

Standard Test Method for Unconfined Compression Test: ASTM D 2166 - 91

Indiv. Lab. ID No.: 12 Bucket No.: _____
Soil Type: _____ Specimen or Bag No.: 44

Test No.: 44

Test Specimen's Physical Properties

Physical Dimensions:

Units: (in. or in')

Height (L_0): Diameter (D_0):

1: 4.005 1: 2.004

2: 4.005 2: 2.005

3: 4.004 3: 2.005

Avg. 4.005 Avg. 2.005

Measuring Devices: ☒ Dia. ☒ Dia. ☒ Dia.

Calipers: ☒ Ht. ☒ Dia.

Dial Comparator: ☒ Ht. ☒ Dia.

Other: _____

Area (A_0) = 3.157 (in.² or _____)

Volume (V_0) = 207.214 (cm³ or _____)

Note: in³ × 16.387 = cm³

Water Content: ☐ Before or ☐ After Shear

From: ☐ Cuttings; ☐ Whole Spec.; ☐ Spec. Slice

Container No. = _____

Mass of Moist Soil + Cont. (g) = _____

Mass of Dry Soil + Cont. (g) = _____

Mass of Cont. (g) = _____

Water Content, w_0 (%) = _____

Mass, Unit Weight & etc.:

Mass of Spec. Before Test + Cont. (g) = _____

Mass of Cont. (g) = _____

Mass of Spec. Before Test, $M_{s,0}$ (g) = 19.28

Mass of Spec. after test + Cont. (g) = _____

Mass of Cont. (g) = _____

Mass of Spec. After Test, $M_{s,1}$ (g) = _____

Total Unit Weight, $\gamma_t = M_{s,0} / V_0$

= _____ (g/cm³ or Mg/m³) × 62.43 = (pcf)

= 6.81 pcf (pcf or lb/ft³ or _____)

Dry Unit Weight, $\gamma_d = \gamma_t / (1 + w_0/100)$

= _____ (pcf or lb/ft³ or _____)

Degree of Saturation, S_0 (%) = _____

Assumed Specific Gravity, G_s = _____

Specimen Condition:

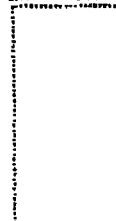
☒ Intact; or ☐ Remolded:

Pct. Comp.: _____ Ref. Effort: _____

Percentage Points Wet (+) / Dry (-) Opt.: _____

Calc. Strain Rate: 0.45"/min
(%/min or 1.12%/min)

Failure Sketch



Specimen Description/Classification: Form Cylinders

Testing Apparatus Information & Identification:

Axial Def.: ☒ Dial or ☐ Elect. Device: No. _____ Range: 0.5" (in or _____)

Cal. Factor if Applicable: (in / V / V or _____) = _____

Axial Force: ☐ Load Cell or ☒ Proving Ring: No. 3170

Range: 1000 lbs. (lbf or _____)

Cal. Factor if Applicable: (lbf / V / V or lbf / div. or 1 dial/div) = 0.684/lbs.

Electronic Recording (if applicable): ☐ Data Acquisition System:

☐ Signal Conditioning System(s):

Def. Channel No.: _____

Def. Ident. No.: _____

Load Channel No.: _____

Load Ident. No.: _____

Ext. Volt Channel No.: _____

Loading Device (Mfg. & Mod. #): Wykeham Farrance (TS7)

Triaxial Cell used in testing: ☒ Yes, with bearing- ☐ ball; ☒ solid
☐ No

Dead weight applied to spec. (dial, platen, rod, etc.) If appl., W_{ds} = _____ (lbf or _____)

Elapsed Time (min:sec)	Deformation Reading, d_i (in. or _____)	Axial Load Reading, P_i (lbf or _____)	Axial Strain, ϵ_a (%)	Compressive Stress, P_i/A_0	
				In Lab's Units (_____)	In ISR's Units (kPa)
0	0	()	X X X		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

☒ See attached print out of raw and/or calculated data file(s).

☐ Additional loading data recorded/presented on 2nd data sheet.

Strength Summary: Under _____

Axial

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meter Ratio: _____

Testing Remarks: SAMPLE DUCKING LOCATION 13 OF 1 SPECIMEN

Sample # 44

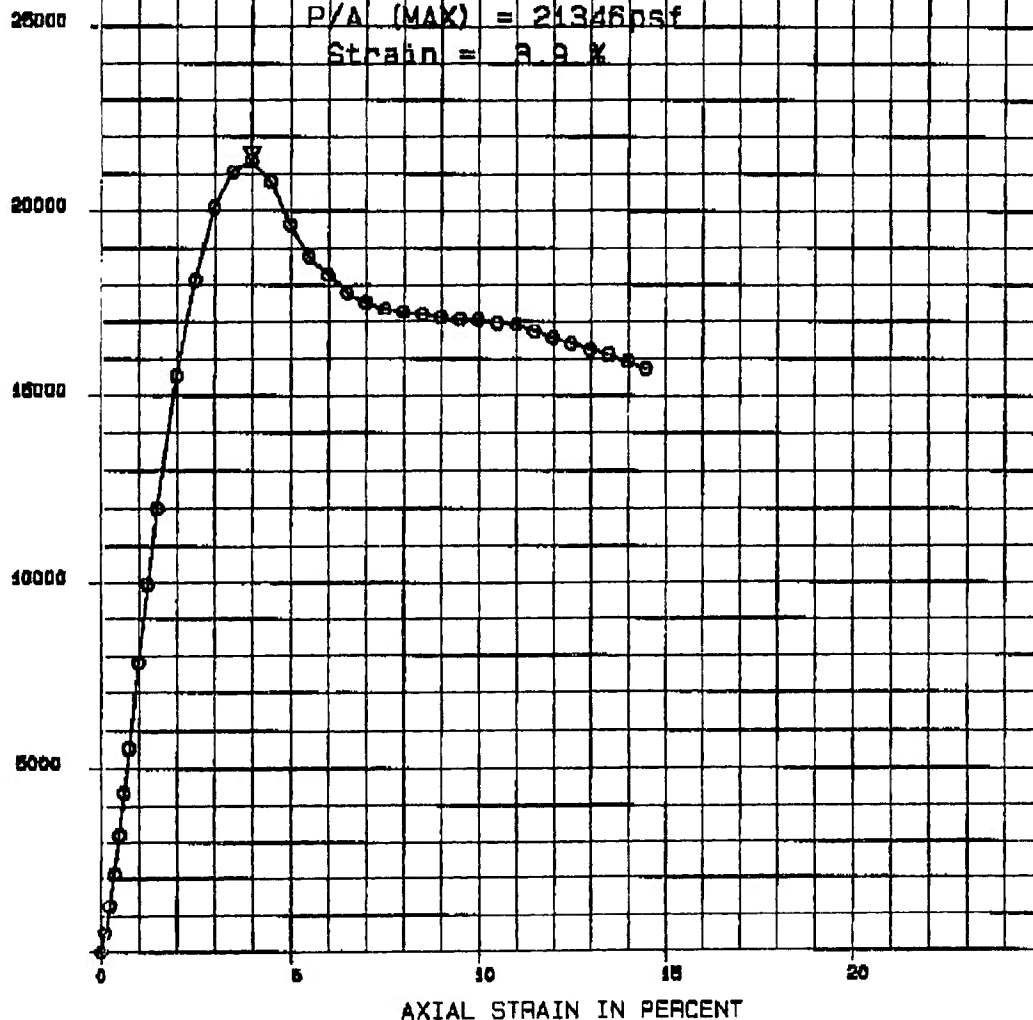
TEST RESULTS

Strain Dial Reading (0.000)	Proving Ring Reading	Incremental Strain (%)	P/A (psi)
--------------------------------	-------------------------	---------------------------	--------------

50.0	605.0	0.125	716.326
100.0	628.0	0.250	1430.860
150.0	660.0	0.375	2423.205
200.0	695.0	0.499	3506.141
250.0	732.0	0.624	4648.331
300.0	770.0	0.749	5818.588
350.0	810.0	0.874	7047.710
400.0	848.0	0.999	8211.973
500.0	917.0	1.248	10316.060
600.0	986.0	1.498	12409.410
800.0	1100.0	1.998	15830.410
1000.0	1188.0	2.497	18425.381
1200.0	1252.0	2.996	20266.949
1400.0	1288.0	3.496	21245.980
1600.0	1298.0	3.995	21435.420
1800.0	1270.0	4.494	20490.029
2000.0	1231.0	4.994	19227.461
2200.0	1212.0	5.493	18566.461
2400.0	1206.0	5.993	18292.461
2600.0	1203.0	6.492	18107.820
2800.0	1200.0	6.991	17924.100
3000.0	1198.0	7.491	17770.170
3200.0	1196.0	7.990	17616.859
3400.0	1195.0	8.489	17492.711
3600.0	1195.0	8.989	17397.250
3800.0	1195.0	9.488	17301.789
4000.0	1195.0	9.988	17206.340
4200.0	1196.0	10.487	17138.789
4400.0	1197.0	10.986	17070.930
4600.0	1198.0	11.486	17002.770
4800.0	1199.0	11.985	16934.289
5000.0	1200.0	12.484	16865.500
5200.0	1200.0	12.984	16799.260
5400.0	1198.0	13.483	16732.670
5600.0	1195.0	13.983	16665.500

UNCONFINED COMPRESSIVE STRENGTH - psf

P/A (MAX) = 21346psf
Strain = 3.9 %



SKETCH
AT
FAILURE



TEST NO. U28.1

TEST NO. U28.1

INITIAL CONDITIONS	INITIAL WATER CONTENT, %	
	INITIAL DRY UNIT WEIGHT, pcf	
	SAMPLE HEIGHT & DIAMETER, in.	4.01 2.01

RATE OF
PERCENT

SOIL DESCRIPTION:

FOAM

LIQUID LIMIT % PLASTIC LIMIT % SPECIFIC GRAVITY

SAMPLE PREPARATION

I.S.R. UNCONFINED COMPRESSION TEST UNCONFINED COMPRESSION TESTS

BORING NO.

TEST SERIES

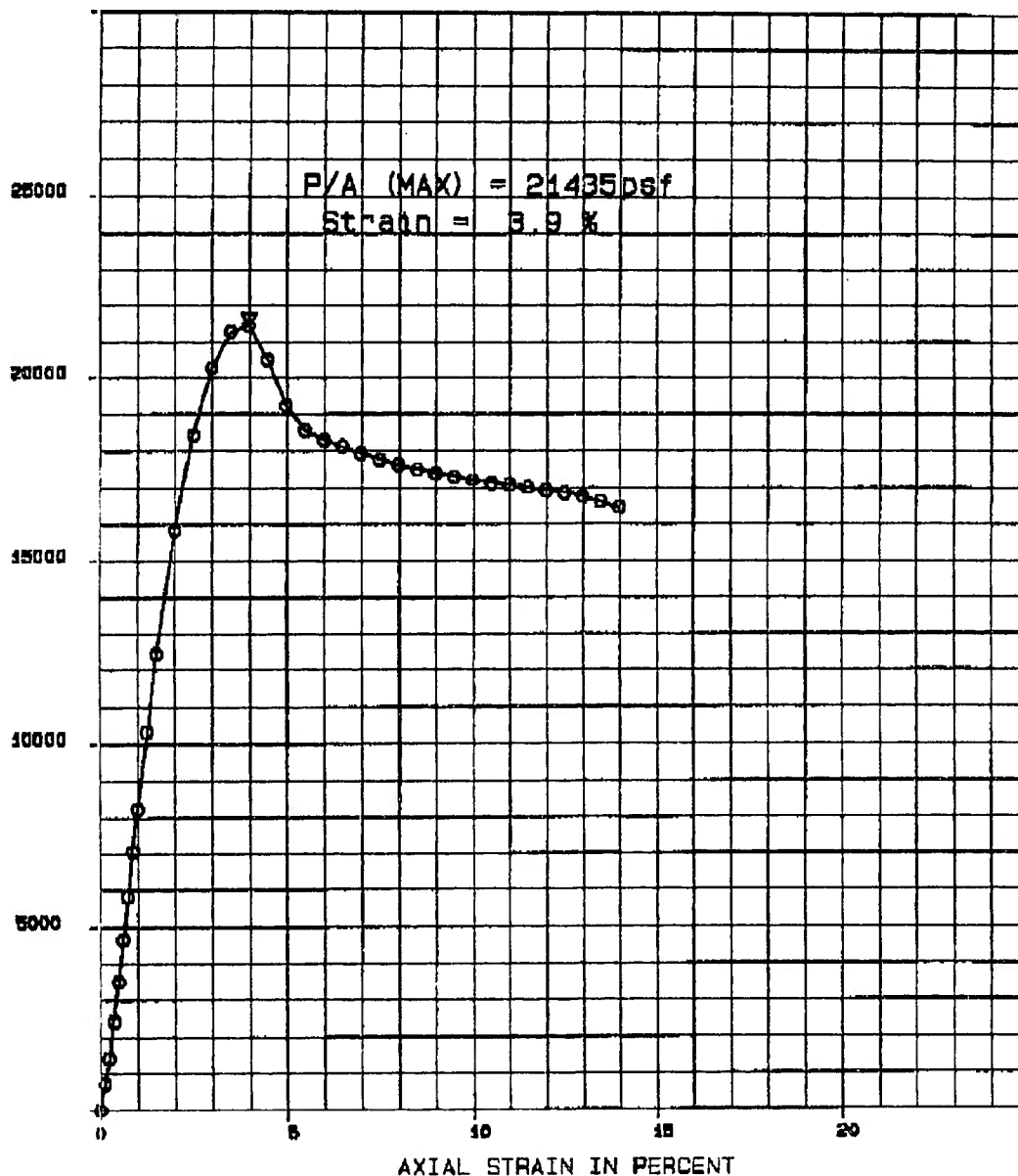
NO. 88
DATE JUNE 88

FILE 18A

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FIGURE

UNCONFINED COMPRESSIVE STRENGTH - psf



SKETCH
AT
FAILURE



TEST NO. U44.1

TEST NO.		U44.1
INITIAL CONDITIONS	INITIAL WATER CONTENT, %	
	INITIAL DRY UNIT WEIGHT, pcf	
	SAMPLE HEIGHT & DIAMETER, in.	4.03 2.03
RATE OF PERCENT		

SOIL DESCRIPTION:		FOAM
LIQUID LIMIT	% PLASTIC LIMIT	% SPECIFIC GRAVITY
SAMPLE PREPARATION		

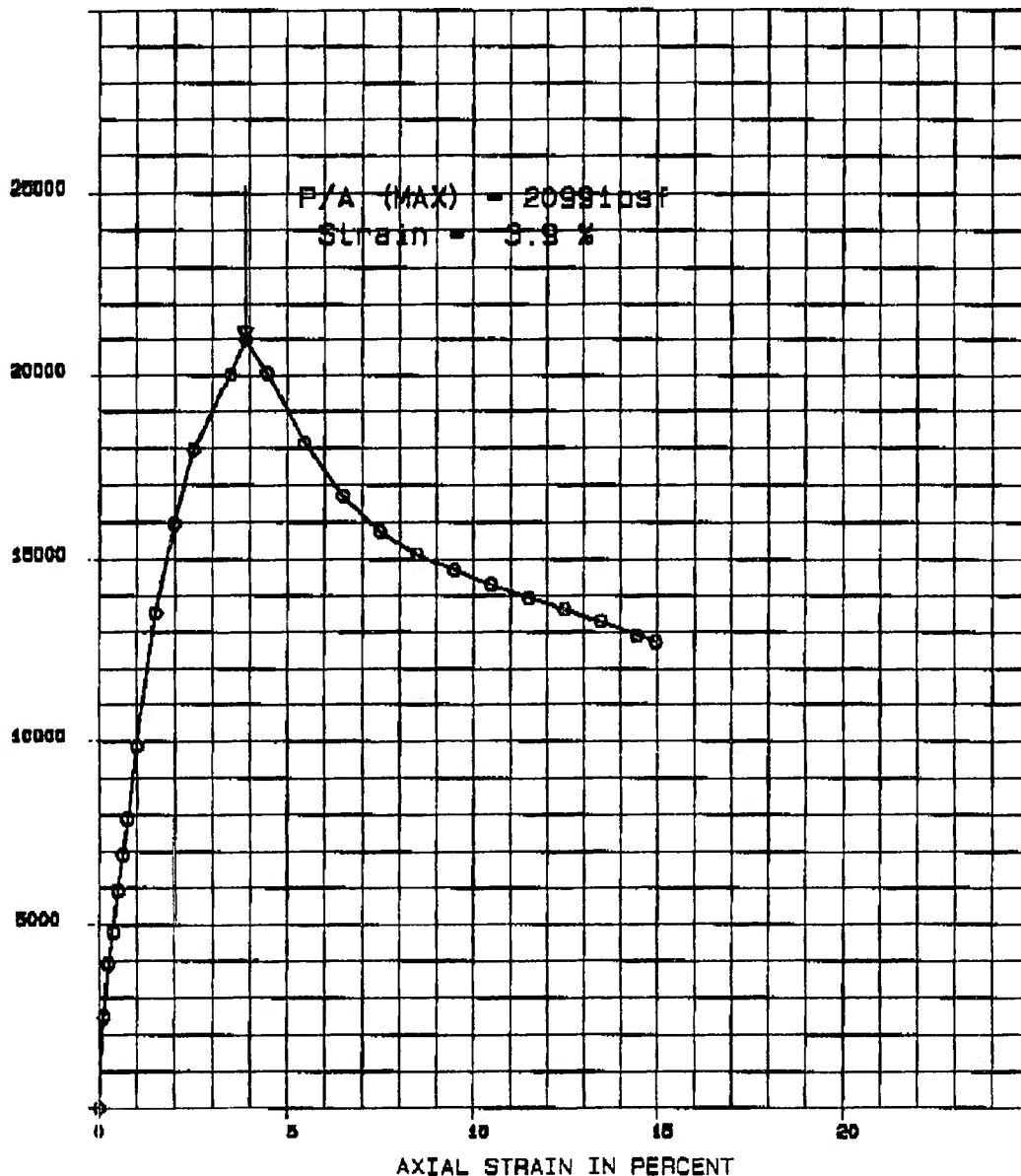
I.S.R. UNCONFINED COMPRESSION
TEST
UNCONFINED COMPRESSION
TESTS

BORING NO.

TEST SERIES
NO. 44
DATE JUNE 68
FILE 188

FIGURE

UNCONFINED COMPRESSIVE STRENGTH - psf



SKETCH
AT
FAILURE



TEST NO. U23.1

TEST NO.		U23.1
INITIAL CONDITIONS	INITIAL WATER CONTENT, %	
	INITIAL DRY UNIT WEIGHT, pcf	
	SAMPLE HEIGHT & DIAMETER, in.	4.01 2.00
RATE PERC		

SOIL DESCRIPTION:		FOAM
LIQUID LIMIT	% PLASTIC LIMIT	% SPECIFIC GRAVITY
SAMPLE PREPARATION		

I.S.R. UNCONFINED COMPRESSION
TEST
UNCONFINED COMPRESSION
TESTS

BORING NO.

TEST SERIES
NO. 03
DATE JUNE 00
FILE 100

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FIGURE

“Triplicate” Laboratory No. 13

SR-2, D#1

Standard Test Method for Unconfined Compression Test: ASTM D 2166 - 91

Indiv. Lab. ID No.: 13 Bucket No.: _____
Soil Type: Foam Specimen or Bag No.: 105

Test No.: 1/3

Test Specimen's Physical Properties

Physical Dimensions:

Units: (in. or _____)

Height (L_0):

Diameter (D_0):

1: 4.000

1: 2.000

2: 4.002

2: 1.999

3: 4.002

3: 2.000

Avg. 4.001

Avg. 2.000

Measuring Devices:

Pi Tape: ☐ Dia.

Calipers: ☐ Ht. ☒ Dia.

Dial Comparator: ☒ Ht. ☐ Dia.

Other: _____

Area (A_0) = 3.14 (in.² or _____)

Volume (V_0) = 12.57 (cm³ or in.³)

Note: in³ × 16.387 = cm³

Water Content: ☐ Before or ☐ After Shear

From: ☐ Cuttings; ☐ Whole Spec.; ☐ Spec. Slice

Container No. = _____

Mass of Moist Soil + Cont. (g) = _____

Mass of Dry Soil + Cont. (g) = _____

Mass of Cont. (g) = _____

Water Content, w_0 (%) = _____

Mass, Unit Weight & etc.:

Mass of Spec. Before Test + Cont. (g) = _____

Mass of Cont. (g) = _____

Mass of Spec. Before Test, $M_{s,0}$ (g) = 18.68

Mass of Spec. after test + Cont. (g) = _____

Mass of Cont. (g) = _____

Mass of Spec. After Test, $M_{s,f}$ (g) = _____

Total Unit Weight, $\gamma_t = M_{s,0} / V_0$

= 9.07×10^{-2} (g/cm³ or Mg/m³) × 62.43 = (pcf)

= 5.66 (pcf or lbf/ft³ or _____)

Dry Unit Weight, $\gamma_d = \gamma_t / (1 + w_0/100)$

= _____ (pcf or lbf/ft³ or _____)

Degree of Saturation, S_0 (%) = _____

Assumed Specific Gravity, G_s = _____

Specimen Condition:

☐ Intact: or ☐ Remolded:

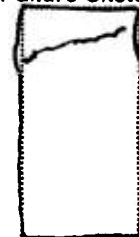
Pct. Comp.: _____ Ref. Effort: _____

Percentage Points Wet (+) / Dry (-) Opt.: _____

Calc. Strain Rate: 0.98

(%/min or _____)

Failure Sketch



Specimen Description/Classification: No Deformities

Testing Apparatus Information & Identification:

Axial Def.: ☐ Dial or ☒ Elect. Device: No. _____ Range: 4095 (in. or 44)

Cal. Factor if Applicable: (in / V / V or in / 44) = 0.0029972277

Axial Force: ☒ Load Cell or ☐ Proving Ring: No. _____

Range: 4200 (lbf or 44)

Cal. Factor if Applicable: (lbf / V / V or lbf / div. or 16 / 44) = 0.23785579725

Electronic Recording (if applicable): ☒ Data Acquisition System:

☐ Signal Conditioning System(s): Def. Channel No.: 4

Def. Ident. No.: _____ Load Channel No.: 0

Load Ident. No.: _____ Ext. Volt Channel No.: _____

Loading Device (Mfg. & Mod. #): Geocomp Corporation; Loadtrac Unit

Triaxial Cell used in testing: ☒ Yes, with bearing- ☒ ball; ☐ solid

☐ No

Dead weight applied to spec. (dial, platen, rod, etc.) if appl., W_{ds} = 439.4 (lbf or g)

Elapsed Time (min:sec)	Deformation Reading, d_r (in. or _____)	Axial Load Reading, P_r (lbf or _____)	Axial Strain, ϵ_a (%)	Compressive Stress, P_1/A_1	
				In Lab's Units (_____)	In ISR's Units (kPa)
0	0	()	X X X		
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☒ See attached print out of raw and/or calculated data file(s).

☐ Additional loading data recorded/presented on 2nd data sheet.

Strength Summary: Unconf.

Axial Str

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Diameter Ratio:

0.5

Testing Remarks:

UNCONFINED COMPRESSION TEST

Project : ISR REFERENCE TESTING Location :
Project No. : 2955 Test No. : 1 OF 3
Boring No. : ID #13 Test Date : 4-14-95 Tested by : JGS
Sample No. : 105 Depth : Checked by : EDB
Sample Type : FOAM Elevation :
Soil Description :
Remarks :

Height : 4.001 (in) Quality of Sample : GOOD
Area : 3.14 (in²) Piston Friction : 0.00 (lb) Wet Unit Weight : 5.66 (lb/ft³)
Volume : 12.57 (in³) Piston Weight : 439.40 (gm) Dry Unit Weight : 0.00 (lb/ft³)

SAMPLE INFORMATION

	SAMPLE #1	SAMPLE #2	SAMPLE #3
CONTAINER NO.	U		
WT CONTAINER + WET SOIL (gm)	0.00	0.00	0.00
WT CONTAINER + DRY SOIL (gm)	0.00	0.00	0.00
WT WATER (gm)	0.00	0.00	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	0.00	0.00	0.00
WATER CONTENT (%)	0.00	0.00	0.00

UNCONFINED COMPRESSION TEST

Project : ISR REFERENCE TESTING

Location :

Project No. : 2955

Test No. : 1 OF 3

Boring No. : ID #13

Test Date : 4-14-95

Tested by : JGS

Sample No. : 105

Depth :

Checked by : EDB

Sample Type : FOAM

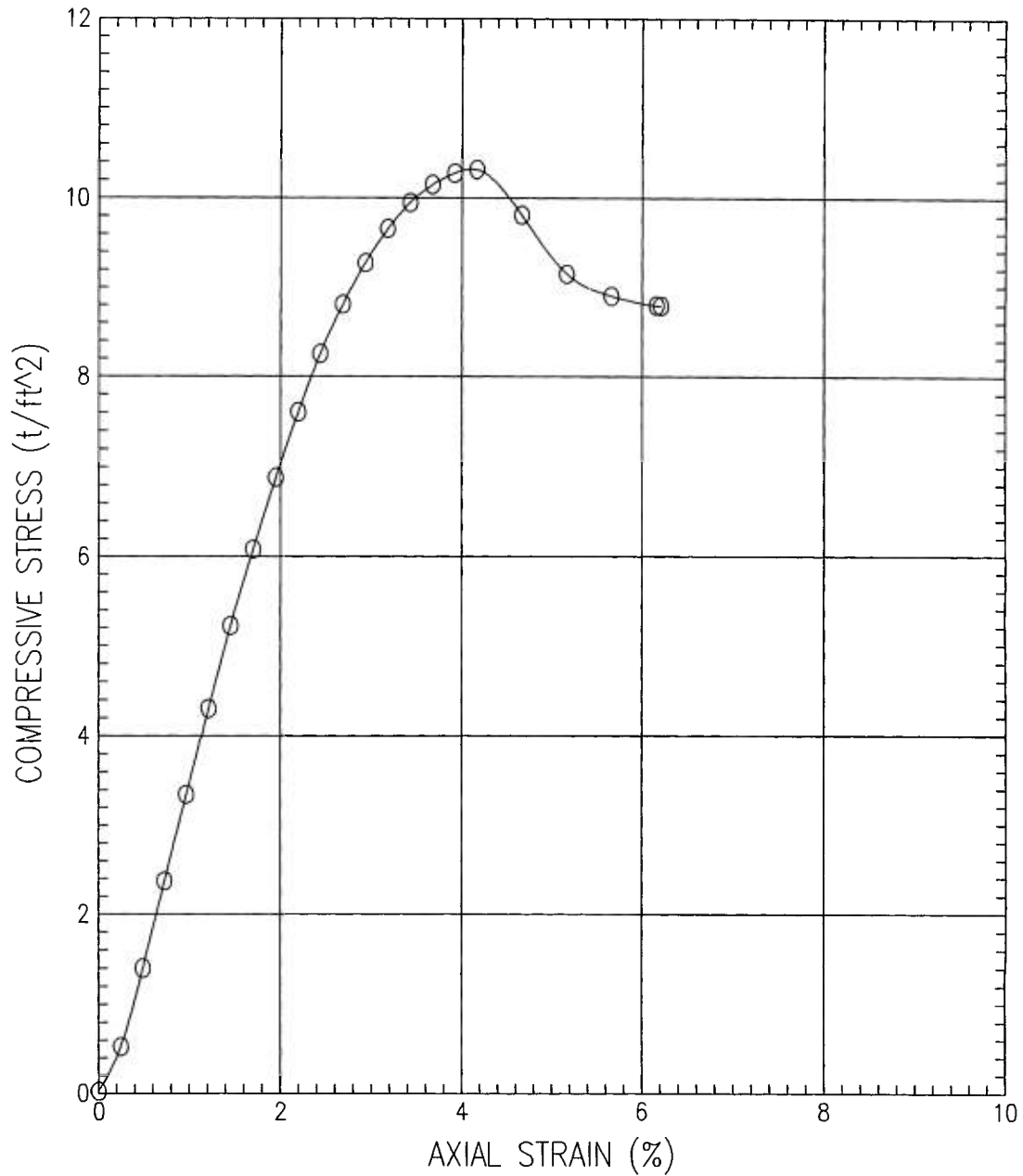
Elevation :

Soil Description :

Remarks :

	AXIAL COMPRESSION (in)	AXIAL STRAIN (%)	LOAD (lb)	CORR. LOAD ON SAMPLE (lb)	VERTICAL STRESS (t/ft ²)	SHEAR STRESS (t/ft ²)	Time (min)
1)	0.000	0.00	0.00	0.97	0.02	0.01	0.0000
2)	0.010	0.25	22.12	23.09	0.53	0.26	0.2513
3)	0.019	0.49	60.42	61.38	1.40	0.70	0.4998
4)	0.029	0.73	103.23	104.20	2.37	1.19	0.7512
5)	0.039	0.97	146.52	147.49	3.35	1.67	1.0005
6)	0.049	1.21	189.10	190.07	4.30	2.15	1.2501
7)	0.058	1.45	230.25	231.21	5.22	2.61	1.4997
8)	0.068	1.70	269.02	269.98	6.08	3.04	1.7510
9)	0.078	1.95	305.41	306.38	6.88	3.44	2.0011
10)	0.088	2.19	338.47	339.44	7.61	3.80	2.2514
11)	0.097	2.43	368.20	369.17	8.25	4.13	2.5010
12)	0.107	2.68	393.89	394.86	8.81	4.40	2.7501
13)	0.117	2.93	416.01	416.98	9.28	4.64	3.0009
14)	0.127	3.18	434.33	435.30	9.66	4.83	3.2505
15)	0.137	3.42	448.60	449.57	9.95	4.98	3.5000
16)	0.147	3.67	458.83	459.79	10.15	5.08	3.7497
17)	0.157	3.92	465.72	466.69	10.28	5.14	4.0010
18)	0.167	4.17	468.82	469.78	10.32	5.16	4.2506
19)	0.187	4.67	448.12	449.09	9.81	4.91	4.7510
20)	0.207	5.17	420.06	421.02	9.15	4.58	5.2511
21)	0.227	5.66	410.78	411.75	8.90	4.45	5.7498
22)	0.246	6.16	407.92	408.89	8.79	4.40	6.2502
23)	0.248	6.21	407.92	408.89	8.79	4.39	6.3066

UNCONFINED COMPRESSION TEST



Project Name : ISR REFERENCE TESTING

Project No : 2955

Boring No : ID #13

Sample No : 105

Test Date : 4-14-95

Test No : 1 OF 3

Depth :

Description :