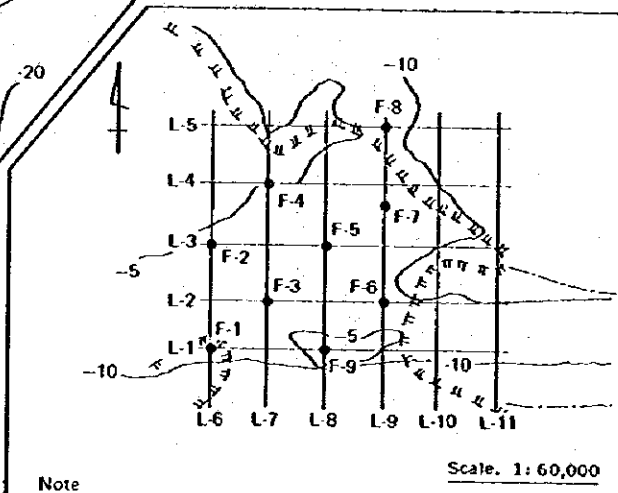


- Note
- L-1~9 Sonic Prospecting Line
 - M-1~5 Magnetic Detecting Line
 - E-1, 2 Boring Point



- Note
- L-1~11. Sonic Prospecting Line
 - F-1~9 Boring Point
 - Boundary of Marine Clay Deposit Area.
 - Boundary of Alluvium Loose Sand Deposit Area.

Plan of Present Survey

COORDINATES OF BORING POSITIONS

PLANE RECTANGULAR COORDINATES
(P.S.A. GRID)

GEOGRAPHICAL COORDINATES

POSITIONS	X	Y	LAT.	LONG.
E-1	-3875.00	1880.00	1 15 9.3596	103 52 11.6284
E-2	-3225.00	2960.00	1 15 30.5230	103 52 46.5679
F-1	3020.00	18845.00	1 18 53.8370	104 1 20.4813
F-2	3975.00	18840.00	1 19 24.9312	104 1 20.3216
F-3	3465.00	19345.00	1 19 8.3248	104 1 36.6582
F-4	4485.00	19335.00	1 19 41.5354	104 1 36.3370
F-5	3995.00	19835.00	1 19 25.5801	104 1 52.5119
F-6	3425.00	20335.00	1 19 7.0201	104 2 8.6865
F-7	4310.00	20330.00	1 19 35.8351	104 2 8.5269
F-8	5000.00	20325.00	1 19 58.3011	104 2 8.3668
F-9	3035.00	19850.00	1 18 54.3231	104 1 52.9949

Drilling Logs

DRILLING LOG

Remarks

Name of Project **Fill Materials for Reclamation Projects** Type of Drilling **Rotary**

Hole Number **No. E-1** Elevation **ACD -8.60** m Date **18th to 21st November, 1978**

Water Table _____ m Driller **Xoken Boring ()**

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery											
									Depth in m.	Sampling by Lab.	N-Value	Reas Per Teach 10cm	(N-Value)							
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11	20.10	11.50	11.50		Marine Clay	Greenish grey to Grey	Very soft	Very sticky. Uniform. High water content. Contains some sea shell fragments. With some fine sand. With some organic matters.												
12																				
13																				
14																				
15																				
16																				
17	25.60	17.00	5.50		Clay with organic	Brownish grey	Soft	Contains fibrous organic matters. Less organic matters at 14m. Observed some laminae of organic matters.												
18																				
19																				
20	28.70	20.10	3.10		Marine Clay	Dark grey	Soft	Sticky. Uniform. With some mudstone gravel ($\phi = 2-5\text{mm}$) with some sand pockets												
21	30.00	21.40	1.30		Silty Clay	Reddish brown	Stiff													
22	30.70	22.10	0.70		Organic Clay	Brownish grey to black	Soft	With decomposed wood												
23																				
24																				
25	34.05	25.45	3.35		Silty Clay	Grey to Reddish brown	Soft	High plasticity with some decomposed vegetables.												
26																				
27								End of Drilling												

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Projects Type of Drilling Rotary
 Site Number No. E-2 Elevation ACD -8.30 m. Date 22nd to 25th November, 1978
 Water Table m. Driller Koken Boring ()

No.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery										
									Depth in m.	Sampling for Lab.	SPT-N Value	Blows Per Each 10cm			(N-Value)				
									Core Recovery										
1																			
2								Sticky, uniform. High water content. Contains seashell fragments.	2.15		0								
3									2.45	P-1	0								
4									4.15		0								
5									4.45	P-2	0								
6								With small quantity of fine sand.	6.15		0								
7									6.45	P-3	0								
8						Greenish grey to Grey	Very soft	With small quantity of organic matters.	8.15		1	1	1	1					
9	17.90	9.60	9.60		Marine Clay			With lots of organic matters.	8.45	P-4	1	1	1	1					
10						Dark brown to Black	Soft	With some fine sand pockets. With decomposed woods.	10.15		3	1	1	1					
11	19.70	11.40	1.80		Organic Clay				10.45	P-5	3	1	1	1					
12						Yellowish orange to Grey	Stiff	High plasticity. Low water content.	12.15		13	3	4	6					
13	21.30	13.00	1.60		Silty Clay				12.45	P-6	13	3	4	6					
14								Sand is fine grained. With small quantity of seashell fragments.	14.15		14	4	5	5					
15	23.80	15.50	2.50		Sandy Clay	Light brown	Stiff		14.45	P-7	14	4	5	5					
16									16.15		4	1	1	2					
17									16.45	P-8	4	1	1	2					
18									18.15		3	1	1	1					
19								Contains some fine sand at upper portion. Gradually change to uniform marine clay.	18.45	P-9	3	1	1	1					
20								With some seashell fragments.	20.15		3	1	1	1					
21									20.45	P-10	3	1	1	1					
22	30.75	22.45	6.95		Marine Clay	Grey	Soft		22.15		3	1	1	1					
23									22.45	P-11	3	1	1	1					
24								End of Drilling											

DRILLING LOG

Name of Project Fill Materials for Reclamation Projects Type of Drilling _____
 Hole Number No. F-1 Elevation ACD -7.00 m Date 13th to 15th December, 1978
 Water Table _____ m Driller Koken Boring ()

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery					
									Depth in m.	Sampling or Lab.	Pen-Value	Blows Per Each 10cm	(N-Value)	
1					Sand with Gravel	Greenish grey		Sand is medium to coarse grained. With seashell fragments	2.15	P-1	0	Self Penetration		
2	9.10	2.10	2.10						2.45					
3														
4									4.15	P-2	0	Self Penetration		
5									4.45					
6														
7								Uniform, sticky. With some fine sand and seashell fragments. Contains black organic matters and sand below 7.5m	6.15	P-3	0	Self Penetration		
8	13.20	8.20	6.10		Marine Clay	Grey to Dark grey	Very soft		6.45					
9									8.15	P-4	1	1/30		
10									8.45					
11								Sand is medium to coarse grained. With some fine gravel (Ø = 2 to 5mm)	10.15	P-5	3	1 1 1		
12	18.80	11.80	3.60		Clayey Sand	Brownish grey	Very loose		10.45					
13									12.15	P-6	18	5 6 7		
14									12.45					
15								Sticky. With some black organic matters	14.15	P-7	6	2 2 2		
16	21.40	14.40	2.60		Silty Clay	Reddish brown to Grey	Very stiff		14.45					
17									16.15	P-8	3	1 1 1		
18									16.45					
19									18.15	P-9	4	1 1 2		
20									18.45					
21	27.20	20.20	5.80		Marine Clay	Dark grey	Soft	Uniform. Very sticky.	20.15	P-10	6	2 2 2		
22									20.45					
23								With black organic matters	22.15	P-11	38	12 15 11		
24	29.10	22.10	1.90		Clay with organic	Dark grey	Medium		22.45					
25									24.15	P-12	17	4 5 8		
26									24.45					
27								Sand is medium to coarse grained. Partly changes to fine sand. With some fine gravel and organic matters	26.15	P-13	18	4 6 8		
28									26.45					
29	35.60	28.60	6.50		Clayey Sand	Greenish grey to Grey	Medium to Dense		28.15	P-14	15	5 5 5		
30									28.45					
31									30.15	P-15	50	25 25 25		
32	37.35	30.35	1.75		Silty Clay	Light brown	Hard	With fine sand	30.35					
33								End of Drilling						

DRILLING LOG

Name of Project Fill Materials for Reclamation Projects Type of Drilling _____
 Log Number No. F-2 Elevation ACD -6.60 m. Date 9th to 14th December, 1978
 Water Table _____ m. Driller Koken Borifig ()

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery					
									Depth in m.	Sampling for Lab.	Blows Per Foot	(N-Value)		
									10	20	30	40	50	
1	8.10	1.50	1.50		Clayey Sand with Gravel	Greenish grey		With seashell fragments	2.15	p-1	50/14	26	24	4
2									2.29					
3									4.15	p-2	47	14	17	16
4	10.70	4.10	2.60		Silty Sand	Greenish grey	Very dense	Uniform. Sand is fine to medium grained	4.45					
5									6.15	p-3	50/12	33	17	2
6									6.27					
7									8.15	p-4	50/15	28	22	5
8									8.30					
9									10.15	p-5	50/14	29	21	4
10									10.29					
11									12.15	p-6	50/12	41	9	2
12									12.27					
13	20.10	13.50	9.40		Clayey Sand with Gravel	Yellowish brown to Grey	Dense to Very dense	Semi-angular to round gravel with dia. of 2 to 3mm. Max. dia. is about 5mm. Majority is quartz gravel. Contains some feldspar gravel.	14.15	p-7	50/10	50		
14									14.25					
15									16.15	p-8	50/8	50	8	8
16									16.23					
17	23.60	17.00	3.50		Silty Sand	Purplish grey	Very dense	Uniform. Sand is fine grained.	18.15	p-9	50/9	50	9	9
18									18.25					
19									20.15	p-10	50/7	50	7	7
20									20.22					
21									22.15	p-11	50/14	36	14	4
22									22.29					
23	29.60	23.00	6.00		Clayey Silt	Grey to yellowish brown	Hard	With some fine sand.	24.15	p-12	50/14	36	14	4
24									24.29					
25	31.87	25.27	2.27		Silty Sand	Whitish to yellowish grey	Very dense	Sand is fine grained.	25.15	p-13	50/12	40	10	2
26								End of Drilling	25.27					

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Projects Type of Drilling Rotary
 Hole Number No. F-3 Elevation ACD -9.80 m. Date 28th Nov. to 4th Dec. 1978
 Water Table _____ m. Driller Koken Boring ()

E F %	E m	D m	T m	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery											
								Depth (m)	Sampling for Lab.	N-Value	Blows Per Each 10cm		(N-Value)						
1																			
2							Sand is fine to medium grained. With small quantity of gravel with dia. of 2 ~ 3 mm.	2.15											
3								2.45	P-1	15	4	5	6						
4	13.70	3.90	3.90	Clayey Sand	Whitish brown	Medium		4.15		50/15	30	20	5						
5								4.30	P-2										
6								6.15		50/12	41	9	2						
7							Semi-angular to round gravel. Dia. of gravel is generally 2 ~ 3 mm. Max. dia. is about 5 mm.	6.27	P-3										
8				Clayey Sand with gravel	Whitish brown to Grey	Very dense		8.15		50/20	27	29							
9	18.50	8.70	4.80					8.35	P-4										
10								10.15		50/16	26	24	6						
11	20.30	10.50	1.80	Silty Clay	Yellowish brown to Grey	Hard	Well cemented. Uniform.	10.31	P-5										
12	21.25	11.45	0.95	Silty Clay	Greenish grey	Hard	Fairly well cemented. Uniform.	11.15	P-6	47	15	16	16						
13							End of Drilling	11.45											
14																			
15																			
16																			
17																			
18																			
19																			
20																			

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Project Type of Drilling Rotary
 Hole Number No. F-4 Elevation ACD -5.30 m. Date 6th to 7th December, 1978
 Water Table _____ m. Driller Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Color	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery						
									Depth in m.	Sampling for Lab.	Blows Per Each 10cm	(N-Value)			
1	7.10	1.80	1.80		Clayey Sand with Gravel	Yellowish grey	Medium	Semi-angular to round gravel with Ø of 2-3mm. With shell fragments	0.15	P-1	18	4	5	9	Core Recovery
2									0.45		50	50			
3	9.40	4.10	2.30		Silty Sand	Whitish grey to yellowish orange	Very dense	Sand is fine to medium	2.15	P-2	8	8			
4									2.23		50	3			
5	11.40	5.80	1.70		Clayey Sand with Gravel	Whitish grey	Very dense	Contains a lot of gravel at some portion. With angular feldspar gravel	4.15	P-3	11	47	3	1	
6									4.26		50	13	12	15	
7	13.30	8.00	2.20		Clayey Sand	Whitish grey	Dense	Sand is fine to medium grained. Uniform	6.15	P-4	40	13	12	15	
8									6.45		50	24			
9	15.10	9.80	1.80		Clayey Sand with Gravel	Yellowish orange	Very dense	Gravel is generally semi-round quartz with dia. of 2-3 mm.	8.15	P-5	17	26	7		
10									8.32		50	22	19	22	9
11									10.15	P-6	22	19	22	9	
12									10.37		50	19	23	9	
13	18.90	13.60	3.80		Clayey Sand	Whitish grey	Very dense	Sand is fine to medium grained. With some fine gravel	12.15	P-7	19	23	9		
14									12.29		50	14	32	4	
15	20.55	15.25	1.65		Clayey Sand with Gravel	Yellowish grey	Very dense	Quartz gravel. Dia. of gravel is 2-3 mm	14.15	P-8	10	50			
16									14.29		50				
17								End of Drilling	15.15	P-9	10	50			
18									15.25						

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Projects Type of Drilling Rotary
 Hole Number No. F-5 Elevation ACD -8.20 m. Date 29th to 30th November, 1978
 Water Table _____ m. Driller Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery													
									Depth in m.	Sampling for Lab.	N-Value	(N-Value)										
1																						
2																						
3																						
4					Clayey Sand with gravel	Reddish brown to Grey	Medium to Very dense	Almost semi-round quartz gravel. Generally gravel is fine grained, i.e. $\phi=2-3$ mm. Max. dia. of gravel is about 5mm.	2.15													
5	13.90	5.70	5.70									2.45	P-1	22	6	7	9					
6												4.15		50				25				
7												4.31	P-2	16	25	6						
8												5.15		50				7				
9					Clayey Sand	Grey to Brown	Dense	Sand is fine to medium grained. With fine gravel.	5.39													
10	16.10	7.90	2.20									6.15	P-4	46	17	15	14					
11									6.45		50											
12					Clayey Sand with gravel	Reddish brown to Brown	Very dense	Almost semi-round quartz gravel. With feldspar gravel. Gravel is fine grained. Max. dia. of gravel is 5mm.	8.15													
13												8.32	P-5	17	23	7						
14												10.15		50				26				
15								10.29	P-6	14	24	4										
16								11.15		50												
17								11.25	P-7	10	50											
18																						
19																						
20																						
								End of Drilling														

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Project Type of Drilling Rotary
 Hole Number No. F-6 Elevation ACD -8.90 m Date 1st to 4th December, 1978
 Water Table _____ m Driller Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery											
									Depth in m.	Sampling for Lab.	SPT N-Value	Blows Per Each 10cm			(N-Value)					
1																				
2																				
3																				
4																				
5																				
6	14.90	6.00	6.00		Clayey Sand	Yellowish to brown	Medium to Dense	Sand is medium to coarse grained. With some fine gravel ($\phi = 2$ to 3 mm)	2.15 2.45	P-1	20	6	7	7						
7																				
8																				
9																				
10																				
11																				
12	21.24	12.34	6.34		Clayey Sand with Gravel	Yellowish brown to Greenish grey	Dense to Very dense	Semi-angular to round gravel. Dia. of gravel is generally 2 to 3 mm. Max. dia. is about 5mm. Contains a lot of gravel with ϕ of 3-5mm below 12m	6.15 6.45	P-2	33	10	10	13						
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				
								End of Drilling												

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Projects Type of Drilling Rotary
 Hole Number No. F-7 Elevation ACO -7.50 m. Date 9th to 11th December, 1978
 Water Table _____ m. Driller Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Section	Type of Soil	Color	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery						
									Depth in m.	Sampling for Lab.	Blows Per Foot	(N-Value)			
1	7.60	0.10	0.10		Clayey Sand with Gravel	Grey		With seashell fragments							
2								Small quantity of gravel around 2m. Sand is fine to medium grained. Semi-angular to round gravel with diameter of 2 to 3 mm.	2.15	P-1	40	11	13	16	
3									2.45						
4					Clayey Sand with Gravel	Green to Yellowish grey	Dense to Very dense		4.15	P-2	55	17	18	20	
5	12.30	4.80	4.70						4.45						
6					Sandy Clay with Gravel	Yellowish brown	Hard	Dia. of gravel is 3 to 5mm. Max. dia. is about 7mm.	6.15		50	24	18	20	12
7	13.70	6.20	1.40						6.39	P-3	24	18	20	4	
8									8.15						
9									8.45	P-4	41	12	13	16	
10								Quartz gravel with dia. of 2 to 3mm. Max. dia. is about 5mm. A lot of gravel at 10m.	10.15		50	19	24	26	9
11					Clayey Sand with Gravel	Green to Yellowish grey	Dense to Very dense		10.34	P-5	19	24	26	9	
12	19.30	11.80	5.60						12.15		50	13	36	14	3
13					Silty Sand	Brown to Greenish grey	Very dense	Sand is fine grained.	12.28	P-6	50	50			
14	20.74	13.24	1.44						13.15		50	9	9		
15								End of Drilling	13.24	P-7	9	9			
16															
17															
18															
19															
20															

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Project Type of Drilling Rotary
 Hole Number No. F-8 Elevation ACD -9.40 m. Date 6th to 7th December, 1978
 Water Table _____ m. Dr. Per Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Litho	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery									
									Depth in m.	Sampling for Lab.	N ₆₀ -Value	Bows Per Each 10cm	(N ₆₀ -Value)					
													10	20	30	40	50	
1																		
2																		
3																		
4																		
5																		
6																		
7	17.20	7.80	7.80		Marine Clay	Dark grey	Very soft	Sticky, uniform. High water content. With some fine sand.										
8																		
9																		
10																		
11	23.90	14.50	6.70		Clayey Sand with Gravel	Grey to Reddish brown	Very loose to Loose	Gravel is semi-angular to round with dia. of 2 to 3mm. Max. dia. of gravel is about 5mm.										
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20	30.10	20.70	6.20		Marine Clay	Dark grey	(Soft)											
21																		
22																		
23	32.90	23.50	2.80		Silty Clay	Greenish grey	Medium											
24																		
25																		
26	35.52	26.12	2.62		Clayey Sand with Gravel	Greenish grey	Very dense	Gravel is semi-angular to round with dia. of 2 to 3 mm. Max. dia. is about 5mm.										
27																		
28								End of Drilling										

DRILLING LOG

Remarks

Name of Project Fill Materials for Reclamation Projects Type of Drilling Rotary
 Hole Number No. F-9 Elevation ACD -6.50 m. Date 16th to 18th December, 1978
 Water Table _____ m. Drift Koken Boring ()

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Standard Penetration Test or Core Recovery										
									Depth in m.	Sampling for Lab.	Blows Per (each 10 cm)	(N-Value)							
1	7.90	1.40	1.40		Sand with Gravel	Greenish grey		Sand is coarse grained. With shell fragments											
2				x					2.15		50	28	13	18	19				
3				x					2.43										
4				x					4.15		50	20	23	27					
5				x					4.35										
6				x					6.15		50	16	31	19	6				
7				x					6.31										
8				x					8.15		50	26	17	21	12	6			
9				x					8.41										
10	16.60	10.10	8.70	x	Sandy Silt	Yellowish brown to Grey	Hard	Partly, material changes to silty clay	10.15		50	19	21	29	9				
11									10.34										
12									12.15		50	18	26	24	8				
13									12.33										
14	20.77	14.27	4.17		Clayey Sand with Gravel	Greenish grey	Very hard	Quartz and feldspar gravels. Semi-angular to round gravels with dia. of 2 to 3 mm. Max. dia. is about 5 mm.	14.15		50	12	37	13	2				
15									14.27										
16								End of Drilling											
17																			
18																			
19																			
20																			

Summary of Soil Tests

No.		SUMMARY OF SOIL TEST							
Project _____		Bore Hole _____						E-1	
Location of project _____									
Sample no.		P-3	P-8	P-9	P-10	P-12			
Sample depth		6.00 m 6.45 m	16.00 m 16.45 m	18.00 m 18.45 m	20.00 m 20.45 m	24.00 m 24.45 m			
Condition of sample		Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %		70.4	65.7	66.9	53.2	31.50			
Specific gravity		2.645	2.606	2.616	2.695	2.686			
Wet density, g/cm ³		(1.63)	(1.57)	(1.61)	(1.90)	(1.80)			
Dry density, g/cm ³		(0.96)	(0.95)	(0.96)	(1.24)	(1.37)			
Natural void ratio		(1.76)	(1.74)	(1.73)	(1.17)	(0.96)			
Degree of saturation, %		(100)	(98)	(100)	(100)	(88)			
Atterberg limits	Liquid limit, %	77	92	87	55	63			
	Plastic limit, %	28	37	31	22	24			
	Plasticity index	49	55	56	33	39			
Grain size analysis	Gravel, %	0	1	0	1	0			
	Sand, %	2	3	1	12	2			
	Silt, %	31	21	22	25	25			
	Clay & colloid, %	67	75	77	62	73			
	Max. diameter, mm	2.00	4.76	2.00	4.76	4.76			
	Diam. at 60%	0.0020	0.0020	0.0012	0.0045	0.0017			
	Diam. at 10%	-	-	-	-	-			
Visual soil description		Clay	Clay with organic	Clay	Silty Clay	Silty Clay			
Unified soil classification		CH	CH	CH	CH	CH			
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

SUMMARY OF SOIL TEST

Project _____ Bore Hole E-2
 Location of project _____

Sample no.	P-2	P-5	P-6	P-7	P-10				
Sample depth	4.00 m 4.45 m	10.00 m 10.45 m	12.00 m 12.45 m	14.00 m 14.45 m	20.00 m 20.45 m				
Condition of sample	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %	71.2	69.1	34.3	41.2	55.1				
Specific gravity	2.660	2.607	2.681	2.697	2.672				
Net density, g/cm ³	(1.61)	(1.79)	(1.88)	(1.80)	(1.74)				
Dry density, g/cm ³	(0.94)	(1.06)	(1.40)	(1.27)	(1.12)				
Natural void ratio	(1.83)	(1.46)	(0.92)	(1.12)	(1.39)				
Degree of saturation, %	(100)	(100)	(100)	(99)	(100)				
Atterberg limits	Liquid limit, %	70	99	75	62	73			
	Plastic limit, %	26	40	27	24	28			
	Plasticity index	44	59	48	38	45			
Grain size analysis	Gravel, %	0	1	0	0	0			
	Sand, %	3	11	7	30	1			
	Silt, %	41	24	23	24	20			
	Clay & colloid, %	56	64	70	46	79			
	Max. diameter, mm	4.76	4.76	4.76	4.76	2.00			
	Diam. at 60%	0.0063	0.0040	0.0022	0.023	0.0014			
	Diam. at 10%	-	-	-	-	-			
Visual soil description	Clay	Organic Clay	Silty Clay	Sandy Clay	Clay				
Unified soil classification	CH	CH	CH	CH	CH				
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

No.		SUMMARY OF SOIL TEST								
Project _____		Bore Hole F-1								
Location of project _____										
Sample no.		P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9
Sample depth		2.00 ^m 2.45 ^m	4.00 ^m 4.45 ^m	6.00 ^m 6.45 ^m	8.00 ^m 8.45 ^m	10.00 ^m 10.45 ^m	12.00 ^m 12.45 ^m	14.00 ^m 14.45 ^m	16.00 ^m 16.45 ^m	8.00 ^m 8.45 ^m
Condition of sample		Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %		50.4	65.2	63.2	59.0	23.9	30.1	42.9	63.2	61.9
Specific gravity		2.678	2.694	2.699	2.664	2.632	2.704	2.664	2.712	2.708
Wet density, g/cm ³		(1.71)	(1.63)	(1.65)	(1.70)	(1.85)	(1.89)	(1.75)	(1.65)	(1.64)
Dry density, g/cm ³		(1.14)	(0.99)	(1.01)	(1.07)	(1.49)	(1.45)	(1.22)	(1.01)	(1.01)
Natural void ratio		(1.35)	(1.73)	(1.67)	(1.49)	(0.76)	(0.86)	(1.18)	(1.68)	(1.67)
Degree of saturation, %		(100)	(100)	(100)	(100)	(82)	(95)	(97)	(100)	(100)
Atterberg limits	Liquid limit, %	69	86	80	-	-	53	67	88	83
	Plastic limit, %	24	28	29	-	-	24	23	30	26
	Plasticity index	45	58	51	-	-	29	44	58	57
Grain size analysis	Gravel, %	5	0	1	3	11	0	0	0	0
	Sand, %	20	1	4	39	68	9	5	3	4
	Silt, %	22	15	17	9	4	21	27	13	9
	Clay & colloid, %	53	84	78	49	17	70	68	84	87
	Max. diameter, mm	9.52	2.00	9.52	4.76	4.76	4.76	4.76	4.76	4.76
	Diam. at 60%	0.013	-	-	0.18	0.80	0.0019	-	-	-
Diam. at 10%	-	-	-	-	-	-	-	-	-	
Visual soil description		Clay	Clay	Clay	Clayey Sand	Clayey Sand	Silty Clay	Silty Clay	Clay	Clay
Unified soil classification		CH	CH	CH	(CL)	(SC)	CH	CH	CH	CH
Unconfined compression test	Undisturbed sample, kg/cm ²									
	Remoulded sample, kg/cm ²									
	Sensitivity ratio									
	Strain at failure, %									
Triaxial compression test	Angle of internal friction									
	Cohesion, kg/cm ²									
	Condition of drainage									
Consolidation test	Preconsolidation pressure, kg/cm ²									
	Compression index									
Shear test	Angle internal friction									
	Cohesion, kg/cm ²									
	Condition of Drainage									
Remarks:										

SUMMARY OF SOIL TEST

No. _____

Project _____ Bore Hole F-1

Location of project _____

Sample no.	P-10	P-11	P-12	P-13	P-14	P-15			
Sample depth	20.00 m 20.45 m	22.00 m 22.45 m	24.00 m 24.45 m	26.00 m 26.45 m	28.00 m 28.45 m	30.00 m 30.35 m			
Condition of sample	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %	61.3	25.8	25.3	26.2	25.6	18.2			
Specific gravity	2.717	2.590	2.623	2.621	2.634	2.689			
Wet density, g/cm ³	(1.60)	(2.02)	(2.01)	(1.89)	(1.92)	(2.06)			
Dry density, g/cm ³	(0.99)	(1.61)	(1.60)	(1.50)	(1.53)	(1.74)			
Natural void ratio	(1.74)	(0.61)	(0.64)	(0.75)	(0.72)	(0.55)			
Degree of saturation, %	(96)	(100)	(100)	(92)	(93)	(89)			
Atterberg limits	Liquid limit, %	83	-	-	-	45			
	Plastic limit, %	24	-	-	-	20			
	Plasticity index	57	-	-	-	25			
Grain size analysis	Gravel, %	0	2	4	8	4	0		
	Sand, %	2	79	86	70	77	2		
	Silt, %	16	7	2	11	10	69		
	Clay & colloid, %	82	12	8	11	9	29		
	Max. diameter, mm	2.00	4.76	9.52	9.52	9.52	2.00		
	Diam. at 60%	0.0010	0.50	0.43	0.29	0.22	0.027		
	Diam. at 10%	-	-	0.060	0.017	0.0033	-		
Visual soil description	Clay	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Silty Clay			
Unified soil classification	CH	(SC)	SW	(SM)	(SH)	CL			
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								

Remarks: _____

No.		SUMMARY OF SOIL TEST								
Project		Bore Hole F-2								
Location of project										
Sample no.	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9	
Sample depth	2.00 2.29	4.00 4.45	6.00 6.27	8.00 8.30	10.00 10.29	12.00 12.27	14.00 14.25	16.00 16.23	18.00 18.25	
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	
Natural water content, %	19.3	13.2	19.8	13.6	14.0	16.3	16.2	16.2	14.2	
Specific gravity	2.634	2.634	2.626	2.635	2.644	2.690	2.677	2.649	2.662	
Wet density, g/cm ³	(2.05)	(2.11)	(2.10)	(2.11)	(2.11)	(2.12)	(2.12)	(2.11)	(2.11)	
Dry density, g/cm ³	(1.72)	(1.86)	(1.75)	(1.86)	(1.85)	(1.82)	(1.82)	(1.82)	(1.85)	
Natural void ratio	(0.53)	(0.41)	(0.50)	(0.42)	(0.43)	(0.48)	(0.47)	(0.46)	(0.44)	
Degree of saturation, %	(95)	(84)	(100)	(86)	(86)	(92)	(93)	(94)	(86)	
Atterberg limits	Liquid limit, %	-	-	-	-	-	-	-	-	45
	Plastic limit, %	-	-	-	-	-	-	-	-	16
	Plasticity index	-	-	-	-	-	-	-	-	29
Grain size analysis	Gravel, %	4	35	2	16	9	7	1	2	0
	Sand, %	68	44	74	62	69	40	32	39	22
	Silt, %	14	5	10	4	3	27	30	32	35
	Clay & colloid, %	14	16	14	18	19	26	37	27	43
	Max. diameter, mm	4.76	9.52	4.76	4.76	4.76	9.52	4.76	9.52	4.76
	Diam. at 60%	0.32	1.80	0.41	1.30	1.30	0.13	0.041	0.090	0.025
Diam. at 10%	0.0010	-	-	-	-	0.0010	-	-	-	
Visual soil description	Silty Sand	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Silty Sand	Silty Sand	Clayey Silt	
Unified soil classification	(SC)	(SC)	(SC)	(SC)	(SC)	(CL)	(CL)	(CL)	CL	
Unconfined compression test	Undisturbed sample, kg/cm ²									
	Remoulded sample, kg/cm ²									
	Sensitivity ratio									
	Strain at failure, %									
Triaxial compression test	Angle of internal friction									
	Cohesion, kg/cm ²									
	Condition of drainage									
Consolidation test	Preconsolidation pressure, kg/cm ²									
	Compression index									
Shear test	Angle internal friction									
	Cohesion, kg/cm ²									
	Condition of Drainage									
Remarks:										

No.

SUMMARY OF SOIL TEST

F-2

Project _____

Bore Hole _____

Location of project _____

Sample no.	P-10	P-11	P-12	P-13					
Sample depth	20.00 _n 20.22 _n	22.00 _m 22.29 _m	24.00 _m 24.29 _m	25.00 _n 25.27 _n	m m	m m	m m	m m	m m
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %	16.2	18.7	18.1	18.8					
Specific gravity	2.683	2.652	2.639	2.639					
Wet density, g/cm ³	(2.13)	(2.15)	(2.10)	(2.09)					
Dry density, g/cm ³	(1.83)	(1.81)	(1.78)	(1.76)					
Natural void ratio	(0.46)	(0.46)	(0.48)	(0.50)					
Degree of saturation, %	(94)	(100)	(99)	(99)					
Atterberg limits	Liquid limit, %	48	47	-					
	Plastic limit, %	15	17	-					
	Plasticity index	33	30	-					
Grain size analysis	Gravel, %	0	1	1	2				
	Sand, %	22	65	67	71				
	Silt, %	37	16	14	12				
	Clay & colloid, %	41	18	18	15				
	Max. diameter, mm	4.76	4.76	4.76	4.76				
	Diam. at 60%	0.016	0.21	0.17	0.34				
	Diam. at 10%	-	-	-	-				
Visual soil description	Clayey Silt	Clayey Silt	Silty Sand	Silty Sand					
Unified soil classification	CL	SC	(SC)	(SC)					
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

No.		SUMMARY OF SOIL TEST									
Project		Bore Hole								F-3	
Location of project											
Sample no.		P-1	P-2	P-3	P-4	P-5	P-6				
Sample depth		2.00 m 2.45 m	4.00 m 4.30 m	6.00 m 6.27 m	8.00 m 8.35 m	10.00 m 10.31 m	11.00 m 11.45 m				
Condition of sample		Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX
Natural water content, %		16.4	15.1	11.3	13.6	22.0	21.3				
Specific gravity		2.640	2.624	2.624	2.642	2.702	2.661				
Wet density, g/cm ³		(2.03)	(2.13)	(2.20)	(2.15)	(1.97)	(2.06)				
Dry density, g/cm ³		(1.74)	(1.85)	(1.98)	(1.89)	(1.61)	(1.70)				
Natural void ratio		(0.51)	(0.42)	(0.33)	(0.40)	(0.67)	(0.57)				
Degree of saturation, %		(84)	(95)	(91)	(91)	(88)	(100)				
Atterberg limits	Liquid limit, %	-	-	-	-	58	57				
	Plastic limit, %	-	-	-	-	22	20				
	Plasticity index	-	-	-	-	36	37				
Grain size analysis	Gravel, %	1	8	15	1	0	0				
	Sand, %	68	69	60	46	8	14				
	Silt, %	13	4	6	22	51	48				
	Clay & colloid, %	18	19	19	31	41	38				
	Max. diameter, mm	4.76	4.76	4.76	4.76	4.76	4.76				
	Diam. at 60%	0.25	0.75	1.18	0.15	0.015	0.024				
	Diam. at 10%	-	-	-	-	-	-				
Visual soil description		Clayey Sand	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Silty Clay	Silty Clay				
Unified soil classification		(SC)	(SC)	(SC)	(CL)	CH	CH				
Unconfined compression test	Undisturbed sample, kg/cm ²										
	Remoulded sample, kg/cm ²										
	Sensitivity ratio										
	Strain at failure, %										
Triaxial compression test	Angle of internal friction										
	Cohesion, kg/cm ²										
	Condition of drainage										
Consolidation test	Preconsolidation pressure, kg/cm ²										
	Compression index										
Shear test	Angle of internal friction										
	Cohesion, kg/cm ²										
	Condition of Drainage										
Remarks:											

SUMMARY OF SOIL TEST

No.		Project _____ Bore Hole <u>F-4</u>								
Location of project _____										
Sample no.	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	P-9	
Sample depth	0.00 0.45	2.00 2.23	4.00 4.26	6.00 6.45	8.00 8.32	10.00 10.37	12.00 12.29	14.00 14.29	15.00 15.25	
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	
Natural water content, %	17.0	17.2	12.9	22.2	18.4	16.4	15.6	15.6	12.4	
Specific gravity	2.648	2.634	2.626	2.631	2.629	2.629	2.623	2.632	2.636	
Wet density, g/cm ³	(2.15)	(1.99)	(2.14)	(2.03)	(2.07)	(2.07)	(2.12)	(2.12)	(2.13)	
Dry density, g/cm ³	(1.84)	(1.70)	(1.90)	(1.66)	(1.75)	(1.78)	(1.83)	(1.83)	(1.90)	
Natural void ratio	(0.44)	(0.55)	(0.39)	(0.58)	(0.50)	(0.48)	(0.43)	(0.44)	(0.39)	
Degree of saturation, %	(100)	(82)	(88)	(100)	(96)	(90)	(95)	(94)	(84)	
Atterberg limits	Liquid limit, %	-	-	-	-	-	-	-	-	
	Plastic limit, %	-	-	-	-	-	-	-	-	
	Plasticity index	-	-	-	-	-	-	-	-	
Grain size analysis	Gravel, %	31	0	10	0	1	0	1	7	32
	Sand, %	56	78	69	72	76	77	77	75	50
	Silt, %	3	8	5	10	5	7	5	1	3
	Clay & colloid, %	10	14	16	18	18	16	17	17	15
	Max. diameter, mm	9.52	4.76	9.52	4.76	4.76	4.76	4.76	4.76	9.52
	Diam. at 60%	1.50	0.38	0.50	0.18	0.42	0.38	0.39	0.88	1.50
	Diam. at 10%	0.0040	-	-	-	-	-	-	-	0.0010
Visual soil description	Clayey Sand with gravel	Silty Sand	Clayey Sand with gravel	Clayey Sand	Clayey Sand with gravel	Clayey Sand	Clayey Sand	Clayey Sand with gravel	Clayey Sand with gravel	
Unified soil classification	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	
Unconfined compression test	Undisturbed sample, kg/cm ²									
	Remoulded sample, kg/cm ²									
	Sensitivity ratio									
	Strain at failure, %									
Triaxial compression test	Angle of internal friction									
	Cohesion, kg/cm ²									
	Condition of drainage									
Consolidation test	Preconsolidation pressure, kg/cm ²									
	Compression index									
Shear test	Angle internal friction									
	Cohesion, kg/cm ²									
	Condition of Drainage									
Remarks:										

No.

SUMMARY OF SOIL TEST

Project

Bore Hole

F-5

Location of project

Sample no.	P-1	P-2	P-3	P-4	P-5	P-6	P-7	
Sample depth	2.00 2.45	4.00 4.31	5.00 5.39	6.00 6.45	8.00 8.32	10.00 10.29	11.00 11.25	
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX
Natural water content, %	14.4	10.8	12.1	18.9	14.7	14.2	12.2	
Specific gravity	2.616	2.620	2.628	2.626	2.626	2.624	2.630	
Wet density, g/cm ³	(2.00)	(2.12)	(2.10)	(2.00)	(2.13)	(2.18)	(2.13)	
Dry density, g/cm ³	(1.75)	(1.91)	(1.87)	(1.68)	(1.86)	(1.91)	(1.90)	
Natural void ratio	(0.50)	(0.37)	(0.40)	(0.56)	(0.41)	(0.37)	(0.39)	
Degree of saturation, %	(76)	(76)	(80)	(88)	(93)	(99)	(83)	
Atterberg limits	Liquid limit, %	-	-	-	-	-	-	
	Plastic limit, %	-	-	-	-	-	-	
	Plasticity index	-	-	-	-	-	-	
Grain size analysis	Gravel, %	9	27	18	1	14	2	19
	Sand, %	68	57	56	67	65	77	61
	Silt, %	6	3	11	14	4	5	3
	Clay & colloid, %	17	13	15	18	17	16	17
	Max. diameter, mm	9.52	9.52	9.52	4.76	9.52	4.76	9.52
	Diam. at 60%	0.56	1.20	0.95	0.27	0.90	0.42	1.00
	Diam. at 10%	-	-	0.0013	0.0010	-	-	-
Visual soil description	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel	
Unified soil classification	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)	
Unconfined compression test	Undisturbed sample, kg/cm ²							
	Remoulded sample, kg/cm ²							
	Sensitivity ratio							
	Strain at failure, %							
Triaxial compression test	Angle of internal friction							
	Cohesion, kg/cm ²							
	Condition of drainage							
Consolidation test	Preconsolidation pressure, kg/cm ²							
	Compression index							
Shear test	Angle of internal friction							
	Cohesion, kg/cm ²							
	Condition of Drainage							
Remarks:								

Atterberg

Unconfined

Triaxial

Shear

Re

SUMMARY OF SOIL TEST

Project _____ Bore Hole F-6
 Location of project _____

Sample no.	P-1	P-2	P-3	P-4	P-5	P-6			
Sample depth	2.00 m 2.45 m	4.00 m 4.45 m	6.00 m 6.45 m	8.00 m 8.45 m	10.00 m 10.41 m	12.00 m 12.34 m			
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed Undisturbed	Disturbed Undisturbed	Disturbed Undisturbed
Natural water content, %	17.8	17.6	16.2	17.6	15.6	12.3			
Specific gravity	2.634	2.638	2.632	2.649	2.653	2.639			
Wet density, g/cm ³	(2.12)	(2.06)	(2.12)	(2.14)	(2.08)	(2.07)			
Dry density, g/cm ³	(1.80)	(1.75)	(1.82)	(1.82)	(1.80)	(1.84)			
Natural void ratio	(0.46)	(0.51)	(0.44)	(0.46)	(0.47)	(0.43)			
Degree of saturation, %	(100)	(92)	(96)	(100)	(87)	(75)			
Atterberg limits	Liquid limit, %	-	-	-	-	-			
	Plastic limit, %	-	-	-	-	-			
	Plasticity index	-	-	-	-	-			
Grain size analysis	Gravel, %	2	2	11	6	11	22		
	Sand, %	77	74	72	66	69	62		
	Silt, %	5	6	2	8	2	5		
	Clay & colloid, %	16	18	15	20	18	11		
	Max. diameter, mm	4.76	4.76	9.52	9.52	4.76	9.52		
	Diam. at 60%	0.41	0.37	0.53	0.34	0.70	1.15		
	Diam. at 10%	-	-	-	-	-	0.0028		
Visual soil description	Clayey Sand	Clayey Sand	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel			
Unified soil classification	(SC)	(SC)	(SC)	(SC)	(SC)	(SC)			
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

No.		SUMMARY OF SOIL TEST						
Project		Bore Hole F-7						
Location of project								
Sample no.		P-1	P-2	P-3	P-4	P-5	P-6	P-7
Sample depth		2.00 ^m 2.45 ^m	4.00 ^m 4.45 ^m	6.00 ^m 6.39 ^m	8.00 ^m 8.45 ^m	10.00 ^m 10.34 ^m	12.00 ^m 12.28 ^m	13.00 ^m 13.24 ^m
Condition of sample		Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX
Natural water content, %		20.1	13.1	21.5	16.5	16.4	14.8	14.6
Specific gravity		2.623	2.625	2.664	2.627	2.632	2.646	2.636
Wet density, g/cm ³		(1.98)	(2.05)	(2.00)	(2.02)	(2.05)	(2.09)	(2.19)
Dry density, g/cm ³		(1.65)	(1.81)	(1.65)	(1.73)	(1.76)	(1.82)	(1.91)
Natural void ratio		(0.59)	(0.45)	(0.68)	(0.52)	(0.49)	(0.45)	(0.38)
Degree of saturation, %		(89)	(77)	(88)	(84)	(87)	(86)	(100)
Atterberg limits	Liquid limit, %	-	-	-	-	-	-	-
	Plastic limit, %	-	-	-	-	-	-	-
	Plasticity index	-	-	-	-	-	-	-
Grain size analysis	Gravel, %	2	23	2	4	28	1	0
	Sand, %	73	55	57	74	58	30	39
	Silt, %	9	6	12	6	4	24	28
	Clay & colloid, %	16	16	29	16	10	45	33
	Max. diameter, mm	4.76	9.52	4.76	4.76	9.52	4.76	4.76
	Diam. at 60%	0.25	0.89	0.24	0.48	1.30	0.020	0.068
	Diam. at 10%	0.0014	0.0010	-	-	0.0047	-	-
Visual soil description		Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Clayey Sand with gravel	Silty Sand	Silty Sand
Unified soil classification		(SC)	(SC)	(SC)	(SC)	(SC)	(CL)	(CL)
Unconfined compression test	Undisturbed sample, kg/cm ²							
	Remoulded sample, kg/cm ²							
	Sensitivity ratio							
	Strain at failure, %							
Triaxial compression test	Angle of internal friction							
	Cohesion, kg/cm ²							
	Condition of drainage							
Consolidation test	Preconsolidation pressure, kg/cm ²							
	Compression index							
Shear test	Angle internal friction							
	Cohesion, kg/cm ²							
	Condition of Drainage							
Remarks:								

SUMMARY OF SOIL TEST

Project _____ Bore Hole F-8
 Location of project _____

Sample no.	P-1	P-2	P-3	P-4	P-5	P-6	P-7	P-8	
Sample depth	2.00 m 2.45 m	4.00 m 4.45 m	6.00 m 6.45 m	8.00 m 8.45 m	10.00 m 10.45 m	11.00 m 11.45 m	24.00 m 24.35 m	25.00 m 26.12 m	
Condition of sample	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed XXXXX	Disturbed Undisturbed
Natural water content, %	81.7	81.7	68.8	17.6	18.3	16.4	12.0	12.3	
Specific gravity	2.689	2.698	2.705	2.657	2.646	2.642	2.629	2.630	
Wet density, g/cm ³	(1.56)	(1.59)	(1.60)	(2.10)	(2.02)	(2.07)	(2.11)	(2.11)	
Dry density, g/cm ³	(0.86)	(0.88)	(0.95)	(1.79)	(1.71)	(1.78)	(1.88)	(1.88)	
Natural void ratio	(2.13)	(2.10)	(1.85)	(0.49)	(0.55)	(0.49)	(0.40)	(0.40)	
Degree of saturation, %	(100)	(100)	(100)	(96)	(88)	(89)	(80)	(81)	
Atterberg limits	Liquid limit, %	98	90	86	-	-	-	-	
	Plastic limit, %	29	27	27	-	-	-	-	
	Plasticity index	69	63	59	-	-	-	-	
Grain size analysis	Gravel, %	0	0	1	7	6	16	42	29
	Sand, %	1	1	4	60	62	58	39	52
	Silt, %	20	22	24	6	6	5	7	7
	Clay & colloid, %	79	77	71	27	26	21	12	12
	Max. diameter, mm	2.00	2.00	9.52	4.76	9.52	9.52	9.52	9.52
	Diam. at 60%	0.0018	-	0.0020	0.71	0.63	0.92	2.10	1.50
	Diam. at 10%	-	-	-	-	-	-	0.0037	0.0015
	Visual soil description	Clay	Clay	Clay	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel
Unified soil classification	CH	CH	CH	(SC)	(SC)	(SC)	(GC)	(SC)	
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

No.

SUMMARY OF SOIL TEST

Project

Bore Hole

F-9

Location of project

Sample no.	P-1	P-2	P-3	P-4	P-5	P-6	P-7		
Sample depth	2.00 2.43	4.00 4.35	6.00 6.31	8.00 8.41	10.00 10.34	12.00 12.33	14.00 14.27		
Condition of sample	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX	Disturbed XXXXXX
Natural water content, %	19.0	21.6	19.8	21.6	13.6	13.7	14.4		
Specific gravity	2.631	2.644	2.630	2.647	2.610	2.629	2.626		
Wet density, g/cm ³	(2.02)	(1.98)	(2.10)	(1.97)	(2.13)	(2.15)	(2.13)		
Dry density, g/cm ³	(1.70)	(1.63)	(1.75)	(1.62)	(1.88)	(1.89)	(1.86)		
Natural void ratio	(0.55)	(0.62)	(0.50)	(0.63)	(0.39)	(0.39)	(0.41)		
Degree of saturation, %	(91)	(92)	(100)	(90)	(91)	(92)	(92)		
Atterberg limits	Liquid limit, %	51	53	48	49	-	-	-	
	Plastic limit, %	19	17	21	14	-	-	-	
	Plasticity index	32	36	27	35	-	-	-	
Grain size analysis	Gravel, %	5	0	0	0	2	6	4	
	Sand, %	36	20	33	37	65	72	75	
	Silt, %	24	38	40	36	8	6	5	
	Clay & colloid, %	35	42	27	27	25	16	16	
	Max. diameter, mm	4.76	4.76	2.00	4.76	4.76	9.52	4.76	
	Diam. at 60%	0.077	0.035	0.063	0.063	0.49	0.70	0.65	
	Diam. at 10%	-	-	-	-	-	0.0017	0.0017	
Visual soil description	Sandy Silt	Sandy Silt	Sandy Silt	Sandy Silt	Clayey Sand With Gravel	Clayey Sand With Gravel	Clayey Sand With Gravel		
Unified soil classification	CH	CH	CL	CL	(SC)	(SC)	(SC)		
Unconfined compression test	Undisturbed sample, kg/cm ²								
	Remoulded sample, kg/cm ²								
	Sensitivity ratio								
	Strain at failure, %								
Triaxial compression test	Angle of internal friction								
	Cohesion, kg/cm ²								
	Condition of drainage								
Consolidation test	Preconsolidation pressure, kg/cm ²								
	Compression index								
Shear test	Angle internal friction								
	Cohesion, kg/cm ²								
	Condition of Drainage								
Remarks:									

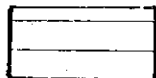
THE STUDY OF FILL MATERIALS

GEOLOGIC CROSS SECTIONS

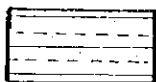
OF OUTER SHOAL

SCALE V : 1 / 400
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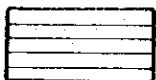
REGEN D



UPPER MARINE CLAY



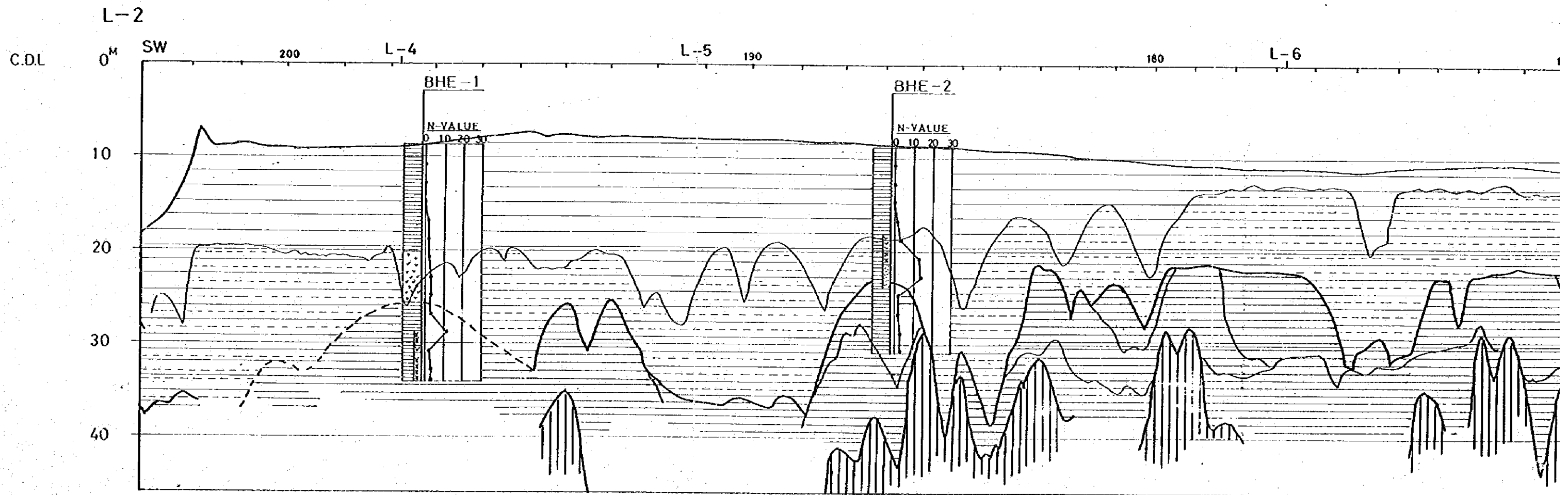
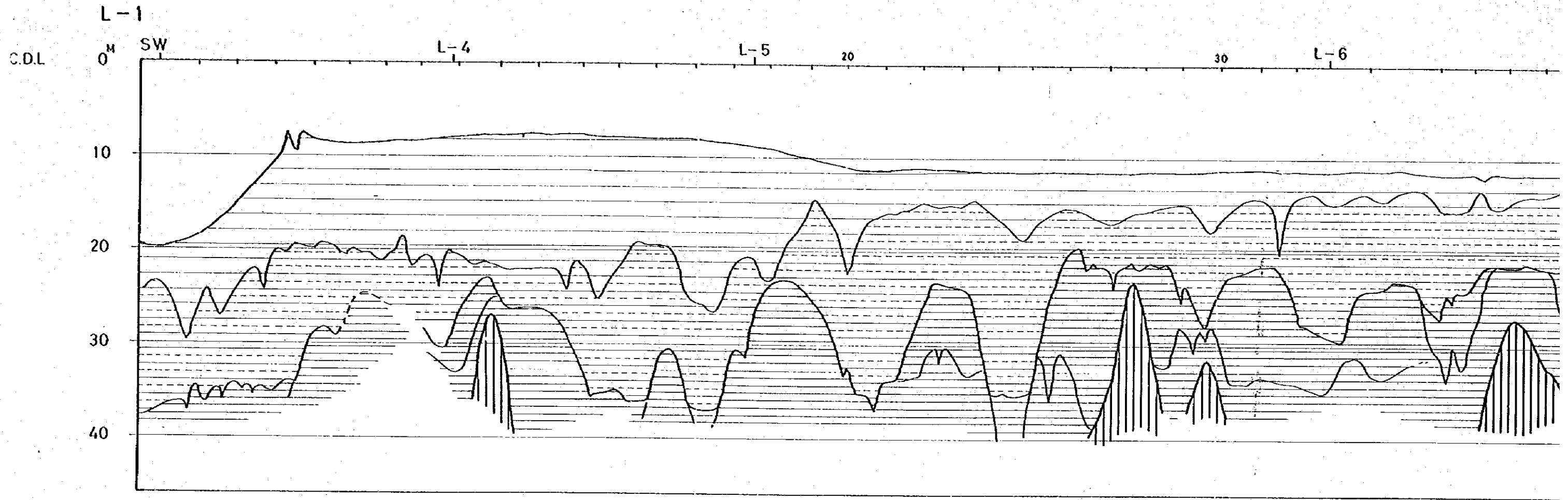
UPPER MARINE CLAY WITH ORGANIC
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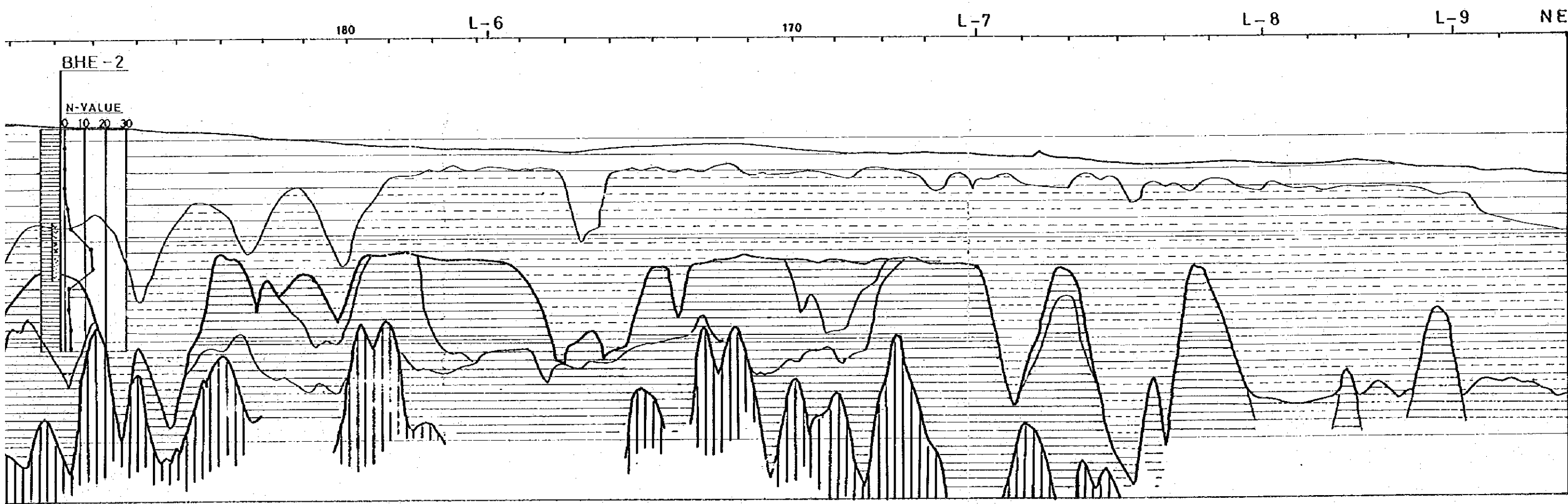
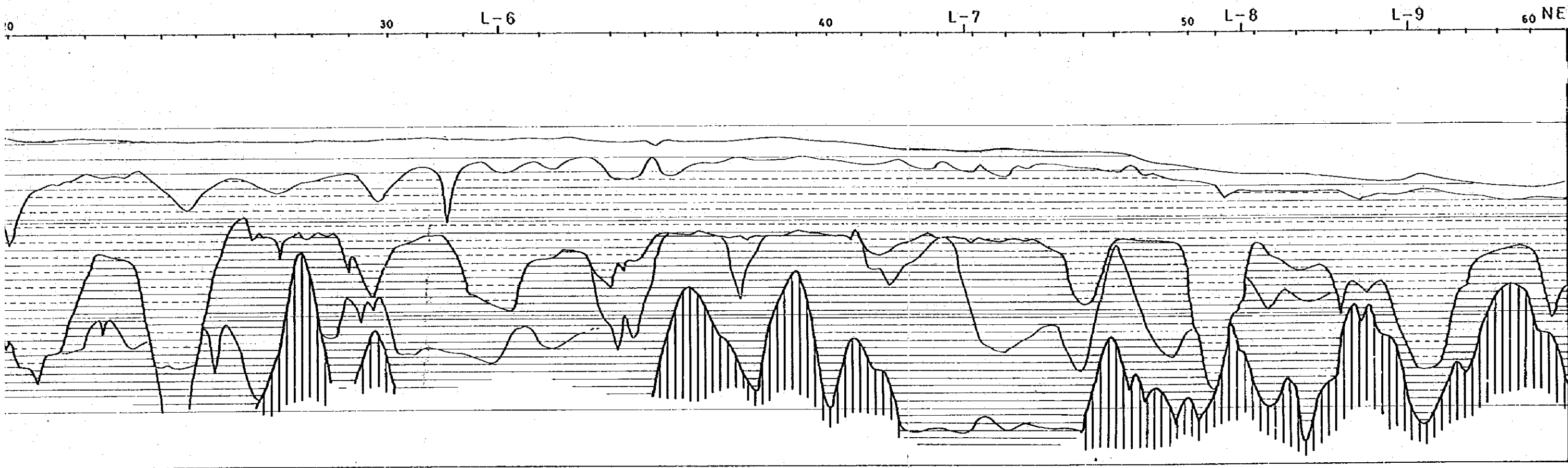


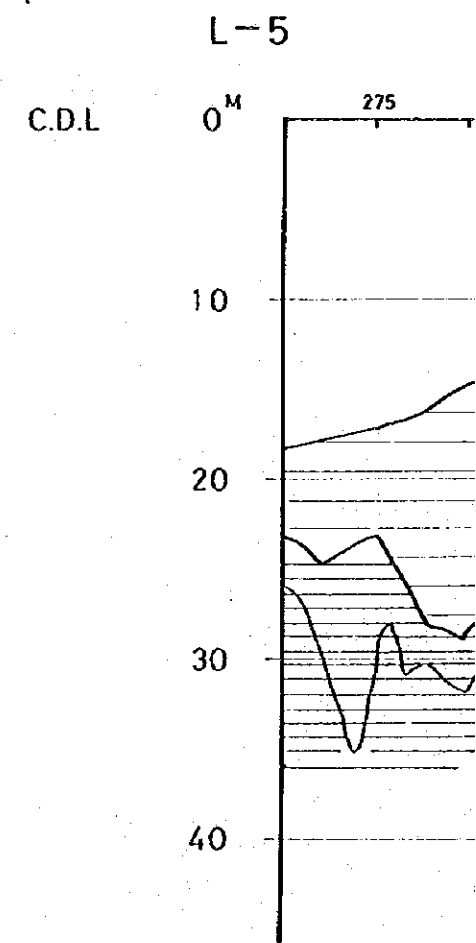
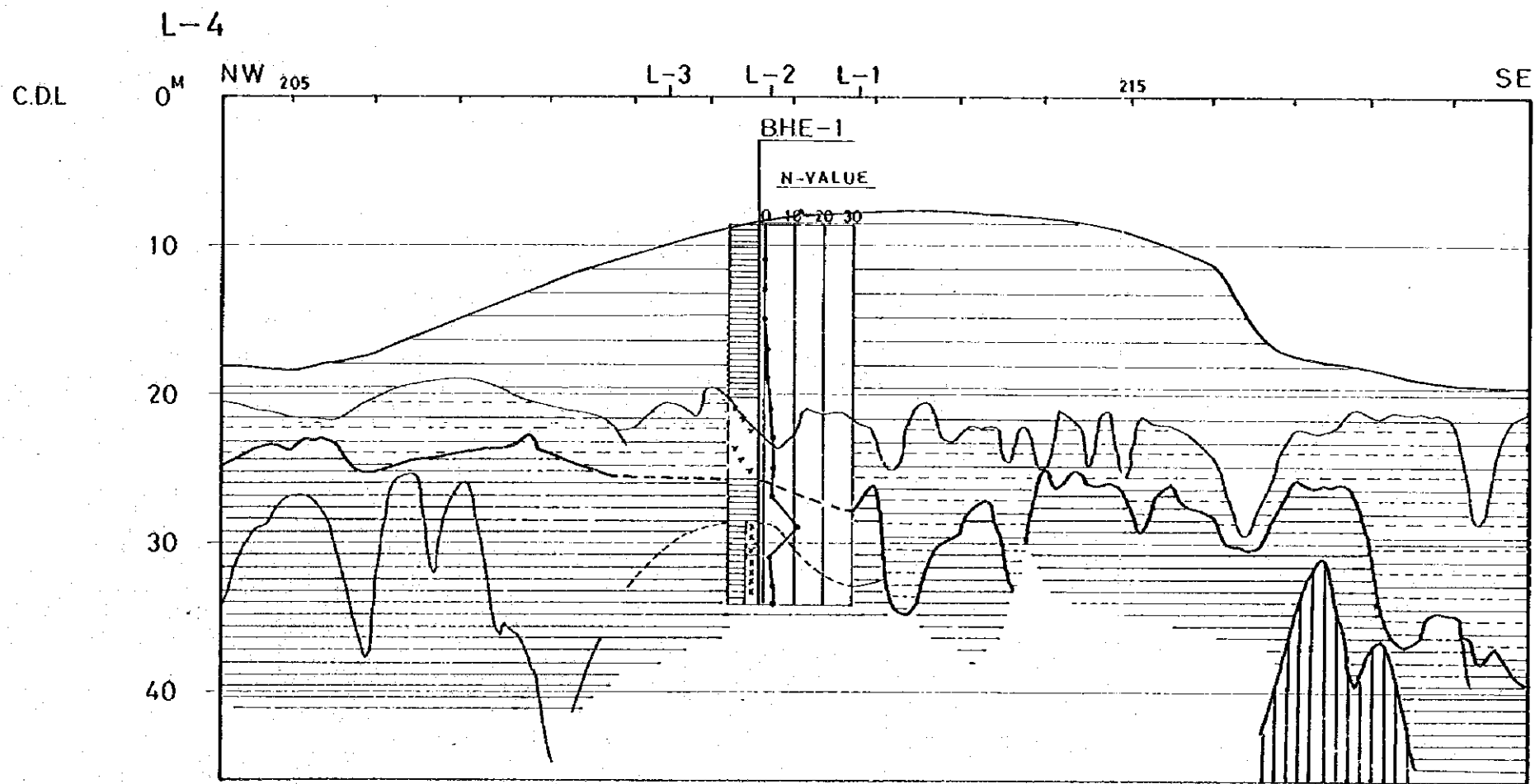
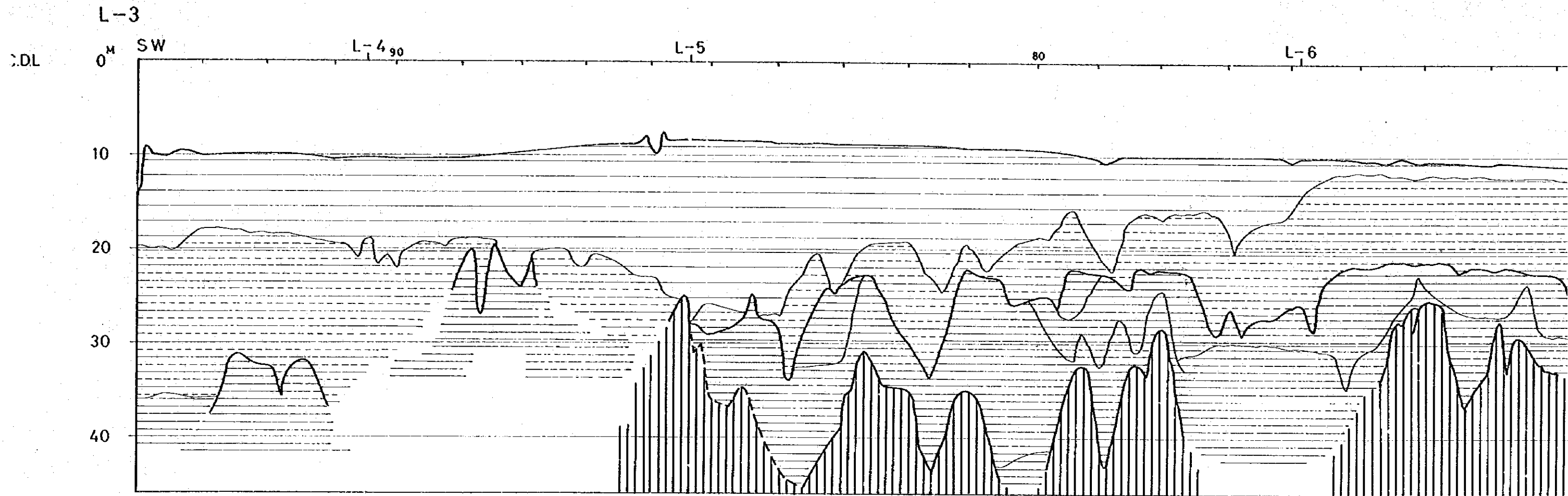
LOWER MARINE CLAY

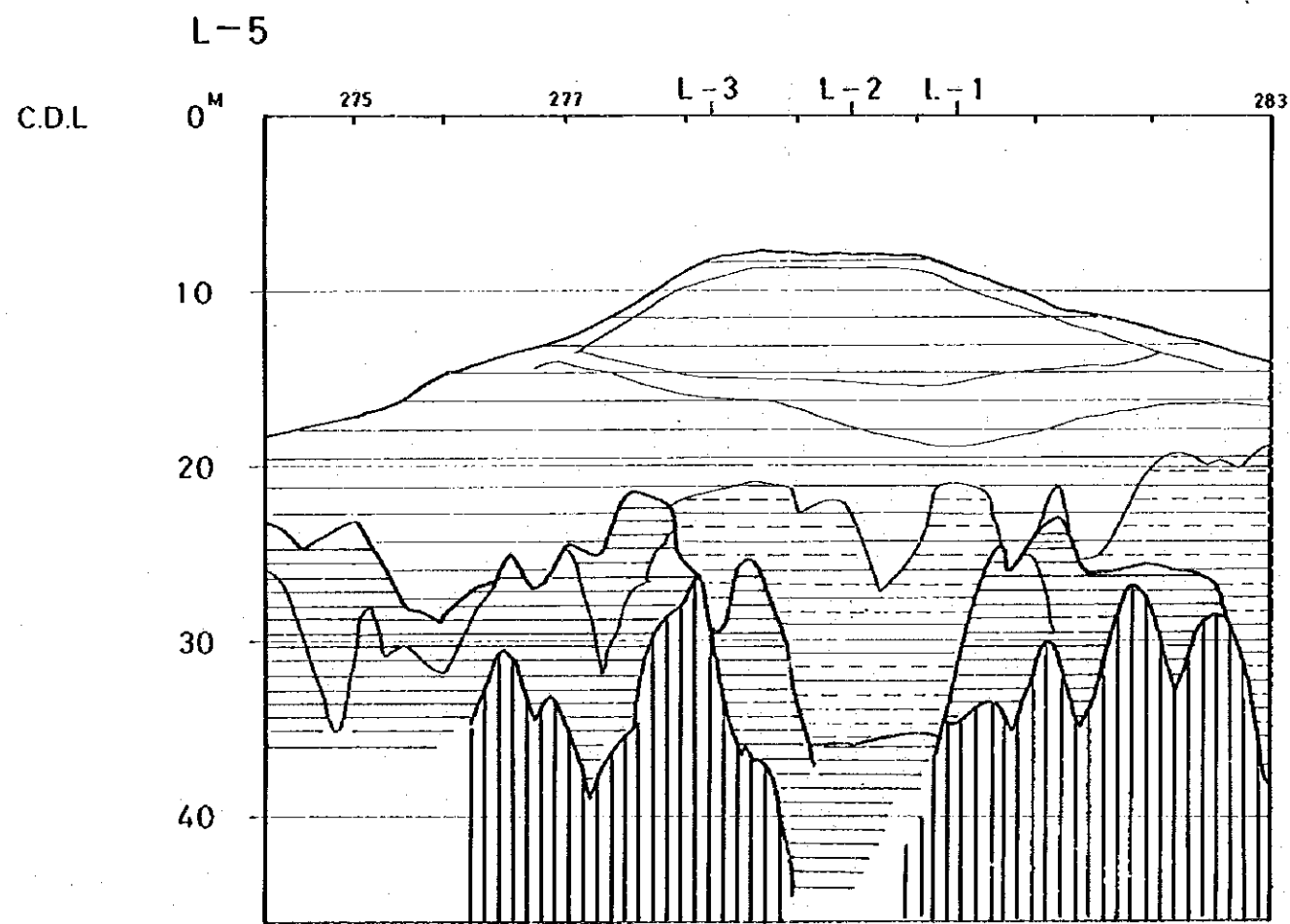
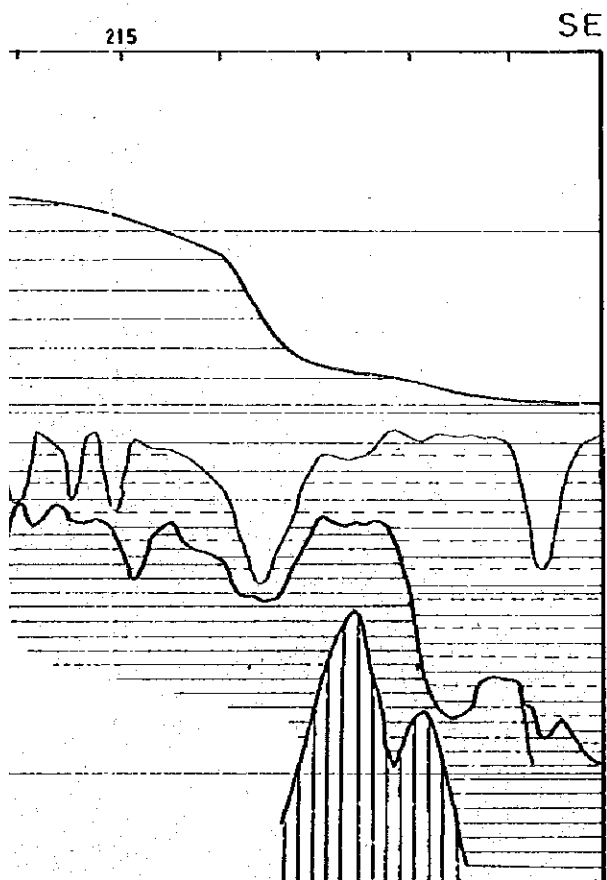
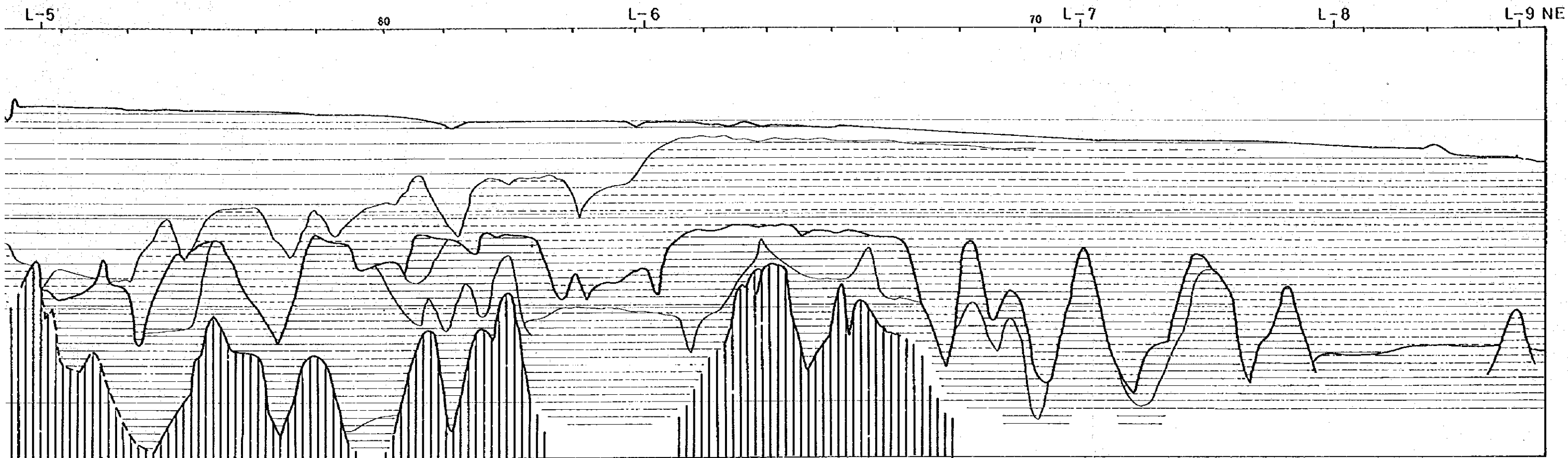


OLD ALLUVIUM.

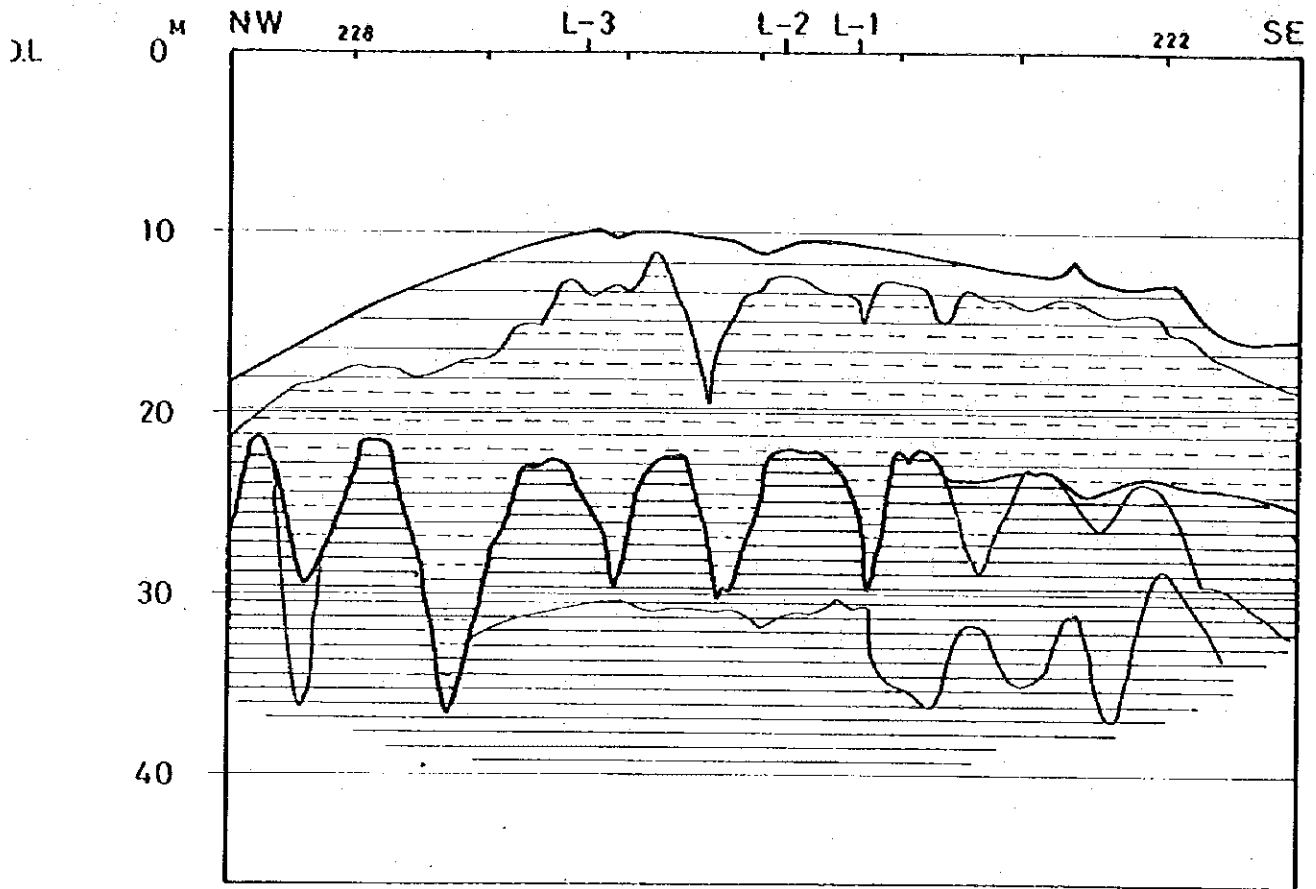




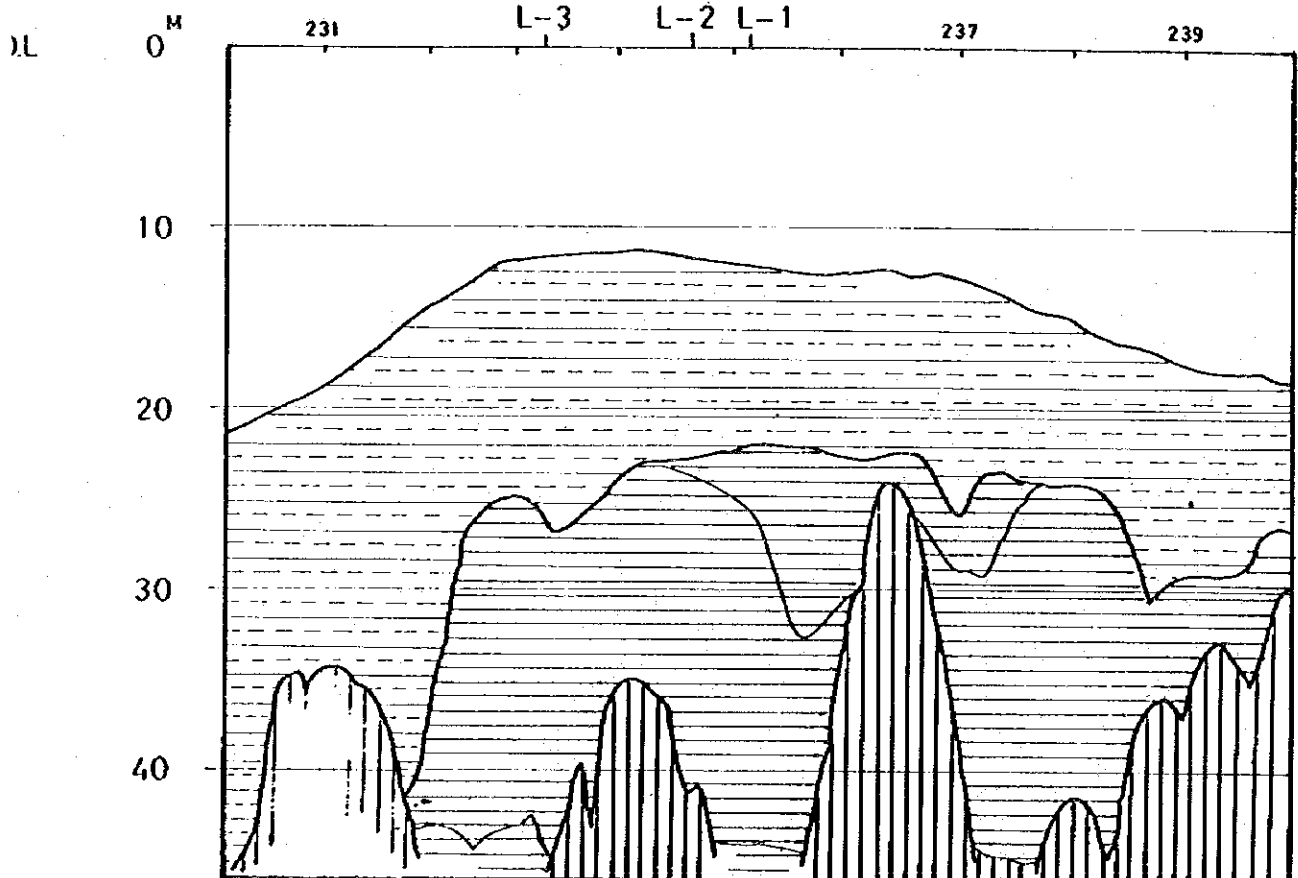


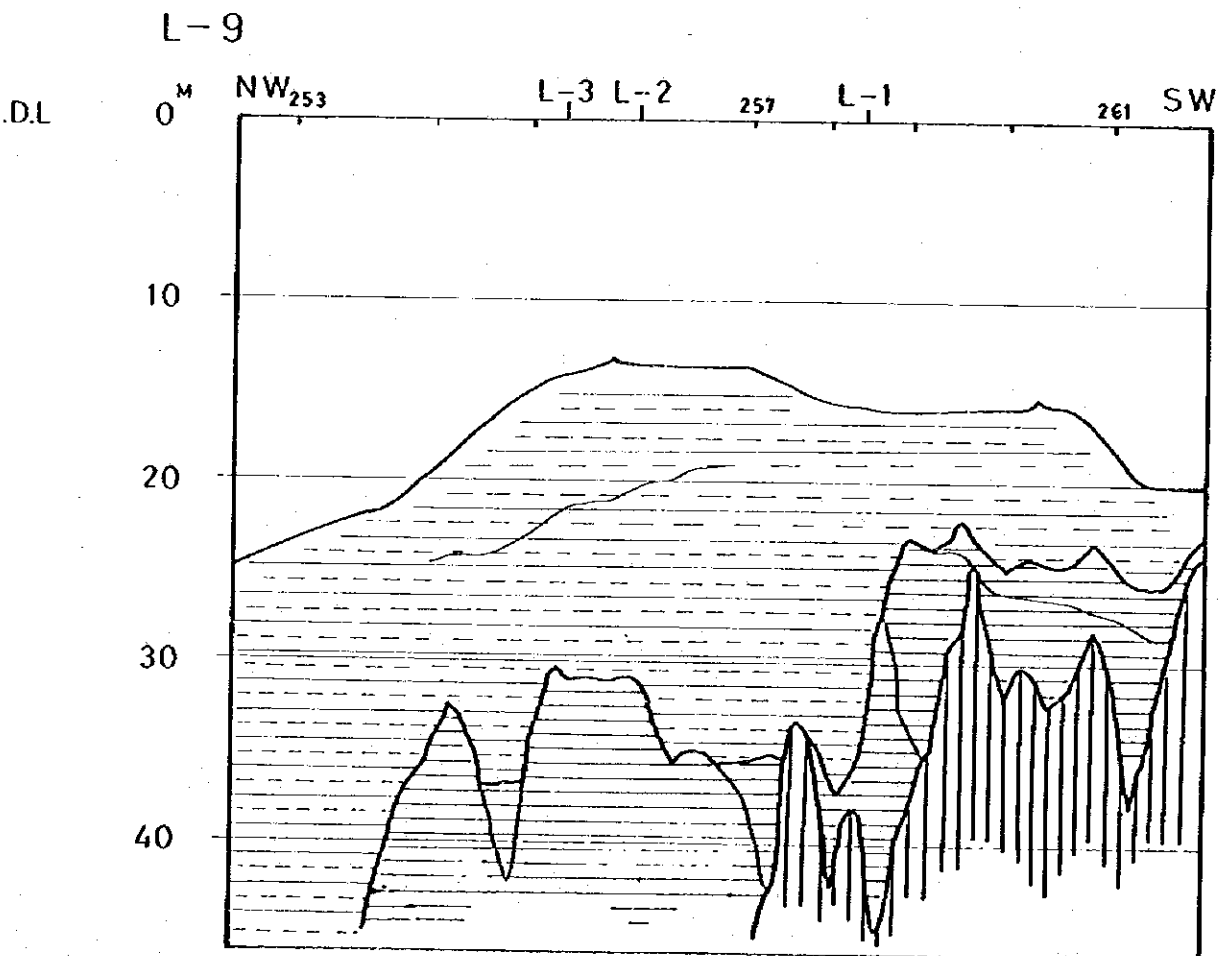
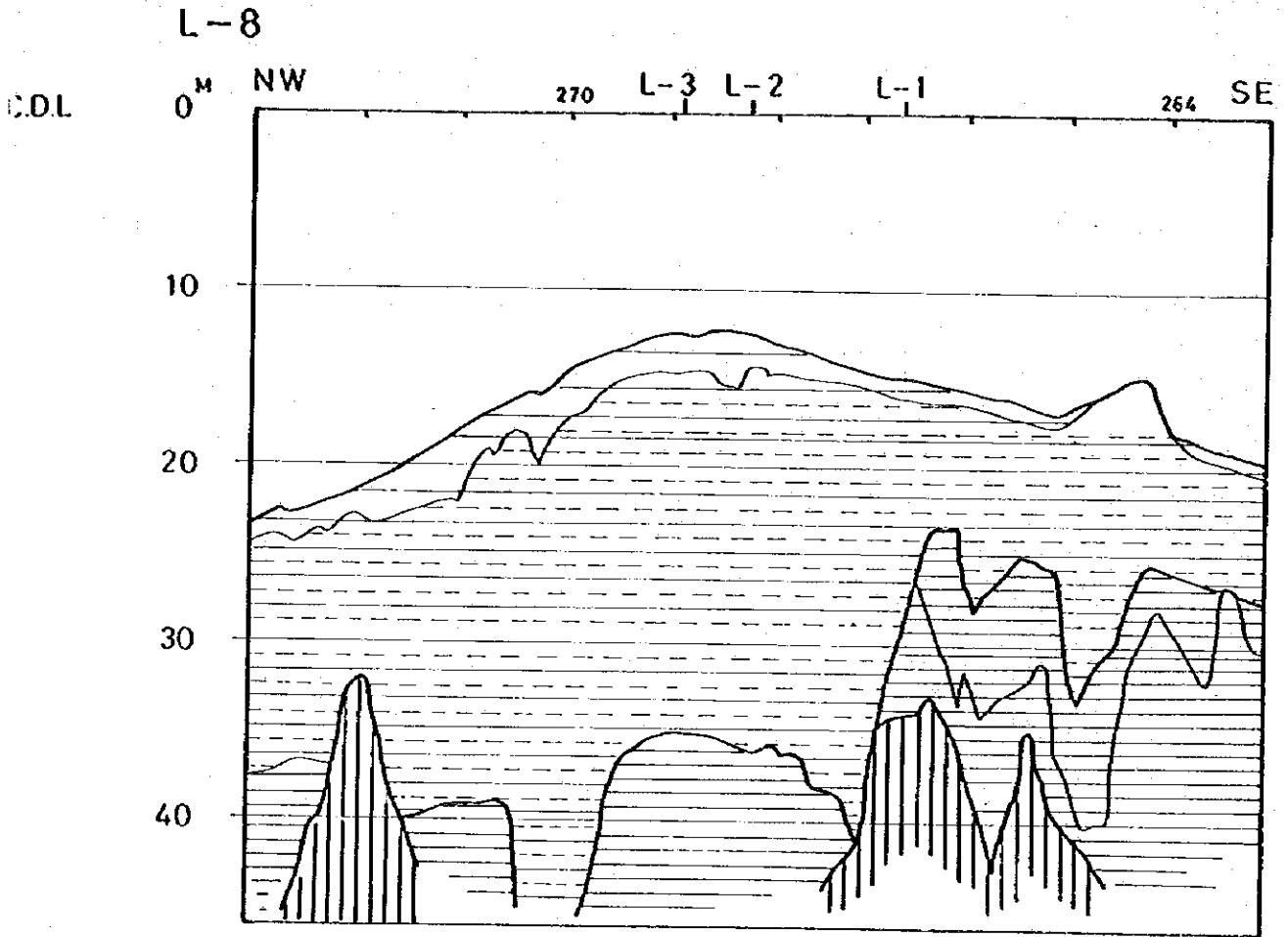


L-6

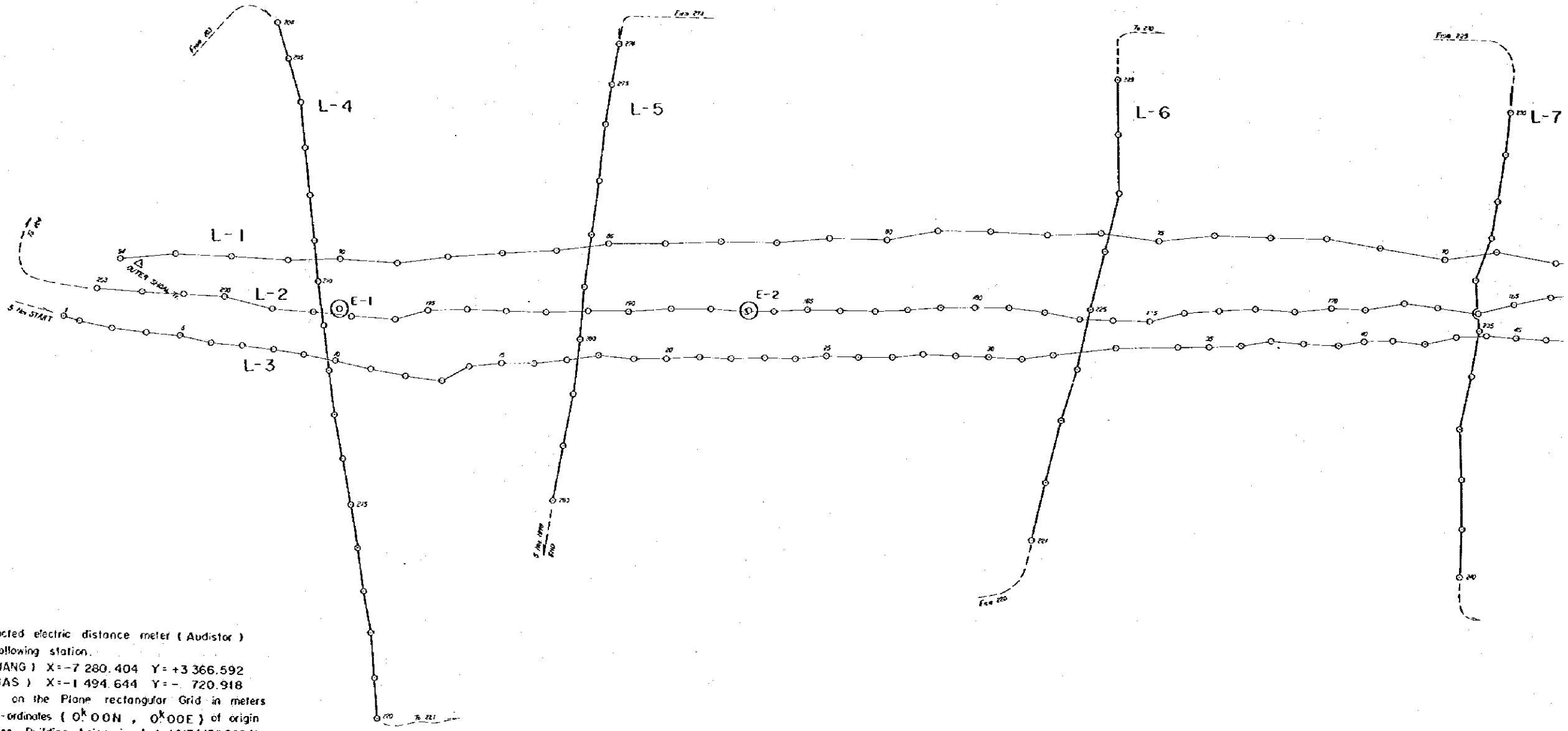
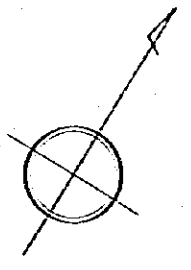


L-7



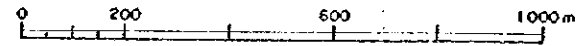


OUTER SHOAL

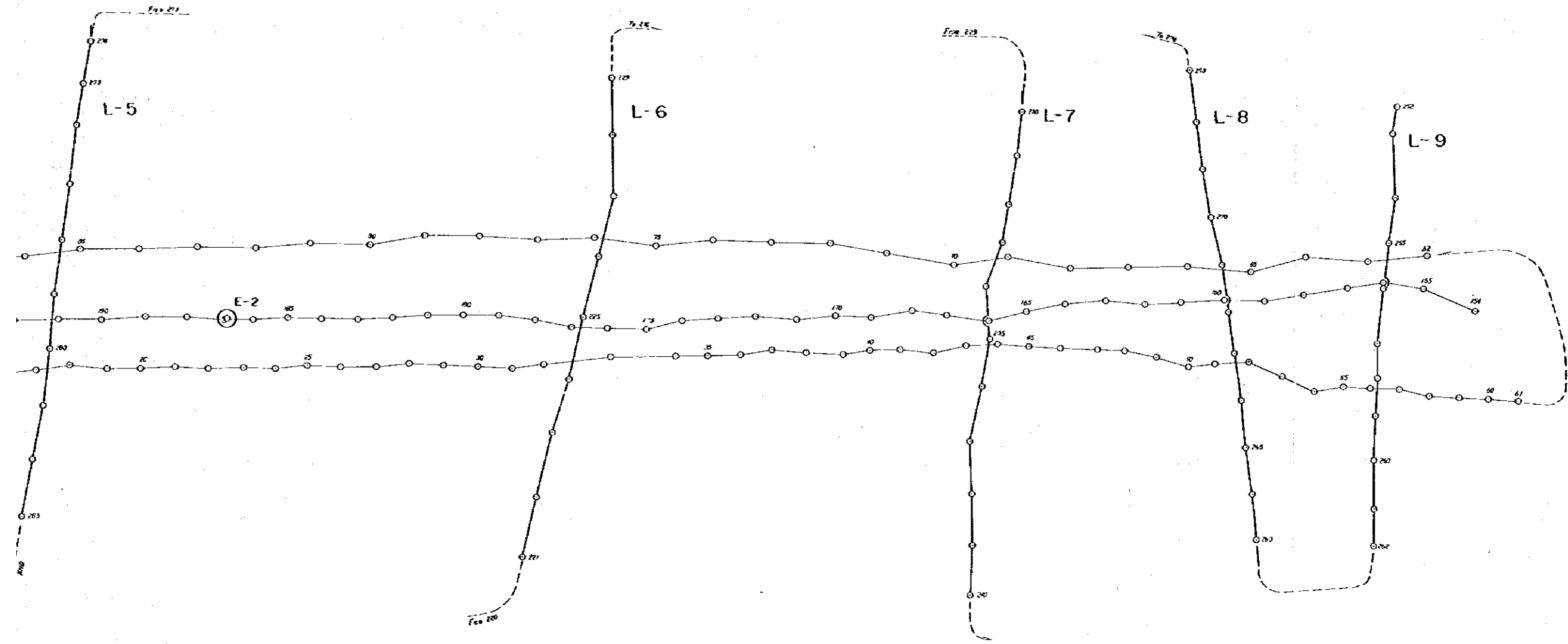


Memoir

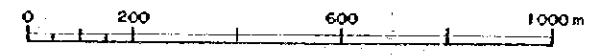
1. The chart is constructed electric distance meter (Audistar) lattices upon the following station.
 slope 1 (SAKJANG) X=-7 280.404 Y=+3 366.592
 slope 2 (TUNAS) X=-1 494.644 Y=- 720.918
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0^K 00N , 0^K 00E) of origin of Government Office Building being in Lot 1°17'15" 528 N, Long. 103°51'10" 808 E.



OUTER SHOAL



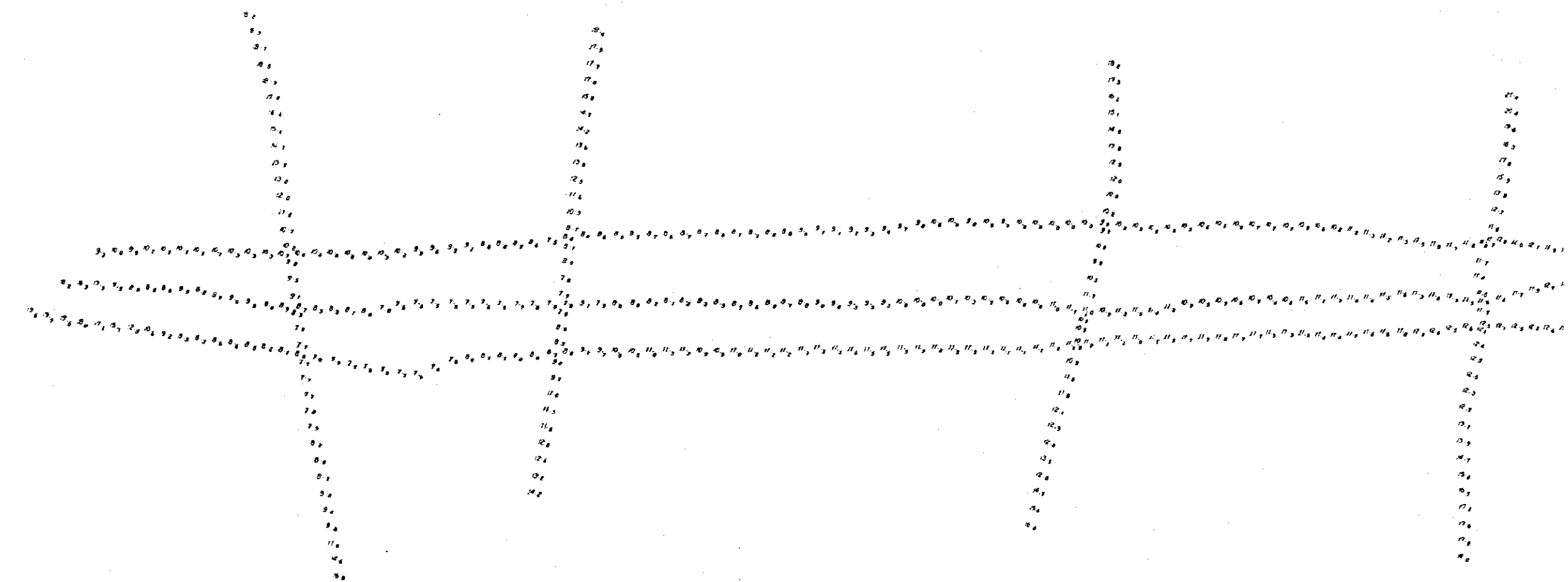
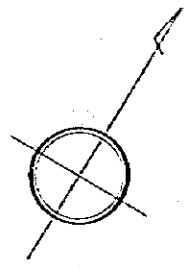
○ — ○ Survey points
 ⊙ Boring points
 E-1



THE STUDY OF FILL MATERIALS
 TRACK CHART
 for Sonic Prospecting

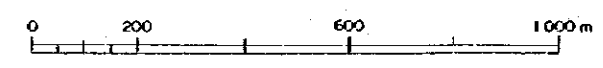
JAN. 1979

OUTER SHOAL

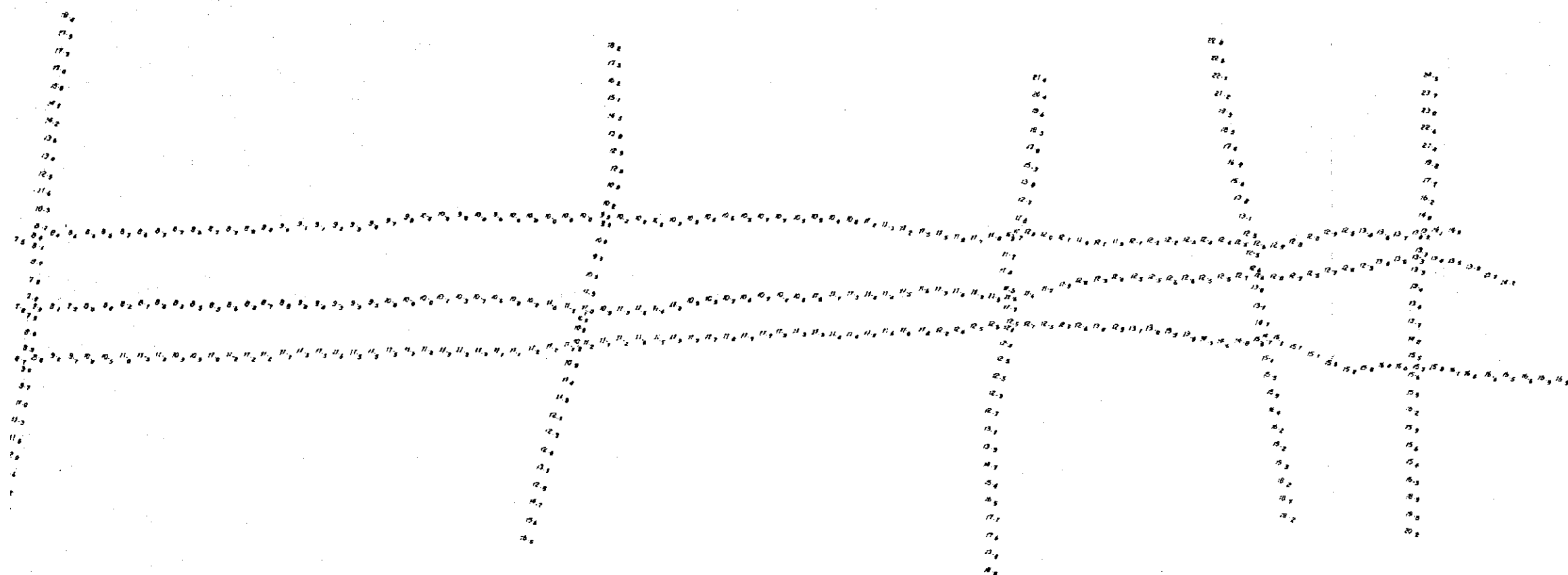


Memoir

1. The chart is constructed electric distance meter (Audistor) lattices upon the following station.
slave 1 (SAKJANG) X=-7 280.404 Y=+3 366.592
slave 2 (TUNAS) X=-1 494.644 Y=- 720.918
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0° 00' N ; 0° 00' E) of origin of Government Office Building being in Lat. 1° 17' 15" 528 N, Long. 103° 51' 10" 808 E.



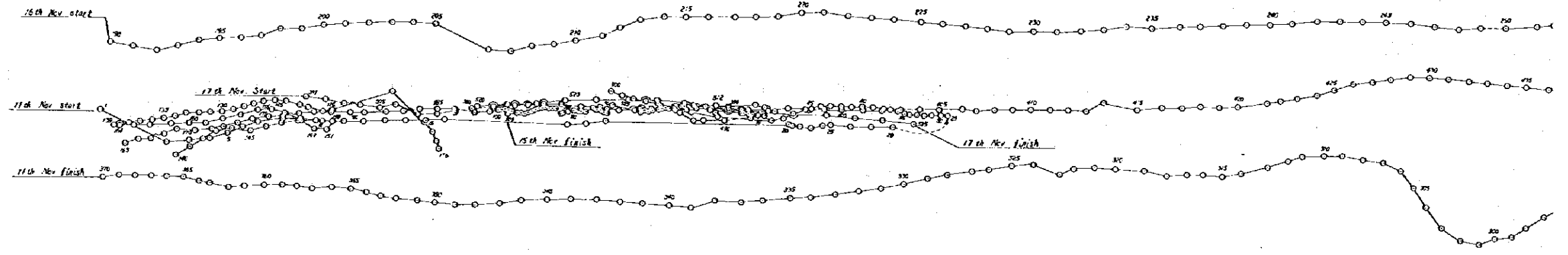
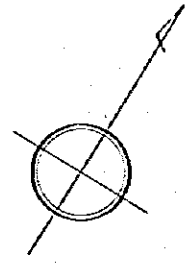
OUTER SHOAL



THE STUDY OF FILL MATERIALS
SOUNDING MAP

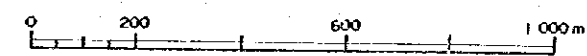
JAN. 1979
DEPTHS IN METERS
Reduced to Chart Datum

OUTER SHOAL



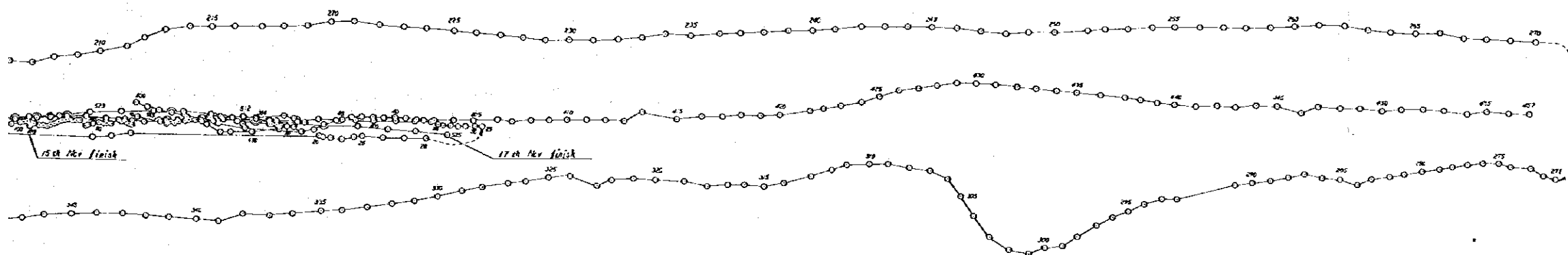
Memoir

- The chart is constructed electric distance meter (Audistor) lattices upon the following station.
 slave 1 (SAKIJANG) X=-7 280.404 Y=+3 366.592
 slave 2 (TUNAS) X=-1 494.644 Y=- 720.918
- The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0° 00' N, 0° 00' E) of origin of Government Office Building being in Lat. 1° 17' 15" S 28 N, Long. 103° 51' 10" 808 E.



○—○ Survey points

OUTER SHOAL



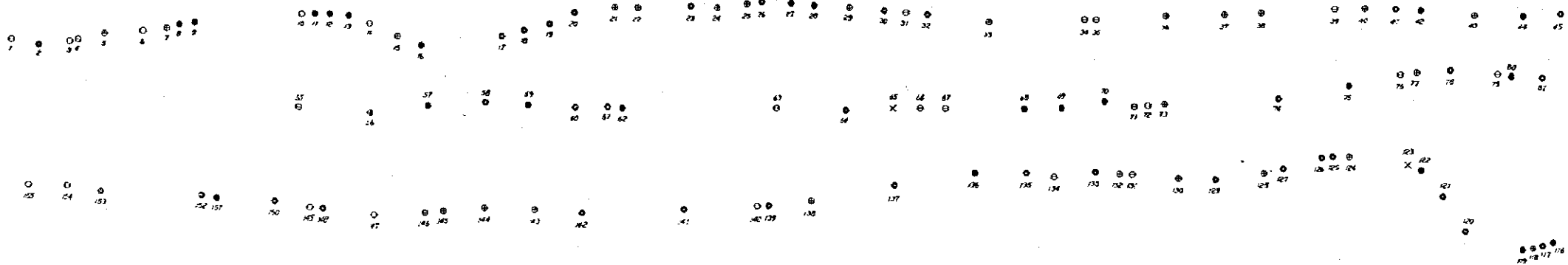
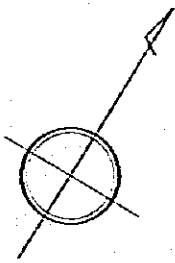
THE STUDY OF FILL MATERIALS
 TRACK CHART
 for Magnetic Detecting

JAN. 1979



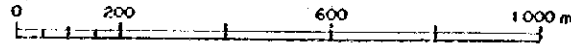
○—○ Survey points

OUTER SHOAL



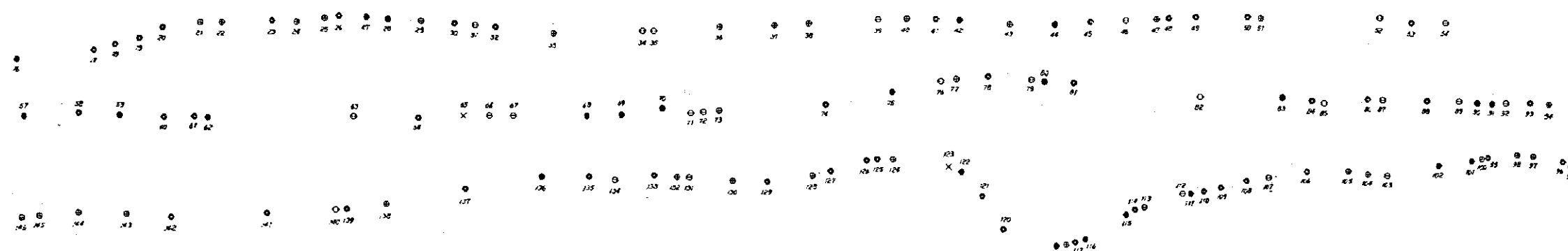
Memoir

1. The chart is constructed electric distance meter (Audistor) lattices upon the following station.
 slave 1 (SAKIJANG) X=-7 280.404 Y=+3 366.592
 slave 2 (TUNAS) X=-1 494.644 Y=- 720.918
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0° 00N , 0° 00E) of origin of Government Office Building being in Lat. 1° 17' 15" 528N, Long. 103° 51' 10" 808 E.



- 0 - 4 G
- 5 - 20 G
- 21 - 50 G
- 51 - 100 G
- 101 - 200 G
- Over 201 G

OUTER SHOAL



THE STUDY OF FILL MATERIALS
 LOCATION MAP
 OF MAGNETIC ANOMALIES
 for Magnetic Detecting

JAN. 1979

THE STUDY OF FILL MATERIALS

GEOLOGIC CROSS SECTIONS

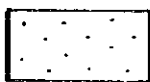
OF OFFSHORE CHANGI

SCALE

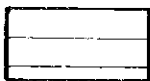
V : 1 / 400

H : 1 / 10,000

REGEN D



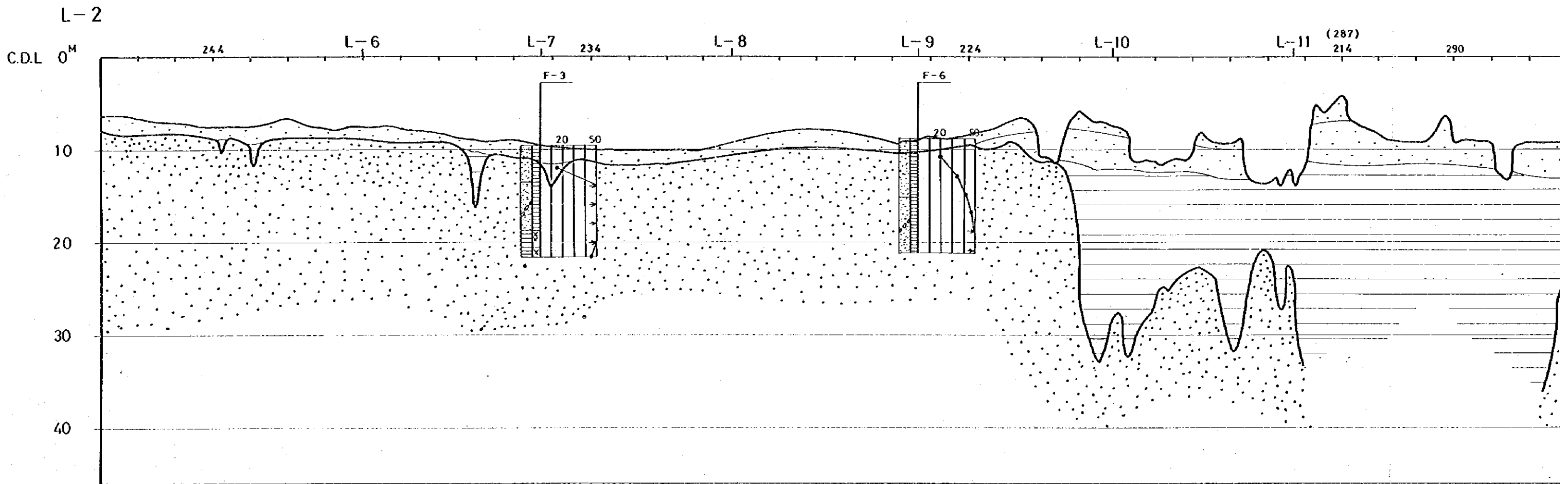
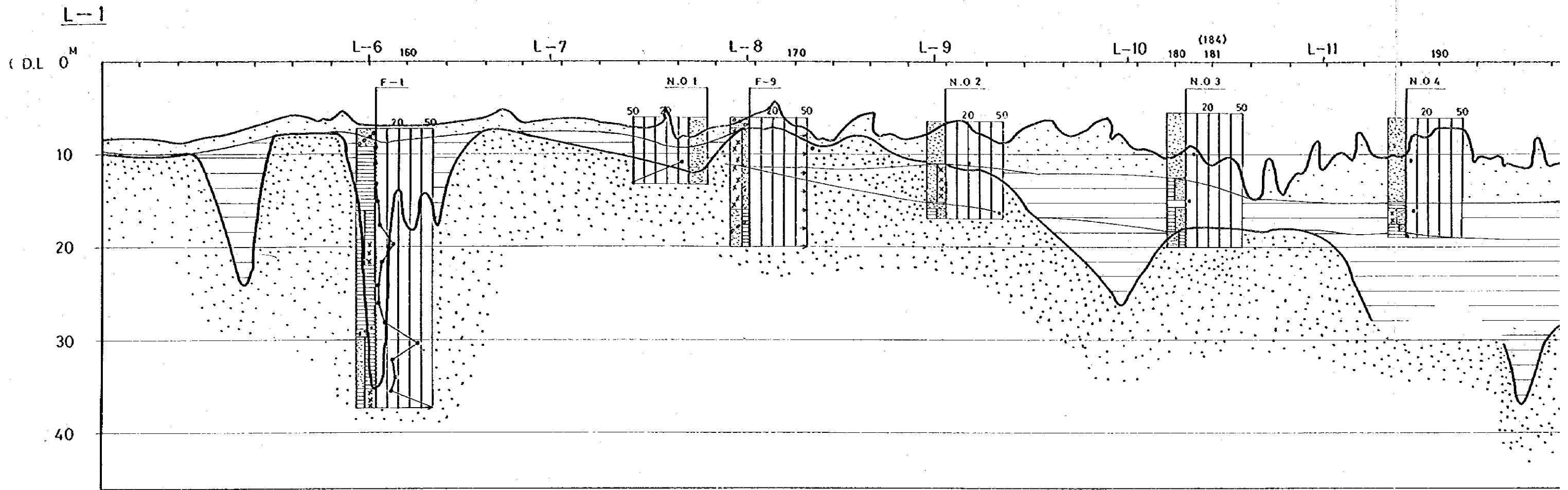
LOOSE SAND

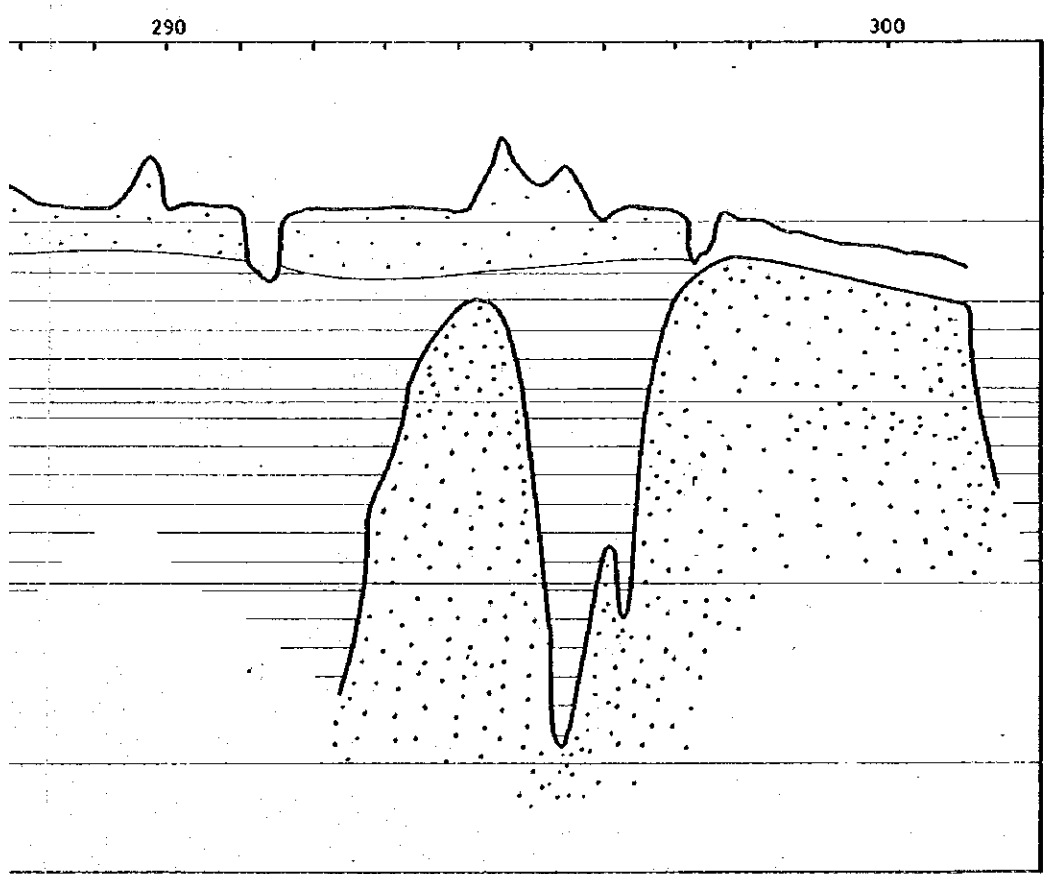
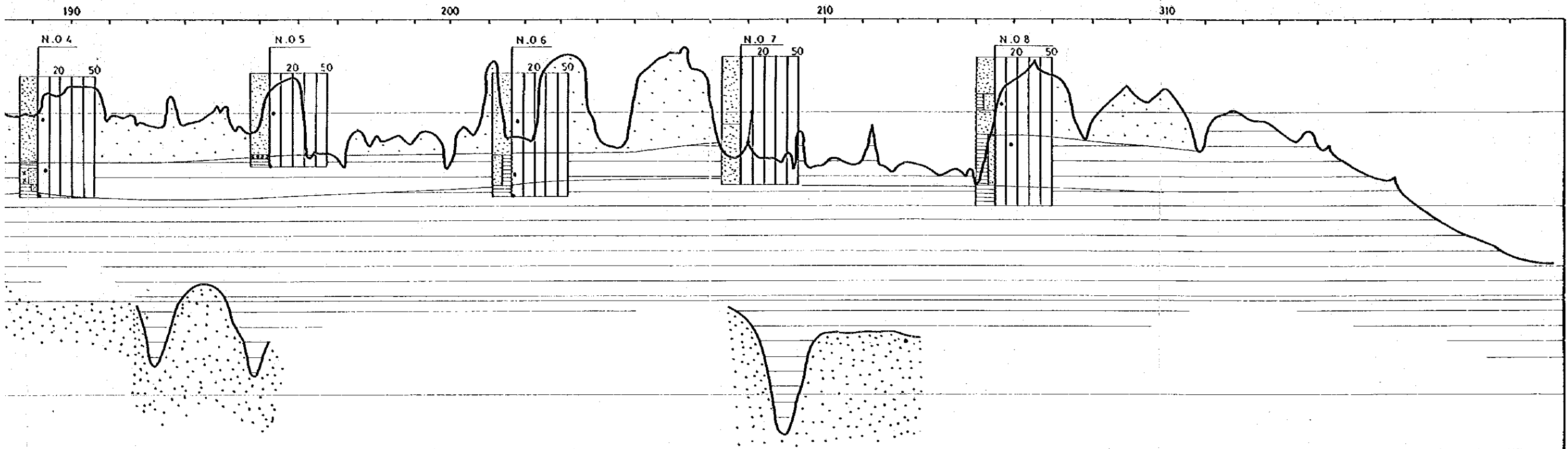


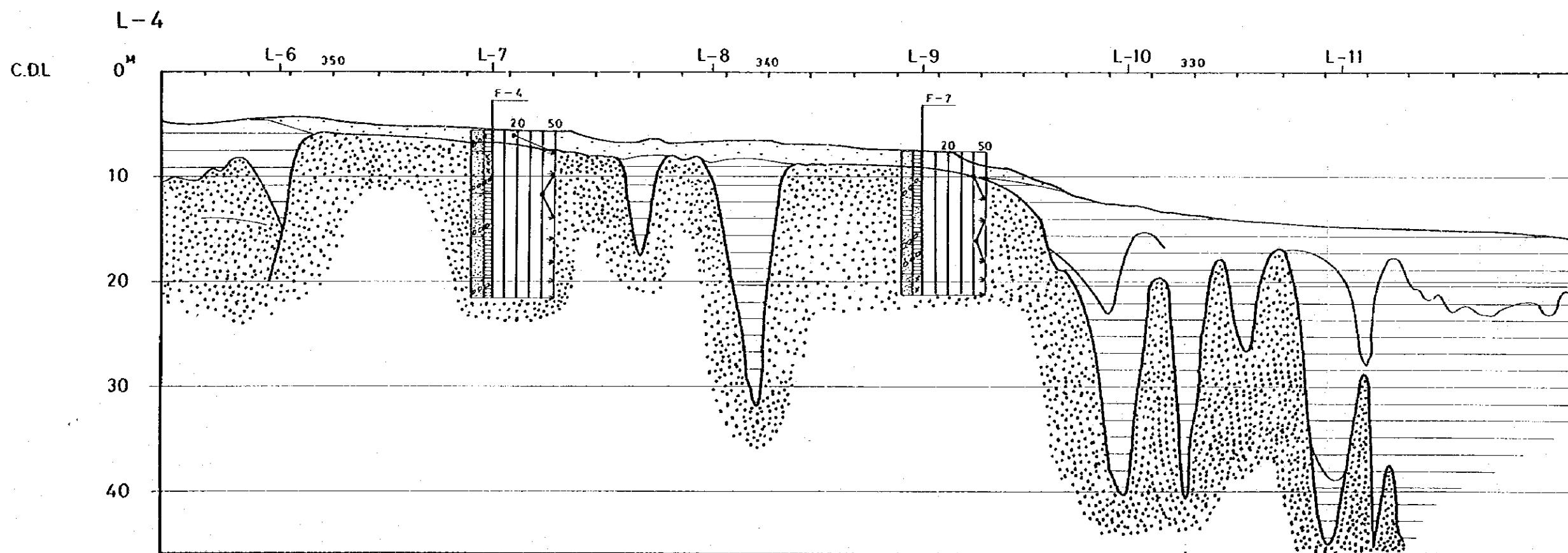
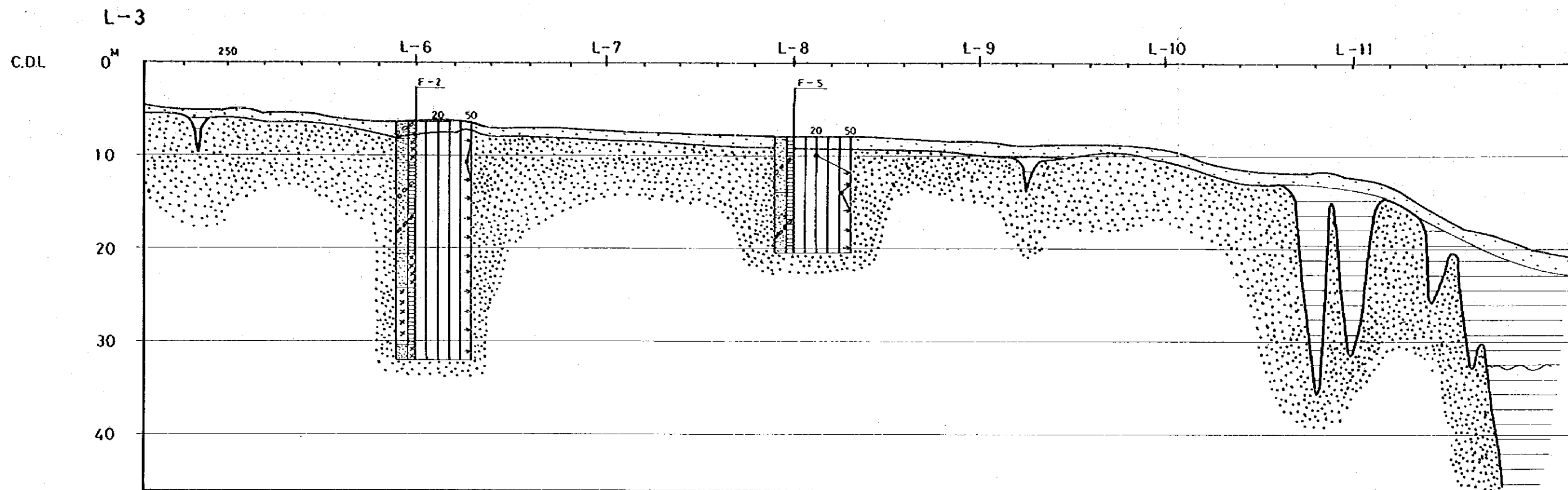
UPPER MARINE CLAY

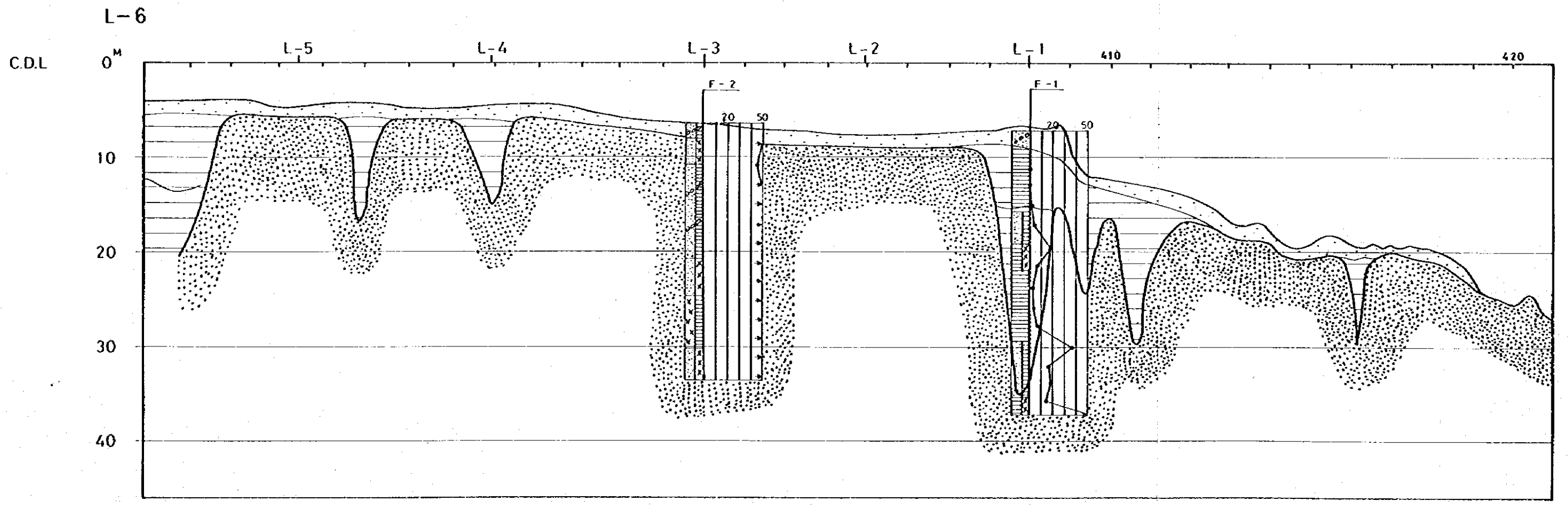
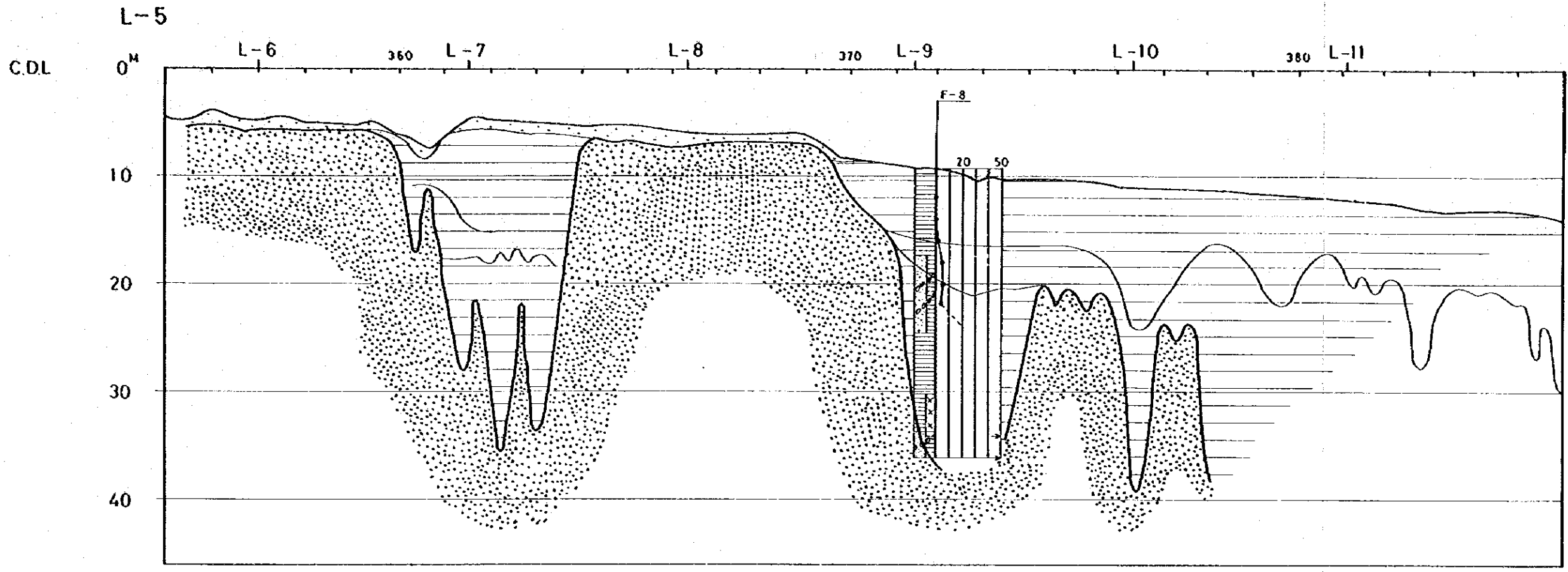


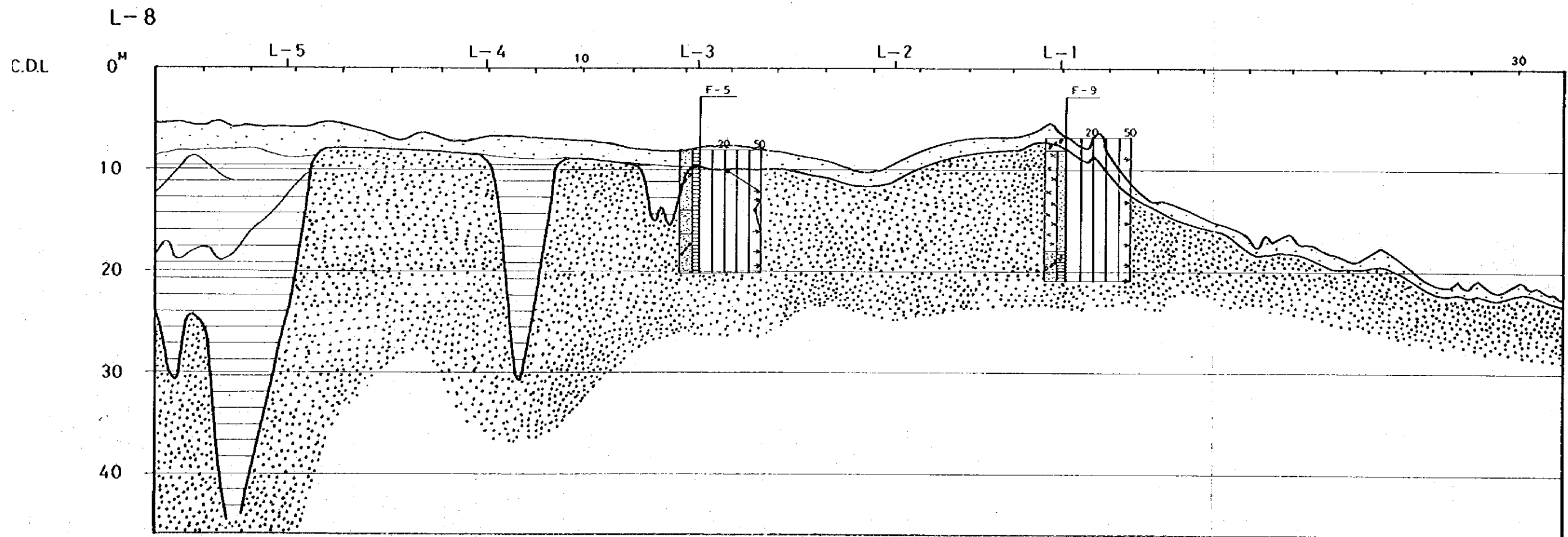
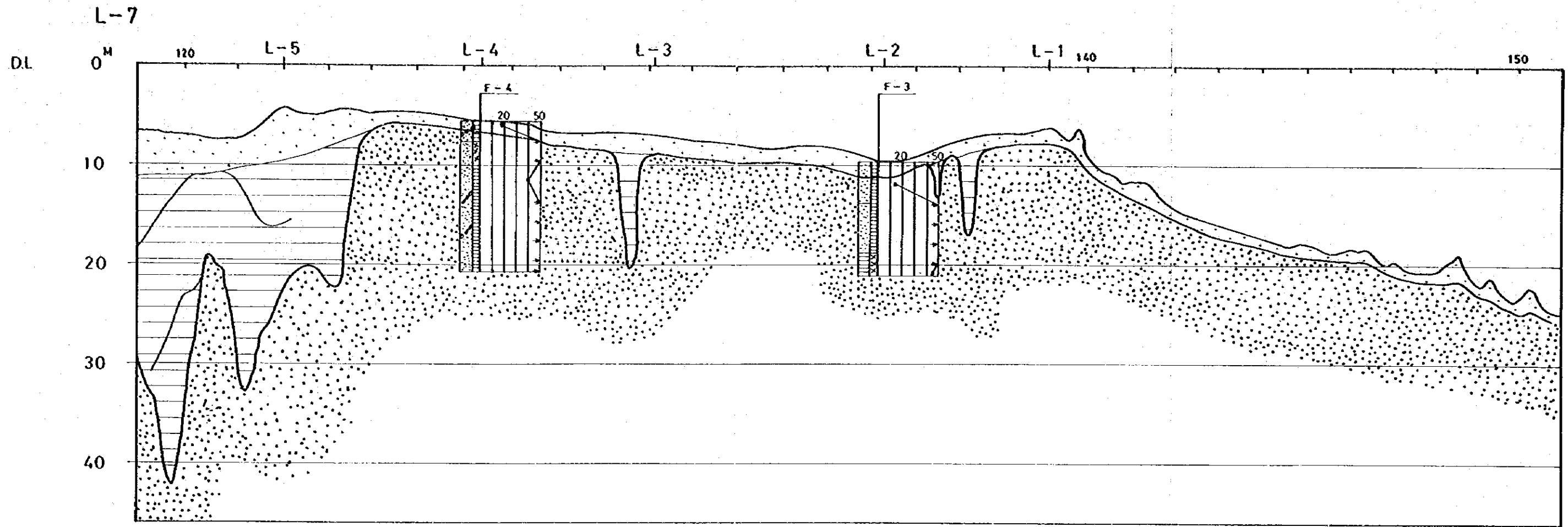
OLD ALLUVIUM

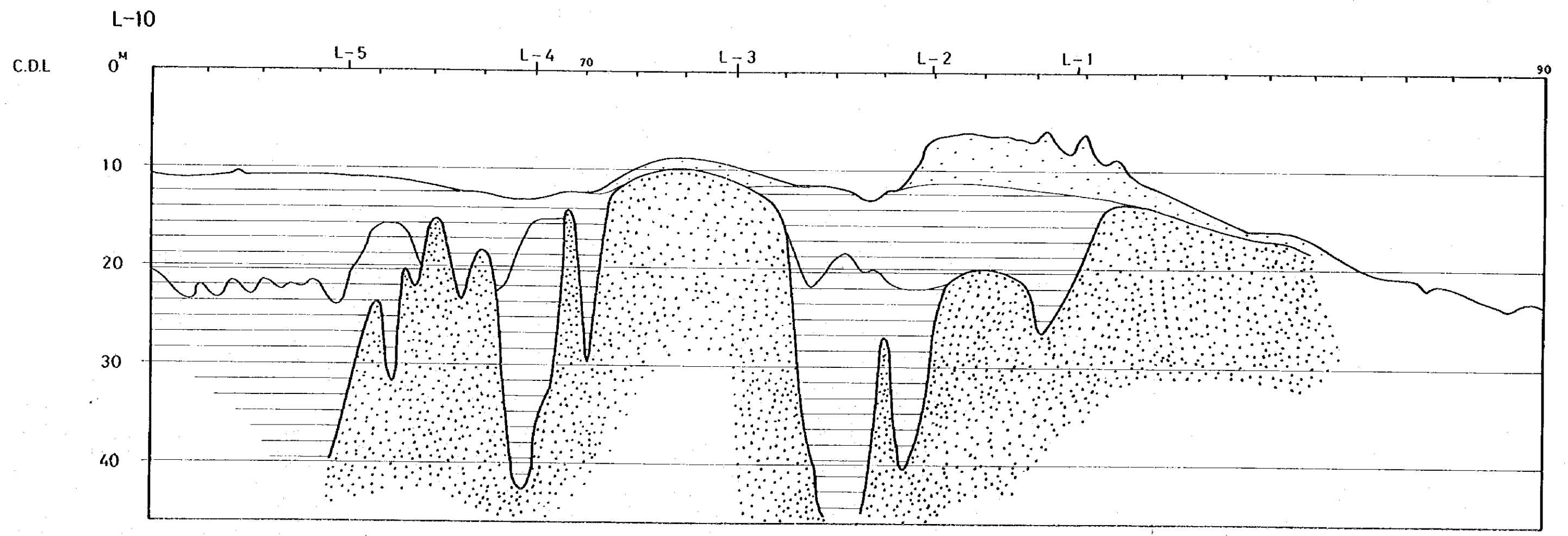
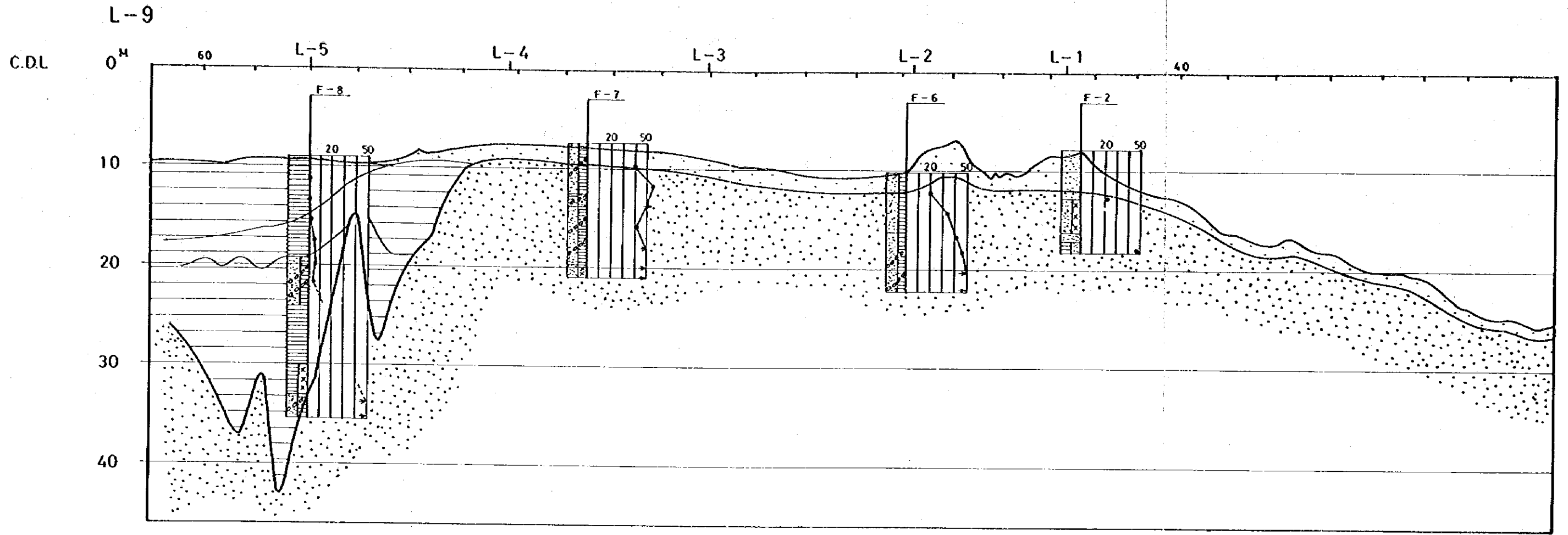






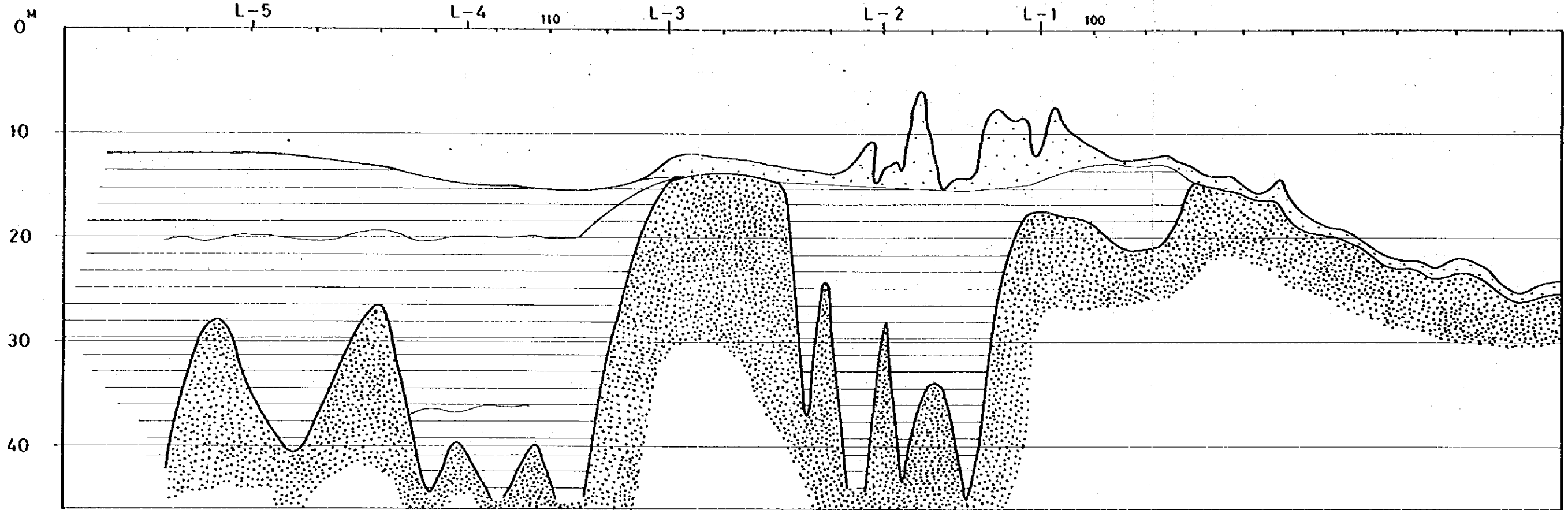




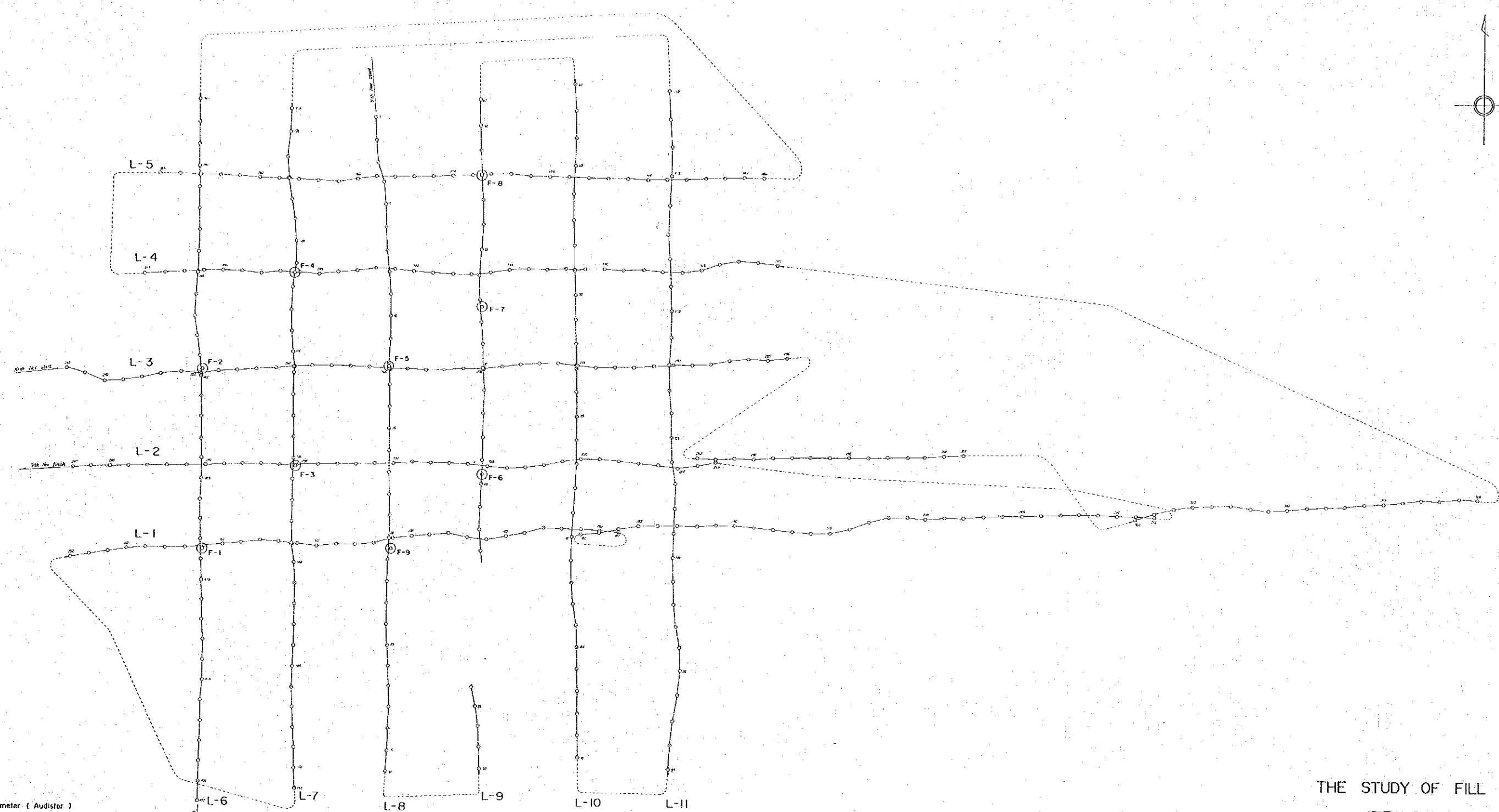
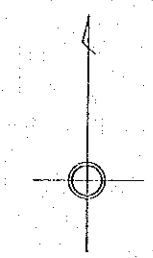


L-11

DL



OFF SHORE OF CHANGI

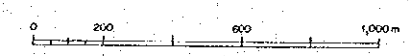


Memoir

- The chart is constructed electric distance meter (Audistar) lattices upon the following station:
 slave 1 (T-7) X+3 323.707 Y+13 062.428
 slave 2 (CR-1) X+9 354.766 Y+16 487.968
- The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0° 00' N, 0° 00' E) of origin at Government Office Building being in Lat. 1° 17' 15" 528 N, Long. 103° 51' 10" 808 E.

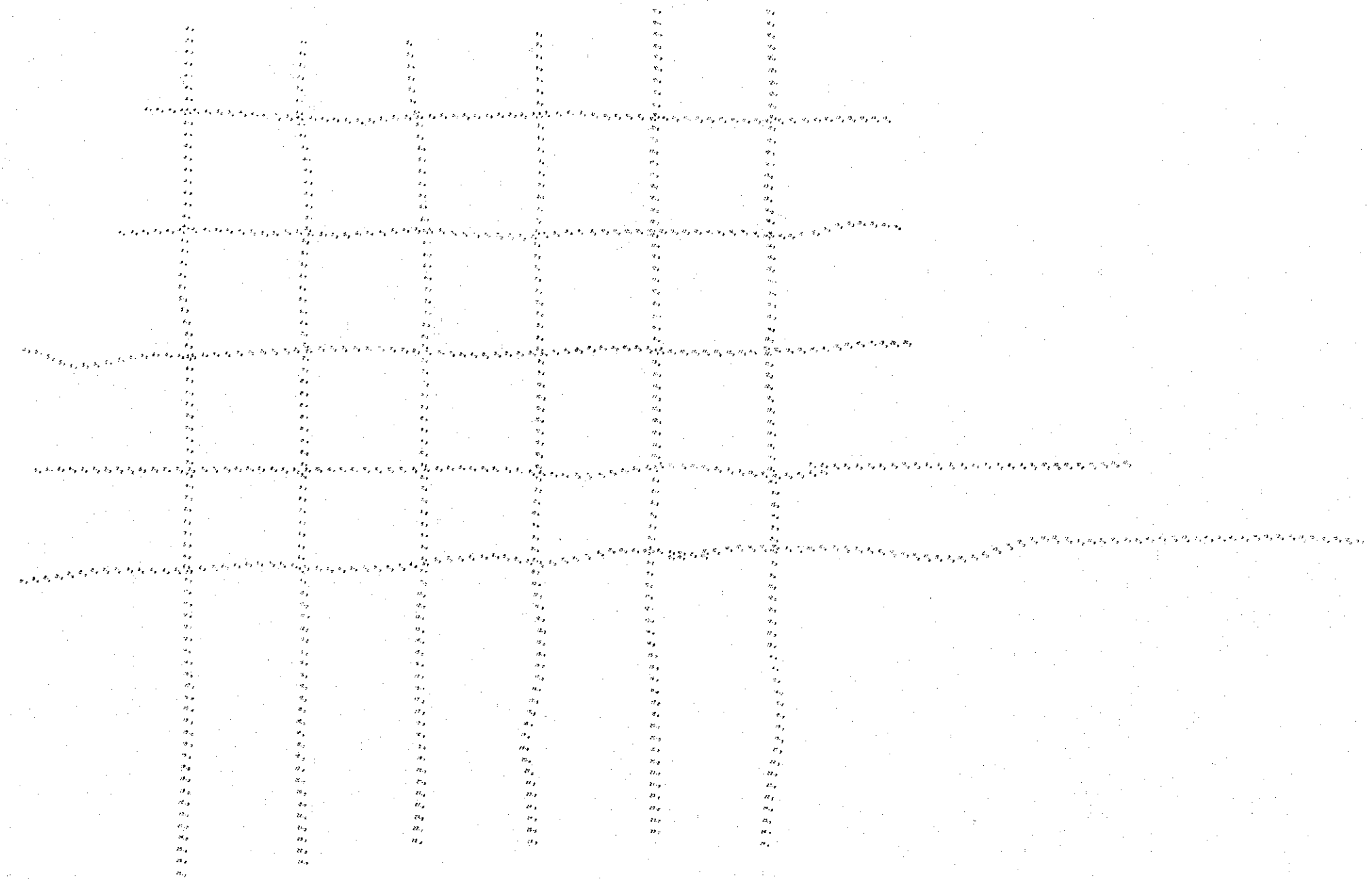
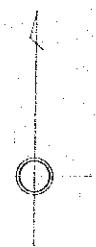
THE STUDY OF FILL MATERIALS
 TRACK CHART
 for Sonic Prospecting

JAN. 1979



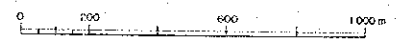
○ Survey points
 F-2
 ⊙ Boring points

OFF SHORE OF CHANGI



Memoir

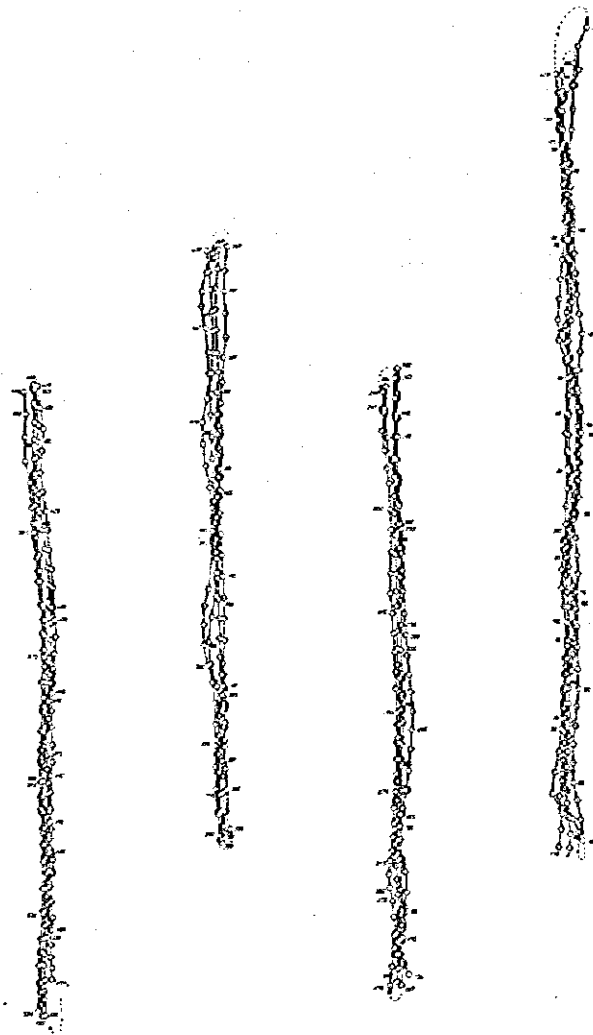
1. The chart is constructed electric distance meter (Audistor) lattices upon the following station.
 slope 1 (T-7) X+3 323.707 Y+13 062.428
 slope 2 (CR-1) X+9 354.766 Y+16 487.968
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (O^s OGN, O^s OOE) of origin at Government Office Building being in Lat. 1°17'15"528 N, Long. 103°51'10"808 E.



THE STUDY OF FILL MATERIALS
SOUNDING MAP

JAN. 1979
DEPTH IN METERS
Reduced to Chart Datum

OFF SHORE OF CHANGI



○—○ Survey points

Memoir

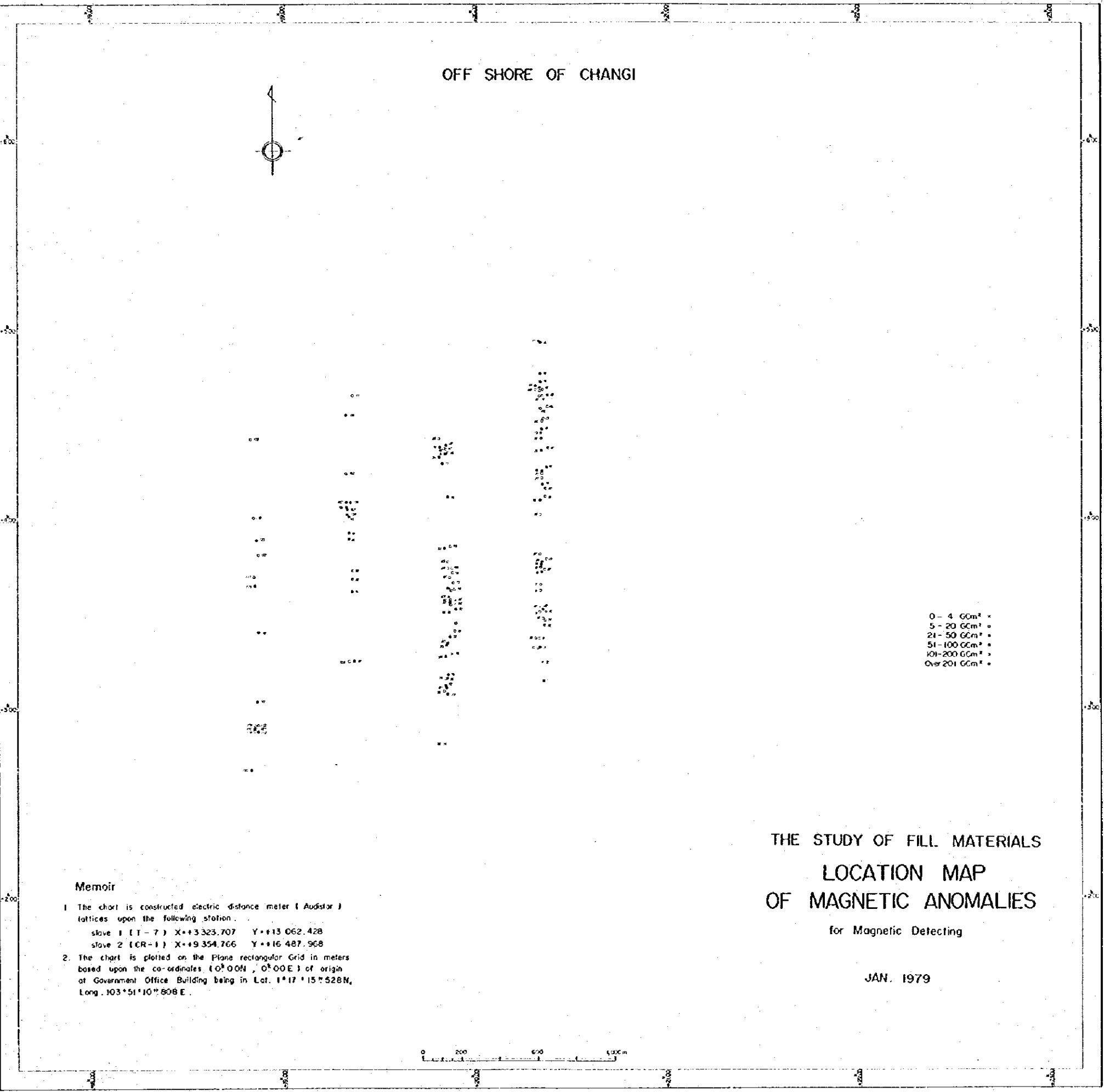
1. The chart is constructed electric distance meter (Audator) lattices upon the following station.
 slave 1 (T-7) X=+3 323.707 Y=+13 062.428
 slave 2 (CR-1) X=+9 354.766 Y=+16 487.968
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0⁰00N, 0⁰00E) of origin of Government Office Building being in Lat. 1°17'45"528N, Long. 103°51'10"808E.

THE STUDY OF FILL MATERIALS
TRACK CHART
 for Magnetic Detecting

JAN. 1979



OFF SHORE OF CHANGI



- 0 - 4 Gcm² •
- 5 - 20 Gcm² •
- 21 - 50 Gcm² •
- 51 - 100 Gcm² •
- 101 - 200 Gcm² •
- Over 201 Gcm² •

Memoir

1. The chart is constructed electric distance meter (Auditor) lattices upon the following station.
 slope 1 (IT-7) X=+3 323.707 Y=+13 062.428
 slope 2 (CR-1) X=+9 354.766 Y=+16 487.968
2. The chart is plotted on the Plane rectangular Grid in meters based upon the co-ordinates (0° 00' N, 0° 00' E) of origin at Government Office Building being in Lat. 1° 17' 15" 528 N, Long. 103° 51' 10" 808 E.

THE STUDY OF FILL MATERIALS
 LOCATION MAP
 OF MAGNETIC ANOMALIES
 for Magnetic Detecting

JAN. 1979



JICA