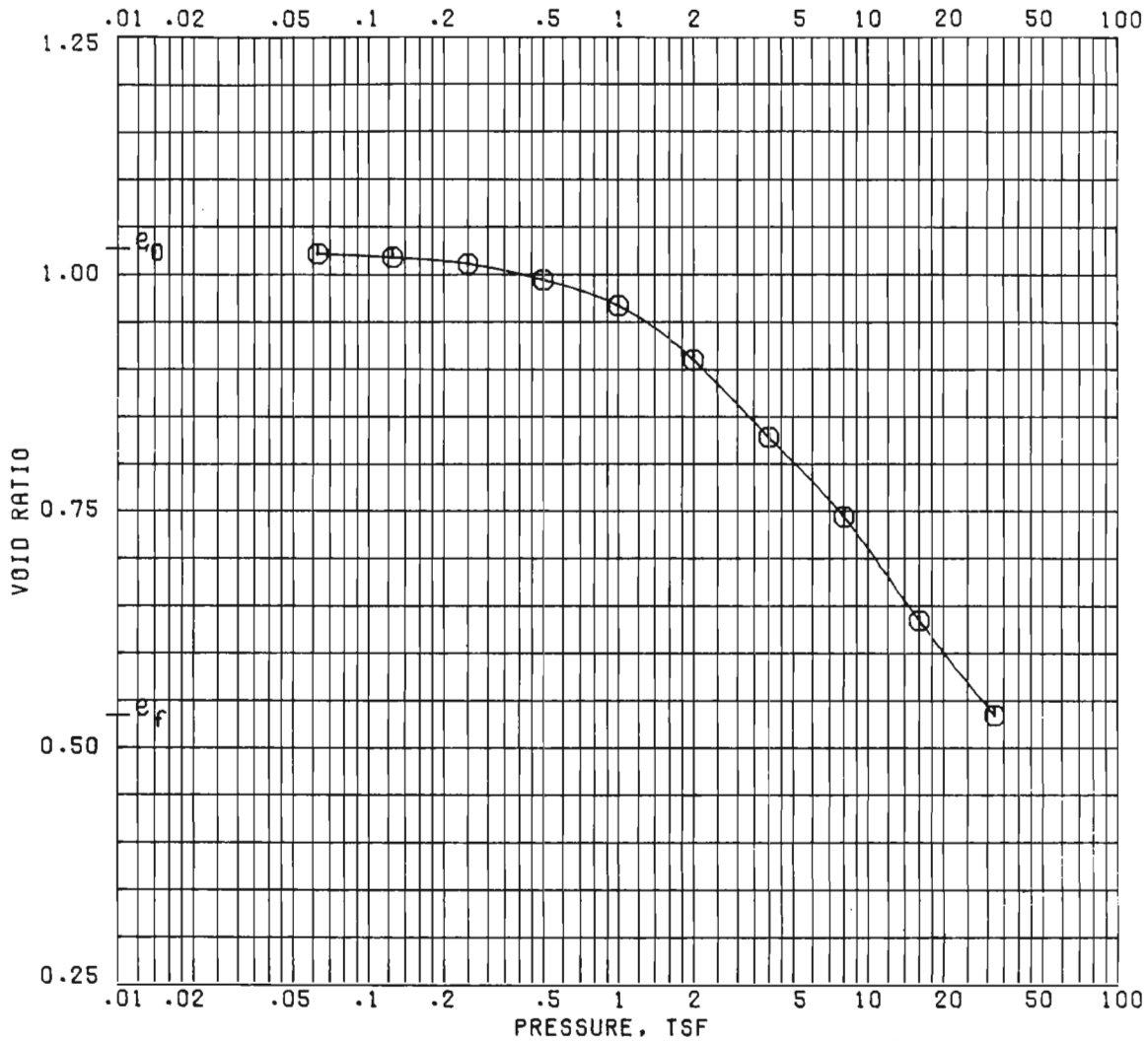
SPECIMEN NO.		△1	Y2	X3	◇4	AVG
INITIAL	WATER CONTENT, %	61.6	64.5	60.5	58.8	61.4
	DRY DENSITY, PCF	62.2	60.5	62.9	64.0	
	SATURATION, %	97.3	97.5	97.3	97.1	
	VOID RATIO	1.709	1.787	1.679	1.635	
BEFORE SHEAR	WATER CONTENT, %					
	DRY DENSITY, PCF					
	SATURATION, %					
	VOID RATIO					
	BACK PRESS., TSF					
MIN PRIN. STRESS, TSF		0.5	1.5	3.0	1.5	
MAX. DEV. STRESS, TSF		0.48	0.33	0.51	0.49	
TIME TO FAILURE, MIN.		4	9	12	5	
RATE OF STRAIN INCR.%			6	6		
INITIAL DIAMETER, IN.		1.39	1.39	1.40	1.40	
INITIAL HEIGHT, IN.		3.00	3.00	3.00	3.00	

CONTROLLED-STRAIN TEST

DESCRIPTION OF SPECIMENS: PLASTIC CLAY (CH), GRAY; 1/4" SILT LAYERS

LL 79	PL 21	PI 58	GS 2.70 (ESTIMATED)	UNDISTURBED SPECIMEN	Q TEST

REMARKS:	PROJECT LAKE PONT. LA. & VIC. HURR. PROT	
	ORLEANS PARISH OUTFALL CANALS	
	BORING NO. 6-LUO	SAMPLE NO. 9-C
	DEPTH/ELEV 34.4 / -28.1	TECH. KOC
	LABORATORY USAE WES	DATE 31 JAN 86
	TRIAXIAL COMPRESSION TEST REPORT	



γ SAT = 115

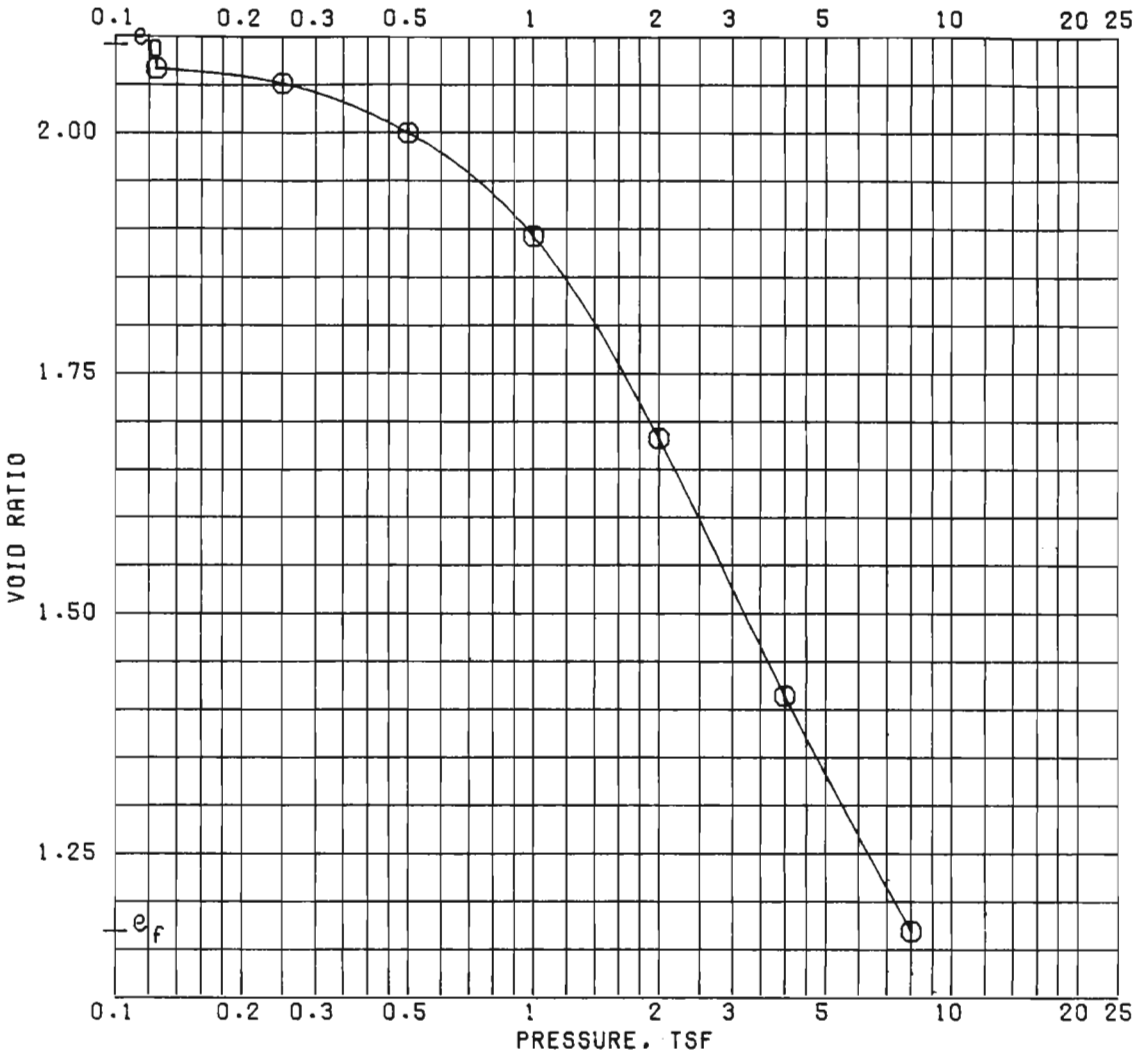
			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	35.7	20.8
PRECONSOL. PRESSURE, TSF	1.88	DRY DENSITY, PCF	83.2	110.0
COMPRESSION INDEX	0.34	SATURATION, %	94.0	100 +
TYPE SPECIMEN UNDISTURBED		VOID RATIO	1.025	0.533
DIA. IN 4.44	HT. IN 1.125	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY; FRIABLE

LL	PL	PI	PROJECT LAKE PONT. LA. & VIC. HURR. PROT
GS 2.70 (EST)	D_{10}		ORLEANS PARISH OUTFALL CANALS
REMARKS		BORING NO. 6-LUG	SAMPLE NO. 4-C
		DEPTH/ELEV 14.9/-8.6	DATE 14 FEB 86

CONSOLIDATION TEST REPORT

SHEET 1 OF 11



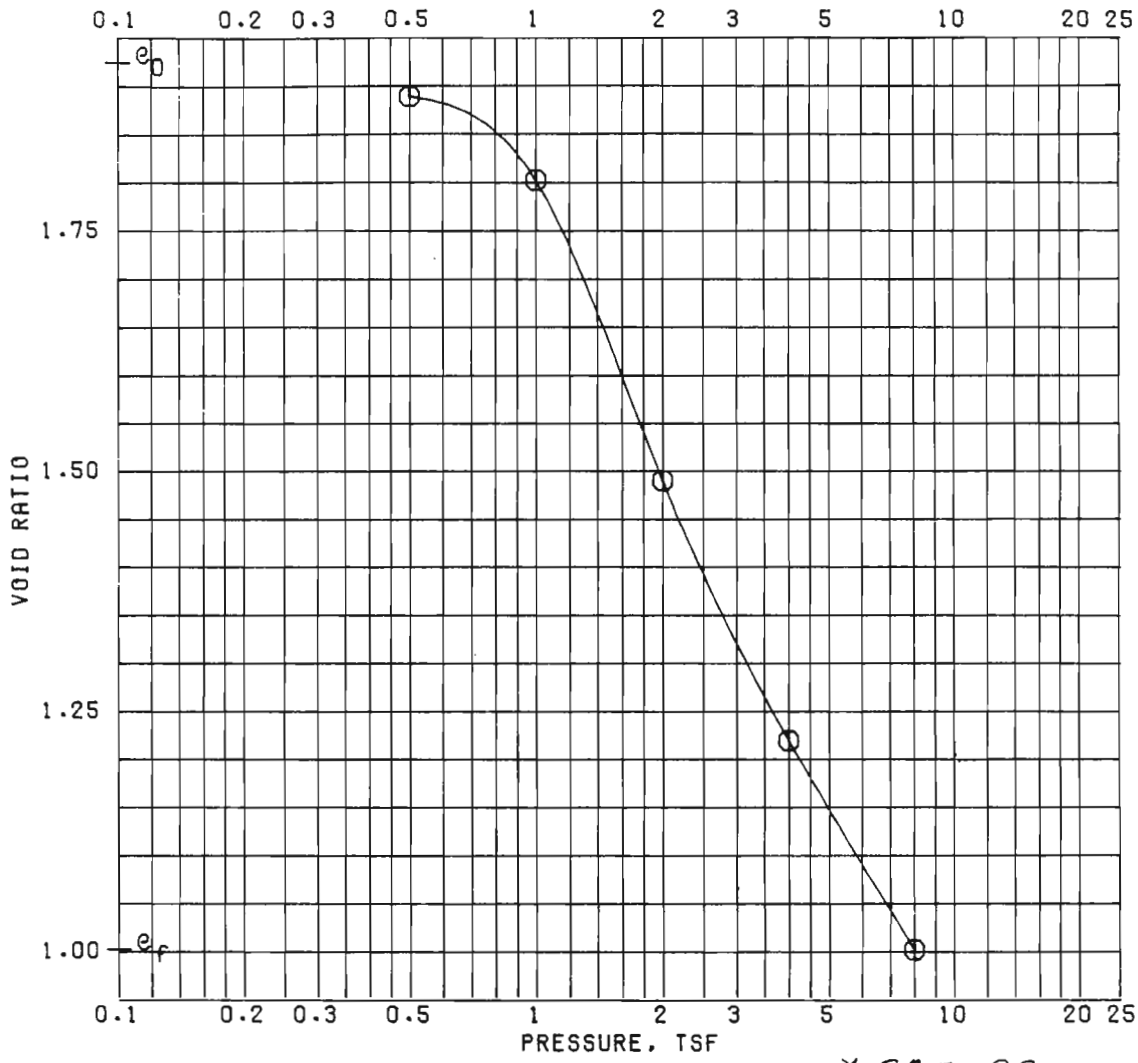
γ SAT = 97

			BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		WATER CONTENT, %	72.2	45.1
PRECONSOL. PRESSURE, TSF	0.98	DRY DENSITY, PCF	54.6	77.8
COMPRESSION INDEX	0.84	SATURATION, %	93.3	100 +
TYPE SPECIMEN UNDISTURBED		VOID RATIO	2.089	1.167
DIA. IN 4.44	HT. IN 1.126	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY; ORGANIC MATERIAL

LL PL PI	PROJECT	LAKE PONT. LA. & VIC. HURR. PROT
GS 2.70 (EST) D_{10}		ORLEANS PARISH OUTFALL CANALS
REMARKS	BORING NO. 6-LUG	SAMPLE NO. 6-B
	DEPTH/ELEV 21.4/-15.1	DATE 21 FEB 86

CONSOLIDATION TEST REPORT



γ SAT = 99

	BEFORE TEST	AFTER TEST
OVERBURDEN PRESSURE, TSF		
PRECONSOL. PRESSURE, TSF 1.00	WATER CONTENT, %	70.3	39.2
COMPRESSION INDEX 1.08	DRY DENSITY, PCF	57.7	84.3
	SATURATION, %	98.7	100 +
TYPE SPECIMEN UNDISTURBED	VOID RATIO	1.923	1.000
DIA. IN 4.44 HT. IN 1.118	BACK PRESSURE, TSF		

CLASSIFICATION PLASTIC CLAY (CH), GRAY

LL	PL	PI
GS 2.70 (EST)	D_{10}	
REMARKS		

PROJECT LAKE PONT. LA. & VIC. HURR. PROT
ORLEANS PARISH OUTFALL CANALS
BORING NO. 6-LUG SAMPLE NO. 7-D
DEPTH/ELEV 27.4/-16.2 DATE 27 FEB 86

CONSOLIDATION TEST REPORT

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

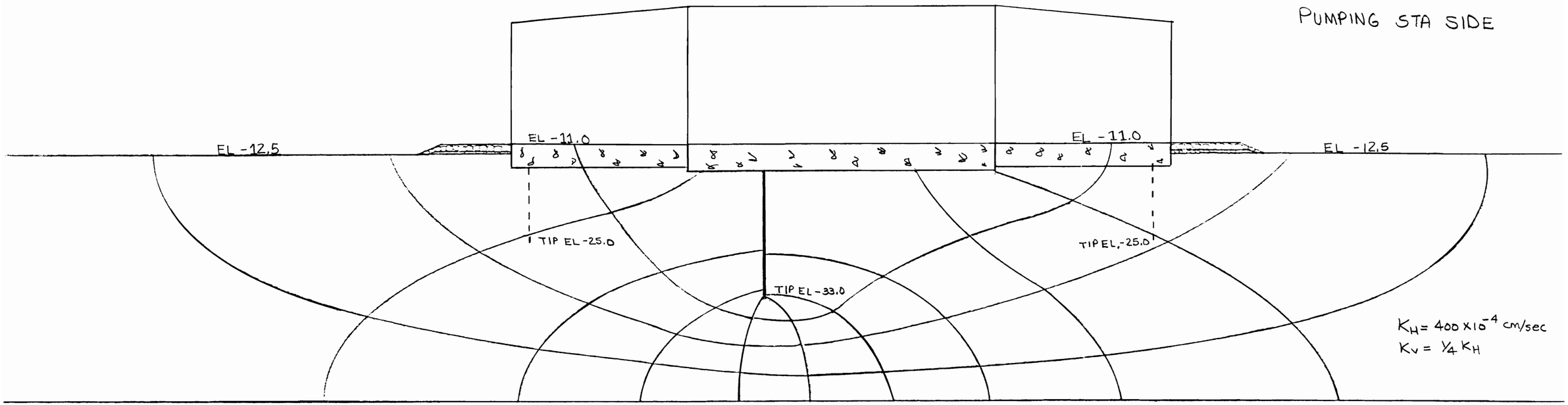
APPENDIX B
FLOW NET ANALYSIS

LONDON AVE VALVE STRUCTURE

FLOW NET WITH
SHEET PILE CUTOFF WALL

LAKE SIDE

PUMPING STA SIDE

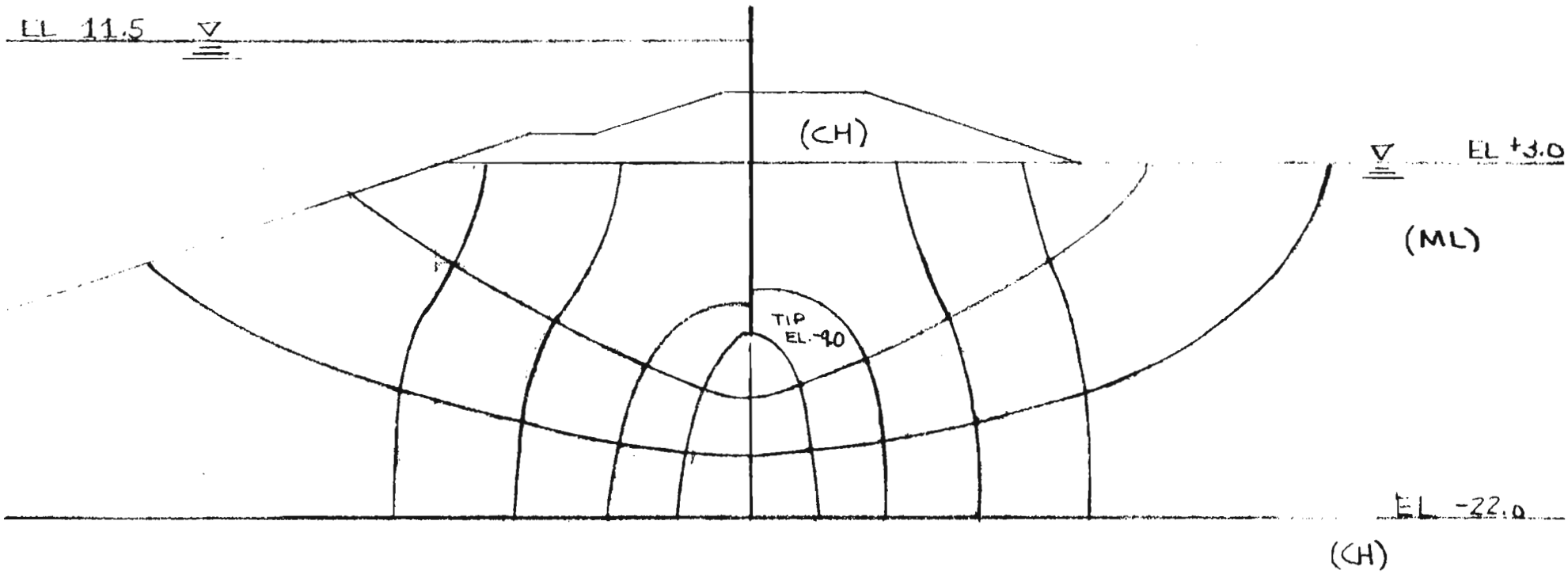


NOTE: CONCRETE APRON AND EROSION SHEET PILE CONSIDERED INEFFECTIVE

$H = 12$ $n_d = 10$ $h = 12/10 = 1.2$

$L = 6.5'$ $I_e = h/L = 1.2/6.5' = .185 < .24$ (OK)

LONDON AVE OUTFALL CANAL
WEST STA 0+73 TO STA 8+53 W/L COE B/L



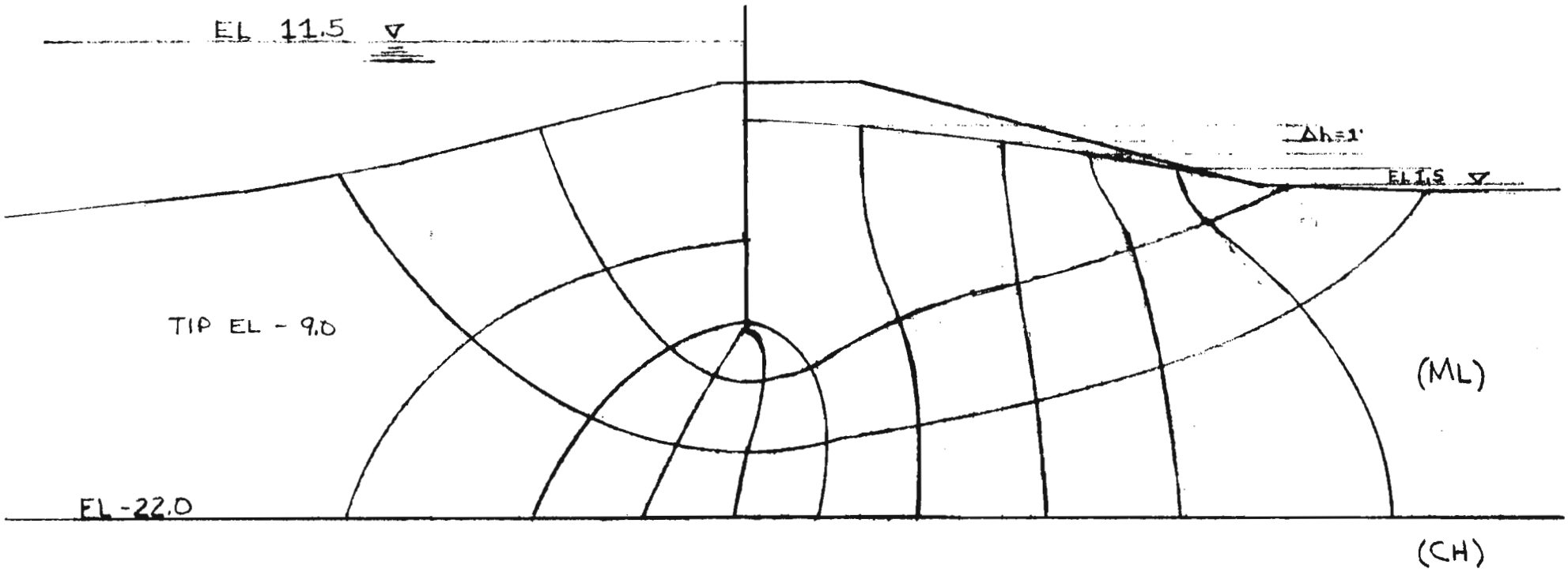
$H = 11.5 - 3.0 = 8.5$

$\Delta h = 8.5/10 = .85$

$I_e = .85/6 = .14 < .23$ (OK)

LONDON AVE OUTFALL CANAL

WEST STA 8+53 to 13+91 W. W/L COE W/L
WEST STA 134+00 to 152+50 B/L A-E B/L



$H = 11.5 - 1.5 = 10$

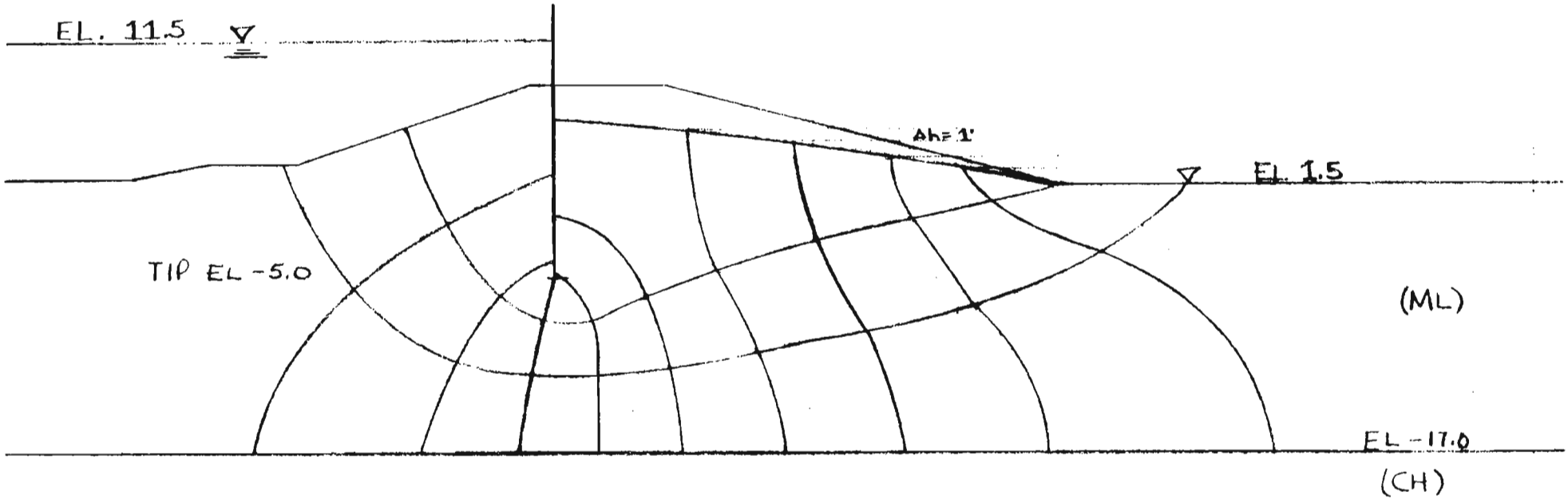
$\Delta h = 10/10 = 1$

$I_e = 1/4 = .25 > .23$ (OK)

SHORT TERM CONDITION
DISCONTINUOUS LAYERS BECAUSE
AREA IS RECLAIMED LAND FROM LAKE
USING FILL FROM LAKE.

LONDON AVE OUTFALL CANAL

WEST STA 152+50 B/L TO LAKEFRONT LEVEE A-E B/L
WEST STA 127+50 B/L TO STA 134+00 B/L A-E B/L



$H = 11.5 - 1.5 = 10'$

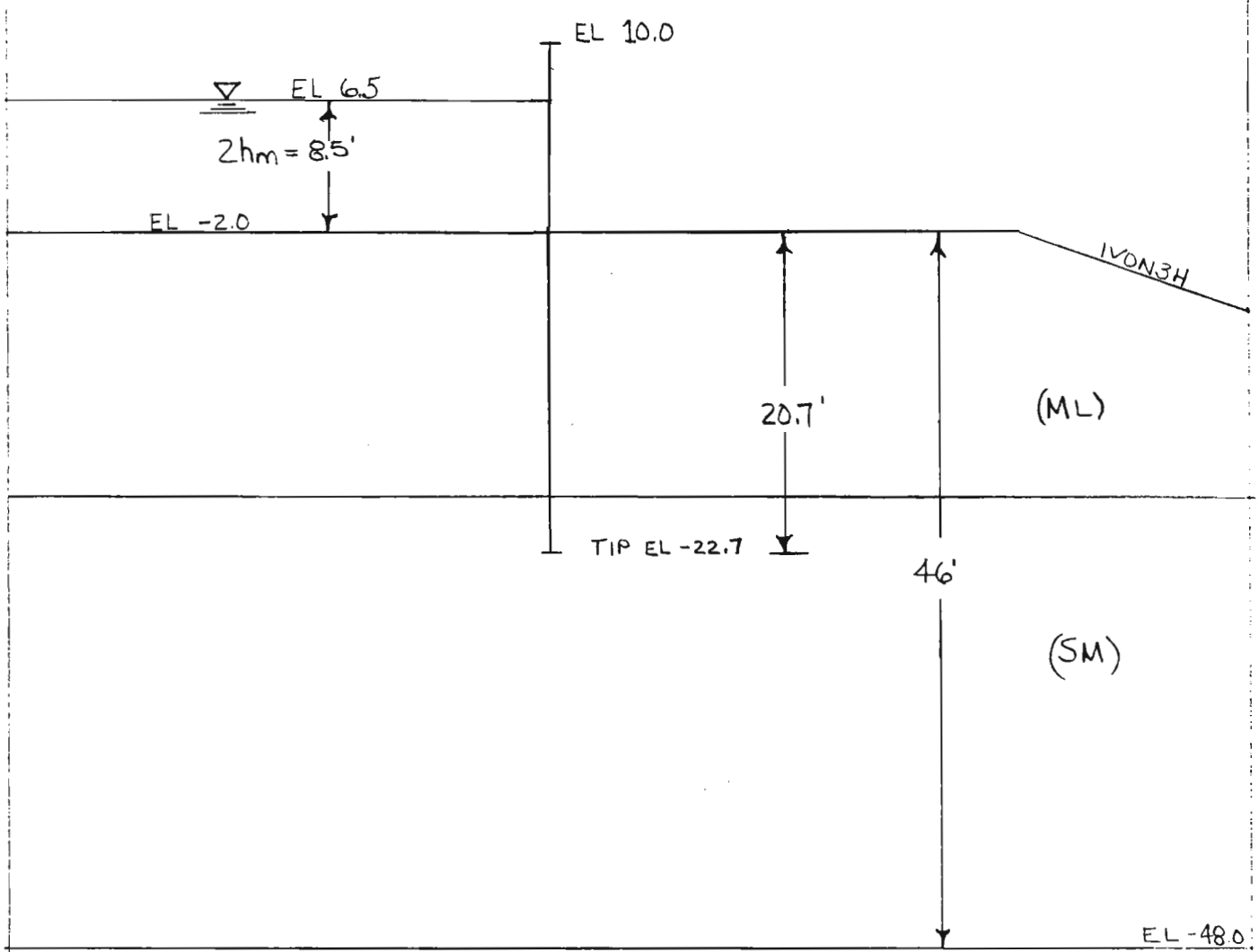
$\Delta h = 10'/10 = 1'$

$L = 4'$ $I_e = \Delta h/L = 1/4' = .25 > .23$ (OK) SHORT TERM CONDITION

DISCONTINUOUS LAYERS BECAUSE AREA IS RECLAIMED LAND FROM LAKE USING FILL FROM LAKE

COMPUTATION SHEET

PROJECT LONDON AVE OUTFALL CANAL VALVE STRUCTURE	PAGE OF	COMPUTED BY FJV	DATE 11/87
SUBJECT CANTILEVER WALL-EXCAVATION-SEEPAGE ANALYSIS		CHECKED BY	DATE



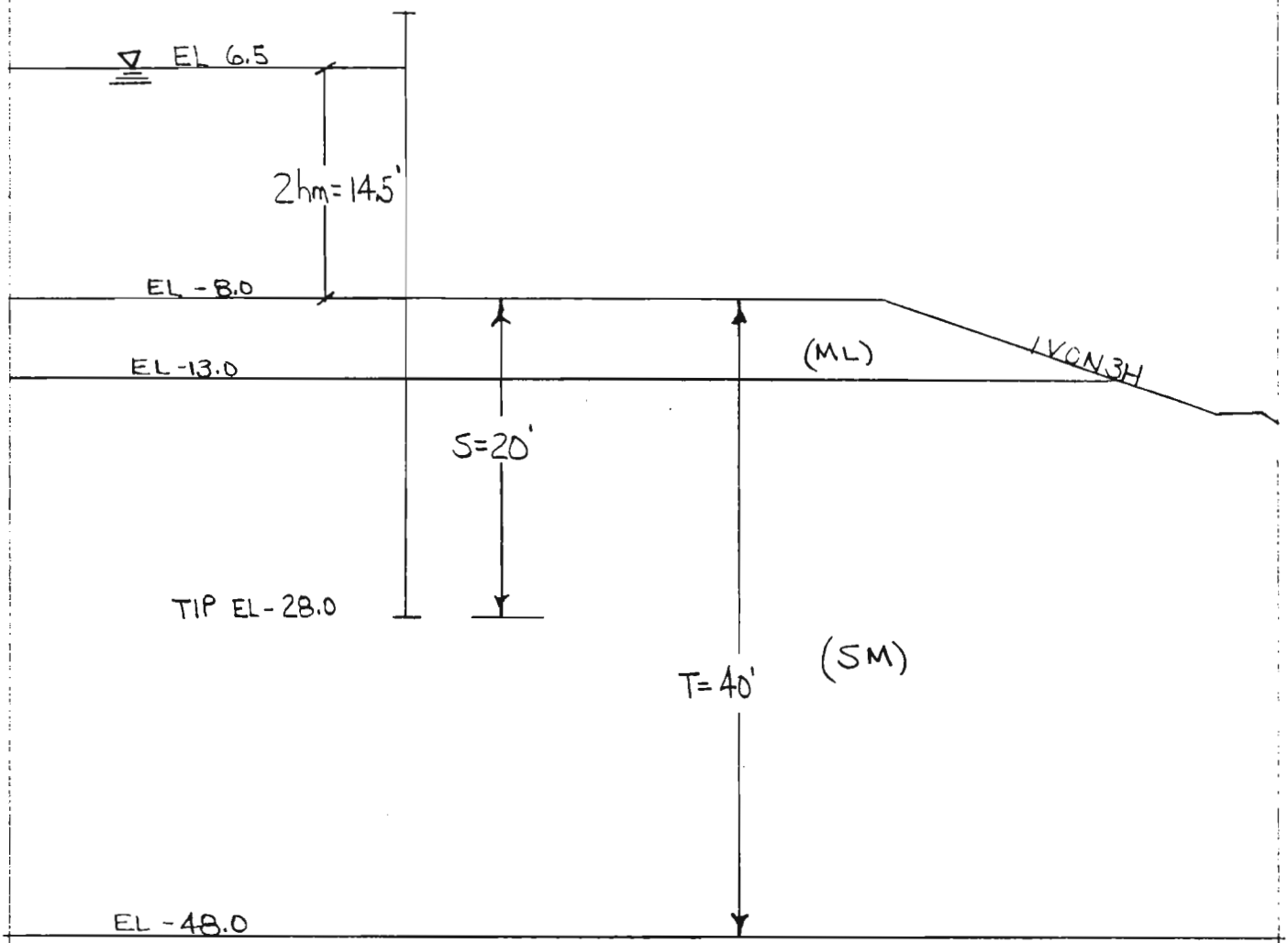
$S/T = 20.7'/46' = .45$

$\frac{I_e S}{h_m} = .6$

$I_e = \frac{(.6)(4.25')}{20.7'} = .123 < .23$ (OK)

COMPUTATION SHEET

PROJECT LONDON AVE. OUTFALL GDM-VALVE STRUCTURE	PAGE OF	COMPUTED BY FJV	DATE 11/87
SUBJECT BRACED WALL-EXCAVATION- SEEPAGE ANALYSIS		CHECKED BY	DATE



$S/T = 20/40 = .5$

$\frac{I_e S}{hm} = .58$

$I_e = \frac{(7.25')(.58)}{20'} = .21 < .23$ (OK)

LONDON AVE
OUTFALL CANAL
COE PIEZOMETERS

DATE	CANAL GAGE	WATER ELEVATIONS									
		1-W	2-W	3-W	4-W	5-W	1-E	2-E	3-E	4-E	5-E
7/2/70	+.5	-7.72	-7.92	—	—	—	-7.01	-7.71	—	—	—
7/13/70	+.4	-7.20	-7.31	—	—	—	-6.74	-7.26	—	—	—
9/15/70	+1.7	-7.71	-7.90	—	—	—	-7.02	-7.72	—	—	—
10/19/70	—	—	—	-7.58	—	—	—	—	—	—	—
10/20/70	—	—	—	—	-7.70	-8.23	—	—	-7.56	—	—
10/21/70	—	—	—	—	—	—	—	—	—	-8.01	—
10/70	—	—	—	—	—	—	—	—	—	—	-8.66
9/10/71	+2.7	-7.33	-7.18	-7.44	-7.48	-7.83	-6.77	-7.90	-7.61	-6.67	-8.16

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 19A, GENERAL DESIGN
LONDON AVENUE OUTFALL CANAL

APPENDIX C
PERTINENT CORRESPONDENCE

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT. CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS. LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

October 27, 1988

Planning Division
Environmental Analysis Branch

FINDING OF NO SIGNIFICANT IMPACT

Lake Pontchartrain, Louisiana, and Vicinity Hurricane Protection Project

LONDON AVENUE OUTFALL CANAL - FLOOD PROTECTION

Description of Action. The U.S. Army Corps of Engineers, New Orleans District, has studied alternative methods of providing high level flood protection for the London Avenue Outfall Canal. The Corps recommends the placement of a structure (butterfly valve) in the canal itself. However, the Orleans Levee Board is seriously considering raising existing levees along the canal, thus providing parallel protection.

Factors Considered in Determination. The following factors were considered in determining that the proposed action would cause no significant impact: fisheries, wildlife, cultural resources, endangered species, noise, community cohesion, esthetics and recreation.

Public Involvement. The EA was circulated to interested parties in October 1988.

Conclusion. The office has assessed the environmental impact of both of the proposed actions and has determined that neither would have significant impact upon the human environment. Therefore, no Environmental Impact Statement will be prepared. The Corps recommends the butterfly valve alternative because it is the more cost effective and less disruptive approach to providing flood protection that will meet specifications of the High Level Hurricane Protection Plan.

19 OCT 88
Date

Lloyd K. Brown
Colonel, Corps of Engineers
District Engineer

ENVIRONMENTAL ASSESSMENT

LAKE PONTCHARTRAIN, LOUISIANA, AND VICINITY
HURRICANE PROTECTION PROJECT,
LONDON AVENUE OUTFALL CANAL

INTRODUCTION

The Lake Pontchartrain, Louisiana, and Vicinity Hurricane Protection project was initially authorized by Public Law 89-298, 27 October 1965, as a "barrier" plan of hurricane protection. An environmental impact statement (EIS) was prepared on the original project and filed with the Council on Environmental Quality in January 1975. Subsequently a court-ordered reevaluation was undertaken. The resultant reevaluation recommending a high level plan of hurricane protection was addressed in Supplement I to the final Environmental Impact Statement (FEIS), filed with the Environmental Protection Agency in December 1984. The approval of the high level plan was granted in 1985, with the signing of the Record of Decision.

However, at the time the FEIS was prepared, the designs for providing hurricane protection for the lakefront outfall canals were unresolved. Presently, the high level plan of hurricane protection is under construction and the design for the protection at the London Avenue Outfall Canal is completed.

This Environmental Assessment (EA) will evaluate two alternative methods of providing hurricane protection to the Orleans Avenue Outfall Canal. The U.S. Army Corps of Engineers (Corps) is recommending protection utilizing a "butterfly valve" structure while the local assurers (Orleans Levee Board) desire to build a system of parallel protection by raising the existing levees adjacent to the canal.

NEED

The London Avenue Outfall Canal provides interior drainage for the City of New Orleans by moving water from the central city to Lake Pontchartrain. Protection from hurricane-induced tidal inundation via the lake/canal connection is presently achieved by locally constructed parallel protection levees adjacent to the canal. The existing levees and floodwalls along the canal do not meet the design height or sectional

stability required for the Lake Pontchartrain project under either the previously authorized barrier or the more recently authorized high level plan. Since the portion of New Orleans adjacent to the canal is well below sea level, protection from a hurricane surge overtopping the levee is necessary to eliminate the risk of interior flooding.

PROJECT DESCRIPTION AND LOCATION

The project area is located in southeastern Louisiana on the south side of Lake Pontchartrain in Orleans Parish (Plate 1).

Hurricane Protection for the London Avenue Outfall Canal can be achieved by two basic concepts. One concept is to provide fronting protection structure between Lakeshore Drive & Leon C. Simon Boulevard (see Plate 1). This structure would have a specialized "butterfly" type valve, consisting of eight 28 x 16-foot gated bays that automatically open or close as the flow changes. As long as the direction of flow is toward the lake, the gate would remain open. During a hurricane, when the lake elevation rises enough to reverse the direction of flow, the gates would automatically close. This structure and appurtenant floodwall would be connected to the existing lakefront levee so that once closed, a continuous line of protection could be achieved. A cofferdam would be built in the canal so the closure could be constructed in the dry. A bypass would be built within the existing channel around the cofferdam so that flows would not be interrupted. Estimated costs of this plan are approximately $12 million. This is the plan recommended by the Corps because it is the most cost effective way to provide hurricane protection, can be designed to fully accomodate interior drainage, and would be the least disruptive method to protect areas behind the existing levees.

A second concept requires upgrading the existing lateral protection provided by levees paralleling the 4-mile canal on either side. In order to do this the existing floodwalls must be degraded and new ones built 7 to 11 feet higher. It is undecided at this time whether protection north

of Leon C. Simon Boulevard would be an earthen levee or a floodwall. This plan would require bridges at Benefit Street, Gentilly Boulevard, Mirabeau Avenue, Filmore Avenue, Robert E. Lee Boulevard, and Leon C. Simon to be modified or floodproofed since their respective deck elevations are below grades required to achieve project protection. In addition the Southern Railroad bridge would also require modifications to achieve flood proofing. Means to achieve positive closure at pumping station numbers 3 and 4, must be incorporated into this plan. Estimated costs for this plan are over $40 million. Both plans will be addressed in this E.A.; however, the Orleans Levee Board has not decided at this time which method of protection will be constructed.

Any borrow material required for use in conjunction with either alternative would be taken from the Corps-approved borrow site in the Bonnet Carre' Spillway.

ENVIRONMENTAL SETTING

SIGNIFICANT RESOURCES

The following resources are considered significant because of their ecological, esthetic, or cultural attributes and their institutional, technical, or public recognition.

FISH AND WILDLIFE RESOURCES

Existing Conditions

The London Avenue Outfall Canal is a man-made canal approximately 4.0 miles in length, with average bottom and top widths of 100 to 160 feet, respectively. Pumping Station No. 3 lies at the head of the canal near Broad Street. Pumping Station No. 4 is near Prentiss Avenue. The canal is paralleled by earthen levees topped with floodwalls or floodwalls alone from Pumping Station No. 3 to Leon C. Simon Boulevard on the east and to

Robert E. Lee Boulevard on the west. From these two boulevards to Lakefront Drive there is an earthen levee on both sides of the canal. Vegetation on the flood side of the protection consists of scrub shrub habitat with baccharis, giant ragweed, mulberry and elderberry predominating. Between Leon C. Simon Boulevard and the lake there is a narrow band of roseau cane at the waters edge. The levee is kept mowed and is covered with annual and perennial grasses and weeds. Residential areas abut the floodwall most of the way from Pumping Station No. 3 to Leon C. Simon. The Orleans Parks and Parkway Commission has a nursery on the east side and Gregory Junior High School lies on the west side near Mirabeau Avenue. Parking lots for the University of New Orleans lie east of the levee north of Leon C. Simon Boulevard and a park-like area with small oaks and oleanders lies west of the levee in the same area. Because of high incidence of human distrubance, the area provides marginal habitat for rabbits, small rodents, and birds. Some use of shrubs and trees by squirrels and songbirds occurs. Least terns and seagulls are commonly seen feeding on the canal.

Water quality in the London Avenue Outfall Canal is generally poor; therefore, the canal has minimal value as habitat for fishery resources. The canal itself receives pumped storm water runoff from New Orleans. The contaminants frequently found in the stormwater effluent are organic chemicals and heavy metals, both of which accumulate in the sediments, and through bioaccumulation cause varying degrees of toxcity or sublethal effects to the organisms. Environmental Protection Agency criteria for propogation of fish and wildlife were consistently exceeded for dissolved oxygen, copper, iron, barium, zinc, cadmium, and phenol. Nickel, mercury, cyanide, arsenic, lead, PH, suspended solids, and oil and grease concentrations also frequently exceeded recommended levels (England et al. 1979). Organic chemicals and heavy metals are the toxicants of most concern that affect aquatic life in the canal and the nearshore vicinity.

The nearshore lake area adjacent to the canal provides moderate value nursery and feeding habitat for estuarine-dependent commercial and sport finfishes and shellfishes. Some fishery use of the canal exists, mainly mullet and gar. Due to the poor water quality, the benthos of the canal is limited to worms, blue crabs, clams, and gastropods. The benthic community is more diverse near the lake. Most benthic species in the area are tolerant of prolonged periods of low dissolved oxygen and are not the benthics primarily utilized as fish food organisms by economic and commercially important fish species.

Future Without Project

Fish and wildlife resources would remain as they are at present.

Butterfly Valve Alternative Impacts

Placement of this structure and associated abutment work would result in the loss of 2.2 acres of marginal benthic habitat associated with the canal bottom. An additional 1.4 acres of benthic habitat would be temporaily removed from production due to excavation associated with the fore and aft bay areas on either side of the structure. Since the canal bottom in this area will be backfilled with rip-rap over shell, repopulation of benthos is expected; however, diversity and quanity of the benthic habitat would be changed. During fill placement associated with structure installation, organisms such as crabs would be able to escape burial, while most sessile or slow-moving organisms, such as clams, would be lost. Turbidities associated with the fill placement would result in temporary reductions in primary production. Water quality within the project area would be adversely affected due to increase in turbidity, reductions in dissolved oxygen, and resuspension of contaminated sediments in the water column. There would be only minimal temporary interference with normal canal/lake interchange during the period of construction. Various estuarine fish species inhabiting this aquatic environment have the mobility to avoid the direct adverse impacts; however, the localized benthic and planktonic food supplies would be temporarily reduced.

Secondary, indirect impacts may result near the canal mouth and adjacent nearshore waters of Lake Pontchartrain. Increases in turbidity accompanied by decreased oxygen associated with the construction may be encountered by various aquatic species, including shrimp, crab, drum, and flounder all of which use the nearshore waters for limited feeding and nursery areas.

Terrestrial impacts associated with the alternative would involve the temporary disturbance of six acres of existing levee. The fringe of roseau cane would also be impacted but would probably revegetate once construction is complete. The impacted area provides low wildlife usage. Five small oaks and six oleander shrubs would be removed which would have minimal impact on wildlife until their replacement plants mature. Oaks would be replaced three for one and oleanders one for one.

Placement and handling of any contaminated dredged material from the canal bottom could cause potential sources of pollution if not contained in a properly secured site. If this alternative is chosen, a Section 404(b)(1) Evaluation will be prepared to address these concerns.

Parallel Protection Alternative Impacts

All work south of Leon C. Simon Boulevard would be within existing rights of way. Approximately 29 acres of low value wildlife habitat would be temporarily impacted by degrading, earth moving, and shaping operations. If an earthen levee is chosen north of Leon C. Simon, 16 young oaks and 26 oleanders would be removed. Replacement would be as described above. If a floodwall is built, no trees or shrubs would be impacted, only existing right-of-way would be affected.

Temporary displacement of habitat for songbirds and tree-dwelling animals would occur in association with tree removal. Habitat in the immature trees would be of moderate value only for some species. This impact would

be short term and would be minor due to the small numbers of trees impacted. In the long term, habitat for tree dwellers would be increased.

In addition, some of the stands of roseau cane and the associated fishery habitat would be affected by degrading and upgrading the existing levee. Runoff during construction would slightly increase turbidity in the canal as well as the amount of airborne dust in the project area. Once the levee became vegetated, this impact would be eliminated.

ENDANGERED SPECIES

Existing Conditions

No threatened or endangered species or their critical habitat are found in the project area.

Future With and Without Both Alternatives

There would be no impact on endangered species.

RECREATION

Existing Conditions

Some recreational opportunities exist in the vicinity. The levee is used by joggers, walkers, bird watchers, and fishermen, especially north of Robert E. Lee Boulevard. Very little bank fishing occurs along the canal south of Robert E. Lee Boulevard due to the location of floodwalls that restrict pedestrian access. Some limited fishing, crabbing, and pleasure-boating takes place between Robert E. Lee Boulevard and the lake. The adjacent park land on the west side of the canal provides areas for field sports, picnicking and similar activities. On the east side of the canal is the University of New Orleans. This area is also open to the public. Students attending the University of New Orleans use this area and the

grassy levee slopes for walking, relaxation, and studying. The New Orleans Recreation Department operates Pratt Park, located one street west of the floodwall at Prentiss and Chatham Streets. This 5.6-acre open field park provides an area for neighborhood field-oriented recreation and community activities.

Future Without Project

Recreational resources would remain as they are at present.

Butterfly Valve Alternative Impacts

Construction of the cofferdam and the structure would interrupt the fishing and crabbing activities that occur at the mouth of the canal. Noise during construction would temporarily disrupt the minimal bird-watching activities that occur at present. With the butterfly valve in place, boat access within the canal south of the structure would be blocked. This is not considered detrimental due to minimal use of the canal for boating. Essentially, the completed structure would have essentially no overall impact on recreation.

Parallel Protection Alternative Impacts

During construction all recreation in the work area will cease. Minimal impacts would occur within the reach between Robert E. Lee and Pumping Station No. 3 due to limited use. Impacts north of Robert E. Lee would be more severe because of heavier use. However, once built, the levee would then support recreational activities similar to those occurring now, although on a levee 3 to 4 feet higher than the present levee. If a floodwall is built in the crown of the existing levee, no additional right of way would be needed; therefore no tree loss would occurr. However, placement of a floodwall in the levee would restrict pedestrian access to the water's edge and impact recreational crabbing and fishing activities. No impact would occur to Pratt Park.

ESTHETICS

Existing Conditions

Within the project reach between Robert E. Lee Boulevard and Pumping Station No. 3 positive esthetic conditions are limited. A parallel floodwall in need of painting and refurbishment, currently exists in this area. This area is not regularly maintained and volunteer growth of various vegetation is evident. However, positive esthetic conditions exist on both sides of the canal north of Robert E. Lee. This open grass west of the canal has scattered oaks and oleanders and is well maintained, contributing to positive esthetic conditions experienced by students of the university and visiting general public.

Future Without Project

Esthetics would remain as they are at present.

Butterfly Valve Alternative Impacts

Initial construction would result in increasing levels of noise and dust in the area of work. It is anticipated that 5 oak and 6 oleander shrubs would be lost due to levee modification in the vicinity of the structure. After the structure is completed, the tie-in levee would be revegetated, trees would be replanted, and the area would soon return to its preproject esthetic condition. The upper portion of the structure would be evident from both sides of the canal. This structure is relatively small in size, and impacts are not considered significant.

Parallel Protection Alternative Impacts

Increasing the height of protection would cause impacts to the esthetic environment. If an earthen levee is built, 16 oaks and 26 oleander shrubs would be removed but, these trees will be replaced upon completion of the

earth work. If a new floodwall is constructed within the levee crown north of Robert E. Lee Boulevard, a visual and physical barrier would be created in an area that traditionally has been a green space. This wall could be esthetically unattractive if measures are not implemented to soften adverse visual impacts. Surface treatment, such as exposed aggregate, three dimensional features, and earth-tone paint, could be implemented that would minimize and partially mitigate adverse visual impacts. No trees would be impacted if a floodwall is built in this area.

CULTURAL

Existing Conditions

The project area includes an existing levee corridor on post-1930 reclaimed land and the artificial channel of the London Avenue Outfall Canal. No cultural resources are recorded in the vicinity of the proposed work.

Future Without Project

This would be the same as existing conditions.

Butterfly Valve Alternative Impacts

No impacts to significant cultural resources are anticipated and no cultural surveys are warranted.

Parallel Protective Alternative Impacts

No impacts on significant cultural resources are anticipated and no cultural resource surveys are warranted.

NOISE

Existing Conditions

Background noise levels for the project area are approximated to range from 70 dBA in the project reaches, located in residential areas South of Robert E. Lee Boulevard, to 50 dBA in the quieter park-like residential areas north of Robert E. Lee to the lake front.

Future Without Project

There would be no noise associated with construction.

Butterfly Valve Alternative Impacts

Installation of this structure would require several construction stages, including pile driving, backfilling, slab construction, and finishing work. The greatest source of noise would be the pile-driving activity, which is to be performed in a noncontinuous fashion for approximately 108, 10-hour days.

The greatest exposure would be encountered in the open area adjacent to the construction and the UNO parking lots. Exposure levels here would range from 95-105 DBA. This level of noise intrusion would interfere with passive recreation such as pleasure walking, picnicking, bird watching, etc. In addition, some interference with oral communication could be expected near the construction site.

There are no residences within the primary noise impact zone, extending up to 400 feet from the construction site of the butterfly valve structure. Approximately 23 homes are located within 200-400 feet of the floodwall construction and adjoining levees. The homes could experience 77-83 dBA noise exposure levels for approximately 42 days. These would be

exterior noise levels, Interior noise exposure should be less. Vibrations resulting from the pile-driving operation that would affect approximately 20 residences located 200-400 feet from the source, should be minimal. While these vibrations could be annoying to inhabitants of these residences, the potential for vibration-induced structural damage should be minimal.

Parallel Protection

This method of construction would result in increases in noise levels produced from degrading and upgrading existing levees and floodwalls. The noise levels expected would range from 95-105 dBA when measured 50 feet from the center of the noise source. Approximately 66 residences would be exposed to this level of noise. In addition, 166 residences would be exposed to noise levels ranging from 77-95 dBA. Another 225 residences would be exposed to 77-89 dBA, while 483 homes would be exposed to 77-83 dBA noise levels. Ambient noise level for the area is 50-70 dBA. Table 1 shows the number of days a particular residence would be exposed to these noise levels.

Construction workers would have to use protective hearing devices. Since construction would take place during daylight hours, sleep interference should occur only for napping children and day sleepers. Noise mainly affects bodily functions (hearing rate, respiratory volume, digestive secretions, hormonal secretions, etc.). If prolonged, the construction noise levels could produce significant physiological damage; however, the relatively short duration of the noise should prevent such problems from occurring. The noise could be annoying to inhabitants of the 457 residences within 200 feet of the actual work site. During the time the noise was higher than 85 dBA, it would be difficult to hold a conversation within the impacted house and recreational areas.

TABLE 1
NOISE EXPOSURE FOR FLOODWALLS (days)

Distance (feet)	Buildings (number)	Decibels			
		95-105	89-95	83-89	77-83
0-50	66 residences	14	14	28	54
50-100	166 residences	-	20	32	56
100-200	225 residences	-	-	42	64
200-400	483 residences	-	-	-	84

During construction the noise levels would increase a maximum of 35-45 dBA above ambient levels. This level of increase is not expected to significantly interfere with residential activity since most of the work would be done during daylight hours and exposure levels inside the homes would be further reduced.

COMMUNITY COHESION

Existing Conditions

The residents of Orleans Parish are in favor of protection provided by the hurricane protection project and have voted for a bond issue that assists in funding the work.

Future Without the Project

The area adjacent to the canal would be subject to flooding from the canal during hurricanes.

Butterfly Valve Alternative Impacts

This alternative would provide the necessary flood protection. Disruption in localized traffic patterns, would be sporadic and of fairly short term. Initial movement of equipment onto and off the site would account for the major portion of the traffic increase. Some occasional heavy traffic would be encountered when fill material is truck-transported to the site and when dredged material is being transported off site. Since fill requirements are minimal, traffic patterns should be normal during the majority of the construction.

Parallel Protection Alternative Impacts

This alternative would provide the necessary flood protection. Disruption in traffic patterns and increases in truck traffic on residential streets would be much greater with this alternative due to the fill requirements and widespread use of pile-driving equipment. Increased levels of noise would be expected during the entire 2-year construction period at varying points along the canal from the lakefront to Interstate 610. This construction method is not localized to a specific area like the construction methods associated with of the butterfly valve.

MITIGATION

Because of the low habitat quality of the construction site and the minimal habitat affected, no wildlife mitigation is proposed. In order to minimize potential impacts, turbidity screens would be used during dredging and construction activities that are likely to resuspend sediment. Dredged material from the canal bottom should be placed in trucks equipped with leak-proof liners and transported to state approved upland disposal sites. To minimize noise-associated problems, pile driving would be limited to daylight hours.

COMPLIANCE WITH ENVIRONMENTAL LAWS

Compliance with the Endangered Species Act has been achieved. Cultural compliance has been achieved. If parallel protection is chosen, no Section 404(b)(1) Evaluation or Coastal Zone Management Consistency Determination would be necessary. If the butterfly valve alternative is chosen, both of these documents would need to be prepared.

COORDINATION

Copies of this EA will be distributed as shown in Table 2.

LITERAURE CITED

England, A.J., Jr., K.P. Suter, and N.K. Williams. 1979. Water Quality in Orleans Parish; Problems, Trends and Recommendations Symposium, pages 37-63. Proceedings, 3rd Coastal Marsh Management.

CONCLUSION

The U.S. Army Corps of Engineers, New Orleans District, proposes to provide flood protection to areas adjacent to the London Avenue Outfall Canal by construction of a butterfly-valved structure north of Robert E. Lee Boulevard. Impacts to fish and wildlife resources, recreation, endangered species, cultural resources, esthetics, and community cohesion would be minimal with this less costly plan. The Orleans Levee Board has not made a decision as to their preferred alternative.

Most impacts of parallel protection would be similar to those for the butterfly valve, but noise increases due to truck traffic on residential streets would be greater using this method.

Larry H Artzog
Prepared by:

John C. Weber
Reviewed by:

11 October 1988
Date:

TABLE 2

LAKE PONTCHARTRAIN, LOUISIANA, AND VICINITY EA MAILING LIST

CONGRESSIONAL

Honorable J. Bennett Johnston
Honorable John B. Breaux
Honorable Lindy Boggs
Honorable Billy Tauzin
Honorable Robert L. Livingston

FEDERAL

U.S. Department of Commerce
Washington, D.C.

National Marine Fisheries Service
St. Petersburg, FL
Baton Rouge, LA

U.S. Environmental Protection Agency
Dallas, TX

Gulf of Mexico Fisheries Mgmt. Coun.
Tampa, FL

U.S. Dept. of Housing and Urban Devel.
Ft. Worth, TX

U.S. Dept. of the Interior
Washington, D.C.

U.S. Fish and Wildlife Service
Lafayette, LA

Federal Highway Administration
Baton Rouge, LA

U.S. Coast Guard
New Orleans

Advisory Council on Historic Preserv.
Golden, CO
Washington, D.C.

STATE

State Historic Preservation Officer

Department of Environmental Quality
Water Pollution Control Division

STATE (Cont'd)

Department of Natural Resources
Office of Environmental Affairs
Coastal Resources Program

Department of Transportation
Office of Public Program

Department of Wildlife
and Fisheries
Secretary
Ecological Studies Section
Natural Heritage Program

LOCAL

Orleans Levee Board

East Jefferson Levee Board

Pontchartrain Levee Board

Lake Borgne Levee Board

City of New Orleans
City Planning Commission
City Council
Mayor

Regional Planning Commission

St. Charles Parish Council

St. Bernard Parish Police Jury

Plaquemines Parish Commission
Council

St. Tammany Parish Police Jury

Gregory Junior High School

ENVIRONMENTAL

Orleans Audubon Society

Environmental Defense Fund

ENVIRONMENTAL (Cont'd)

League of Women Voters of Louisiana

Louisiana Wildlife Federation

Delta Chapter, Sierra Club

Bonnet Carre' Rod & Gun Club

United States Department of the Interior
FISH AND WILDLIFE SERVICE
POST OFFICE BOX 4305
103 EAST CYPRESS STREET
LAFAYETTE, LOUISIANA 70502

February 8, 1988

FEB 17 1988

Colonel Lloyd K. Brown
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160

Dear Colonel Brown:

Reference is made to the General Design Memorandum for the London Avenue Outfall Canal feature of the Lake Pontchartrain, Louisiana, and Vicinity Hurricane Protection Project. The intent of this report is to provide your agency with essential data, assumptions, and information to be used in developing the above-referenced General Design Memorandum. This report is provided as a supplement to the Fish and Wildlife Coordination Act Report which was submitted in July 1984 and attached to the Corps of Engineers (Corps) Main Report and Supplement I to the Environmental Impact Statement for this project. This supplemental report constitutes the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and was prepared in consultation with the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service.

The recommended plan presented in the Corps' July 1984 Main Report and Environmental Impact Statement proposes to rectify deficiencies in the main outfall canals entering Lake Pontchartrain to provide hurricane protection for Metropolitan New Orleans. The proposed project includes modification of the London Avenue Outfall Canal located between Lake Terrace Park and the University of New Orleans campus in the lakeshore portion of the Metropolitan New Orleans drainage area.

Presently, two alternatives are under consideration. The first alternative consists of a water control structure, recessed within the London Avenue Outfall Canal, inland from the outfall at the south shore of Lake Pontchartrain. The water control structure would require partial closure of the canal and installation of a vertical-pivoting butterfly valve gate. The gate would allow canal waters to flow into Lake Pontchartrain whenever the water level in the canal exceeds that of the lake. Conversely, when lake water levels exceed that of the canal, the gate would automatically close. This alternative would require an undetermined amount of dredging of the canal during construction of the water control structure, levees, and approach channels.

The second alternative is identified in the Corps' Main Report and Supplement I to the Environmental Impact Statement for the Hurricane Protection Project. This alternative consists of raising the height of the return levees paralleling the London Avenue Outfall Canal and providing floodgates or road ramps at all existing bridges crossing the canal. The levees would either be widened landward from the canal, or floodwalls would be installed atop the existing levee to achieve the required height for hurricane protection. The amount of dredging associated with this second alternative is also undetermined at this time.

The existing levee to be affected by the proposed improvements is frequently mowed. Predominant vegetation on the levee includes perennial grasses and herbs. Due to human disturbance and vegetative structure, the levee is thought to provide habitat of negligible value to wildlife. In addition, the waters of the London Avenue Canal receive stormwater runoff pumped from the Metropolitan New Orleans area and are of generally poor water quality and of negligible value as habitat for fishery resources. Accordingly, the habitat of the levees and adjacent canal to be directly affected by the two alternatives under consideration have been designated as having medium to low value to fish and wildlife resources. However, the Service believes that planning goals to minimize further loss of habitat value or project impacts to adjacent areas should be considered.

Indirect impacts of the proposed project may include adverse effects to the nearshore areas of Lake Pontchartrain. Wildlife use of these nearshore areas include limited feeding and resting by various seabirds and migratory waterfowl, principally lesser scaup. Lesser scaup feed on benthic fauna of the project area during the winter months. Accordingly, the estuarine subtidal open water habitat found in the vicinity of the proposed project feature is considered to have medium wildlife resource value. The nearshore areas adjacent to the proposed project area also provide moderate to high value nursery and feeding habitat for estuarine-dependent commercial and sport finfishes and shellfishes. Economically important sport and commercial species common to the nearshore areas of Lake Pontchartrain include brown shrimp, white shrimp, blue crab, Atlantic croaker, gulf menhaden, spot, striped mullet, red drum, southern flounder, spotted seatrout, sand seatrout, black drum, and sheepshead.

The fish and wildlife habitat quality of the nearshore areas of Lake Pontchartrain has been and continues to be degraded by a variety of human activities and natural phenomena. The southern portion of Lake Pontchartrain is particularly degraded by chronic inputs of a broad spectrum of contaminants from urban, domestic, and commercial sources. Most significantly impacted are the nearshore habitats that receive discharges from the major drainage canals (including the London Avenue Outfall Canal). These canals are the primary receiving basins for stormwater runoff and incidental sewerage effluent from the metropolitan area adjacent to the lake (Schurtz and St. Pé 1984). Storm water runoff pumped into the London Avenue Outfall Canal and ultimately discharged into Lake Pontchartrain may be characterized as moderately polluted, when compared to adjacent outfall canals. Slightly elevated levels of total hydrocarbons, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, chlordane, DDT

metabolites, heavy metals, and other contaminants have been found in the nearshore sediments adjacent to the mouth of the London Avenue Outfall Canal (Schurtz and St. Pé 1984).

Two types of contaminants present in the stormwater effluent entering the London Avenue Outfall Canal affect aquatic life in the canal and nearshore vicinity of the proposed project area. Organic chemicals and heavy metals biodegrade very slowly and tend to accumulate in the sediments, demonstrating varying degrees of toxicity, bioaccumulation, and/or sublethal effects to aquatic organisms. Other compounds biodegrade much more readily, causing periodic and severe oxygen depletions in the canal and nearshore areas (especially during the warmer months), resulting in eutrophication (i.e., excessive enrichment) in the lake overall (Schurtz and St. Pé 1984).

The canals west of the Inner Harbor Navigation Canal (including the London Avenue Outfall Canal) chronically exceeded standards for fecal coliform, ammonia, and a variety of heavy metals (Englande et al. 1979). Environmental Protection Agency criteria for propagation of fish and wildlife were also consistently exceeded for dissolved oxygen, copper, iron, barium, zinc, cadmium, and phenol. Nickel, mercury, cynanide, arsenic, lead, pH, suspended solids, and oil and grease concentrations were also noted to have frequently exceeded recommended levels (England et al. 1979).

Runoff entering the outfall canals undergoes quality changes prior to discharge from the drainage canal system. Dissolved oxygen levels decrease and coliform concentrations increase dramatically during canal storage between rainfall events (Englande et al. 1979). The effect of contaminated runoff is a year-round problem in the project area, particularly during periods of intense rainfall. Oxygen depletions caused by the "first-flush" of stormwater are particularly detrimental due to the comingling of effluent from stormwater and leaking sanitary sewers (Englande et al. 1979).

Total numbers and species diversity of benthic organisms are severely affected by oxygen depletions and chronic exposure to pollutants because they cannot readily move to cleaner areas. Severe dissolved oxygen depletions frequently cause mass mortalities of aerobic benthic organisms. Persistent low oxygen conditions may result in mortality of even highly tolerant, facultatively anaerobic organisms as well (Schurtz and St. Pé 1984). The effects of oxygen depletions and chronic exposure to contaminants on fishes and crustaceans is more difficult to assess because they can avoid the affected area.

There are several anticipated impacts on fish and wildlife resources which may result from the dredging and construction activities associated with the proposed project. Installation of the butterfly-valve water control structure may resuspend contaminated sediment into the water column, resulting in a temporary increase of turbidity in the project area. Reductions in benthic and plankton populations in the canal and nearshore areas due to increased turbidity may also be anticipated. Consequently, local populations of fishes and shellfishes which are dependent upon these food sources may be displaced. Resuspension of polluted sediments are likely to cause an oxygen depletion and may release toxic materials into the canal and

adjacent nearshore areas, potentially resulting in a fish kill. Similar impacts would be associated with dredging of borrow material from the London Avenue Outfall Canal if such action was needed to upgrade existing pump stations and to enlarge the parallel levees along that canal.

To minimize the potential impacts to fish and wildlife resources associated with either proposed alternative, the Service recommends that the following modifications be incorporated in the General Design Memorandum for the London Avenue Outfall Canal feature:

1. To minimize potential discharges of contaminated suspended sediment into Lake Pontchartrain, a turbidity screen should be used in the outfall canal and nearshore areas during all dredging operations associated with site access and construction activities that may resuspend sediment.

2. All dredged material should be removed by bucket dredge and transported to a state-approved, upland site for disposal.

Please advise us of any significant changes in the proposed project alternatives as the General Design Memorandum proceeds through the Corps' review and approval process so that we may provide you with appropriate findings and recommendations relative to those changes.

Sincerely yours,

David M. Smith
Acting Field Supervisor

TWS/pl

cc: EPA, Dallas, TX
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD), Baton Rouge, LA
LA Dept. of Environmental Quality (Attn: Mike Schurtz)
NMFS, Baton Rouge, LA
FWS, Atlanta, GA (AWE)
FWS, Jackson, MS
FWS, Washington, DC (ES/FP)

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