Boring By Guide wall C-1

AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

SUMMARY OF LABORATORY TEST DATA

PROJECT: ~~Brazos River Floodgates and~~ Colorado River Locks

BORING NUMBER	DEPTH IN FEET	MOISTURE, %	DRY DENSITY, PCF	COMPRESSION, TSF	STRAIN, %	TYPE FAILURE	LAT. PRESSURE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SIEVE (NO. 200)	CONSOLIDATION	SWELL, %
87-209	Top. El. +9.0 M.L.T.			X-Sec. El. 9.4									
1C	0'-2'	24.4											
2J	2'-4'	14.3									12.7		
3J	7'-9'	37.8						X	X		85.9		
4C	12'-14'	21.5	100.6					19	15	4	31.0		
5J	14'-16'	25.6									24.6		
6J	19'-21'	25.1											
7C	22'-24'	27.1	99.3	2.07	2.67	Slicken-sided		68	29	39	100.0		
8C	24'-26'			Sample is to be tested by Government									
9C	26'-28'	22.9											
10J	28'-30'	22.1									68.6		
11C	33'-35'	26.4	102.2	2.80	6.33	Bulge		58	21	37	92.4		
12J	37'-39'	24.7									18.7		
13C	43'-45'			Sample is to be tested by Government									
14J	45'-47'	24.2									71.4		
15C	47'-49'	27.4	96.6	2.32	3.00	V.Split		54	23	31	97.0		
16C	50'-52'	29.0											
17C	52'-54'	28.3	97.2	1.15	1.00	slickensided 45° S		75	33	42	91.8		
18C	54'-56'			Sample to be tested by Government									
19C	56'-58'	29.0	97.6	1.63	2.67	45° S		68	29	39	91.4		
20C	58'-60'	18.7											
21J	60'-62'	18.4									67.2		
22J	65'-67'	22.0											

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SUMMARY OF LABORATORY TEST DATA

PROJECT: Brazos River Floodgates and Colorado River Locks

BORING NUMBER	DEPTH IN FEET	MOISTURE, %	DRY DENSITY, PCF	COMPRES-SION, TSF	STRAIN, %	TYPE FAILURE	LAT. PRESSURE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SIEVE (NO. 200)	CONSOLI-DATION	SWELL, %
87-209													
23C	68'-70'	25.1	103.7	1.40	1.33	Slicken-sided		58	23	35	88.6		

AVILES ENGINEERING CORP.
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PROJECT Brazos River Floodgates and Colorado River Locks, Gulf Intracoastal Waterway

BORING 87-209

DATE 01-16-88 TYPE 6" Core LOCATION See Plan

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS / FOOT	M.C., %	U.D.W., PCF	LIQUID LIMIT	PLASTIC LIMIT
			X-Sec El. +9.4 GND. El. +9.0 M.L.T.					
0			Brown Silty Clay w/ Shell Fragments (CL)		24			
			Brown Sand - Soft (SM)	3	14			
5								
			Brown Clay w/Shell Fragments-Soft (CH)	2	38			
10								
			Gray Silty Sand w/Shell Fragments - Soft (SM)		22	101	19	15
15				5	26			
			Sandy Silt Think this must be MU					
20				2	25			
			Reddish Brown Clay - Very Stiff - Slickensided 22'-24'		27	99	68	29
25			- w/Calcareous Nodules 24'-27'					
			-w/ Sandy Pockets 26'-30'		23			
				49	22			
30								
			-w/Silt Parting & Sand Pockets 33'-35'		26	102	58	21
35			Tan Sand w/Shell Fragments (SM)					
				50/4"	25			
40			- Layered Clay & Sand 41'-46'					
45				45	24			
			Reddish Brown Clay - Very Stiff - w/Sand Seams 46'-51'		27	97	54	23
50								

SHEAR STRENGTH, TSF
O – POCKET PENETROMETER
X – LABORATORY CONFINED
● – LABORATORY UNCONFINED
0.5 1.0 1.5 2.0 2.5

AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT Brazos River Floodgates and Colorado River Locks, Gulf Intracoastal Waterway

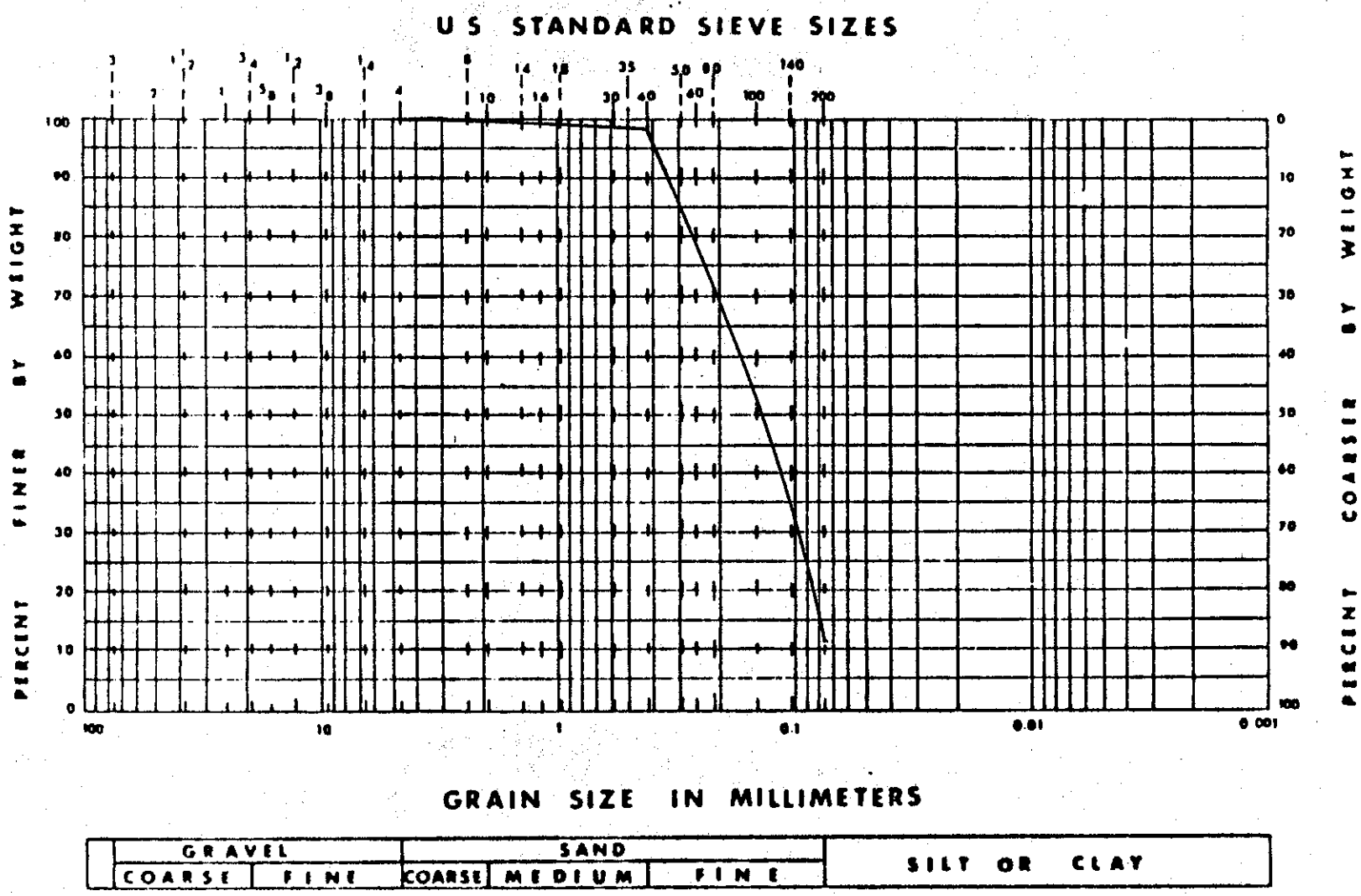
BORING 87-209

DATE 01-16-88 TYPE 6" Core LOCATION See Plan

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS / FOOT	M.C., %	U.D.W., PCF	SHEAR STRENGTH, TSF (O – POCKET PENETROMETER; X – LABORATORY CONFINED; ● – LABORATORY UNCONFINED; 0.5 1.0 1.5 2.0 2.5)	LIQUID LIMIT	PLASTIC LIMIT
50			Gray & Tan Clay w/Shell Fragments - Very Stiff (CH)		29				
			- w/Calcareous Nodules 50'-54'		28	97		75	33
			- Slickensided 52'-54'						
55			- w/Silt Pockets 56'-58'		29	98		68	29
			Tan & Gray Silty Clay - Very Stiff (CL)		19				
60			- w/Sandstone Fragments 60'-62'	50/6"	18				
			Tan Silty Sand (SM)						
65			- Very Dense						
			- w/Clay Pockets 65'-67'	50/4"	20				
			Greenish Gray Clay - Slickensided (CH)		25	104		58	23
70			Bottom @ 70'						

Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 2J
Depth 2'-4'



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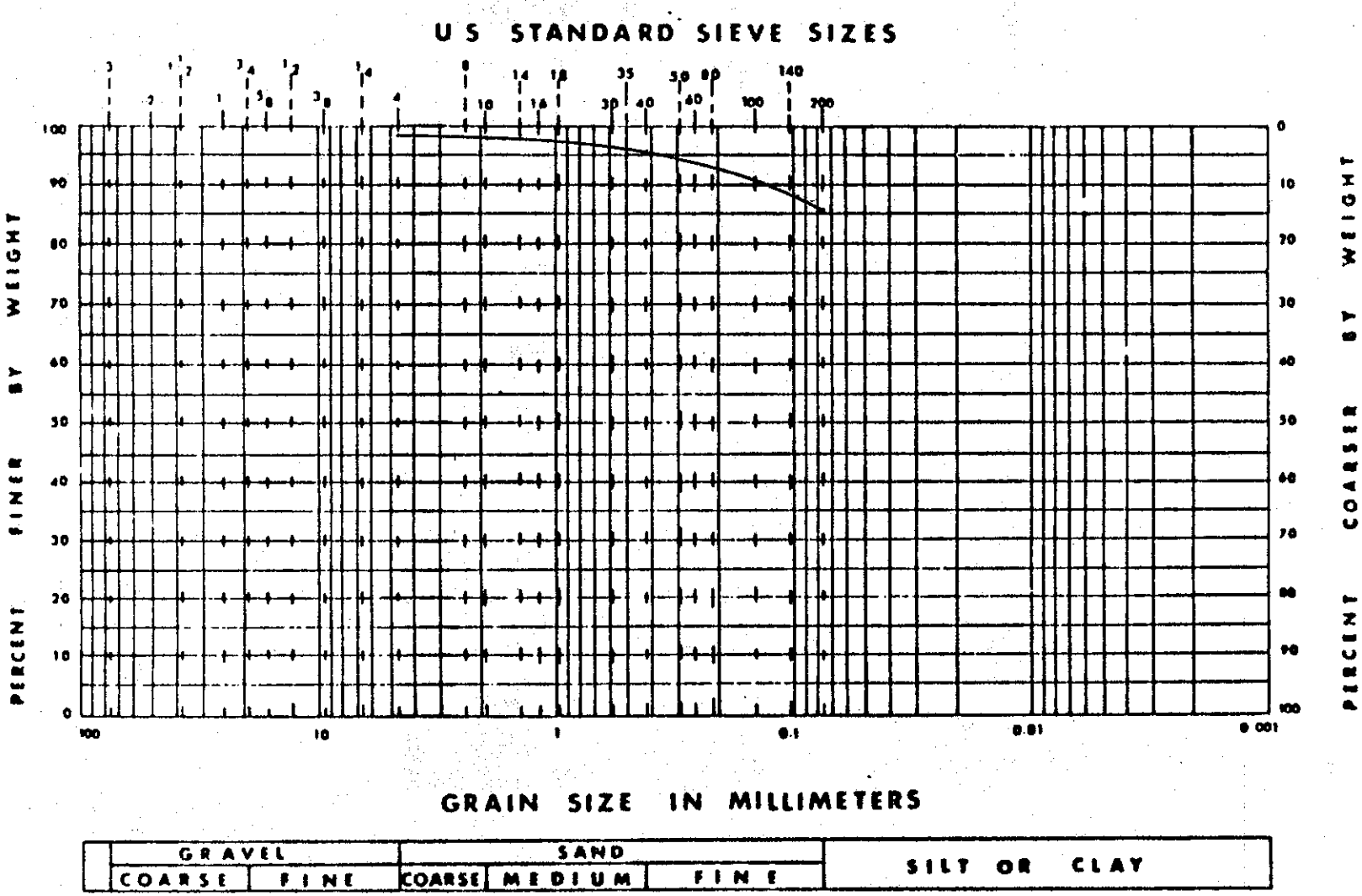
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 3J
Depth 7'-9'



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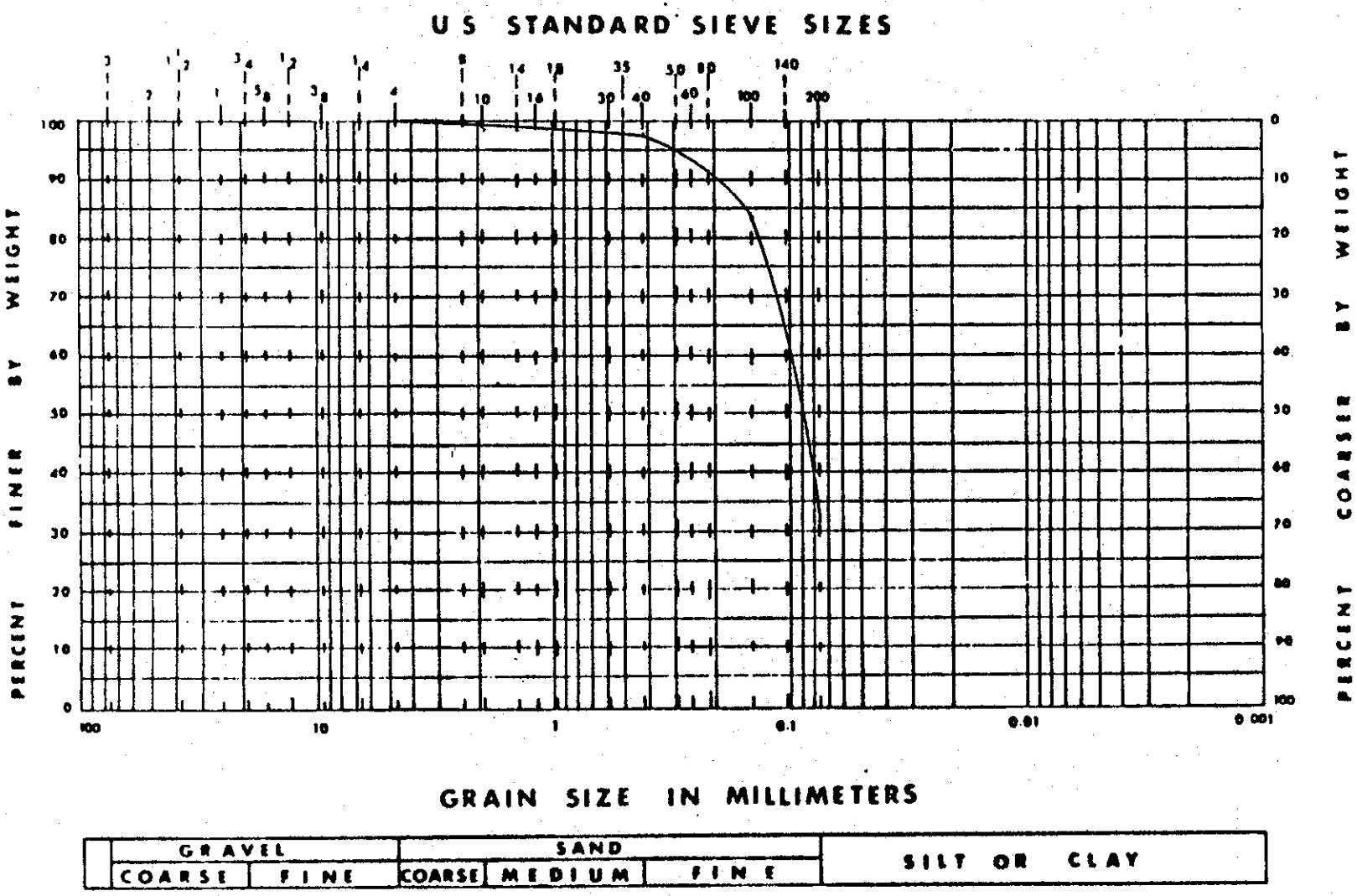
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 4C
Depth 12'-14'



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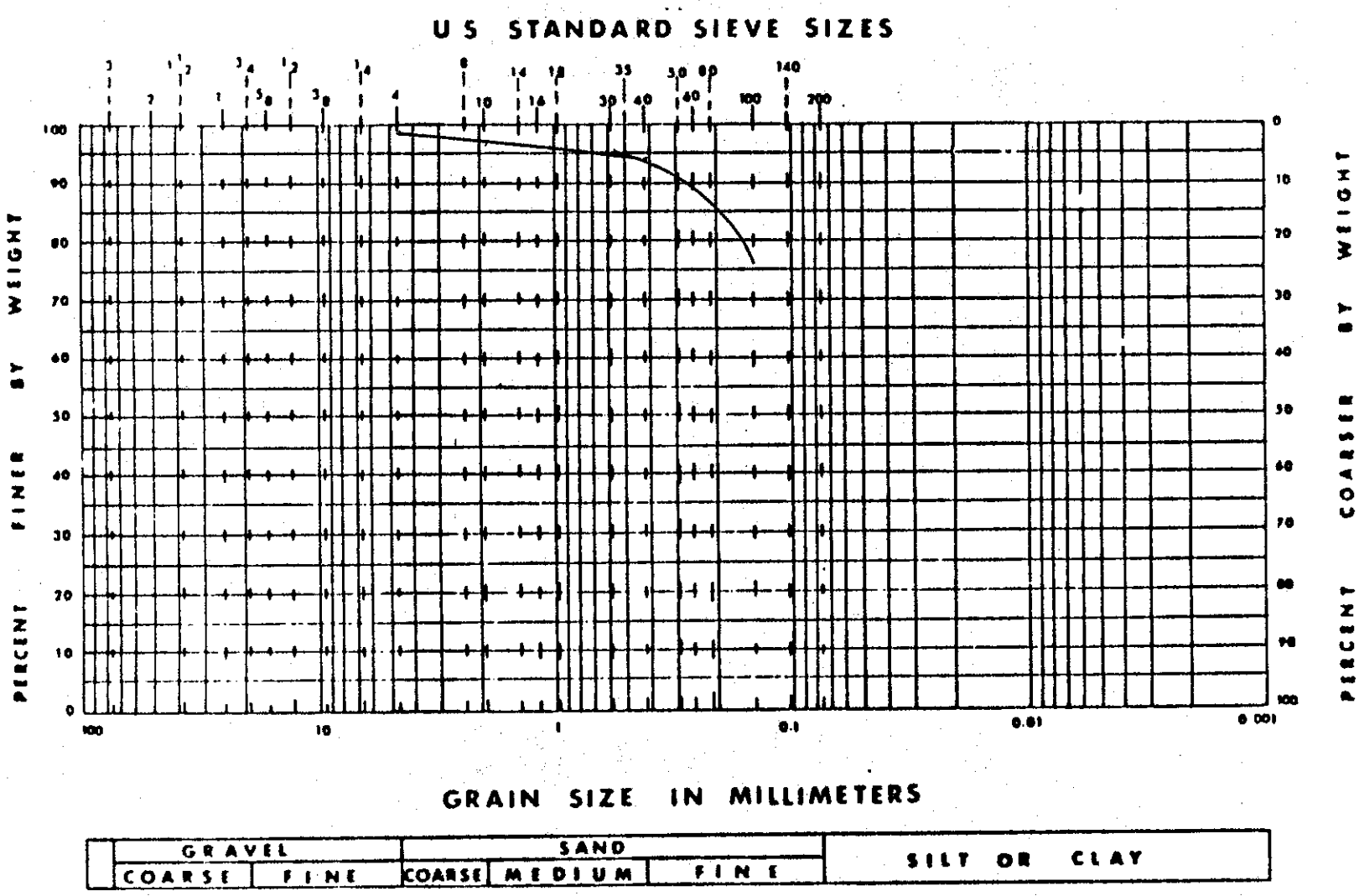
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 5J
Depth 14'-16'



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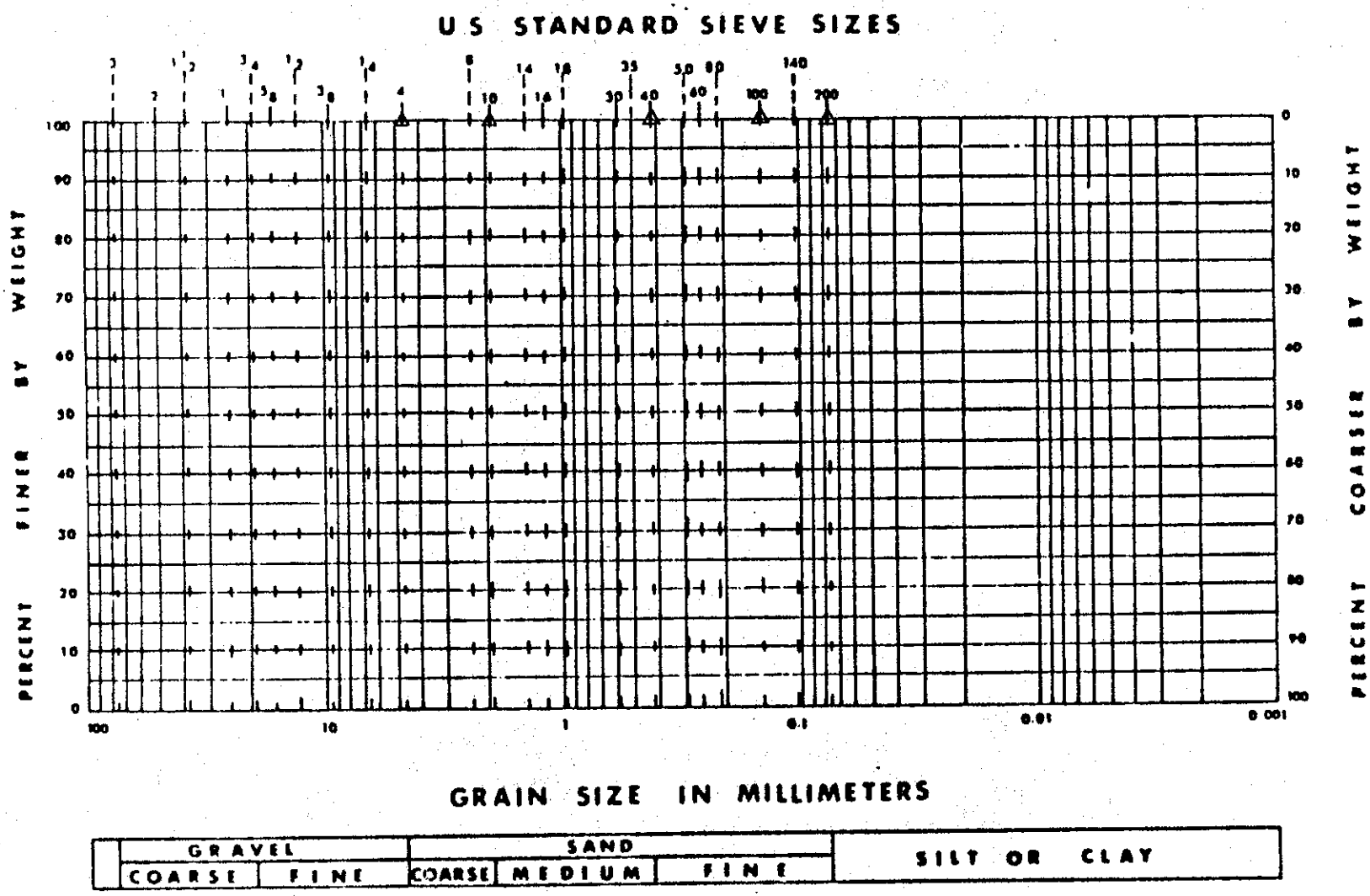
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 7C
Depth 22'-24'



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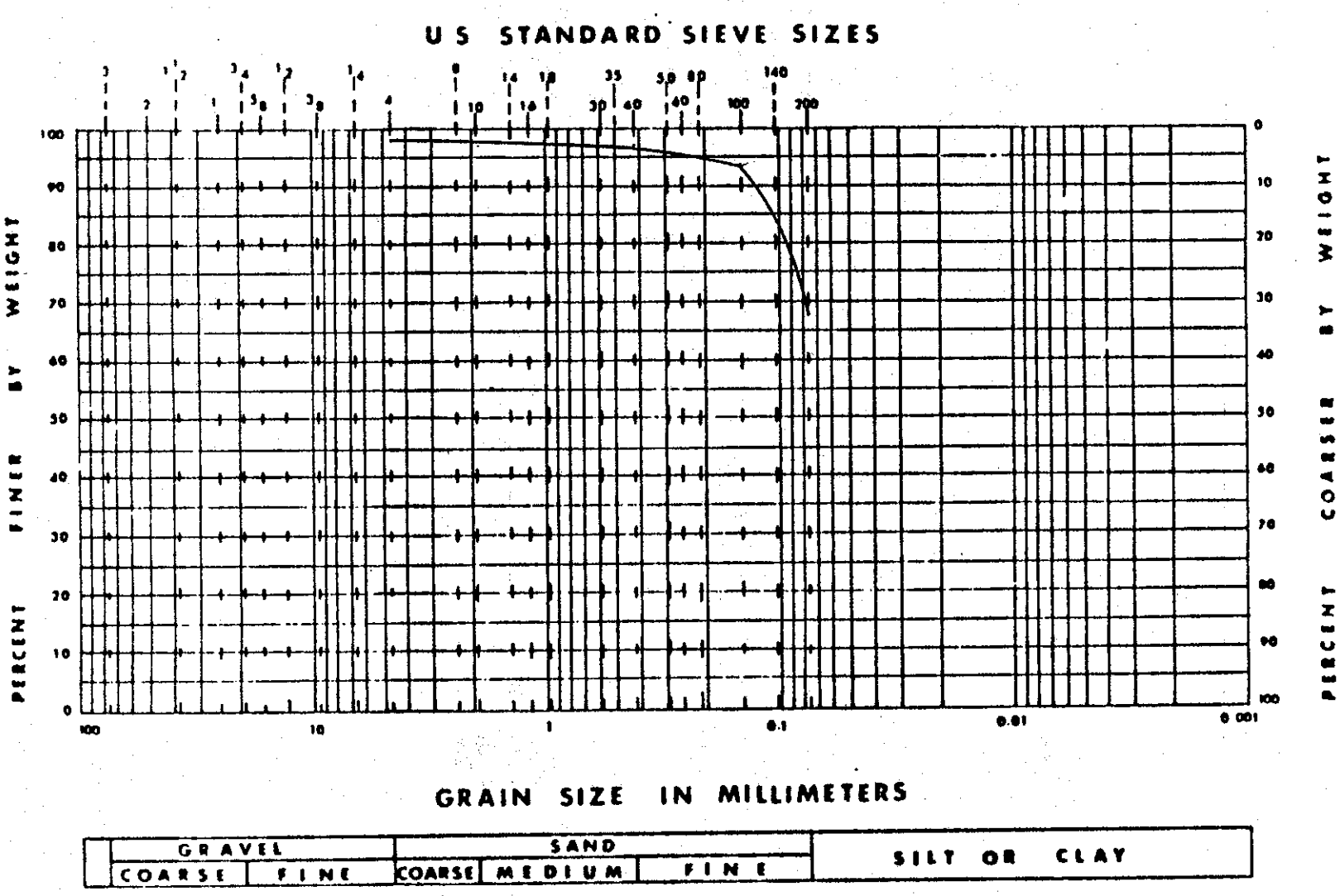
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 10J
Depth 20'-30'



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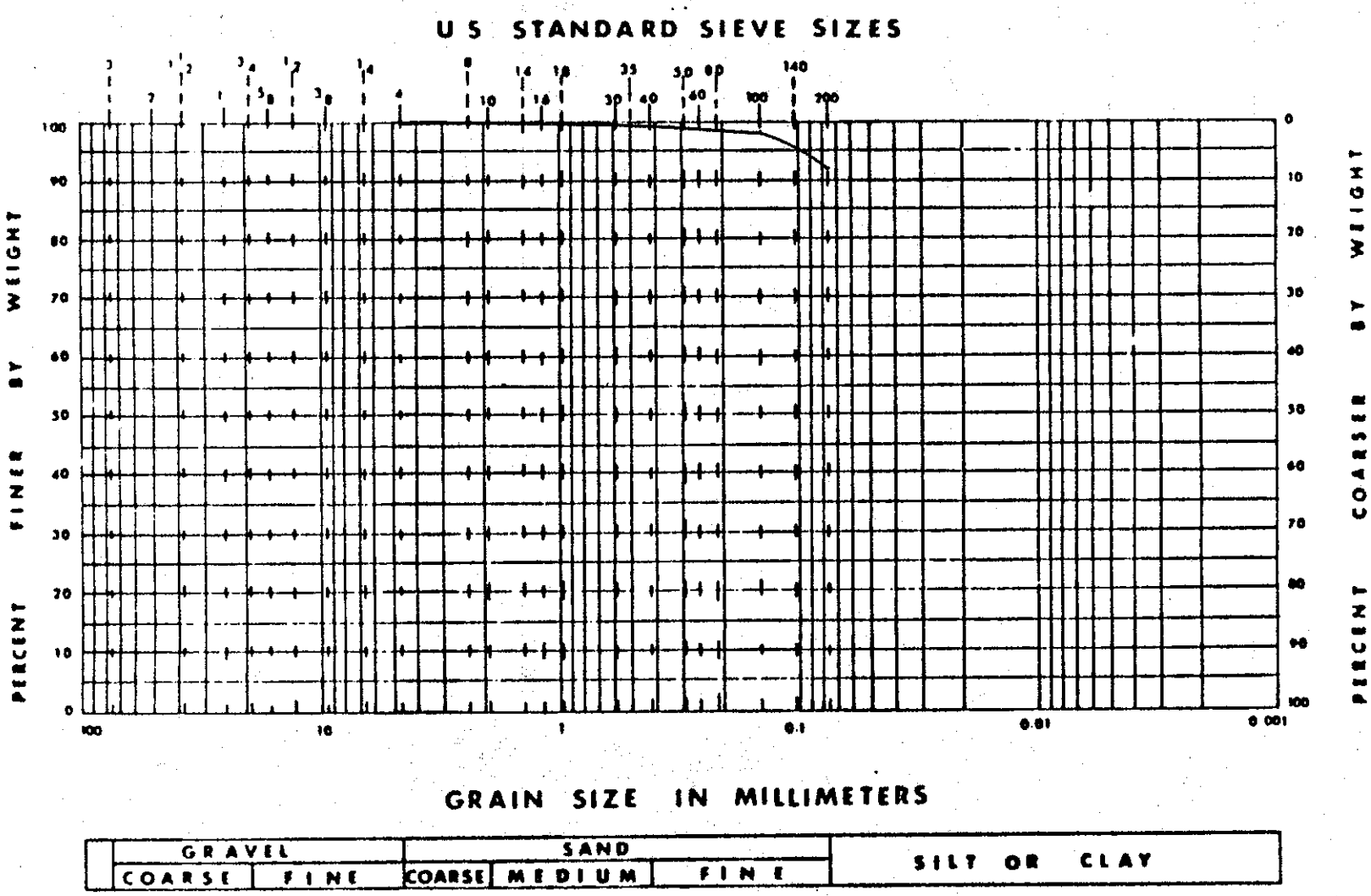
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 11C
Depth 33'-35'



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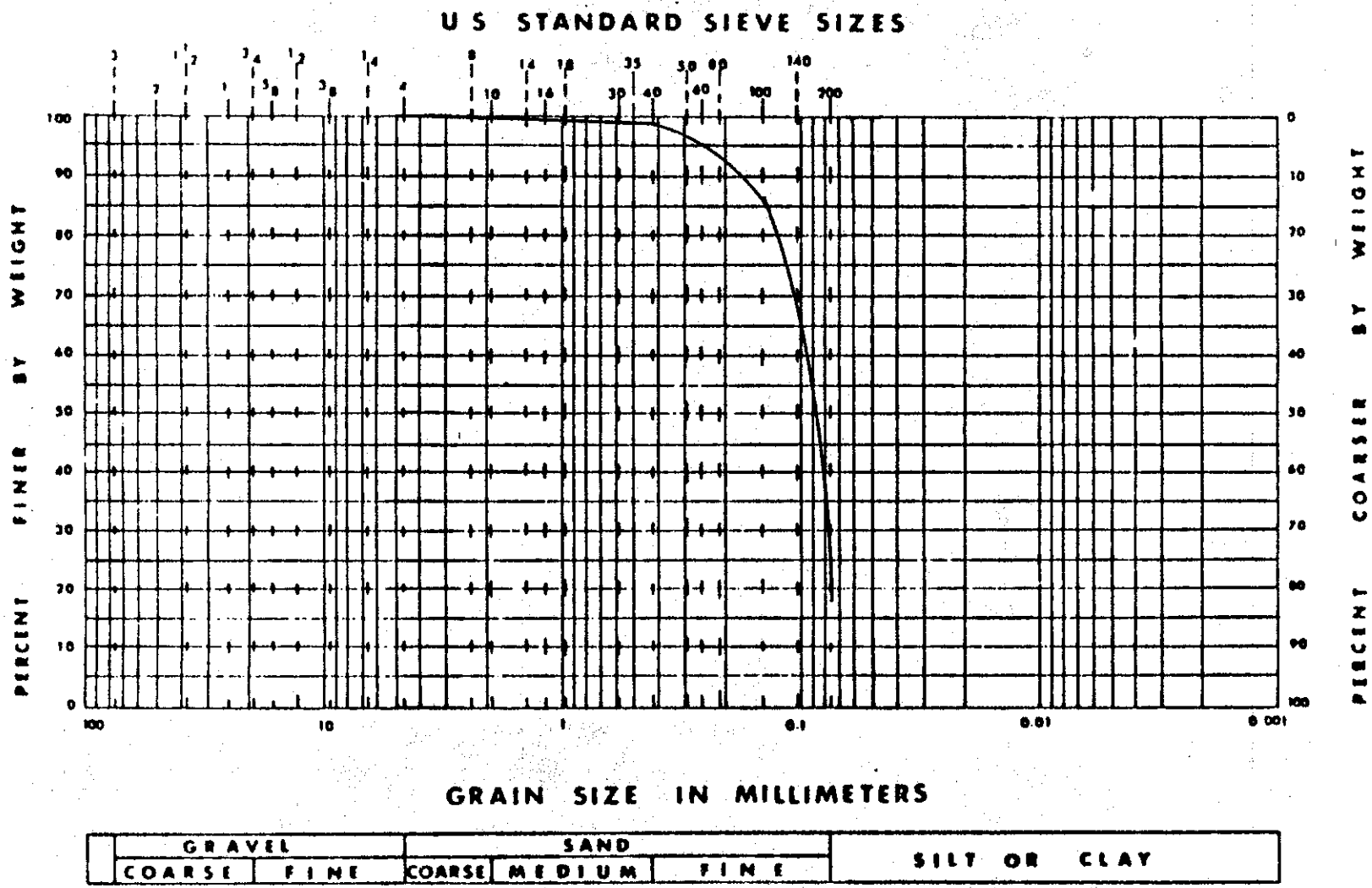
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 12J
Depth 37'-39'



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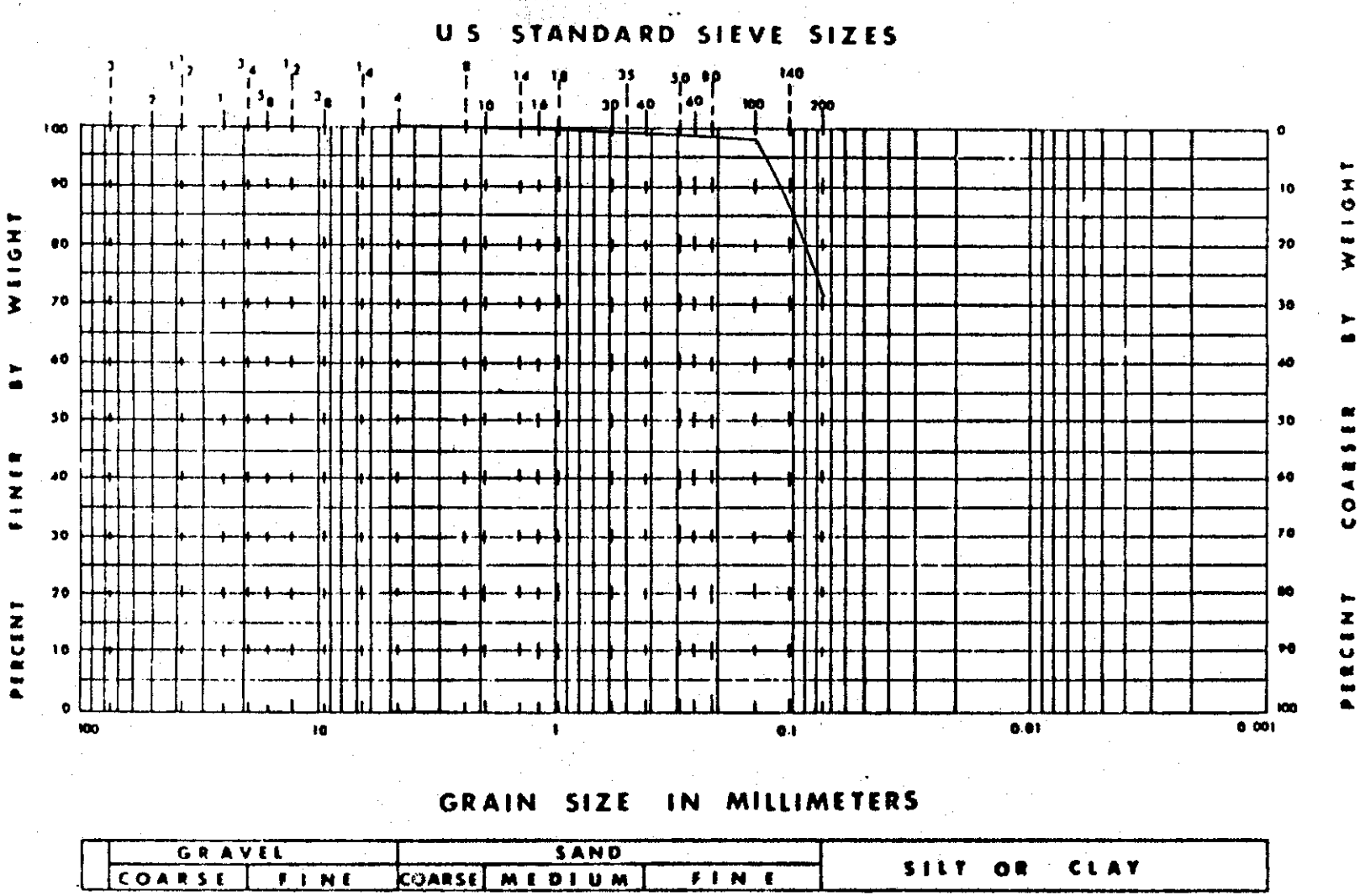
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 14J
Depth 45'-47'



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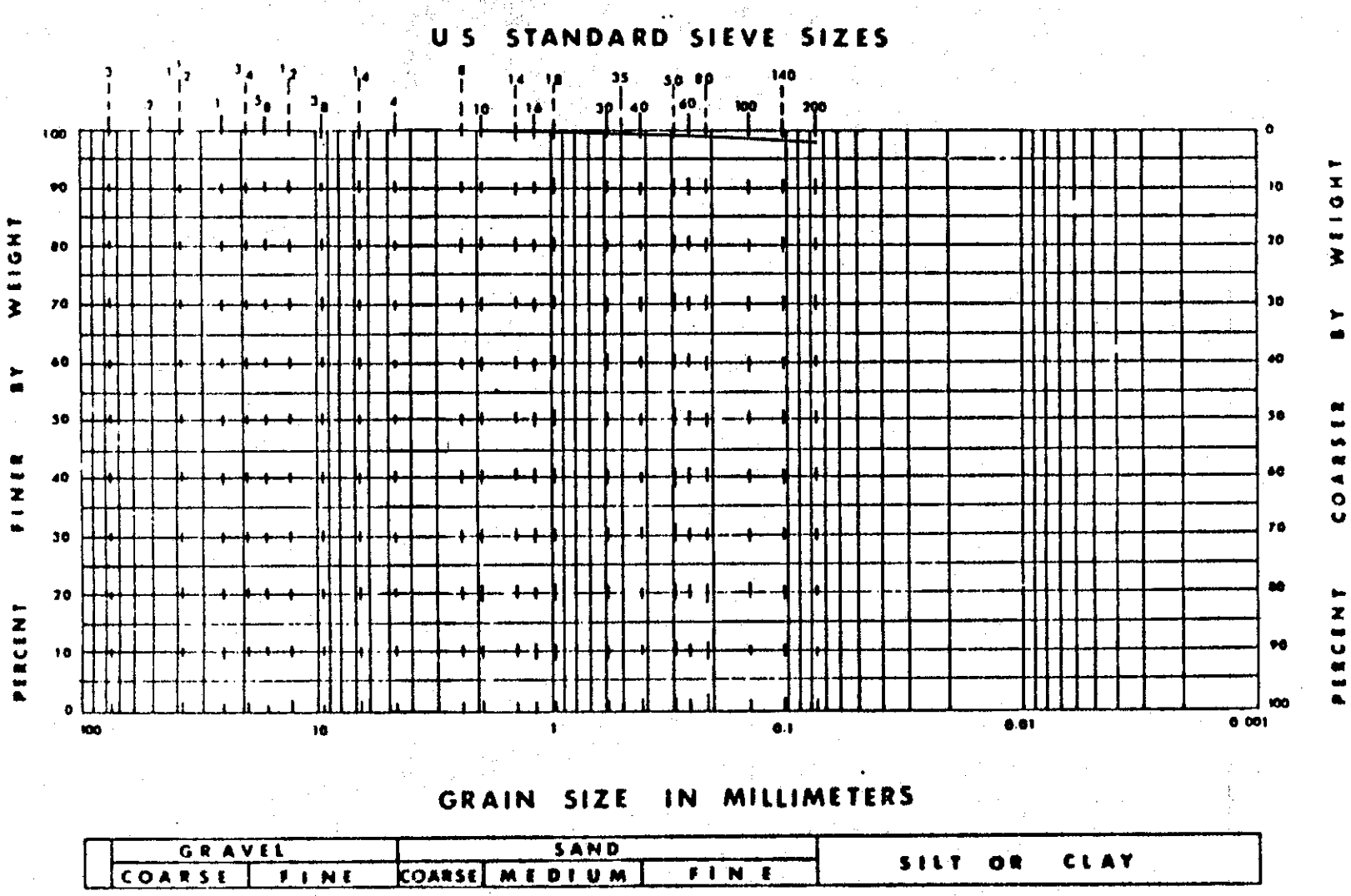
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 15C
Depth 47'-49'



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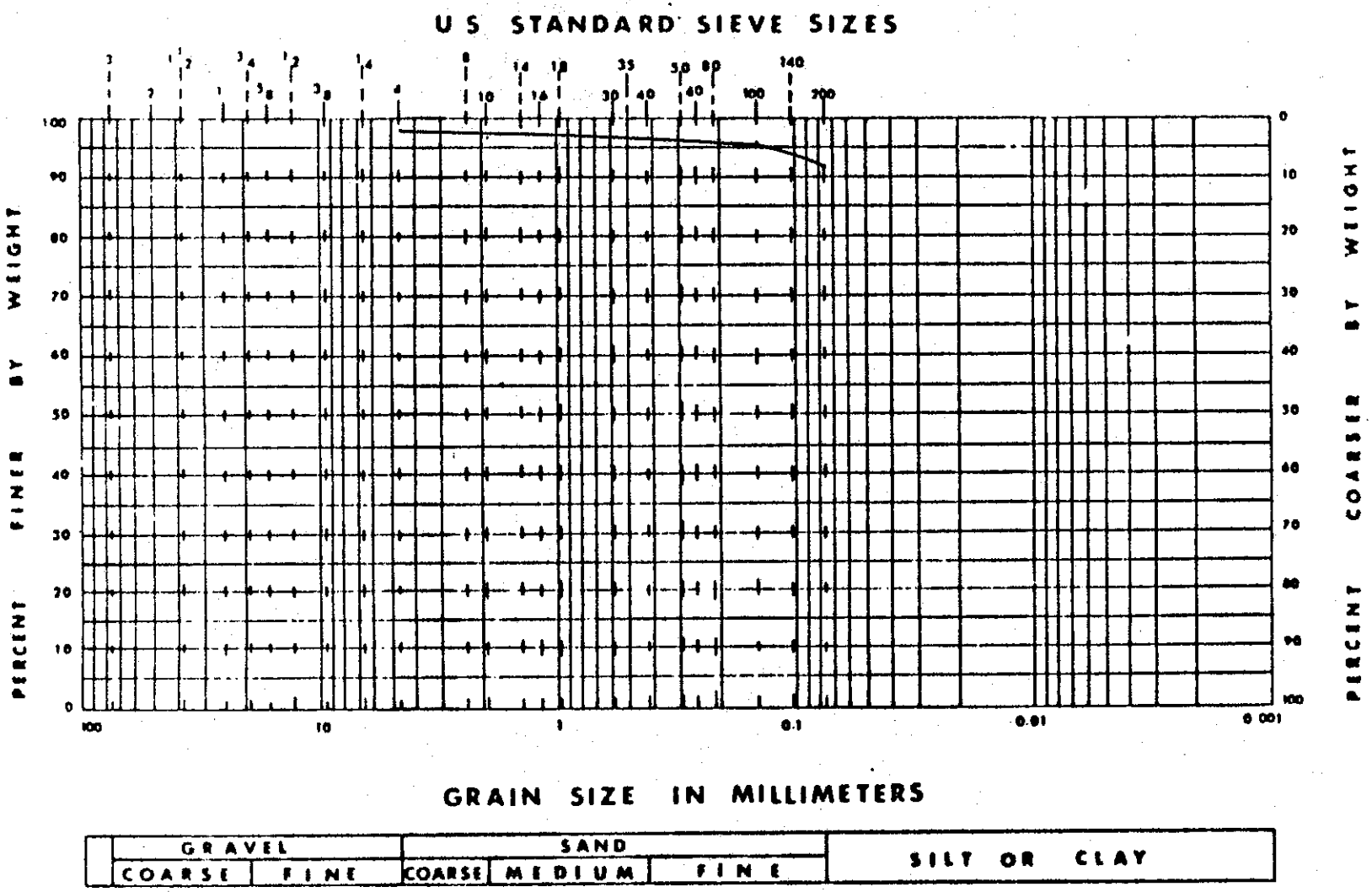
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 17C
Depth 52'-54'



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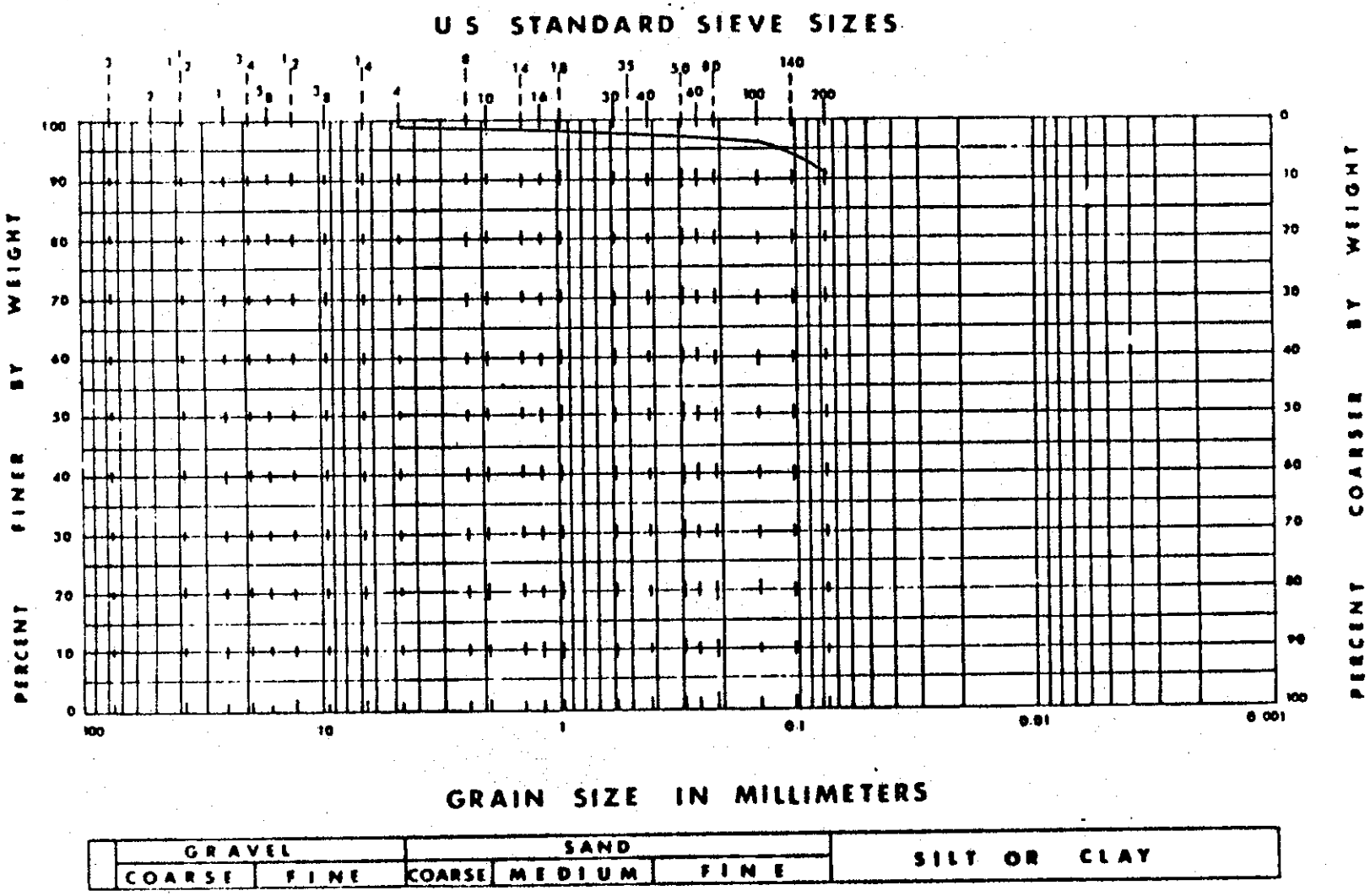
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 19C
Depth 56'-58'



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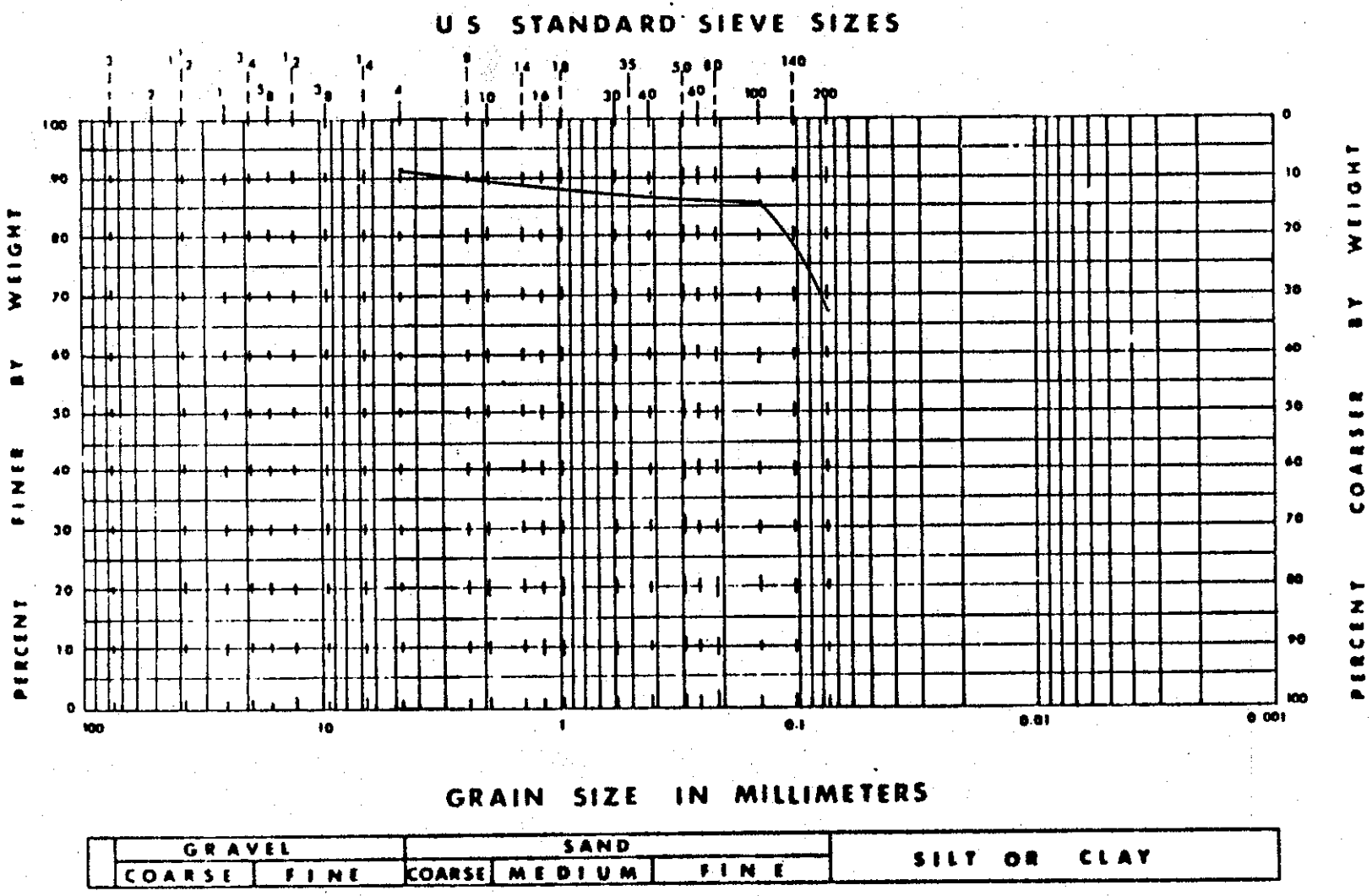
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 21J
Depth 60'-62'



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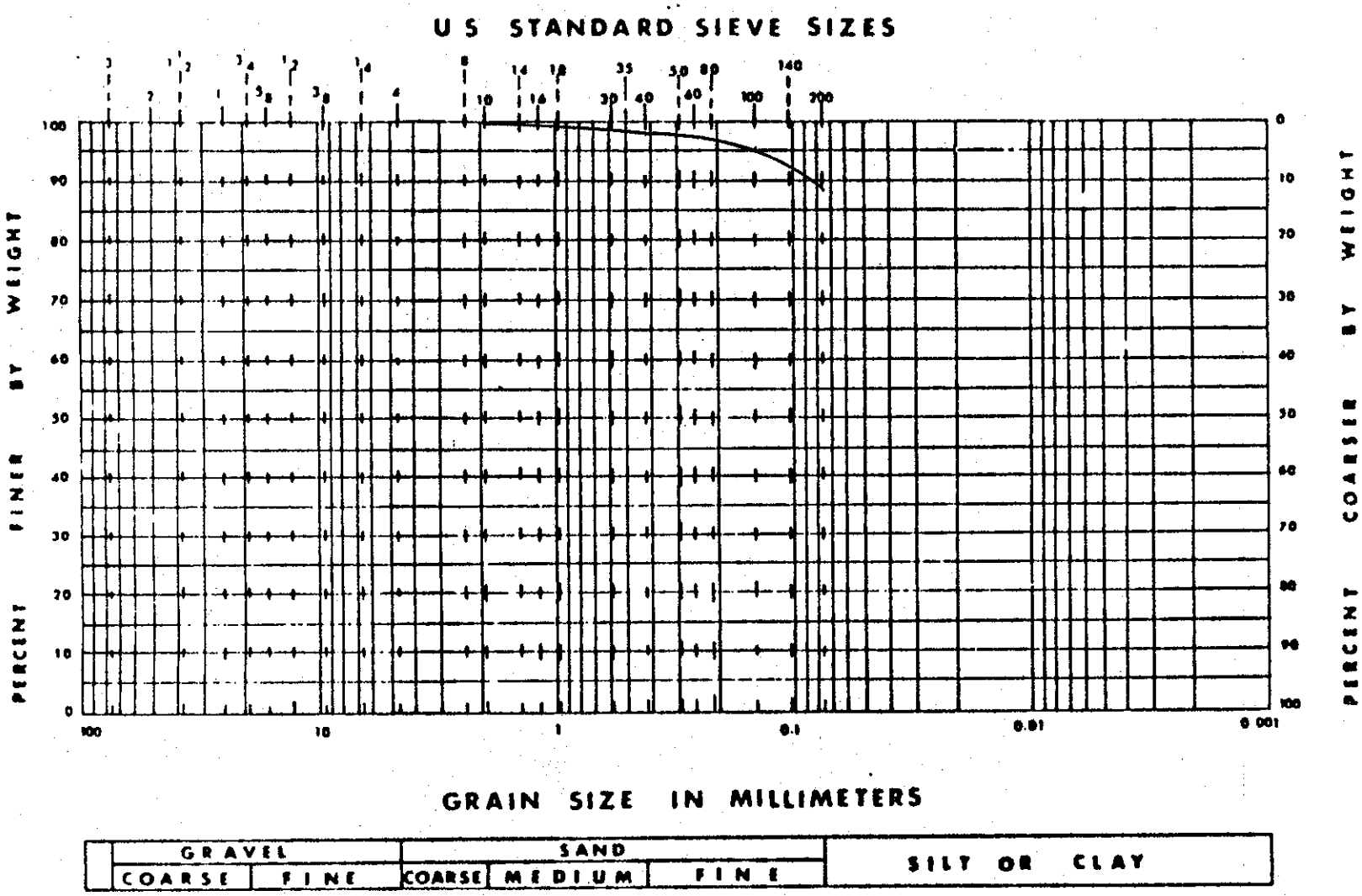
Brazos River Floodgates and Colorado River Locks

Boring No. 87-209 Sample 23C
Depth 68'-70'



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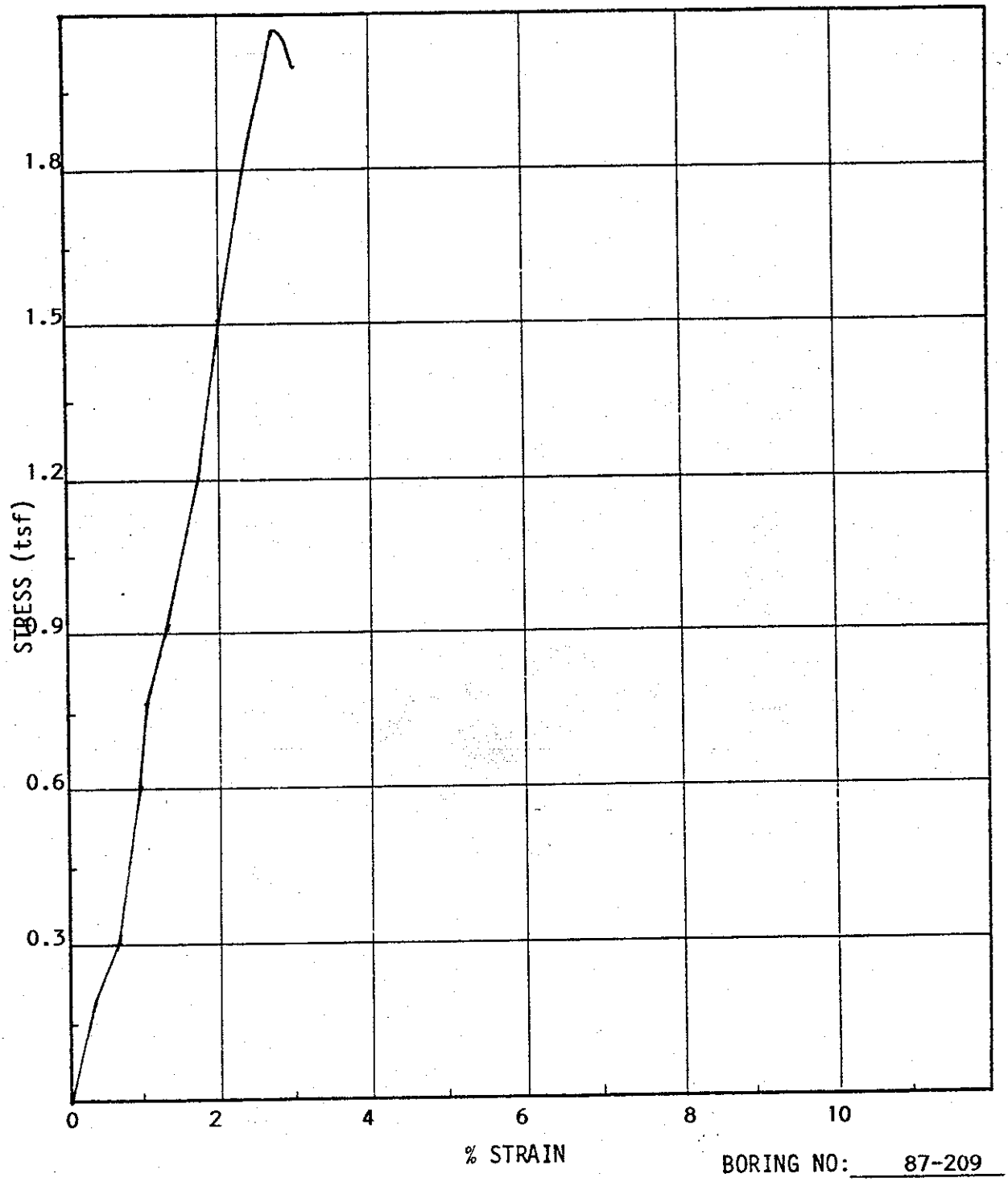
UNCONFINED COMPRESSION TEST



BORING NO: 87-209

SAMPLE DEPTH: 22'-24'

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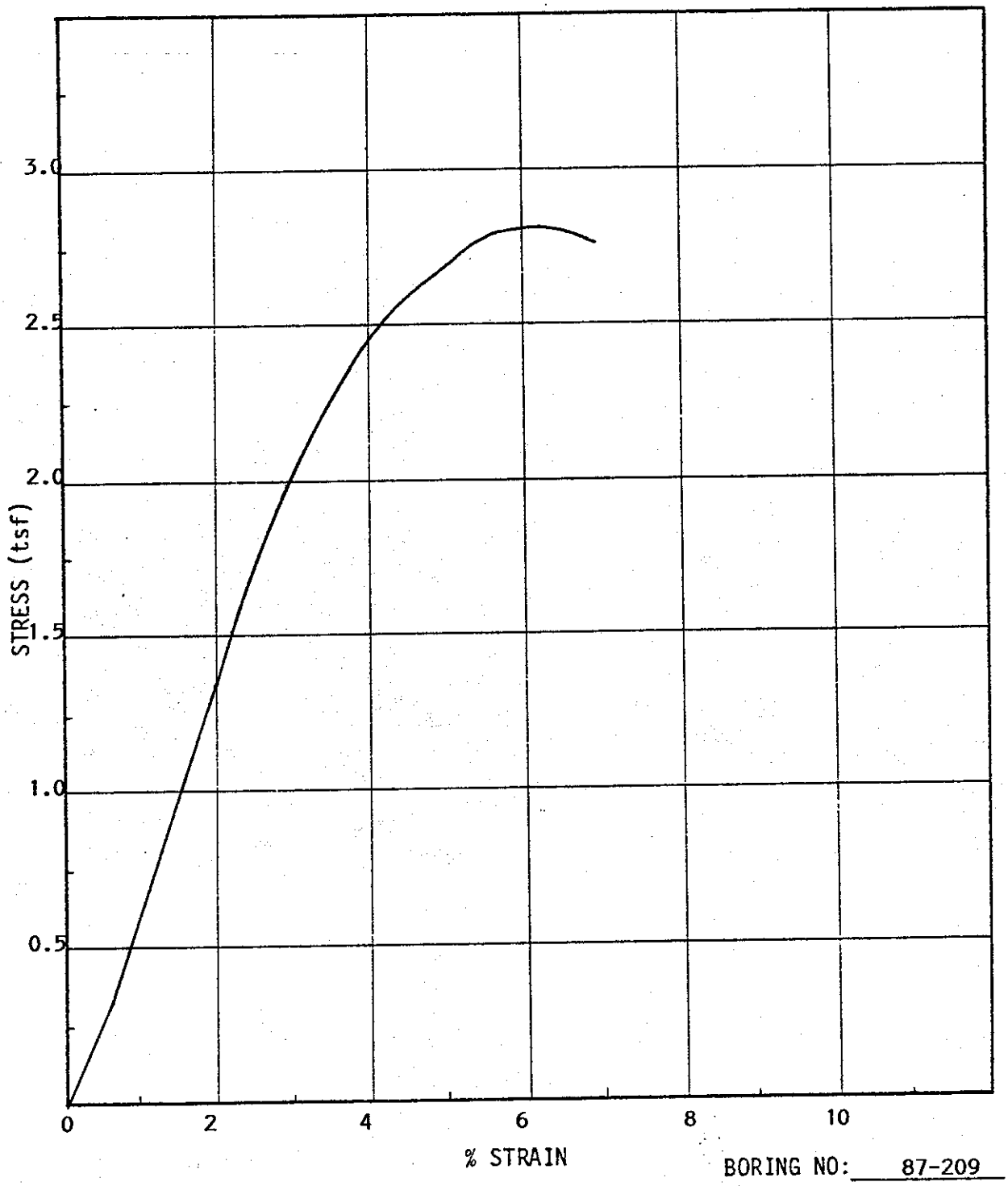
UNCONFINED COMPRESSION TEST



BORING NO: 87-209

SAMPLE DEPTH: 33'-35'

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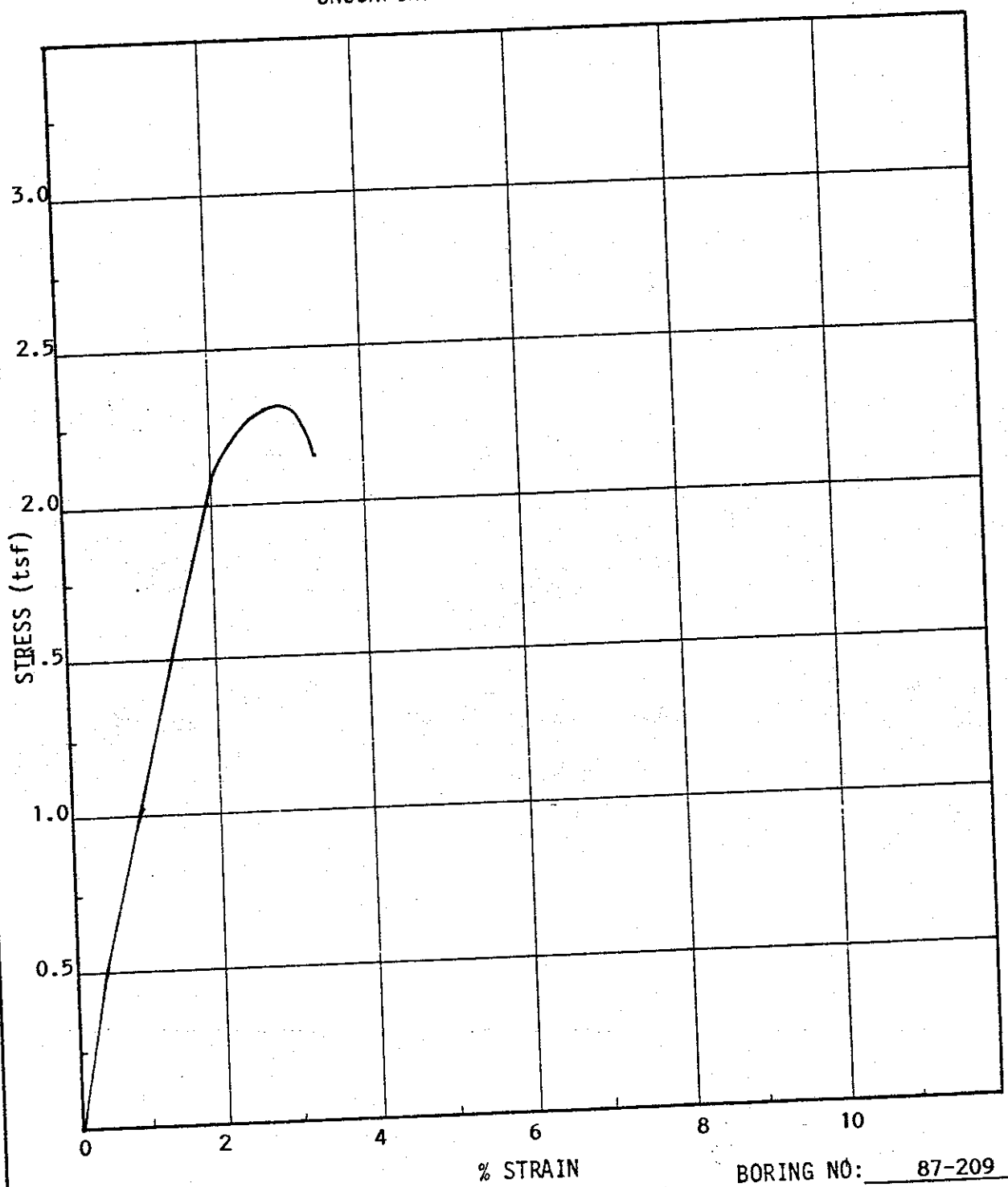
UNCONFINED COMPRESSION TEST



BORING NO: 87-209

SAMPLE DEPTH: 47'-49'

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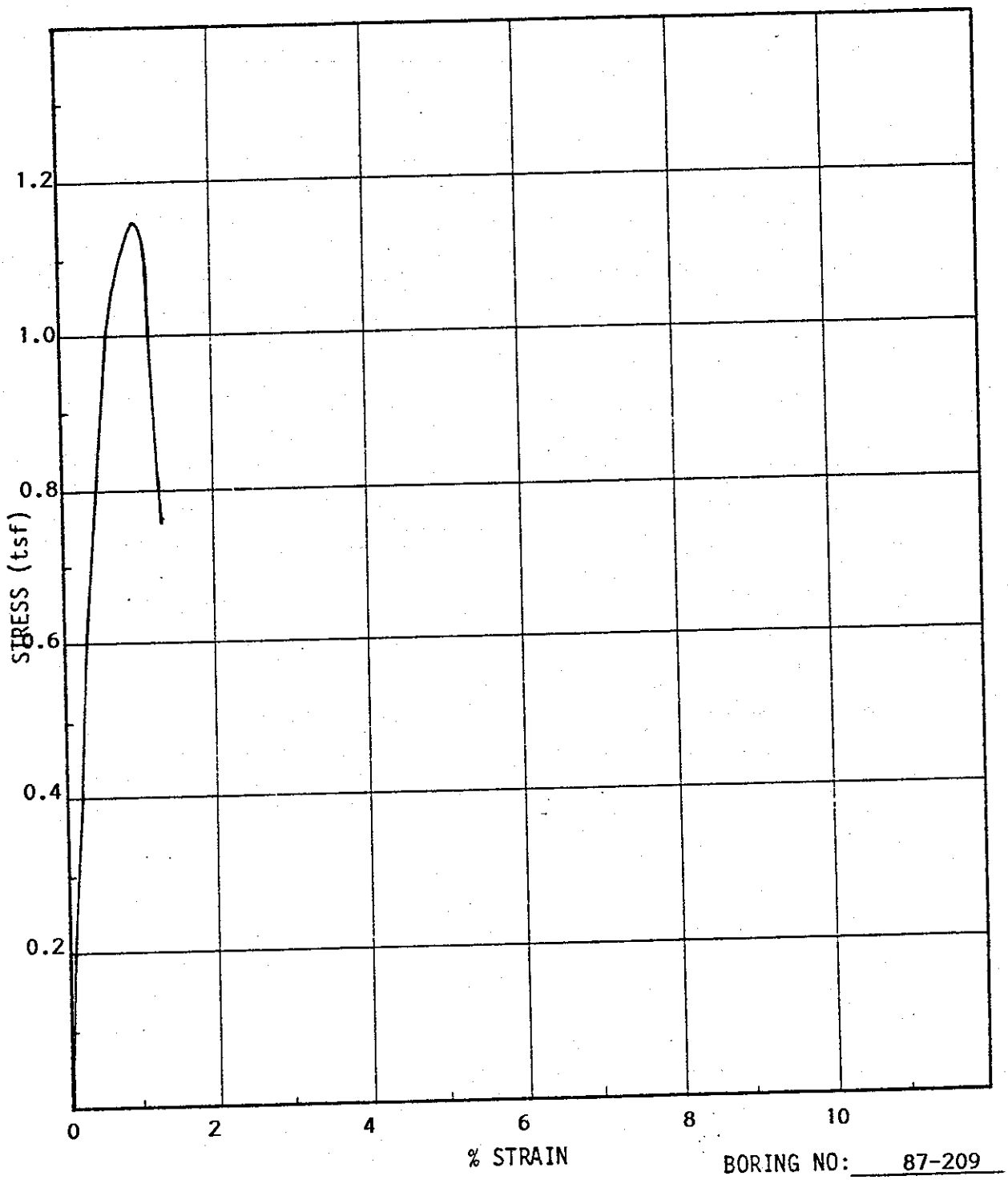
UNCONFINED COMPRESSION TEST



BORING NO: 87-209

SAMPLE DEPTH: 52'-54'

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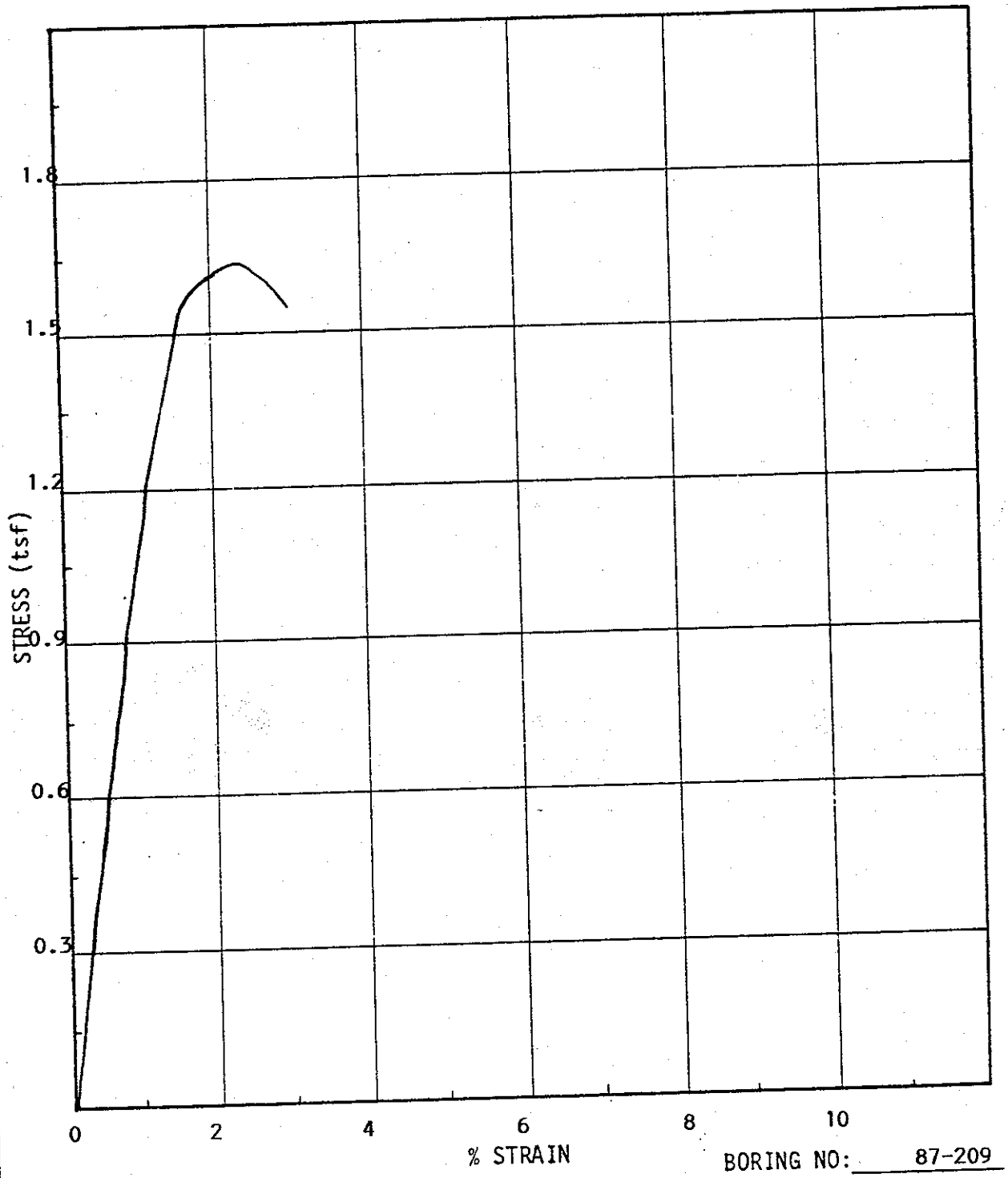
UNCONFINED COMPRESSION TEST



BORING NO: 87-209

SAMPLE DEPTH: 56'-58'

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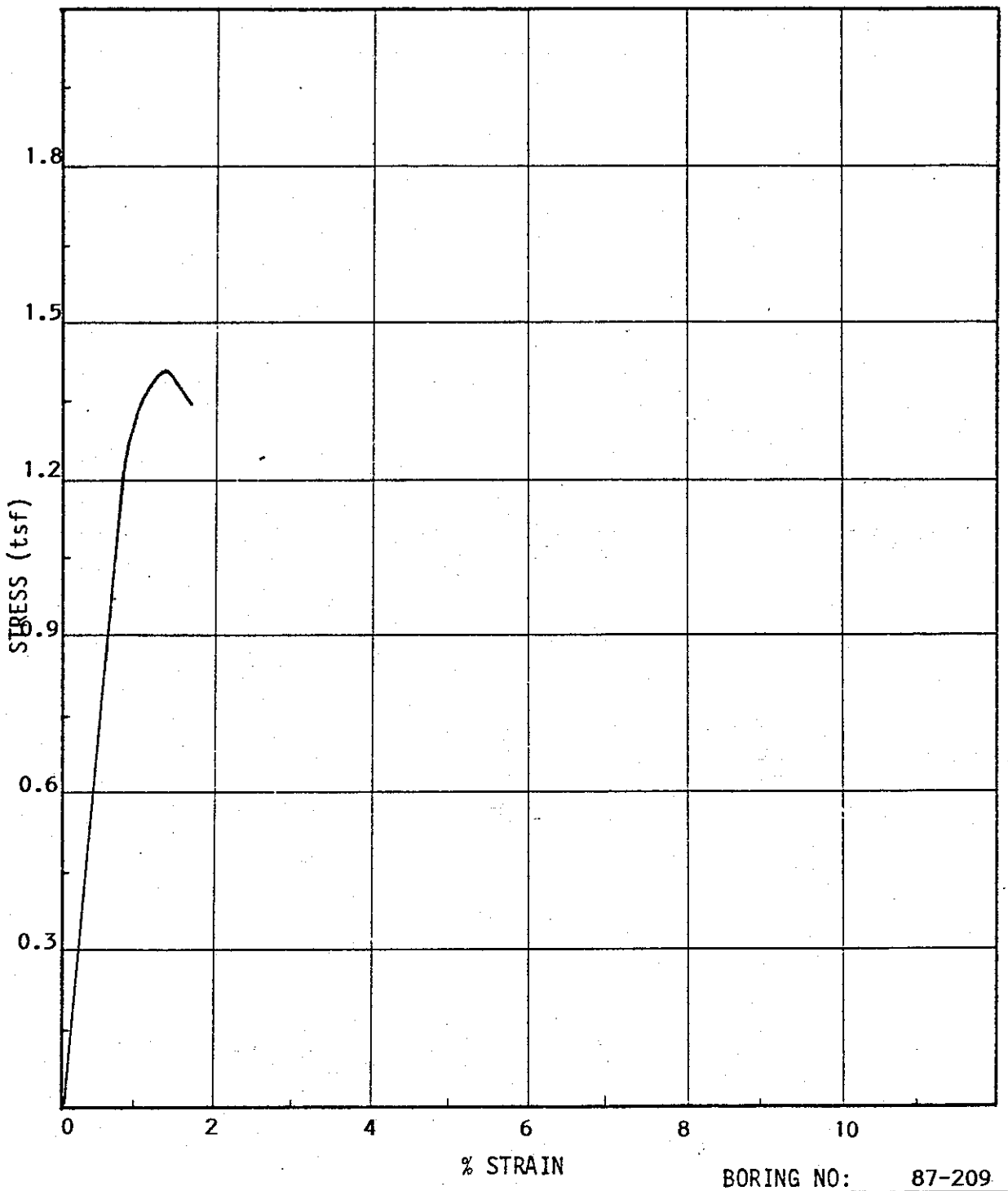
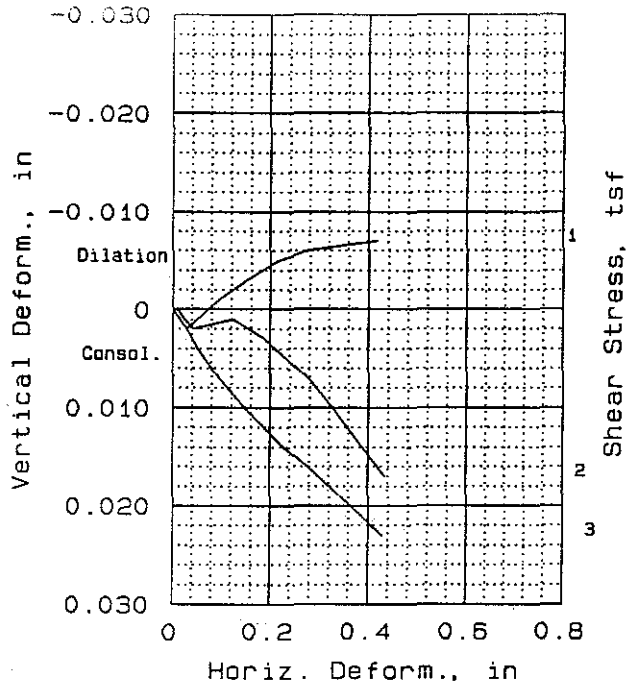
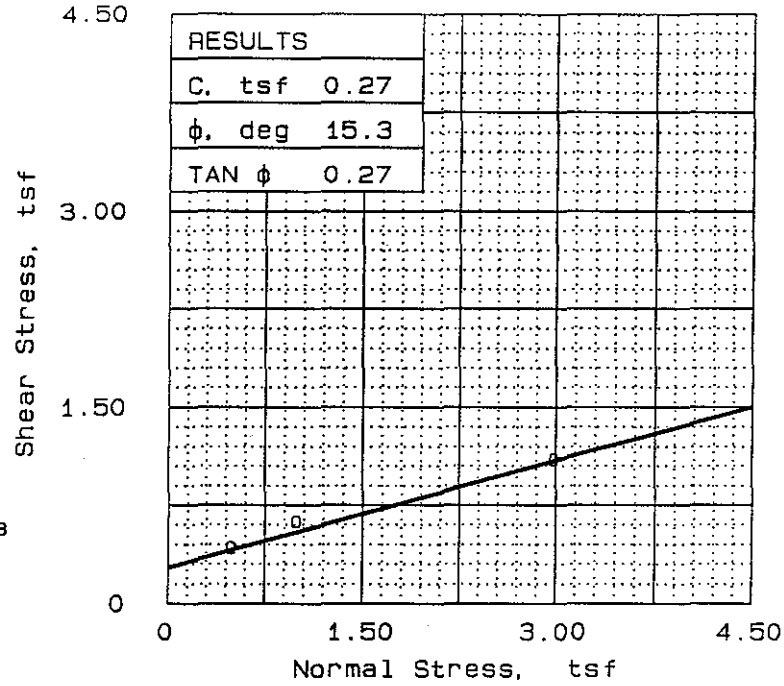
UNCONFINED COMPRESSION TEST

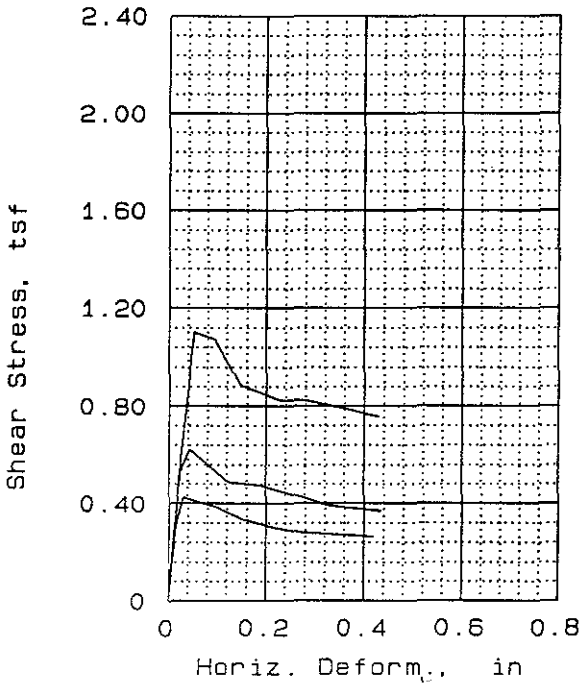


BORING NO: 87-209

SAMPLE DEPTH: 68'-70'







	SAMPLE NO.	1	2	3
INITIAL	WATER CONTENT, %	29.0	28.7	29.5
	DRY DENSITY, pcf	93.5	94.0	93.2
	SATURATION, %	99.0	98.9	100.0
	VOID RATIO	0.782	0.774	0.789
	SIDE LENGTH, in	3.00	3.00	3.00
	HEIGHT, in	0.50	0.50	0.50
AT TEST	WATER CONTENT, %	29.3	29.0	29.2
	DRY DENSITY, pcf	93.7	94.1	93.8
	SATURATION, %	100.5	100.4	100.3
	VOID RATIO	0.779	0.771	0.778
	DIAMETER, in	3.39	3.39	3.39
	HEIGHT, in	0.50	0.50	0.50
NORMAL STRESS, tsf		0.50	1.00	3.00
MAX. SHEAR, tsf		0.42	0.62	1.10
STRAIN RATE, %/min.		0.005	0.005	0.005
ULT. SHEAR, tsf		0.27	0.37	0.76

SAMPLE DATA

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: LEAN CLAY (CL)

LL= 47 PL= 19 PI= 28.0

SPECIFIC GRAVITY= 2.67

REMARKS:

CLIENT: US ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT

PROJECT: BRAZOS AND COLORADO RIVER
SWDED-GL NO. 14686

SAMPLE LOCATION: 87-209
CTN-8, 24.0-26.0, SWD LAB NO. 88/2571

PROJ. NO.: 14686 DATE: AUGUST 1988

DIRECT SHEAR TEST

CORPS OF ENGINEERS - SOUTHWESTERN