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

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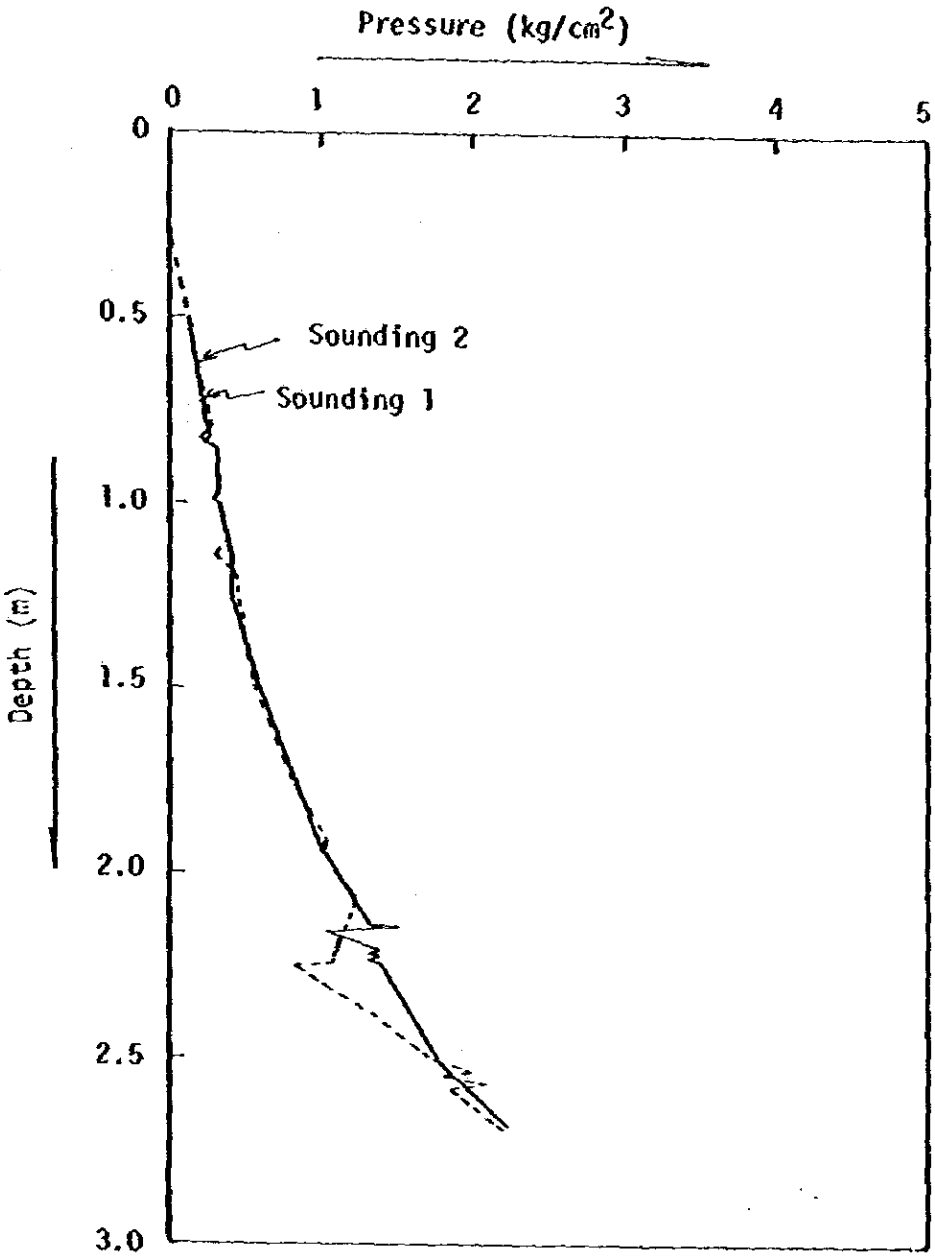
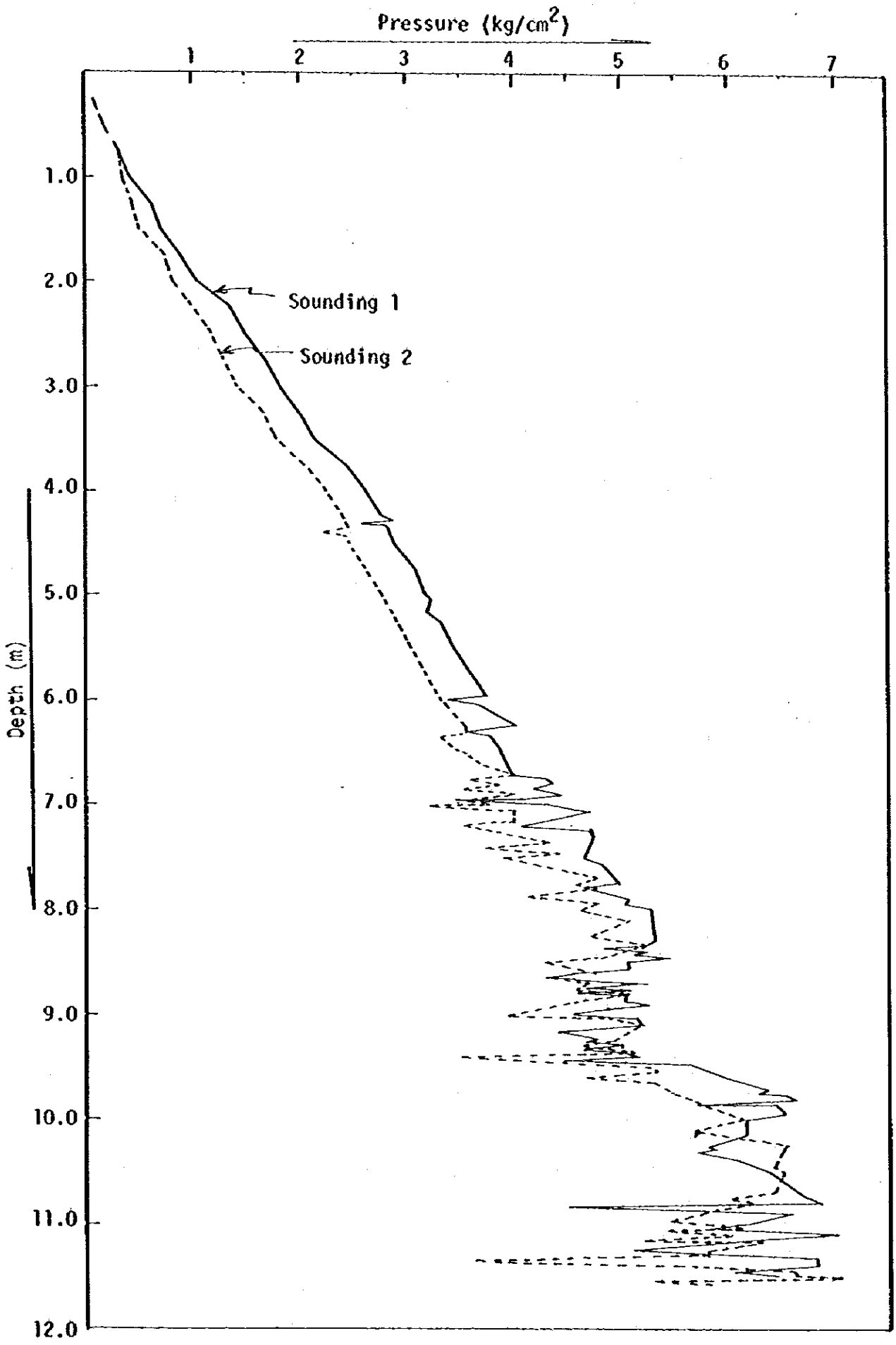
Project : Feasibility Study for the Reclamation Project of Ex-mining Land for Housing Development and Other Purposes / Phase I at Sungai, Kuala Lumpur

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

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



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



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

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: 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	Grey-ish white	Very soft	With roots
	32.60	3.80	3.65		Silty Clay	Grey-ish white	Very soft	
	31.80	4.60	0.80		Silty Fine Sand	Grey	Very loose	With clay
								With gravels
							Very loose to	Sand is medium to coarse grained
	26.65	9.75	5.15		Sand	Grey	loose	
	25.70	10.70	0.95		Clayey Silt	Grey	Very soft	With traces of sand
	25.60	10.80	0.10		Rock or Gravel			
								End of Drilling

Depth in m	Sampling or Lab	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
5.15				5.00
5.45	P-5	4	1 1 2	5.50 Perceability 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	50/5cm		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

Order: 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
	36.50							
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
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m	Sampling Job.	N-Value	Blows Per Each 10cm	(N-Value) 10 20 30 40 50
				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 Test
6.15 / 6.45	P-6	2	1 0 1	
7.00 / 7.15	P-7	50/5	50/5 - -	50 blows/15cm
7.95 / 8.25	P-8	29	12 9 8	
9.15 / 9.45	P-9	33	5 11 17	
9.80 / 10.03	P-10	50/13	50/13 - -	50 blows/13cm

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 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:

Scale m	Elevation in m	Depth in m	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.30	0.10	0.10		Silty Clay	Grayish Brown		Top soil. With roots
	32.60	3.80	3.70		Silty Clay	Grey-ish White	Very soft	
	28.40	8.00	4.20		Sand	Grey	Loose	Fine to medium. With some gravel
	25.60	10.80	2.80		Sand	Grey	Loose	Medium to coarse. With gravel ø = 5 - 20mm
	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	Grayish White	Soft	Traces of fine sand
	20.65	15.75	1.25		Sandy Clay	Grey	Soft	Traces of fine sand
	18.50	17.90	2.15		Sand	Grey	Loose	Sand is medium to coarse grained
	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	Grayish White	Very dense	Weathered lime-stone?
					End of Drilling			

Standard Penetration Test x Core Recovery

Depth in m	Sampling No.	Blow Value	Blows Per Each 15cm	(N—Value)
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	3	1 1 1	
5.15 - 5.45	P-5	5	2 2 1	5.00 - 5.50 Perceability Test
6.15 - 6.45	P-6	4	2 1 1	
7.15 - 7.45	P-7	3	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 Perceability 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 Perceability 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 Perceability Test 50 blows/5cm

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

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

Driller: Geotechnique (M) (Kiso-Jiban

Remarks:

Elevation in m.	Depth in m.	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
+36.20						
+36.00	0.20	0.20	Silty Clay	Greyish brown	Very Soft	Top soil. With roots
+29.40	6.80	6.60	Silty Clay	Grey-ish white	Very Soft	
						Traces of fine sand
+24.20	12.00	5.20	Silty Clay	Grey	Very soft	
+23.20	13.00	1.00	Silty Sand	Greyish white	Very loose	Sand is fine grained
+21.20	15.00	2.00	Silty Sand	Grey-ish white	Medium	Sand is fine grained Weathered lime-stone
						Sand is fine grained. Heavily weathered limestone
+17.40	18.80	3.80	Silty Sand	Grey	Dense	
+14.45	21.75	2.95	Silty Sand	Grey	Medium to Dense	Sand is fine grained. Weathered lime-stone?
+13.20	23.00	1.25	Silty Sand	Grey	Loose	Sand is fine grained. Weathered limestone?
+11.75	24.45	1.45	Silty Sand	Grey-ish white	Medium	Sand is fine grained. Weathered limestone?
+10.20	26.00	1.55	Silty Sand	Grey	Medium	Sand is fine grained. Weathered limestone?
			End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m.	Sampling No.	Blow Value (Blows)	Blows Per 15cm 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 - -	50 blows/5 cm
26.00				

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. SG-1

Elevation: PL +36.40 m

Date: 28.12.79 to 29.12.79

Site: Sentul

Water Table: GL -2.15 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							
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
14					End of Drilling			
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test & Core Recovery

Depth in m	Sampling No.	Blow Value	Blows Per Each 10cm	(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	
3.15				
3.45	P-3	1	- - 1	
4.15				
4.45	P-4	1	- 1 1	
5.15				
5.45	P-5	1	- - 1	
6.15				
6.45	P-6	1	- - 1	
7.15				
7.45	P-7	4	1 1 2	
8.15				
8.45	P-8	5	1 2 2	
9.15				
9.45	P-9	4	1 1 2	
10.15				
10.45	P-10	6	2 2 2	
11.15				
11.45	P-11	5	1 2 2	
12.15				
12.45	P-12	8	2 2 4	
13.00	P-13	50	50	50 blows/5 cm
13.05				

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. S8-2

Site Sentul

Elevation RL +37.5 m

Water Table GL -2.31 m

Type of Drilling Percussion

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

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							Very soft	Traces of fine sand
3								
4	+33.42	4.08	3.93		Clayey Silt	Greyish brown		
5								Traces of fine sand
6							Very soft	
7								
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			

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm	(N—Value)
1.15				Core Recovery
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	50/4 - -	
8.51				

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 Drilling: 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 Soil	N-Value	Blows Per Each 10cm	Standard Penetration Test or Core Recovery (N-Value)
	+35.90												
1	+34.40	1.50	1.50		Silty Clay	Bluish grey	Very soft	With roots	1.00				
2									1.45	P-1	0	Self penetration under weight of hammer	
									2.15				
3									2.45	P-2	2	1 1 -	
						Light Grey-ish			3.00				
4	+31.40	4.50	3.00		Silty Clay	brown	Very soft		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									5.15				
									5.45	P-5	3	1 1 1	
								Sand is medium to coarse grained	6.15				
7	+28.40	7.50	3.00		Sand	Grey	Loose		6.45	P-6	4	1 2 1	
									7.15				
									7.45	P-7	3	1 1 1	
								Sand is coarse grained.	8.15				
9									8.45	P-8	5	1 2 2	
							Loose	With gravel	9.15				
10								With silt	9.45	P-9	6	2 2 2	
	+25.40	10.50	3.00		Sand	Grey	Medium		10.15				
11									10.45	P-10	8	1 2 3	50 blows/2cm
	+25.42	10.52	0.02		Gravel	Greyish White	Hard	Gravel is ø10 15 mm	10.50	P-11	50/2cm		
12									10.52				
								End of Drilling					
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

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. S8-4 Elevation PL +37.5' m. Date 4/1/80 to 5/1/80

Site Sentul Water Table GL -2.65 m. Drifter Geotechnique (M) (Kiso-Jiban

Remarks

Elevation in m.	Depth in m.	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
+37.50						
+37.10	0.40	0.40	Sandy Silt	Grey	Loose	Sand is fine grained with root traces of clay
+32.60	4.90	4.50	Silty Clay	Greyish white	Very soft	Traces of fine sand
+30.00	7.50	2.60	Sand	Grey	Loose	Medium to coarse sand
+24.80	12.70	5.20	Sand	Greyish white	Medium	Sand is medium to coarse grained. With gravel (ø 5 - 20cm) With fragments of limestone (ø 30 - 50cm)
+23.90	13.60	0.90	Silty Sand	Grey	Loose	Sand is fine grained
+23.00	14.50	0.90	Silty Sand	Grey	Loose	With some clay. Sand is medium to coarse
+20.90	16.60	2.10	Silty Sand	Grey	Medium	Sand is coarse grained
+19.00	18.50	1.90	Sand	Grey	Loose	Sand is fine to medium grained with silt
+17.50	20.00	1.50	Sand	Grey	Medium	Sand is coarse grained
+17.49	20.01	0.01	Sand with Gravel			Weathered limestone
				End of Drilling		

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	30cms Per Each 10cm	(N—Value)
1.15 1.45	P-1	1	0 1/50	
2.00 2.45	P-2	0	Self penetration under weight of hammer	
3.15 3.45	P-3	1	0 0 1	
4.00 4.45	P-4	0	Self penetration 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	6	1 3 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	50/1 - -	

Core Recovery

50 blows/1cm

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-5 Elevation: PL +36.9 m. Date: 7/1/80 to 8/1/80

Site: Sentul Water Table: GL -2.15 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
	36.90							
	36.75	0.15	0.15		Clayey Silt	Light brown	Very Soft	With roots
1	35.45	1.45	1.30		Clayey Silt	Grey	Very soft	Traces of sand
2								
3	34.15	2.75	1.30		Clayey Silt	Light grey	Very soft	
	33.40	3.50	0.75		Sand	Grey	Medium	Sand is medium grained. Traces of gravel
4								
5	31.10	5.80	2.30		Silty Sand	Grey	Very loose	Sand is fine grained
6								
7	29.40	7.50	1.70		Sandy Silt	Grey	Very soft	With coarse sand
8								High plasticity
9								
10								
11	26.05	10.85	3.35		Silty Clay	Grey	Very soft	
	25.40	11.50	0.65		Sandy Clay	Grey	Soft	With gravel. Gravel is ø2-20cm
12								
13								With medium to coarse sand with gravel ø3 - 5cm
14	22.90	14.20	2.70		Silty Clay	Dark grey	Stiff	
15	21.40	15.50	1.30		Clayey Sand	Dark grey	Loose	With white patches Sand is medium to coarse grained.
16								With white patches
17	19.90	17.00	1.50		Silty Sand	Grey	Loose	Sand is medium to coarse grained
	19.88	17.02	0.02		Sand with Gravel	Grey	Hard	Weathered limestone
18								End of Drilling
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m.	Sampling for Lab.	N-Value	Blows Per Each 10cm (1st / 2nd / 3rd)
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	10	4 / 4 / 3
3.45			
4.15	P-4	2	1 / 1 / -
4.45			
5.00	P-5	0	Self penetration under weight of hammer
5.45			
6.15	P-6	1	1 / - / -
6.45			
7.15	P-7	1	1 / - / -
7.45			
8.15	P-8	1	1 / - / -
8.45			
9.15	P-9	2	1 / 1 / -
9.45			
10.15	P-10	1	1 / - / -
10.45			
11.15	P-11	4	1 / 1 / 2
11.45			
12.15	P-12	10	3 / 3 / 4
12.45			
13.15	P-13	8	2 / 3 / 3
13.45			
14.15	P-14	9	2 / 3 / 4
14.45			
15.15	P-15	7	2 / 2 / 3
15.45			
16.15	P-16	8	2 / 2 / 4
16.45			
17.00	P-17	50/2	50/2 / - / -
17.02			

Core Recovery

(N-Value)

10 20 30 40 50

50 blows/2cm

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. 58-5 Elevation: +36.4 m. Date: 29.12.79 to 4.1.80

Site: Sentul Water Table: GL -5.50 m. Drilled by: Geotechnique (M) (Kiso-Jiba)

Remarks

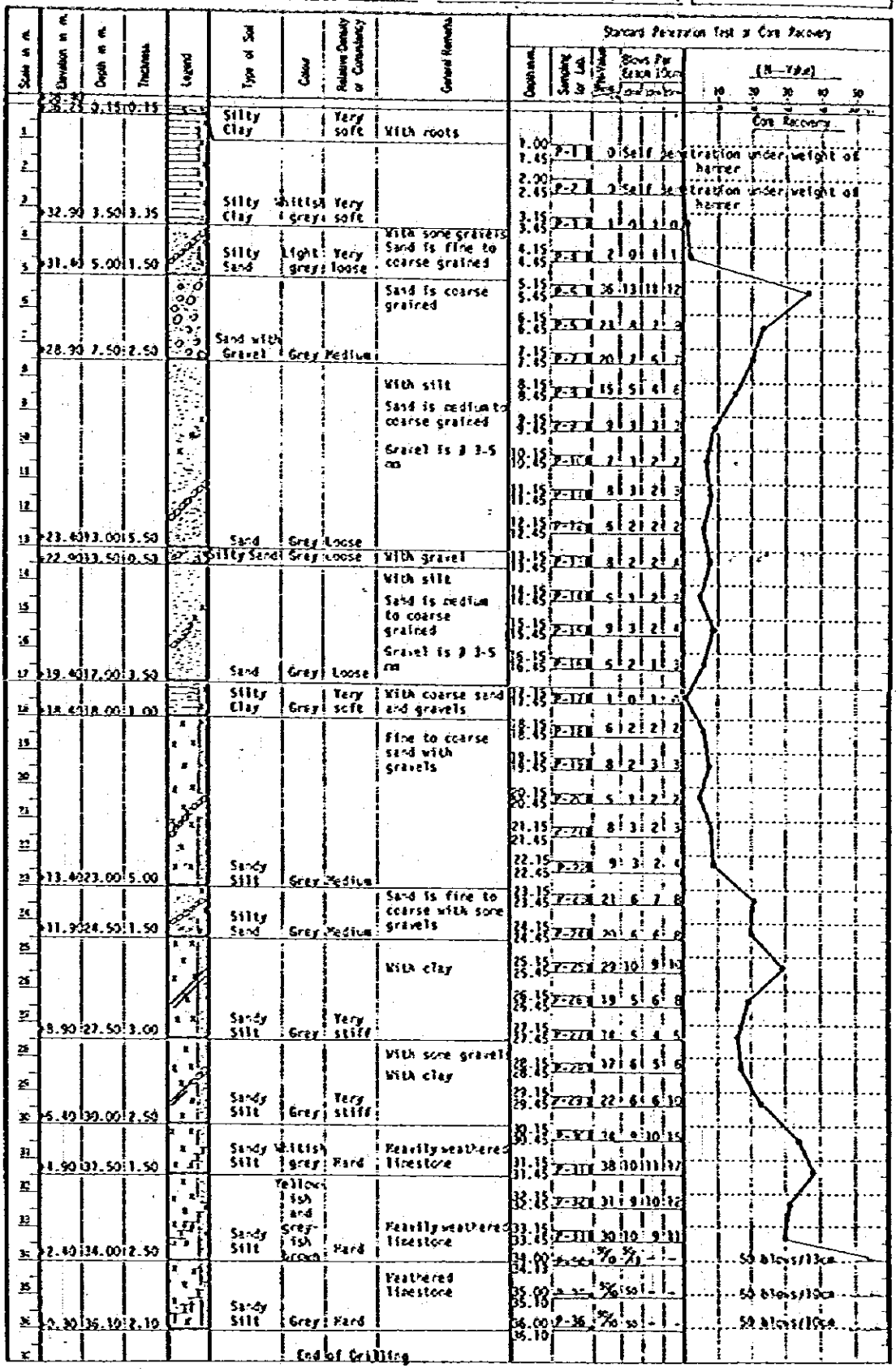


FIG. DRILLING LOG

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

Hole Number: No. SB-7 | Elevation: RL +33.7 m | Site: Sentul | Water Table: GL -2.60 m

Type of Drilling: Percussion | Date: 10/1/80 to 11/1/80 | 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
0	33.40	0.30	0.30		Organic Clay	Dark grey	Very soft	With roots
1								Sand is fine grained
2								
3	30.00	3.70	3.40		Silty Sand	Light grey	Very soft	
4								Sand is coarse grained with silt
5					Sand and Gravel			Gravel is ϕ 2-5cm
6	27.10	6.60	2.90			Light grey	Loose	
7	26.20	7.50	0.90		Sand and Gravel	Grey	Medium	Sand is coarse grained. Gravel is ϕ2-50cm
8								Sand is fine grained with gravel
9	24.70	9.00	1.50		Silty Sand	Grey	Dense	
10	23.60	10.10	1.10		Silty Sand	Greyish White	Very dense	With gravels Gravel is ϕ2-5cm
11						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				Core Recovery
1.45	P-1	0		Self penetration under weight of hammer
2.15			1/30	
2.45	P-2	1		
3.00				
3.45	P-3	0		Self penetration under weight of hammer
4.15				
4.45	P-4	4	1 1 2	
5.15				
5.45	P-5	4	1 1 2	
6.15				
6.45	P-6	5	2 1 2	
7.15				
7.45	P-7	10	3 3 4	
8.15				
8.45	P-8	33	10 11 11	
9.15			50/10	
9.45	P-9	50		50 blows/10cm
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. S8-8

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

Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
34.00							
33.75	0.25	0.25		Organic Clay	Grey	Soft	With roots
32.40	1.60	1.35		Clay with Sand	Grey	Very loose	Sand is fine to medium grained
31.20	2.80	1.20		Sand	Grey	Very loose	Sand is medium to coarse grained
							Sand is fine to medium grained
							With gravel ϕ 3 - 5cm
25.50	8.50	5.70		Sand	Grey	Very loose	
							Sand is medium grained with small gravel.
22.00	12.00	3.50		Sandy Silt	Grey	Very soft	
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.	SPT-Value	Blows Per Each 10cm	(N—Value)
1.15 / 1.45	P-1	1	1/30	
2.15 / 2.45	P-2	1	1/30	
3.15 / 3.45	P-3	9	5 3 1	
4.00 / 4.45	P-4	0	- - -	Self penetration under weight of hammer
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	2	1/15 1/15	
8.15 / 8.45	P-8	4	1 1 2	
9.15 / 9.45	P-9	2	1/15 1/15	
10.15 / 10.45	P-10	0	- - -	
11.15 / 11.45	P-11	2	1/15 1/15	
12.00 / 12.03	R-12	50/3	50/1	50 blows 3 cm

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-9 Elevation PL +38.1 m Date 14/1/80 to 18/1/80

Site Sentul Water Table GL -7.00 m Order 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
	38.10	0.15	0.15					
1	37.95				Silty Sand	Greyish brown	(Soft)	Fine sand with roots
2								
3	35.10	3.00	2.85		Silty Clay	Greyish brown	Very soft	
4							Very soft to soft	Traces of fine sand
5								
6								
7	30.60	7.50	4.50		Silty Clay	Greyish brown		
8								Traces of sand
9								
10								
11	27.10	11.00	2.50		Silty Clay	Greyish brown	Very soft	
12								With clay with gravels
13	24.60	13.50	2.50		Sandy Clay	Greyish brown	Very soft	
14								With silt
15								Sand is fine to coarse grained.
16								
17	22.33	16.75	3.25		Sandy Clay	Grey	Soft	With gravels
	22.33	16.80	0.05		Sand with Gravel			Weathered limestone
18					End of Drilling			
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m	Sampling or Lab.	(N)-Value	Blows Per Each 10cm	(N—Value)	Core Recovery
1.10	P-1	0			Self penetration under weight of hammer
1.45					
2.10	P-2	0			Self penetration under weight of hammer
2.45					
3.15	P-3	1	1/30		
3.45					
4.15	P-4	2	1/15 1/15		
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	3	1 1 1		
7.45					
8.15	P-8	4	1 1 2		
8.45					
9.15	P-9	1	1/30		
9.45					
10.15	P-10	1	1		
10.45					
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	P-13	1	1/30		
13.45					
14.15	P-14	1	1/30		
14.45					
15.15	P-15	2	1/15 1/15		
15.45					
16.15	P-16	2	1 1		
16.45					
16.75	P-17	5/5	5/5		50 blows/5cm
16.80					

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: 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: 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
	36.44							
1	36.25	0.20	0.20		Silty Clay	Yellowish brown	(Very soft)	With roots
2	34.30	2.15	1.95		Silty Clay	Yellowish brown	(Very soft)	
3	33.55	2.90	0.75		Silty Clay	Grey	(Very soft)	
4								
5	31.75	4.70	1.80		Sand	Grey	Loose	Sand is fine to medium grained
6								
7							Loose to	
8	28.85	7.60	2.90		Sand	Grey	Medium	Sand is fine to medium grained
9	27.45	9.00	1.40		Sand	Grey	Loose	Sand is fine to medium grained
10								
11								
12								
13								Sand is medium to coarse grained
14	22.50	13.90	4.90		Sand	Grey		
15	22.15	14.30	0.40		Silty Clay	Grey		With traces of sand
16								
17								
18								Sand is medium to coarse grained
19						Greyish white		
20	16.70	19.75	5.45		Sand			
21	15.20	21.25	1.50		Limestone	Greyish white		Limestone is heavily weathered
22	14.40	22.05	0.80		Limestone	Greyish white	Hard	Weathered limestone
23								
24								
25								
26								
27								
28								
29	7.00	29.45	7.40		Limestone	Greyish white		
30					End of Drilling			

Standard Penetration Test or Core Recovery

Depth in m	Sampling or Lab.	(N)-Value	Blows Per Each 10cm	(N—Value) 10 20 30 40 50
0.10				
0.80	S-1			
1.00				
1.80	S-2			
2.00				
2.75	S-3			
3.15	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 Tes			
22.05				
22.24	P-7	48	48 - -	

Core Recovery

100%

100%

45%

50%

55%

30%

FIG. DRILLING LOG

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

Name of Project

Boring No. Sub-section A"-B Elevation RL +36.4 m

Site Sentul Water Table GL -2.25 m

Type of Drilling Rotary

Date 9/2/80 to 11/2/80

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							
1	+36.20	0.20	0.20		Silty Clay	Yellowish brown	(Very soft)	With roots in top part. Top soil
2	+33.65	2.75	2.55		Silty Clay	Grey	(Very soft)	
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
16								
17								
18								Fresh
19						Light		
20	+16.70	19.70	5.54		Limestone	grey		
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m	Sampling for Lab	SPT-N Value	Blows Per Each 10cm	(N—Value) 10 20 30 40 50	Core Recovery
1.00	In-situ Vane Test				
2.00	In-situ Vane Test				
15.20	Pressuremeter Test				35%
16.20	Pressuremeter Test				95%
17.00	Pressuremeter Test				85%
18.50	Pressuremeter Test				
19.00	Pressuremeter Test				100%

FIG. DRILLING LOG

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

Boring No. Sub-section B-A Location GL +36.3 m. Date 19/1/80 to 31/1/80

Site Seatul Water Table GL -2.20 m. Order Geotechnique (M) (Kisa-Jibyo

Remarks

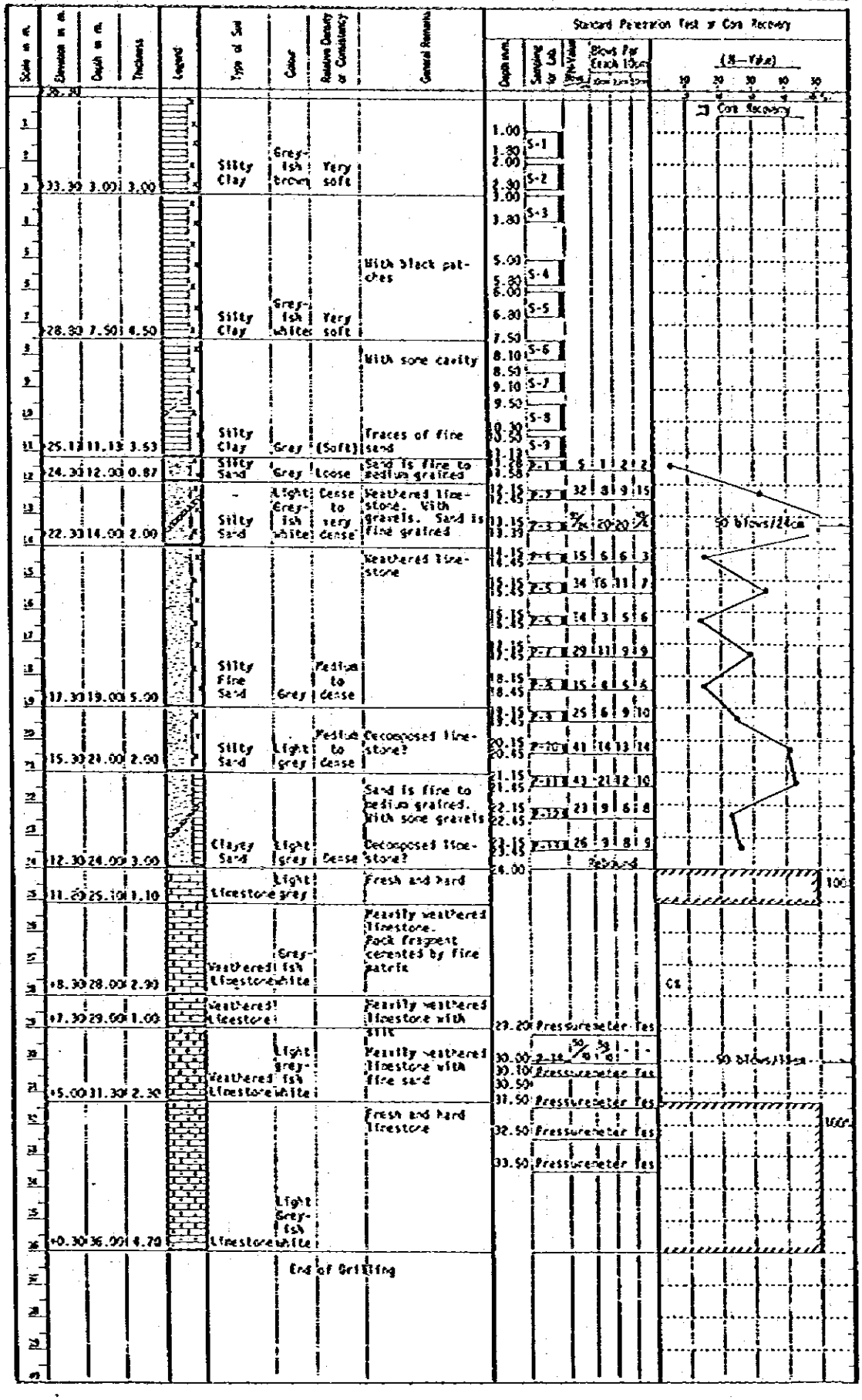


FIG. DRILLING LOG

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 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

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	36.30							
29.50		6.80	6.80		Silty Clay	Grey-ish white	(Very soft)	
24.30		12.00	5.20		Silty Clay	Grey	(Very soft)	
					Sand	Grey-ish white		Sand is fine gravel With some gravels Weathered lime-stone
18.30		18.00	6.00					
					Silty Fine Sand	Grey		With some gravels Weathered lime-stone
10.30		26.00	8.00					
+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
					Weathered Limestone	Light grey		Limestone is heavily weathered at 29.5 to 31.5m Rock is fresh and hard in lower portion
+2.30		33.50	5.00					

End of Drilling

E-93

Depth in m.	Sampling for Lab.	SPT-Value Blows Per 6each 10cm	(N—Value)
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			Core Recovery
12.45			Permeability Test
17.00			
17.45			Permeability Test
22.00			
22.45			Permeability Test
			45%
28.00	P-1	50	50 blows/5cm
28.05			
			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 ( )

Elevation in m	Depth in m	Thickness	Type of Soil	Colour	Relative Density or Consistency	General Remarks
36.35	0.00					
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
21.85	14.50	8.80	Silty Clay	Dark grey	Very soft	Traces of fine sand, small organic matter, and fine mica
19.35	17.00	2.50	Silty Clay	Grey	Stiff	Traces of fine sand and mica
18.35	18.00	1.00	Silty Clay	Grey	Very stiff	With angular limestone fragments (Ø = 20mm)
18.24	18.11	0.11	Decomposed Limestone	Grey-white	Hard	

End of Drilling

Standard Penetration Test or Core Recovery

Depth in m	Sampling for Lab.	N-Value Blows	Blows Per Each 10cm (1)	(2)	(3)	(N—Value) / Core Recovery
1.00 / 1.80	U01					
1.95 / 2.25	P-1	0	0	-	-	Penetration under weight of rods
3.00 / 3.80	002					
3.95 / 4.25	P-2	0	0	-	-	Penetration under weight of rods
5.00 / 5.80	U03					
5.95 / 6.25	P-3	0	0	-	-	Penetration under weight of rods
7.00 / 7.80	U04					
7.95 / 8.25	P-4	0	0	-	-	Penetration under weight of rods
9.00 / 9.80	U05					
9.95 / 10.25	P-5	0	0	-	-	Penetration under weight of rods
11.00 / 11.80	U06					
11.95 / 12.25	P-6	0	0	-	-	Penetration under weight of rods
13.00 / 13.80	U07					
13.95 / 14.25	P-7	0	0	-	-	Penetration under weight of rods and hammer
15.00 / 15.80	U08					
15.95 / 16.25	P-8	9	2	3	4	
17.15 / 17.45	P-9	23	7	8	8	
18.00 / 18.11	P-10	50/11	42	8/1	-	50 blows/11cm

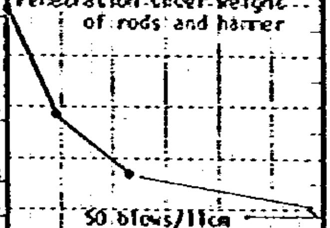


FIG. DRILLING LOG

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. — Driller: Geotechnique ( )

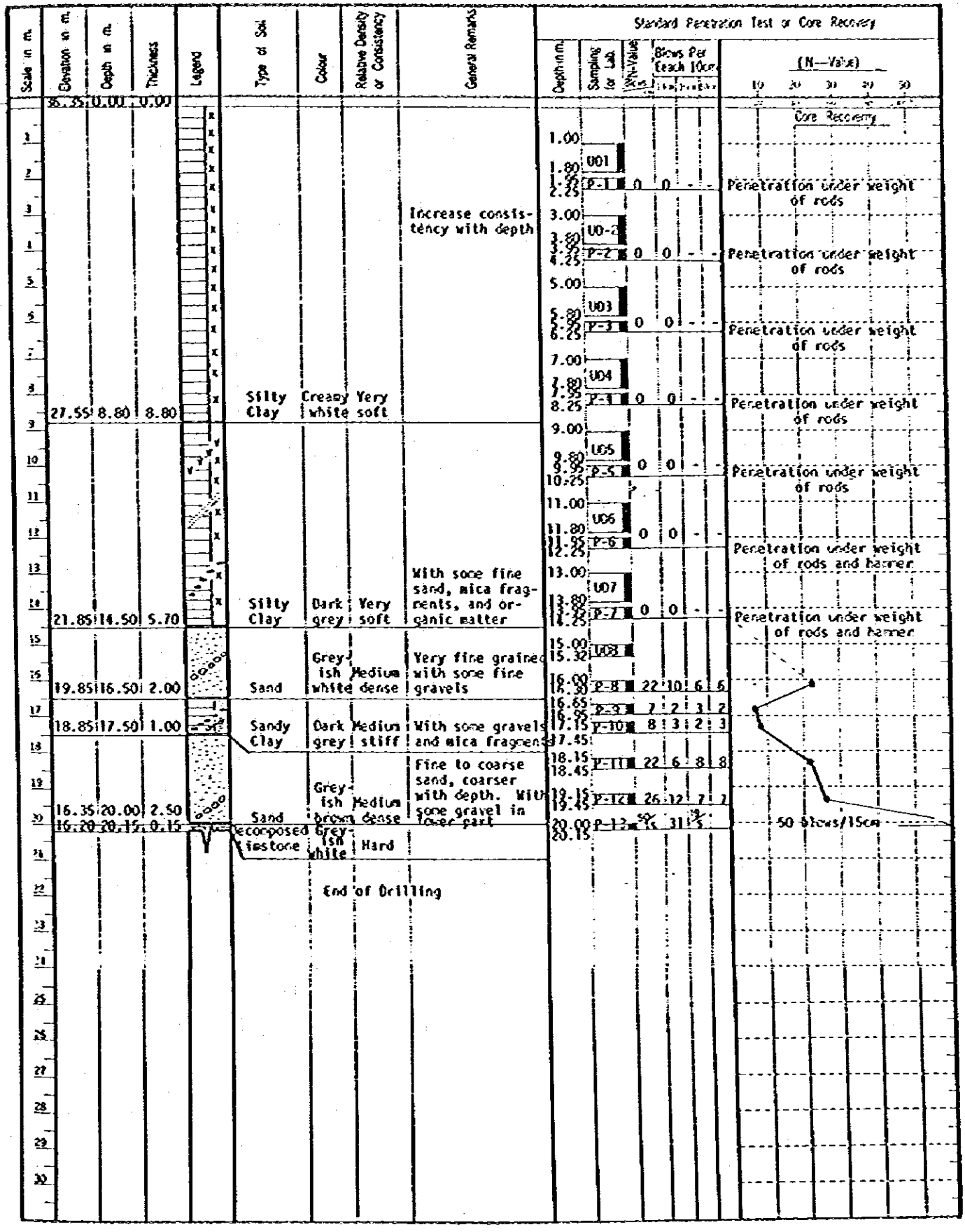


FIG. DRILLING LOG

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 Mong (X-J S'pore)

Remarks

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

Scale in m.	Elevation in m.	Depth in m.	Thickness	Legend	Type of Soil	Colour	Relative Density or Consistency	General Remarks
	37.45	0.00						
1	36.65	0.80	0.80		Silty Clay	Yellowish brown	Medium Stiff	With Sand
2	35.65	1.80	1.00					
3					Sand	Greyish white	Loose	Coarse grained with some angular gravels (ϕ=2 to 5mm)
4								
5								
6								
7								
8								
9								
10	27.45	10.00	8.20		Silty clay	Greasy white	Very soft	Increase consistency with depth
11								
12								
13								Increase consistency with depth
14								
15								
16	21.25	16.20	6.20		Silty Clay	Dark grey	Very soft to soft	With decayed woods & traces of sand at lower portion
17								
18						Dark grey with white patches		
19	18.05	19.40	3.20		Silty Clay		Soft to stiff	With coarse sand and gravels
20	17.25	20.20	0.80					
21					Sandy Silt	Dark grey	Medium dense	Sand is fine grained
22								
23	14.05	23.40	3.20		Sand	Dark grey	Loose	Fine grained with pocket of coarse sand & gravels
24	13.05	24.40	1.00		Silt	Greyish white	Stiff	With gravels
25	12.45	25.00	0.60					
	11.95	25.50	0.50		Sand	Dark grey	Medium	Coarse grained with gravels
26					Limestone	White & grey	Hard	
27					End of Drilling			
28								
29								
30								

Standard Penetration Test or Core Recovery

Depth in m.	Sampling or Lab. No.	Blows Per Each 10cm	(N-Value)
0.00	U0-1		
0.80			
1.00	U0-2		
1.80			
2.00	U0-3		
2.80			
3.00	U0-4		
3.80			
4.00	U0-5		
4.80			
5.00	U0-6		
5.80			
6.00	U0-7		
6.80			
7.00	U0-8		
7.80			
8.00	U0-9		
8.80			
9.00	U0-10		
9.80			
10.00	U0-11		
10.80			
11.00	U0-12		
11.80			
12.00	U0-13		
12.80			
13.00			
13.80	U0-14		
14.00	U0-15		
14.80			
15.00	U0-16		
15.80			
16.00	U0-17		
16.40			
16.55	P-1	3 1/5 1/5 3	
16.85			
17.65	P-2	8 2 3 3	
17.95			
18.65	P-3	9 3 3 3	
18.95			
19.65	P-4	13 3 4 6	
19.95			
20.65	P-5	10 3 3 4	
20.95			
21.65	P-6	7 2 2 3	
21.95			
22.65	P-7	7 3 2 2	
22.95			
23.65	P-8	13 3 4 6	
23.95			
24.65	P-9	14 3 4 7	
24.95			

Core Recovery 100

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

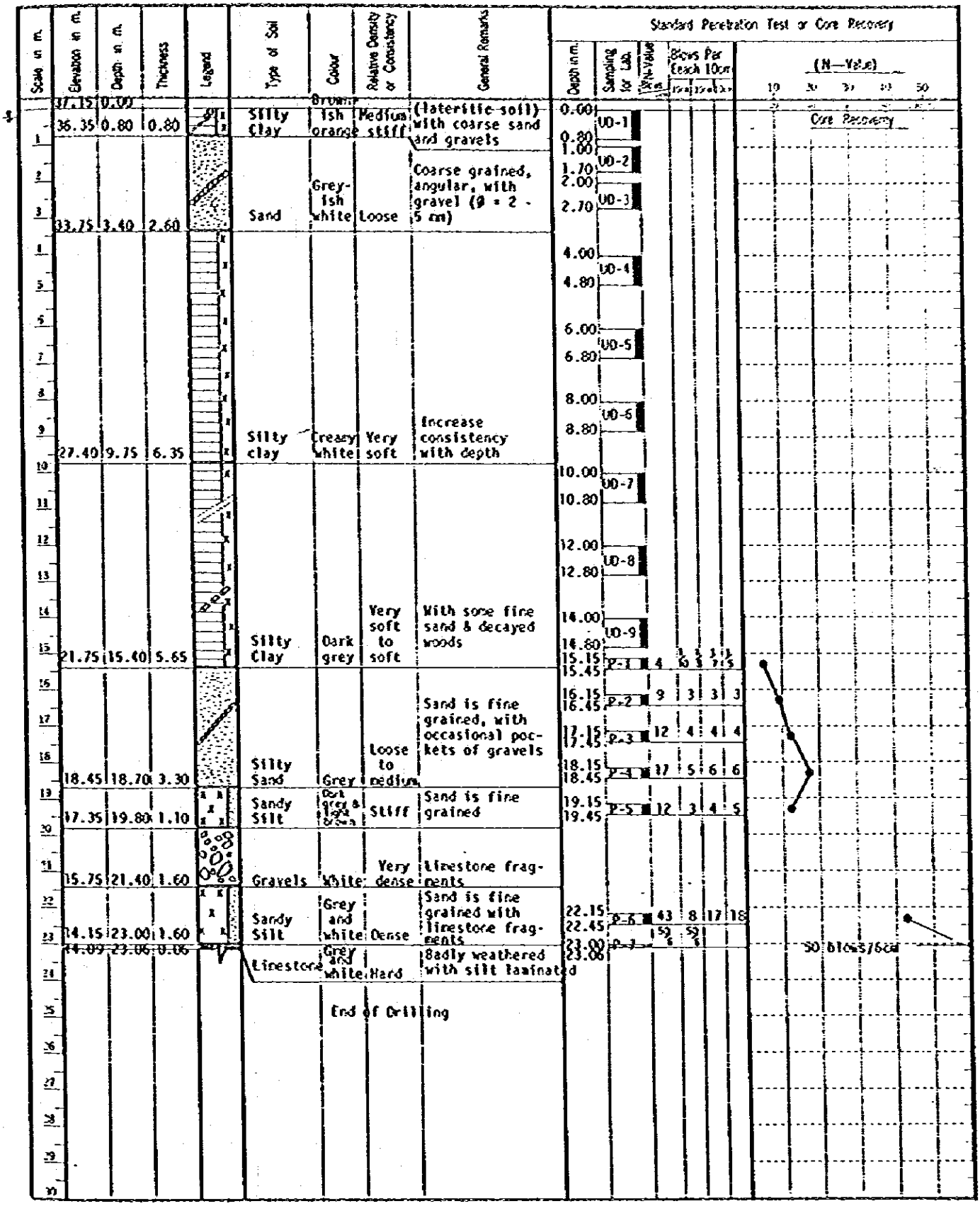


FIG. DRILLING LOG

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	Sampling Depth in m.	Sampling Sample No.	Standard Penetration Test or Core Recovery N Value	Blows Per Each 10cm 0~15cm	10~20cm	20~30cm	N - Value 10 20 30 40 50	Core Recovery 30 40 50 60 100 %
	37.85	0.00														
1						Brown-		With medium to	0.50	UD-1						
2	35.85	2.00	2.00		Silty clay	ish red	Medium stiff	coarse sand & laterite nodules	1.35 / 1.50							
	35.15	2.70	0.70		Sand	Greyish white	Loose	Coarse grained	2.35 / 2.50	UD-2						
3									3.35	UD-3						
4																
5									5.00							
6									5.85	UD-4						
7									6.50							
8									7.35	UD-5						
9									8.00							
10								With patches of dark grey clay & organic matters at bottom part	8.85	UD-6						
	27.15	10.70	8.00		Silty clay	Creamy white	Very soft		9.50							
11									10.35	UD-7						
12									11.00							
13									11.85	UD-8						
14									12.50							
15									13.35	UD-9						
16								With very fine sand, organic matters and decayed woods	14.00							
	21.35	16.50	5.80		Silty clay	Dark grey	Soft		14.85	UD-10						
17									15.50							
18									16.35	UD-11						
19									17.15 / 17.45	P-1	9	2	3	4		
20									18.15 / 18.45	P-2	7	2	2	3		
21									19.15 / 19.45	P-3	7	2	2	3		
22								With medium to coarse grained gravel and decayed woods	20.15 / 20.45	P-4	4	1	1	2		
	14.95	22.90	6.40		Clayey sand	Dark grey	Loose		21.15 / 21.45	P-5	3	1	1	1		
23									22.15 / 22.45	P-6	12	2	4	6		
						Grey- ish		Highly weathered limestone								
24	13.65	24.20	1.30		Limestone	white	Hard		24.20 / 24.22	P-7	50/2cm					
								End of drilling								
25																
26																
27																
28																
29																
30																

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 (Wong)

Remarks

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

Elevation m.	Depth m.	Thickness 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	10.57	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

Depth in m.	Sample No.	N Value	Blows Per Each 10cm 1st	2nd	3rd	Core Recovery
0.50	UD-1					
1.35						
1.50	UD-2					
2.35						
4.15	P-1	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	8	2	3	3	
17.45						
18.15	P-3	42	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	6	14	8	50/28 cm
23.45						
24.15	P-9	29	10	8	11	
24.45						
25.15	P-10	50/21	18	27	5/1	50/21 cm
25.35						
26.10	P-11	50/7	50/7			50/7 cm
26.17						

N - Value: 10, 20, 30, 40, 50

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

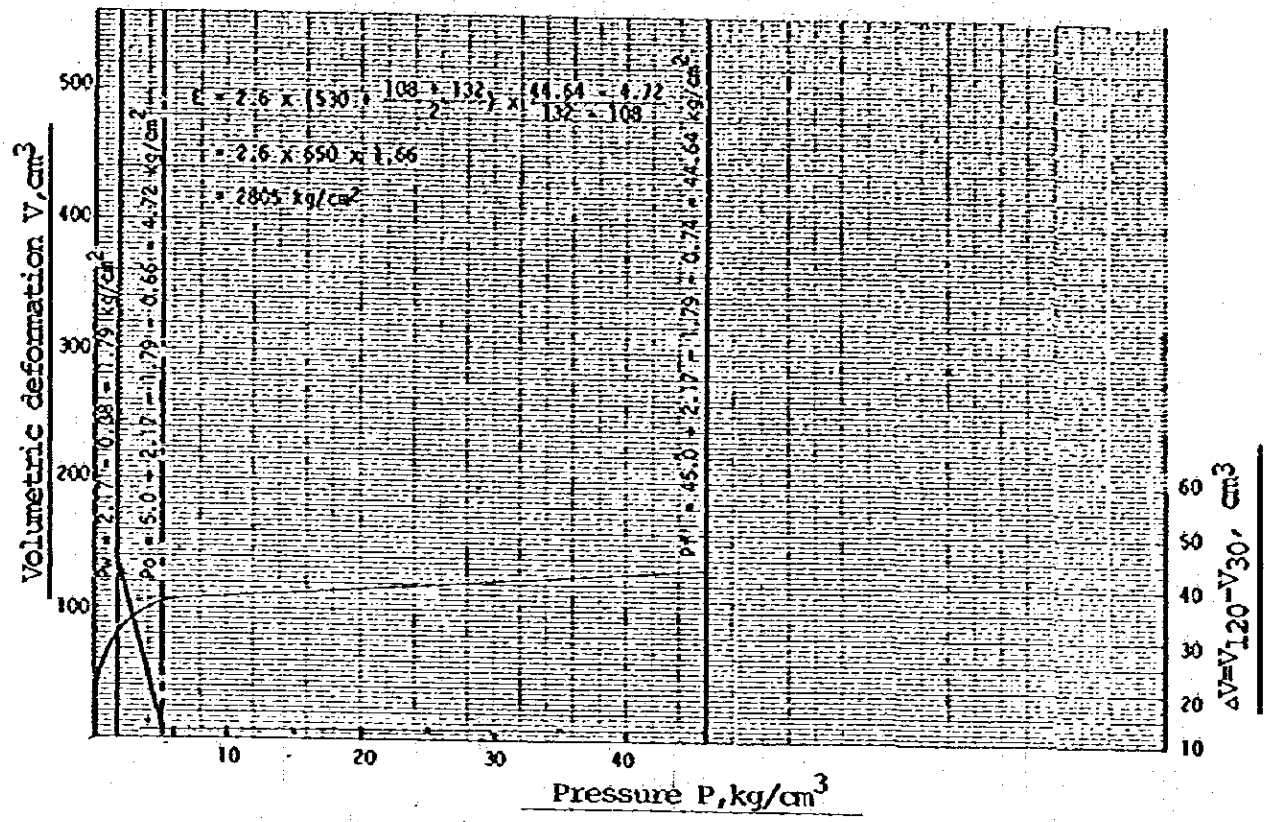
Summary of Pressuremeter Tests

Site		Sentul					
Boring No.		Test depth m	Description of Material	Earth pressure at rest Po, kg/cm^2	Creep pressure Pf, kg/cm^2	Limit pressure Pe, kg/cm^2	Modulus of deformation E, kg/cm^2
Sub-section	A"-A	21.7	Limestone	4.72	44.64	-	2805
	A"-B	15.2	Limestone	4.46	24.43	-	3375
		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

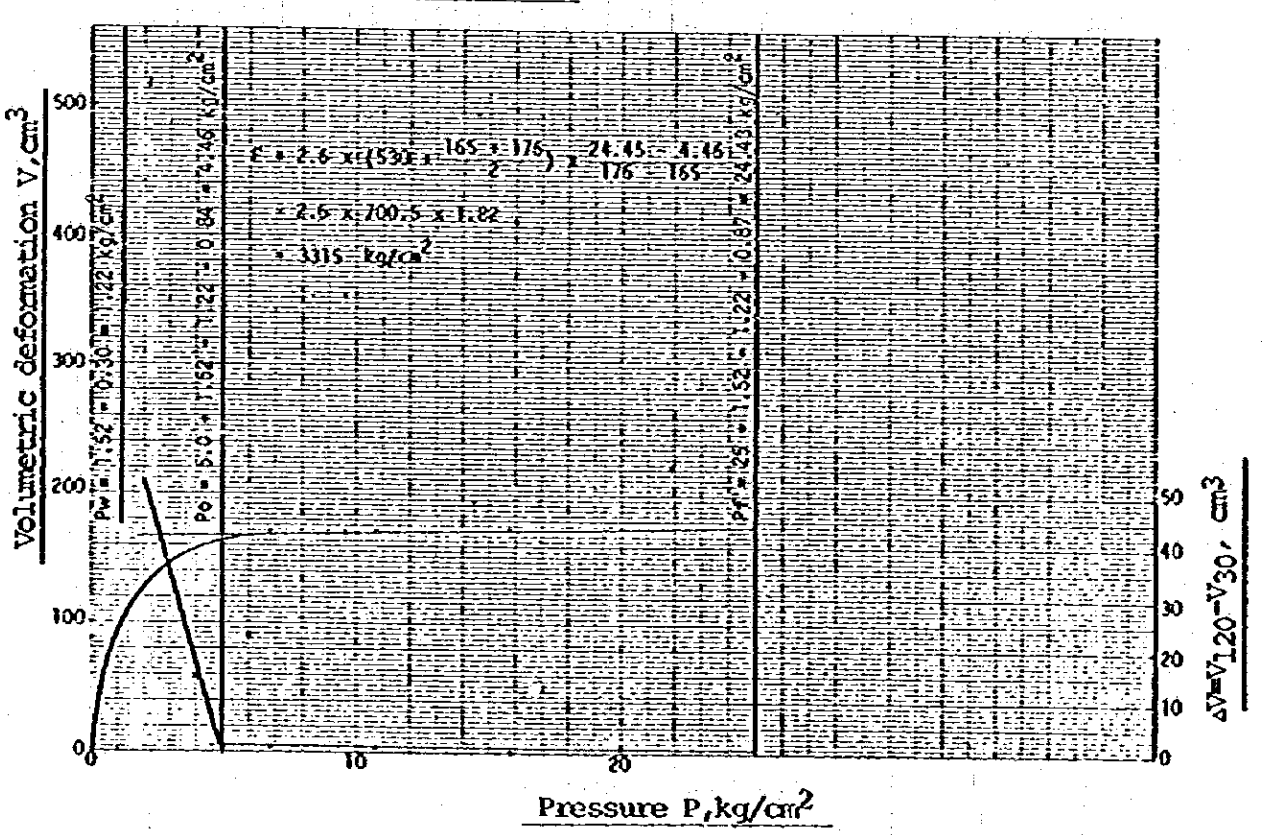
Groundwater Table GL -3.8m



PRESSUREMETER CURVE

Boring No. Sub-section A°-B Depth 35.2m

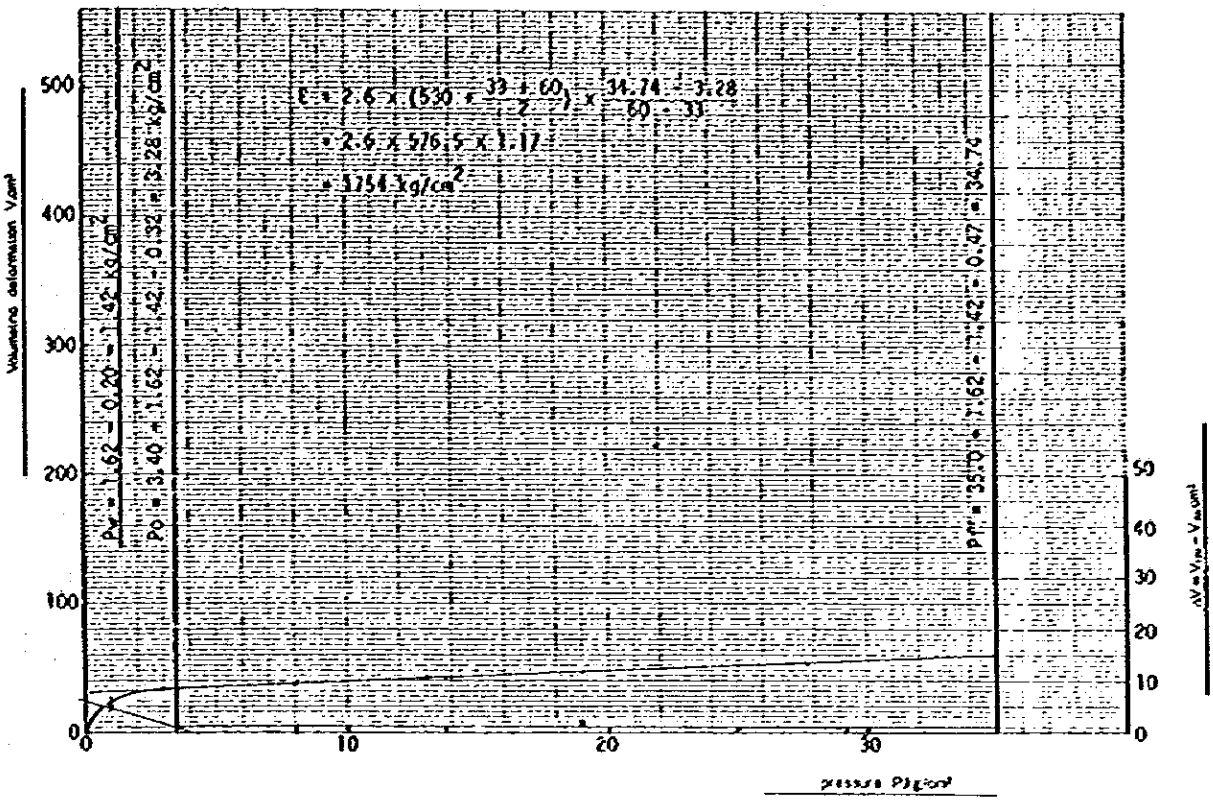
Groundwater Table GL -3.00m



PRESSUREMETER CURVE

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

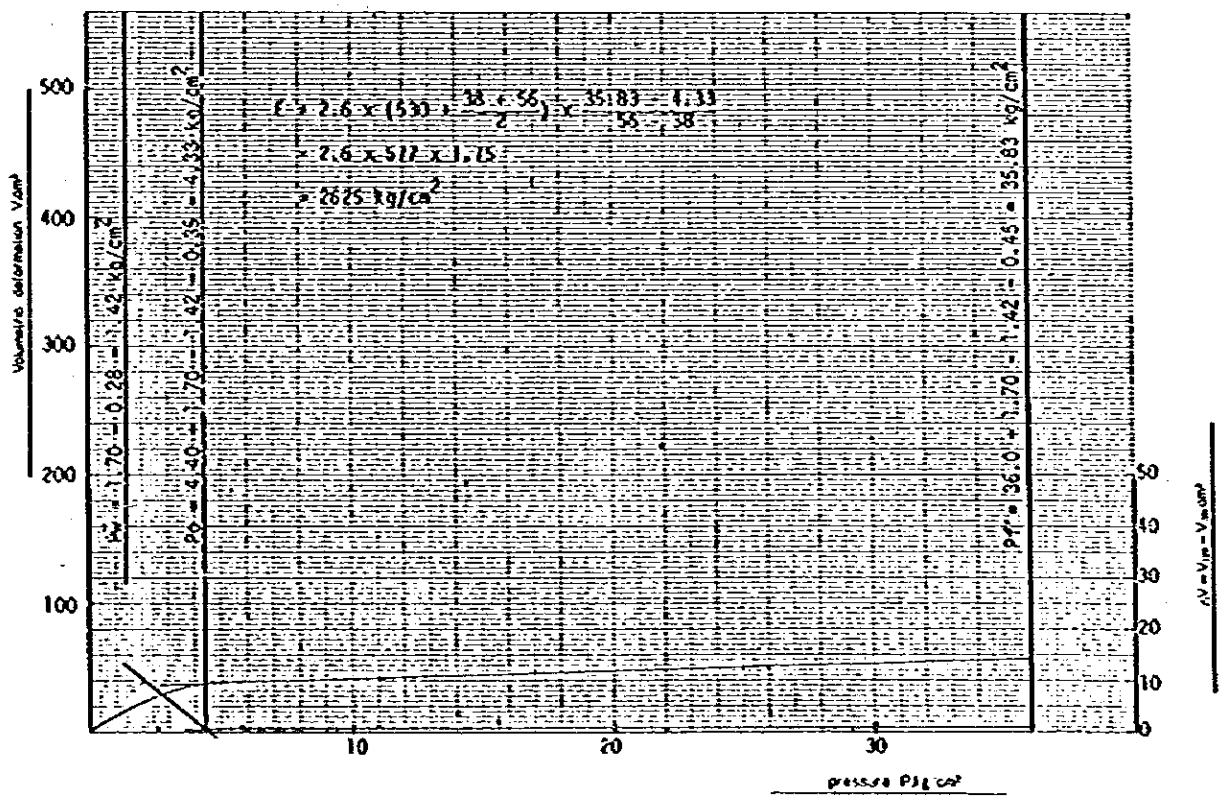
Groundwater Table GL -2.00m



PRESSUREMETER CURVE

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

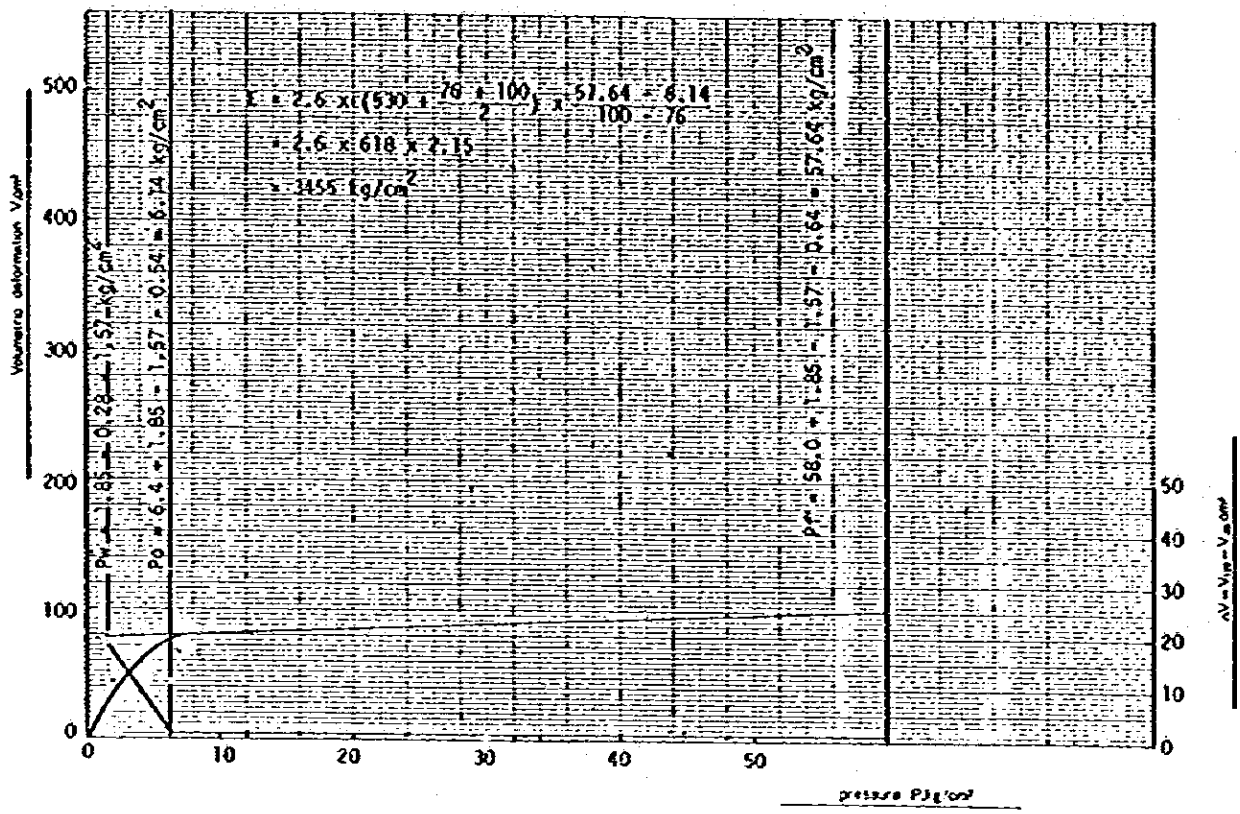
Groundwater Table GL -2.80m



PRESSUREMETER CURVE

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

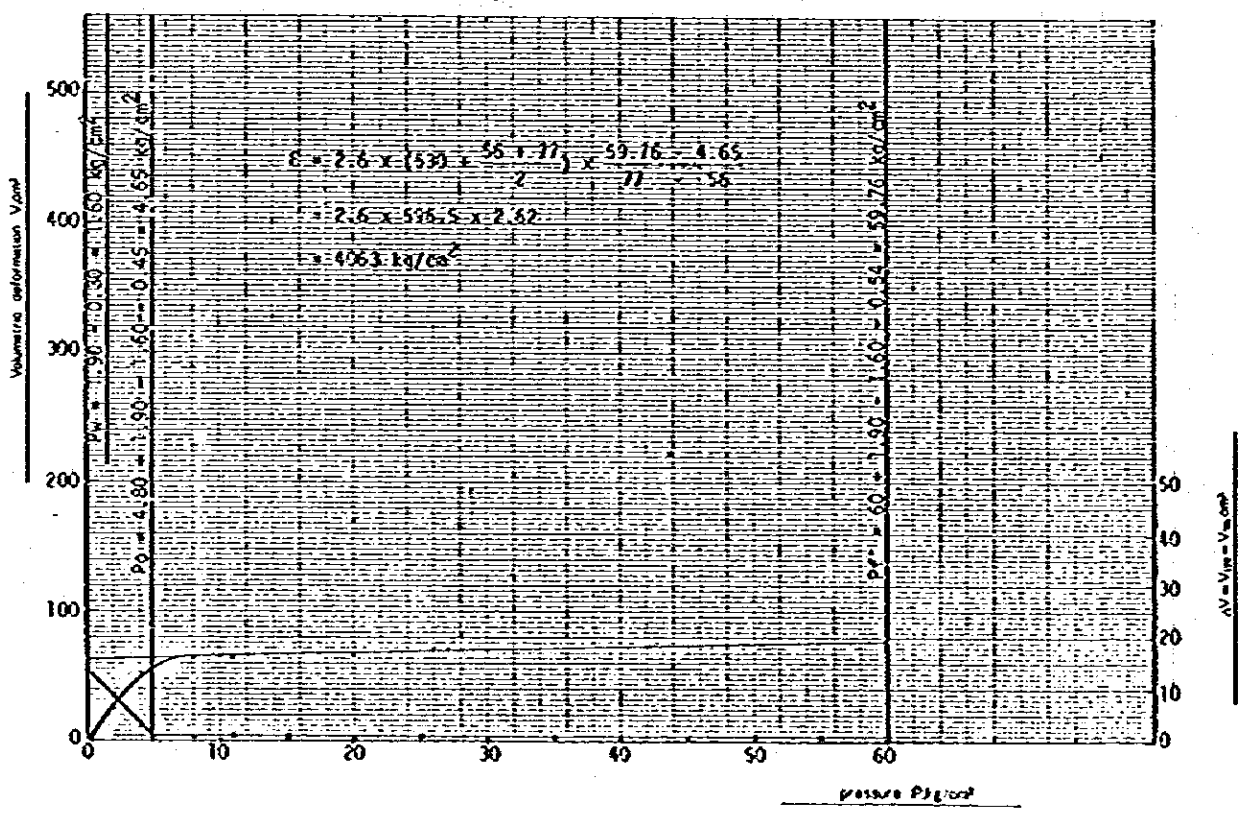
Groundwater Table GL -2.80m



PRESSUREMETER CURVE

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

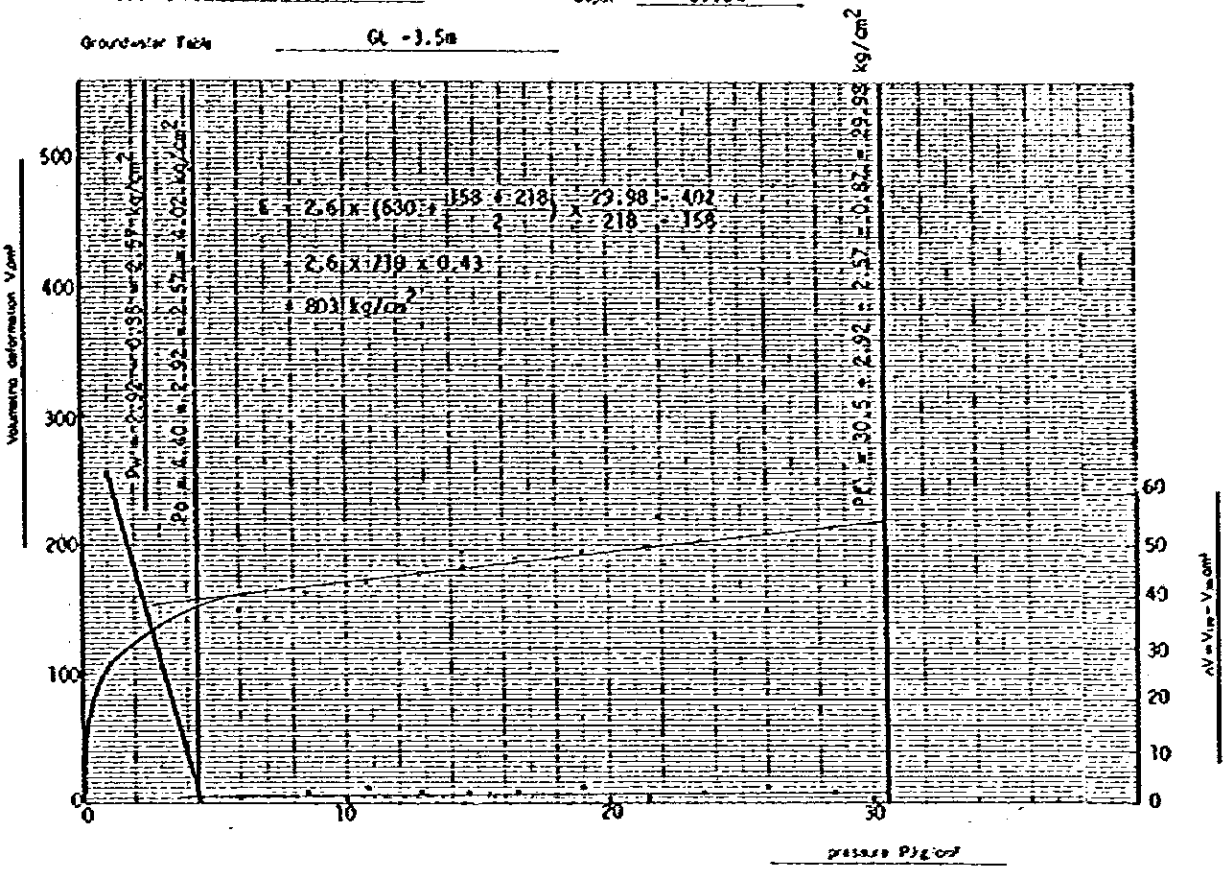
Groundwater Table GL -3.00m



PRESSUREMETER CURVE

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

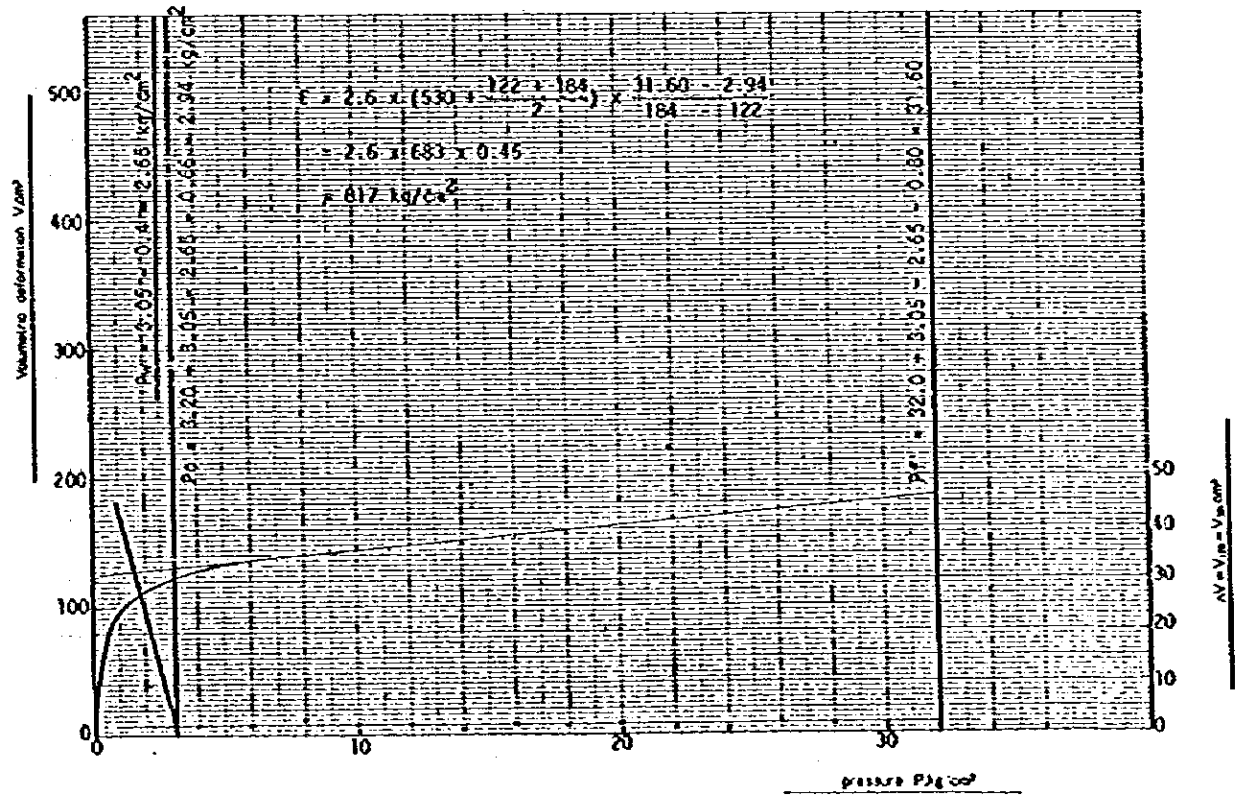
Groundwater Table GL -3.5m



PRESSUREMETER CURVE

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

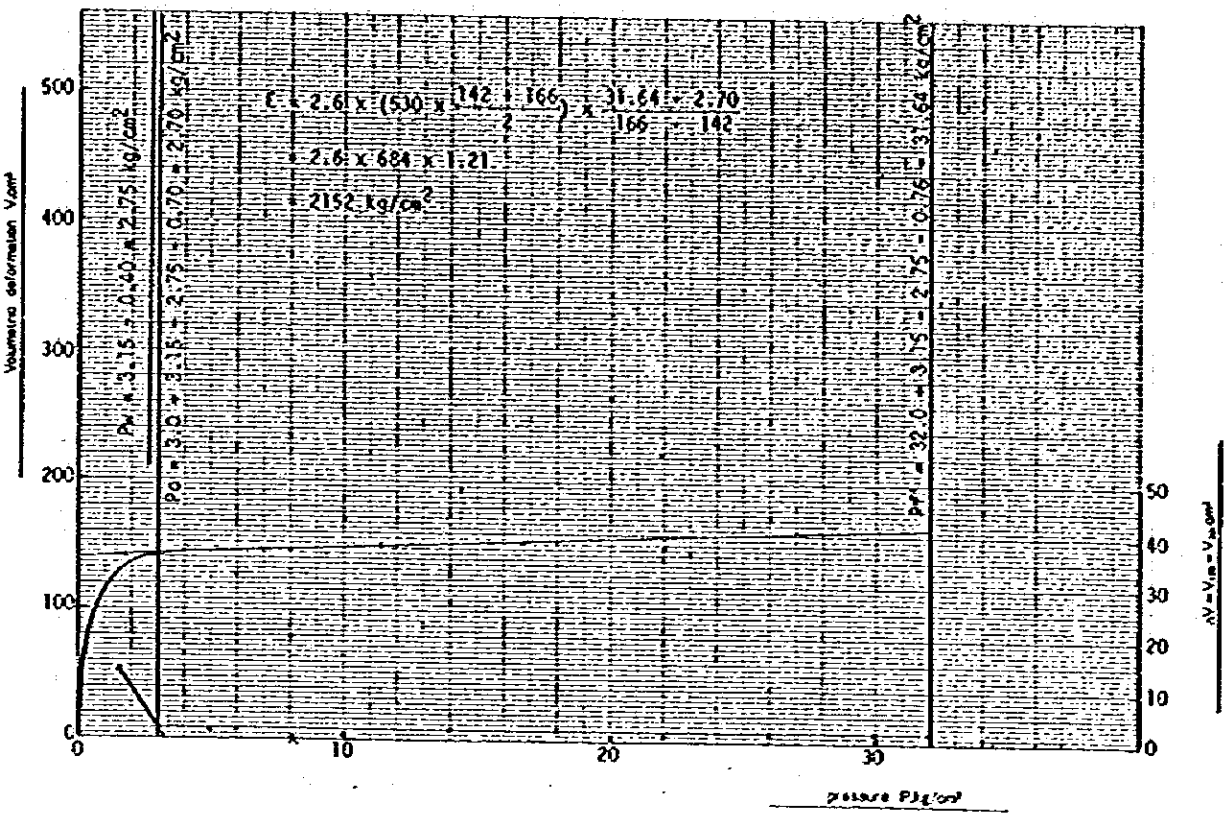
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

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

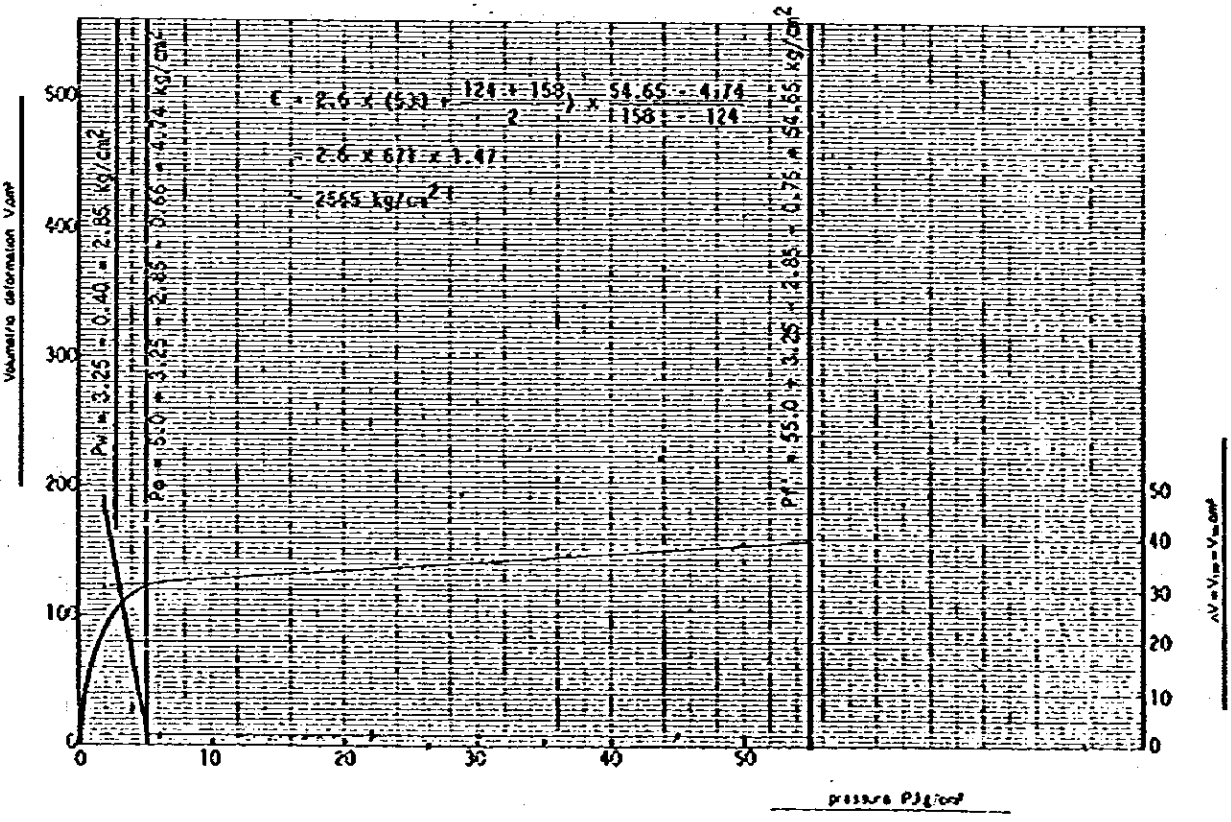
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

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

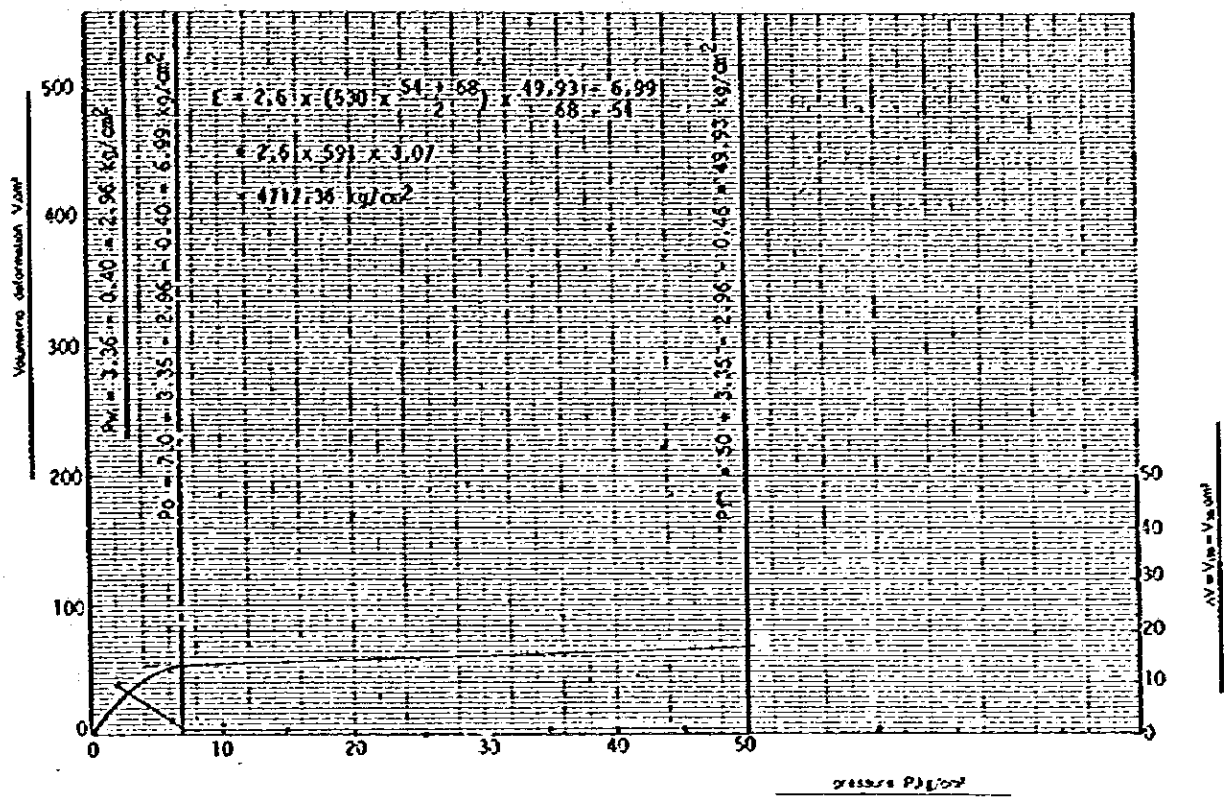
Groundwater Table GL -4.0m



PRESSUREMETER CURVE

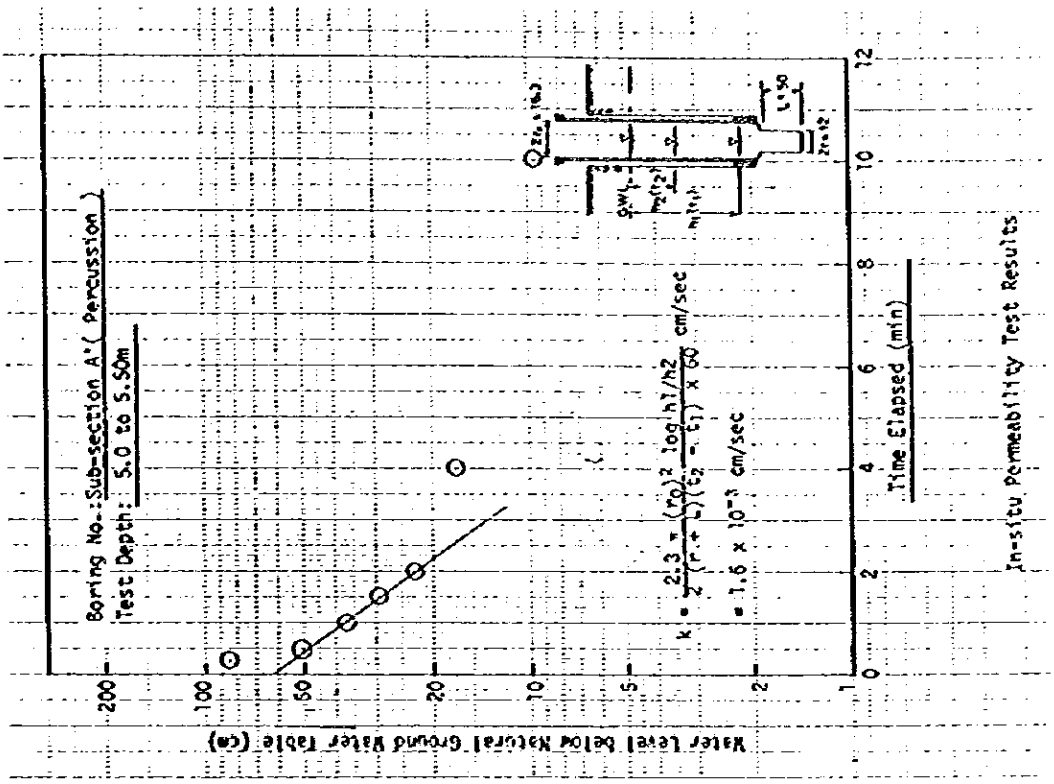
Boring No. Sub-section B-A　　Depth 33.5m

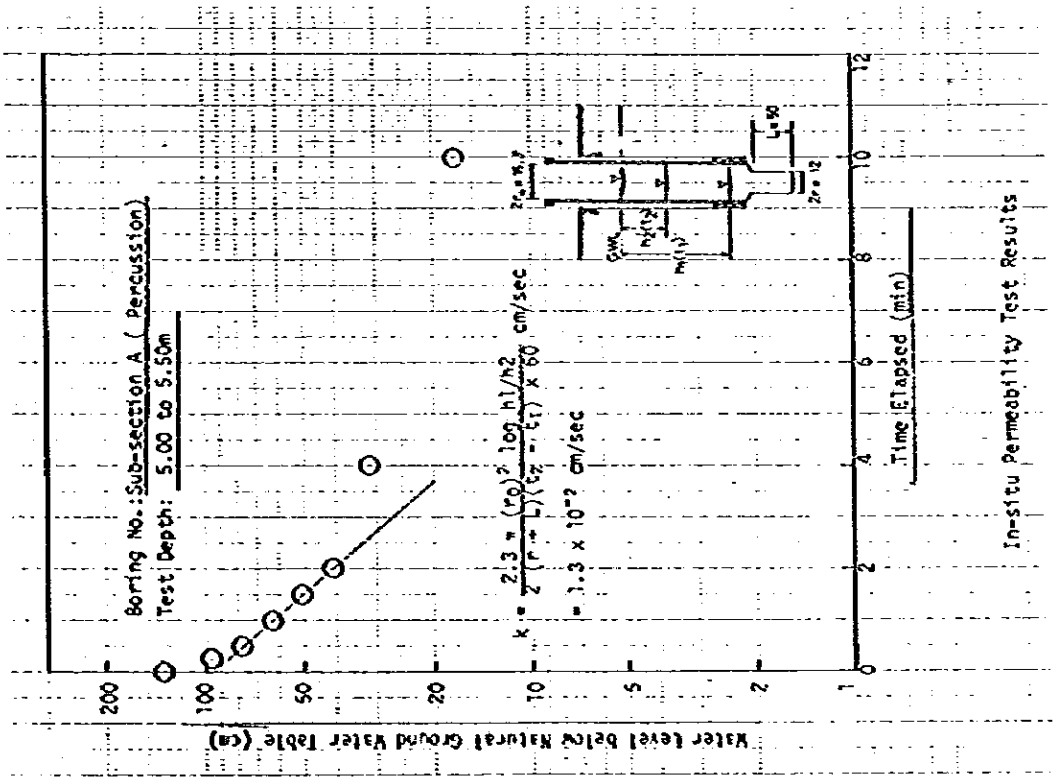
Groundwater Table GL -4.0m



Summary of In-situ Permeability Test

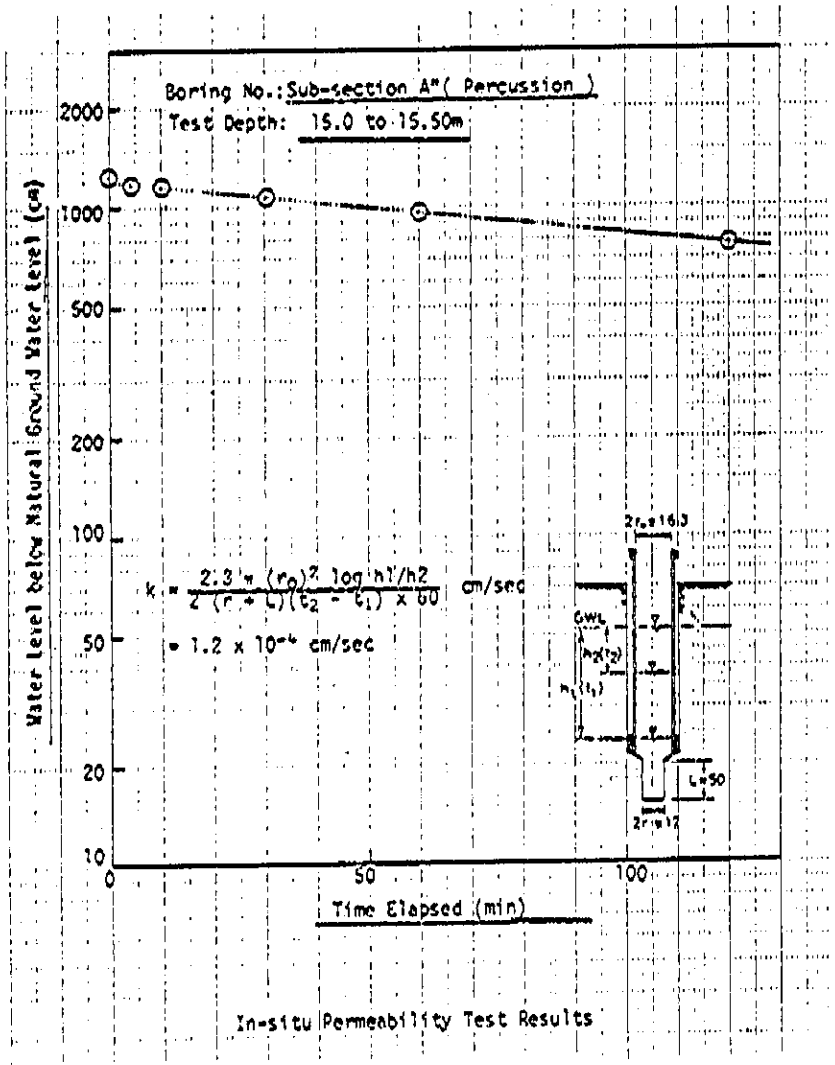
Boring Type	Boring No.		Depth (m)	Coefficient of Permeability k (cm/sec)
Percussion	Sub-section	A	5.00 - 5.50	1.3×10^{-2}
Percussion		A'	5.00 - 5.50	1.6×10^{-2}
Percussion		A"	5.00 - 5.50	1.1×10^{-2}
Percussion		A"	10.00 - 10.50	1.2×10^{-4}
Percussion		A"	15.00 - 15.50	1.2×10^{-4}
Percussion		A"	19.10 - 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}

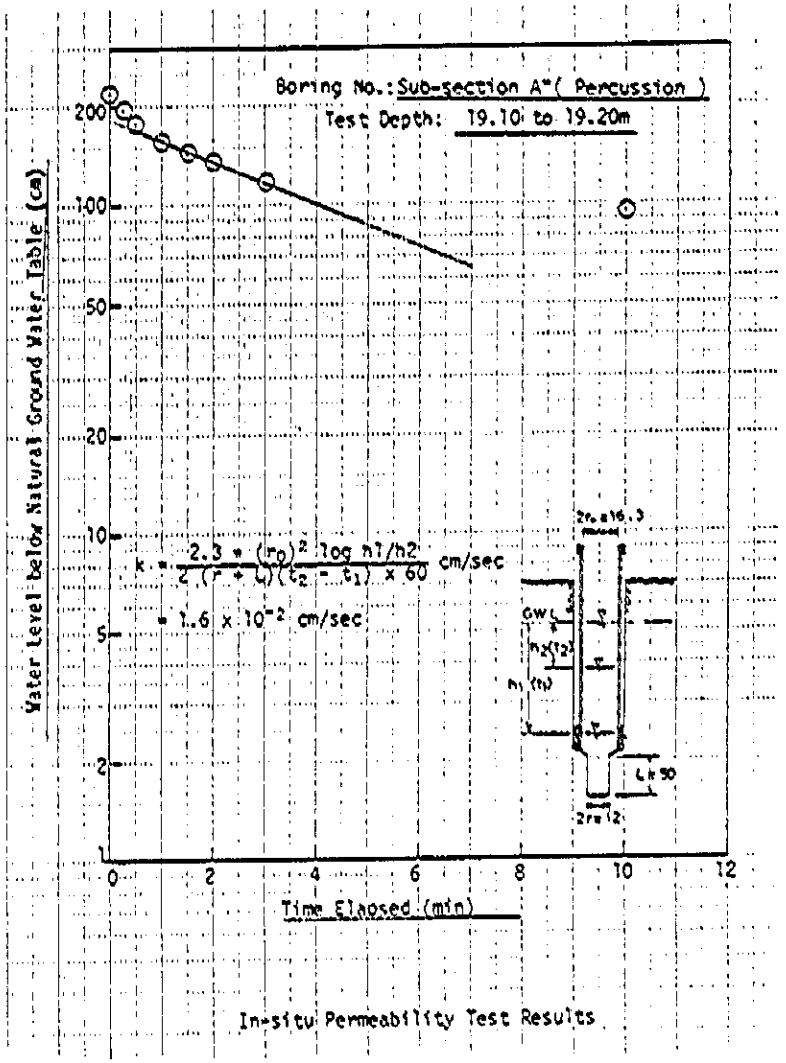

In-situ Permeability Test Results
Boring No.:Sub-section A'(Percussion)
Test Depth: 5.0 to 5.50m
Water level below Natural Ground Water Table (cm)
Time Elapsed (min)
k = 2.3 × (r0)² / 2(r + L)(t2 − t1) × log h1/h2 cm/sec
= 1.6 × 10⁻³ cm/sec


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 × (r0)² / 2(r + L)(t2 − t1) × log h1/h2 cm/sec
= 1.3 × 10⁻² cm/sec

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 × (r0)² log h1/h2 / 2(r + L)(t2 − t1) × 60 cm/sec
= 1.2 × 10⁻⁴ cm/sec
In-situ Permeability Test Results

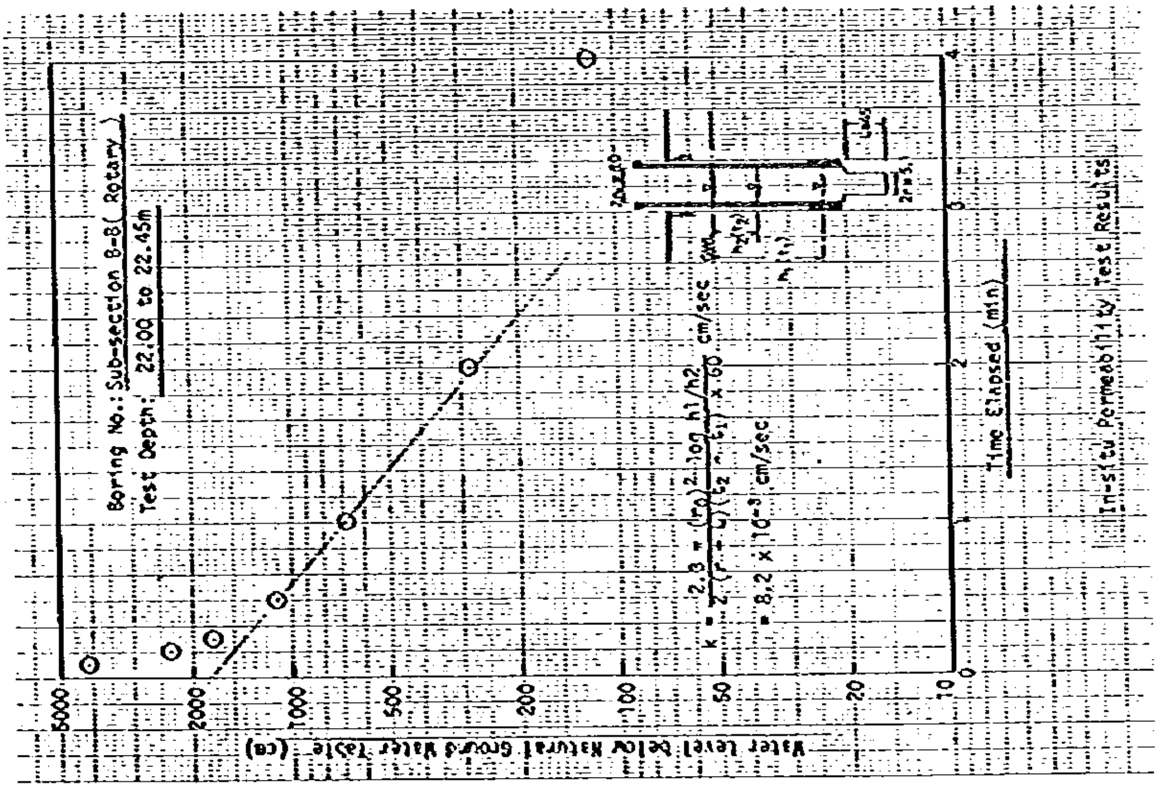
Boring No.: Sub-section A" (Percussion)
Test Depth: 5.00 to 5.50m
Water level below Natural Ground Water table (cm)
Time Elapsed (min)
k = 2.3 × (r0)² log h1/h2 / 2(r + L)(t2 − t1) × 60 cm/sec
= 1.1 × 10⁻² cm/sec
In-situ Permeability Test Results


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)
$k = \frac{2.3 \pi (r_0)^2 \log h_1/h_2}{2 (r + L)(t_2 - t_1) \times 60}$ cm/sec
$= 1.2 \times 10^{-4}$ cm/sec
GWL
L=50
In-situ Permeability Test Results


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)
$k = \frac{2.3 \pi (r_0)^2 \log h_1/h_2}{2 (r + L)(t_2 - t_1) \times 60}$ cm/sec
$= 1.6 \times 10^{-2}$ cm/sec
GWL
L=50
In-situ Permeability Test Results

Boring No.: Sub-section 8-8(Rotary)
Test Depth: 17.00 to 17.45m
Water level below Natural Ground Water level (cm)
Time Elapsed (min)
In-situ Permeability Test Results
k = 2.3 π (ro)² log h1/h2 / 2(r + L)(t2 - t1) x 60 cm/sec
= 1.4 x 10⁻³ cm/sec
GWL
2ro=4.0
2r=5.1
L=45

Boring No.: Sub-section 8-8(Rotary)
Test Depth: 12.00 to 12.45m
Water level below Natural Ground Water level (cm)
Time Elapsed (min)
In-situ Permeability Test Results
k = 2.3 π (ro)² log h1/h2 / 2(r + L)(t2 - t1) x 60 cm/sec
= 1.3 x 10⁻² cm/sec
GWL
2ro=4.0
2r=5.1
L=45



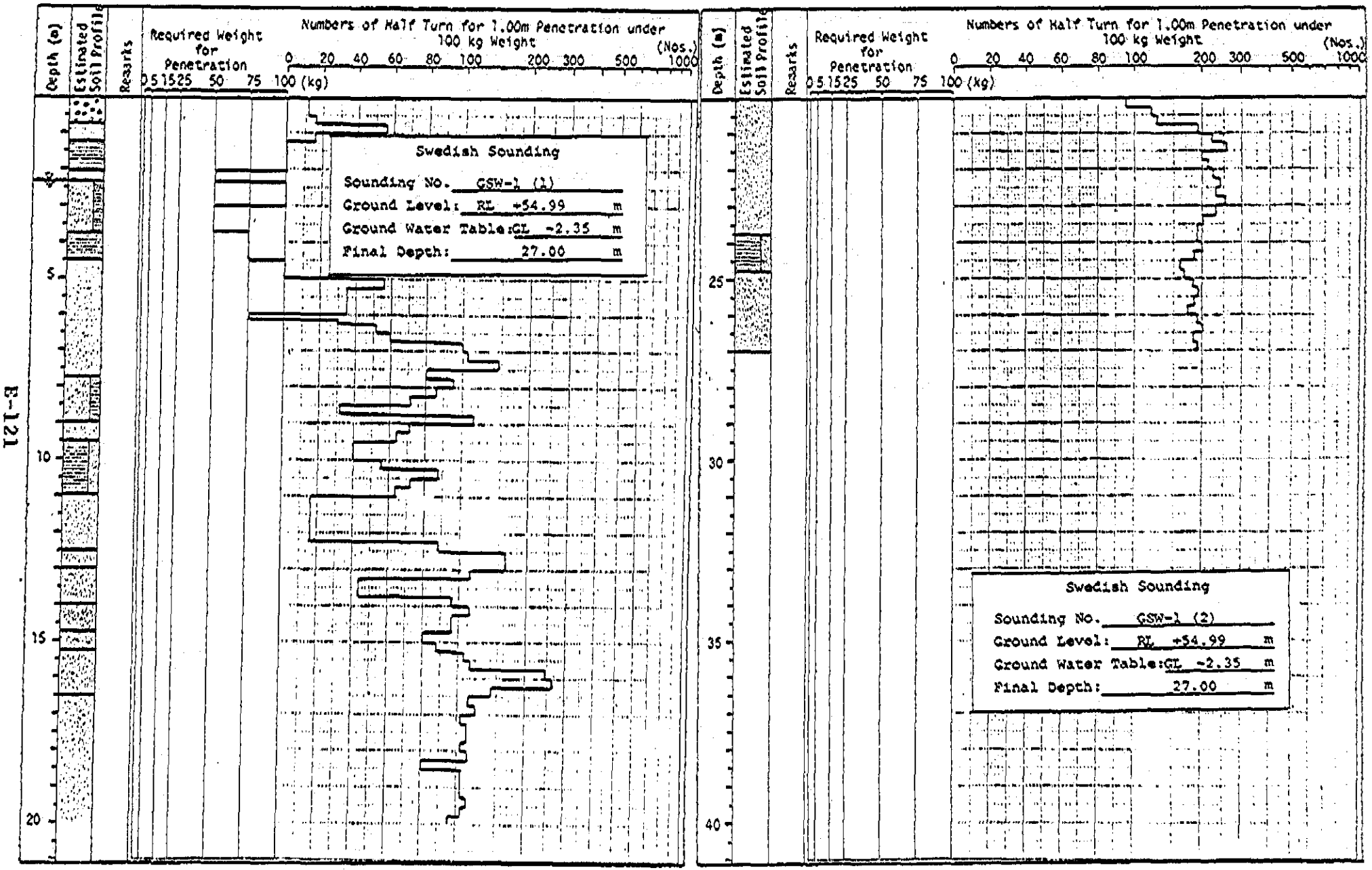
Boring No.: Sub-section B-8(Rotary)
Test Depth: 22.00 to 22.45m
= 8.2 x 10^-3 cm/sec
Time Elapsed (min)
In-situ Permeability Test Results
Water Level below Natural Ground Water Table (cm)
5000
2000
1000
500
200
100
50
20
10
0
2
4

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

Swedish Sounding
Sounding No. CSW-2
Ground Level: RL +55.03 m
Ground Water Table: GL -2.40 m
Final Depth: 9.20 m
Swedish Sounding
Sounding No. CSW-3
Ground Level: RL +54.87 m
Ground Water Table: GL -0.95 m
Final Depth: 14.30 m
Numbers of Half Turn for 1.00m Penetration under 100 kg Weight (Nos.)
Required Weight for Penetration (kg)
Depth (m)
Estimated Soil Profile
Remarks