APPENDIX 2F

GEOTECHNICAL REPORT - REACTOR BORINGS. JULY 1974

The information contained in this appendix was not revised, but has been extracted from the original FSAR and is provided for historical information.

GEOTECHNICAL REPORT

REACTOR BORINGS

SEABROOK STATION, NEW HAMPSHIRE

Submitted to

YANKEE ATOMIC ELECTRIC CO.

GEOTECHNICAL ENGINEERS INC.
1017 Main Street
Winchester, Massachusetts 01890

July 31, 1974

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6. Contouretl Equal Area Upper Hemisphere Polar Projection to slickensided surfaces in Reactor 2; Borings E2-15, 16, 17, and 18

1.0 INTRODUCTION

1.1 Purpose

An excavation approximately 150 feet in diameter and 70 feet deep will be required for each of the two proposed reactors at Seabrook Station.

To design the side slopes of the excavation and to estimate the quantity of excavation, it is necessary to determine the frequency and orientation of fractures in the rock. For this purpose inclined borings were made around the perimeter of each of the two proposed excavations. The core was oriented and the orientation of joints, slickensided surfaces, and foliation was determined.

1.2 Scope

Four inclined borings were made around the perimeter of each proposed reactor excavation. The borings ranged in length from 165 to 169 feet, and in inclination from 39° to 41.5°, measured from vertical. (The bottom of a 165-foot-long boring inclined at 40° is at a vertical difference in elevation of 126 feet below the ground surface.)

2.4 Orientation Data

Core was oriented from near the rock surface to the bottom of the hole, with three exceptions: Boring E2-11 in which orientation starts at 63 ft (inclined length) below the rock surface; Boring E2-17 in which orientation terminates at 65 ft (inclined length) in a borehole that was 165 ft long; and Boring E2-15 in which orientation terminates at 42 ft (inclined length) in a borehole that was 165 ft long.

Appendix II is a summary of all the orientation data, and Appendix III contains polar equal area stereo net projections for the features oriented in each borehole.

Fig. 1 is a plot of generalized dip and strike data for joints in each of the borings.

Fig. 2 is a plot of generalized dip and strike data for foliation. As shown on the individual boring logs in Appendix I, the rock at the two reactor sites does not exhibit much foliation.

Fig. 3 is a plot of generalized dip and strike data for slickensided surfaces.

Fig. 4 is a contoured plot of the projections of poles for 230 joints measured in the core from borings at Reactor 1; Fig. 5 is a contoured plot of the projections of poles for 93 joints in Reactor 2; and Fig. 6 is a contoured plot of the projections of poles for 114 slickensided surfaces in Reactor 2.

Fig. 4 shows that there are two dominant sets of fracture surfaces at Reactor No. 1 with strikes and dips roughly as follows (listed in order of decreasing frequency of occurrence):

N30E, 40NW
N40E, 60SE

Figs. 5 and 6 show that there are three dominant sets of fracture surfaces at Reactor No. 2, with strikes and dips roughly as follows (listed in order of decreasing frequency of occurrence):

N30E, 30 NW
N45E, 55SE
N15W, 60 SW

Revised August 5, 1974

TABLES

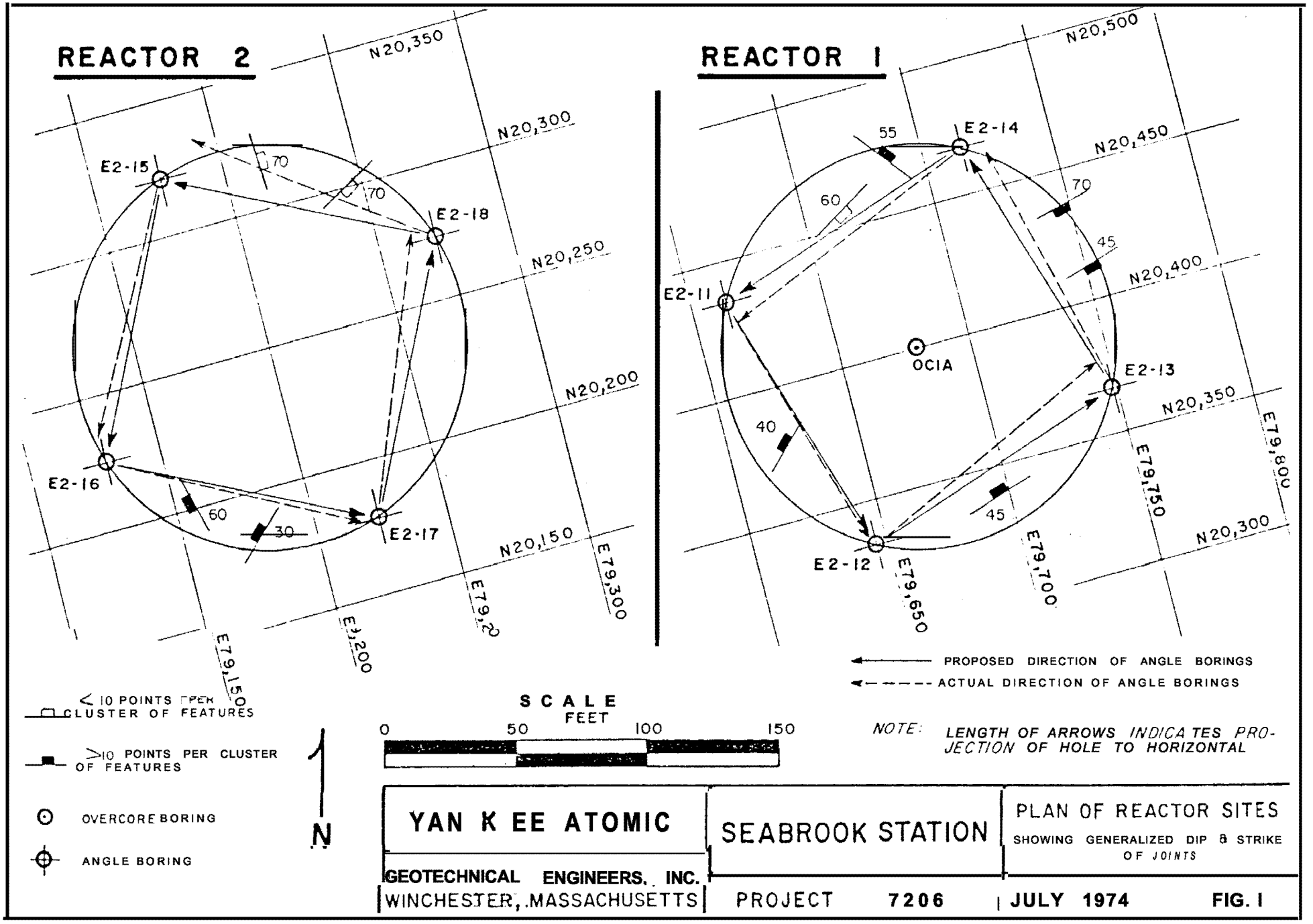
TABLE 1

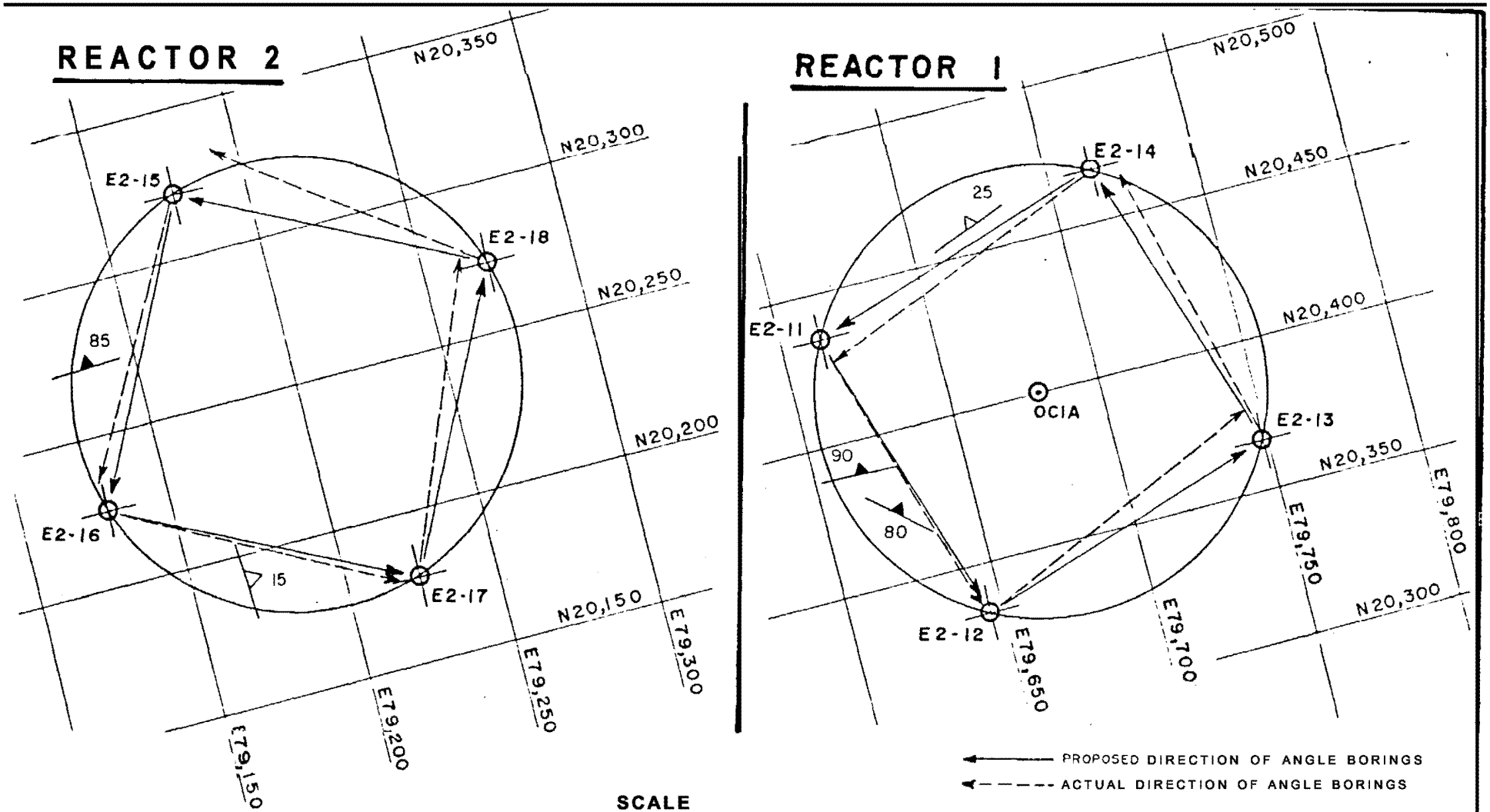
ZONES ORIENTED IN REACTOR BORINGS

Reactor No.	Boring No.	Length of Boring* (feet)	Inclination of Boring Measured From Vertical	Length Oriented* (feet)	Vertical Depth to Top of Rock (feet)
1	E2-11	168.0	40°	63-168	13.5
1	E2-12	165.7	41°	13.8-165.7	0.7
1	E2-13	169.0	41°	22-169	0.0
1	E2-14	166.0	41.5°	11-166	2.2
2	E2-15	165.0	41.5°	13.5-42	8.6
2	E2-16	165.1	41°	18-165	7.1
2	E2-17	165.0	41°	22-65	14.3
2	E2-18	168.0	39°	15.5-168	10.8

*Measured along inclined axis of borehole.

FIGURES


REACTOR 2
REACTOR 1
N20,350
N20,300
N20,250
N20,200
N20,150
N20,500
N20,450
N20,400
N20,350
N20,300
E79,150
E79,200
E79,250
E79,300
E79,650
E79,700
E79,750
E79,800
E2-15
E2-18
E2-16
E2-17
E2-14
E2-11
E2-13
E2-12
OCIA
70
70
60
30
55
60
70
45
40
45
PROPOSED DIRECTION OF ANGLE BORINGS
ACTUAL DIRECTION OF ANGLE BORINGS
< 10 POINTS PER CLUSTER OF FEATURES
>10 POINTS PER CLUSTER OF FEATURES
OVERCORE BORING
ANGLE BORING
N
SCALE
FEET
0
50
100
150
NOTE: LENGTH OF ARROWS INDICATES PROJECTION OF HOLE TO HORIZONTAL
YAN K EE ATOMIC
GEOTECHNICAL ENGINEERS, INC.
WINCHESTER, MASSACHUSETTS
SEABROOK STATION
PLAN OF REACTOR SITES
SHOWING GENERALIZED DIP & STRIKE OF JOINTS
PROJECT 7206
JULY 1974
FIG. I



< 2 POINTS PER CLUSTER OF FEATURES

>2 POINTS PER CLUSTER OF FEATURES

OVERCORE BORING

ANGLE BORING

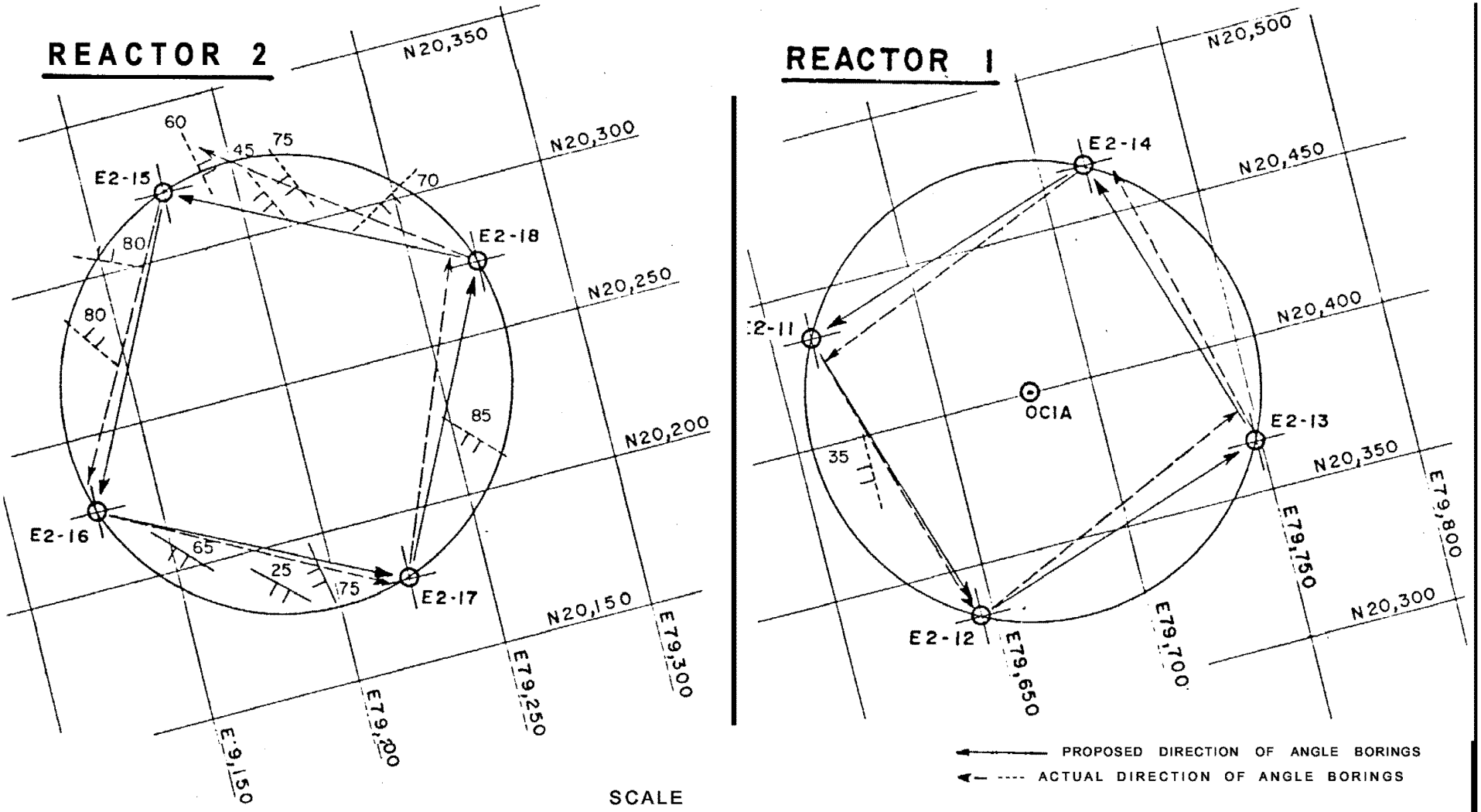
N

SCALE FEET

0 50 100 150

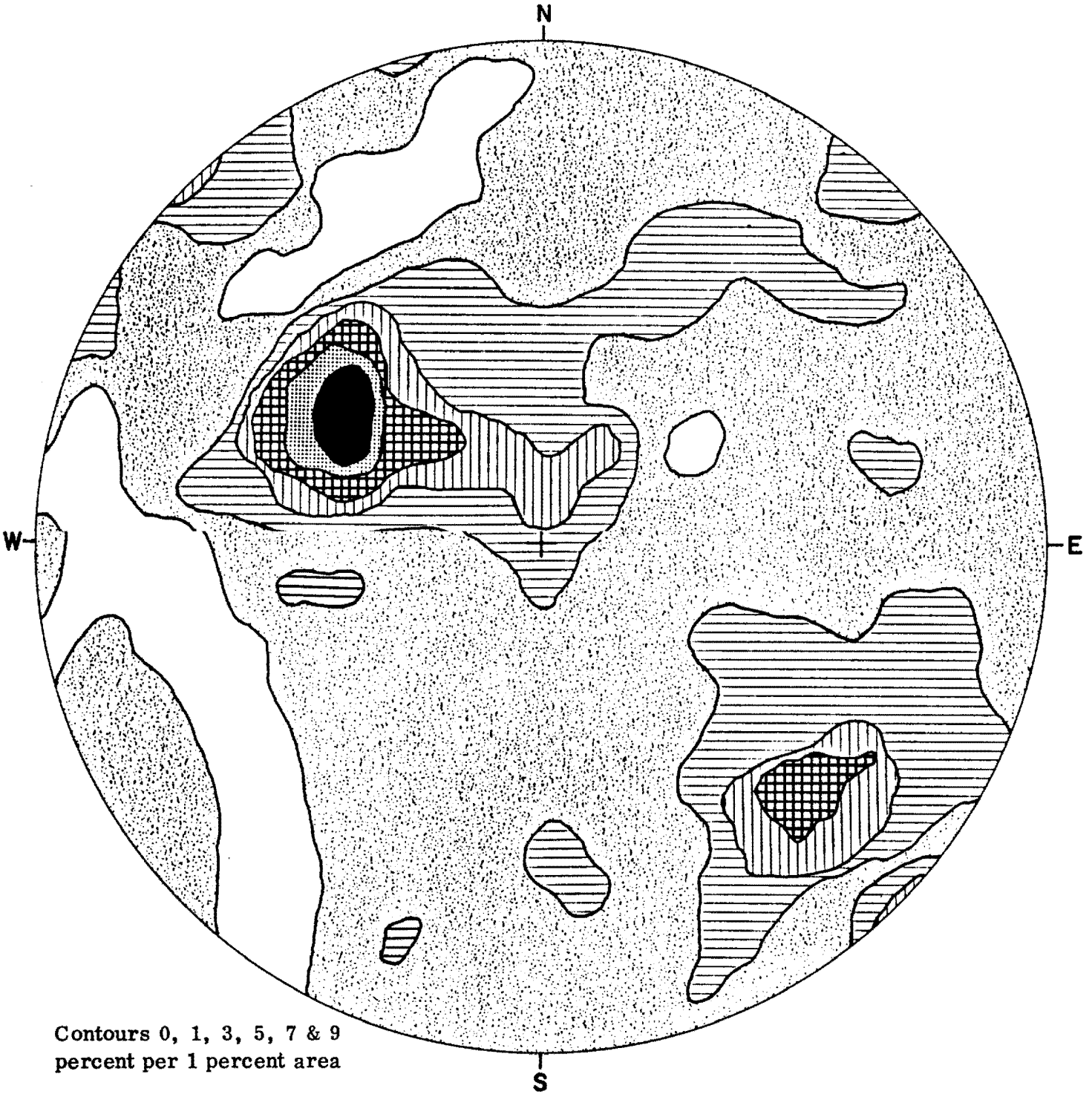
NOTE: *LENG TH Of ARROWS INDICATES PROJECTION OF HOLE TO HORIZONTAL.*

YANKEE ATOMIC	SEABROOK STATION	PLAN OF REACTOR SITES
GEOTECHNICAL ENGINEERS, INC. WINCHESTER, MASSACHUSETTS	PROJECT 7286	SHOWING GENERALIZED DIP & STRIKE OF FOLIATIONS
		JULY 1974 FIG. 2



NOTE: *LENGTH OF ARROWS INDICATES PROJECTION OF HOLE TO HORIZONTAL.*

YANKEE ATOMIC GEOTECHNICAL ENGINEERS, INC WINCHESTER. MASSACHUSETTS	SEABROOK STATION PROJECT 7266	PLAN OF REACTOR SITES SHOWING GENERALIZED DIP & STRIKE OF SLICKENSIDED SURFACES JULY 1974 FIG. 3



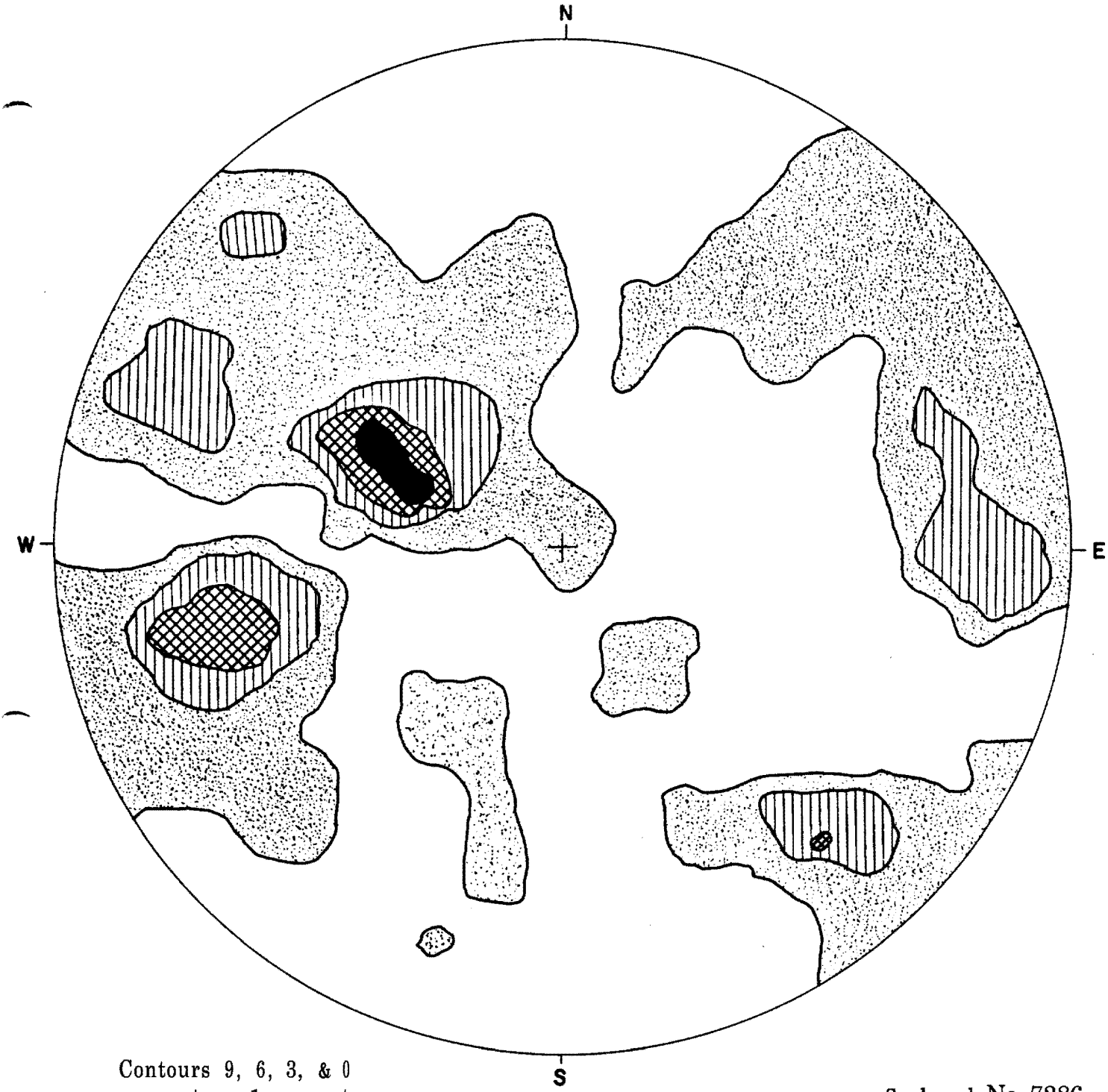
Seabrook No. 7286

0%

0% to 1% | 1% to 3% | 3% to 5% | 5% to 7% | 7% to 9% | 9% to 11%

Contoured Equal Area Upper Hemisphere Polar Projection of Poles to 230 Joints In Reactor 1; Borings E2-11, 12, 13 & 14

Fig. 4



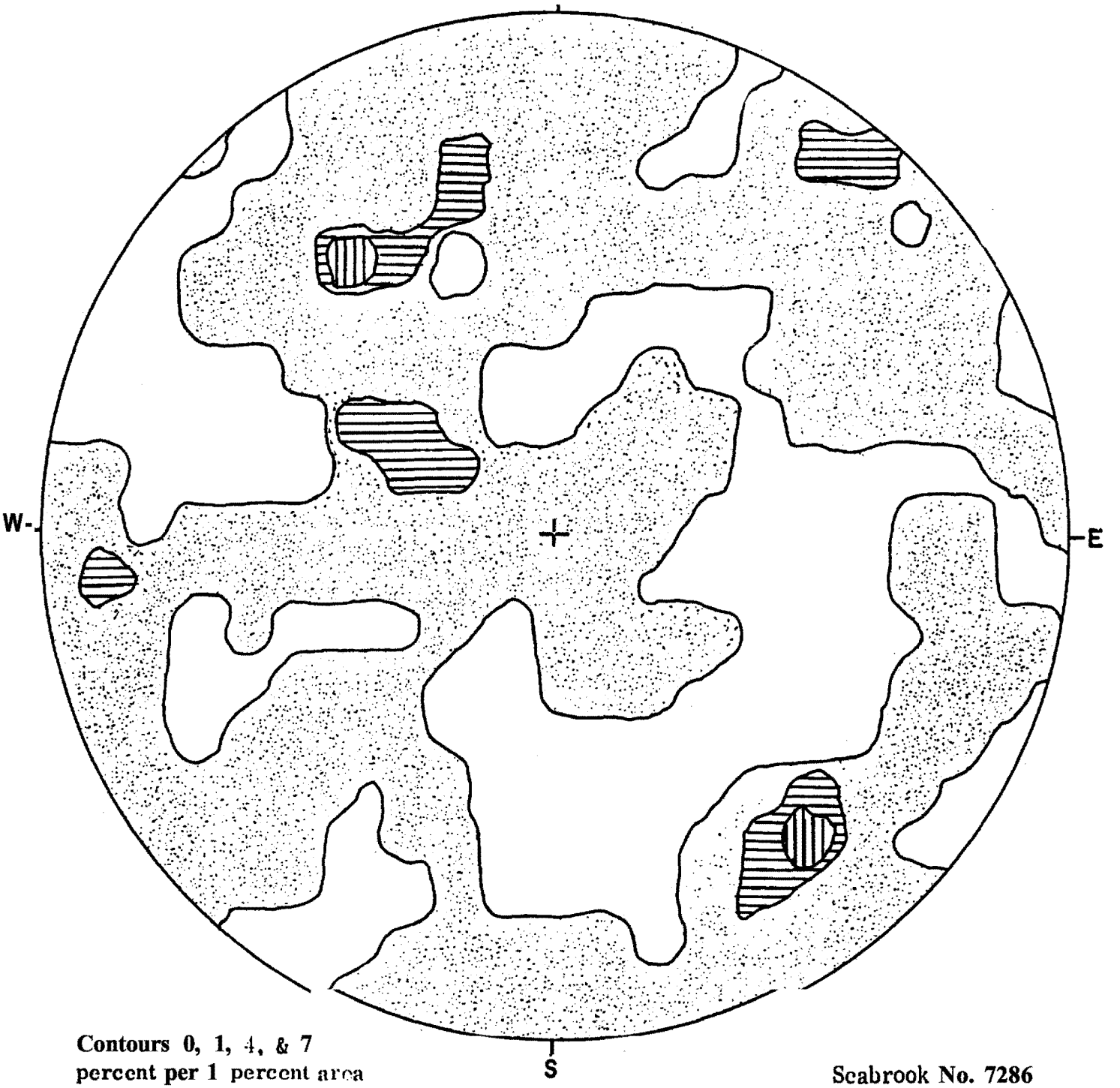
Contours 9, 6, 3, & 0
percent per 1 percent area

Seabrook No. 7286

0% | 0% to 3% | 3% to 6% | 6% to 9% | 9% to 11%

Contoured Equal Area Upper Hemisphere Polar Projection of Poles to 93 Joints In Reactor 2; Borings E2-15, 16, 17, 18.

Fig. 5



Contours 0, 1, 4, & 7
percent per 1 percent area

Seabrook No. 7286

0% 0% to 4% 4% to 7% 7% to 9%

Contoured Equal Area Upper Hemisphere Polar Projection of Poles to 114 Slickensided Surfaces in Reactor 2; Borings E2-15, 16, 17, & 18.

Fig. 6

APPENDIX I

APPENDIX I

Boring Logs

Note: All holes are angle holes. Depths are measured along core axis. Inclinations of holes are measured from vertical.

BORING LOCATION N20115, E29611, Plot Sub INCLINATION 16° BEARING S31E DATE START/FINISH June 28, 1971 / June 27, 1971

CASING ID 3 in. CORE SIZE 2 1/8 - 1 7/8 in. TOTAL DEPTH 168.0 ft DRILLED BY American Drilling & Boring Co. / L. Lapaine

GROUND EL (MSL) 25.0 ft DEPTH TO WATER DATE 9.7 ft Sep. 21, 1971 LOGGED BY Soil - K. Fall, Rock - J. H. Boyd

EL. MSL. ft	Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT %	Graphic	or RQD %	PRESSURE TEST Gpm psi	Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact D = Drilling Break	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
25.0										S = Slickensid				
					2)									
				II					TOP	OF TILL				
	6.5	SS-1	100											
	10	SS-2	99											
		SQ-3	10											
		SQ-4	31											
	17.7	SQ-5	57						TOP	OF ROCK				
	20											1.5' core lost	Fresh internally. Some minor rusty staining on joints and partings. Not chloritic.	Diorite. Medium fine grained, medium dark gray. Massive texture.
		SQ-6	76		5'							Rusty stain		
												Rusty stain		
	30	SQ-7	100		93							Minor rusty		
0														
												Minor rusty	Fresh and hard. Drills well. Most joints and partings are clean. Not chloritic.	Pegmatite. Diorite. Predominantly medium-fine grained, medium dark gray with occasional medium coarse quartz diorite.
	40	SQ-8	100		91									
	50	SQ-9	100		91									
													Fresh and hard. Drills core well. Joints and partings clean. Not chloritic. Most partings break across core.	Diorite. Fine to medium fine grained, medium dark gray. Massive texture.
-20	60	SQ-10	100		74							Solid core		
		SQ-11	100		99					N21E, 13NW J				
	70	SQ-12	100		97					N15E, 69NW J				Diorite. Medium-fine grained, medium gray. Massive.
		SQ-13	100		76					N13E, 53NW J		Minor chlorite	Fresh and hard. Joints and partings generally clean. Some minor chlorite on joints and partings in diabase.	
		SQ-14	100		00					N12W, 50SW S		Slight rusty		74.8' Fused intrusive contact. Diabase. Fine to medium-grained, dark greenish gray. Locally calcitic.
	80									N86E, 69NW J				
		SQ-15	100		00					N15W, 62SW S				
-40										N17W, 19SW S				83.1' Fused contact
		SQ-16	100		74					N14W, 40SW J				Diorite. Medium-fine grained, medium gray. Massive.
	90	SQ-17	100		98					N65W, 55NE J		Pyrite	Fresh and hard. Joints and partings generally clean. Diabase broken on calcite veining.	
		SQ-18	100		00									Diorite. Medium-fine, massive. Becoming gneissoid foliated toward base.
		SQ-19	100		00									
	100	SQ-20	100		85					N15E, 72SE C N55E, 76NW C				Fused. Diabase, fine calcitic - calcite veining. Fused
		SQ-21	100		00					N52E, 68NW J				
-60	110	SQ-22	100		92					N33E, 48NW J N27W, 72NE J N65W, 55SW J			Fresh and hard. Joints and partings clean. Not chloritic.	Diorite. Mixed fine-grained dark gray and medium-coarse grained medium gray. Gneissoid. Predominantly fine-grained.
		SQ-23	100		87									
	120	SQ-24	100		00					N25E, 90NW J				
		SQ-25	100		00					N75E, 82NW S			Fresh and hard. Drills well.	Foliated texture. Diorite. Predominantly fine grained, medium dark gray. Gneissoid at top of section.
	130	SQ-26	100		00					N31E, 19NW J N33E, 36NW J				
-80		SQ-27	100		17					N10E, 41NW J N71W, 61NE S				
	140	SQ-28	10		0							uggy-slight wx	Locally vuggy. Slightly wx. 2' core lost at 141'. Chips look OK.	Welded breccia
		SQ-29	98		95					N11E, 40NW J N31E, 22NW J		Minor chlorite ore lost		
	146													

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

1) - Washed through soil 0 - 6.5 ft. No samples taken.
2) - No clays present; therefore no water contents determined.

x - Oriented core

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 11, 1971 Project 7286

PAGE 1 of 2 LOG OF BORING 12-11

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20135, E7961, Plant Site INCLINATION 10° BEARING S33E DATE START/FINISH June 20, 1971 / June 27, 1971

CASING ID 3 in. CORE SIZE 2-1/8 - 1-7/8 in. TOTAL DEPTH 168.0 ft DRILLED BY American Drilling & Boring Co.; T. Canning

GROUND EL (MSL) 25.0 ft DEPTH TO WATER DATE 9.7 ft June 23, 1971 LOGGED BY Soil - K. Polk; Rock - J. R. Rand

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT %	Graphic	PRESSURE TEST Gun psi	Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickensides	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
									CONTINUED FROM PREVIOUS PAGE			
	146											
		NQ-30	100		100				N27E, 32NW J		Slight wx	Diorite. Mixed fine and medium coarse grained textures. Locally gneissoid.
	150								N26E, 28NW J		Slight wx	
		NQ-31	100		100						Solid core. Fresh and hard. Drills well. Partings are clean.	
									N63W, 25NE J			
		NQ-32	100		100						Solid core	
									N18W, 71NE J			
	160										Fresh and hard. Drills well. Joints and partings are clean.	Diorite. Predominantly fine, medium dark with patches of coarse quartz diorite.
100		NQ-33	100		100				N30E, 75NW J			
		NQ-34	97		97				N50W, 63NE J			
	168											
								BOTTOM	OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 11, 1971 Project 7286

PAGE 2 of 2 LOG OF BORING 12-11

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20334, E79642; Plant Site | INCLINATION 11 | BEARING N66E | DATE START/FINISH June 10, 1971 / June 18, 1974

CASING ID 3 in. | CORE SIZE 2-1/8 - 1-7/8 in. | TOTAL DEPTH 165.5 ft | DRILLED BY American Drilling & Boring Co. - A. Whitaker

GROUND EL (MSL) 21.5 ft | DEPTH TO WATER/DATE - 7.1 ft June 12, 1974 | LOGGED BY Soil - L. Dell; Rock - L. R. Hand

EL. MSL ft	Depth ft	Sample Type and No.	N or Rec.	Rate of Adv. min/ft	Water Content or RQD %	Graphic	Pressure Test psi	Computed k 10^{-1} cm/sec	Strike, Dip (F = Foliation, J = Joint, C = Contact, B = Bedding; S = Slickensided)	Core Breaks	Soil and Rock Descriptions (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
21.5									TOP OF ROCK			
		NX-1	100	2	16					Rusty	Fresh to slightly wx internally. Joints and partings have rusty coatings. Not chloritic.	Diorite. Predominantly medium coarse grained, medium gray with occasional local fine-grained patches.
		NX-2	95	3	0					Rusty		
	10	NX-3	100	3	46					Rusty		
										Rusty		
		NX-4	100	3	25					Rusty		
		NQ-5	81	3	43				21	Rusty		
	20	NQ-6	100	4	82				N18E, 43NW J North, 21W J	Slight wx	Fresh and hard. Partings show powdery or rusty staining. Not slickensided.	Diorite. Predominantly fine grained, medium dark gray. Locally coarse-grained and locally foliated.
		NQ-7	98	4	44				N17E, 47NW J	Minor rusty Slight wx		
0									N73W, 15NE J N41W, 67NE J	D Slight wx		
	30	NQ-8	100	4	68					Minor rusty Extreme wx-crumbly		
		NQ-9	100	4	97				N23E, 47NW J			
	40	NQ-10	100	4	98				N73W, 82SW J	D	Fresh and hard. Drills well. Joints and partings are clean. Not chloritic.	Diorite. Predominantly fine-grained, medium dark gray with occasional patches of coarse quartz diorite.
		NQ-11	100	5	99				N63W, 37SW J	D D		
									N32E, 67NW J			
	50	NQ-12	100	5	92				N63E, 15NW J	Slight wx		
20									N10E, 16NW J		Fresh and hard. Drills very well. Some local minor rusty stains on partings. Not slickensided.	Diorite. Mixed fine-grained medium dark gray diorite and coarse-grained light gray quartz diorite.
		NQ-13	100	6	90				N38E, 52NW J			
	60	NQ-14	98	16	89				N31E, 13NW J N51E, 37NW J	Minor rusty		
										5' solid piece		
		NQ-15	100	20	100							
	70	NQ-16	100	15	92					Vuggy-Slight wx	Fresh and hard. Drills well. Some slight rusty staining on some partings. Not slickensided.	
		NQ-17	100	6	85				N26W, 86NE J			
40									N75W, 55SW J	Rusty stain		Diorite. Predominantly fine-grained, medium dark gray with local zones of medium coarse quartz diorite.
	80	NQ-18	100	8	92				N19W, 81SW J			
									N81E, 55SE J	Rusty stain		
		NQ-19	100	6	83				N26E, 65NW J			
									N35E, 45NW C			Fused seinlets Diabase
	90	NQ-20	100	6	64					Rusty Severe wx	Generally fresh. Local wx and rusty staining (93 to 107' core may be mixed up - box knocked over in field).	Diabase
		NQ-21	100	5	89							Slightly bleached
	100	NQ-22	100	6	25					Rusty Rusty		Diorite. Predominantly fine-grained, dark to medium gray. Some saussuritization of feldspars.
0									N28W, 43SW J	Moderate wx		
		NQ-23	100	6	90							
									N26E, 37NW J			
	110	NQ-24	100	8	100				N65W, 67SW J	D	Fresh and hard. Drills very well. Partings not slickensided. Show only very minor wx effects.	Diorite. Fine-grained, medium dark gray. Small white phenocryst speckling.
									N36E, 45NW J			
		NQ-25	97	5	94							
									N35E, 44NW J	D		Fused seinlets
	120	NQ-26	100	4	90					Rusty	Fresh and hard. Drills well. Joints and partings are clean. Not chloritic.	Diorite. Mixed fine grained dark gray in medium coarse medium gray quartz diorite. Predominantly fine-grained.
		NQ-27	97	5	75							
	130	NQ-28	100	6	95				N15E, 12NW J			
		NQ-29	100	6	100				N45E, 12NE J			
	140	NQ-30	94	6	94					D	Fresh and hard. Joints and partings clean. Not chloritic.	Diorite. Predominantly fine-grained, medium dark gray.
									N35E, 42NW J			
		NQ-31	95	6	75				N75E, 73SE J	D		
17.5												

LEGEND

x - Standard penetration resistance, blows/ft

Rec - Length recovered/length cored, %

RQD - Length of sound core 4 in. and longer/length cored, %

S - Split spoon sample

U - Undisturbed samples

Groundwater

S - Shelby tube | N - Denison

F - Fixed piston | P - Pitcher

O - Osterberg | G - GEI

D - Drilling break

wx - Weathered, weathering

k - Coefficient of permeability

1) - Washed through soil 0-1 ft. No samples taken.

2) - This is only a partial list of dip and strike data.

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 11, 1974 | Project 7286

PAGE 1 of 2 | LOG OF BORING [illegible]

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20331, E79642, Plant Site INCLINATION 0° BEARING N66E DATE START/FINISH June 10, 1974 / June 13, 1974

CASING ID 3 in. CORE SIZE 2-1/8 - 3-7/8 in. TOTAL DEPTH 165.5 ft DRILLED BY American Drilling & Boring Co., R. Whitney

GROUND EL (MSL) 21.5 ft DEPTH TO WATER DATE ? ft June 12, 1974 LOGGED BY Soil - K. Polly; Rock - L. R. Rand

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT or RQD %	Graphic	PRESSURE TEST psi	Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickenside	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
									CONTINUED FROM PREVIOUS PAGE			
	137.5											
	150	NQ-32	100	6	52					Driller mislatched		
									N25E, 37NW J			
100		NQ-33	100	6	100				N25E, 26NW J		Fresh and hard. Drills very well. Joints and partings are clean. Not chloritic.	Diorite. Fine grained, medium dark gray. Massive texture.
	160	NQ-34	93	6	93					Solid core		
										Solid core		
	165.5	NQ-35	100	1	100							
								BOTTOM	OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 11, 1974 Project 7286

PAGE 2 of 2 LOG OF BORING

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20[illegible], [illegible] East Side INCLINATION 41° BEARING N10W DATE START/FINISH June 20, 1971 / July 1, 1971

CASING ID 3 in. CORE SIZE 1-7/8 - 2-1/8 in. TOTAL DEPTH 160.0 ft. DRILLED BY American Drilling & Boring Co. A. Whitaker

GROUND EL (MSL) +20.5 ft. DEPTH TO WATER DATE +13.0 ft. June 21, 1971 LOGGED BY [illegible] K. Fels, Rec. - J. R. Rind

EL. MSL ft.	Depth ft.	Type and No.	N or Rec.	RQD %	Water Content %	Graphic	Pressure Test Gpm/psi	Computed k cm/sec	Strike, Dip, J = Foliation, J = Joint, C = Contact, B = Bedding	Core Breaks	Soil and Rock Descriptions (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
20.5									S = Slickensided			
		NX-1	88	3.0	12				2)		Rusty staining	Diorite. Mixed fine-grained, medium dark gray diorite with patches of medium to medium-coarse quartz diorite.
		NX-2	72	1.0	0						Slight wx	Slightly wx to about 8' and fresh and hard below. Not chloritic.
		NX-3	100	5.0	13						Rusty staining, Moderate wx	
	10	NX-4	100	5.0	96						Rusty	Fresh and hard. Slight rusty staining on joints. Not chloritic or slickensided.
		NX-5	100	4.0	85						Slight rusty, Slight rusty, Slight rusty	Diorite. Mixed fine-grained dark gray diorite in medium coarse, medium gray quartz diorite.
	20	NX-6	100	4.0	100							
		NQ-7	75	5.0	46				N83E, 28NW J		Slight rusty	
		NQ-8	93	7.0	43				N10E, 58SE J, N15E, 75SE J		Slight rusty, Moderate wx, 1' core lost	1' zone of moderate wx. Core lost.
	30	NQ-9	100	9.0	82							
		NQ-10	100	12.0	80				Horiz. J, N30E, 83SE J, N32E, 67SE J		Slight wx, Slight wx, Slight wx	Fresh and hard. Some joints and partings show minor powdery to rusty surface wx effects. Not chloritic.
	40	NQ-11	100	14.0	100						D	Diorite. Mixed fine-grained, dark gray diorite in medium to medium-coarse, medium gray quartz diorite.
		NQ-12	100	15.0	83				N65E, 27NW J		Slight wx	
		NQ-13	100	16.0	100							
	50	NQ-14	97	18.0	93				N27E, 67SE J, N55E, 85SE J, N35E, 11SE J		Slight wx, Slight wx	Fresh and hard. Some joints and partings show very minor powdery surface wx effects. Not chloritic.
		NQ-15	100	4.0	83				N28E, 25NW J		Slight rusty	Diorite. Mixed fine-grained, dark gray diorite in medium coarse to coarse, medium gray quartz diorite. Predominantly fine-grained.
	60	NQ-16	100	5.0	98						D, Slight wx	
		NQ-17	100	6.0	92				N25E, 61SE J, N35E, 66SE J, N09W, 39NW J		Slight wx, Slight wx	
	70	NQ-18	97	9.0	88				N35W, 63NE J		Moderate wx	Fresh and hard. Local thin zones of moderate to severe wx on closely spaced joints. Not chloritic.
		NQ-19	98	2.0	87				N55E, 7NW J, N53E, 81SE J		Minor vuggy	Diorite. Mixed fine-grained, dark gray diorite in medium-coarse, medium gray quartz diorite. Medium coarse textures predominate.
	80	NQ-20	97	5.0	81				N10E, 88NW J, N50E, 30SE J		Severe wx, Moderate wx	
		NQ-21	100	20.0	97							
	90	NQ-22	100	4.0	80				N83E, 52SE J		Slight wx, Moderate wx	Fresh and hard. Drills well. Some thin wx zones on joints or partings as shown. Not chloritic.
		NQ-23	98	6.0	98				N15E, 21NW J, N16E, 58SE J			Quartz diorite. Medium-coarse grained, medium gray with occasional patchs of included fine-grained diorite.
	100	NQ-24	00	8.0	93				N15E, 87NW J, N15W, 57NE J		Slight wx	
		NQ-25	00	9.0	88				N21E, 88NE J, N35E, 88SE J, North, 36W J		Rusty stain	Fresh and hard. Some minor local rusty staining on some joints. Not chloritic.
	110	NQ-26	00	0.0	00				N19E, 86SE C, N67W, 83SW J		Minor rusty	Diorite. Mixed fine-grained, dark gray in medium coarse, medium gray quartz diorite.
		NQ-27	00	5.0	67							Dolerite inclusion
		NQ-28	00	20.0	75				N15W, 17NE J		Slight wx	Quartz diorite.
	120	NQ-29	97	4.0	63				N70E, 25NW J, N50W, 30NE J		Minor rusty	Fresh and hard. Some minor wx and rusty staining. Diabase. Diorite. Medium-grained medium gray.
		NQ-30	00	5.0	83				N16W, 41NE J, N68W, 53NE J, N56E, 83NW J			Fused contact (broken)
	130	NQ-31	100	6.0	54				N45E, 35SE J, Lost, 8NE J			Diabase. Dark gray. Fused contact
		NQ-32	98	6.0	75				N50E, 18NW J, N31E, 42SE J		Minor rusty, Slight wx	Fresh and hard. Local slight to severe wx joints. Diorite. Medium-coarse grained, medium gray. Somewhat porphyritic.
	140	NQ-33	98	6.0	50				N28E, 30SE J		Moderate wx	

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering x - Grouted core

NOTES

1) No clay samples present; therefore no water contents were determined.
2) This is only a partial list of dip and strike data.

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

United engineers

Date: July 30, 1971 Project 7286

PAGE 1 of 2 LOG OF BORING 12-10

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20365, E79715, Hood site INCLINATION 41° BEARING N30W DATE START/FINISH June 20, 1974 / July 3, 1974

CASING ID 3 in. CORE SIZE 1-7/8 - 2-1/8 in. TOTAL DEPTH 169.0 ft DRILLED BY American Drilling & Boring Co.; A. Whitaker

GROUND EL (MSL) [illegible] ft DEPTH TO WATER DATE [illegible] ft June 24, 1974 LOGGED BY Soil - [illegible], Rock - J. R. Hood

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT %	RQD Graphic	PRESSURE TEST psi	Computed k 10^{-1} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickenside	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
						100					CONTINUED FROM PREVIOUS PAGE		
	144												
		NQ-34	95	3.0	25				N22E, 15SE J		Slight wx	Fresh and hard. Some minor wx effects and rusty staining on joints.	Diorite. Medium-grained medium gray. Somewhat porphyritic.
									N16E, 60SE J		Rusty		
	150								N56E, 70NW J		Severe wx		
		NQ-35	100	4.0	33				N30E, 81SE J		Rusty stain		Veining
									N38E, 46SE J		Rusty stain		
											Vuggy		
		NQ-36	100	6.0	85				N90E, 86SE J		Minor rusty		
									N19E, 66SE J		Slight wx		
	160												
		NQ-37	100	7.0	83				N55E, 63SE J				
									N67E, 76SE J				
		NQ-38	93	8.0	87						Slight wx		
	169												
								BOTTOM	OF BORING				

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples

S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI

D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 11, 1974 Project 7286

PAGE 2 of 2 LOG OF BORING E2-13

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20167, E79713; Plant Site INCLINATION 11.5 BEARING S55W DATE START/FINISH June 6, 1971 / June 19, 1971

CASING ID 5 in. CORE SIZE 2-1/8 - 1-7/8 TOTAL DEPTH 166.0 ft DRILLED BY American Drilling & Boring Co.; T. Canning

GROUND EL (MSL) [illegible] ft DEPTH TO WATER DATE [illegible] ft June 11, 1971 LOGGED BY Soil - L. L. Poll; Rock - J. R. Rand

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT or RQD %	Graphic	PRESSURE TEST GPM/ft	Computed k 10^{-4} cm/sec	STRIKE, DIP (F = Foliation, J = Joint, C = Contact, B = Bedding, S = Slickensided)	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
29.0													
	3.0	3)			2)				TOP OF ROCK				
		NX-1	100	3.8	21				D		Rusty staining	Generally fresh and hard internally. Joints and partings have thin minor rusty staining. Closely spaced joints and partings.	Diorite. Mixed fine-grained, dark gray diorite and medium to coarse quartz diorite.
	10	NX-2	100	4.1	33						Vuggy		
+20		NQ-3	90	2.1	23				N65W, 13NW J		Minor rusty staining		
		NQ-4	93	1.8	27				N53W, 88NE J; N11E, 69SE J; N73W, 72NE J				
	20	NQ-5	90	2.4	30						Rusty staining	Subject to slight to moderate wx although generally hard between joints and partings. Rusty staining on joints. Not slickensided.	
		NQ-6	79	2.9	17								Diorite. Mixed coarse and fine.
		NQ-7	68	2.7	11								
	30	NQ-8	100	4.5	11				N28E, 67SE J				
		NQ-9	83	4.1	0						Vuggy		Pegmatite. Quartz-feldspar. Light tannish and gray-white.
		NQ-10	39	2.5	0								
0	40	NQ-11	97	4.1	60							Fresh and hard. Partings clean.	Diorite. Mixed fine, dark gray and coarse quartz diorite.
		NQ-12	100	4.4	90				N22E, 53SE J; N60W, 69NE J; N13E, 10NW J		Slight wx		
	50	NQ-13	100	5.2	92				N 3W, 67NE J			Fresh and hard. Drills well. Partings generally clean. Not slickensided.	Diorite. Mixed fine-grained, dark gray diorite in coarse-grained quartz diorite.
		NQ-14	100	6.2	87				N57W, 41NE J		Slight rusty		
	60	NQ-15	98	5.5	92				N30E, 35NW J		Moderate wx	Fresh and hard with thin local rusty stained areas and some local moderate wx. Not slickensided.	Diorite. Predominantly medium grained, spotted (dark matrix) quartz diorite with some local fine grained, medium dark gray diorite.
		NQ-16	100	5.6	77				N65W, 14NE J		Moderate wx		
-20									N50E, 12SE J; N30E, 30NW J		Minor rusty; Minor rusty		
	70	NQ-17	100	6.4	83				N15E, 85NW C				
		NQ-18	100	6.3	65				N 5E, 49SE J; N60E, 55SE J		Rusty stain; Moderate wx		
		NQ-19	100	3.6	32				East, 77S J; N15W, 12SW J		Slight wx; Rusty stain; Slight wx; Rusty stain	Fresh and hard. Partings subject to rusty stains. Not slickensided.	Diorite. Fine-grained, medium dark gray with small phenocryst spotting. Some thin fused veinlets.
	80	NQ-20	100	1.8	71								
		NQ-21	100	5.5	80				N16W, 87NE J				
		NQ-22	97	4.8	62				N 6E, 61SE J; N11E, 77SE J		Minor rusty; Minor rusty		
-40		NQ-23	89	2.7	0						Minor rusty		
		NQ-24	100	5.0	11				N10E, 68SE S		Minor rusty; Minor rusty		
		NQ-25	95	5.3	81						Minor rusty; Minor rusty		
	100	NQ-26	100	4.8	67				N78E, 10SE J; N75E, 18NW J; N73E, 16NW J		Slight wx; Pyrite	Fresh and hard. Some minor wx effects on partings. No chlorite. Not slickensided.	Diorite. Fine-grained, dark gray with small phenocrysts spotting. Contains pyrrhotite.
		NQ-27	98	5.0	75				N26E, 38NW J; N50E, 62SE J				Diabase intrusion
	110	NQ-28	100	5.4	82				N20W, 67NE J; N22W, 58W J			Fresh and hard. Drills well. Joints and partings are clean.	Diorite. Predominantly fine-grained medium dark gray with patches of medium coarse quartz diorite.
-60		NQ-29	98	5.7	85								
	120	NQ-30	100	6.0	81								
		NQ-31	100	5.4	100								
		NQ-32	98	6.7	98								
	130	NQ-33	100	4.6	53				N10E, 22NW J; N55E, 69SE J; N63E, 72SE J			Fresh and hard. Joints and partings are clean. Not chloritic.	Diorite. Mixed fine grained, medium dark gray diorite with occasional patches of medium coarse quartz diorite.
		NQ-34	78	5.7	98								
	139												

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample; Groundwater
U - Undisturbed samples

S - Shelby tube; N - Denison
F - Fixed piston; P - Pitcher
O - Osterberg; G - GEI

D - Drilling break; k - Coefficient of permeability
wx - Weathered, weathering

NOTES

1) - This is only a partial list of dip and strike data.
2) - No clays present, therefore no water contents were determined.
3) - Washed through soil 0-3 ft. No samples taken.

x - Oriented core

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 2, 1971 Project 7286

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GEOTECHNICAL ENGINEERS INC

BORING LOCATION N201.2, L7971, Plot Site INCLINATION 31.5° BEARING N53W DATE START/FINISH June 6, 1974 / June 19, 1974

CASING ID 3 in. CORE SIZE 2-1/8 to 1-7/8 in. TOTAL DEPTH 166.0 ft DRILLED BY American Drilling & Boring Co. - J. Canning

GROUND EL (MSL) [illegible] DEPTH TO WATER DATE [illegible] ft June 11, 1974 LOGGED BY S.G. K. L. Dell Rev. - A. R. Rand

EL. MSL ft	Depth ft	Sample Type and No.	N or Rec.	Rate of Adv. min/ft	Water Content %	Graphic	Pressure Test gpm/ft	Computed k 10^{-4} cm/sec	Strike, Dip F = Foliation J = Joint C = Contact B = Bedding	Core Breaks	Soil and Rock Descriptions (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
									S = Shear zone		CONTINUED FROM PREVIOUS PAGE	
	130											
	140	NQ-35	100	10.5	92				N71W, 25NE J	D		
-80		NQ-36	98	2.0	98					D		
									N63W, 60NE J	D		
	150	NQ-37	100	2.0	93				N19E, 62SE J N31E, 70SE J	Slight wx	Fresh and hard. Joints and partings clean. Not chloritic.	Diorite. Predominantly fine-grained medium dark gray with patches of medium coarse quartz diorite.
									N61W, 54NE J	D		
		NQ-38	98	3.1	98				N65E, 18NW S			
	160	NQ-39	100	3.3	93				N55E, 29NE J			
		NQ-40	98	3.2	98				N25W, 20SW J			
	166								BOTTOM OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 3, 1974 Project 7386

PAGE 2 of 2 LOG OF BORING [illegible]

GEOTECHNICAL ENGINEERING INC

BORING LOCATION N20321, E79179, Plant Site INCLINATION 41.7° BEARING S10 W DATE START/FINISH June 3, 1971 / June 5, 1971

CASING ID 3 in. CORE SIZE 2-1/8 - 1-7/8 in. TOTAL DEPTH 165.0 ft DRILLED BY American Drilling & Boring; A. Whitaker

GROUND EL (MSL) 11.5 ft DEPTH TO WATER DATE ft June 3, 1971 LOGGED BY Soil: K. Cole, Rock: J. R. Boal

EL. MSL ft	Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT % or RQD	Graphic	PRESSURE TEST gpm psi	Computed k 10^{-1} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
13.9		D							S = Slickenside				
	10												
11.5								TOP	OF ROCK				
		NQ-2	91	5.0	0				21		Rusty	Generally fresh and hard internally. Some minor chlorite on joints and partings.	Diorite. Mixed fine-grained foliated diorite (?) or quartzitic schist and medium coarse quartz diorite.
0									N85W, 80NE S		Rusty		Foliated quartzite
	20	NQ-3	100	6.0	37				N74W, 35NE J		Rusty		
									N58E, 19NW S		Minor chlorite		
		NQ-4	100	6.0	8						Minor chlorite		
									N75E, 82NW J			tionable.	
		NQ-5	100	6.0	42				N63E, 83NW J		Severe wx		Foliated quartzite(?)
	30								N88E, 82NW S		Minor chlorite	Fresh and hard. Joints and partings clean. Some minor chlorite.	Diorite. Fine-grained dark gray locally resembles quartzite with zones of medium coarse quartz diorite.
		NQ-6	100	3.0	19						Chips		
									N80E, 38E J				
		NQ-7	100	3.0	99				N83E, 39NW S		D		
	40												
		NQ-8	100	3.0	57				N30W, 85NE S		Minor chlorite		
-20													
		NQ-9	100	3.0	73								
	50											Fresh and hard. Joints or partings not chloritic.	Diorite (?) to dioritized quartzitic schist (?). Fine to medium grained, medium dark gray feldspathic rock.
											Slight wx		
		NQ-10	100	3.0	67								
	60												Diorite. Medium, medium gray.
											Moderate wx	Fresh and hard. Joints and partings not notably chloritic.	
		NQ-11	100	4.0	67								
-40	70												Metaquartzite (?). Fine grained, medium dark gray, fairly weak foliated.
		NQ-12	98	4.0	73								
	80											Fresh and hard. Some joints or partings show minor chlorite.	Metaquartzite (?). Schist. Fine-grained medium dark gray. Locally well foliated.
											Minor chlorite Pyrite		Pyrite welded breccia
		NQ-13	100	4.0	73						Chlorite Polished-conchoidal		
	90												
-60		NQ-14	100	5.0	49								2.7' Fused contact
	100										Minor chlorite	Fresh and hard. Some joints or partings have minor chlorite sur- chlorite development.	Diorite. Predominantly granodiorite, saussuritized feldspars. Medium-coarse grained. Local patches of fine-grained diorite (?) or quartzite(?). Locally foliated.
		NQ-15	98	5.0	73								
	110										Minor chlorite Slight wx Minor chlorite		
		NQ-16	91	5.0	65								
											1' core unaccounted for	Fresh and hard. Joints and partings locally show minor chloritic surfaces.	Metaquartzite (?) or diorite (?). Fine-grained, medium dark gray. Generally foliated rock.
-80	120												
		NQ-17	100	4.0	90						Minor chlorite		
	130										Minor chlorite		
											Minor chlorite		
		NQ-18	102	5.0	90								
	140												

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples

S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI

D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

1) - Washed through soil 0 - 11.5 ft. No soil samples taken.

2) - This is only a partial list of dip and strike data. Orientation discontinued at 42 ft.

x - Oriented core

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 2, 1971 Project 7286

PAGE 1 of 2 LOG OF BORING 12-15

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20321, E79179, Plant Site INCLINATION 11.5° BEARING S10°W DATE START/FINISH June 3, 1971 / June 5, 1971

CASING ID 3 in. CORE SIZE 2-1/8 - 1-7/8 in. TOTAL DEPTH 165.0 ft DRILLED BY American Drilling & Boring: A. Whitaker

GROUND EL (MSL) +17.9 ft DEPTH TO WATER DATE ft June 1, 1971 LOGGED BY Soil - K. Fish Rock - J. H. Rand

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min./ft	WATER CONTENT or RQD %	Graphic	PRESSURE TEST gpm psi	Computed k 10^{-1} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickenside	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
											CONTINUED FROM PREVIOUS PAGE		
-100	140										Minor chlorite	Fresh and hard. Drills well. Some minor smooth chlorite development on some joints or partings.	Metaquartzite (?). Fine-grained medium dark gray locally feldspathized. Local vague banding or foliation.
	150	Q-1	95	5.0	81						Minor chlorite		
		Q-2	104	5.0	76						Chlorite	Fresh and hard. Some thin chlorite on joints as shown.	Metaquartzite (?). Fine-grained, medium dark gray vaguely foliated.
	160	J-2	101	3.0	75								
	165							BOTTOM	OF BORING		Chlorite		

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
YANKEE ATOMIC ELECTRIC COMPANY
united engineers

Date: July 2, 1971 Project 7286

PAGE 2 of 2 LOG OF BORING E2-15

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20227, E79130, Plant Site | INCLINATION 11° | BEARING S78°E | DATE START/FINISH May 20, 1971 / May 29, 1971

CASING ID 4 in. | CORE SIZE 2-1/8 x 1-7/8 in. | TOTAL DEPTH 165.2 ft | DRILLED BY American Drilling & Boring Co.; A. Whitaker

GROUND EL (MSL) 16.8 ft | DEPTH TO WATER DATE 2.5 ft May 29, 1971 | LOGGED BY Soil - N. L. Poll, Rock - J. R. Rand

EL. MSL ft	Sample Depth ft	Sample Type and No.	Sample N or Rec.	RATE OF ADV. min/ft	WATER CONTENT %	Graphic	PRESSURE TEST gpm psi	PRESSURE TEST Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickenside	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
16.8													
		1)			2)								
+10	9.5	NX-1	12460						TOP OF ROCK		Cored fill and boulders.		
	10	NX-2	83	4.0	60				3)		Minor rusty; Slight wx; 1' core lost	Fresh and hard. Local slight surface wx effects. Rust on joints and partings.	Diorite. Mixed fine-grained medium dark gray and medium-coarse grained medium gray. Moderate saussuritization of feldspars. Fine-grained rock is magnetic.
0		NX-3	59	1.0	15				N36E, 28NW J		Minor rusty		
	20	NQ-4	88	1.0	12				N 5W, 85SW S; N18W, 58SW J		D; Minor rusty		
		NQ-5	100	3.0	41				N15W, 64SW J				
	30	NQ-6	96	3.0	0				N15W, 64SW J; N21W, 68SW J		Slight wx	Fresh and hard. Only minor surface powdery wx effects on joint and parting surfaces. Magnetic.	Welded breccia
-20		NQ-7	100	2.0	69				N 8W, 47SW J; N46W, 30NE F				Diorite. Fine grained, medium dark gray. Generally massive texture. Magnetic (apparently disseminated pyrrhotite).
	40	NQ-8	100	3.0	60				N11W, 83SW J				
		NQ-9	100	1.0	69				N57E, 38NW J; N11E, 69NW J		Vuggy	Fresh and hard. Only minor powdery wx effects on joints and partings. Magnetic. Appears to be finely disseminated. Pyrrhotite.	
	50	NQ-10	100	3.0	40				N41E, 61NW S; N70E, 16NW J				
		NQ-11	98	3.0	45				N16E, 81NW J; N15E, 78SE S				Diorite. Fine-grained, medium dark gray. Magnetic. Locally well foliated.
-40	60	NQ-12	100	3.0	80				N27E, 77NW J; N51E, 47NW S				
		NQ-13	100	1.0	45								
		NQ-14	100	4.0	83						Slippery-on foliation	Fresh and hard. Drills very well. Joints and partings show only minor surface wx effects. Magnetic.	Diorite (?). Fine-grained, medium dark gray. Somewhat resembles impure quartzite. Pyrrhotite disseminated.
	70	NQ-15	100	1.0	70								
-60		NQ-16	100	1.0	83				N31E, 28NW J; N20E, 73NW J; N19E, 37NW J				Medium-grained, greenish gray diorite. Moderate saussuritization.
	80	NQ-17	98	6.0	88				N26E, 38NW J				
		NQ-18	98	6.0	60				N22E, 31NW J; N55W, 82NE J			Fresh and hard. Drills well. Joints and partings are generally clean. Minor surface wx effects.	
	90	NQ-19	69	6.0	52						Chips		Diorite. Fine to medium fine-grained, medium dark gray. Magnetic feldspars moderately saussuritized.
-80									N20E, 33NW S		Mistaich		Bleached
	100	NQ-20	100	4.0	89				N53E, 68NW J; N12E, 28SE F		D		
		NQ-21	100	4.0	82				N 5W, 60SW S; N11W, 85SW S		Slight wx	Fresh and hard. Drills fairly well. Local slight surface wx effects on some joints.	
	110	NQ-22	100	4.0	75				N25W, 81SW S				
		NQ-23	98	1.0	59				N36E, 50NW J		Slight wx		Diorite. Fine to medium fine grained, medium dark gray. Locally quartzose. Magnetic.
-100									N23E, 32NW J		Minor vuggy		
	120	NQ-24	100	4.0	65				N29E, 72NW J				Bleach
		NQ-25	100	5.0	49				N25E, 35NW J; N35E, 22NW S		Slight wx	Fresh and hard. Slight wx effects on joints. Moderate wx 136.7 to 137.1'.	Diorite. Fine to medium fine grained, medium dark gray. Massive. Disseminated pyrrhotite. Magnetic.
		NQ-26	100	1.0	73				N30E, 21NW; N61E, 56SW S				
	130								N35W, 77SW S		Minor chlorite		
		NQ-27	100	3.0	57				N23W, 76SW S; N35E, 35NW S		Slight wx; Slight wx		
-120		NQ-28	100	2.0	0						Moderate wx; Severe wx; Pyrite; Vuggy	Fresh and hard, except soft, severe wx at 138-138.7'. Minor chlorite on some joints	Diorite. Fine grained medium dark gray. Generally massive. Locally foliated. Magnetic.
	140								N21E, 30NW S				
		NQ-29	100	3.0	50				N31E, 15NW S; N38E, 65NW S				
	165.2												

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample
U - Undisturbed samples
S - Shelby tube; N - Denison; F - Fixed piston; P - Pitcher; O - Osterberg; G - GEI
D - Drilling break
wx - Weathered, weathering
k - Coefficient of permeability
Groundwater

NOTES

1) - Washed through soil 0-5 ft. No sample taken.
2) - No clays sampled; therefore no water contents were determined.
3) - This is only a partial list of dip and strike data.
x - Oriented core

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: June 28, 1971 | Project 7286

PAGE 1 of 2 | LOG OF BORING 12-16

GOTTFRIED GEOTECHNICAL ENGINEERING

BORING LOCATION N26297, E79140; Plant Site INCLINATION 11° BEARING S78 E DATE START/FINISH May 20, 1971 / May 20, 1971

CASING ID 3 in. CORE SIZE 2-1/8 - 1-7/8 in. TOTAL DEPTH 165.2 ft DRILLED BY American Drilling & Boring Co. - A. Whitaker

GROUND EL (MSL) [illegible] ft DEPTH TO WATER DATE 2.5 ft May 29, 1971 LOGGED BY Soil [illegible], Poll [illegible], Rock [illegible]

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT or RQD %	Graphic	PRESSURE TEST PTW psi	Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
	145	NQ-30	100	1.0	32				N10E, 68NW S N82E, 77NW S		Minor chlorite D	Foliated
	150	NQ-31	100	1.0	82				N27W, 90NW S N37W, 56NE S			
-120									N50W, 53NE S		Pyrrhotite	Fresh and hard. Excellent drilling.
	160	NQ-32	100	4.0	92						D Bleached	Welded breccia
									N10W, 72SW S			Diorite. Medium-fine grained, medium dark gray. Massive. Magnetic.
	165.2	NQ-33	100	1.0	100							
								BOTTOM	OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
WX - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: June 25, 1971 Project 7286

PAGE 2 of 2 LOG OF BORING E2-16

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20117, E72224, Plant Site | INCLINATION 41° | BEARING N6.5E | DATE START/FINISH May 30, 1974 / June 5, 1974

CASING ID 3 in. | CORE SIZE 1-7/8 in. | TOTAL DEPTH 165.0 ft | DRILLED BY American Drilling & Boring; T. Canning

GROUND EL (MSL) 13.3 ft | DEPTH TO WATER DATE -2.2 ft June 5, 1974 | LOGGED BY Soil - K. Pell, Rock - J. R. Rand

EL. MSL ft	Depth ft	Sample Type and No.	N or Rec.	Rate of Adv. min/ft	Water Content % or RQD	Graphic (0–100)	Pressure Test gpm/psi	Computed k 10^{-4} cm/sec	Strike, Dip (F = Foliation, J = Joint, C = Contact, B = Bedding, S = Slickenside)	Core Breaks	Soil and Rock Descriptions (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
13.3												
	10	1)										
0												
	19.0								TOP OF ROCK			
	20	2)							3)			
		NQ-1	100	*	0						Core is closely broken by rusty and wx joints and partings.	Diorite. Medium grained quartz diorite.
		NQ-2	89	*	0							
		NQ-3	82	1.8	0				N37E, 34NW J			
	30	NQ-4	100	2.0	21					Slight wx on coatings	Fresh and hard. Joints or partings show slight wx effects. Does not core well. Close breaks.	Grades into well-foliated quartzite schist. Schist is locally feldspathic.
		NQ-5	95	2.0	96				N87W, 87SW J; N17W, 77NE J			
		NQ-6	89	1.8	0							Diorite
	40	NQ-7	100	2.1	73				N50W, 78NE S; N61E, 52NE J; N51E, 21NE J			
-20		NQ-8	100	1.9	28							
		NQ-9	100	2.0	61					Slight wx effects		Quartzitic schist. Fine to medium-fine grained medium gray. Well foliated.
	50	NQ-10	100	2.0	29							
		NQ-11	100	2.1	53				N55W, 86NE J; N68E, 80NE S			
		NQ-12	100	2.8	60							Welded breccia
	60	NQ-13	100	3.1	48				N71W, 89NE S	Chips	Fresh and hard. Conchoidal jointing shows polished surfaces (of other #2 holes).	Quartzite (?) to quartzitic schist. Fine-grained, medium gray. Well foliated.
		NQ-14	100	2.8	38					Chlorite; Chlorite polishing; Chlorite polishing; Chlorite polishing		
												Welded breccia
-40	70	NQ-15	97	2.0	33					Slight to mod. wx; Minor chlorite; Minor chlorite		Metaquartzite (?). Fine-grained, medium dark gray. Massive to vaguely banded rock. Somewhat feldspathic.
		NQ-16	100	2.0	21						Fresh and hard. Local chlorite and conchoidal polish on some joint surfaces.	
	80	NQ-17	100	2.1	60					Chlorite polish		
										Polish-chips		
		NQ-18	90	2.8	0							
	90	NQ-19	99	2.0	32					Slight wx	Closely-spaced jointing. Attitude not known.	Metaquartzite (?). Fine-grained, medium dark gray. Quite massive texture.
-60		NQ-20	100	2.0	22					Polished-slight wx; Polished; Polished	Generally fresh. Locally subject to slight to moderate wx.	
	100	NQ-21	100	2.1	49							
	110	NQ-22	100	2.1	64					Moderate wx	Fresh and hard. Drills well. Some very minor chlorite locally on some joints or partings.	Quartzite (?). Fine-grained, medium dark gray, vaguely banded or foliated. Locally feldspathic. "Metaquartzite"
		NQ-23	100	1.5	100							
	120	NQ-24	88	2.3	85							
-80												Metaquartzite (?). Fine-grained, medium dark gray. Vaguely banded.
	130	NQ-25	100	2.1	94					Chlorite; Chlorite-polish	Fresh and hard. Generally drills well. Polished conchoidal surfaces locally on joint	
	136											

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

1) - Washed through soil 0-19 ft. No samples taken.
2) - Roller bitted from 19 to 22 ft.
3) - This is only a partial list of dip and strike data. Orientation discontinued @ 65 ft.
* Not available.
x - Oriented core.

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date: July 3, 1974 | Project 7286

PAGE 1 of 2 | LOG OF BORING E2-17

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20117, E79221, Plant Site | INCLINATION 0° | BEARING N6.5E | DATE START FINISH May 30, 1971 / June 5, 1971

CASING ID 3 in. | CORE SIZE 1-7/8 in. | TOTAL DEPTH 165.0 ft | DRILLED BY American Drilling & Boring, T. Canning

GROUND EL (MSL) [illegible] ft | DEPTH TO WATER DATE [illegible] ft June 5, 1971 | LOGGED BY [illegible] Rock, J. H. Ryd

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT % or RQD %	Graphic	PRESSURE TEST gpm/psi	Computed k 10^{-4} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Slickenside	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
					100						CONTINUED FROM PREVIOUS PAGE	
-100	135	NQ-25	98	2.5	81						Minor chlorite	
	140											
	150	NQ-27	100	2.9	75						Slight wx Polish Polish Pyrite	Fresh and hard. Conchoidal and fused polished surfaces on some joints as shown.
	160	NQ-28	89	2.5	25							
-120	165	NQ-29	100	3.0	55							
									BOTTOM OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date July 3, 1971 | Project 7286

PAGE 2 of 2 | LOG OF BORING EB-17

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20270, E79272 (Plant Site) INCLINATION 30° BEARING N68.5W DATE START/FINISH May 22, 1971 / May 28, 1971

CASING ID 3 in. CORE SIZE 1-7/8 in. TOTAL DEPTH 168.0 ft DRILLED BY American Drilling & Boring Co. - T. Canning

GROUND EL (MSL) 14.0 ft DEPTH TO WATER DATE 2.0 m. ft May 23, 1971 LOGGED BY Soil - K. Polk, Rock - J. R. Rand

EL. MSL ft	Depth ft	Type and No.	N or Rec.	RATE OF ADV min/ft	WATER CONTENT %	Graphic	PRESSURE TEST psi	Computed k 10^{-1} cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)		(Type, texture, mineralogy, color, hardness, etc.)
+14.0									S - Slickensided				
		3)			2)								
	10												
	14.0								TOP OF ROCK				
		U											
		NQ-1	100	1.7	23						Slight wx	Fresh. Some slight wx on closely-spaced joints. Joints have minor chloride coatings.	Diorite (?) Fine-grained medium dark gray. Looks somewhat like quartzite. Magnetic.
	0 20	NQ-2	100	2.0	0								
		NQ-3	100	1.9	14				N28W, 50SW S		Slight wx Rock broken on close chloride coated joints. Minor to moderate chlorite on joints		
		NQ-4	100	2.1	10								
		NQ-5	100	2.2	0								
	30	NQ-6	100	1.5	0						Powdery wx	Fresh, intermittent slight to moderate wx on joint zones. Some minor bleaching. Minor rust. Magnetic.	Mixed fine quartzose diorite. Medium dark gray. May be metaquartzite (?) Rock is magnetic. Apparently disseminated pyrrhotite.
		NQ-7	100	3.8	17						Slight to moderate wx - stained		
		NQ-8	100	3.9	53				N53E, 25SE J				
		NQ-9	100	1.3	0								
	40	NQ-10	95	1.5	36						Slight wx Chips - moderate wx		
									N 5E, 73SE J N55E, 25SE J				
		NQ-11	100	1.1	39						Slight wx		
-20		NQ-12	100	2.7	67				N30W, 72NE J		Minor chlorite		
	50	NQ-13	100	2.3	67				N87E, 86SE S N25E, 81SE J N18W, 41SW S		Slight rusty	Fresh and hard. Not affected by wx. Joints and partings are not slickensided. Minor powdery wx effects only on joints.	(?)Quartzite. Fine-grained medium gray, locally feldspathized to medium coarse-grained, medium light gray quartz diorite(?)
		NQ-14	98	2.6	67				N 8W, 69SW S				Feldspathized
											D		
	60	NQ-15	100	3.5	93				N50W, 87NE S				Feldspar porphyroblasts
									N63W, 71SE S		Minor chlorite	Fresh and hard internally. Some local slight to moderate wx. No rust.	Diorite. Mixed fine-grained medium-dark gray diorite and medium to medium coarse grained diorite. Feldspars show saussuritization. Magnetic.
		NQ-16	100	2.9	62				N61E, 80SW J N45E, 85NW J				
	70	NQ-17	100	3.4	68								
-40		NQ-18	100	3.5	69				N55W, 61SE J N11W, 68NE J N20W, 66NE S		Slight wx Slight wx Chips-moderate wx Slight chlorite		
		NQ-19	92	3.5	71								
	80										Chips - 2.2' core lost - rock looks OK. No chlorite 2' core lost	Rock which was recovered is fresh and hard.	
		NQ-20	50	3.1	0								
		NQ-21	46	3.0	0						Chips-chlorite		Diorite. Fine-grained, medium dark gray. Locally medium-coarse grained, saussuritized. Magnetic.
		NQ-22	78	3.4	0						Chlorite Chips	Fresh intervalle. Cut by closely-spaced chloride coated joints. (See Boring E2-1.)	
	90	NQ-23	100	*	0								
		NQ-24	100	3.3	12								
		NQ-25	100	3.2	26								
-60		NQ-26	100	3.0	31						Chlorite-Slight-mod. wx		Diorite. Fine to medium fine grained medium dark gray. Magnetic. Slight greenish tinge.
	100	NQ-27	100	3.5	12								
		NQ-28	92	3.0	31						Chips-chlorite coated joints	Fresh and hard. Chloride-coated joints 102.6' to 105.6'. Joints and partings generally fresh.	
	110	NQ-29	100	3.0	72								
		NQ-30	100	3.2	80						Pyrite		
	120	NQ-31	100	3.7	68							Fresh and hard. Drills well. No chloride on joints. Joints and partings show only minor surface wx effects.	Diorite. Mixed fine-grained medium gray diorite and medium coarse grained medium gray quartz diorite. Magnetic disseminated pyrrhotite local 1-2" feldspar porphyroblasts.
-80		NQ-32	100	4.0	67				N37W, 44SW S N 1E, 76SE J				
		NQ-33	100	3.6	85				N11W, 67NE J N61E, 1NW S				
	130	NQ-34	100	5.9	90				N77W, 50NE S N54E, 68SE J				
		NQ-35	87	4.9	12							Fresh and hard. Most joints are clean. Local minor chlorite partings.	Diorite. Fine-grained, medium dark gray. Massive. Magnetic. Disseminated pyrrhotite.
	140	NQ-36	100	6.0	58				N32W, 50NE S N19E, 61SE S N15E, 25NW		Vertical joint		
		NQ-37	100	1.5	67						Slight wx		Feldspathized
	154												

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

NOTES

1) - Roller bitted from 14.0 ft to 15.5 ft.
2) - No clays sampled; therefore no water contents were determined.
3) - Washed through soil 0-14 ft. No samples taken.

* - Not available.
x - Oriented core

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

united engineers

Date July 1, 1971 Project 7886

PAGE 1 of 2 LOG OF BORING E2-2

GEOTECHNICAL ENGINEERS INC

BORING LOCATION N20270, E72272 ; Plant Site INCLINATION 39 BEARING N68.5W DATE START/FINISH May 22, 1971 / May 28, 1971

CASING ID 3 in. CORE SIZE 1-7/8 in. TOTAL DEPTH 168.0 ft DRILLED BY American Drilling & Boring Co., J. Canning

GROUND EL (MSL) 11.2 ft DEPTH TO WATER DATE 29 in. ft May 21, 1971 LOGGED BY Soil, K. Poe, R. J. B. Rand

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT or RQD %	Graphic	PRESSURE TEST gpm/psi	Computed 10^{-1} k cm/sec	STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
									CONTINUED FROM PREVIOUS PAGE			
-100	118											
	150	NQ-38	100	5	87				30E, 28NW J 13W, 66NE J 19W, 86NE S 52E, 66SE S		Minor chlorite Minor chlorite Pyrite Chlorite	
		NQ-39	100	10	25							
	160	NQ-40	97	8	80				35E, 72SE S 36W, 53SW S		Pyrite	Fresh and hard. Some chlorite and pyrite on joints.
		NQ-41	99	0	100				50E, 67SE J 77W, 52SW J		Pyrite Pyrite	Diorite. Fine-grained, medium dark gray. Massive. Magnetic.
	168								BOTTOM OF BORING			

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
RQD - Length of sound core 4 in. and longer/length cored, %
S - Split spoon sample ▽ Groundwater
U - Undisturbed samples
S - Shelby tube N - Denison
F - Fixed piston P - Pitcher
O - Osterberg G - GEI
D - Drilling break k - Coefficient of permeability
wx - Weathered, weathering

SEABROOK STATION
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
YANKEE ATOMIC ELECTRIC COMPANY
united engineers

Date Jul. 1, 1971 Project 7286

PAGE 2 of 2 LOG OF BORING 1-18

GEOTECHNICAL ENGINEERS INC

APPENDIX I I

Project Seabrook
Project No. 7286

Boring No. E2-11

Ground Elevation (MSL) = + 25.0

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
66.1	N21E	43MW	X				
70.2	N15E	64NW	X				
74.0	N13E	53NW	X				
75.9	N67W	45NE	X				
76.0	N12W	50SW			X		
76.1	N80w	70NE			X		
77.0	N30W	69SW			X		
78.5	N86E	67NW	X				
81.1	N15W	62NW			X		
a2.9	N39E	15NW			X		
83.0	N45E	84NW			X		
84.0	N17W	49sw			X		
85.1	N50E	7SE	X			X	Diabase over Diorite
87.0	N14W	4osw	X				
87.4	N65E	80NW	X				
88.5	N65W	55NE	X				
99.3	N45E	72SE				X	Diorite over Diabase
99.9	N30E	75NW			X		
100.6	N55E	76NW				X	Diabase over Diorite
103.1	N50W	25SW	X				
105.5	N52E	68NW	X				
108.1	N35E	45NW	X				
108.9	N85E	86NW		X			
110.9	N38E	48NW	X				
110.9	N10E	85SE	X				
111.0	N50E	81NW	X				
111.1	N50E	81NW	X				
111.2	N50E	81NW	X				
112.0	N27W	72NE	X				
113.1	N65E	90NW	X				
113.4	N50E	53NW	X				
113.5	N15W	55NE	X				
114.0	N65W	55SW		X			
121.5	N75E	90NW		X			
123.5	N75E	89NW		X			
124.8	N75E	82NW					
129.3	N34E	19NW	X				
129.8	N29E	40NW	X				
129.9	N82E	37NW	X				
131.1	N33E	36NW	X				
133.1	N15E	50NW	X				
133.1	N15E	50NW					
133.2	N30W	75NE					
133.5	N25E	37NW	X				
134.5	N40E	41NW	X				
135.2	N43E	80NW	X				

Project Seabrook
Project No. 7286

Boring No. E2-11

Ground Elevation (MSL) = + 25.0

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
137.5	N74W	61NE			X		
142.8	N44E	40NW	X				
143.3	N25E	40NW	X				
143.6	N47E	46NW	X				
143.8	N30E	45NW	X				
144.2	N25E	36NW	X				
144.8	N30E	45NW	X				
144.9	N20E	45NW	X				
145.4	N70W	80NE		X			
146.0	N31E	22NW	X				
147.4	N27E	32NW	X				
148.5	N70E	90NW		X			
149.6	N70W	71NE		X			
152.0	N26E	28NW	X				
154.4	N85E	70NW		X			
155.3	N63W	25NE		X			
158.2	N35E	41NW	X				
159.0	N18W	70NE	X				
161.0	N85W	16NE	X				
162.0	N30E	75NW	X				
163.1	N25E	45NW	X				
163.9	N70W	15NE	X				
164.8	N50W	43NE					

Boring No. E2-12

Project Seabrook
Project No. 7286

Ground Elevation (MSL) = t 21.5

Feature Depth	Strike	Dip	Type of Feature: Joint'	Foliation	Slickensided Surface	Contact	Remarks
19.2	N18E	43NW	x				
19.8	N17E	46NW	X				
20.2	Horizontal		X				
21.2	North	21w	X				
21.9	N35E	25SE		X			
23.0	N23W	39SW	X				
24.0	N17E	47NW	X				
24.4	N50E	61SE	X				
25.1	Horizontal		X				
25.8	N38W	73NE	X				
27.1	N73W	15NE	X				
29.0	N41W	67NE	X				
35.1	N23E	47NW	X				
40.0	N73W	82SW		X			
44.3	N63W	37SW	X				
48.9	N12E	67NW	X				
50.4	N63E	45NW	X				
53.3	N40E	46NW	X				
57.3	N38E	52NW	X				
59.4	N34E	43NW	X				
60.0	N8W	79NE	X				
61.5	N51E	37NW	X				
75.0	N26W	86NE	X				
77.0	N75W	55SW	X				
77.5	N9E	48NW	X				
77.6	N9E	48NW	X				
82.0	N19W	81 SW	X				
82.4	N41E	40NW	X				
83.0	N81E	55SE	X				
85.7	N26E	65NW	X				
89.0	N35E	45NW				X	Diabase Dikelet
89.1	N35E	45NW	X			X	Diabase Dikelet
103.9	N28W	43sw	X				
108.0	N26E	37NW	X				
111.9	N65W	67SW	X				
114.3	N36E	45NW	x				
119.5	N35E	44NW	X				
119.6	N35E	44NW	X				
119.7	N60E	22NW	X				
132.1	N15E	12NW	X				
133.0	N40E	43NW	X				
136.0	N45E	12NE	X				
143.1	N35E	42NW	X				
143.9	N55E	50SE		X			
144.9	N75E	73SE		X			
153.7	N25E	37NW	X				
156.8	N25E	26NW	X				

Project Seabrook
Project No. 7286

Boring No. E2-13

Ground Elevation (MSL) ▫ + 30.5

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
23.6	N83E	28NW	X				
25.3	N40E	58SE	X				
28.7	N15E	75SE	X				
34.0	Horizontal		X				
34.5	N25E	12SE	X				
35.1	N30E	83SE	X				
35.7	N35E	22sw	X				
38.3	N32E	67SE	X				
39.2	N5W	31NE	X				
44.2	N65E	27NW	X				
49.5	N25E	67SE	X				
50.8	N34E	30SE	X				
50.9	N29E	51SE	X				
51.8	N55E	85SE					
52.5	N55E	11SE	X				
55.9	N28E	25NW	X				
62.8	N28E	64SE	X				
63.0	N32E	60SE	X				
64.3	N35E	66SE	X				
67.0	N79W	39sw	X				
70.5	N35W	63NE	X				
70.8	N40W	54NE	X				
76.8	N55E	7NW	X				
77.0	N50E	4NW	x				
77.3	N52E	22NW	X				
78.7	N53E	84SE	X				
81.2	N46E	86NW	X				
82.0	N67E	75SE	X				
83.8	N80E	30SE	X				
89.5	N83E	52SE	X				
90.3	East	58S	X				
98.8	N45E	21NW	X				
99.3	N51E	65SE	X				
100.6	N46E	58SE	X				
101.7	N23E	39sw	x				
102.8	N45E	87NW	X				
105.0	N15W	57NE.	X				
108.4	N21E	88SE	x				
110.4	N35E	88SE	X				
112.5	North	36W	X				
115.3	N19E	86SE				X	Diabase over Diorite
117.3	N67W	83SW	X				
117.8	Horizontal		X				
118.2	N40E	N40E				X	Diorite over Diabase
118.3	N45W	N40E				X	Diabase over Diorite
120.1	N30E	N45W	X				

Project Seabrook
Project No. 7286

Boring No. E2-13

Ground Elevation (MSL) = + 30.5

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
121.8	N30E	38SE	X				
123.0	N70E	23NW		X			
123.7	N80W	37NE	X				
125.0	N50W	30NE	X				
125.4	N44E	57SE	X				
128.0	N16W	44NE	X				
129.3	N68W	54NE	X				
131.3	N56E	83NW				X	Diorite over Diabase
131.6	N15W	19%	X				
131.7	N45E	76SE	X			X	Diabase over Diorite
132.8	N60E	44SE	x				
134.1	N45E	35SE	X				
135.0	N42E	37SE	X				
13G.3	East	8NE	X				
136.8	N38E	73SE	X				
138.0	N50E	18NW	X				
139.3	N35E	43SE	X				
140.5	N31E	42SE	X				
142.4	N28E	30SE	X				
142.5	N40E	46NW	X				
145.0	N22E	45SE	X				
145.2	N22E	45SE	X				
149.7	N46E	63SE	X				
150.0	N34E	34SE	X				
150.5	N21E	73SE	X				
151.3	N56E	79NW	X				
151.7	N26E	48SE	X				
153.0	N30E	81SE	X				
154.7	N26E	78SE	X				
154.9	N38E	46SE	X				
157.4	N89E	86SE	X				
158.0	N75W	72SW	X				
159.9	N49E	66SE	X				
162.3	N55E	63SE	X				
163.7	N60E	70SE	X				
165.5	N67E	76SE	X				

Project Seabrook
Project NO. 7286

Boring No. E2-14

Ground Elevation (MSL) = + 29.9

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
11.8	N65E	43NW	X				
12.0	N65W	77SW	X				
13.6	N83W	88NE	X				
13.8	N70W	42NE	X				
13.9	N70W	42NE	X				
14.5	N44E	69SE	X				
15.8	N37E	67SE	x				
16.5	N73W	72NE	X				
28.9	N28E	67SE	X				
29.0	N85E	26NW	X				
42.2	N22E	53SE	X				
43.2	N87E	37NW	X				
44.0	N60W	69NE	X				
46.0	N43E	40NW	X				
50.8	N3W	67NE	X				
51.8	N57W	71NE	X				
53.2	N57W	41NE	X				
58.9	N30E	35NW	X				
62.5	N65W	14NE	X				
63.8	N71W	52NE	X				
65.3	N50E	42St	X				
65.4	N75E	38SE	X				
66.7	N42W	50NE	X				
67.0	N30E	30NW	X				
70.0	N45E	85NW				X	Diorite over Diabas
70.8	N30W	21NE	X				
72.9	N5E	49SE	X				
73.5	N43W	63NE	X				
74.6	N60E	55SE	X				
78.2	East	77s	X				
80.0	N15W	42SW	X				
80.2	N70E	12NW	X				
80.4	N49E	33NW	X				
iM.2	N46W	87NE	X				
85.0	N34W	82SW	X				
87.5	N6E	64SE	X				
87.8	N48W	14NE	X				
88.2	N3W	89NE	X				
89.3	N11E	77SE	X				
89.6	N65E	86SE	X				
94.3	N10E	68SE					
94.6	N59E	59SE					
99.3	N78E	40SE	X				

Project Seabrook
Project No. 7286

Boring No. E2-14

Ground Elevation (MSL) = + 29.9

Type of Feature

Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
101.3	N75E	18NW	X				
103.8	N73E	46NW	X				
104.0	N77E	46NW	X				
105.0	N26E	38NW	X				
107.5	N50E	62SE	X				
108.0	N46E	63SE	X				
108.3	N21E	62SE	X				
109.8	N20W	61NE	X				
110.1	N45E	81SE	X				
110.4	N45E	81SE	X				
112.3	N22W	5SW	X				
112.4	N65E	38NW	X				
129.3	N40E	22NW		X			
129.5	N60E	33NW		X			
131.5	N55E	69SE	X				
131.9	N84W	75ilE	X				
132.2	N50W	64NE	X				
133.5	N63E	72SE	X				
141.9	N71W	25NE	X				
142.5	N73W	20NE	X				
146.8	N63W	60NE	X				
148.9	N49E	62SE	X				
149.2	N75W	53NE	X				
150.0	N34E	70SE	X				
153.2	N61W	54NE	X				
154.6	N70W	39NE	X				
155.9	N65E	48NW					
158.0	N55E	29NE	X				
164.8	N25W	20SW		X			

Boring No. E2-15

Project Seabrook
Project No. 7286

Ground Elevation (MSL) = + 13.9

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickensided Surface	Contact	Remarks
17.0	N85W	80NE			X		
17.6	N85E	89NW		X			
18.G	N73W	70NE		X			
18.7	N45E	36NW	X				
19.4	N74W	35NE	X				
20.9	N69E	65NW			X		
21.7	N58E	49NW			X		
16.5	N82E	88NW			X		
24.9	Horizontal		X				
26.G	N75E	82NW		X			
27.G	N69E	83NW		X			
28.1	N77W	78NE			X		
30.0	N50W	78NE			X		
29.3	N63E	86SE			X		
31.0	N88E	82NW			X		
31.5	N86E	80NW			X		
32.0	N49W	73NE			X		
35.5	N80E	3SE		X			
37.5	N83E	39NW			X		
40.3	N50W	85NE			X		
41.5	N55W	86NE			X		
39.7	N60W	60NE			X		

Boring No. E2-16

Project Seabro
Project No. 7286

Ground Elevation (MSL) = + 16.8

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickensided Surface	Contact	Remarks
17.3	N36E	28NW	X				
18.3	N10W	56SW	X				
20.0	N5W	85SW			X		
20.6	N20W	70SW	X				
23.0	N18W	58SW	X				
23.5	N25E	15NW	X				
23.9	N25W	50SW	X				
24.3	N25W	53SW	X				
25.3	N45W	64SW	X				
25.9	N5E	86SE	X				
29.9	N15W	64SW	X				
30.0	N15W	64SW	X				
32.0	N21W	68SW	X				
33.9	N10W	68SW	X				
34.3	N8W	47SW	X				
35.0	N46W	30NE		X			
41.2	N11W	83SW	X				
41.7	N10W	55SW	X				
43.7	N57E	38NW	X				
44.5	N50E	30NW			X		
44.6	N52W	61NE			X		
45.1	N43E	69NW	X				
45.6	N19E	71NW	X				
46.1	N25E	89NW	X				
47.5	N44E	61NW			X		
48.0	N39W	67SW	X				
49.0	N70E	46NW	X				
50.0	N84W	68NE			X		
50.4	N42E	77NW	X				
52.4	N16E	84NW	X				
52.5	N16E	84NW	X				
53.0	Horizontal		X				
54.6	N15E	78SE			X		
56.9	N21E	69NW	X				
57.7	N27E	77NW	X				
58.2	N51E	47NW			X		
58.3	N86W	59NE			X		
58.13	N7E	62NW	X				
75.4	N31E	28NW	X				
77.4	N20E	73NW	X				
78.4	N43E	40NW	X				
79.7	N19E	37NW	X				
81.5	North	26W			X		
81.6	N26E	27NW			X		
82.3	N26E	38NW	X				
82.7	N15E	28NW	X				

Boring No. E2-16

Project Seabrook
Project No. 7286

Ground Elevation (MSL) = + 16.8

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickensided Surface	Contact	Remarks
83.8	N15E	25NW	X				
86.8	N22E	34NW	X				
87.5	N5E	76SE	X				
88.0	N55W	82NE	X				
89.0	N12W	74SW			X		
96.5	N20E	33NW			X		Trend=N35W Plunge=27
100.8	N53E	68NW	X				
102.5	N12E	28SE		X			
104.9	N5W	60SW			X		Trend=N71W Plunge=54
106.2	N41W	85SW			X		Trend=S34W Plunge=87
107.0	N50E	5NW			X		Trend=N66W Plunge=19
107.5	N30W	11NE		X			
101.9	N25W	81SW			X		Trend=S16E Plunge=18
109.1	N21W	45SW	X				
109.3	N41E	25NW	X				
110.9	N5W	84SW			X		Trend=S20W Plunge=70
111.1	Horizontal		X				
112.1	N36E	50NW			X		Trend=N71W Plunge=45
112.3	N15E	15NW			x		Trend=S60E Plunge=16
113.0	N5E	85NW			X		Trend=S55W Plunge=70
115.3	N23E	32NW	X				
115.4	N15E	20NW	X				
115.9	N20E	30NW	X				
116.9	N26E	32NW	X				
118.9	N29E	72NW	X				
121.3	N25E	35NW	X				
121.11	N70E	17SE			X		
121.8	N70W	74NE		X			
122.0	N30E	30NW	X				
123.1	N35E	22NW			X		Trend=N35W Plunge=22
124.3	N15W	81SW			X		
125.G	N30E	21NW	X				
126.7	N28W	84SW	X				
127.6	N61E	56SW			X		Trend=N60W Plunge=33
128.8	N48W	76 SW		X			
129.3	N35W	77SW			X		
130.1	N40W	24NE			X		
131.0	N15W	14NE		X			
131.2	N64W	51NE			X		
132.4	N23W	7G SW			X		
133.0	N5W	74SW			X		
133.0	N70E	30NW	X				
133.3	N40E	83SE	X				
133.5	N10W	11NE			X		
134.0	N35E	35NW			X		
134.3	N45W	45NE	X				

Boring No. E2-16

Ground Elevation (MSL) = + 16.8

Project Seabroo

Project No. 7286

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickcnsided Surface	Contact	Remarks
140.5	N21E	30NW			X		
142.2	N53E	45NW			X		Trend=N35E Plunge=10
142.3	N41E	10NW			X		
143.1	N50E	65NW			X		
143.2	N71E	69NW			X		Trend=N40E Plunge=33
143.9	N81E	55NW			X		Trend=N35E Plunge=35
144.1	N72E	65NW			X		
144.1	N17E	54NW	X				
146.1	N59E	80NW			X		Trend= N5W Plunge=73
146.5	N37E	63NW			X		Trend=N20E Plunge=17
147.2	N40E	68NW			X		
147.5	N8W	48SW			X		
140.1	N59E	80NW			X		
148.2	N68E	62NW			X		
148.3	N82E	77NW			X		
149.5	N53E	65NW			X		
151.2	N27W	90SW			X		
151.8	Horizontal		X				
152.0	N81W	56NE			X		
154.0	N35E	29NW			X		
155.7	N59W	53NE			X		
162.0	N10W	72 SW			X		

Project Seabrook
Project No. 7286

Boring No. E2-17

Ground Elevation (MSL) = t 13.3

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickensided Surface	Contact	Remarks
28.0	N37E	34NW	X				
29.5	N55E	59sc	X				
33.3	N87W	87SW		X			
34.3	N47W	23NE			X		
35.9	N17W	77NE	X				
42.G	N50W	78NE			X		
43.4	N49E	23NE			X		
44.1	N61E	52NE	X				
45.0	N24W	10NE			X		
45.1	N49E	60NE			X		
45.3	N73E	84NE			X		
45.9	N51E	24NE	X				
54.7	N55W	80NE		X			
55.5	N78W	86NE			X		
56.0	N68E	80NE			X		
5G.2	N76W	86NE			X		
5G.3	N44E	64NE			X		
56.4	N44E	64NE			X		
60.5	N71W	89NE			X		

Boring No. E2-18

Project Seabrook
Project No. 7286

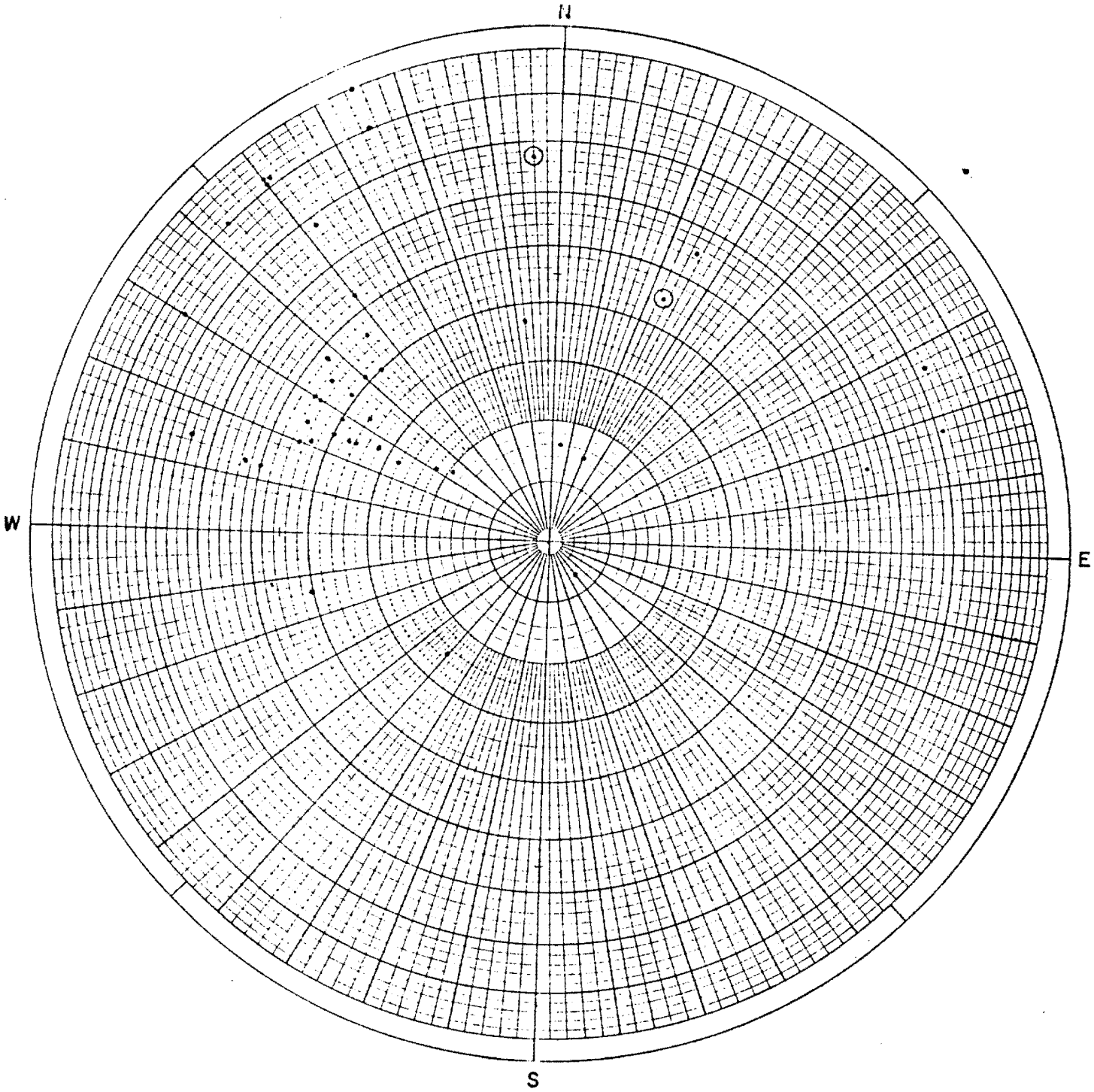
Ground Elevation (MSL) = + 14.9

Feature Depth	Strike	Dip	Type of Feature: Joint	Foliation	Slickensided Surface	Contact	Remarks
22.8	N28W	50SW			X		
36.0	N53E	25SE	X				
42.0	N5E	73SE	X				
42.G	N42E	64SE	X				
43.1	N55E	25SE	X				
44.0	N8W	45SW	X				
46.G	N30W	72NE	X				
57.0	N45W	75SW			X		
47.5	N40W	81SW			X		
49.1	N87E	86SE			X		
50.2	N87E	73SE			X		
50.3	N60W	36SW	X				
51.3	N25E	81SE	X				
53.0	N48W	44SW			X		
54.0	N8W	34SW			X		
54.1	N76W	56SW	X				
54.2	N73W	73SW			X		
54.3	N21E	70SE			X		
56.0	N8W	69SW			X		
57.11	North	East	X				
61.7	N50W	87NE			X		
64.G	N63W	74NE			X		
66.6	N64E	80SW	X				
67.3	N5W	52SW			X		Trend=N79W Plunge=18
67.9	N55E	89SE	X				
68.0	N45E	85NW	X				
68.3	N45E	85NW	X				
68.5	N23E	45NW	X				
72.2	N55W	61NE	X				
73.6	N45E	62SE	X				
74.8	N14W	68NE	X				
75.0	N42E	71SE	X				
76.0	N20W	66NE			X		
123.8	N37W	44SW			X		
125.0	N4E	76SE	X				
126.0	N21W	63NE			X		Trend=S62E Plunge=52
176.1	N6E	64SE			X		
126.3	N17W	64NE			X		
128.0	N14W	67NE	X				
129.6	N70E	53NW	X				
131.1	N64E	1NW			X		
132.5	N15W	68NE	X				
135.G	N77W	50NE			X		
137.1	N54E	68SE			X		
137.4	N42W	62NE			X		
143.9	N32W	50NE			X		Trend=S25E Plunge=38

APPENDIX I I I

APPENDIX III

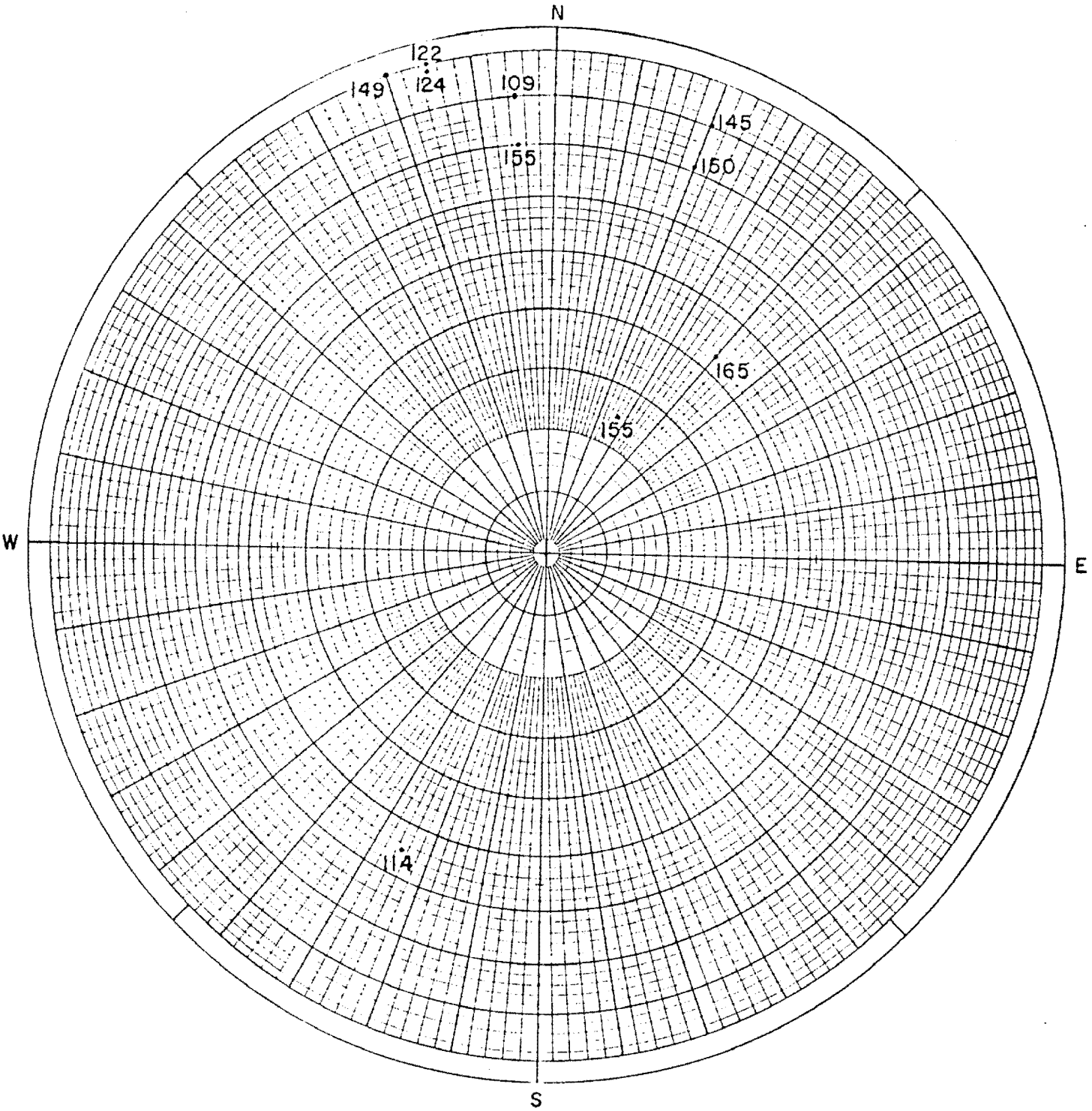
Polar Equal Area Stereo Net Projections



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-11
Ground Elevation (MSL) +25.5 ft
Joints in:

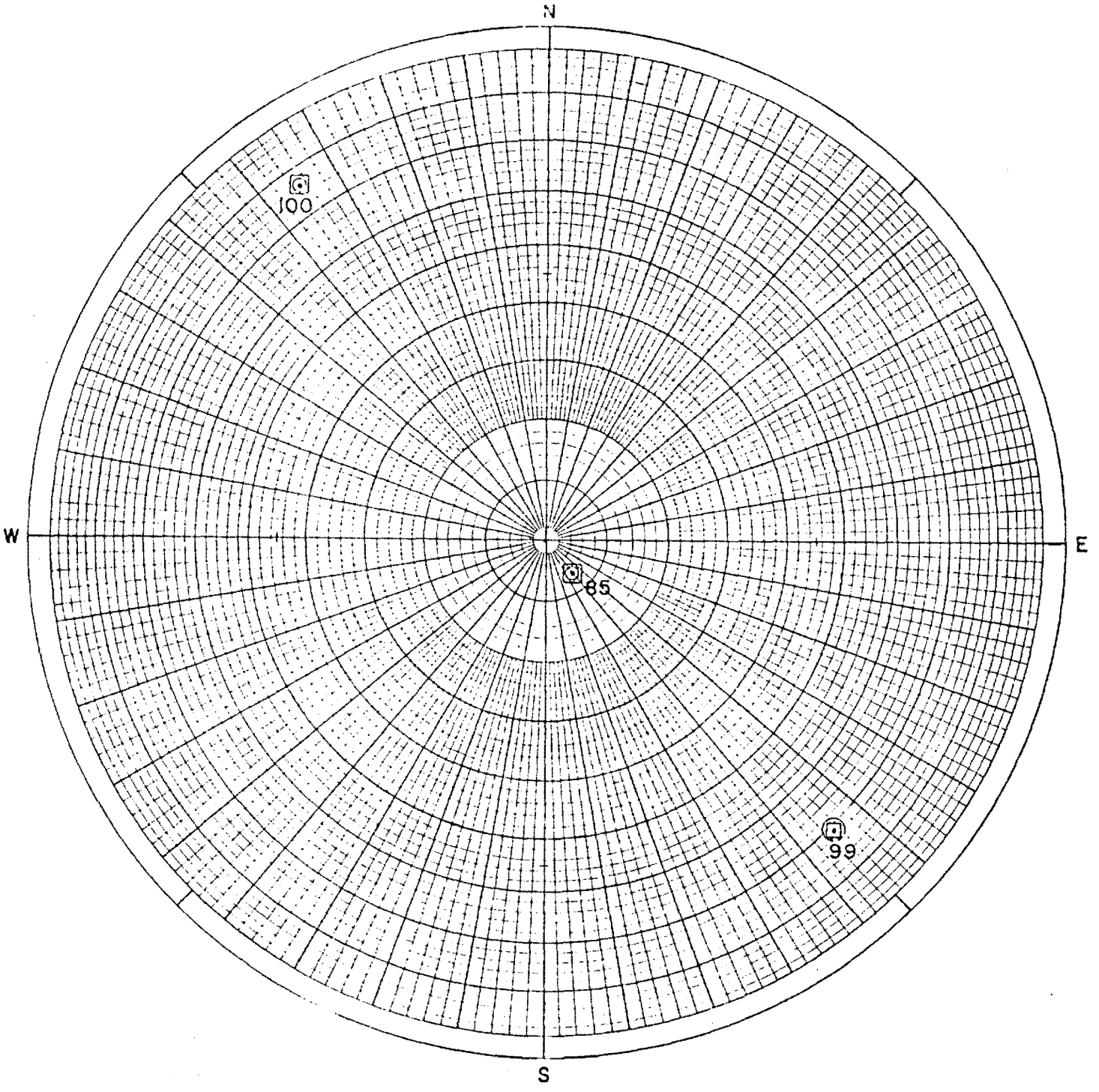
. Diorite
⊙ Diabase



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2 -11
Ground Elevation (MSL) +25.0 ft
Foliation in:

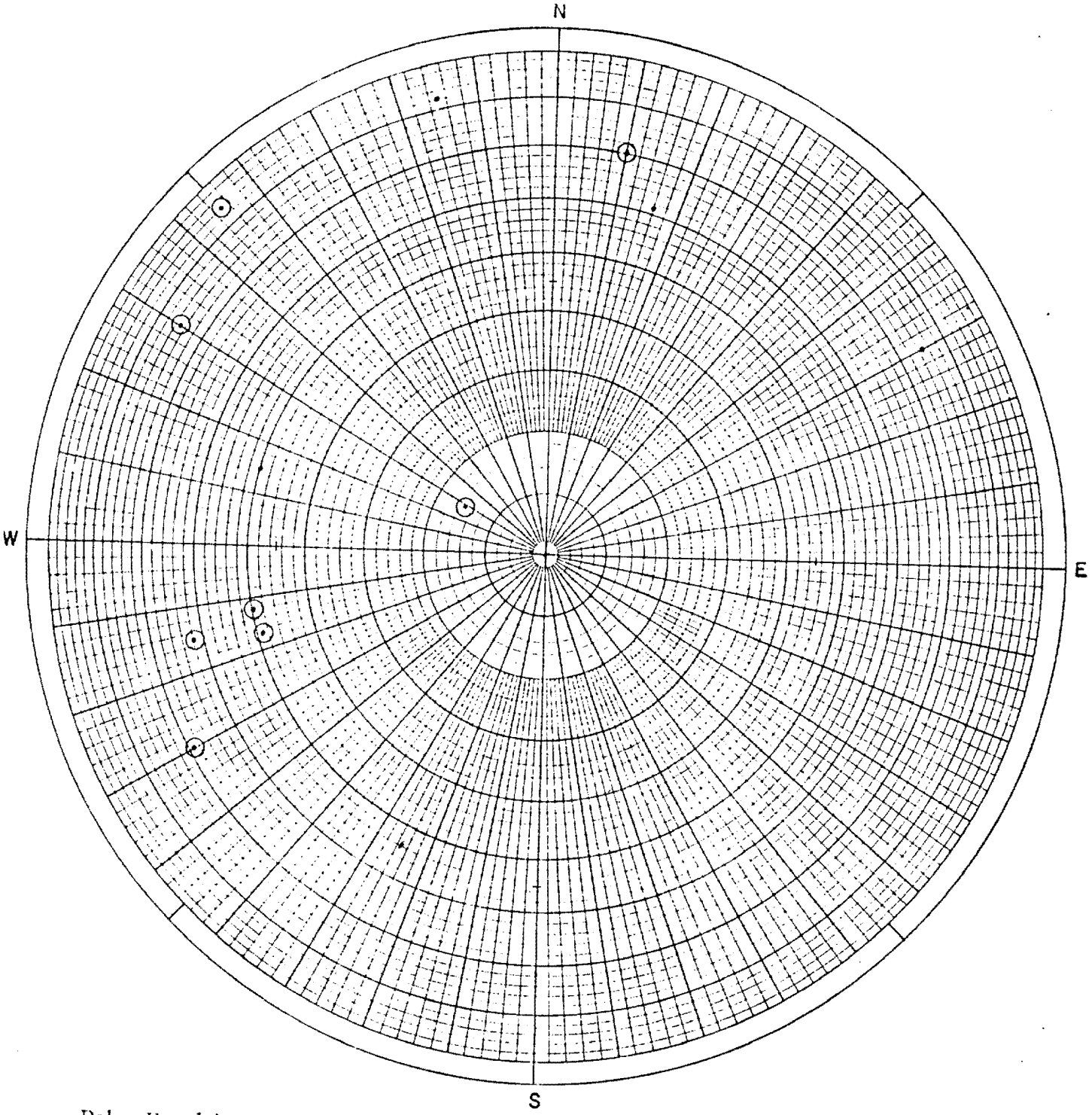
• Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-11
Ground Elevation (MSL) +25.0 ft
Contacts and Depth :

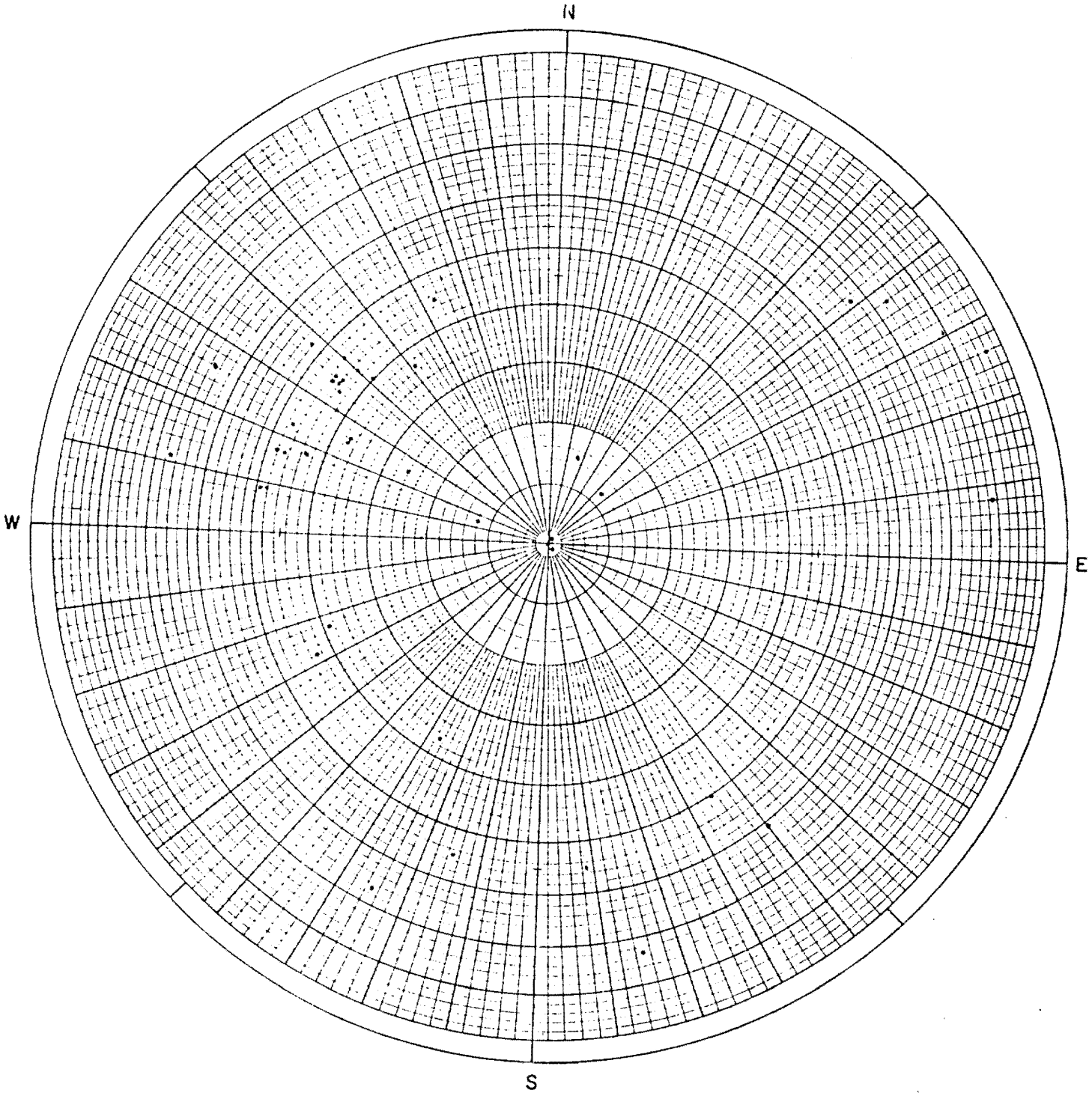
Diorite over Diabase
Diabase over Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-11
Ground Elevation (MSL) i-25. 0 ft
Slickensided Surfaces in:

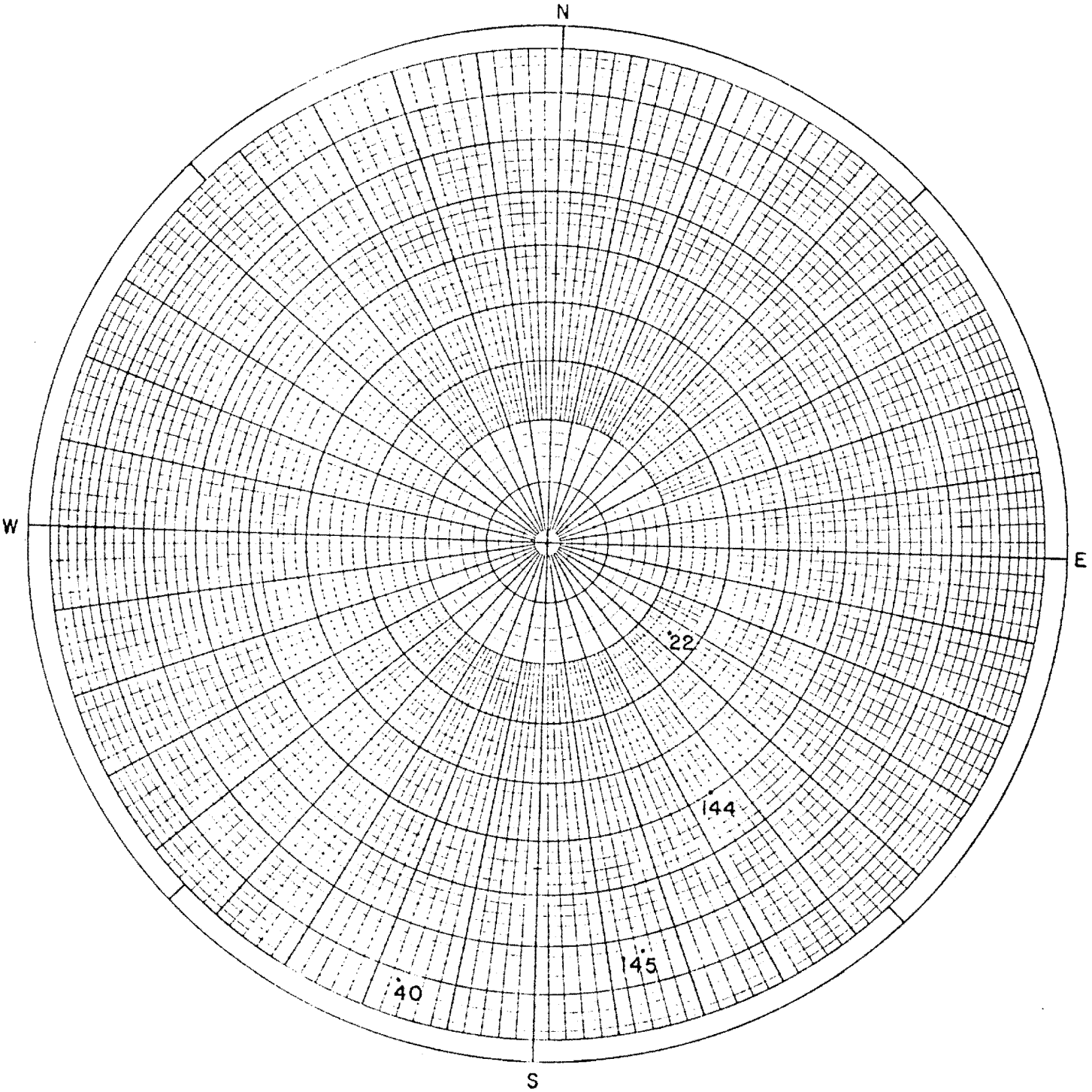
. Dioritc
⊙ Diabase



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-12
Ground Elevation (MSL) +21.5 ft
Joints in

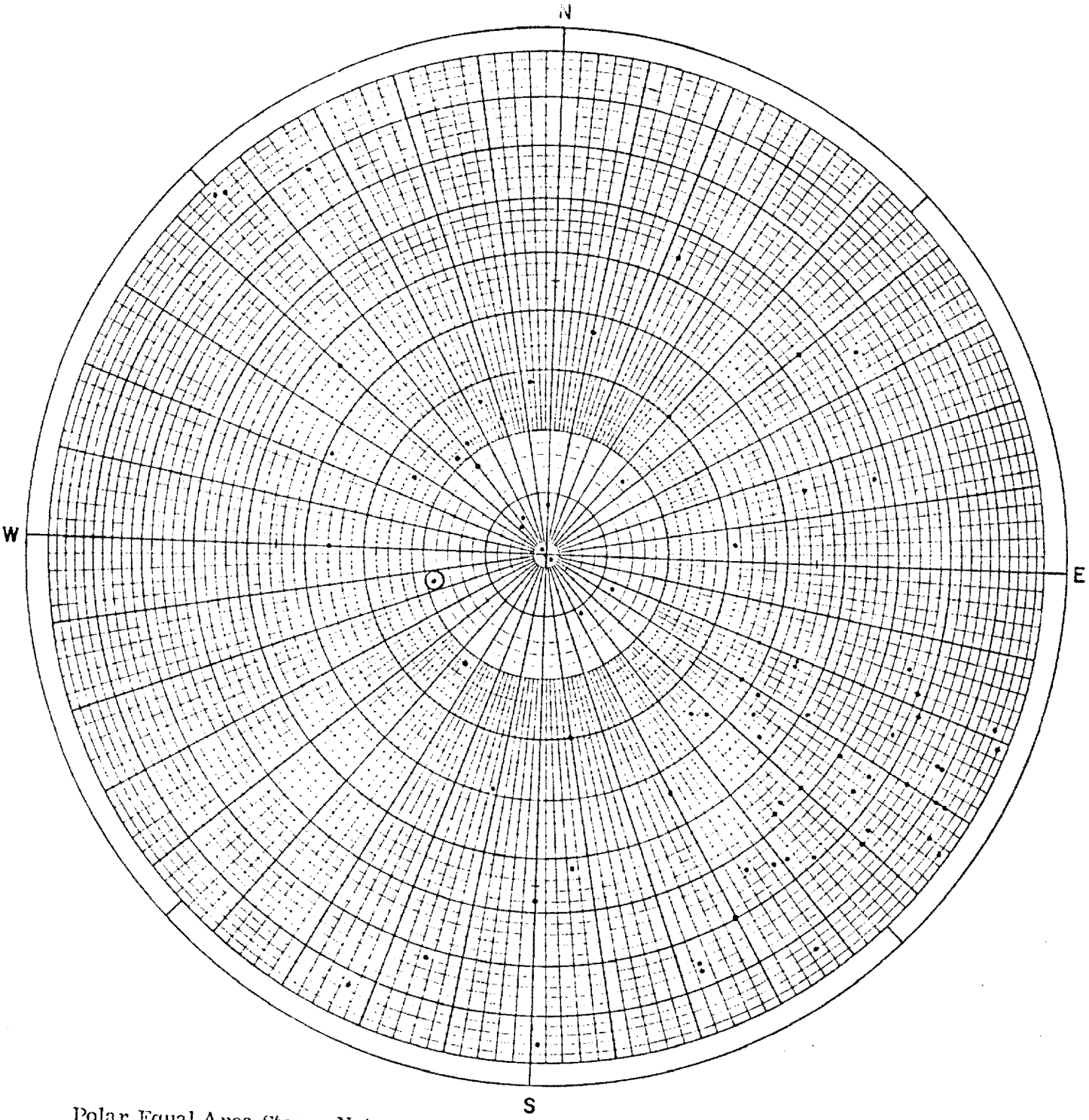
• Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-12
Ground Elevation (MSL) +21.5
Foliation and Depth in:

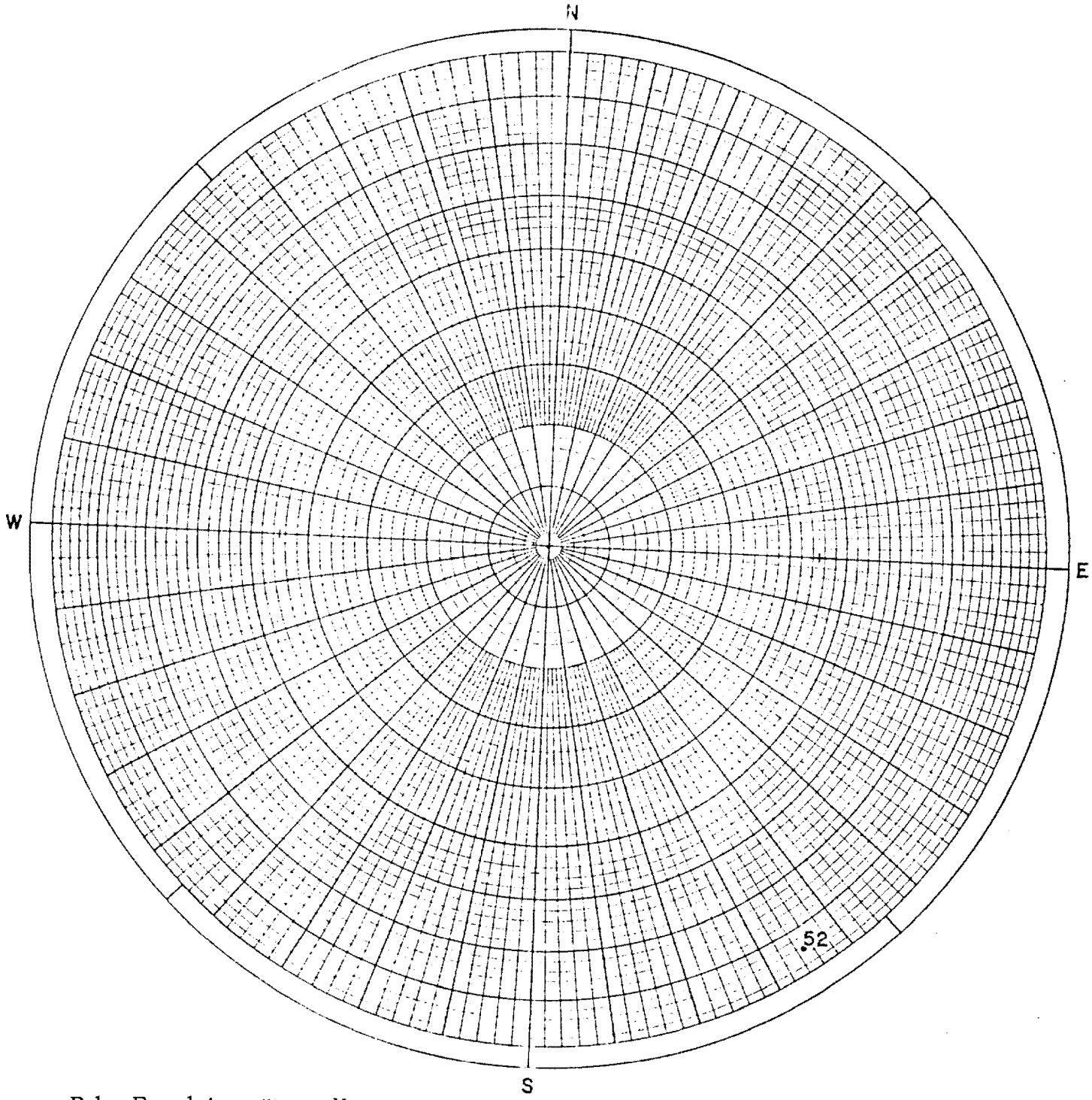
- Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-13
Ground Elevation (MS L) +30.5 ft
Joints in:

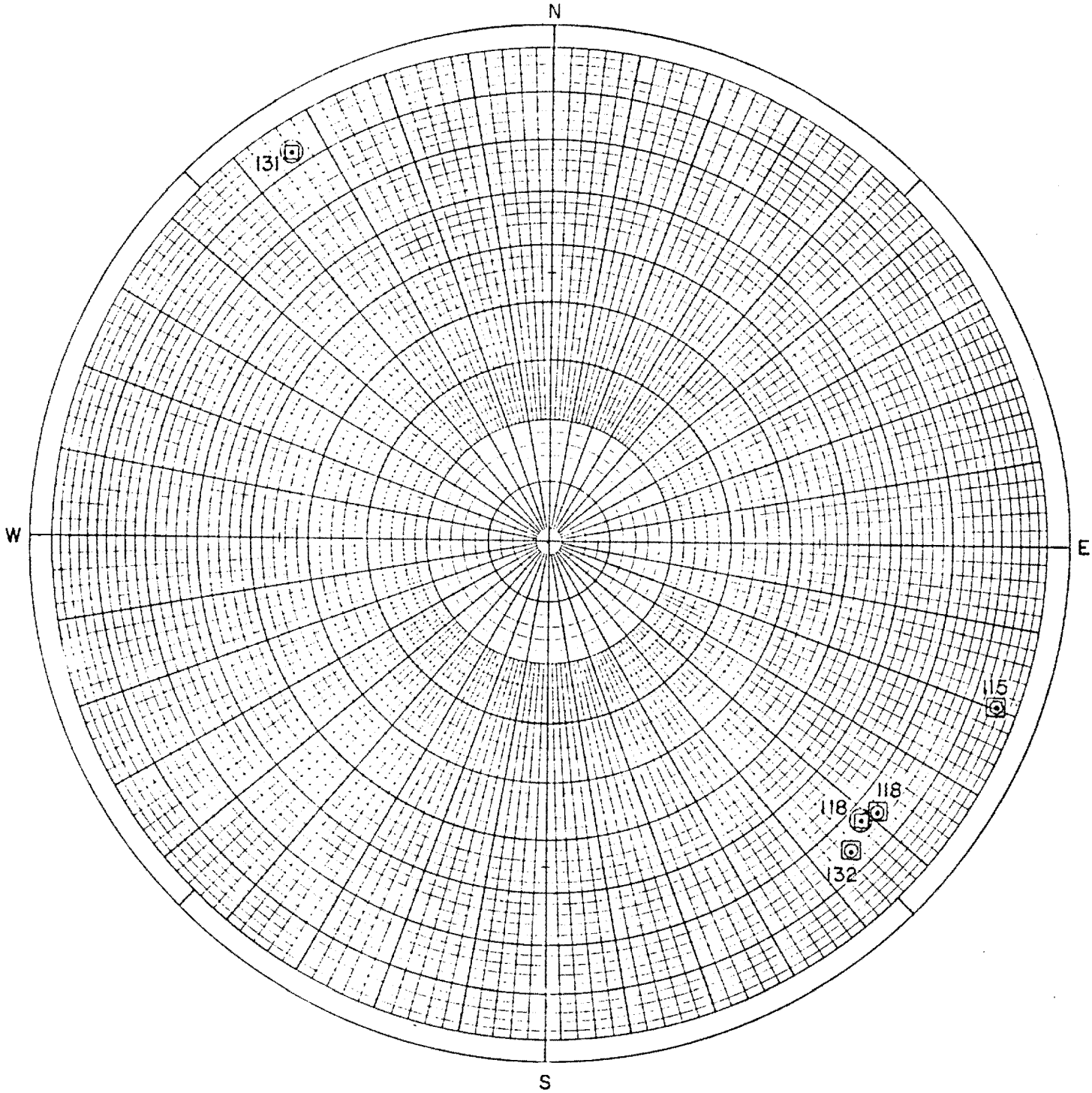
. Diorite
⊙ Diabase



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-13
Ground Elevation (MSL) +30.5 ft
Foliation and Depth in:

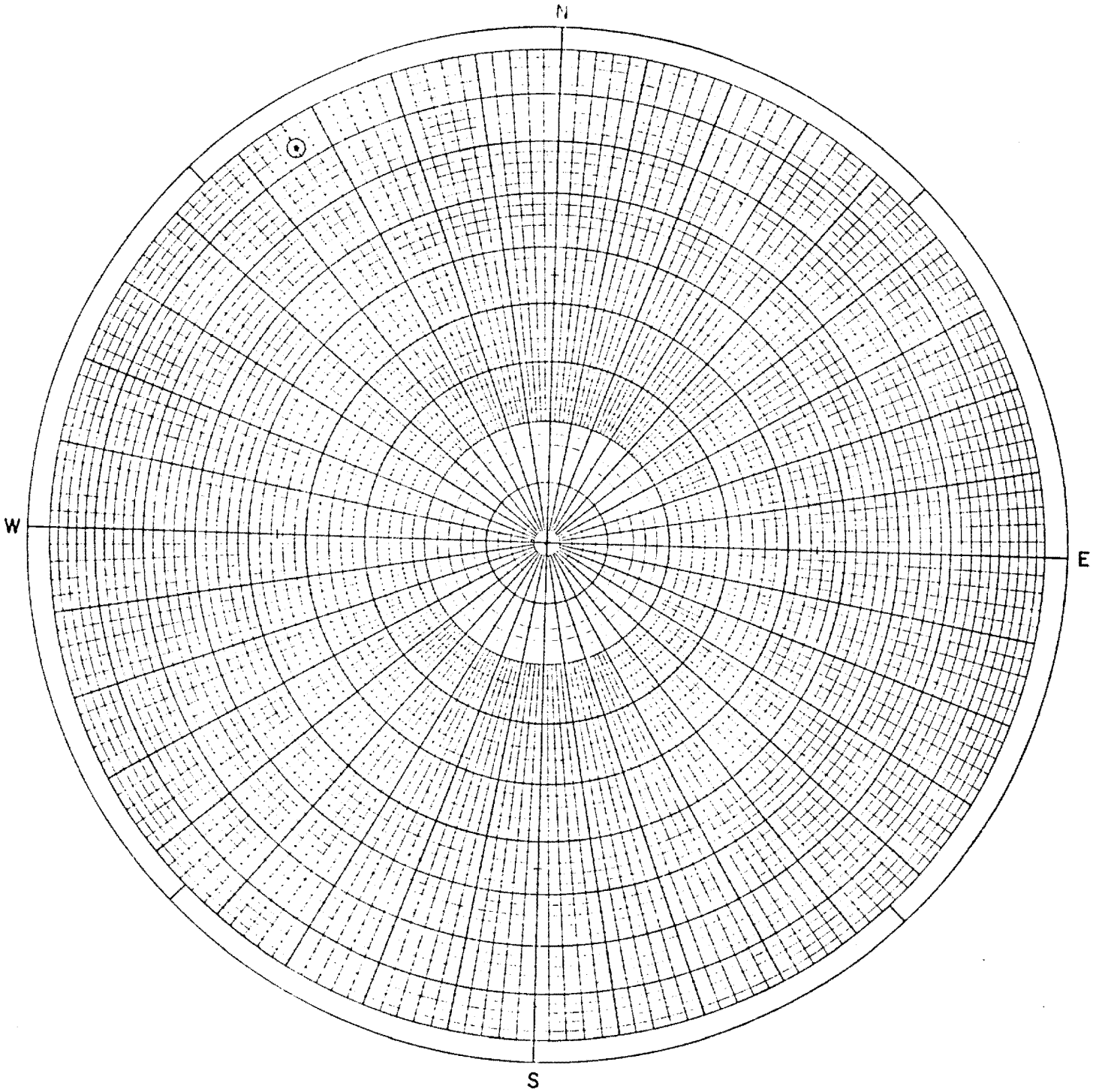
- Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-13
Ground Elevation (MSL) -130.5 ft
Contacts and Depth:

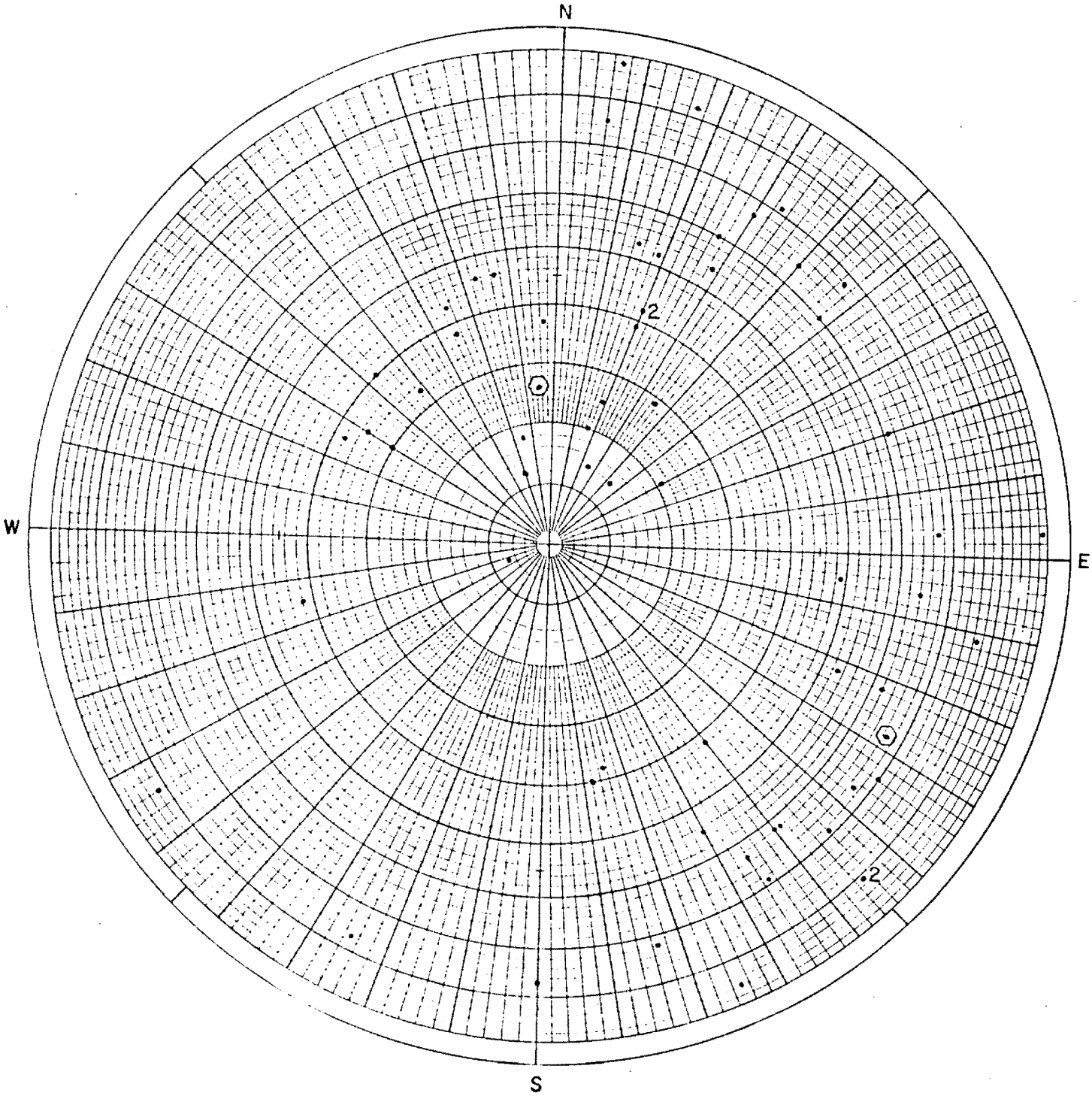
Diorite over Diabase
Diabase over Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-13
Ground Elevation (MSL) +30.5 ft
Slickensided Surfaces in:

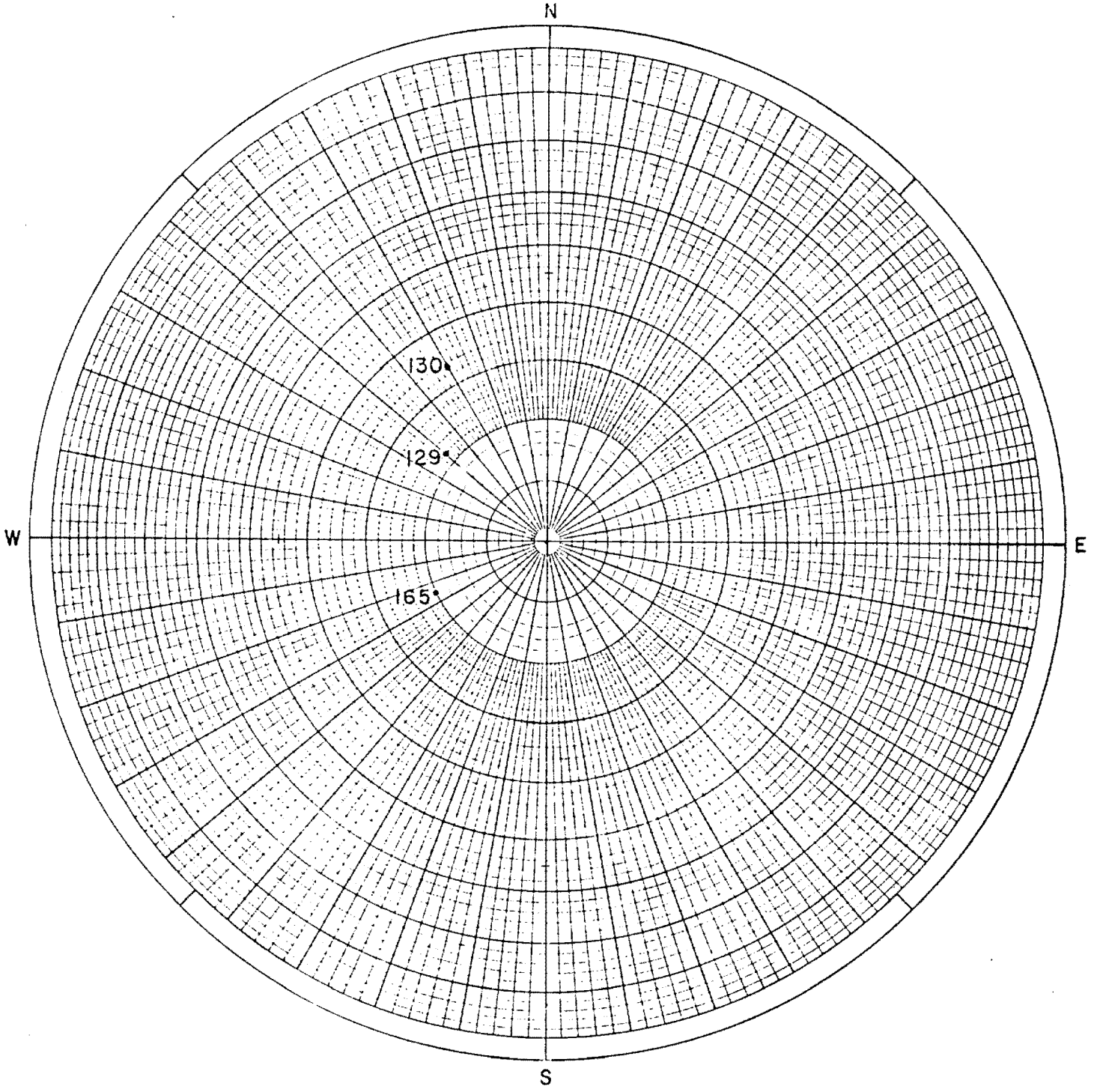
⊙ Diabase



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2 -14
Ground **Elevation** (MSL) +29.9 ft
Joints in:

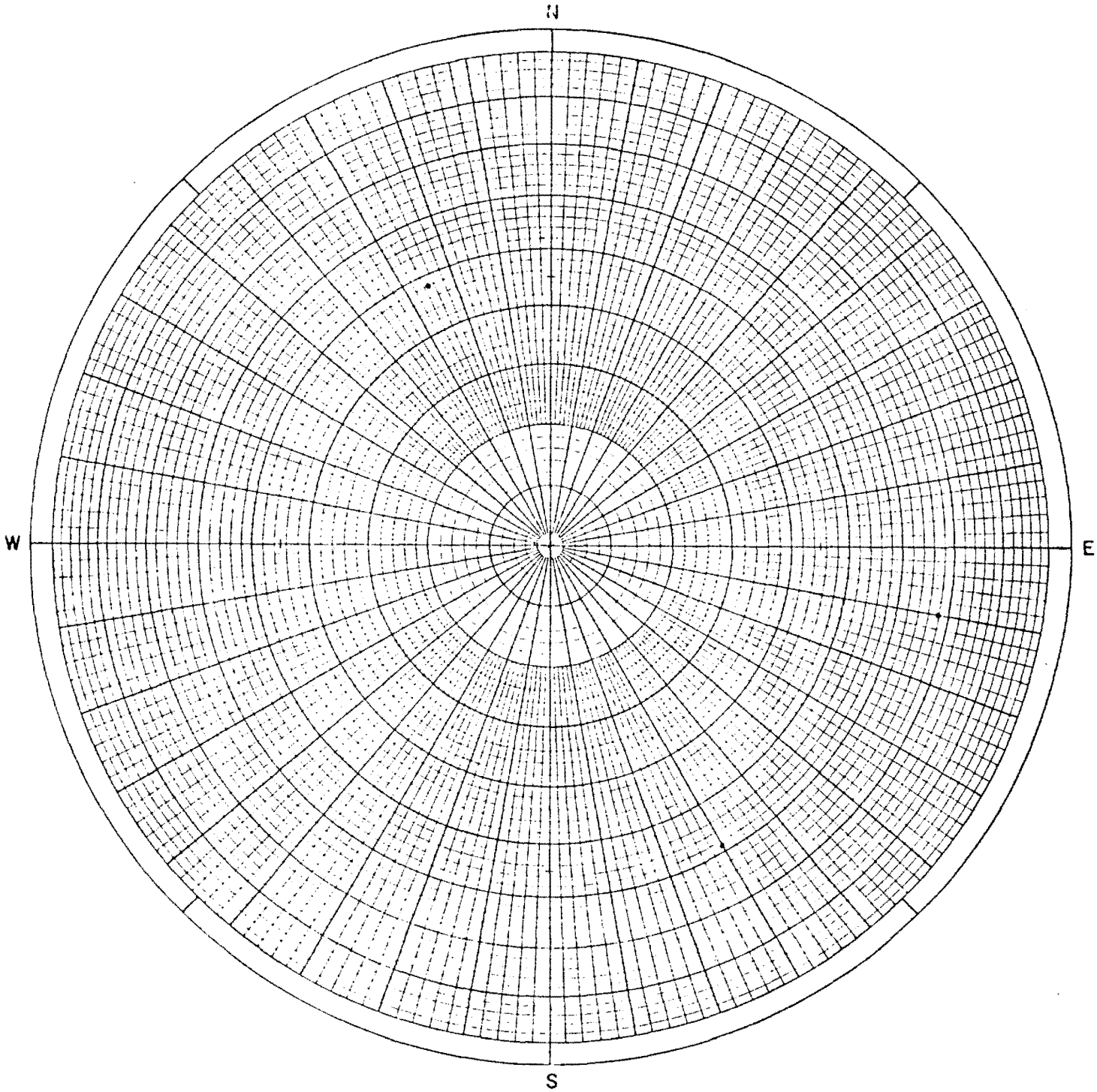
. Diorite
⊙ Pegmatite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Sta lion
June 1974

Boring E2-14
Ground Elevation (MSL) + 29.9 ft
Foliation and Depth in:

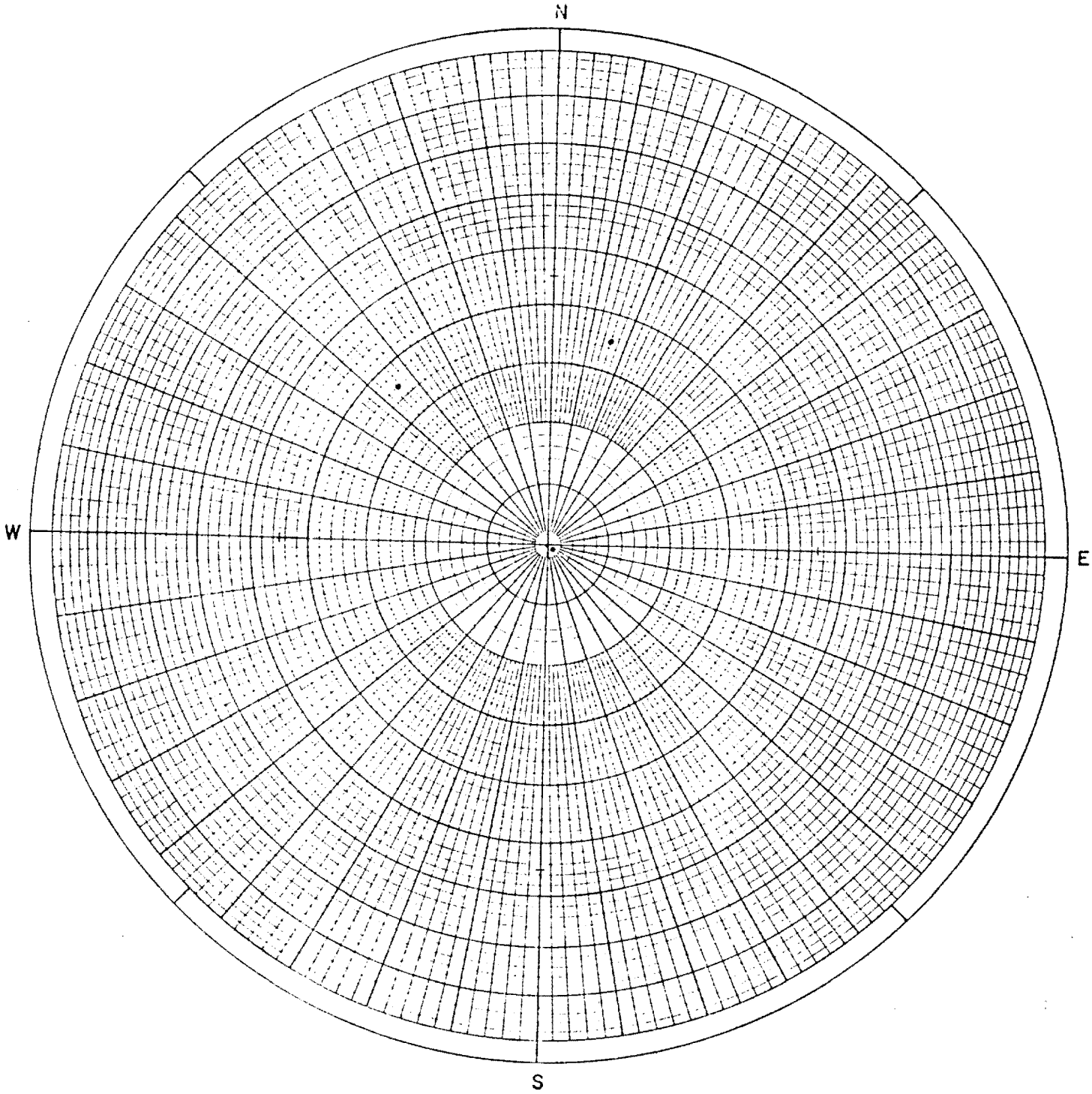
- Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-14
Ground Elevation (MSL) +29.9 ft
Slickensided Surfaces in:

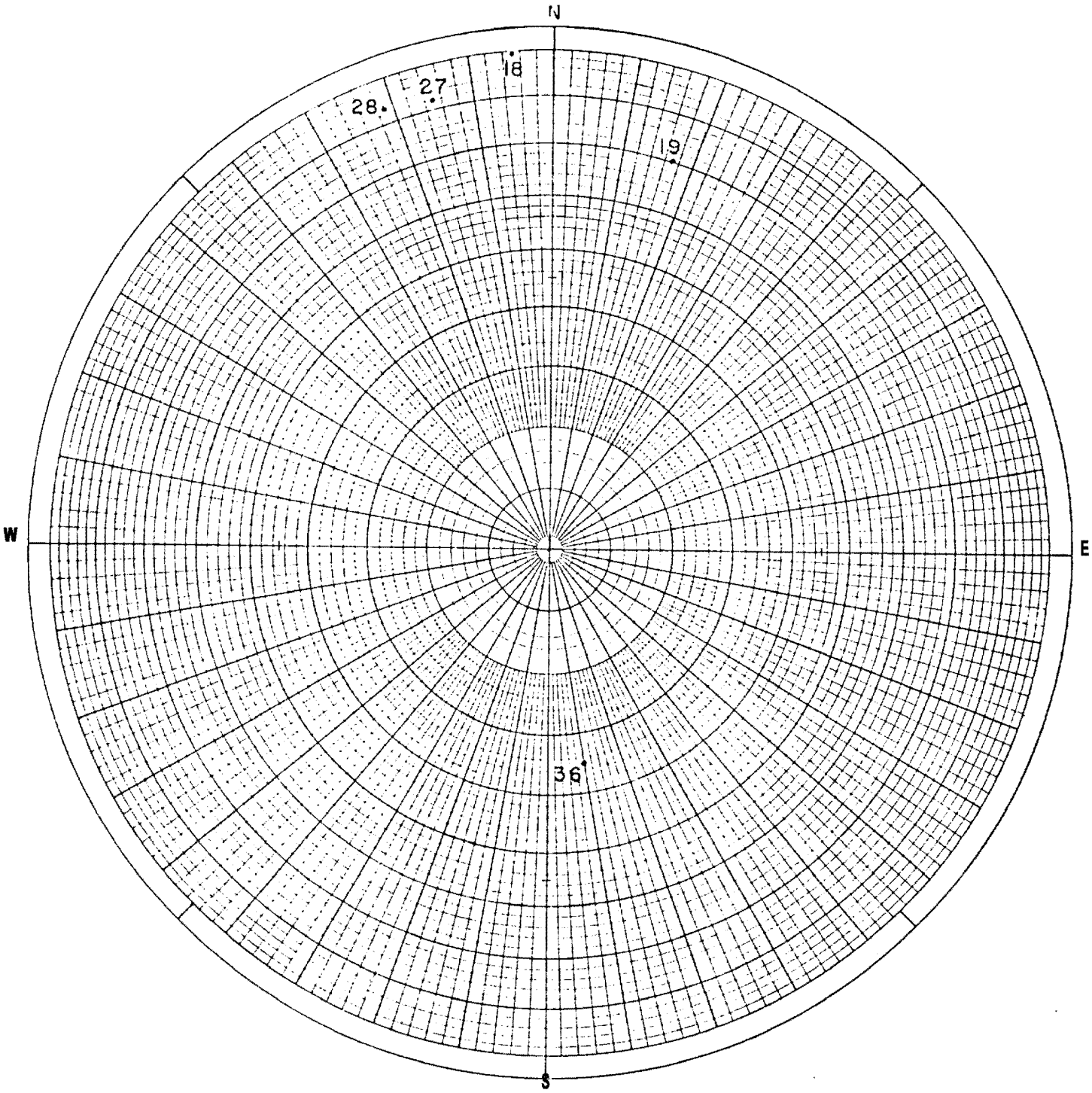
. Diorite



Polar Equal Area Slcrco Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-15
Ground Elevation (MSL) + 13.9 ft
Joints in:

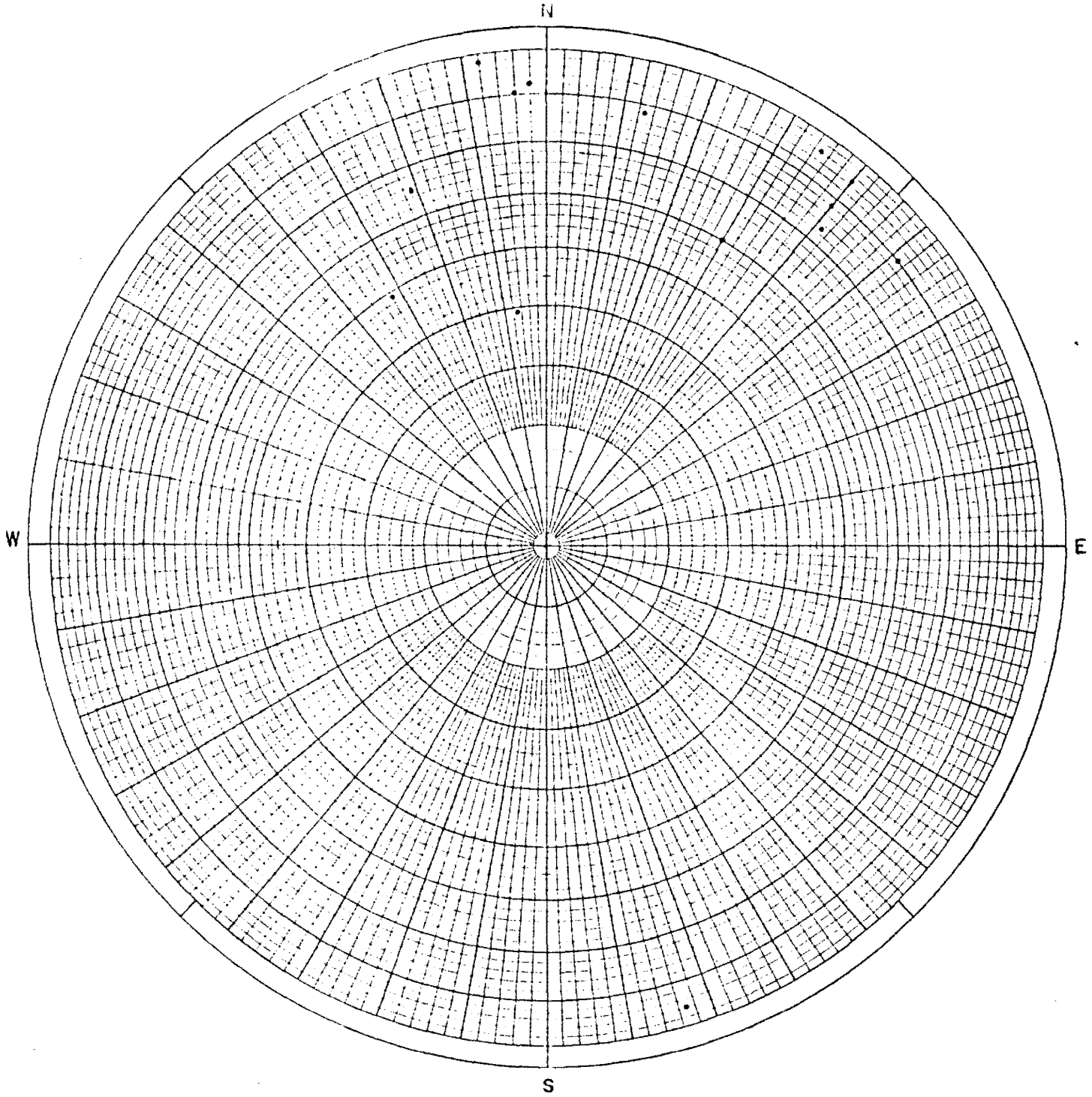
. Dioritc



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-15
Ground Elevation (MSL) +13.9 ft
Foliation in:

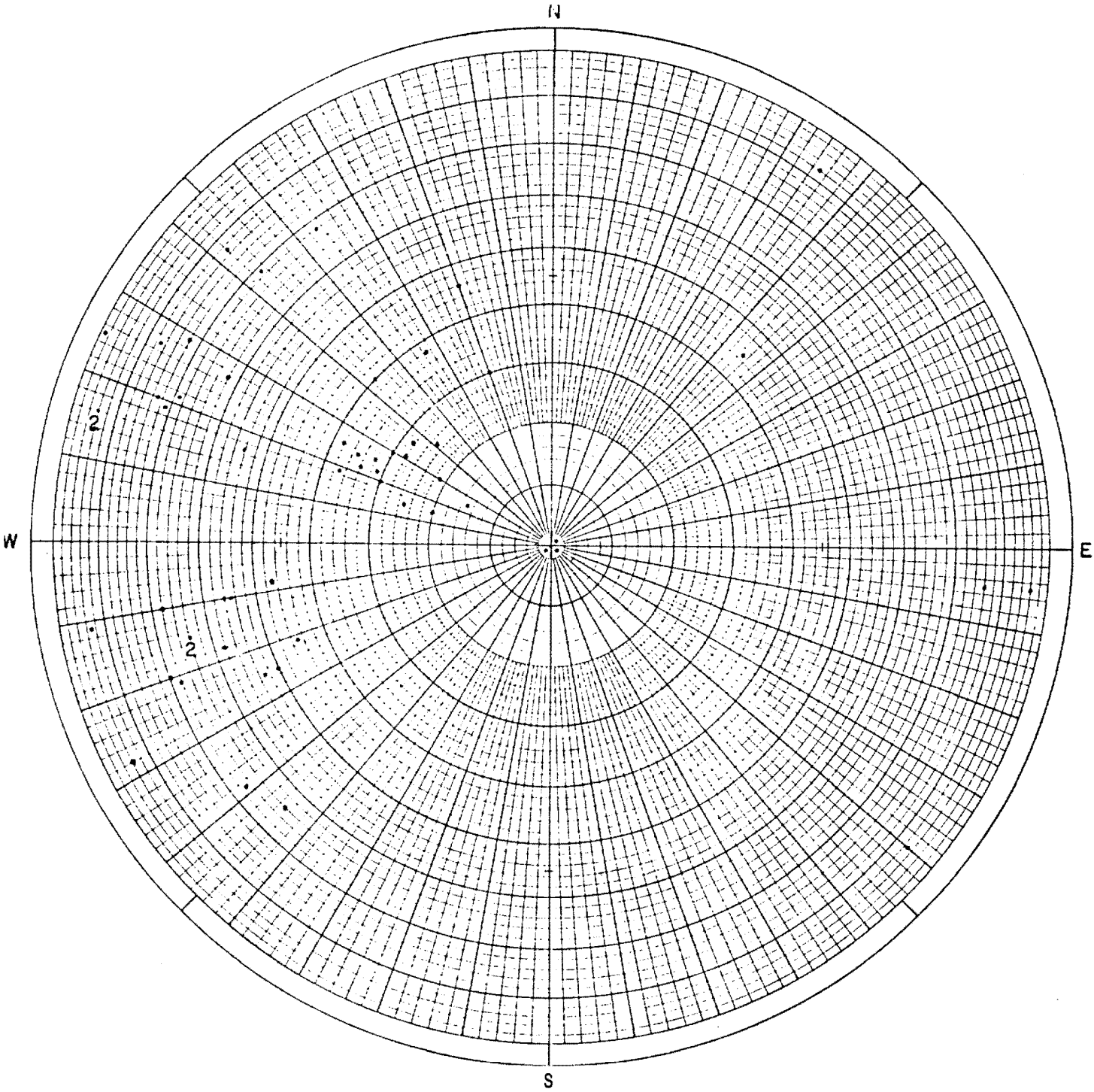
- **Diorite**



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-15
Ground Elevation (MSL) t-13.9 ft
Slickensided Surfaces in:

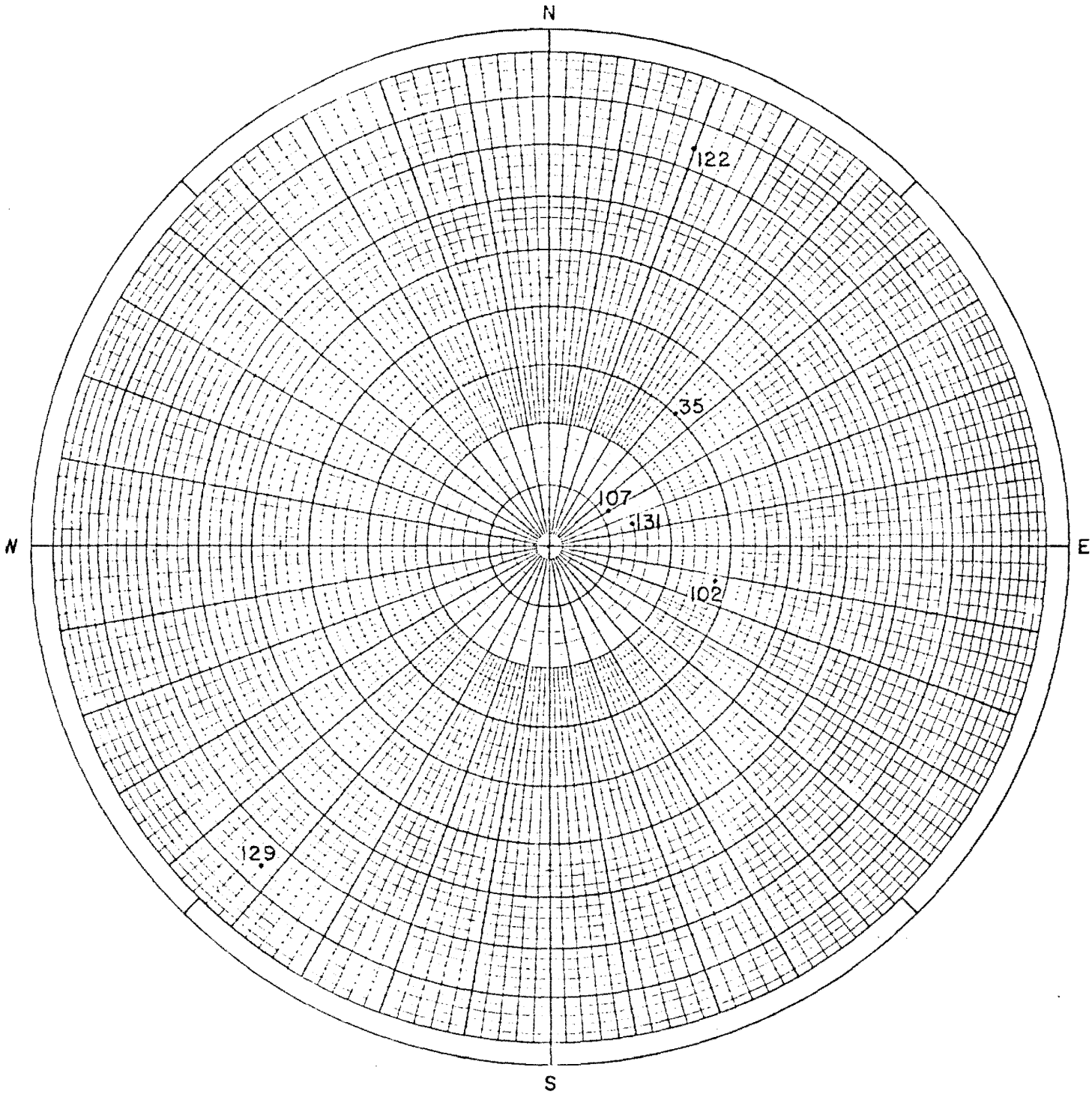
. Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1374

Boring E2-16
Ground Elevation (MSL) +16. 8 ft
Joints in:

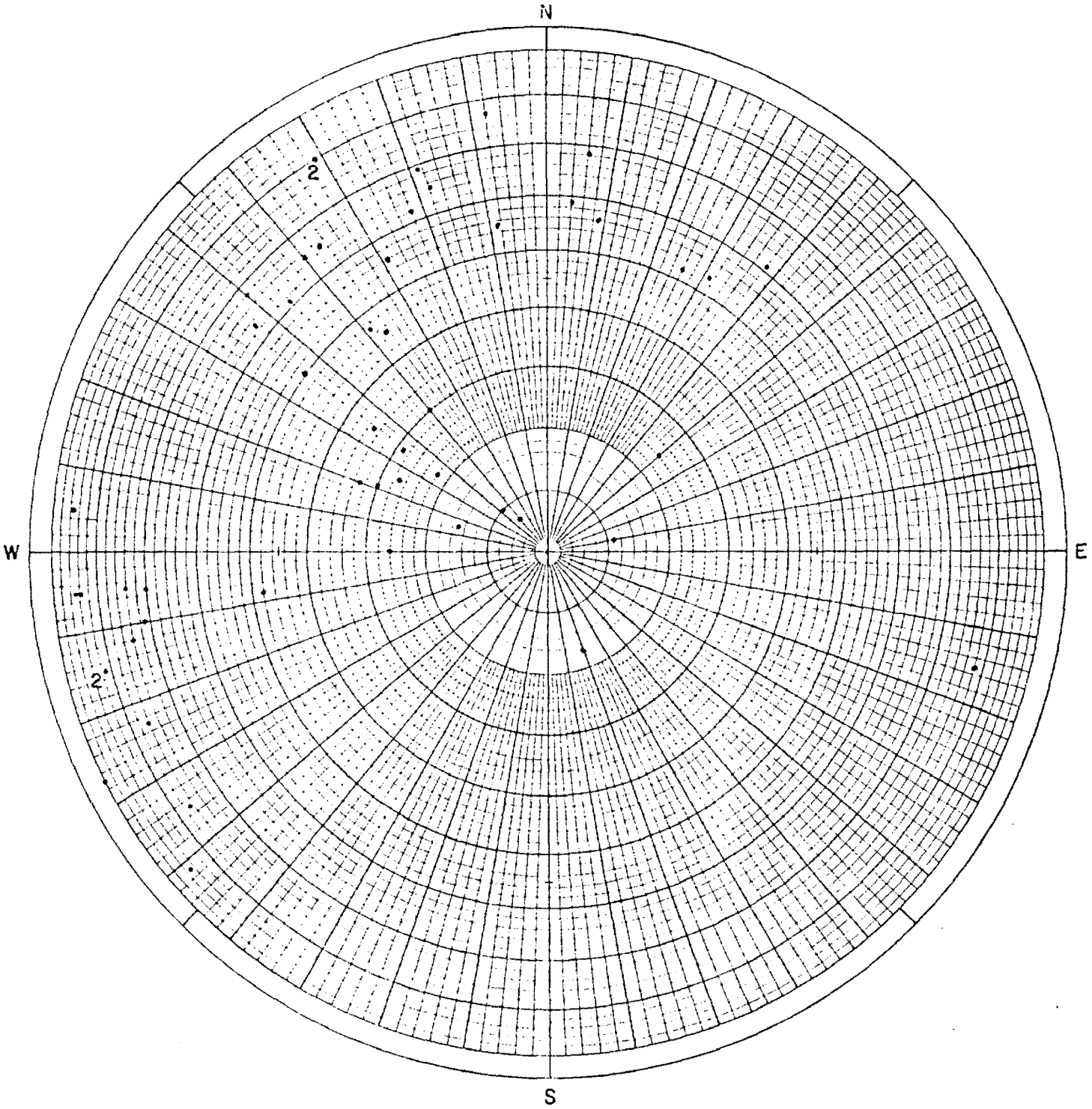
- Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-16
Ground Elevation (MSL) +16.8 ft
Foliaiton and Depth in:

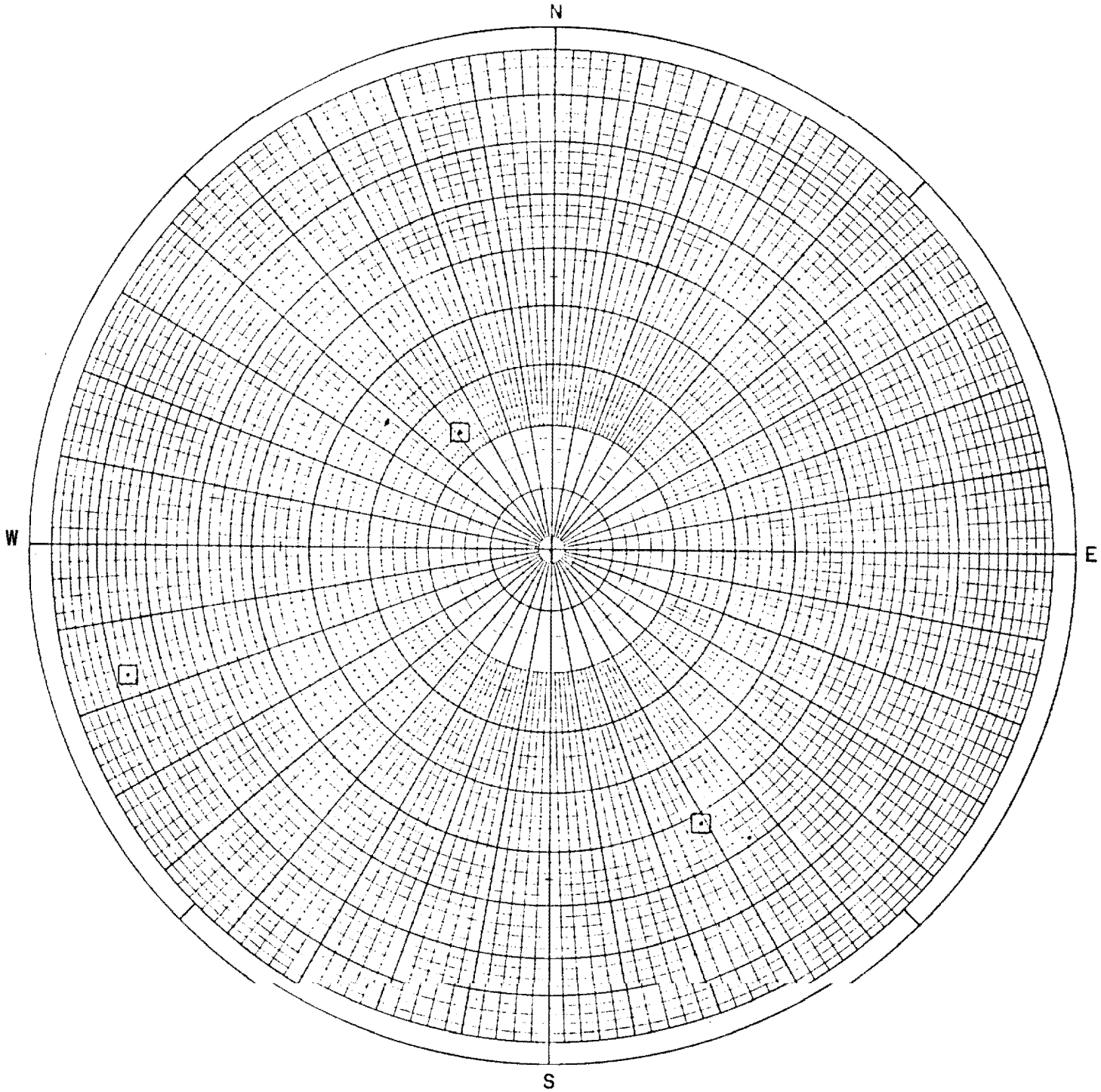
. Diorite



Polar Euqal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1374

Boring E2 - 16
Ground Elevation (MSL) +16.8 ft
Slickensided Surfaces in:

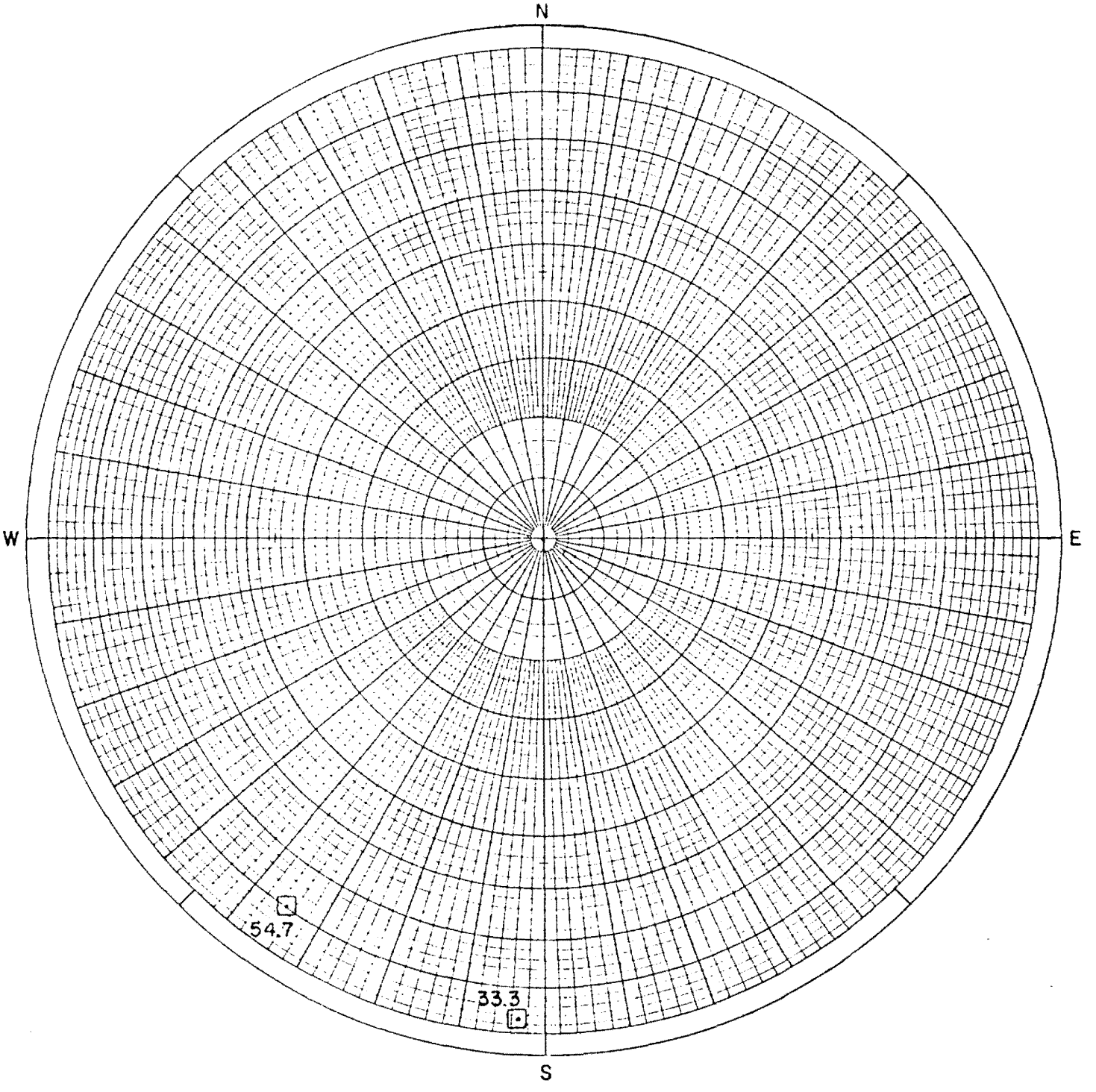
- Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-17
Ground Elevation (MSL) +13.3
Joints in:

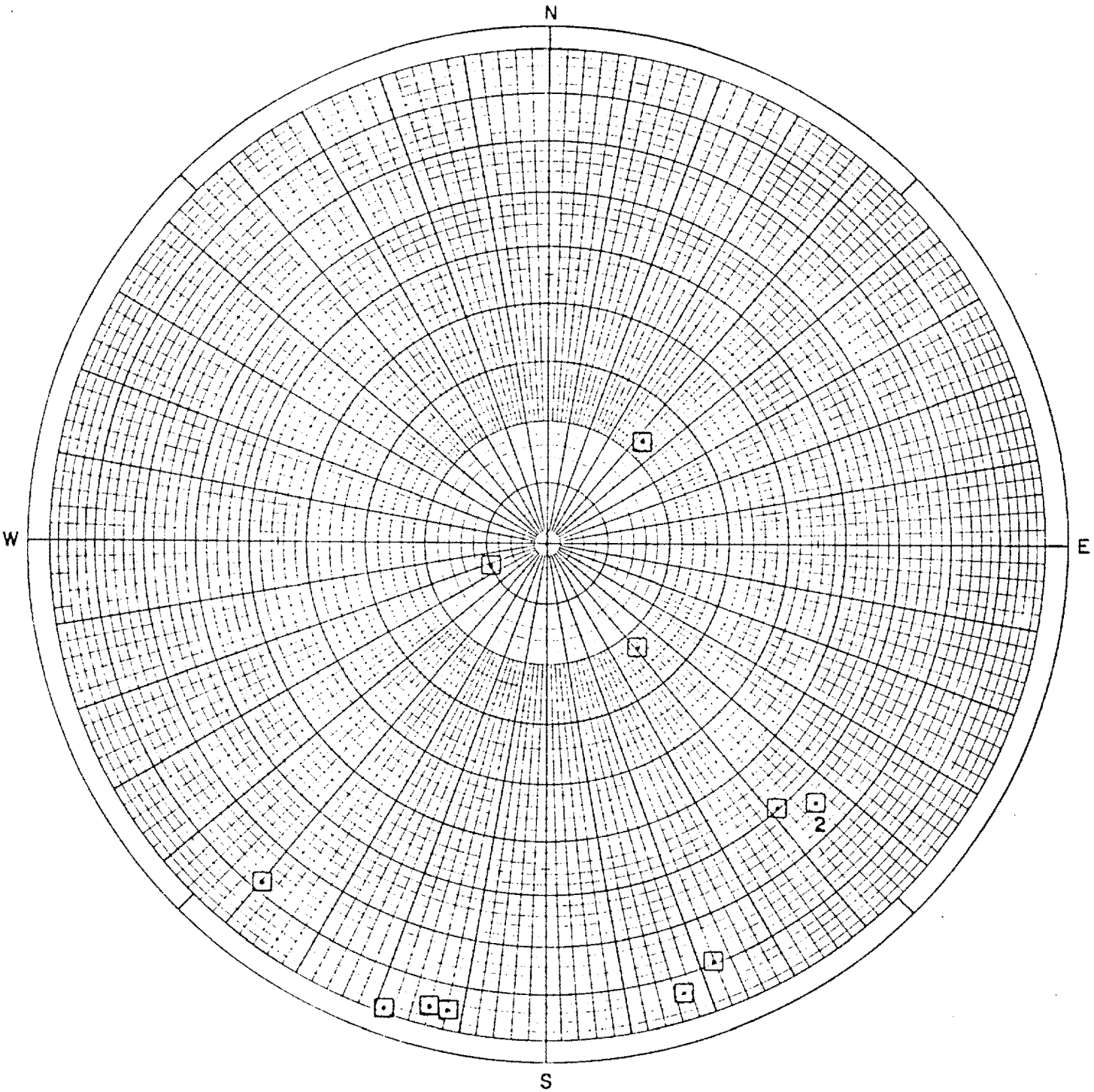
• Diorite
⊡ Schist



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-17
Ground Elevation (MSL) + 13.3 ft
Foliation and Depth in:

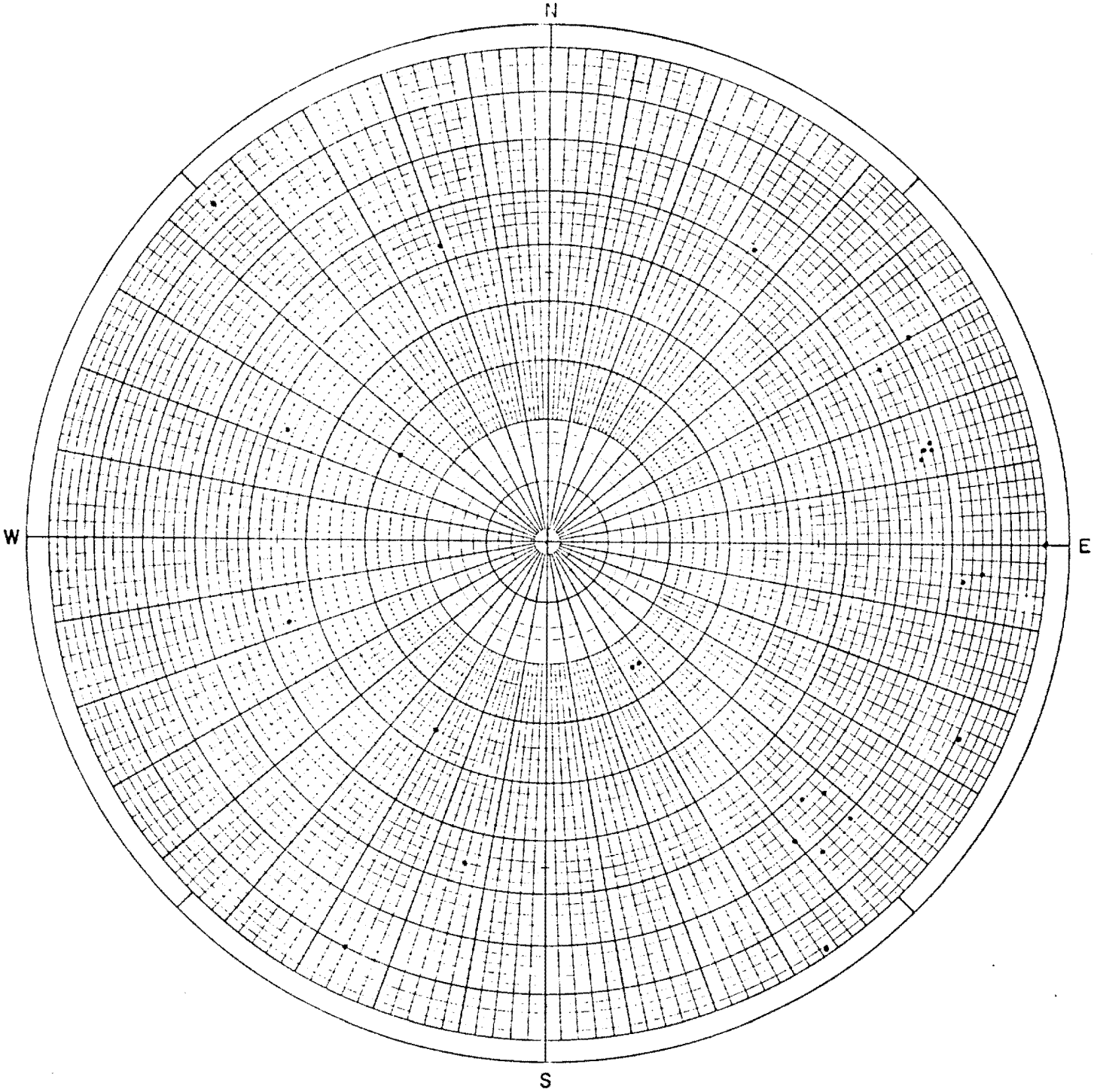
⊡ Schist



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-17
Ground Elevation (MSL) + 13.3 ft
Slickensided Surfaces in:

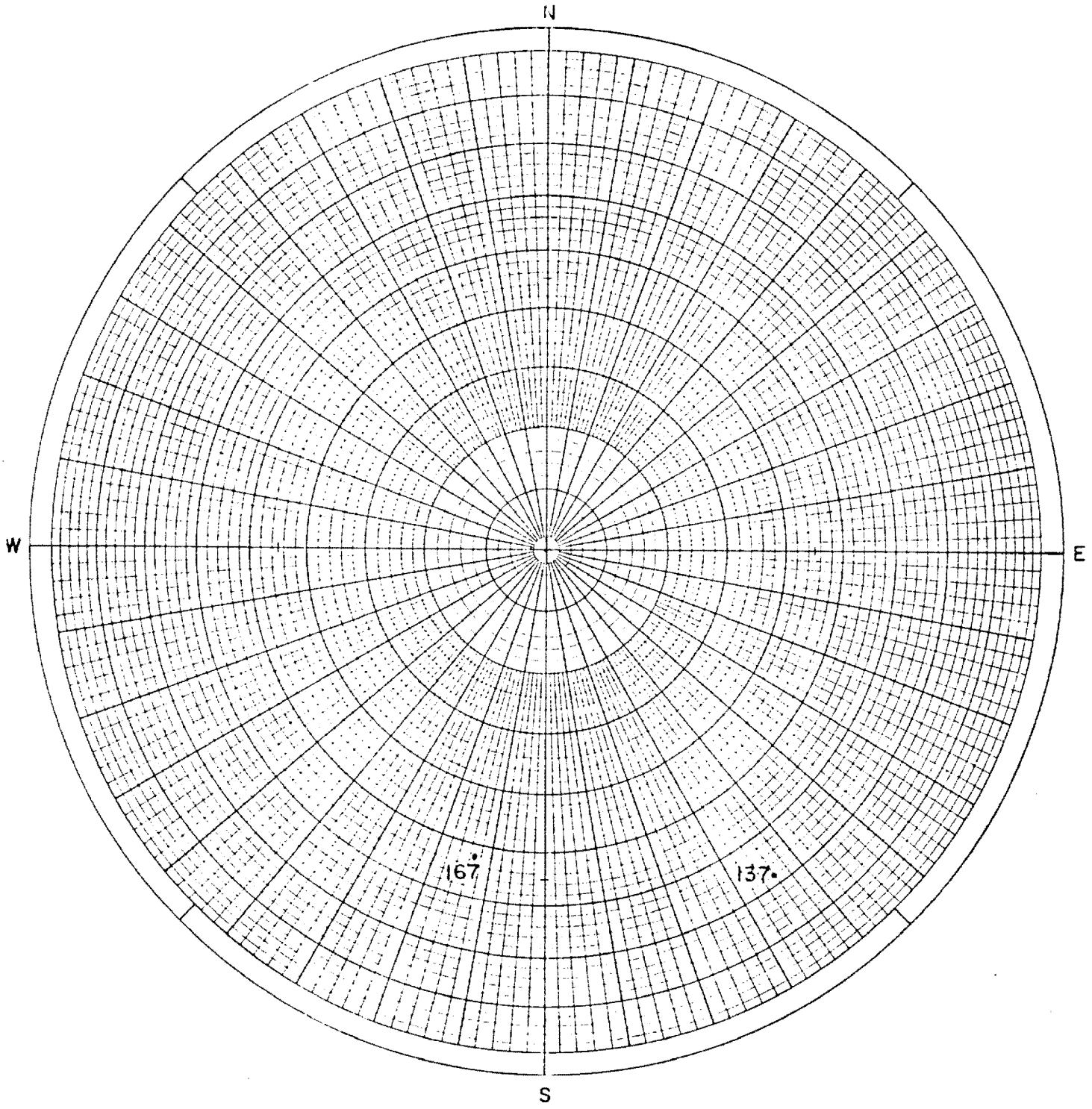
⊡ Schist



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-18
Ground Elevation (MSL) +14.9 ft
Joints in:

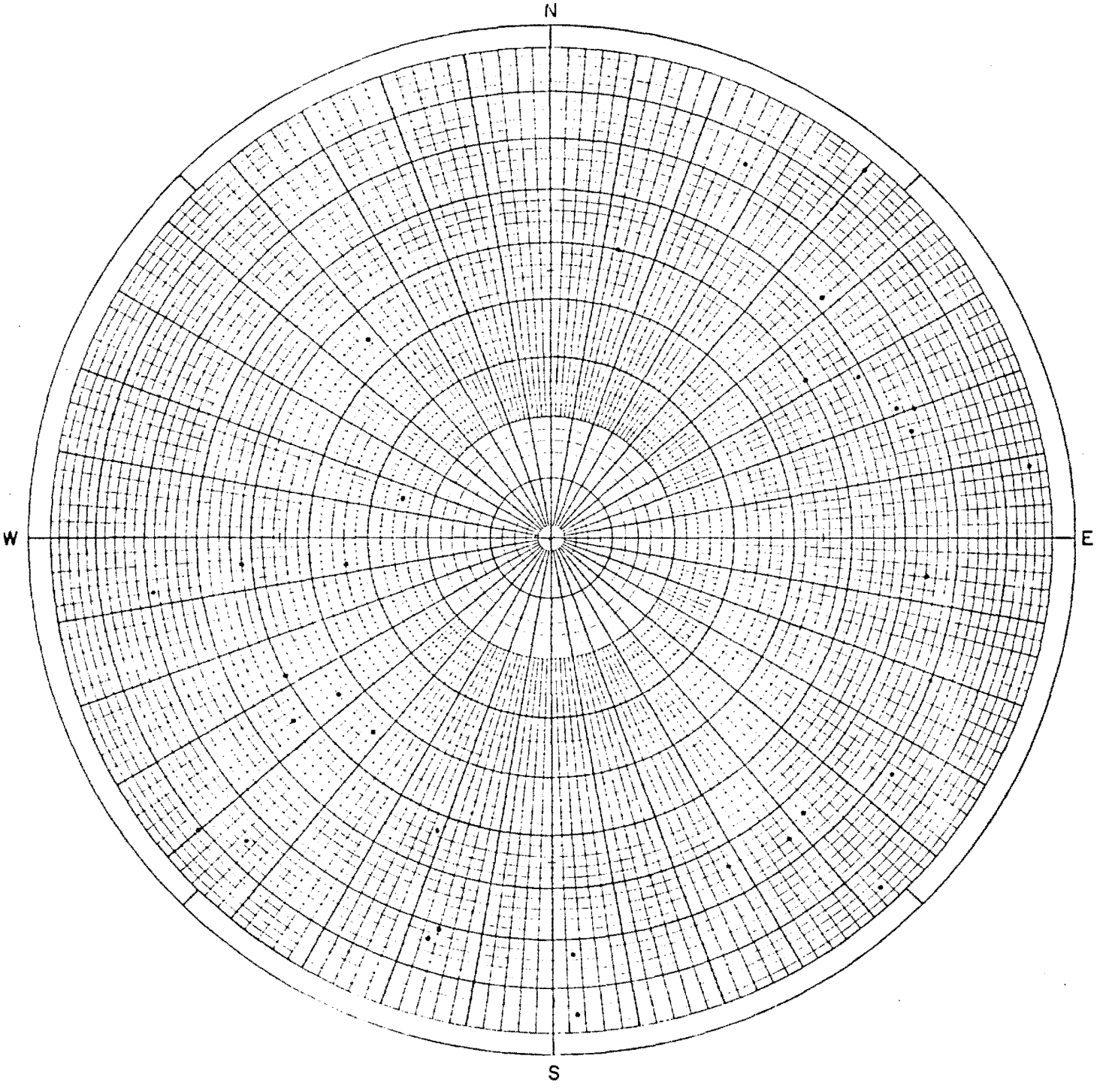
. Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-18
Ground Elevation (MSL) +14.9 ft
Foliation and Depth in:

. Diorite



Polar Equal Area Stereo Net
Geotechnical Engineers, Inc.
Seabrook Station
June 1974

Boring E2-18
Ground Elevation (MSL) +14.9 ft
Slickensided Surfaces in:

- Diorite

APPENDIX IV

APPENDIX IV

Overburden Descriptions

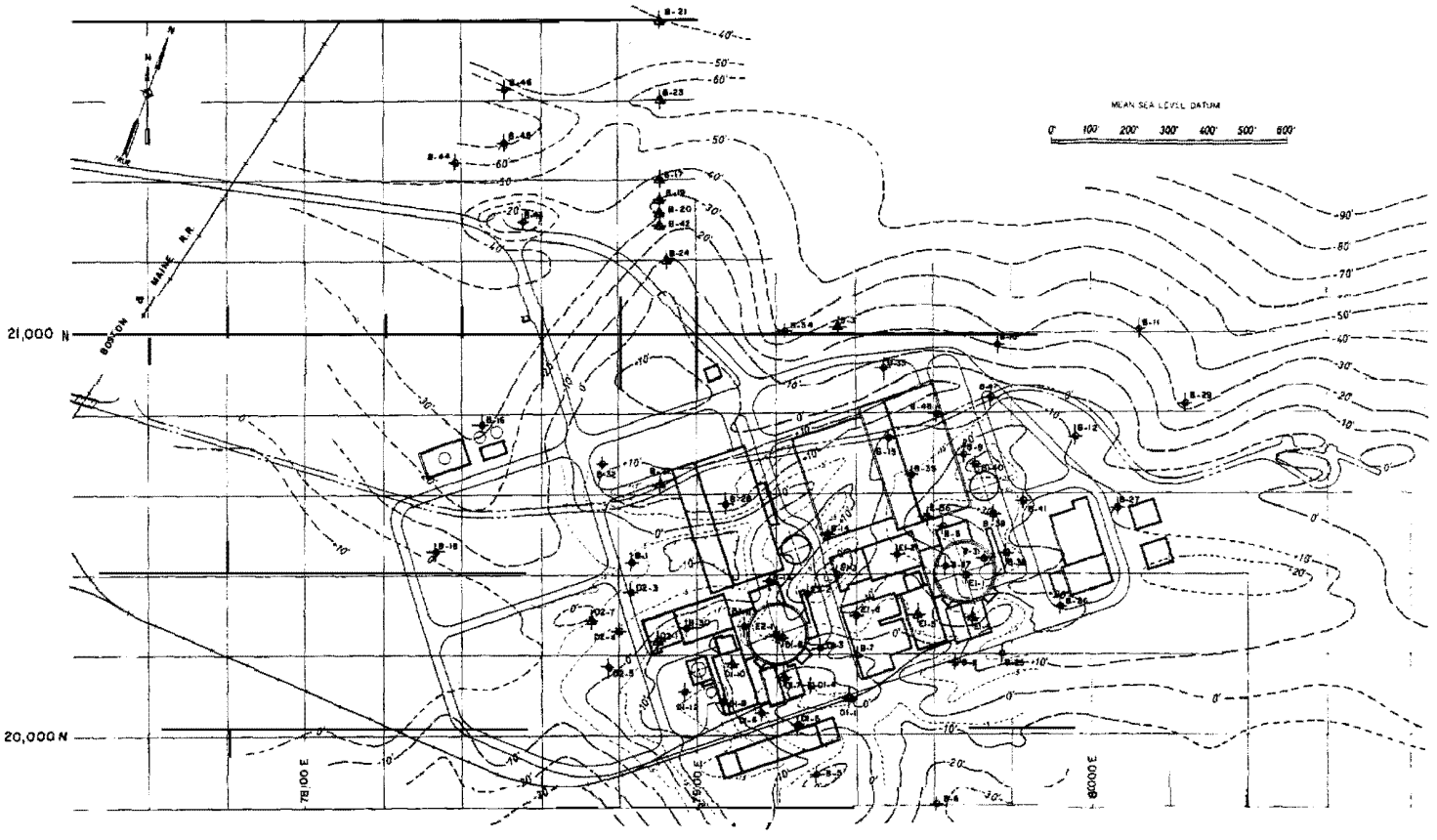
Note: The boring layout and soil descriptions are taken from the PSAR.

CONTENTS OF APPENDIX IV

1. Fig. 2.5-9 from PSAR

2. Boring Logs from Appendix 2D of PSAR:

   D1-11
   D1-8
   E2-1
   E1-1



PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE SEABROOK STATION *Preliminary Safety Analysis Report*	ESTIMATED TOPOGRAPHY OF THE BEDROCK SURFACE
	FIG. 2.5–9

SOIL DESCRIPTIONS

Ground Elevation: 13.8 ft
Depth to Water Level: 1.2 ft

Project No. 7286

Sample No.	Depth ft	Number of Blows per 6"	Description
1	o-2	1-1-4-7	Top is dark brown peat with many roots up to 1 mm diameter. Bottom is brown sand. Fine grained; uniform; contains few black organic pieces < 1 mm In size; < 5% silt.
2	5- 6.5	7-10-12	Light gray silty sand. Fine grained; uniform; very fast reaction to shaking test; contains ~ 30-40% nonplastic fines; part of sample is silty gravelly sand containing gravel up to 28 mm in size; angular grains
3	10-11.5	27-30-44	Gray silty sand. Widely graded; angular to subrounded grains; contains ~ 25-30% nonplastic fines; few gravel pieces up to 8 mm in size. w.= 7.5.g

BORING NO. D1-8
SOIL DESCRIPTIONS

Ground Elevation: 15.9 ft
Depth to Water Level: 1.9 ft

Project **No. 7286**

Sample No.	Depth ft	Number of Blows per 6"	Description
1	o- 1.5	1-1-12	Top is dark brown fine-sandy organic silt containing several roots < 1 mm diameter. Bottom is brown and rusty-brown sandy silt *containing many* dark brown organic pieces < 0.5 mm in size.
2	5- 6 . 5	31-40-72	Brown slightly gravelly silty sand. Widely graded; angular to subrounded grains; contains ~ 30-40% nonplastic fines and ~ 10-15% gravel up to 35 mm in size; fast reaction to shaking test.
3	8.5- 9	127	Gray-brown silty gravelly sand. Widely graded; angular grains; contains ~ 30-40% gravel up to 25 mm in size and ~ 20-30% nonplastic fines.

BORING NO. E2-1
SOIL DESCRIPTIONS

Ground Elevation: 15.9 ft
Depth to Water Level: 6.0 ft

Project No. 7286

Sample No.	Depth ft	Number of Blows per 6"	Description
1	o- 2	1-1-7-19	Top is brown sandy organic silt containing roots up to 12 mm diameter. Bottom is light brown to gray-brown gravelly silty sand. Widely graded; generally angular grains; contains ~ 20-30% nonplastic fines and ~ 10-20% gravel up to 18 mm in size; several rusty-brown spots up to 10 mm in size.
2	5- G.6	31-60-74	Similar to bottom portion of Sample No. 1, but slightly less silty and fewer rusty-brown spots.

BORING NO. E1-1
SOIL DESCRIPTIONS

Ground Elevation: 28.9 ft
Depth to Water Level:

Project No. 7286

Sample No.	Depth ft	Number of Blows per 6"	Description
			No soil samples taken. (Bedrock at ground surface.)