

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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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

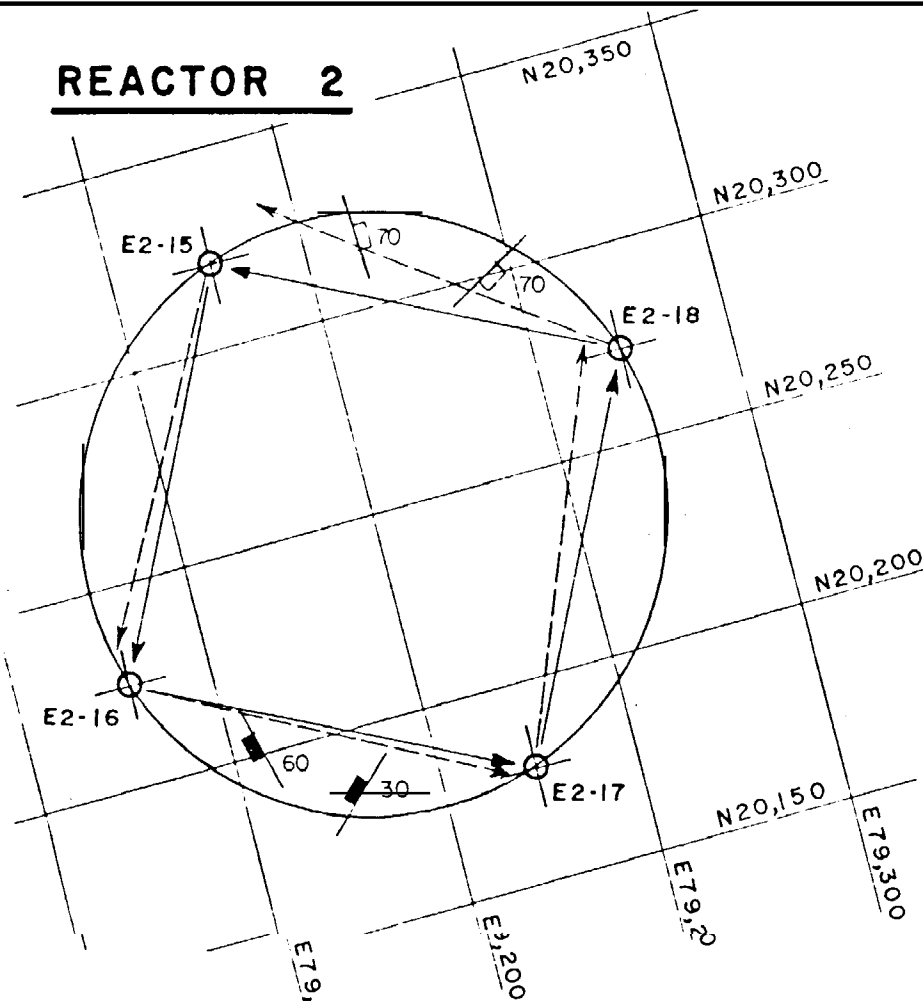
ZONES ORIENTED IN REACTOR BORINGS

<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

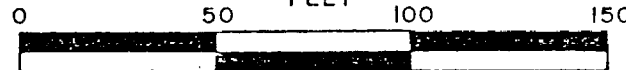
>10 POINTS PER CLUSTER
OF FEATURES

○ OVERCORE BORING

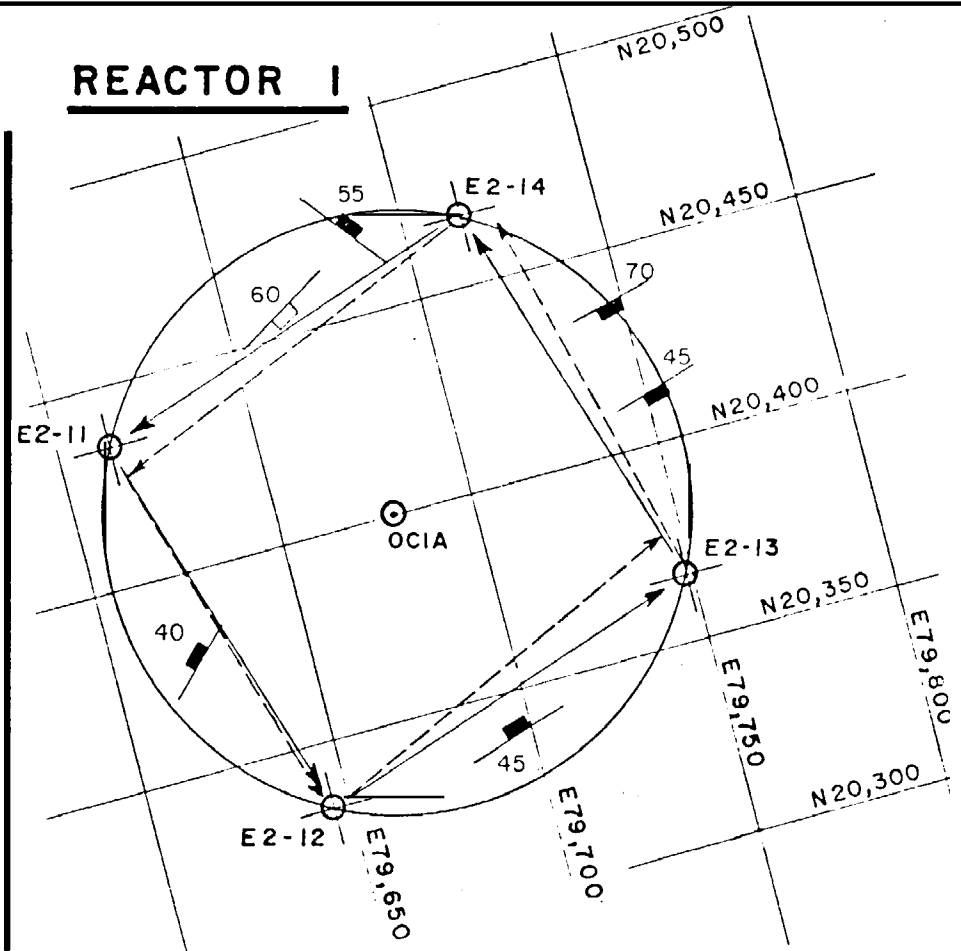
⊙ ANGLE BORING

N

SCALE
FEET



REACTOR 1



← PROPOSED DIRECTION OF ANGLE BORINGS
- - - ACTUAL DIRECTION OF ANGLE BORINGS

NOTE: LENGTH OF ARROWS INDICATES PRO-
JECTION OF HOLE TO HORIZONTAL

YAN K EE ATOMIC

SEABROOK STATION

PLAN OF REACTOR SITES

SHOWING GENERALIZED DIP & STRIKE
OF JOINTS

GEOTECHNICAL ENGINEERS, INC.
WINCHESTER, MASSACHUSETTS

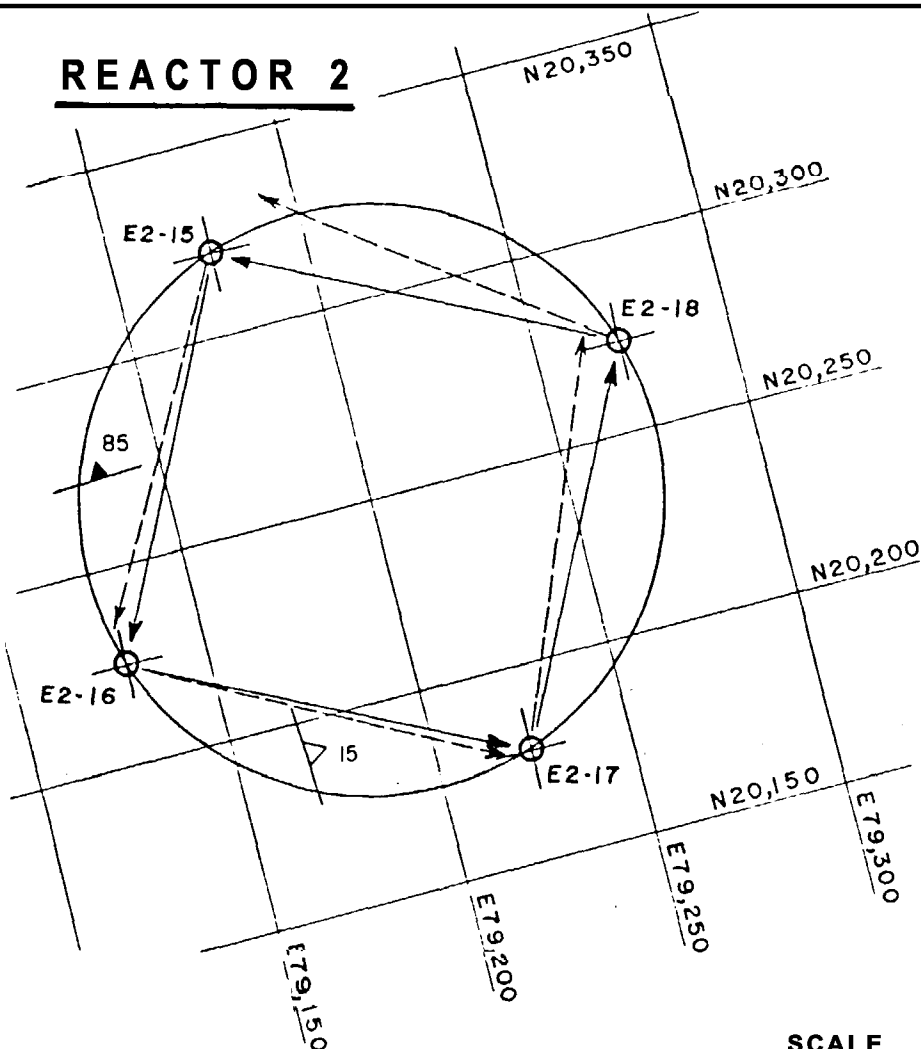
PROJECT

7206

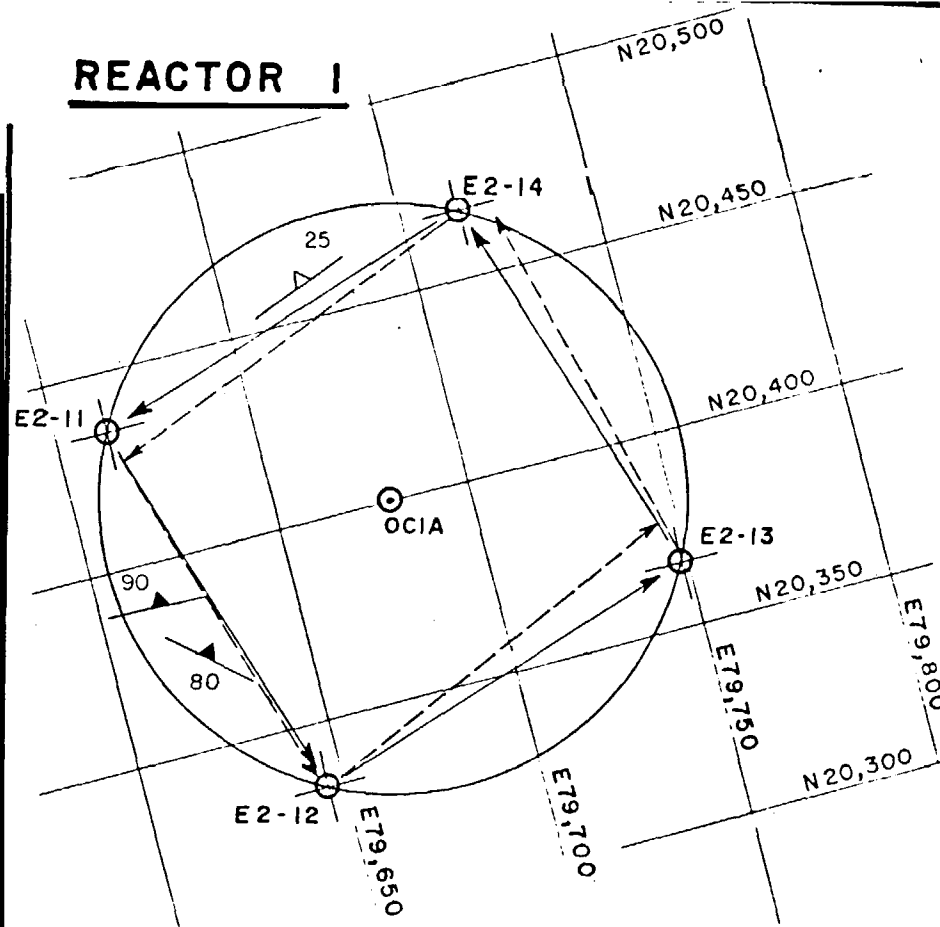
JULY 1974

FIG. 1

REACTOR 2



REACTOR 1



PROPOSED DIRECTION OF ANGLE BORINGS
 ACTUAL DIRECTION OF ANGLE BORINGS

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

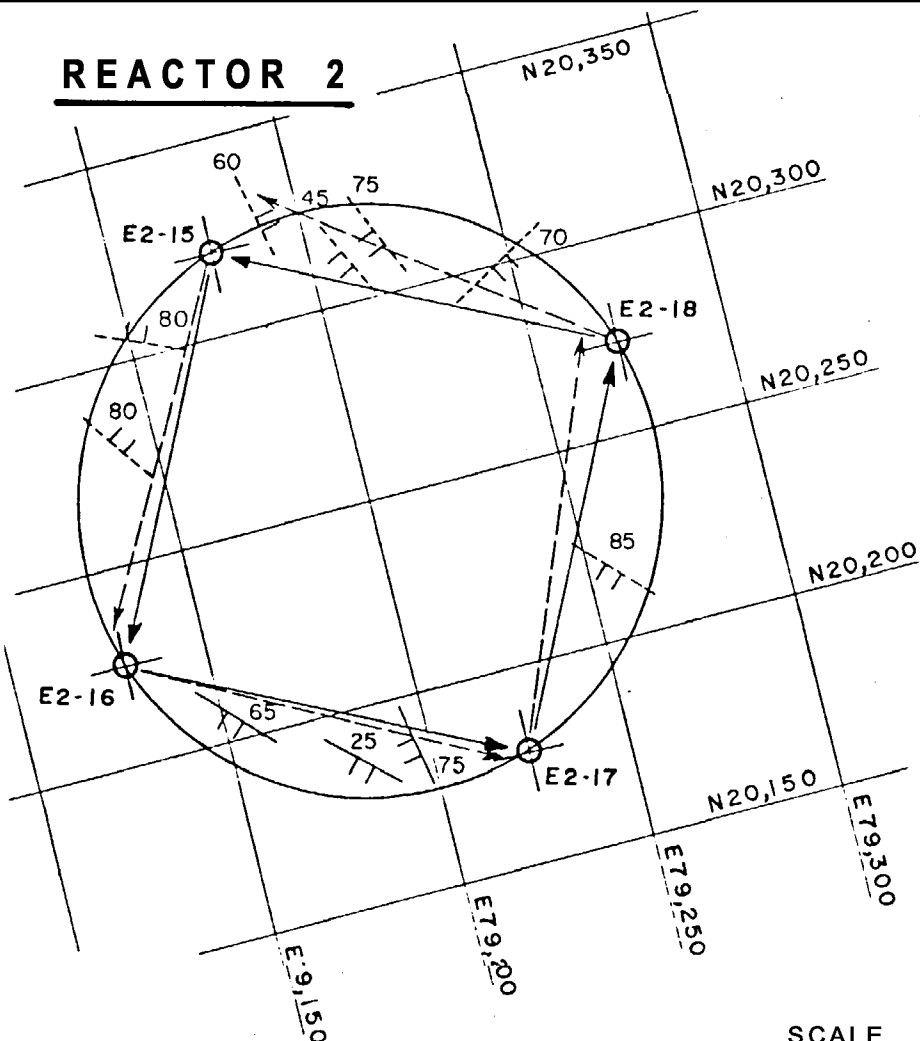
- < 2 POINTS PER CLUSTER OF FEATURES
- > 2 POINTS PER CLUSTER OF FEATURES
- OVERCORE BORING
- ANGLE BORING

N

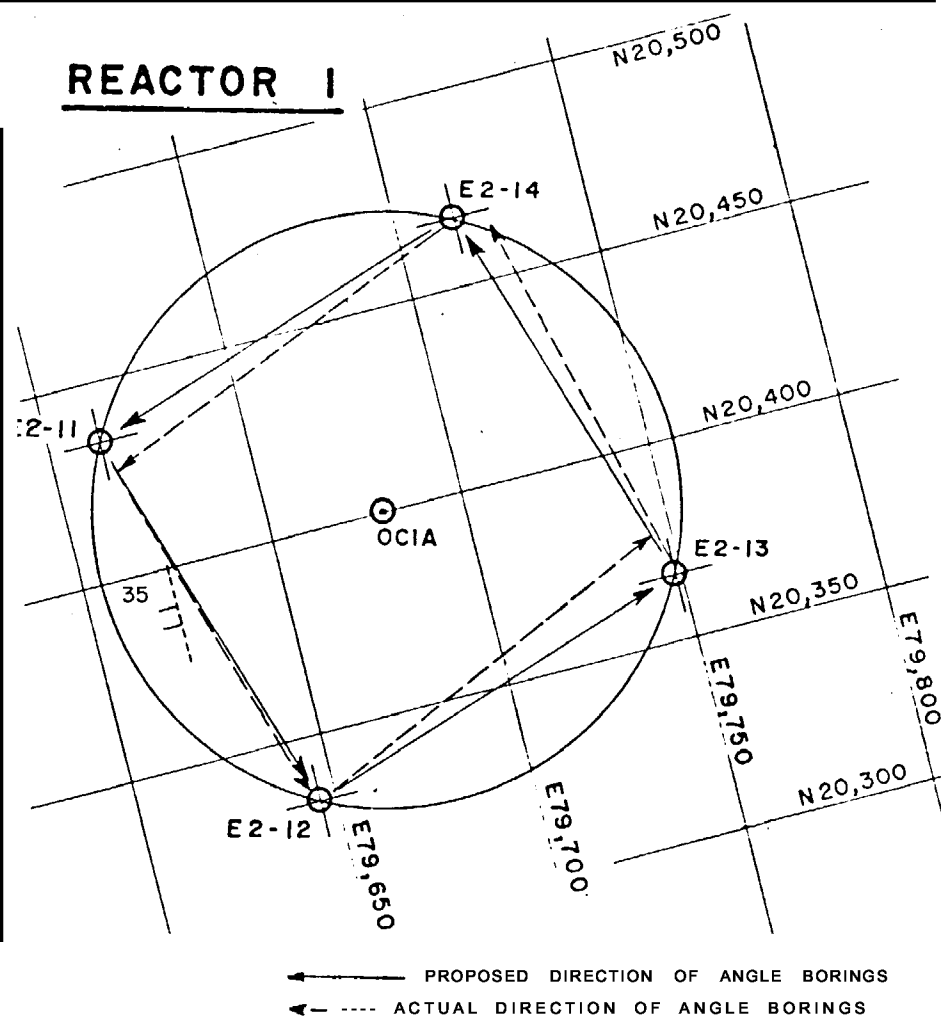


YANKEE ATOMIC	SEABROOK STATION	PLAN OF REACTOR SITES SHOWING GENERALIZED DIP & STRIKE OF FOLIATIONS
GEOTECHNICAL ENGINEERS, INC. WINCHESTER, MASSACHUSETTS		PROJECT 7286 JULY 1974 FIG. 2

REACTOR 2



REACTOR 1



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

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

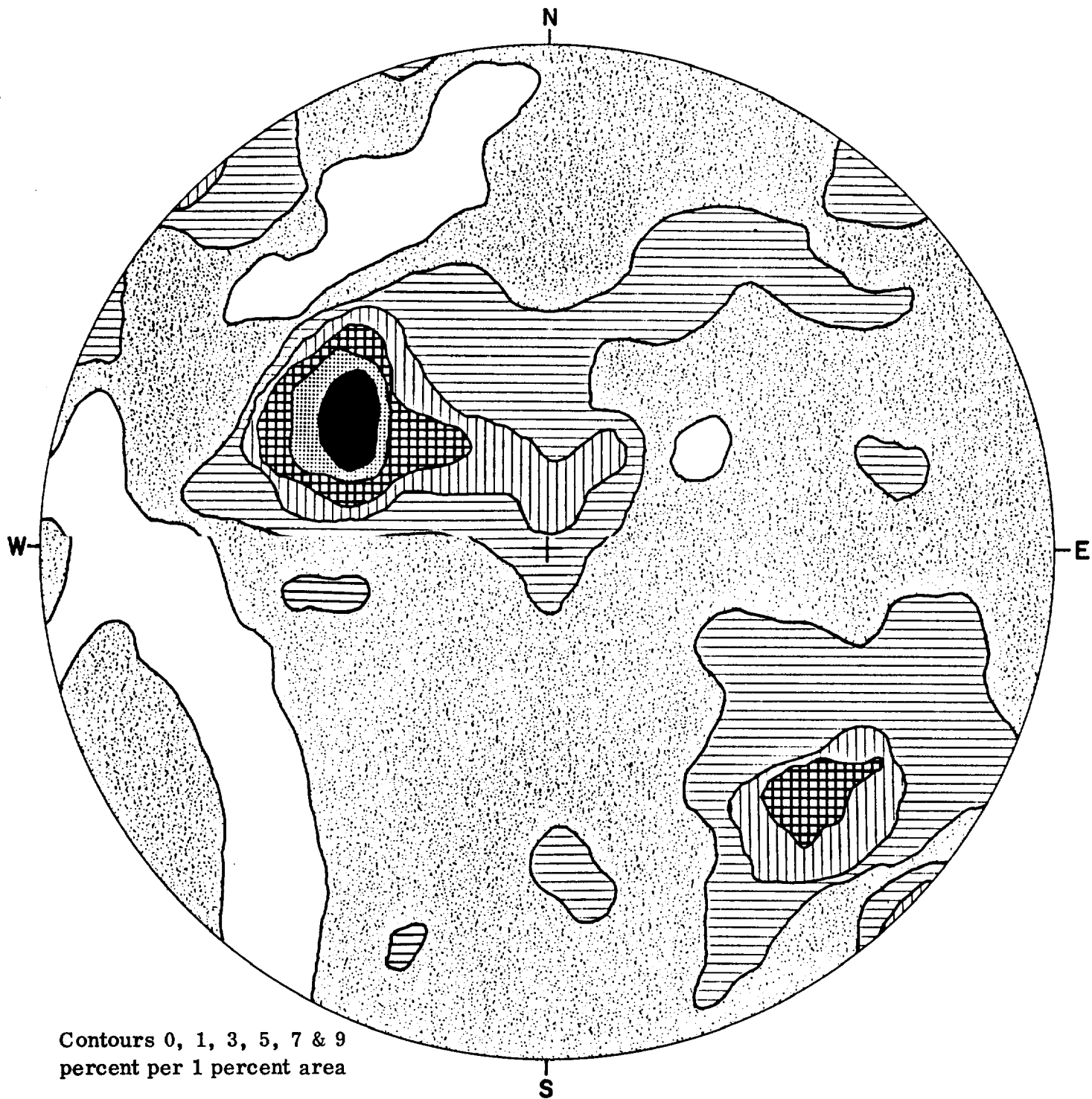
— > 8 POINTS PER CLUSTER OF FEATURES

○ OVERCORE BORING
 ⊕ ANGLE BORING

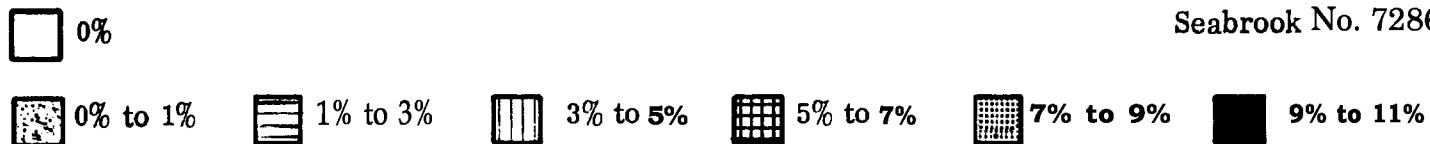
N



YANKEE ATOMIC		SEABROOK STATION	PLAN OF REACTOR SITES	
			SHOWING GENERALIZED DIP & STRIKE OF SLICKENSIDED SURFACES	
GEOTECHNICAL ENGINEERS, INC WINCHESTER. MASSACHUSETTS		PROJECT 7 2 6 6	J U L Y 1 9 7 4 FIG. 3	

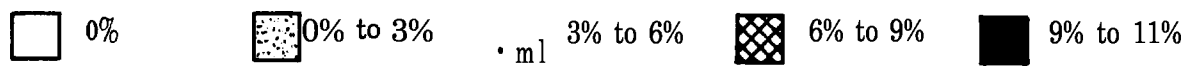
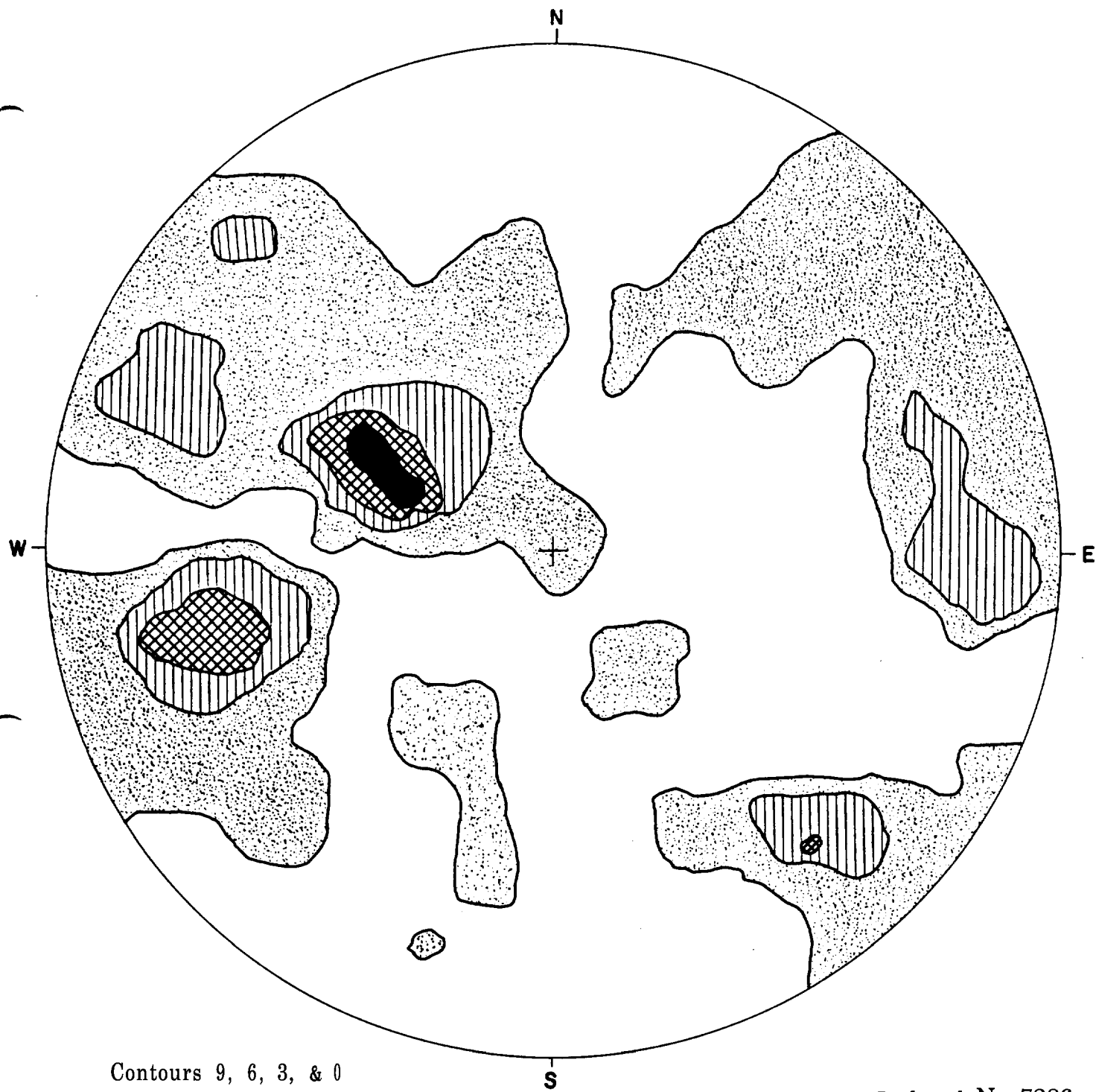


Seabrook No. 7286

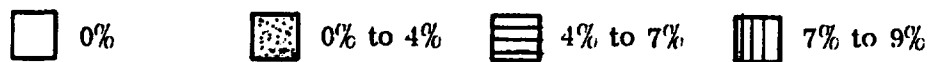
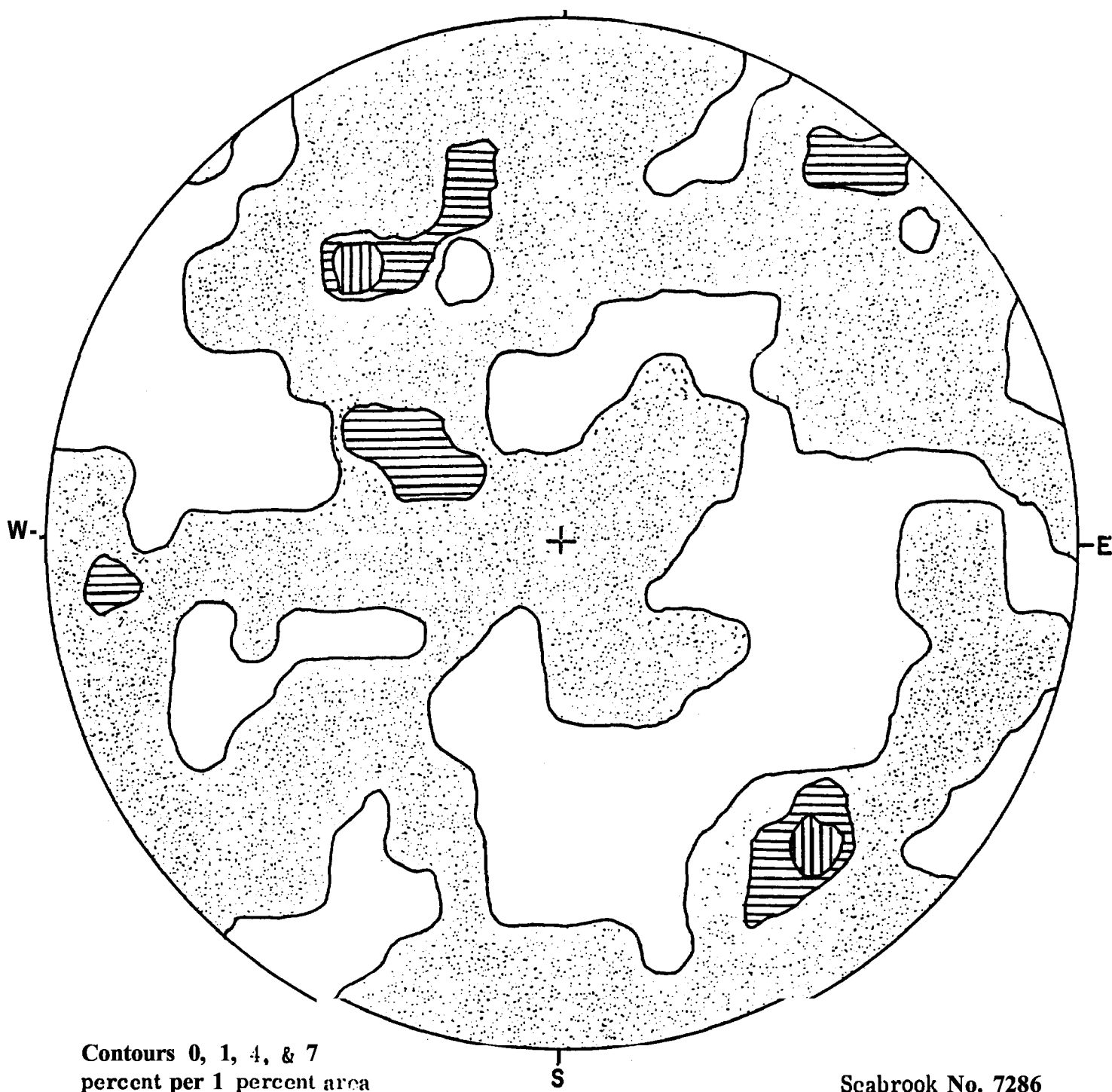


Contoured Equal Area Upper Hemisphere Polar Projection of Poles to 230 Joints In Reactor 1;
Borings E2-11, 12, 13 & 14

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>S2013, 179611, Plot 896</u>		INCLINATION <u>10°</u>		PAIRING <u>S311</u>		DATE START/FINISH <u>June 20, 1971 / June 27, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2 1/4 x 1 1/2 in.</u>		TOTAL DEPTH <u>168.0</u> ft		DRILLED BY <u>American Drilling & Boring Co. - I. Lanning</u>	
GROUND EL. (MSL) <u>75.0</u> ft		DEPTH TO WATER DATE <u>7-7</u> ft		LOGGED BY <u>Soil - E. J. Hall, Rock - J. H. Hand</u>			

F.L. MSL	Depth ft	SAMPLE Type and No.	N or Rec.	RATE OF ADV. in./ft	WATER CONTENT or RQD		PRESSURE TEST		STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding	CORE AREAS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)	
					%	Grainable	2000 psi	Computed				
75.0												
	6.5	XX-1	100									
	10	XX-2	99									
	10	NQ-3	10									
	10	NQ-4	31									
	17.7	NQ-5	57									
	20	NQ-6	76									
	30	NQ-7	100									
	40	NQ-8	100									
	50	NQ-9	100									
	60	NQ-10	100									
	70	NQ-11	100									
	80	NQ-12	100									
	90	NQ-13	100									
	100	NQ-14	100									
	110	NQ-15	100									
	120	NQ-16	100									
	130	NQ-17	100									
	140	NQ-18	100									
	150	NQ-19	100									
	160	NQ-20	100									
	170	NQ-21	100									
	180	NQ-22	100									
	190	NQ-23	100									
	200	NQ-24	100									
	210	NQ-25	100									
	220	NQ-26	100									
	230	NQ-27	100									
	240	NQ-28	100									
	250	NQ-29	100									
	260	NQ-30	100									
	270	NQ-31	100									
	280	NQ-32	100									
	290	NQ-33	100									
	300	NQ-34	100									
	310	NQ-35	100									
	320	NQ-36	100									
	330	NQ-37	100									
	340	NQ-38	100									
	350	NQ-39	100									
	360	NQ-40	100									
	370	NQ-41	100									
	380	NQ-42	100									
	390	NQ-43	100									
	400	NQ-44	100									
	410	NQ-45	100									
	420	NQ-46	100									
	430	NQ-47	100									
	440	NQ-48	100									
	450	NQ-49	100									
	460	NQ-50	100									
	470	NQ-51	100									
	480	NQ-52	100									
	490	NQ-53	100									
	500	NQ-54	100									
	510	NQ-55	100									
	520	NQ-56	100									
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	610	NQ-65	100									
	620	NQ-66	100									
	630	NQ-67	100									
	640	NQ-68	100									
	650	NQ-69	100									
	660	NQ-70	100									
	670	NQ-71	100									
	680	NQ-72	100									
	690	NQ-73	100									
	700	NQ-74	100									
	710	NQ-75	100									
	720	NQ-76	100									
	730	NQ-77	100									
	740	NQ-78	100									
	750	NQ-79	100									
	760	NQ-80	100									
	770	NQ-81	100									
	780	NQ-82	100									
	790	NQ-83	100									
	800	NQ-84	100									
	810	NQ-85	100									
	820	NQ-86	100									
	830	NQ-87	100									
	840	NQ-88	100									
	850	NQ-89	100									
	860	NQ-90	100									
	870	NQ-91	100									
	880	NQ-92	100									
	890	NQ-93	100									
	900	NQ-94	100									
	910	NQ-95	100									
	920	NQ-96	100									
	930	NQ-97	100									
	940	NQ-98	100									
	950	NQ-99	100									
	960	NQ-100	100									

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 sample S - Shelby tube N - Denison F - Fixed platen P - Pitcher O - Osterberg G - GEI D - Drilling break k - Coefficient of permeability xx - Weathered, weathering	NOTES 1) - Washed through soil # - 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  Date: July 11, 1971 Project 7286 PAGE 1 of 2 LOG OF BORING 12-11
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BORING LOCATION <u>N2035, 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>168.0</u> ft		DRILLED BY <u>American Drilling & Boring Co., J. Canning</u>	
GROUND ELEVATION <u>25.0</u> ft		DEPTH TO WATER DATE <u>2.7</u> ft		<u>June 21, 1971</u>		LOGGED BY <u>Soil & Poll. Book - J. R. Reed</u>	

ELEV. 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 (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)	
	Depth ft	Type and No.		N or Rec.	%	Graphic	psi			Computed k 10 ⁻¹ cm/sec	(Weathering, defects, etc.)
										CONTINUED FROM PREVIOUS PAGE	
	146	NQ-30	100		100				N27E, 32NW J	Slight wx	Fresh and hard. Drills well. Partings are clean.
	150	NQ-31	100		100				N26E, 28NW J	Slight wx	
									N63W, 25NE F	Solid core	
	160	NQ-32	100		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.
		NQ-33	100		100				N30E, 75NW J		
	168	NQ-31	97		93				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

A Subsidiary of American Company

Date: July 11, 1971 Project: 7286

PAGE 2 of 2 LOG OF BORING 12-11

BORING LOCATION <u>N20314, 179612, Plant Site</u>		INCLINATION <u>11</u>		BEARING <u>N66E</u>		DATE START/FINISH <u>June 10, 1971</u> / <u>June 18, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2-1/8 - 1-7/8 in.</u>		TOTAL DEPTH <u>165.5</u> ft		DRILLED BY <u>American Drilling & Boring Co. A. Whittaker</u>	
GROUND EL. (MSL) <u>21.5</u> ft		DEPTH TO WATER/DATE <u>7.1</u> ft <u>June 12, 1971</u>		LOGGED BY <u>Soil L. Doll, Res. J. B. Hand</u>			

F.L. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. min/ft	WATER CONTENT or RQD T	PRESSURE TEST GPa psi	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	Computed k cm/sec
21.5							TOP OF ROCK			
		NX-1	100	2	16				Rusty	
		NX-2	95	3	6				Rusty	Fresh to slightly wx internally. Joints and partings have rusty coatings. Not chloritic.
		NX-3	100	3	46				Rusty	
		NX-4	100	3	25				Rusty	
		NQ-5	81	3	43				Rusty	
		NQ-6	100	4	82				Rusty	
		NQ-7	98	4	44				Rusty	
		NQ-8	100	4	68				Rusty	
		NQ-9	100	4	97				Rusty	
		NQ-10	100	4	98				Rusty	
		NQ-11	100	5	89				Rusty	
		NQ-12	100	5	92				Rusty	
		NQ-13	100	6	90				Rusty	
		NQ-14	98	16	89				Rusty	
		NQ-15	100	20	100				Rusty	
		NQ-16	100	15	92				Rusty	
		NQ-17	100	6	85				Rusty	
		NQ-18	100	8	92				Rusty	
		NQ-19	100	6	83				Rusty	
		NQ-20	100	6	64				Rusty	
		NQ-21	100	5	89				Rusty	
		NQ-22	100	6	25				Rusty	
		NQ-23	100	6	90				Rusty	
		NQ-24	100	8	100				Rusty	
		NQ-25	97	5	94				Rusty	
		NQ-26	100	4	90				Rusty	
		NQ-27	97	5	75				Rusty	
		NQ-28	100	6	95				Rusty	
		NQ-29	100	6	100				Rusty	
		NQ-30	94	6	94				Rusty	
		NQ-31	95	6	75				Rusty	

LEGEND

Rec - Length recovered/length cored, T

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

S - Split spoon sample

U - Undisturbed samples

S - Shelby tube

F - Fixed piston

O - Osterberg

D - Drilling break

wx - Weathered, weathering

N - Denison

P - Pitcher

G - GEI

k - Coefficient of permeability

11 - Washed through #10 0-1 ft. No samples taken.

21 - 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 11, 1971 Project 7286

PAGE 1 of 2 LOG OF BORING

BORING LOCATION N20331, 175612, Plant Site						INCLINATION 10°		PEARING K&G		DATE START/FINISH June 10, 1974 / June 13, 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. H. Holmes			
GROUND ELEVATION 111.5 ft			DEPTH TO WATER DATE July 17, 1974			LOGGED BY Sed. & N. Paley, Book - L. R. (10)					
EL. MSL ft	SAMPLE		RAT ¹ 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	Qu psi			Computed k 10 ⁻¹ cm/sec	
								S = Shickside		CONTINUED FROM PREVIOUS PAGE	
117.5											
150	NQ-32	100	6	52				N25E, 37NW J	Driller mismatched	X X X	Diabase, 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

Date: July 11, 1974 Project: 7286

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BORING LOCATION N2007, 179715, 179716, 179717, 179718, 179719, 179720, 179721, 179722, 179723, 179724, 179725, 179726, 179727, 179728, 179729, 179730, 179731, 179732, 179733, 179734, 179735, 179736, 179737, 179738, 179739, 179740, 179741, 179742, 179743, 179744, 179745, 179746, 179747, 179748, 179749, 179750, 179751, 179752, 179753, 179754, 179755, 179756, 179757, 179758, 179759, 179760, 179761, 179762, 179763, 179764, 179765, 179766, 179767, 179768, 179769, 179770, 179771, 179772, 179773, 179774, 179775, 179776, 179777, 179778, 179779, 179780, 179781, 179782, 179783, 179784, 179785, 179786, 179787, 179788, 179789, 179790, 179791, 179792, 179793, 179794, 179795, 179796, 179797, 179798, 179799, 179800, 179801, 179802, 179803, 179804, 179805, 179806, 179807, 179808, 179809, 179810, 179811, 179812, 179813, 179814, 179815, 179816, 179817, 179818, 179819, 179820, 179821, 179822, 179823, 179824, 179825, 179826, 179827, 179828, 179829, 179830, 179831, 179832, 179833, 179834, 179835, 179836, 179837, 179838, 179839, 179840, 179841, 179842, 179843, 179844, 179845, 179846, 179847, 179848, 179849, 179850, 179851, 179852, 179853, 179854, 179855, 179856, 179857, 179858, 179859, 179860, 179861, 179862, 179863, 179864, 179865, 179866, 179867, 179868, 179869, 179870, 179871, 179872, 179873, 179874, 179875, 179876, 179877, 179878, 179879, 179880, 179881, 179882, 179883, 179884, 179885, 179886, 179887, 179888, 179889, 179890, 179891, 179892, 179893, 179894, 179895, 179896, 179897, 179898, 179899, 179900, 179901, 179902, 179903, 179904, 179905, 179906, 179907, 179908, 179909, 179910, 179911, 179912, 179913, 179914, 179915, 179916, 179917, 179918, 179919, 179920, 179921, 179922, 179923, 179924, 179925, 179926, 179927, 179928, 179929, 179930, 179931, 179932, 179933, 179934, 179935, 179936, 179937, 179938, 179939, 179940, 179941, 179942, 179943, 179944, 179945, 179946, 179947, 179948, 179949, 179950, 179951, 179952, 179953, 179954, 179955, 179956, 179957, 179958, 179959, 179960, 179961, 179962, 179963, 179964, 179965, 179966, 179967, 179968, 179969, 179970, 179971, 179972, 179973, 179974, 179975, 179976, 179977, 179978, 179979, 179980, 179981, 179982, 179983, 179984, 179985, 179986, 179987, 179988, 179989, 179990, 179991, 179992, 179993, 179994, 179995, 179996, 179997, 179998, 179999, 180000										INCLINATION		DIP		DATE START/FINISH	
Casing ID		Core Size		Total Depth		Drilled By									
Ground Elevation		Depth to Water		Date		Logged By									
FL. MSL.	Depth	Type	N or Rec.	ADV. in/ft	T	Geologic	Pressure (PSI)	Strike, Dip	Soil and Rock Descriptions						
										Core	Soil and Rock Descriptions				
10.5		NX-1	88	3.0	17			21	Rusty staining						
		NX-2	72	1.0	0				Slight wx						
		NX-3	100	5.0	13				Rusty staining						
		NX-4	100	5.0	96				Moderate wx						
		NX-5	100	4.0	85				Rusty						
		NX-6	100	4.0	100				Slight rusty						
		NX-7	75	5.0	46				Slight rusty						
		NQ-8	91	7.0	43				Moderate wx						
		NQ-9	100	0.0	82				Core lost						
		NQ-10	100	12.0	80				Slight wx						
		NQ-11	100	14.0	100				Slight wx						
		NQ-12	100	15.0	83				Fresh and hard. Some joints and partings show minor powdery surface wx effects.						
		NQ-13	100	16.0	100				Slight wx						
		NQ-14	100	17.0	83				Slight wx						
		NQ-15	100	18.0	83				Slight wx						
		NQ-16	100	19.0	83				Slight wx						
		NQ-17	100	20.0	83				Slight wx						
		NQ-18	97	2.0	87				Fresh and hard. Local thin zones of moderate to severe wx on closely spaced joints. Not chloritic.						
		NQ-19	97	5.0	80				Moderate wx						
		NQ-20	97	8.0	80				Minor rusty						
		NQ-21	100	10.0	97				Severe wx						
		NQ-22	100	12.0	80				Moderate wx						
		NQ-23	98	14.0	98				Slight wx						
		NQ-24	90	16.0	93				Moderate wx						
		NQ-25	90	18.0	88				Slight wx						
		NQ-26	90	20.0	80				Fresh and hard. Some minor local rusty staining on some joints. Not chloritic.						
		NQ-27	90	22.0	67				Rusty stain						
		NQ-28	90	24.0	75				Minor rusty						
		NQ-29	97	26.0	63				Slight wx						
		NQ-30	98	28.0	83				Fresh and hard. Some minor wx and rusty staining.						
		NQ-31	100	30.0	74				Minor rusty						
		NQ-32	98	32.0	75				Slight wx						
		NQ-33	98	34.0	50				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 - Denham
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.

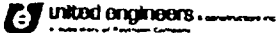
2) This is only a partial list of dip and strike data.

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

UNITED ENGINEERS
A DIVISION OF HANSON COMPANY

Date: July 16, 1971 Project: 7286

PAGE 1 of 2 LOG OF BORING 17-13

BORING LOCATION		N20365, E79745, Plant Site		INCLINATION		4"		BEARING		N30W		DATE START/FINISH		June 20, 1971 / July 3, 1971	
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 FL. (MSL)		106.5 ft		DEPTH TO WATER DATE		June 21, 1971		LOGGED BY		Sofia E. Polz, Rick J. R. Hand					
EL. MSL. ft	SAMPLE			RAT. OF ADV. min/ft	WATER CONTENT or RQD		PRESSURE TEST		STRIKE, DIP F = Folliot 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	mm psi	Computed - 1 k 10 ³ cm/sec							
	CONTINUED FROM PREVIOUS PAGE														
144	NQ-31	95	3.0	25					N22E, 45SE J		Slight wx				
									N46E, 68SE J		Rusty	Fresh and hard. Some			
150	NQ-35	100	4.0	33					N56E, 79NW J		Severe wx	minor wx effects and			
									N30E, 81SE J		Rusty stain	rusty staining on joints.			
	NQ-36	100	6.0	45					N35E, 46SE J		Rusty stain				
									N89E, 86SE J		Vuggy				
160	NQ-37	100	7.0	43					N49E, 66SE J		Minor rusty				
									N55E, 63SE J		Slight wx				
	NQ-38	93	4.0	47					N67E, 76SE J						
169											Slight wx				
	BOTTOM OF BORING														
<p> 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 </p>															
<p> SEABROOK STATION PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE YANKEE ATOMIC ELECTRIC COMPANY  Date: July 11, 1971 Project 7286 PAGE 2 of 2 LOG OF BORING E2-13 </p>															

BORING LOCATION <u>N20167, 172913</u> Plot <u>51-1</u>		INCLINATION <u>11.5</u>		BEARING <u>S55W</u>		DATE START/FINISH <u>June 6, 1971 / June 19, 1971</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>29.9</u> ft		DEPTH TO WATER DATE <u>June 11, 1971</u>		LOGGED BY <u>Soil & L. L. Polk, Rock & J. R. Reed</u>			

EL. MSL ft	DEPTH ft	SAMPLE Type and No.	N or Rec.	RAFI ADV. min/ft	WATER CONTENT or ROD	GRAPHIC	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.)	
							4222 psi	Computed k 10 ⁻¹ cm/sec				
29.9	0								S - Slickensided			
	3.0	NX-1	100	3.8	21				ROCK			
	10	NX-2	100	4.1	33					Rusty staining, surge	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.
	15	NQ-3	90	2.1	23					Minor rusty staining		
	20	NQ-4	93	1.4	27							
	25	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.	Diorite. Mixed coarse and fine.
	30	NQ-6	73	2.9	17							
	35	NQ-7	68	2.7	11							
	40	NQ-8	100	4.5	11							
	45	NQ-9	83	4.1	0							
	50	NQ-10	39	2.5	0							
	55	NQ-11	97	1.1	60							
	60	NQ-12	100	4.4	90							
	65	NQ-13	100	5.2	92							
	70	NQ-14	100	6.2	87							
	75	NQ-15	98	5.5	92							
	80	NQ-16	100	5.6	77							
	85	NQ-17	100	6.1	83							
	90	NQ-18	100	6.3	65							
	95	NQ-19	100	3.6	32							
	100	NQ-20	100	1.8	71							
	105	NQ-21	100	5.5	80							
	110	NQ-22	97	4.8	62							
	115	NQ-23	89	2.7	0							
	120	NQ-24	100	5.0	11							
	125	NQ-25	95	5.3	81							
	130	NQ-26	100	4.8	67							
	135	NQ-27	94	5.0	75							
	140	NQ-28	100	5.4	82							
	145	NQ-29	94	5.7	85							
	150	NQ-30	100	6.0	81							
	155	NQ-31	100	5.4	100							
	160	NQ-32	94	6.7	94							
	165	NQ-33	100	4.6	53							
	170	NQ-34	74	5.7	94							

LEGEND

N - Standard penetration resistance, blows/ft
Rec - Length recovered/length cored, %
ROD - 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 - Pulcher
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.

SEABROOK STATION
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

United engineers

Date: July 2, 1971 Project 7246

PAGE 1 of 2 LOG OF BORING 1-1

BORING LOCATION		INCLINATION		ELEVATION		DATE START/FINISH			
N201-2, L79711, Plant Site		31.5°		S55W		June 6, 1971 / June 19, 1971			
CASING ID		CORE SIZE		TOTAL DEPTH		DRILLED BY			
3 in.		2 1/2 x 1 1/2 x 7/8 in.		166.0 ft		American Drilling & Boring Co., Inc., Canning			
GROUND E.L. (MSL)		DEPTH TO WATER DATE				LOGGED BY			
299.9 ft		June 11, 1971				Sgt. F. E. Poll, R. E. L. R. Rand			
E.L. MSL ft	SAMPLE		RATIO OF ADV. non f.	WATER CONTENT or RQD		PRESSURE TEST		STRIKE, DIP F = Isolation J = Joint C = Contact U = Bedding	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)
	Depth ft	Type and No.		N or Rec.	%	Gravimetric	Computed k 10 ⁻⁴ cm/sec		
								S - Shelby tube	CONTINUED FROM PREVIOUS PAGE
-135									
-140									
-80		NQ-35	100	10.5	82			N71W, 25NE J	X X X
		NQ-36	98	2.0	98			N63W, 60NE J	X X X
		NQ-37	100	2.0	93			N19E, 62SE J	X X X
-150		NQ-38	98	3.1	98			N31E, 70SE J	X X X
		NQ-39	98	3.1	98			N61W, 54NE J	X X X
		NQ-40	100	3.3	93			N65E, 18RW S	X X X
-160		NQ-41	98	3.2	98			K55E, 20NE J	X X X
-161								N25W, 20SW I	X X X
								BOTTOM OF BORING	

BORING LOCATION <u>N29321, F79179</u> Plant Site		INCLINATION <u>41.5°</u>		BEARING <u>S10 W</u>		DATE START/FINISH <u>June 3, 1971 / June 5, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2-1/8 - 1-7/8 in.</u>		TOTAL DEPTH <u>165.0</u> ft		DRILLED BY <u>American Drilling & Boring, A. Whitaker</u>	
GROUND E.L. (MSL) <u>+11.0</u> ft		DEPTH TO WATER DATE <u>June 1, 1971</u>		LOGGED BY <u>Soil K. Cole, R. J. R. R. R.</u>			

E.L. MSL ft	SAMPLE		RATIO OF ADV. min/ft	WATER CONTENT or RQD		PRESSURE TEST		STRIKE, DIP F = Foliation J = Joint C = Contact B = Bedding S = Stickenslip	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)	
	Depth ft	Type and No.		N or Rec.	Graphic	gpm (psi)	Computed 10 ⁻¹ k/cm/sec				
13.9											
15.5											
0											
20											
30											
40											
50											
60											
70											
80											
90											
100											
110											
120											
130											
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
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.

SEABROOK STATION
PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

YANKEE ATOMIC ELECTRIC COMPANY

United Engineers

Date: July 2, 1971 Project: 7256

PAGE 1 of 2 LOG OF BORING: 12-15

BORING LOCATION <u>B20321, E79179, Plant Site</u>		INCLINATION <u>11.5°</u>		BEARING <u>S10°W</u>		DATE START/FINISH <u>June 3, 1974</u> / <u>June 5, 1974</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>2-1/8" x 1-7/8 in.</u>		TOTAL DEPTH <u>165.0</u> ft		DRILLED BY <u>American Drilling & Boring, A. Whitaker</u>	
GROUND EL. (MSL) <u>+13.9</u> ft		DEPTH TO WATER DATE <u>June 1, 1974</u>		LOGGED BY <u>Soil - K, P, R; Rock - J, R; Rnd</u>			

EL. MSL ft	SAMPLE Depth ft	Type and No.	N or Rec.	RATE OF ADV. in./ft	WATER CONTENT or RQD		PRESSURE TEST		SUCKER, 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	g/g psi	Computed -1 k 10 ⁻¹ cm/sec				
											CONTINUED FROM PREVIOUS PAGE	
140	2-1	93	5.0	81							Minor chlorite	Fresh and hard. Drills well. Some minor smooth chlorite development on some joints or partings.
150	Q-2	104	5.0	76							Minor chlorite	
160	J-2	101	3.0	75							Chlorite	Fresh and hard. Some thin chlorite on joints as shown.
165											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 ▽ Groundwater
U - Undisturbed samples

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

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

NOTES

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

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Date: July 2, 1974 Project: 7286

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BORING LOCATION <u>N20227, E79130, Plant Site</u>				INCLINATION <u>11°</u>		BEARING <u>S79° E</u>		DATE START/FINISH <u>May 20, 1971 / 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. Whitaker</u>	
GROUND EL. (MSL) <u>105.8</u> ft				DEPTH TO WATER DATE <u>5/29</u> ft		<u>May 29, 1971</u>		LOGGED BY <u>Sgt. S. L. Polley, Rick + J. R. Rand</u>	

EL. MSL ft	SAMPLE Depth ft	Type No.	N or RQD Rec.	RATIO OF ADV. min. ft	WATER CONTENT %	FRICTION or RQD Graphical	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.)	
							Static psi	Computed k 10 ³ cm/sec				
105.8									S = Stick-slip			
+10	0.0	NX-1	124.0									
	10	NX-2	83	1.0	60							
	15	NX-3	59	1.0	15							
	20	NQ-4	88	1.0	12							
	25	NQ-5	100	1.0	41							
	30	NQ-6	96	3.0	0							
	35	NQ-7	100	2.0	68							
	40	NQ-8	100	3.0	60							
	45	NQ-9	100	1.0	68							
	50	NQ-10	100	3.0	40							
	55	NQ-11	98	3.0	45							
	60	NQ-12	100	3.0	80							
	65	NQ-13	100	1.0	15							
	70	NQ-14	100	4.0	83							
	75	NQ-15	100	1.0	70							
	80	NQ-16	100	1.0	83							
	85	NQ-17	98	6.0	84							
	90	NQ-18	98	6.0	60							
	95	NQ-19	69	6.0	52							
	100	NQ-20	100	1.0	80							
	105	NQ-21	100	4.0	82							
	110	NQ-22	100	4.0	75							
	115	NQ-23	98	1.0	59							
	120	NQ-24	100	4.0	65							
	125	NQ-25	100	5.0	49							
	130	NQ-26	100	1.0	73							
	135	NQ-27	100	3.0	57							
	140	NQ-28	100	2.0	0							
	145	NQ-29	100	1.0	50							

LEGEND

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

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

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

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 CORPORATION

Date: June 28, 1971 Project: 7286

PAGE: 1 of 2 LOG OF BORING: 12-16

BORING LOCATION <u>N262227, E79100, Plant Site</u>				INCLINATION <u>41°</u>		BEARING <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 - 1-7/8 in.</u>		TOTAL DEPTH <u>155.2</u> ft		DRILLED BY <u>American Drilling & Boring Co. - A. Whistler</u>			
GROUND EL. (MSL) <u>155.2</u> ft		DEPTH TO WATER DATE <u>May 29, 1971</u>		LOGGED BY <u>Soil - R. L. DOE, Rock - J. R. Bond</u>					

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	CORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)	
	Depth ft	Type and No.	N or Rec.			Elm. 100 lb. 1 in./sec	Computed 100 lb. 1 in./sec				
-115.0		NQ-30	100	1.0	32			N10E, 68NW S N82E, 77KW S		Minor chlorite	Foliated
-150.0		NQ-31	100	1.0	82			N27W, 98SW N81W, 56NE 96			
-120.0		NQ-32	100	4.0	92			N59W, 53NE S		Pyrrhoite	Fresh and hard. Excellent drilling.
-160.0		NQ-33	100	1.0	100			N10W, 72SW S		Bleached	
-165.2								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 G - 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
ws - Weathered, weathering

NOTES

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

Date: June 28, 1971 Project: 7286

PAGE 2 of 2 LOG OF BORING E2-16

BORING LOCATION <u>N26117, F79221, Plant Site</u>				INCLINATION <u>11°</u>		BEARING <u>N6.5E</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>		FOUNDED BY <u>Soil - K. DeB. Root - 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				
13.3	0											
		1)										
		2)										
		NQ-1	100	*	0							
		NQ-2	89	*	0							
		NQ-3	82	1.8	0							
		NQ-4	100	2.0	21							
		NQ-5	95	2.0	96							
		NQ-6	89	1.8	0							
		NQ-7	100	2.1	73							
		NQ-8	100	1.9	28							
		NQ-9	100	2.0	61							
		NQ-10	100	2.0	29							
		NQ-11	100	2.1	53							
		NQ-12	100	2.8	60							
		NQ-13	100	3.1	48							
		NQ-14	100	2.8	38							
		NQ-15	97	2.0	33							
		NQ-16	100	2.0	21							
		NQ-17	100	2.1	60							
		NQ-18	90	2.9	0							
		NQ-19	99	2.0	32							
		NQ-20	100	2.0	22							
		NQ-21	100	2.1	49							
		NQ-22	100	2.1	61							
		NQ-23	100	1.5	100							
		NQ-24	88	2.3	95							
		NQ-25	100	2.1	94							

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

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: F2-17

BORING LOCATION <u>N20117, F72221, Plant Site</u>				INCLINATION <u>41°</u>		BEARING <u>S65.5E</u>		DATE START <u>May 30, 1971</u> / FINISH <u>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 k			
-100	135	NQ-26	98	2.5	81						Minor chlorite Slight wx Polish Pyrite Fresh and hard. (non-chlorite) and fused polished surfaces on some joints as shown. Metagranite (?) Feldspathized. Fine to medium grained, medium gray. Only vague local foliation.
-140	150	NQ-27	100	2.9	75						
-160	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 & CONSULTANTS INC.
a subsidiary of Republic of Engineers

Date: July 3, 1971 Project: 7286

PAGE 2 of 2 TAG. OF BORING F7-17

BORING LOCATION <u>N20270, F75272</u> Plant Site		INCLINATION <u>30</u>		BEARING <u>N68.5W</u>		DATE START/FINISH <u>May 22, 1971</u> / <u>May 28, 1971</u>	
CASING ID <u>3 in.</u>		CORE SIZE <u>1-7/8 in.</u>		TOTAL DEPTH <u>168.0</u> ft		DRILLED BY <u>American Drilling & Boring Co. - T. Cannone</u>	
GROUND EL. (MSL) <u>11.9</u>		DEPTH TO WATER DATE <u>May 21, 1971</u>		LOGGED BY <u>Soil - J. Polk, Rock - L. R. Rand</u>			

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	SCORE BREAKS	SOIL AND ROCK DESCRIPTIONS (Weathering, defects, etc.) (Type, texture, mineralogy, color, hardness, etc.)	
	Depth ft	Type and No.		T	Graphic	Slur psi	Computed k 10 ⁻¹ cm/sec				
11.9											
10											
0											
-20											
-40											
-60											
-80											
-100											
-120											
-140											
-160											
-180											
-200											
-220											
-240											
-260											
-280											
-300											
-320											
-340											
-360											
-380											
-400											
-420											
-440											
-460											
-480											
-500											
-520											
-540											
-560											
-580											
-600											
-620											
-640											
-660											
-680											
-700											
-720											
-740											
-760											
-780											
-800											
-820											
-840											
-860											
-880											
-900											
-920											
-940											
-960											
-980											
-1000											

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 - GFI

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

NOTES

1) - Borehole batted from 11.0 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 a construction firm
A SUBSIDIARY OF BETHLEHEM COMPANY

Date: July 1, 1971 Project: 9266

PAGE 1 of 2 LOG OF BORING 11.9

[illegible]

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		
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 21.5Type of Feature

Feature Depth	Strike	Dip	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) \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				

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 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	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	N 22W	5 SW	X				
112.4	N65E	38NW	X				
129.3	N40E	22NW		X			
129.5	N60E	33NW		X			
131.5	N55E	69SE	X				
131.9	N84W	7511E	X				
132.2	N50W	64NE	X				
133.5	N63E	72SE	X				
141.9	N71W	25NE	X				
142.5	N 73W	20NE	X				
146.8	N63W	60NE	X				
148.9	N49E	62SE	X				
149.2	N 75W	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 Seabrook
Project No. 7286Ground Elevation (MSL) = + 13.9

Feature Depth	Strike	Dip	Type of Feature				Remarks
			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) = + 16.0

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	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				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

Type of Feature

Feature Depth	Strike	Dip	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		
125.6	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

Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint	Foliation	Slickensided Surface	Contact	
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 13.3

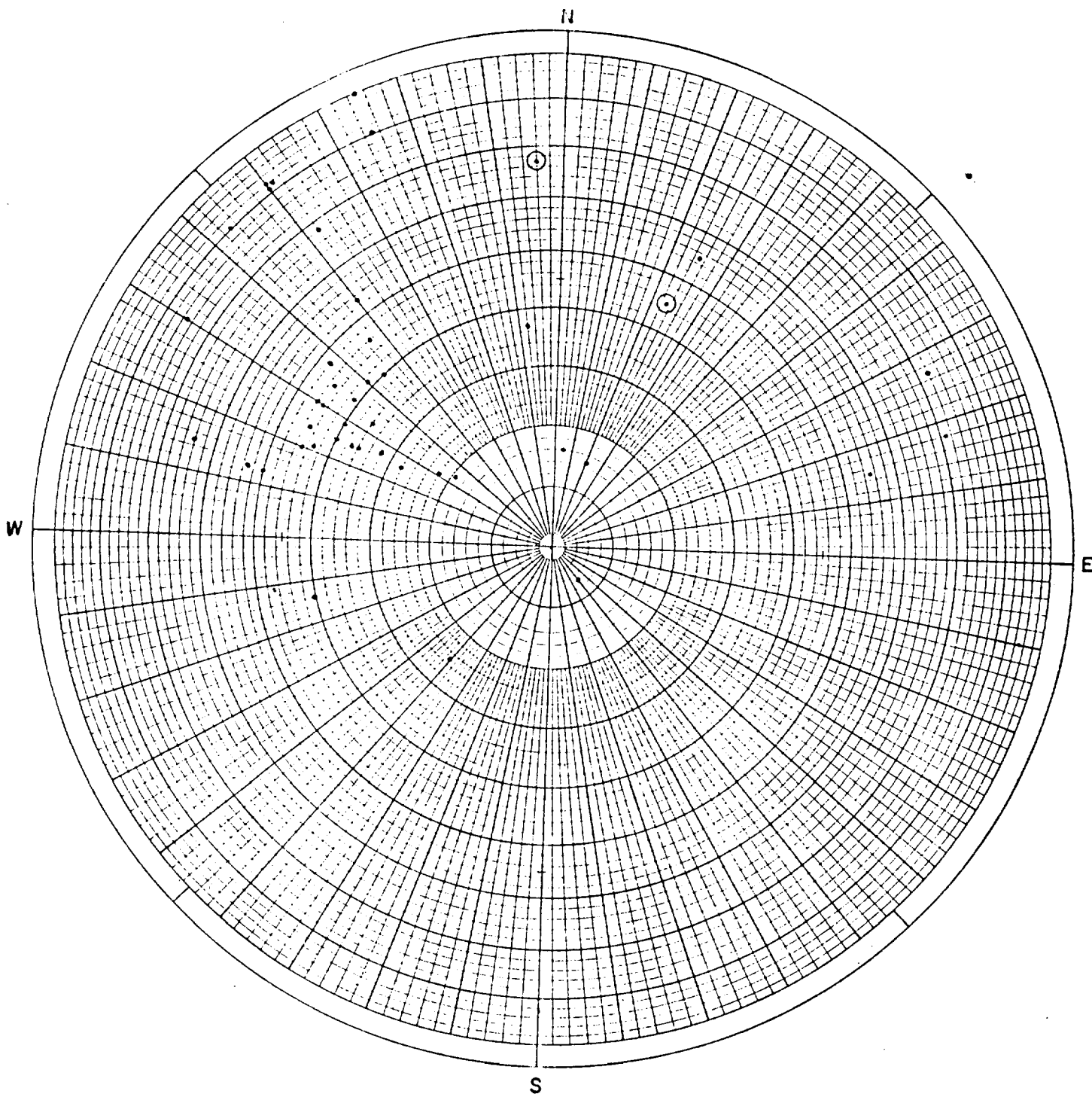
Feature Depth	Strike	Dip	Type of Feature				Remarks
			Joint	Foliation	Slickensided Surface	Contact	
28.0	N37E	34NW	X				
29.5	N55E	59sc	X				
33.3	N87W	87SW		X			
34.3	N47W	23NE			X		
35.9	N17W	77NE	X				
42.6	N50W	78NE			X		
43.4	N49E	23NE			X		
44.1	N61E	52NE	X				
45.0	N24W	10NE			X		
45.1	N49E	60NE			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	N0 rt 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		
123.8	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				
135.6	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

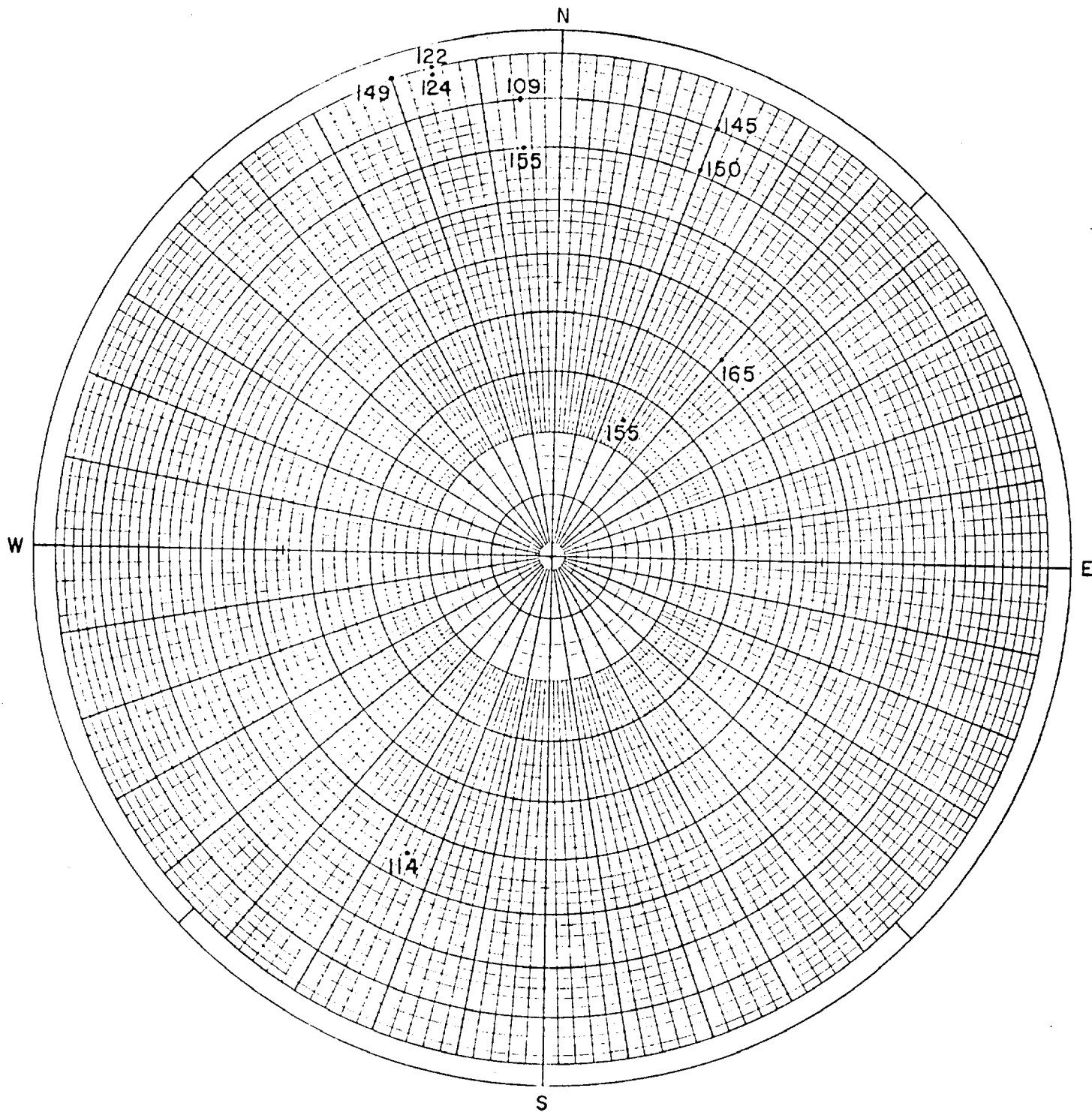
APPENDIX III
Polar Equal Area Stereo Net Projections



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

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

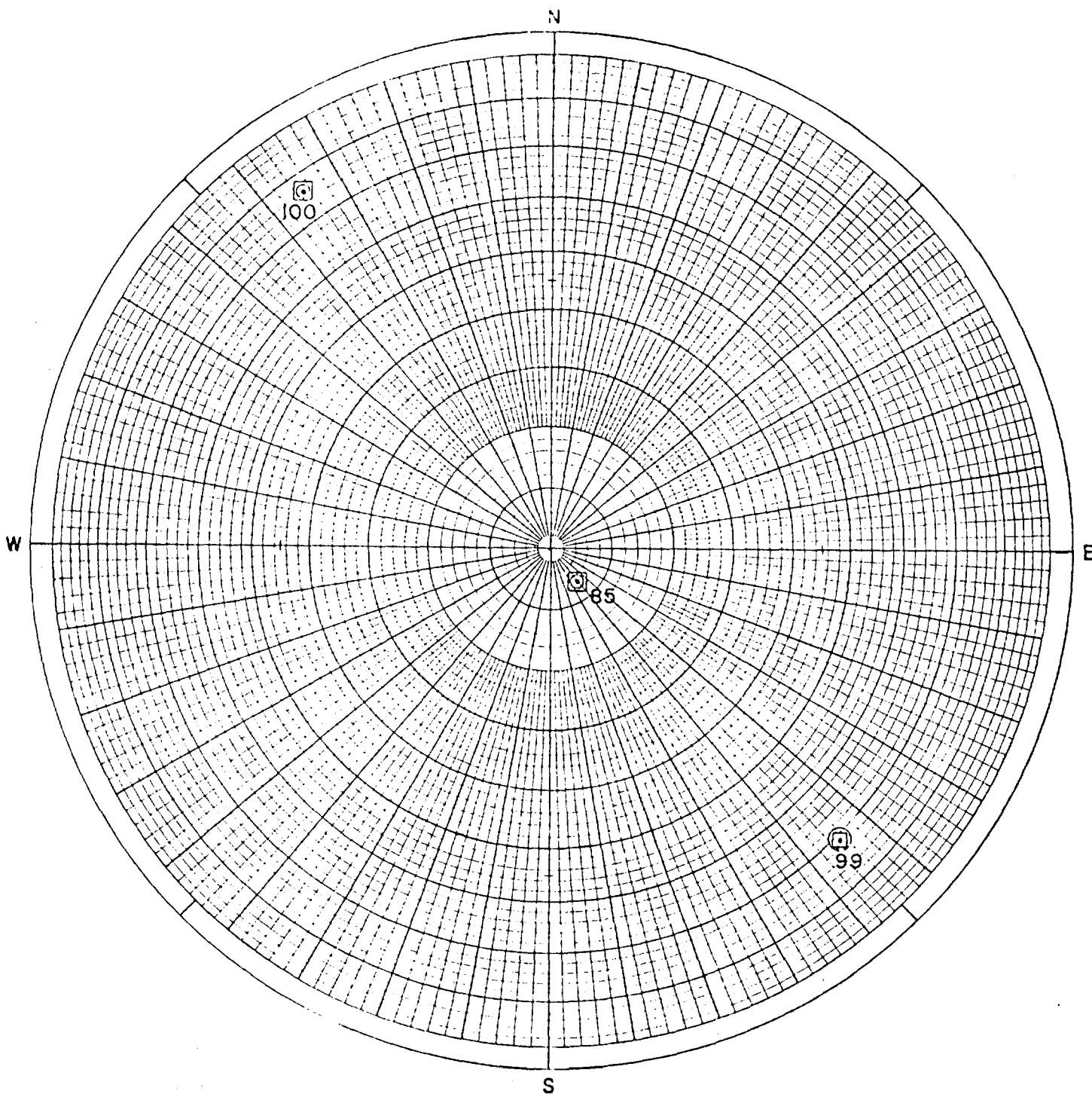
- Diorite
- ⊙ Diabase



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

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

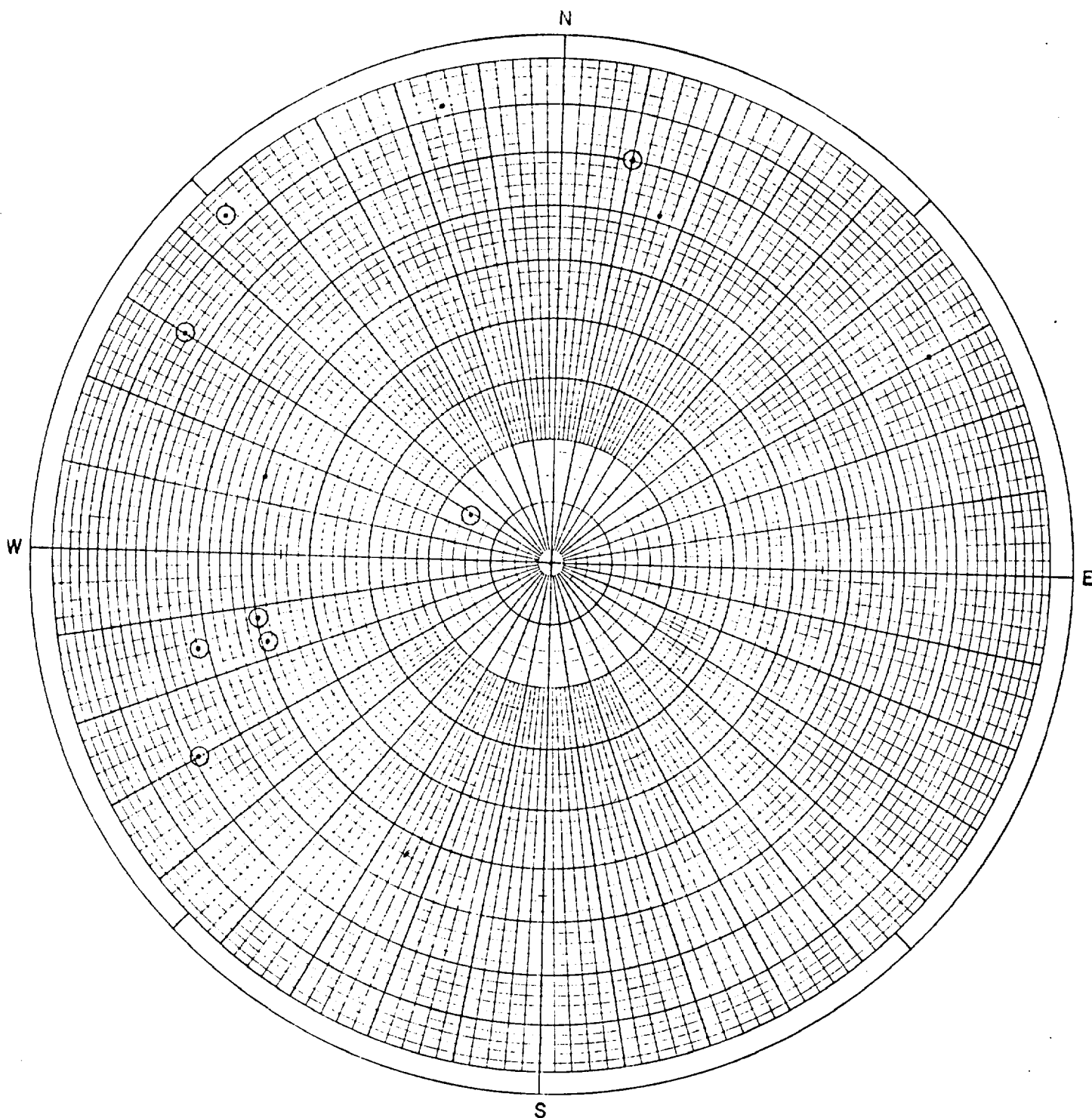
. Diorite



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

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

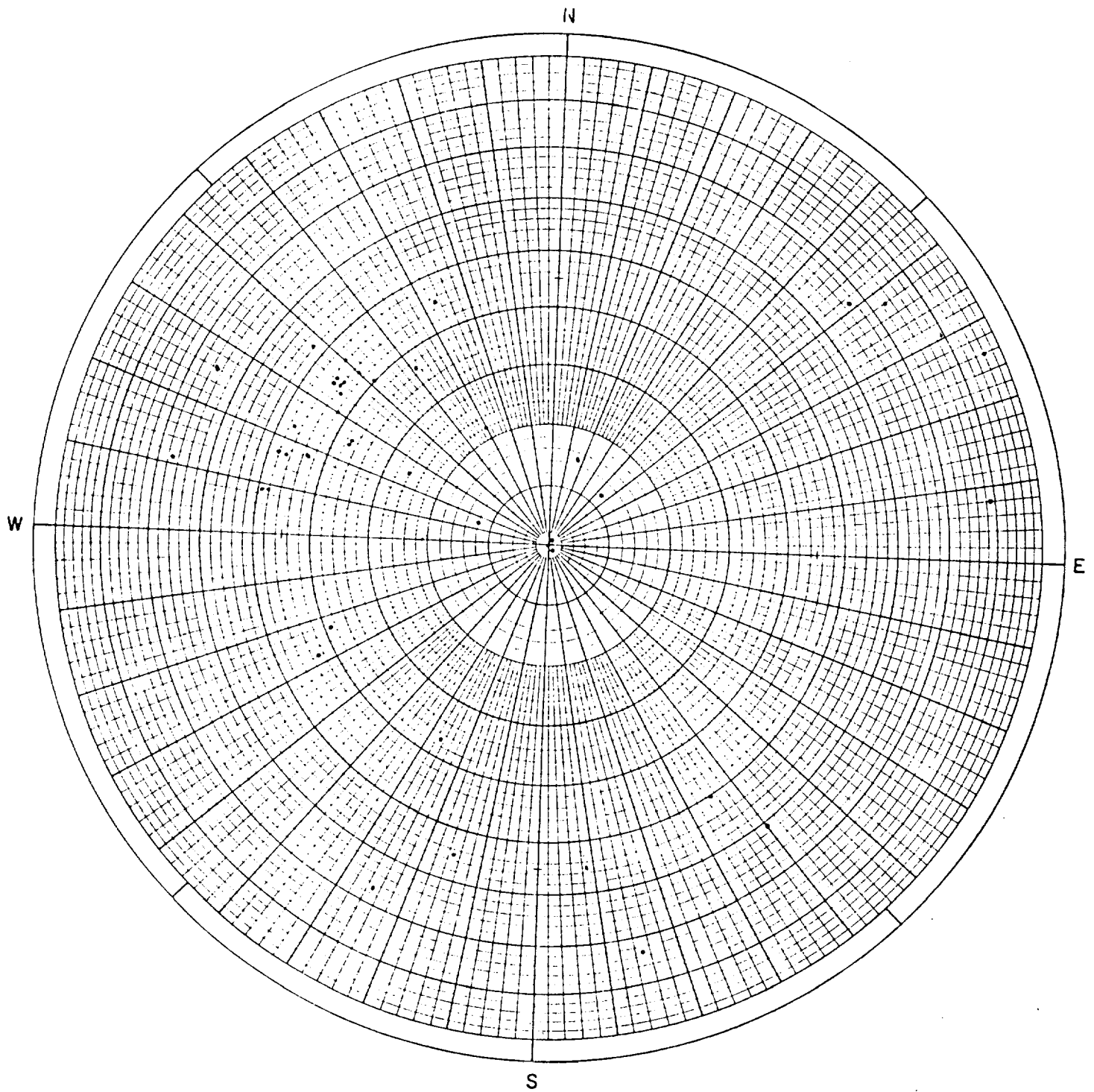
- ⊠ Diorite over Diabase
- ⊙ Diabase over Diorite



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:

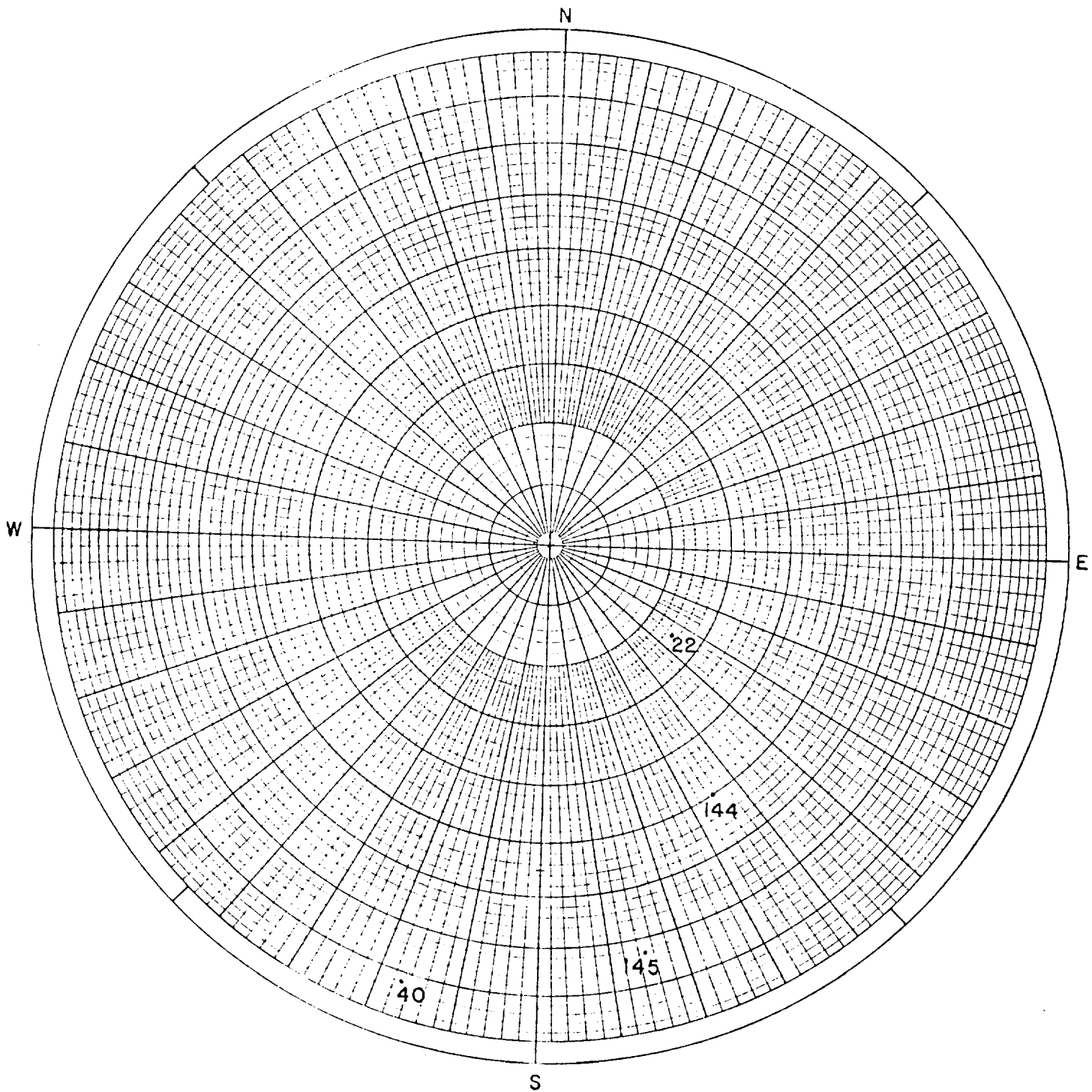
- . Diorite
- ⊙ Diabase



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

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

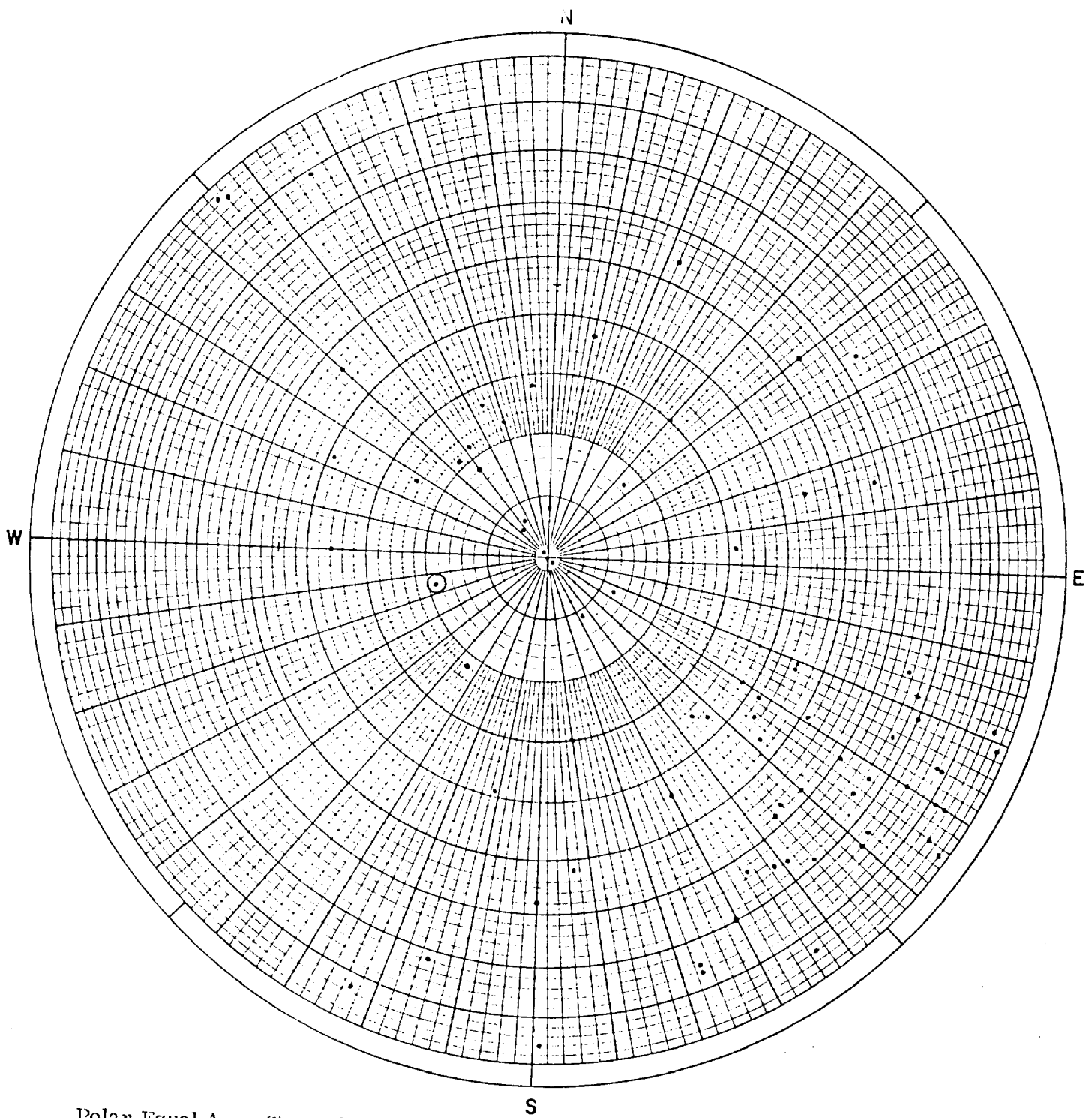
. Diorite



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

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

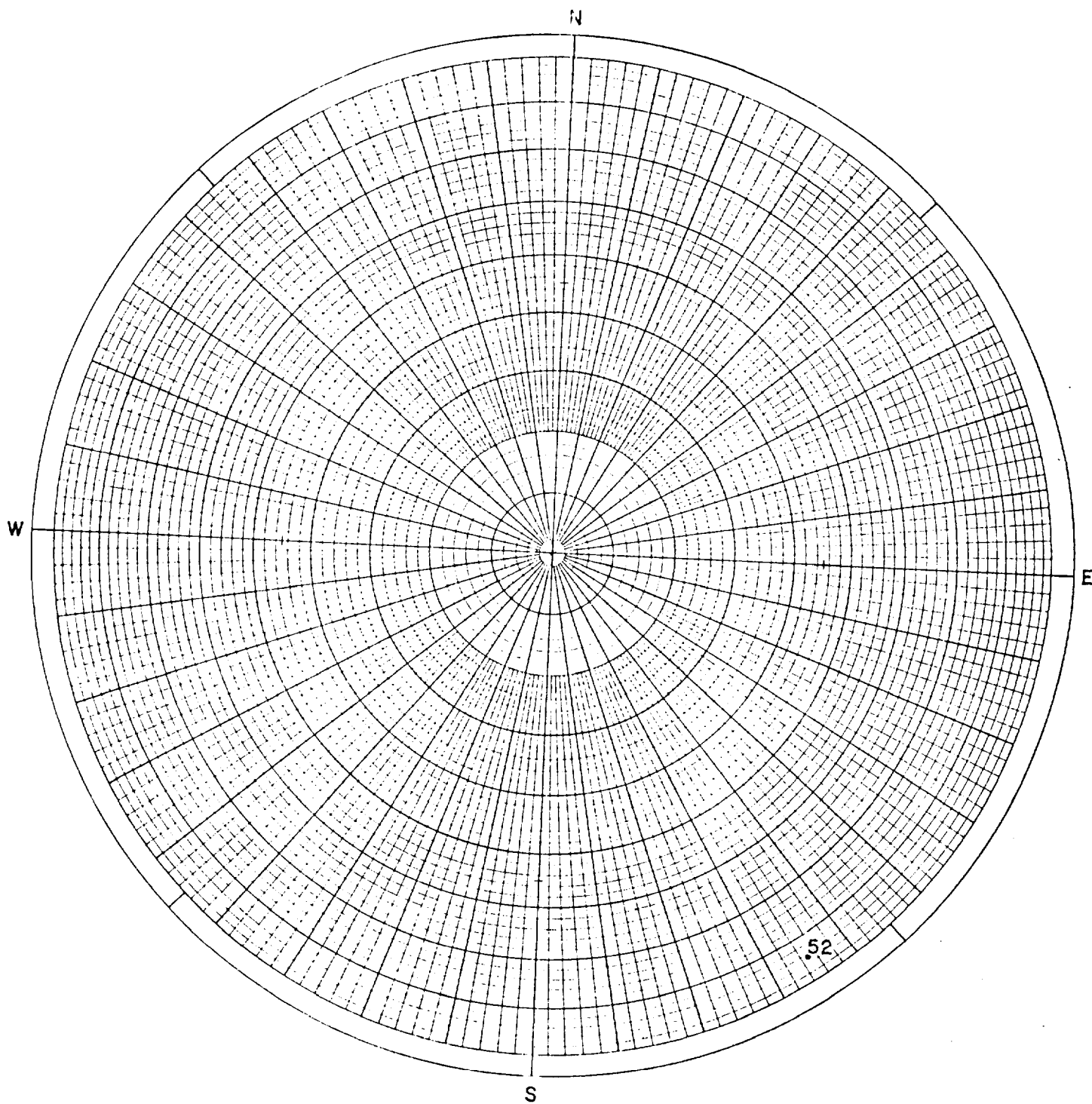
. Diorite



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

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

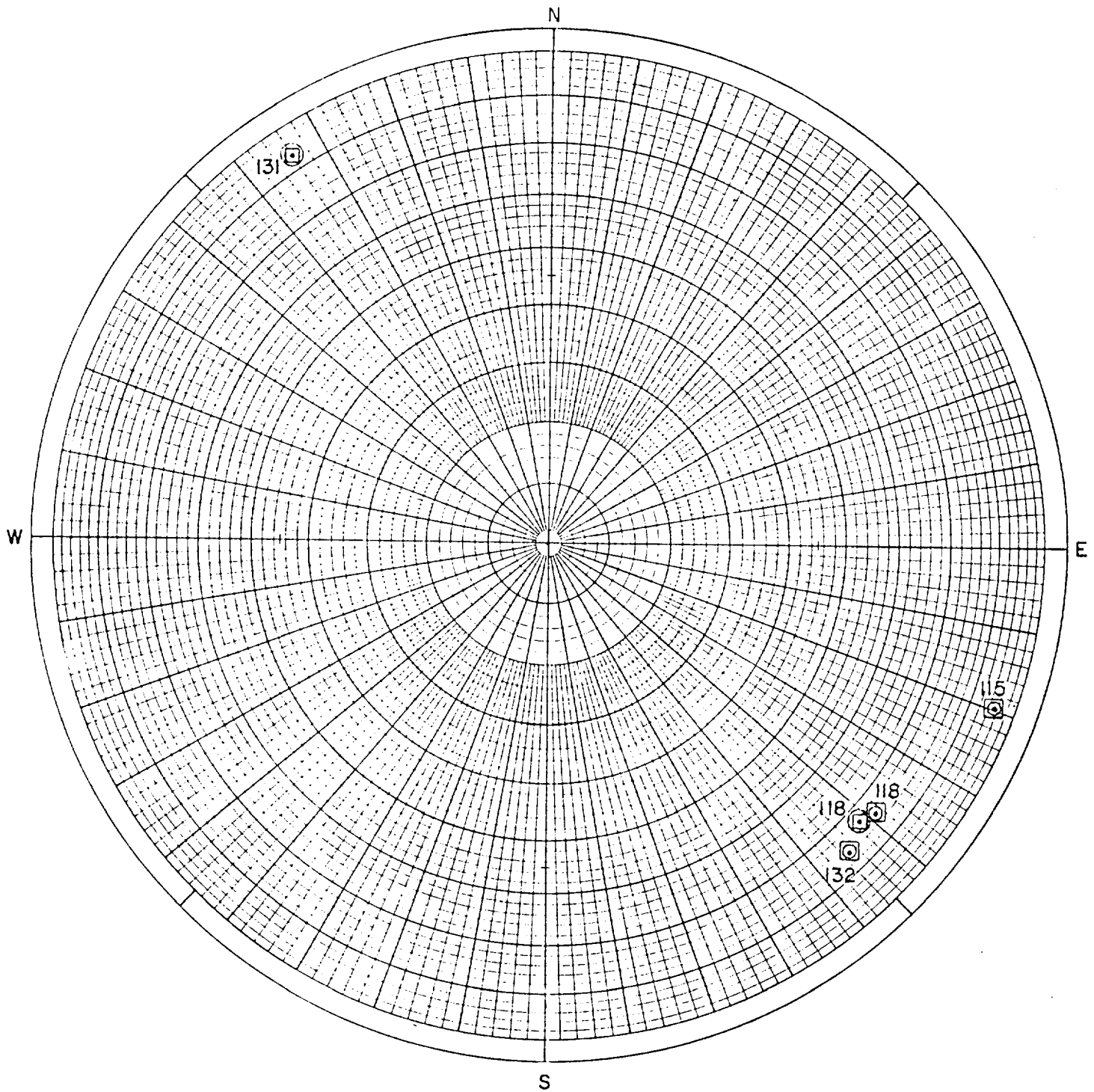
. Diorite
 ⊙ Diabase



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:

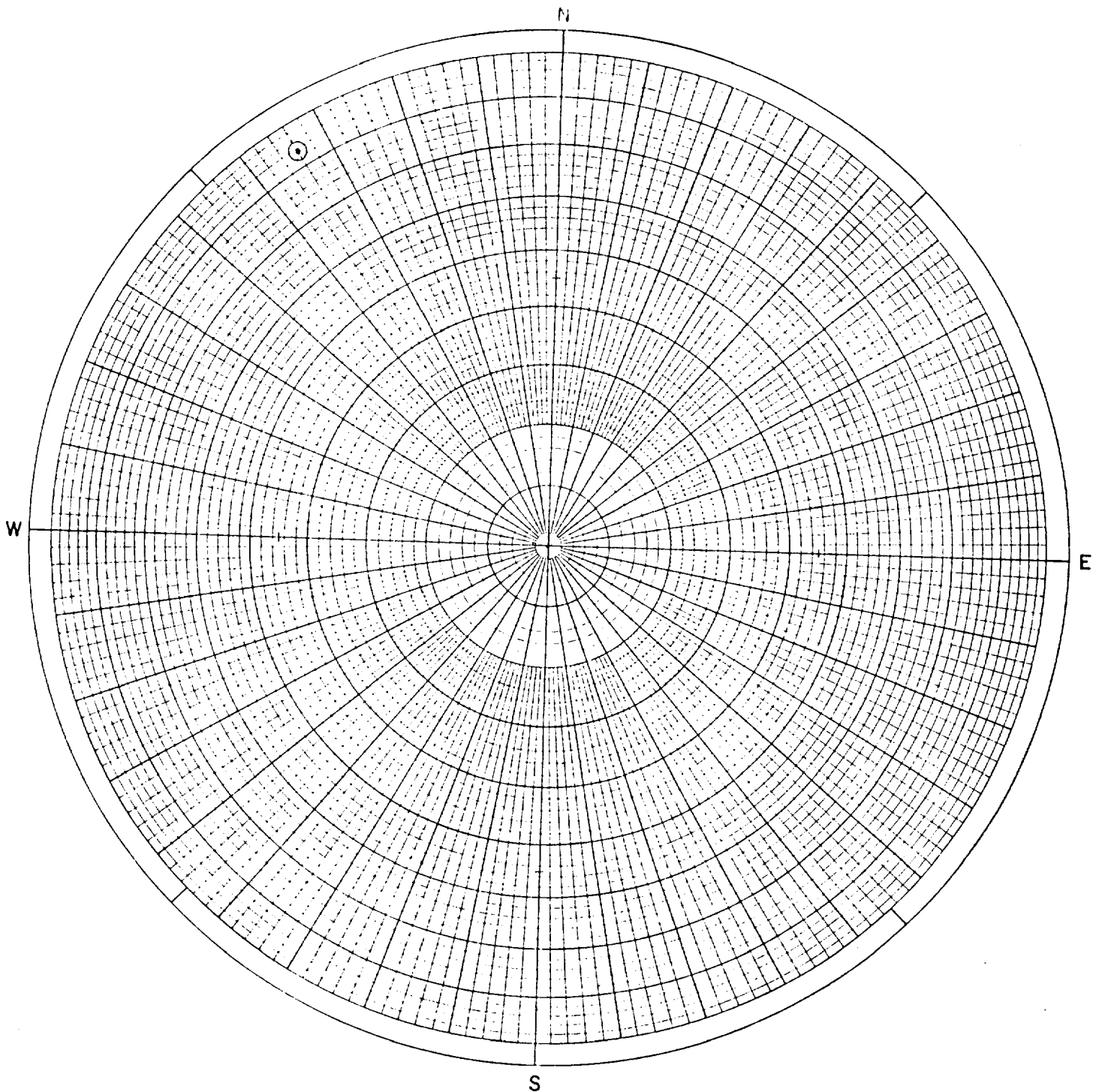
. Diorite



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

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

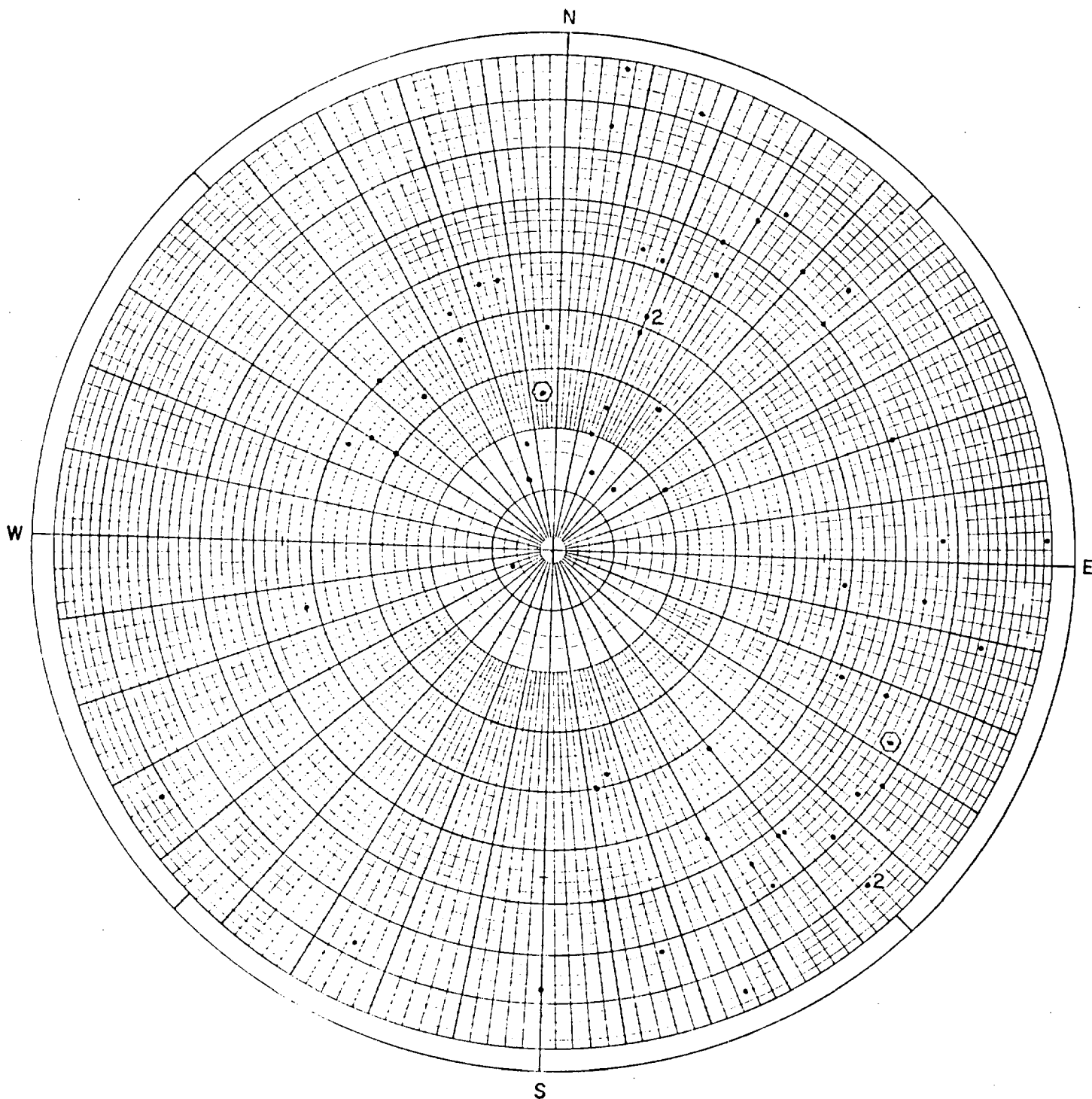
- ⊠ Diorite over Diabase
- ⊙ Diabase over Diorite



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

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

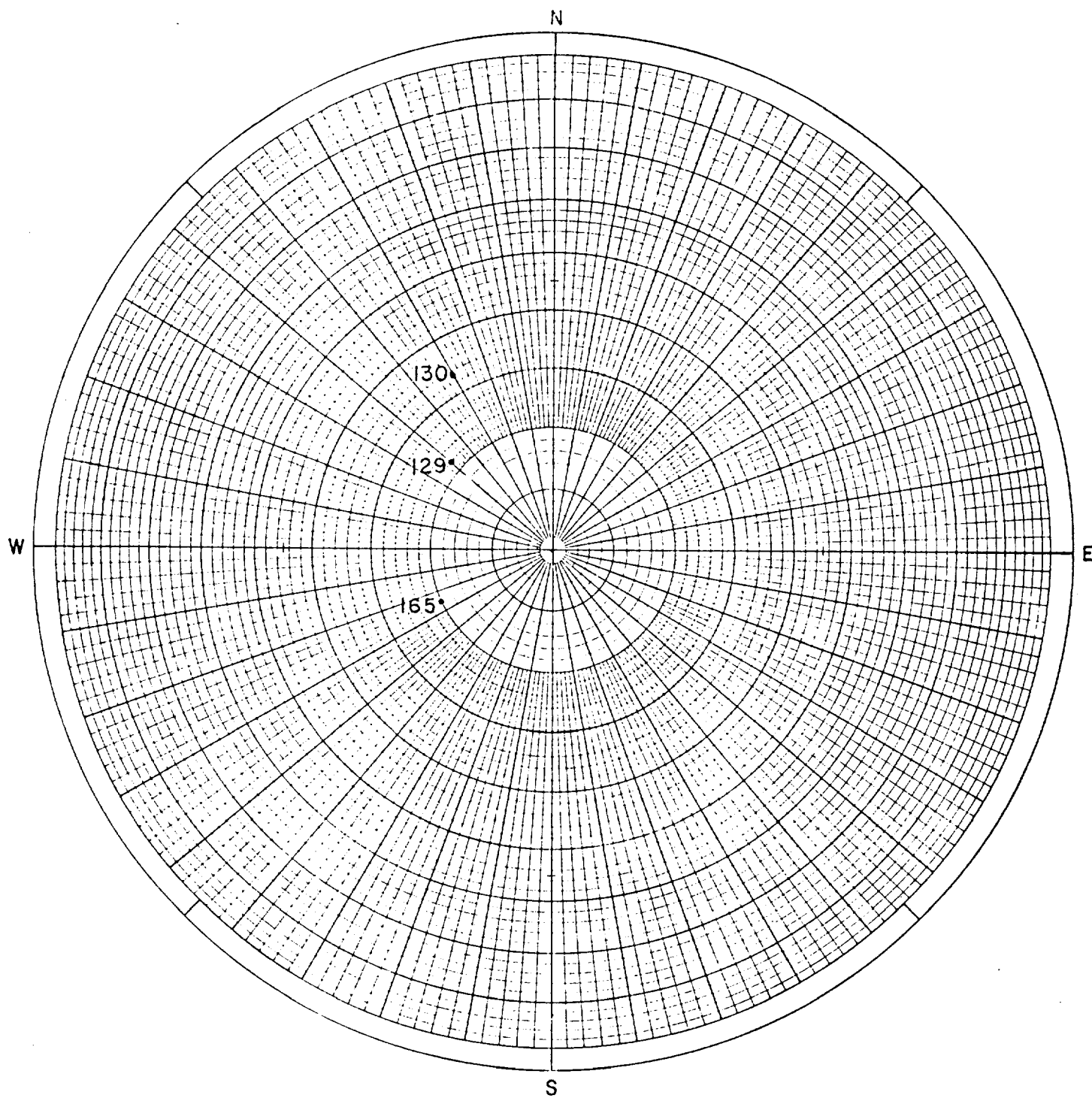
⊙ Diabase



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

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

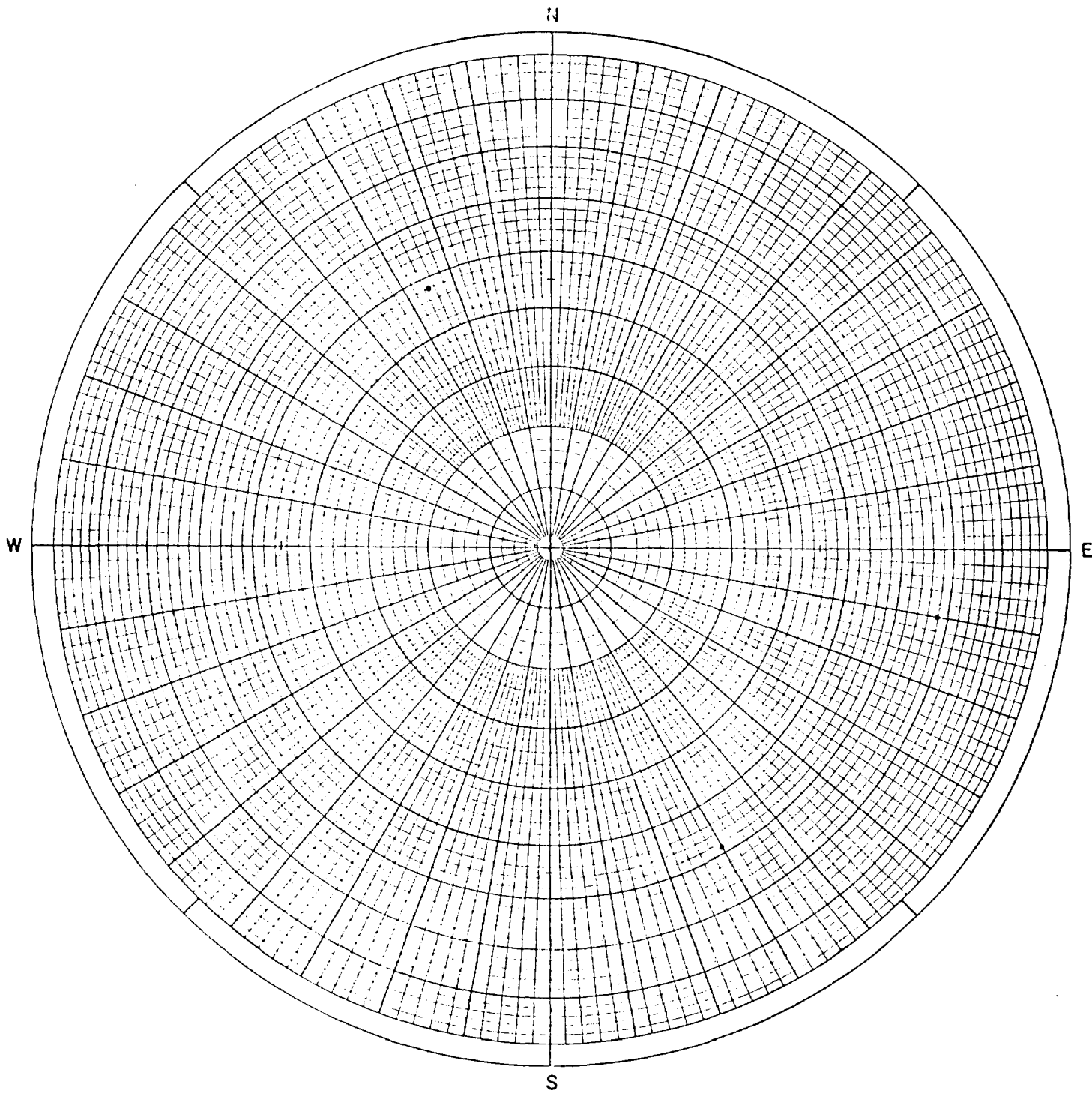
- Diorite
- ⊙ Pegmatite



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:

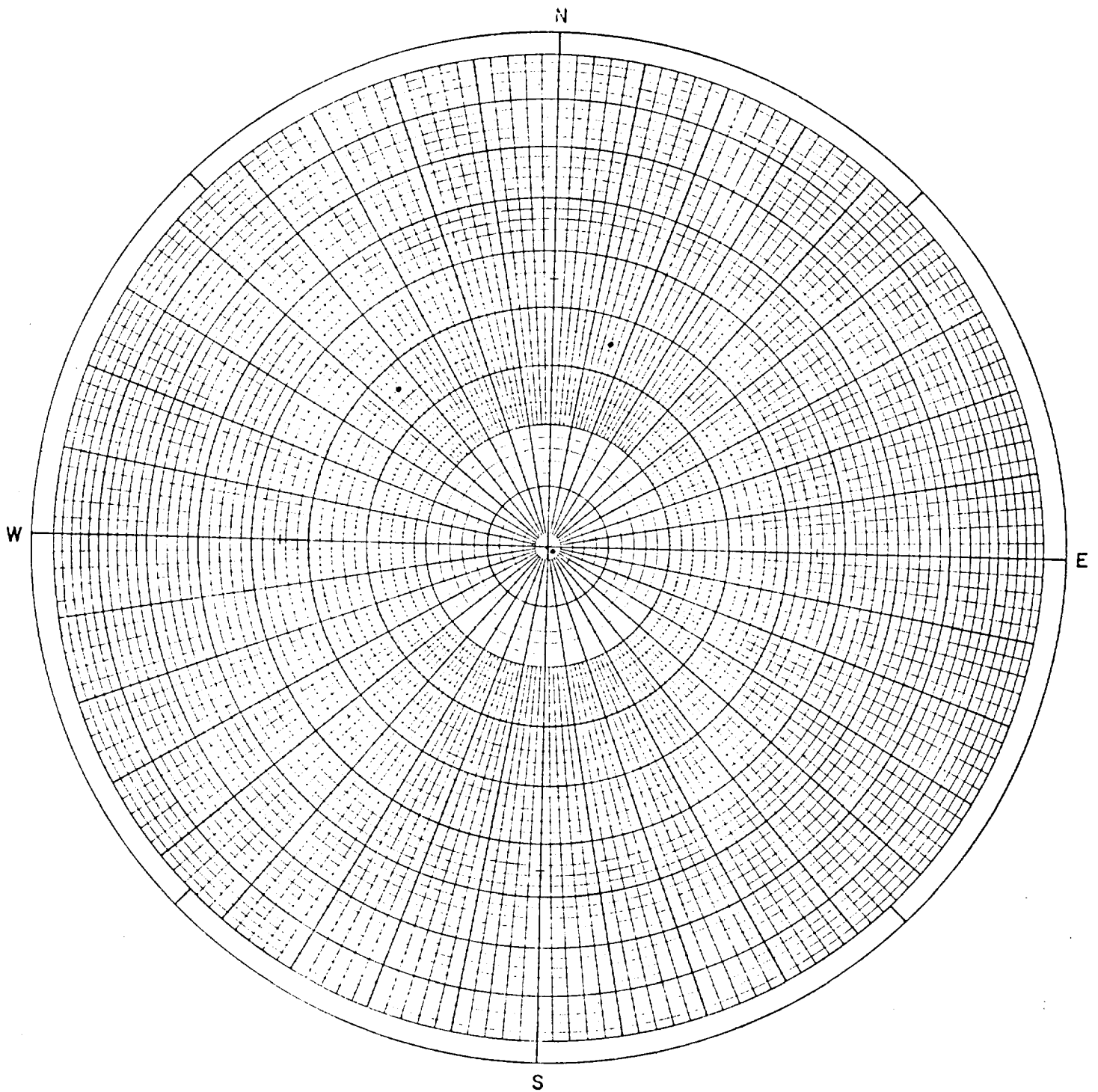
• Diorite



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

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

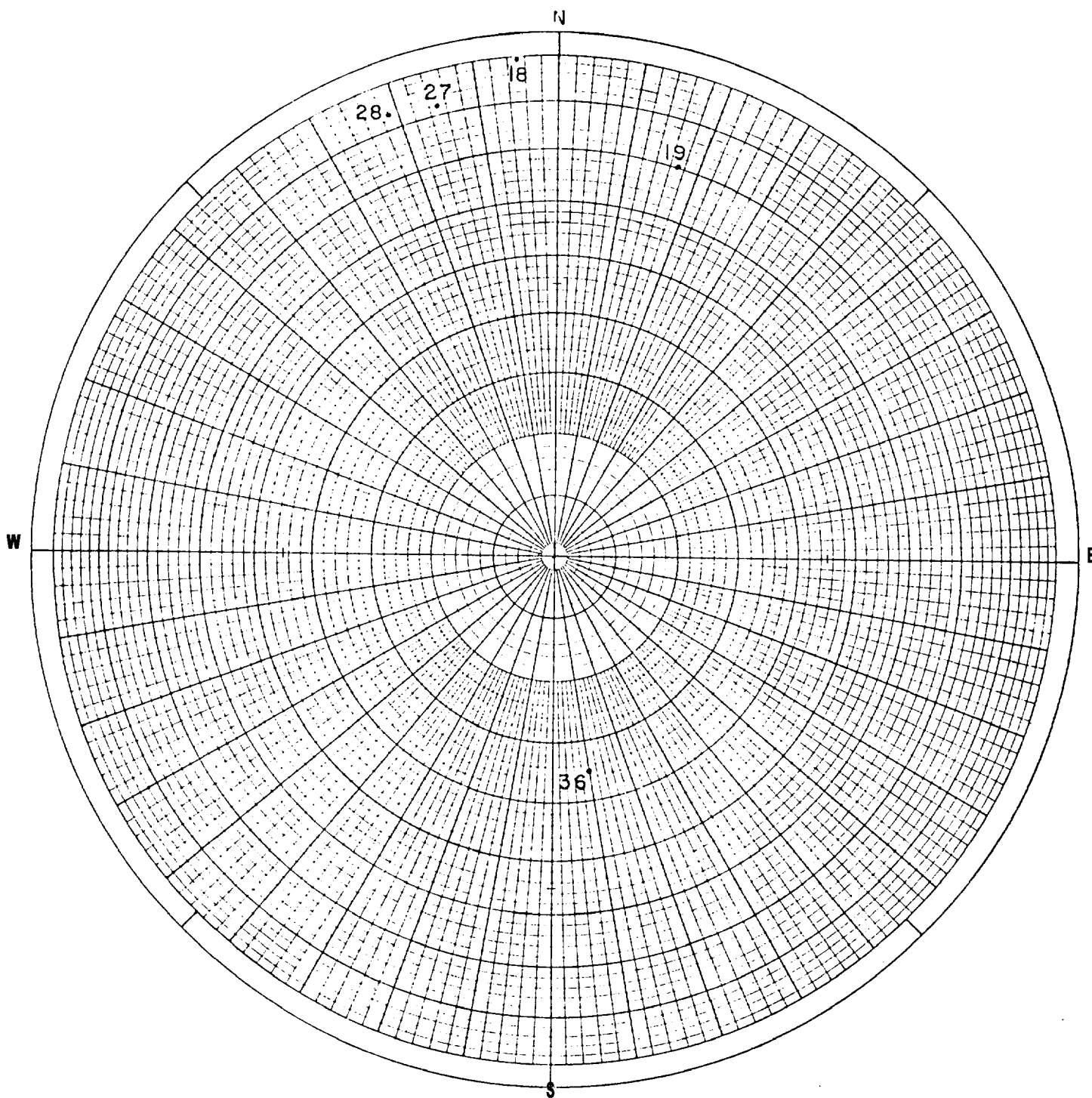
. Diorite



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

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

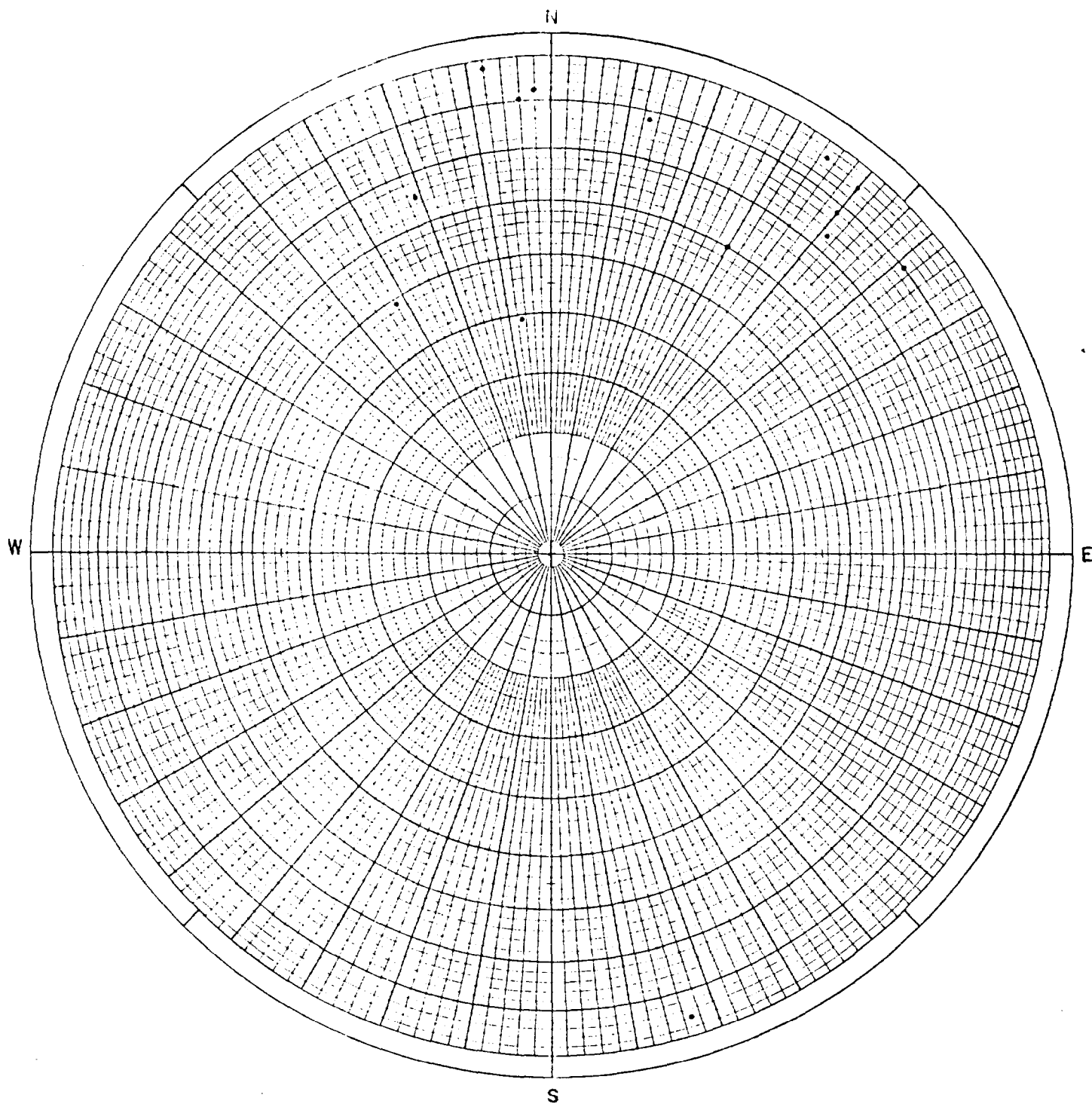
. Diorite



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

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

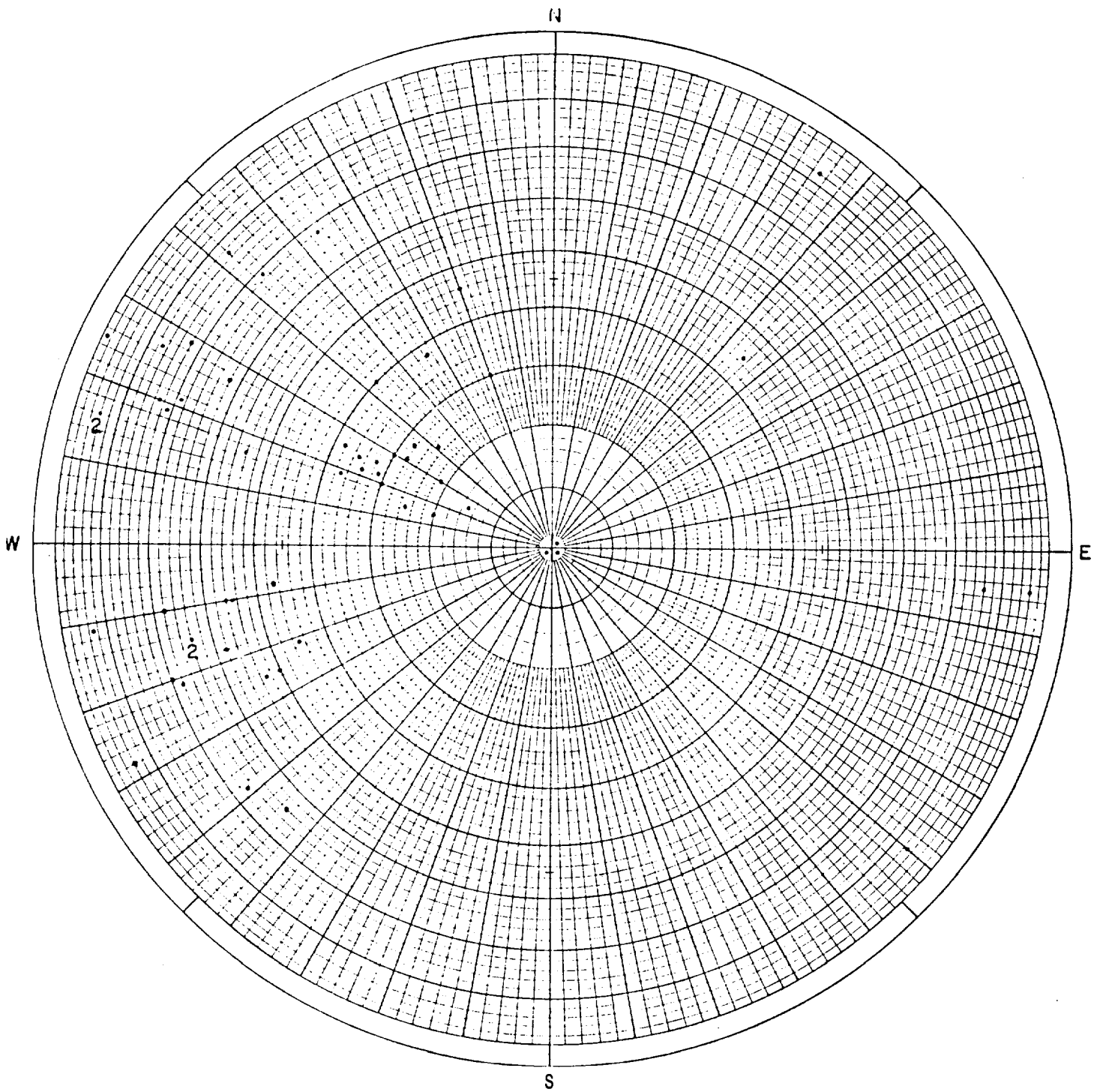
. Diorite



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

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

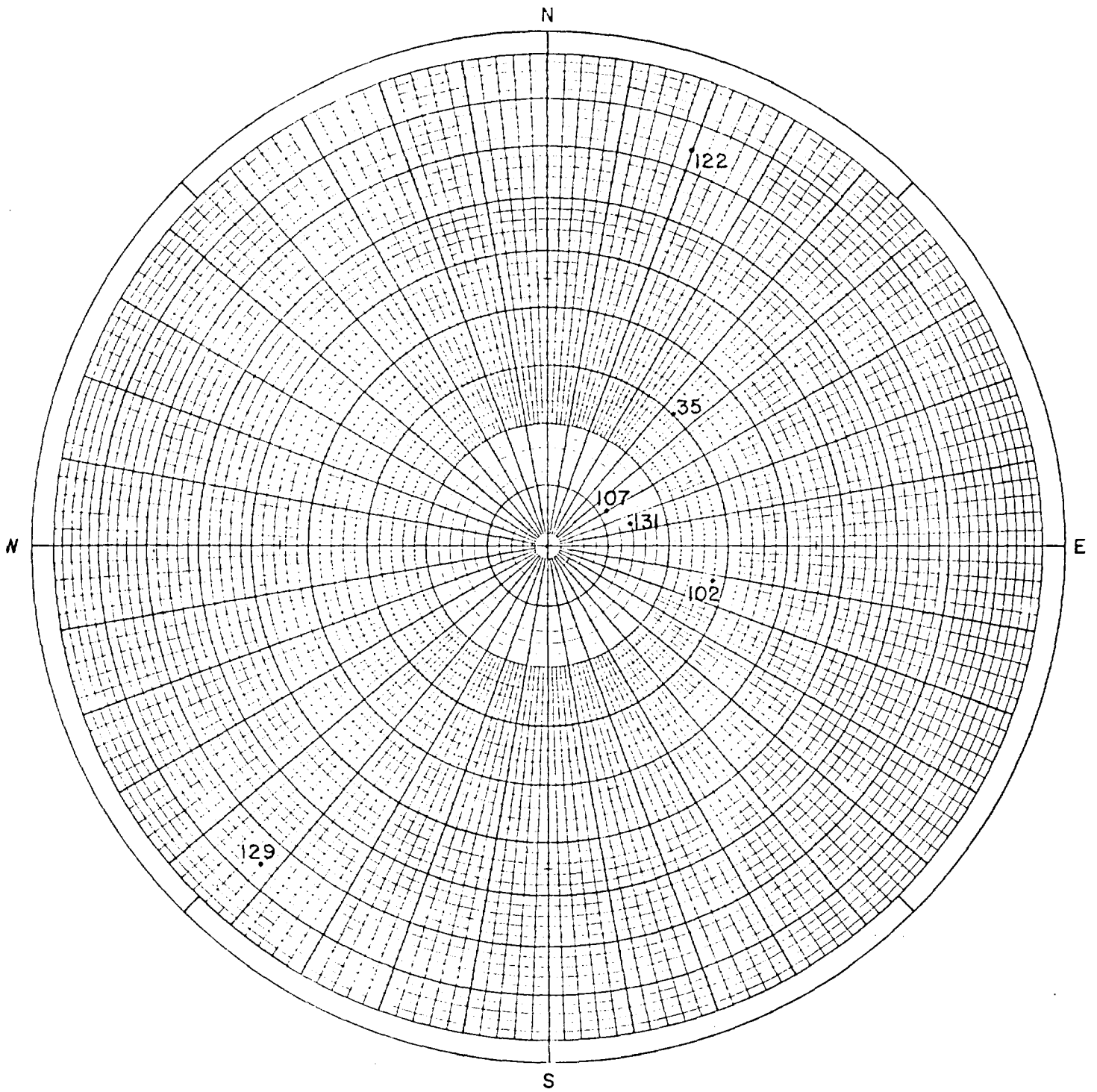
. Diorite



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

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

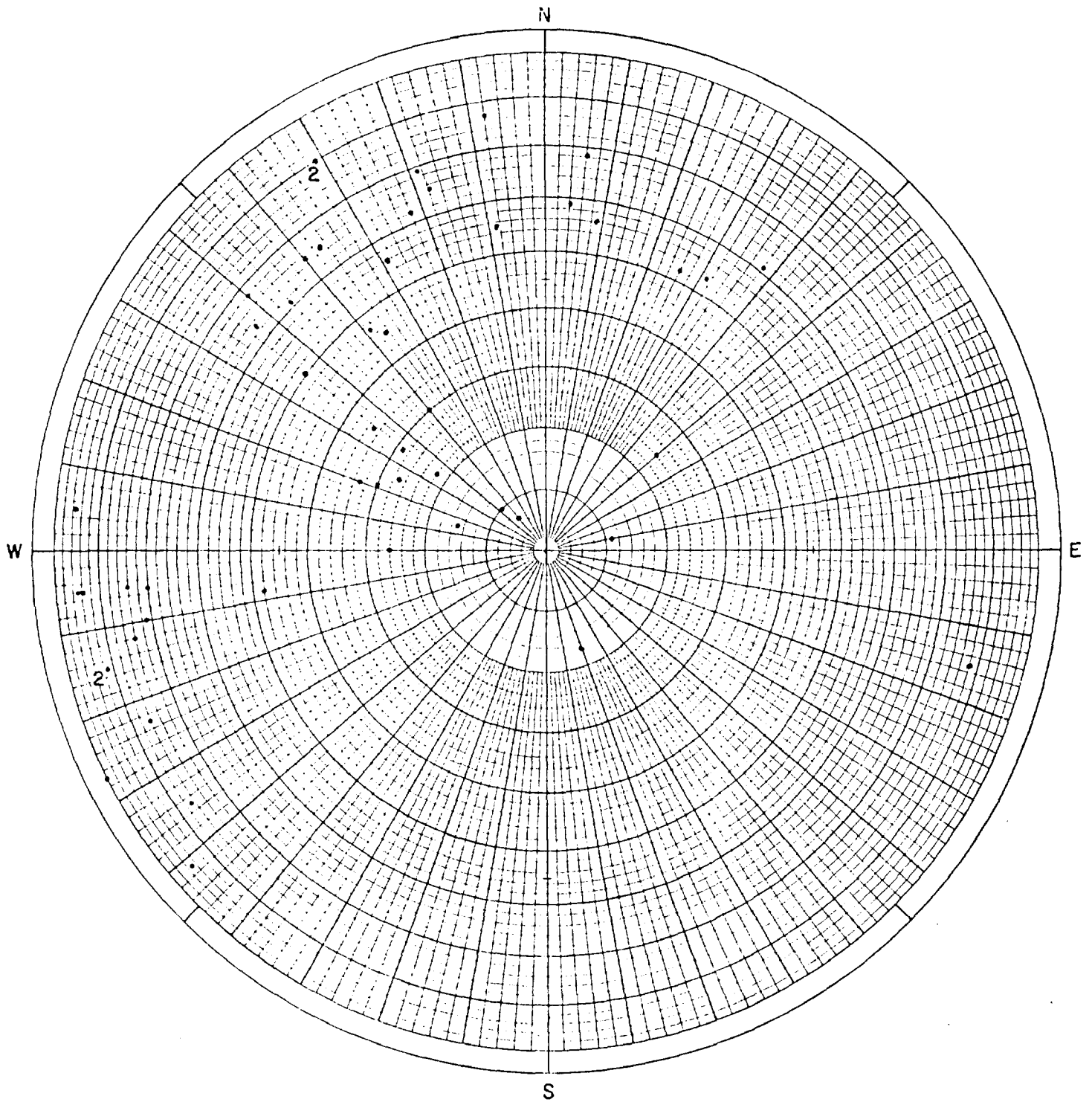
. Diorite



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

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

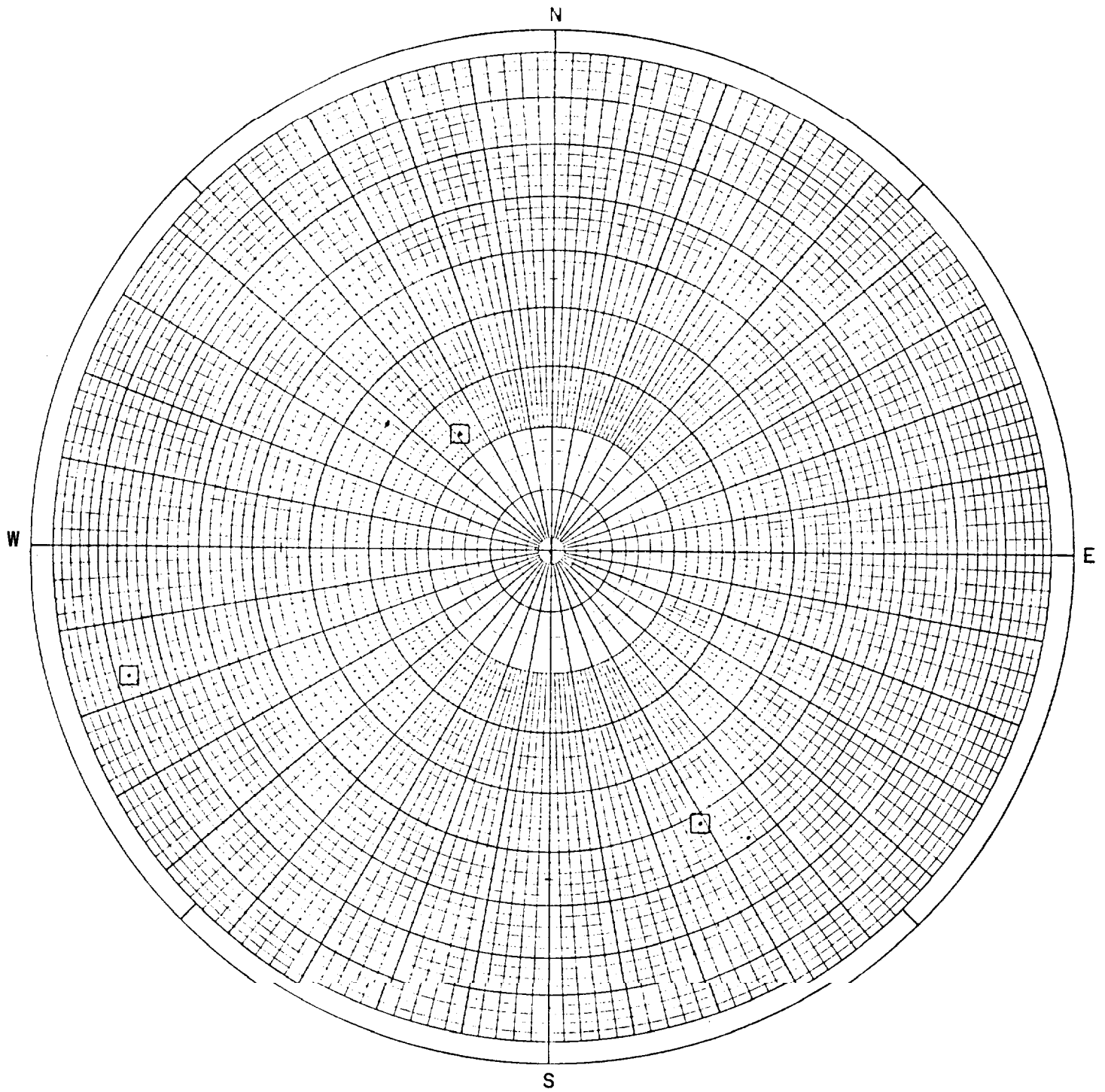
. Diorite



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

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

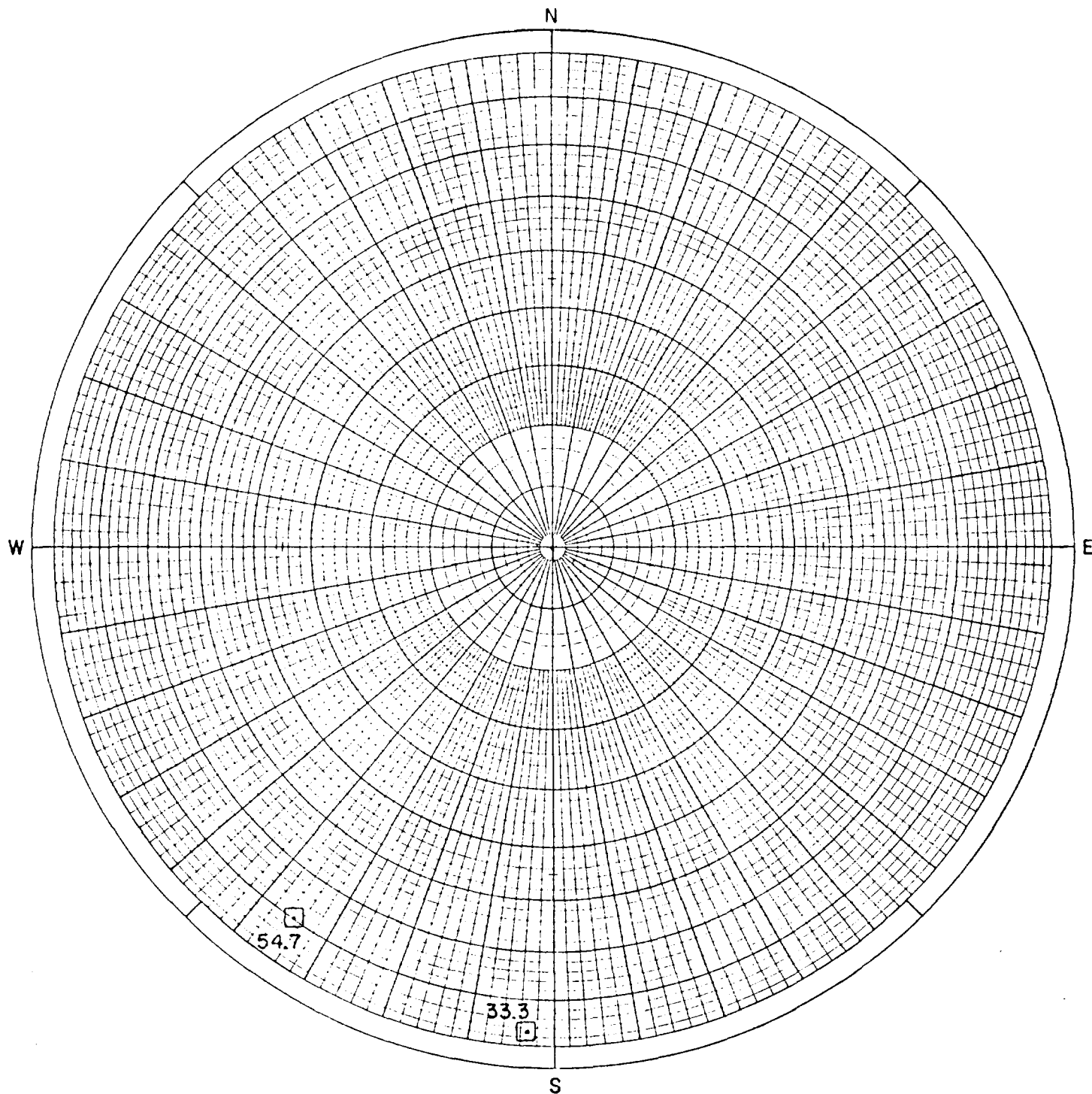
• Diorite



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

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

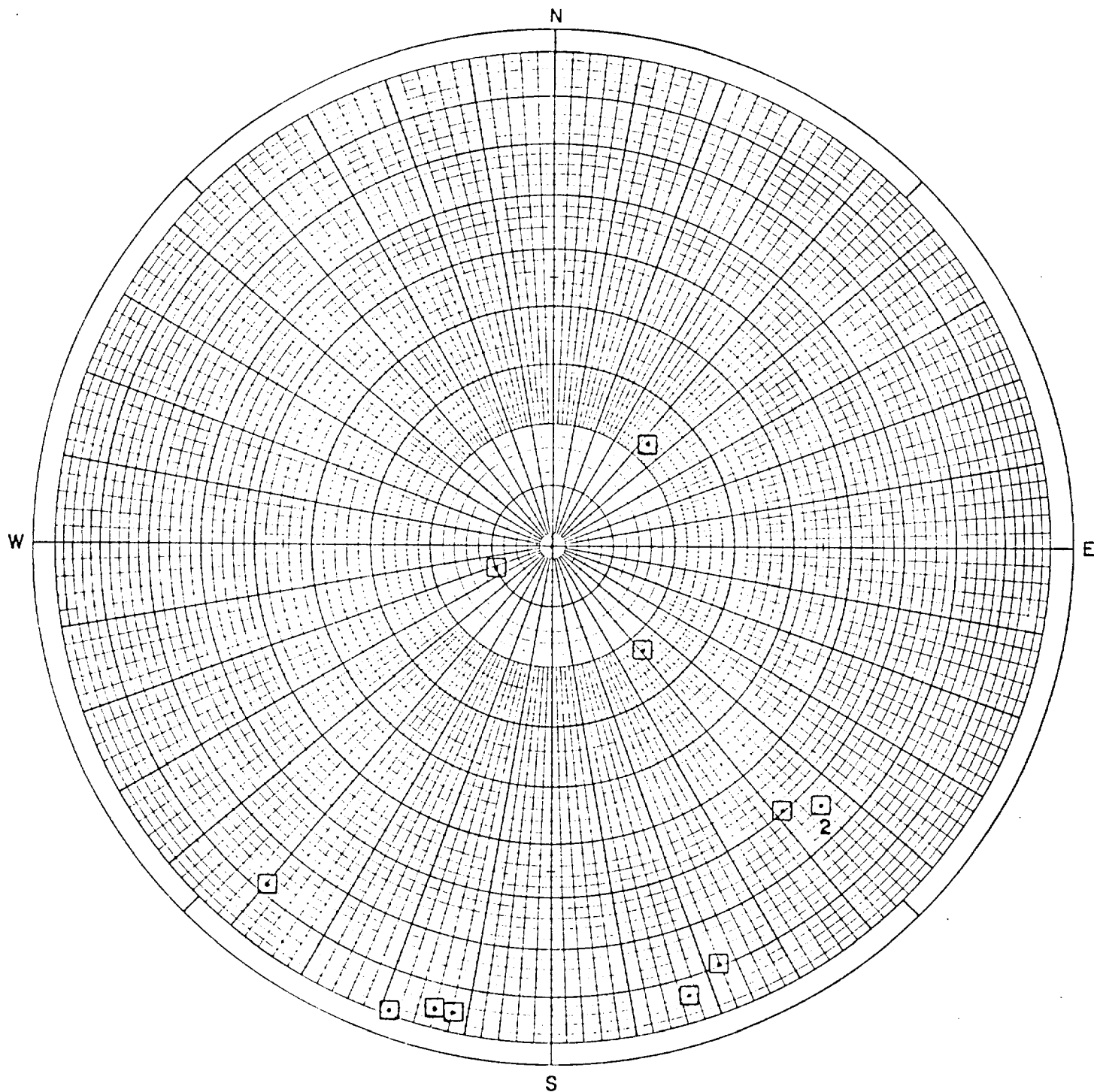
- Diorite
- ◻ Schist



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:

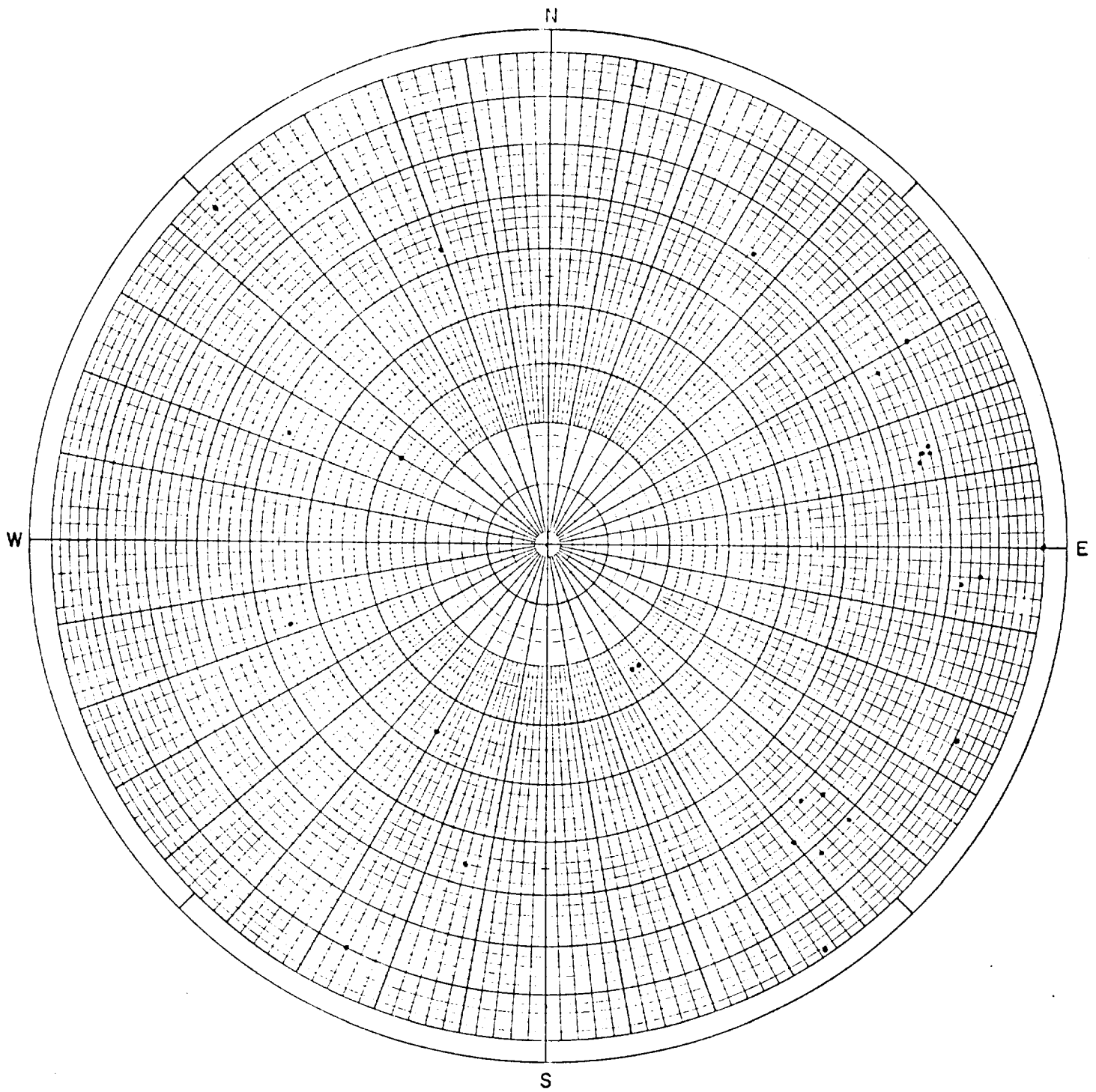
□ Schist



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

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

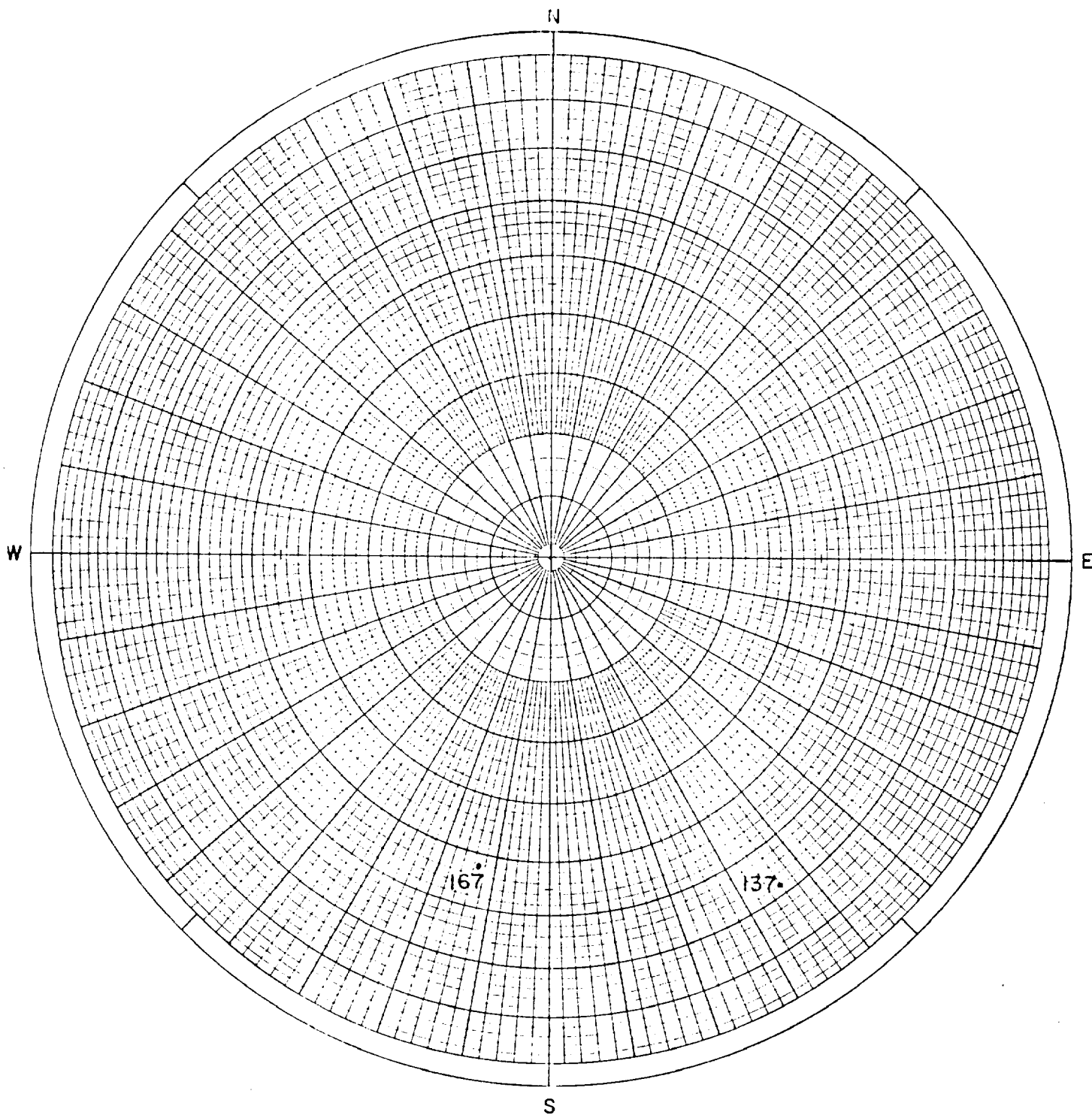
□ Schist



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

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

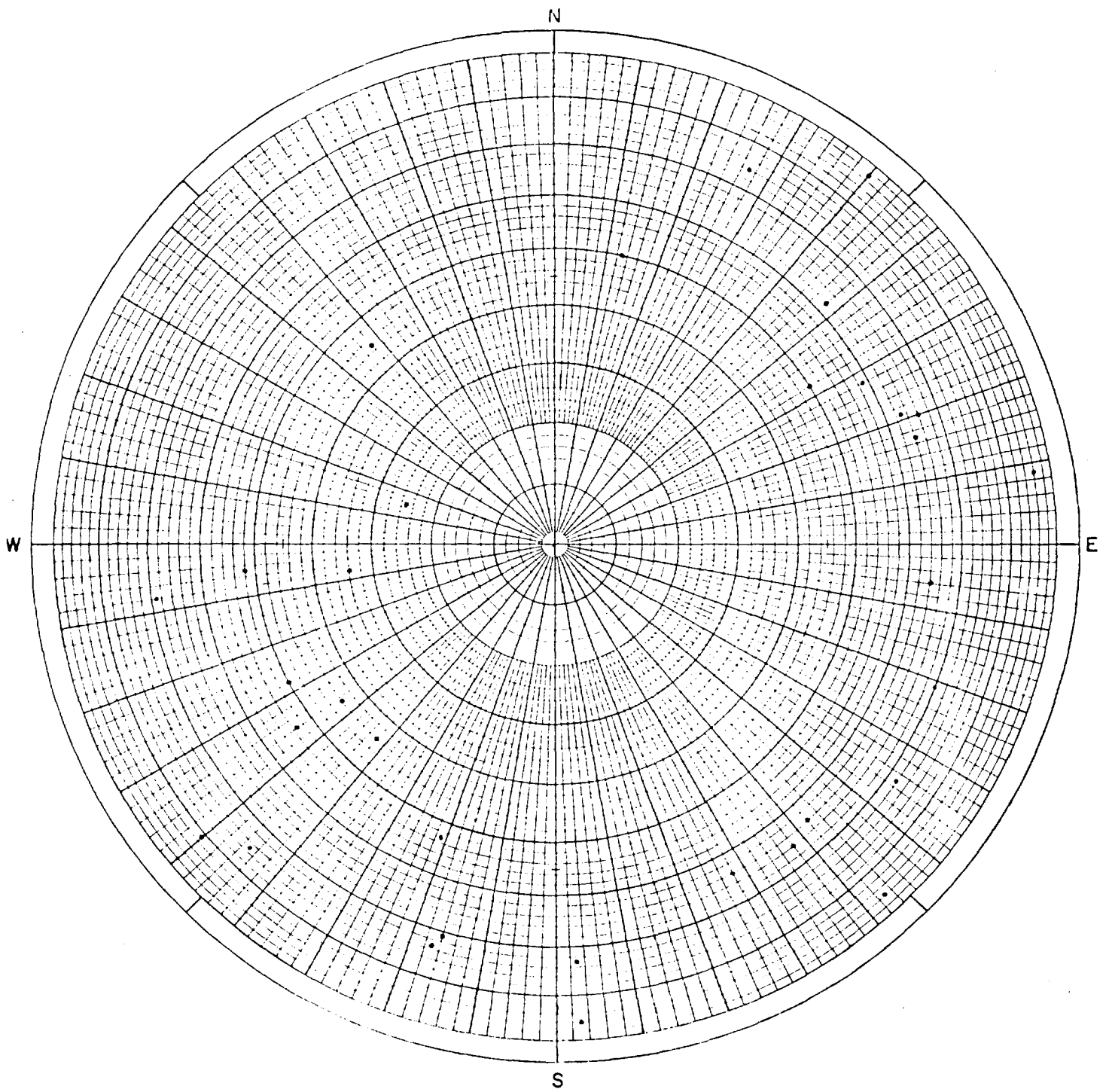
. Diorite



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

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 Level:

Project No. 7286

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

