PROJECT NO. 278-91 (B 91-202)

AYLES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT Water Control Structure at Salt Bayou

BORING 91-202

DATE 7/27/91 TYPE D & R 3" Core LOCATION See Plan

DEPTH IN FEET	SYMBOL	CORES	DESCRIPTION	BLOWS/FOOT	M.C.,%	U.D.W. PCF	COMPRESSIVE STRENGTH-TSF (○ POCKET PENETROMETER △ TORVANE ● UNCONFINED COMPRESSION)	LIQUID LIMIT	PLASTIC LIMIT
0			Fill to 10': Very stiff light tan & gray clay (CL) w/ sand seam 0' -6'	H	18	106		47	18
				VS	22	104		41	17
5			Medium clay (CH) w/ shell 4' - 18'	S	28	93		54	19
	▽ 11'			Med	25	95		57	20
				Med	30	89		51	19
10			Soft gray silty clay (CH) w/ grass roots @ 10' -12'	Med	32	87			
			Slickensided @ 12' - 14'	Med	64	61		98	36
15			Very soft silty clay		68				
					71				
					85				
20					63	60		64	21
			Soft silty clay (CH)	Med	26				
25			Stiff light gray clay (CL) w/ sand partings 24' -26' Light gray & tan		27	99		49	19
					23				
			Stiff tan & gray sandy clay (CL)	VS	24				
30			Very stiff @ 30' - 32'	H	23				
			Firm @ 32' - 34'	S	23				
35			Very stiff @ 34'-36'		22				
			Bottom @ 36'						
			Date: 7/30/91						
			Time: 3:00 p.m.						
40			Temperature: 97°F						
			Weather: Sunny & hot						
			Logger: Chaiyong Sriprasitdh						
			Driller: Dempsey Gearen						
45			Machine: D & R 100						
			NOTE: Unconfined compression and pocket penetrometer plotted as ½ of the laboratory value.						
50									

BORING DRILLED TO 36 FEET WITHOUT DRILLING FLUID
WATER ENCOUNTERED AT 24 FEET WHILE DRILLING
WATER LEVEL AT 10.5 FEET AFTER ½ HOURS Water at 9' on 7/30/91

PLATE

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

SUMMARY OF LABORATORY TEST DATA

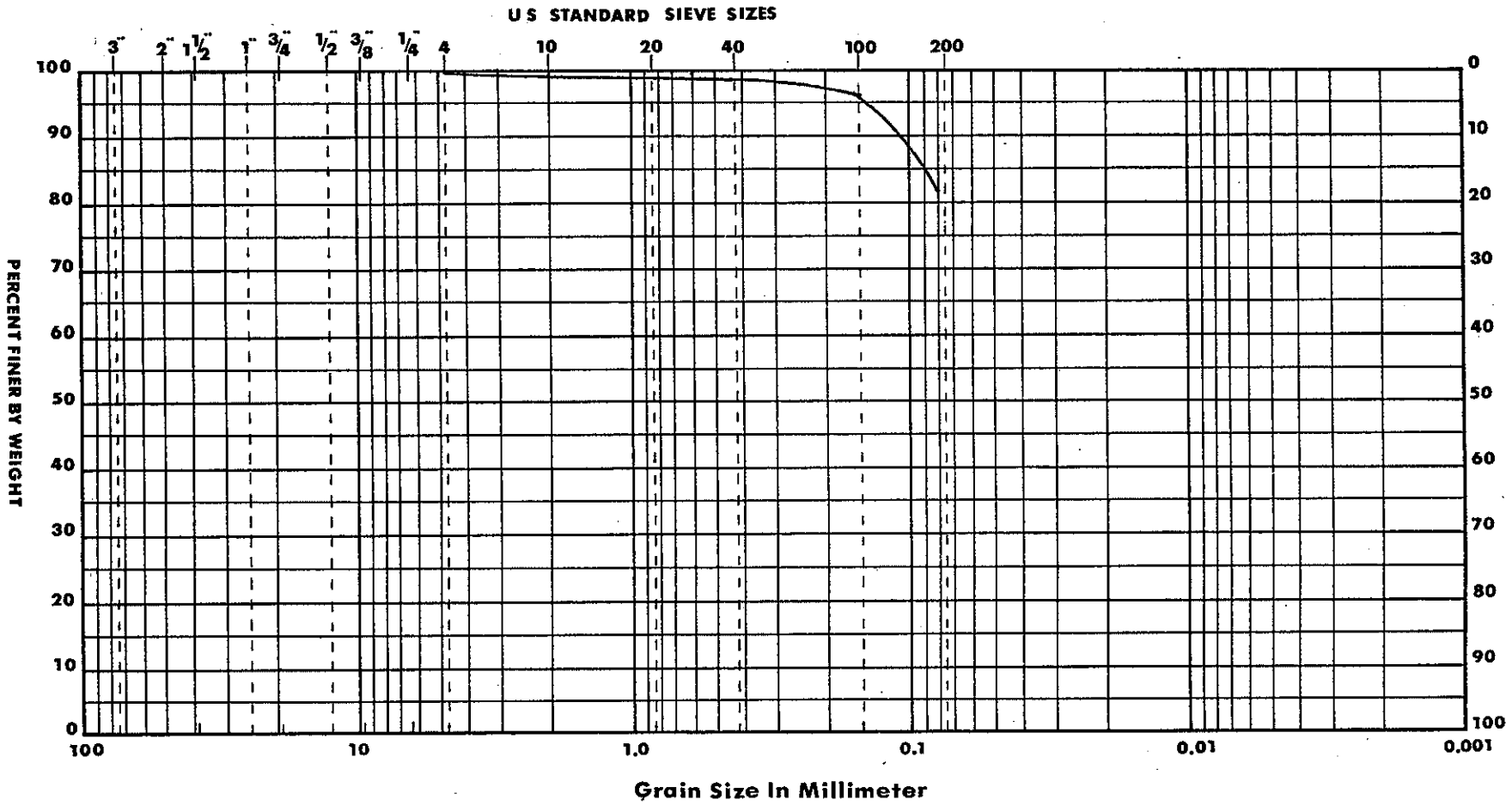
PROJECT: SALT BAYOU WATER CONTROL STRUCTURE

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	TORVANE, TSF
91-202													
1	0-2	18	106	1.3	3.3	Vert. Fracture		47	18	29			
2	2-4	22	104					41	17	24			
3	4-6	28	93	0.37	6.7	Vert. Fracture		54	19	35			
4	6-8	25	95					57	20	37			0.6
5	8-10	30	89					51	19	32			0.44
6	10-12	32	87										0.44
7	12-14	64	61	0.14	5.0	Single Shear		98	36	62			0.10
8	14-16	68											0.10
9	16-18	71											0.10
10	18-20	85											0.13
11	20-22	63	60	0.11	6.6	Mult. Shear		64	21	43			0.13
12	22-24	26											0.45
13	24-26	27	99	0.63	11.6	Bulge		49	19	30			
14	26-28	23											
15	28-30	24											
16	30-32	23											
17	32-34	23											
18	34-36	22											

PROJECT NO. 278-91

91-202 0-2

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

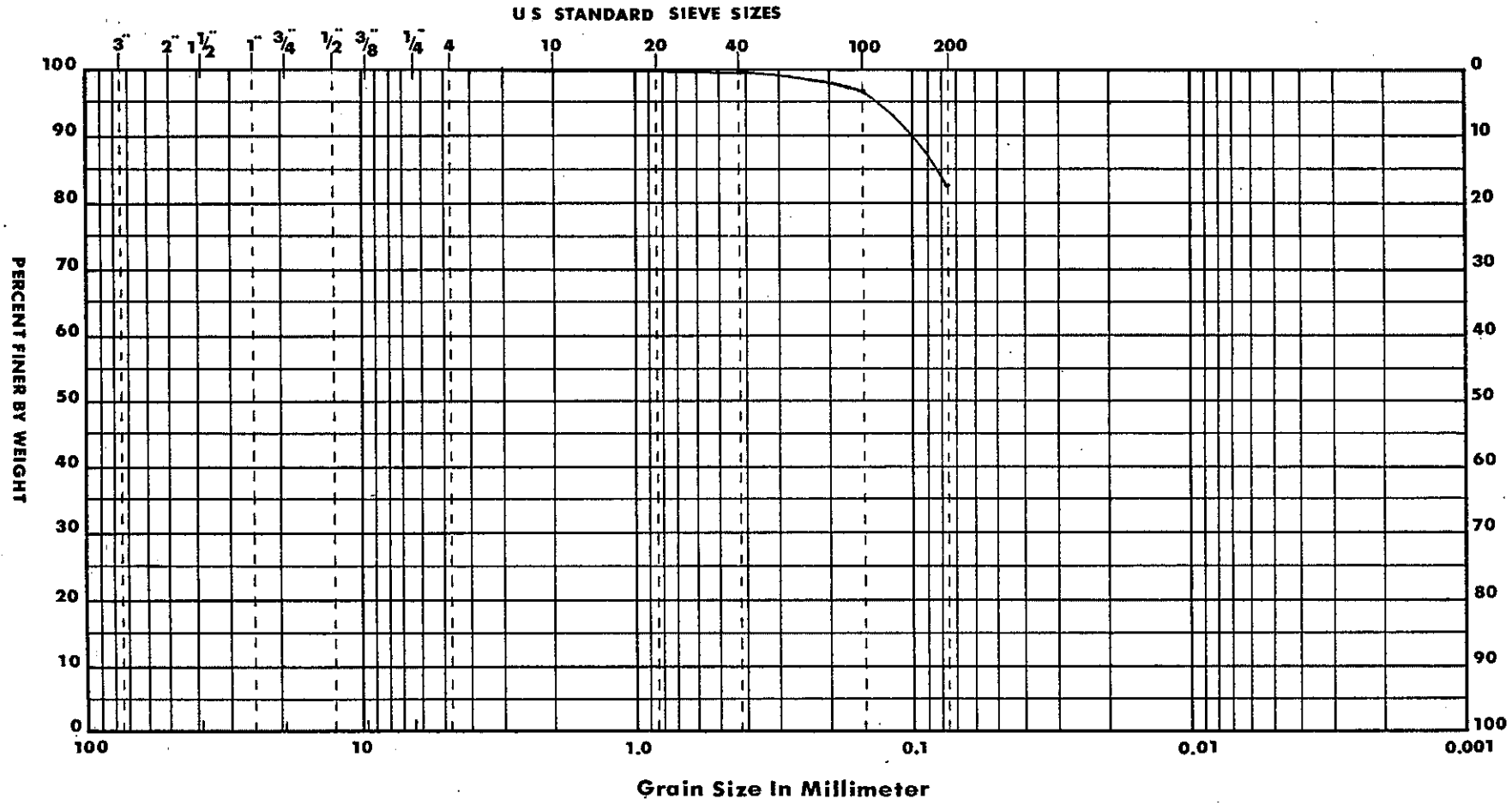
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	0'-2'	Very stiff light tan & gray clay (CL)

AVILES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

PROJECT NO. 278-91

91-202 2'-4'

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

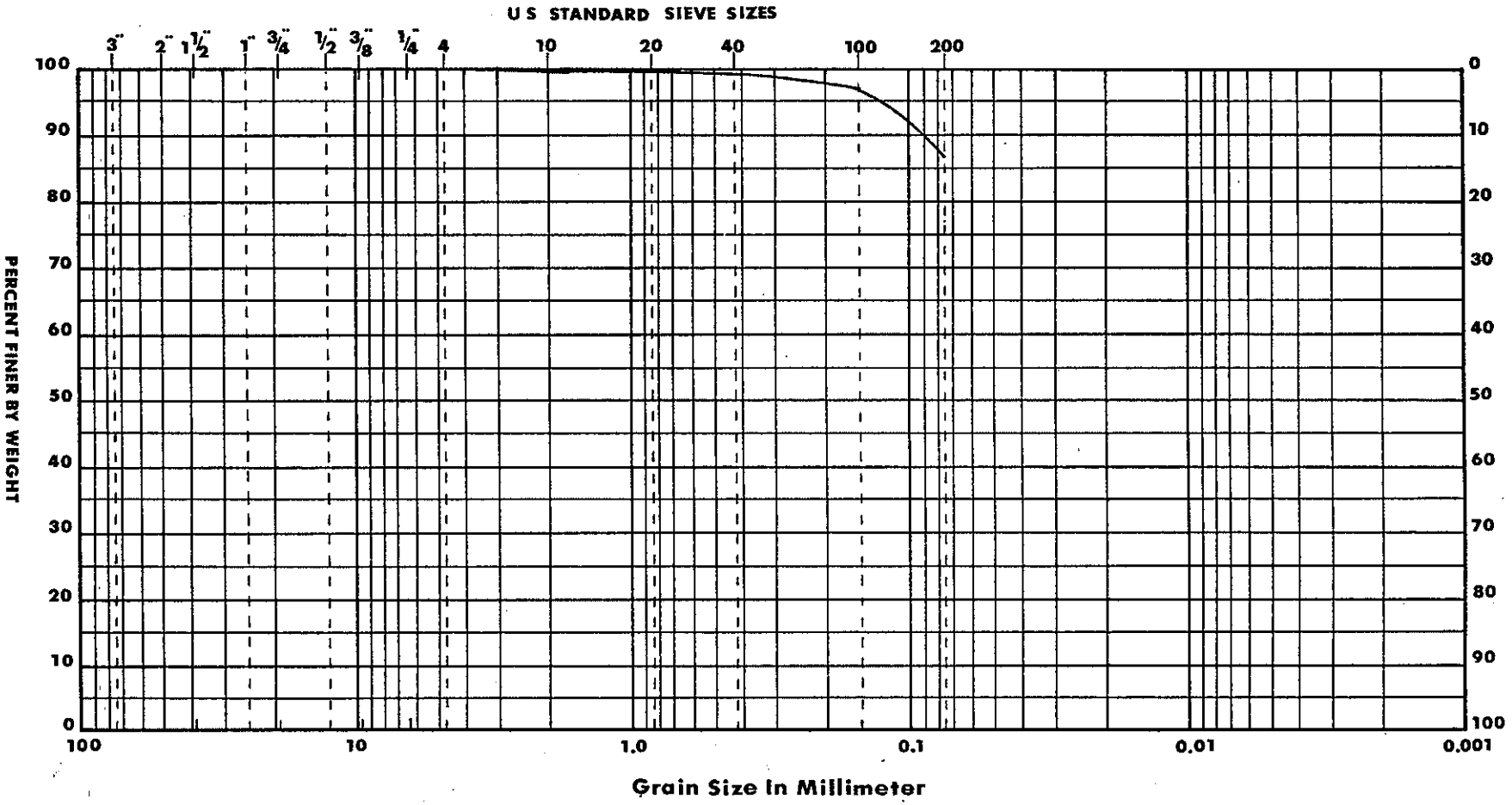
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	2-4'	Very stiff light tan & gray clay (CL) w/ ferreous nodules & sand seams

AVLES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

PROJECT NO. [illegible]-91

91-202 4-6

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

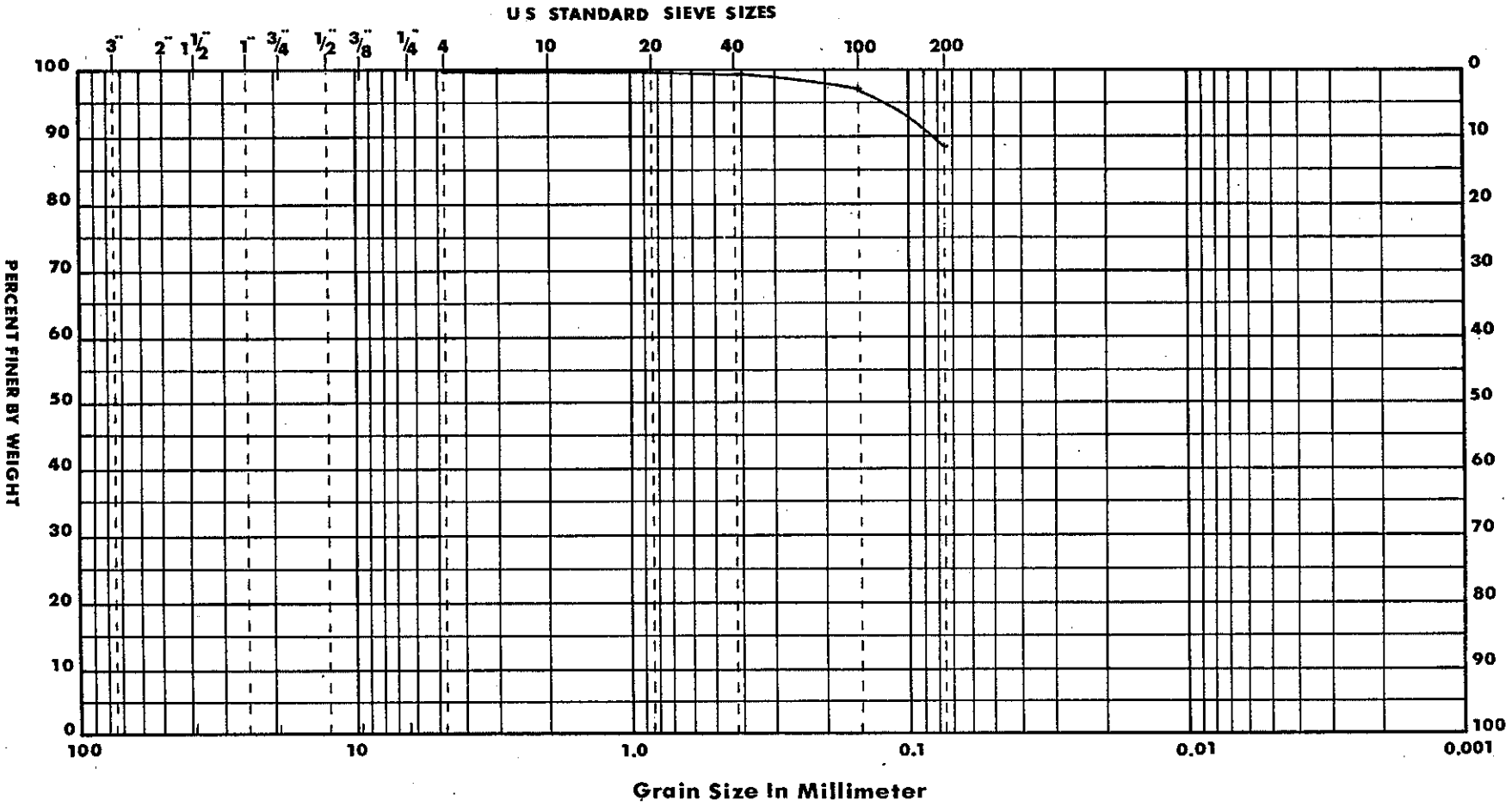
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	4'-6'	Medium light tan & gray clay (CH) w/ sand seams & shells

AMLES ENGINEERING CORP. GEOTECHNICAL ENGINEERS

PROJECT NO. 278-91

91-202 6'-8'

GRAIN SIZE CURVES



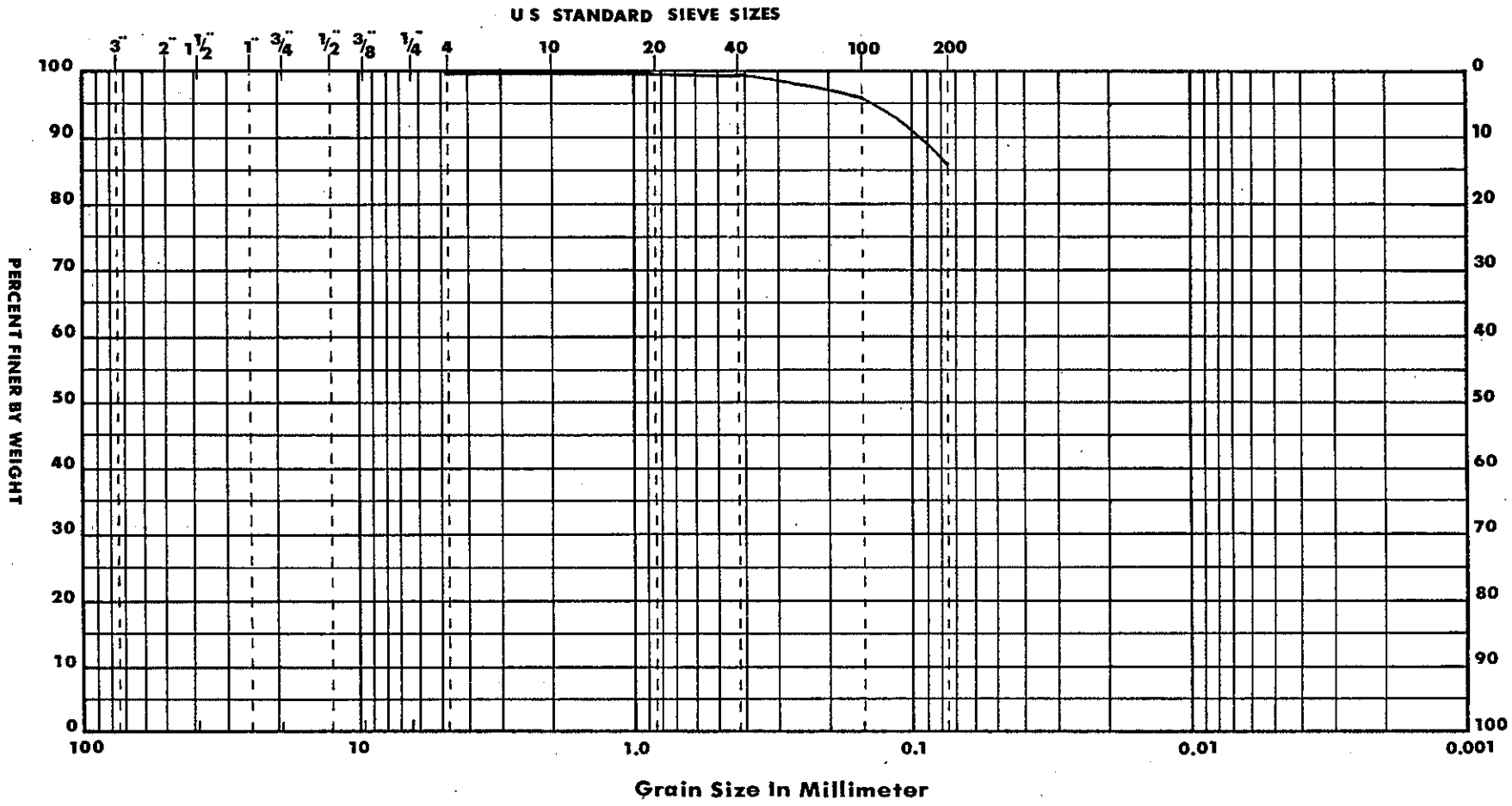
	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

Curve No.	Boring No.	Depth, Ft.	Material
	91-202	6'-8'	Medium light tan & gray clay (CH) w/ shell

AVLES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

PROJECT NO. 78-
91-202 8'-10'

GRAIN SIZE CURVES



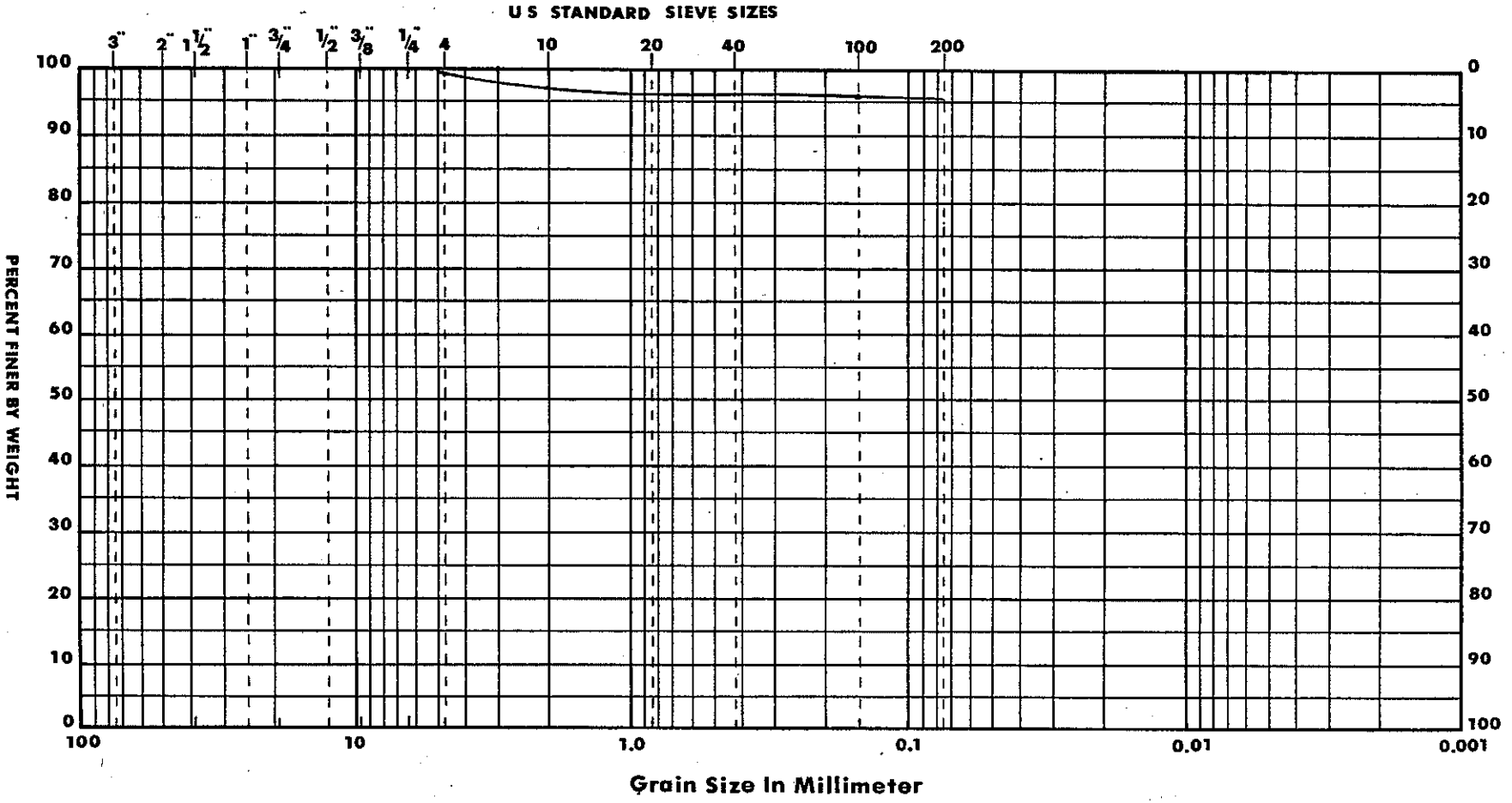
	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

Curve No.	Boring No.,	Depth, Ft.	Material
	91-202	8'-10'	Medium light tan & gray clay (CH)

AVLES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

PROJECT NO. 270-1

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

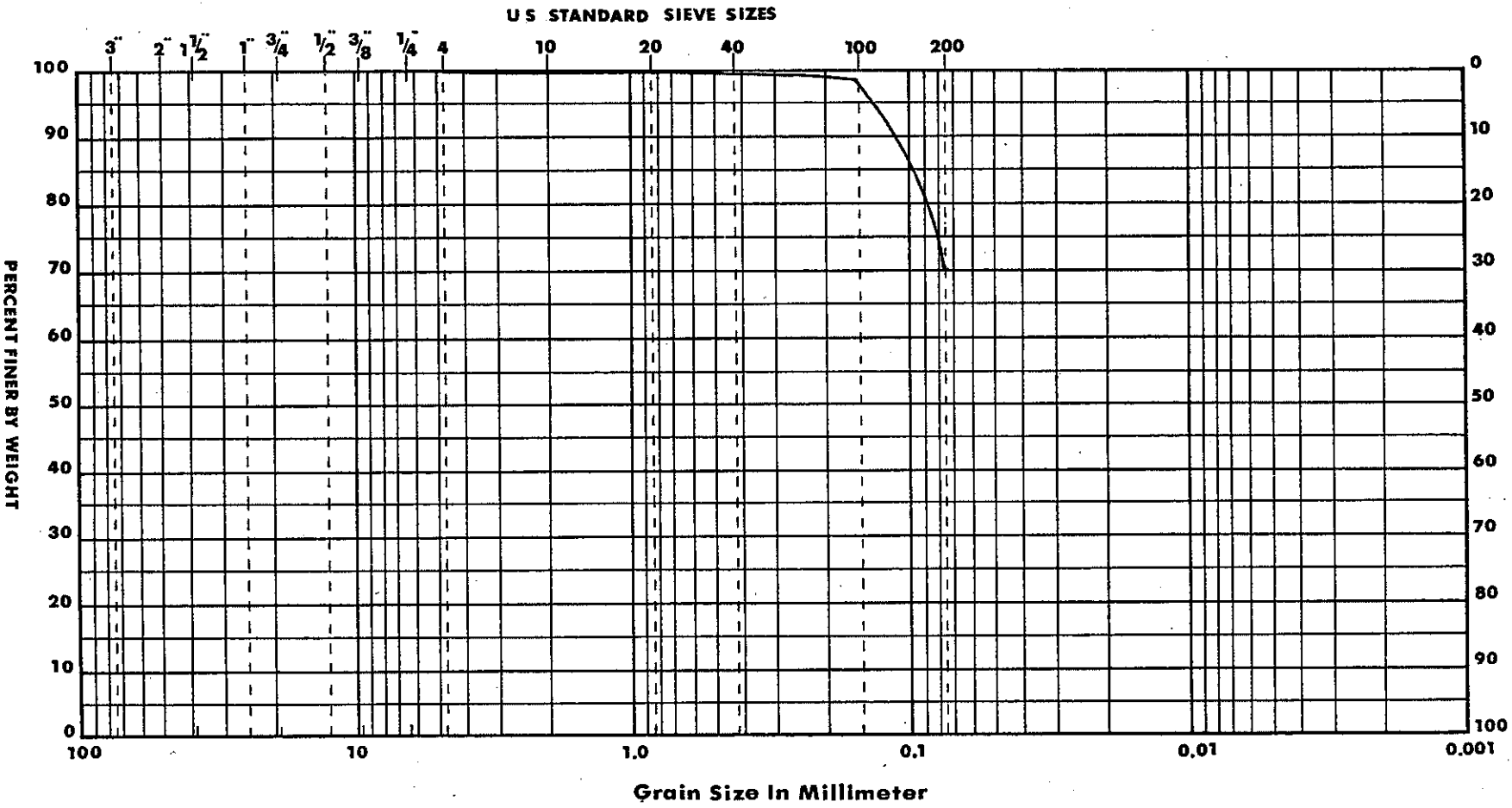
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	12'-14'	Very soft gray silty clay (OH)

AMES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

PROJECT NO 278-91

91-202 20'-22'

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

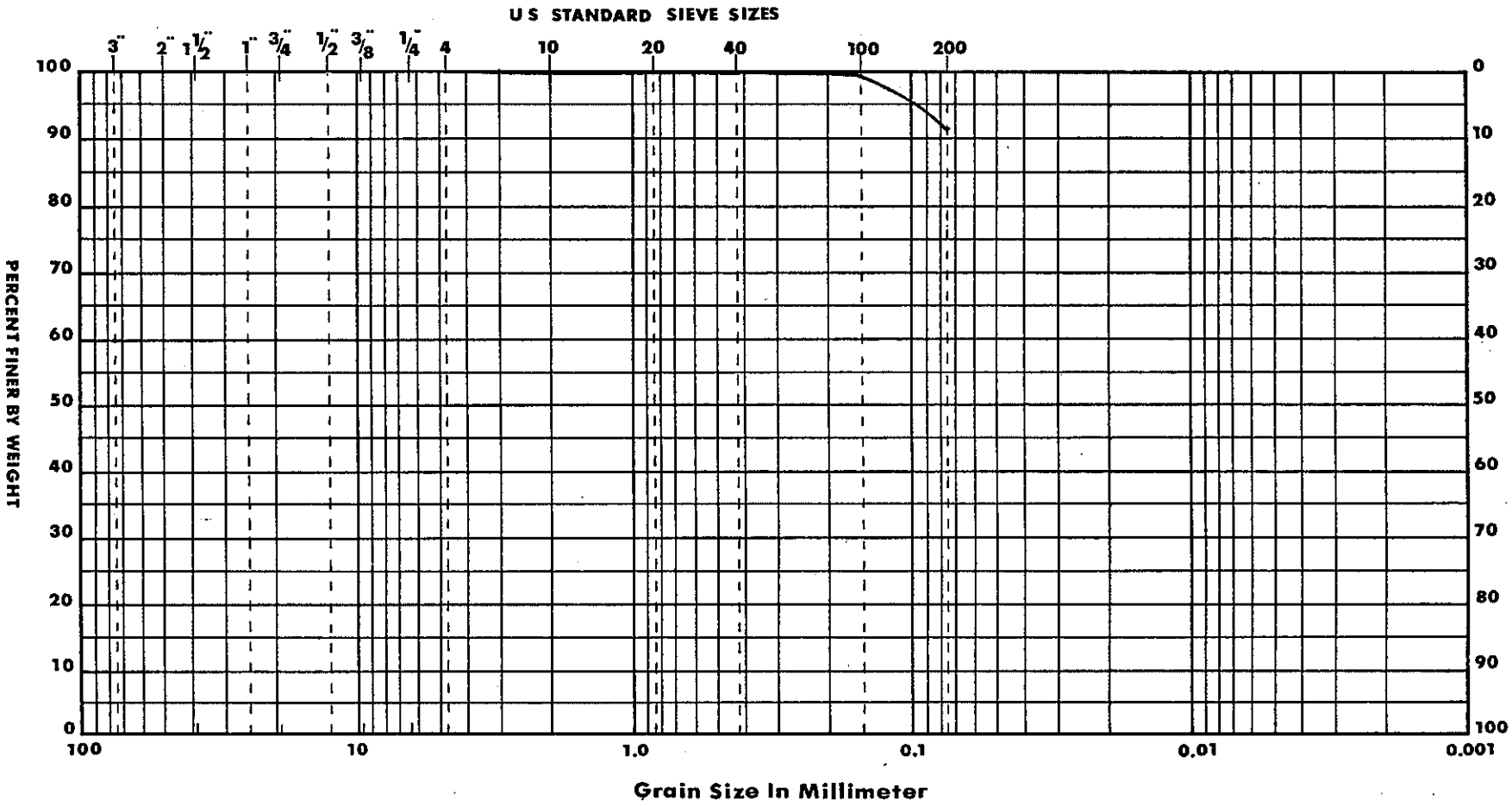
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	20'-22'	Very soft silty clay (CH)

AVLES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

[illegible]JEC[illegible]D. [illegible]-91

91-202 24'-26'

GRAIN SIZE CURVES



	GRAVEL		SAND			SILT	CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE		

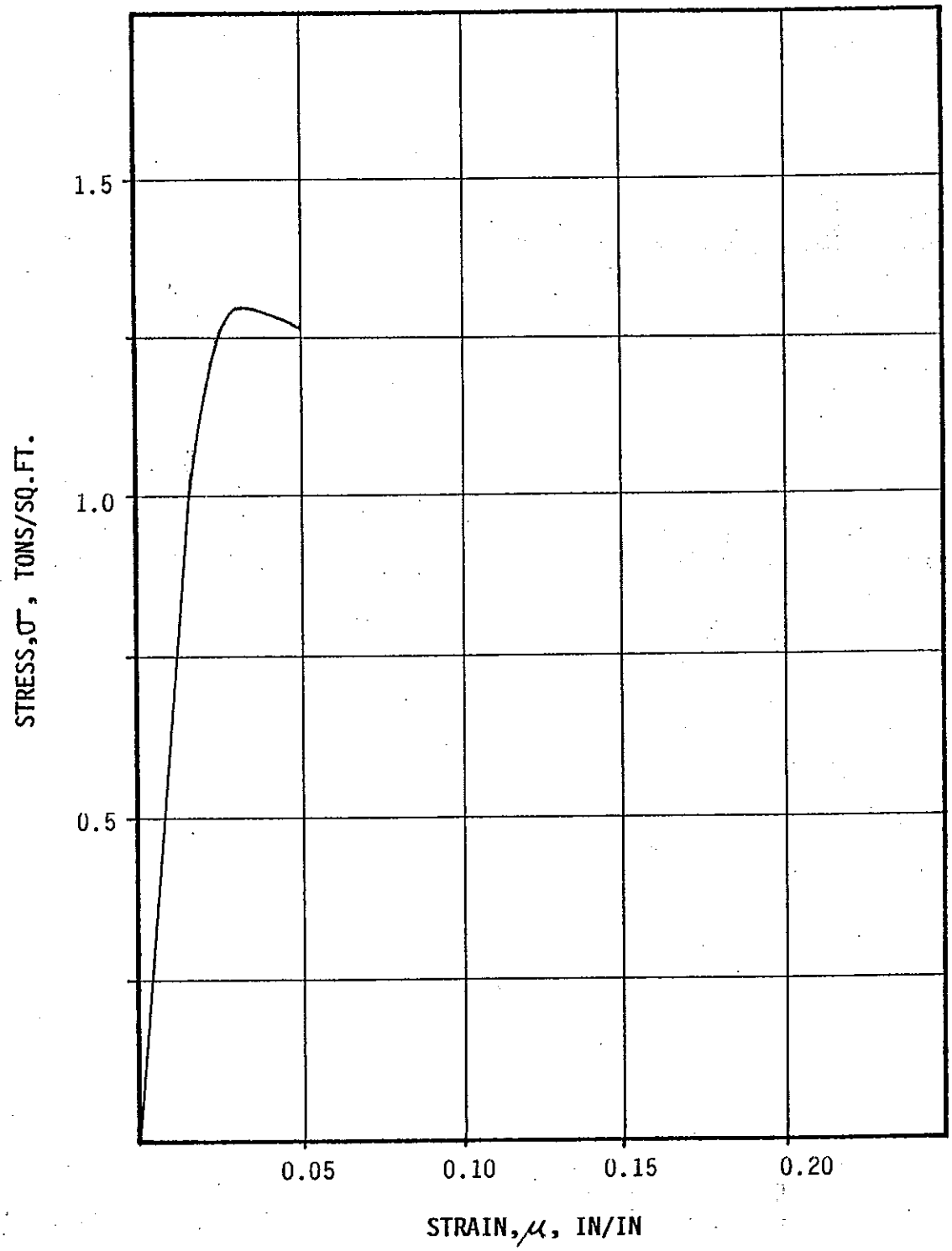
Curve No.	Boring No.	Depth, Ft.	Material
	91-202	24'-26'	Stiff light gray clay (CL)

AVLES ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

STRESS-STRAIN DIAGRAM



BORING NO. 91-202

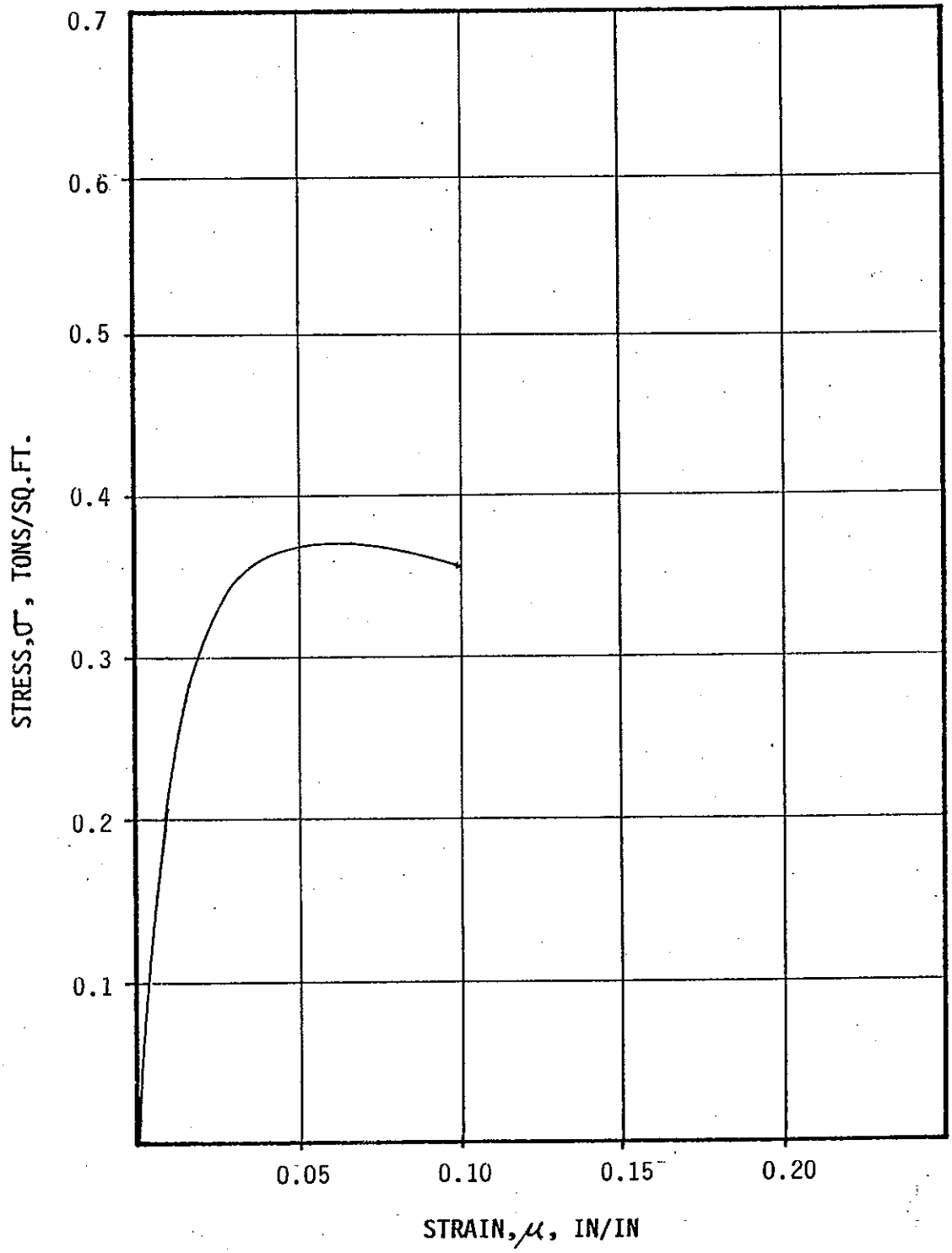
DEPTH 0-2 FT.

PLATE

AVLES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

STRESS-STRAIN DIAGRAM



BORING NO. 91-202

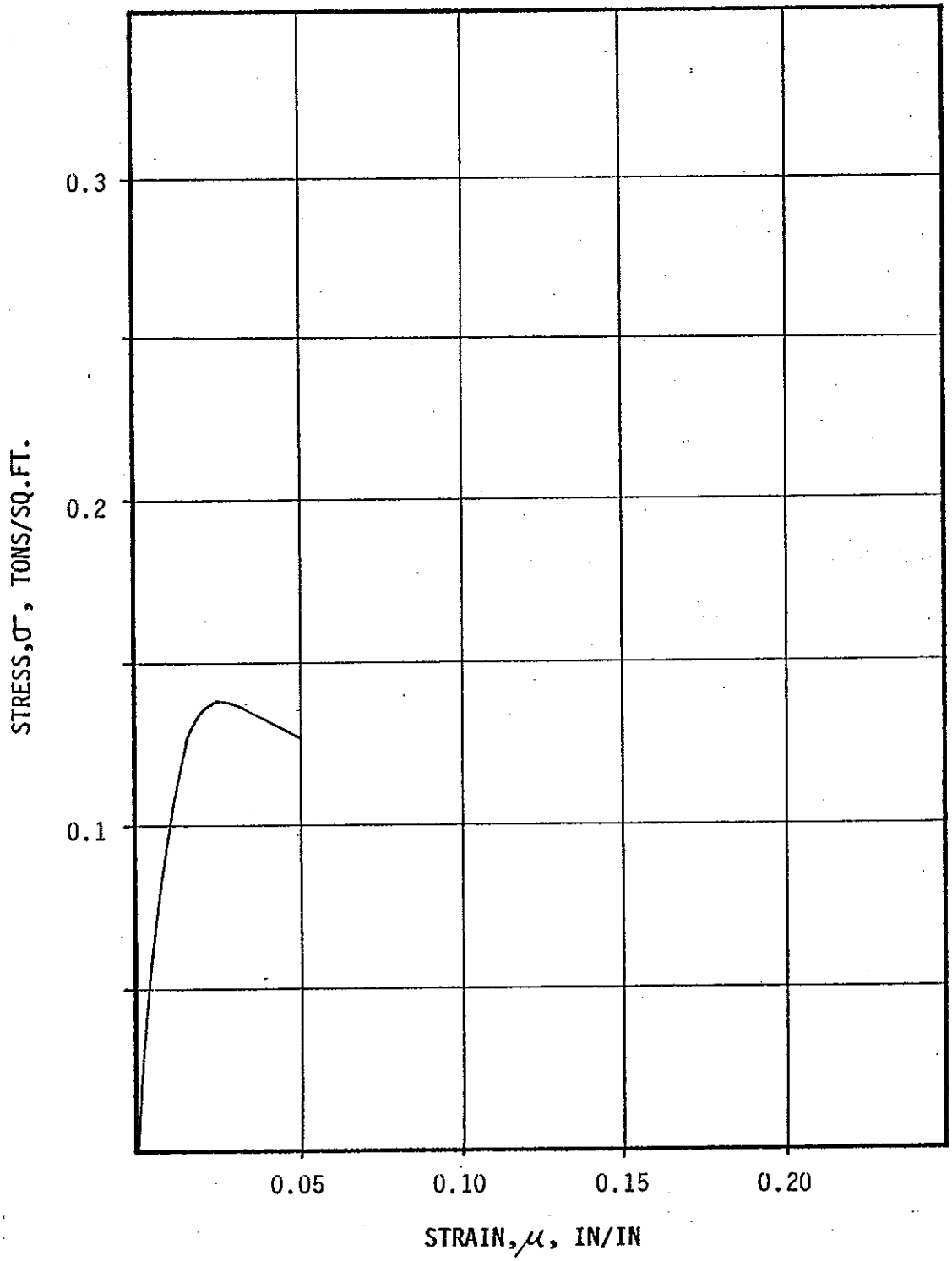
DEPTH 4-6 FT.

PLATE

AVLES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

STRESS-STRAIN DIAGRAM



BORING NO. 91-202

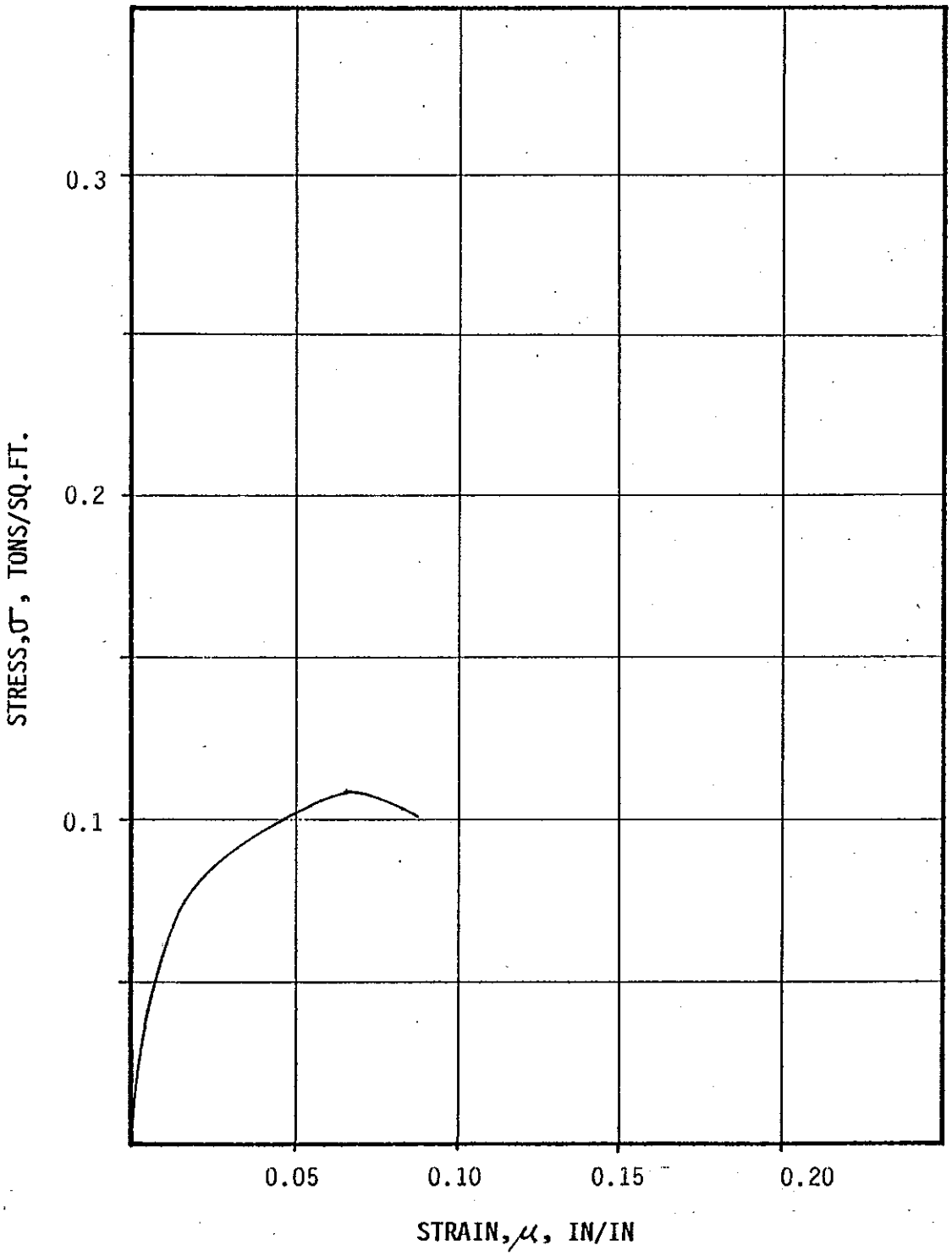
DEPTH 12-14 FT.

PLATE

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

STRESS-STRAIN DIAGRAM



BORING NO. 91-202

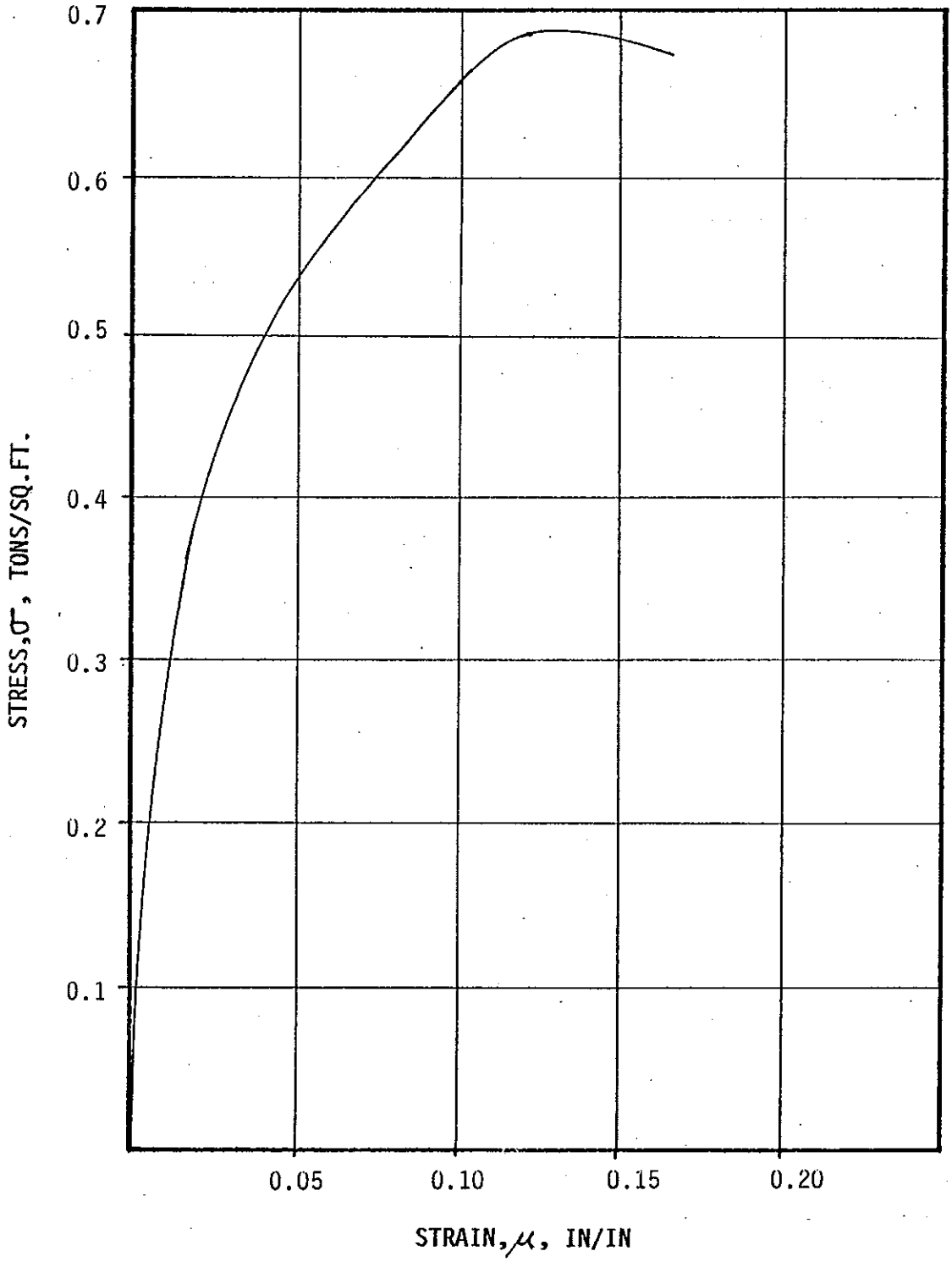
DEPTH 20-22 FT.

PLATE

AVILES
ENGINEERING CORP.
GEOTECHNICAL ENGINEERS

UNCONFINED COMPRESSION TEST

STRESS-STRAIN DIAGRAM



BORING NO. 91-202

DEPTH 24-26 FT.

PLATE

CESWG-EO-FS
Copy furnished
David Campbell
10 Sept 91

Review of Aviles Report

on Salt Bayou Water Control Structure

1. The plates showing description of materials, moisture content, unit dry weight, shear strength and atterberg limits are somewhat misleading. The presentation of unconfined compressive stress as a shear strength does ~~ont~~ not appear appropriate. Shear strength is usually taken as one half the unconfined compressive stress.

2. A comparison of the plots of pocket penetrometer readings with those shown on the driller's log appears to indicate that most if not all of the field readings were used on the plots. The contracts states: "The consistency of undisturbed cohesive materials shall be determined in the laboratory by taking pocket penetrometer readings in accordance with procedures outlined in Paragraph 8.6." Were pocket penetrometer readings taken in the laboratory?

3. A number of the torvane readings shown on the plots indicate no shear strength. What in fact were the torvane readings? A tabulation of the torvane readings should have been presented on the Summary of Laboratory Test Data.

4. The moisture - density relationship does not appear reasonable for some samples. Sample 6 from Boring No. 91-202 and

Sample 2 from Borings No. 91-206 appears to have this unreasonable relationship.