





## E.4 Results of Field Ground Investigation

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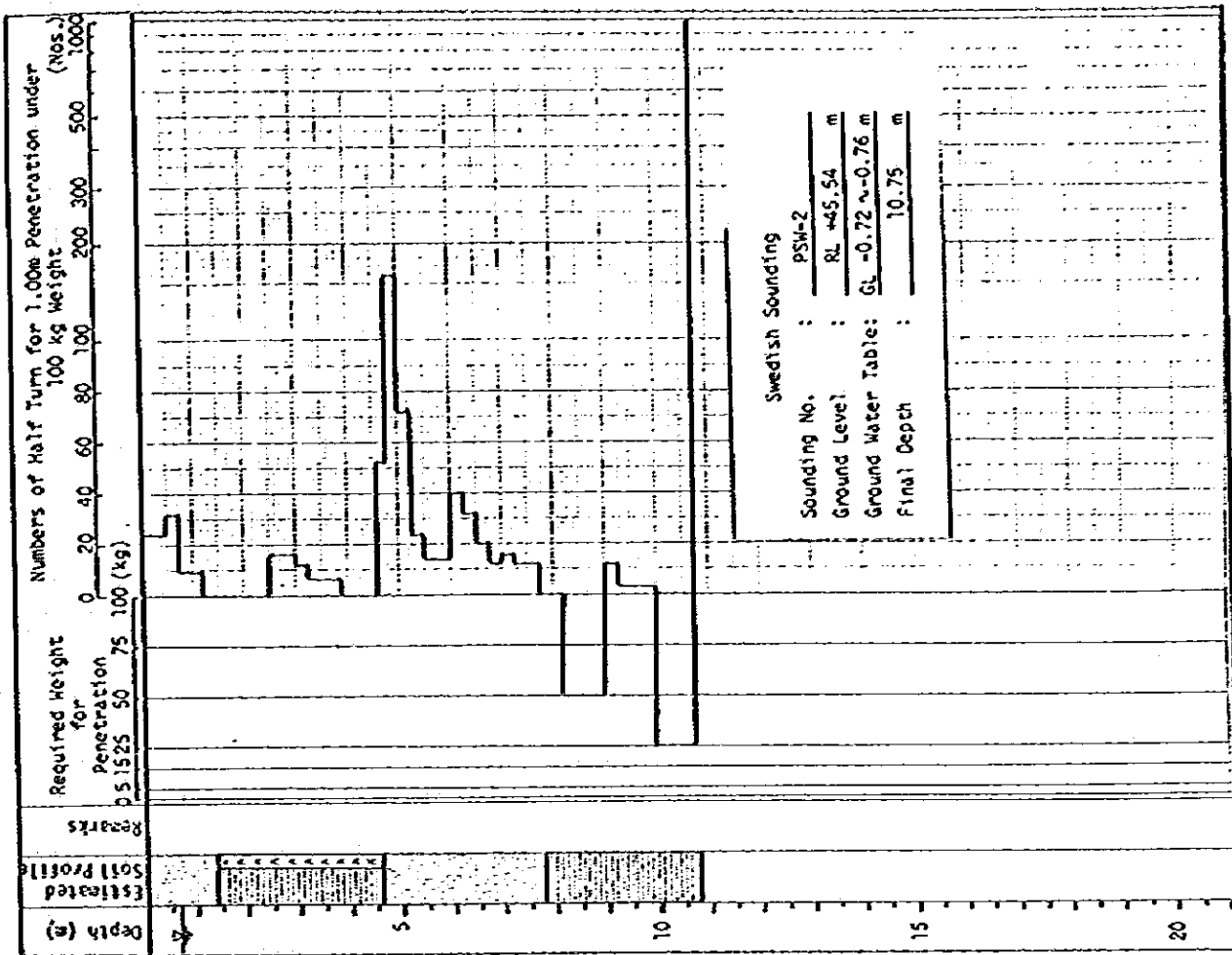
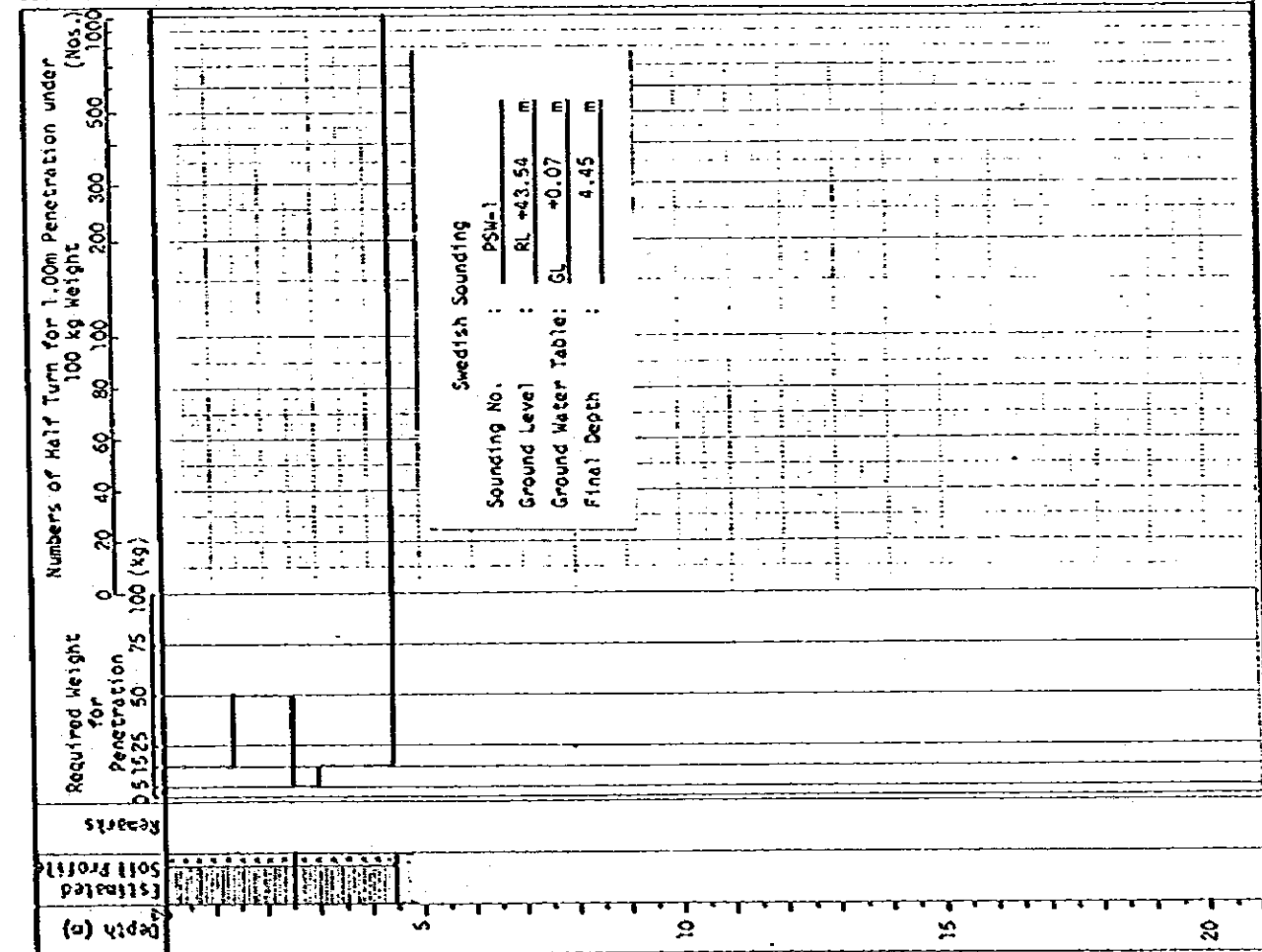
	<u>Page</u>
1. Details of Field Ground Investigation Performed .....	E-130
2. Swedish Sounding .....	E-131
3. Rotary Boring .....	E-139

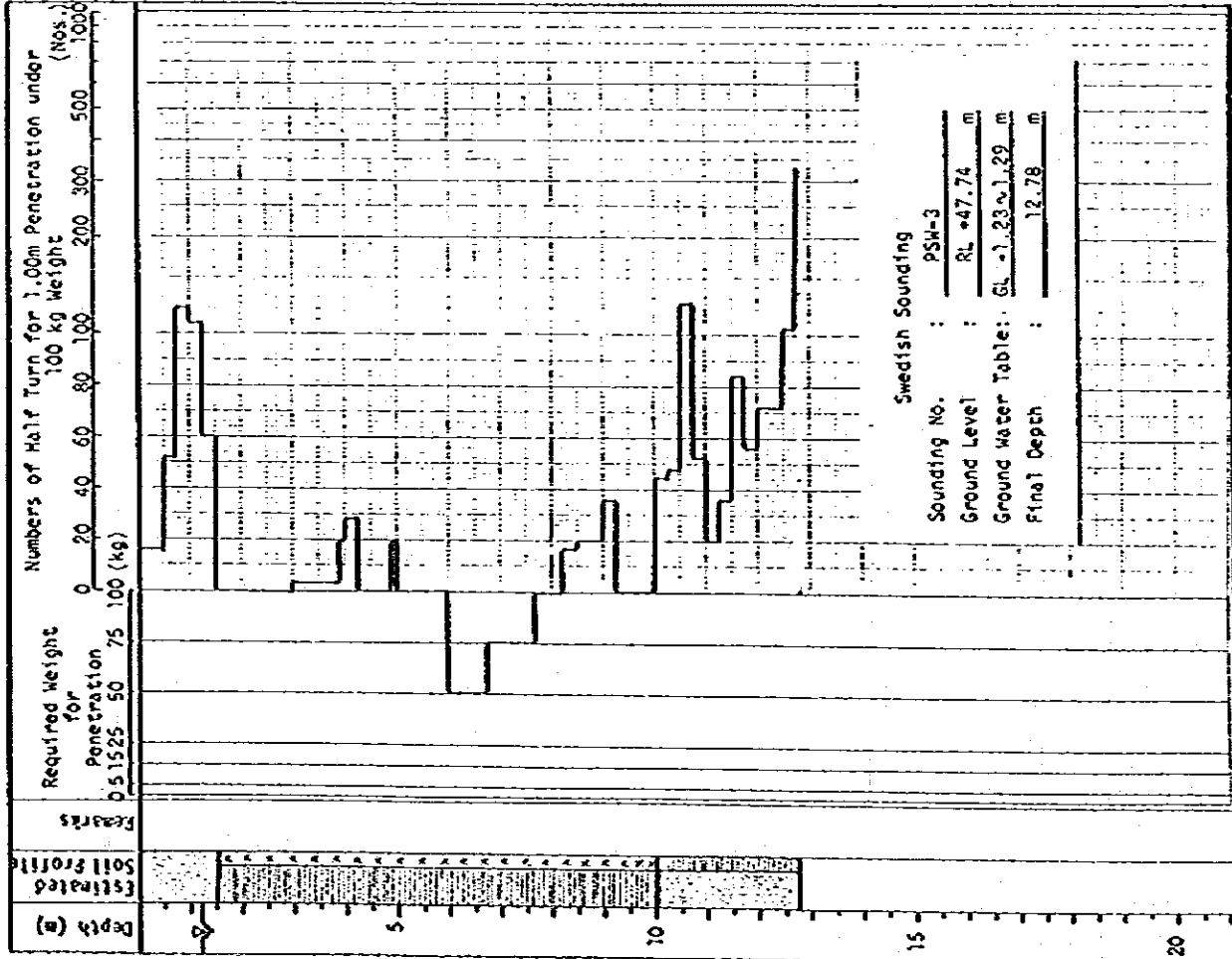
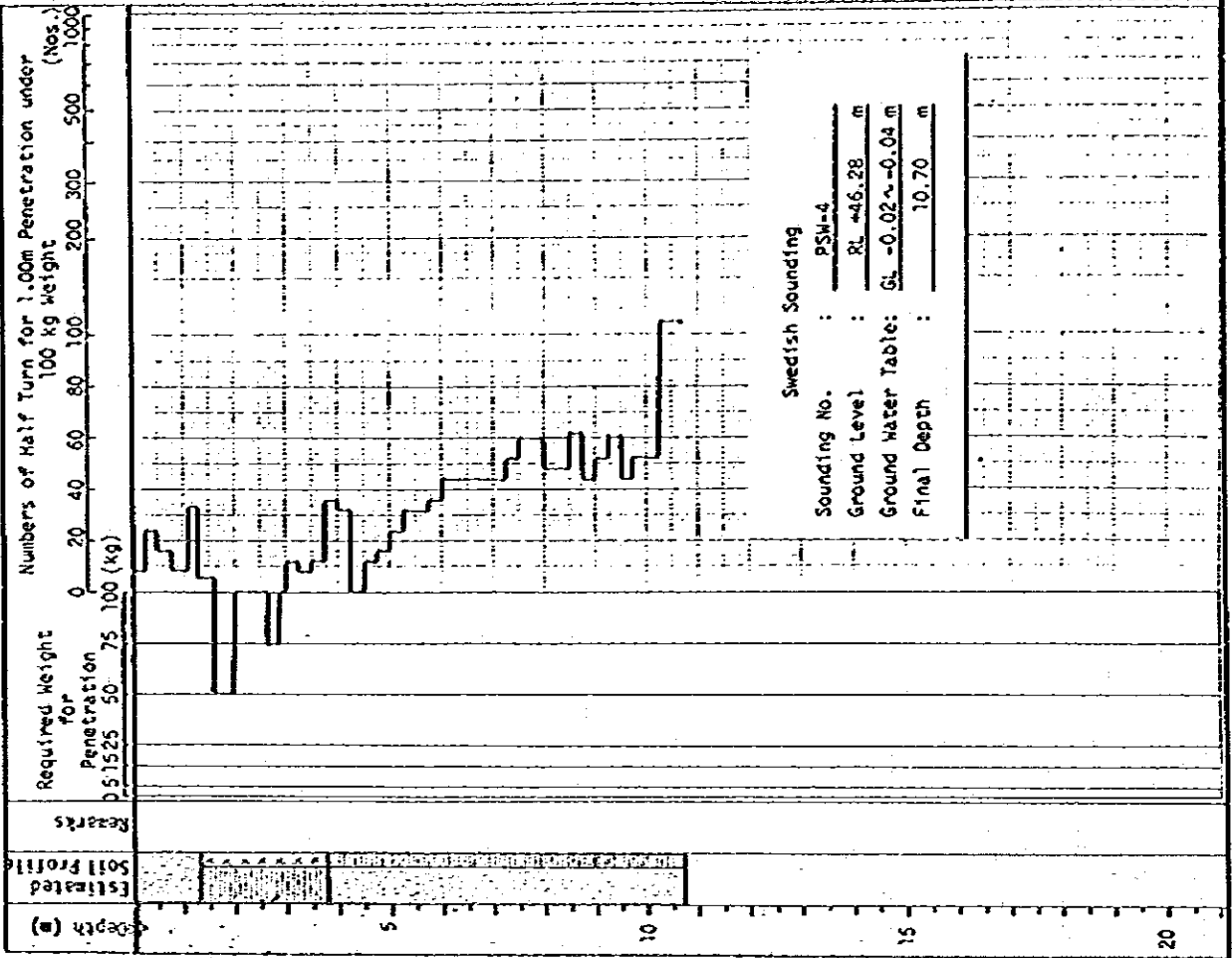
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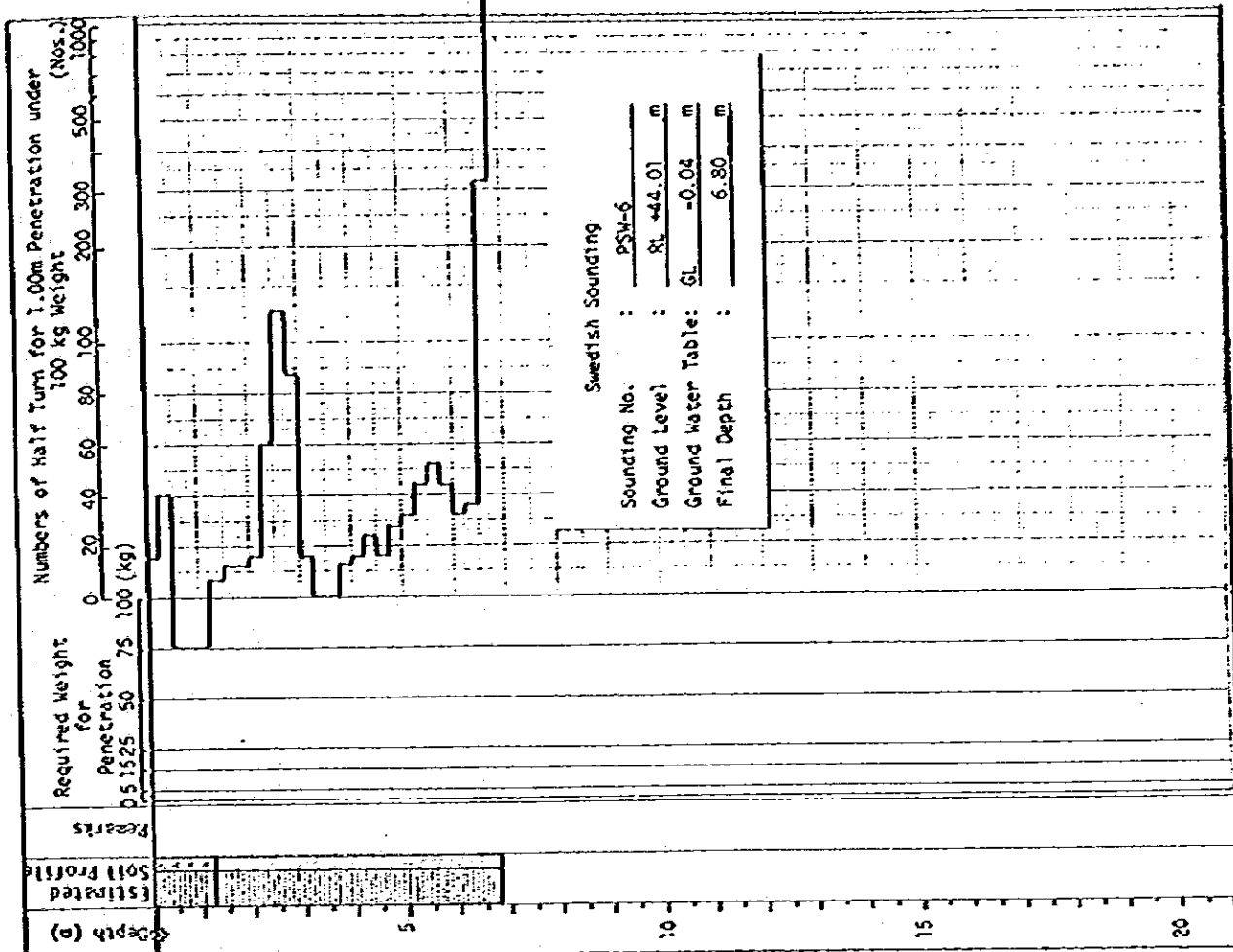
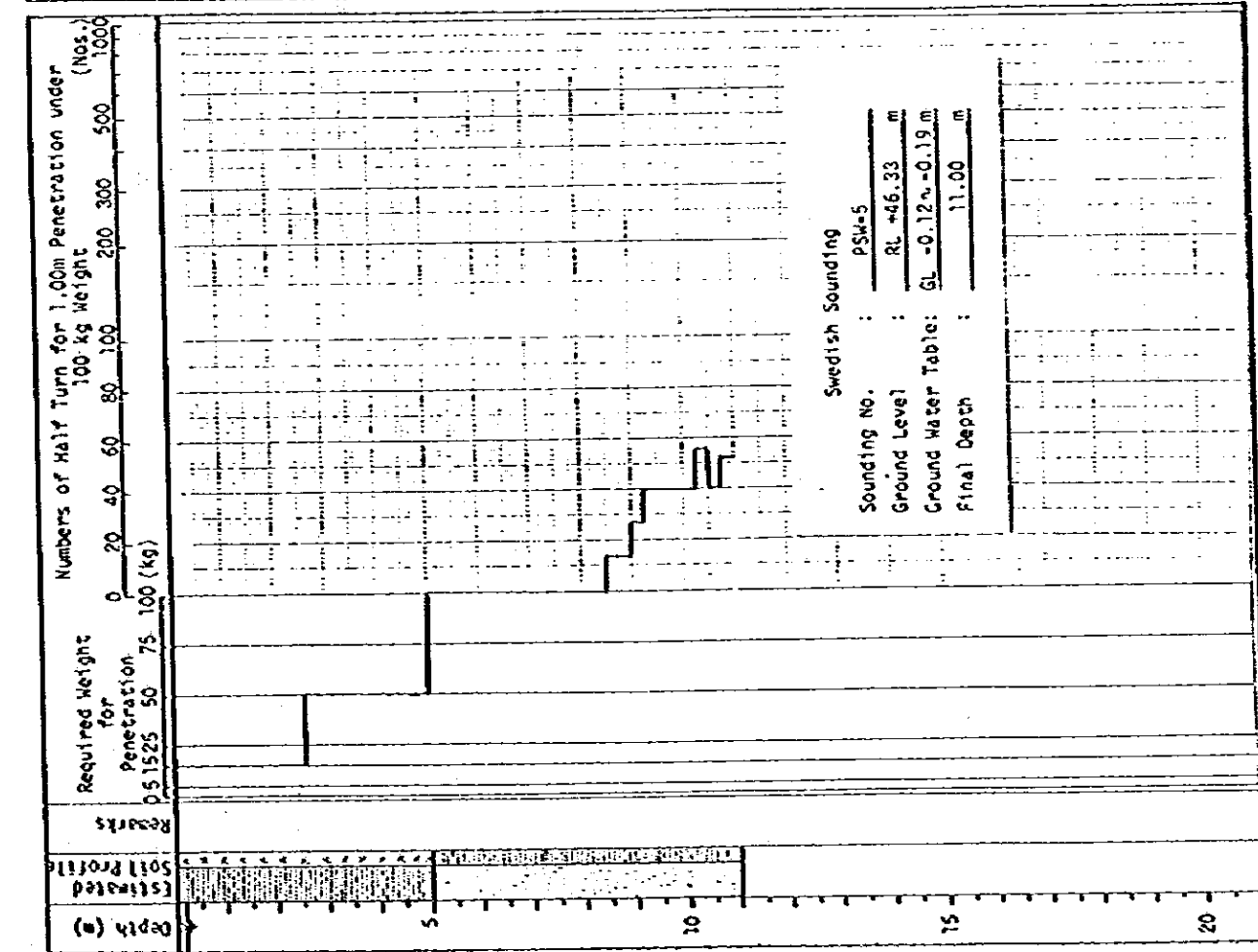
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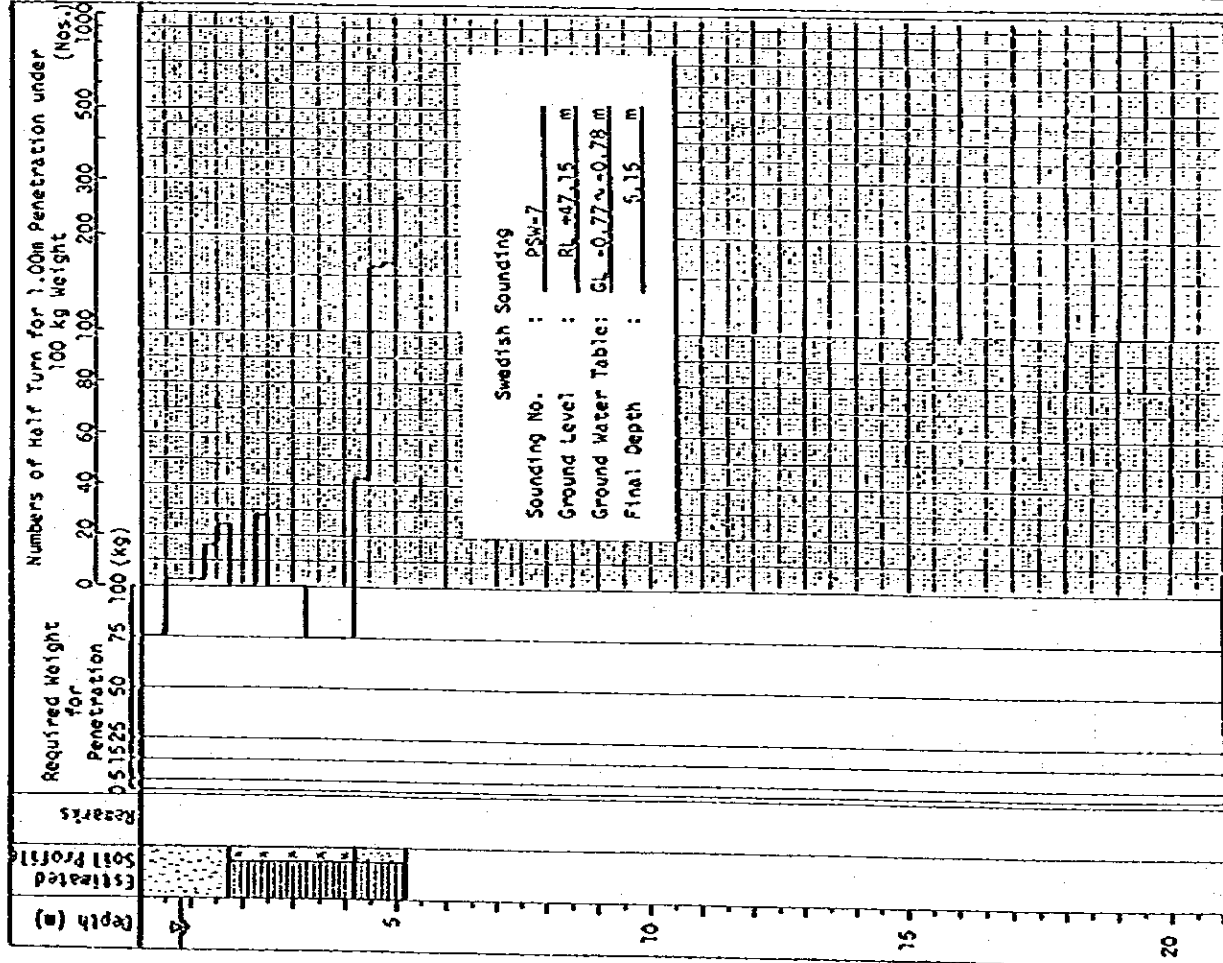
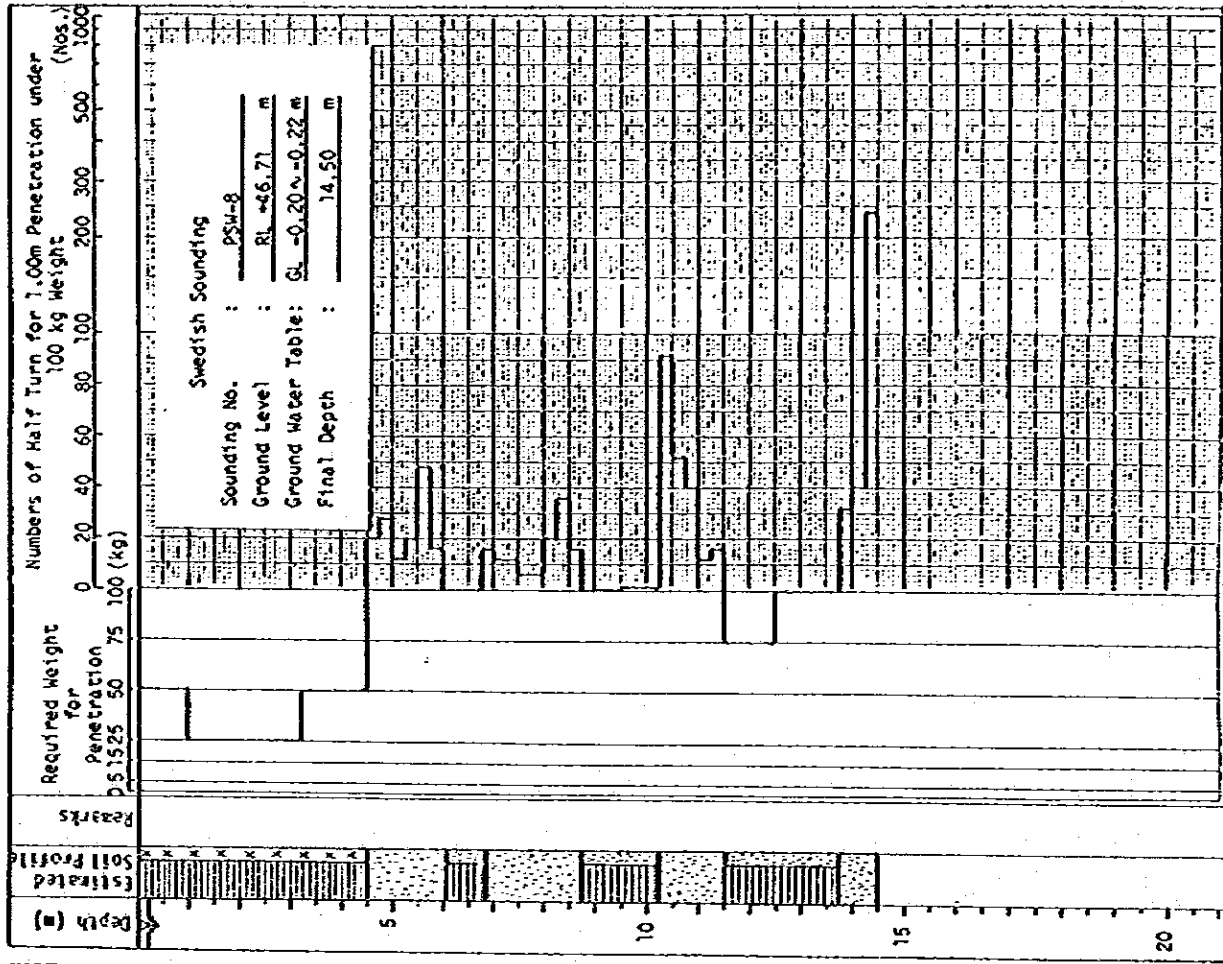
	Sounding No.	Ground Level (RL m)	Sounding Depth (m)	Groundwater* Table (GL $\pm$ m)	Remarks	
						Swedish Sounding
PSW-2	45.54	10.75	-0.72 ~ -0.76			
PSW-3	47.74	12.78	-1.23 ~ -1.29			
PSW-4	46.28	10.70	-0.02 ~ -0.04	1 m away from PBH-3		
PSW-5	46.33	11.00	-0.12 ~ -0.19			
PSW-6	44.01	6.80	-0.04			
PSW-7	47.15	5.15	-0.77 ~ -0.78			
PSW-8	46.71	14.50	-0.20 ~ -0.22			
PSW-9	46.81	9.95	-0.30	1 m away from PBH-2		
PSW-10	47.18	13.00	-0.30			
PSW-11	46.54	10.75	-0.20	1 m away from PBH-1		
PSW-12	48.20	10.75	-1.10			
PSW-13	47.41	11.25	-0.72 ~ -0.73	1 m away from PBH-4		
PSW-14	47.91	11.20	-1.08 ~ -1.09			
PSW-15	48.17	6.43	-0.79 ~ -0.91			
Total	15 locations		149.46 m	-		
Rotary Boring	Boring No.	Boring Length (m)			Undisturbed Sampling (Nos.)	Standard Penetration Tests (Nos.)
		Soil Boring	Rock Boring	Total		
	PBH-1	17.41	0.50	17.91	7	9
	PBH-2	8.45	0.50	8.95	3	3
	PBH-3	11.83	1.12	12.95	2	9
	PBH-4	17.00	0.50	17.50	4	13
Total	54.69	2.62	57.31	16	34	

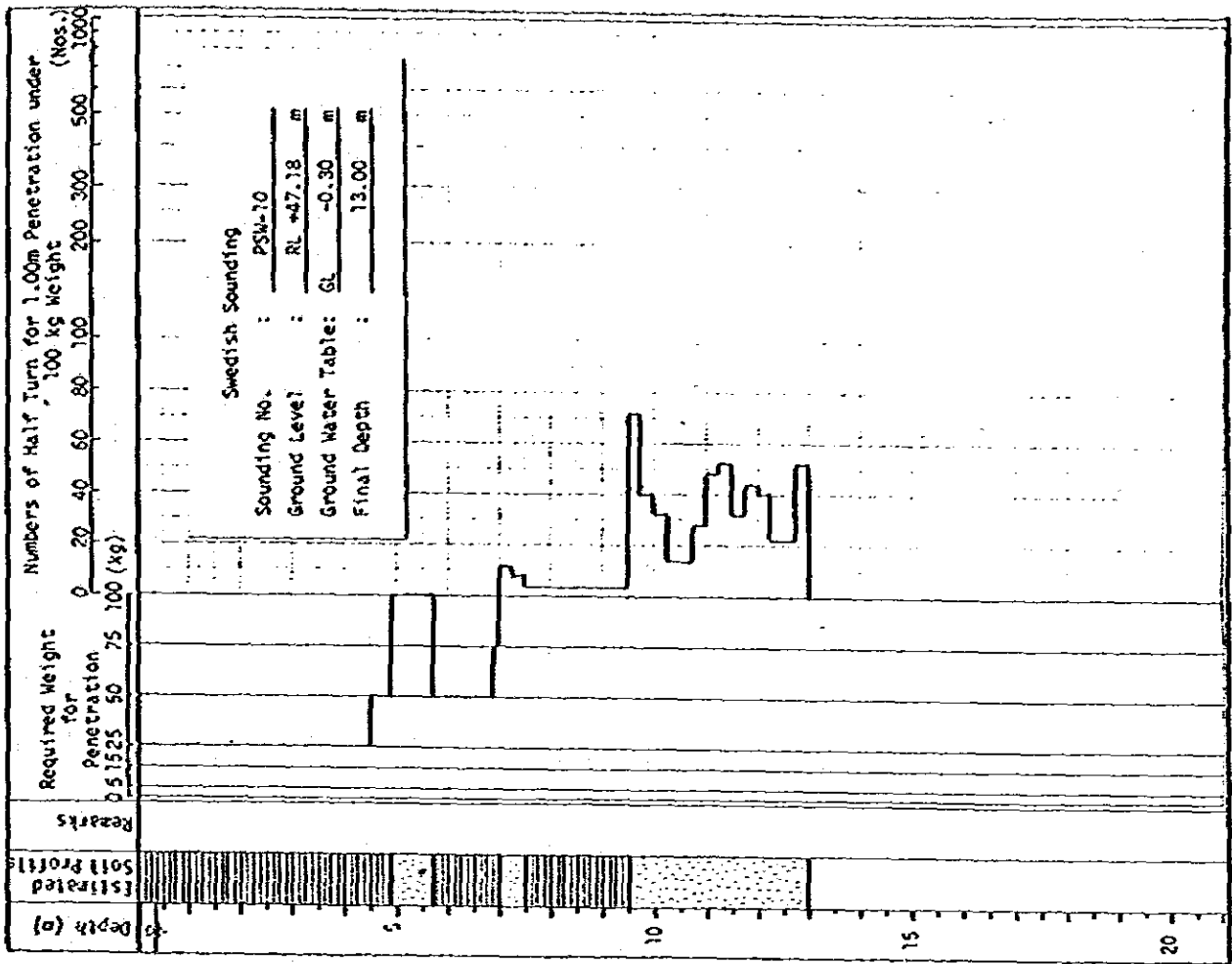
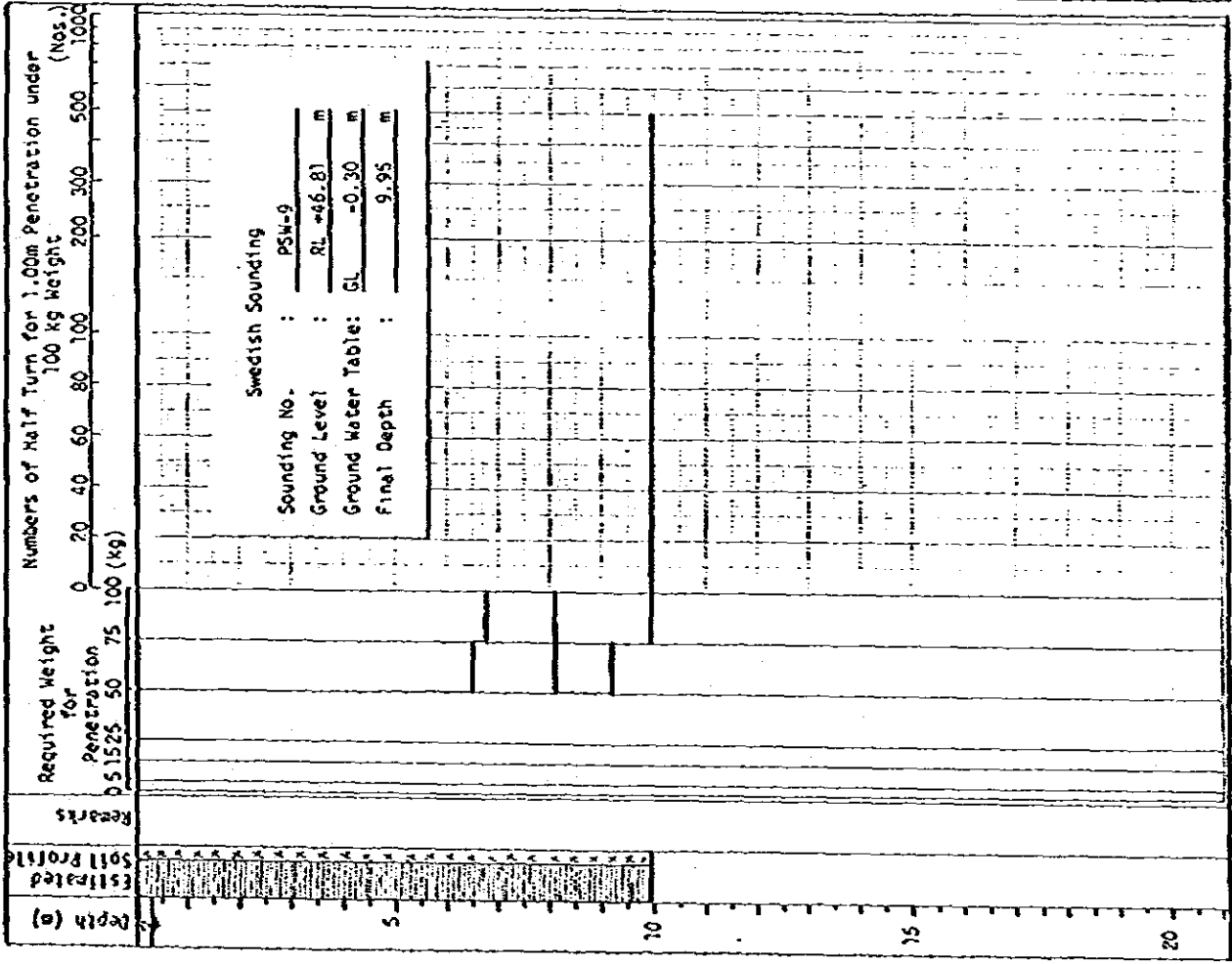
\* Groundwater tables were observed on 18th and 19th Jan. 1981.

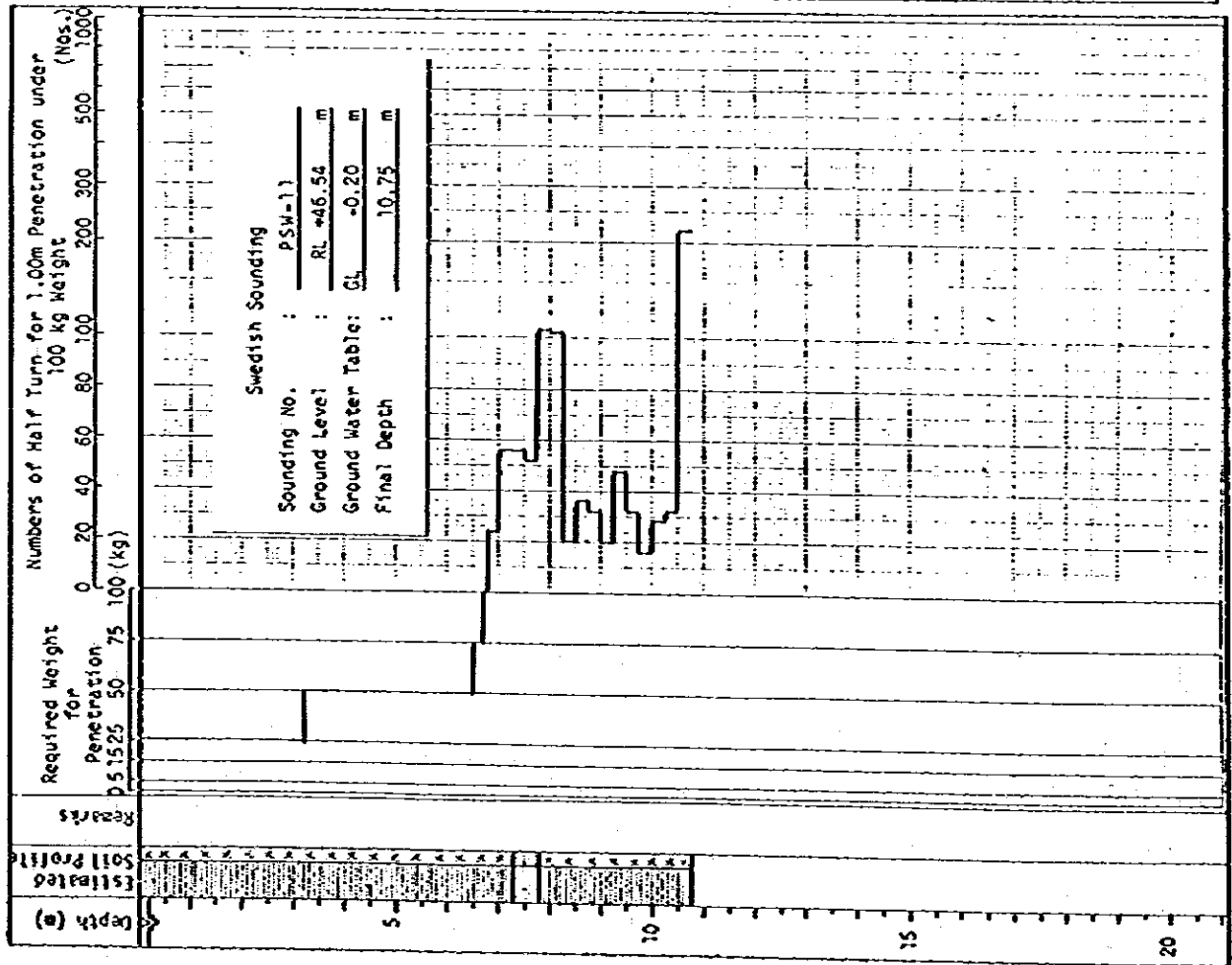
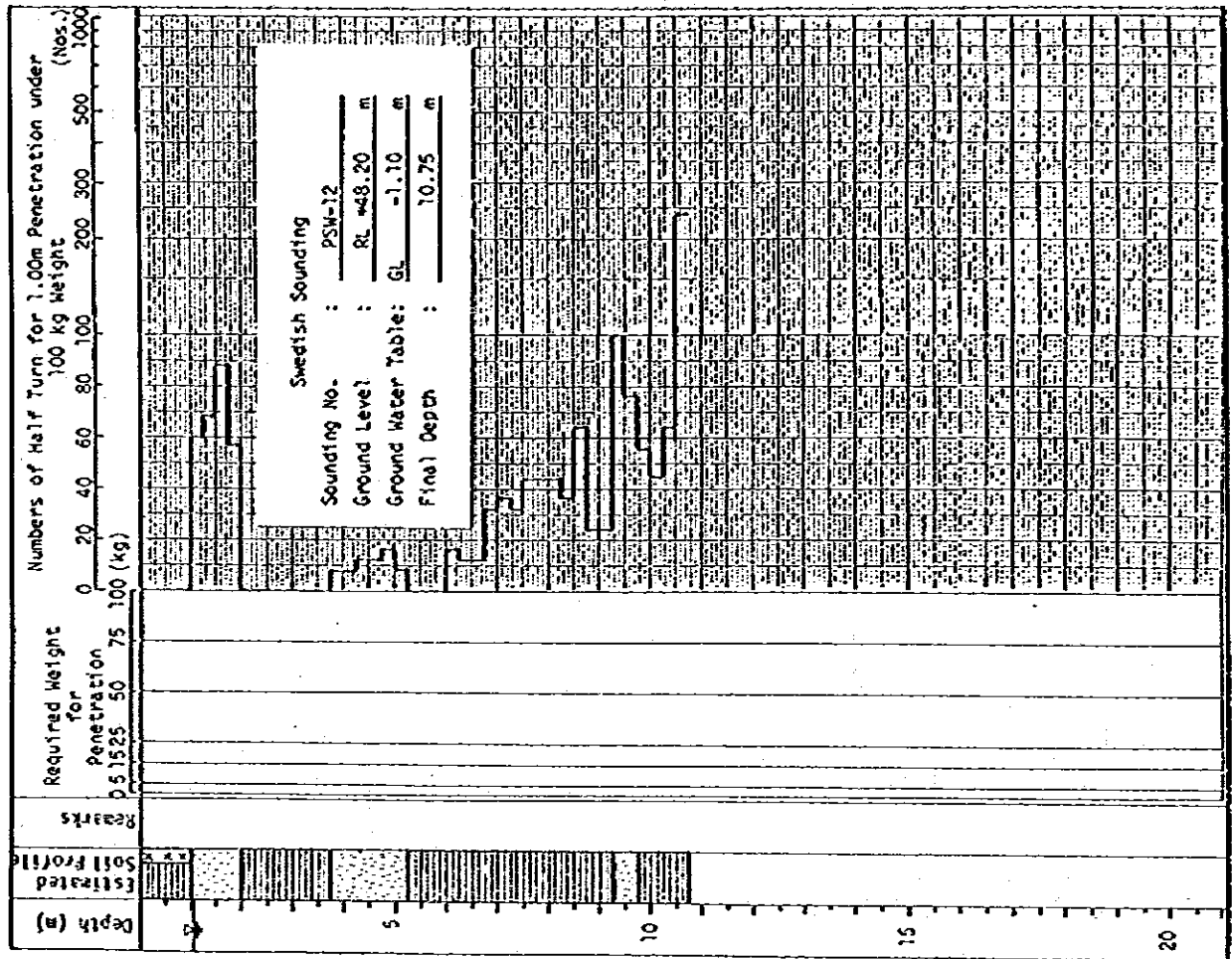




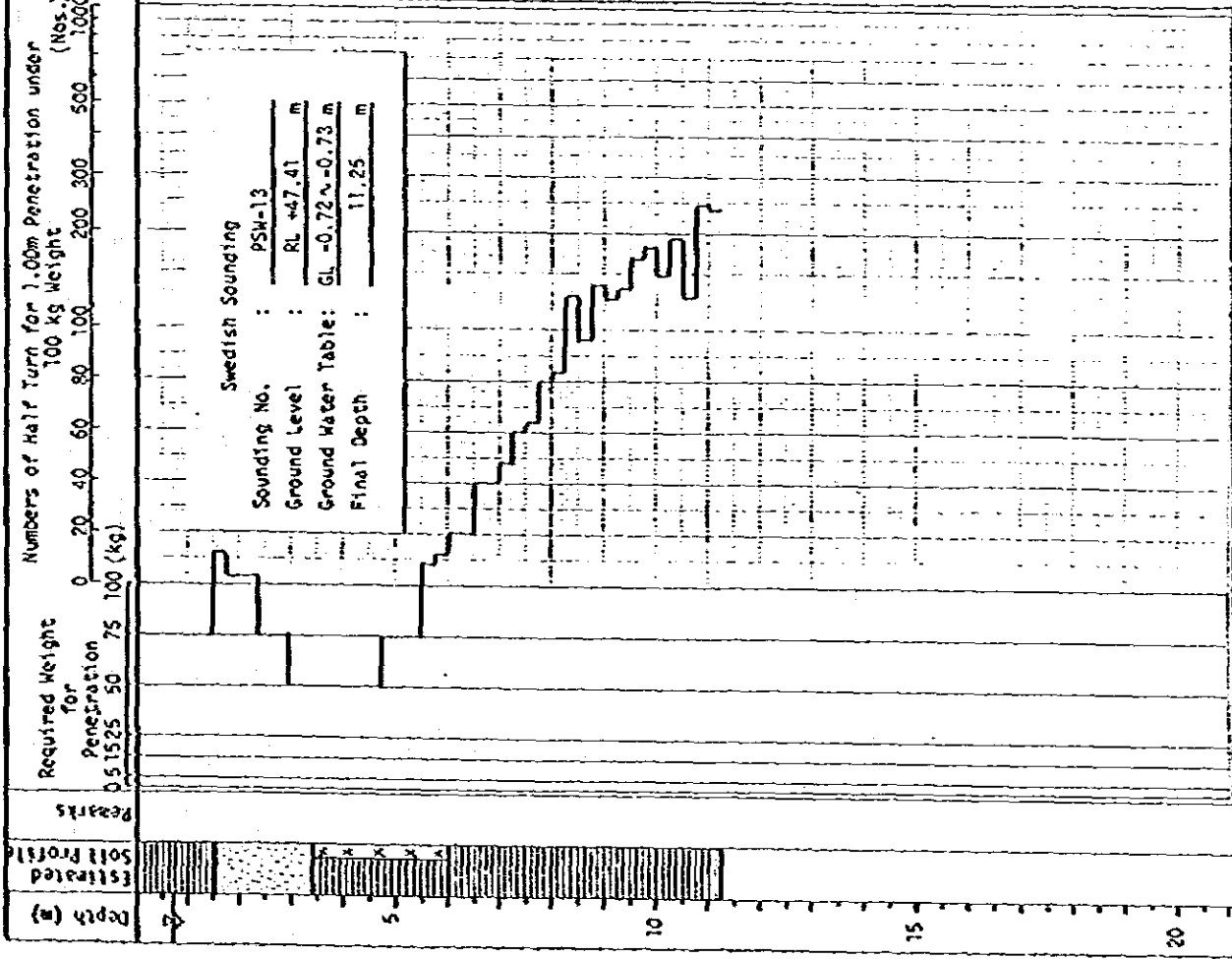
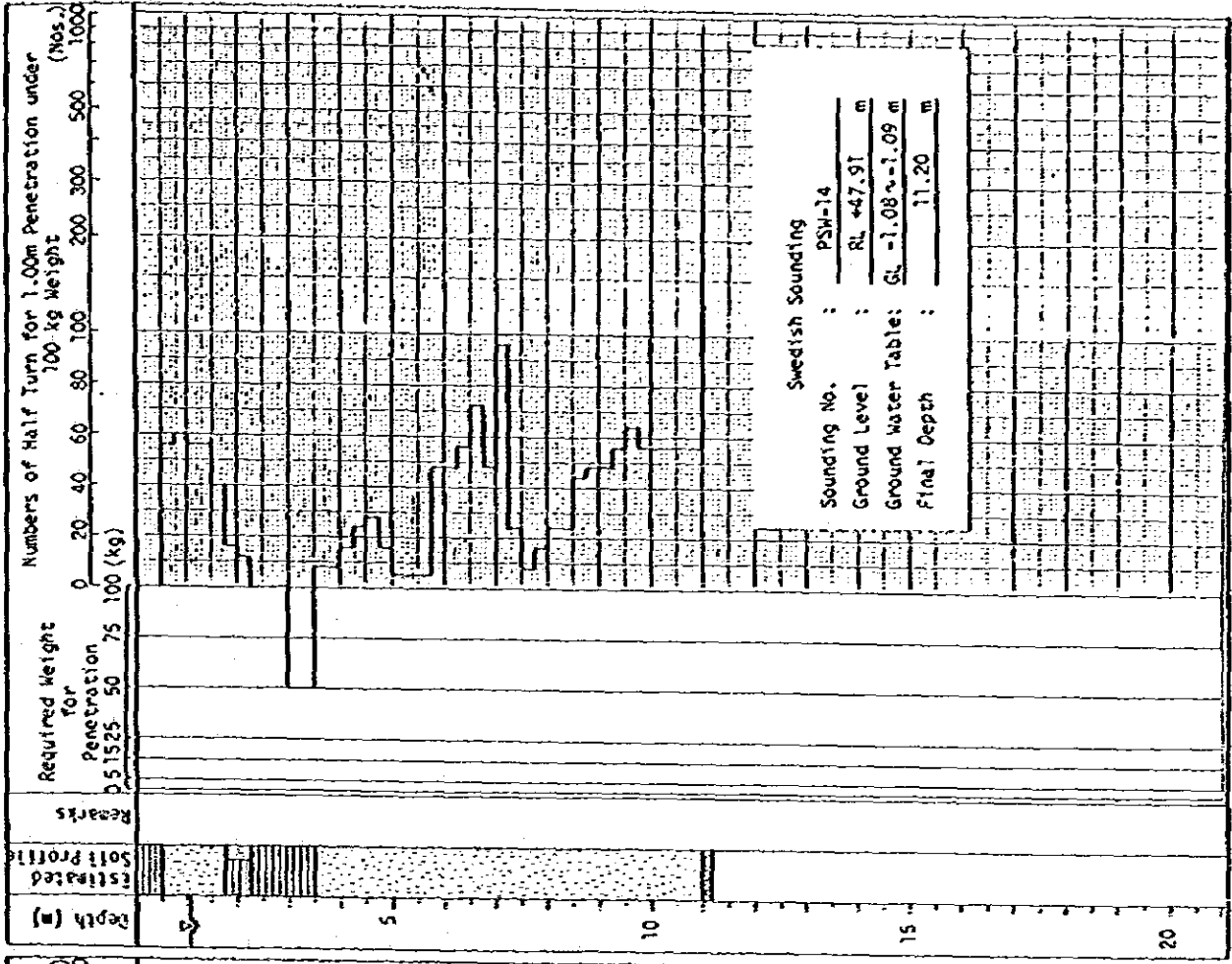


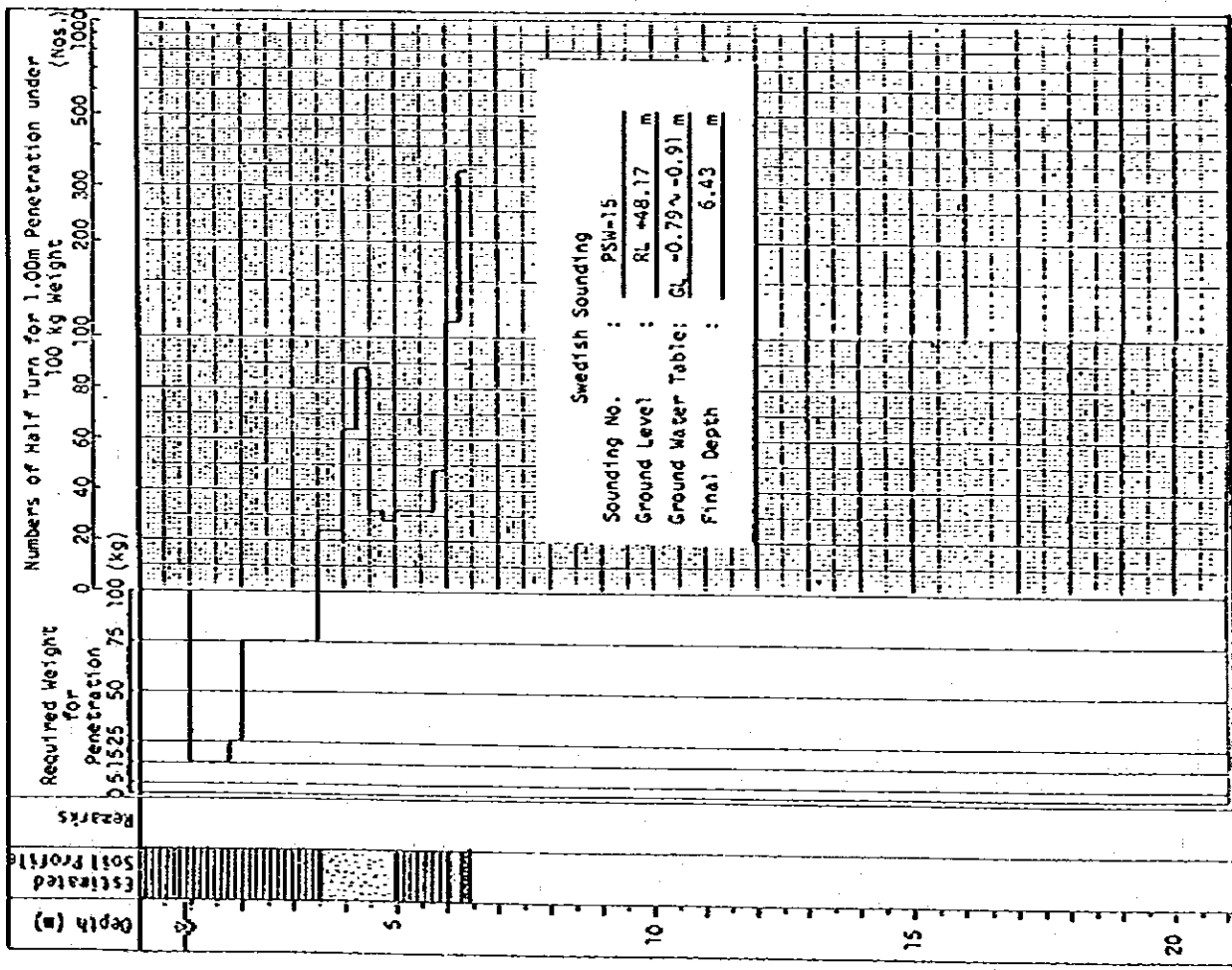














# FIG. DRILLING LOG

Name of Project **Setapak** Type of Drilling **Rotary**  
 Hole Number **No. PBH-2** Elevation RL **+ 46.81** m Date **17.11.80 to 19.11.80**  
 Water Table GL **-0.30** m Driller **Geotechnique ( )**

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.	SPT Value	Blows Per Each 10cm	(N-Value)						
	46.81	0.00																	
1	45.61	1.20	1.20		Silty clay	Brown	Soft to medium	With a little organic matter	1.00										
2								With some interbed of loose silty sand. Sand is fine to medium grained	1.80	UO-1									
3	43.21	3.60	2.40		Silty clay	Pinkish grey	very soft		4.00										
4	41.91	4.90	1.30		Silty clay	Light grey	Soft	With very fine grained sand & some organic matter	4.80	UO-2									
5	40.81	6.00	1.10					Fine grained, with some organic matter	5.15										
6	40.31	6.50	0.50		Sand	Grey	very loose		5.45	P-1									
7					Silty sand	Grey	Very loose	With some gravels	6.15										
8	38.81	8.00	1.50					Mottled brown with very fine grained sand and trace of organics	6.45	P-2	0	0							
9	38.36	8.45	0.45					With some pieces of sandstone fragments	7.00	UO-3									
10	37.86	8.95	0.50					With reddish brown patches, fractured	7.80										
11					Silty sand	Light yellowish brown	Very dense		8.15	P-3	65	18	21	27					
12					Limestone	Light yellowish brown	Hard												
13					End of Drilling														
14																			
15																			
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# FIG. DRILLING LOG

Remarks

Name of Project **Setapak** Type of Drilling **Rotary**  
 Hole Number **No. PBH-3** Elevation RL + 46.28 m Date **26.11.80 to 28.11.80**  
 Water Table **GL-0.05** m Driller **Geotechnique ( )**

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.	S.N. Value	Blogs Per Each 10cm	(N-Value)					
1	46.28	0.00							0.65									
2	44.38	1.90	1.50		Silty sand	Dark grey	Loose	Coarse grained, with patches of clay and angular gravels (1-2 to 10mm)	0.95	P-1	10	3	3	4				
3	43.68	2.60	0.70		Silty clay	Grey	Soft		1.15	P-2	7	4	2	1				
4									2.15	P-3	3	0	2	1				
5									2.45									
6									3.00									
7									3.80	SD-1								
8	40.48	5.80	3.20		Silty clay	Light bluish grey	Soft	Mottled yellowish brown, with very fine grained sand										
9									6.15									
10	36.48	9.80	4.00		Gravelly clay	Brown to yellowish brown	Medium stiff	Gravel is sub-angular (1-2-10mm). Most of the gravels are lateritic nodules	6.45	P-4	5	2	2	2				
11	35.98	10.30	0.50		Silty sand	Light greyish white	Very dense	With pieces of soft limestone fragments	7.00	SD-2								
12	35.48	10.80	0.50		Limestone	Light greyish white		Weathered & fractured	8.15	P-5	4	1	1	2				
13	34.68	11.60	0.80		Silty clay	Light brownish grey	Dense	With pieces of limestone fragments	8.45									
14	33.83	12.45	0.73		Weathered limestone	White	Hard		9.15	P-6	7	2	2	3				
15					Silty sand	Light brownish grey	Very dense	With pieces of limestone fragments	9.45									
16					Limestone	Fresh white	Hard	Fractured, the deeper the fresh	10.15									
17									10.45	P-7	5	2	5					
18									11.15									
19									11.45	P-8	50	11	12	2				
20									12.15									
21									12.45	P-9	50	10	40	-				
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# FIG. DRILLING LOG

Name of Project Setapak Type of Drilling Rotary Drilling  
 Hole Number No. PBH-4 Elevation RL + 47.41 m Date 3.12.80 to 6.12.80  
 Water Table GL-0.75 m Driller Geotechnique ( )

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.	SPN Value	Blows Per Each 10cm	(N-Value)				
												10	20	30	40	50	
	47.41	0.00															
1	45.91	1.50	1.50		Silty clay	Light greyish brown	Very soft	With mica fragments	0.65	P-1	1	0	1	0			
2					Sand and gravel	Brown	Very loose	Sand is medium to coarse. Gravel is round (φ=2-20cm)	1.85	UO-1							
3	44.06	3.35	1.85		Clayey silt	brownish grey	Very soft	With fine grained sand	2.15	P-2	1	1					
4	43.41	4.00	0.65		Silty clay	Greyish brown	Very soft		3.00	UO-2							
5	42.61	4.80	0.80		Sandy silt	Grey	Very soft	Sand is medium grained with some clay	3.85	P-3	1	1					
6	41.41	6.00	1.20		Sandy clay	Grey	Medium stiff	Sand is fine grained with brown colour stain	4.15	UO-3							
7	40.81	6.60	0.60		Silty clay	Brownish grey	Medium stiff	With some soft gravels (φ=2 to 20cm)	6.15	P-4	6	2	1	3			
8	39.41	8.00	1.40		Sandy clay	Brownish grey	Medium stiff	With brown colour stain	6.45	UO-4							
9	38.91	8.50	0.50		Silty clay	Light greyish yellow	Medium stiff	With some reddish brown patches and some lateritic nodules and fine grained sand	7.15	P-5	7	2	2	3			
10					Silty clay	Yellowish brown	Stiff	With a few lateritic nodules some limestone fragments and sand	7.45	UO-5							
11					Silty clay	Yellowish brown	Very stiff	With some white patches of weathered limestone	8.00	P-6	8	2	2	4			
12					Limestone	Brownish white	Hard	Fractured	8.50	UO-6							
13	33.61	13.80	5.30		Silty clay	Yellowish brown	Stiff		9.15	P-7	8	2	2	4			
14					Silty clay	Yellowish brown	Very stiff		9.45	UO-7							
15	31.41	16.00	2.20		Silty clay	Yellowish brown	Stiff		10.15	P-8	9	2	3	4			
16	30.41	17.00	1.00		Silty clay	Yellowish brown	Very stiff		10.45	P-9	8	2	2	4			
17	29.91	17.50	0.50		Silty clay	Yellowish brown	Very stiff		11.15	P-10	8	2	2	4			
18					Silty clay	Yellowish brown	Very stiff		11.45	P-11	10	3	3	4			
19					Silty clay	Yellowish brown	Very stiff		12.15	P-12	7	2	2	3			
20					Silty clay	Yellowish brown	Very stiff		12.45	P-13	17	3	4	10			
21					Silty clay	Yellowish brown	Very stiff		13.15								
22					Silty clay	Yellowish brown	Very stiff		13.45								
23					Silty clay	Yellowish brown	Very stiff		14.15								
24					Silty clay	Yellowish brown	Very stiff		14.45								
25					Silty clay	Yellowish brown	Very stiff		15.15								
26					Silty clay	Yellowish brown	Very stiff		15.45								
27					Silty clay	Yellowish brown	Very stiff		16.15								
28					Silty clay	Yellowish brown	Very stiff		16.45								

**E.5 Results of Field Ground Investigation**

**- Castlefield -**

	<u>Page</u>
1. Details of Field Ground Investigation ...	E-144
2. Swedish Sounding .....	E-145
3. Rotary Boring .....	E-155

Details of Field Ground Investigation Performed  
- Castlefield -

Site	Sounding No.	Ground Level <sup>#1</sup> (TBM ± m)	Sounding Depth (m)	Groundwater <sup>#2</sup> Table (GL ± m)	Remarks
North site	CNSW-1	+0.94	7.00	-3.10 ~ -3.20	
	CNSW-2	+0.05	18.15	-1.85 ~ -1.87	1 m away from CNBH-1
	CNSW-3	-0.39	11.29	-1.84 ~ -1.85	
	CNSW-4	-0.82	18.07	-1.28 ~ -1.30	1 m away from CNBH-2
	CNSW-5	-1.08	18.03	-0.88 ~ -1.05	
	CNSW-6	-2.85	15.55	-0.18 ~ -0.24	1 m away from CNBH-3
	CNSW-7	-3.04	11.27	-0.05 ~ -0.26	
	CNSW-8	-3.84	12.10	-0.05 ~ -0.07	
	CNSW-9	-3.88	12.15	-0.06 ~ -0.23	
	CNSW-10	-3.93	13.40	-0.05 ~ -0.16	
	CNSW-11	-3.93	12.65	+0.05	
	CNSW-12	-3.95	13.78	+0.05	
	Sub-Total	12 locations	163.44 m	—	
South site	CSSW-1	-0.10	8.85	-0.4	
	CSSW-2	-0.36	9.50	+0.10 ~ +0.28	
	CSSW-3	-0.49	10.60	+0.07 ~ +0.20	
	CSSW-4	-0.42	12.15	+0.04 ~ +0.05	
	CSSW-5	-0.28	9.34	+0.06 ~ -0.28	
	CSSW-6	-0.25	6.85	+0.06 ~ -0.58	
	CSSW-7	+0.51	7.65	-0.14 ~ -0.70	
		Sub-Total	7 locations	64.94 m	—
	<b>Total</b>	<b>19 locations</b>	<b>228.38 m</b>	—	
	<b>Grand Total<sup>#3</sup></b>	<b>46 locations</b>	<b>567.34 m</b>	—	

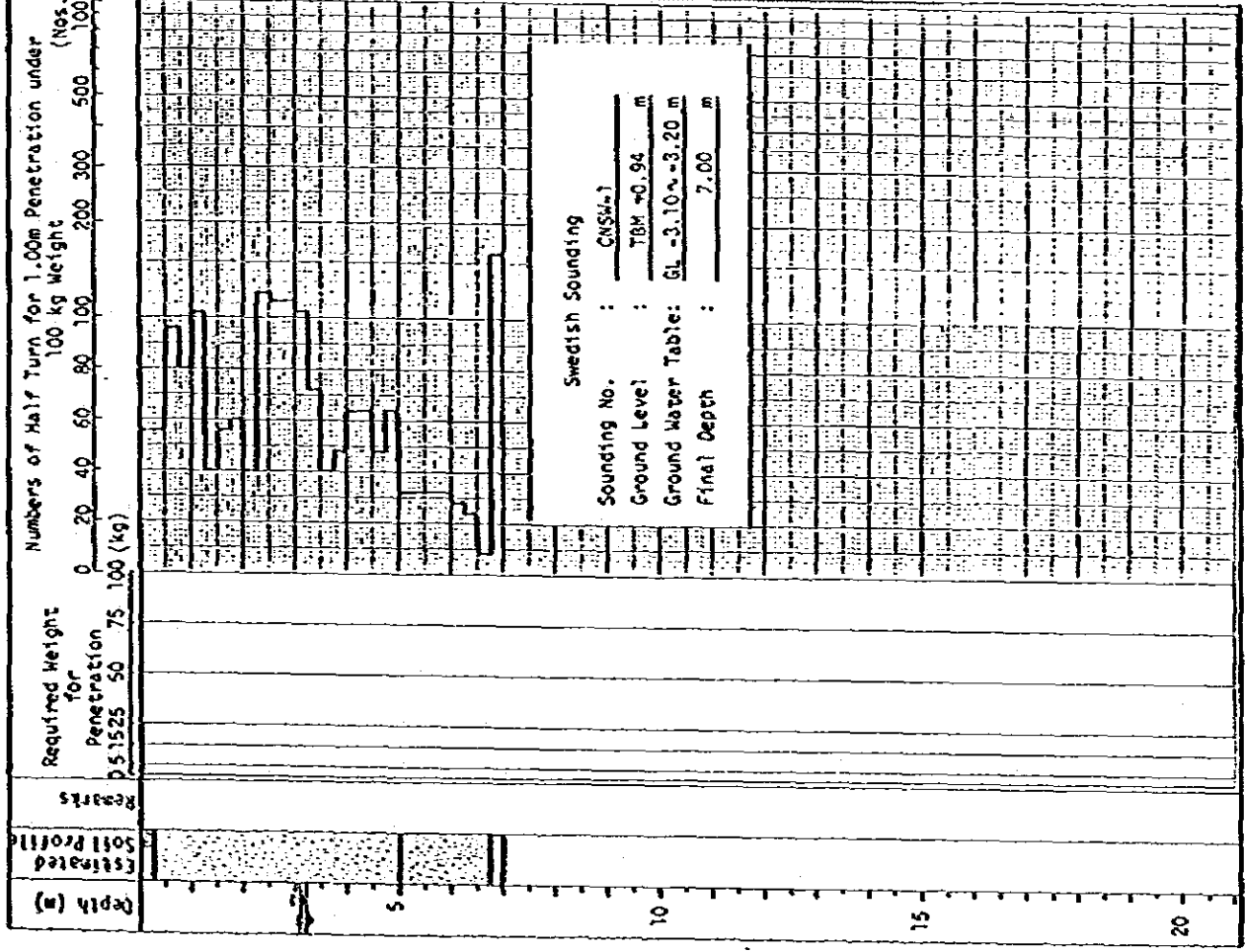
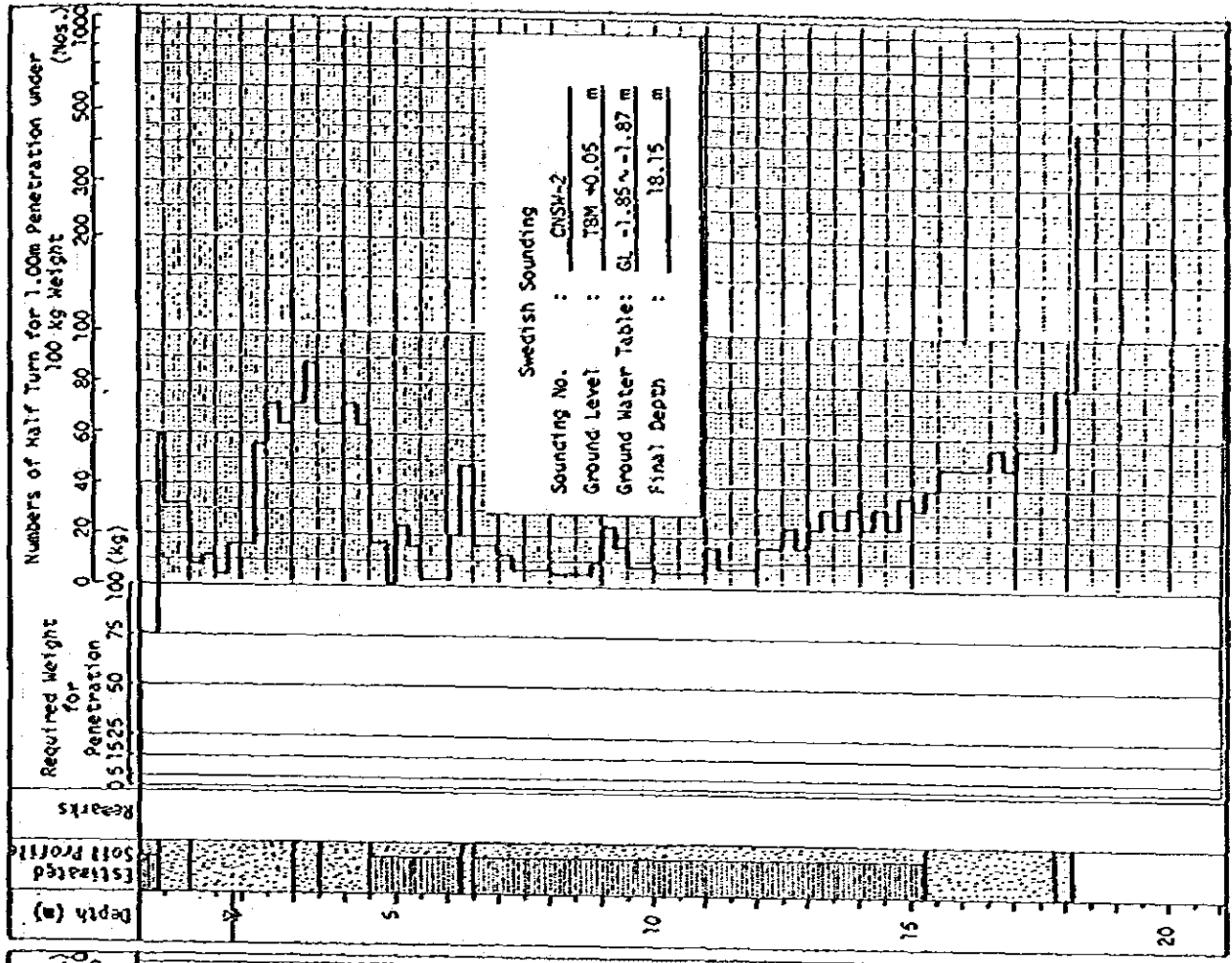
Rotary Boring	Boring No.	Boring Length (m)			Undisturbed Sampling (Nos.)	Standard Penetration Test (Nos.)
		Soil Boring	Rock Boring	Total		
	CNBH-1	21.26	0.50	21.76	6	11
	CNBH-2	12.25	1.00	13.25	2	10
	CNBH-3	22.35	1.00	23.35	3	19
	<b>Total</b>	<b>55.86</b>	<b>2.50</b>	<b>58.36</b>	<b>11</b>	<b>40</b>

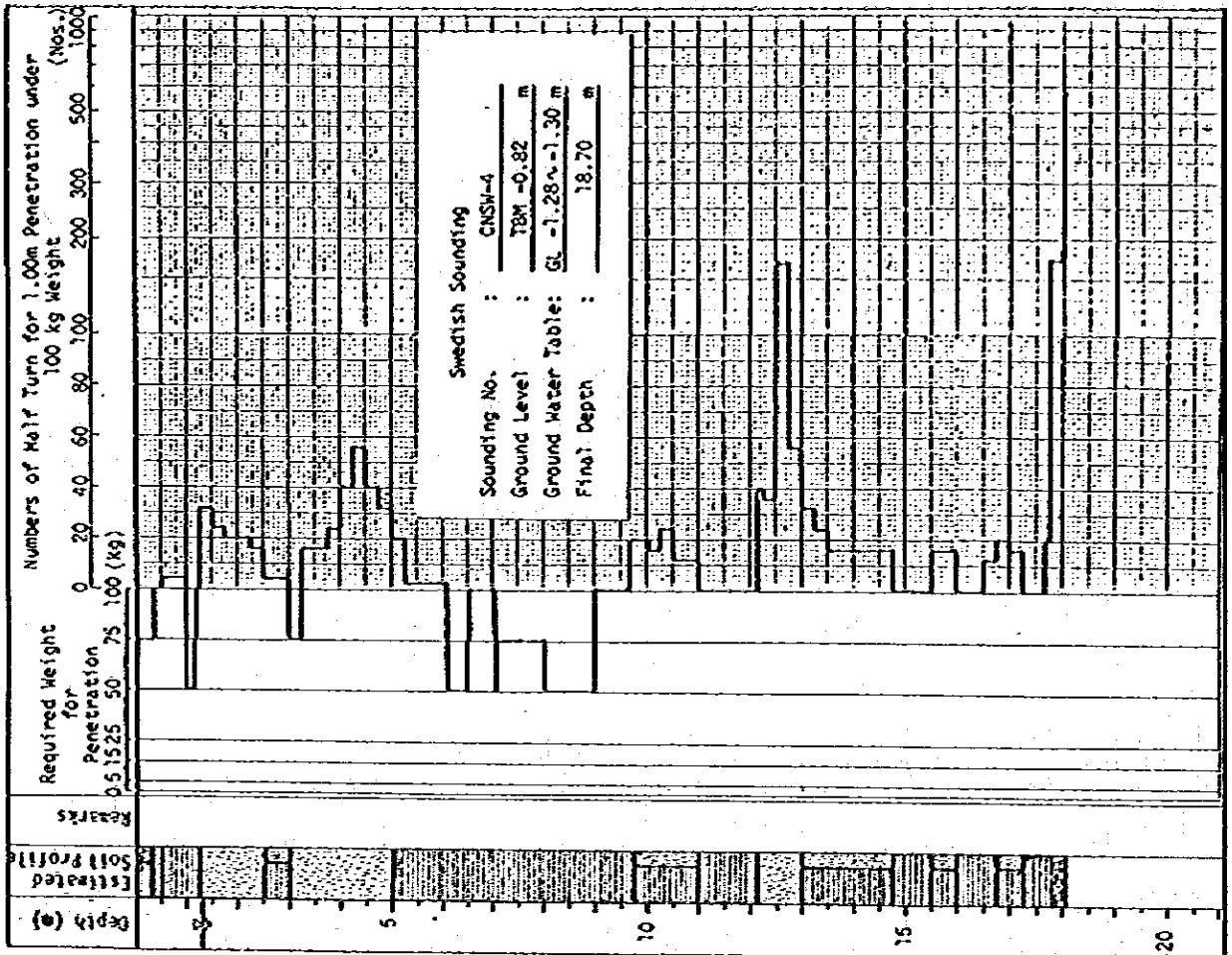
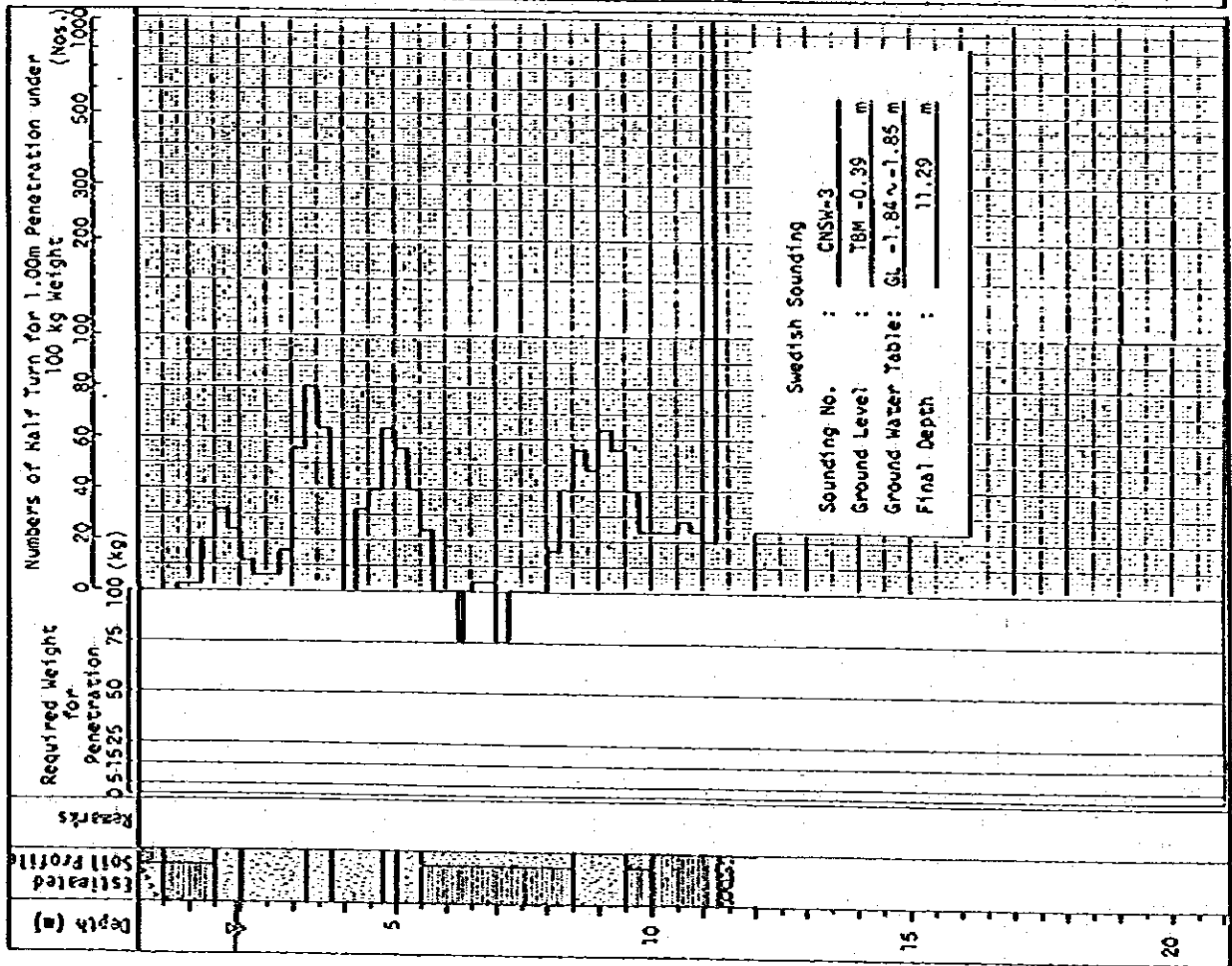
<sup>#1</sup> Reference of the ground level is a temporary bench mark prepared on a bridge of KL-Selenban Highway across the Sungai Besi near the site.

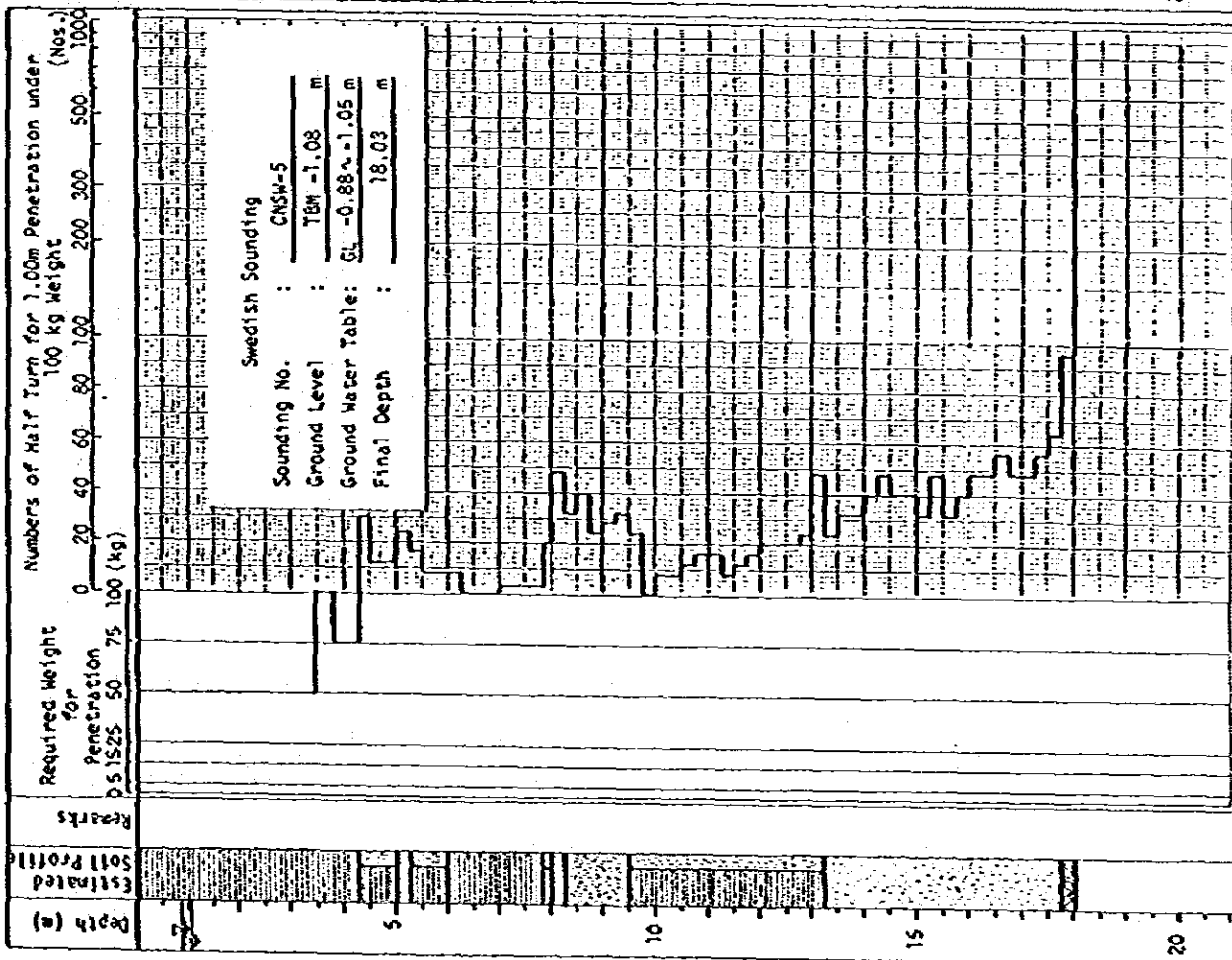
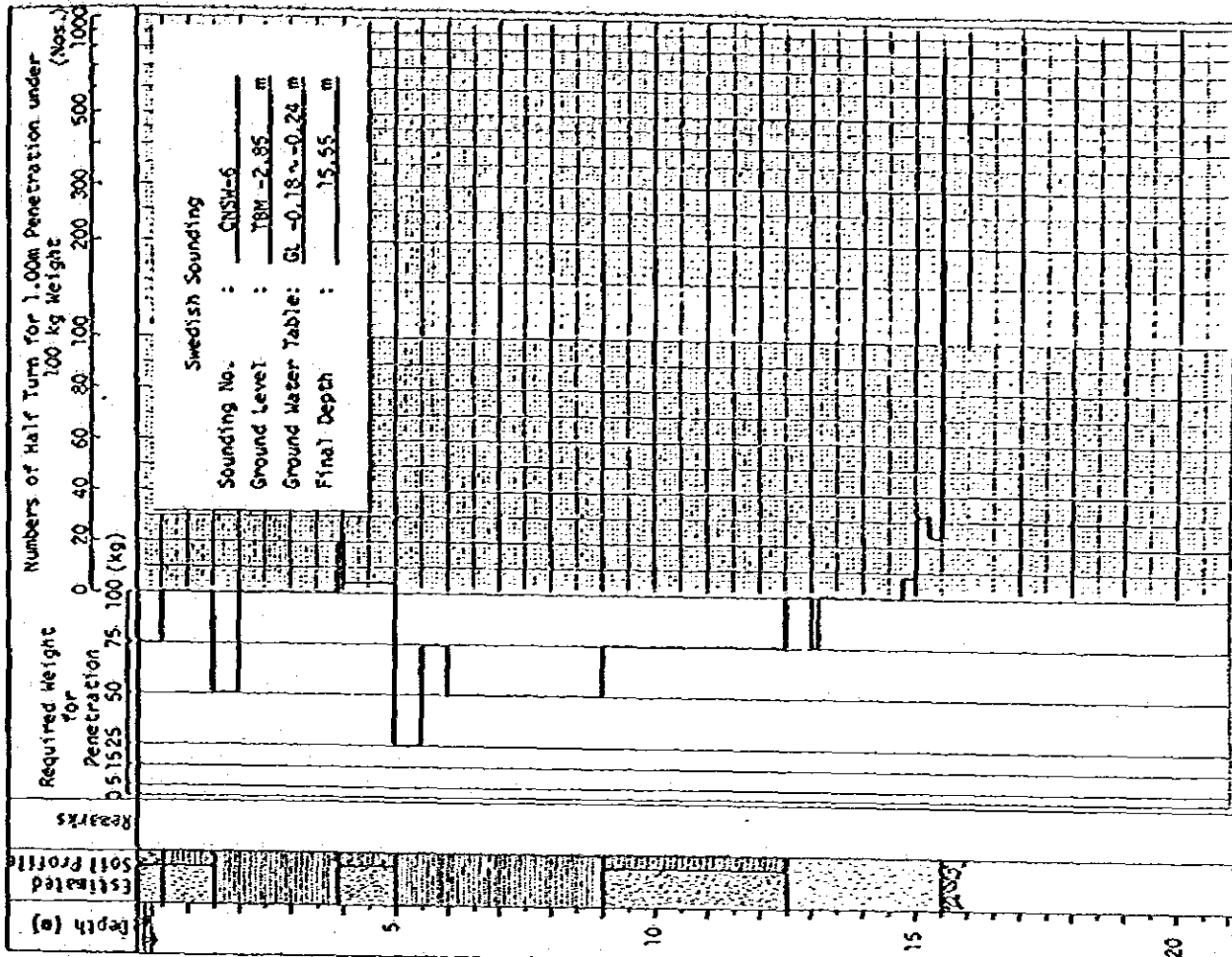
<sup>#2</sup> Groundwater Tables were observed on 17th to 19th Jan. 1981.

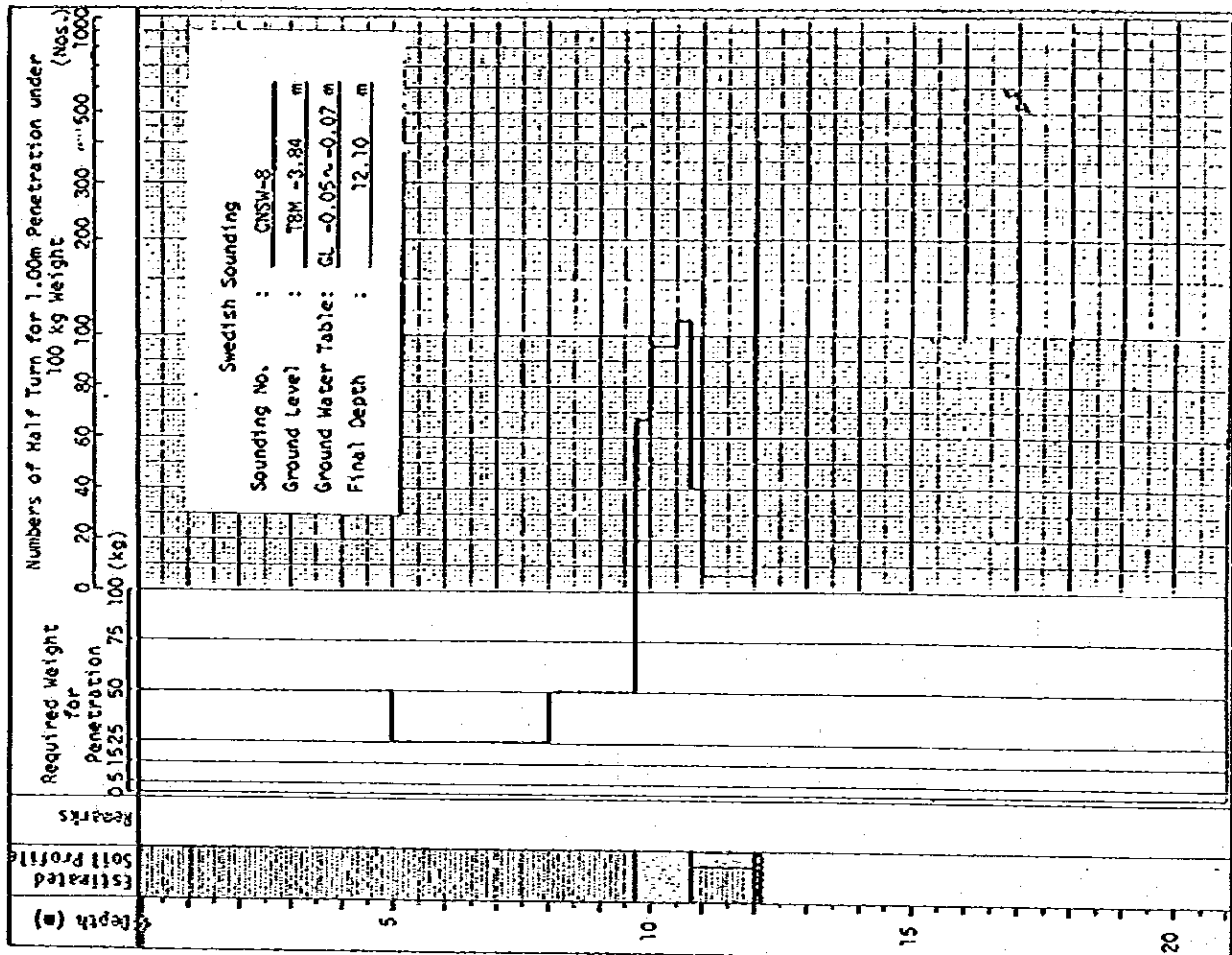
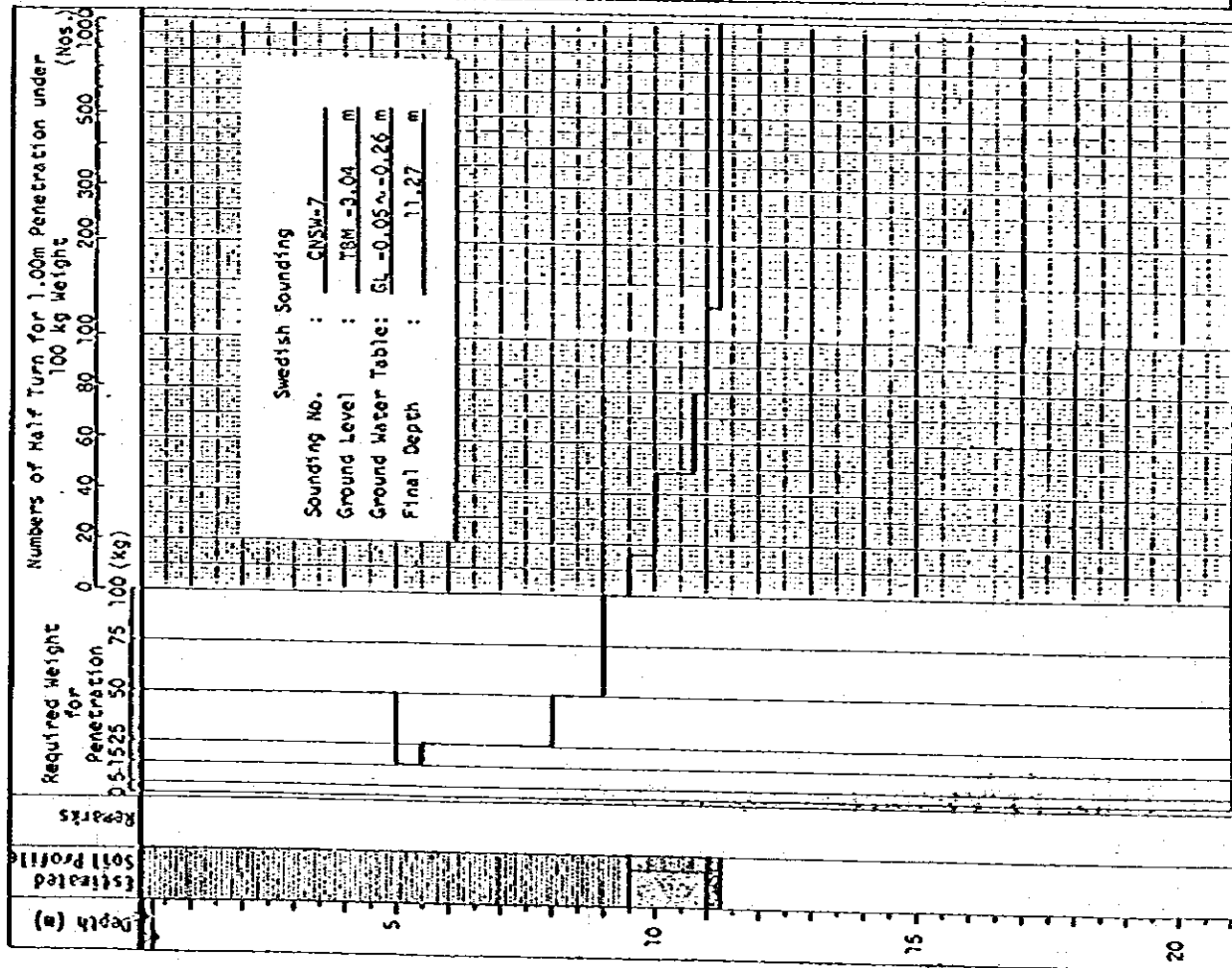
<sup>#3</sup> Total of Tables 5-2a and 5-2b.

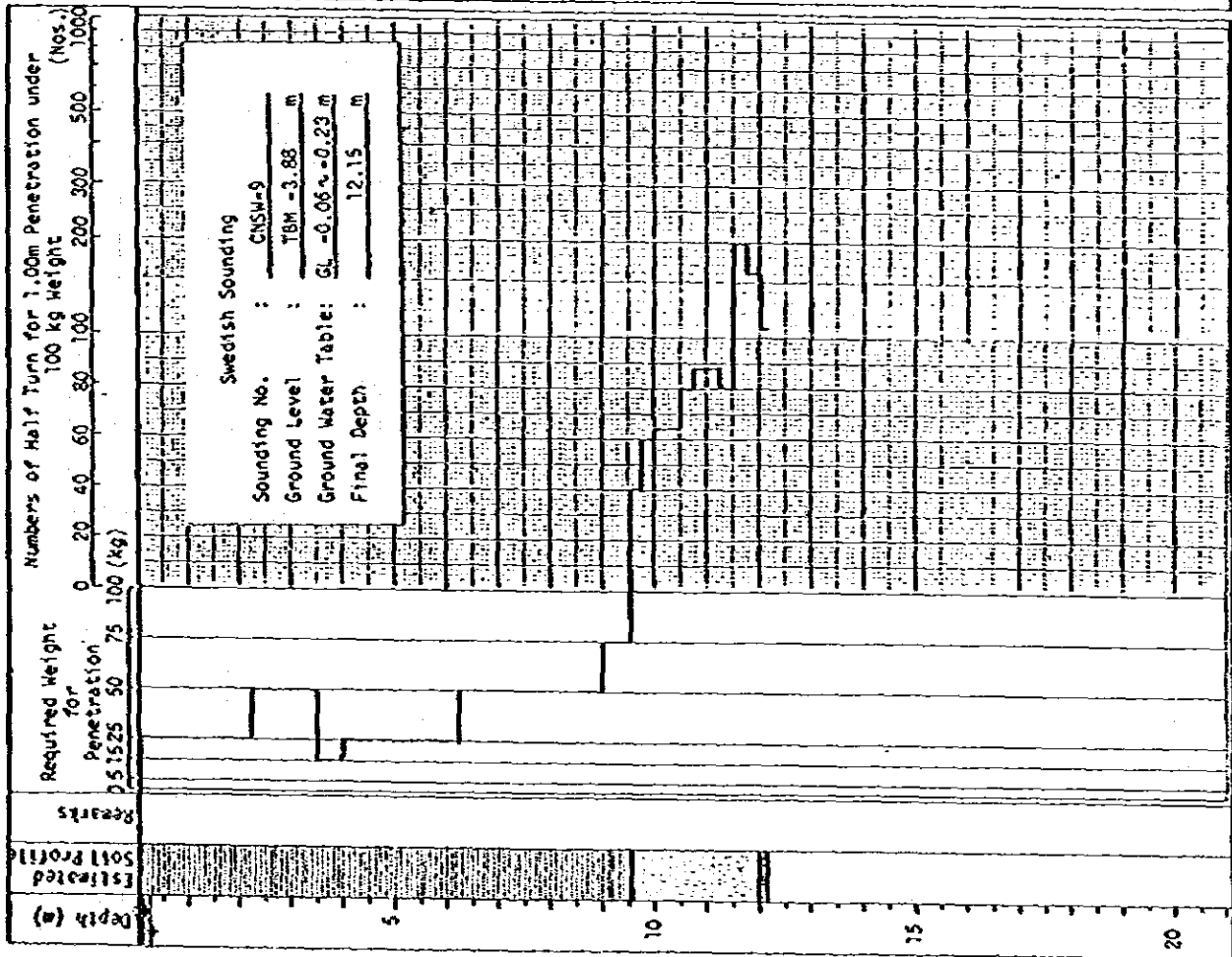
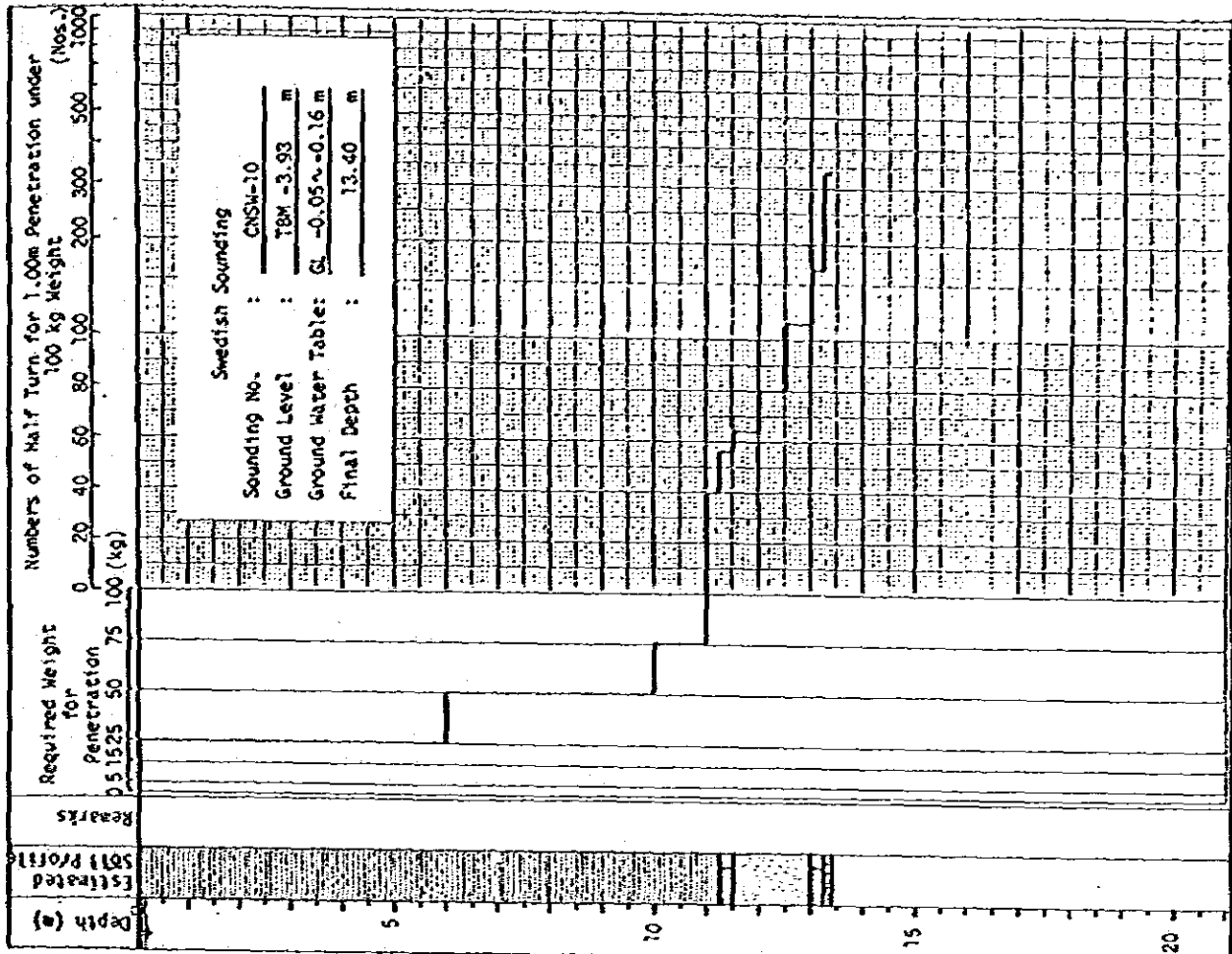


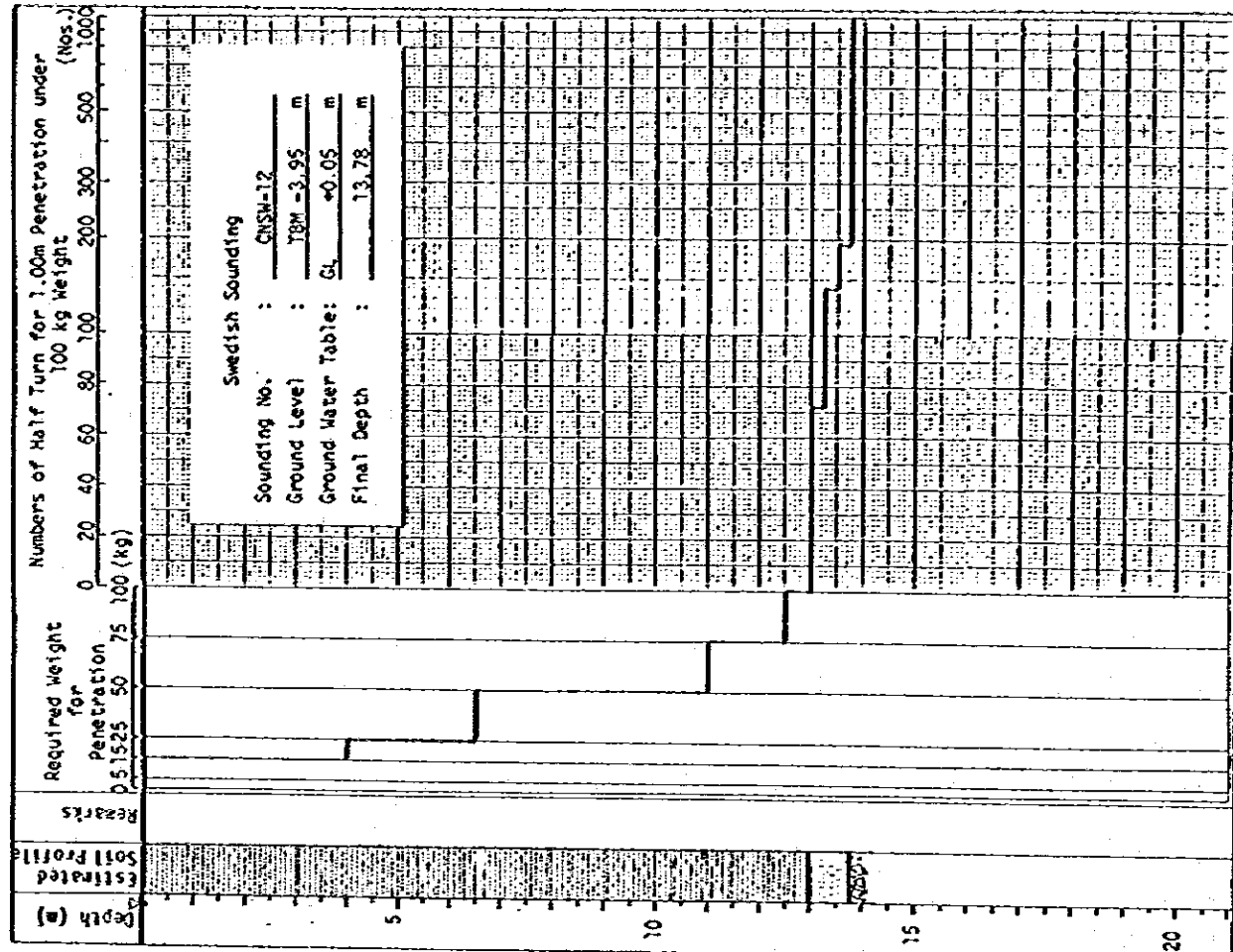
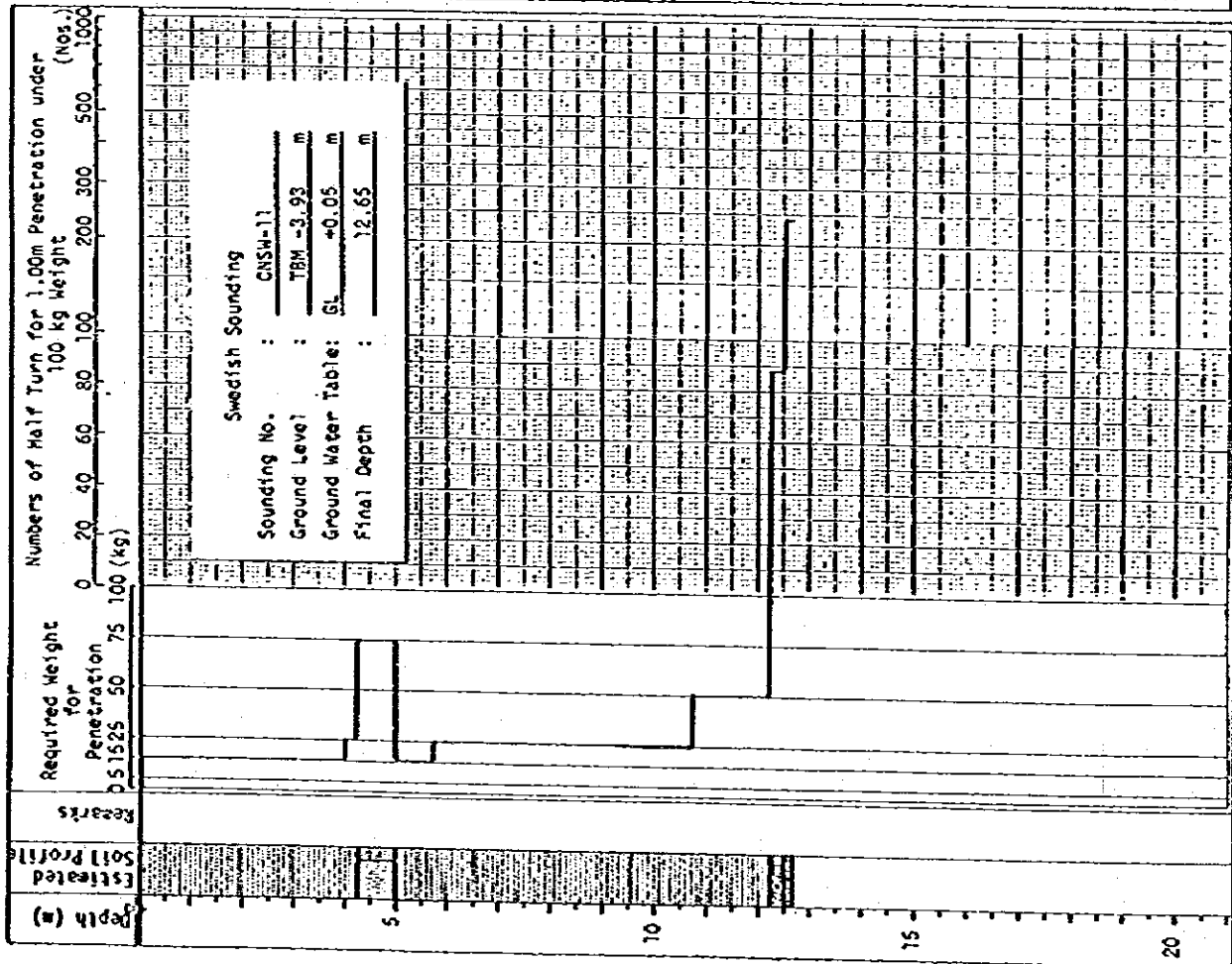


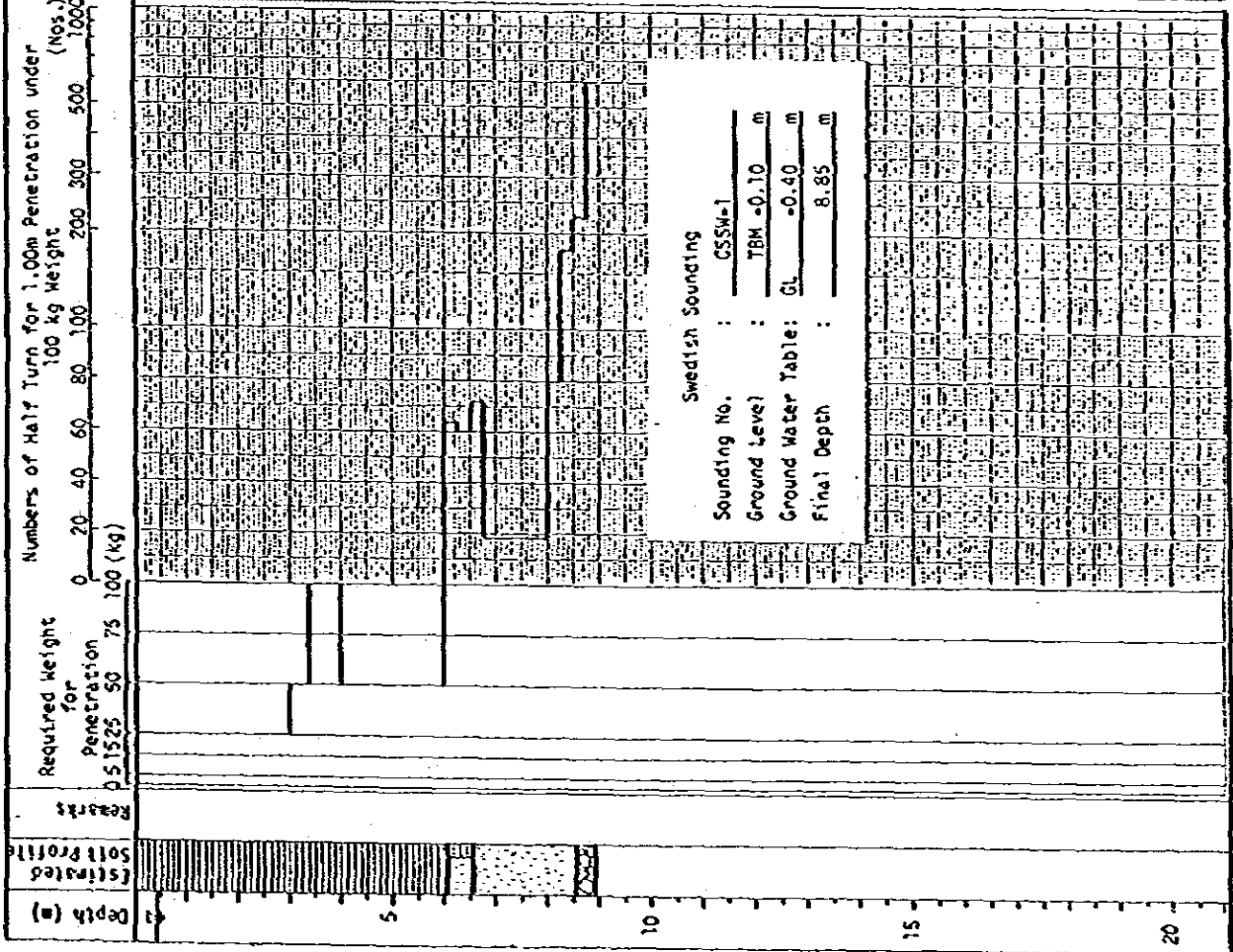
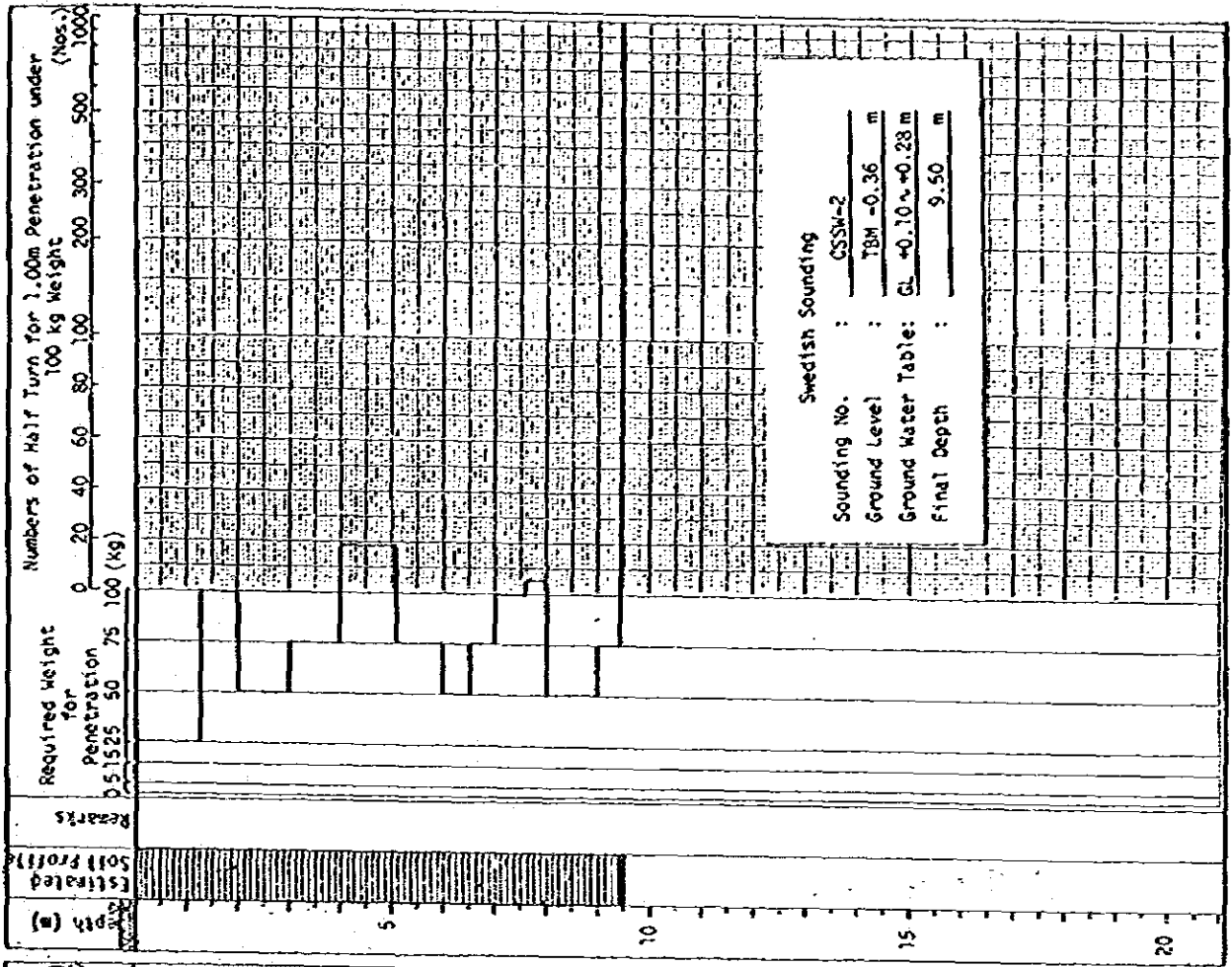




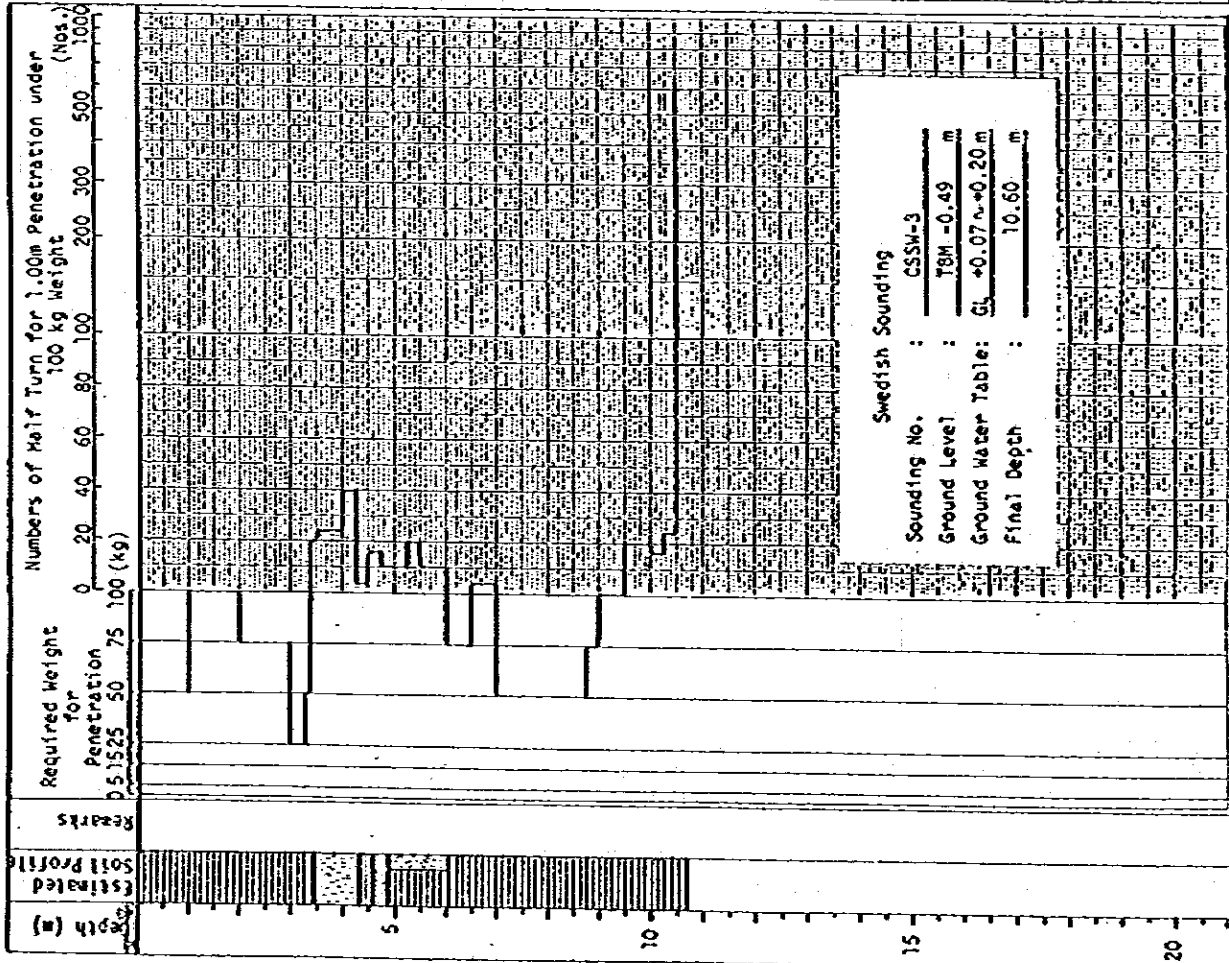
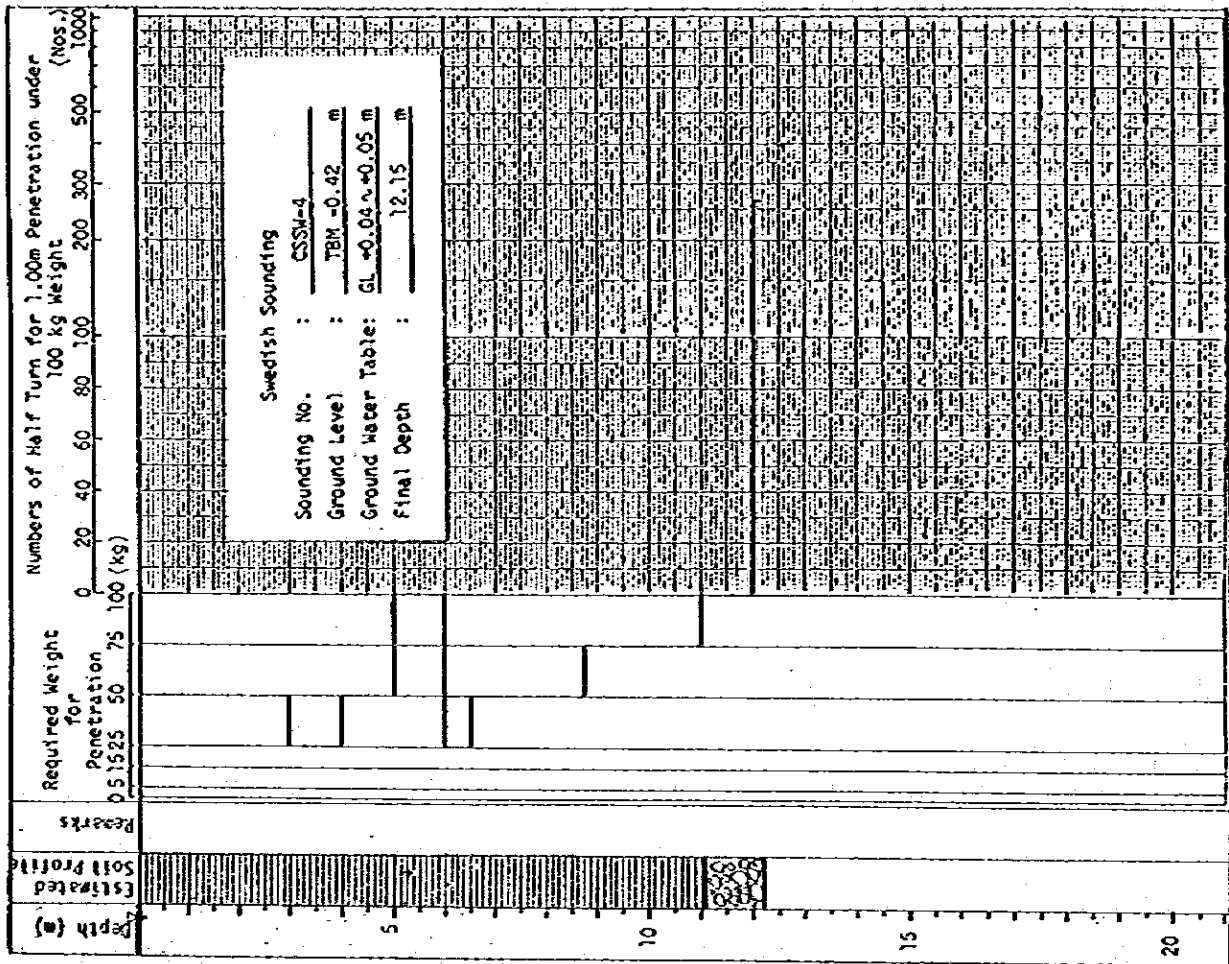




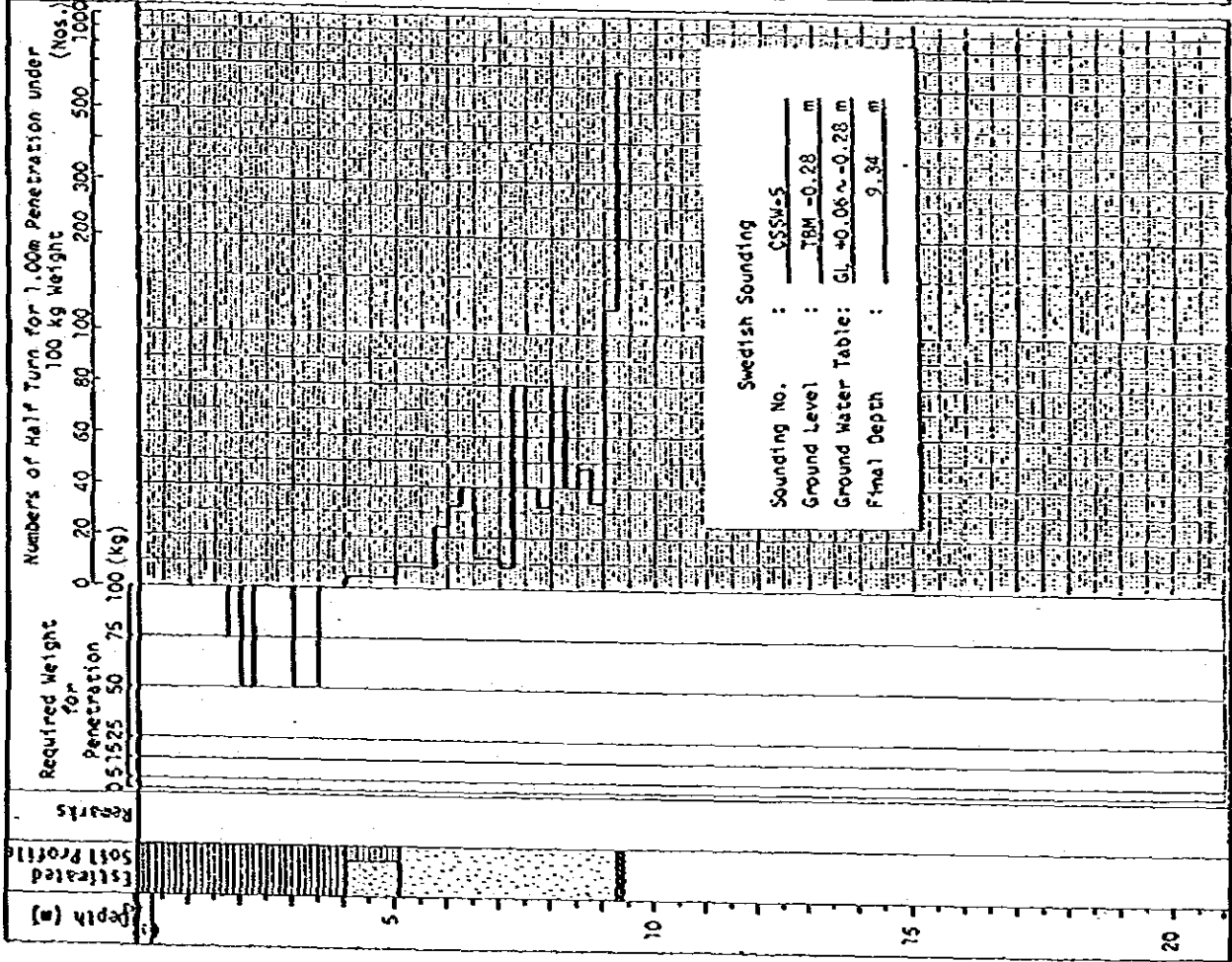
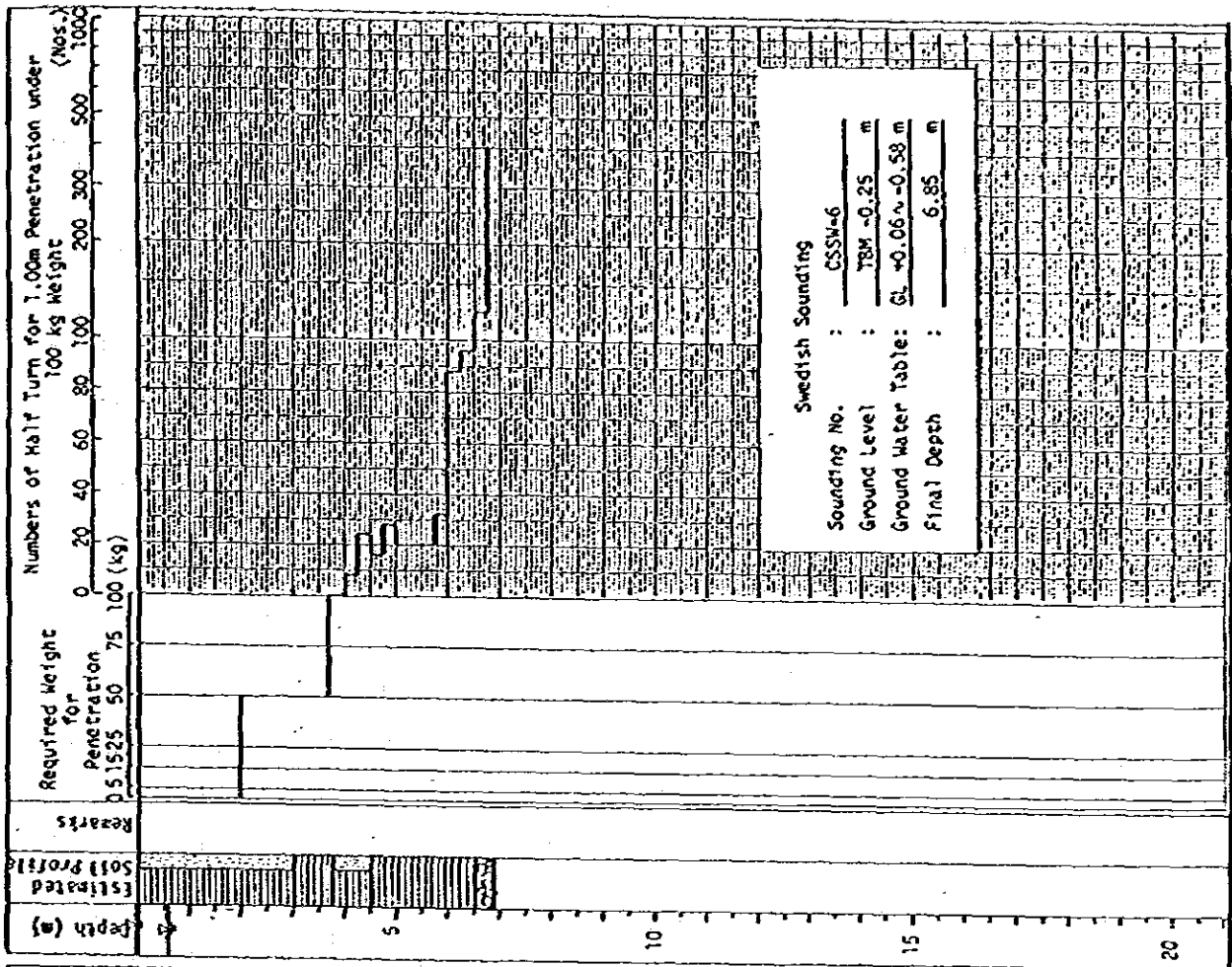


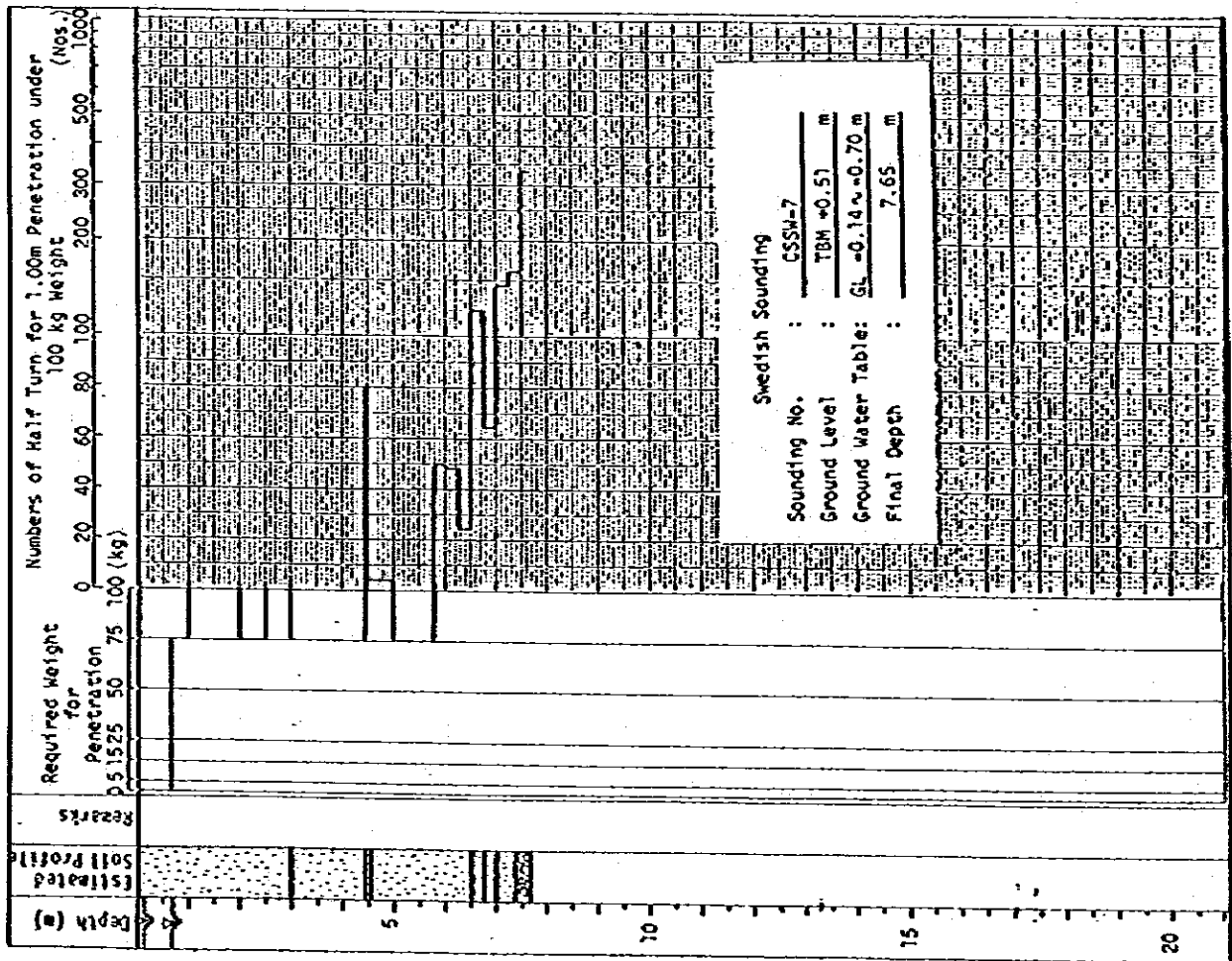












# FIG. DRILLING LOG

Name of Project Castlefield North Type of Drilling Rotary  
 Hole Number No. CH BH-1 Elevation RL +30.52 m Date 15.12.80 to 20.12.80  
 Water Table GL -1.85 m Order Geotechnique ( )

Remarks  
 Reference of the elevation is a temporary bench mark on a bridge of KL - Seranban highway near the site which crosses the Sungai Besti. Elevation of TBM was supposed to be 100 feet.

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)								
1	30.52	0.00	0.45		Clayey Silt	Greyish brown		With traces of sand and mica fragments												
2	28.62	1.90	1.45		Silty Sand	Greyish brown	Very loose	Well graded, with mica fragments	1.15	P-1	4	1	1	2						
3									2.15	P-2	6	1	2	3						
4									3.15	P-3	9	2	3	4						
5	25.82	4.70	2.80		Sand	Greyish brown	Loose	Coarse grained with mica fragments	4.15	P-4	9	3	3	3						
6									4.45											
7	24.67	5.85	1.15		Silty Sand	Yellowish brown	Very loose	Medium grained with mica fragments	5.15	P-5	2	1	1	1						
8									5.45											
9	23.52	7.00	1.15		Clayey Silt	Light brown with grey patches	Soft	With much fine grained sand between 6.20m and 6.55m deep	6.00	UD-1										
10									6.80	UD-2										
11	21.72	8.80	1.80		Clayey Silt	Dark grey	Soft	With some decomposed vegetation	7.50	UD-3										
12									8.30											
13	20.62	9.90	1.10		Silt	Brown	Soft	With many pockets of fine sand	9.00	UD-4										
14									9.80	UD-5										
15	19.22	11.30	1.40		Silty Clay	Dark grey	Very soft	With stripes of light grey colour dirty	10.15	P-6	1	1								
16									10.45											
17									11.50	UD-6										
18	16.32	14.20	2.90		Clayey Silt	Dark grey	Soft	With some seams of fine grained sand, mottled dark brown	12.30											
19									13.00	UD-7										
20									13.80											
21									14.65	P-7	3		1	2						
22									14.95											
23	13.32	17.20	3.00		Silty Clay	Greyish light brown	Soft	Homogeneous	15.00	UD-8										
24									16.80											
25									17.65	P-8	31	9	10	12						
26									17.95											
27									18.65	P-9	21	6	7	8						
28									18.95											
29									19.65	P-10	34	10	10	14						
30	9.26	21.26	4.06		Limestone	Light brown	Soft	Weathered, fractured	19.95											
31	8.76	21.76	0.50		Limestone	Reddish brown	Medium-hard	Fractured	20.65	P-11	37	10	8	19						
32									20.95											
33																				
34																				
35																				
36																				
37																				
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# FIG. DRILLING LOG

Name of Project Castlefield North Type of Drilling Rotary  
 Hole Number No. CABH-2 Elevation RL +29.66 m Date 24.12.80 to 27.12.80  
 Water Table Cl. -1.30 m Order Geotechnique ( )

**Remarks**  
 Reference of the elevation is a temporary bench mark on a bridge of KL - Seremban Highway near the site which crosses the Sungai Besti. Elevation of TBM was supposed to be 100-feet.

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 <sub>60</sub> Value	Blows Per Each 10cm	(N-Value)						
	29.66	0.00																	
1	28.76	0.90	0.90		Silty Clay	Yellowish brown	Medium stiff	With plant roots in the top part											
	27.96	1.70	0.80		Silty Sand	Light brown	Loose	With some mica fragments	1.15	P-1	6	2	2	2					
3								Coarse grained, with some gravels and mica fragments	2.15	P-2	4	1	1	2					
1	25.56	4.10	2.40		Sand	Light brown	Very loose		3.15	P-3	3	1	1	1					
5	24.86	4.80	0.70		Silty Sand	Dark grey	Loose	Fine to coarse grained, with mica fragments	4.15	P-4	8	2	3	3					
5	23.96	5.70	0.90		Sand	Light grey	Very loose	Fine to medium grained, with mica fragments	5.15	P-5	1	-	1	-					
6	22.76	6.90	1.20		Sandy Silt	Yellowish brown	Soft	With many mica fragments	6.00	UD-1									
3	21.46	8.20	1.30		Silty Clay	Light brown	Very soft	With some mica fragments	7.15	P-6	2	1	1	-					
3									8.15	P-7	1	1	-	-					
10	19.76	9.90	1.70		Silty Clay	Greyish brown	Very soft	With some yellowish brown patches	9.00	UD-2									
11	18.86	10.80	0.90		Silty Clay	Greyish brown	Stiff	With some mica fragments	10.15	P-8	12	4	4	4					
12	17.66	12.00	1.20		Silty Clay	Yellowish brown	Very soft	With traces of sand, mottled grey	11.15	P-9	2	-	1	1					
13	17.41	12.25	0.25						12.15	P-10	50	50	-	-					
11	16.41	13.25	1.00		Silty Clay	Greyish brown		With some coarse sand											
11					Limestone	Greyish white	White	Top half fractured											
15								End of Drilling											
16																			
17																			
18																			
19																			
20																			
21																			
22																			
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29																			
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資料F

室内試験結果

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# 資 料 F

## 室 内 試 験 結 果

		ページ
F. 1	カンボンパンダン .....	F - 1
F. 2	センツル .....	F - 5
F. 3	セタバク .....	F - 119
F. 4	キャッスルフィールド .....	F - 143



**F.1 Results of Laboratory Tests on Samples from Kampong Pandan**

	<u>Page</u>
1. Summary of Soil Test .....	P-3



Summary of Soil Test (Kampong Pandan)

Boring No.	PB-1										PB-2					
	P-1	P-4	P-7	P-9	P-11	P-13	P-15	P-17	P-19	P-20	P1/D2	P2/D3	P3/D4	P4/D5	P5/D6	
Sample No.*	1.15m 1.45m	4.15m 4.45m	7.15m 7.45m	9.15m 9.45m	11.15m 11.45m	13.15m 13.45m	15.15m 15.45m	17.15m 17.45m	19.15m 19.45m	21.15m 21.45m	1.00m 1.45m	2.00m 2.45m	3.00m 3.45m	4.00m 4.45m	5.00m 5.45m	
Natural water content, %	13.8	12.5	9.3	8.5	33.1	39.7	20.5	42.8	20.7	18.1	23.2	17.3	32.7	23.2	19.9	
Specific gravity	2.648	2.633	2.644	2.651	2.605	2.612	2.726	2.608	2.655	2.722	2.599	2.671	2.575	2.617	2.622	
Liquid limit, %	-	-	-	-	35.0	51.1	34.0	61.3	-	-	61.9	-	59.8	41.8	33.6	
Plastic limit, %	-	-	-	-	21.4	27.0	19.5	33.8	-	-	22.0	-	24.9	18.2	15.4	
Plasticity Index	-	-	-	-	13.6	24.1	14.5	27.5	-	-	39.9	-	34.9	23.6	18.2	
Gravel, %	21	6	22	22	14	0	24	0	5	15	8	18	5	4	8	
Sand, %	76	93	75	74	24	14	39	0	48	48	58	71	35	44	50	
Silt, %	3	1	3	4	37	37	21	47	18	18	7	11	10	15	15	
Clay & colloid, %	-	-	-	-	25	49	16	53	29	9	27	-	50	37	27	
Max. diameter, mm	9.52	9.52	9.52	9.52	9.52	2.00	9.52	0.074	9.52	9.52	9.52	9.52	4.76	4.76	9.52	
Diam. at 60%	1.1	0.60	1.0	1.1	0.062	0.016	0.75	0.072	0.16	0.83	0.50	1.2	0.085	0.17	0.31	
Diam. at 10%	0.18	0.17	0.21	0.24	-	-	-	-	-	0.0077	-	-	-	-	-	
Visual soil description	Gravel Sand	Sand	Gravel Sand	Gravel Sand	Sandy Clay	Silty Clay with Sand	Clayey Sand with Gravel	Silty Clay	Clayey Sand	Silty Sand	Clayey Sand	Sand	Sandy Clay	Sandy Clay	Clayey Sand	
Unified soil classification	SW	SP	SP	SP	CL	CH	SC	MH	-	-	SC	-	CH	CL	SC	

Boring No.	PB-3										PB-5					
	P-1	P-3	P-5	P-7	P-9	P-11	P-12	P-13	P-14	P-1	P-4	P-7	P-10	P-12	P-14	P-15
Sample No.*	1.15m 1.45m	3.15m 3.45m	5.15m 5.45m	7.15m 7.45m	9.15m 9.45m	11.15m 11.45m	12.15m 12.45m	13.15m 13.45m	14.15m 14.45m	16.00m 16.30m	17.15m 17.45m	18.15m 18.45m	19.15m 19.45m	20.15m 20.45m	21.15m 21.45m	22.15m 22.45m
Natural water content, %	17.1	14.7	14.5	16.9	17.7	73.5	38.9	37.7	13.2	8.8	15.9	21.6	19.8	16.4	21.2	9.5
Specific gravity	2.642	2.649	2.639	2.637	2.621	2.499	2.474	2.623	2.712	2.643	2.632	2.637	2.647	2.656	2.651	2.638
Liquid limit, %	-	-	-	-	-	82.2	50.6	48.8	-	-	-	-	-	-	-	-
Plastic limit, %	-	-	-	-	-	42.7	32.3	26.0	-	-	-	-	-	-	-	-
Plasticity Index	-	-	-	-	-	39.5	18.3	22.8	-	-	-	-	-	-	-	-
Gravel, %	18	37	31	11	27	0	16	4	2	7	6	2	2	7	6	46
Sand, %	64	55	86	79	48	0	36	29	58	80	86	96	91	86	88	48
Silt, %	10	8	11	10	14	18	24	38	32	10	8	2	7	7	6	6
Clay & colloid, %	8	-	-	-	11	82	24	29	8	-	-	-	-	-	-	-
Max. diameter, mm	9.52	19.1	4.76	9.52	9.52	0.022	9.52	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	25.4
Diam. at 60%	0.95	2.1	0.35	0.68	1.1	-	0.25	0.044	0.18	0.47	0.49	0.67	0.53	0.46	0.46	5.0
Diam. at 10%	0.0092	0.10	-	0.074	0.0030	-	-	-	0.0075	-	-	-	-	-	-	0.10
Visual soil description	Sand w/Silt	Gravel Sand	Sand	Sand	Gravel with Clay	Silty Sand	Sandy Clay	Silty Clay	Silty Sand	Sand	Sand	Sand	Sand	Sand	Sand	Gravel Sand
Unified soil classification	-	(SW-SM)	(SP-SM)	(SW-SM)	(SW-SM)	MH	MH	CL	-	-	(SP-SM)	SP	(SP-SM)	(SP-SM)	(SP-SM)	(SP-SM)

\* Note: All samples are disturbed.



## F.2 Results of Laboratory Tests on Samples from Sentul

	<u>Page</u>
1. Summary of Soil Test .....	F-7
2. Unconsolidated-Undrained Triaxial Compression Test (Mohr's Circle) .....	F-15
3. Consolidated-Undrained Triaxial Compression Test (Mohr's Circle) .....	F-42
4. Consolidation Test (e-log p curves) .....	F-49
5. Consolidation Test ( $c_v$ , $m_v$ , $k$ v.s. log p) .....	F-82
6. Chemical Stabilization Test on Soft Clay Sample .....	F-115
7. Unconfined Compression Test on a Rock Core Sample .....	F-117



Summary of Soil Test 1. (Sentul)

Boring No.	Sub-section A*																		
	Rotary										Percussion								
	S-1	S-2	S-3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type of Boring																			
Sample No.																			
Sample depth	0.10 0.90	1.00 1.80	2.00 2.73	2.00 2.45	3.00 3.45	4.00 4.45	5.00 5.45	7.00 7.45	8.00 8.45	9.00 9.45	10.00 10.45	11.00 11.45	12.00 12.45	13.00 13.45	14.00 14.45	15.00 15.45	16.00 16.45	17.00 17.45	18.00 18.45
Condition of sample																			
Natural water content, %	83.9	86.6	78.8	78.6	66.5	13.2	13.6	13.5	22.6	6.2	1.5	13.2	27.3	32.0	41.0	14.5	19.8	18.4	18.4
Specific gravity	2.605	2.591	2.604	2.571	2.573	2.622	2.638	2.629	2.635	2.648	2.636	2.639	2.642	2.616	2.614	2.517	2.626	2.691	2.765
Wet density, g/cm <sup>3</sup>	1.51	1.50	1.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dry density, g/cm <sup>3</sup>	0.821	0.802	0.856	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Natural void ratio	2.17	2.23	2.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Degree of saturation, %	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquid limit, %	78.1	80.9	77.5	72.1	79.9	-	-	-	-	-	-	-	31.1	38.0	50.4	49.0	-	38.4	-
Plastic limit, %	35.8	36.8	36.2	29.4	29.9	-	-	-	-	-	-	-	18.4	19.8	18.5	26.9	-	25.5	-
Plasticity Index	42.3	44.1	41.3	42.7	50.0	-	-	-	-	-	-	-	12.7	18.2	11.9	22.1	-	12.9	-
Gravel, %	0	0	0	0	0	30	33	57	4	82	90	35	12	4	0	0	20	16	16
Sand, %	0	0	0	0	0	62	64	42	93	15	7	44	28	12	39	11	59	24	42
Silt, %	24	24	25	21	30	8	3	1	3	3	3	11	35	37	32	40	11	34	29
Clay & colloid, %	76	76	75	79	70	-	-	-	-	-	-	10	25	47	29	49	10	26	13
Max. diameter, mm	0.074	0.074	0.074	0.048	0.048	19.1	19.1	19.1	4.75	25.4	19.1	19.1	9.52	4.76	0.84	0.84	9.52	19.1	9.52
Clam. at 60%	0.0022	0.0022	0.0020	-	-	1.2	1.7	4.2	0.40	9.5	6.1	1.4	0.075	0.011	0.075	0.012	0.60	0.085	0.15
Clam. at 10%	-	-	-	-	-	0.087	0.22	0.44	0.14	0.65	2.0	0.0040	-	-	-	-	0.0051	-	0.0016
Visual soil description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Gravel Sand	Gravel Sand	Sandy Gravel	Sand	Gravel	Gravel	Gravel	Silty Clay w/Gravel	Silty Clay w/Gravel	Silty Clay w/Gravel	Silty Clay	Gravel Sand w/Silt	Silty Clay w/Gravel	Silty Clay
Unified soil classification	MH	MH	MH	CH	CH	(SM-SM)	SW	SW	SP	GW	GP	GP	CL	CL	CL	CL	ML	-	-
Undisturbed sample, kN/m <sup>2</sup>	0.055	0.050	0.115	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Remoulded sample, kN/m <sup>2</sup>	0.066	-	0.138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sensitivity ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strain at failure, %	10.0	11.0	3.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Angle of internal friction	0°	0°	9°	0°	9°	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cohesion, kg/cm <sup>2</sup>	0.04	0.04	0.070	0.09	0.09	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Condition of drainage	U-U	U-U	C-U	C-U	C-U	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preconsolidation pressure, kg/cm <sup>2</sup>	-	0.20	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compression Index	0.58	0.64	0.59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Summary of Soil Test 2. (Sentul)

Boring No.	Sub-Section B											
	Rotary											
Type of Boring	S-1	S-2	S-3	S-4	S-5 Top	S-5 Bottom	S-6	S-7	S-8	S-9 Top	S-9 Bottom	
Sample No. #	1.00~ 1.80m	2.00~ 2.80m	3.00~ 3.80m	5.00~ 5.80m	6.00~ 6.80m	7.50~ 8.10m	8.50~ 9.10m	9.50~ 10.30m	10.50~ 11.00m	11.00~ 11.73m		
Natural water content, %	99.2	97.4	90.0	78.1	70.3	63.1	64.6	57.4	49.4	57.1	55.7	
Specific gravity	2.606	2.583	2.606	2.618	2.612	2.629	2.637	2.638	2.626	2.603	2.526	
Wet density, g/cm <sup>3</sup>	1.45	1.45	1.49	1.53	1.57	1.61	1.60	1.64	1.71	1.66	1.63	
Dry density, g/cm <sup>3</sup>	0.728	0.735	0.784	0.859	0.922	0.987	0.972	1.04	1.15	1.06	1.05	
Natural void ratio	2.58	2.52	2.32	2.05	1.83	1.66	1.71	1.53	1.29	1.46	1.41	
Degree of saturation, %	100	100	100	100	100	100	99	99	100	100	100	
Atterberg limits	76.2	83.6	87.4	62.0	67.8	59.2	67.0	56.9	56.5	68.1	53.0	
Plastic limit, %	33.8	34.9	34.1	27.1	29.9	26.3	26.1	25.1	25.3	26.3	23.3	
Plasticity index	42.4	48.7	53.3	34.9	37.9	32.9	40.9	31.8	31.2	41.8	29.7	
Gravel, %	0	0	0	0	0	0	0	0	0	0	0	
Sand, %	0	0	0	7	1	2	4	1	1	1	27	
Silt, %	23	19	18	32	29	28	32	36	35	23	33	
Clay & colloid, %	77	81	82	61	70	70	64	63	64	76	40	
Max. diameter, mm	0.043	0.042	0.074	0.25	0.105	0.105	0.105	0.105	0.105	0.25	0.84	
Diam. at 60%	0.0070	-	-	0.0046	0.0020	0.0027	0.0035	0.0040	0.0036	0.0077	0.057	
Diam. at 10%	-	-	-	-	-	-	-	-	-	-	-	
Visual soil classification	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay w/Sand	
Unified soil classification	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	
Unconfined compression test	-	0.033	0.062~ 0.055	0.057~ 0.075	-	-	-	0.108~ 0.137	0.295~ 0.305	0.315~ 0.427	-	-
Sensitivity ratio	-	-	-	-	-	-	-	-	-	-	-	
Strain at failure, %	-	(15.0)	4.3~5.5	4.0~8.0	-	-	-	9.8~11.5	5.5~8.5	4.9~7.9	-	
Angle of internal friction	-	0°	0°	7°	0°	0°	0°	0°	0°	14°	0°	
Cohesion, kg/cm <sup>2</sup>	-	0.03	0.035	0.10	0.04	0.05	0.06	0.08	0.19	0.12	0.21	
Condition of drainage	-	U-U	U-U	C-U	U-U	U-U	U-U	U-U	U-U	C-U	U-U	
Preconsolidation pressure, kg/cm <sup>2</sup>	-	0.17	0.46	0.25	-	0.28	0.50	0.43	1.3	1.3	-	
Compression index	0.59	0.64	0.66	0.63	-	0.49	0.54	0.66	0.44	0.53	-	

\* Note: All samples are undisturbed.



Summary of Soil Test 3. (Sentul)

Boring No.	SBH-1										SBH-2									
	UD-1	UD-2	UD-3	UD-4	UD-5	UD-6	UD-7	UD-8	UD-1	UD-2	UD-3	UD-4	UD-5	UD-6	UD-7	UD-8				
Sample No.	1.00	1.80	2.80	3.80	4.80	5.80	6.80	7.80	8.80	9.80	10.80	11.80	12.80	13.80	14.80	15.80				
Sample depth	1.00	1.80	2.80	3.80	4.80	5.80	6.80	7.80	8.80	9.80	10.80	11.80	12.80	13.80	14.80	15.80				
Natural water content, %	115.4	100.6	87.4	76.2	41.8	35.6	38.2	40.1	104.7	96.2	75.4	59.5	49.8	34.0	35.9	19.7				
Specific gravity	2.584	2.583	2.556	2.576	2.603	2.605	2.616	2.607	2.555	2.553	2.578	2.589	2.615	2.623	2.625	2.623				
Wet density, g/cm <sup>3</sup>	1.40	1.44	1.49	1.57	1.78	1.82	1.81	1.81	1.87	1.46	1.44	1.64	1.70	1.85	1.83	2.08				
Dry density, g/cm <sup>3</sup>	0.65	0.72	0.80	0.89	1.25	1.34	1.31	1.29	0.71	0.73	0.88	1.03	1.13	1.38	1.35	1.74				
Natural void ratio	2.98	2.60	2.21	1.89	1.08	0.94	1.00	1.02	2.58	2.48	1.93	1.52	1.30	0.90	0.95	0.51				
Degree of saturation, %	100	100	100	100	99	100	100	100	100	99	100	100	100	99	100	100				
Liquid limit, %	78.7	85.4	71.3	69.9	43.0	39.5	41.8	43.5	88.0	79.8	70.0	59.5	56.9	42.5	36.3	33.9				
Plastic limit, %	34.3	37.3	33.9	31.4	23.2	20.9	21.9	22.4	35.1	34.8	32.0	27.2	23.5	20.1	18.6	16.5				
Plasticity index	44.4	48.1	37.4	38.5	19.8	18.6	19.9	21.1	52.9	45.0	38.0	32.1	33.4	22.4	17.7	17.4				
Gravel, %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17				
Sand, %	0	0	0	0	24	17	14	10	7	7	4	2	4	15	18	42				
Silt, %	27	28	37	39	46	51	50	58	31	37	37	39	44	58	49	17				
Clay & colloid, %	73	72	63	61	30	32	36	32	68	68	59	59	52	27	33	24				
Max. diameter, mm	0.044	0.043	0.063	0.043	0.590	1.19	0.297	1.19	0.210	0.210	0.210	0.210	0.210	0.420	0.420	19.10				
Diam. at 60%	-	0.0011	0.0016	0.0018	0.028	0.024	0.014	0.014	0.014	-	-	0.0024	0.0022	0.0035	0.029	0.016				
Diam. at 10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Visual soil description	Silty Clay (CH)	Silty Clay (CH)	Silty Clay (CH)	Silty Clay (CH)	Silty Clay (CL)	Silty Clay (CL)	Silty Clay (CL)	Silty Clay (CL)	Silty Clay (CL)	Silty Clay (CH)	Silty Clay (CH)	Silty Clay (CH)	Silty Clay (CH)	Silty Clay w/Sand (CL)	Silty Clay w/Sand (CL)	Clayey Sand (SC)				
Unified soil classification	(CH)	(CH)	(CH)	(CH)	CL	CL	CL	CL	CL	CH	CH	CH	CH	CL	CL	SC				
Undisturbed sample, kg/cm <sup>2</sup>	-	-	0.065	0.050	0.21	0.23	0.32	0.21	-	-	0.958	-	0.016	0.35	0.49	-				
Ramoulded sample, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Sensitivity ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Strain at failure, %	-	-	6.5	(20.0)	5.5	18.0	10.5	(20.0)	-	-	9~12	-	9~12	14~20	12~20	-				
Angle of internal friction	-	-	0°	0°	0°	-	0°	-	-	-	0°	9°	0°	0°	0°	-				
Cohesion, kg/cm <sup>2</sup>	-	-	0.030	0.040	0.14	-	0.20	-	-	-	0.06	0.28	0.10	0.18	0.18	-				
Condition of drainage	-	-	U-U	U-U	U-U	-	U-U	-	-	-	-	UU	C-U	UU	UU	UU				
Preconsolidation pressure, kg/cm <sup>2</sup>	-	0.13	0.19	0.13	(0.60)	-	-	-	0.11	0.14	0.19	-	0.42	(1.2)	-	-				
Compression index	0.70	0.80	0.66	0.50	0.35	0.31	0.29	0.26	0.88	0.74	0.60	0.48	0.38	0.30	0.22	-				
Lab. Vane Shear	0.019	0.031	-	-	-	-	-	-	0.020	0.031	0.053	-	-	-	-	-				

\* Note : All samples are undisturbed.

Summary of Soil Test 4. (Sentul)

Boring No.	SBH-3																			
	UD-1 Top 0.00 0.15	UD-1 Bottom 0.15 0.30	UD-2 1.00 1.80	UD-3 2.00 2.80	UD-4 3.00 3.80	UD-5 4.00 4.80	UD-6 5.00 5.80	UD-7 6.00 6.80	UD-8 7.00 7.80	UD-9 8.00 8.80	UD-10 9.00 9.80	UD-11 10.00 10.80	UD-12 11.00 11.80	UD-13 12.00 12.80	UD-14 13.00 13.80	UD-15 14.00 14.80	UD-16 15.00 15.80	UD-17 16.00 16.80	UD-17 Bottom 16.80 17.60	
Condition of sample	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	
Natural water content, %	20.7	20.5	14.5	93.4	98.7	101.3	91.7	86.4	74.8	70.8	57.7	50.5	44.7	41.8	40.3	37.4	43.6	29.0	47.2	20.1
Specific gravity	2.642	2.652	2.602	2.559	2.545	2.556	2.575	2.564	2.567	2.606	2.603	2.665	2.607	2.630	2.602	2.632	2.652	2.611	2.634	2.677
Wet density, g/cm <sup>3</sup>	2.00	2.03	2.03	1.46	1.46	1.46	1.46	1.50	1.57	1.56	1.63	1.70	1.75	1.77	1.79	1.81	1.89	1.75	1.80	1.91
Dry density, g/cm <sup>3</sup>	1.66	1.68	1.77	0.75	0.73	0.73	0.76	0.80	0.90	0.91	1.03	1.13	1.21	1.25	1.28	1.32	1.32	1.36	1.22	1.59
Natural void ratio	0.594	0.574	0.468	2.39	2.46	2.52	2.38	2.19	1.86	1.85	1.52	1.36	1.16	1.11	1.07	1.00	1.01	0.92	1.15	0.68
Degree of saturation, %	92	95	81	100	100	100	99	100	100	100	99	99	100	99	99	99	100	82	100	79
Liquid limit, %	38.0	-	-	77.8	79.2	82.4	89.0	74.0	68.7	60.1	51.1	49.7	45.2	44.3	42.9	44.4	51.2	48.1	62.2	-
Plastic limit, %	18.6	-	-	32.2	33.6	32.7	34.9	31.0	30.4	26.1	21.8	25.0	20.9	20.1	20.2	21.6	21.2	23.3	27.8	-
Plasticity index	19.4	-	-	45.6	45.6	49.7	54.1	43.0	38.3	33.9	29.3	24.7	24.3	24.2	22.7	22.8	30.0	24.8	34.4	-
Gravel, %	1	3	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Sand, %	47	59	75	0	0	0	0	0	2	0	0	6	14	10	8	13	11	45	0	41
Silt, %	17	17	4	71	22	16	17	22	25	31	36	45	38	44	47	42	39	17	25	20
Clay & colloid, %	35	21	-	89	78	84	83	78	73	69	64	49	48	46	45	45	50	38	75	20
Max. diameter, mm	4.76	9.52	9.52	0.020	0.032	0.074	0.043	0.043	0.250	0.041	0.041	0.250	0.250	0.420	0.250	0.250	0.420	2.00	0.074	6.73
Diam. at 60%	0.11	0.145	1.10	-	0.0012	-	0.0010	0.001	0.0021	0.0029	0.0039	0.011	0.012	0.014	0.014	0.016	0.012	0.095	0.0020	0.30
Diam. at 10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Visual soil description	Clayey Sand	Clayey Sand	Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Sandy Clay	Clayey Sand	Clayey Sand
Unified soil classification	SC	(SC)	SW	CH	CH	CH	CH	CH	CH	CH	CH	(CH)	CL	CL	CL	CL	(CH)	(SC)	CH	-
Unconfined compression test	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Angle of internal friction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cohesion, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Condition of drainage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preconsolidation pressure, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compression index	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maximum shear stress, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Summary of Soil Test 5. (Serial)

Boring No.	SBH-4												SBH-5											
	UD-1	UD-2	UD-3	UD-4 Top	UD-4 Bottom	UD-5	UD-6 Top	UD-6 Bottom	UD-7	UD-8	UD-9	UD-1 Top	UD-1 Bottom	UD-2 Top	UD-2 Bottom	UD-3 Top	UD-3 Bottom	UD-4						
Sample No.	0.00	1.00	2.00	4.00	4.80	6.00	8.00	8.80	10.00	12.00	14.00	0.80	0.80	1.80	1.80	2.80	2.80	3.00						
Sample depth	0.80	1.80	2.80	4.80	4.80	6.80	8.80	8.80	10.80	12.80	14.80	0.80	0.80	1.80	1.80	2.80	2.80	3.00						
Condition of sample	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed						
Natural water content, %	19.6	10.5	14.9	73.0	32.2	76.5	69.7	62.9	40.0	30.2	33.2	17.5	18.5	22.7	13.6	15.6	82.5	83.8						
Specific gravity	2.679	2.654	2.655	2.602	2.628	2.602	2.623	2.627	2.644	2.668	2.661	2.674	2.684	2.651	2.633	2.629	2.630	2.614						
Wet density, g/cm <sup>3</sup>	2.03	2.08	2.07	1.56	1.72	1.53	1.56	1.60	1.79	1.88	1.86	1.80	2.12	2.14	1.86	1.55	1.51	1.48						
Dry density, g/cm <sup>3</sup>	1.70	1.88	1.80	0.90	1.30	0.87	0.92	0.98	1.28	1.44	1.40	1.53	1.79	1.74	1.64	1.34	0.83	0.81						
Natural void ratio	0.58	0.41	0.47	1.89	1.02	2.00	1.85	1.67	1.07	0.85	0.91	0.746	0.50	0.520	0.61	0.96	2.18	2.25						
Degree of saturation, %	91	68	84	100	83	100	99	99	99	95	98	64	99	100	59	43	100	98						
Liquid limit, %	37.3	-	-	83.6	50.8	79.2	70.1	65.0	42.8	38.5	42.7	-	41.3	32.1	-	-	78.8	69.9						
Plastic limit, %	13.2	-	-	32.3	19.9	34.1	29.5	26.1	18.3	18.8	19.5	-	15.3	14.8	-	-	30.2	28.7						
Plasticity index	24.1	-	-	51.3	30.9	45.1	40.6	37.9	24.5	19.7	23.2	-	22.0	17.3	-	-	48.6	41.2						
Gravel, %	5	22	29	2	11	0	0	0	0	0	0	1	1	2	18	19	0	0						
Sand, %	52	72	65	6	46	4	1	0	11	27	10	44	43	53	77	75	0	1						
Silt, %	15	(6)	(5)	11	8	20	27	23	52	40	44	36	19	15	5	6	6	21						
Clay & colloid, %	28	-	-	81	35	76	72	77	37	33	46	19	37	30	-	-	94	78						
Max. diameter, mm	9.52	9.52	9.52	4.76	9.52	0.420	0.420	0.420	0.420	0.420	0.420	0.420	0.420	0.420	0.420	0.420	0.0077	0.25						
Diam. at 60%	0.16	1.20	1.49	0.0011	0.49	-	0.0019	0.0017	0.024	0.035	0.014	0.090	0.085	0.11	1.1	1.2	-	0.0010						
Diam. at 10%	-	0.14	0.17	-	-	-	-	-	-	-	-	-	-	-	0.12	0.13	-	-						
Visual soil description	Clayey Sand	Sand	Sand	Silty Clayey Sand	Clayey Sand	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Sandy Clay	Sandy Clay	Clayey Sand	Sand	Sand	Silty Clay	Silty Clay						
Unified soil classification	SC	SW	SW	CH	SC	CH	CH	CH	CL	CL	CL	CL	CL	SC	SW	SW	CH	CH						
Undisturbed sample, kg/cm <sup>2</sup>	-	-	-	0.13	-	0.065	-	0.13	0.21	0.39	0.42	-	-	1.3	-	-	0.12	-						
Remolded sample, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	-	-	-						
Sensitivity ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Strain at failure, %	-	-	-	14.5	-	15.0	-	14.0	14.5	14.5	13.0	-	-	5.5	-	-	14	-						
Angle of internal friction	-	-	-	-	-	0°	0°	0°	2°	0°	0°	-	(0°)	-	-	-	-	-						
Cohesion, kg/cm <sup>2</sup>	-	-	-	-	-	0.050	0.060	0.065	0.07	0.30	0.35	-	(2.0)	-	-	-	-	-						
Condition of drainage	-	-	-	-	-	U-U	U-U	U-U	U-U	U-U	U-U	-	U-U	-	-	-	-	-						
Preconsolidation pressure, kg/cm <sup>2</sup>	-	-	-	-	-	-	0.32	(0.4)	(0.67)	(0.90)	(0.95)	-	-	-	-	-	(0.29)	0.11						
Compression index	-	-	-	0.55	-	-	0.55	0.45	0.26	0.24	0.27	-	-	-	-	-	0.69	0.76						
Max. shear stress, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
Max. shear strength, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.933						

Summary of Soil Test 6. (Sentul)

Boring No.	SBH-5										SBH-6									
	UD-5	UD-6	UD-7	UD-8	UD-9	UD-10	UD-11	UD-1	UD-2	UD-3	UD-4	UD-5	UD-5 Bottom	UD-6	UD-7	UD-8	UD-9	UD-10		
Sample No.	9.50	8.15	9.50	11.00	12.50	14.00	15.50	9.50	11.00	12.50	14.00	15.50	8.30	9.80	11.30	12.80	14.30	15.80		
Sample depth	8.35	8.15	10.35	11.85	13.35	14.85	16.35	1.35	2.85	4.35	5.85	7.35	8.85	10.35	11.85	13.35	14.85	16.35		
Condition of sample	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed	Undisturbed		
Natural water content, %	82.5	77.6	51.6	45.2	40.3	40.4	44.8	20.6	19.9	2.666	2.600	2.532	69.3	60.2	52.4	33.2	34.6	36.1		
Specific gravity	2.620	2.636	2.659	2.669	2.664	2.669	2.634	2.661	2.666	2.600	2.592	2.632	2.627	2.632	2.645	2.652	2.677	2.659		
Wet density, g/cm <sup>3</sup>	1.52	1.60	1.56	1.76	1.81	1.83	1.75	(1.91)	2.04	1.56	1.61	1.60	1.60	1.65	1.69	1.82	1.87	1.86		
Dry density, g/cm <sup>3</sup>	0.83	0.90	0.91	1.11	1.29	1.30	1.21	1.58	1.70	0.91	0.94	0.95	0.95	1.03	1.11	1.32	1.41	1.37		
Natural void ratio	2.15	1.93	1.92	1.42	1.06	1.05	1.18	0.680	0.567	1.86	1.76	1.78	1.55	1.37	1.01	0.879	0.926	0.946		
Degree of saturation, %	100	100	100	100	100	100	100	81	94	100	100	100	100	100	100	100	100	100		
Atterberg Limits	Liquid limit, %	70.0	67.5	61.9	48.9	46.0	55.4	33.9	48.2	73.0	71.8	68.3	65.7	58.0	42.3	37.0	40.1	47.0		
	Plastic limit, %	31.3	30.3	28.2	20.2	20.3	25.3	18.0	17.8	31.6	30.1	30.4	28.0	24.7	19.8	17.8	20.1	21.2		
Grain size analysis	Plasticity index	38.7	37.2	33.7	28.7	25.7	30.1	15.9	30.4	41.4	41.7	37.9	37.7	33.3	22.5	19.2	20.0	25.8		
	Gravel, %	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0		
	Sand, %	1	0	1	3	7	8	36	41	1	3	2	0	1	12	14	11	4		
	Silt, %	22	22	35	45	40	33	32	17	21	22	21	19	34	43	50	51	26		
	Clay & colloid, %	77	78	65	52	53	59	30	41	78	75	77	81	65	45	36	38	70		
	Max. diameter, mm	0.25	0.074	0.105	0.037	0.25	0.25	4.75	4.75	0.25	0.25	0.25	0.028	0.105	0.25	0.42	0.84	0.42		
	Diam. at 60%	0.0012	0.0014	0.0024	0.0036	0.0085	0.0057	0.062	0.081	0.0015	0.0018	0.0016	0.0016	0.0037	0.015	0.029	0.024	0.0026		
	Diam. at 10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Visual soil description	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Sandy clay	Sandy clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay	Silty clay		
Unified soil classification	CH	CH	CL	CL	CL	CL	CH	CL	CL	CH	CH	CH	CH	CH	CL	CL	CL	CL		
Unconfined compression test	Undisturbed sample, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	3.95	-	-	-	-	-	-	-	-	-		
	Remoulded sample, kg/cm <sup>2</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Triaxial compression test	Sensitivity ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	Strain at failure, %	-	-	-	-	-	-	-	9.5	-	-	-	-	-	-	-	-	-		
Triaxial compression test	Angle of internal friction	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°	0°		
	Cohesion, kg/cm <sup>2</sup>	0.040	-	0.035	0.070	0.060	0.18	-	-	0.080	0.050	0.085	0.11	0.14	0.19	0.29	0.30	0.25		
Triaxial compression test	Condition of drainage	U-U	U-U	U-U	U-U	U-U	U-U	-	-	U-U	U-U	U-U	U-U	U-U	U-U	U-U	U-U	U-U		
	Preconsolidation pressure, kg/cm <sup>2</sup>	0.42	-	0.36	0.60	-	1.1	-	-	0.4	0.52	-	(0.62)	0.84	(1.4)	1.8	1.9	1.8		
Triaxial compression test	Compression index	0.66	-	0.55	0.46	0.35	0.32	0.48	0.12	0.63	0.62	-	0.52	0.51	0.30	0.26	0.29	0.31		
	Max. Vane Shear strength, kg/cm <sup>2</sup>	0.046	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Summary of Soil Test 7. (Sentul)

Boring No.	SB-1										SB-2										SB-3										SB-4						
	P1/D2	P4	P6	P9	P11	P13	D3/P2	D5/P4	D7/P6	D9/P8	D2/P1	D4/P3	D6/P5	D8/P7	D10/P9	P1/D4	P3/D4	P5/D4	P7/D4	P9/D4	P11/D4	P13/D4	D3/P2	D5/P4	D7/P6	D9/P8	D2/P1	D4/P3	D6/P5	D8/P7	D10/P9	P1/D4	P3/D4	P5/D4	P7/D4	P9/D4	
Sample No.*	1.00m	4.00m	6.00m	9.00m	11.00m	13.00m	2.00m	4.00m	6.00m	8.00m	1.00m	3.00m	5.00m	7.00m	9.00m	1.00m	3.00m	5.00m	7.00m	9.00m	1.00m	3.00m	5.00m	7.00m	9.00m	1.00m	3.00m	5.00m	7.00m	9.00m	1.00m	3.00m	5.00m	7.00m	9.00m		
Sample depth	1.45m	4.45m	6.45m	9.45m	11.45m	13.45m	2.45m	4.45m	6.45m	8.45m	1.45m	3.45m	5.45m	7.45m	9.45m	1.45m	3.45m	5.45m	7.45m	9.45m	1.45m	3.45m	5.45m	7.45m	9.45m	1.45m	3.45m	5.45m	7.45m	9.45m	1.45m	3.45m	5.45m	7.45m	9.45m		
Natural water content, %	77.3	75.4	73.6	26.0	25.3	6.5	56.2	61.0	78.5	76.8	69.1	89.6	7.4	12.3	3.0	42.2	60.9																				
Specific gravity	2.598	2.607	2.603	2.649	2.662	2.613	2.663	2.625	2.596	2.600	2.556	2.603	2.622	2.626	2.650	2.615	2.577																				
Liquid limit, %	84.9	79.0	79.0	38.5	40.2	-	68.0	67.6	89.9	77.3	82.0	68.0	-	-	-	51.1	70.7																				
Plastic limit, %	37.5	34.8	35.0	20.8	20.4	-	30.5	21.6	35.7	35.5	35.6	32.3	-	-	-	24.9	30.2																				
Plasticity Index	47.4	44.2	44.0	17.7	19.8	-	37.5	46.0	54.2	41.8	46.4	35.7	-	-	-	26.2	40.5																				
Gravel, %	0	0	0	14	20	74	2	0	0	0	0	0	35	31	82	0	0																				
Sand, %	0	0	0	23	20	12	73	10	0	0	0	20	59	62	16	11	9																				
Silt, %	25	26	23	27	23	4	23	28	21	24	23	20	6	7	2	33	28																				
Clay & Colloid, %	75	74	77	36	37	10	62	62	79	76	77	80				56	63																				
Max. diameter, mm	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048																				
Diam. at 60%	-	-	-	0.060	0.073	5.2	0.043	0.0043	-	-	-	0.0010	-	1.7	1.4	5.7	0.0074	0.0072																			
Diam. at 10%	-	-	-	-	-	0.0046	-	-	-	-	-	-	0.22	0.13	0.95	-	-	-																			
Visual soil description	Silty Clay	Silty Clay	Silty Clay	Silty Clay w/Sand	Silty Clay	Gravel with Clay	Silty Clay w/Sand	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Gravel Sand	Gravel Sand	Gravel	Silty Clay	Silty Clay																				
Unified soil classification	CH	CH	CH	CL	CL	-	CH	CH	CH	CH	CH	CH	(SN-SM)	(SN-SM)	GM	CH	CH	(SN-SM)	(SN-SM)	GM	CH	CH	CH	GM	GM	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH		
Boring No.	SB-4										SB-5										SB-6																
Sample No.*	P5/D6	P7/D8	P9/D10	P11/D12	P13/D14	P16/D17	P19/D20	P1/D2	P3/D4	P6/D7	P8/D9	P10/D11	P12/D13	P14/D15	P16/D17	D-1	D-3																				
Sample depth	5.00m	7.00m	9.00m	11.00m	13.00m	16.00m	19.00m	1.00m	3.00m	6.00m	8.00m	10.00m	12.00m	14.00m	16.00m	1.00m	3.00m																				
Natural water content, %	5.45m	7.45m	9.45m	11.45m	13.45m	16.45m	19.45m	1.45m	3.45m	6.45m	8.45m	10.45m	12.45m	14.45m	16.45m	1.45m	3.45m																				
Specific gravity	2.625	2.622	2.654	2.635	2.633	2.634	2.632	2.609	2.649	2.654	2.639	2.661	2.707	2.705	2.626	2.605	2.604																				
Liquid limit, %	-	-	-	-	-	35.1	-	64.9	-	-	47.0	63.9	42.1	36.9	-	84.0	71.8																				
Plastic limit, %	-	-	-	-	-	19.0	-	27.3	-	-	24.2	29.5	19.2	19.4	-	35.0	31.0																				
Plasticity Index	-	-	-	-	-	16.1	-	37.6	-	-	22.8	34.4	22.9	17.5	-	49.0	40.8																				
Gravel, %	42	3	61	59	0	10	48	0	24	0	0	0	7	8	37	0	4																				
Sand, %	55	94	38	40	62	42	46	0	67	19	4	0	37	41	58	0	5																				
Silt, %	3	3	1	1	14	14	6	38	9	58	48	24	18	16	12	19																					
Clay & colloid, %	9.52	4.76	19.1	25.4	4.76	4.76	9.52	0.048	9.52	4.76	0.84	0.046	9.52	9.52	19.1	0.012	9.52																				
Max. diameter, mm	2.1	0.50	9.6	16	0.13	0.24	2.3	0.0038	0.70	0.044	0.014	0.12	0.12	0.31	1.9	-	0.0026																				
Diam. at 60%	0.21	0.14	0.30	0.35	-	-	0.30	-	0.078	-	-	-	-	-	0.25	-	-																				
Diam. at 10%																																					
Visual soil description	Gravel Sand	Sand	Sandy Gravel	Sandy Gravel	Silty Sand	Clayey Sand	Sandy Gravel	Silty Clay	Gravel Sand	Clayey Silt	Silty Clay	Silty Clay	Sandy Clay	Sandy Clay	Gravel Sand	Silty Clay	Silty Clay																				
Unified soil classification	SN	SP	GP	GP	-	SC	(GM-GM)	CH	(SP-SM)	-	CL	CH	CL	CL	(SN-SM)	CH	CH	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CL	CH		

\* Note: All samples are disturbed.

Summary of Soil Test 8. (Sentul)

Boring No.	SB-7							SB-8				SB-9					MC-4	
	P1/D2	P3/D4	P5/D6	P7/D8	P8/D10	P3/D4	D13	P1/D1	P3/D4	P5/D6	P7/D8	P9/D10	P14/D15	P16/D17	1	2		
Sample No.*	1.00m 1.45m	3.00m 3.45m	5.00m 5.45m	7.00m 7.45m	9.00m 9.45m	3.00m 3.45m	12.00m 12.45m	1.00m 1.45m	3.00m 3.45m	5.00m 5.45m	7.00m 7.45m	9.00m 9.45m	14.00m 14.45m	16.00m 16.45m	1.00m 1.45m	2.00m 2.45m		
Natural water content, %	26.7	24.3	10.5	1.7	9.1	13.9	1.2	62.9	50.2	71.2	58.3	47.3	18.0	15.8	71.6	77.1		
Specific gravity	2.677	2.657	2.647	2.657	2.785	2.631	2.711	2.612	2.603	2.617	2.635	2.637	2.625	2.628	2.606	2.590		
Liquid limit, %	-	-	-	-	-	-	-	64.4	52.4	75.7	67.8	58.0	36.3	33.2	60.2	61.8		
Plastic limit, %	-	-	-	-	-	-	-	27.0	26.3	27.4	29.9	29.0	17.2	16.3	29.9	29.2		
Plasticity Index	-	-	-	-	-	-	-	37.4	26.1	48.3	37.9	29.0	19.1	16.9	30.3	32.6		
Gravel, %	11	11	36	87	66	93	17	0	0	0	0	0	21	22	0	0		
Sand, %	48	53	54	10	20	5	72	0	0	0	6	1	39	44	0	0		
Silt, %	30	22	10	3	14	2	11	23	26	27	18	48	15	14	41	44		
Clay & colloid, %	11	14	10	3	14	2	11	77	74	73	76	51	25	20	59	56		
Max. diameter, mm	9.52	9.52	9.52	19.1	19.1	25.4	9.52	0.048	0.047	0.048	4.76	0.42	9.52	9.52	0.074	0.048		
Diam. at 60%	0.15	0.17	1.7	9.5	7.2	17	0.82	0.0010	-	-	0.0014	0.0085	0.41	0.77	0.0054	0.0059		
Diam. at 10%	0.0030	0.0012	0.074	1.1	-	3.0	-	-	-	-	-	-	-	-	-	-		
Visual soil description	Silty Sand	Clayey Sand	Gravel Sand	Gravel	Sandy Gravel	Gravel	Gravel Sand	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Clayey Sand	Gravel Sand w/Clay	Silty Clay	Silty Clay		
Unified soil classification	-	-	(SW-SM)	GW	-	-	GW	CH	CH	CH	CH	CH	SC	SC	CH	CH		

Boring No.	MC-4							MC-5								
	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
Sample No.*	3.00m 3.45m	4.00m 4.45m	5.00m 5.45m	6.00m 6.45m	7.00m 7.45m	8.00m 8.45m	9.00m 9.45m	1.00m 1.45m	2.00m 2.45m	3.00m 3.45m	4.00m 4.45m	5.00m 5.45m	6.00m 6.45m	7.00m 7.45m	8.00m 8.45m	9.00m 9.45m
Natural water content, %	78.4	61.3	68.5	109	85.7	78.0	75.7	118	82.0	98.2	78.3	84.7	79.1	85.7	73.6	94.9
Specific gravity	2.603	2.594	2.583	2.576	2.594	2.600	2.585	2.575	2.592	2.586	2.603	2.586	2.575	2.602	2.582	2.594
Liquid limit, %	57.9	65.0	58.9	71.6	66.0	75.0	76.1	78.3	77.4	75.9	76.2	73.3	80.1	74.9	76.2	73.4
Plastic limit, %	28.9	29.9	24.9	32.3	30.5	32.7	32.7	37.7	33.1	34.9	37.0	31.9	33.9	32.8	34.2	32.1
Plasticity Index	29.0	35.1	34.0	39.3	35.5	42.3	43.4	40.6	44.3	41.0	39.2	41.4	46.2	42.1	42.0	41.3
Gravel, %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sand, %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silt, %	34	43	42	22	26	35	36	26	20	34	19	22	35	33	42	35
Clay & colloid, %	66	57	58	78	74	65	64	74	80	66	81	78	65	67	58	65
Max. diameter, mm	0.047	0.047	0.047	0.049	0.048	0.048	0.048	0.045	0.048	0.049	0.048	0.048	0.048	0.048	0.048	0.048
Diam. at 60%	0.0035	0.0062	0.0055	-	0.0010	0.0015	0.0026	-	-	0.0027	0.0013	-	0.0037	-	0.0060	0.0032
Diam. at 10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Visual soil description	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay	Silty Clay
Unified soil classification	CH	CH	CH	CH	CH	CH	CH	MH	CH	MH	CH	CH	CH	CH	CH	CH

\* Note: All samples are disturbed.

Summary of Soil Test  
- Chemical Analysis and Mineral Analysis -

	Site		Sentul				
	Boring No./Location		Sub-section B				
** Chemical Analysis	Sample No.	S-1	S-5	S-10	D-1	P-3	
	pH at 25°C	6.7	7.5	7.8	6.5	6.6	
	Total sulphates as SO <sub>3</sub> (% w/w)	0.01	0.03	0.23	0.01	0.03	
	Water-soluble chlorides as Cl <sup>-</sup> (% w/w)	less than 0.001	0.001	less than 0.001	-	-	
	Total chlorides as Cl <sup>-</sup> (% w/w)	0.006	0.004	0.004	0.004	0.004	
	Tin, Sn (mg/kg)	2	less than 1	2	1	1	
	Cyanide as CN (mg/kg)	less than 1	less than 1	less than 1	less than 1	less than 1	
	Arsenic, As (mg/kg)	10	less than 4	40	10	3	
	Lead, Pb (mg/kg)	78	44	78	80	100	
	Cadmium, Cd (mg/kg)	less than 5	less than 5	5	1	2	
* Mineral Analysis	Sample No.	S-1	S-4	S-8	P-3	D-1	
	Kaolinite (%)	78	74	62	54	58	
	Chloride (%)	-	-	T.A.*			
	Illite (%)	22	19	35	46	42	
	Degraded illite (%)	T.A.*	7	3	0	0	

\* T.A. denotes trace amount.

\*\* Results of chemical analysis were based on samples dried at 80°C, except for pH value which was based on air-dried sample.

TRIAxIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section A", S-1

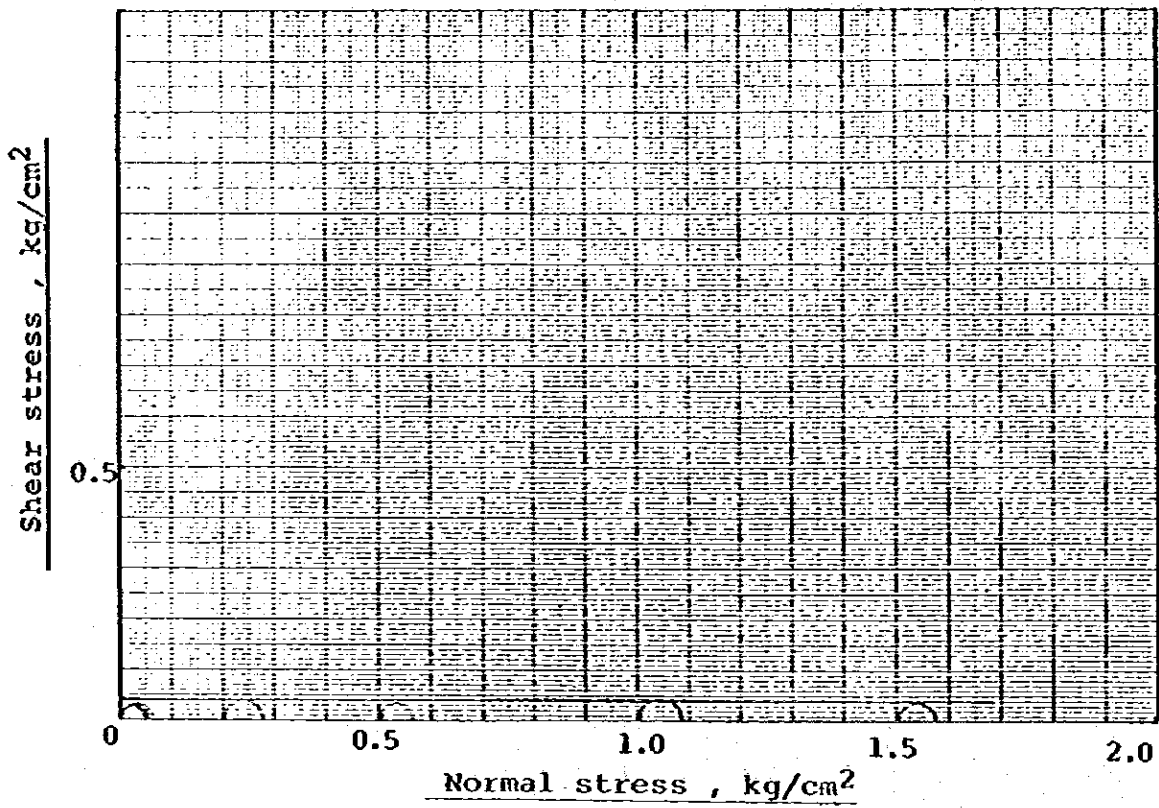
Depth of Sample 0.10 ~ 0.90 m

Location of project \_\_\_\_\_

Condition of storage U-U

Angle of internal friction 0°

Cohesion 0.09 kg/cm<sup>2</sup>



TRIAxIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section A", S-2

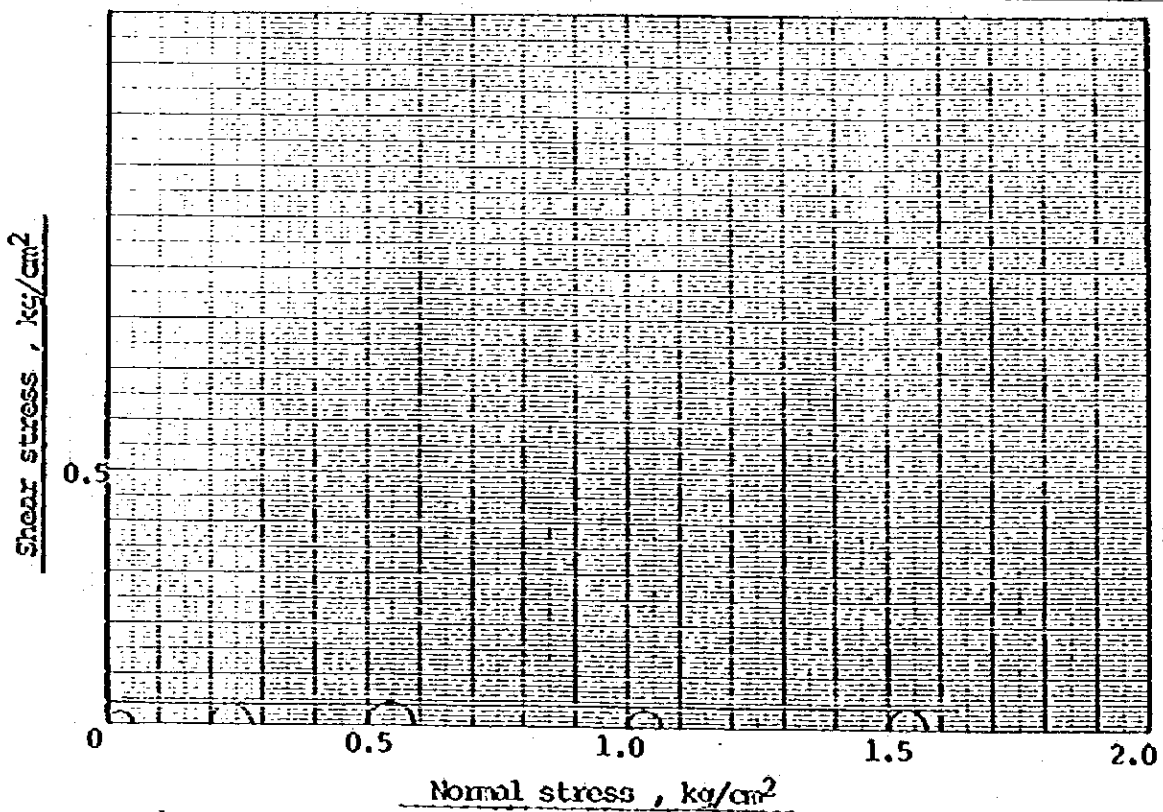
Depth of Sample 1.00 ~ 1.80 m

Location of project \_\_\_\_\_

Condition of storage U-U

Angle of internal friction 0°

Cohesion 0.09 kg/cm<sup>2</sup>





TRIAXIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section A", S-3

Depth of Sample 200 ~ 274 mm

Location of project \_\_\_\_\_

Condition of storage \_\_\_\_\_

Angle of internal friction 0°

Cohesion 0.08 kg/cm<sup>2</sup>



TRIAXIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section B, S-2

Depth of Sample 200 ~ 280 mm

Location of project \_\_\_\_\_

Condition of storage U-U

Angle of internal friction 0°

Cohesion 0.03 kg/cm<sup>2</sup>



TRIAXIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section B ,S-3

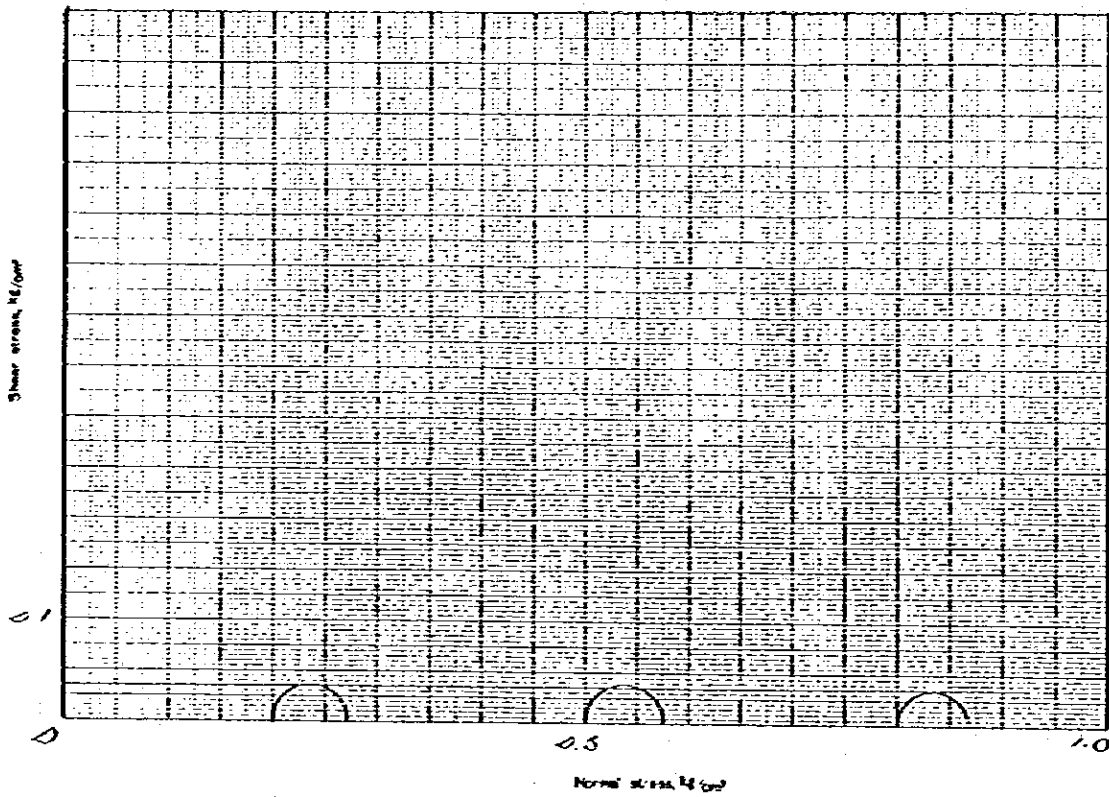
Depth of Sample 14.00 ~ 15.80 m

Location of project \_\_\_\_\_

Condition of storage U-U

Angle of internal friction 0°

Cohesion 0.035 kg/cm<sup>2</sup>



TRIAXIAL COMPRESSION TEST (Mohr's circle)

Project 224

Sample No Sub-section B ,S-4

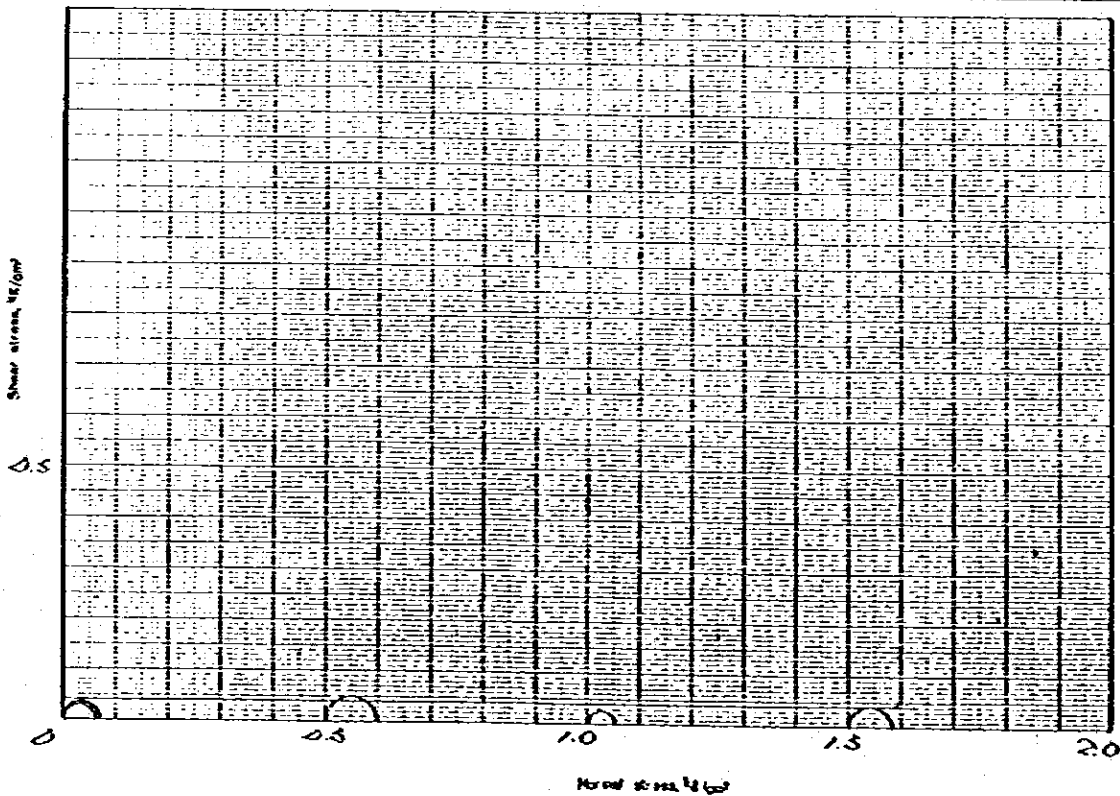
Depth of Sample 5.00 ~ 5.80 m

Location of project \_\_\_\_\_

Condition of storage U-U

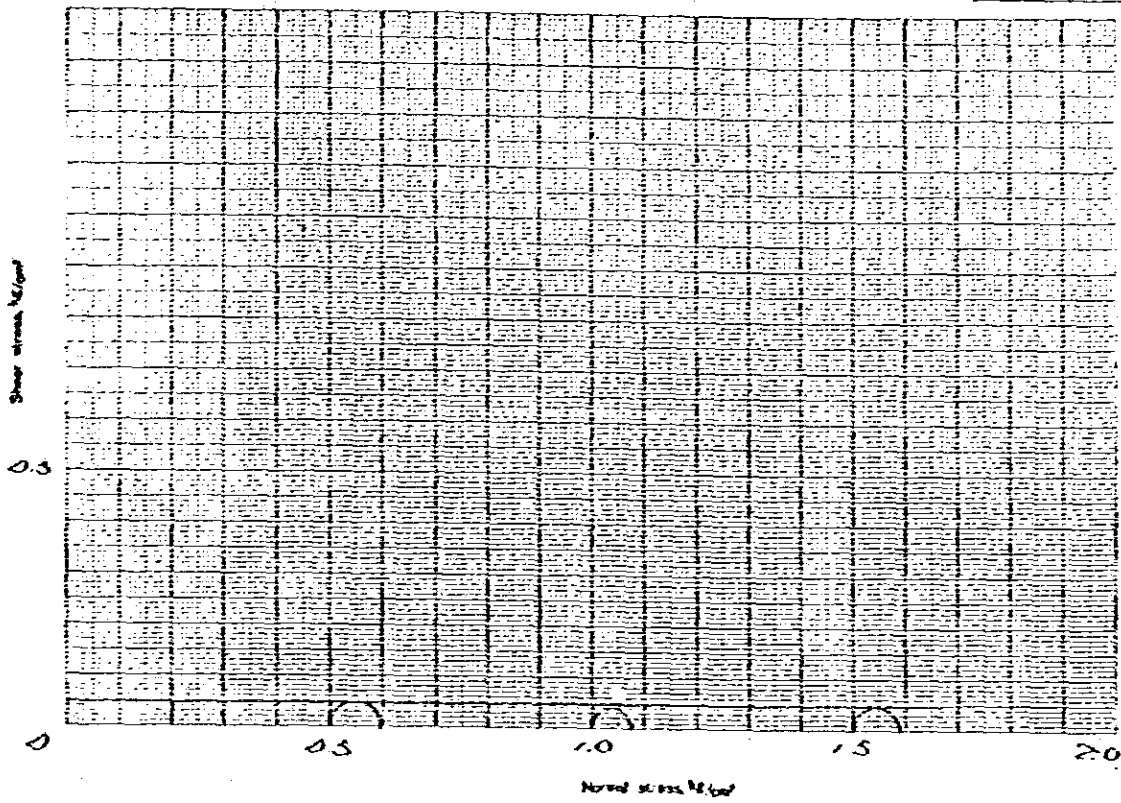
Angle of internal friction 0°

Cohesion 0.09 kg/cm<sup>2</sup>



TRIAxIAL COMPRESSION TEST (Mohr's circle)

Project 224 Sample No. Sub-section B, S-5 Bottom Depth of Sample 6.10 ~ 6.80 m  
Location of project \_\_\_\_\_ Condition of storage U-U Angle of internal friction 0°  
Cohesion 0.05 kg/cm<sup>2</sup>



TRIAxIAL COMPRESSION TEST (Mohr's circle)

Project 224 Sample No. Sub-section B, S-6 Depth of Sample 7.50 ~ 8.10 m  
Location of project \_\_\_\_\_ Condition of storage U-U Angle of internal friction 0°  
Cohesion 0.06 kg/cm<sup>2</sup>

