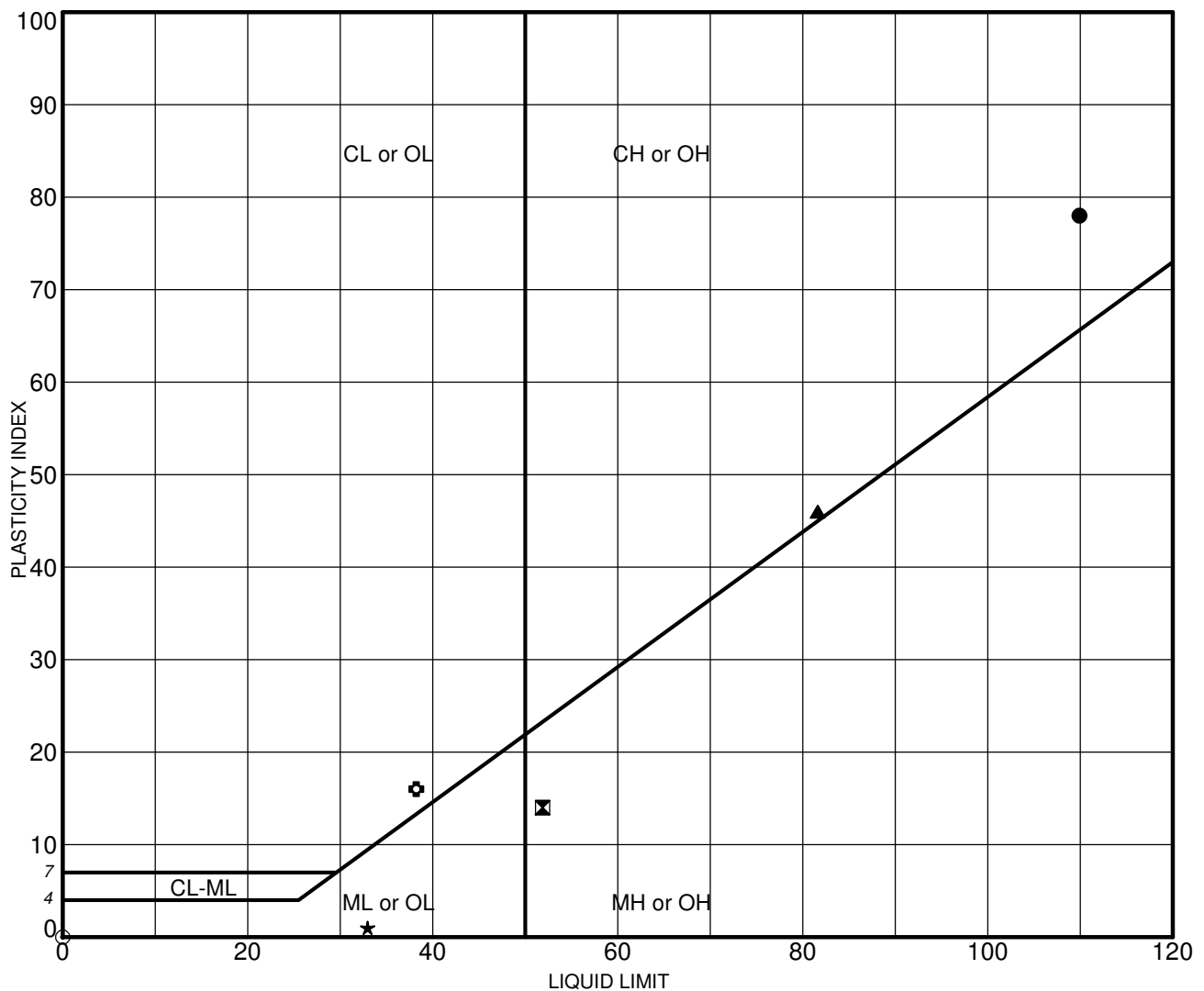




	Sample	Depth (ft)	LL	PL	PI	Description
●	B-3	26.5-28.0	110	32	78	Gray with tan mottling silty clay (CH) with a little gravel
⊠	B-5	5.5-7.0	52	38	14	Reddish brown clayey silt (MH) with some decomposed gravel
▲	B-6	5.5-7.0	82	36	46	Brown silty clay (CH) with some sand and gravel
★	B-7	5.0-6.5	33	32	1	Brown sandy silt (ML) with some gravel
⊙	B-8	5.0-6.5	NP	NP	NP	Brown sandy silt
⊕	B-9	1.0-2.5	38	22	16	Reddish brown clayey sand (SC) with some gravel

NP = NON-PLASTIC

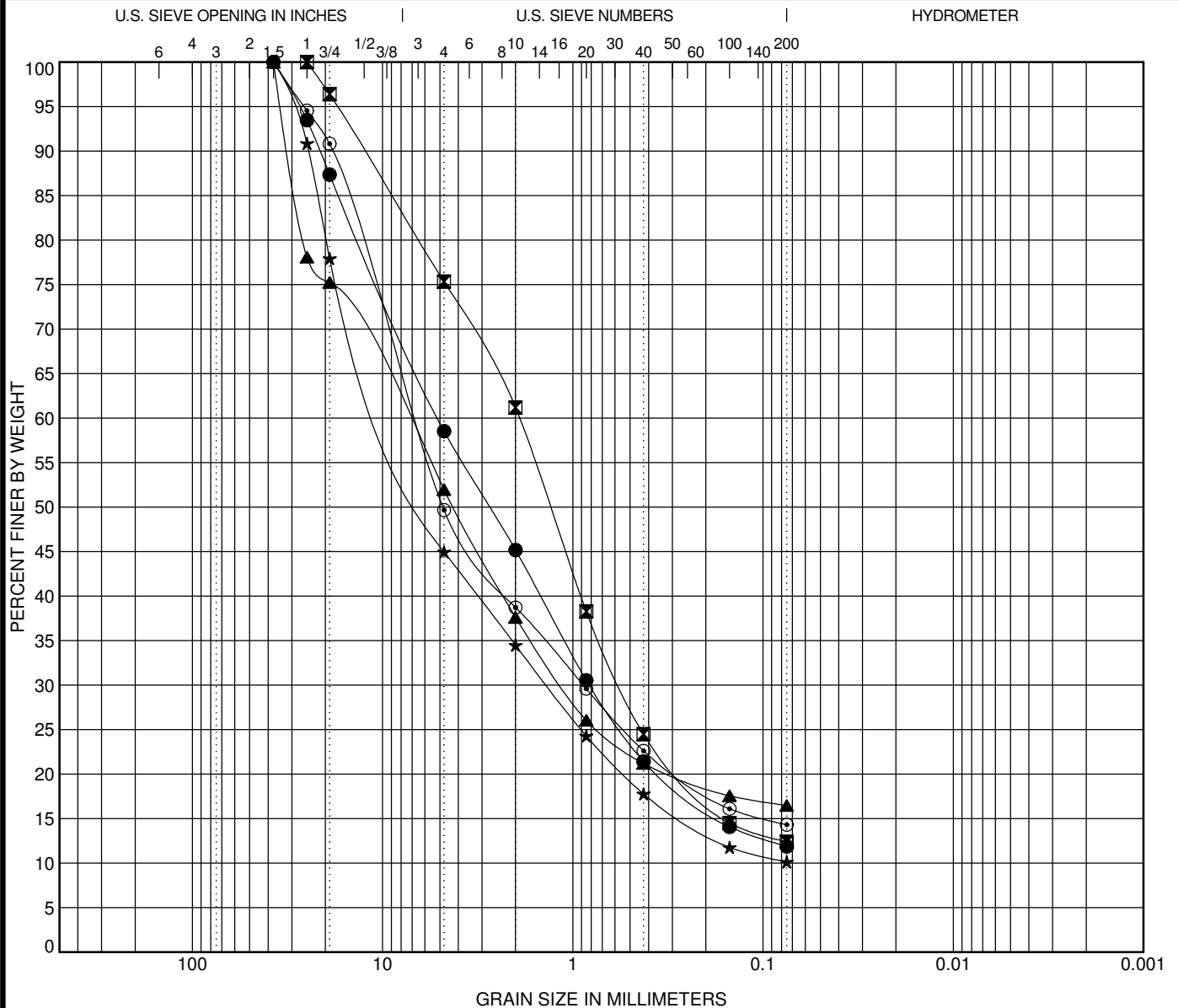


GEOLABS, INC.
 GEOTECHNICAL ENGINEERING
 W.O. 7341-00

ATTERBERG LIMITS TEST RESULTS - ASTM D4318

INTERSTATE ROUTE H-1 AND H-201
 DESTINATION SIGN UPGRADE/
 REPLACEMENT, PHASE 3
 FAP NO. NH-0300 (144)
 ISLAND OF OAHU, HAWAII

Plate
B - 1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample	Depth (ft)	Description					LL	PL	PI	Cc	Cu	
●	B-4	5.0-6.5	Brownish gray gravelly sand (SP-SM) with a little silt								3.1	122.2
■	B-7	15.0-16.5	Brown with multi-color mottling silty sand (SM) with some gravel								4.8	56.2
▲	B-7	25.0-26.5	Brown silty gravel (GM) with some sand									
★	B-8	15.0-16.5	Brown w/ multi-color mottling sandy gravel (GW-GM) w/ a little silt								3.0	125.4
◎	B-8	20.0-21.5	Brown silty gravel (GM) with some sand									
	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine			
●	B-4	5.0-6.5	37.5	5.1	0.816		41.5	46.7	11.9			
■	B-7	15.0-16.5	25	1.915	0.561		24.7	62.9	12.4			
▲	B-7	25.0-26.5	37.5	7.664	1.139		48.0	35.5	16.5			
★	B-8	15.0-16.5	37.5	8.943	1.374		55.1	34.8	10.1			
◎	B-8	20.0-21.5	37.5	6.729	0.883		50.3	35.4	14.3			

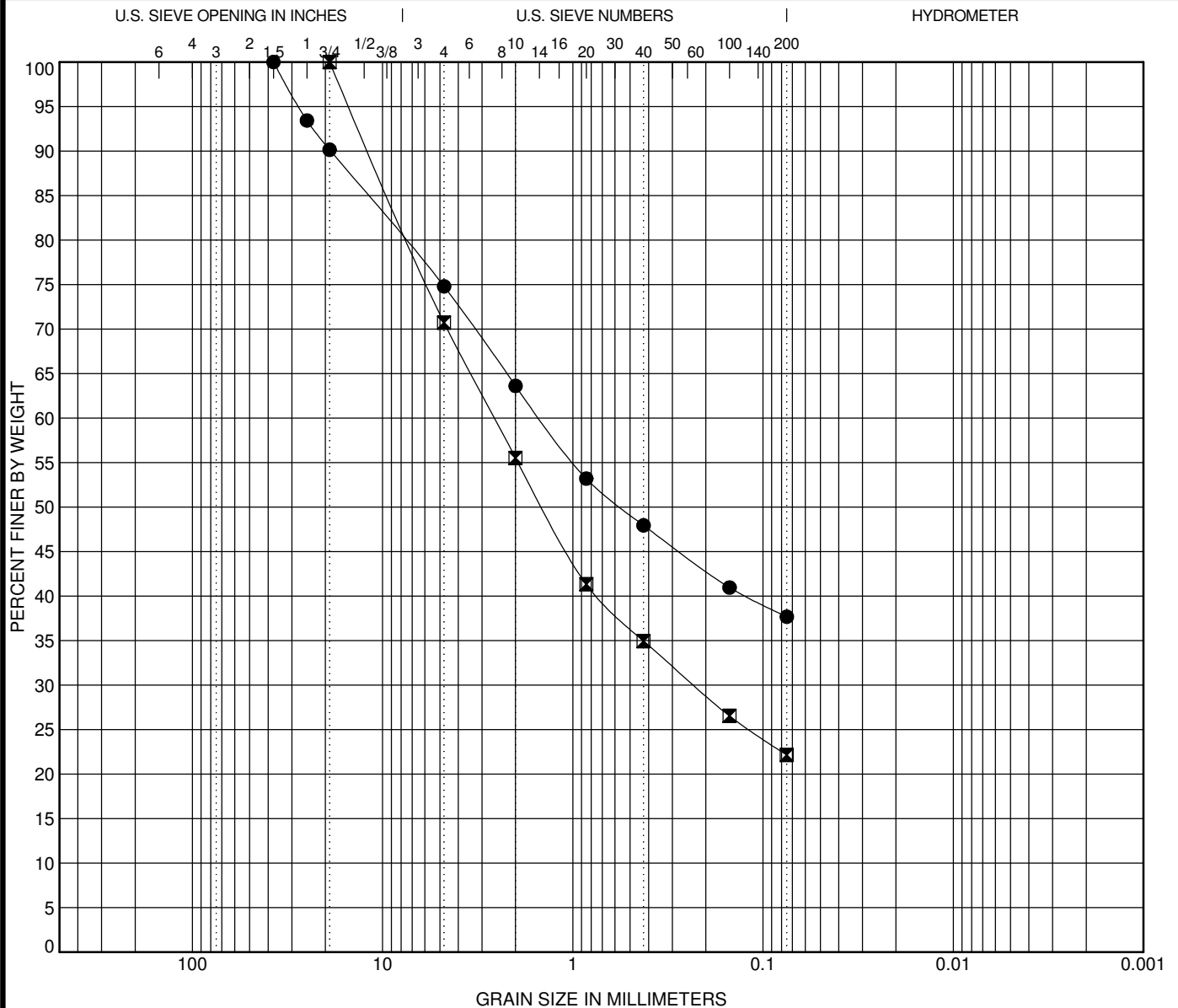


GEOLABS, INC.
GEOTECHNICAL ENGINEERING
W.O. 7341-00

GRAIN SIZE DISTRIBUTION - ASTM D6913

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 2



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description					LL	PL	PI	Cc	Cu
●	B-9	1.0-2.5	Reddish brown clayey sand (SC) with some gravel					38	22	16		
☒	B-9	10.0-11.3	Reddish brown and gray silty sand (SM) with some gravel									
	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine			
●	B-9	1.0-2.5	37.5	1.487			25.2	37.1	37.7			
☒	B-9	10.0-11.3	19	2.584	0.23		29.3	48.6	22.1			



GEOLABS, INC.
 GEOTECHNICAL ENGINEERING
 W.O. 7341-00

GRAIN SIZE DISTRIBUTION - ASTM D6913

INTERSTATE ROUTE H-1 AND H-201
 DESTINATION SIGN UPGRADE/
 REPLACEMENT, PHASE 3
 FAP NO. NH-0300 (144)
 ISLAND OF OAHU, HAWAII

Plate
B - 3

Location	Depth	Length	Diameter	Length/ Diameter Ratio	Density	Load	Compressive Strength
	(feet)	(inches)	(inches)		(pcf)	(lbs)	(psi)
B-1	15.5 - 16	6.743	3.189	2.11	133.6	19,610	2,460
B-1	21 - 26	6.710	3.185	2.11	125.1	14,390	1,810
B-2	6 - 11	6.721	3.230	2.08	117.1	8,920	1,090
B-2	16 - 21	6.681	3.239	2.06	117.9	11,610	1,410
B-5	21.5 - 26.5	6.950	3.250	2.14	153.7	60,330	7,270
B-6	11.5 - 16.5	7.020	3.250	2.16	185.0	200,540	24,170
B-6	21.5 - 26.5	6.840	3.240	2.11	185.4	158,200	19,190
B-9	17 - 17.5	6.500	3.200	2.03	120.7	34,900	4,340
B-9	28.5 - 29	6.500	3.250	2.00	134.8	24,140	2,910

ASTM D7012 (METHOD C)

Note: Samples were not prepared in accordance with ASTM D4543. Therefore, results reported may differ from results obtained from a test specimen that meets the requirements of Practice D4543

**GEOLABS, INC.**

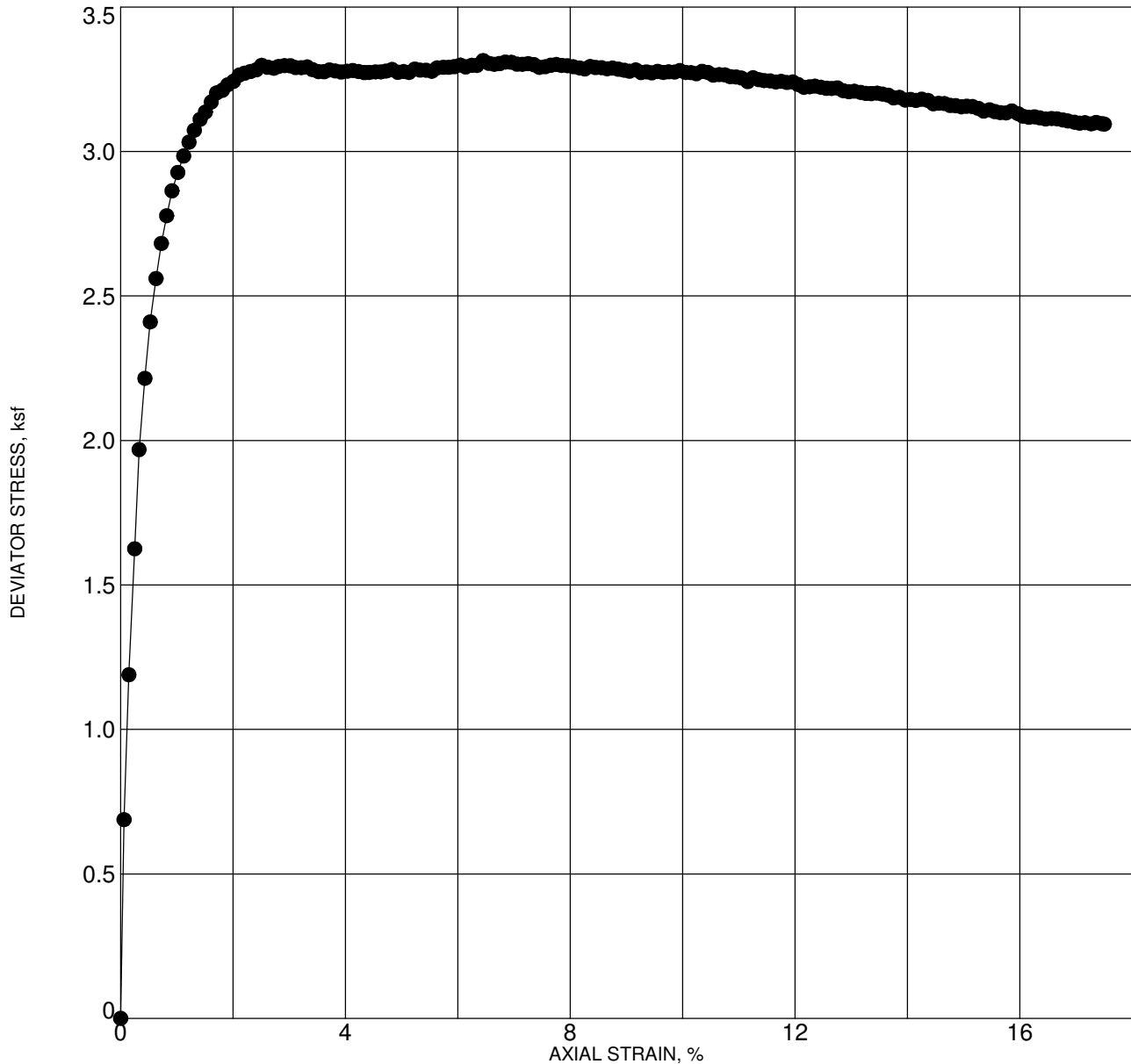
GEOTECHNICAL ENGINEERING

W.O. 7341-00

UNIAXIAL COMPRESSIVE STRENGTH TEST

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 4



Max. Deviator Stress (ksf): 3.2

Confining Stress (ksf): 0.6

Location: B-3

Depth: 5.5 - 7.0 feet

Description: Dark brown silty clay

Test Date: 5/25/2018

Dry Density (pcf)	85.9	Sample Diameter (inches)	2.393
Moisture (%)	32.2	Sample Height (inches)	5.107
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	0.99



GEOLABS, INC.

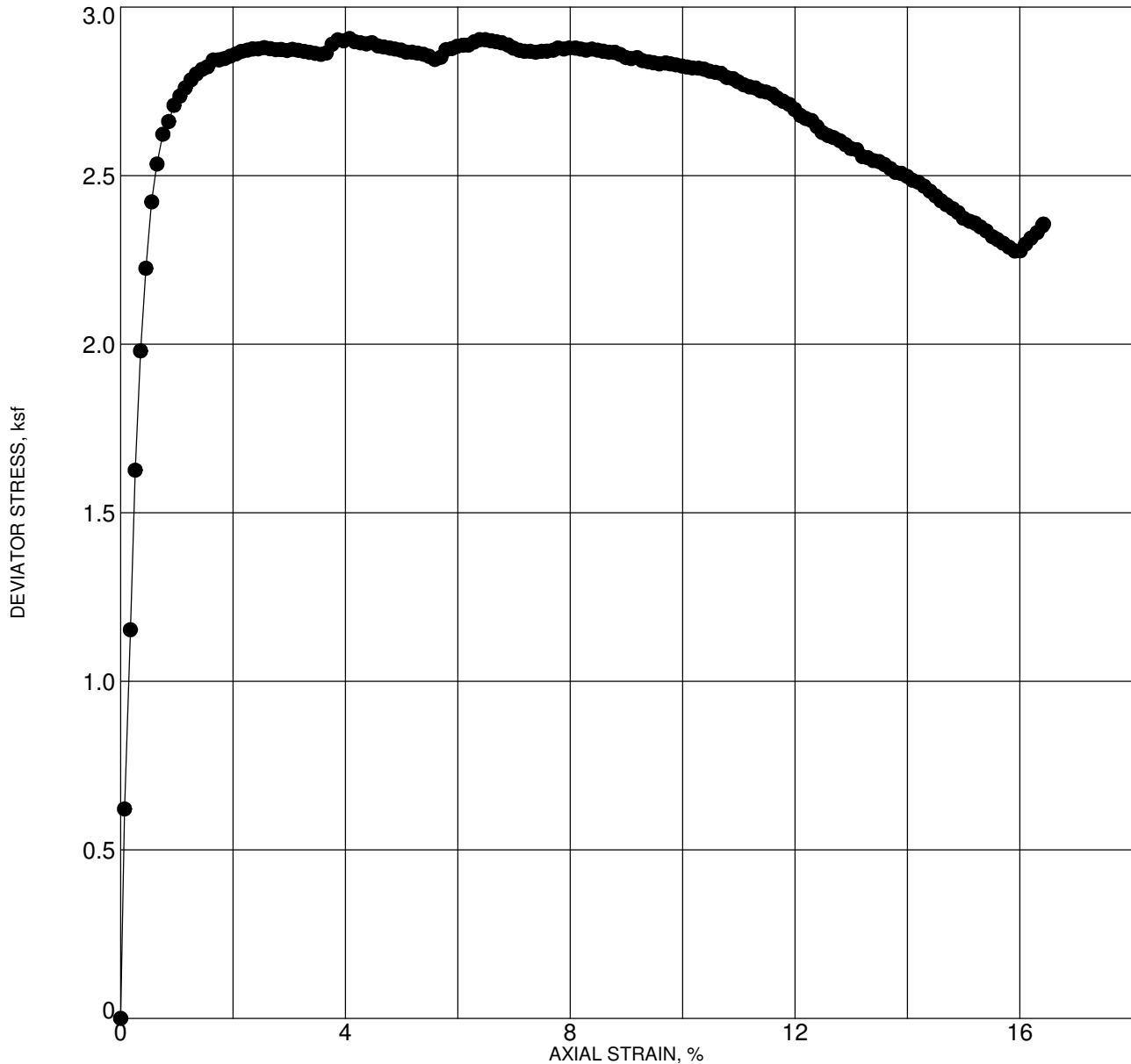
GEOTECHNICAL ENGINEERING

W.O. 7341-00

TRIAXIAL UU COMPRESSION TEST - ASTM D2850

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 5



Max. Deviator Stress (ksf): 2.9

Confining Stress (ksf): 2.5

Location: B-3

Depth: 26.5 - 28.0 feet

Description: Gray with tan mottling silty clay (CH) with a little gravel

Test Date: 5/25/2018

Dry Density (pcf)	60.9	Sample Diameter (inches)	2.323
Moisture (%)	67.2	Sample Height (inches)	5.103
Axial Strain at Failure (%)	4.0	Strain Rate (% / minute)	1.01



GEOLABS, INC.

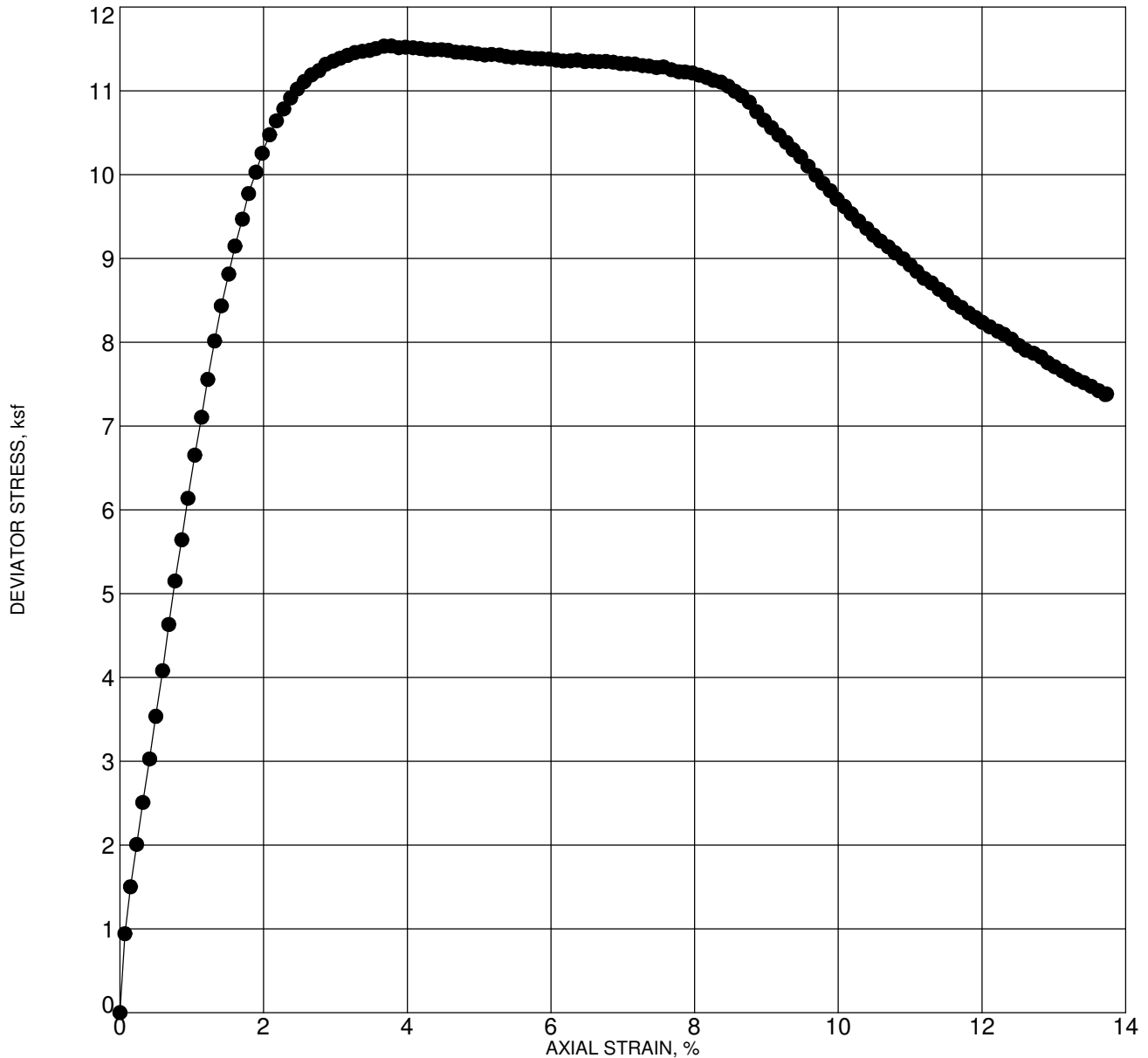
GEOTECHNICAL ENGINEERING

W.O. 7341-00

TRIAXIAL UU COMPRESSION TEST - ASTM D2850

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 6



Max. Deviator Stress (ksf): 11.5

Confining Stress (ksf): 2.0

Location: B-4

Depth: 16.5 - 18.0 feet

Description: Dark brown silty clay with some decompose gravel

Test Date: 5/25/2018

Dry Density (pcf)	84.2	Sample Diameter (inches)	2.407
Moisture (%)	35.4	Sample Height (inches)	5.107
Axial Strain at Failure (%)	3.8	Strain Rate (% / minute)	1.01



GEOLABS, INC.

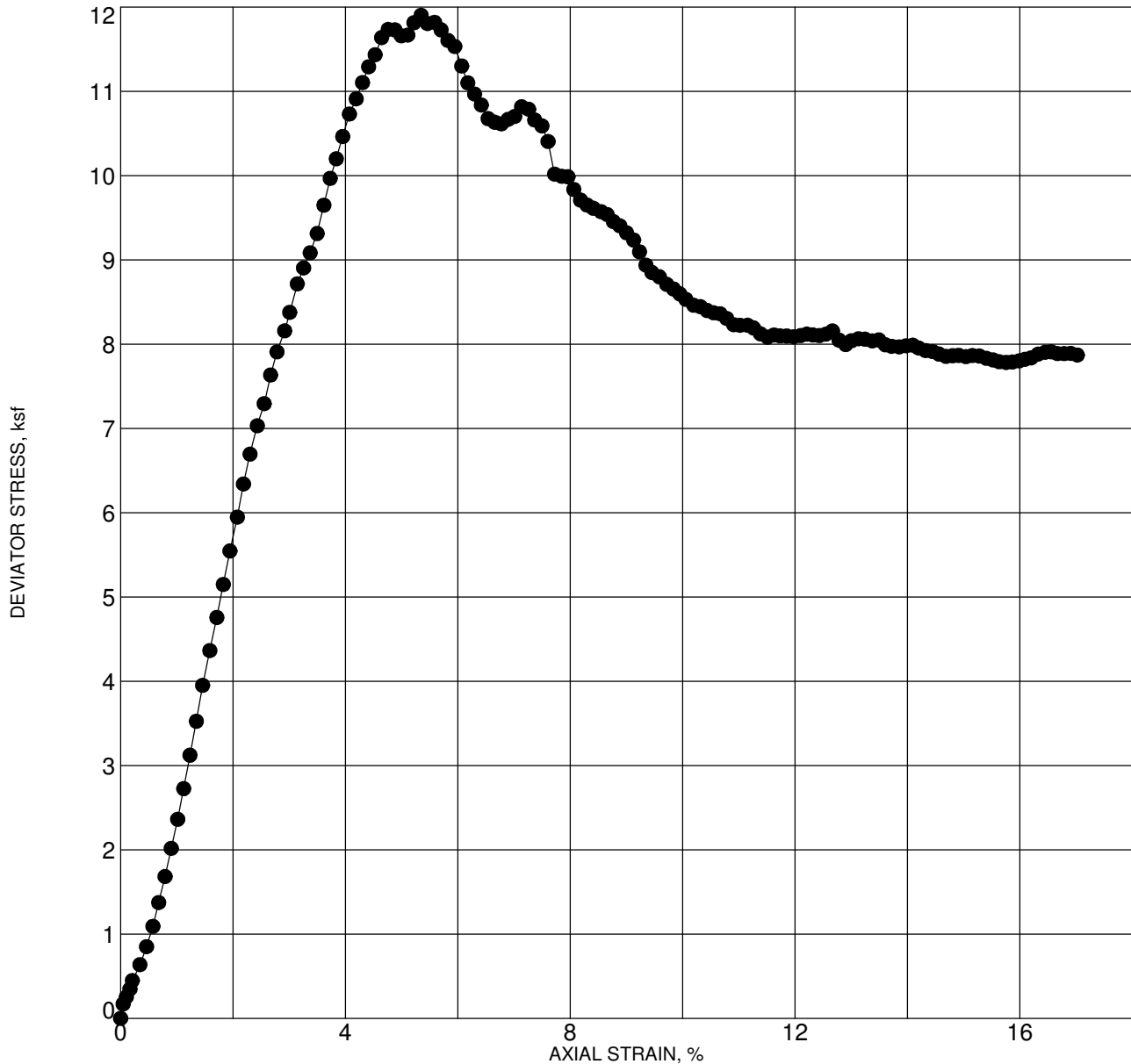
GEOTECHNICAL ENGINEERING

W.O. 7341-00

TRIAXIAL UU COMPRESSION TEST - ASTM D2850

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 7



Max. Deviator Stress (ksf): 11.9

Confining Stress (ksf): 0.5

Location: B-7

Depth: 5.0 - 6.5 feet

Description: Brown sandy silt (ML) with some gravel

Test Date: 1/18/2022

Dry Density (pcf)	72.9	Sample Diameter (inches)	2.413
Moisture (%)	32.1	Sample Height (inches)	5.100
Axial Strain at Failure (%)	5.3	Strain Rate (% / minute)	0.70



GEOLABS, INC.

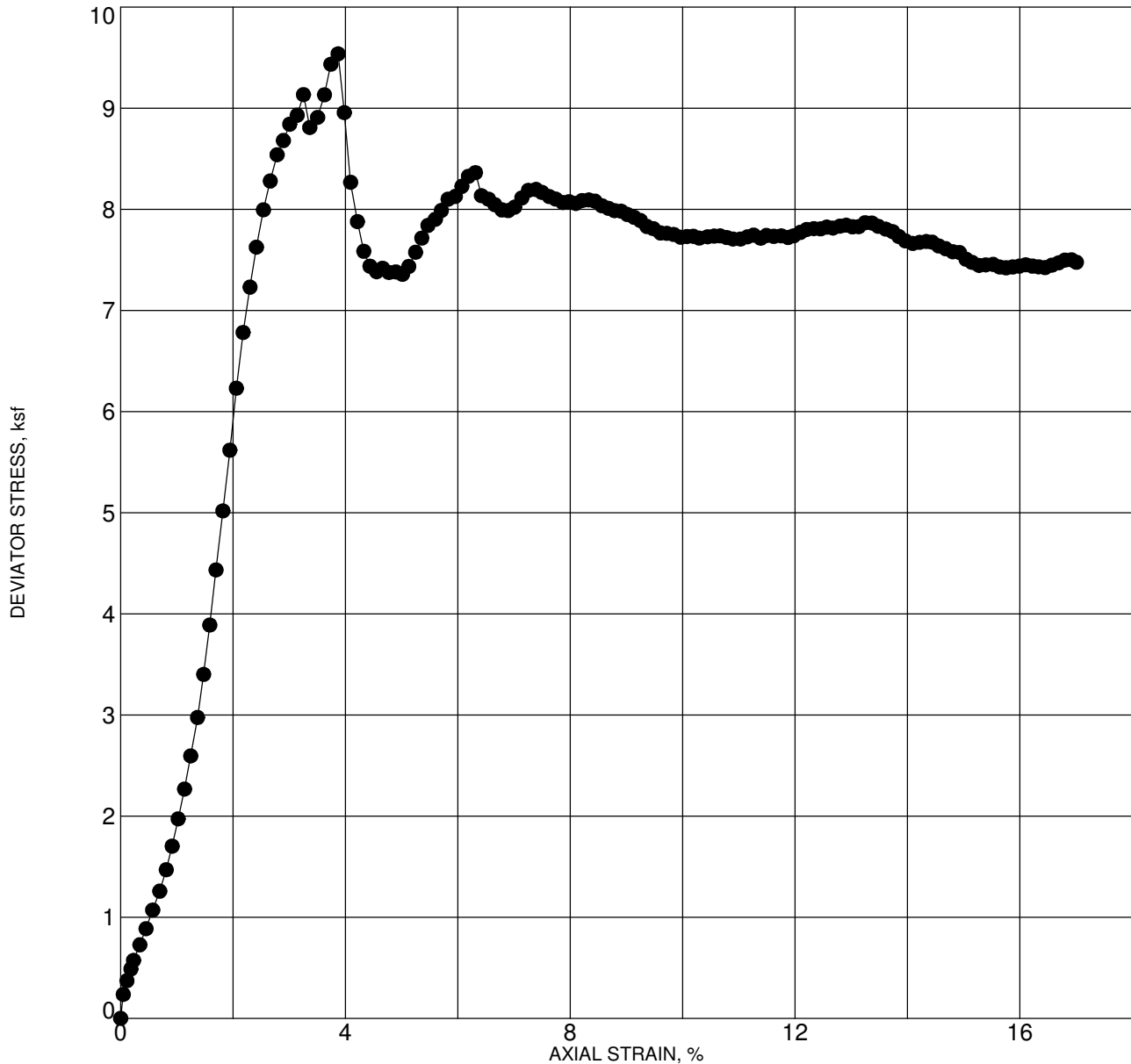
GEOTECHNICAL ENGINEERING

W.O. 7341-00

TRIAXIAL UU COMPRESSION TEST - ASTM D2850

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 8



Max. Deviator Stress (ksf): 9.5

Confining Stress (ksf): 0.5

Location: B-8

Depth: 5.0 - 6.5 feet

Description: Brown sandy silt

Test Date: 1/19/2022

Dry Density (pcf)	76.7	Sample Diameter (inches)	2.413
Moisture (%)	27.2	Sample Height (inches)	5.100
Axial Strain at Failure (%)	3.9	Strain Rate (% / minute)	0.70



GEOLABS, INC.

GEOTECHNICAL ENGINEERING

W.O. 7341-00

TRIAXIAL UU COMPRESSION TEST - ASTM D2850

INTERSTATE ROUTE H-1 AND H-201
DESTINATION SIGN UPGRADE/
REPLACEMENT, PHASE 3
FAP NO. NH-0300 (144)
ISLAND OF OAHU, HAWAII

Plate
B - 9