Project : Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Developement and Other Purposes / Phase I at Sentul, Kuala Lumpur

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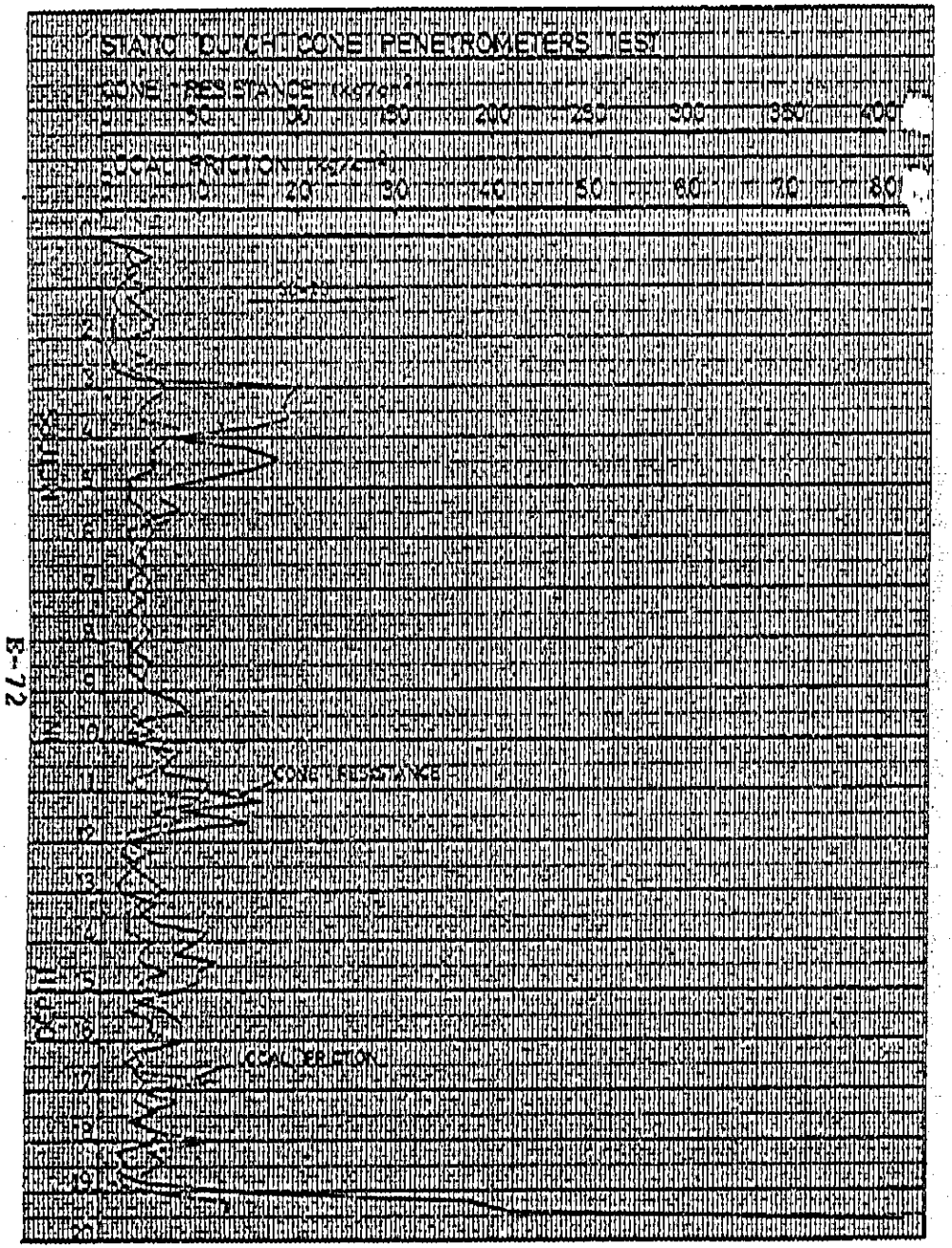

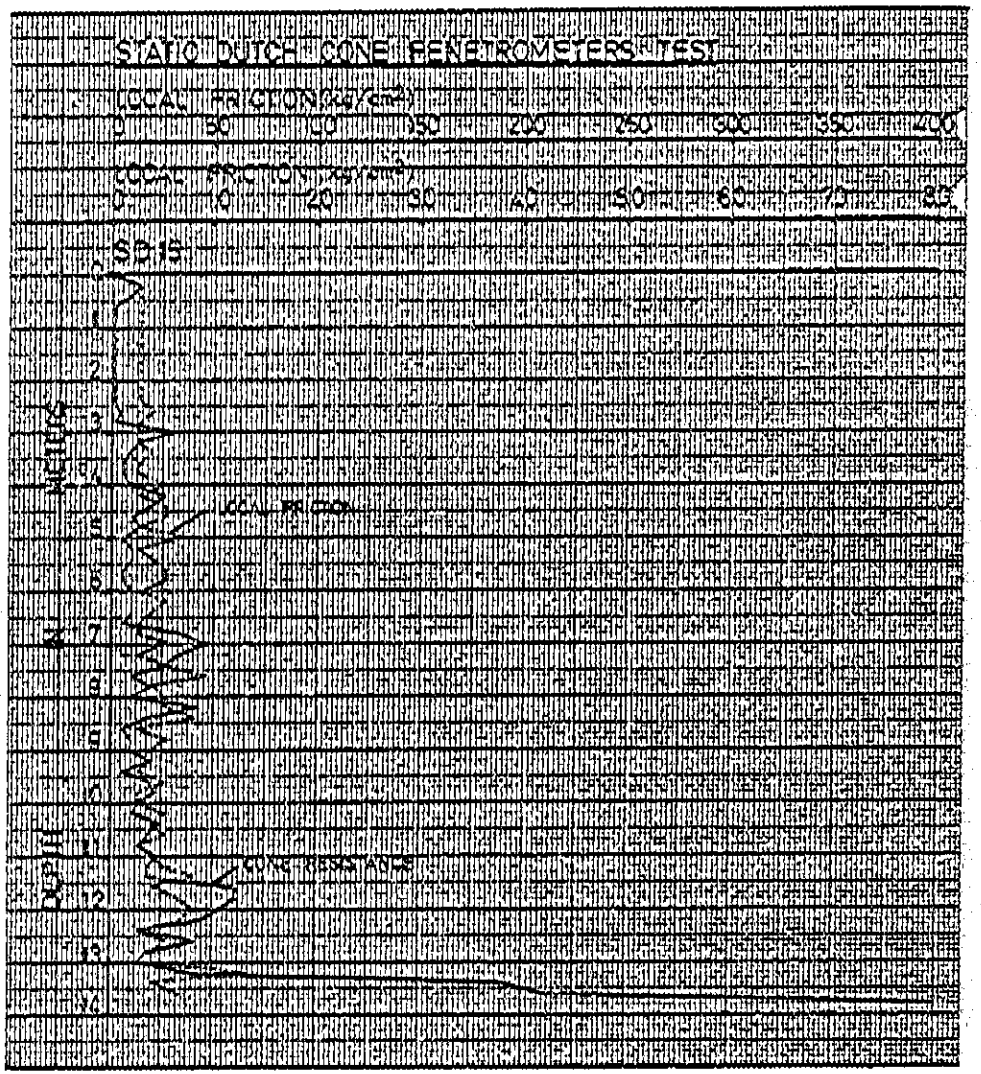

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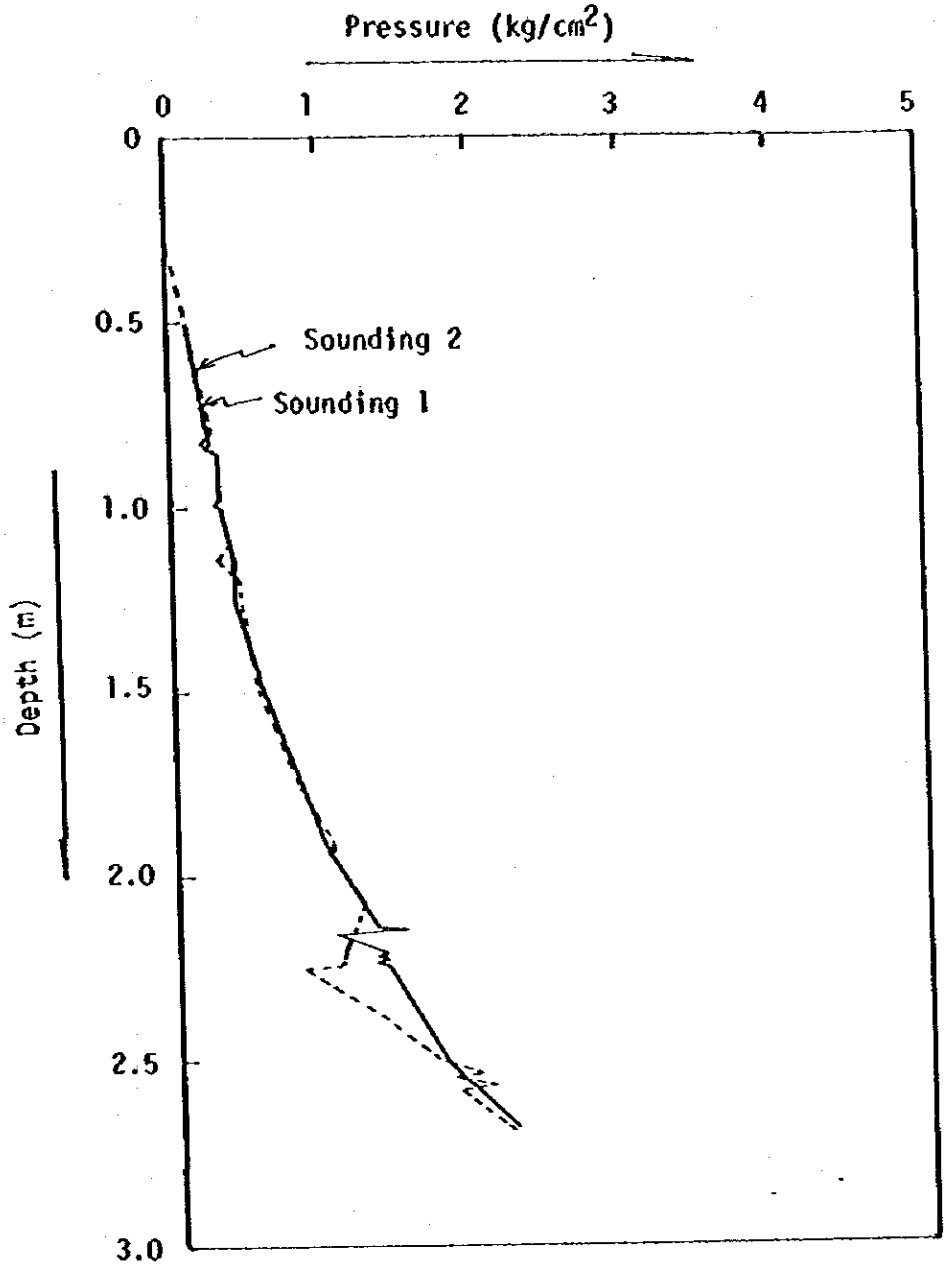
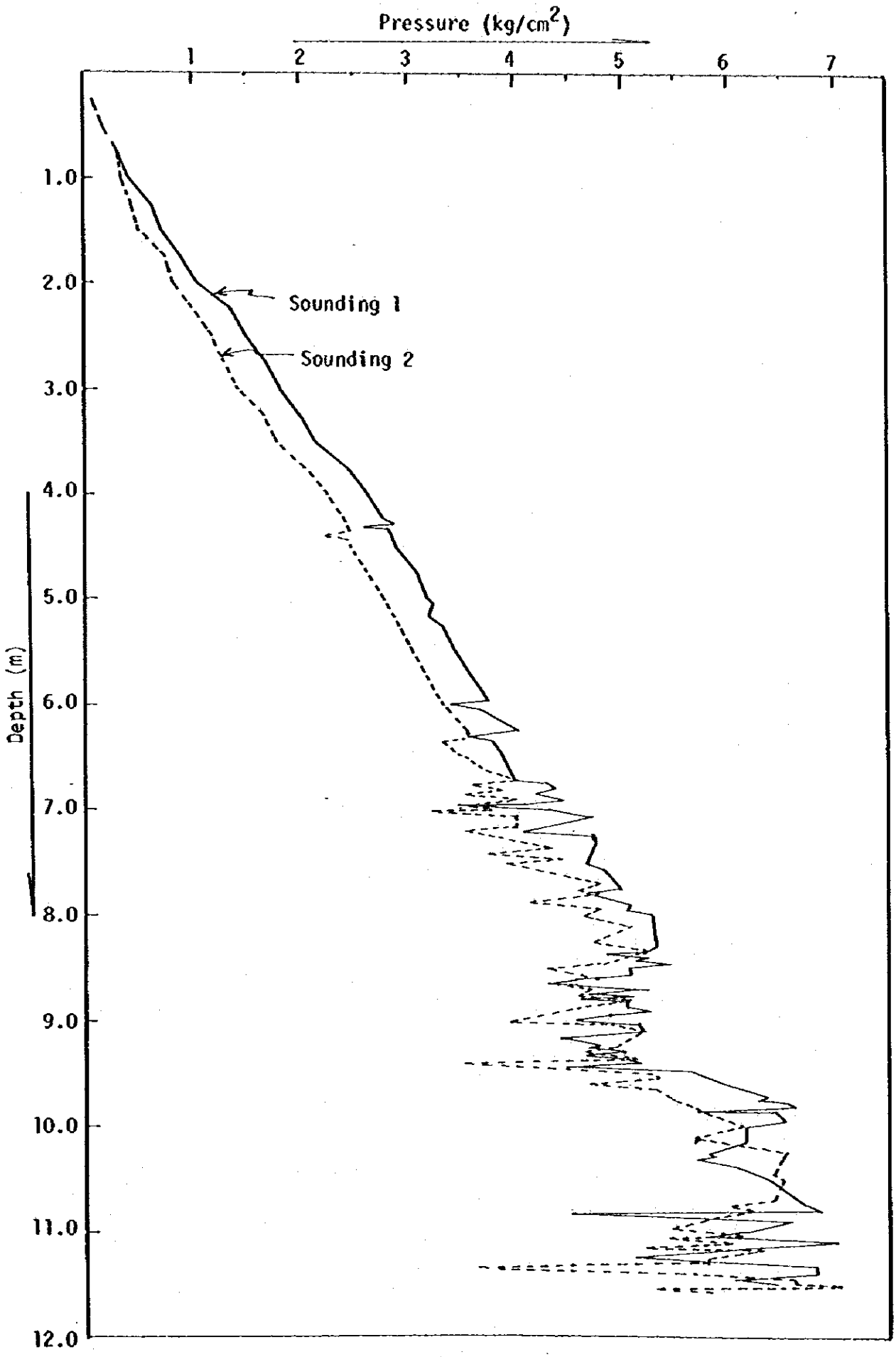


Result of Pore Water Pressure Sounding (Sub-section A")



Result of Pore Water Pressure Sounding (Sub-section B)

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other

Name of Project Purposes - Phase I

Type of Drilling Percussion

Hole Number Sub-section A Elevation RL +36.4 m Date 15/2/80 to 16/2/80

Site Sentul Water Table GL -2.58 m Driller Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.40							
	36.25	0.15	0.15		Silty Clay	Greyish white	Very soft	With roots
1								
2								
3	32.60	3.80	3.65		Silty Clay	Greyish white	Very soft	
4	31.80	4.60	0.80		Silty Fine Sand	Grey	Very loose	With clay
5								With gravels
6								
7							Very loose	Sand is medium to coarse grained
8							to	
9								
10	26.65	9.75	5.15		Sand	Grey	loose	
	25.70	10.70	0.95		Clayey Silt	Grey	Very soft	With traces of sand
11	25.60	10.80	0.10		Rock or Gravel			
12					End of Drilling			

Depth in m	Sampling No.	N-Value	Blows Per Each 10cm	Standard Penetration Test or Core Recovery (N-Value)
1.00				Core Recovery
1.45	P-1	0		Self penetration under weight of hammer
2.00				
2.45	P-2	0		Self penetration under weight of hammer
3.00				
3.45	P-3	0		Self penetration under weight of hammer
4.00				
4.45	P-4	0		Self penetration under weight of hammer
5.00				
5.15	P-5	4	1 1 2	
5.45				5.50 Permeability Test
6.15				
6.45	P-6	8	3 3 2	
7.15				
7.45	P-7	7	2 3 2	
8.15				
8.45	P-8	4	1 2 1	
9.15				
9.45	P-9	5	1 2 2	
10.15				
10.45	P-10	1	1 0 0	
10.70	P-11	50/5	50/5	50 blows/10 cm
10.80				

FIG. DRILLING LOG

Name of Project: Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Type of Drilling: Percussion

Hole Number: Sub-section A' Elevation: PL +36.5 m. Date: 17/1/80 to 19/1/80

Site: Sentul Water Table: GL -2.505 m. Driller: Geotechnique (H) (Kiso-Jiban)

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.50							
1	36.40	0.10	0.10		Clayey Silt	Greyish brown	Very soft	With roots
2								
3								
4	32.65	3.85	3.75		Silty Clay	Greyish White	Very soft	
5	31.70	4.80	0.95		Silty Clay	Grey	Very soft	
6	30.65	5.85	1.05		Sand	Grey	Loose	Sand is fine to medium grained. With gravel
7	29.50	7.00	1.15		Sand	Grey	Very Loose	Sand is fine to medium grained. With gravel
8	28.25	8.25	1.25		(Sand and Gravel)	Brownish White		Decomposed limestone?
9	27.05	9.45	0.80		Sandy Silt	Yellowish brown		
10	26.47	10.03	0.58		Sandy Silt	Yellowish White		
11					End of Drilling			

Depth in m.	Sampling or Lab.	SPT-N Value	Blows Per Each 10cm	Core Recovery
1.15–1.45	P-1	0	Self penetration under weight of hammer	
2.15–2.45	P-2	0	Self penetration under weight of hammer	
3.15–3.45	P-3	0	Self penetration under weight of hammer	
4.15–4.45	P-4	0	Self penetration under weight of hammer	
5.15–5.45	P-5	6	2 2 2	5.00–5.50 Permeability Tes
6.15–6.45	P-6	2	1 0 1	
7.00–7.15	P-7	50/15	50/15	50 blows/15cm
7.95–8.25	P-8	29	12 9 8	
9.15–9.45	P-9	33	5 11 11 17	
9.90–10.03	P-10	50/9	50/3	50 blows/13cm

(N—Value) 10 20 30 40 50

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Name of Project

Hole Number Sub-section A'' Elevation RL +36.4 m

Site Sentul Water Table GL -2.52 m

Type of Drilling Percussion

Date 20/1/80 to 25/1/80

Driller Geotechnique (M) (Kiso-Jiban

Remarks

Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
36.40							
36.30	0.10	0.10		Silty Clay	Greyish brown		Top soil. With roots
32.60	3.80	3.70		Silty Clay	Grey-ish white	Very soft	
							Fine to medium
							With some gravel
28.40	8.00	4.20		Sand	Grey	Loose	
							Medium to coarse
							With gravel ϕ = 5 - 20cm
25.60	10.80	2.80		Sand	Grey	Loose	
24.50	11.90	1.10		Silty Sand	Grey	Loose	Sand is medium to coarse grained. With some gravel
23.55	12.85	0.95		Sandy Clay	Grey	Medium	
22.70	13.70	0.85		Sand with Gravel	Grey	Loose	With clay
21.90	14.50	0.80		Silty Clay	Greyish brown	Soft	Traces of fine sand
20.65	15.75	1.25		Sandy Clay	Grey	Soft	Traces of fine sand
							Sand is medium to coarse grained
18.50	17.90	2.15		Sand	Grey	Loose	
18.00	18.40	0.50		Silty Clay	Grey	Stiff	With traces of fine sand and gravel
17.20	19.20	0.80		Fine Sand	Greyish white	Very dense	Weathered lime-stone
				End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm	(N—Value) 10 20 30 40 50
1.15 - 1.45	P-1	0	Self penetration under weight of hammer	Core Recovery
2.15 - 2.45	P-2	0	Self penetration under weight of hammer	
3.15 - 3.45	P-3	0	Self penetration under weight of hammer	
4.15 - 4.45	P-4	3	1 1 1	
5.15 - 5.45	P-5	5	2 2 1	5.00 - 5.50 Permeability Test
6.15 - 6.45	P-6	4	2 1 1	
7.15 - 7.45	P-7	8	2 2 4	
8.15 - 8.45	P-8	9	2 3 4	
9.15 - 9.45	P-9	3	2 1 0	
10.15 - 10.45	P-10	2	0 1 1	10.00 - 10.50 Permeability Test
11.15 - 11.45	P-11	5	2 2 1	
12.15 - 12.45	P-12	5	3 1 2	
13.15 - 13.45	P-13	8	3 2 3	
14.15 - 14.45	P-14	4	1 1 2	
15.15 - 15.45	P-15	3	0 2 1	15.00 - 15.50 Permeability Test
16.15 - 16.45	P-16	6	3 2 1	
17.15 - 17.45	P-17	5	1 2 3	
18.15 - 18.45	P-18	13	3 4 6	
19.15 - 19.20	P-19	50/5	50/5 - -	19.00 - 19.20 Permeability Test 50 blows/5cm

FIG. DRILLING LOG

Name of Project: Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Hole Number: Sub-section B

Site: Sentul

Elevation: RL +36.20 m

Water Table: GL -2.15 m

Type of Drilling: Percussion

Date: 12/2/80 to 14/2/80

Order: Geotechnique (II) (Kiso-Jiban

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
1	36.00	0.20	0.20		Silty Clay	Geyish Brown	Very Soft	Top soil. With roots
2								
3								
4								
5								
6								
7	29.40	6.80	6.60		Silty Clay	Greyish white	Very Soft	
8								Traces of fine sand
9								
10								
11								
12	24.20	12.00	5.20		Silty Clay	Grey	Very soft	
13	23.20	13.00	1.00		Silty Sand	Greyish white	Very Loose	Sand is fine grained
14					Silty Sand	Greyish white	Medium	Sand is fine grained Weathered limestone
15	21.20	15.00	2.00					
16								Sand is fine grained. Heavily weathered limestone
17								
18	17.40	18.80	3.80		Silty Sand	Grey	Dense	
19								
20							Medium to Dense	Sand is fine grained. Weathered limestone?
21	14.45	21.75	2.95		Silty Sand	Grey		
22								
23	13.20	23.00	1.25		Silty Sand	Grey	Loose	Sand is fine grained. Weathered limestone?
24								
25	11.75	24.45	1.45		Silty Sand	Greyish white	Medium	Sand is fine grained. Weathered limestone?
26	10.20	26.00	1.55		Silty Sand	Grey	Medium	Sand is fine grained. Weathered limestone?
27								
28								
29								
30					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm	(N-Value)
1.00				
1.45	P-1	0	Self penetration under weight of rod	
2.00				
2.45	P-2	0	Self penetration under weight of rod	
3.00				
3.45	P-3	0	Self penetration under weight of rod	
4.00				
4.45	P-4	0	Self penetration under weight of rod	
5.00				
5.45	P-5	0	Self penetration under weight of rod	
6.00				
6.45	P-6	0	Self penetration under weight of hammer	
7.00				
7.45	P-7	0	Self penetration under weight of hammer	
8.15				
8.45	P-8	1	1 - -	
9.10				
9.45	P-9	0	Self penetration under weight of hammer	
10.15				
10.45	P-10	1	1 - -	
11.15				
11.45	P-11	1	1 - -	
12.15				
12.45	P-12	4	1 1 2	
13.15				
13.45	P-13	20	5 7 8	
14.15				
14.45	P-14	23	7 7 9	
15.15				
15.45	P-15	32	12 10 10	
16.15				
16.23	P-16	50/3	50/5 - -	
17.15				
17.45	P-17	35	14 11 10	
18.15				
18.45	P-18	50	12 27 17	
19.15				
19.45	P-19	27	6 7 14	
20.15				
20.45	P-20	35	13 12 10	
21.15				
21.45	P-21	42	12 13 17	
22.15				
22.45	P-22	8	2 2 4	
23.15				
23.45	P-23	21	5 6 10	
24.15				
24.45	P-24	24	8 8 8	
25.15				
25.45	P-25	26	7 10 9	
25.95	P-26	50/5	50/5 - -	
26.00				

Core Recovery

50 blows/5 cm

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Name of Project

Type of Drilling: Percussion

Hole Number: No. SB-1 | Elevation: RL +36.40 m | Date: 28.12.79 to 29.12.79

Site: Sentul | Water Table: GL -2.15 m | Order: Geotechnique (H) (Kiso-Jiban)

Remarks

Scale in m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistancy	General Remarks
	36.40							
1	35.65	0.75	0.75		Silty Clay	Light brownish grey	Very soft	With roots
2								Traces of fine sand
3								
4								
5								
6	29.90	6.50	5.75		Silty Clay	Brownish grey	Very soft	
7								
8	28.40	8.00	1.50		Silty Clay	Grey	Soft	With gravel and some sand
9								With sand and gravel
10								
11	24.90	11.50	3.50		Silty Clay	Dark grey	Medium	
12					Sand and Gravel	Dark grey	Loose	With silt. Sand is coarse graire gravel is 25-30cm
13	24.00	13.00	1.50					
	23.35	13.05	0.05		Sand and Gravel	Light grey	Very dense	Heavily weathered limestone
					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m	Sampling No.	Lab.	N-Value	Blows Per Each 10cm	(N—Value)
1.00	P-1		0		Self penetration under weight of hammer
1.45					
2.00	P-2		0		Self penetration under weight of hammer
2.45					
3.15	P-3		1	- - 1	
3.45					
4.15	P-4		1	- 1 -	
4.45					
5.15	P-5		1	- - 1	
5.45					
6.15	P-6		1	- - 1	
6.45					
7.15	P-7		4	1 1 2	
7.45					
8.15	P-8		5	1 2 2	
8.45					
9.15	P-9		4	1 1 2	
9.45					
10.15	P-10		6	2 2 2	
10.45					
11.15	P-11		5	1 2 2	
11.45					
12.15	P-12		8	2 2 4	
12.45					
13.00	P-13		50	50	50 blows/5 cm
13.05					

Core Recovery

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other

Name of Project Purposes - Phase I

Type of Drilling Percussion

Hole Number No. SB-2

Elevation RL +37.5 m.

Date 9/1/80 to 10/1/80

Site Sentul

Water Table GL -2.31 m.

Driller Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	+37.50							
1	+37.35	0.15	0.15		Silty Sand	Greyish brown	Very loose	With roots
2								Traces of fine sand
3							Very soft	
4	+33.42	4.08	3.93		Clayey Silt	Greyish brown		
5								Traces of fine sand
6								
7							Very soft	
8	+29.00	8.50	4.42		Silty Clay	Greyish brown		
9	+28.80	8.70	0.20		Sand with Gravel	Grey-white	Very Dense	Heavily weathered Limestone
10					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling or Lab.	N-Value	Blows Per Each 10cm	(N-Value)
1.15				
1.45	P-1	1	0 0 1	
2.00				Self penetration under
2.45	P-2	0	weight of hammer	
3.00				Self penetration under
3.45	P-3	0	weight of hammer	
4.15				
4.45	P-4	1	0 0 1	
5.15				
5.45	P-5	2	0 1 1	
6.15				
6.45	P-6	2	0 1 1	
7.15				
7.45	P-7	2	1 0 1	
8.15				
8.45	P-8	1	0 1 0	50 blows/10cm
8.50	P-9	50/4	50/1	
8.51				

Core Recovery

FIG. DRILLING LOG

Name of Project: Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Type of Drilling: Percussion

Hole Number: No. SB-3

Elevation RL +35.9 m

Date: 7.1.80 to 8.1.80

Site: Sentul

Water Table: GL -2.20 m

Driller: Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	+35.90							
1	+34.40	1.50	1.50		Silty Clay	Bluish grey	Very soft	With roots
2								
3						Light Grey-ish brown		
4	+31.40	4.50	3.00		Silty Clay		Very soft	
5								
6								Sand is medium to coarse grained
7	+28.40	7.50	3.00		Sand	Grey	Loose	
8								Sand is coarse grained.
9							Loose	With gravel
10	+25.40	10.50	3.00		Sand	Grey	Medium	With silt
11	+25.42	10.52	0.02		Gravel	Greyish White	Hard	Gravel is ø10 15 cm
12								End of Drilling

Standard Penetration Test or Core Recovery

Depth in m	Sampling for SPT	N-Value (Blows per 20cm)	Blows Per Each 10cm	(N-Value) 10 20 30 40 50
1.00				Core Recovery
1.45	P-1	0		Self penetration under weight of hammer
2.15				
2.45	P-2	2	1 1	
3.00				
3.45	P-3	0		Self penetration under weight of hammer
4.00				
4.45	P-4	0		Self penetration under weight of hammer
5.15				
5.45	P-5	3	1 1	
6.15				
6.45	P-6	4	1 2	
7.15				
7.45	P-7	3	1 1	
8.15				
8.45	P-8	5	1 2	
9.15				
9.45	P-9	6	2 2	
10.15				
10.45	P-10	8	3 2	50 blows/2cm
10.50	P-11	50/2cm		
10.52				

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other

Name of Project Purposes - Phase I — Type of Drilling: Percussion

Hole Number: No. SB-4 — Elevation: PL +37.5' m — Date: 4/1/80 to 5/1/80

Site: Sentul — Water Table: GL -2.65 m — Driller: Geotechnique (M) (Kiso-Jiban

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistancy	General Remarks
	+37.50							
	+37.10	0.40	0.40					Sand is fine grained with root traces of clay
1					Sandy Silt	Grey	Loose	
2								
3								
4								
5	+32.60	4.90	4.50		Silty Clay	Greyish white	Very soft	Traces of fine sand
6								Medium to coarse sand
7								
	+30.00	7.50	2.60		Sand	Grey	Loose	
8								Sand is medium to coarse grained.
9								
10								With gravel (ϕ 5 - 20cm)
11								With fragments of limestone (ϕ 30 - 50cm)
12	+24.80	12.70	5.20		Sand	Greyish white	Medium	
13	+23.90	13.60	0.90		Silty Sand	Grey	Loose	Sand is fine grained
14	+23.00	14.50	0.90		Silty Sand	Grey	Loose	With some clay. Sand is medium to coarse
15								
16	+20.90	16.60	2.10		Silty Sand	Grey	Medium	Sand is coarse grained
17								Sand is fine to medium grained with silt
18	+19.00	18.50	1.90		Sand	Grey	Loose	
19								Sand is coarse grained
20	+17.50	20.00	1.50		Sand	Grey	Medium	
	+17.49	20.01	0.01		Sand with Gravel			Weathered limestone
21								
22						Grey		End of Drilling
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m.	Sampling No.	SPT-N Value	Blows Per Each 10cm	(N—Value) 10 20 30 40 50
1.15 / 1.45	P-1	1	0 1/20 -	Core Recovery
2.00 / 2.45	P-2	0	Self pe	etration under weight of hammer
3.15 / 3.45	P-3	1	0 0 1	
4.00 / 4.45	P-4	0	Self pe	etration under weight of hammer
5.15 / 5.45	P-5	4	1 1 2	
6.15 / 6.45	P-6	5	1 2 2	
7.15 / 7.45	P-7	7	2 2 3	
8.15 / 8.45	P-8	9	2 3 4	
9.15 / 9.45	P-9	8	2 3 3	
10.15 / 10.45	P-10	9	2 3 4	
11.15 / 11.45	P-11	9	3 3 3	
12.15 / 12.45	P-12	8	2 2 4	
13.15 / 13.45	P-13	5	1 2 2	
14.15 / 14.45	P-14	4	1 1 2	
15.15 / 15.45	P-15	6	2 2 2	
16.15 / 16.45	P-16	7	2 2 3	
17.15 / 17.45	P-17	8	2 2 4	
18.15 / 18.45	P-18	8	3 2 3	
19.15 / 19.45	P-19	11	3 4 4	
20.00 / 20.01	P-20	5/1	5/1 - -	50 blows/1cm

FIG. DRILLING LOG

Name of Project: Feasibility Study for the reclamation project at Ex-mining Land for Housing Development and Other Purposes - Phase I

Type of Drilling: Percussion

Hole Number: No. SB-5

Elevation: PL +36.9 m

Date: 7/1/80 to 8/1/80

Site: Sentul

Water Table: GL -2.15 m

Order: Geotechnique (M) (Kiso-Jiban)

Remarks

Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
36.75	0.15	0.15		Clayey Silt	Light brown	Very Soft	With roots
35.45	1.45	1.30		Clayey Silt	Grey	Very soft	Traces of sand
34.15	2.75	1.30		Clayey Silt	Light grey	Very soft	
33.40	3.50	0.75		Sand	Grey	Medium	Sand is redium grained. Traces of gravel
31.10	5.80	2.30		Silty Sand	Grey	Very loose	Sand is fine grained
29.40	7.50	1.70		Sandy Silt	Grey	Very soft	With coarse sand
26.05	10.85	3.35		Silty Clay	Grey	Very soft	High plasticity
25.40	11.50	0.65		Sandy Clay	Grey	Soft	With gravel. Gravel is ø2-20mm
22.90	14.20	2.70		Silty Clay	Dark grey	Stiff	With redium to coarse sand with gravel ø3 - 5mm
21.40	15.50	1.30		Clayey Sand	Dark grey	Loose	With white patche Sand is redium to coarse grained.
19.90	17.00	1.50		Silty Sand	Grey	Loose	With white patche Sand is redium to coarse grained
19.88	17.02	0.02		Sand with Gravel	Grey	Hard	Weathered lirestone

End of Drilling

Standard Penetration Test or Core Recovery

Depth in m.	Sample No.	Sampling by Lab.	SPT-N Value	Blows Per Each 10cm	
1.00	P-1		0	Self penetration under weight of hammer	
2.00	P-2		0	Self penetration under weight of hammer	
3.15	P-3		10	4	4 3
4.15	P-4		2	1	1 -
5.00	P-5		0	Self penetration under weight of hammer	
6.15	P-6		1	1	- -
7.15	P-7		1	1	- -
8.15	P-8		1	1	- -
9.15	P-9		2	1	1 -
10.15	P-10		1	1	- -
11.15	P-11		4	1	1 2
12.15	P-12		10	3	3 4
13.15	P-13		8	2	3 3
14.15	P-14		9	2	3 4
15.15	P-15		7	2	2 3
16.15	P-16		8	2	2 4
17.00	P-17		50/2	50/2	- -

(N—Value) 10 20 30 40 50

Core Recovery

50 blows/2cm

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes – Phase I

Name of Project

Hole Number No. 53-6 Elevation RL +36.6 m. Date 29.12.79 to 4.1.80

Site Seatul Water table GL -5.50 m. Driller Geotechnique (M) (Kiso-Jiby

Type of Drilling Percussion

Remarks

Standard Penetration Test & Core Recovery

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.30							
	36.25	0.15	0.15		Silty Clay		Very soft	With roots
	32.90	3.50	3.35		Silty Clay	Whitish grey	Very soft	
	31.40	5.00	1.50		Silty Sand	Light grey	Very loose	With some gravels. Sand is fine to coarse grained
	28.90	7.50	2.50		Sand with Gravel	Grey	Medium	Sand is coarse grained
	23.40	13.00	5.50		Sand	Grey	Loose	With silt. Sand is medium to coarse grained. Gravel is ø 3-5 mm
	22.90	13.50	0.50		Silty Sand	Grey	Loose	With gravel
	18.40	18.00	4.50		Sand	Grey	Loose	With silt. Sand is medium to coarse grained. Gravel is ø 3-5 mm
	18.40	18.00	1.00		Silty Clay	Grey	Very soft	With coarse sand and gravels
	13.40	23.00	5.00		Sandy Silt	Grey	Medium	Fine to coarse sand with gravels
	11.90	24.50	1.50		Silty Sand	Grey	Medium	Sand is fine to coarse with some gravels
	5.90	27.50	3.00		Sandy Silt	Grey	Very stiff	With clay
	5.40	30.00	2.50		Sandy Silt	Grey	Very stiff	With some gravel. With clay
	4.90	31.50	1.50		Sandy Silt	Whitish grey	Hard	Feebly weathered limestone
	2.40	34.00	2.50		Sandy Silt	Yellowish and Greyish brown	Hard	Feebly weathered limestone
	0.30	36.10	2.10		Sandy Silt	Grey	Hard	Weathered limestone
					End of Drilling			

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other

Name of Project Purposes - Phase I — Type of Drilling: Percussion

Hole Number: No. SB-7 — Elevation: RL +33.7 m — Date: 10/1/80 to 11/1/80

Site: Sentul — Water Table: GL -2.60 m — Driller: Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	33.70							
	33.40	0.30	0.30		Organic Clay	Dark grey	Very soft	With roots
1								Sand is fine grained
2								
3					Silty Sand	Light grey	Very soft	
	30.00	3.70	3.40					
4								Sand is coarse grained with silt
5					Sand and Gravel	Light grey	Loose	Gravel is ϕ 2-5cm
6	27.10	6.60	2.90					
7					Sand and Gravel	Grey	Medium	Sand is coarse grained. Gravel is ϕ2-50cm
	26.20	7.50	0.90					
8								Sand is fine grained with gravel
9	24.70	9.00	1.50		Silty Sand	Grey	Dense	
								With gravels
10	23.60	10.10	1.10		Silty Sand	Greyish white	Very dense	Gravel is ϕ2-5cm
11					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m	Sampling No.	N-Value	Blows Per Each 10cm	(N—Value)
1.00				Core Recovery
1.45	P-1	0		Self penetration under weight of hanner
2.15	P-2	1	1/30	
2.45				
3.00	P-3	0		Self penetration under weight of hanner
3.45				
4.15	P-4	4	1 1 2	
4.45				
5.15	P-5	4	1 1 2	
5.45				
6.15	P-6	5	2 1 2	
6.45				
7.15	P-7	10	3 3 4	
7.45				
8.15	P-8	33	10 11 11	
8.45				
9.15	P-9	50/10	50	50 blows/10cm
9.45				
10.00	P-10	50/15	50/15	50 blows/15cm
10.10				

FIG. DRILLING LOG

Name of Project: Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Type of Drilling: Percussion

Hole Number: No. SB-8

Elevation: RL +34.00 m

Date: 13/1/80 to 14/1/80

Site: Sentul

Water Table: GL - 2.25 m

Driller: Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	33.00							
	33.75	0.25	0.25		Organic Clay	Grey	Soft	With roots
1	32.40	1.60	1.35		Clay with Sand	Grey	Very loose	Sand is fine to medium grained
2								
3	31.20	2.80	1.20		Sand	Grey	Very loose	Sand is medium to coarse grained
4								Sand is fine to medium grained
5								
6								With gravel ϕ 3 - 5cm
7								
8	25.50	8.50	5.70		Sand	Grey	Very loose	
9								Sand is medium grained with seat gravel.
10								
11								
12	22.00	12.00	3.50		Sandy Silt	Grey	Very soft	
13	21.97	12.03	0.03		Sand with Gravel			Weathered limestone
					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm	(N—Value) 10 20 30 40 50
1.15	P-1	1	1/30 - -	Core Recovery
1.45				
2.15	P-2	1	1/30 - -	
2.45				
3.15	P-3	9	5 3 1	
3.45				
4.00	P-4	0	- - -	Self penetration under weight of hammer
4.45				
5.15	P-5	2	1/15 1/15 -	
5.45				
6.15	P-6	3	1 1 1	
6.45				
7.15	P-7	2	1/15 1/15 -	
7.45				
8.15	P-8	4	1 1 2	
8.45				
9.15	P-9	2	1/15 1/15 -	
9.45				
10.15	P-10	0	- - -	
10.45				
11.15	P-11	2	1/15 1/15 -	
11.45				
12.00	P-12	50/3	50/1 - -	50 blows/3 cm
12.03				

FIG. DRILLING LOG

Remarks

Name of Project: Feasibility Study for the Reclamation Project or Ex-mining Land for Housing Development and Other Purposes - Phase I

Type of Drilling: Percussion

Hole Number: No. SB-9 | Elevation: PL +38.1 m | Date: 14/1/80 to 18/1/80

Site: Sentul | Water Table: GL -7.00 m | Driller: Geotechnique (M) (Kiso-Jiban)

Elevation in m.	Depth in m.	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
38.10						
37.95	0.15	0.15	Silty Sand	Greyish brown	(Soft)	Fine sand with roots
35.10	3.00	2.85	Silty Clay	Greyish brown	Very soft	
30.60	7.50	4.50	Silty Clay	Greyish brown	Very soft to soft	Traces of fine sand
27.10	11.00	2.50	Silty Clay	Greyish brown	Very soft	Traces of sand
24.60	13.50	2.50	Sandy Clay	Greyish brown	Very soft	With clay; with gravels
22.38	16.75	3.25	Sandy Clay	Grey	Soft	With silt; Sand is fine to coarse grained. With gravels
22.33	16.80	0.05	Sand with Gravel			Weathered limestone

End of Drilling

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm			Remarks (N-Value) / Core Recovery
1.10–1.45	P-1	0				Self penetration under weight of hammer
2.10–2.45	P-2	0				Self penetration under weight of hammer
3.15–3.45	P-3	1	1/30	-	-	
4.15–4.45	P-4	2	1/15	1/15	-	
5.15–5.45	P-5	2	1/15	1/15	-	
6.15–6.45	P-6	3	1	1	1	
7.15–7.45	P-7	3	1	1	1	
8.15–8.45	P-8	4	1	1	2	
9.15–9.45	P-9	1	1/30	-	-	
10.15–10.45	P-10	1	1	-	-	
11.00–11.45	P-11	0				Self penetration under weight of hammer
12.00–12.45	P-12	0				Self penetration under weight of hammer
13.15–13.45	P-13	1	1/30	-	-	
14.15–14.45	P-14	1	1/30	-	-	
15.15–15.45	P-15	2	1/15	1/15	-	
16.15–16.45	P-16	2	1	1	-	
16.75–16.80	P-17		50/5	50/5	-	50 blows/5cm

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I

Name of Project

Type of Drilling: Rotary

Boring No. Sub-section A"-A

Elevation: RL +36.4 m.

Date: 2/2/80 to 7/2/80

Site: Sentul

Water Table: GL -2.91 m.

Driller: Geotechnqive (M) (Kiso-Jiban)

Remarks

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	+36.45							
	+36.25	0.20	0.20		Silty Clay	Yellowish brown	(Very soft)	With roots
	+34.30	2.15	1.95		Silty Clay	Yellowish brown	(Very soft)	
	+33.55	2.90	0.75		Silty Clay	Grey	(Very soft)	
	+31.75	4.70	1.80		Sand	Grey	Loose	Sand is fine to medium grained
	+28.85	7.60	2.90		Sand	Grey	Loose to Medium	Sand is fine to medium grained
	+27.45	9.00	1.40		Sand	Grey	Loose	Sand is fine to medium grained
	+22.50	13.90	4.90		Sand	Grey		Sand is medium to coarse grained
	+22.15	14.30	0.40		Silty Clay	Grey		With traces of sand
	+16.70	19.75	5.45		Sand	Greyish white		Sand is medium to coarse grained
	+15.20	21.25	1.50		Limestone	Greyish white		Limestone is heavily weathered
	+14.40	22.05	0.80		Limestone	Greyish white	Hard	Weathered limestone
	+7.00	29.45	7.40		Limestone	Greyish white		
					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value (Blows)	Blows Per Each 10cm
0.10			
0.90	S-1		
1.00			
1.80	S-2		
2.00			
2.75	S-3		
3.35	P-1		2 1 1 0
3.45			
4.15	P-2		3 0 0 3
4.45			
5.15	P-3		6 1 2 3
5.45			
6.15	P-4		10 4 3 3
6.45			
7.15	P-5		8 3 3 2
7.45			
8.15	P-6		3 1 1 1
8.45			
21.70	Pressuremeter Test		
22.05	P-1		
22.24			

(N-Value) 10 20 30 40 50

Core Recovery

100%

100%

65%

50%

55%

30%

FIG. DRILLING LOG

Feasibility Study for the Reclamation Project at Ex-mining Land for Housing Development and Other

Name of Project Purposes - Phase I — Type of Drilling Rotary

Boring No. Sub-section A"-B — Elevation PL +36.4 m — Date 9/2/80 to 11/2/80

Site Sentul — Water Table GL -2.25 m — Driller Geotechnique (M) (Kiso-Jiban)

Remarks

Scale in m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks	Depth in m	Sampling or Lab.	SPT-Value	Blows Per Each 10cm	Standard Penetration Test or Core Recovery (N-Value)
	+36.40												
1	+36.20	0.20	0.20		Silty Clay	Yellowish brown	(Very soft)	With roots in top part. Top soil	1.00	In-situ Vane Test			Core Recovery
2	+33.65	2.75	2.55		Silty Clay	Grey	(Very soft)		2.00	In-situ Vane Test			
3													
4													
5													
6								Sand is medium to coarse grained					
7													
8													
9													
10													
11													
12													
13							(Very loose to loose)						
14	+22.25	14.15	11.40		Sand	Grey							
15								Limestone is weathered in upper portion	15.20	Pressuremeter Test			35%
16									16.20	Pressuremeter Test			55%
17								Fresh	17.00	Pressuremeter Test			85%
18									18.50	Pressuremeter Test			
19	+16.70	19.70	5.54		Limestone	Light grey			19.00	Pressuremeter Test			100%
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

FIG. DRILLING LOG

Name of Project: Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes + Phase I

Type of Drilling: Rotary

Boring No. Sub-section B-A — Elevation: RL +36.3 m — Date: 19/1/80 to 31/1/80

Site: Sentul — Water Table: GL -2.20 m — Driller: Geotechnique (M) (Kiso-Jiban)

Remarks:

Scale in m	Elevation in m	Depth in m	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	+36.30						
3	+33.30	3.00	3.00	Silty Clay	Greyish brown	Very soft	
7	+28.80	7.50	4.50	Silty Clay	Greyish white	Very soft	With black patches
11	+25.17	11.13	3.63	Silty Clay	Grey	(Soft)	With some cavity. Traces of fine sand
12	+24.30	12.00	0.87	Silty Sand	Grey	Loose	Sand is fine to medium grained
14	+22.30	14.00	2.00	Silty Sand	Light Greyish white	Dense to very dense	Weathered limestone. With gravels. Sand is fine grained
19	+17.30	19.00	5.00	Silty Fine Sand	Grey	Medium to dense	Weathered limestone
21	+15.30	21.00	2.00	Silty Sand	Light grey	Medium to dense	Decomposed limestone?
24	+12.30	24.00	3.00	Clayey Sand	Light grey	Dense	Sand is fine to medium grained. With some gravels. Decomposed limestone?
25	+11.20	25.10	1.10	Limestone	Light grey		Fresh and hard
28	+8.30	28.00	2.90	Weathered limestone	Greyish white		Heavily weathered limestone. Rock fragment cemented by fine matrix
29	+7.30	29.00	1.00	Weathered limestone			Heavily weathered limestone with silt
31	+5.00	31.30	2.30	Weathered limestone	Light greyish white		Heavily weathered limestone with fine sand
36	+0.30	36.00	4.70	Limestone	Light Greyish white		Fresh and hard limestone
							End of Drilling

Standard Penetration Test or Core Recovery

Depth in m	Sampling / Tube No.	N-Value	Blows per each 15 cm (1st)	(2nd)	(3rd)
1.00–1.80	S-1				
2.00–2.80	S-2				
3.00–3.80	S-3				
5.00–5.80	S-4				
6.00–6.80	S-5				
7.50–8.10	S-6				
8.50–9.10	S-7				
9.50–10.30	S-8				
10.55–11.13	S-9				
11.28–11.58	P-1	5	1	2	2
12.15–12.45	P-2	32	8	9	15
13.15–13.39	P-3	50/24	20	20	10/9
14.15–14.45	P-4	15	6	6	3
15.15–15.45	P-5	34	16	11	7
16.15–16.45	P-6	14	3	5	6
17.15–17.45	P-7	29	11	9	9
18.15–18.45	P-8	15	4	5	6
19.15–19.45	P-9	25	6	9	10
20.15–20.45	P-10	43	14	13	16
21.15–21.45	P-11	43	21	32	10
22.15–22.45	P-12	23	9	6	8
23.15–23.45	P-13	26	9	8	9
24.00			[illegible]		
29.20	Pressuremeter Test				
30.00–30.10	P-14	50/10			
30.10–30.50	Pressuremeter Test				
31.50	Pressuremeter Test				
32.50	Pressuremeter Test				
33.50	Pressuremeter Test				

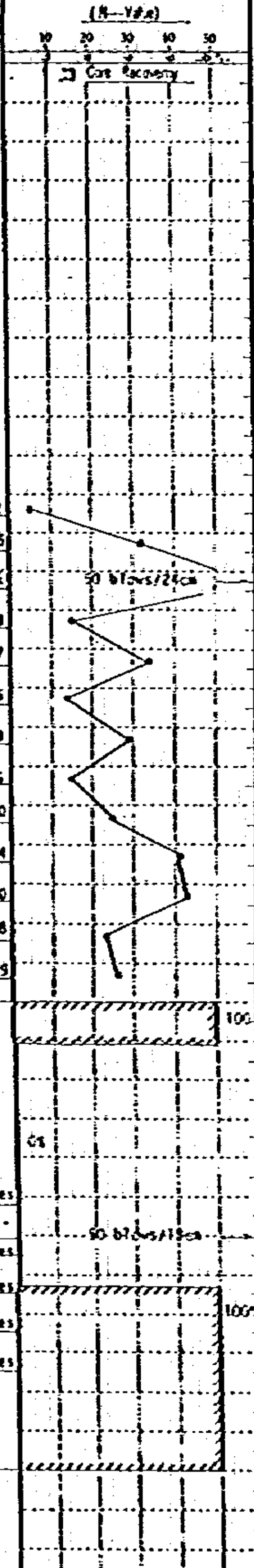


FIG. DRILLING LOG

Name of Project	Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes - Phase I
Type of Drilling	Rotary
Boring No.	Sub-section B-8
Elevation	RL +36.3 m
Date	2/2/80 to 9/2/80
Site	Sentul
Water Table	GL -2.13 m
Driller	Geotechnique (M) (Kiso-Jiban)

Remarks

Elevation in m	Depth in m	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
36.30						
29.50	6.80	6.80	Silty Clay	Greyish white	(Very soft)	
24.30	12.00	5.20	Silty Clay	Grey	(Very soft)	
18.30	18.00	6.00	Sand	Greyish white		Sand is fine gravel; With some gravels; Weathered limestone
10.30	26.00	8.00	Silty Fine Sand	Grey		With some gravels; Weathered limestone
+8.80	27.50	1.50	Weathered Limestone	Grey		Rock fragment (limestone) cemented by fine matrix
+7.80	28.50	1.00	Weathered Limestone	Light grey		Very heavily weathered
+2.80	33.50	5.00	Weathered Limestone	Light grey		Limestone is heavily weathered at 29.5 to 31.5m; Rock is fresh and hard in lower portion

End of Drilling

Standard Penetration Test or Core Recovery

Depth in m	Sampling for Lab	Blows Per Each 10cm	(N-Value) / Core Recovery
1.45	In-situ Vane Test		
2.45	In-situ Vane Test		
3.45	In-situ Vane Test		
4.45	In-situ Vane Test		
5.45	In-situ Vane Test		
6.45	In-situ Vane Test		
7.45	In-situ Vane Test		
8.45	In-situ Vane Test		
9.45	In-situ Vane Test		
10.45	In-situ Vane Test		
11.45	In-situ Vane Test		
12.00–12.45			Permeability Test
17.00–17.45			Permeability Test
22.00–22.45			Permeability Test
26.00–27.50			45%
28.00–28.05	P-1	50, 50	50 blows/5cm
			75%
			15%
			70%
			100%

FIG. DRILLING LOG

Remarks

Name of Project

Type of Drilling Rotary

Hole Number No. SBH-1 Elevation RL +36.35 m. Date 14.9.80 to 17.9.80

Location Sentul Water Table GL +0.20 m. Driller Geotechnique ( )

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.35	0.00						
9	27.55	8.80	8.80		Silty Clay	Creamy white	Very soft	Increase consistency with depth Trace of very fine sand and fine fragments of organic matter
14	21.85	14.50	5.70		Silty Clay	Dark grey	Very soft	Traces of fine sand, small organic matter, and fine mica
17	19.35	17.00	2.50		Silty Clay	Grey	Stiff	Traces of fine sand and mica
18	18.35	18.00	1.00		Silty Clay	Grey	Very stiff	With angular limestone fragments (9 - 20mm)
	18.24	18.11	0.11		Decomposed Limestone	Grey-white	Hard	
					End of Drilling			

Depth in m.	Sampling or Lab.	SPT N-Value	Blows Per Each 10cm
1.00	U01		
1.80	P-1	0	0 - 1 -
2.25			
3.00	U02		
3.80	P-2	0	0 - - -
4.25			
5.00	U03		
5.80	P-3	0	0 - - -
6.25			
7.00	U04		
7.80	P-4	0	0 - - -
8.25			
9.00	U05		
9.80	P-5	0	0 - - -
10.25			
11.00	U06		
11.80	P-6	0	0 - - -
12.25			
13.00	U07		
13.80	P-7	0	0 - - -
14.25			
15.00	U08		
15.80	P-8	9	2 3 4
16.25			
17.15	P-9	23	7 8 8
17.45			
18.00	P-10	50/11	42 8 -
18.11			

Standard Penetration Test or Core Recovery

(N—Value) 10 20 30 40 50

Core Recovery

Penetration under weight of rods

Penetration under weight of rods

Penetration under weight of rods

Penetration under weight of rods

Penetration under weight of rods

Penetration under weight of rods

Penetration under weight of rods and hammer

50 blows/11cm

FIG. DRILLING LOG

Remarks

Name of Project

Type of Drilling Rotary

Hole Number No. SBH-2 Elevation RL +36.35 m. Date 19.9.80 to 21.9.80

Location Sentul Water Table GL +0.20 m. Order Geotechnique ( )

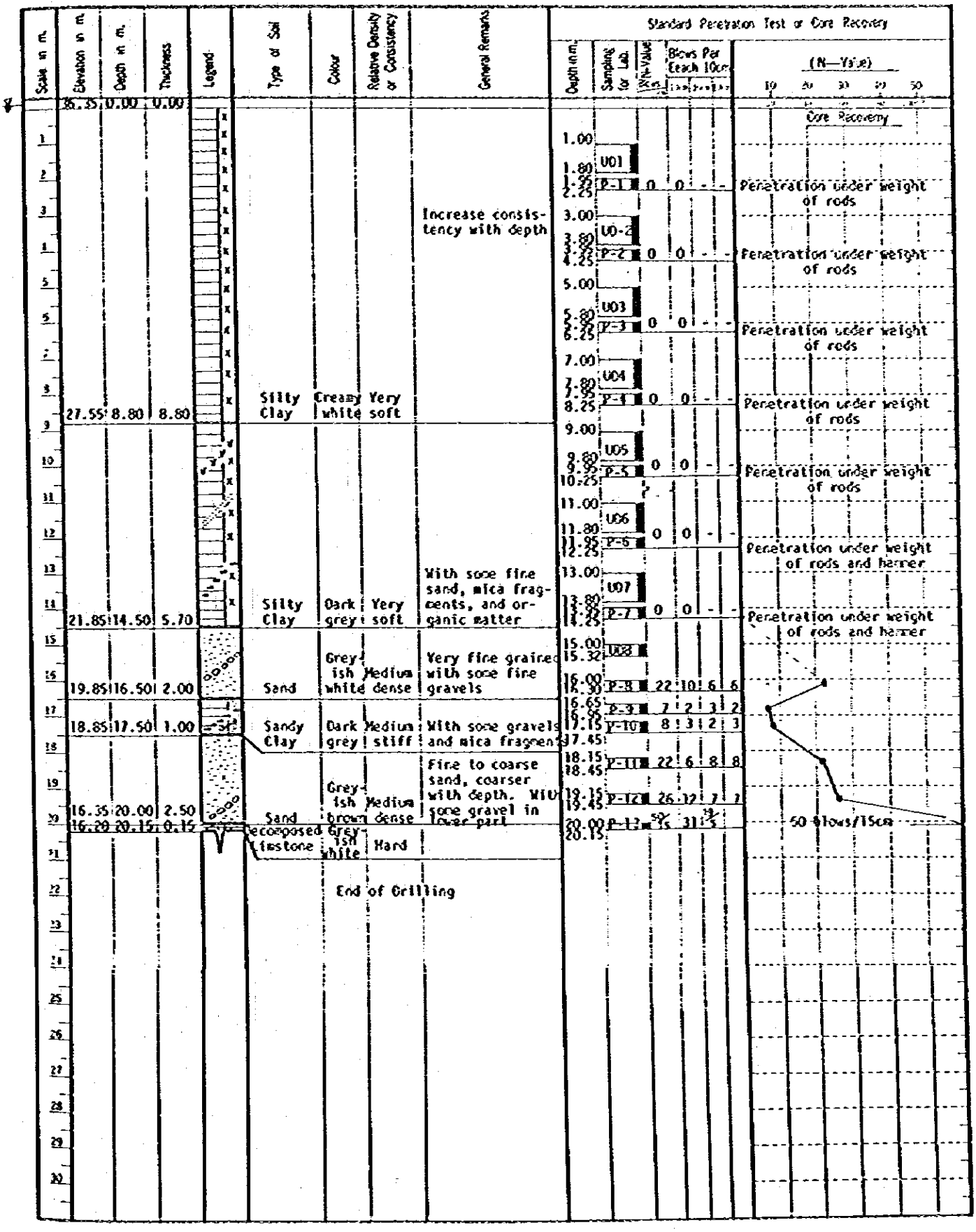


FIG. DRILLING LOG

Name of Project	
Hole Number	No. SBH-3
Elevation	RL+37.45 m
Water Table	GL-0.60-0.80 m
Type of Drilling	Rotary
Date	28.1.81 to 1.2.81
Driller	Wong (K-J S'pore)

Remarks

After first stage of surcharging (about 1.3m) without sand drain

Elevation in m	Depth in m	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
37.45	0.00					
36.65	0.80	0.80	Silty Clay	Yellowish brown	Medium Stiff	With Sand
35.65	1.80	1.00	Sand	Greyish white	Loose	Coarse grained with some angular gravels (ϕ=2 to 5mm)
27.45	10.00	8.20	Silty clay	Creamy white	Very soft	Increase consistency with depth
21.25	16.20	6.20	Silty Clay	Dark grey	Very soft to soft	Increase consistancy with depth. With decayed woods & traces of sand at lower portion
18.05	19.40	3.20	Silty Clay	Dark grey with white patches	Soft to stiff	With coarse sand and gravels
17.25	20.20	0.80	Sandy Silt	Dark grey	Medium dense	Sand is fine grained
14.05	23.40	3.20	Sand	Dark grey	Loose	Fine grained with pocket of coarse sand & gravels
13.05	24.40	1.00	Silt	Greyish white	Stiff	With gravels
12.45	25.00	0.60	Sand	Dark grey	Medium	Coarse grained with gravels
11.95	25.50	0.50				
			Limestone	White & grey	Hard	

End of Drilling

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm		
0.00–0.80	UD-1				
1.00–1.80	UD-2				
2.00–2.80	UD-3				
3.00–3.80	UD-4				
4.00–4.80	UD-5				
5.00–5.80	UD-6				
6.00–6.80	UD-7				
7.00–7.80	UD-8				
8.00–8.80	UD-9				
9.00–9.80	UD-10				
10.00–10.80	UD-11				
11.00–11.80	UD-12				
12.00–12.80	UD-13				
13.00–13.80	UD-14				
14.00–14.80	UD-15				
15.00–15.80	UD-16				
16.00–16.40	UD-17				
16.55–16.85	P-1	3	1/5	1/35	1
17.65–17.95	P-2	8	2	3	3
18.65–18.95	P-3	9	3	3	3
19.65–19.95	P-4	13	3	4	6
20.65–20.95	P-5	10	3	3	4
21.65–21.95	P-6	7	2	2	3
22.65–22.95	P-7	7	3	2	2
23.65–23.95	P-8	13	3	4	6
24.65–24.95	P-9	14	3	4	7

(N—Value)

Core Recovery

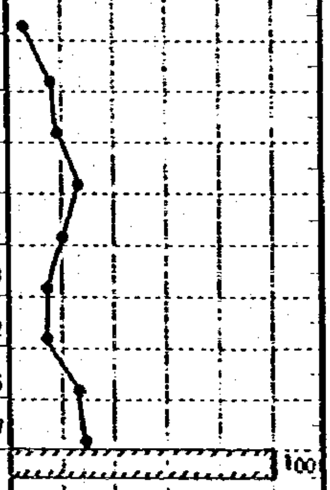


FIG. DRILLING LOG

Name of Project

Type of Drilling Rotary

Hole Number No. SBH-4 Elevation RL +37.15 m Date 22.1.81 to 26.1.81

Water Table GL -0.10 - 0.20m Driller Wong (K-J S'pore)

Remarks

After first stage of surcharging (about 1.3m) with sand drain

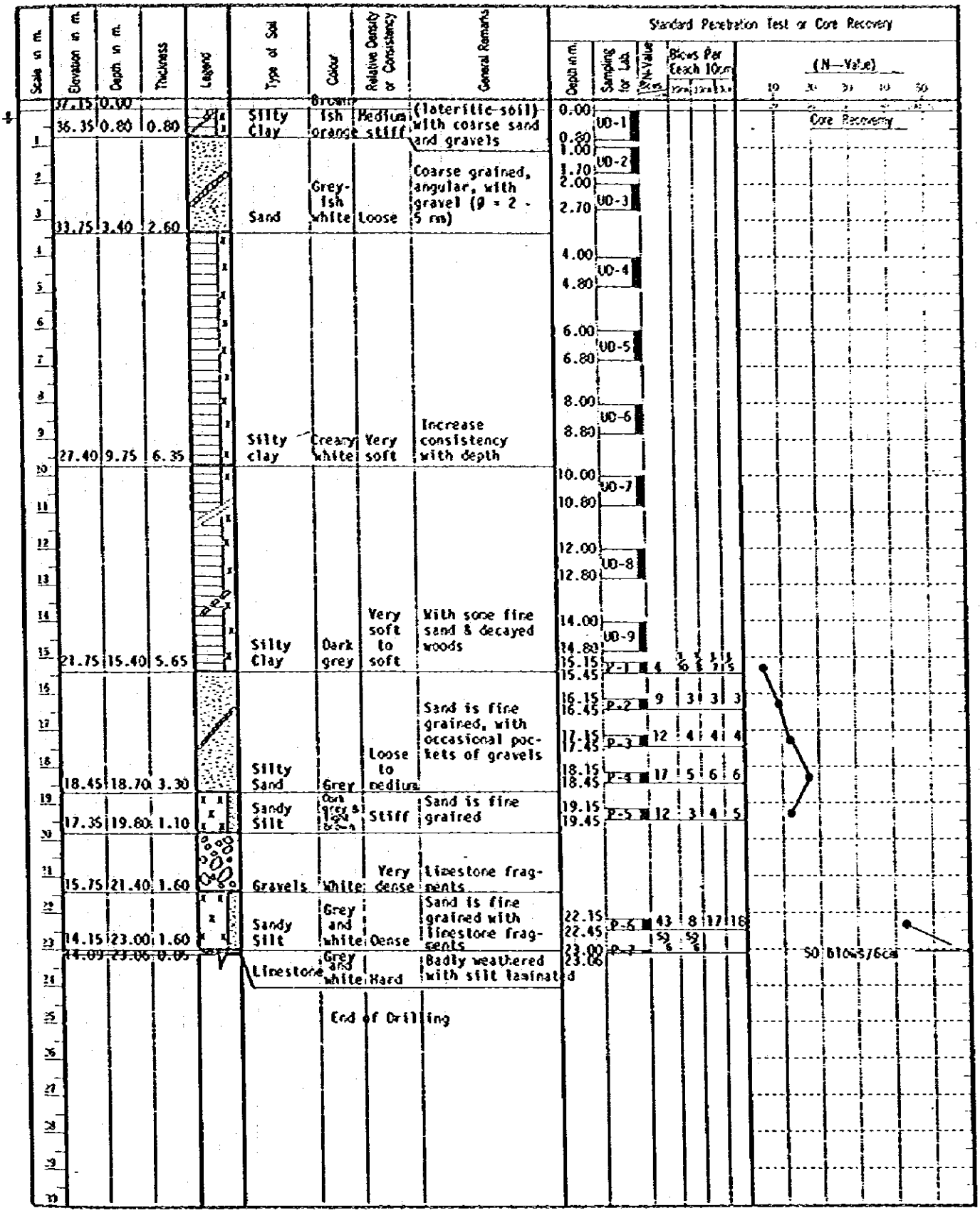


FIG. DRILLING LOG

Project No. Project

Hole Number SBH-5 Elevation RL +37.85 m.

Water Table GL -1.30 ~ -1.40m.

Type of Drilling Rotary

Date 11.7.81 to 16.7.81

Driller (Wong)

Remarks

After second stage of surcharge (about 2.3 m in total)

Scale in m.	Elevation in m.	Depth in m.	Thickness in m.	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	37.85	0.00						
1					Silty clay	Brownish red	Medium stiff	With medium to coarse sand & laterite nodules
2	35.35	2.00	2.00					
	35.15	2.70	0.70		Sand	Greyish white	Loose	Coarse grained
3								
4								
5								
6								
7								
8								
9								
10					Silty clay	Creamy white	Very soft	With patches of dark grey clay & organic matters at bottom part
11	27.15	10.70	8.00					
12								
13								
14								
15								
16					Silty clay	Dark grey	Soft	With very fine sand, organic matters and decayed woods
	21.35	16.50	5.80					
17								
18								
19								
20								
21								
22								
23					Clayey sand	Dark grey	Loose	With medium to coarse grained gravel and decayed woods
	14.95	22.90	6.40					
24						Greyish white		Highly weathered limestone
	13.65	24.20	1.30		Limestone		Hard	
25								End of drilling
26								
27								
28								
29								
30								

Sampling Depth in m.	Sample No.	N-Value	Blows Per Each 10cm	
0.50	U0-1			
1.35				
1.50	U0-2			
2.35				
2.50	U0-3			
3.35				
5.00	U0-4			
5.85				
6.50	U0-5			
7.35				
8.00	U0-6			
8.85				
9.50	U0-7			
10.35				
11.00	U0-8			
11.85				
12.50	U0-9			
13.35				
14.00	U0-10			
14.85				
15.50	U0-11			
16.35				
17.15				
17.45	P-1	9	2	3 4
18.15				
18.45	P-2	7	2	2 3
19.15				
19.45	P-3	7	2	2 3
20.15				
20.45	P-4	4	1	1 2
21.15				
21.45	P-5	3	1	1 1
22.15				
22.45	P-6	12	2	4 6
24.20	P-7	50/2cm		
24.22				

Standard Penetration Test or Core Recovery

N - Value

10 20 30 40 50

20 40 60 80 100 (%)

Core Recovery

50/2 cm

FIG. DRILLING LOG

Project No. Project

Hole Number SBH-6 Elevation 37.80 m.

Water Table GL -1.20 ~ -1.40 m.

Type of Drilling Rotary

Date 26.6.81 to 5.7.81

Driller (Hong)

Remarks

After second stage of surcharge (about 2.3 m in total)

Elevation in m.	Depth in m.	Thickness in m.	Type of Soil	Colour	Relative Density or Consistency	General Remarks
37.80	0.00					
35.00	2.80	2.80	Silty clay	Reddish brown	Medium stiff	With sand & laterites
33.00	4.80	2.00	Sand	Greyish white	Loose	Coarse grained
27.30	10.50	5.70	Silty clay	Creamy white	Very soft	
21.60	16.20	5.70	Silty clay	Dark grey	Soft	With organic matters and traces of fine sand
21.20	16.60	0.40	Sand	Brownish grey	Loose	W/clay patches and gravel, sand is fine.
20.20	17.60	1.00	Clayey sand	Dark grey	Loose	Sand is fine to med. with gravel
11.63	26.17	8.57	Clayey silt	Greyish white	Stiff to Hard	With occasional sand layer and some fragments of limestone
						End of drilling

Sampling Depth in m.	Sample No.	N Value	Blows Per Each 10cm			Core Recovery
0.50						
1.35	UD-1					
1.50						
2.35	UD-2					
4.15	P-1	3	5	1	2	2
4.45						
5.00						
5.85	UD-3					
6.50						
7.35	UD-4					
8.00						
8.85	UD-5					
9.50						
10.35	UD-6					
11.00						
11.85	UD-7					
12.50						
13.35	UD-8					
14.00						
14.85	UD-9					
15.50						
16.30	UD-10					
17.15	P-2	14	8	2	3	3
17.45						
18.15	P-3	44	12	16	14	
18.45						
19.15	P-4	23	7	7	9	
19.45						
20.15	P-5	22	4	8	10	
20.45						
21.15	P-6	15	3	5	7	
21.45						
22.15	P-7	25	7	8	10	
22.45						
23.15	P-8	50/28 cm	6	14	8	50/28 cm
23.45						
24.15	P-9	29	10	8	11	
24.45						
25.15	P-10	50/21 cm	21	18	27	5/1 50/21 cm
25.35						
26.10	P-11	50/7 cm	7	7		50/7 cm
26.17						

Results of In-Situ Vane Shear Tests (1)

Location: Pilot Test Area at Sentul

Note : Tests were performed in Phase I study.

Location	Sub-section A"-B (R*)			Sub-section B-B (R*)		
Ground Level	R.L. +36.40 m			R.L. +36.40 m		
Depth of The Vane Tip	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio
1.45	0.45	0.15	3.0	0.21	0.16	1.3
2.45	0.62	0.25	2.5	0.25	0.19	1.3
3.45	—	—	—	0.41	0.22	1.9
4.45	—	—	—	0.35	0.24	1.5
5.45	—	—	—	0.31	0.19	1.6
6.45	—	—	—	0.51	0.20	2.6
7.45	—	—	—	1.22	0.45	2.7
8.45	—	—	—	0.78	0.54	1.4
				(0.45)		(0.9)
9.45	—	—	—	(1.09)	0.51	(2.1)
				(1.40)		(2.7)
10.45	—	—	—	1.93	0.79	2.4
11.45	—	—	—	2.40	1.36	1.8

Note : R* denotes rotary boring

Results of In-Situ Vane Shear Tests(2)

Location: Test Embankment at Sentul(Preloading Area)

Note: Tests were performed between 18th and 25th September 1980 i.e. before placeing the embankment.

Location No.	SV-1 (at SBH-1)			SV-3 (at SBH-1)		
Ground Level	R.L +36.35 m			R.L. +36.35 m		
Depth of The Vane Tip	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio
1.45 m	0.17	0.15	1.1	0.17	0.08	2.1
2.45 m	0.13	0.08	1.6	0.29	0.13	2.2
3.45 m	0.25	0.10	2.5	0.17	0.13	1.3
4.45 m	0.55	0.10	5.5	0.46	0.17	2.7
5.45 m	0.57	—	—	0.46	0.13	3.5
6.45 m	—	—	—	0.34	0.17	2.0
6.95 m	0.42	0.07	6.0	—	—	—
7.45 m	—	—	—	0.68	0.13	5.2
8.45 m	0.65	—	—	0.50	0.17	2.9
9.45 m	0.98	0.24	4.1	0.71	0.17	4.2
10.45 m	1.00	0.35	2.9	1.46	0.42	3.5
11.45 m	1.47	0.50	2.9	1.26	0.42	3.0
12.45 m	1.71	0.55	3.1	1.07	0.50	2.1
13.45 m	2.18	0.63	3.5	2.40	1.08	2.2
14.45 m	2.70	0.76	3.6	2.55	0.76	3.4

Results of In-Situ Vane Shear Tests(3)

Location: Test Embankment at Sentul
(Sand Drain + Preloading Area)

Note: Tests were performed between 18th and 25th September 1980 i.e. before placeing the embankment.

Location No.	SV-2 (at SBH-2)			SV-4 (at SBH-2)		
Ground Level	R.L. +36.35 m			R.L. +36.35 m		
Depth of The Vane Tip	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio
1.45 m	0.21	0.08	2.6	0.08	0.03	2.7
2.45 m	0.17	0.08	2.1	0.13	0.05	2.6
3.45 m	0.34	0.21	1.6	0.08	0.03	2.7
4.45 m	0.42	0.13	3.2	0.26	0.10	2.6
5.45 m	0.42	0.13	3.2	0.31	0.10	3.1
6.45 m	0.55	0.17	3.2	0.89	0.29	3.1
7.45 m	0.71	0.25	2.8	0.89	0.34	2.6
8.45 m	0.80	0.21	3.8	1.51	0.52	2.9
9.45 m	1.08	0.34	3.2	1.63	0.57	2.9
10.45 m	1.26	0.46	2.7	1.86	0.78	2.4
10.95 m	1.39	0.46	3.0	—	—	—
11.45 m	—	—	—	3.12	0.75	4.2
12.45 m	—	—	—	3.44	1.25	2.8

Results of In-Situ Vane Shear Tests(4)

Location: Test Embankment at Sentul

Note: Tests were performed between 2nd and 5th September 1981 i.e. after 1st stage of embankment.

Area	Preloading Area			Sand Drain + Preloading Area		
Location No.	SV-5 (at SBH-3)			SV-6 (at SBH-4)		
Ground Level	R.L.+37.45 m			R.L. +37.15 m		
Depth of the Vane Tip	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio	Undisturbed (t/m^2)	Remolded (t/m^2)	Sensitivity Ratio
3.95 m	0.17	0.06	2.8	——	——	——
4.45 m	0.16	0.09	1.8	0.28	0.11	2.5
4.95 m	0.21	0.08	2.6	0.34	0.13	2.6
5.45 m	0.26	0.08	3.3	0.50	0.17	2.9
5.95 m	0.36	0.10	3.6	0.83	0.13	6.4
6.45 m	0.37	0.12	3.1	0.33	0.13	2.5
6.95 m	0.39	0.10	3.9	0.56	0.17	3.3
7.45 m	0.44	0.12	3.7	0.71	0.08	8.9
7.95 m	0.45	0.13	3.5	0.60	0.13	4.6
8.45 m	0.55	0.15	3.7	1.10	0.14	7.9
8.95 m	0.54	0.16	3.4	0.65	0.06	10.8
9.45 m	0.63	0.15	4.2	1.01	0.17	5.9
9.95 m	0.71	0.11	6.5	1.05	0.26	4.0
10.45 m	0.77	0.22	3.5	1.60	0.11	14.5
10.95 m	0.84	0.13	6.5	1.23	0.10	12.3
11.45 m	0.97	0.07	13.9	1.40	0.12	11.7
11.95 m	1.08	——	——	——	——	——
12.45 m	——	——	——	1.76	0.23	7.7
12.95 m	1.48	0.10	14.8	——	——	——
13.45 m	——	——	——	1.07	0.29	3.7
13.95 m	1.62	0.22	7.4	——	——	——

Results of In-Situ Vane Shear Tests (5)

Location: Test Embankment at Sentul

Note : Tests were performed between 6th and 7th July 1981 i.e. after 2nd stage of embankment.

Area	Preloading Area			Sand Drain + Preloading Area		
Location No.	SV-7 (at SBH-5)			SV-8 (at SBH-6)		
Ground Level	R.L. +37.45 m			R.L. +37.81 m		
Depth of the Vane Tip	Un-disturbed (t/m^2)	Disturbed (t/m^2)	Sensitivity Ratio	Un-disturbed (t/m^2)	Disturbed (t/m^2)	Sensitivity Ratio
3.5 m	0.23	0.07	3.3	-	-	-
4.5 m	0.22	0.07	3.1	-	-	-
5.5 m	0.31	0.10	3.1	0.45	0.07	2.6
6.0 m	-	-	-	-	-	-
6.5 m	0.40	0.14	2.9	0.55	-	-
7.5 m	0.44	0.11	4.0	0.52	0.14	3.7
8.0 m	-	-	-	0.96	0.30	3.2
8.5 m	0.50	0.15	3.3	-	-	-
9.0 m	-	-	-	0.98	0.26	3.8
10.0 m	-	-	-	1.09	0.28	3.9
10.5 m	0.90	0.22	4.1	-	-	-
11.0 m	-	-	-	1.35	-	-
11.5 m	1.12	0.29	3.9	1.92	0.38	5.1
12.5 m	1.33	0.37	3.6	1.53	0.58	2.6
13.5 m	1.77	0.50	3.5	2.08	0.59	3.5
14.5 m	2.03	0.55	3.7	2.16	0.58	3.7
15.5 m	-	-	-	2.28	0.75	3.0

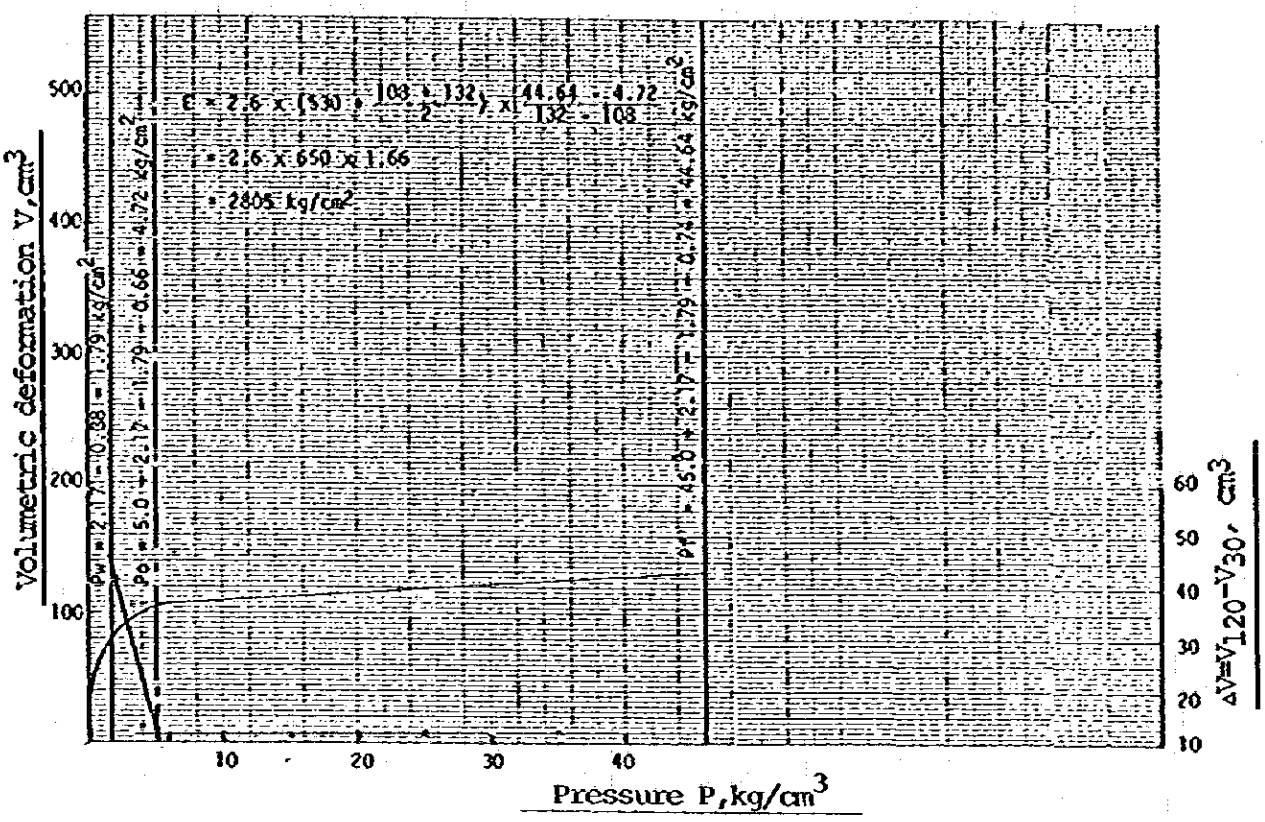
Summary of Pressuremeter Tests

Site		Sentul					
Boring No.		Test depth m	Description of Material	Earth pressure at rest Po, kg/cm2	Creep pressure Pf, kg/cm2	Limit pressure Pe, kg/cm2	Modulus of deformation E, kg/cm2
Sub-section	A"-A	21.7	Limestone	4.72	44.64	-	2805
	A"-B	15.2	Limestone	4.46	24.43	-	3315
		16.2	Limestone	3.28	34.74	-	1754
		17.0	Limestone	4.33	35.83	-	2625
		18.5	Limestone	6.14	57.64	-	3455
		19.0	Limestone	4.65	59.76	-	4063
	B-A	29.2	Limestone	4.02	29.98	-	803
		30.5	Limestone	2.94	31.60	-	817
		31.5	Limestone	2.70	31.64	-	2152
		32.5	Limestone	4.74	54.65	-	2565
		33.5	Limestone	6.99	59.93	-	5808

PRESSUREMETER CURVE

Boring No. Sub-section A"-A Depth 21.70m

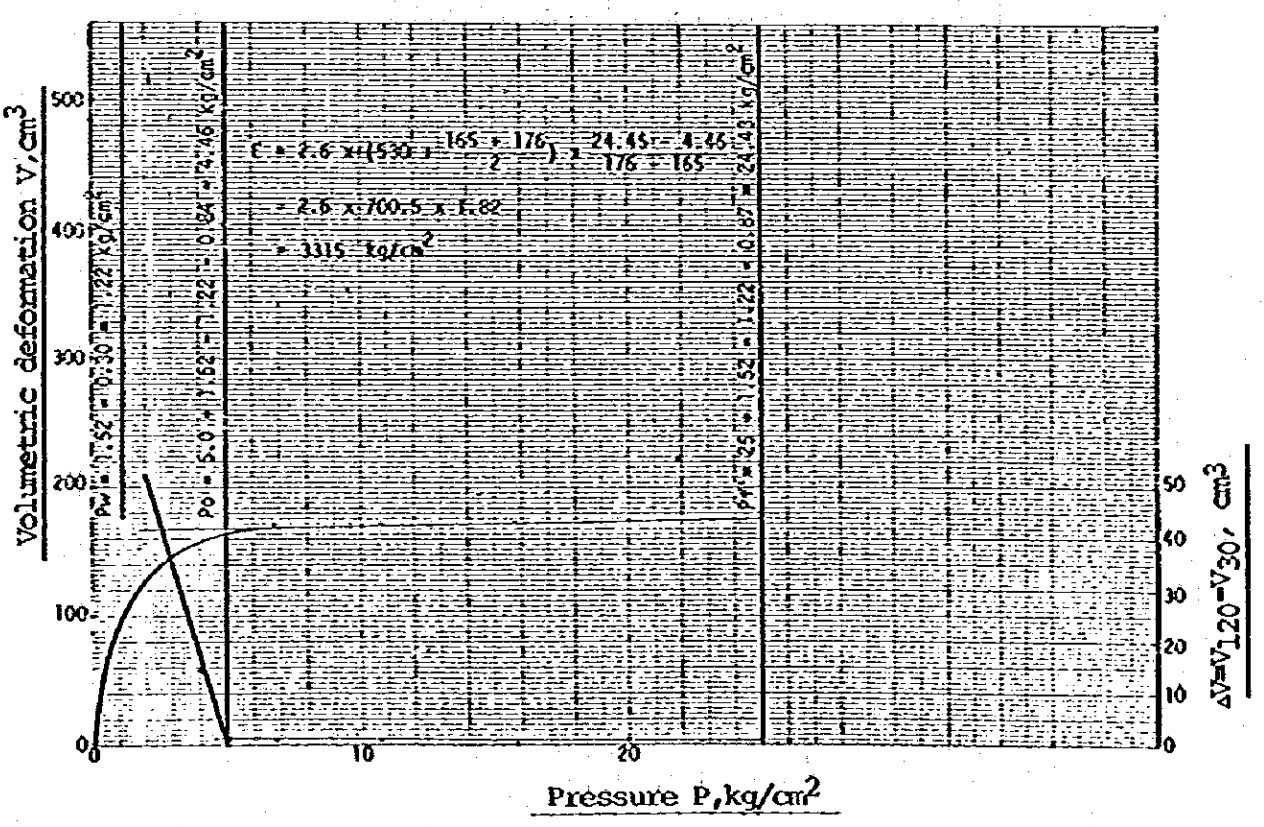
Groundwater Table GL -3.6m



PRESSUREMETER CURVE

Boring No. Sub-section A"-B Depth 15.2m

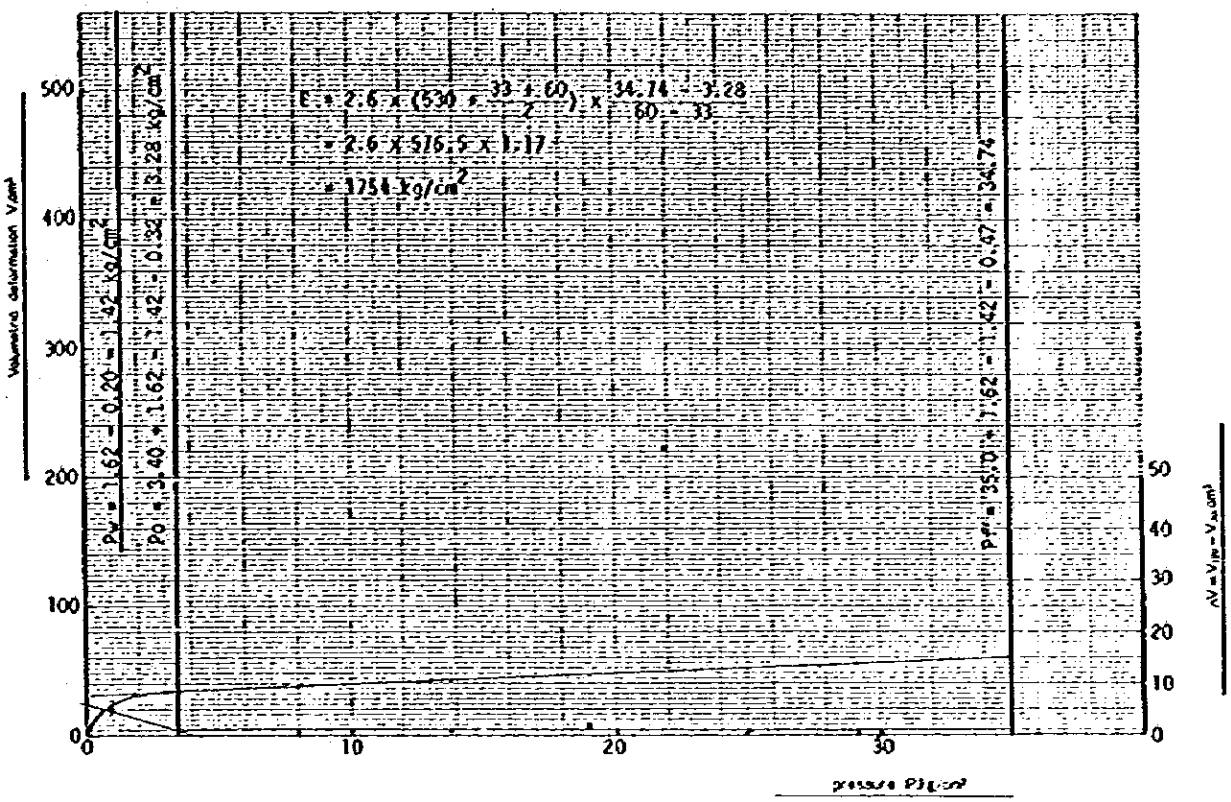
Groundwater Table GL -3.00m



PRESSUREMETER CURVE

Boring No. Sub-section A"-B Depth 16.2m

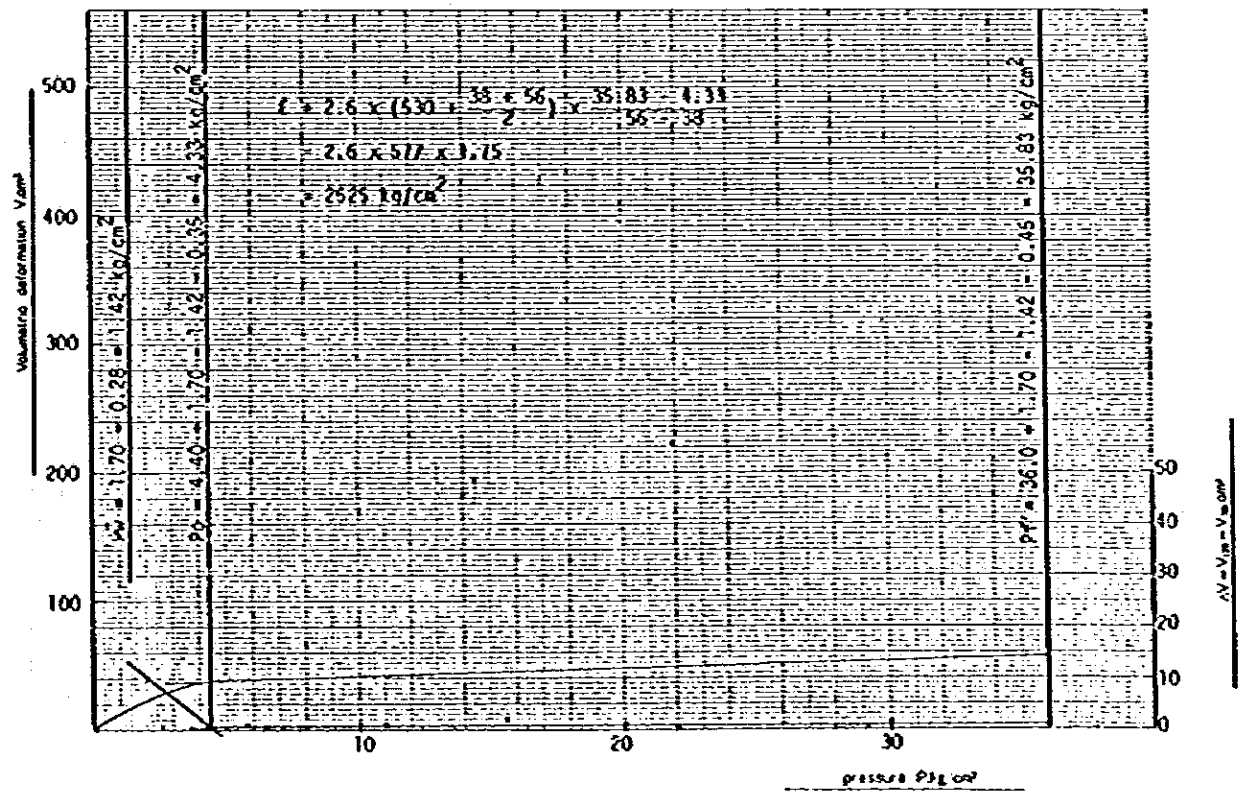
Groundwater Table GL -2.00m



PRESSUREMETER CURVE

Boring No. Sub-section A"-B Depth 17.0m

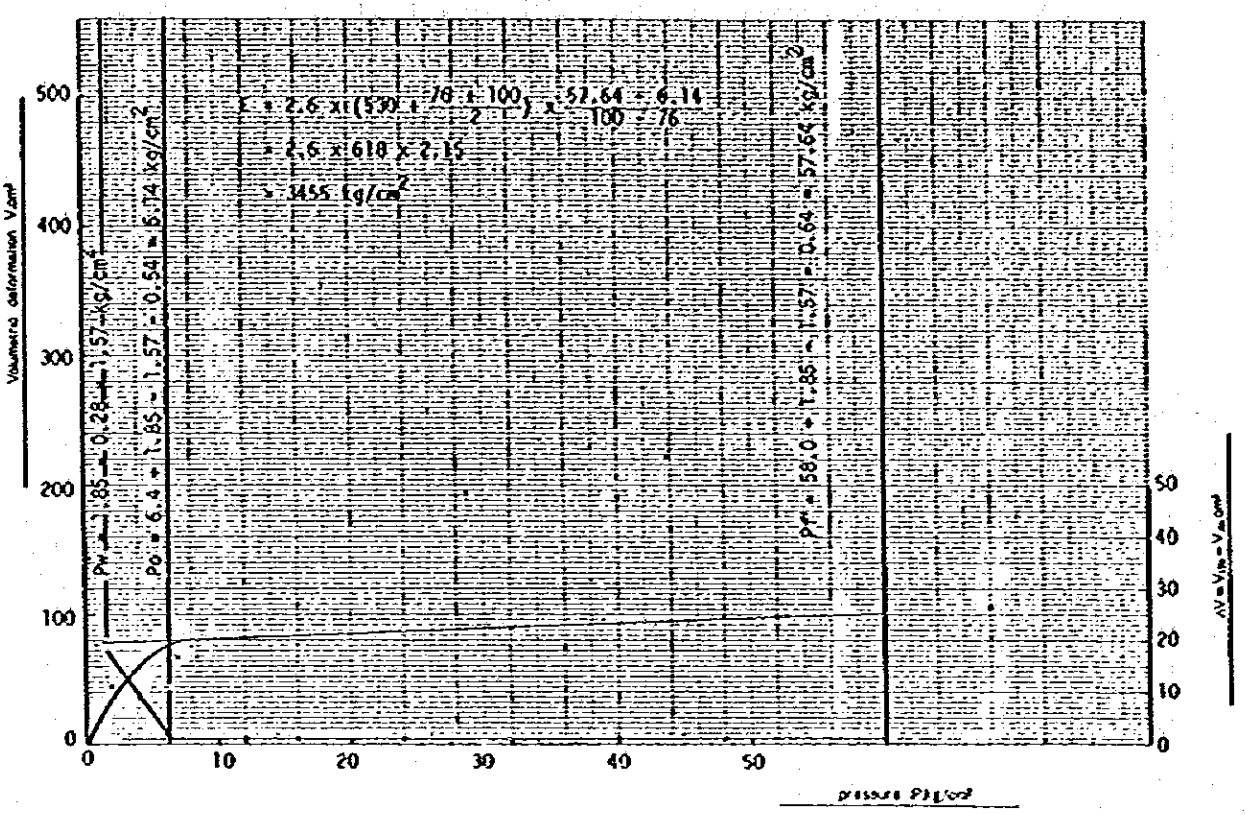
Groundwater Table GL -2.80m



PRESSUREMETER CURVE

Boring No. Sub-section A"-8 Depth 18.5m

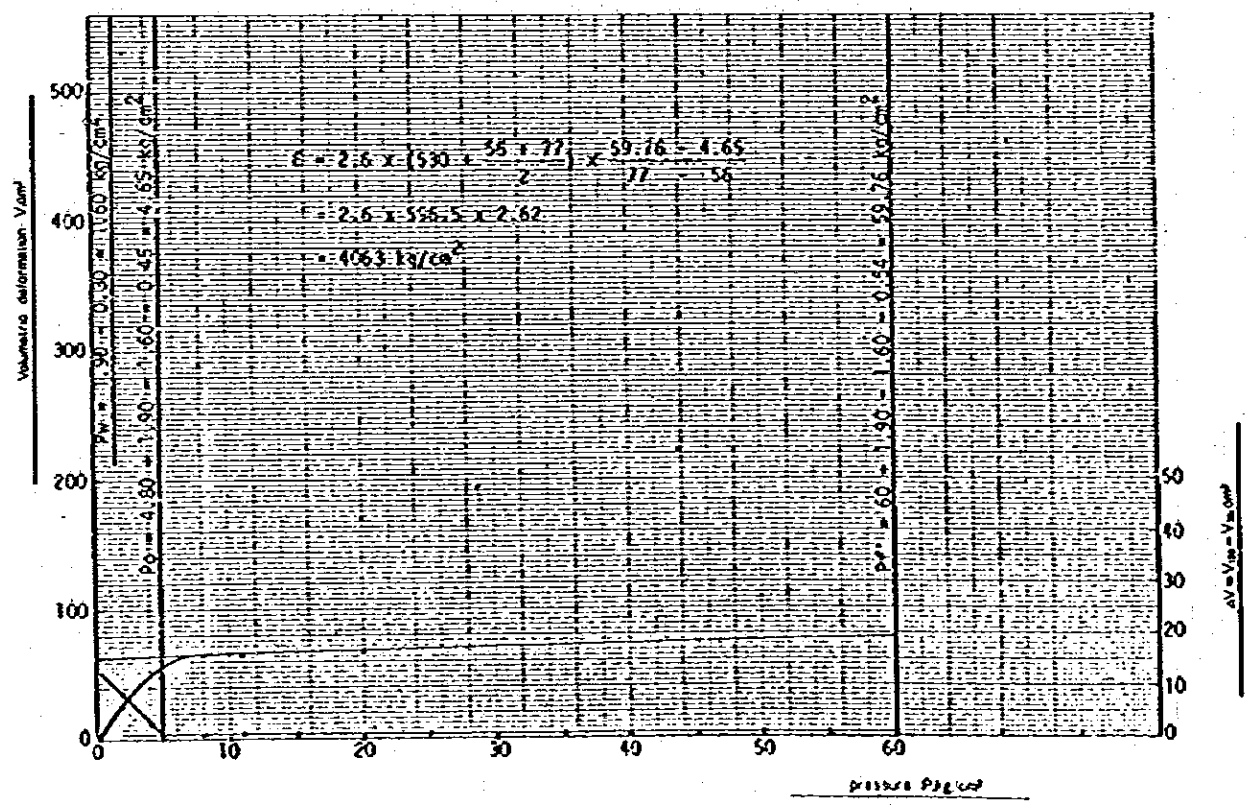
Groundwater Table GL -2.80m



PRESSUREMETER CURVE

Boring No. Sub-section A"-8 Depth 19.0m

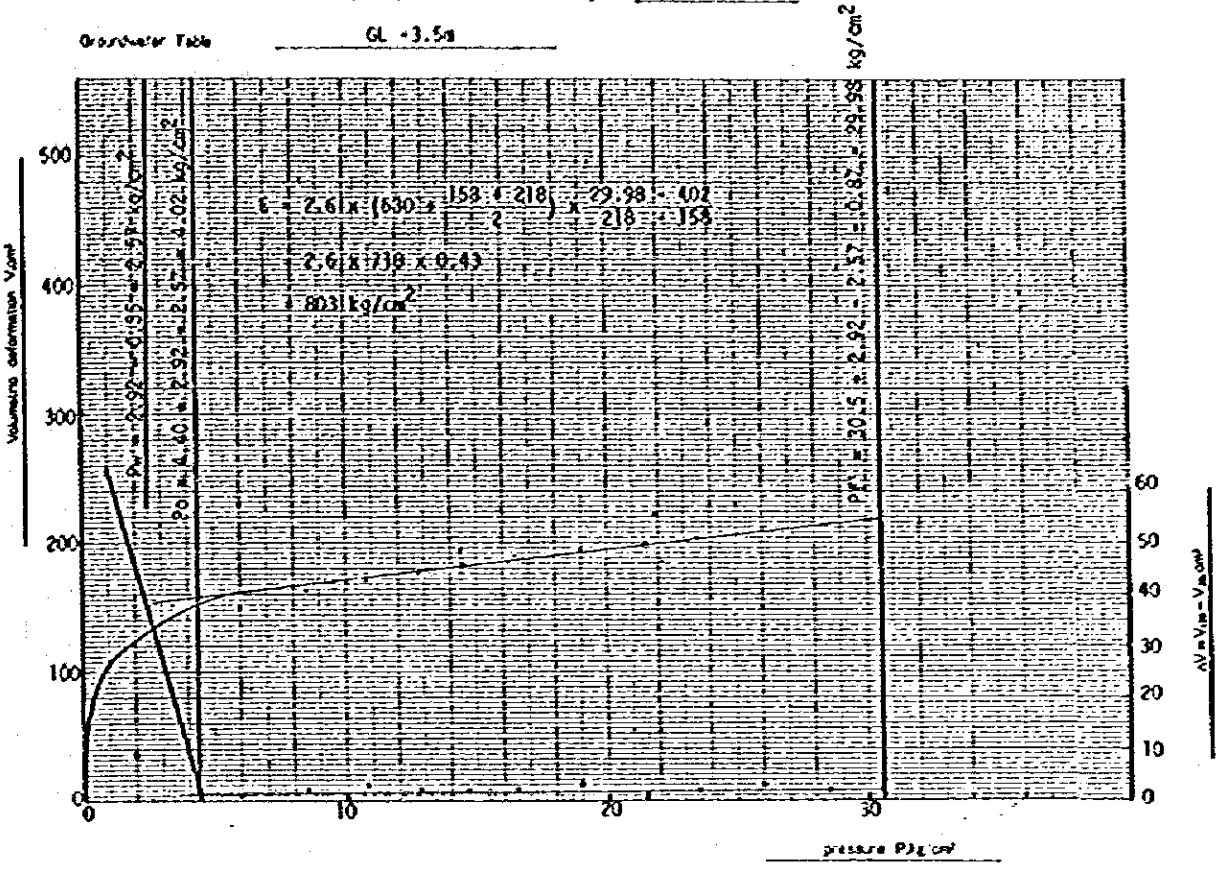
Groundwater Table GL -3.00m



PRESSUREMETER CURVE

Boring No. Sub-section B-A Depth 29.2m

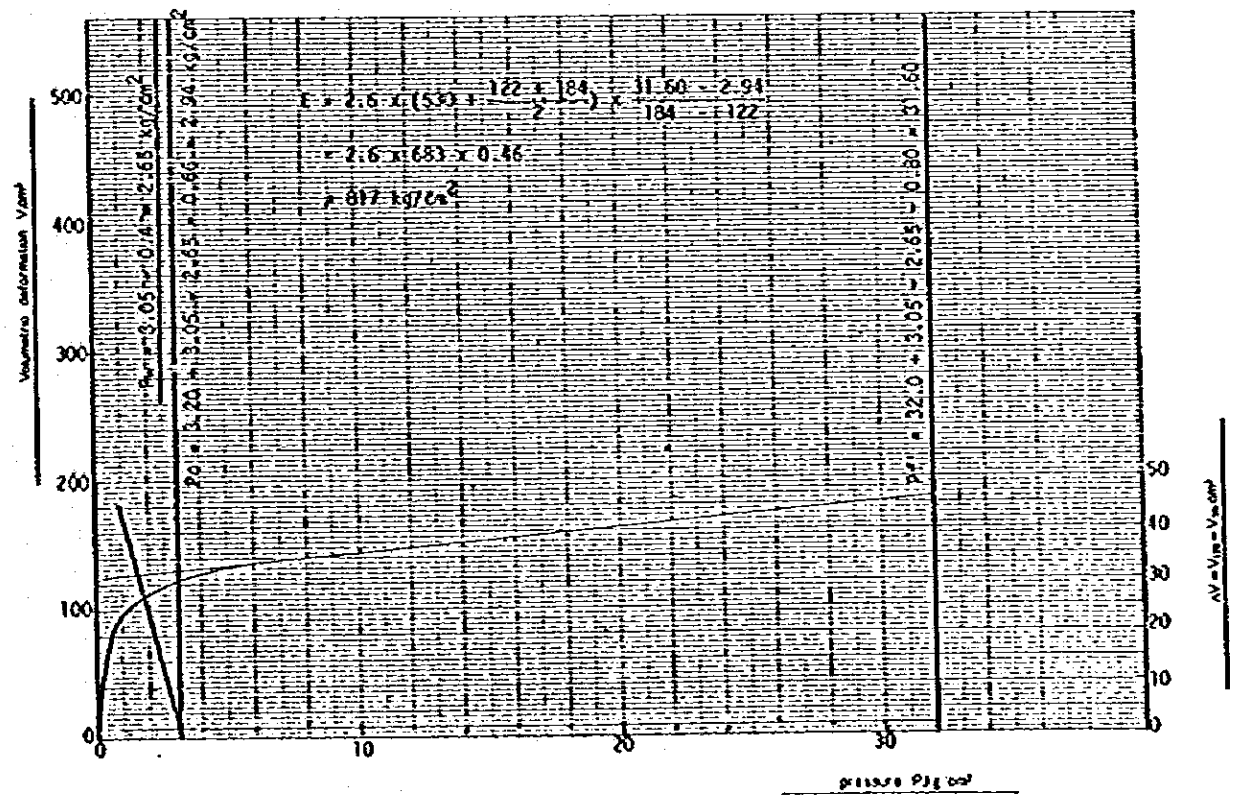
Groundwater Table GL -3.5m



PRESSUREMETER CURVE

Boring No. Sub-section B-A Depth 30.5m

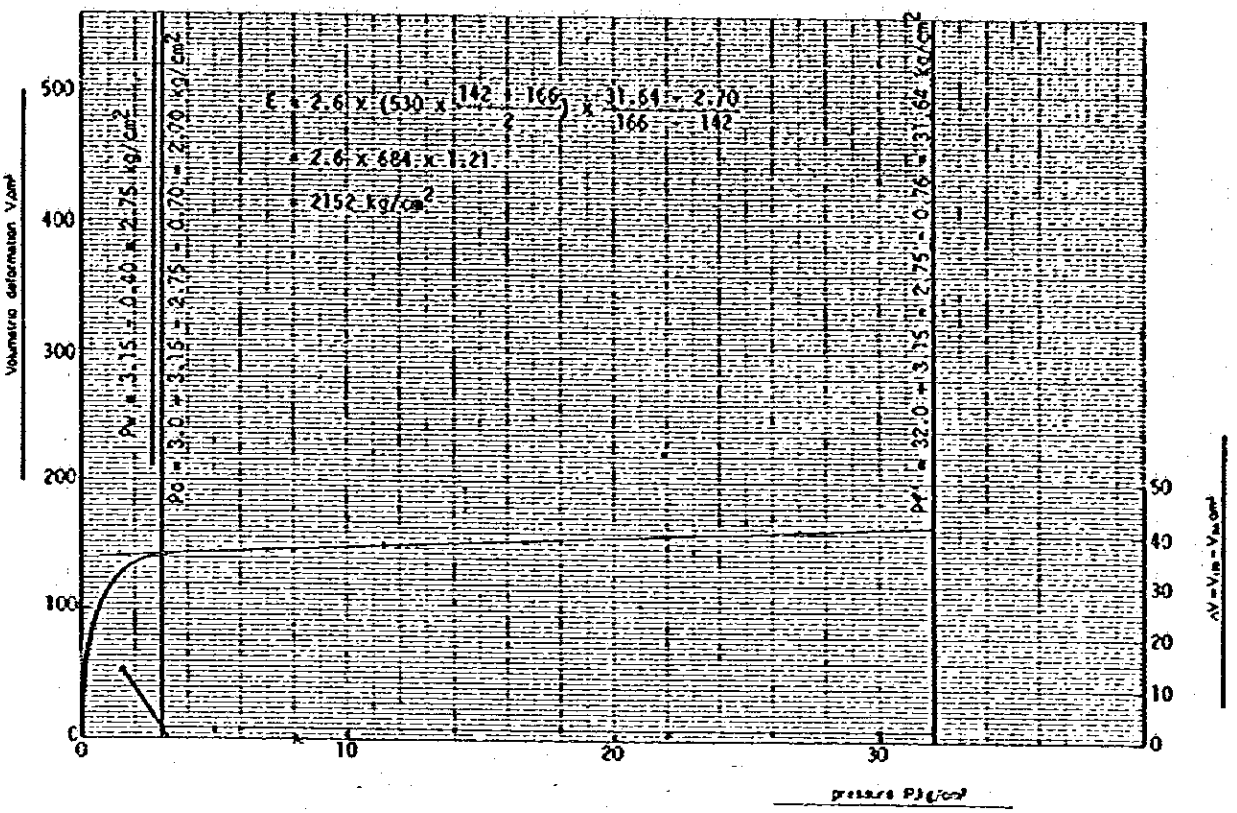
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

Boring No. Sub-section B-A Depth 31.5m

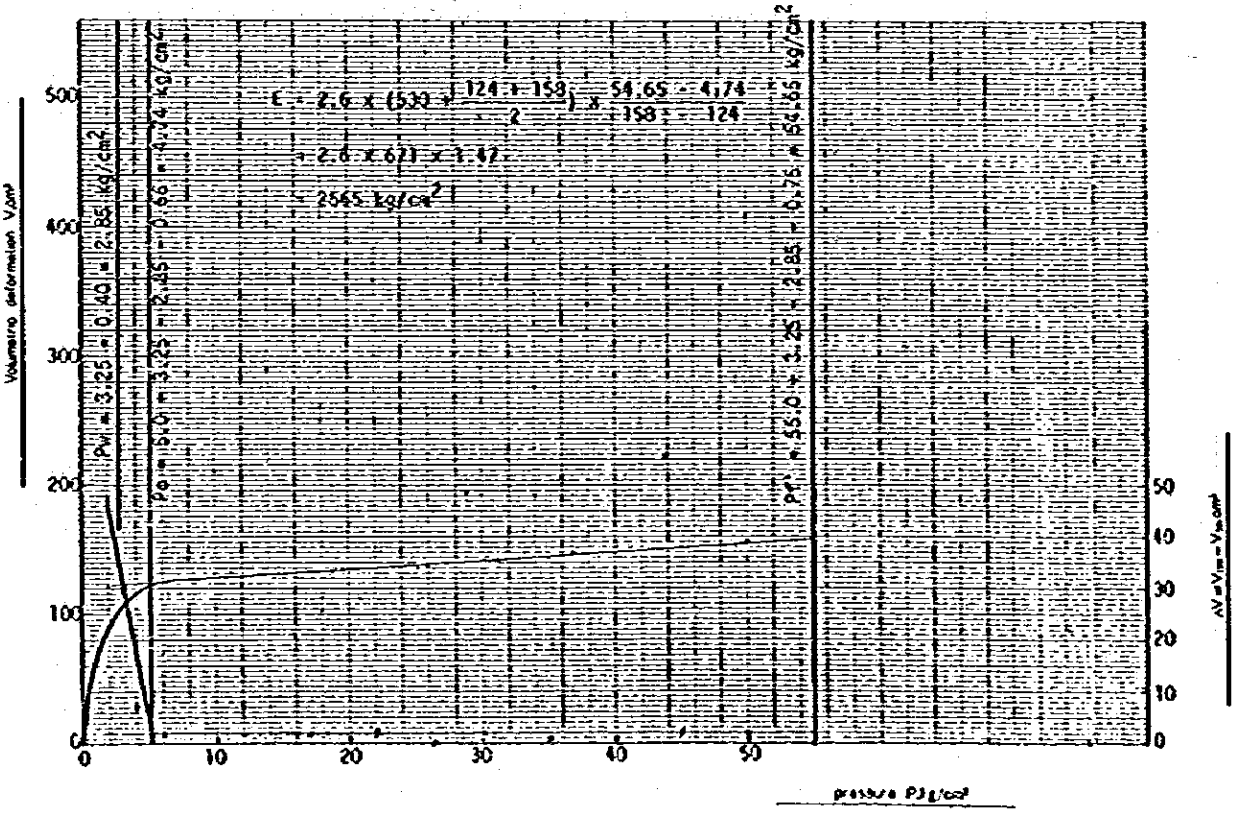
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

Boring No. Sub-section B-A Depth 32.5m

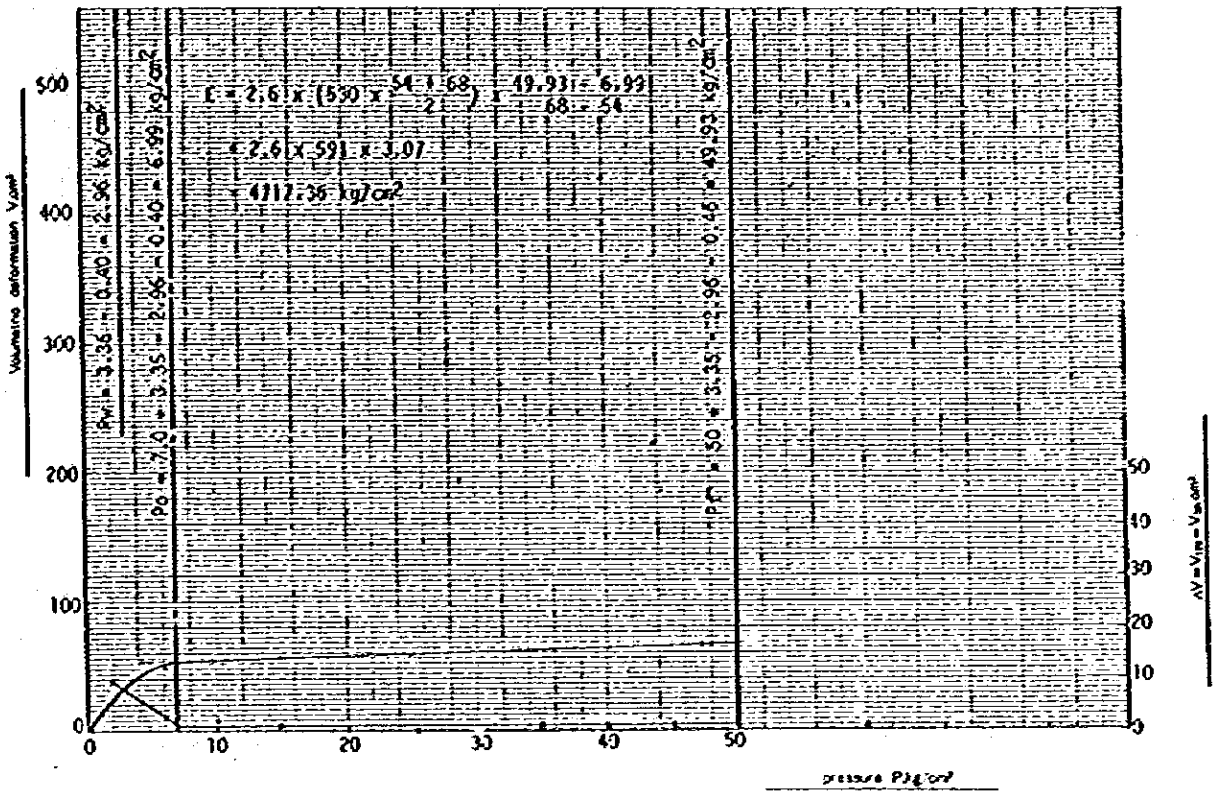
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

Boring No. Sub-section B-A Depth 33.5m

Groundwater Table GL -4.0m



Summary of In-situ Permeability Test

Boring Type	Boring No.		Depth (m)	Coefficient of Permeability k (cm/sec)
Percussion	Sub-section	A	5.00 - 5.50	1.3×10^{-2}
Percussion		A'	5.00 - 5.50	1.6×10^{-2}
Percussion		A"	5.00 - 5.50	1.1×10^{-2}
Percussion		A"	10.00 - 10.50	1.2×10^{-4}
Percussion		A"	15.00 - 15.50	1.2×10^{-4}
Percussion		A"	19.10 - 19.20	1.6×10^{-2}
Rotary		B-B	12.00 - 12.45	1.3×10^{-2}
Rotary		B-B	17.00 - 17.45	1.4×10^{-3}
Rotary		B-B	22.00 - 22.45	8.2×10^{-3}

Boring No.:Sub-section A' (Percussion)
Test Depth: 5.0 to 5.50m
Water level below Natural Ground Water Table (cm)
Time Elapsed (min)
In-situ Permeability Test Results
k = 2.3 × (r0)² log h1/h2 / 2(r + L)(t2 - t1) × 60 cm/sec
= 1.6 × 10⁻¹ cm/sec

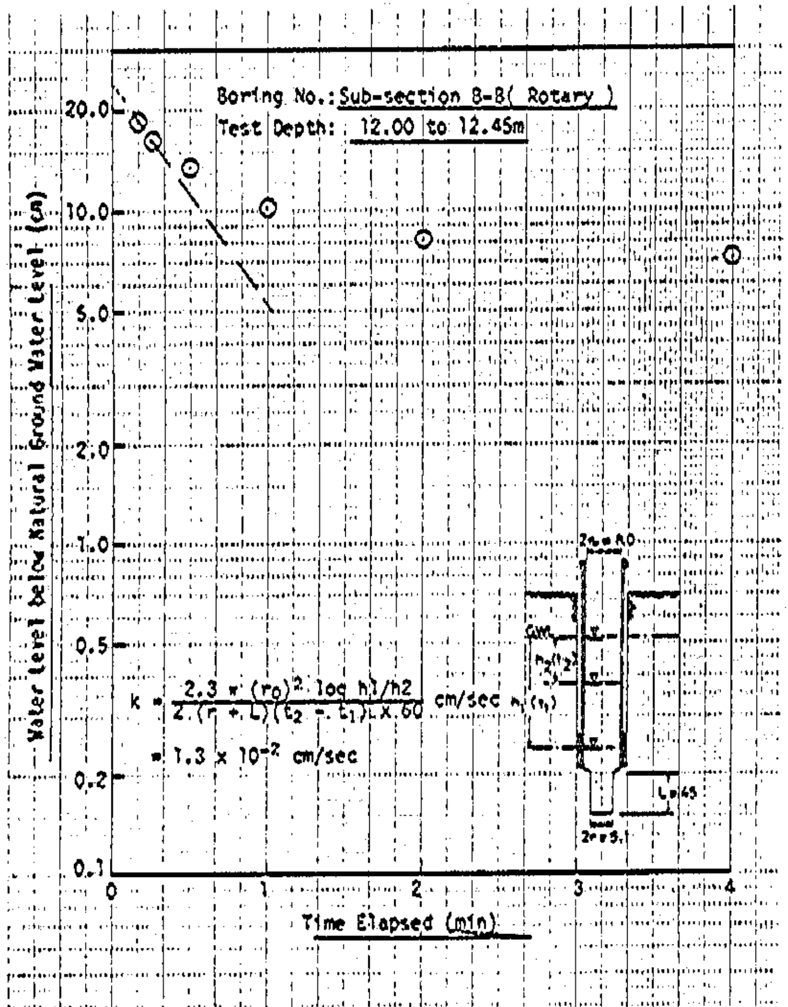
Boring No.:Sub-section A (Percussion)
Test Depth: 5.00 to 5.50m
Water level below Natural Ground Water Table (cm)
Time Elapsed (min)
In-situ Permeability Test Results
k = 2.3 × (r0)² log h1/h2 / 2(r + L)(t2 - t1) × 60 cm/sec
= 1.3 × 10⁻² cm/sec

In-situ Permeability Test Results
Boring No.: Sub-section A" (Percussion)
Test Depth: 10.00 to 10.50m
Water level below Natural Ground Water Level (cm)
Time Elapsed (min)
k = 2.3 × (ro)² log h1/h2 / 2(t2 − t1)(t2 − t1) × 60 cm/sec
= 1.2 × 10⁻⁴ cm/sec

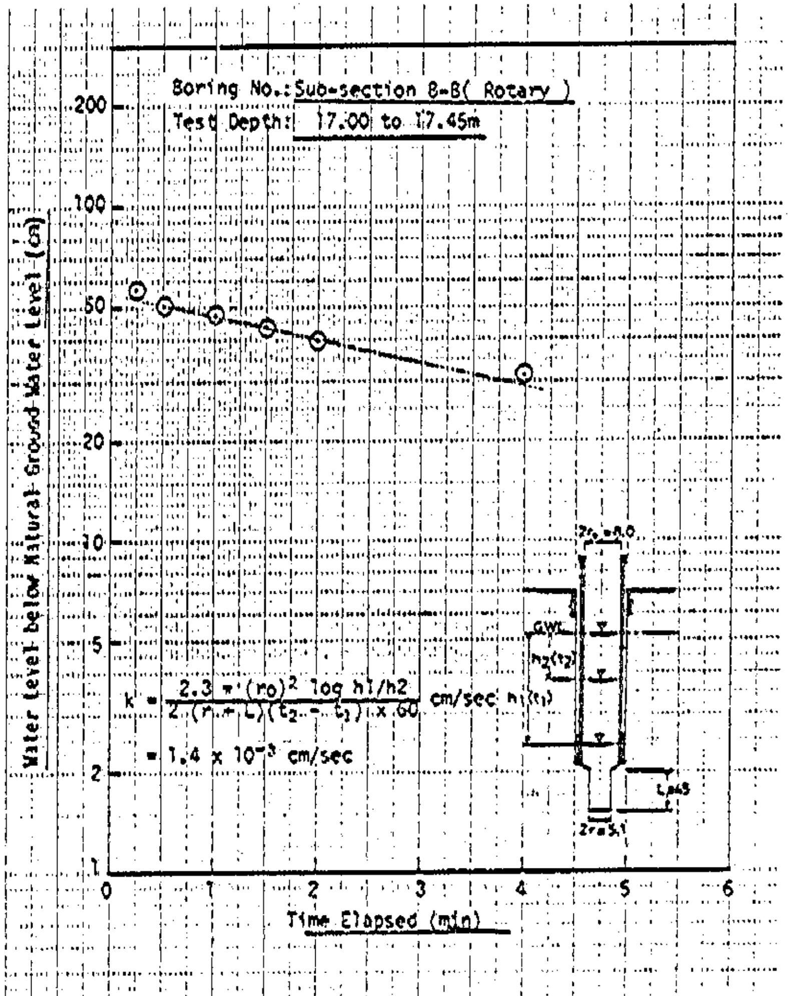
In-situ Permeability Test Results
Boring No.: Sub-section A" (Percussion)
Test Depth: 5.00 to 5.50m
Water level below Natural Ground Water table (cm)
Time Elapsed (min)
k = 2.3 × (ro)² log h1/h2 / 2(t2 − t1)(t2 − t1) × 60 cm/sec
= 1.1 × 10⁻² cm/sec

Boring No.: Sub-section A" (Percussion)
Test Depth: 19.10 to 19.20m
Water level below Natural Ground Water Table (cm)
200
100
50
20
10
5
2
1
0
2
4
6
8
10
12
Time Elapsed (min)
In-situ Permeability Test Results

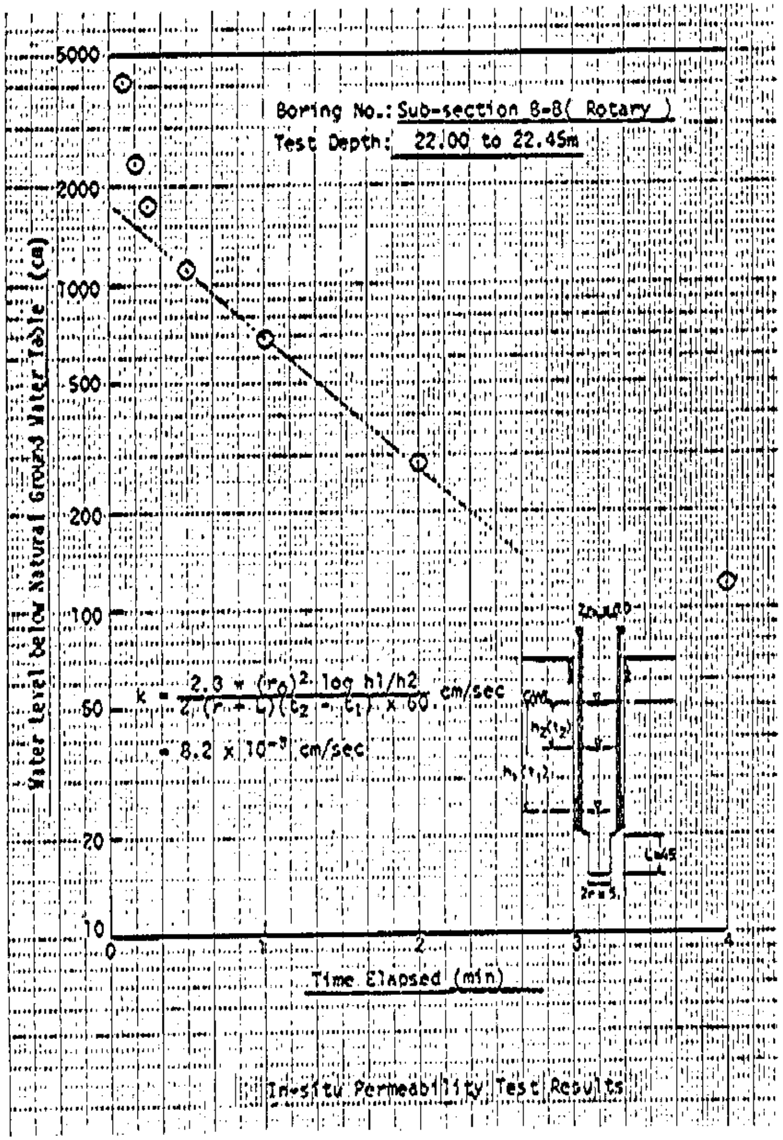
Boring No.: Sub-section A" (Percussion)
Test Depth: 15.0 to 15.50m
Water level below Natural Ground Water level (cm)
2000
1000
500
200
100
50
20
10
0
50
100
Time Elapsed (min)
In-situ Permeability Test Results



In-situ Permeability Test Results



In-situ Permeability Test Results



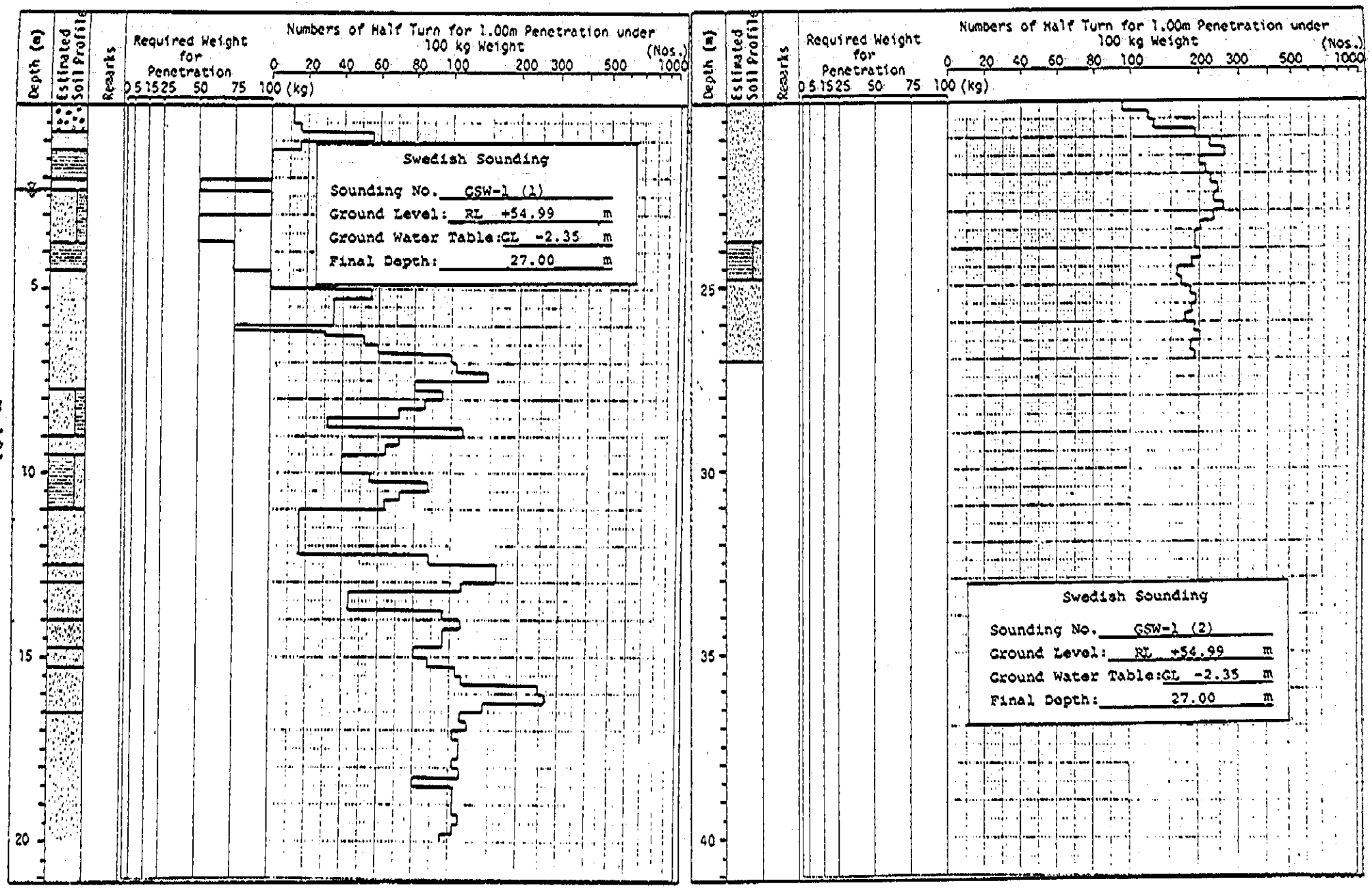
Boring No.: Sub-section B-B(Rotary)
Test Depth: 22.00 to 22.45m
5000
2000
1000
500
200
100
50
20
10
Water Level below Natural Ground Water Table (cm)
0
1
2
3
4
Time Elapsed (min)
k = 2.3 • (r0)2. log h1/h2 / 2 (r + L)(t2 - t1) x 60 cm/sec
In-situ Permeability Test Results

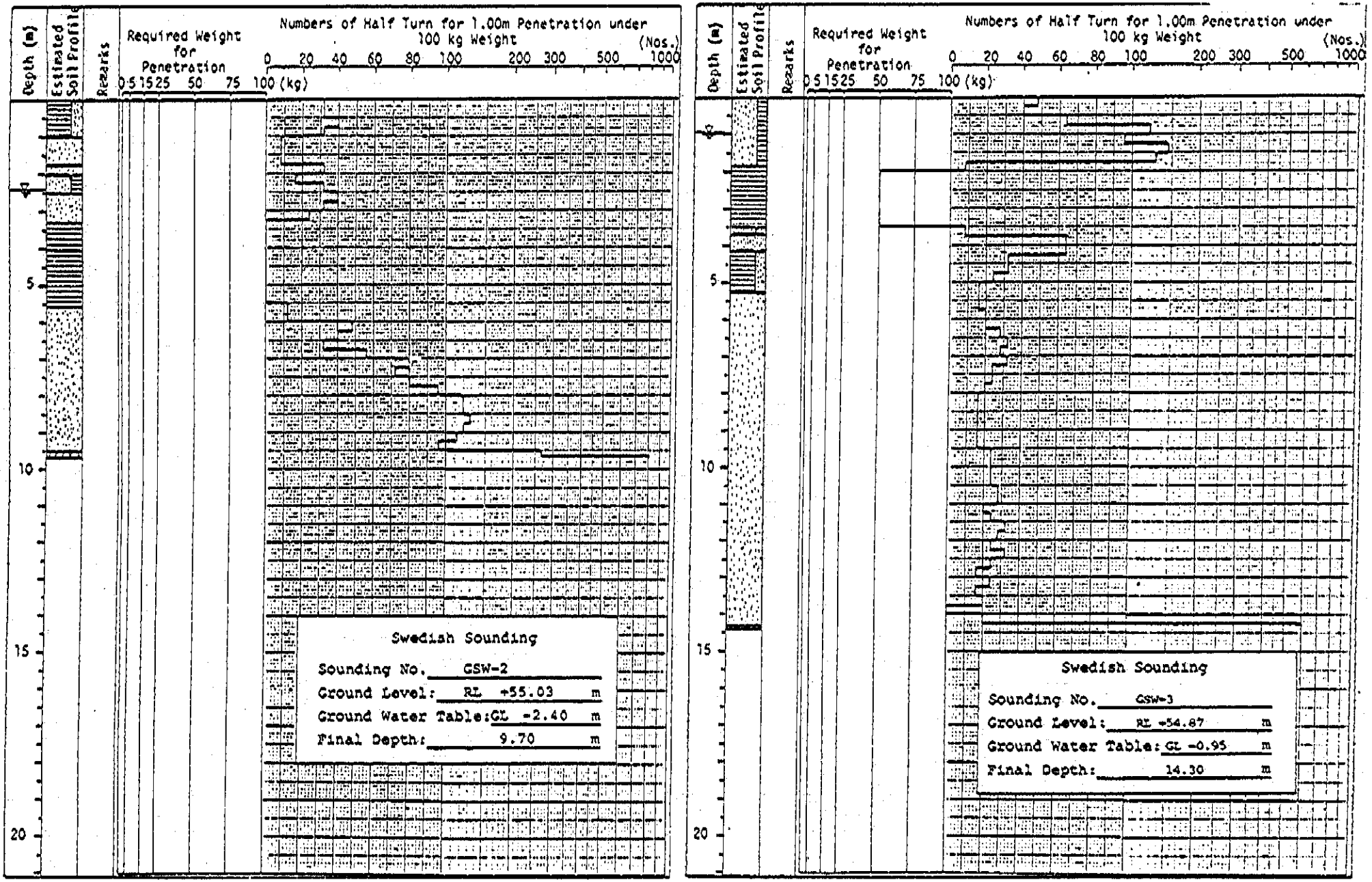
E.3 Results of Field Investigation
- Gombak -

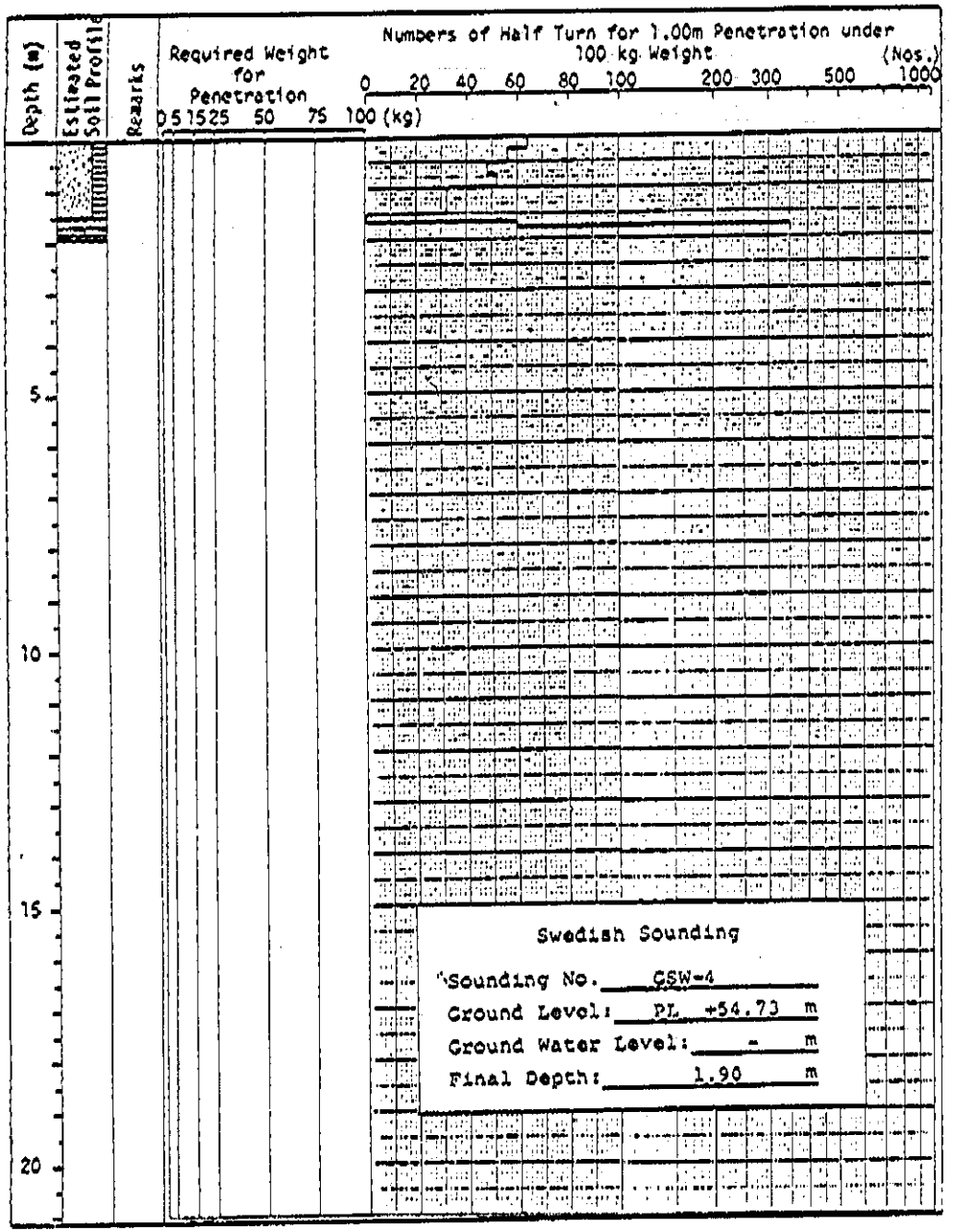
Summary of Swedish Sounding
- Gombark -

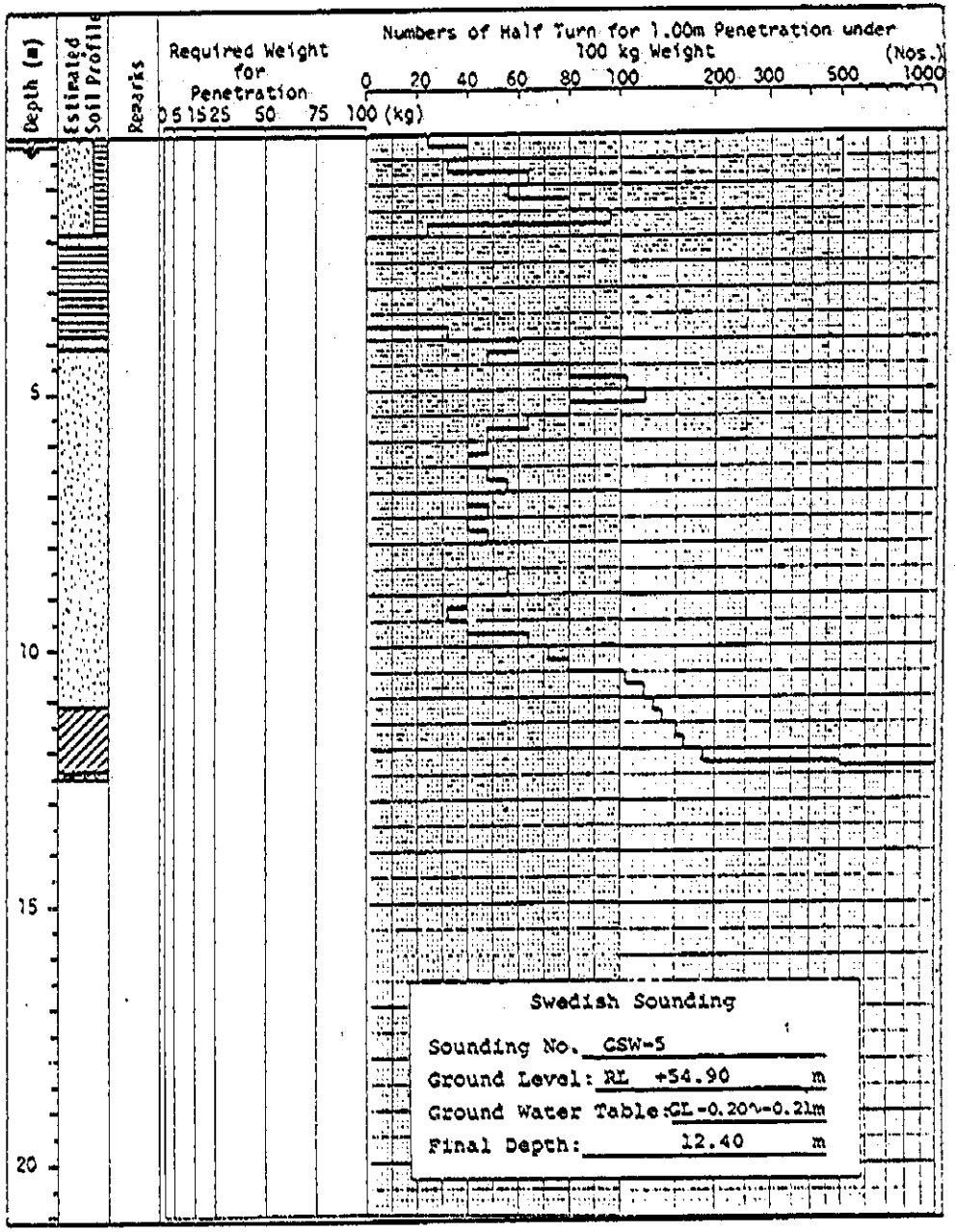
Sounding No.	Ground Level (RL m)	Sounding Depth (m)	Groundwater* Table (GL ± m)	Remarks
GSW-1	54.99	27.00	-2.34 ∿ -2.35	
2	55.03	9.70	-2.40	
3	54.87	14.30	-0.95	
4	54.73	1.90*	-	*Sounding was terminated at this depth due to existence of rocks.
5	54.90	12.40	-0.20 ∿ -0.21	
6	56.96	15.40	-1.60 ∿ -1.70	
7	56.70	15.95	-1.40 ∿ -1.60	
8	56.77	16.55	-1.60 ∿ -1.80	
9	57.04	16.30	-3.00 ∿ -3.28	
10	57.03	20.00	-3.00 ∿ -3.40	
11	59.48	20.00	-1.23 ∿ -1.24	
12	59.12	20.00	-0.85 ∿ -0.93	
Total	12 locations	189.50 m	-	

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


Depth (m)
Estimated Soil Profile
Remarks
Required Weight for Penetration
0.5 1 5 25 50 75 100 (kg)
Numbers of Half Turn for 1.00m Penetration under 100 kg Weight
0 20 40 60 80 100 200 300 500 1000 (Nos.)
Swedish Sounding
Sounding No. GSW-1 (1)
Ground Level: RL +54.99 m
Ground Water Table: GL -2.35 m
Final Depth: 27.00 m
Swedish Sounding
Sounding No. GSW-1 (2)
Ground Level: RL +54.99 m
Ground Water Table: GL -2.35 m
Final Depth: 27.00 m


Depth (m)
Estimated Soil Profile
Remarks
Required Weight for Penetration
0.5 1.5 2.5 5.0 7.5 10.0 (kg)
Numbers of Half Turn for 1.00m Penetration under 100 kg Weight
0 20 40 60 80 100 200 300 500 1000 (Nos.)
5
10
15
20
Swedish Sounding
Sounding No. GSW-2
Ground Level: RL +55.03 m
Ground Water Table: GL -2.40 m
Final Depth: 9.70 m
Swedish Sounding
Sounding No. GSW-3
Ground Level: RL +54.87 m
Ground Water Table: GL -0.95 m
Final Depth: 14.30 m


Depth (m)
Estimated Soil Profile
Remarks
Required Weight for Penetration
0 5 15 25 50 75 100 (kg)
Numbers of Half Turn for 1.00m Penetration under 100 kg Weight
0 20 40 60 80 100 200 300 500 1000 (Nos.)
5
10
15
20
Swedish Sounding
Sounding No. CSW-4
Ground Level: PL +54.73 m
Ground Water Level: - m
Final Depth: 1.90 m


Depth (m)
Estimated Soil Profile
Remarks
Required Weight for Penetration
0 5 15 25 50 75 100 (kg)
Numbers of Half Turn for 1.00m Penetration under 100 kg Weight
0 20 40 60 80 100 200 300 500 1000 (Nos.)
5
10
15
20
Swedish Sounding
Sounding No. CSW-5
Ground Level: RL +54.90 m
Ground Water Table: GL -0.20~-0.21m
Final Depth: 12.40 m