Boring B, Guide Wall C-4

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	COMPRES-SION, TSF	STRAIN, %	TYPE FAILURE	LAT. PRESSURE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SIEVE (NO. 200)	CONSOLI-DATION	TORVANE
87-213		X-Sec	Gnd El. +15.3										
1C	0'-2'	17.4	99.9					52	18	34	74.6		
2J	2'-4'	14.2											
3J	4'-6'	17.3									10.3		
4J	8'-10'	23.5											
5J	14'-16'	23.1									67.4		
6C	16'-18'	32.8	83.8					65	20	45	88.5		0.22
7J	18'-20'	22.4											
8C	25'-27'	30.7	94.4	0.57	3.33	Slicken-Sided		29	16	13	63.6		
9C	27'-29'	26.1											
10C	29'-31'	24.3											
11C	32'-34'	21.6	103.2	1.82	5.00	45° S		27	15	12	50.6		
12C	34'-36'			Sample to be tested by Government									
13C	36'-38'	23.2											
14J	38'-40'	23.8									42.0		
15J	44'-46'	23.3											
16J	48'-50'	22.2									22.9		
17C	53'-55'	25.7	95.1					52	19	33	86.7		
18C	55'-57'	31.9											
19C	58'-60'	29.5	95.4	3.06	3.00	45° S		72	31	41	96.6		
20C	60'-62'			Sample to be tested by Government									
21C	62'-64'	23.1											
22C	64'-66'	24.8	104.5	2.65	5.00	Bulge & 45° S		64	26	38	97.6		

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	COMPRES-SION, TSF	STRAIN, %	TYPE FAILURE	LAT. PRESSURE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	SIEVE (NO. 200)	CONSOLI-DATION	TORVANE
87-213													
23C	66'-68'	24.6											

AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

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

BORING 87-213

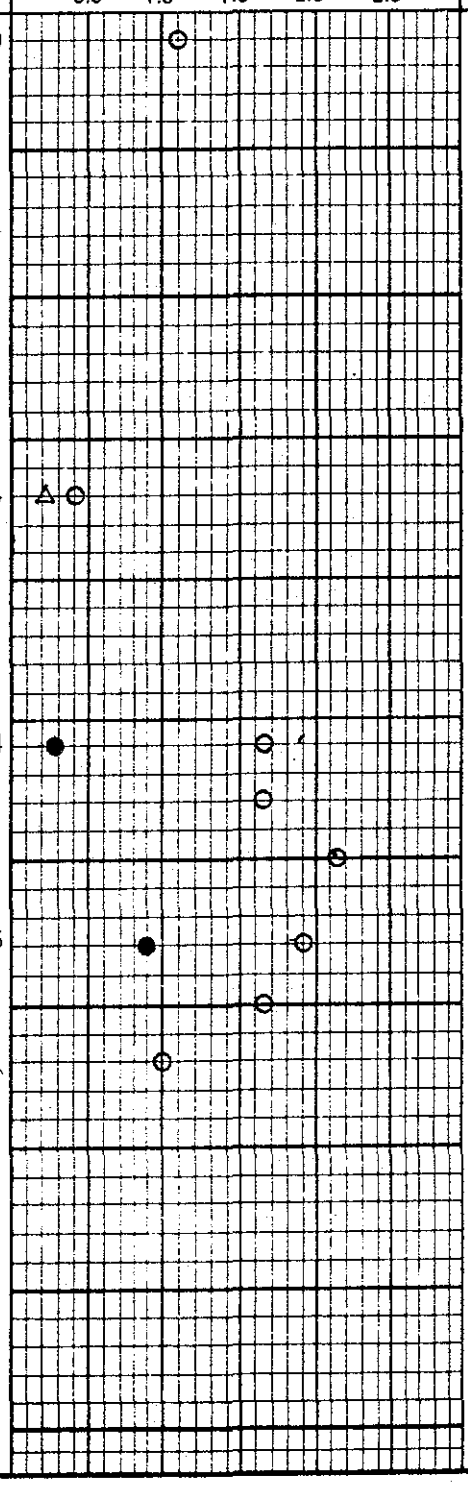
DATE 01-15-88 TYPE 6" Core - Mayhew 200 LOCATION See Plan

X-Sec. Gnd El. 15.3
GND. El. +16.0 M.L.T.

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS / FOOT	M.C., %	U.D.W., PCF	LIQUID LIMIT	PLASTIC LIMIT
0			Reddish Brown Clay - Very Stiff (CH)		17	100	52	18
			Tan Sand - Dense (SM)		14			
5				26	17			
10				24	24			
15				5	23			
			Dark Gray Clay - Firm (CH) - w/Sand Pockets 15'-18'		33	84	65	20
20			Gray Clayey Sand - Loose (SC) w/Clay Pockets & Thin Layers	3	22			
25			Reddish Brown Silty Clay - Stiff to Very Stiff (CL)		31	94	29	16
			- w/Calcareous Nodules 26'-27'		26			
			- Slickensided 27'-31'		24			
30			- w/6" Sand Layer at 33'		22	103	27	15
35					23			
			Tan Silty Sand - Very Dense (SM)	46	24			
40								
45				71	23			
			- w/Clay Pockets 48'-50'	54	22			
50								

SHEAR STRENGTH, TSF

O – POCKET PENETROMETER
✱ – LABORATORY CONFINED
● – LABORATORY UNCONFINED
Δ – TORVANE



AVILES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

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

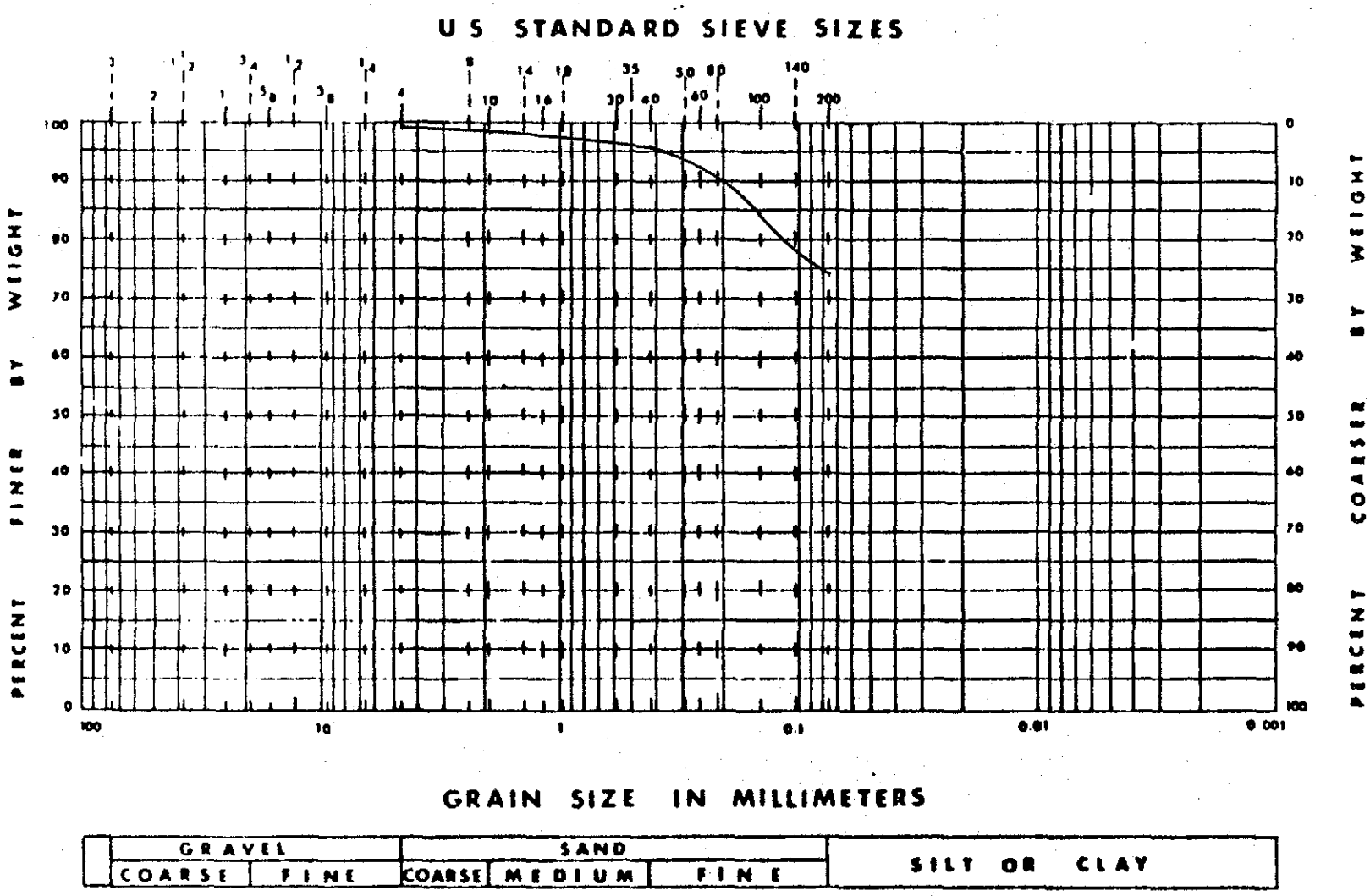
BORING 87-213

DATE 01-15-88 TYPE 6" Core - Mayhew 200 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			Tan Silty Sand - Very Dense (SM)						
			Reddish Brown Clay - Very Stiff (CH)		26	95		52	19
55			- w/Shell Fragments & Organic Material 53'-55'		32				
			- Greenish Gray 55'-61'		30	95		72	31
60									
					23				
65					25	105		64	26
					25				
70			Bottom @ 70'						

Brazos River Floodgates and Colorado River Locks

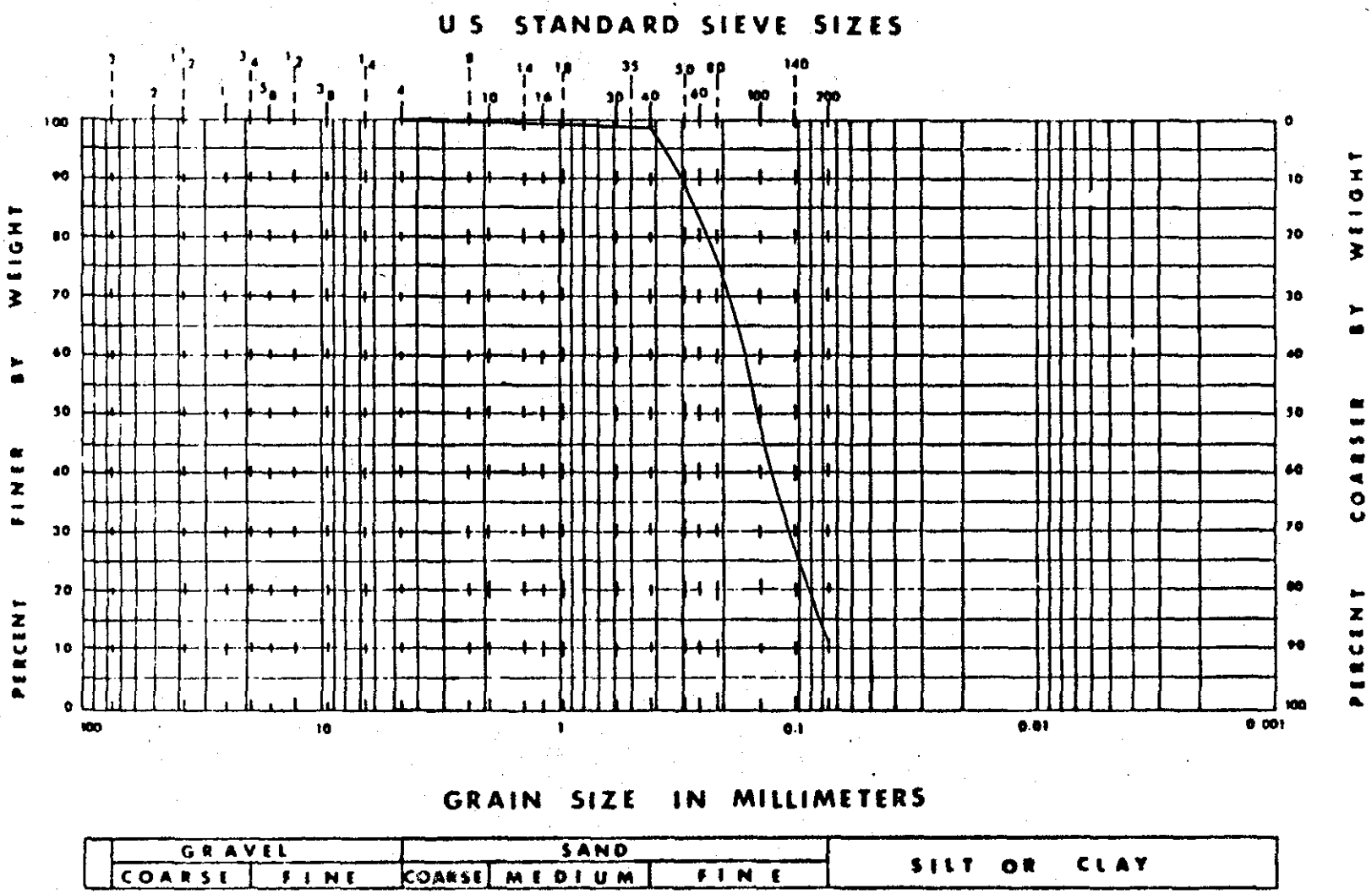
Boring No. 87-213 Sample 1C
Depth 0'-2'



AMLES ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

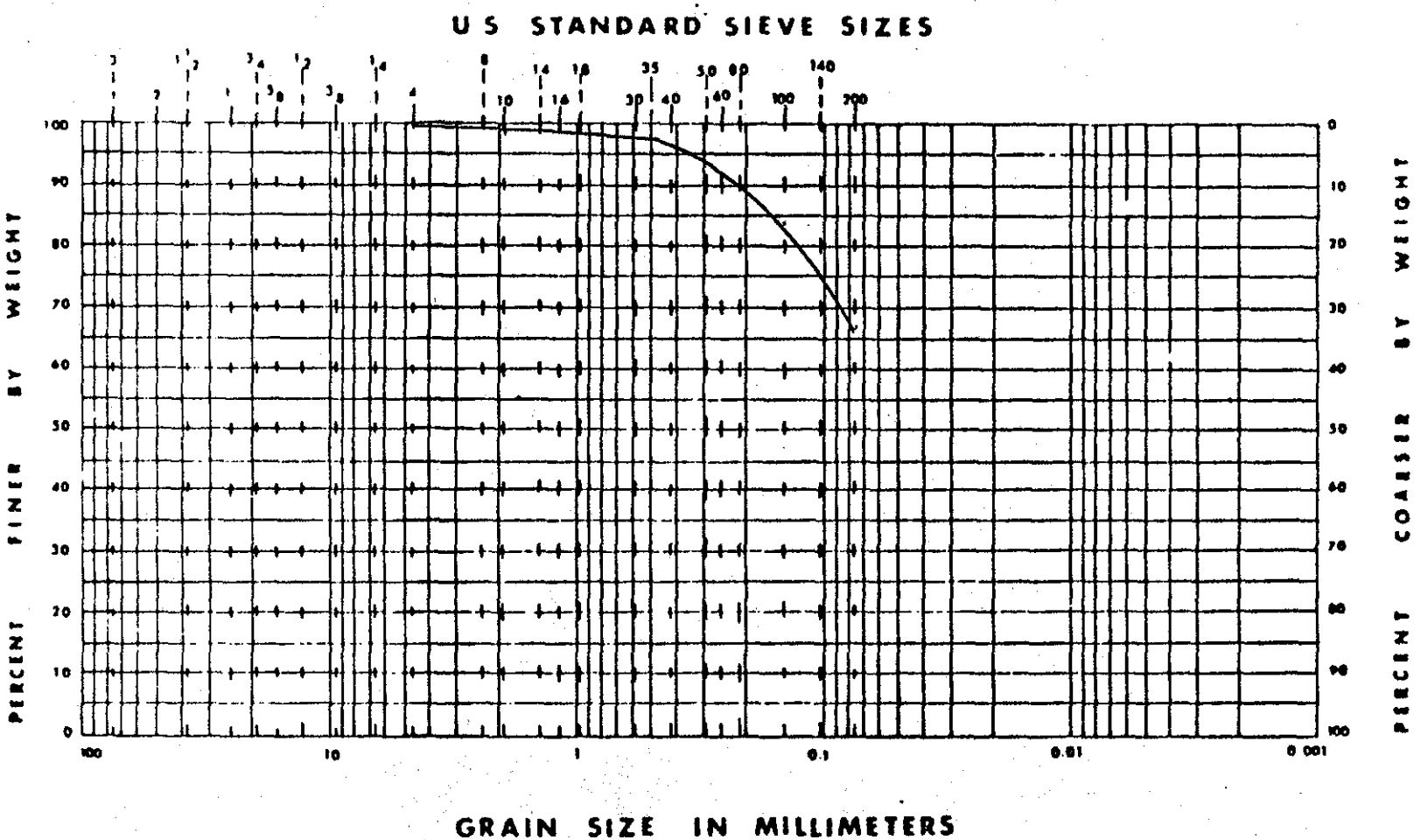
Boring No. 87-213 Sample 3J
Depth 4'-6'



ATLES ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

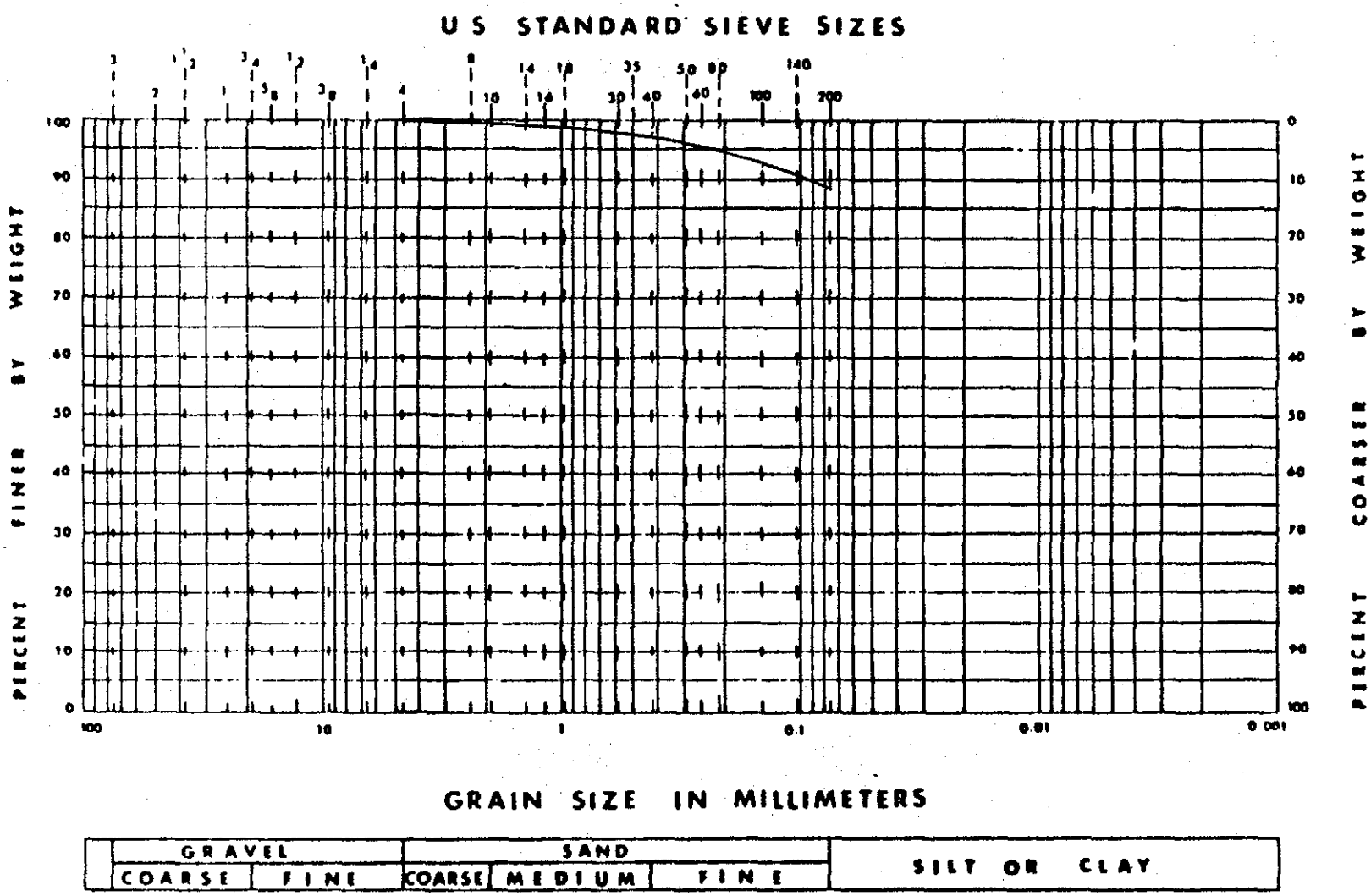
Boring No. 87-213 Sample 5J
Depth 14'-16'



AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

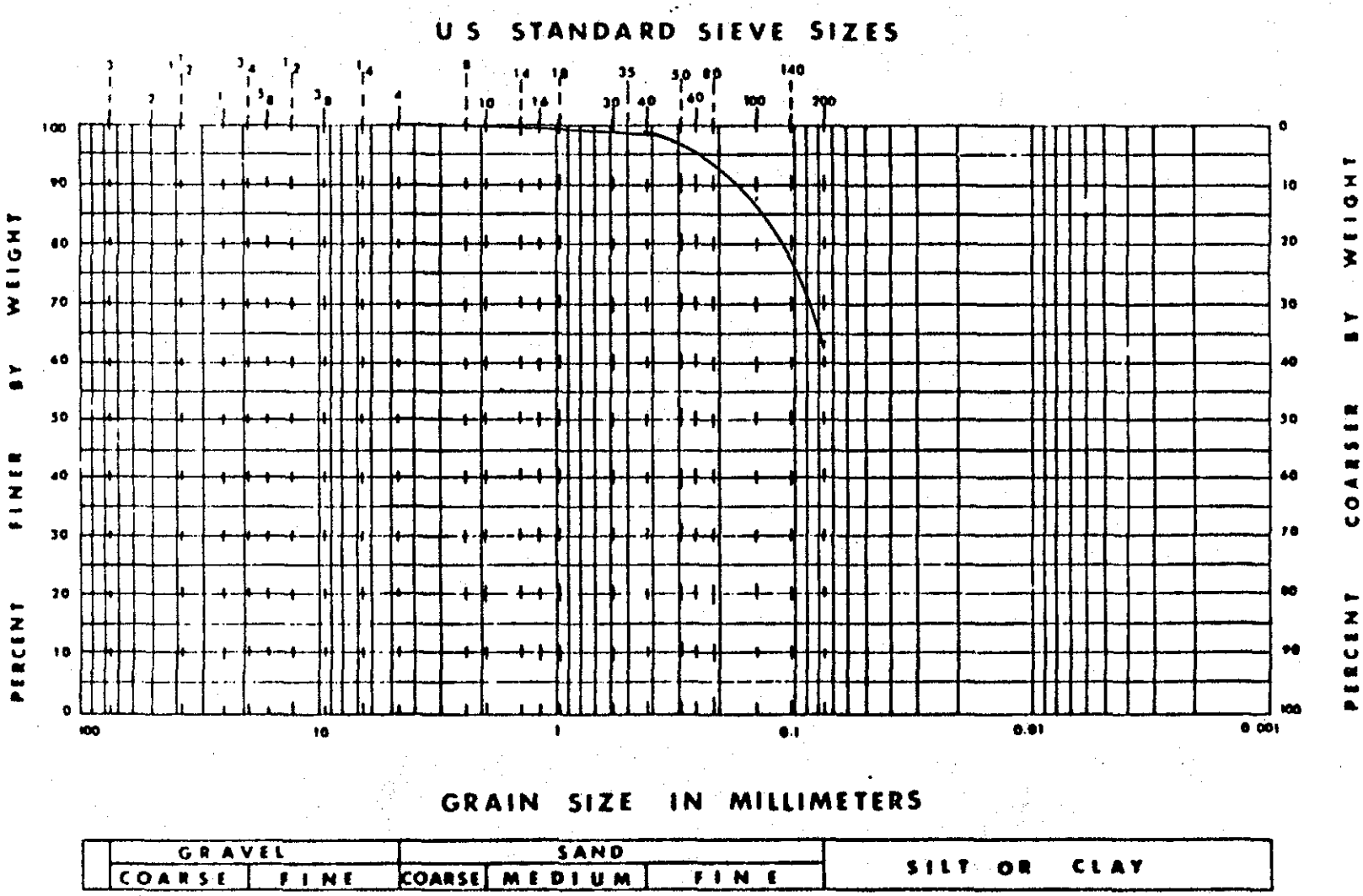
Boring No. 87-213 Sample 6C
Depth 16'-18'



AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

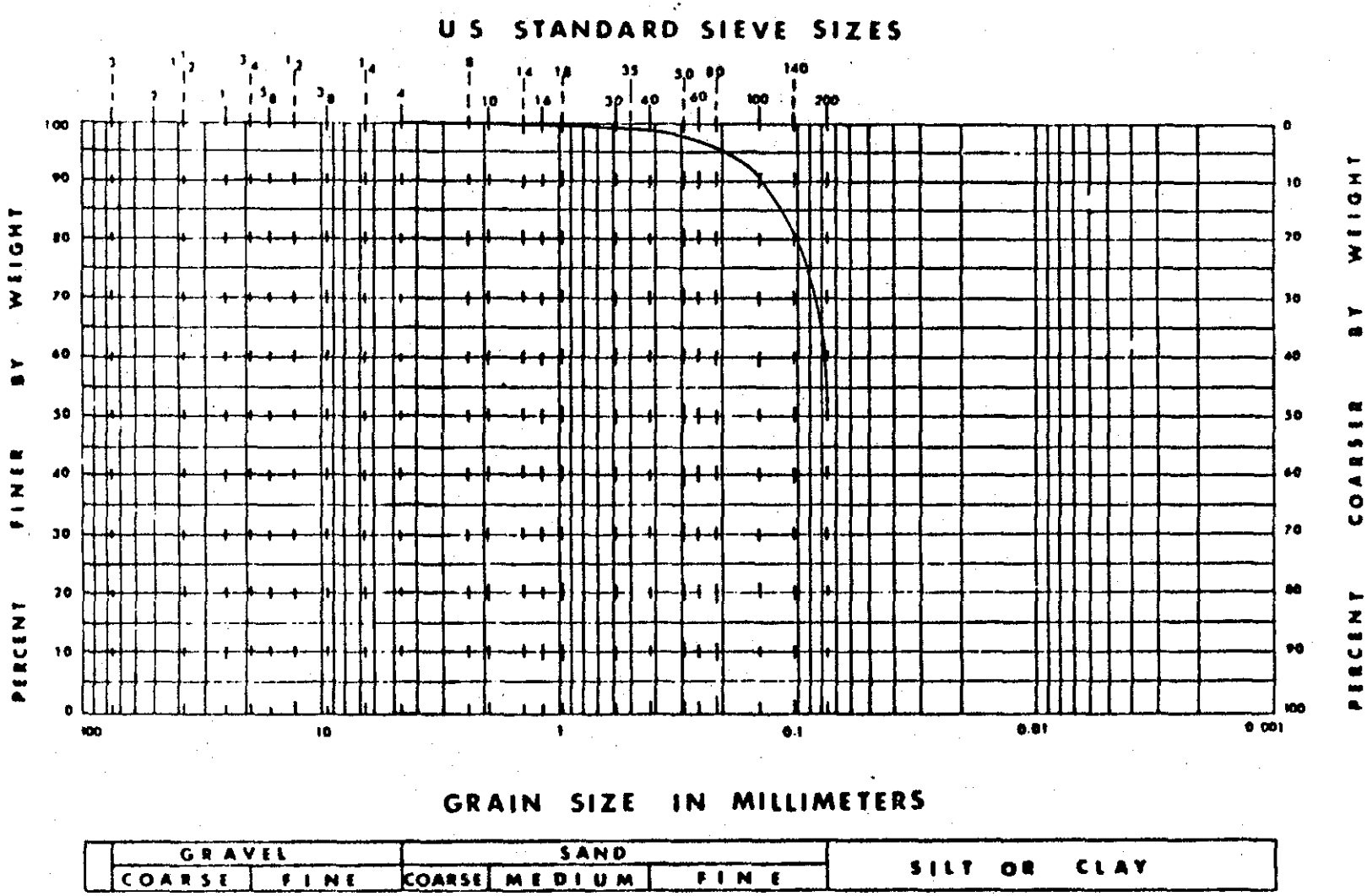
Boring No. 87-213 Sample 8C
Depth 25'-27'



AMLES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

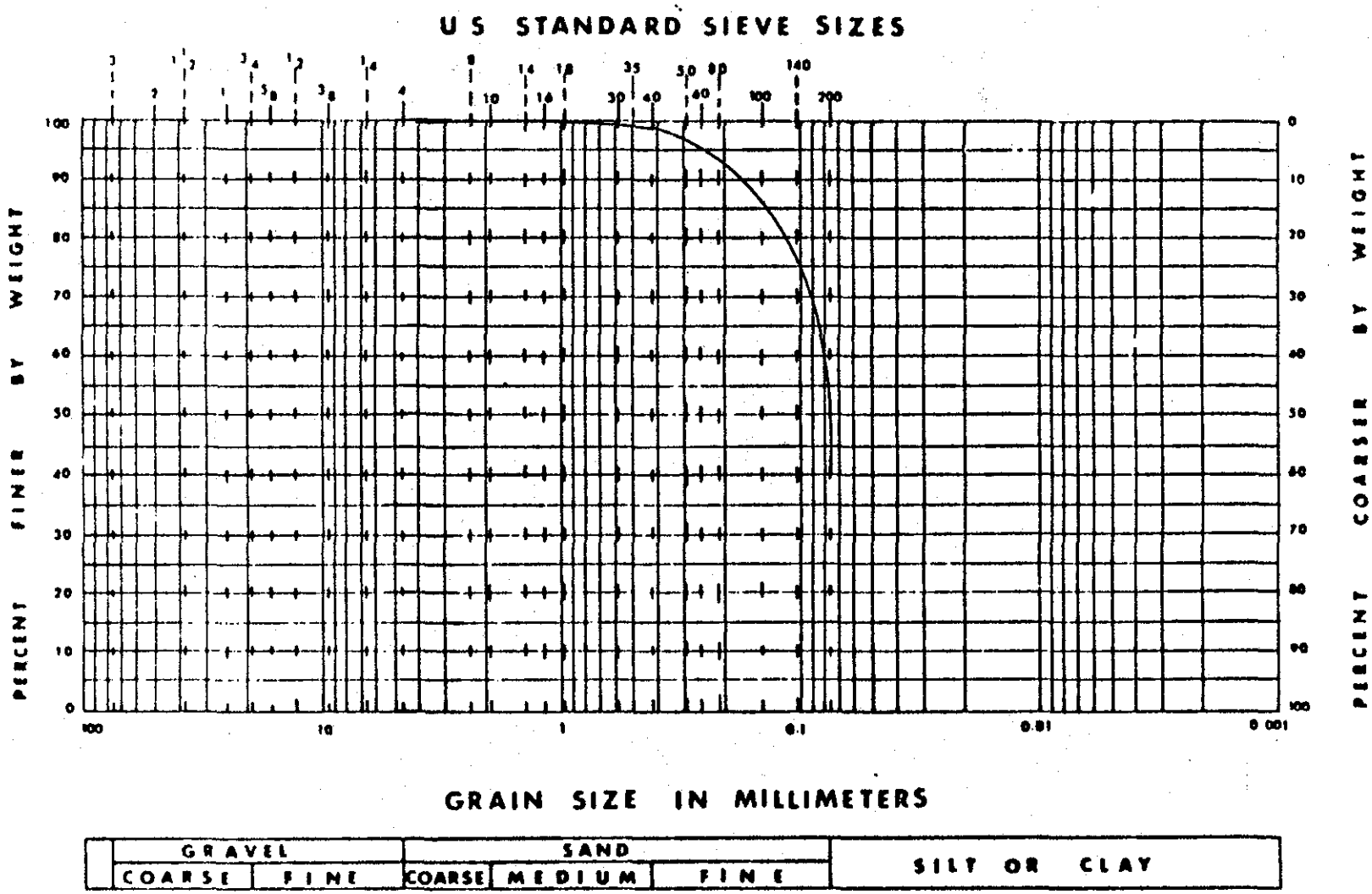
Boring No. 87-213 Sample 11C
Depth 32'-34'



AVILES ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

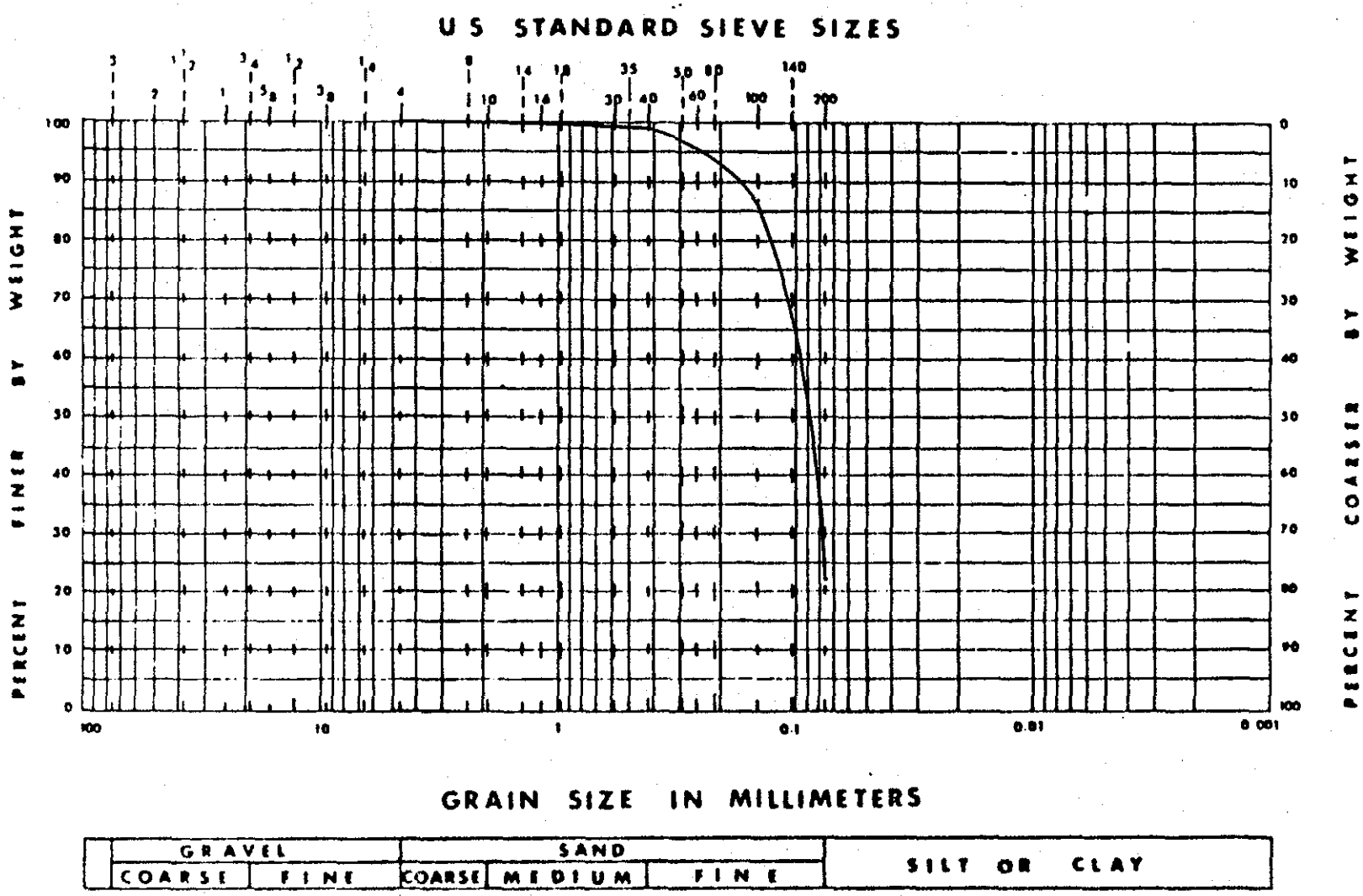
Boring No. 87-213 Sample 14J
Depth 38'-40'



AMLES
ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

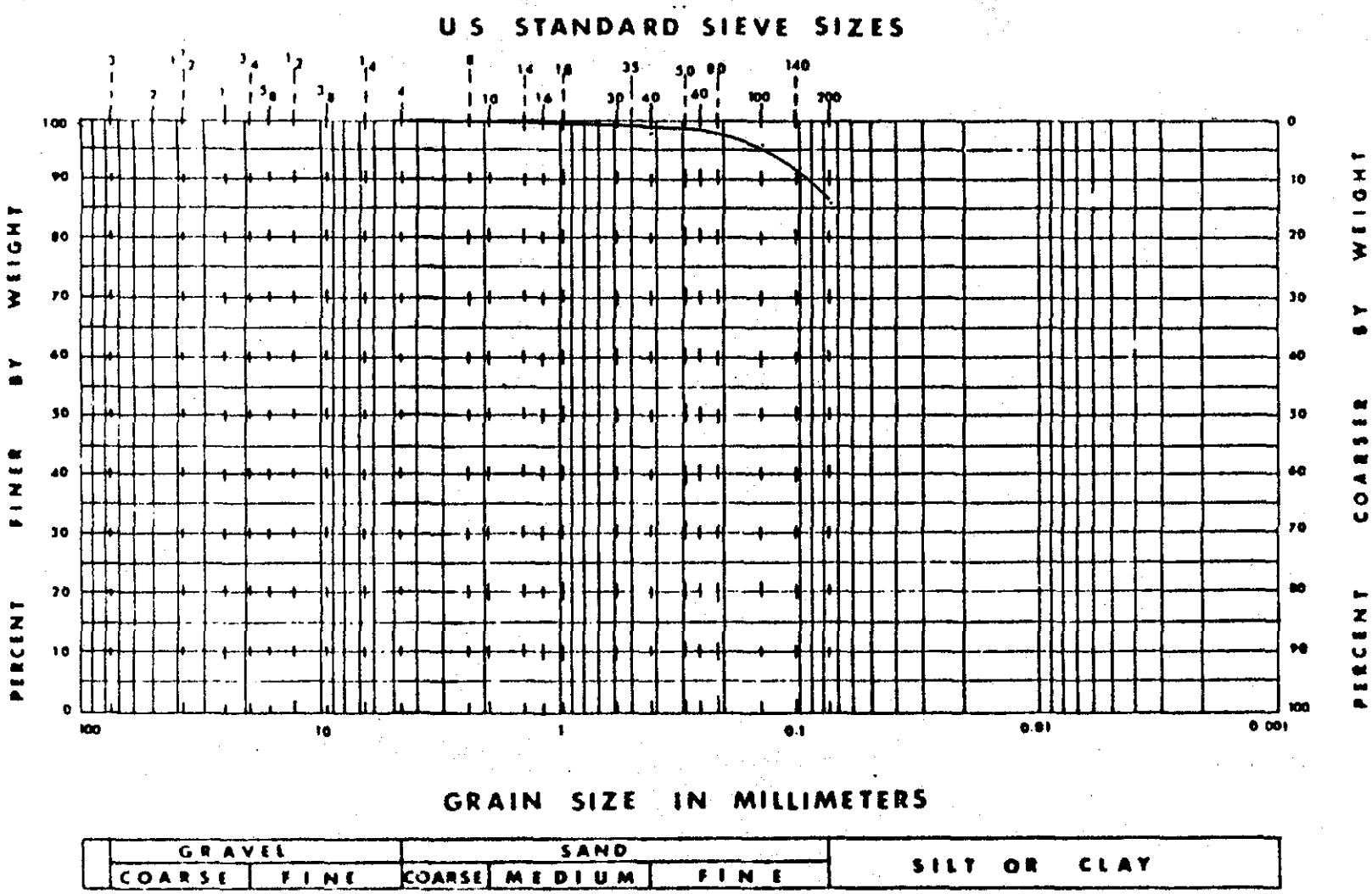
Boring No. 87-213 Sample 16J
Depth 48'-50'



AMLES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

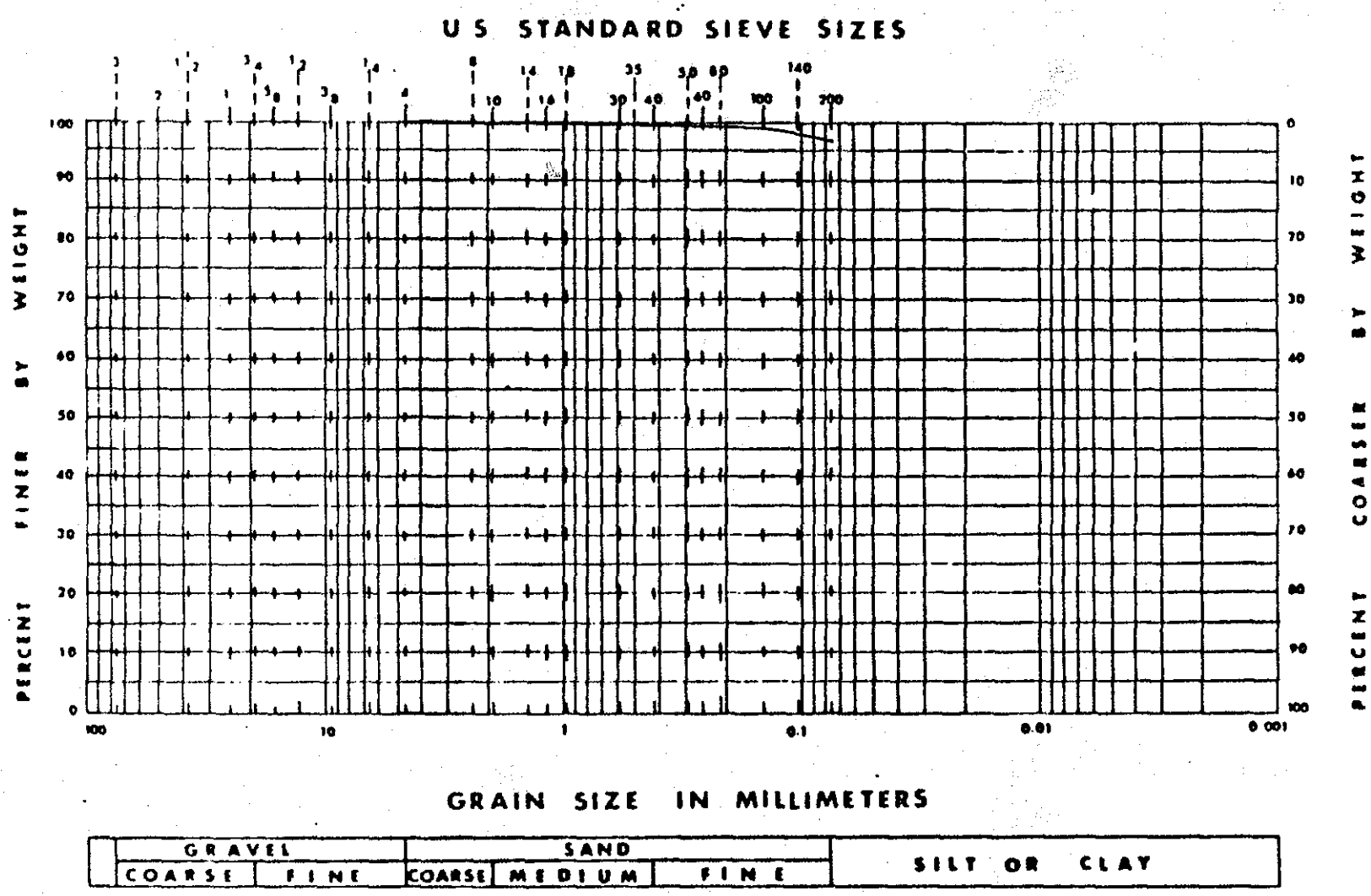
Boring No. 87-213 Sample 17C
Depth 53'-55'



AMLES ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

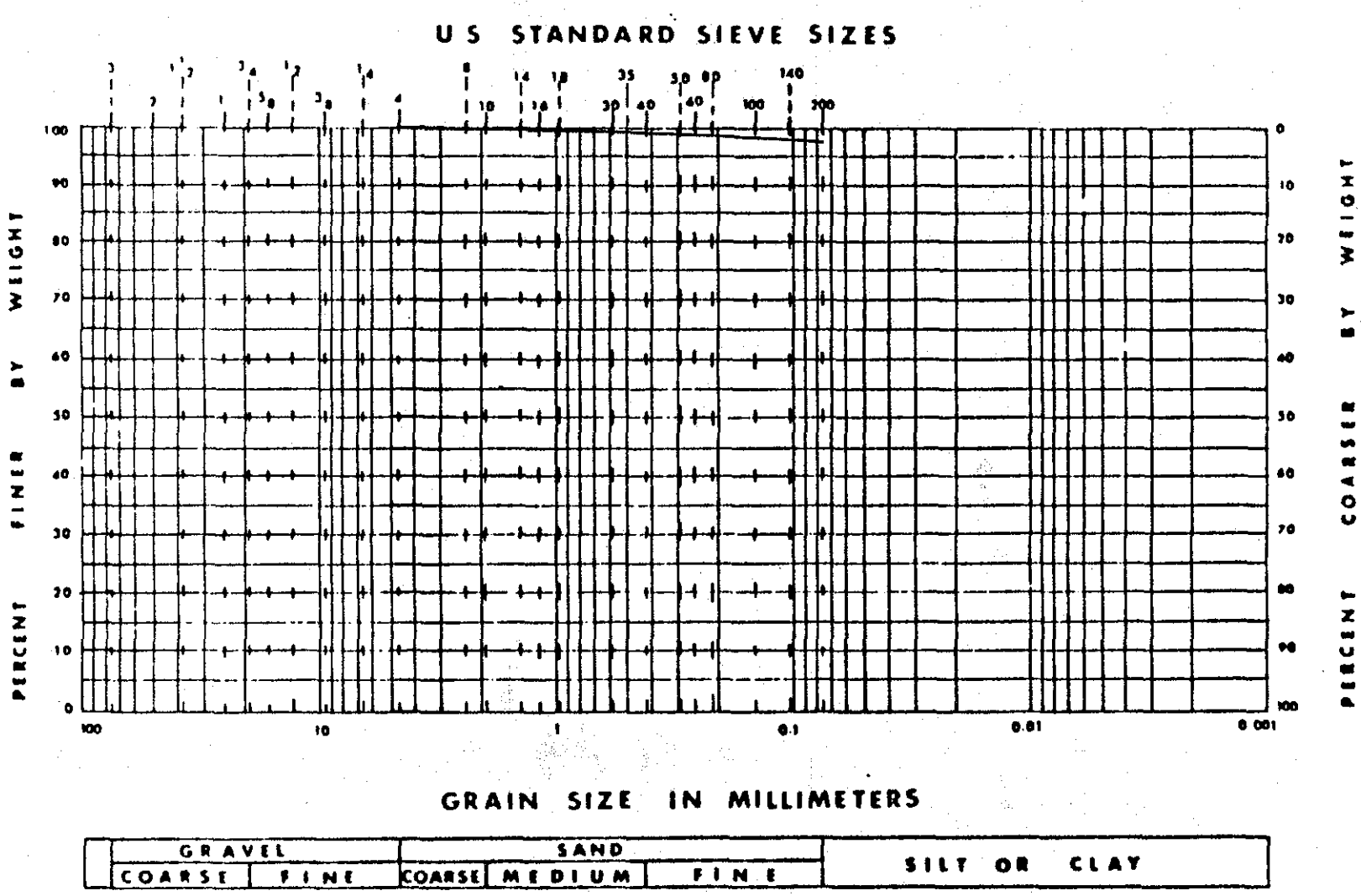
Boring No. 87-213 Sample 19C
Depth 58'-60'



ENGINEERING CORP
GEOTECHNICAL ENGINEERS

Brazos River Floodgates and Colorado River Locks

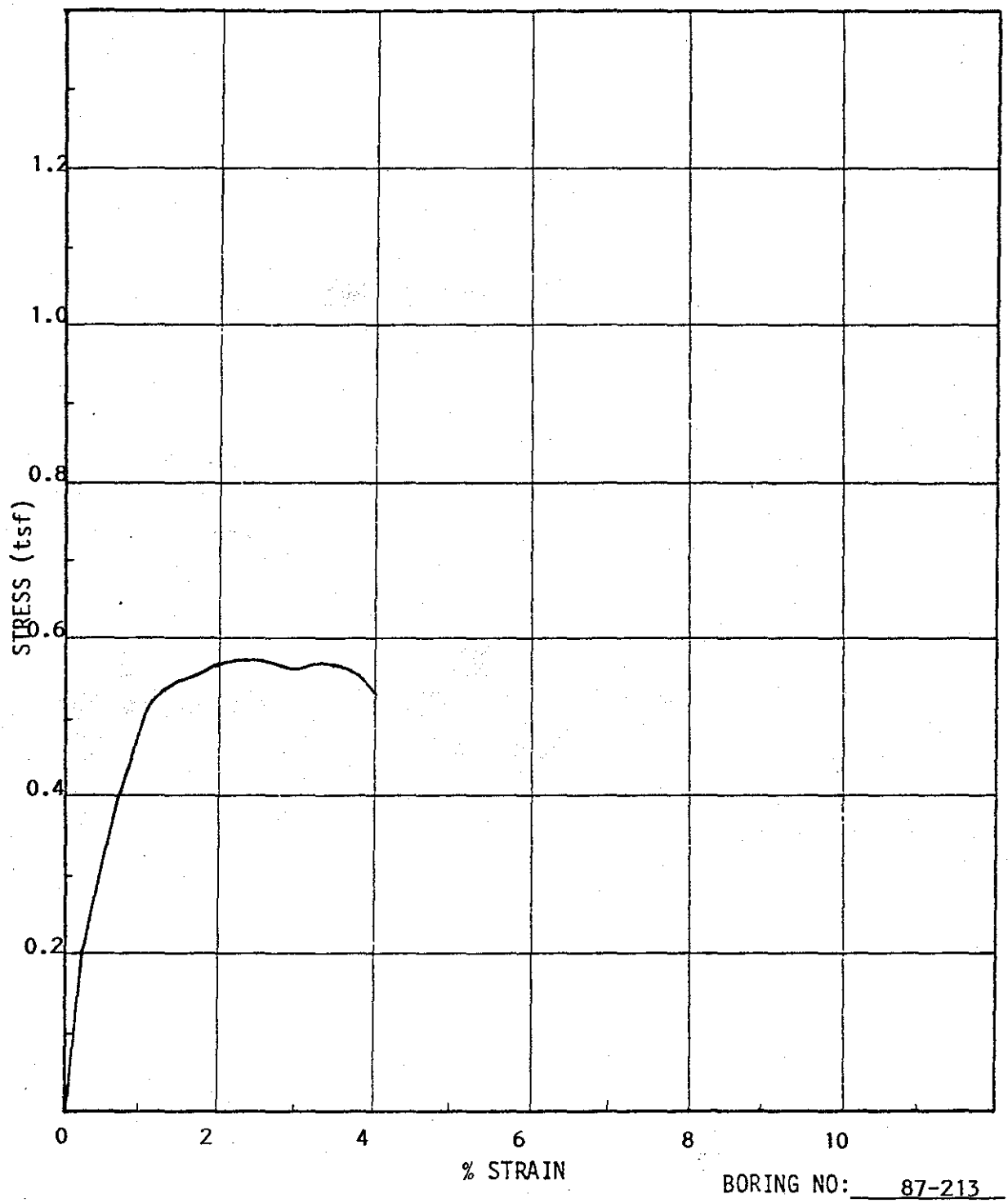
Boring No. 87-213 Sample 22C
Depth 64'-66'



AMLES ENGINEERING CORP
GEOTECHNICAL ENGINEERS

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

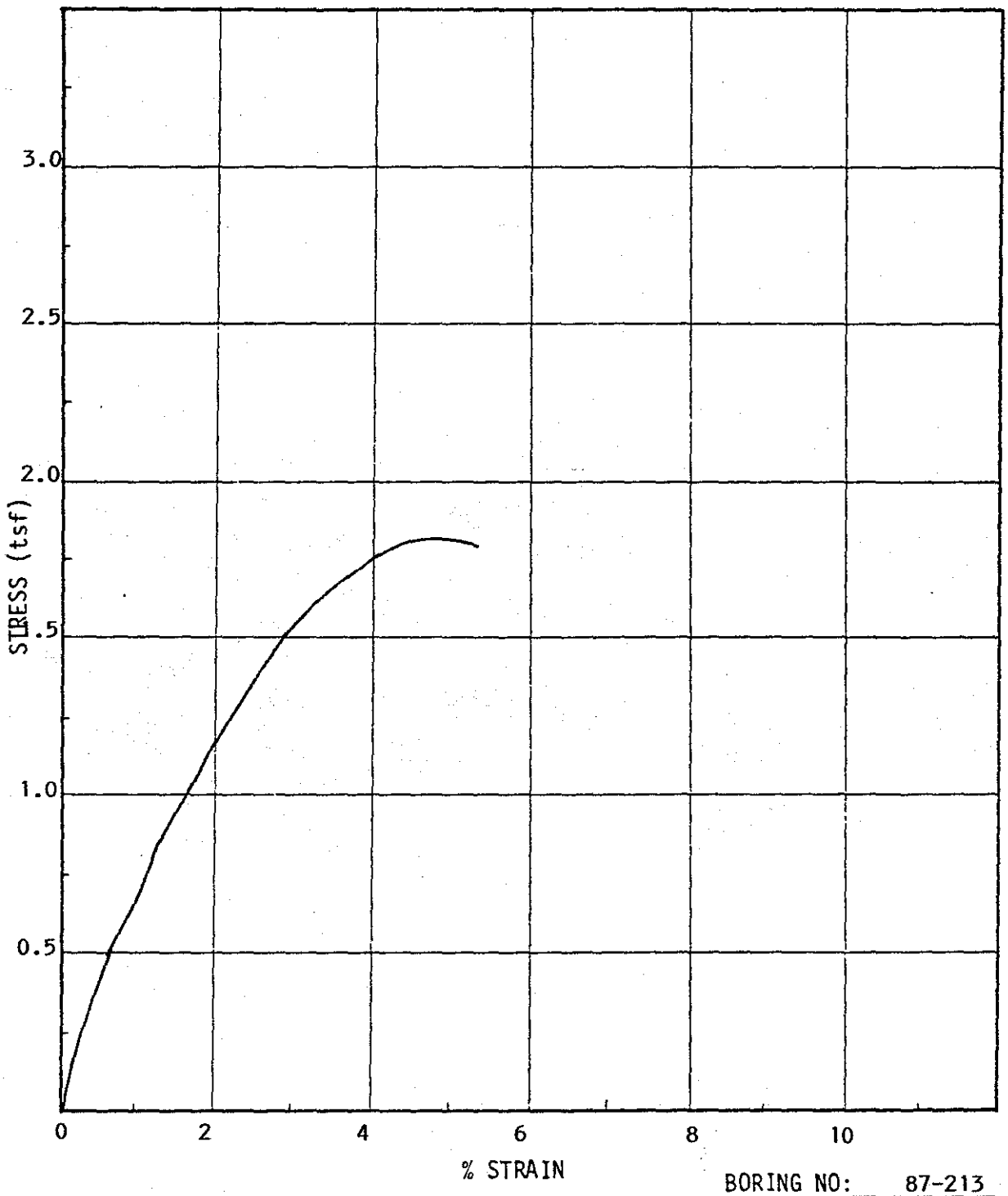


BORING NO: 87-213

SAMPLE DEPTH: 25'-27'

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

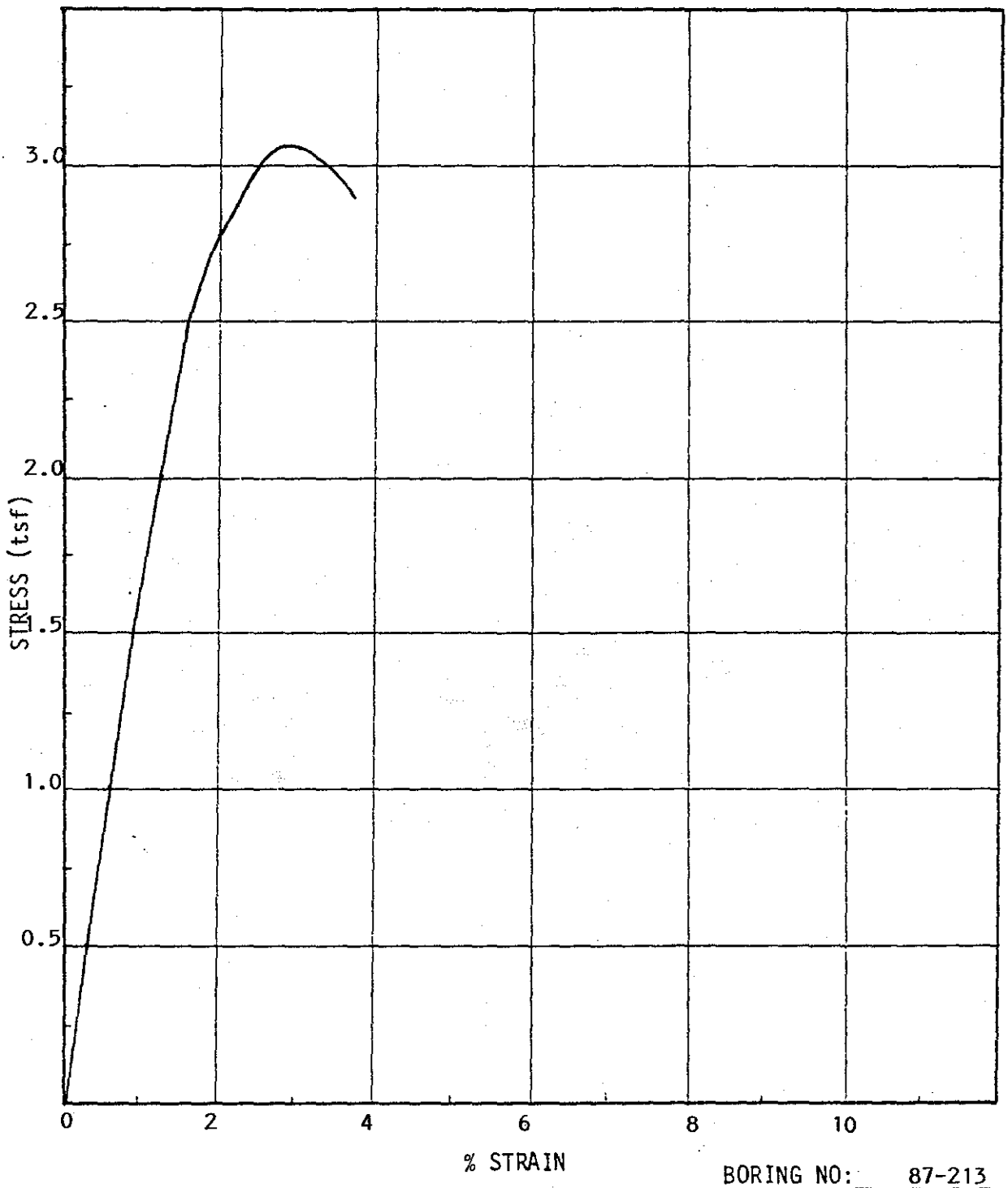


BORING NO: 87-213

SAMPLE DEPTH: 32'-34'

AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

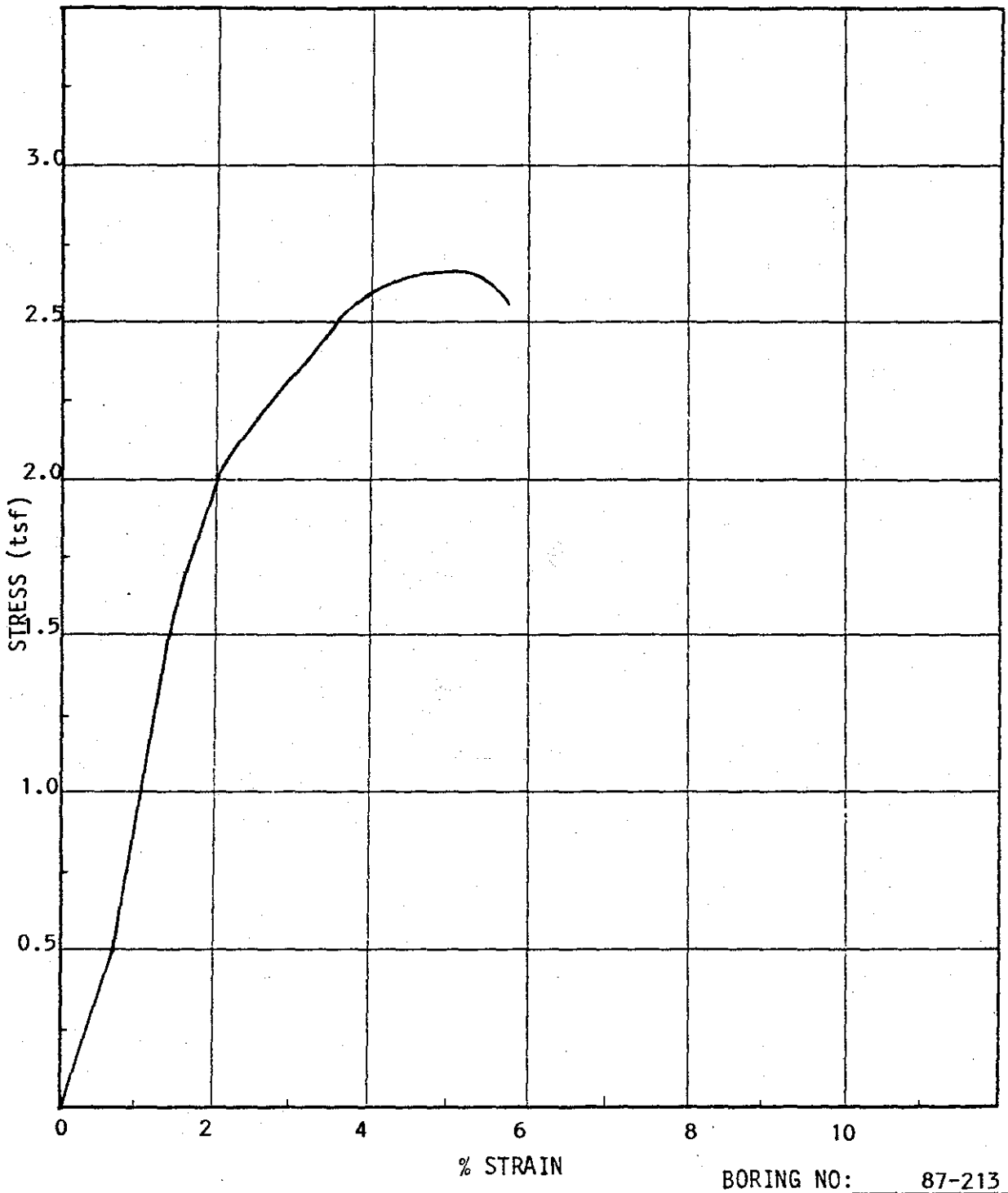


BORING NO: 87-213

SAMPLE DEPTH: 58'-60'

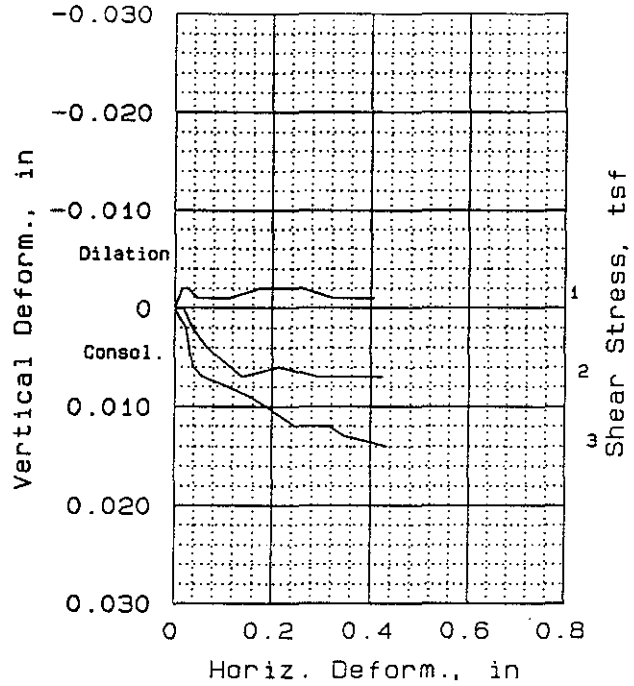
AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

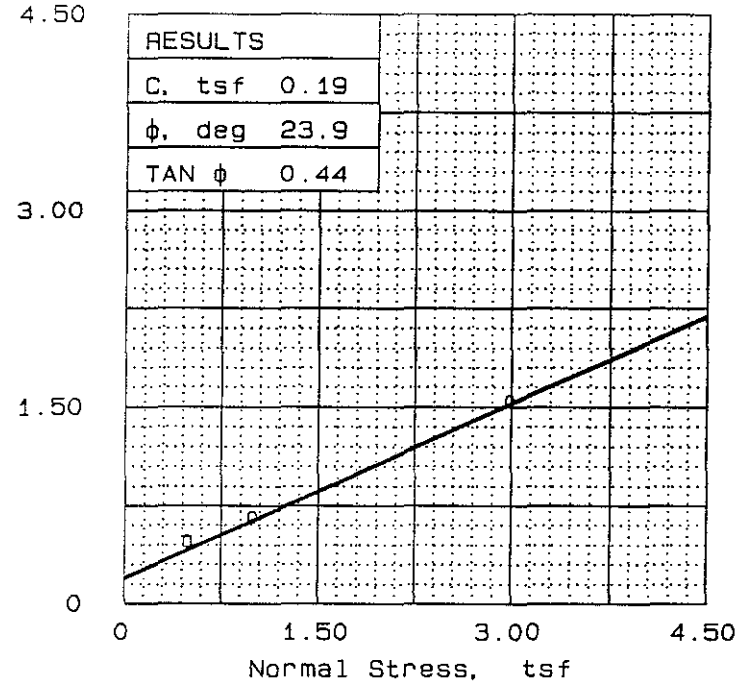
UNCONFINED COMPRESSION TEST

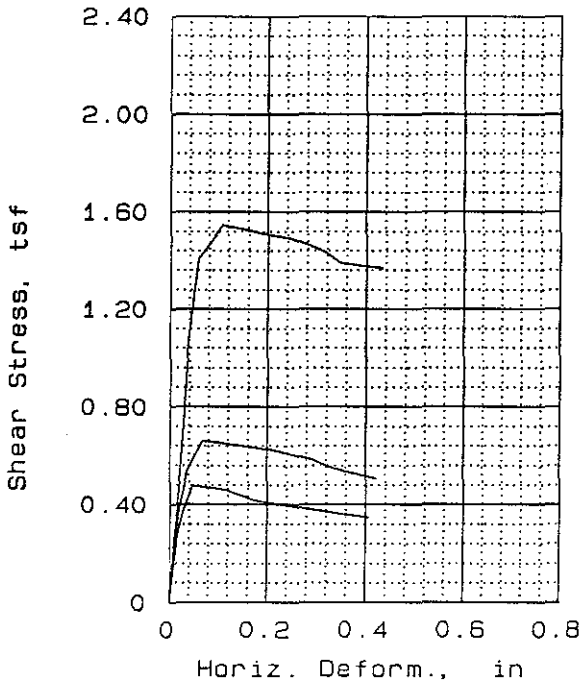


BORING NO: 87-213

SAMPLE DEPTH: 64'-66'







	SAMPLE NO.	1	2	3
INITIAL	WATER CONTENT, %	21.7	22.3	23.4
	DRY DENSITY, pcf	103.9	103.4	102.0
	SATURATION, %	96.6	97.9	98.9
	VOID RATIO	0.598	0.606	0.628
	SIDE LENGTH, in	3.00	3.00	3.00
	HEIGHT, in	0.50	0.50	0.50
AT TEST	WATER CONTENT, %	22.5	22.7	23.3
	DRY DENSITY, pcf	104.1	103.6	102.6
	SATURATION, %	100.7	100.2	100.2
	VOID RATIO	0.596	0.603	0.619
	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		0.48	0.66	1.55
STRAIN RATE, %/min.		0.005	0.005	0.005
ULT. SHEAR, tsf		0.35	0.51	1.37

SAMPLE DATA

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: LEAN CLAY WITH SAND (CL)

LL= 29 PL= 15 PI= 14.0

SPECIFIC GRAVITY= 2.66

REMARKS:

CLIENT: US ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT

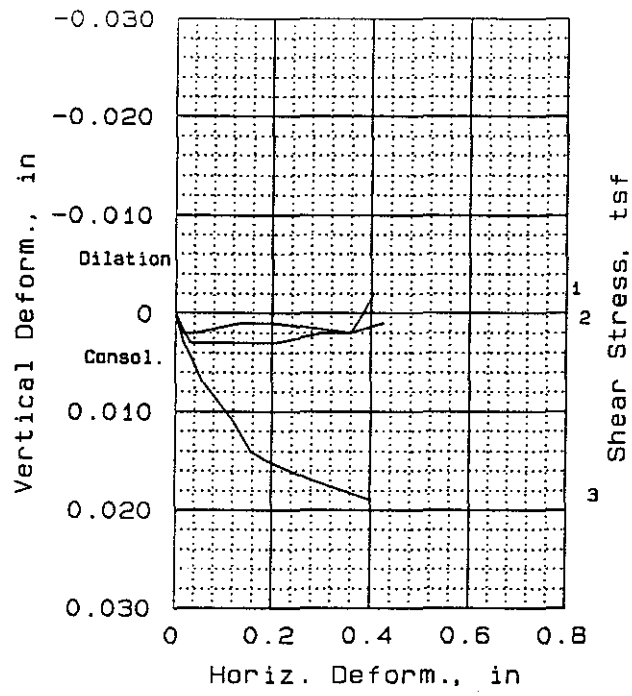
PROJECT: BRAZOS AND COLORADO RIVER
SWDED-GL NO. 14686

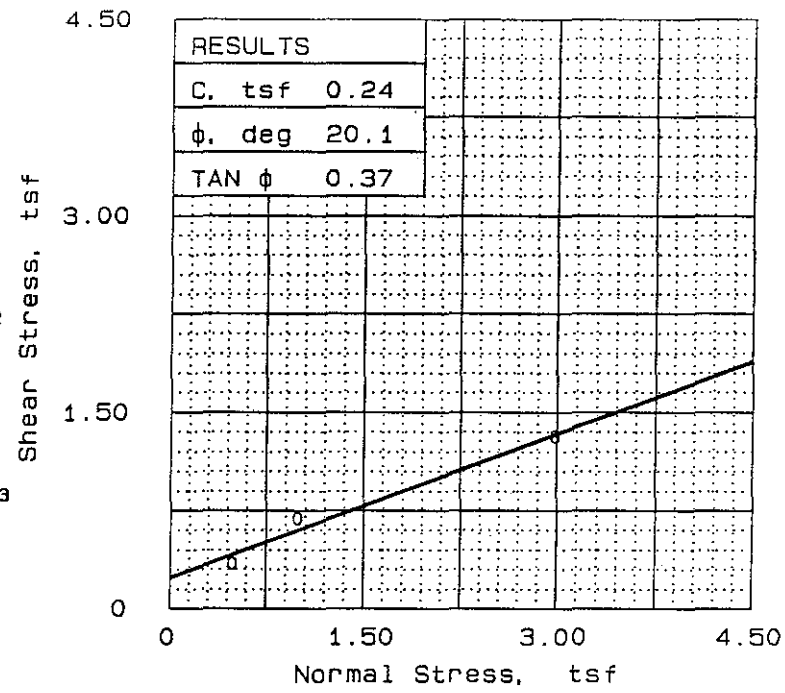
SAMPLE LOCATION: 87-213
CTN-12, 34.0-36.0, SWD LAB NO. 88/2574

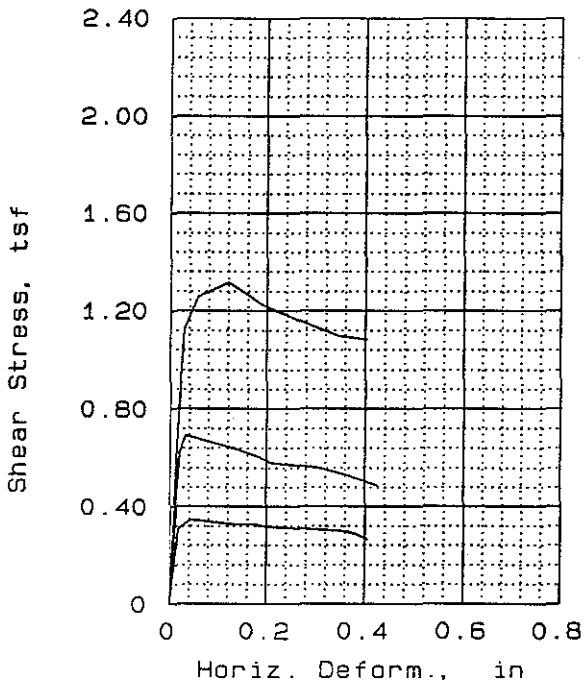
PROJ. NO.: 14686 DATE: AUGUST 1988

DIRECT SHEAR TEST

CORPS OF ENGINEERS - SOUTHWESTERN







	SAMPLE NO.	1	2	3
INITIAL	WATER CONTENT, %	30.6	30.2	30.5
	DRY DENSITY, pcf	91.9	91.2	92.1
	SATURATION, %	99.8	97.1	100.1
	VOID RATIO	0.821	0.834	0.816
	SIDE LENGTH, in	3.00	3.00	3.00
	HEIGHT, in	0.50	0.50	0.50
AT TEST	WATER CONTENT, %	30.8	30.9	30.0
	DRY DENSITY, pcf	92.2	91.8	92.9
	SATURATION, %	101.3	100.7	100.2
	VOID RATIO	0.814	0.823	0.802
	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		0.35	0.69	1.32
STRAIN RATE, %/min.		0.004	0.005	0.005
ULT. SHEAR, tsf		0.27	0.49	1.08

SAMPLE DATA

SAMPLE TYPE: UNDISTURBED

DESCRIPTION: FAT CLAY (CH)

LL= 63 PL= 21 PI= 42.0

SPECIFIC GRAVITY= 2.68

REMARKS:

CLIENT: US ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT

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

SAMPLE LOCATION: 87-213
CTN-20, 60.0-62.0, SWD LAB NO. 88/2575

PROJ. NO.: 14686 DATE: AUGUST 1988

DIRECT SHEAR TEST

CORPS OF ENGINEERS – SOUTHWESTERN