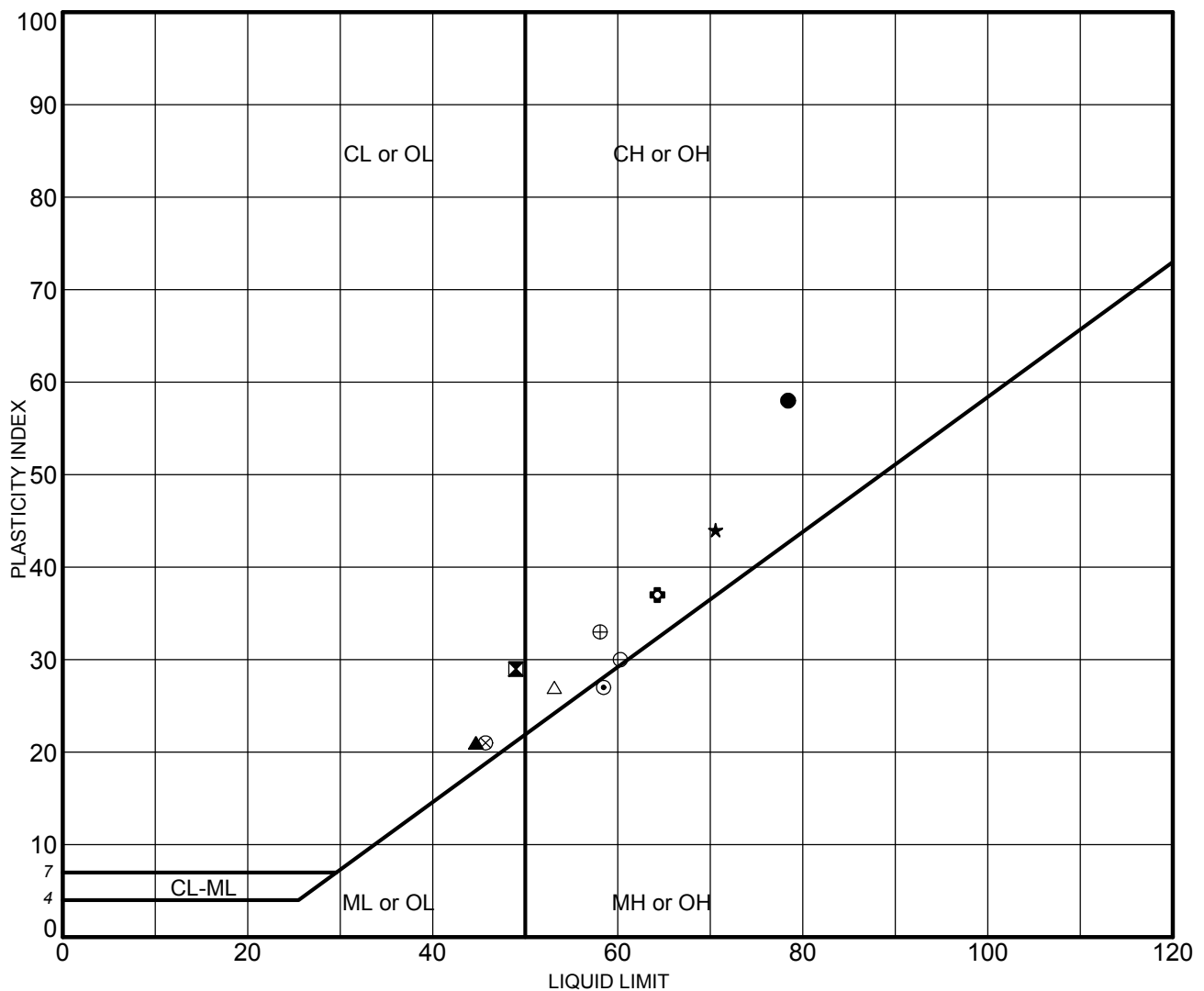




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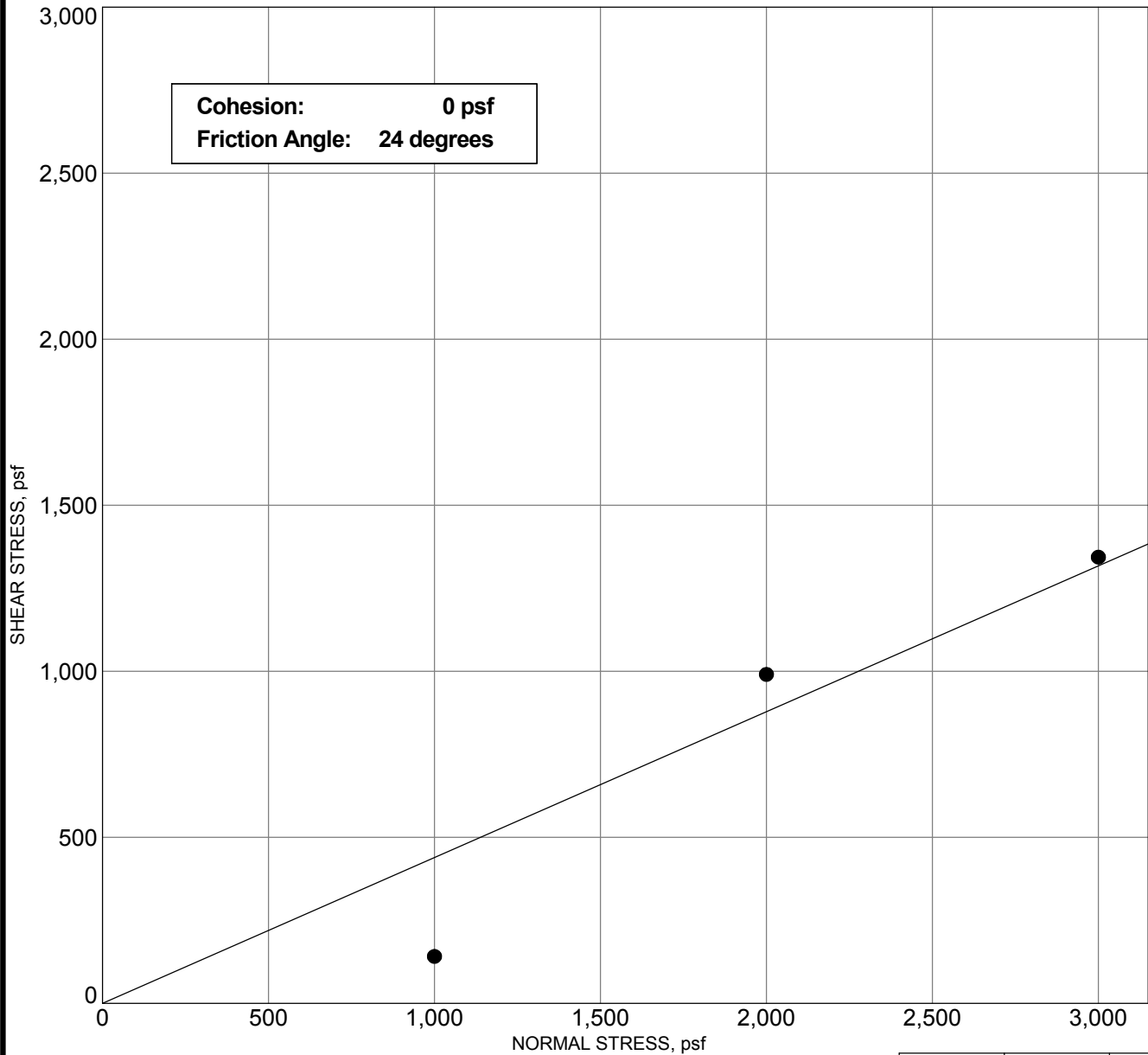


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ATTERBERG LIMITS TEST RESULTS - ASTM D4318

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 1



Sample: B-2
Depth: 1.0 - 2.5 feet
Description: Brown silty clay with a little sand and gravel

		Sample #1	Sample #2	Sample #3
INITIAL	Moisture Content, %	18.8	18.9	20.8
	Dry Density, pcf	79.7	81.1	79.3
	Height, inches	1.00	1.00	1.00
FINAL	Moisture Content, %	44.1	30.9	30.2
	Dry Density, pcf	79.4	85.1	82.5
	Height, inches	1.004	0.953	0.961
Diameter, inches		2.42	2.42	2.42
Deformation Rate, inch/minute		0.0025	0.0022	0.0023
Normal Stress, psf		1000	2000	3000
Peak Shear Stress, psf		141	991	1344
Shear Displacement, inches		0.43	0.41	0.44

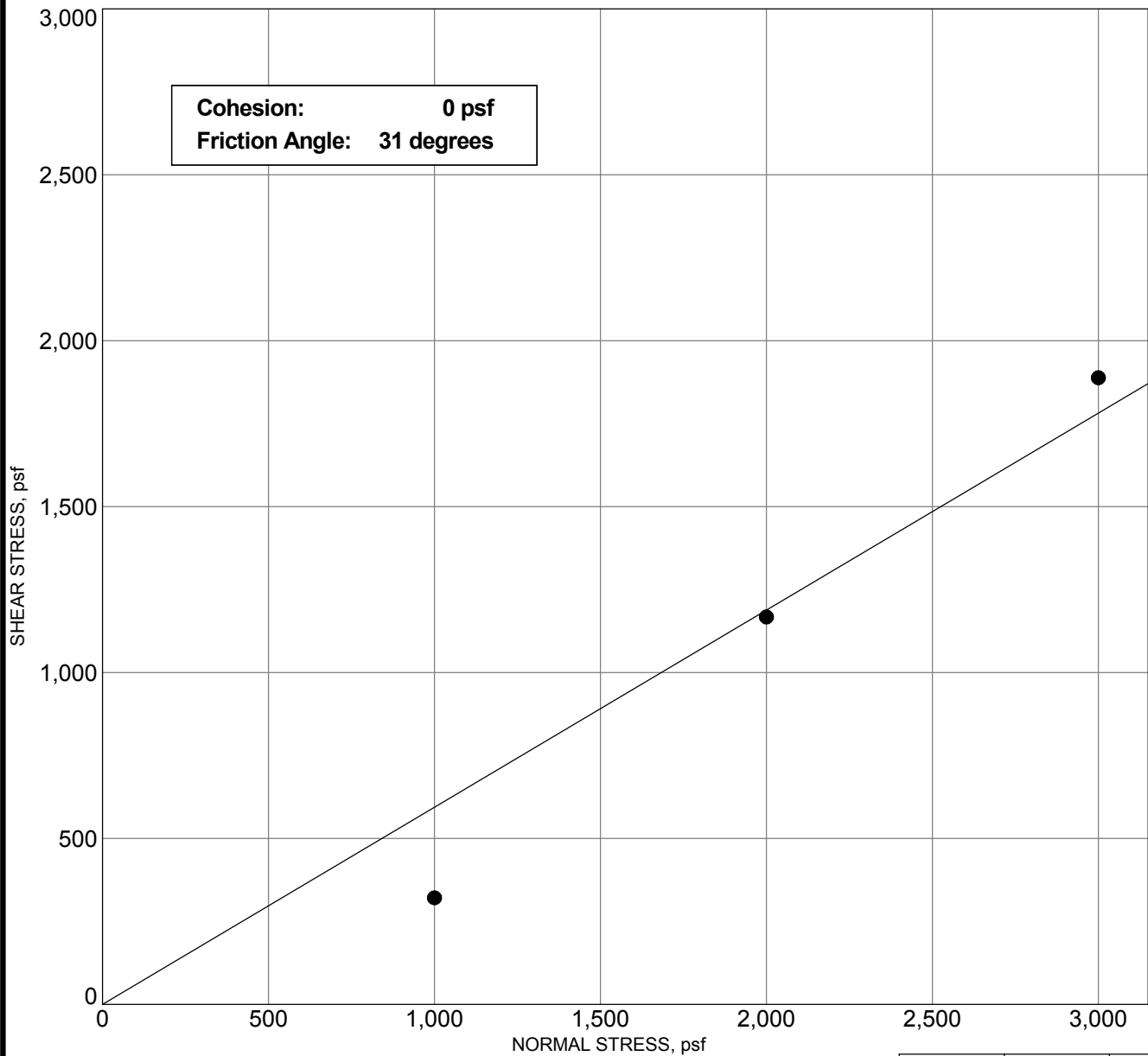


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DIRECT SHEAR TEST - ASTM D3080

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 2



Sample: B-6
 Depth: 1.0 - 2.5 feet
 Description: Reddish brown silty clay

		Sample #1	Sample #2	Sample #3
INITIAL	Moisture Content, %	21.8	22.6	25.2
	Dry Density, pcf	71.0	74.7	75.6
	Height, inches	1.00	1.00	1.00
FINAL	Moisture Content, %	45.4	37.8	35.7
	Dry Density, pcf	71.0	78.8	79.5
	Height, inches	1.000	0.948	0.951
Diameter, inches		2.42	2.42	2.42
Deformation Rate, inch/minute		0.0025	0.0023	0.0022
Normal Stress, psf		1000	2000	3000
Peak Shear Stress, psf		321	1167	1888
Shear Displacement, inches		0.43	0.42	0.43

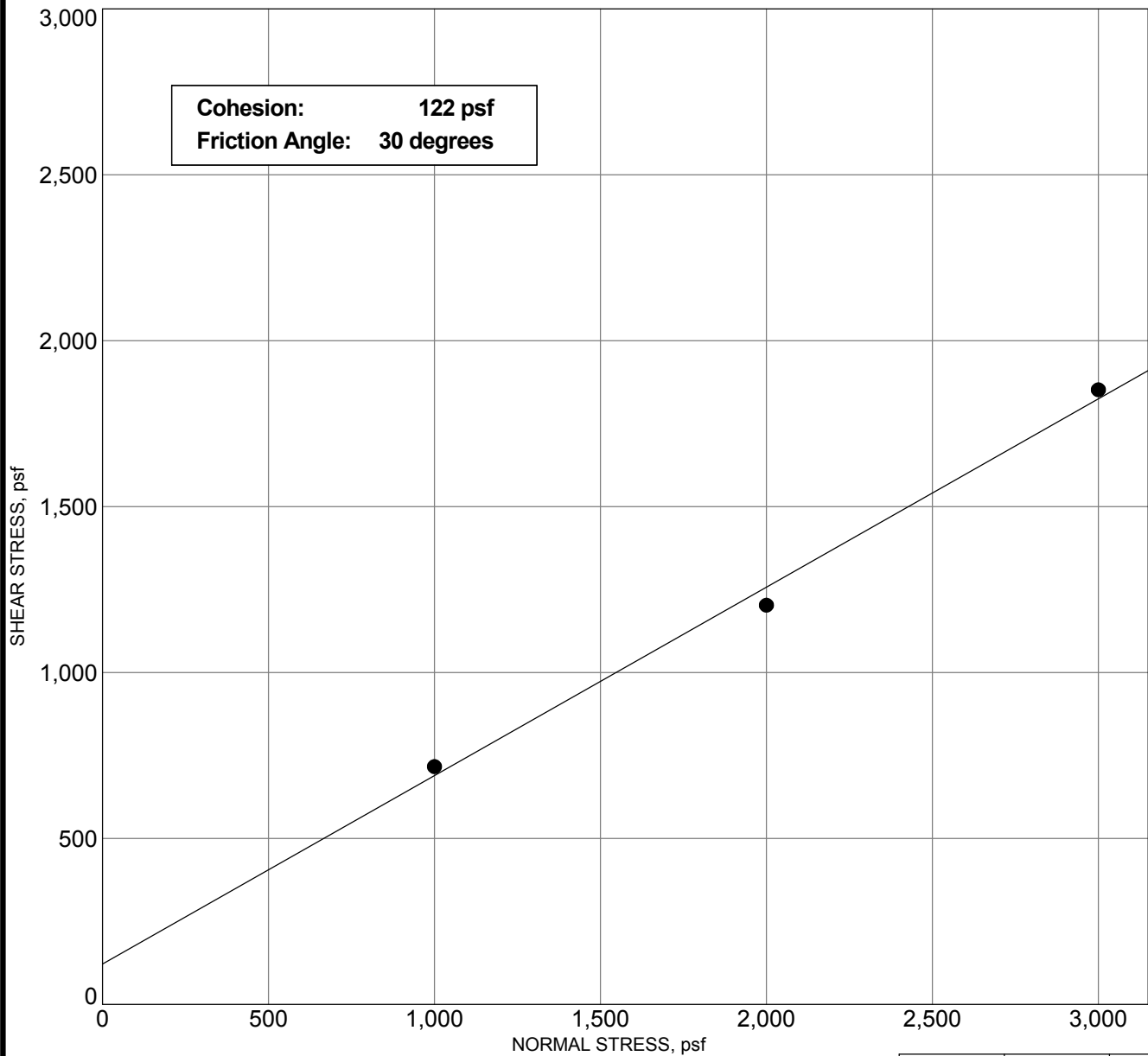


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DIRECT SHEAR TEST - ASTM D3080

FREEWAY MANAGEMENT SYSTEM
 INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
 PHASE 2A
 DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 3



Sample: B-6
Depth: 15.0 - 16.5 feet
Description: Brown with multi-color mottling clayey silt

		Sample #1	Sample #2	Sample #3
INITIAL	Moisture Content, %	28.0	32.4	33.5
	Dry Density, pcf	79.8	77.4	78.9
	Height, inches	1.00	1.00	1.00
FINAL	Moisture Content, %	45.3	43.1	42.5
	Dry Density, pcf	79.4	79.5	80.6
	Height, inches	1.005	0.974	0.979
Diameter, inches		2.42	2.42	2.42
Deformation Rate, inch/minute		0.0025	0.0021	0.0022
Normal Stress, psf		1000	2000	3000
Peak Shear Stress, psf		716	1203	1852
Shear Displacement, inches		0.43	0.41	0.43

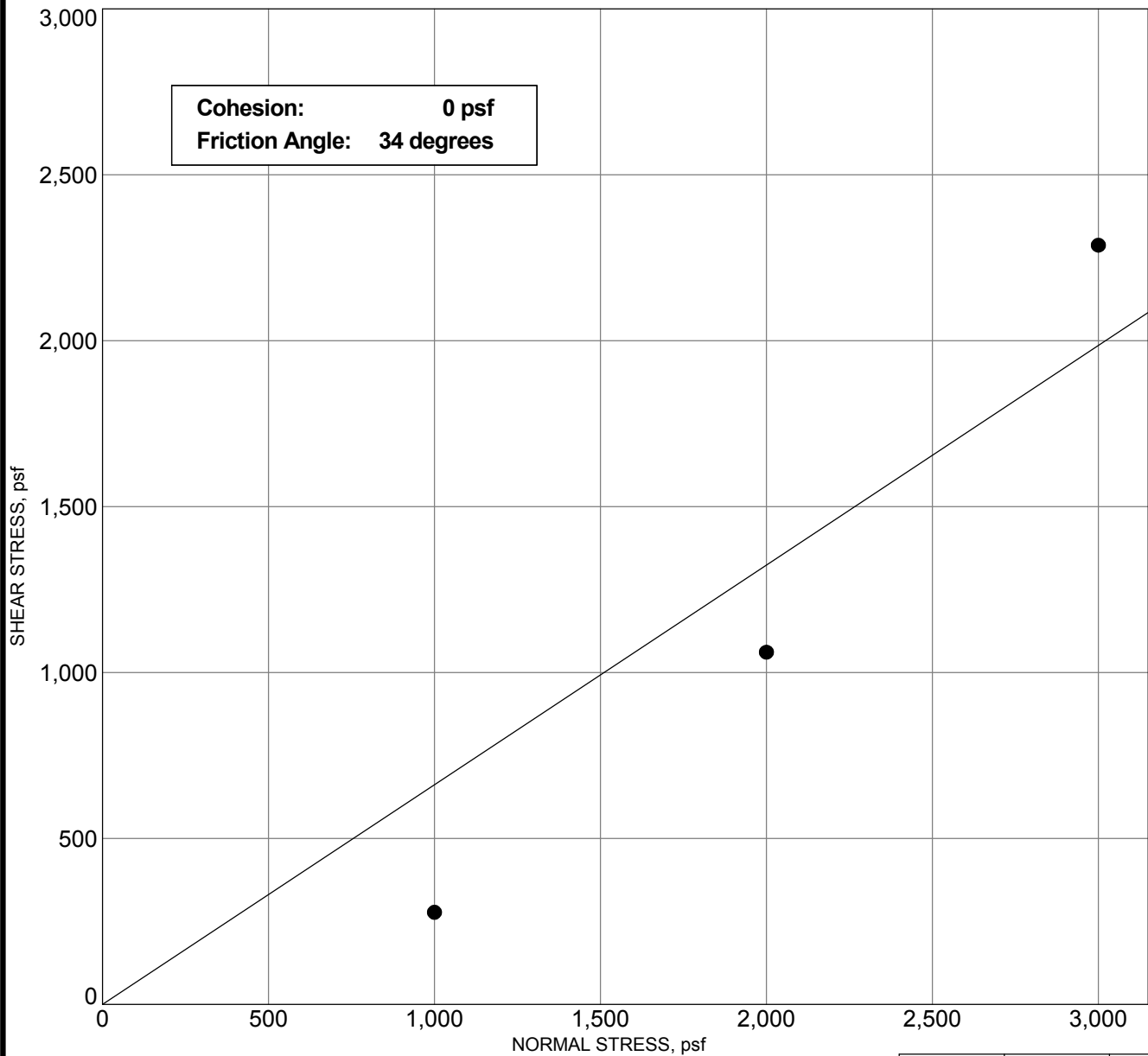


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DIRECT SHEAR TEST - ASTM D3080

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 4



Sample: B-7
Depth: 1.0 - 2.5 feet
Description: Reddish brown clayey silt

		Sample #1	Sample #2	Sample #3
INITIAL	Moisture Content, %	17.4	20.3	21.2
	Dry Density, pcf	82.2	85.9	86.8
	Height, inches	1.00	1.00	1.00
FINAL	Moisture Content, %	37.2	31.0	29.3
	Dry Density, pcf	82.0	90.0	91.1
	Height, inches	1.002	0.954	0.953
	Diameter, inches	2.42	2.42	2.42
	Deformation Rate, inch/minute	0.0025	0.0022	0.0022
	Normal Stress, psf	1000	2000	3000
	Peak Shear Stress, psf	277	1061	2288
	Shear Displacement, inches	0.43	0.41	0.43

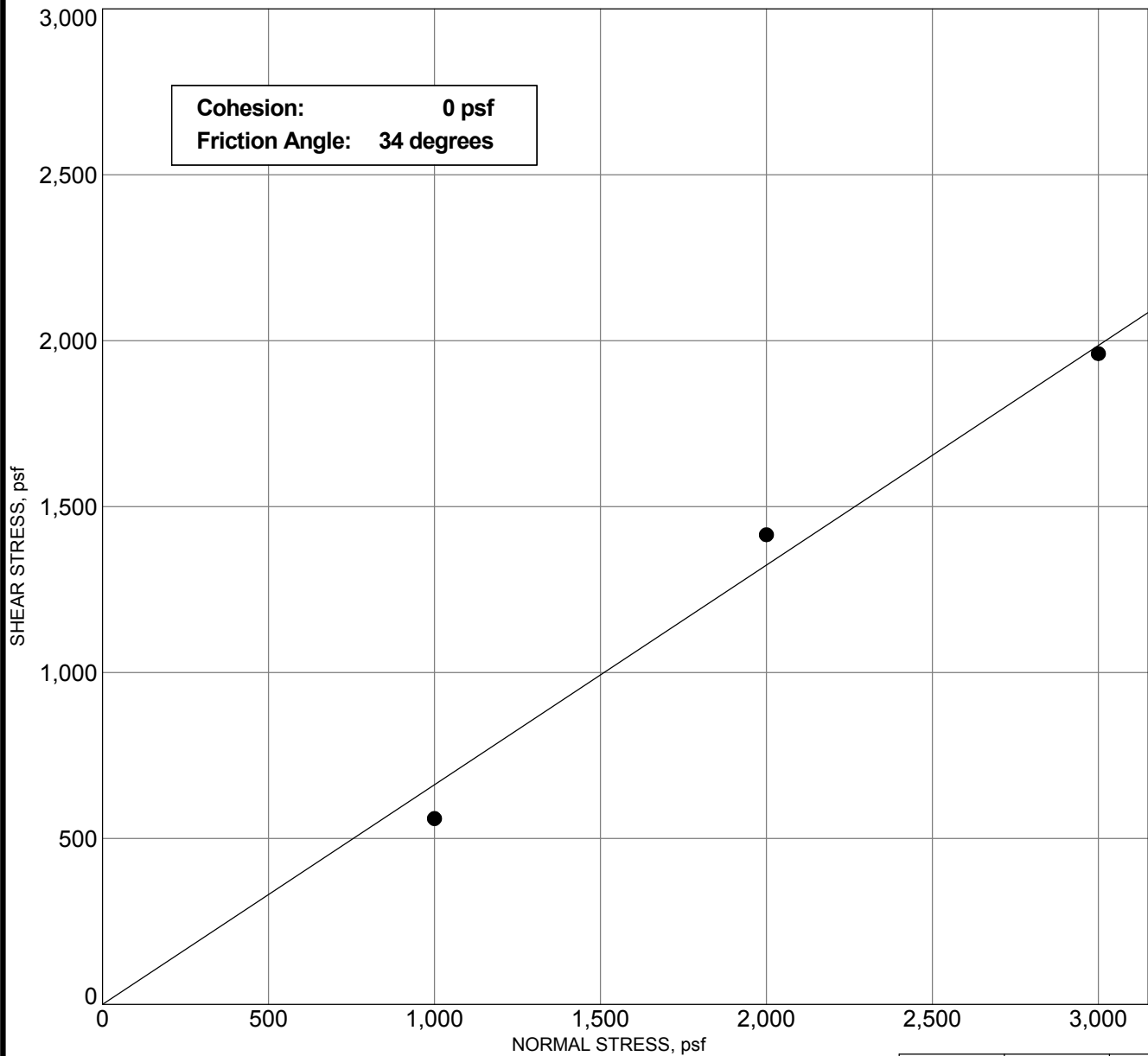


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DIRECT SHEAR TEST - ASTM D3080

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 5



Sample: B-8
Depth: 1.0 - 2.5 feet
Description: Reddish brown silty clay

		Sample #1	Sample #2	Sample #3
INITIAL	Moisture Content, %	18.1	21.7	21.6
	Dry Density, pcf	87.5	84.1	85.6
	Height, inches	1.00	1.00	1.00
FINAL	Moisture Content, %	38.9	33.0	30.9
	Dry Density, pcf	87.4	89.2	88.6
	Height, inches	1.001	0.942	0.966
	Diameter, inches	2.42	2.42	2.42
	Deformation Rate, inch/minute	0.0025	0.0022	0.0022
	Normal Stress, psf	1000	2000	3000
	Peak Shear Stress, psf	560	1415	1961
	Shear Displacement, inches	0.43	0.41	0.44

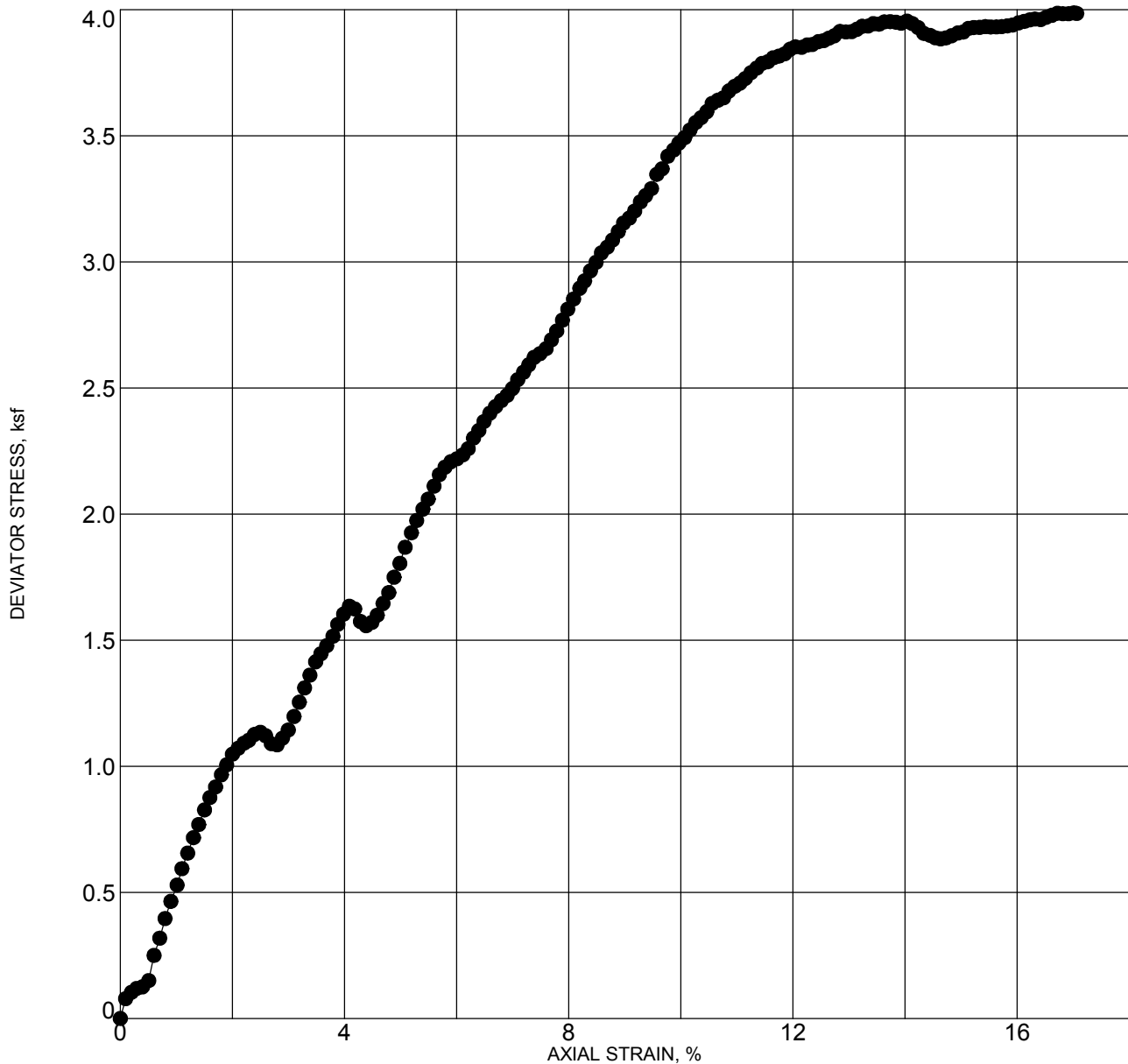


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DIRECT SHEAR TEST - ASTM D3080

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 6



Max. Deviator Stress (ksf): 3.9

Confining Stress (ksf): 0.5

Location: B-1

Depth: 6.0 - 7.5 feet

Description: Reddish brown with multi-color mottling sandy silt

Test Date: 12/8/2017

Dry Density (pcf)	74.9	Sample Diameter (inches)	2.410
Moisture (%)	22.3	Sample Height (inches)	5.120
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	1.00



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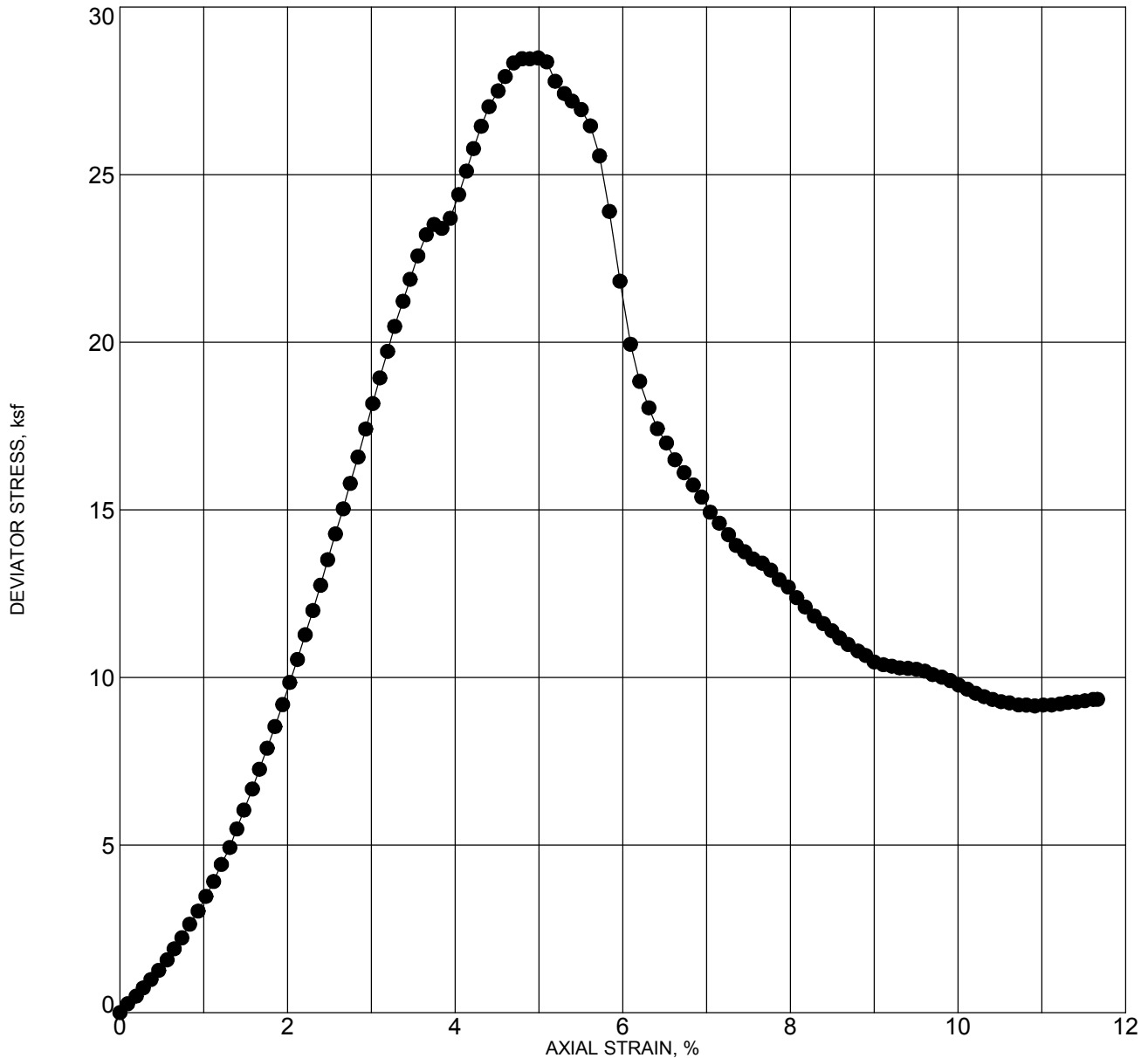
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 7



Max. Deviator Stress (ksf): 28.5

Confining Stress (ksf): 0.5

Location: B-2

Depth: 5.0 - 6.5 feet

Description: Brown with black mottling clayey silt

Test Date: 11/30/2017

Dry Density (pcf)	103.4	Sample Diameter (inches)	2.390
Moisture (%)	17.1	Sample Height (inches)	5.230
Axial Strain at Failure (%)	4.8	Strain Rate (% / minute)	0.93



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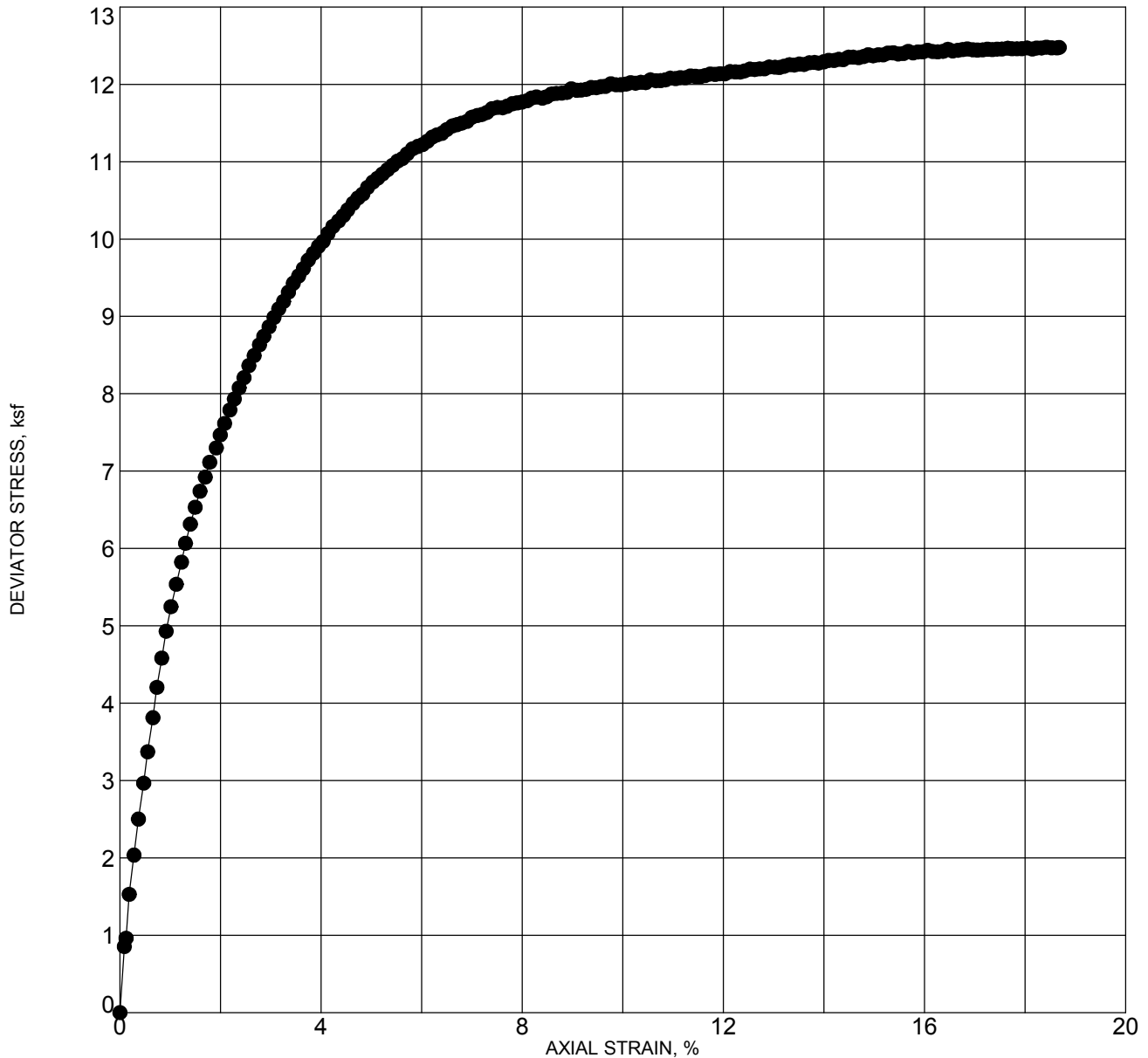
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 8



Max. Deviator Stress (ksf): 12.2

Confining Stress (ksf): 5.5

Location: B-5

Depth: 5.0 - 6.5 feet

Description: Reddish brown clayey silt

Test Date: 6/1/2017

Dry Density (pcf)	79.4	Sample Diameter (inches)	2.400
Moisture (%)	31.7	Sample Height (inches)	4.973
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	0.99



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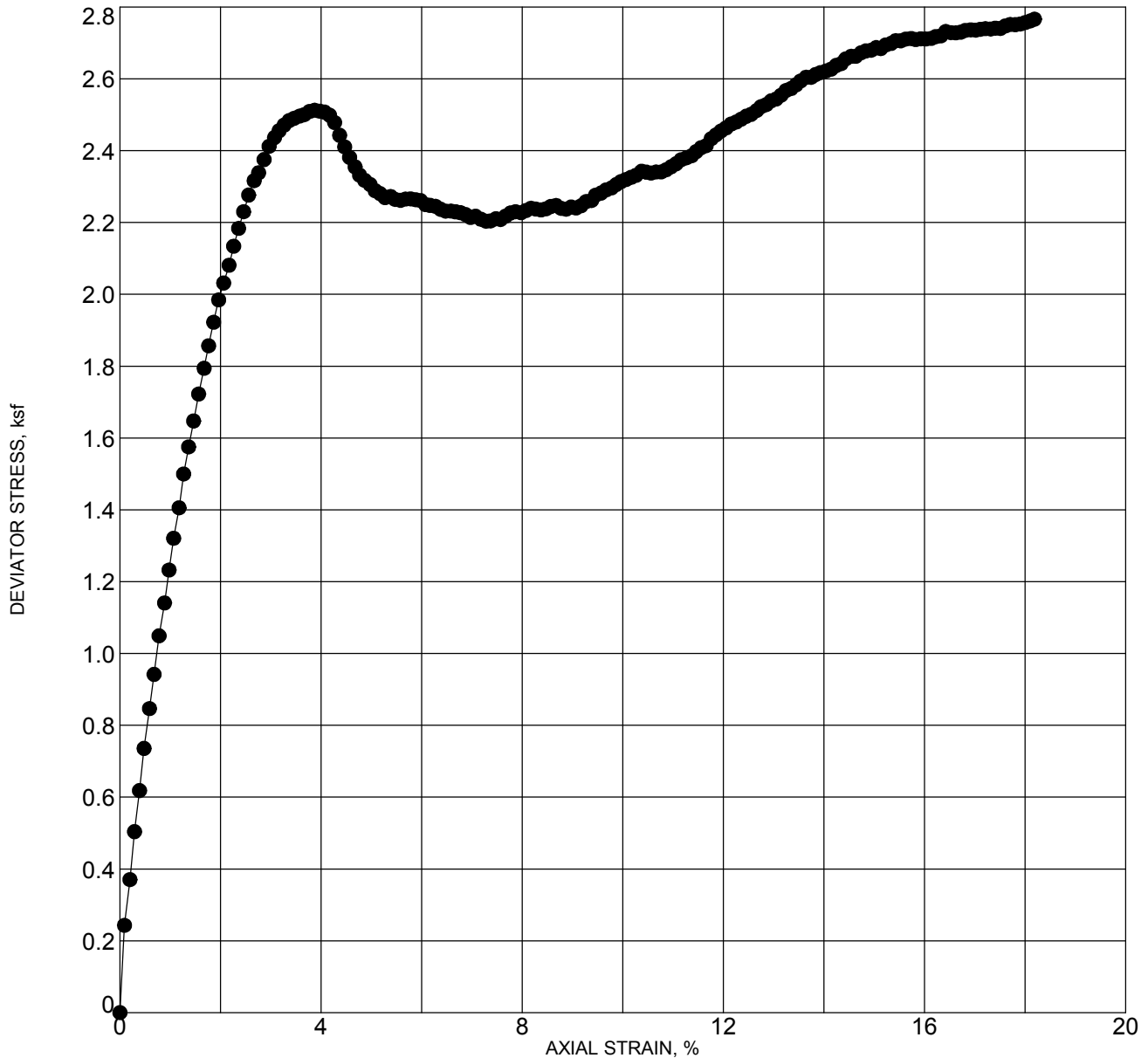
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 9



Max. Deviator Stress (ksf): 2.6

Confining Stress (ksf): 0.5

Location: B-6

Depth: 5.0 - 6.5 feet

Description: Brown with multi-color mottling silty clay

Test Date: 11/30/2017

Dry Density (pcf)	72.4	Sample Diameter (inches)	2.420
Moisture (%)	24.1	Sample Height (inches)	4.860
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	0.99



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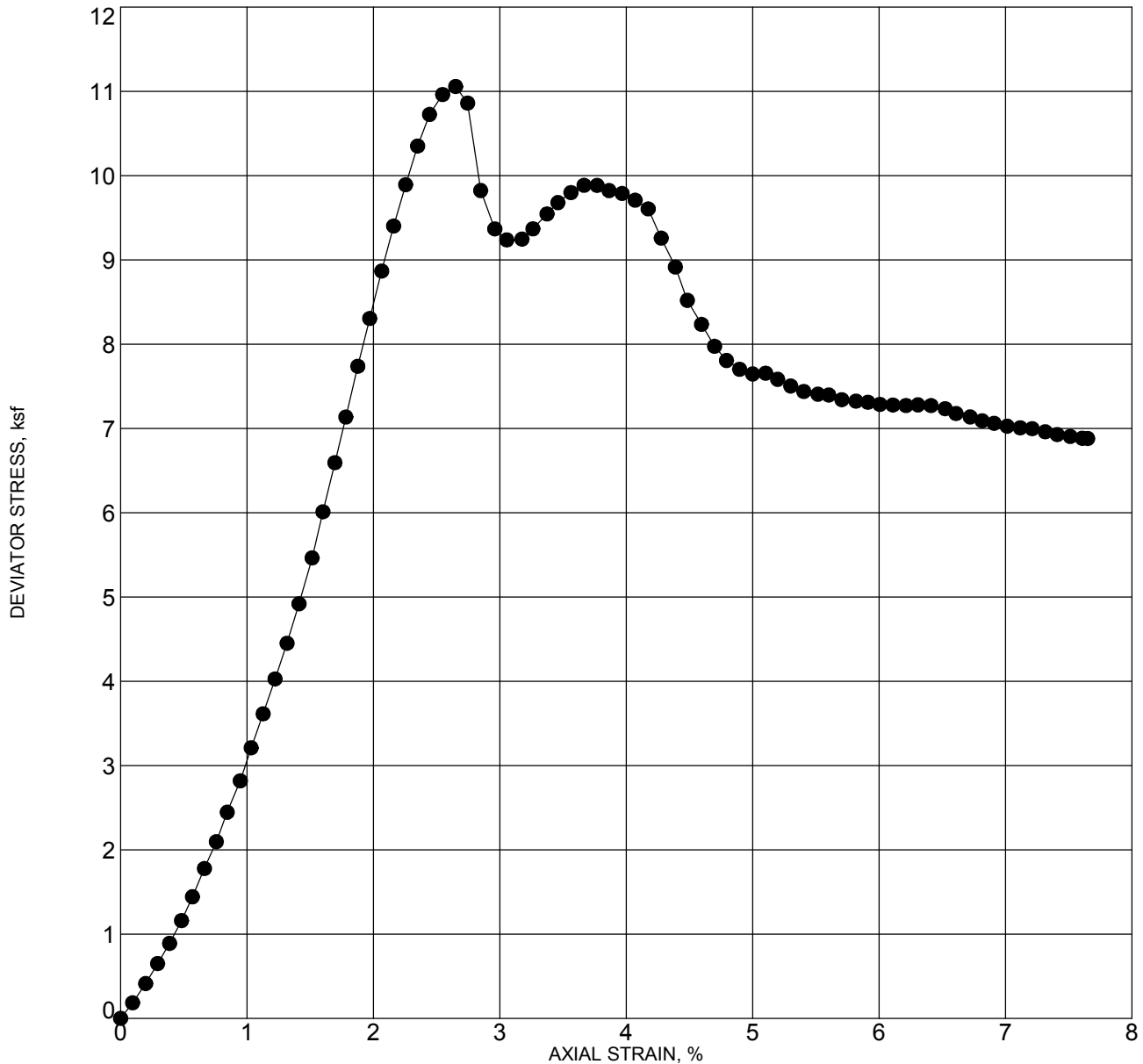
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 10



Max. Deviator Stress (ksf): 11.1

Confining Stress (ksf): 0.5

Location: B-7

Depth: 5.0 - 6.5 feet

Description: Reddish brown clayey silt

Test Date: 11/30/2017

Dry Density (pcf)	87.9	Sample Diameter (inches)	2.420
Moisture (%)	18.7	Sample Height (inches)	5.120
Axial Strain at Failure (%)	3.8	Strain Rate (% / minute)	1.02



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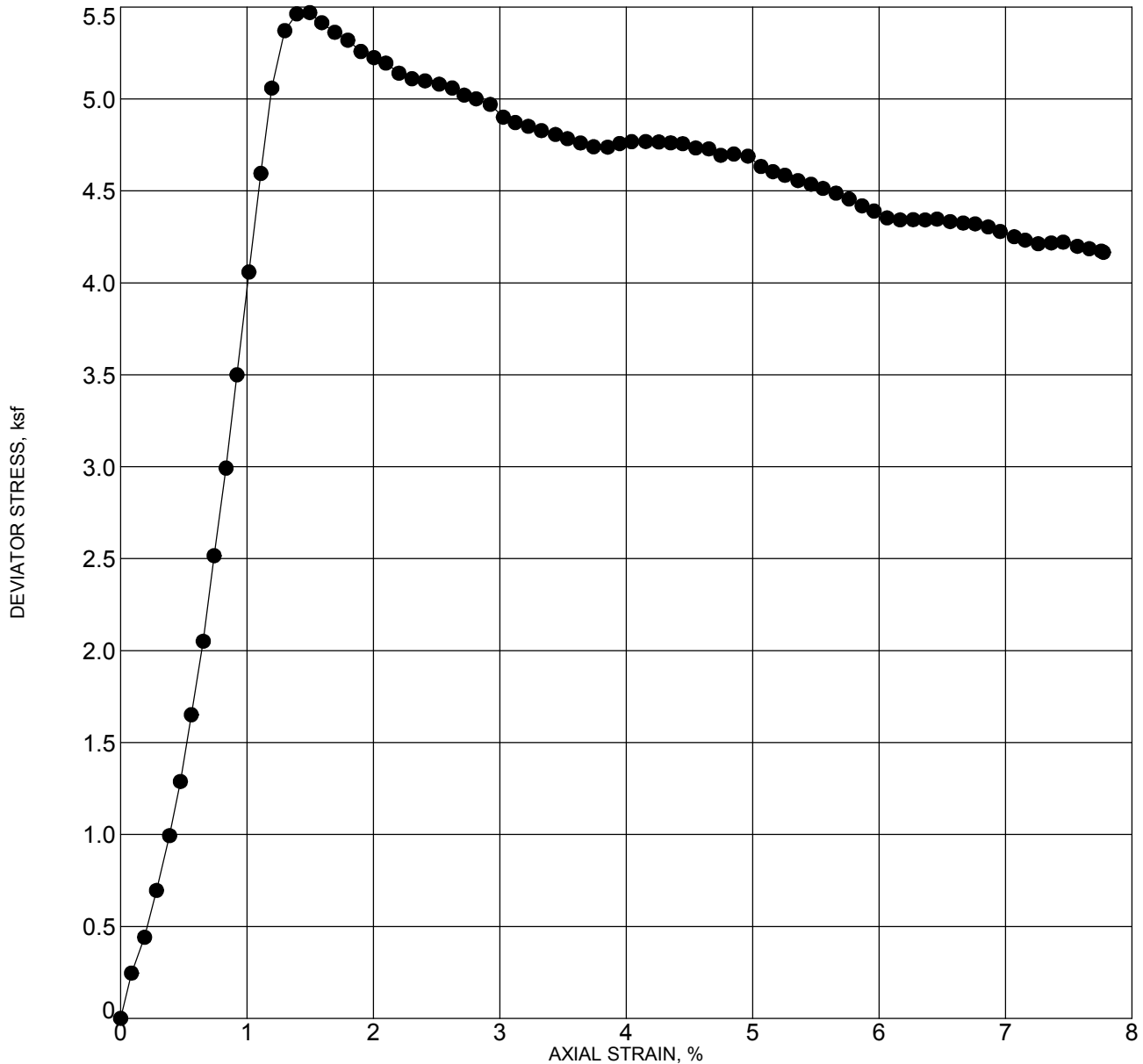
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 11



Max. Deviator Stress (ksf): 5.5

Confining Stress (ksf): 0.5

Location: B-8

Depth: 5.0 - 6.5 feet

Description: Reddish brown silty clay

Test Date: 11/30/2017

Dry Density (pcf)	94.3	Sample Diameter (inches)	2.410
Moisture (%)	18.6	Sample Height (inches)	5.120
Axial Strain at Failure (%)	4.3	Strain Rate (% / minute)	1.02



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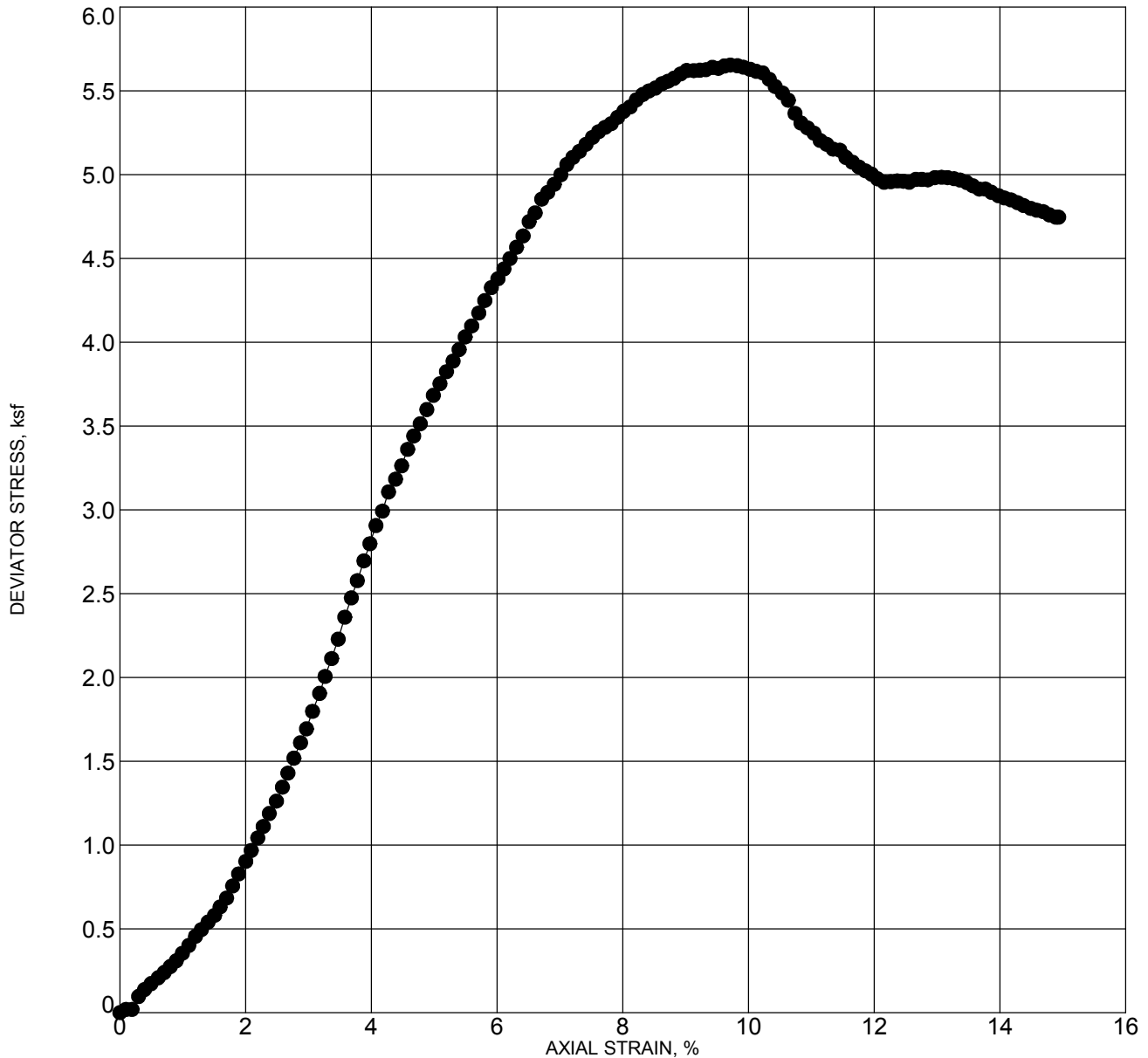
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TRIAXIAL UU COMPRESSION TEST - ASTM D2850

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 12



Max. Deviator Stress (ksf):	5.7
Confining Stress (ksf):	0.5

Location: B-9
 Depth: 5.0 - 6.5 feet
 Description: Brown with gray sandy silt
 Test Date: 12/11/2017

Dry Density (pcf)	98.7	Sample Diameter (inches)	2.410
Moisture (%)	13.9	Sample Height (inches)	5.110
Axial Strain at Failure (%)	3.9	Strain Rate (% / minute)	1.01



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TRIAXIAL UU COMPRESSION TEST - ASTM D2850
 FREEWAY MANAGEMENT SYSTEM
 INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
 PHASE 2A
 DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 13

Location	Depth	Length	Diameter	Length/ Diameter Ratio	Density	Load	Compressive Strength
	(feet)	(inches)	(inches)		(pcf)	(lbs)	(psi)
B-7	24 - 25.5	5.045	2.383	2.12	150.2	25,130	5,630
B-7	25.5 - 30.5	4.801	2.384	2.01	116.4	8,860	1,980

ASTM D7012 (METHOD C)



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UNIAXIAL COMPRESSIVE STRENGTH TEST

FREEWAY MANAGEMENT SYSTEM
INTERSTATE H-1, H-2 AND FARRINGTON HIGHWAY
PHASE 2A
DISTRICTS OF HONOLULU & EWA, ISLAND OF OAHU

Plate
B - 14