

SEABROOK UPDATED FSAR

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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5. Contoured Equal Area Upper Hemisphere Polar Projection to joints in Reactor 2; Borings E2-15, 16, 17, and 18
6. Contoured 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

TABLES

TABLE 1

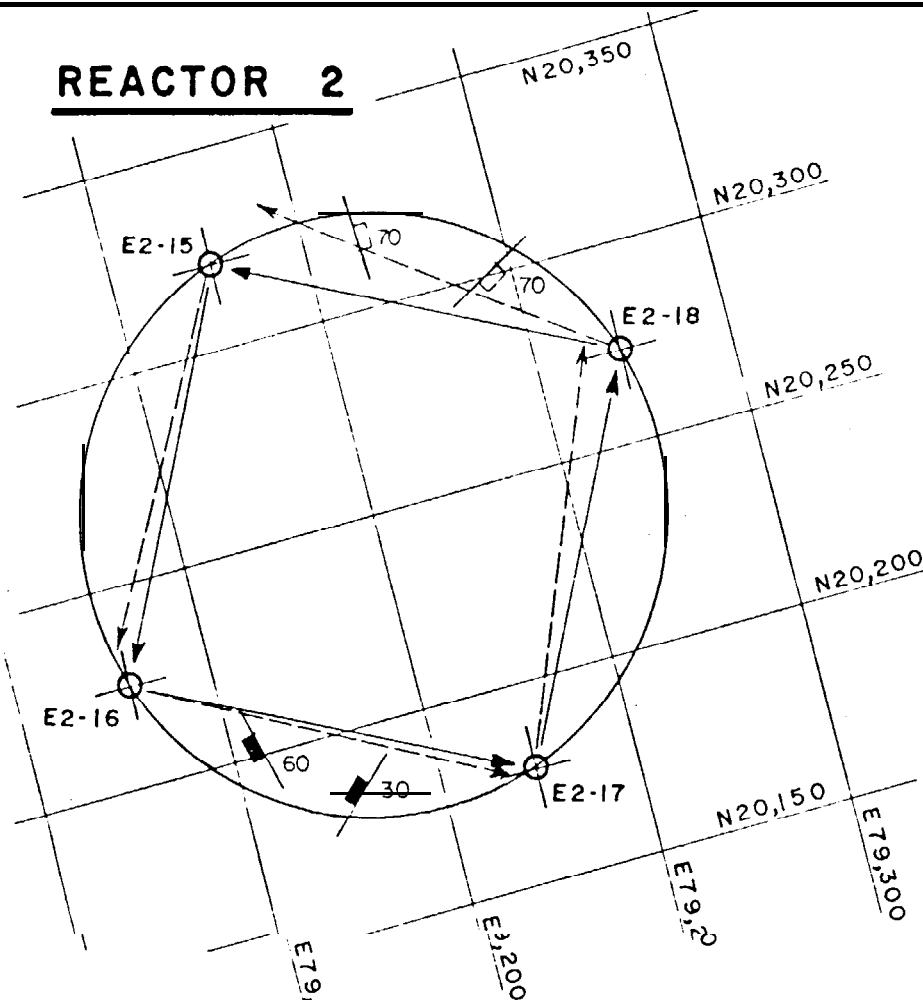
ZONES ORIENTED IN REACTOR BORINGS

<u>Reactor No.</u>	<u>Boring No.</u>	<u>Length of Boring*</u> (feet)	<u>Inclination of Boring Measured From Vertical</u>	<u>Length Oriented*</u> (feet)	<u>Vertical Depth to Top of Rock</u> (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



10 POINTS PER CLUSTER OF FEATURES

>10 POINTS PER CLUSTER OF FEATURES

OVERCORE BORING

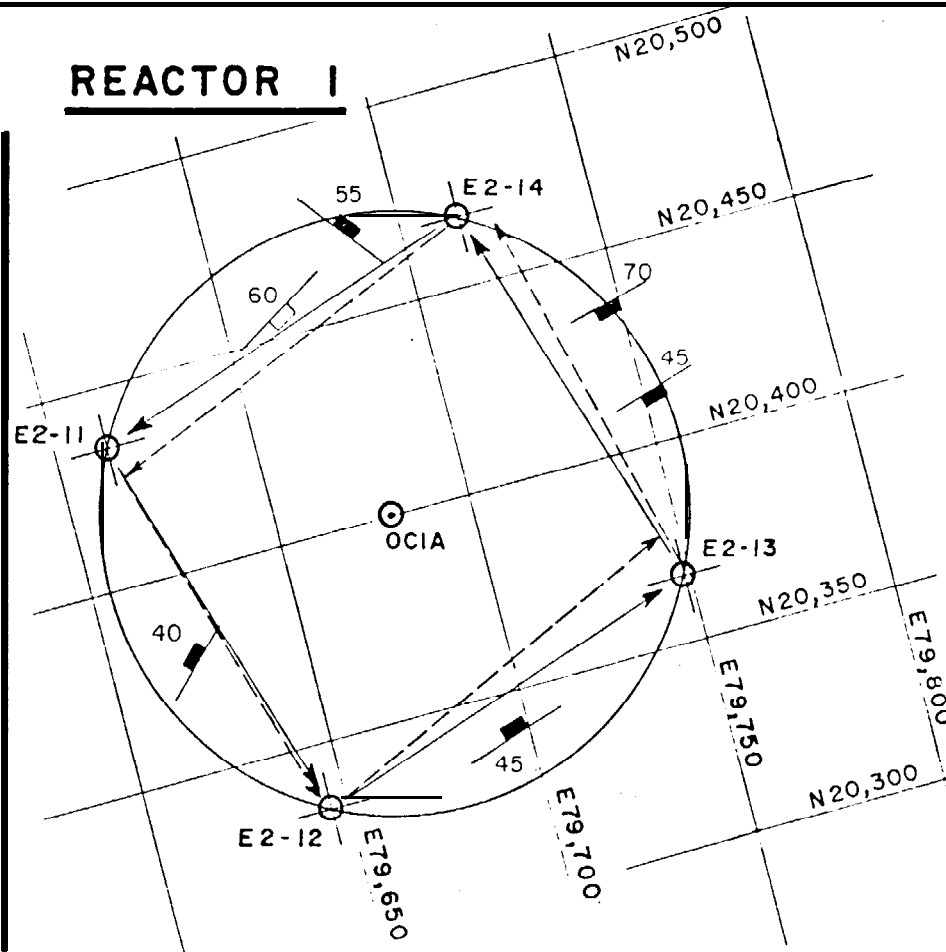
ANGLE BORING

N

SCALE
FEET



REACTOR 1



PROPOSED DIRECTION OF ANGLE BORINGS
ACTUAL DIRECTION OF ANGLE BORINGS

NOTE: LENGTH OF ARROWS INDICATES PROJECTION OF HOLE TO HORIZONTAL

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SEABROOK STATION

PLAN OF REACTOR SITES

SHOWING GENERALIZED DIP & STRIKE
OF JOINTS

GEOTECHNICAL ENGINEERS, INC.
WINCHESTER, MASSACHUSETTS

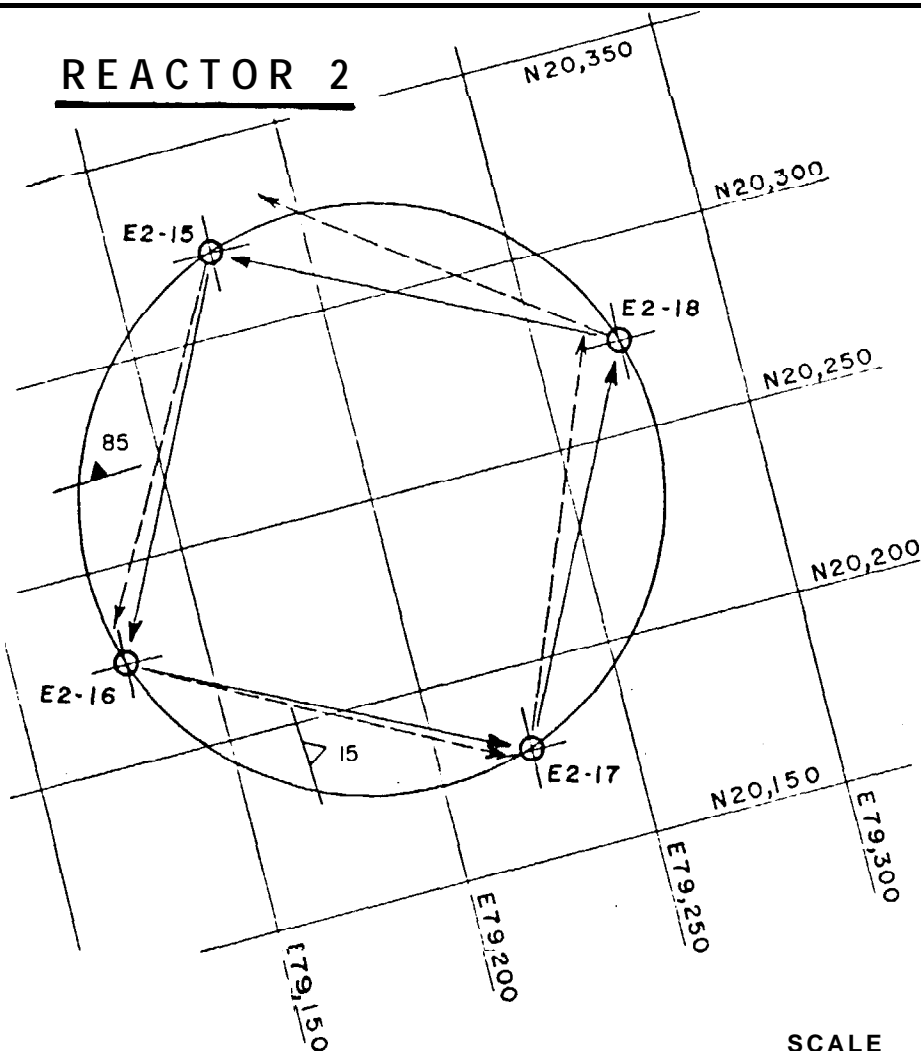
PROJECT

7206

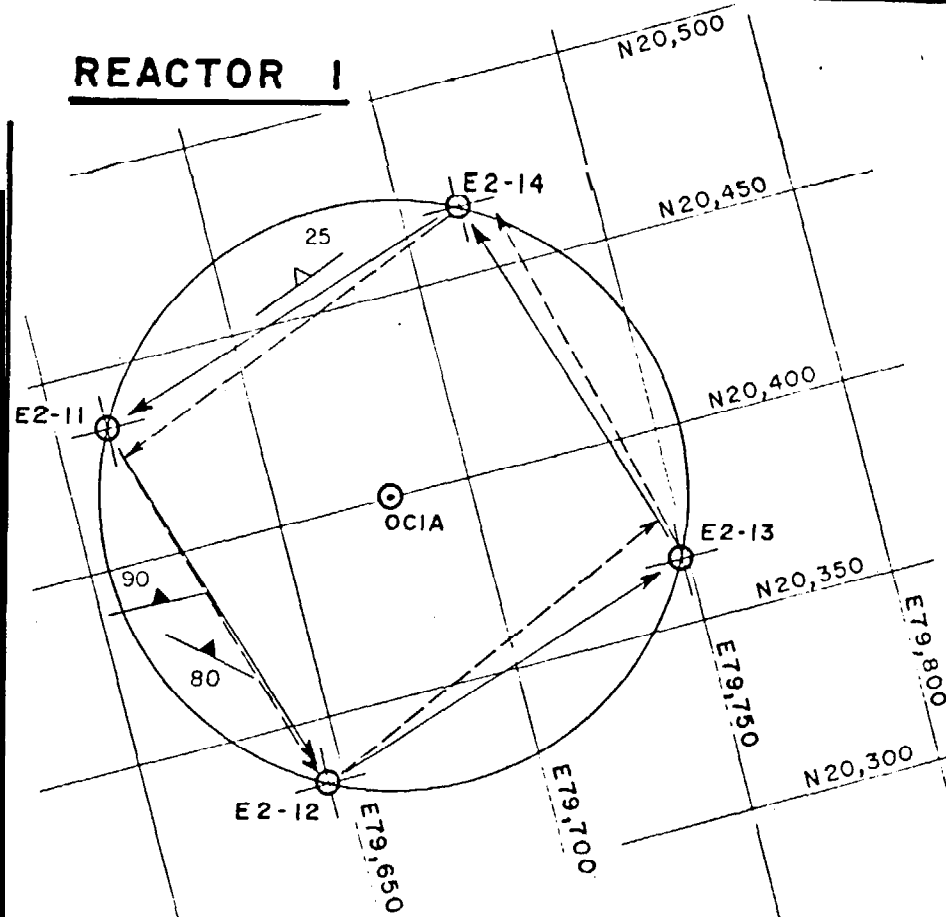
JULY 1974

FIG. I

REACTOR 2



REACTOR 1



— PROPOSED DIRECTION OF ANGLE BORINGS
 - - - ACTUAL DIRECTION OF ANGLE BORINGS

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

△ < 2 POINTS PER CLUSTER OF FEATURES

▲ > 2 POINTS PER CLUSTER OF FEATURES

○ OVERCORE BORING

⊕ ANGLE BORING

N



YANKEE ATOMIC

SEABROOK STATION

PLAN OF REACTOR SITES

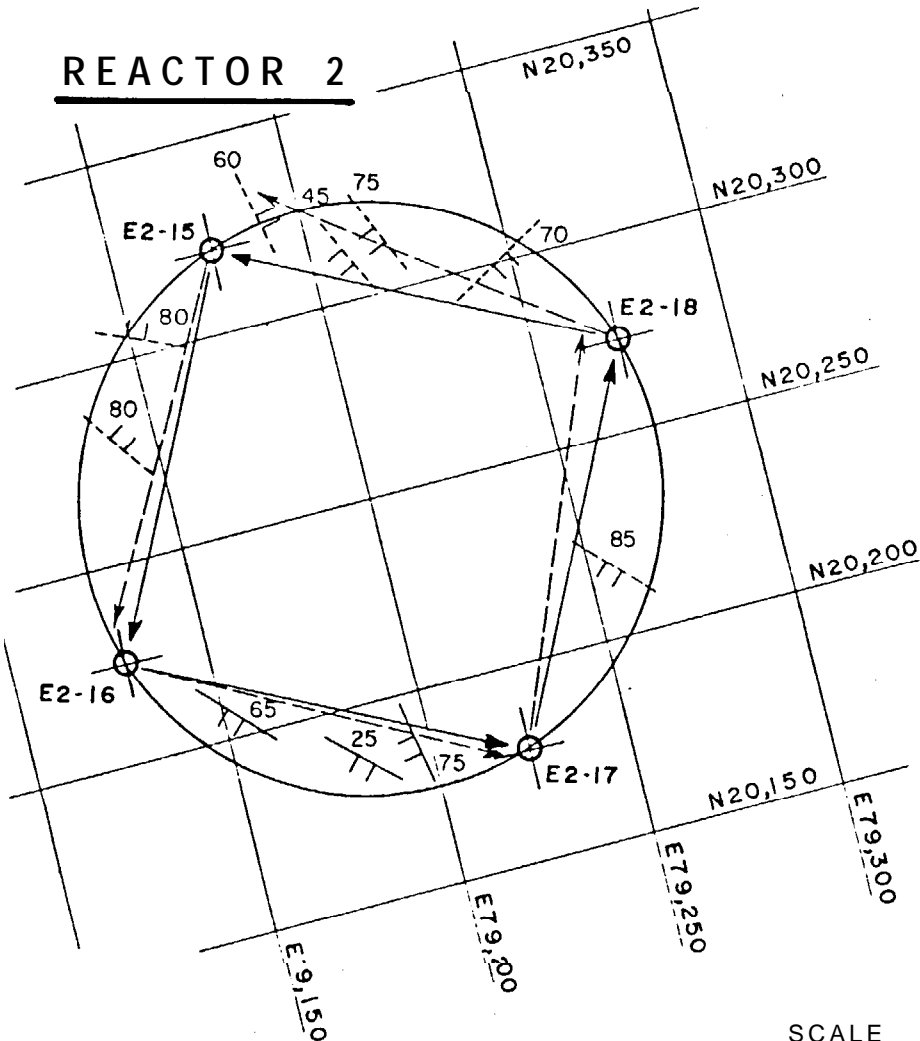
SHOWING GENERALIZED DIP & STRIKE OF FOLIATIONS

GEOTECHNICAL ENGINEERS, INC.
 WINCHESTER, MASSACHUSETTS

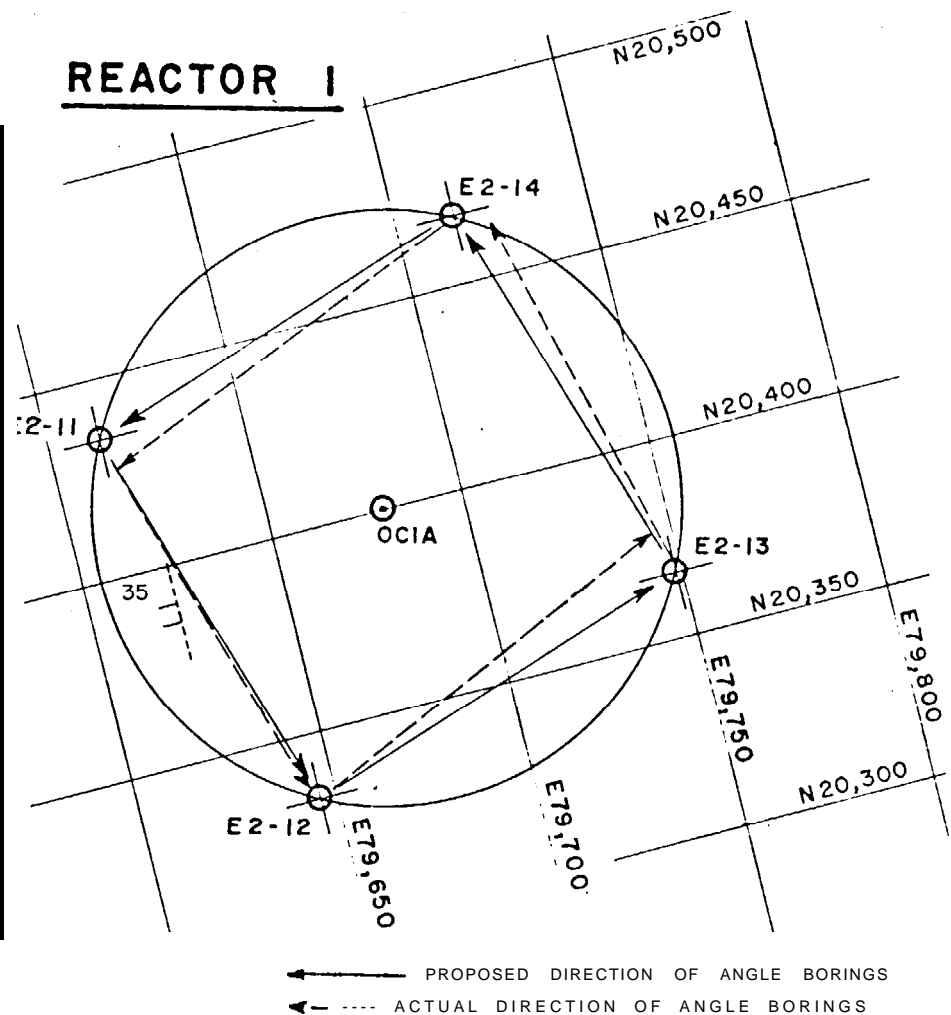
PROJECT 7286

JULY 1974 FIG. 2

REACTOR 2



REACTOR 1



— PROPOSED DIRECTION OF ANGLE BORINGS
 - - - ACTUAL DIRECTION OF ANGLE BORINGS

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

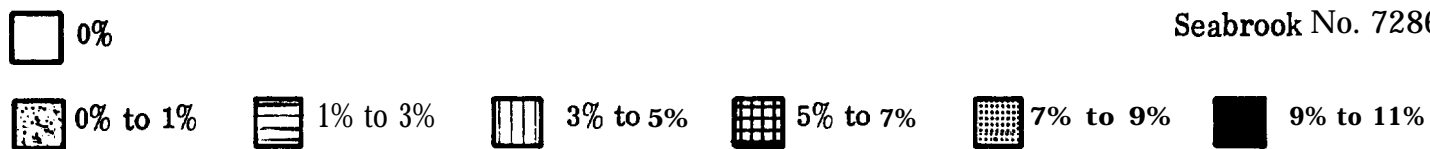
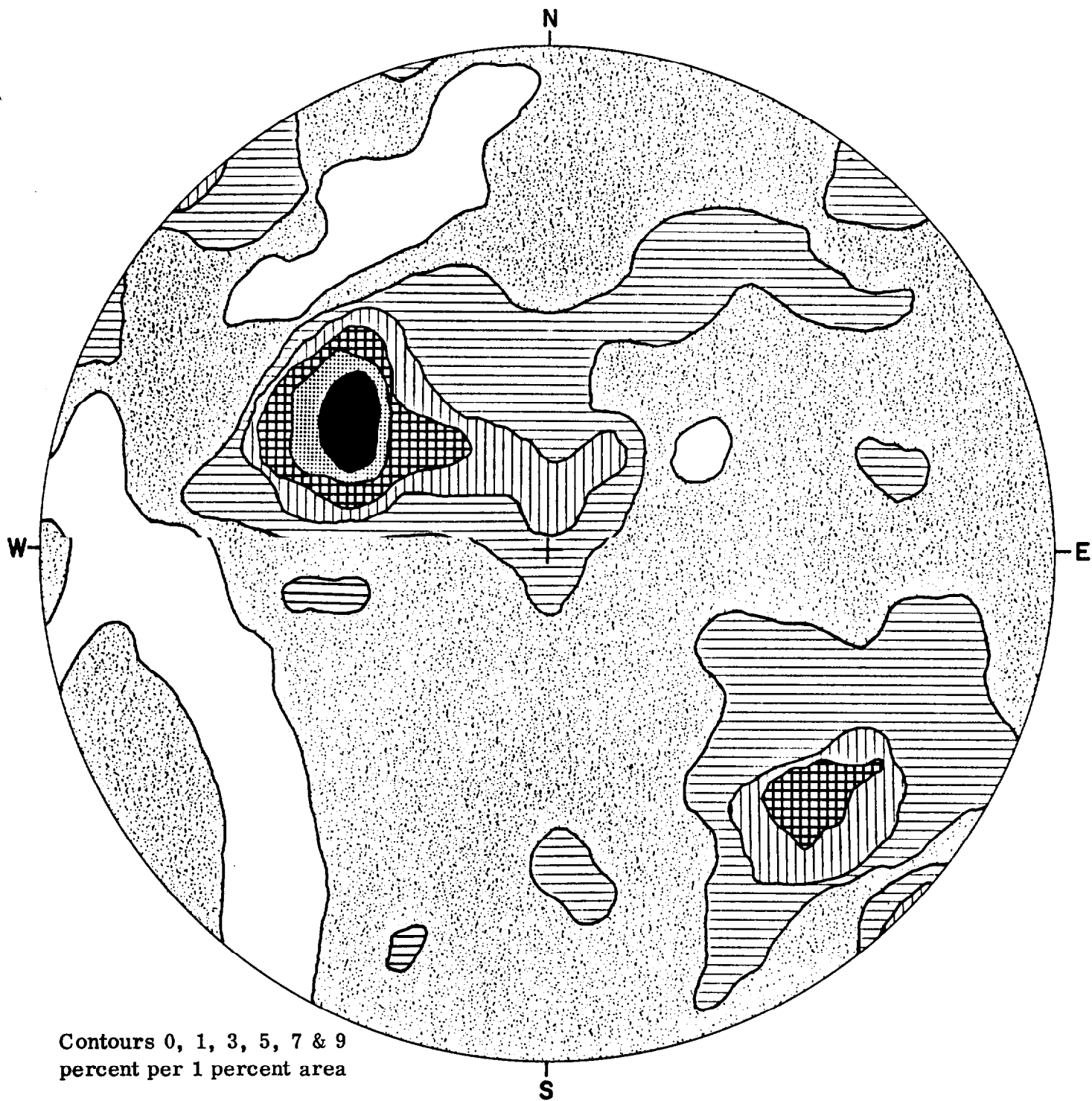
— > 8 POINTS PER CLUSTER OF FEATURES

○ OVERCORE BORING
 ⊕ ANGLE BORING

N

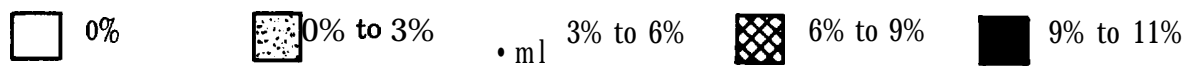
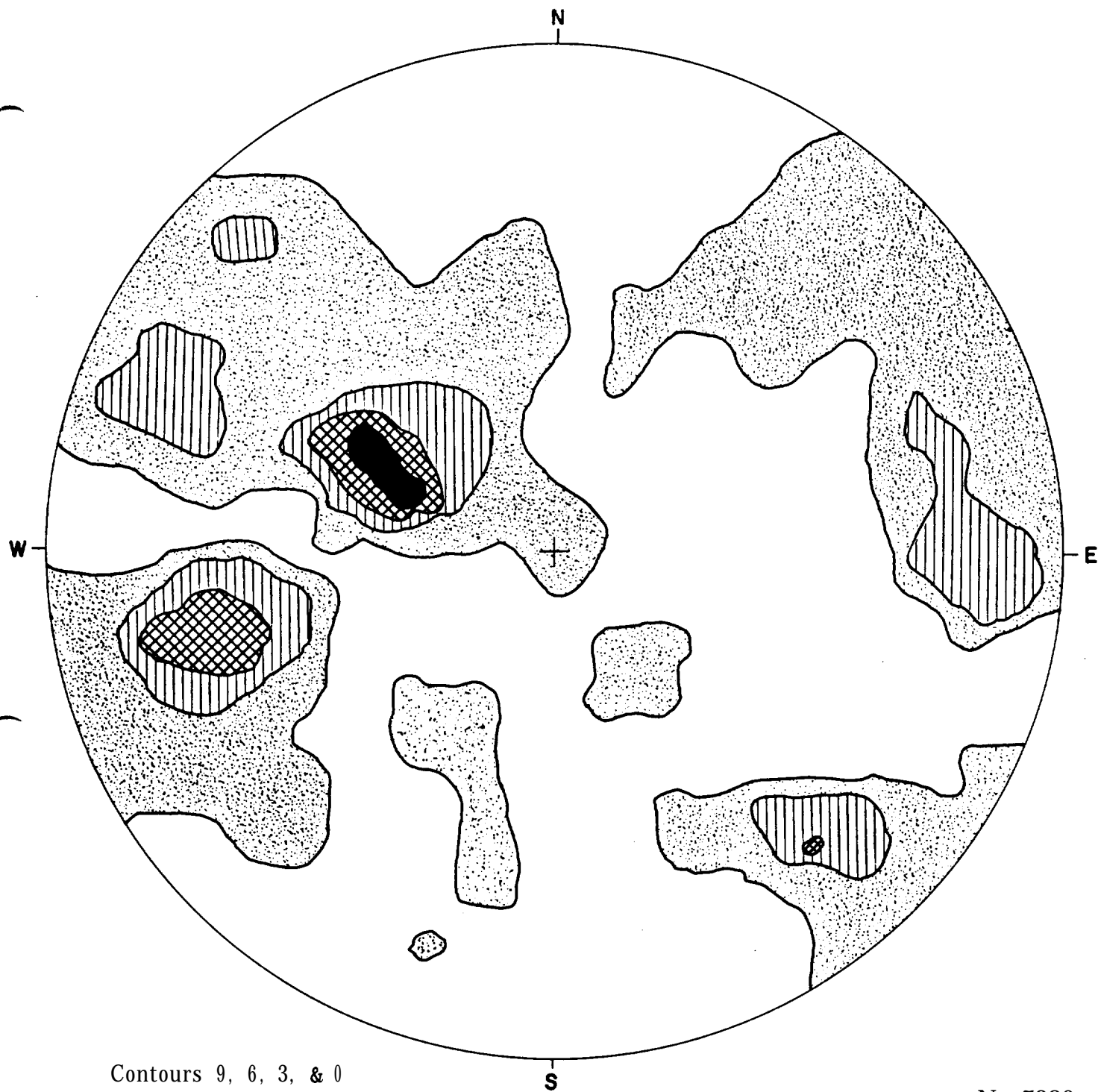


YANKEE ATOMIC	SEABROOK STATION	PLAN OF REACTOR SITES SHOWING GENERALIZED DIP & STRIKE OF SLICKENSIDED SURFACES
GEOTECHNICAL ENGINEERS, INC WINCHESTER. MASSACHUSETTS		
	PROJECT 7266	JULY 1974 FIG. 3

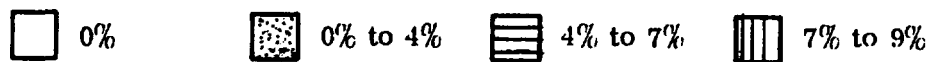
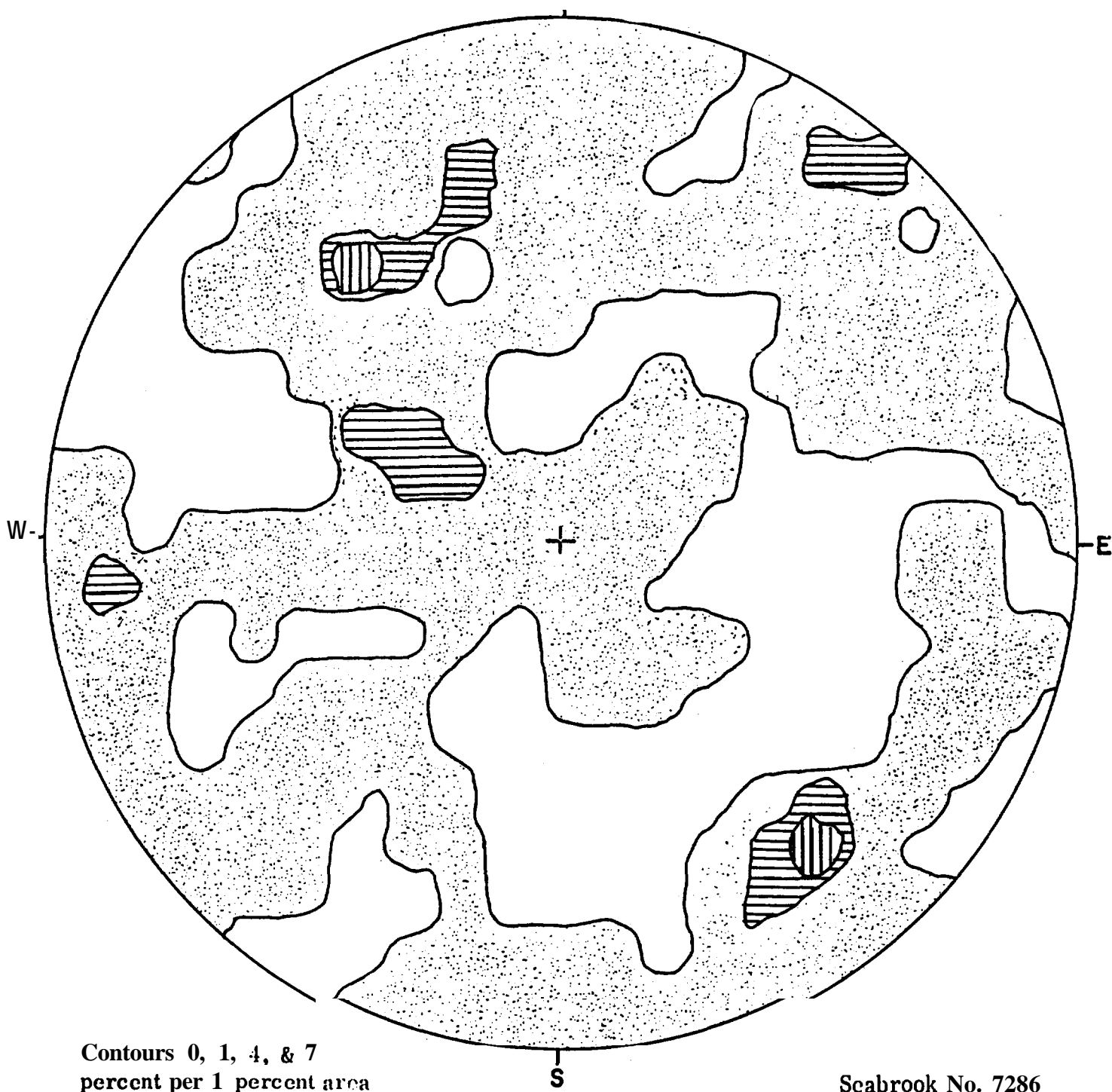


Contoured Equal Area Upper Hemisphere Polar Projection of Poles to 230 Joints In Reactor 1;
Borings E2-11, 12, 13 & 14

Fig. 4



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



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 <u>N2045, E70611, Plant Site</u>				INCLINATION <u>10°</u>		TO ADJUNG <u>SOE</u>		DATE START/FINISH <u>June 20, 1971 / June 27, 1971</u>	
CASING ID <u>3 in.</u>				CORE SIZE <u>2-1/8 x 1-7/8 in.</u>		TOTAL DEPTH <u>169.0</u> ft		DRILLED BY <u>American Drilling & Boring Co., J. Canning</u>	
GROUND EL (MSL) <u>25.0</u> ft				DEPTH TO WATER DATE <u>2.7</u> ft <u>June 21, 1971</u>		LOGGED BY <u>Soil, K. Polk, Rock - J. R. Reed</u>			

E.L. MSL ft	SAMPLE		RATIO OF ADV. min ft	WATER CONTENT		PRESSURE TEST		STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS	
	Depth ft	Type and No.		N or Rec.	%	Graphical	psi			Computed k 10 ⁻¹ cm/sec	(Weathering, defects, etc.)
										CONTINUED FROM PREVIOUS PAGE	
	146	NQ-30	100					N27E, 32NW J		Slight wx	Fresh and hard. Drills well. Partings are clean.
	150	NQ-31	100					N26E, 28NW J		Slight wx	
								N63W, 25NE F		Solid core	
	160	NQ-32	100					N18W, 71NE J		Fresh and hard. Drills well. Joints and partings are clean.	Diorite. Predominantly fine, medium dark with patches of coarse quartz diorite.
	160	NQ-33	100					N30E, 75NW J			
	168	NQ-31	97					N50W, 41NE F			
								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
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

A Subsidiary of American Engineers

Date: July 11, 1971

PAGE 2 of 2

Project 7286

LOG OF BORING 12-11

BORING LOCATION N20334, F79612, Plant Site INCLINATION 11 DEARING N66E DATE START/FINISH June 10, 1971 / June 18, 1971
 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. Whittaker
 GROUND EL. (MSL) 215.0 ft DEPTH TO WATER DATE June 12, 1971 LOGGED BY Sgt. L. J. Poll, Rec'd. L. B. Rand

EL. MSL ft	SAMPLE			RAT. OF ADV. min/ft	WATER CONTENT or RqD	PRESSURE TEST		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.)	
	Depth ft	Type and No.	N or Rec.			Graphic	psi			Computed 10 ⁻¹ cm/sec	
21.5								TOP OF ROCK			
10		NX-1	100	2	16			N18E, 43NW J	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	85	3	6			North, 21W J	Rusty		
		NX-3	100	3	46			N17E, 47NW J	Rusty		
		NX-4	100	3	25			N73W, 15NE J	Rusty		
		NQ-5	81	3	43			N41W, 67NE J	Rusty		
20		NQ-6	100	4	82			N23E, 47NW 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			N73W, 92SW J	Minor rusty		
		NQ-8	100	9	68			N63W, 37SW J	Slight wx		
		NQ-9	100	4	97			N12E, 67NW J	Minor rusty		
10		NQ-10	100	4	98			N63E, 15NW J	Extreme wx-crumblly		
		NQ-11	100	5	89			N10E, 46NW J		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-12	100	5	92			N48E, 52NW J			
20		NQ-13	100	6	90			N41E, 13NW J	Slight wx	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-14	98	16	89			N51E, 37NW J	Minor rusty		
		NQ-15	100	20	100						
		NQ-16	100	15	92						
10		NQ-17	100	6	85			N26W, 46NE J		Fresh and hard. Drills well. Some slight rusty staining on some partings. Not slickensided.	Diorite. Predominantly fine-grained, medium dark gray with local zones of medium coarse quartz diorite.
		NQ-18	100	8	92			N19W, 81SW J	Rusty stain		
		NQ-19	100	6	83			N81E, 55SE J			
		NQ-20	100	6	64			N26E, 65NW J	Rusty stain		
		NQ-21	100	5	89			N35E, 45NW J		Generally fresh. Local wx and rusty staining (93 to 100' core may be mixed up - box knocked over in field).	Fused xenoliths Diabase Diabase Slightly bleached
		NQ-22	100	6	25				Rusty severe wx		
		NQ-23	100	6	96			N28W, 43SW J	Rusty		
10		NQ-24	100	8	100			N26E, 37NW J	Rusty		
		NQ-25	97	5	94			N65W, 67SW J	Moderate wx	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.
		NQ-26	100	4	90			N36E, 45NW J			
		NQ-27	97	5	75			N35E, 44NW J			
		NQ-28	100	6	95				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-29	100	6	100			N15E, 12NW J			
		NQ-30	94	6	94			N45E, 12NE J			
17.5		NQ-31	95	6	75			N35E, 42NW J		Fresh and hard. Joints and partings clean. Not chloritic.	Diorite. Predominantly fine-grained, medium dark gray.

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 k - Coefficient of permeability
 wx - Weathered, weathering

1 - Washed through #10 0-1 ft. No samples taken.
 2 - This is only a partial list of dip and strike data.

SEABROOK STAT10 N
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
YANKEE ATOMIC ELECTRIC COMPANY
 United Engineers
Date: July

BORING LOCATION N20331, VT0542, Plant Site						INCLINATION 10°		PEARING K&G		DATE START/FINISH June 10, 1974 / June 18, 1974	
CASING ID 3 in.			CORE SIZE 2-1/8 x 3-7/8 in.			TOTAL DEPTH 165.5 ft		DRILLED BY American Drilling & Logging Co., A. W. Baker			
GROUND EL. (MSL) 71.5 ft			DEPTH TO WATER DATE July 17, 1974			LABORED BY Soil - Ck, Logs - Hook - L. R. Hook					
EL. MSL ft	SAMPLE		RAT OF ADV. in./ft	WATER CONTENT or RQD		PRESSURE TEST		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.)	
	Depth ft	Type and No.		N or Rec.	T	Graphic	G _{max} psi			Computed k 10 ⁻³ cm/sec	
								S + Shickside		CONTINUED FROM PREVIOUS PAGE	
102.5											
150	NQ-32	100	6	52				N25E, 37NW J	Driller mismatched	X X X	Diorite, fine grained, medium dark gray. Massive texture.
	NQ-33	100	6	100				N25E, 26NW J	Fresh and hard. Drills very well. Joints and partings are clean. Not chloritic.	X X X	
160	NQ-34	93	6	93					Solid core	X X X	
165.5	NQ-35	100	1	100					Solid core	X X X	
								BOTTOM OF BORING			

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

united engineers
A subsidiary of Southern Company

Date: July 11, 1974 Project: 7286

PAGE 2 of 2 LOG OF BORING 4-12

BORING LOCATION N200-C, 129715		INCLINATION 41°		HEADING N10W		DATE START/FINISH June 20, 1971 / July 1, 1971	
CASING ID 3 in.		CORE SIZE 1-2 1/2 x 2-1/2 in.		TOTAL DEPTH 160.0 ft		DRILLED BY American Drilling & Boring Co. A. Whittaker	
GROUND ELEVATION 30.5 ft		DEPTH TO WATER DATE June 21, 1971		LOGGED BY NOEL K. FOLEY, ROBERT J. R. RIND			

FL. MSL	Depth ft	SAMPLE Type and No.	N or Rec.	RATIO OF ADV. in/ft	WATER CONTENT %	RQD	PRESSURE LBS	STRIKE, DIP	SOIL AND ROCK DESCRIPTIONS	
									(Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
10.5		NX-1	88	3.0	12			2)	Rusty staining	Slightly wx to about 85 and fresh and hard below. Not chloritic.
		NX-2	72	1.0	0				Slight wx	
		NX-3	100	5.0	13				Rusty staining	
	10	NX-4	100	5.0	96				Moderate wx	
		NX-5	100	4.0	85				Rusty	Fresh and hard. Slight rusty staining on joints. Not chloritic or slickensided.
		NX-6	100	4.0	100				Slight rusty	
		NX-7	75	5.0	46			N40E, 28NW J	Slight rusty	
		NQ-8	93	7.0	13			N10E, 58SE J	Moderate wx	
	20	NQ-9	100	5.0	82			N15E, 75SE J	U zone of moderate wx. Core lost.	
		NQ-10	100	12.0	80			Horiz. N30E, 83NE J	Slight wx	
		NQ-11	100	14.0	100			N32E, 67SE J	Slight wx	Fresh and hard. Some joints and partings show minor powdery to rusty surface wx effects. Not chloritic.
		NQ-12	100	15.0	83			N65E, 27NW J	Slight wx	
		NQ-13	100	16.0	100			N25E, 67SE J	Slight wx	
		NQ-14	97	18.0	83			N55E, 55SE J	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	
	60	NQ-16	100	5.0	98			N29E, 61NE J	Slight wx	
		NQ-17	100	6.0	92			N35E, 66SE J	Slight wx	
		NQ-18	97	9.0	88			N59W, 30SW J	Slight wx	
		NQ-19	98	2.0	97			N35W, 63NE J	Moderate wx	Fresh and hard. Local thin zones of moderate to severe wx on closely spaced joints. Not chloritic.
		NQ-20	97	5.0	83			N55E, 7NW J	Minor vuggy	
		NQ-21	100	20.0	97			N53E, 81SE J	Severe wx	
		NQ-22	100	4.0	80			N46E, 86SW J	Moderate wx	
		NQ-23	98	6.0	98			N50E, 30SE J	Slight wx	Fresh and hard. Drills well. Some thin wx zones on joints or partings as shown. Not chloritic.
		NQ-24	90	8.0	83			N15E, 21NW J	Slight wx	
		NQ-25	90	9.0	88			N16E, 58SE J		
		NQ-26	90	0.0	90			N15E, 97NW J		
		NQ-27	90	5.0	67			N15W, 57NE J		
		NQ-28	90	2.0	75			N21E, 84NE J		
		NQ-29	97	4.0	63			N35E, 88SE J	Rusty stain	Fresh and hard. Some minor local rusty staining on some joints. Not chloritic.
		NQ-30	98	5.0	83			North, 36W J	Minor rusty	
		NQ-31	100	6.0	54			N10E, 96SE J	Slight wx	Fresh and hard. Some minor wx and rusty staining.
		NQ-32	98	6.0	65			N67W, 83SW J	Minor rusty	
		NQ-33	98	6.0	50			N15W, 17NE J		
								N70E, 23NW J		
								N50W, 30NE J		
								N16W, 41NE J		
								N60W, 51NE J		
								N56E, 83NW J		
								N45E, 35SE J		
								East, 8NE J		
								N50E, 19NW J	Minor rusty	Fresh and hard. Local
								N31E, 42SE J	Slight wx	slight to severe wx joints.
								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
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) 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

A subsidiary of American Electric

Date: **July 16, 1971** Project: **7286**

PAGE **1** of **2** LOG OF BORING **12-13**

BORING LOCATION <u>N20365, E79745, 11th St</u>		INCLINATION <u>0°</u>		BEARING <u>N30W</u>		DATE START/FINISH <u>June 20, 1974</u> / <u>July 3, 1974</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>1-7/8 - 2-1/8 in.</u>		TOTAL DEPTH <u>169.0</u> ft		DRILLED BY <u>American Drilling & Boring Co., A. Whitaker</u>	
GROUND FL. (MSL) <u>106.5</u> ft		DEPTH TO WATER DATE <u>June 21, 1974</u>		LOGGED BY <u>Shelby, P.B., R.Q.D., R. Hand</u>			

E.L. MSL ft	SAMPLE			RATE OF ADV. min/ft	WATER CONTENT or RQD	PRESSURE TEST		STRIKE, DIP F - Foliation J - Joint C - Contact D - Drilling	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)
	Depth ft	Type and No.	N or Rec.			Grain PSI	Computed $\frac{1}{10} \frac{k}{cm/sec}$			
								S - Stickenside		CONTINUED FROM PREVIOUS PAGE
144		NQ-31	95	3.0	25			N22E, 45E J		Slight wx
								N46E, 60SE J		Rusty
150		NQ-35	100	3.0	33			N56E, 70NW J		Severe wx
								N30E, 81SE J		Rusty stain
								N35E, 46SE J		Rusty stain
		NQ-36	100	6.0	85			N90E, 86SE J		Vuggy
								N19E, 66SE J		Minor rusty
160		NQ-37	100	7.0	83					Slight wx
								N55E, 63SE J		
		NQ-38	93	8.0	87			N67E, 76SE J		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
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

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Date: July 11, 1974 Project 7286

PAGE 2 of 2 LOG OF BORING E2-13

BORING LOCATION <u>N2007, 172513</u> Plot <u>S-1</u>		INCLINATION <u>11.5</u>		BEARING <u>S55W</u>		DATE START/FINISH <u>June 6, 1974</u> / <u>June 19, 1974</u>	
CASING ID <u>1 in.</u>		CORE SIZE <u>2-1/8 x 1-1/8</u>		TOTAL DEPTH <u>166.0</u> ft		DRILLED BY <u>American Drilling & Boring Co.; T. Canning</u>	
GROUND EL. (MSL) <u>29.0</u> ft		DEPTH TO WATER DATE <u>June 11, 1974</u>		LOGGED BY <u>Soil - E. L. Pelly; Rock - J. R. Rowd</u>			

E.L. MSL ft	Depth ft	SAMPLE Type and No.	N or Rec.	RAFI ADV. min/ft	WATER CONTENT or ROD	PRESSURE TEST 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.)	
29.0	0						8' Shickenside			
	1.0	NX-1	100	3.8	21		TOP OF ROCK			
	1.0	NX-2	100	4.1	33					
	2.0	NQ-3	90	2.1	23		N65E, 43NW J N53W, 84SE J N11E, 69SE J N73W, 72NE J			
	2.0	NQ-4	93	1.4	27					
	2.0	NQ-5	90	2.4	30					
	2.0	NQ-6	79	2.9	17					
	2.0	NQ-7	68	2.7	11					
	2.0	NQ-8	100	4.5	11		N28E, 67SE J			
	2.0	NQ-9	83	4.1	0					
	2.0	NQ-10	39	2.5	0					
	2.0	NQ-11	97	1.1	60					
	2.0	NQ-12	100	4.4	90		N23E, 53SE J N60W, 69NE J N13E, 10NW J			
	2.0	NQ-13	100	5.2	92					
	2.0	NQ-14	100	6.2	87		N 3W, 67NE J N57W, 41NE J			
	2.0	NQ-15	98	5.5	92					
	2.0	NQ-16	100	5.6	77		N10E, 35NW J N65W, 14NE J N50E, 12SE J N30E, 30NW J			
	2.0	NQ-17	100	6.4	83					
	2.0	NQ-18	100	6.3	65		N15E, 85NW J N 5E, 19SE J N60E, 55SE J			
	2.0	NQ-19	100	3.6	32					
	2.0	NQ-20	100	1.8	71		E85, 77S J N15W, 12SW J			
	2.0	NQ-21	100	5.5	80					
	2.0	NQ-22	97	4.8	62		N 6E, 64SE J N11E, 77SE J			
	2.0	NQ-23	89	2.7	0					
	2.0	NQ-24	100	5.0	11					
	2.0	NQ-25	95	5.3	81		N10E, 68SE J			
	2.0	NQ-26	100	4.8	67		N79E, 10SE J N75E, 18NW J N73E, 16NW J N26E, 38NW J			
	2.0	NQ-27	98	5.0	75					
	2.0	NQ-28	100	5.4	82		N50E, 62SE J N20W, 67NE J N22W, 58W J			
	2.0	NQ-29	98	5.7	85					
	2.0	NQ-30	100	6.0	81					
	2.0	NQ-31	100	5.4	100					
	2.0	NQ-32	98	6.7	98					
	2.0	NQ-33	100	4.6	53		N10E, 22NW J N55E, 69SE J N63E, 72SE J			
	2.0	NQ-34	78	5.7	98					

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 - GHI

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.

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PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

United Engineers
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Date: July 2, 1974 Project 7286

PAGE 1 of 2 LOG OF BORING 1-1

BORING LOCATION <u>N201-7, 170713, Plant Site</u>				INCLINATION <u>11.5°</u>		LEAKING <u>S55W</u>		DATE START/FINISH <u>June 6, 1971 / June 19, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2 1/2 x 1 1/2 x 7 3/4 in.</u>		TOTAL DEPTH <u>166.0</u> ft		DRILLED BY <u>American Drilling & Boring Co. - J. Canning</u>			
GROUND EL. (MSL) <u>130.0</u>		DEPTH TO WATER DATE <u>11.0</u> ft		June 11, 1971		LOGGED BY <u>Sgt. E. J. Poll, Rec'd - J. R. Reed</u>			

EL. MSL ft	Depth ft	SAMPLE Type and No.	N or Rec.	RATIO OF ADV. min 15	WATER CONTENT or RQD	PRESSURE TEST	STRIKE, DIP	SOIL AND ROCK DESCRIPTIONS	
								(Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
									CONTINUED FROM PREVIOUS PAGE
130		NQ-35	100	10.5	82		N71W, 25NE J		Fresh and hard. Joints and partings clean. Not chloritic. Diorite. Predominantly fine-grained medium dark gray with patches of medium coarse quartz diorite.
140		NQ-36	98	2.0	98		N63W, 60NE J		
		NQ-37	100	2.0	93		N19E, 62SE J		
150		NQ-38	98	3.1	98		N31E, 70SE J		
		NQ-39	98	3.1	98		N61W, 54NE J		
160		NQ-40	100	3.3	93		N65E, 18NW S		
		NQ-41	98	3.2	98		N55E, 29NE J		
166							N25W, 20SW I		
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
 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 a subsidiary of

Date: July 2, 1971 Project: 3386

PAGE 2 of 2 LOG OF BORING 170713

BORING LOCATION N26321, F79179, Plant Site INCLINATION 41.5 BEARING S10W 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 ELEVATION 111.0 ft DEPTH TO WATER DATE June 1, 1971 LOGGED BY Soil. K. Fode, R. J. R. R. R.

EL. MSL	Depth	Type and No.	N or Rec.	RATIO OF ADV. min/ft	WATER CONTENT or RQD		PRESSURE TEST		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.)	
					%	Graphic	gpm (psi)	Computed 10 ⁻¹ cm/sec				
13.9									S - Stickiness			
11.5												
0												
-20												
-30												
-40												
-50												
-60												
-70												
-80												
-90												
-100												
-110												
-120												
-130												
-140												

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 k - Coefficient of permeability
 wx - Weathered, weathering
 x - Oriented core

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.

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 Date: July 2, 1971 Project: 7286
 PAGE 1 of 2 LOG OF BORING 12-15

[illegible]

BORING LOCATION <u>N261127, E79149; Plant Site</u>		INCLINATION <u>41</u>		PEARING <u>S78 E</u>		DATE START/FINISH <u>May 29, 1971</u> / <u>May 29, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2-1/8 x 1-7/8 in.</u>		TOTAL DEPTH <u>165.2</u> ft		DRILLED BY <u>American Drilling & Boring Co. - A. M. Mator</u>	
GROUND EL. (MSL) <u>10.0</u> ft		DEPTH TO WATER DATE <u>May 29, 1971</u>		LOGGED BY <u>Sgt. J. L. For, Rod. J. H. Bond</u>			

EL. MSL ft	SAMPLE			RATIO OF ADV. min. ft	WATER LOG, FNT. or RQD	PRESSURE FEET	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.)	
	Depth ft	Type and No.	N or Rec.						Weathering, defects, etc.	Type, texture, mineralogy, color, hardness, etc.
-110										
-115		NQ-30	100	1.0	32		N10E, 68NW S N82E, 77NW S	Minor chlorite		Foliated
-150		NQ-31	100	1.0	82		N27W, 98SW N81W, 56NE S			
-120		NQ-32	100	4.0	92		N59W, 53NE S	Pyrrhotite	Fresh and hard. Excellent drilling.	
-160		NQ-33	100	1.0	100		N10W, 72SW S	D bleached		Welded breccia
-165										Diorite. Medium-fine grained, medium dark gray. Massive. Magnetic.
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 - Donnan
F - Fixed piston P - Pitcher
O - Osterberg G - GEI

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

NOTES

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Date: June 28, 1971 Project: 2285

PAGE 2 of 2 LOG OF BORING E2-16

BORING LOCATION <u>N26117, F79221, Plant Site</u>				INCLINATION <u>11°</u>		BEARING <u>N6.5°</u>		DATE START/FINISH <u>May 30, 1974 / June 5, 1974</u>	
CASING ID <u>3 in.</u>				CORE SIZE <u>1-7/8 in.</u>		TOTAL DEPTH <u>165.0</u> ft		DRILLED BY <u>American Drilling & Boring, T. Canning</u>	
GROUND EL. (MSL) <u>13.3</u> ft				DEPTH TO WATER DATE <u>June 5, 1974</u>		LOCKED BY <u>Soil - K. DeB. Rock - J. R. Rand</u>			

EL. MSL ft	Depth ft	SAMPLE Type and No.	N or Rec.	RATIO OF ADV. min./ft	WATER CONTENT or RQD		PRESSURE TEST		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.)	
					T	Graphic	gum psi	Computed 10 ⁻¹ k/cm/sec			(Weathering, defects, etc.)	(Type, texture, mineralogy, color, hardness, etc.)
13.3	0											
	10											
	19.0											
	20	1) NQ-1	100	*	0							
		NQ-2	89	*	0							
		NQ-3	82	1.8	0							
	30	NQ-4	100	2.0	21				N37E, 34NW J			
		NQ-5	95	2.0	96				N47W, 87SW J	Slight wx on coatings	Core is closely broken by rusty and wx joints and partings.	Diorite. Medium grained quartz diorite.
		NQ-6	89	1.8	0				N17W, 77NE J		Fresh and hard. Joints or partings show slight wx effects. Does not core well. Close breaks.	Grades into well-foliated quartzitic schist. Schist is locally feldspathic.
	40	NQ-7	100	2.1	73				N70W, 78NE S			
		NQ-8	100	1.9	28				N61E, 52NE J			
		NQ-9	100	2.0	61				N51E, 21NE J	Slight wx effects		
	50	NQ-10	100	2.0	29							
		NQ-11	100	2.1	53							
		NQ-12	100	2.8	60				N55W, 80NE J			
		NQ-13	100	3.1	48				N68E, 80NE J	Chips Chlorite Chlorite polishing Chlorite polishing Chlorite polishing	Fresh and hard. Conchoidal coating shows polished surfaces (of other #2 holes).	Welded breccia
	60	NQ-14	100	2.8	38				N71W, 89NE S	Chips Chlorite Chlorite polishing Chlorite polishing Chlorite polishing		Quartzite (?) to quartzitic schist. Fine-grained, medium gray. Well foliated.
		NQ-15	97	2.0	33					Slight to med. wx		
	70	NQ-16	100	2.0	21					Minor chlorite Minor chlorite Chlorite polish	Fresh and hard. Local chlorite and conchoidal polish on some joint surfaces.	Welded breccia
		NQ-17	100	2.1	60					Polish-chips		Metaquartzite (?) Fine-grained, medium dark gray. Massive to vaguely banded rock. Somewhat feldspathic.
	80	NQ-18	90	2.9	0							
		NQ-19	99	2.0	32					Slight wx	Closely spaced jointing. Attitude not known.	Metaquartzite (?) Fine-grained, medium dark gray. Quite massive texture.
	90	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					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"
	110	NQ-22	100	2.1	61							
		NQ-23	100	1.5	100							
	120	NQ-24	88	2.3	95							
	130	NQ-25	100	2.1	94					Chlorite Chlorite	Fresh and hard. Generally drills well. Polished conchoidal Chlorite-polish surfaces locally on joint	Metaquartzite (?) Fine-grained, medium dark gray. Vaguely banded.
	140											
	150											
	165.0											

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 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.

SEABROOK STATION

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YANKEE ATOMIC ELECTRIC COMPANY

United Engineers

Date: July 3, 1974 Project: 7286

PAGE: 1 of 2 LOG OF BORING: F2-17

BORING LOCATION <u>N20117, F72221, Plant Site</u>				INCLINATION <u>41°</u>		BEARING <u>S65.5E</u>		DATE START/FINISH <u>May 30, 1971 / June 5, 1971</u>	
CASING ID <u>3 in.</u>				CORE SIZE <u>1.75 in.</u>		TOTAL DEPTH <u>165.0</u> ft		DRILLED BY <u>American Drilling & Boring, T. Canning</u>	
GROUND EL. (MSL) <u>1.0</u> ft				DEPTH TO WATER DATE <u>June 5, 1971</u>		LOGGED BY <u>Carl L. Polk, Rock, J. H. Reed</u>			

EL. MSL ft	SAMPLE			RATIO OF ADV. min. ft	WATER CONTENT %	OR RQD	PRESSURE TEST		STRIKE, DIP F = Foliation J = Joint C = Contact R = Bedding	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)
	Depth ft	Type and No.	N or Rec.				Grain	Computed			
-100	135	NQ-26	98	2.5	81						Minor chlorite
-140	150	NQ-27	100	2.9	75						Minor chlorite
-160	160	NQ-28	89	2.5	25						Minor chlorite
-120	165	NQ-29	100	3.0	55						Minor chlorite
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

U - Undisturbed samples

S - Shelby tube

F - Fixed piston

O - Osterberg

D - Drilling break

xx - Weathered, weathering

N - Denison

P - Pitcher

G - GEI

k - Coefficient of permeability

NOTES

SEABROOK STATION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

United Engineers & CONSULTANTS INC.

Date: July 3, 1971

Project: 7286

PAGE 2 of 2

LOG OF BORING F72-17

[illegible]

BORING LOCATION		INCLINATION		BEARING		DATE START/FINISH		
N20270, L29272 - Plant Site		3°		S68.5W		May 22, 1971 / May 28, 1971		
CASING ID		CORE SIZE		TOTAL DEPTH		DRILLED BY		
3 in.		1-7/8 in.		168.6 ft		American Drilling & Boring Co., T. Canning		
GROUND ELEVATION		DEPTH TO WATER DATE				LOGGED BY		
112.0 ft		May 24, 1971				S. J. Poff, R. L. R. Reed		
EL. MSL ft	SAMPLE		RATIO OF ADV. min./ft	WATER CONTENT or RQD	PRESSURE TEST		STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)
	Depth ft	Type and No.			N or Rec.	Graphical		
-100								
118								
150	NQ-34	100	5	87			36E, 28SW J	Minor chlorite
							113W, 66NE J	Minor chlorite
	NQ-35	100	10	25			19W, 86NE S	Pyrite
							52E, 66SE S	Chlorite
160	NQ-45	97	8	80			35E, 72SE S	Pyrite
							35W, 53SW S	Fresh and hard. Some chlorite and pyrite on oints.
	NQ-46	98	0	100			50E, 67SE J	Pyrite
168							77W, 52SW J	Pyrite
							BOTTOM OF BORING	

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	N85E	67NW	X				
81.1	N15W	62NW			X		
82.9	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	40sw	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. E2-12Project Seabrook
Project No. 7286Ground Elevation (MSL) = t 21.5

Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint'	Foliation	Slickensided Surface	Contact	
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) \square + 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				
136.3	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				

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	83NE	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	42SE	X				
65.4	N75E	38SE	X				
66.7	N42W	50NE	X				
67.0	N30E	30NW	X				
70.0	N45E	85NW				X	Diorite over Diabase
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				
81.2	N46W	87NE	X				
85.0	N34W	82SW	X				
87.5	N6E	64SE	X				
87.8	N48W	14NE	X				
88.2	N3W	39NE	X				
89.3	N11E	77SE	X				
89.6	N65E	86SE	X				
94.3	N10E	68SE					
94.6	N59E	59SE					
99.3	N78E	40SE	X				

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	75NE	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. E2-15Project No. Seabrook
7286Ground Elevation (MSL) = + 13.9

Feature Depth	Type of Feature						Remarks
	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	
17.0	N85W	80NE			X		
17.6	N85E	89NW		X			
18.6	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				
26.6	N75E	82NW		X			
27.6	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. E2-16Project Seabrook
Project No. 7286Ground Elevation (MSL) = + 16.9

Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint	Foliation	Slickensided Surface	Contact	
17.3	N36E	28NW	X				
18.3	N10W	56SW	X				
20.0	N5W	85SW			X		
20.6	N20W	70SW	X				
23.0	N18W	53SW	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	63SW	X				
33.9	N10W	68SW	X				
34.3	N8W	47SW	X				
35.0	N46W	30NE		X			
41.2	N11W	33SW	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				X		
81.6	N26E	27NW			X		
82.3	N26E	38NW	X				
82.7	N15E	28NW	X				

Boring No. E2-16Project **Seabrook**
Project No. 7286Ground Elevation (MSL) = + 16.8

Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint	Foliation	Slickensided Surface	Contact	
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		
125.6	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	76 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 **Seabrook**
 Project No. 7286

Type of Feature							
Feature Depth	Strike	Dip	Joint	Foliation	Slip 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		

Boring No. E2-17Project **Seabrook**
Project No. 7286Ground Elevation (MSL) = t 13.3Type of Feature

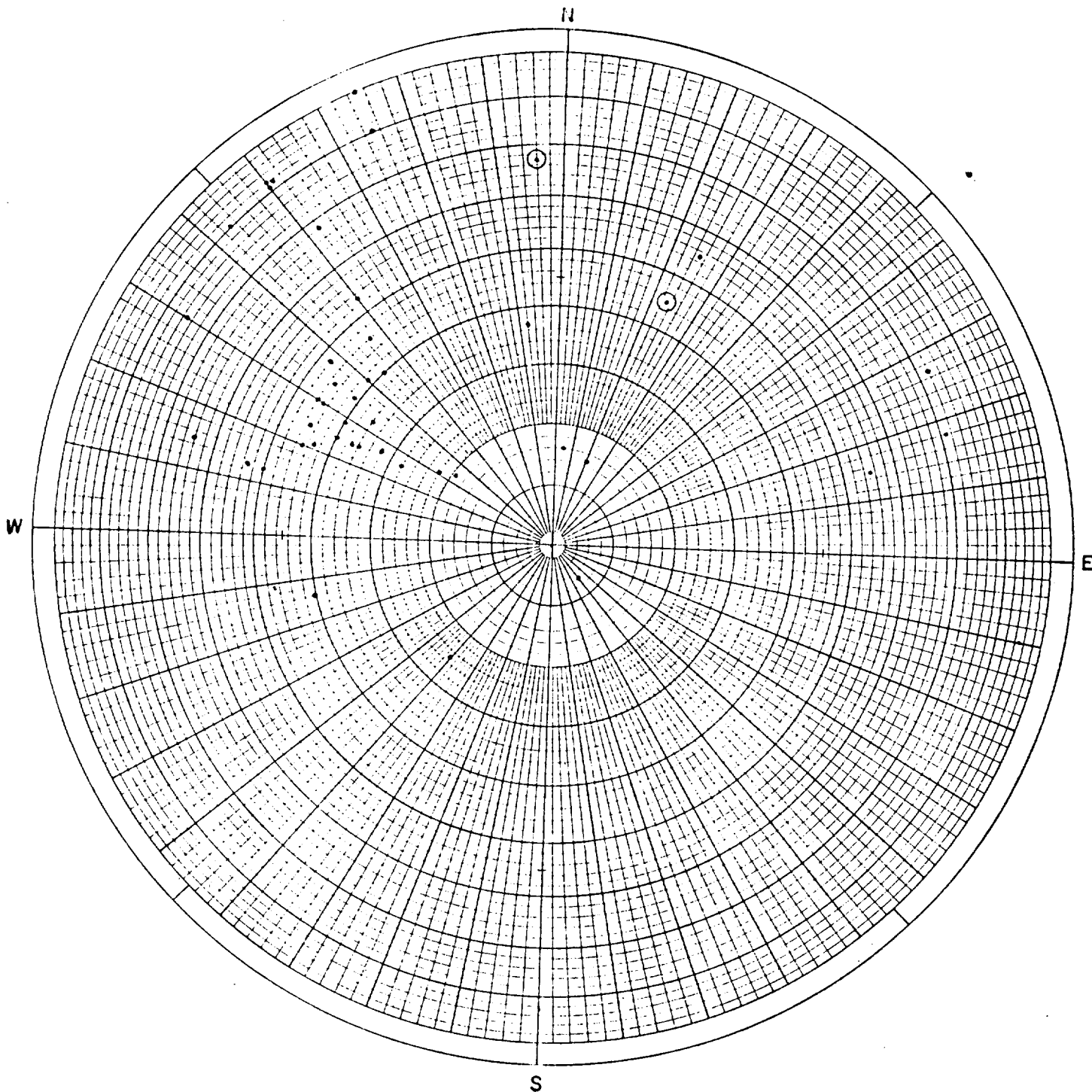
Feature Depth	Strike	Dip	Joint	Foliation	Slickensided Surface	Contact	Remarks
28.0	N37E	34NW	X				
29.5	N55E	59sc	X				
33.3	N87W	87SW		X			
34.3	N47W	23NE			X		
35.9	N17W	77NE	X				
42.6	N50W	78NE			X		
43.4	N49E	23NE			X		
44.1	N61E	52NE	X				
45.0	N24W	10NE			X		
45.1	N49E	60NE			X		
45.3	N73E	84NE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

Boring No. E2-18Project Seabrook
Project No. 7286Ground Elevation (MSL) = + 14.9

Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint	Foliation	Slickensided Surface	Contact	
22.8	N28W	50SW			X		
36.0	N53E	25SE	X				
42.0	N5E	73SE	X				
42.6	N42E	64SE	X				
43.1	N55E	25SE	X				
44.0	N3W	45SW	X				
46.6	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	N0rt h	East	X				
61.7	N50W	87NE			X		
64.6	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		
123.3	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				
135.6	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

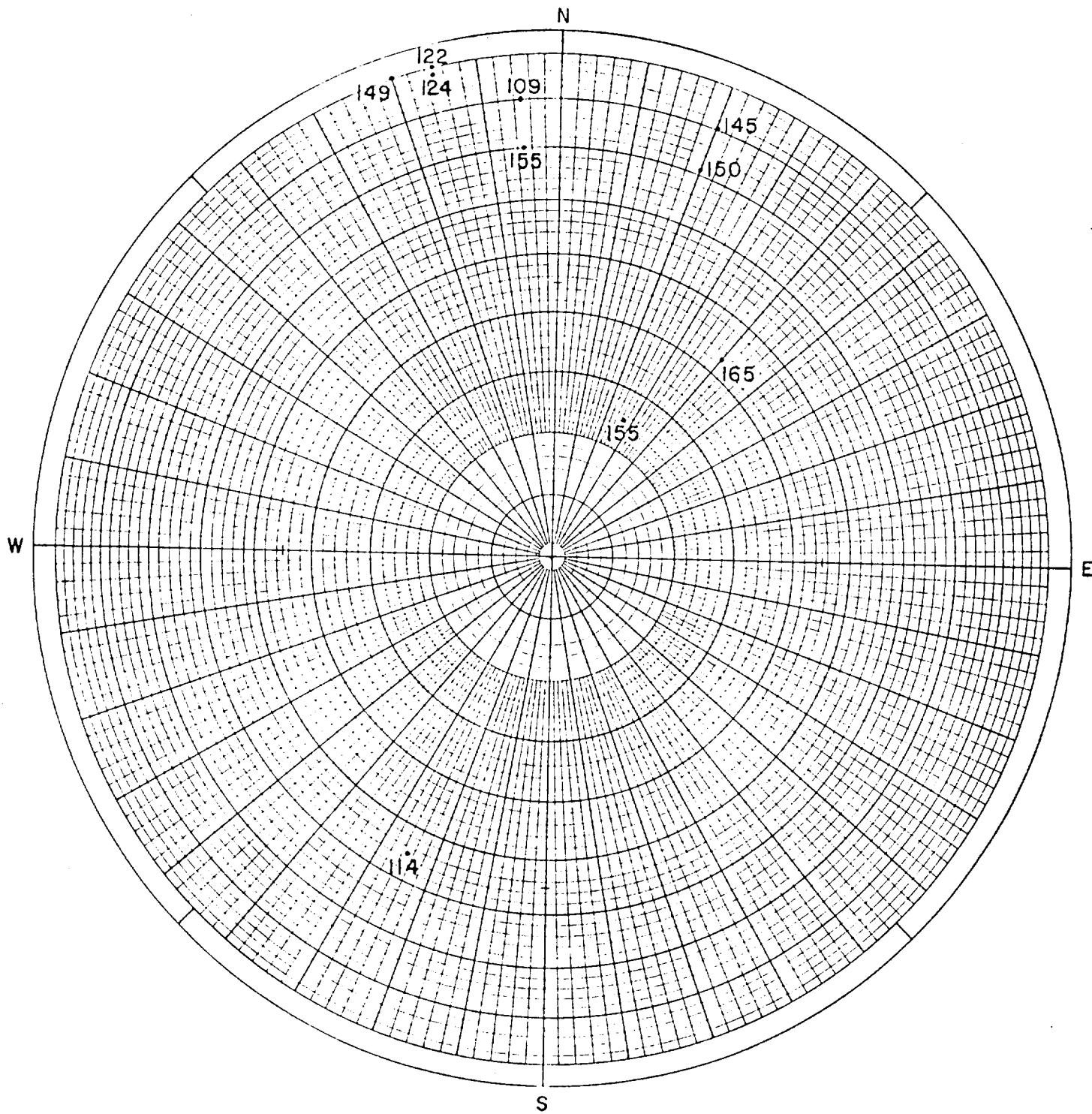
APPENDIX III
Polar Equal Area Stereo Net Projections



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

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

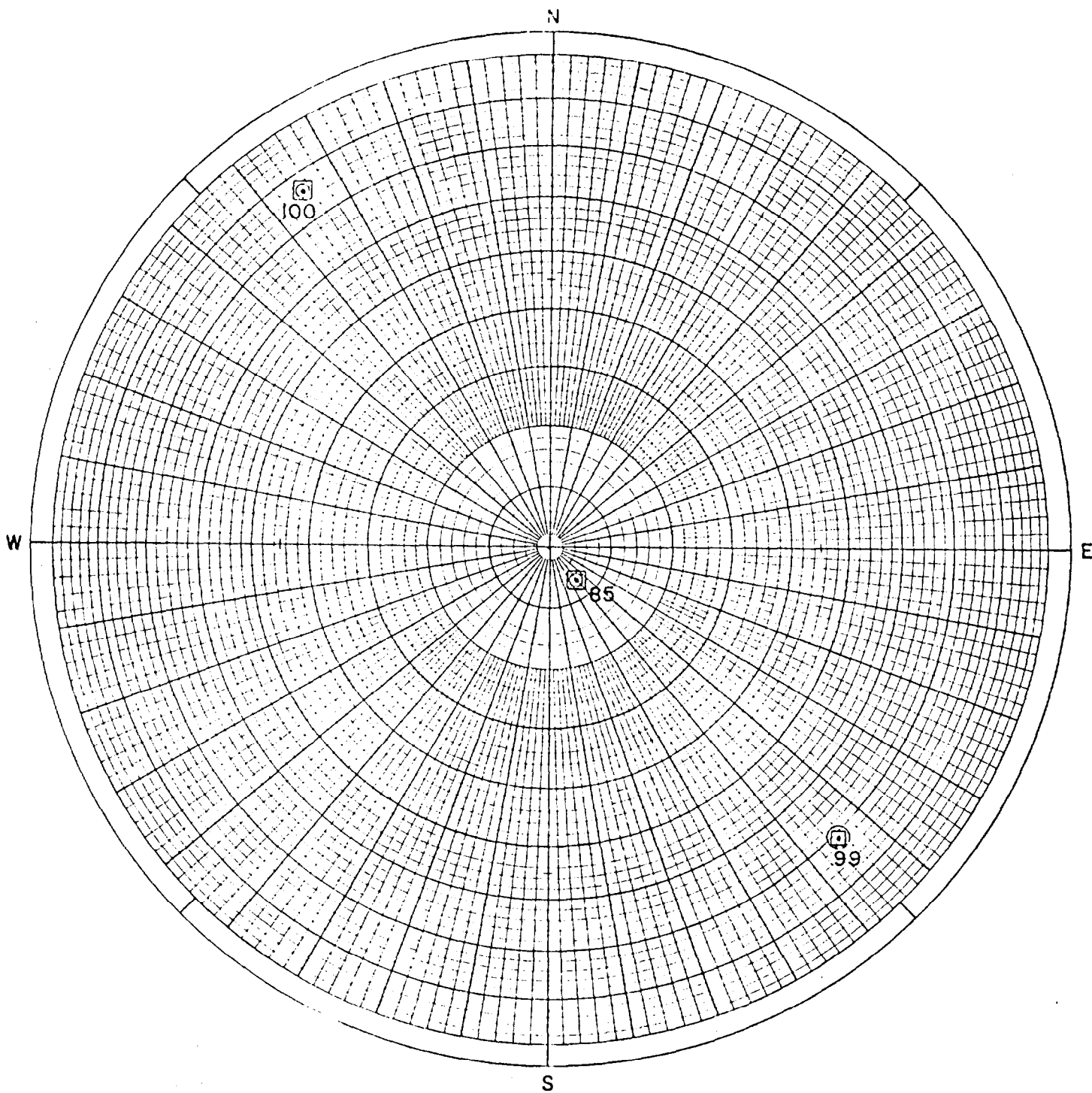
- Diorite
- ⊙ Diabase



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

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

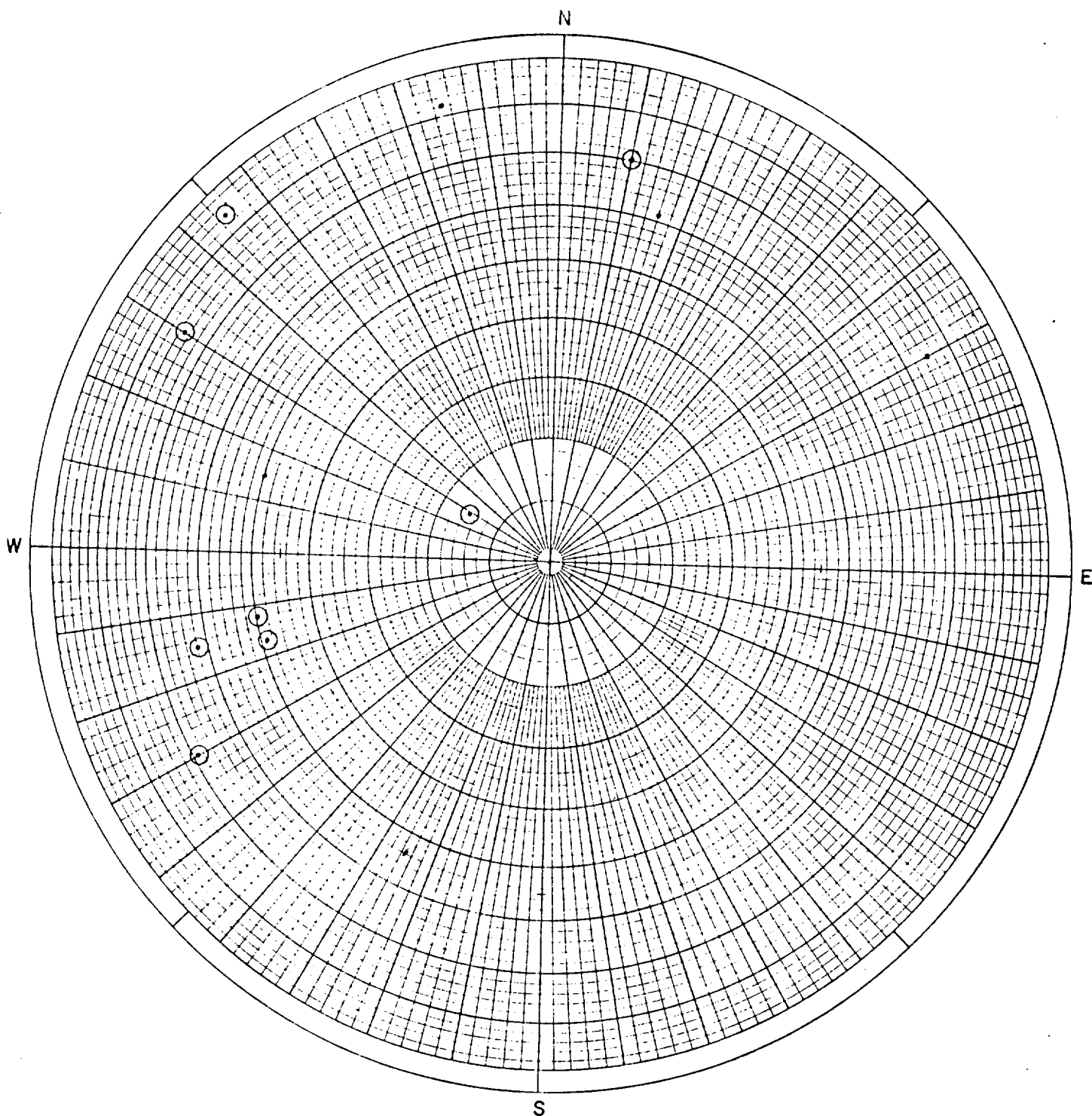
. Diorite



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

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

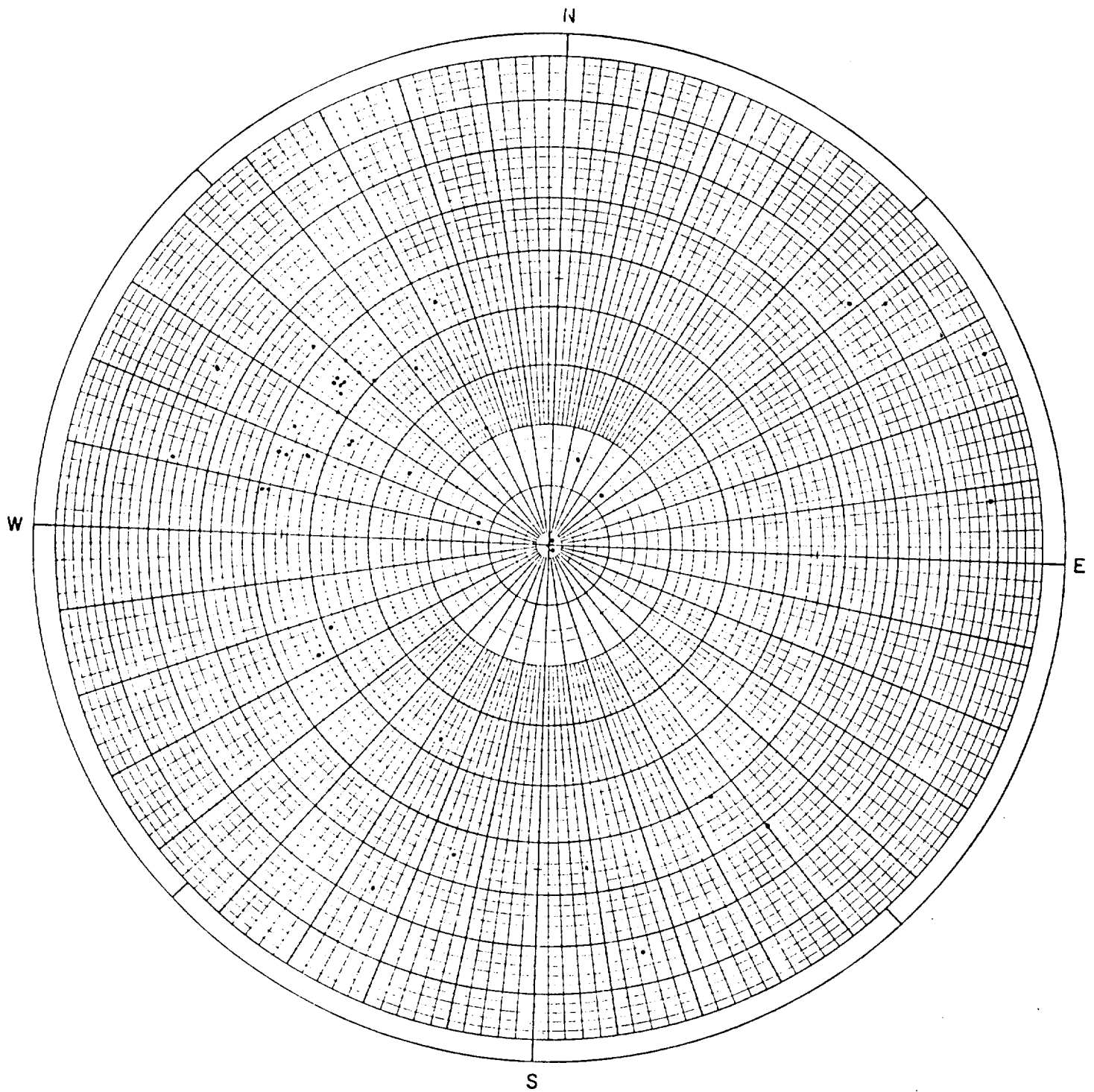
- ⊠ Diorite over Diabase
- ⊡ Diabase over Diorite



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

Boring E2-11
Ground Elevation (MSL) 1-25.0 ft
Slickensided Surfaces in:

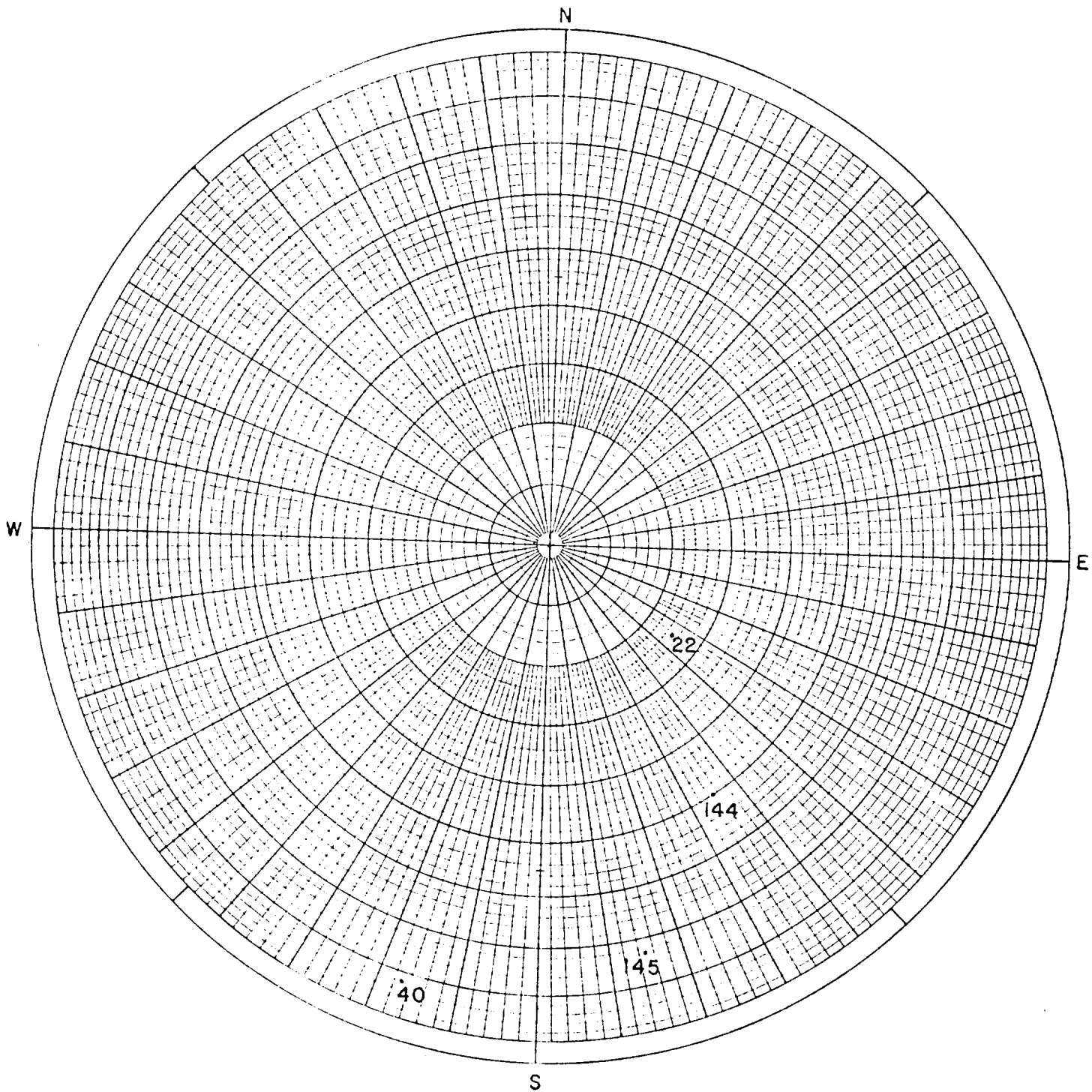
- Diorite
- ⊙ Diabase



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

Boring F2-12
Ground Elevation (MSL) +21.5 ft
Joints in

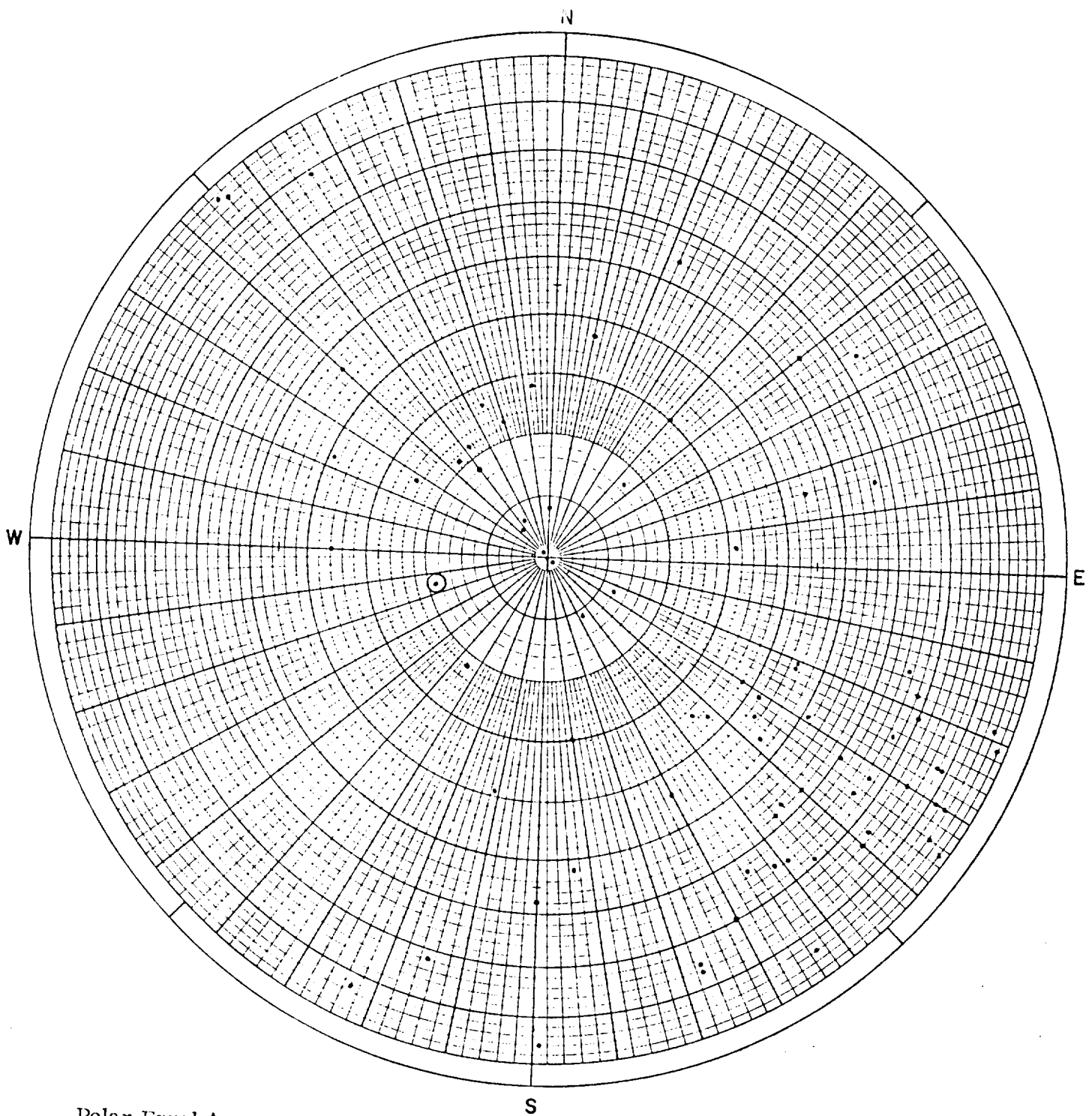
. Diorite



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

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

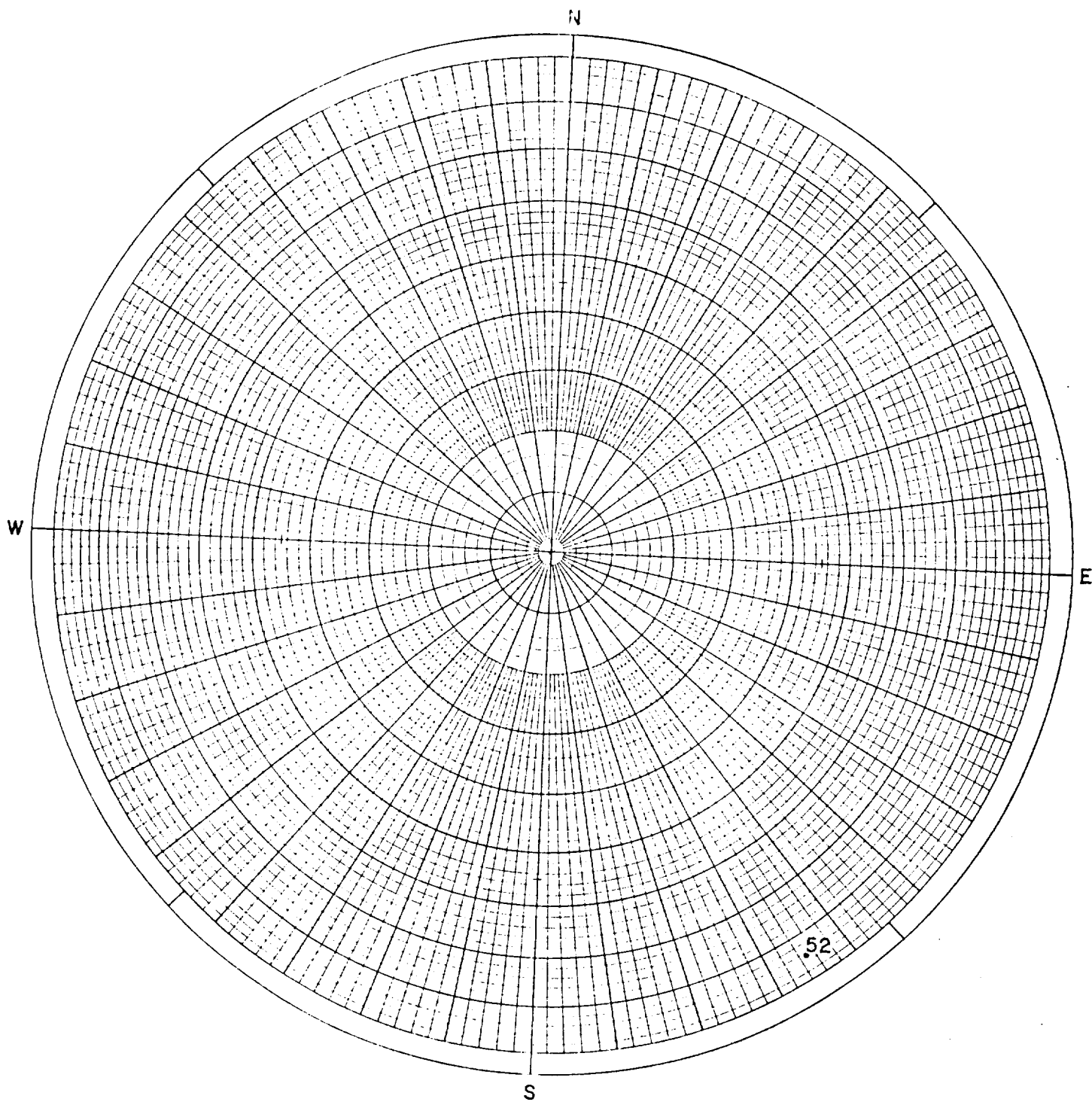
. Diorite



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

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

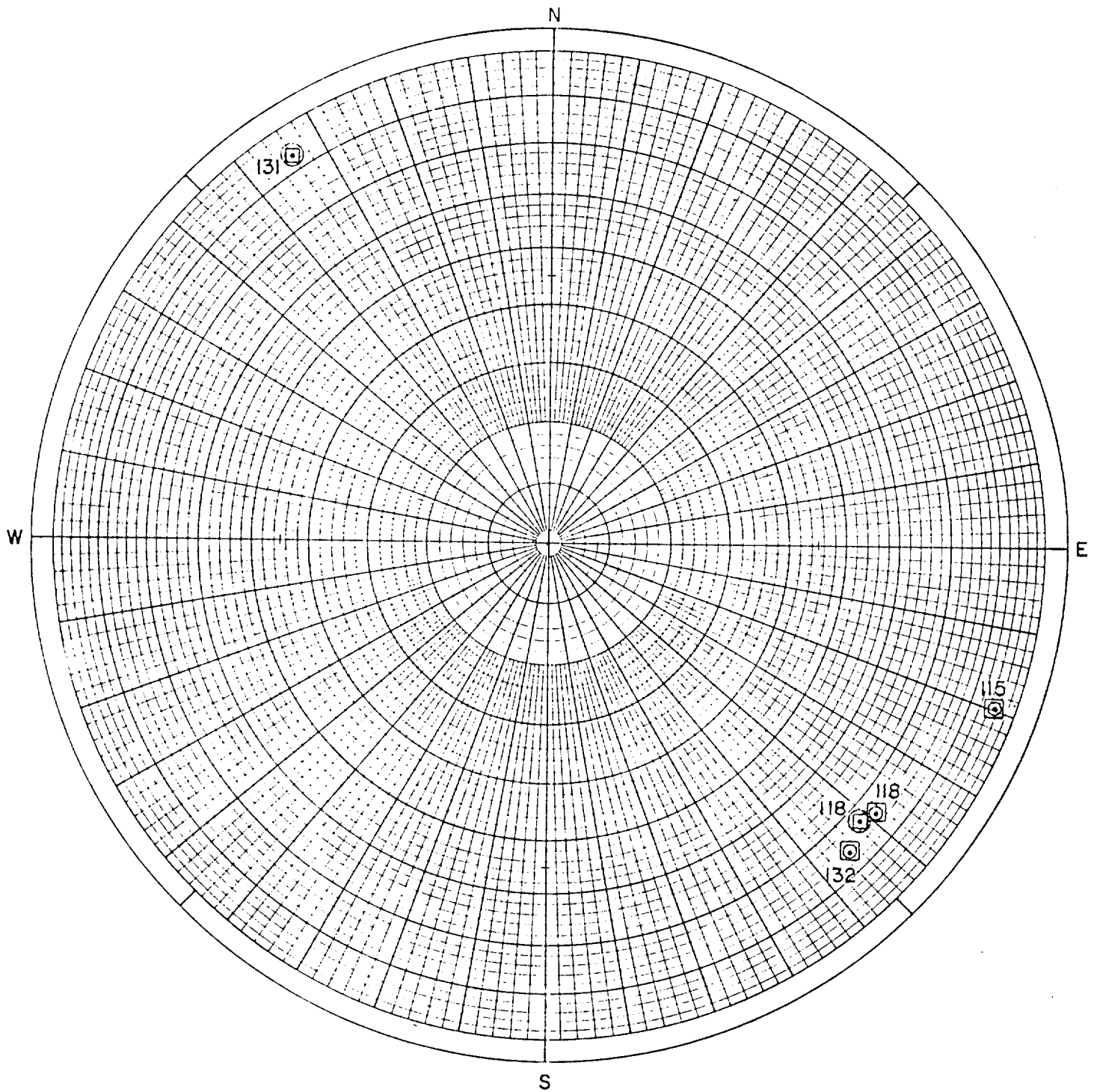
• Diorite
⊙ Diabase



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:

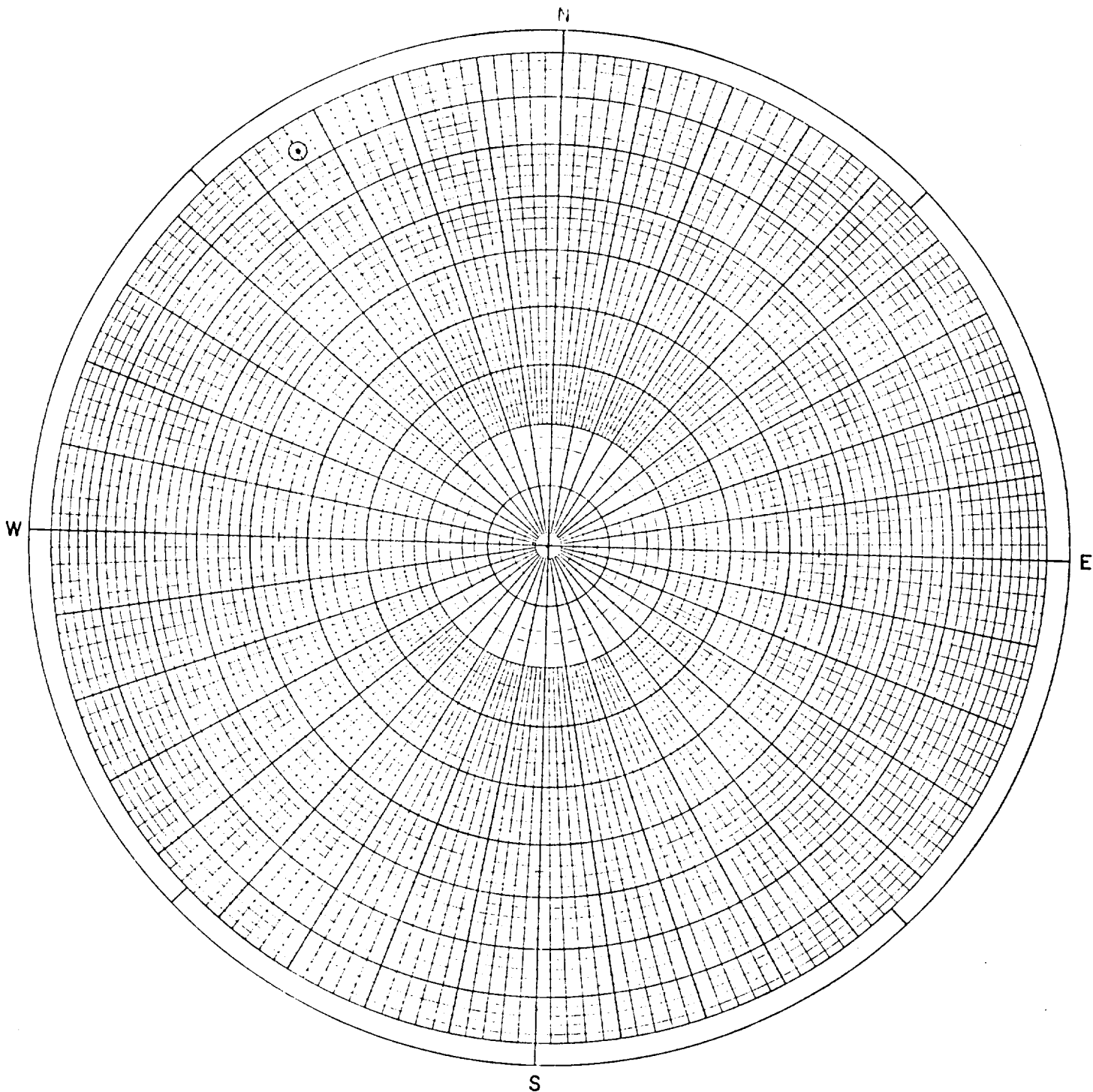
. Diorite



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

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

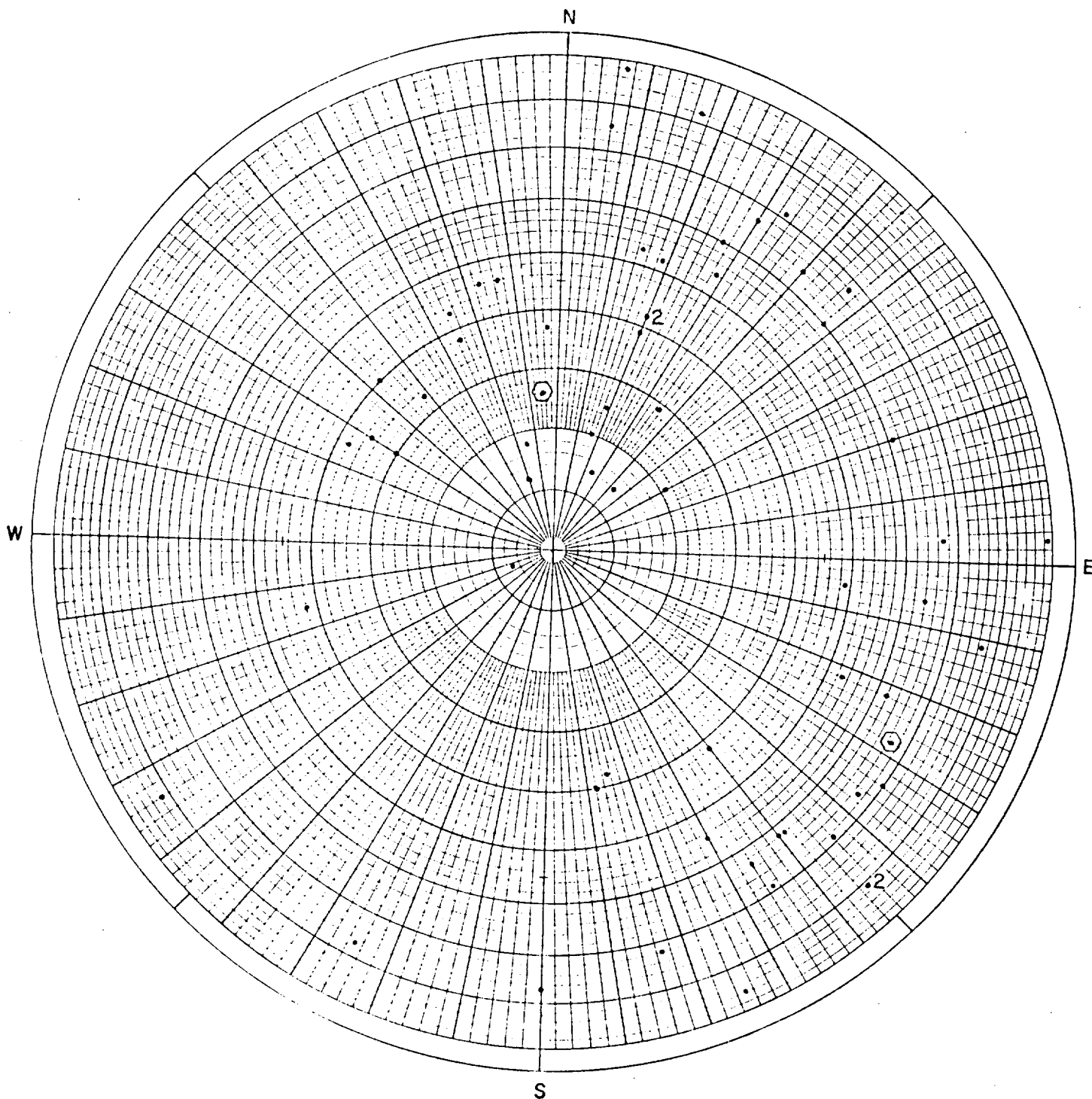
- ☐ Diorite over Diabase
- ⊙ Diabase over Diorite



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

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

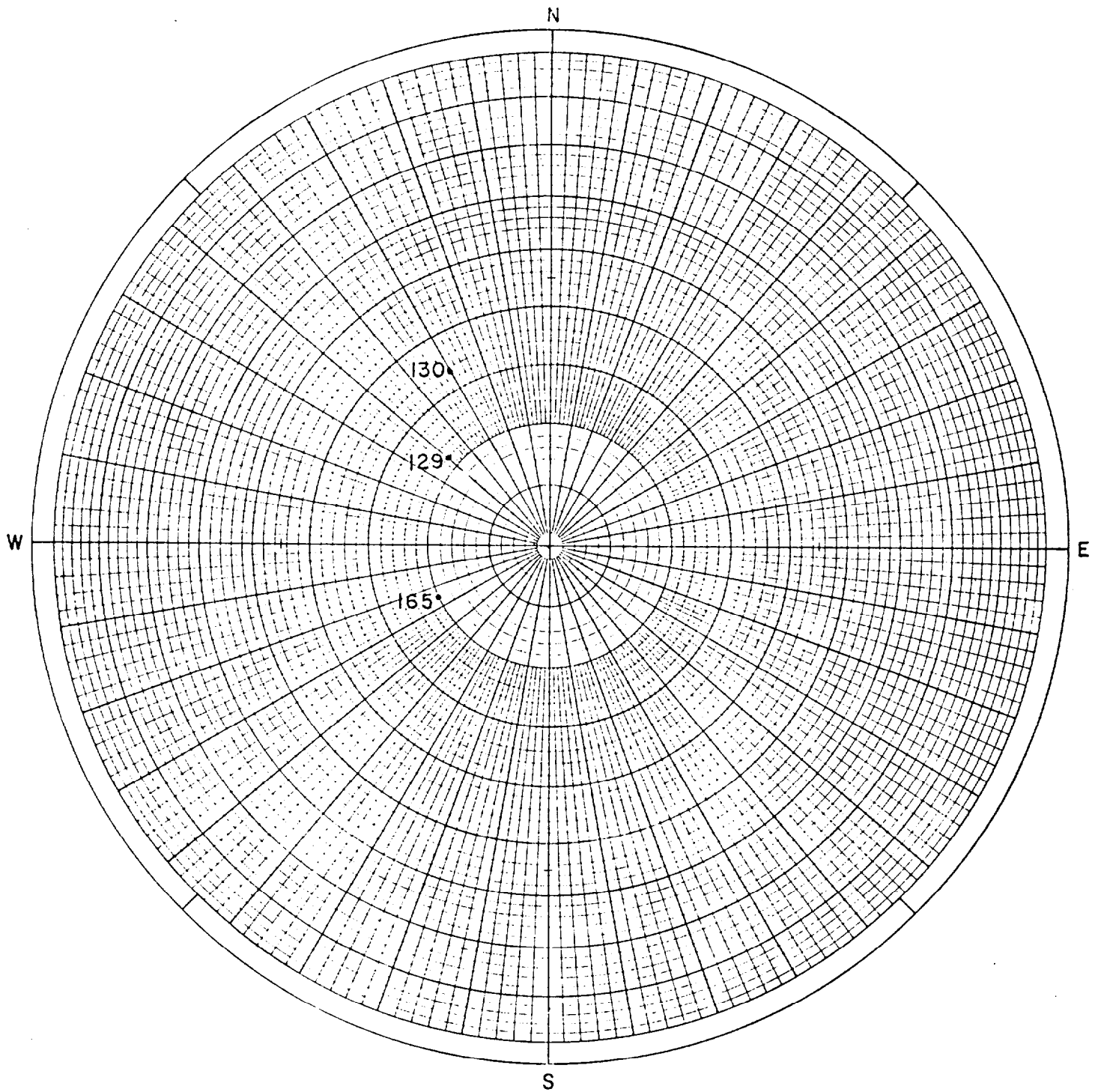
⊙ Diabase



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

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

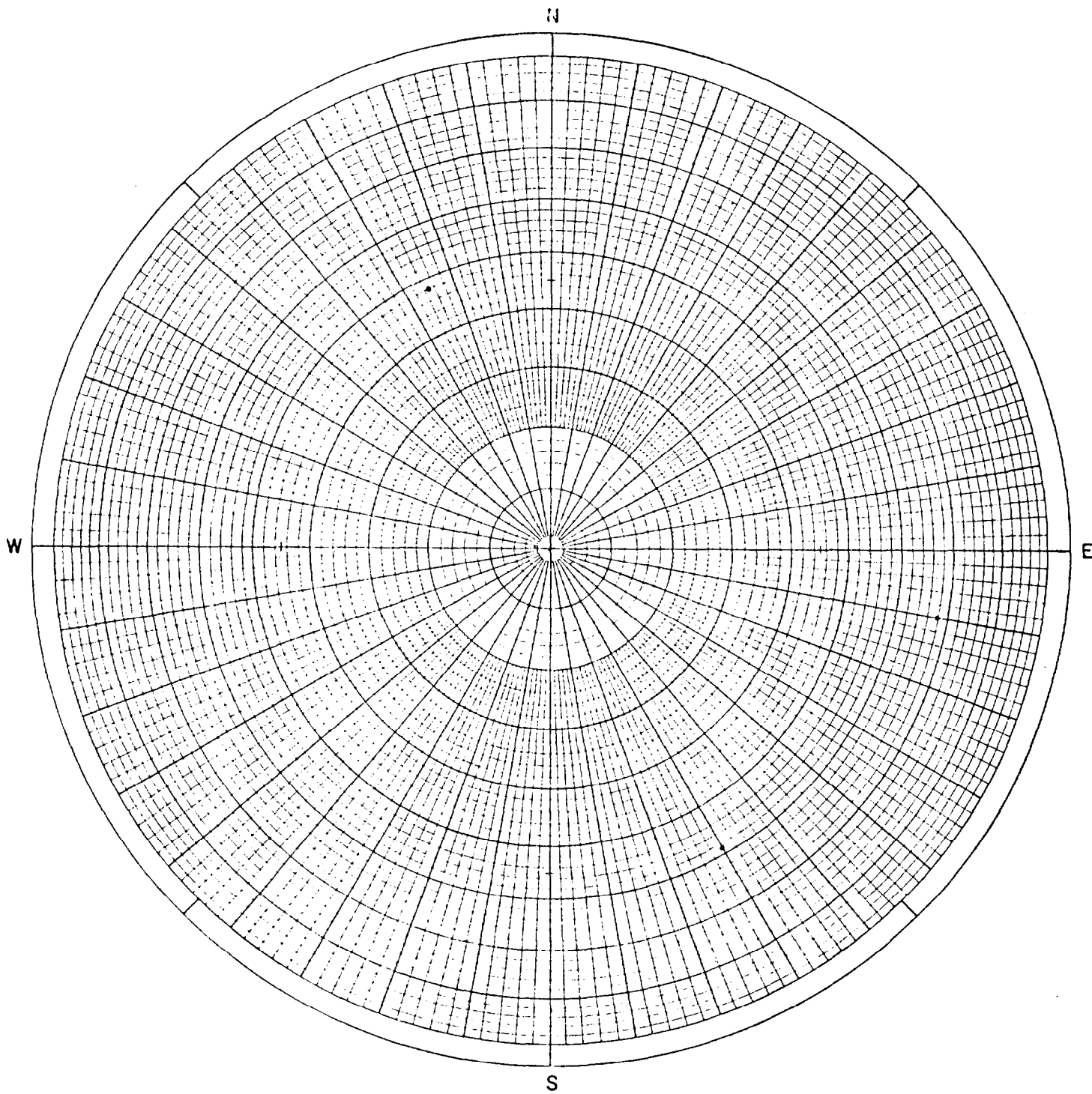
• Diorite
 ⊙ Pegmatite



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

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

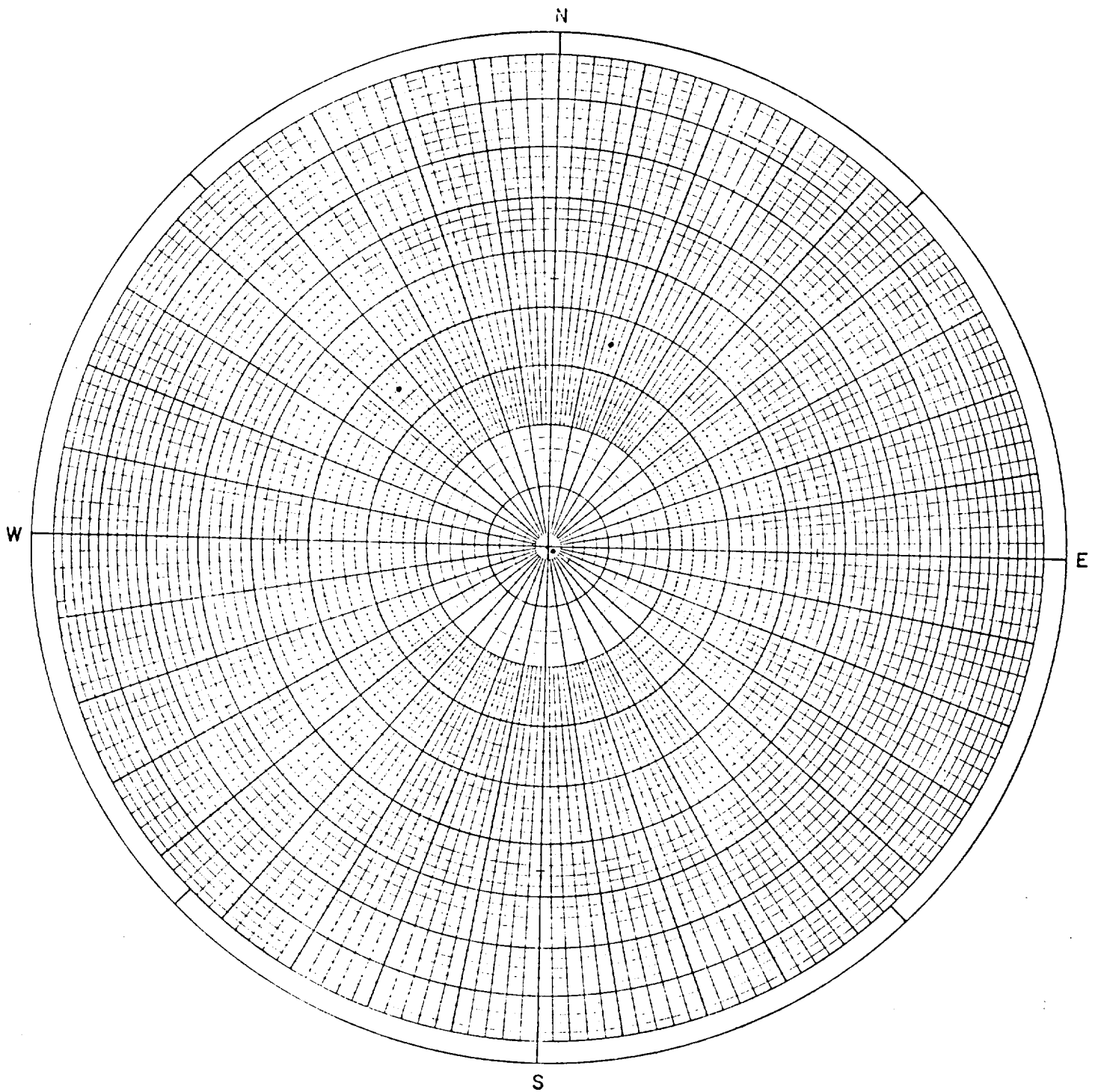
• Diorite



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

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

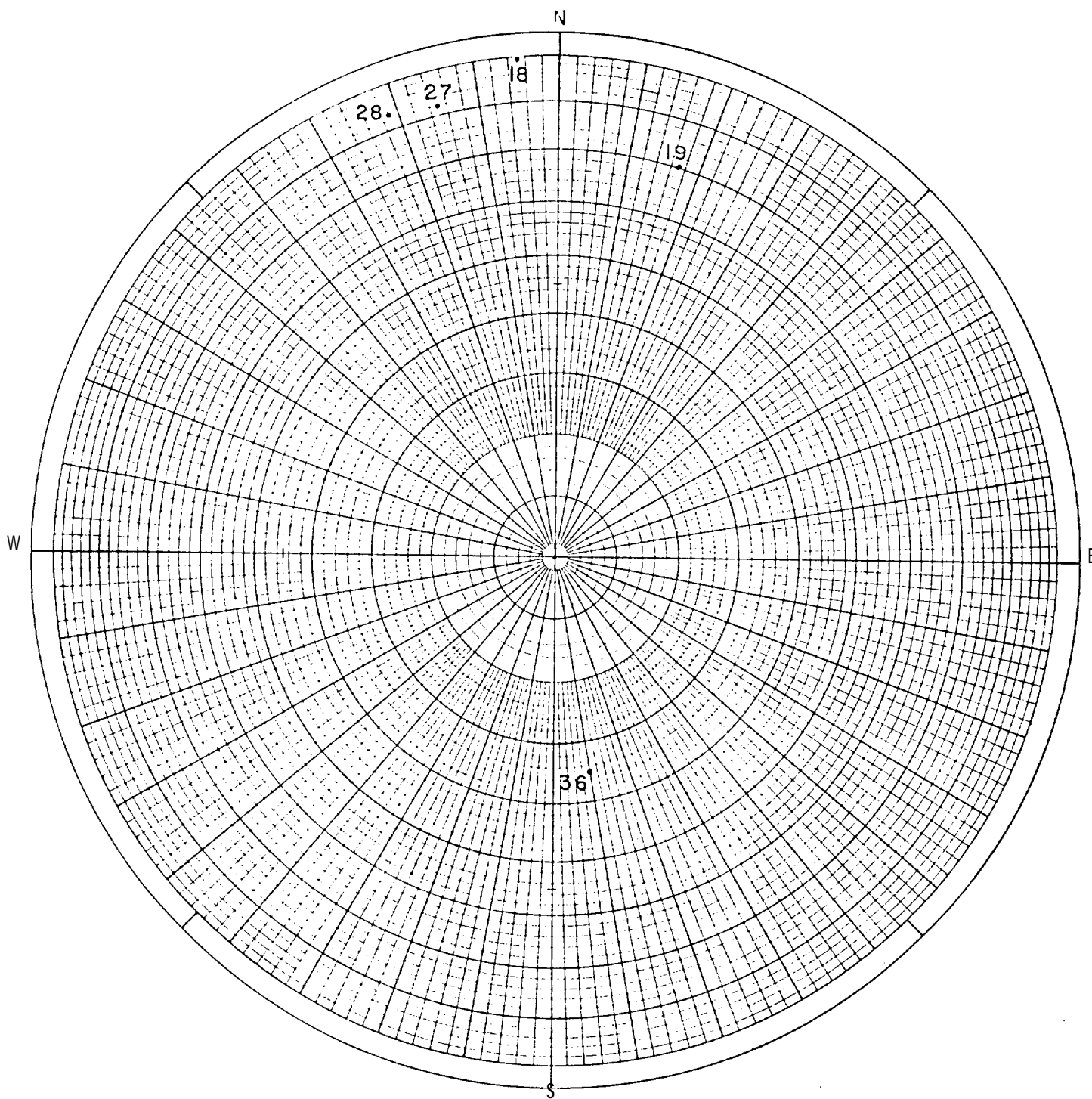
. Diorite



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

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

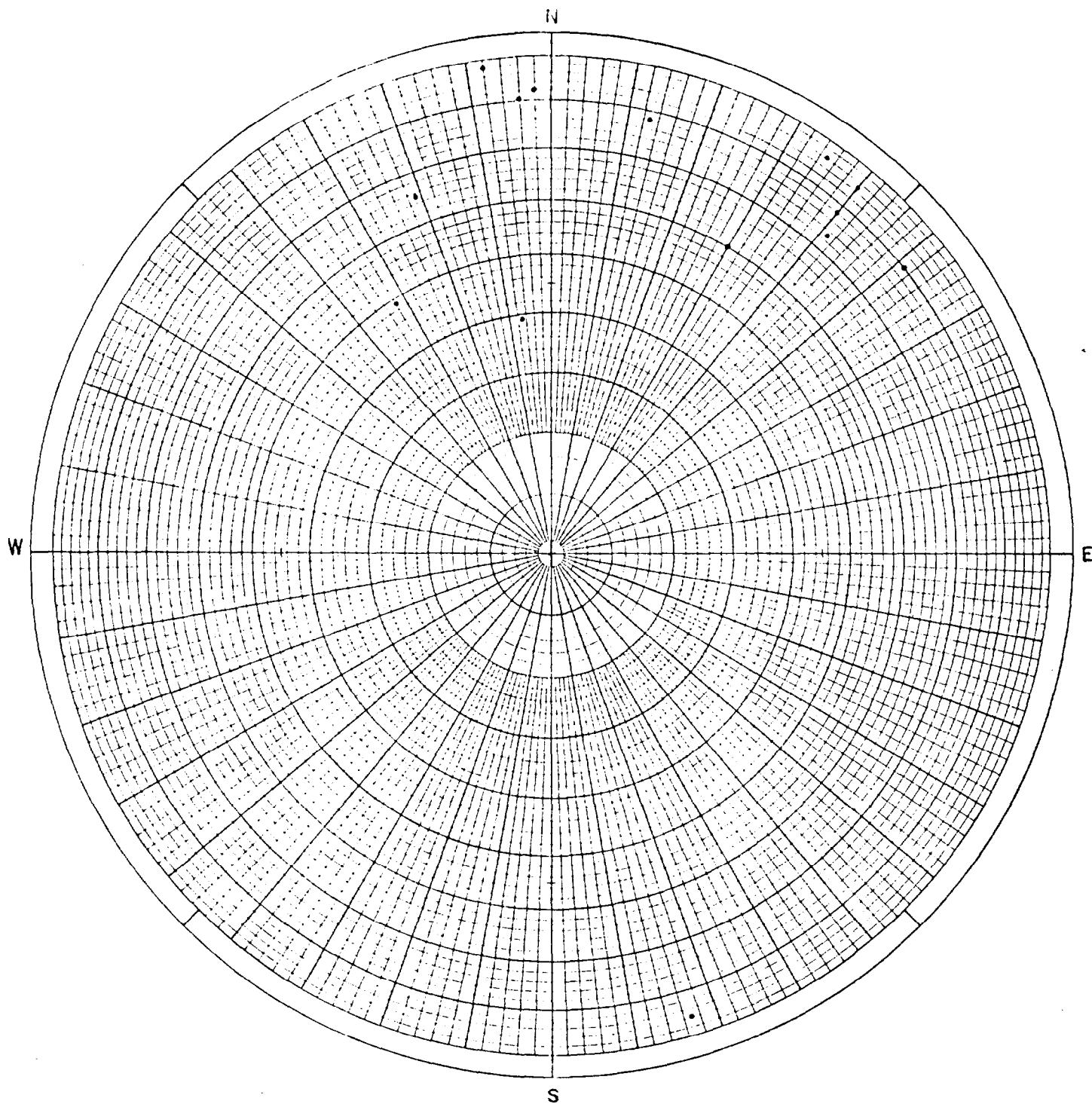
. Diorite



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

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

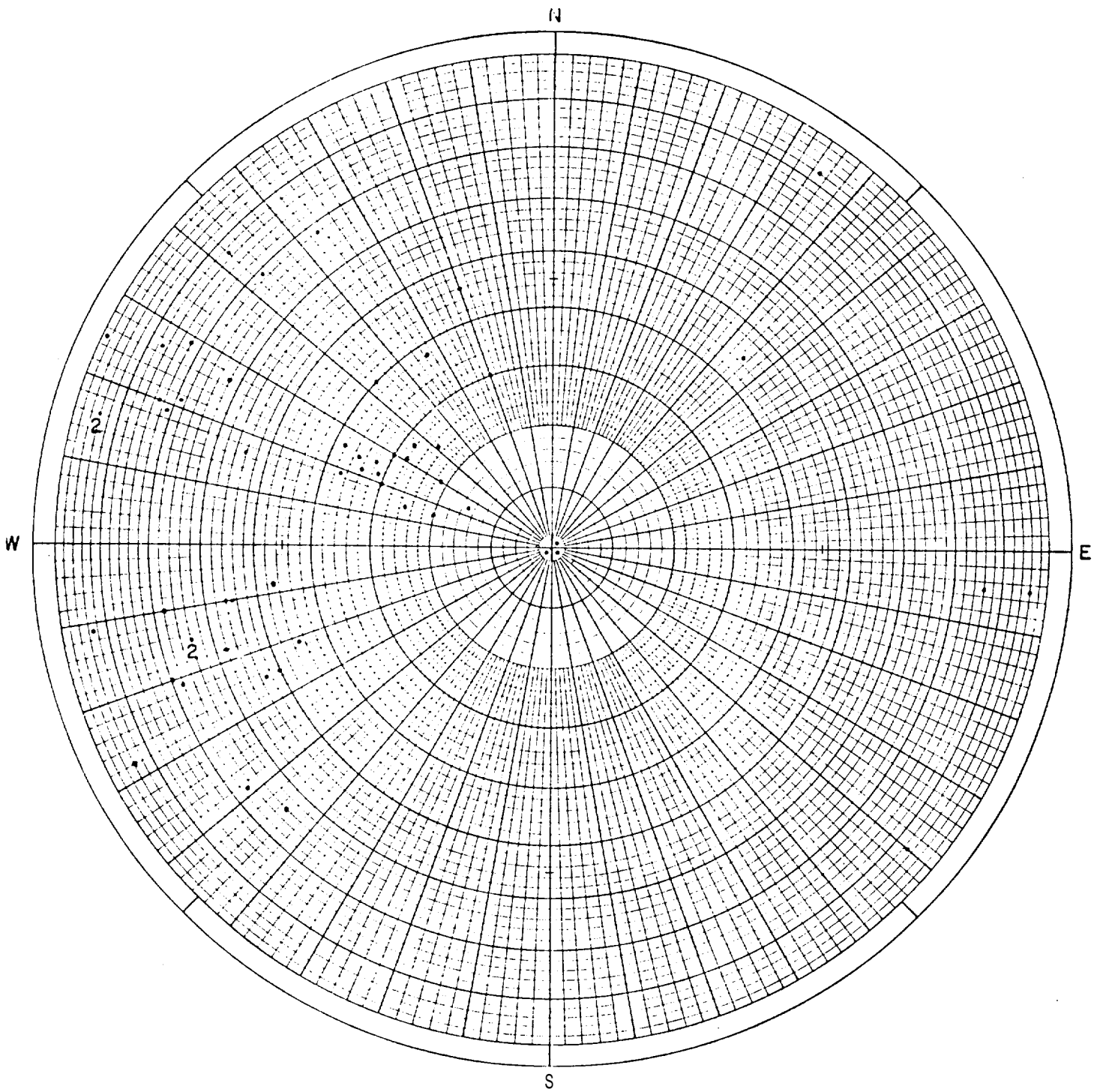
. **Diorite**



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

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

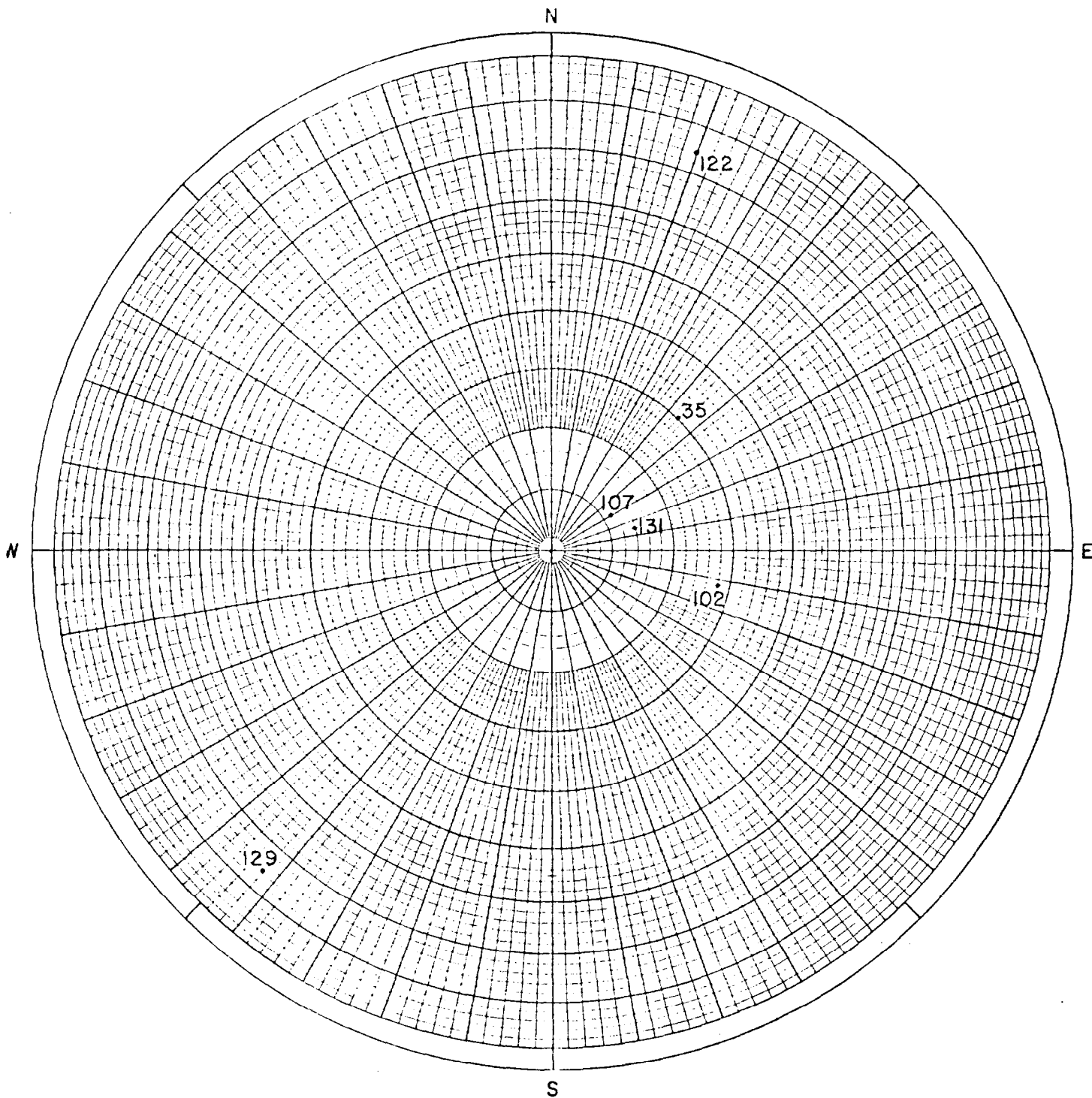
. Diorite



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

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

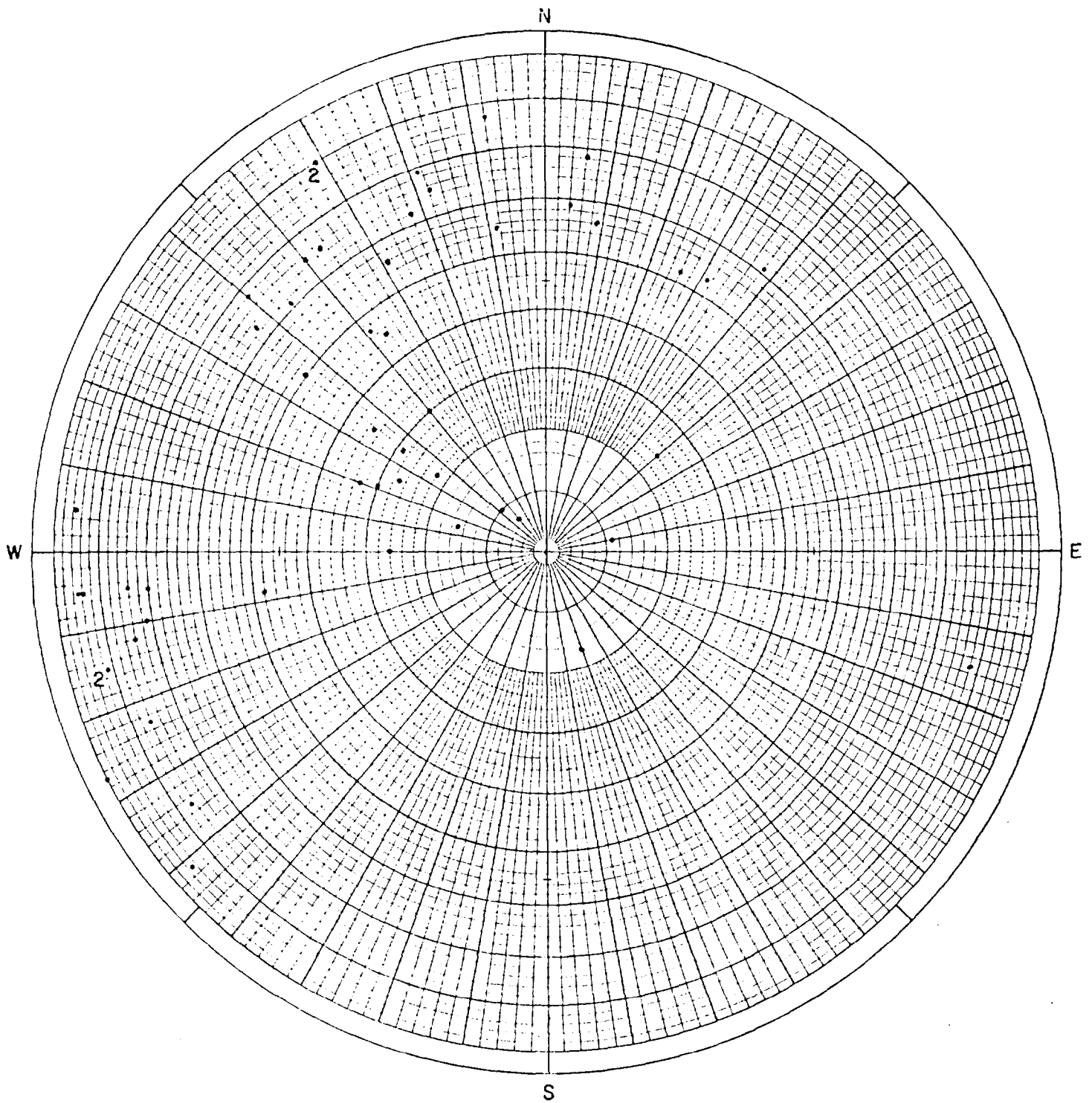
. Diorite



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

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

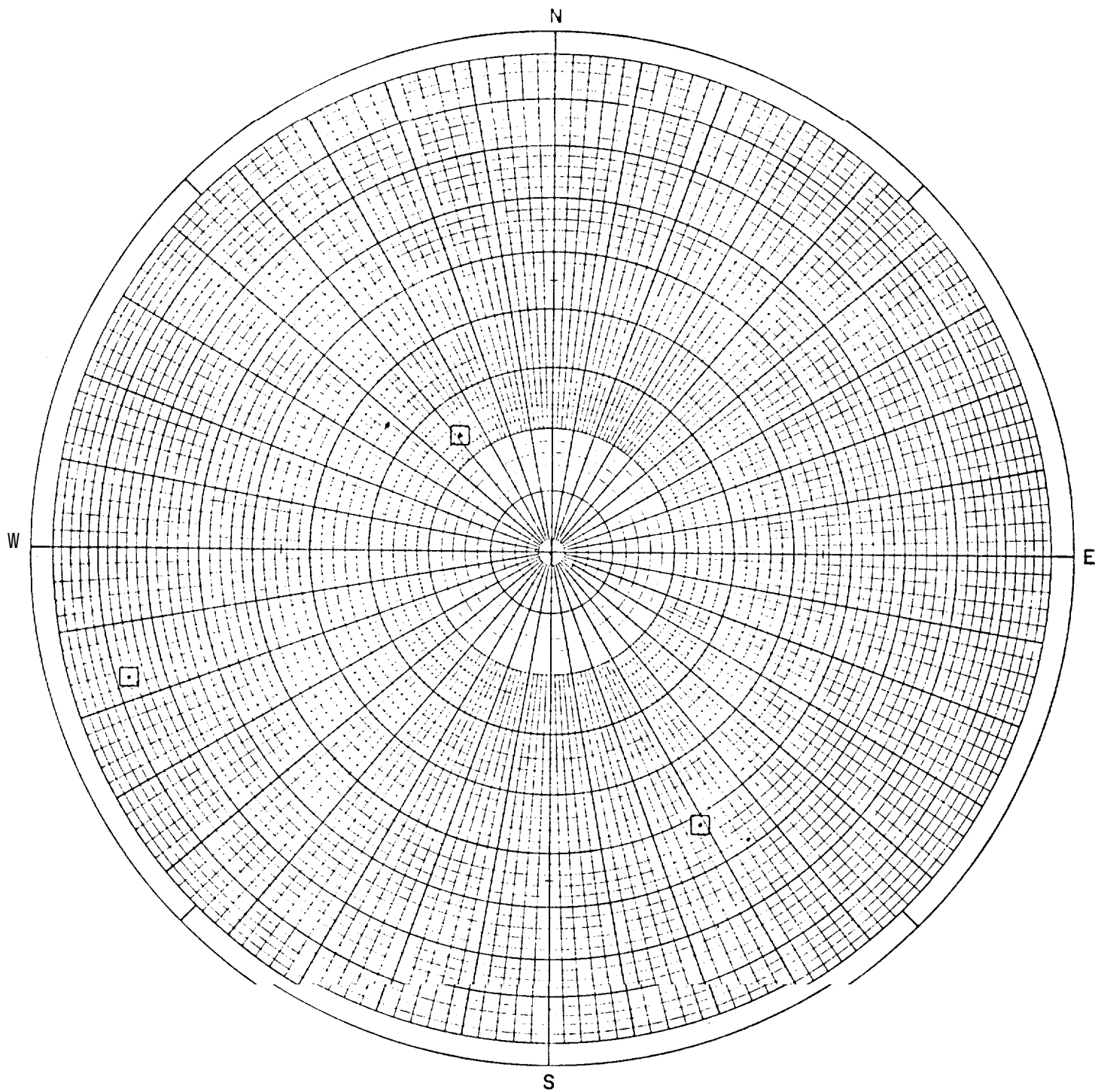
. Diorite



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

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

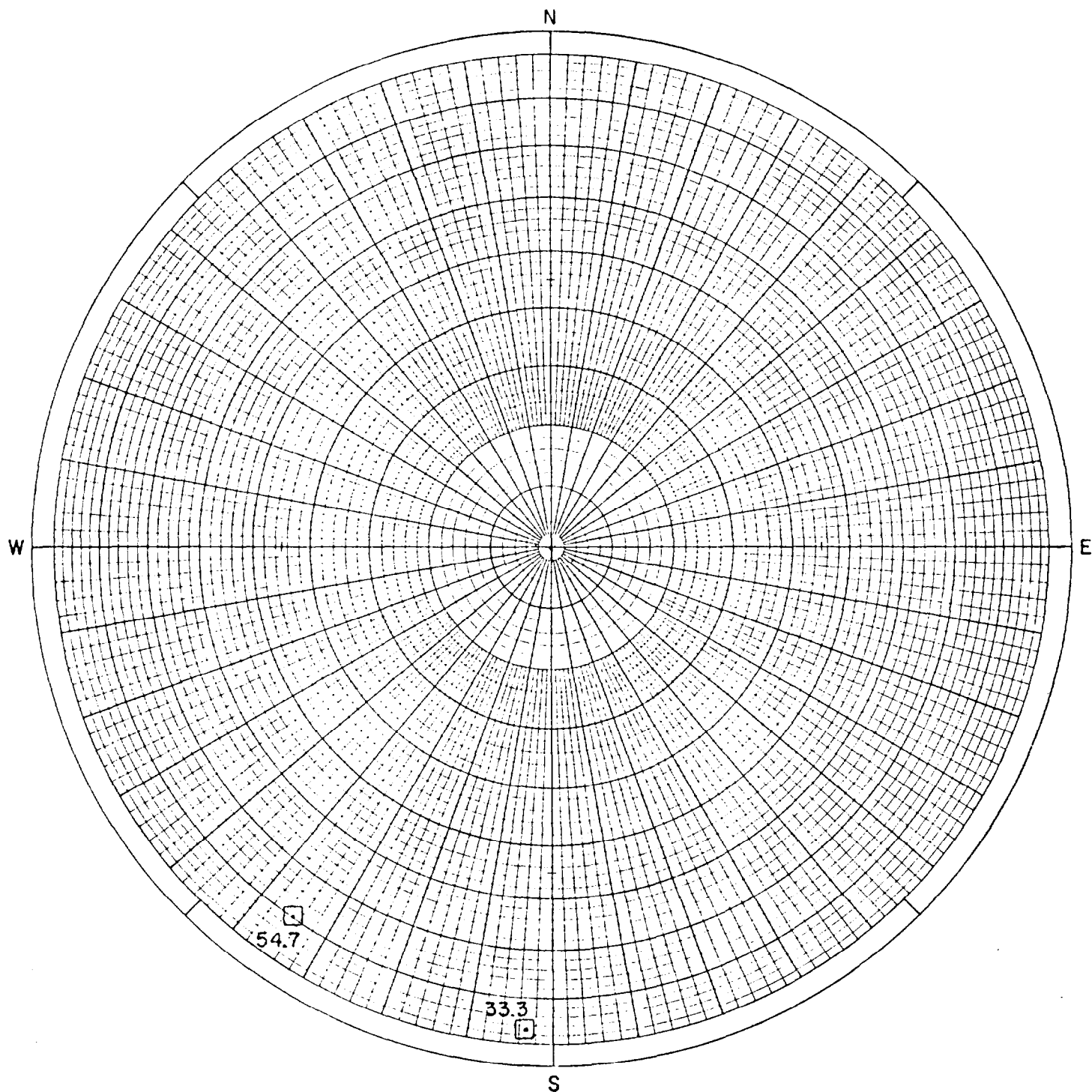
. Diorite



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

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

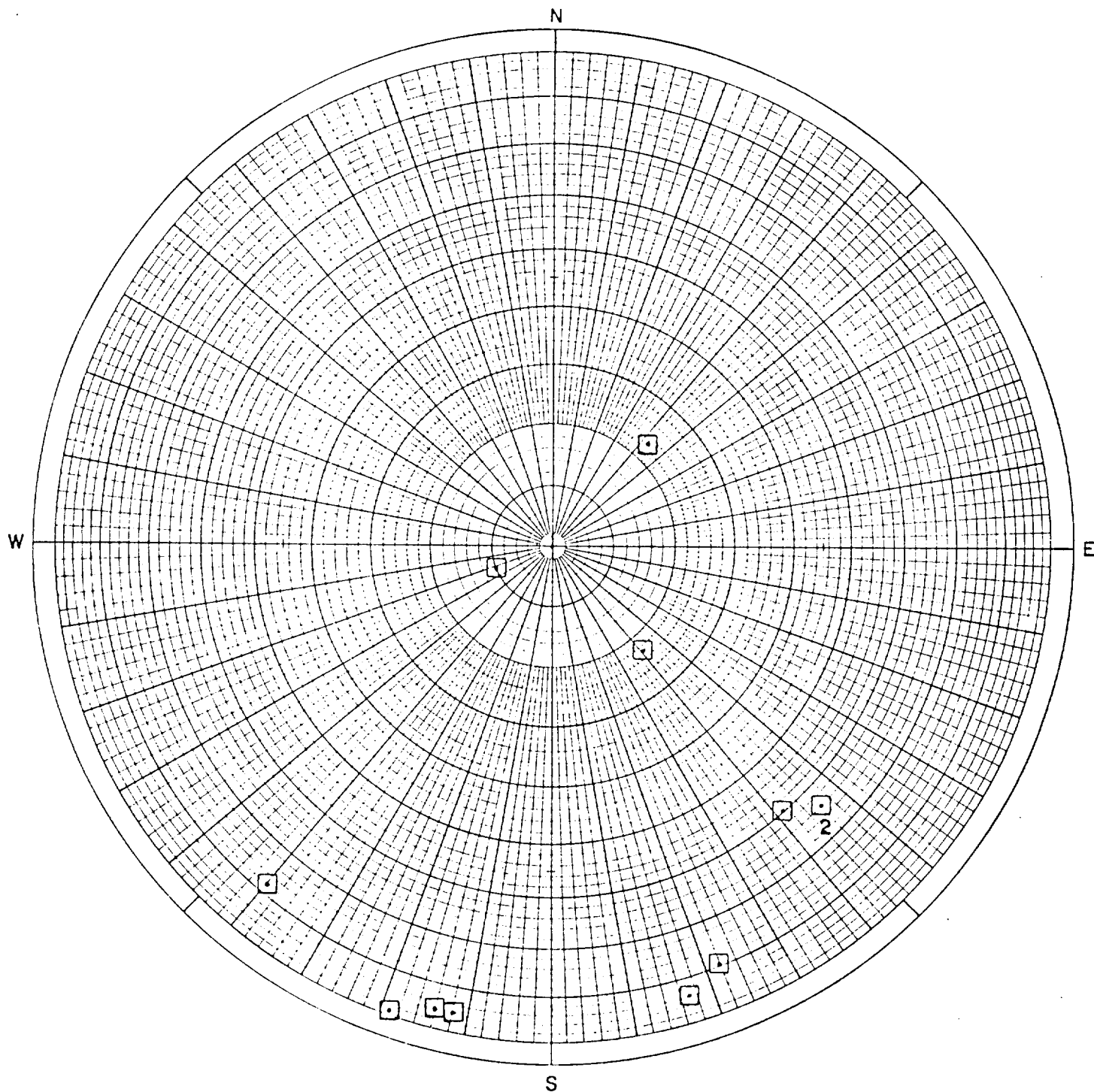
- Diorite
- ◻ Schist



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:

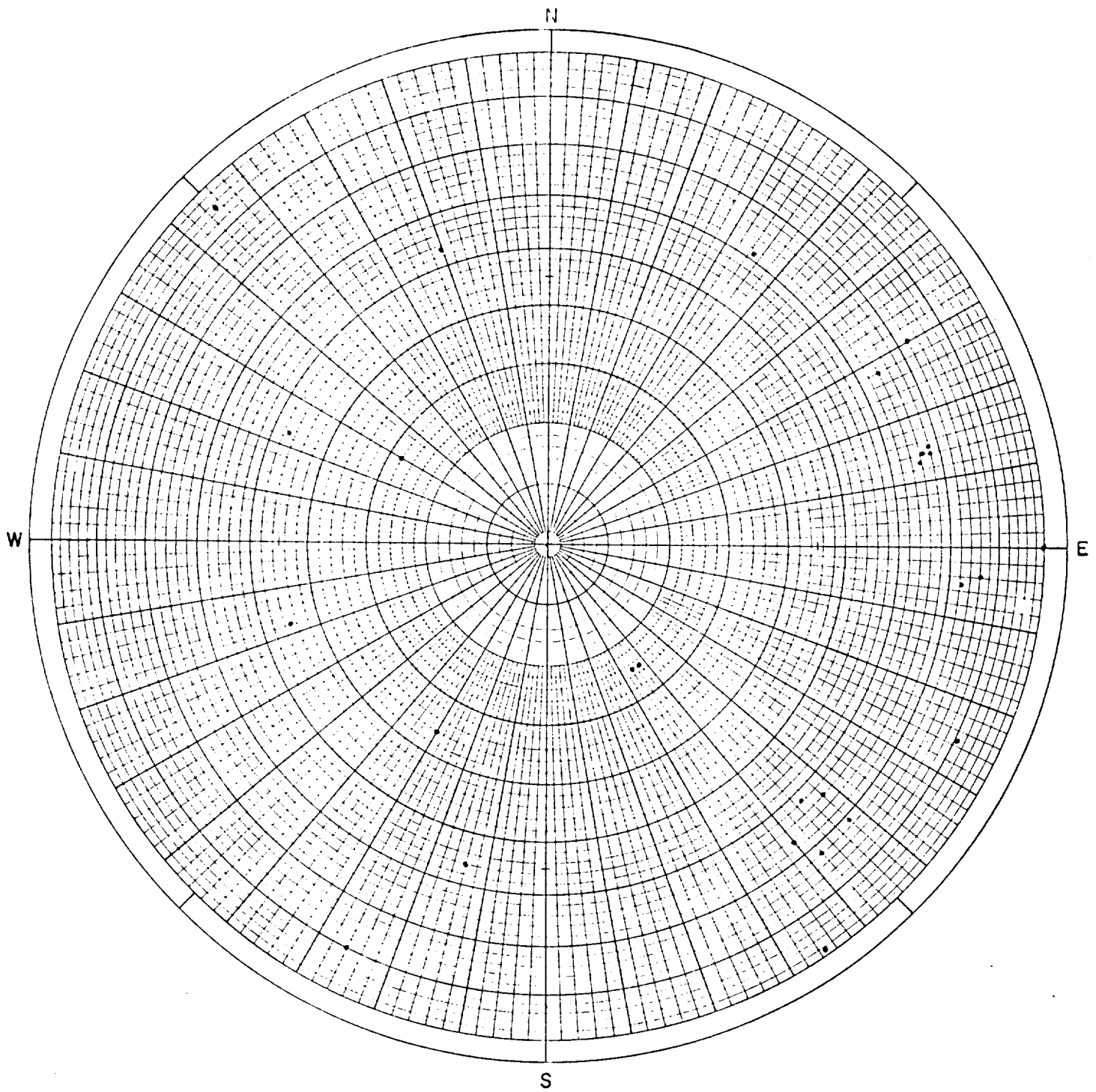
□ Schist



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

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

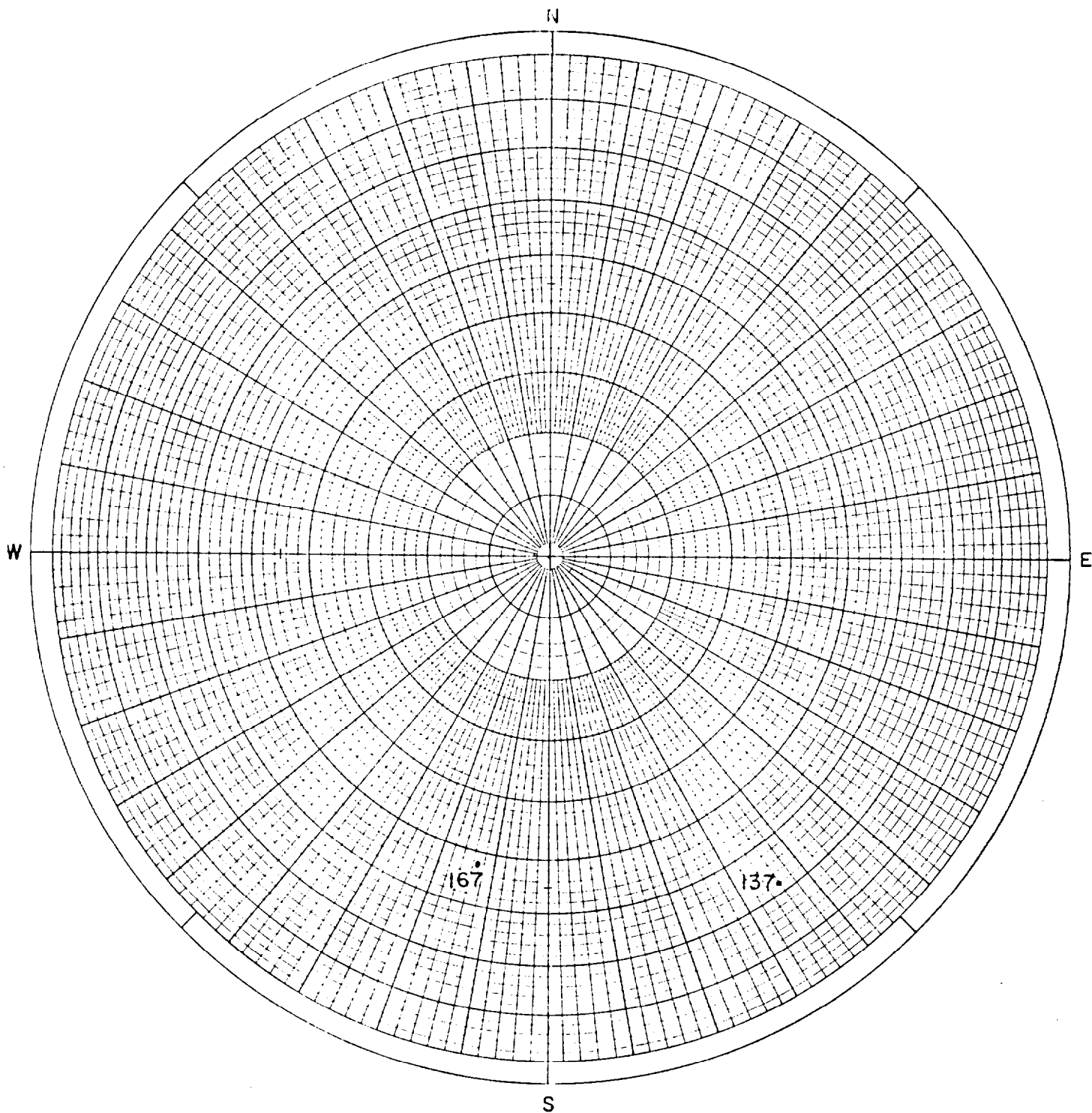
□ Schist



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

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

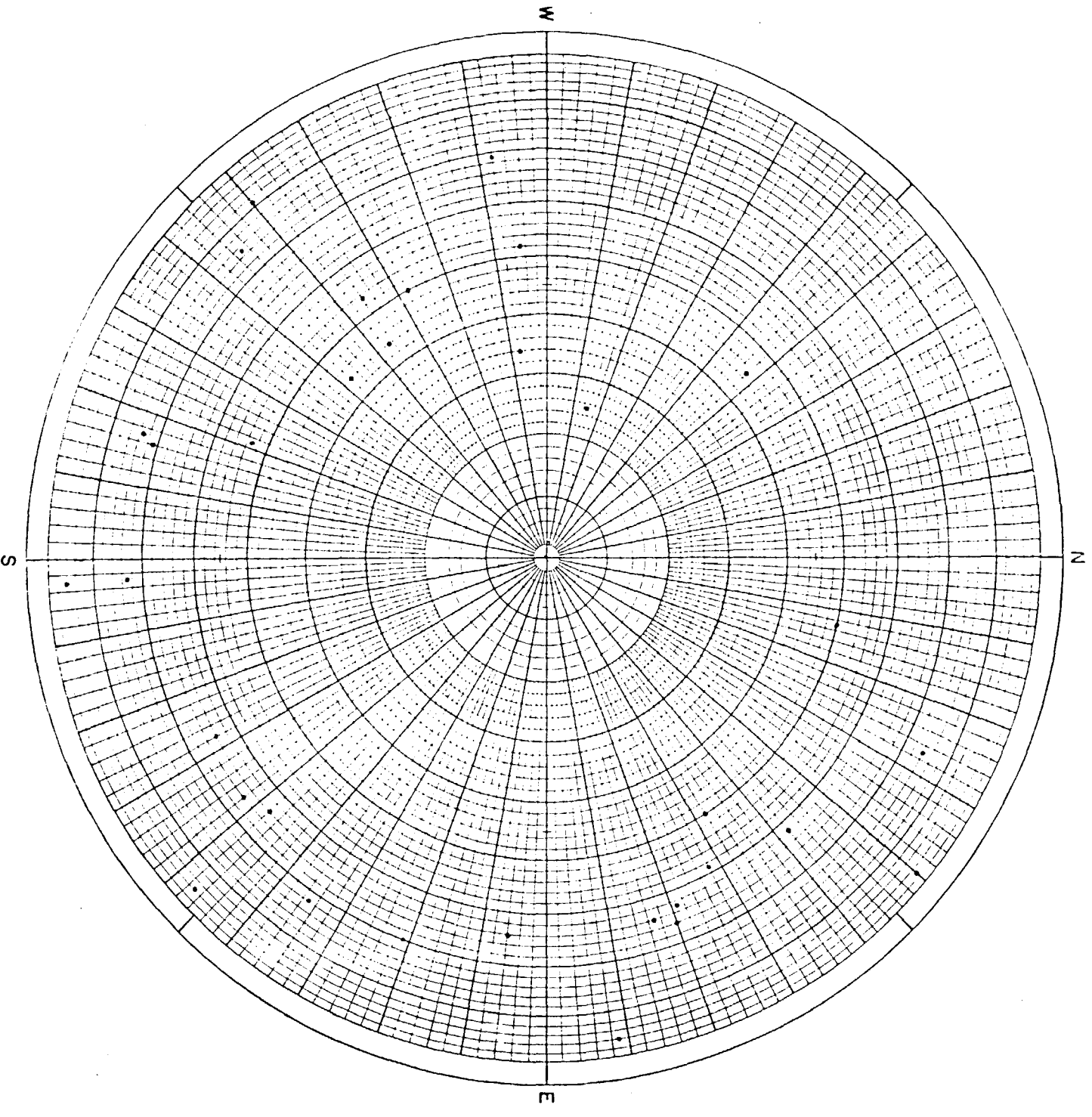
. Diorite



Polar Equal Area Sterco Net
Geotechnicnl 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

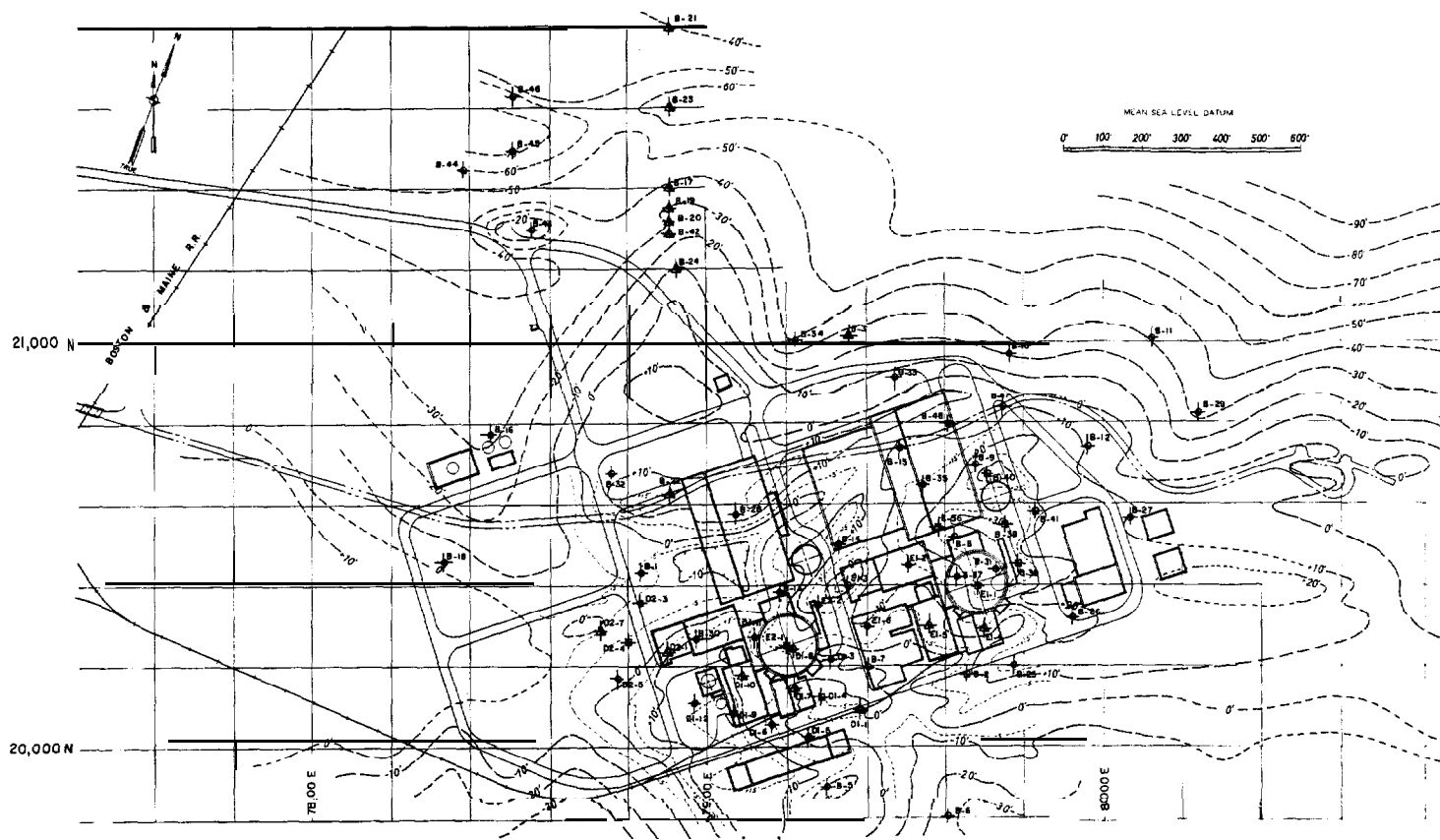
1. Fig. 2.5-9 from PSAR
2. Boring Logs from Appendix 2D of PSAR:

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. 2.5-8

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	0-2	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	0- 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 <i>containing many</i> 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	0- 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 Table:

Project No. 7286

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

