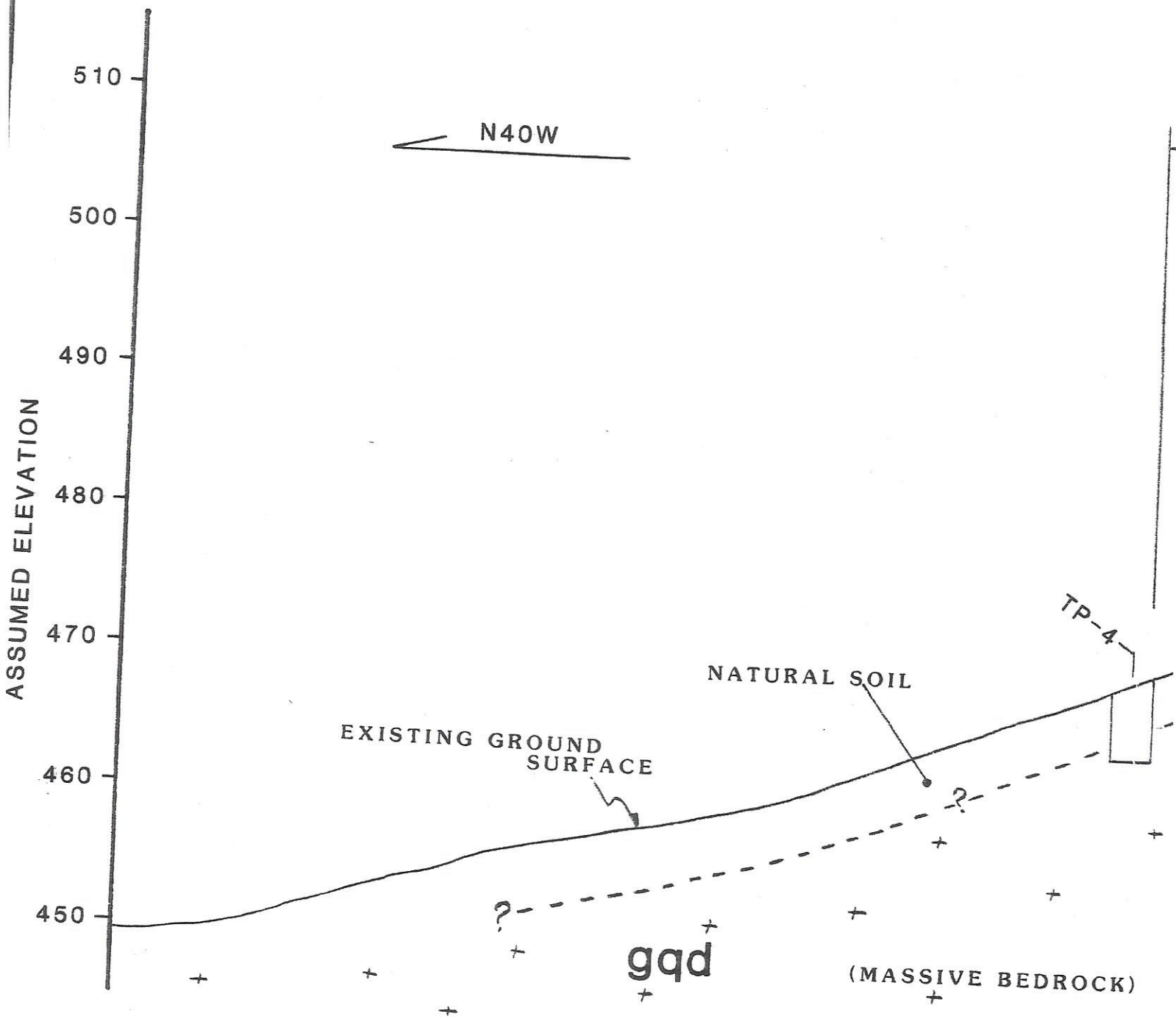
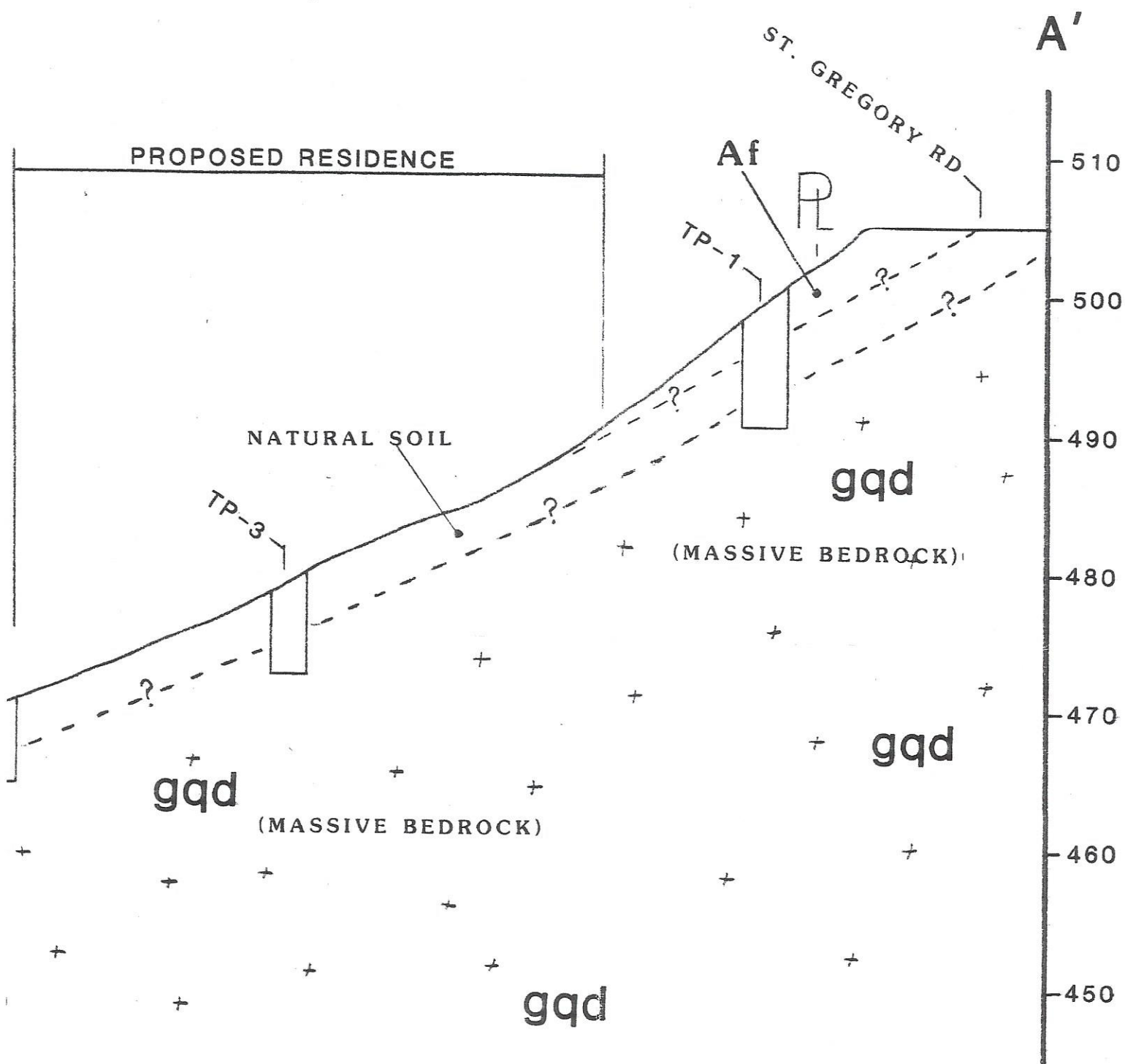


A





V): 1"=10'

GEOLOGIC CROSS SECTION

2979 St Gregory Rd

SWN SOILTECH CONSULTANTS, INC.

Proj. No. 3895-94

Depth Interval (ft)Description

0.0 - 3.0'

Artificial Fill - Silty Sand (SM)

Brown and yellow brown, mottled, dry to slightly moist, moderately compact; angular, granitic fragments (30 - 40%) to 4 inches in dimension; scattered rootlets; abrupt downslope contact with natural soil/ slopewash

3.0 - 7.0'

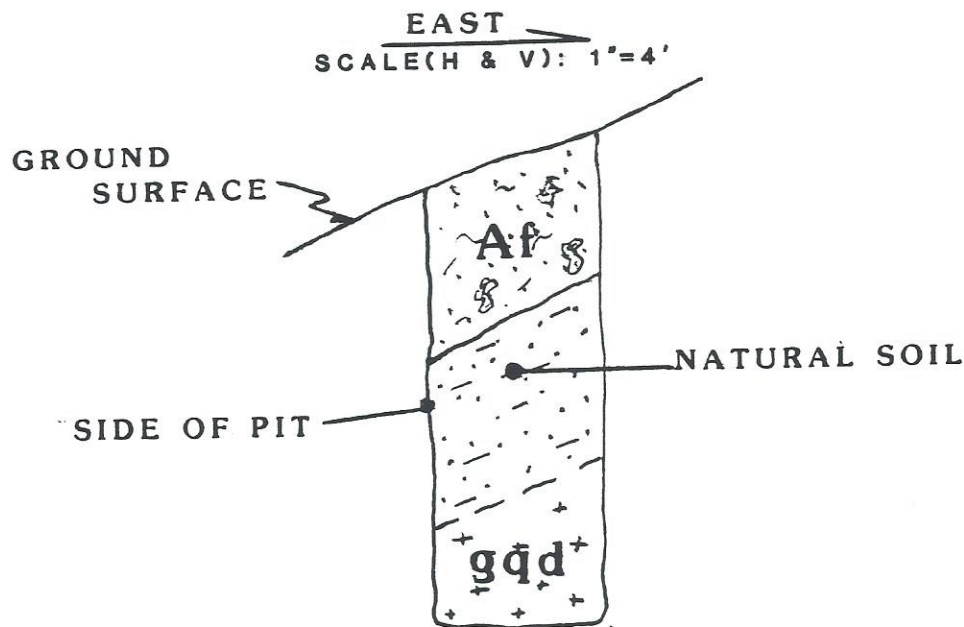
Natural Soil/ Slopewash - Silty Sand (SM)

Strong brown, slightly moist, moderately dense, slightly porous; subangular, granitic clasts (10 - 20%) to 3 inches in dimension; scattered rootlets; weakly cemented, granular, structure; few pieces of charcoal; slightly gradational contact with underlying bedrock.

7.0 - 10.0'

Bedrock - Quartz Diorite (gqd)

Yellow-brown, massive, slightly weathered, slightly fractured, indurated; fractures are discontinuous, irregularly spaced, undulatory and tight; no continuous structure or layering.



- NOTES: 1. Surficial soils visually classified in accordance with the Unified Soil Classification System.
2. No caving or ground water encountered.
3. Excavated July 12, 1994.

SWN Soiltech Consultants, Inc.
Project No. 3895-94

EXPLORATORY HAND-DUG TEST PIT LOG NO. 2

Depth Interval (ft)

Description

0.0 - 1.0'

Artificial Fill - Silty Sand (SM)

Brown and yellow brown, mottled, dry to slightly moist, moderately compact; angular, granitic fragments (30 - 40%) to 4 inches in dimension; numerous rootlets; abrupt downslope contact with natural soil/ slopewash

1.0 - 3.0'

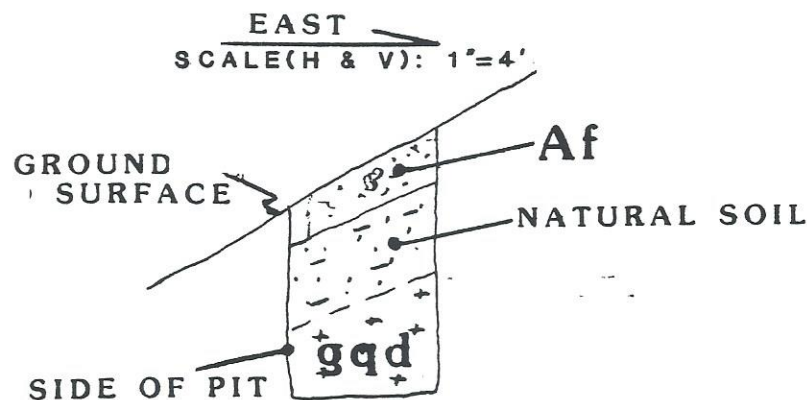
Natural Soil/ Slopewash - Silty Sand (SM)

Strong brown, slightly moist, moderately dense, slightly porous; subangular, granitic clasts (10 - 20%) to 3 inches in dimension; scattered rootlets; weakly cemented, granular, structure; few pieces of charcoal; slightly gradational contact with underlying bedrock.

3.0 - 5.0'

Bedrock - Quartz Diorite (gqd)

Yellow-brown, massive, slightly weathered, slightly fractured, indurated; fractures are discontinuous, irregularly spaced, undulatory and tight; no continuous structure or layering.



- NOTES: 1. Surficial soils visually classified in accordance with the Unified Soil Classification System.
2. No caving or ground water encountered.
3. Excavated July 12, 1994.

SWN Soiltech Consultants, Inc.
Project No. 3895-94

EXPLORATORY HAND-DUG TEST PIT LOG NO. 3

Depth Interval (ft)

Description

0.0 - 4.0'

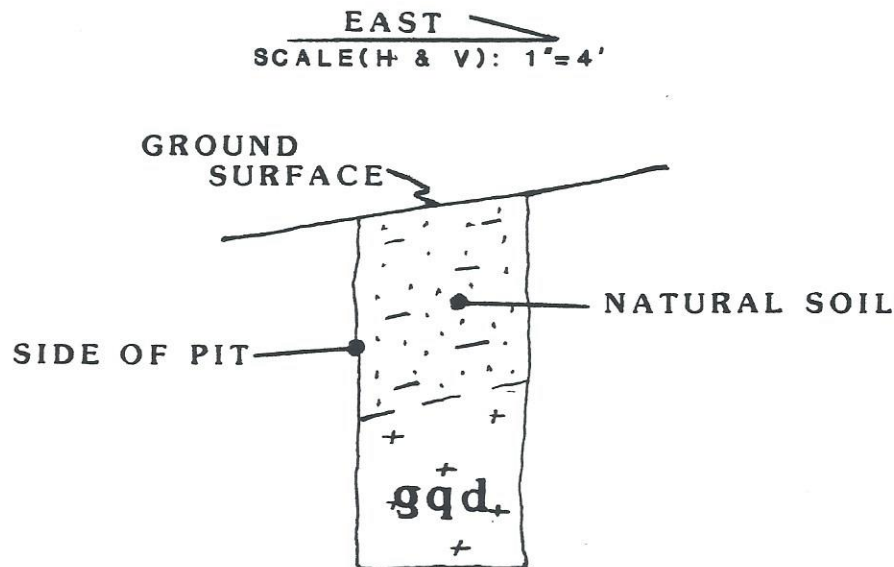
Natural Soil/ Slopewash - Silty Sand (SM)

Strong brown, slightly moist, moderately dense, slightly porous; subangular, granitic clasts (10 - 20%) to 3 inches in dimension; numerous rootlets; weakly cemented, granular, structure; few pieces of charcoal; slightly gradational contact with underlying bedrock.

4.0 - 7.5'

Bedrock - Quartz Diorite (gqd)

Yellow-brown, massive, slightly weathered, slightly fractured, indurated; fractures are discontinuous, irregularly spaced, undulatory and tight; increases in induration with depth; no continuous structure or layering.



- NOTES: 1. Surficial soils visually classified in accordance with the Unified Soil Classification System.
2. No caving or ground water encountered.
3. Excavated July 12, 1994.

SWN Soiltech Consultants, Inc.

Project No. 3895-94

Plate C-3

EXPLORATORY HAND-DUG TEST PIT LOG NO. 4

Depth Interval (ft)

Description

0.0 - 3.5'

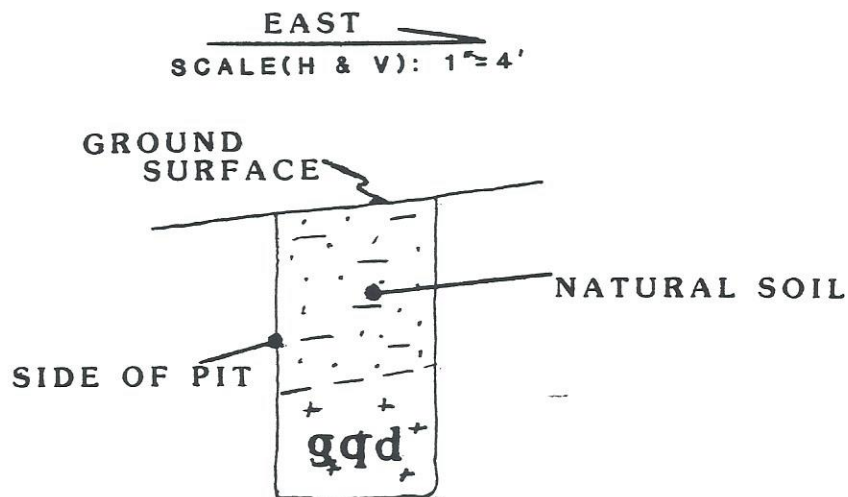
Natural Soil/ Slopewash - Silty Sand (SM)

Strong brown, slightly moist, moderately dense, slightly porous; subangular, granitic clasts (10 - 20%) to 3 inches in dimension; numerous rootlets; weakly cemented, granular, structure; few pieces of charcoal; slightly gradational contact with underlying bedrock.

3.5' - 6.0'

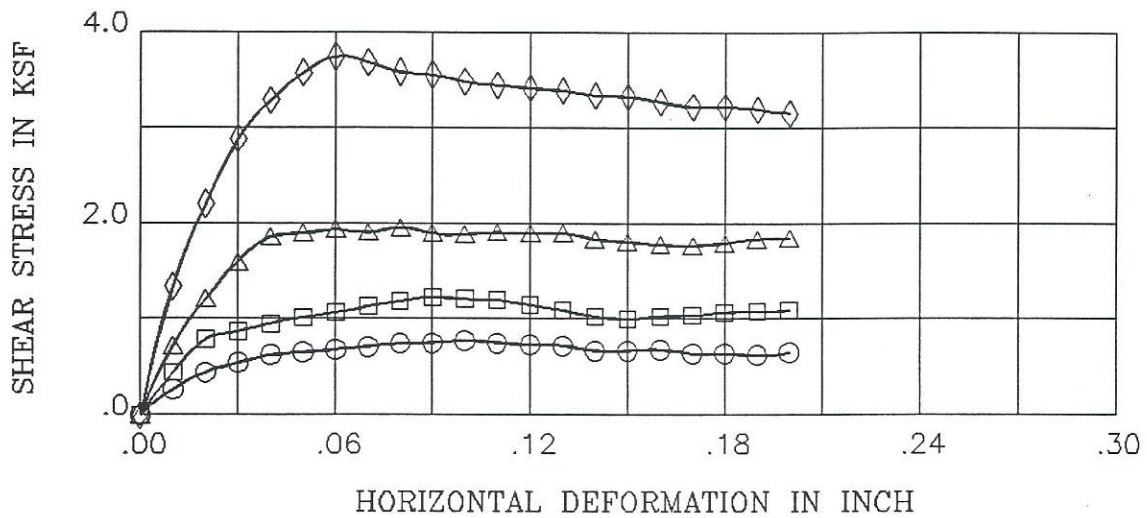
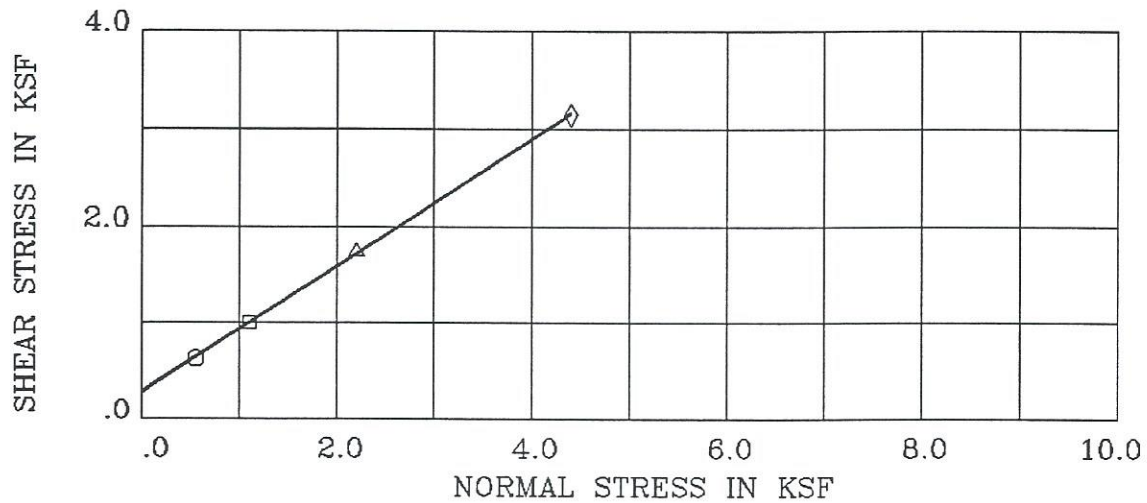
Bedrock - Quartz Diorite (gqd)

Yellow-brown, massive, slightly weathered, slightly fractured, indurated; fractures are discontinuous, irregularly spaced, undulatory and tight; increases in induration with depth; no continuous structure or layering.



- NOTES: 1. Surficial soils visually classified in accordance with the Unified Soil Classification System.
2. No caving or ground water encountered.
3. Excavated July 12, 1994.

SWN Soiltech Consultants, Inc.
Project No. 3895-94

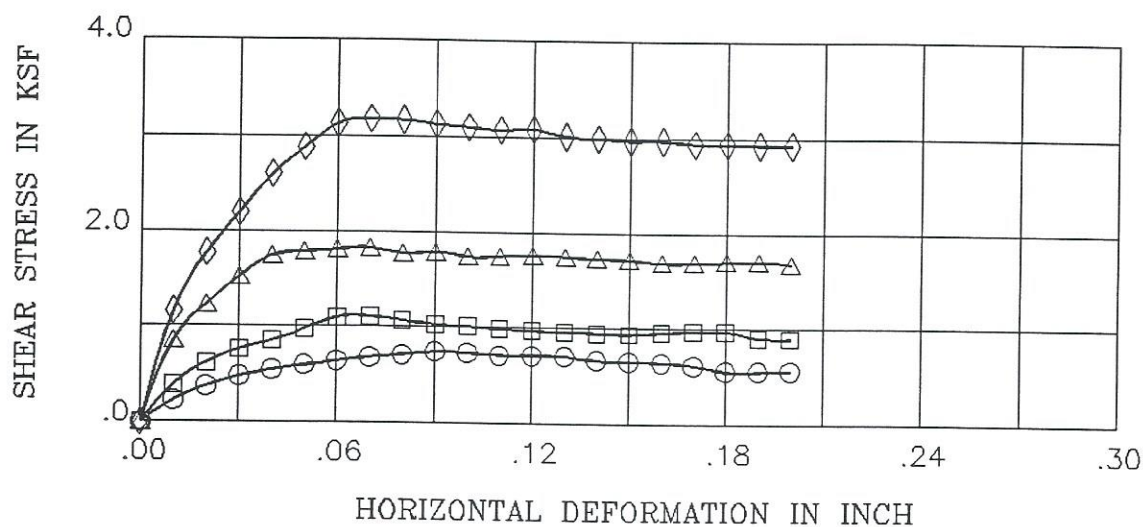
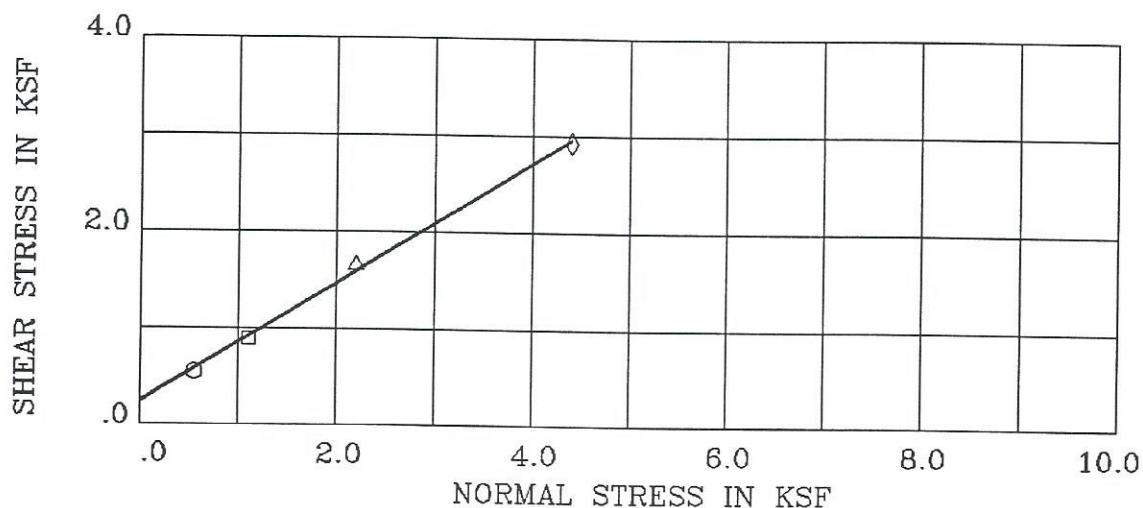


BORING/SAMPLE : T.P.1/S.1 DEPTH (ft) : 2
 DESCRIPTION : Fill - silty sand
 STRENGTH INTERCEPT (C) : .282 KSF
 FRICTION ANGLE (PHI) : 33.2 DEG (RESIDUAL STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	15.8	116.1	.424	.55	.77	.62
□	15.8	116.1	.424	1.10	1.23	1.00
△	15.8	116.1	.424	2.20	1.95	1.76
◇	15.8	116.1	.424	4.40	3.74	3.15

Remark : Undisturbed samples, soaked

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SWN Soiltech Consultants	DIRECT SHEAR TEST Plate No. D-1



BORING/SAMPLE : T.P.4/S.1 DEPTH (ft) : 2
 DESCRIPTION : Soil - silty sand
 STRENGTH INTERCEPT (C) : .238 KSF
 FRICTION ANGLE (PHI) : 31.7 DEG (RESIDUAL STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	20.3	105.3	.571	.55	.74	.55
□	20.3	105.3	.571	1.10	1.12	.90
△	20.3	105.3	.571	2.20	1.83	1.68
◇	20.3	105.3	.571	4.40	3.18	2.93

Remark : Undisturbed samples, soaked

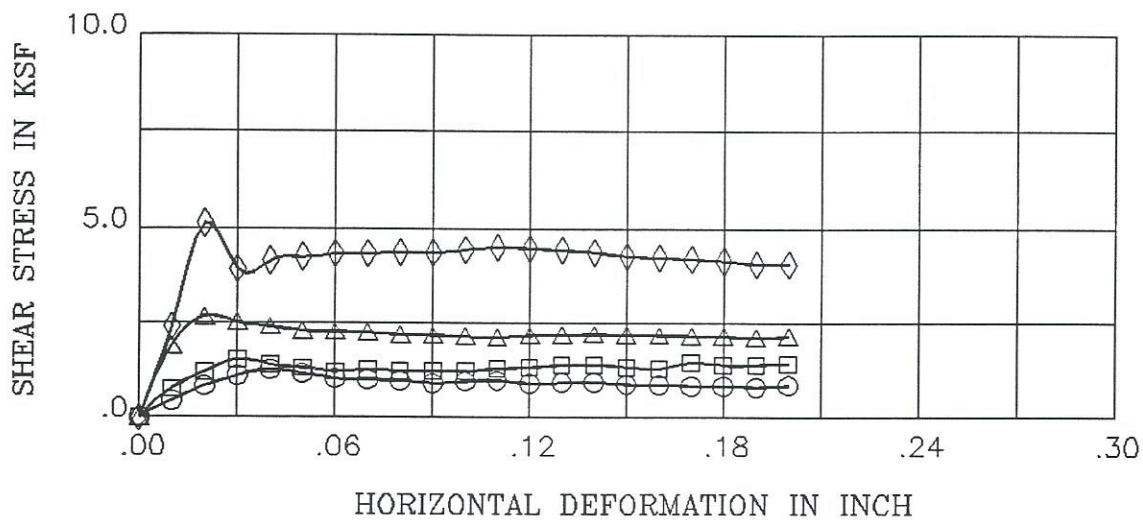
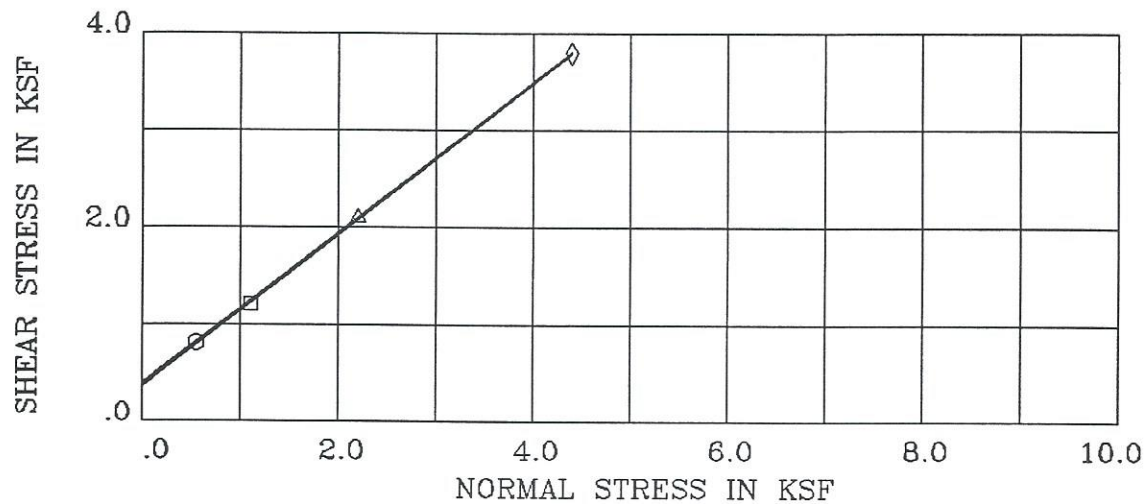
Project 3895-94

Robinson - St. Gregory Road

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DIRECT SHEAR TEST

Plate No. D-2

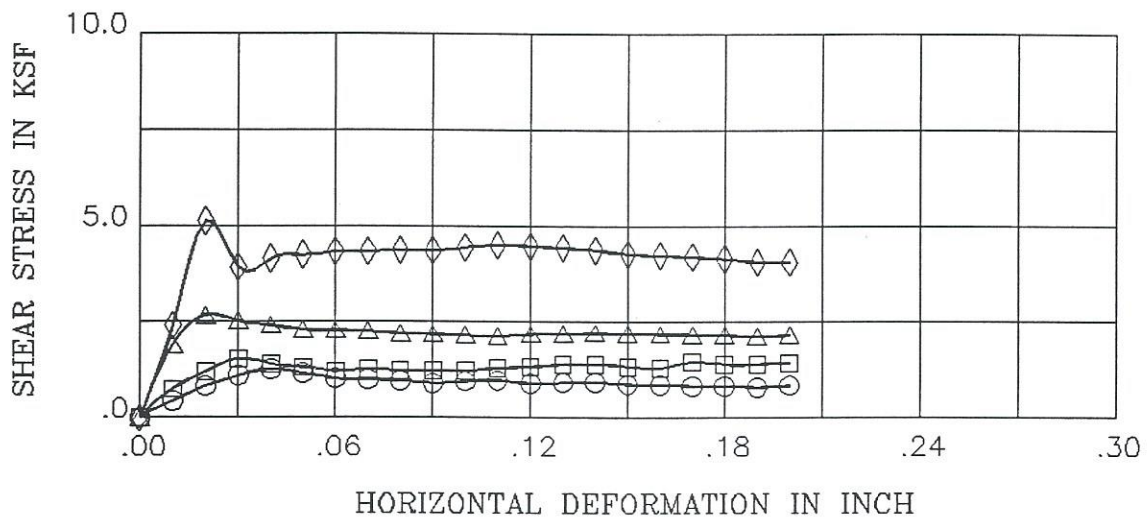
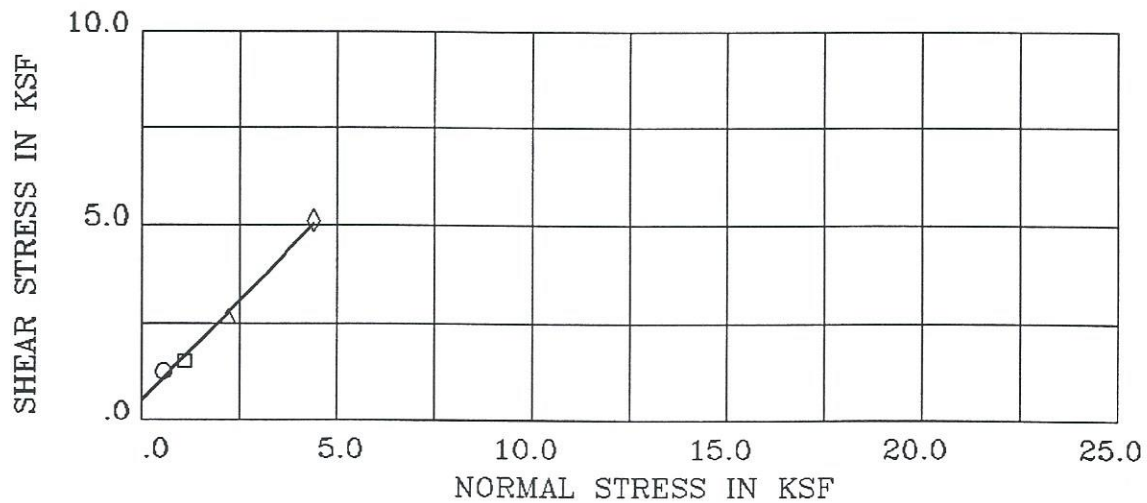


BORING/SAMPLE : T.P.1/S.3 DEPTH (ft) : 10
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .382 KSF
 FRICTION ANGLE (PHI) : 37.9 DEG (RESIDUAL STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
O	13.7	123.3	.392	.55	1.27	.81
□	13.7	123.3	.392	1.10	1.54	1.22
△	13.7	123.3	.392	2.20	2.69	2.13
◇	13.7	123.3	.392	4.40	5.12	3.80

Remark : Undisturbed samples, soaked

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SWN Soiltech Consultants	DIRECT SHEAR TEST Plate No. D-3



BORING/SAMPLE : T.P.1/S.3 DEPTH (ft) : 10
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .537 KSF
 FRICTION ANGLE (PHI) : 45.7 DEG (PEAK STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	13.7	123.3	.392	.55	1.27	.81
□	13.7	123.3	.392	1.10	1.54	1.22
△	13.7	123.3	.392	2.20	2.69	2.13
◇	13.7	123.3	.392	4.40	5.12	3.80

Remark : Undisturbed samples, soaked

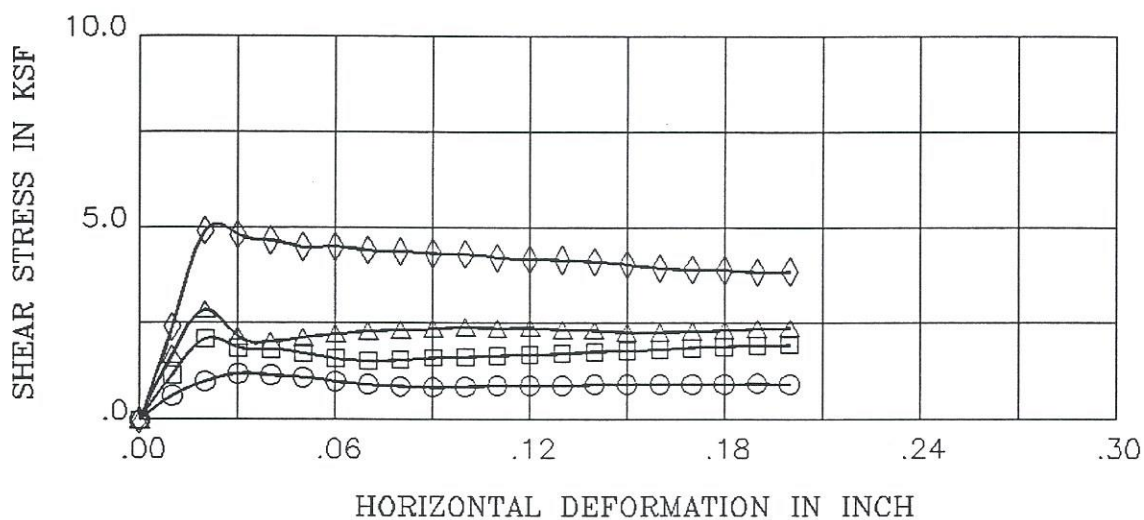
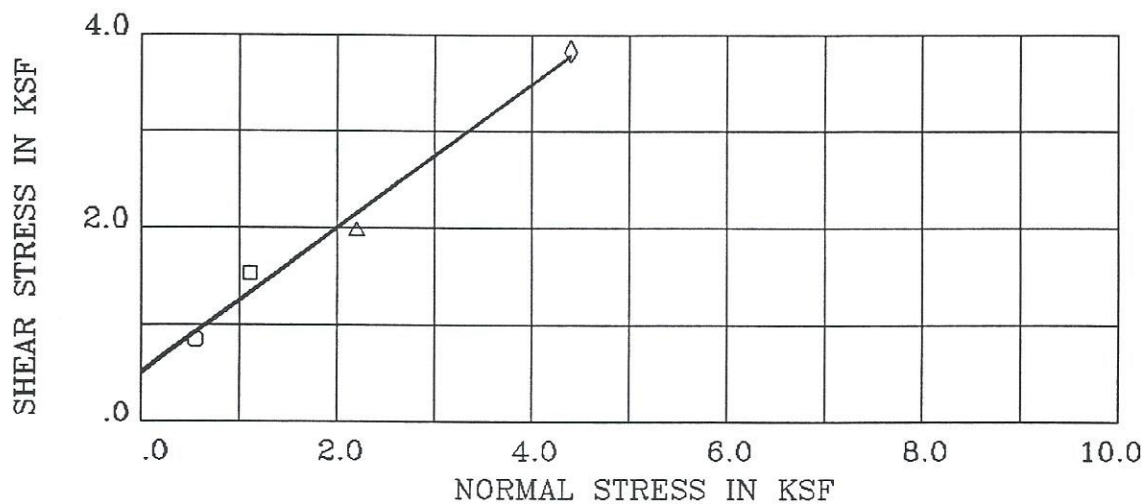
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DIRECT SHEAR TEST

Plate No. D-4



BORING/SAMPLE : T.P.2/S.2 DEPTH (ft) : 5
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .516 KSF
 FRICTION ANGLE (PHI) : 36.7 DEG (RESIDUAL STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	13.0	124.8	.375	.55	1.21	.85
□	13.0	124.8	.375	1.10	2.12	1.53
△	13.0	124.8	.375	2.20	2.85	1.99
◇	13.0	124.8	.375	4.40	5.08	3.83

Remark : Undisturbed samples, soaked

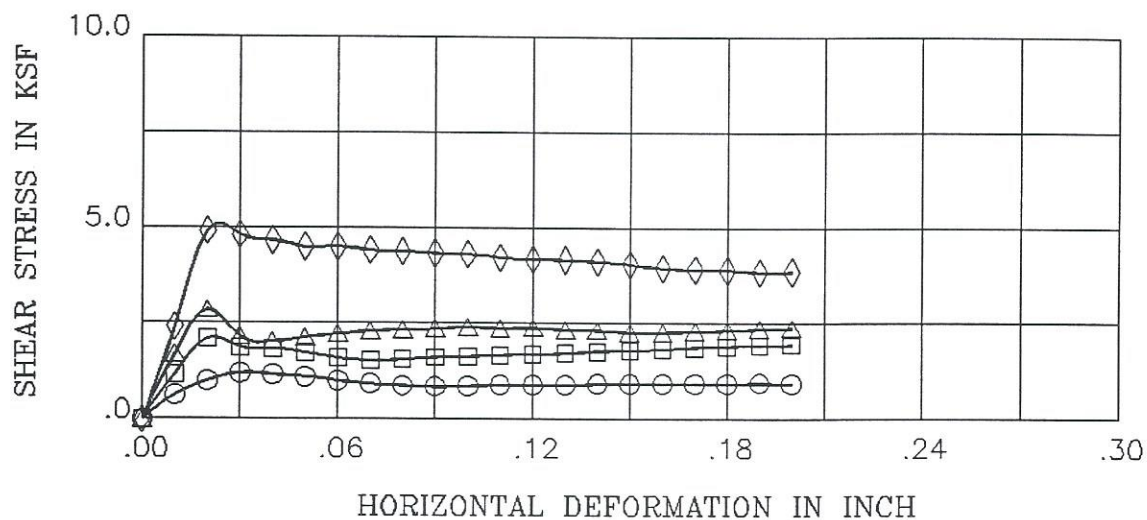
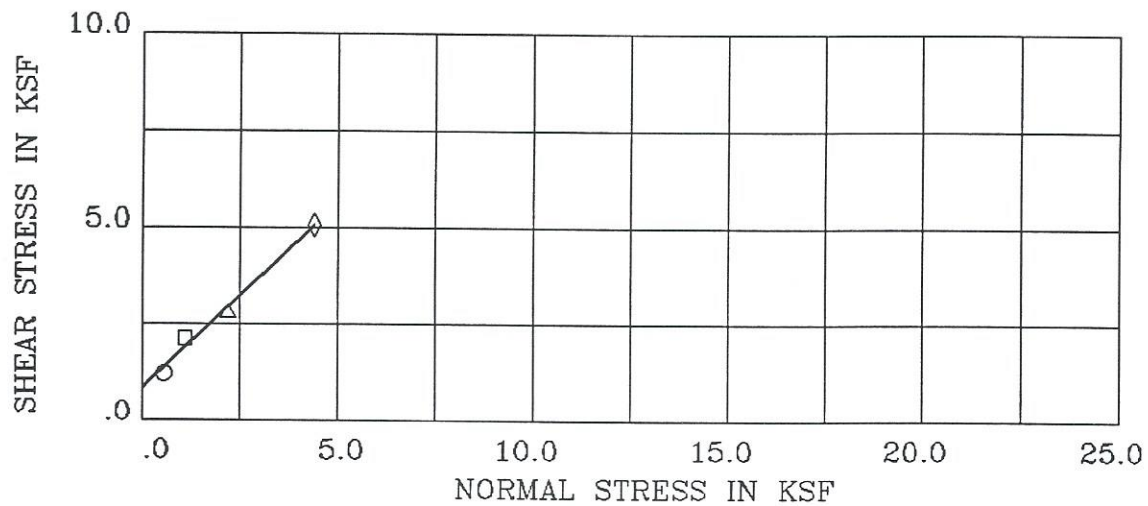
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DIRECT SHEAR TEST

Plate No. D-5

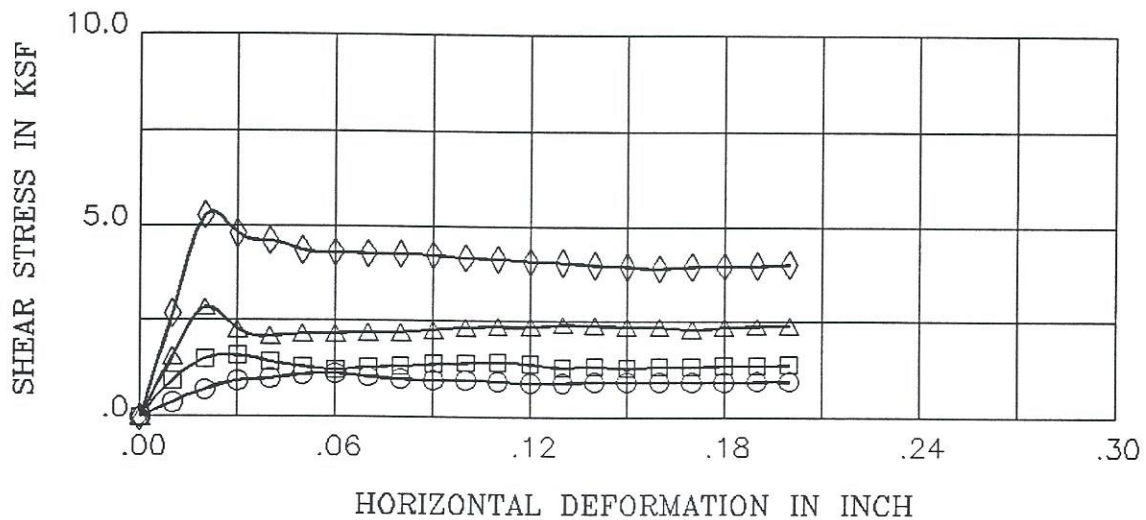
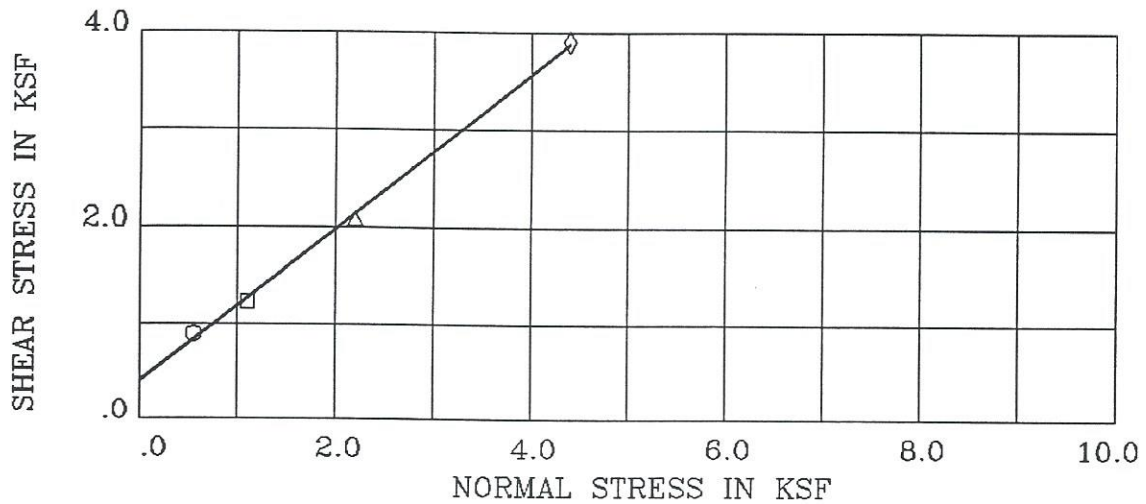


BORING/SAMPLE : T.P.2/S.2 DEPTH (ft) : 5
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .827 KSF
 FRICTION ANGLE (PHI) : 43.9 DEG (PEAK STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
O	13.0	124.8	.375	.55	1.21	.85
□	13.0	124.8	.375	1.10	2.12	1.53
△	13.0	124.8	.375	2.20	2.85	1.99
◇	13.0	124.8	.375	4.40	5.08	3.83

Remark : Undisturbed samples, soaked

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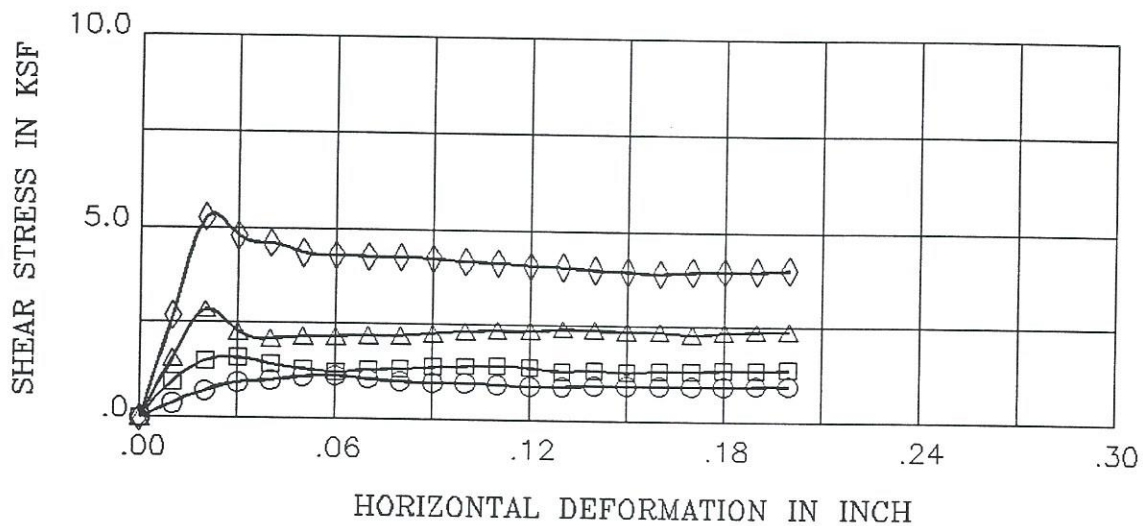
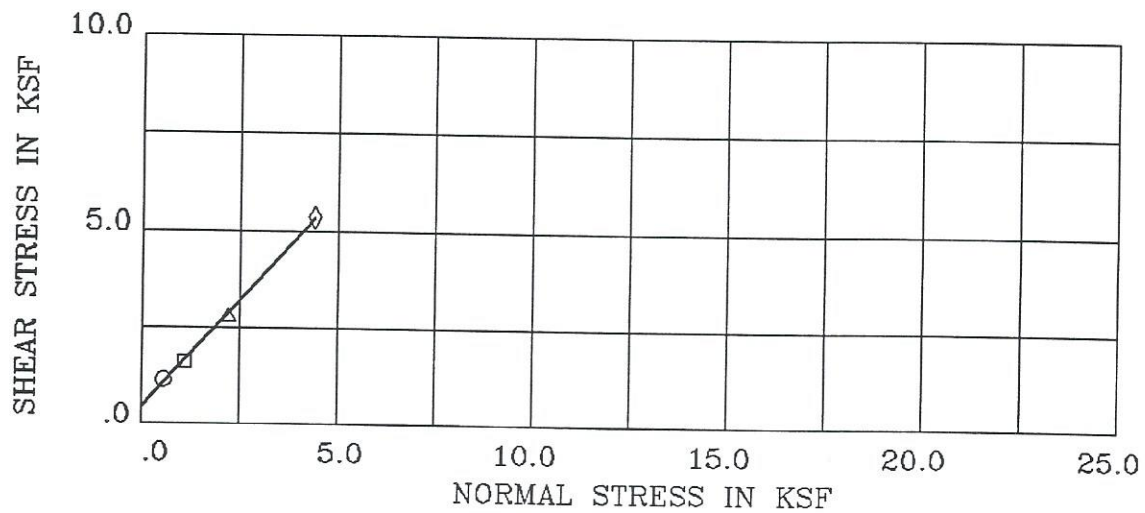


BORING/SAMPLE : T.P.3/S.2 DEPTH (ft) : 5
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .404 KSF
 FRICTION ANGLE (PHI) : 38.3 DEG (RESIDUAL STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	12.5	127.6	.345	.55	1.14	.90
□	12.5	127.6	.345	1.10	1.60	1.24
△	12.5	127.6	.345	2.20	2.85	2.09
◇	12.5	127.6	.345	4.40	5.36	3.91

Remark : Undisturbed samples, soaked

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BORING/SAMPLE : T.P.3/S.2 DEPTH (ft) : 5
 DESCRIPTION : Bedrock - quartz diorite
 STRENGTH INTERCEPT (C) : .442 KSF
 FRICTION ANGLE (PHI) : 48.1 DEG (PEAK STRENGTH)

SYMBOL	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	VOID RATIO	NORMAL STRESS (ksf)	PEAK SHEAR (ksf)	RESIDUAL SHEAR (ksf)
○	12.5	127.6	.345	.55	1.14	.90
□	12.5	127.6	.345	1.10	1.60	1.24
△	12.5	127.6	.345	2.20	2.85	2.09
◇	12.5	127.6	.345	4.40	5.36	3.91

Remark : Undisturbed samples, soaked

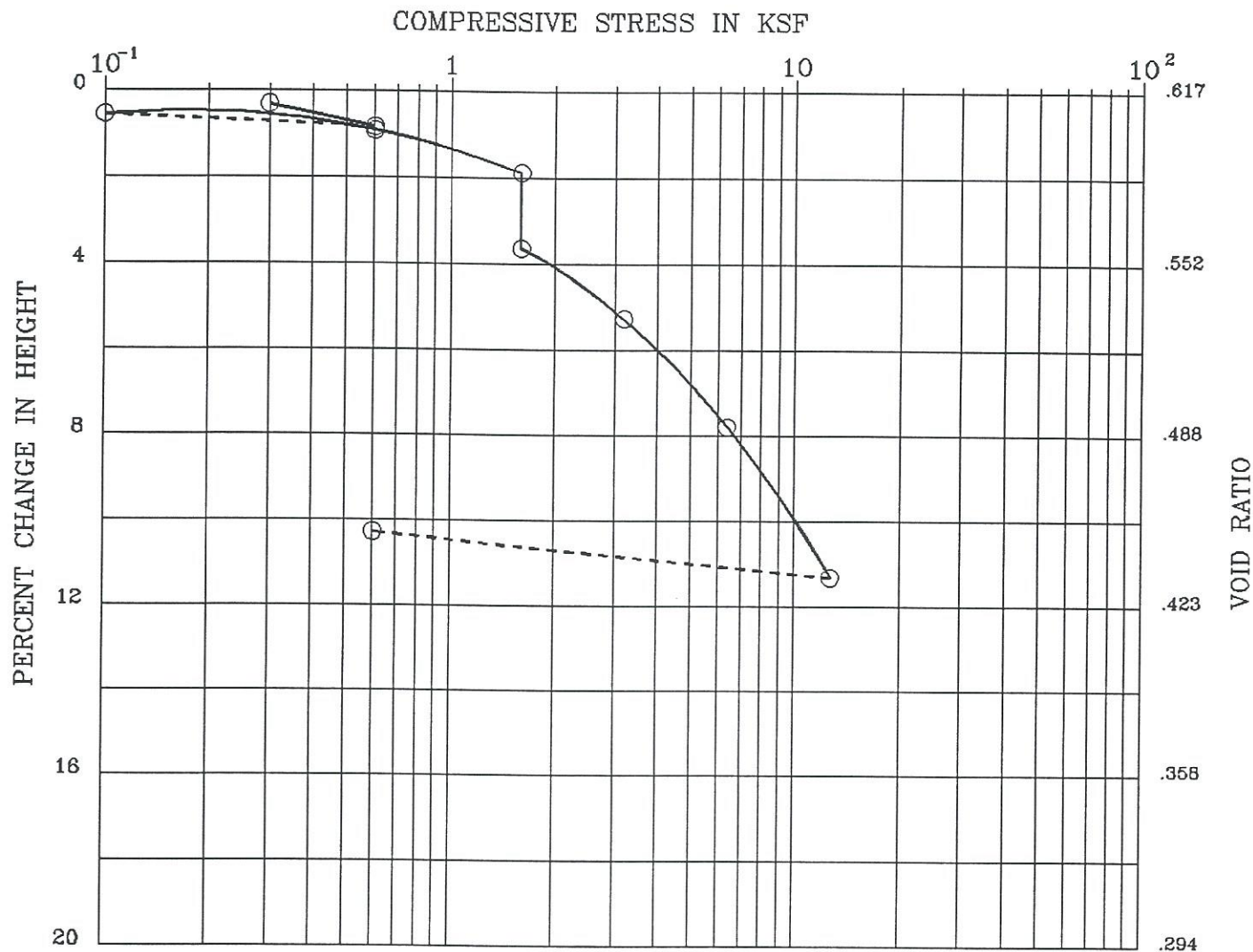
Project 3895-94

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DIRECT SHEAR TEST

Plate No. D-8



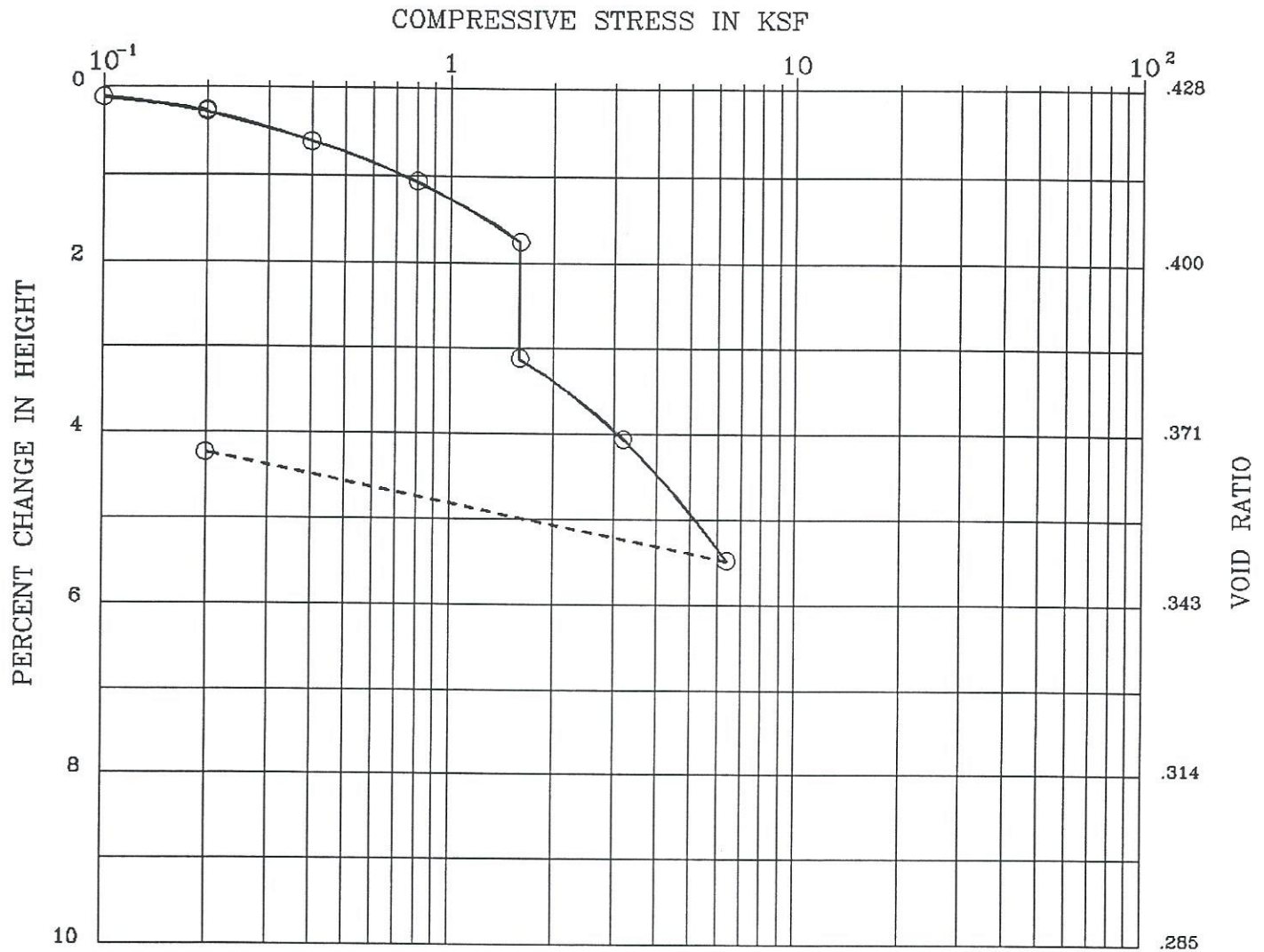
BORING : T.P.1/S.2
 DEPTH (ft) : 5
 SPEC. GRAVITY : 2.69

DESCRIPTION : Soil - silty sand
 LIQUID LIMIT :
 PLASTIC LIMIT :

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	5.2	104.1	23	.617
FINAL	16.8	115.7	100	.455

Remark : Undisturbed sample, water added at 1.60 ksf

Project 3895-94	Robinson - St. Gregory Road		
SWN Soiltech Consultants	CONSOLIDATION TEST		Plate No. E-1



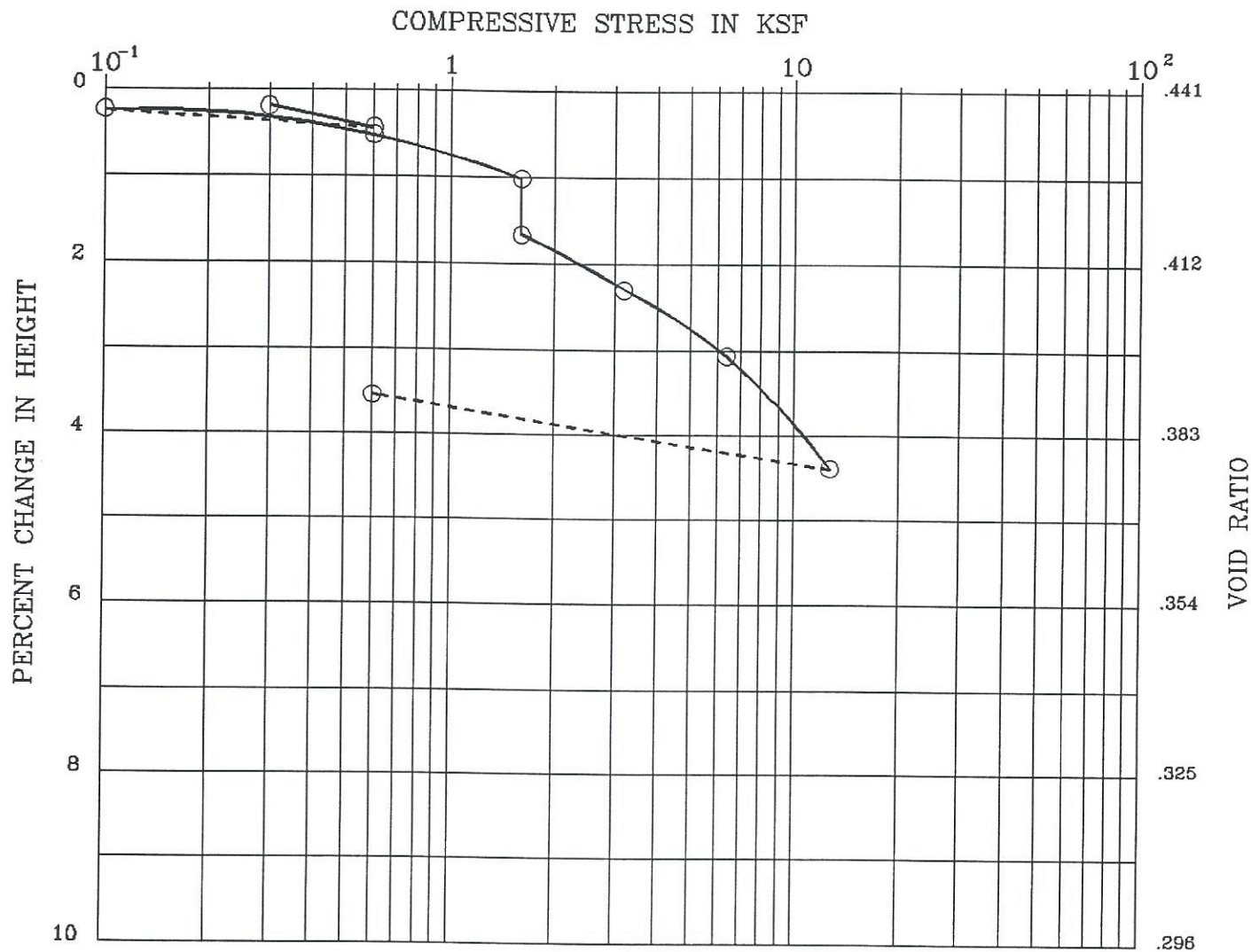
BORING : T.P.2/S.1
 DEPTH (ft) : 2
 SPEC. GRAVITY : 2.65

DESCRIPTION : Soil - silty sand
 LIQUID LIMIT :
 PLASTIC LIMIT :

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	3.0	115.9	19	.428
FINAL	13.4	122.0	100	.357

Remark : Undisturbed sample, water added at 1.60 ksf

Project 3895-94	Robinson - St. Gregory Road		
SWN Soiltech Consultants	CONSOLIDATION TEST		Plate No. E-2



BORING : T.P.4/S.2
 DEPTH (ft) : 5
 SPEC. GRAVITY : 2.76

DESCRIPTION : Bedrock - quartz diorite
 LIQUID LIMIT :
 PLASTIC LIMIT :

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	5.2	119.7	33	.441
FINAL	13.8	124.6	100	.383

Remark : Undisturbed sample, water added at 1.60 ksf

Project 3895-94	Robinson - St. Gregory Road		
SWN Soiltech Consultants	CONSOLIDATION TEST		Plate No. E-3