

Tables

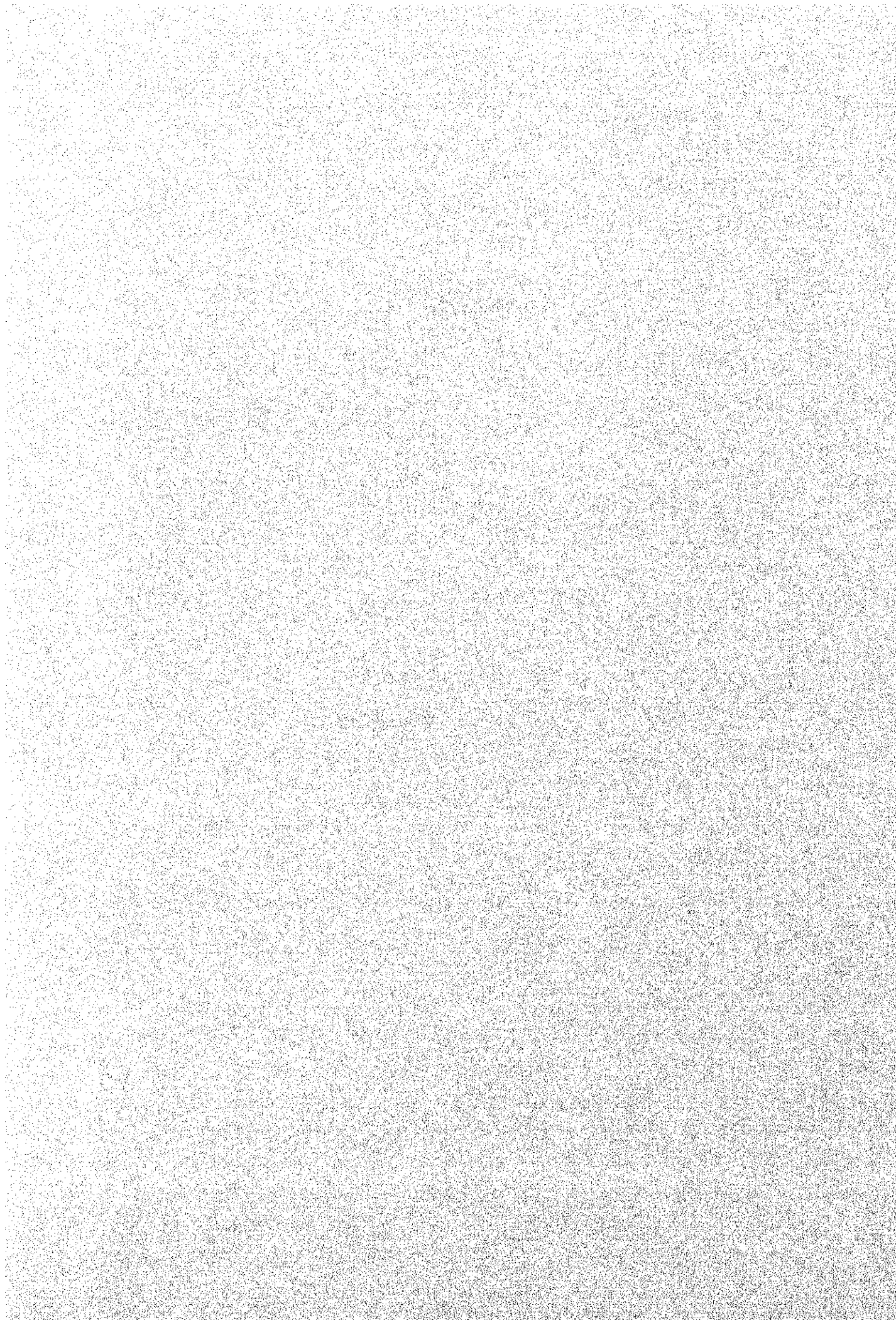


Table IV.1 RESULTS OF QUESTIONNAIRE SURVEY (GEOLOGY:1/2)

SR	COD. NO	NAME OF PROJECT	DISTRICT	MUKIM	KAMPUNG	G. MAP		G. COND		No.1 by State	No.2 by State	No.3 by State	Dropped by State
						G. PETA/LEG. MEKAL	G. S.S.L.C	G. DATA	G. DAMG				
1	PR	1 SIMPANG GETI	ORAN	CHURING	ORAN	PANGGAS	N	N	N	N	N	N	N
2	PR	2 PANGAS-SMALL DAM PROJECT	PAYA	PAYA	PDG LATI	PANGGAS	N	N	N	N	N	N	N
3	PR	4 TASEK MELATI	BESEK	BESEK	PAYA KELUBI	PANGGAS	N	N	N	N	N	N	N
4	PR	5 PAYA KELUBI MANGO PROJECT	MATA AYER	MATA AYER	HUTAN LEMBAH	PANGGAS	N	N	N	N	N	N	N
5	PR	6 HUTAN LEMBAH MANGO PROJECT	PAYA	PAYA	PDG LATI	PANGGAS	N	N	N	N	N	N	N
6	PR	7 TASEK MELATI II	LANGKAWI	AIR HANGAT	DURIAN BERAGIN	PANGGAS	N	N	N	N	N	N	N
7	KH	1 AIR HANGAT	LANGKAWI	AIR HANGAT	KUMBANG BADAH	PANGGAS	N	N	N	N	N	N	N
8	KH	2 AIR HANGAT	LANGKAWI	ULU MELAKA	PDG SAGA	PANGGAS	N	N	N	N	N	N	N
9	KH	3 AMPANGAN PDG SAGA	LANGKAWI	KEDAWANG	KEDAWANG	PANGGAS	N	N	N	N	N	N	N
10	KH	4 KAWASAN PADI KEDAWANG	LANGKAWI	KEDAWANG	BK LEMBU	PANGGAS	N	N	N	N	N	N	N
11	KH	5 KEDAWANG	LANGKAWI	KEPLU	GUAR BT HITAM	PANGGAS	N	N	N	N	N	N	N
12	KH	6 PULAU BERKELOMPOK	PDG TERAP PASU	PDG TERAP KANAN	PDG TERAP KANAN	PANGGAS	N	N	N	N	N	N	N
13	KH	13 PDG GELANGGANG	PDG TERAP	BELEMBING KIRI	BENDANG RAJA	PANGGAS	N	N	N	N	N	N	N
14	KH	14 BELIMBING KIRI	PDG TERAP	TEKAI KANAN	KG LUBUK MERBAU	PANGGAS	N	N	N	N	N	N	N
15	KH	15 LUBUK MERBAU	PDG TERAP	KURONG HITAM	TANDOP BESAR	PANGGAS	N	N	N	N	N	N	N
16	KH	16 SEKUM TANDOP BESAR	PDG TERAP	KURONG HITAM	KERAP	PANGGAS	N	N	N	N	N	N	N
17	KH	19 KURONG HITAM IRRIGATION SCHEME	PENDANG	RANBAI	KUBOR PANIANG	PANGGAS	N	N	N	N	N	N	N
18	KH	31 KUBUR PANIANG	PENDANG	PDG KERBAU	ASAM PADI	PANGGAS	N	N	N	N	N	N	N
19	KH	32 KG KAYU TIGA	PENDANG	PDG FUSING	SAWA KECIK	PANGGAS	N	N	N	N	N	N	N
20	KH	34 KG SAWA KECIK	PENDANG	PDG PELIANG	BK PERAK	PANGGAS	N	N	N	N	N	N	N
21	KH	35 BK PERAK	PENDANG	MEBOK	KG PASIR	PANGGAS	N	N	N	N	N	N	N
22	KH	40 SG AIR JERNIH	KUALA MUDA	BEJANG	SG PASIR	PANGGAS	N	N	N	N	N	N	N
23	KH	41 SG BARU	KUALA MUDA	BEJANG	BENDANG DALAM	PANGGAS	N	N	N	N	N	N	N
24	KH	43 BENDANG DALAM	SIK	NA	KG BETONG	PANGGAS	N	N	N	N	N	N	N
25	KH	48 KG BETONG - PDURIAN KELOMPOK	SIK	NA	KG KUBANG YOI	PANGGAS	N	N	N	N	N	N	N
26	KH	49 KG KUBANG YOI	SIK	NA	KG SELAMAT	PANGGAS	N	N	N	N	N	N	N
27	KH	50 KG SELAMAT - P. SAUTUR & BUAHAN	SIK	NA	KG SELAMAT	PANGGAS	N	N	N	N	N	N	N
28	PP	1 LUAR BAS PINANG TUNGGAL	5 PERALUTARA	3	PANTAI KAMALLOON	1/25000*	GMP	N	N	N	N	N	N
29	PP	2	5 PERALUTARA	3	LAHAR TIANG	1/25000*	GMP	N	N	N	N	N	N
30	PP	3 TOK BEDU IRRIGATION AREA	5 PERALUTARA	6	TOK BEDU	1/25000*	GMP	N	N	N	N	N	N
31	PP	4 KOTOK BEDU AIR KELINTAS, PATTG BERAN S PERALUTARA	5 PERALUTARA	6		1/25000*	GMP	N	N	N	N	N	N
32	PP	5 PINANG TUNGGAL IRRIGATION AREA (PIA)	5 PERALUTARA	6,12	POKOK JENEREH	1/25000*	GMP	N	N	N	N	N	N
33	PP	6 SG JAKAR IRRIGATION AREA	5 PERALUTARA	12	BEJUK	1/25000*	GMP	N	N	N	N	N	N
34	PP	7 BK TOH ALLANG	5 PERALUTARA	13	BK TOH ALLANG	1/25000*	GMP	N	N	N	N	N	N
35	PP	8 SG BURUNG	BARAT DAYA	H	SG BURUNG	S.S.L.C		N	N	N	N	N	N
36	PP	9 SG BURUNG	BARAT DAYA	M & H	KG SG BURUNG	S.S.L.C		N	N	N	N	N	N
37	PP	10 MAK SULONG	5 PERALUTARA	20	MAK SULONG	S.S.L.C		N	N	N	N	N	N
38	PP	11 SG KULIM IRRIGATION SCHEME	5 PERALUTARA	30	MENKUNANG MAK SULONG	S.S.L.C		N	N	N	N	N	N
39	PP	12 SKM PENGANGARAN SG KULIM	5 PERALUTARA	21	BK BELUTONG	S.S.L.C		N	N	N	N	N	N
40	PP	13 SKM PENGANGARAN TASEK SELATAN	5 PERALUTARA	1	TASEK JUNJONG	1/25000*	GMP	N	N	N	N	N	N
41	PK	1 KG TASEK	HULU PERAK	BELUKAR SEMANG	TASEK	R.S.S.L		N	N	N	N	N	N
42	PK	2 PUSAT PERTANAHAN TINGGI BK BERING	HULU PERAK	TEMENGOR	PUNCAK BERING	R.S.S.L		N	N	N	N	N	N
43	PK	3 INSULTRU BUAH BUAHAN	SELANA	LOK	KG MESJID HOK	R.S.S.L		N	N	N	N	N	N
44	PK	4 BERDANG TELONG	HULU PERAK	LENGGONG	TELUK BATU	R.S.S.L		N	N	N	N	N	N
45	PK	3 PELOMPOK BUAH BUAHAN	LARUT MATANG	BATU KURAU	CANGKAT LOBAK	R.S.S.L		N	N	N	N	N	N
46	PK	6 PELOMPOK BUAH BUAHAN SAYURAN	LARUT MATANG	BATU KURAU	TELUK BATU ANAK KURAI	R.S.S.L		N	N	N	N	N	N
47	PK	7 SENOK CHANGKAT NING	LARUT MATANG	MATANG	SENOUK BATULAPAN	S.C		N	N	N	N	N	N
48	PK	8 PELOMPOK BUAH BUAHAN AIR PUTIH	LARUT MATANG	CHERAK GALAH	KG PAK DOLLAH	R.G.S.C		N	N	N	N	N	N
49	PK	9 BENDANG JENALIK	KUALA KANGSAR	LUBUK MERBAU	JENALIK	R.S.S.L		N	N	N	N	N	N
50	PK	10 BENDANG KG LANEH	KUALA KANGSAR	SENGGANG	KG LANEH	R.S.S.L		N	N	N	N	N	N
51	PK	11 RANC TALIAR BENDANG SENGGANG	KUALA KANGSAR	SENGGANG	KG SENGGANG	R.S.S.L		N	N	N	N	N	N
52	PK	12 RANC TALIAR BENDANG LEMPOR	KUALA KANGSAR	SENGGANG	LEMPOR	R.S.S.L		N	N	N	N	N	N
53	PK	13 RANC TALIAR PDG RENGAS	KUALA KANGSAR	KG BUAJA	PDG RENGAS	R.S.S.L		N	N	N	N	N	N
54	PK	15 BENDANG A	MANJUNG	BRUAS	KG DENDANG	R.S.S.L		N	N	N	N	N	N
55	PK	16 BENDANG B	MANJUNG	BRUAS	KG KOTA	R.S.S.L		N	N	N	N	N	N
56	PK	17 BRUAS & TAMBAHAN	MANJUNG	BRUAS	KG PULAU MERANTI	R.S.S.L		N	N	N	N	N	N
57	PK	19 KG LALAT BATU 7	HILIR PERAK	DURIAN BATANG	KG LALAT BATU 7	G.S.C		N	N	N	N	N	N
58	PK	20 SG BATANG PDG MATI	HILIR PERAK	SG MANIK	SG TUKANG SIDIN	G.S.C		N	N	N	N	N	N
59	PK	21 SG MANIK BERIRIG SCHEME	HILIR PERAK	SG MANIK - LABU KUBONG	SG TUKANG SIDIN	G.S.C		N	N	N	N	N	N
60	SG	1 TEBUK BERHUN	SARAK BERANAM	SARAK	TEBUK BERHUN	1/6336	G.S.C	N	N	N	N	N	N
61	SG	3 SG JANG	HULU SELANGOR	KELANG	SG JANG		C	N	N	N	N	N	N
62	SG	4 BK TAMU	HULU SELANGOR	BATANG KALI	BK TAMU			N	N	N	N	N	N
63	SG	6 P SAYURAN SG YU	KUALA SELANGOR	PMTG	SG YU			N	N	N	N	N	N
64	SG	8 KUANG	GOMBAK	KAWANG	KUANG			N	N	N	N	N	N
65	SG	9 REKREASI SG CHONGKRAK	HULU LANGAT	HULU LANGAT	KG PDG	1/25000	R.G.S	N	N	N	N	N	N
66	SG	10 KG KANTAN	HULU LANGAT	SEMENYIH	KG KANTAN		S.L.C	N	N	N	N	N	N
67	SG	11 KG PASIR	HULU LANGAT	BERANANG	KG PASIR			N	N	N	N	N	N
68	SG	12 MINANG KABAU	HULU LANGAT	BERANANG	MINANG KABAU			N	N	N	N	N	N
69	SG	13 JLN ENAM KAKI 1	HULU LANGAT	BERANANG	JLN 6 KAKI			N	N	N	N	N	N
70	SG	14 SAPAN BT MINANG KABAU	HULU LANGAT	BERANANG	SESAPAN BT MINANG KABAU	1/63360		N	N	N	N	N	N
71	SG	15 SG JAI BK KERONG	HULU LANGAT	BERANANG	SG JAI			N	N	N	N	N	N
72	SG	16 MARDI RESEK STATION	KELANG	JLN KEBUN	BT 6, JLN KEBUN			N	N	N	N	N	N
73	SG	18 TAJAN PERTI MAJALISA	PETALING	BK RAJAH				N	N	N	N	N	N
74	SG	19 TAJAN PERTI MAJALISA	PETALING	MORIB				N	N	N	N	N	N
75	SG	24 PELOMPOK SAYURAN KG EDDAH	KUALA LANGAT	MORIB	KANCHONG TENGAH			N	N	N	N	N	N
76	SG	25 PELOMPOK KONTAN KG RUNDANG	KUALA LANGAT	BATU	KUNDANG			N	N	N	N	N	N

Table IV.1 RESULTS OF QUESTIONNAIRE SURVEY(GEOLOGY/2/2)

QR. CODE NO	NAME OF PROJECT	DISTRICT	MEKIM	KAMPUNG	G. MAP	3 FSCALH MISCAL	G. COND	G. DATAG	DMK.G. FRAMG.	SDAMG.	SDAMK.L. MDAYA	*REMARK
77	NS 1 STEVEN MARDI DELBU	LELEBU	LAKAI				R.S.SL					
78	NS 2 BEAH BUAHAN LANJUT MANIS	KUALA PILAH	AMPANG TINGGI	TALANG			R.S.SL					
79	NS 3 SRI MENANTI	KUALA PILAH	SRI MENANTI	KG TENGAH			R.S.SL	N	SF	SB(Ch)		
80	NS 4 PEMBANGUNAN SAWAH KG. LONDAR	GENAS	GENAS	LONDAR			R.S.SL					
81	NS 5 REMBAU	REMBAU	SPI				R.S.SL					
82	NS 6 KELOMPOK KG CHENGGAU ULU	PORT DICKSON	CHENGGAU	CHENGGAU ULU			R.S.SL					
83	NS 7 KG BK TEMBOK & SG BAYA	PORT DICKSON	PASIR PANJANG	BK TEMBOK			R.S.SL					
84	NS 8 P TERAKAN UDANG GALAH	KUALA PILAH	SRI MENANTI	JUMBANG			R.S.SL					
85	MA 1 TEBONG	ALOR GAJAH	TEBONG	BT 22, TEBONG								
86	MA 2 ULU SG BULOH	ALOR GAJAH	SG BULOH	ULU SG BULOH								
87	MA 3 SOLOK BT ALANG	ALOR GAJAH	SG SIFUT	SG SIFUT				19168	C			
88	MA 4 FELCRA RAMUAN CINA	ALOR GAJAH	SG JERNIH	FELCRA RAMUAN CINA								
89	MA 5 MERIAM PATIAH	ALOR GAJAH	KUALA LINGGI	MERIAM PATIAH								
90	MA 6 SOLOK PUNGGAI	ALOR GAJAH	AUR PAALOS	SOLOK PUNGGAI								
91	MA 9 PDG KELADI	ALOR GAJAH	DURIAN TUNGGAL	PDG KELADI								
92	MA 11 SG UDANG	MELAKA TENGAH	SG UDANG	SG UDANG				1693360	C			
93	MA 12 FELDA RK KATIL	MELAKA TENGAH	BK KATIL	FELDA TUN RAZAK								
94	MA 14 KANDANG	MELAKA TENGAH	KANDANG	KANDANG				1/1168	C			
95	MA 15 SOLOK BK META	MELAKA TENGAH	ALAUKANDANG	SLK BK META				1/1168	C			
96	MA 16 FELCRA BK SEDANAN	JASIN	SELANDAR	BK SEDANAN				1/25000	C			
97	MA 17 CINCIN LAKE	JASIN	CINCIN	CINCIN								
98	MA 18 KG PULAI SERKAM	JASIN	TEBONG	PULAI								
99	JR 3 SAWAH KEBUN BARI	MUAR	TANGKAK	SAGEI								
100	JR 8 LDG KELOMPOK KG SRI TIMOR	KLUANG	KLUANG	SRI TIMOR								
101	JR 9 LDG KELOMPOK BT SAMBULAN, YONG PEN	BATU PAHAT	CHAAH BARU	SRI SEPAKAT								
102	JR 10 LDG KELOMPOK KANGKAR MERLIMAU	BATU PAHAT	SRI MEDAN	KANGKAR MERLIMAU				1/25000				
103	JR 12 TUNOK LAUT	KOTA TENGGI	ULU SG SEDIJI BESAR									
104	JR 14 SG CIEMARAN	KOTA TENGGI	TANJONG SURAI									
105	JR 15 TUBA KAR PANTAI	TUMPAI	TUMPAI	JUBA KAR PANTAI								
106	KN 4 KG BELIAN	TUMPAI	SELEHONG NORTH	KG BELIAN								
107	KN 5 LUBOK SELEHONG	TUMPAI	SELEHONG	KOK PASIR								
108	KN 8 BENDANG JELUTONG, KOK LANSAS	KOTA BEHARU	KOK LANSAS	JELUTONG				1/25000			5m	
109	KN 9 BENDANG BITINGGI, BK CHEVA	KOTA BEHARU	KOK LANSAS	BITINGGI				1/25000			5m	
110	KN 10 BENDANG SOKOR, BK CHINA	KOTA BEHARU	KOK LANSAS	SOKOR				1/25000				
111	KN 11 KUBANG TEBAKANG	PASIR MAS	KUBANG GADUNGG	KUBANG TEBAKANG								
112	KN 12 BENDANG TASEK BERANGAN	PASIR MAS	ALOR PASIR	TASEK BERANGAN								
113	KN 13 TASEK PUTERA	PASIR MAS	PASIR MAS	KUBANG PANJANG								
114	KN 16 BENDANG PERGI	PASIR MAS	KUALA LEMAL	KG PULAI								
115	KN 24											
116	KN 26											
117	KN 27											
118	KN 35 RANC TALIAIR LEPAN AGOR	KUALA KRAI	BT MENKERBANG	BUNUT PAYONG								
119	TR 1 TELAK IRIGATON SCHEME	BESUT	PASIR AKAR	DURIAN TELOR				1/25000				
120	TR 3 SKIN TANAMAN PADI MARAS	KUALA TRG	BT RAKIT	DARAT BT RAKIT								
121	TR 4 KELOMPOK SAYURAN	KUALA TRG	KUALA TRG	MENGABANG LEKOR								
122	TR 7 SALIRAN TOK IRING	KUALA TRG	KUALA NERUS	TOK IRING								
123	TR 12 P KELOMPOK SAYURAN	KUALA TRG	SERADA	BENGOL KATONG								
124	TR 14 P KELOMPOK SAYURAN	MARANG	PENGADANG BULOH	SURAU HU DAUD								
125	TR 20 SKIN TANAMAN PADI DURIAN HATI	MARANG	ALOR LIMBAT	ALOR LIMBAT				1/25000				
126	TR 24 P KELOMPOK SAYURAN	MARANG	ALOR LIMBAT	BELUKAR GOREK								
127	TR 28 P KELOMPOK SAYURAN	MARANG	BK PAYONG	LUBUK BATU								
128	TR 34 LEMBAH MARANG II	MARANG	JERONG	JERONG SURAU								
129	TR 38 P KELOMPOK SAYURAN	MARANG	MERCANG	MERCANG								
130	TR 42 P KELOMPOK SAYURAN	HULU TRG	HULU TELEMONG	TERIS				1/25000				
131	TR 44 P KELOMPOK SAYURAN	HULU TRG	JENAGOR	PASIR NERING								
132	TR 45 P KELOMPOK SAYURAN	HULU TRG	KUALA BERANG	KUALA KEHR				1/25000				
133	TR 50 KOLAM ABANG	DUNGUIN	ABANG	RANTAU ABANG				1/25000				
134	PH 9 PAYA PAGAR SASAK	LIPS	KEOHAN	PETOLA								
135	PH 11 P WAI BERTONG & GEMAYAI	MARAN	LUIT	KUALA WAU								
136	PH 12 PAYA BELITUNG	MARAN	KERTAU	SEKARA								
137	PH 13 PAYA NYAK BESAR	MARAN	KERTAU	NYAK								
138	PH 14 PAYA TING & BESAR KERTAU	MARAN	KERTAU	KG PAYA TING								
139	PH 16 PAYA NYAK KECIL	MARAN	BK SEGUMPAL	NYAK								
140	PH 17 PAYA DDG TENGGA LA	MARAN	CHENOR	BK LADA								
141	PH 19 PAYA SG LING	MARAN	CHENOR	SG LING								
142	PH 20 PAYA LANTING	MARAN	CHENOR	LANTING								
143	PH 23 PAYA PESAGI	MARAN	CHENOR	KG PESAGI								
144	PH 24 PAYA KRUT	MARAN	CHENOR	JENGA								
145	PH 25 PAYA LDG	MARAN	CHENOR	PAYA LDG								

Table IV.2 Extent of Geological Investigation & Soilmechanical Test

No.	Name of Project	Site	Hole	Place	Elevation	Depth	DIA	SPT	BPT	SMT	Remarks
1	KH 4 Kawasan PadUpstream Lembu and Lembu		KH-1	Left	B. 11.681 m	5.0 m	100 mm	3 nos	1 nos	1 sp	
			KH-2	Left	B. 4.686 m	10.0 m	do	8 nos	1 nos		
						(5.0 m)		(3 nos)			
	KH 5 Kedawang	Ketapang	KH-3	Left	B. 17.639 m	10.0 m	do	4 nos	2 nos		
									(7 nos)		
	KH 4	Right B.			15.586 m	7.0 m	do	3 nos	1 nos		
							(10.0 m)		(7 nos)	(2 nos)	
2	TR 44 Pasir Nerin	-	TR-1	Right B.		10.0 m	do	8 nos	2 nos	1 sp	
									(7 nos)		
	TR 2	Left B.				9.0 m	do	5 nos	1 nos		
							(10.0 m)		(7 nos)	(2 nos)	
3	MA 16 Felcra BK. Sedanan	-	MA-1	Right B.		10.0 m	do	7 nos	2 nos	1 sp	
							(5.0 m)		(3 nos)	(1 nos)	
			(MA-2)	Left B.)		(5.0 m)		(3 nos)	(1 nos)		
4	NS 1 Stesen Marð	-	NS-1	Right B.		10.0 m	do	7 nos	1 nos	1 sp	one additional hole for sampling & k-test
									(2 nos)		
	NS 2	Left B.				10.0 m	do	7 nos	2 nos		
5	KN 16 Bendang Pmt Sungkai	-	KN-1	Right B.		12.0 m	do	8 nos	2 nos	1 sp	
							(6.0 m)		(4 nos)	(2 nos)	
			(KN-2)	Left B.)		(6.0 m)		(4 nos)	(2 nos)		
6	PP 3 Tok Bedu	-	PP-1	-		16.0 m	do	13 nos	2 nos		
							(5.0 m)		(3 nos)	(1 nos)	
			(PP-2)	-		(5.0 m)		(3 nos)	(1 nos)		
	Irrigation					109.0 m		73 nos	17 nos	5 sp	
							(102.0 m)		(68 nos)	22 nos)	
	Total										

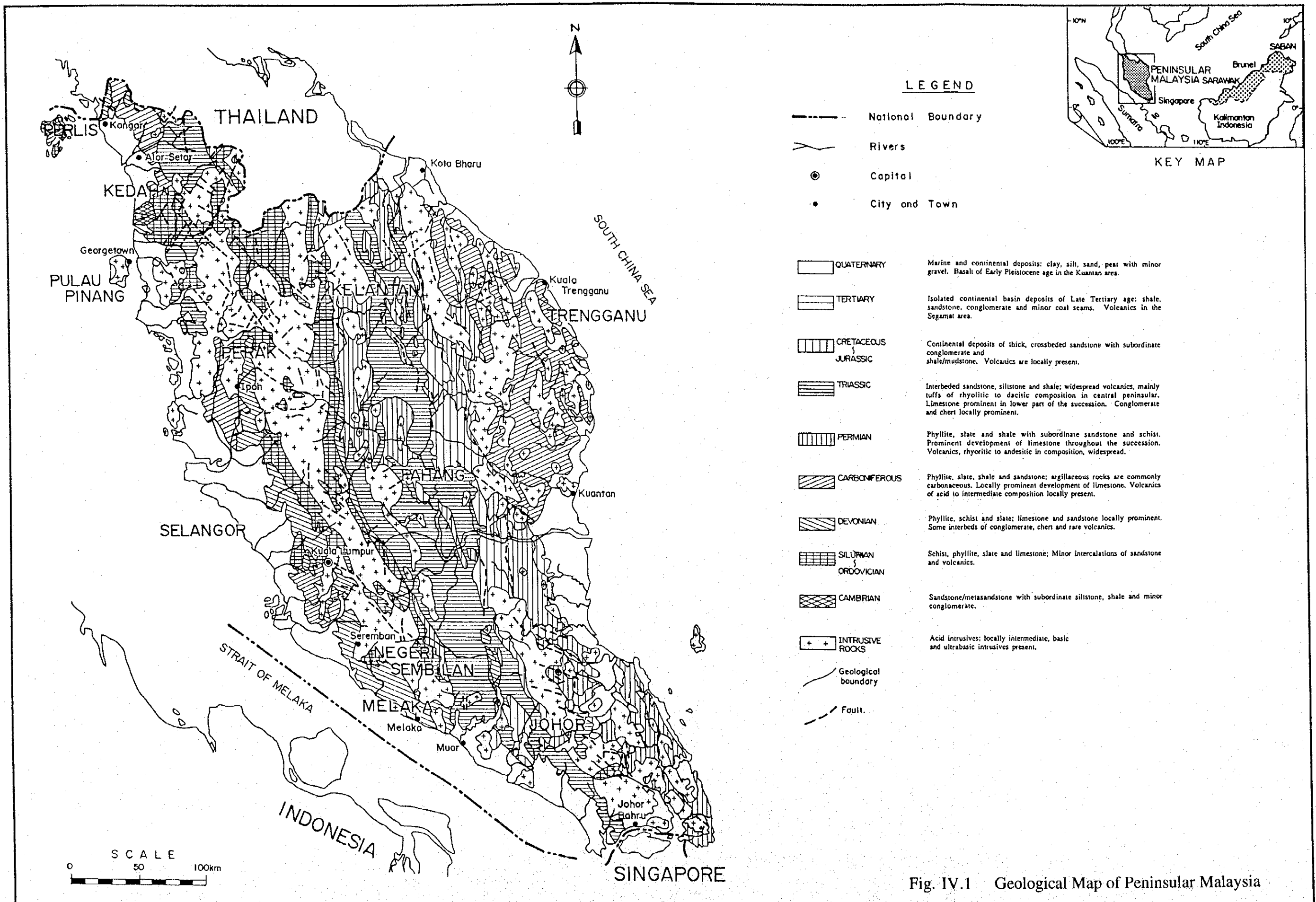
NOTE:

- 1) Columns of Hole & Depth, parentheses means original plan
- 2) DIA: Borehole Diameter, SPT: Standard Penetration Test, BPT: Borehole Permeability Test, SMT: Soil Mechanical Test Sample
- 3) No.1 to No.3 Project for JICA, No.4 to No.6 for DID

Table IV.3 Results of Soil Mechanical Tests for Dam Material

No.	Project	Sample	B.Density			S.Gravity			N.Water			G.Size			Att.Limits			Compaction		Perm.Test (m/s)	Tri.UU		Tri.CU		Soil Type
			(Mg/m3)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)		(%)	(%)	(%)	(%)	
1	KH4/KH5	KH	(2.03)	2.62	11	13	15	49	23	36	56	20	1.77	17	0.115	55	24	15	38	SM					
2	TR44	TR	(1.98)	2.60	17	46	11	32	11	37	63	26	1.68	20	0.467	50	31	0	33	MH					
3	MA16	MA	(2.02)	2.64	24	47	8	44	1	36	73	37	1.70	20	0.152	140	43	10	33	MH					
4	NS1	NS	(2.10)	2.61	12	20	45	35	0	18	31	13	1.93	12.5	1.600	75	22	0	41	CL					
5	KN16	KN(O)	(2.02)	2.61	9	-	4	50	46	-	NP	-	2.01	7.5	3.540	-	-	0	50	SP					
6	KN16	KN(N)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

Figures



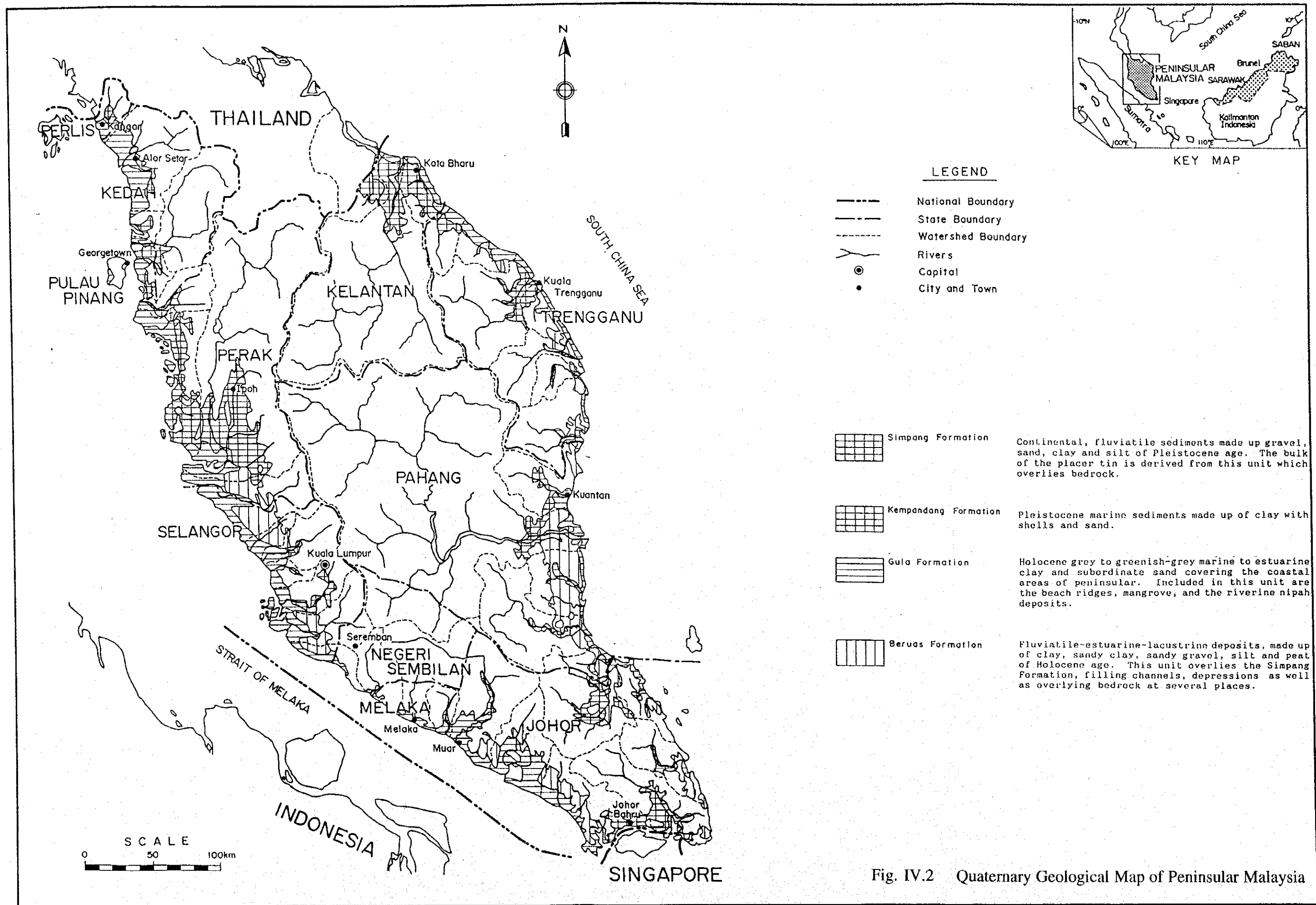
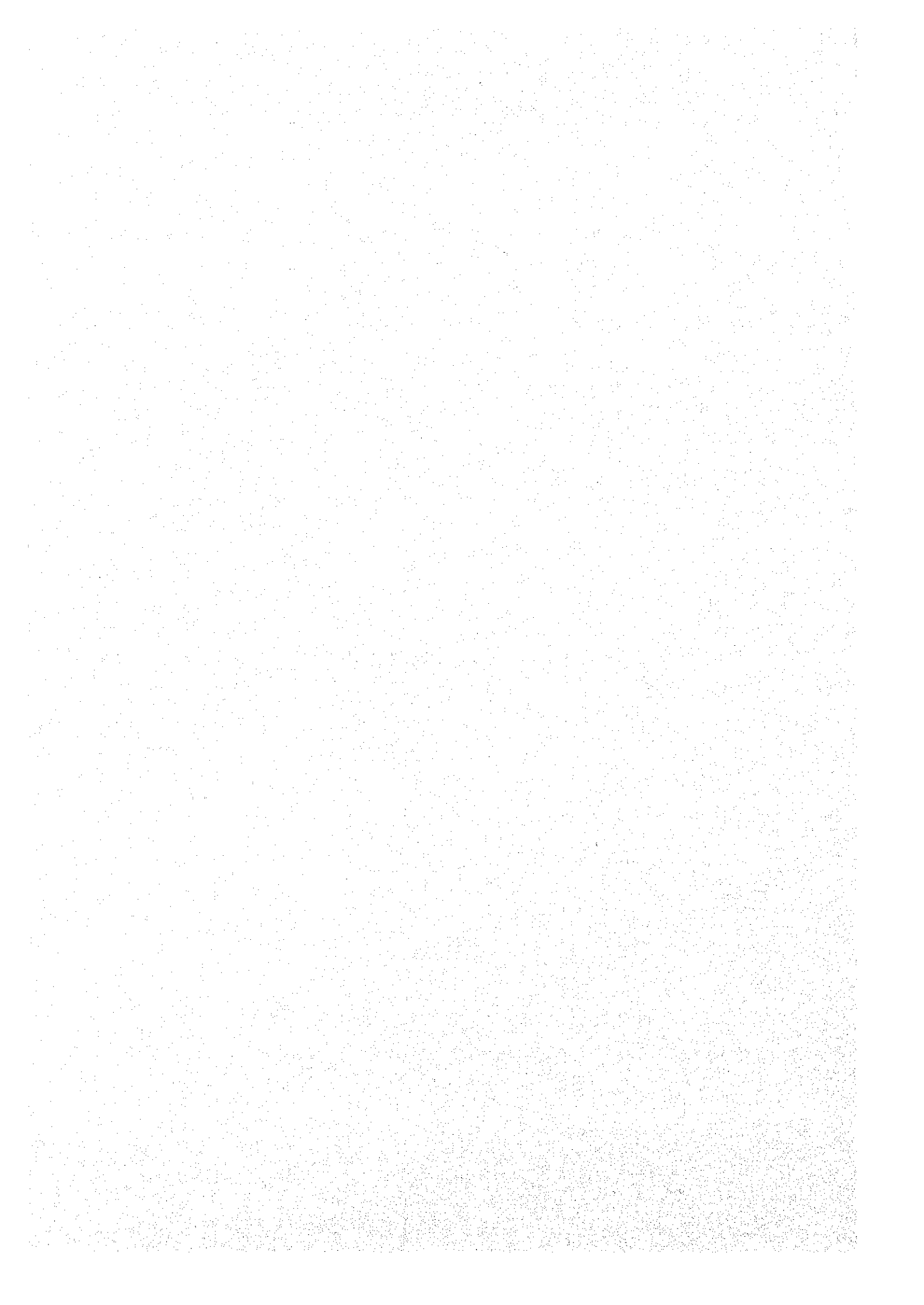


Fig. IV.2 Quaternary Geological Map of Peninsular Malaysia

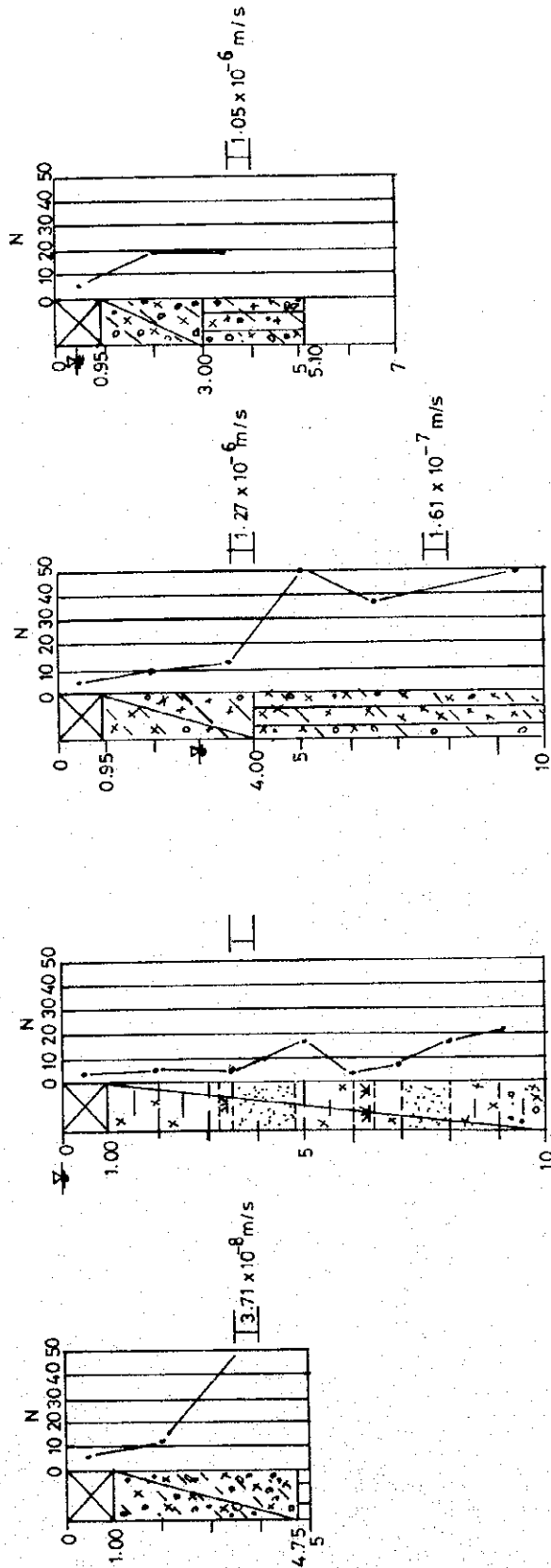


UPSTREAM LEMBU
KH - 1 (D: 5.0) : L
EL : 11.681

LEMBU
KH - 2 (D: 10.0) : L
EL : 4.686

KETAPANG
KH - 3 (D: 10.0) : L
EL : 17.636

KH - 4 (D: 7.0) : R
EL : 15.586



LEGEND

- TOP SOIL
- ALLUVIUM
- RESIDUAL SOIL
- ROCKS

▼ FINAL WATER LEVEL IN BOREHOLE

3.71×10^{-8} m/s

INTERVAL OF BPT (BOREHOLE PERMEABILITY TEST) & COEFFICIENT PERMEABILITY

- CLAY
- SILT
- SAND
- GRAVEL
- ORGANIC MATTER

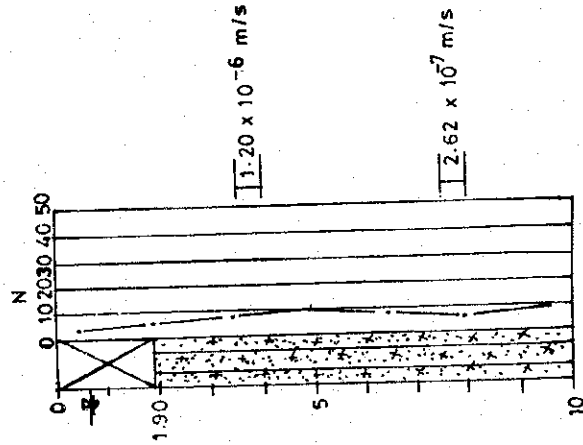
N : VALUE OF SPT (STANDARD PENETRATION TEST)

PROJECT KH 4 & KH 5 (KAWASAN PADI & KEDAWANG)

Fig. IV.3 1/2 Summary of Drilling Log

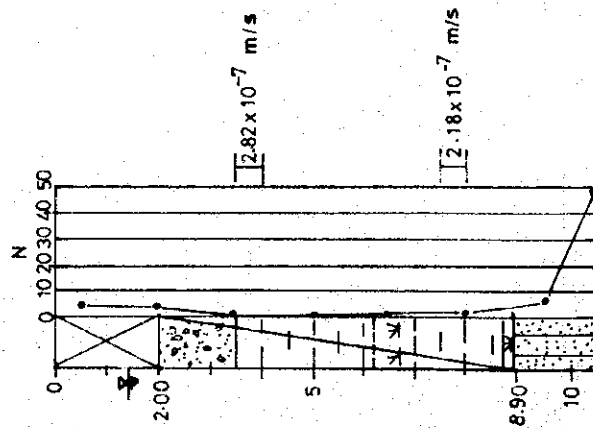
PROJEK MA16 (FELCRA BKT. SEDANAN)

MA-1 (D:10.0) : R
EL:



PROJEK TR 44 (PASIR NERING)

TR-1 (D:10.0) : R
EL:



TR-2 (D:9.0) : L
EL:

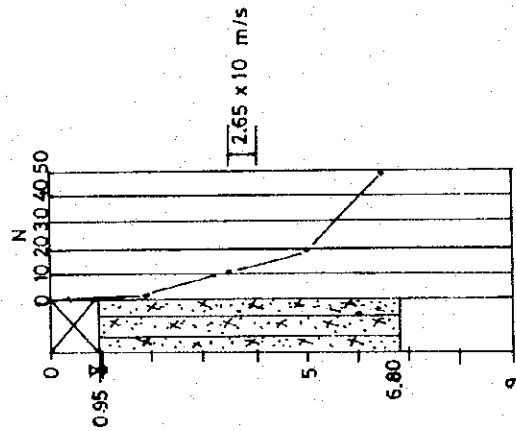
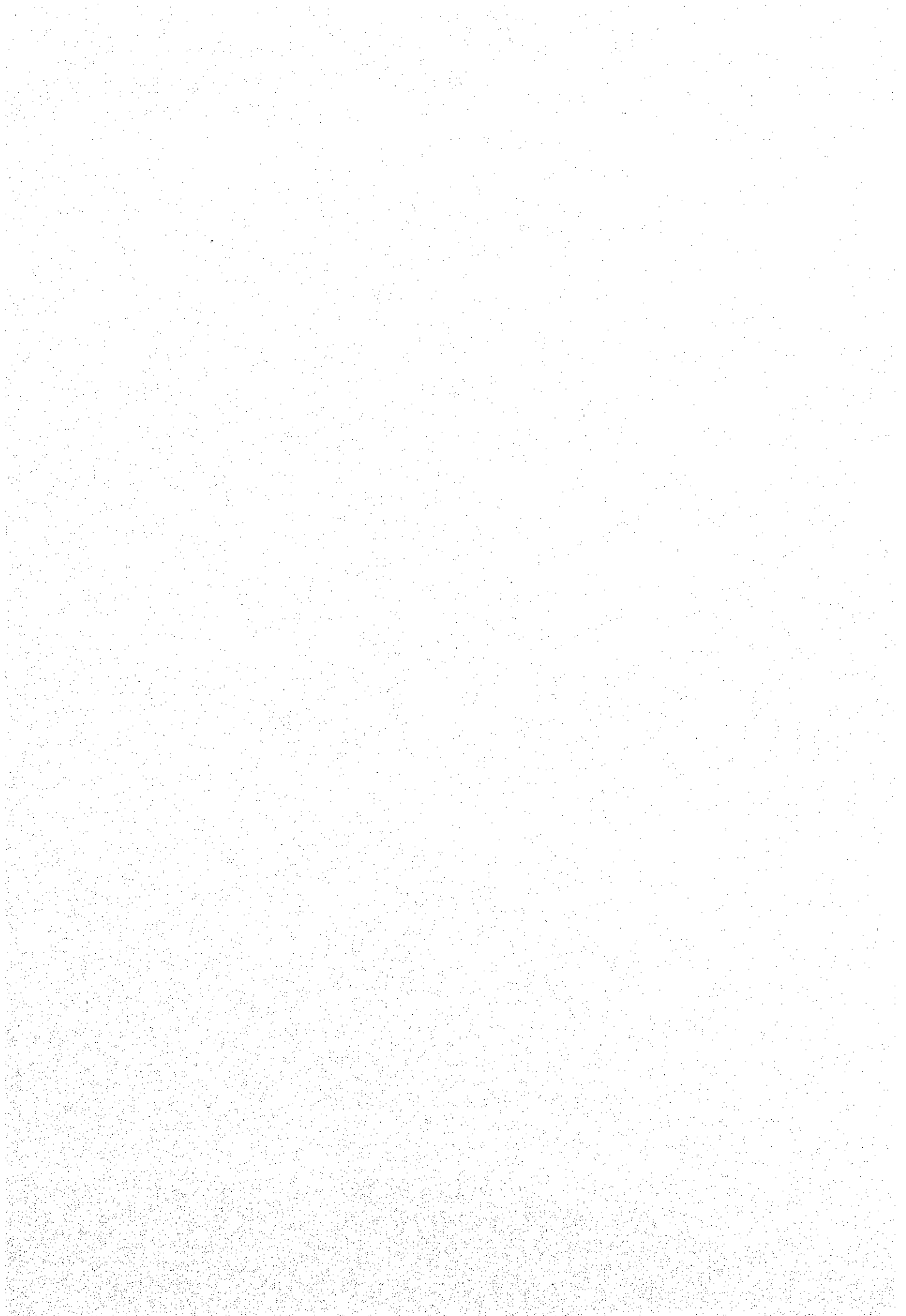


Fig.IV.3 2/2 Summary of Drilling Log



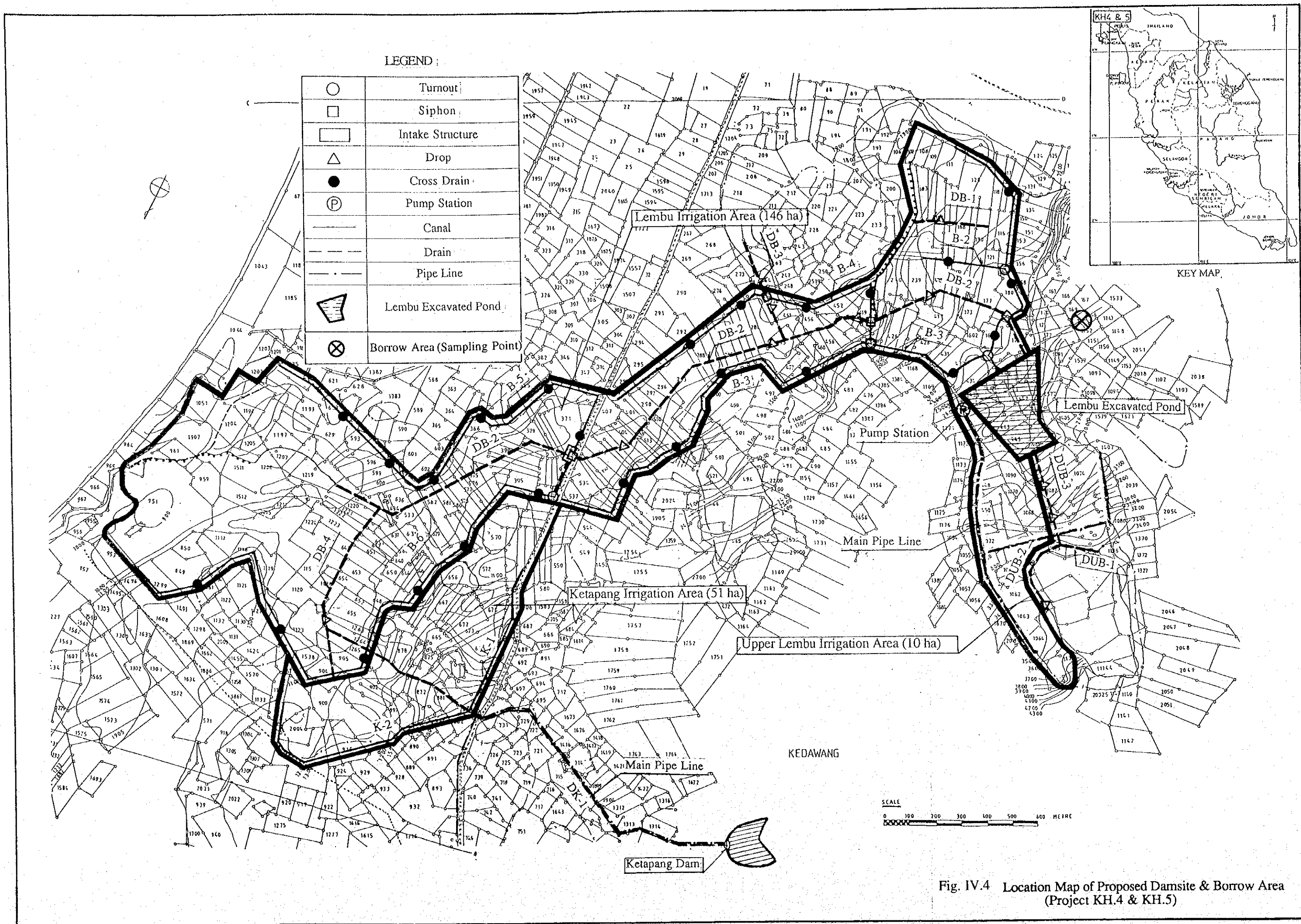


Fig. IV.4 Location Map of Proposed Damsite & Borrow Area (Project KH.4 & KH.5)

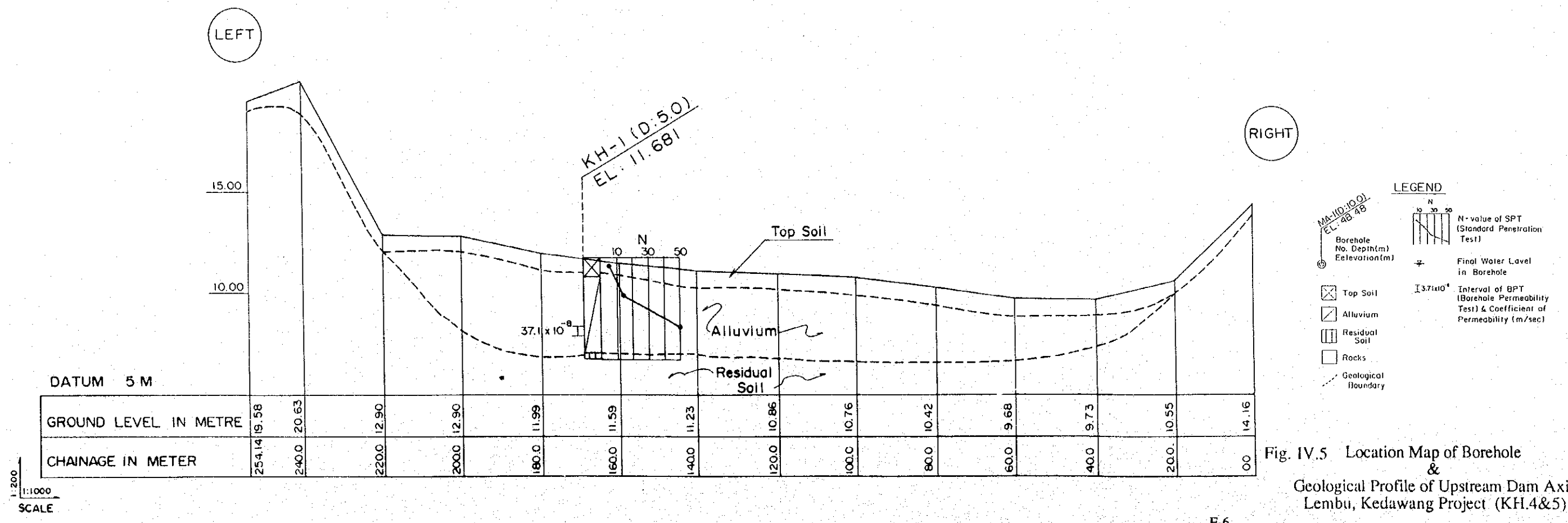
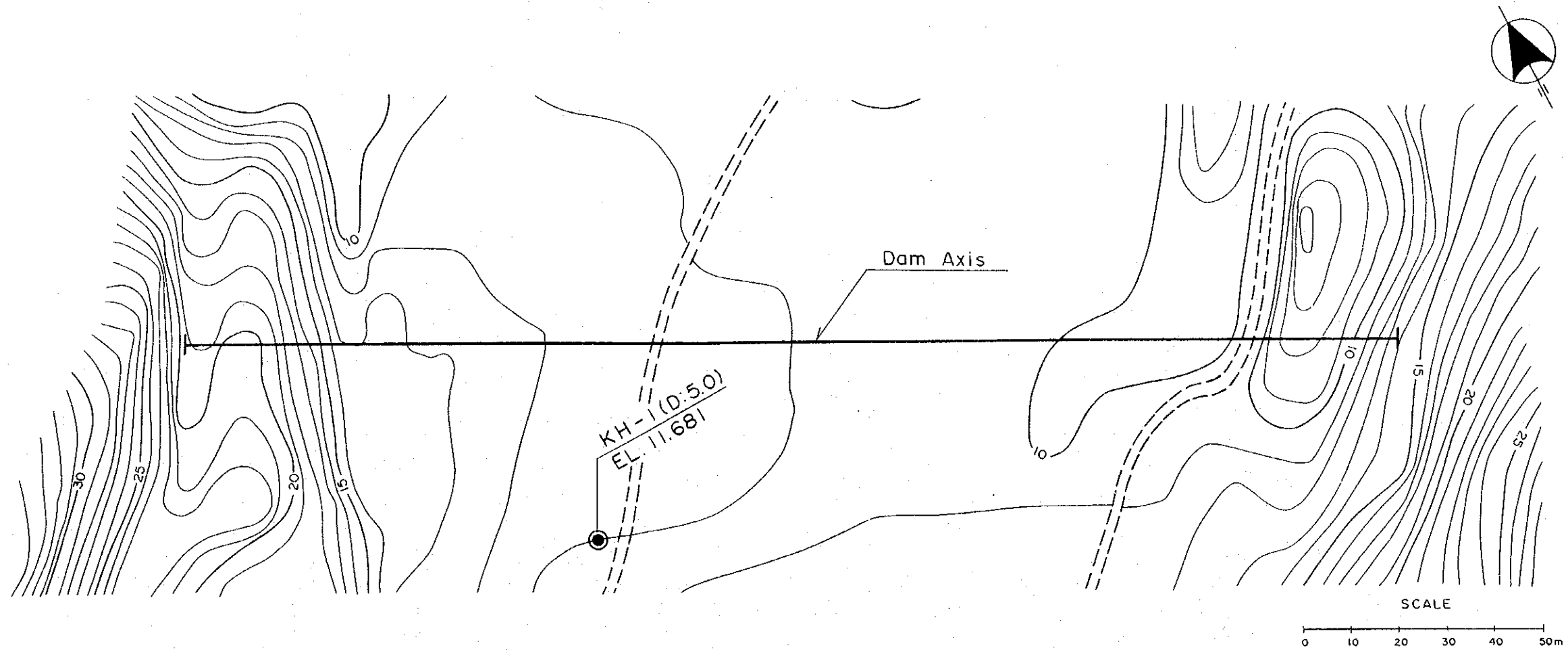


Fig. IV.5 Location Map of Borehole & Geological Profile of Upstream Dam Axis Lembu, Kedawang Project (KH.4&5)

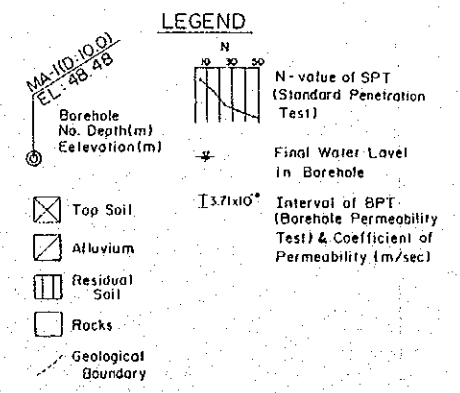
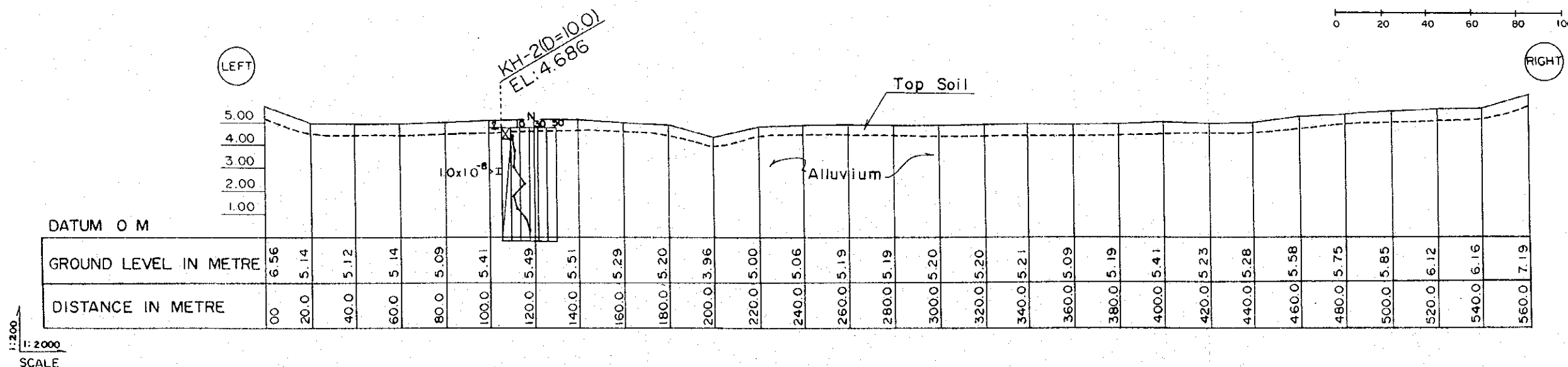
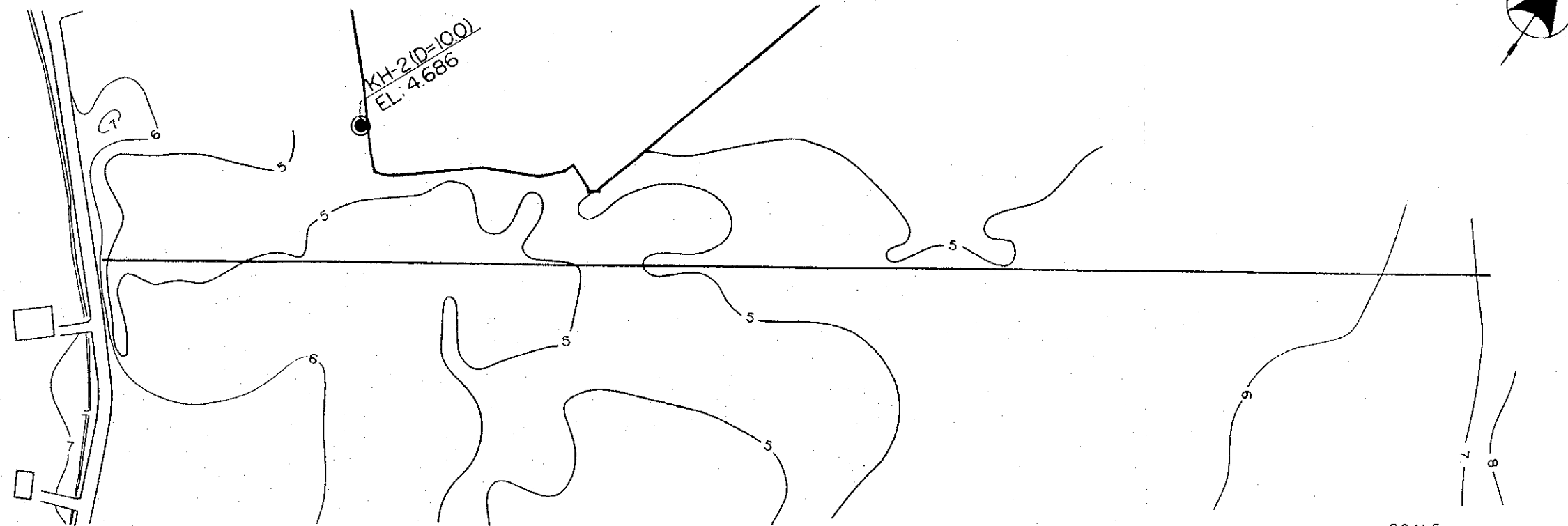
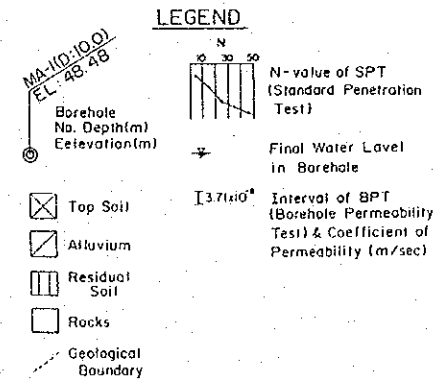
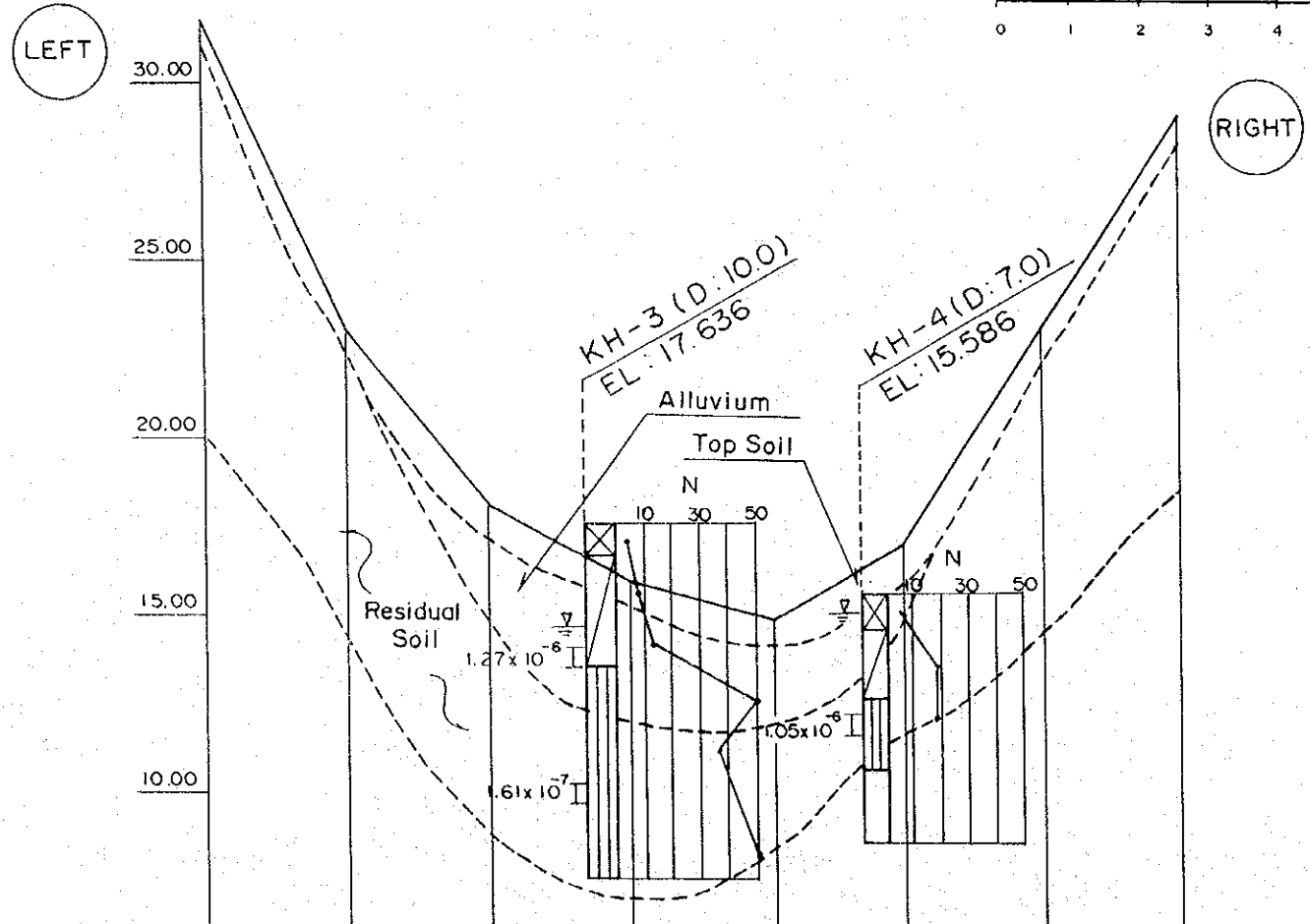
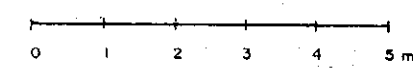
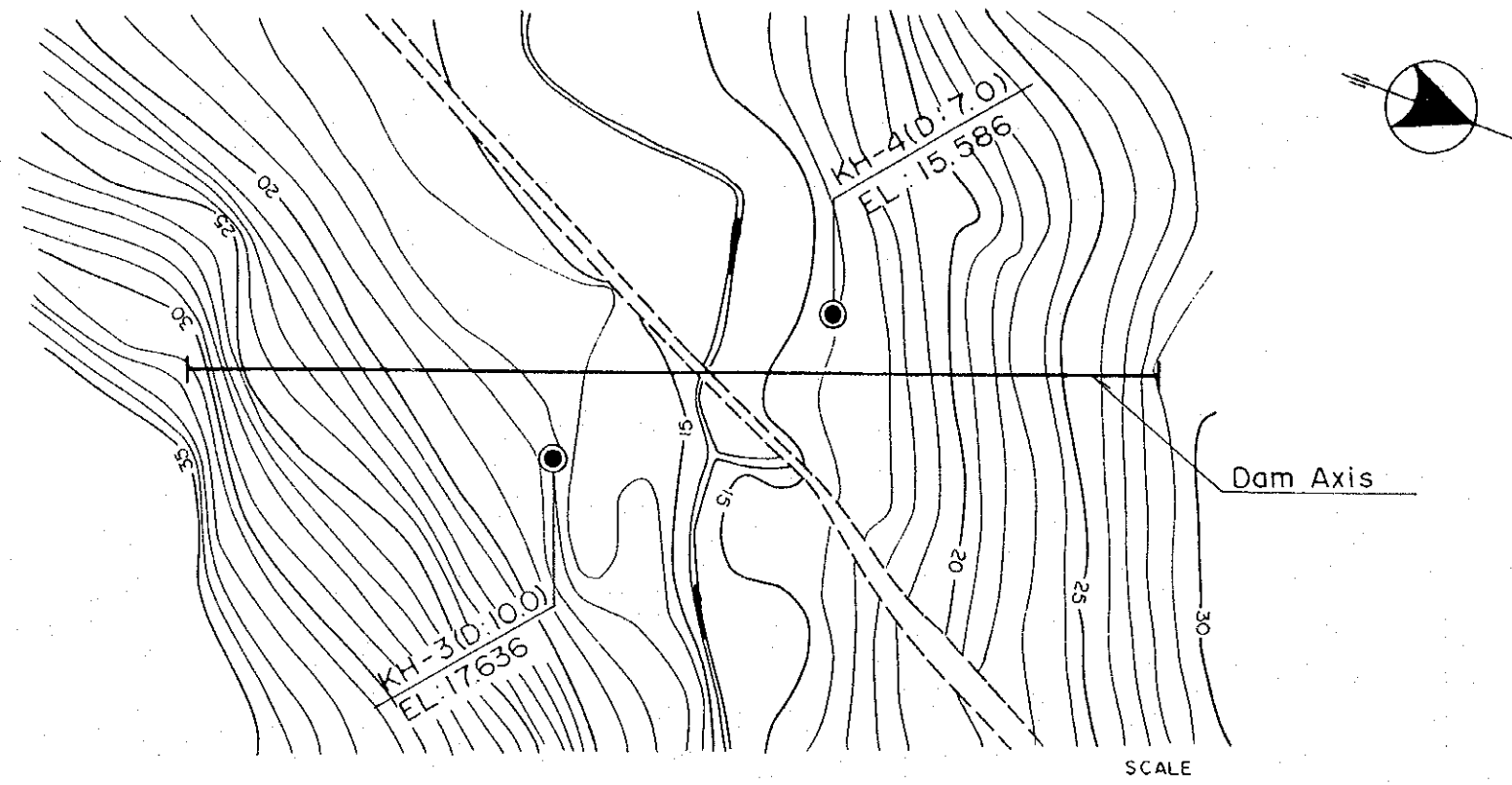


Fig. IV.6 Location Map of Borehole & Geological Profile of Dam Axis (Lembu Excavated Pond) Lembu, Kedawang Project (KH.4&5)



DATUM 5 M

GROUND LEVEL IN METRE	31.73	22.72	18.16	15.91	14.83	17.03	23.35	29.50
CHAINAGE IN METRE	1400	1200	1000	800	600	400	200	100

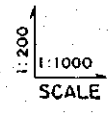


Fig. IV.7 Location Map of Borehole & Geological Profile of Ketapang Dam Axis Kedawang Project (KH.4&5)

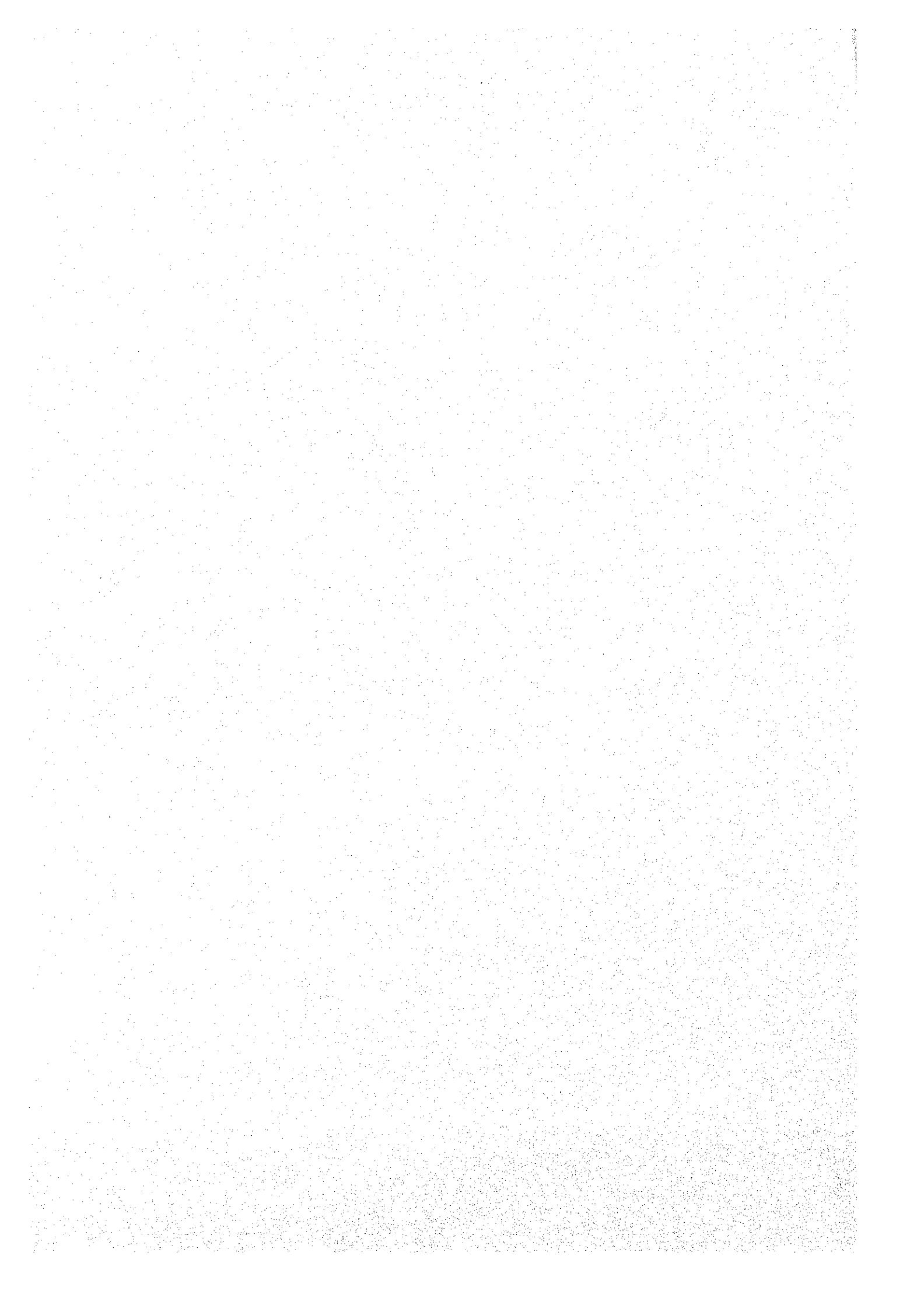


Fig. IV.8 Grading Curve of Soil (KH)

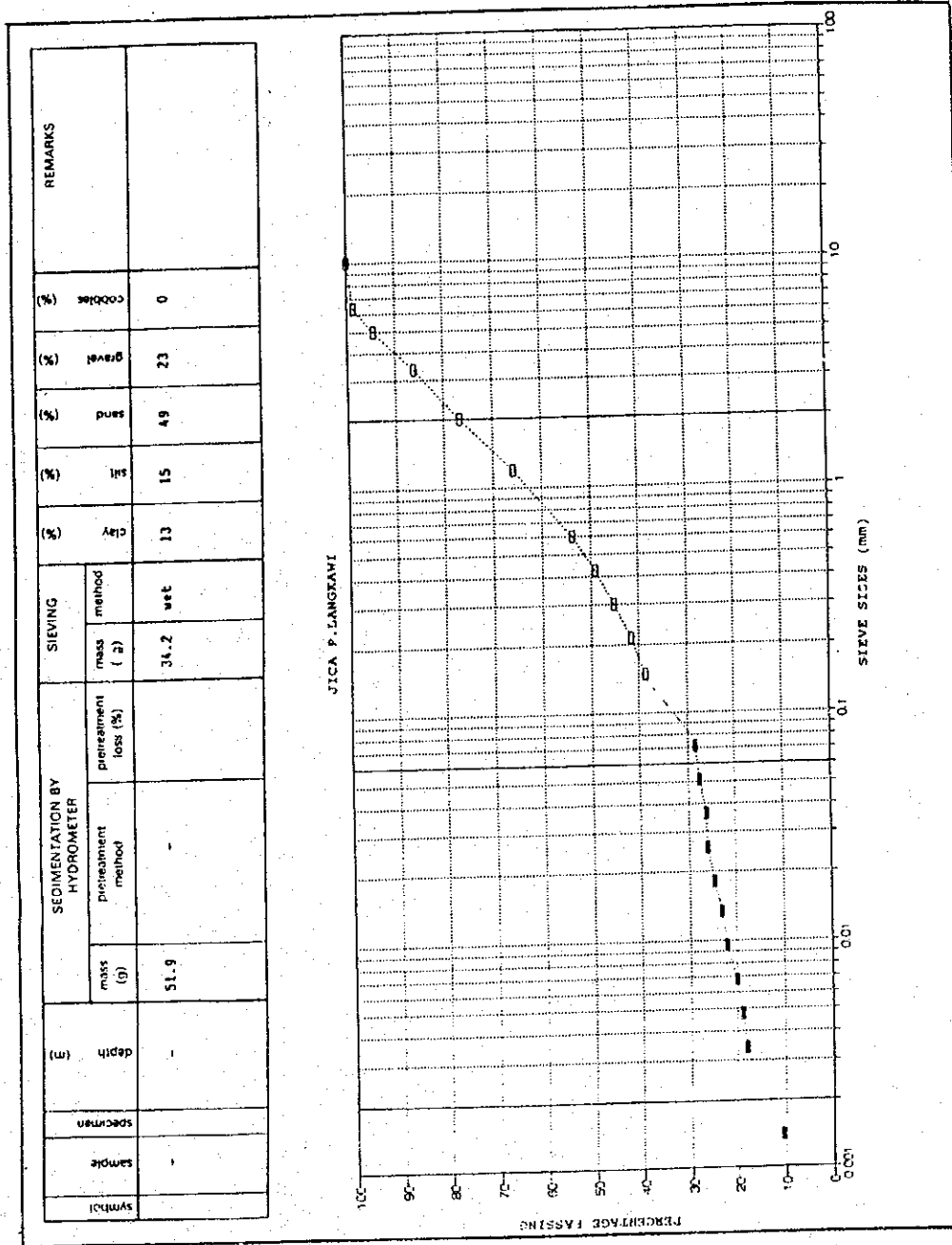


Fig. IV.9 Compaction Characteristics of Soil (KH)

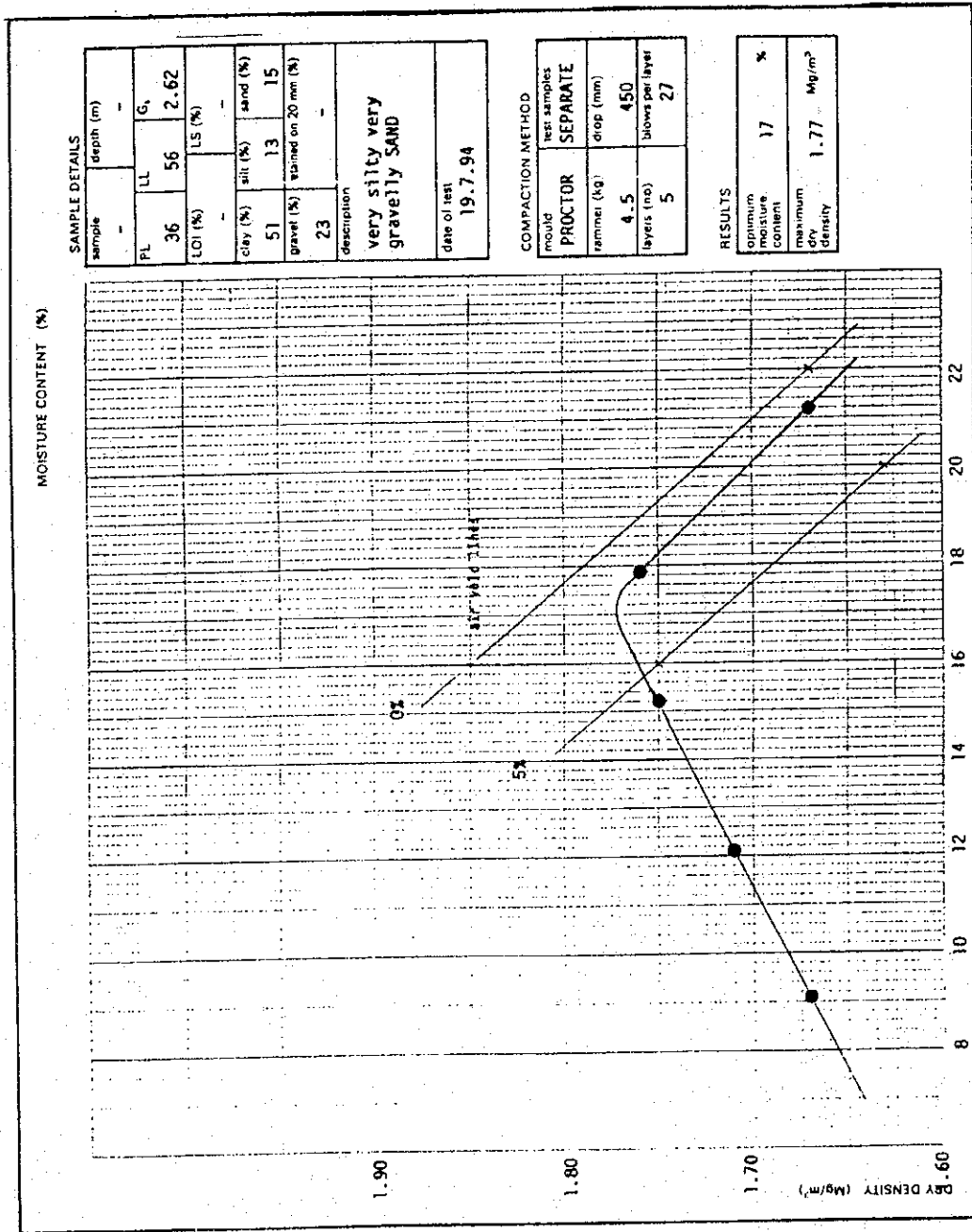


Fig. IV.10 $(\sigma_1 - \sigma_3) - \Sigma$ Curves and Mohr-Circle Diagram of Soil, UU Test (KH)

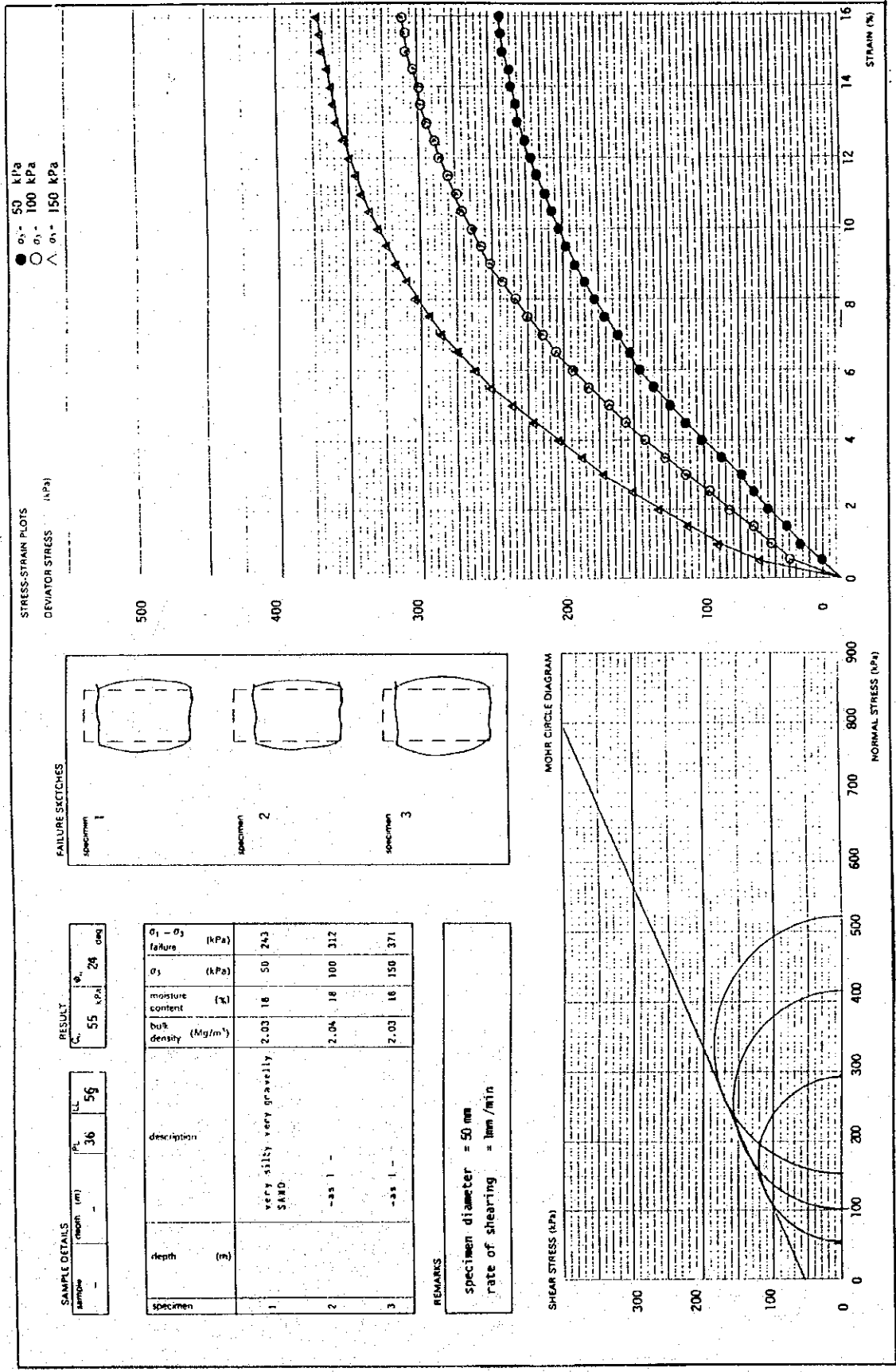


Fig.IV.11 Mohr-Circle Diagram of Soil CU Test (KH)

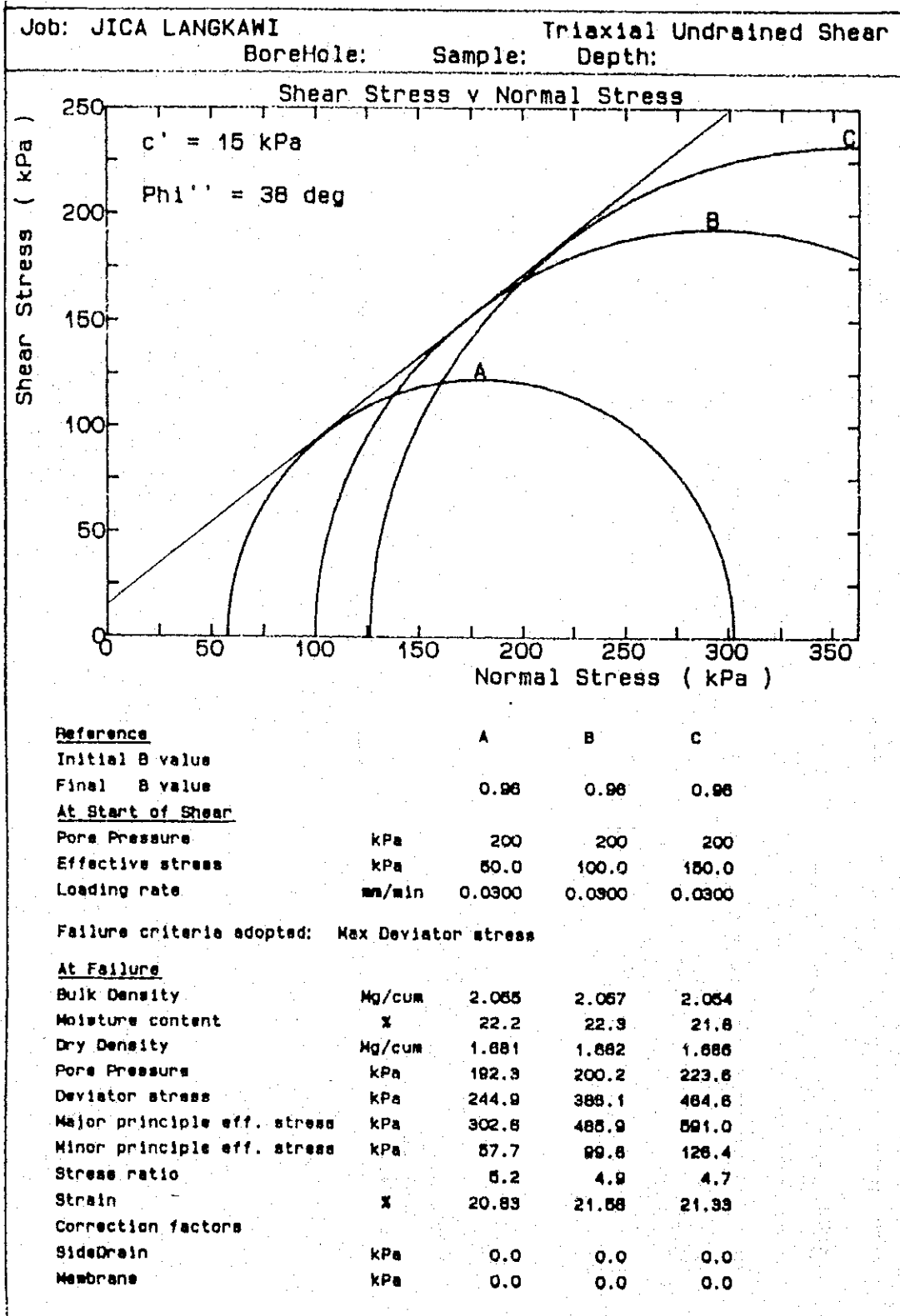


Fig.IV.12 Permeability of Soil (KH)

Location JICA (LANGKAWI)		Job ref :		
Soil description dark reddish brown very silty very gravelly SAND		Borehole/ pit ref		
		Sample no		
Test method BS 1377:Part 6:1990:6 Constant head permeability test in triaxial cell		Depth (m)		
		Date		23.7.94
Type of specimen Undisturbed/compacted undisturbed				
Method of preparation cylinder				
Flow conditions Vertical upwards/downwards upwards				
TEST SPECIMEN				
Diameter	D mm	52	Nominal effective stress	kPa 100.1
Area	A mm	2123.72	Cell pressure	kPa 200.0
Length	L mm	100	Back pressure	p2 kPa 80.0
Density	p Mg/m	2.03	Pressure difference (p1 - p2)	kPa 20.1
Moisture content	%	21	Inlet pressure	p1 kPa 100.1
Dry density	p Mg/m	1.68	Mean effective stress	kPa 110
Method of saturation		BS 1377 part 6 (5.4)	$\sigma'_3 = \sigma_3 - 1/2(p_1 + p_2)$	
Final B value		100	Hydraulic gradient	20.5

From graph, mean slope q =	0.00-0.00 43.5-16.5	ml/min	0.03
Corresponding pressure correction pc =		kPa	0.00 (assumed)
CALCULATIONS			
Coefficient of permeability	$k = \frac{1.63 q L R t}{A((p_1 - p_2) - pc)} \times 10^{-4} \text{ m/s}$		
SPECIMEN AFTER TEST			
Density	Mg/m ³	2.15	Accepted permeability 1.15 x 10 ⁻⁸ m/s
Moisture content	%	24	
		Operator	Checked
			Approved

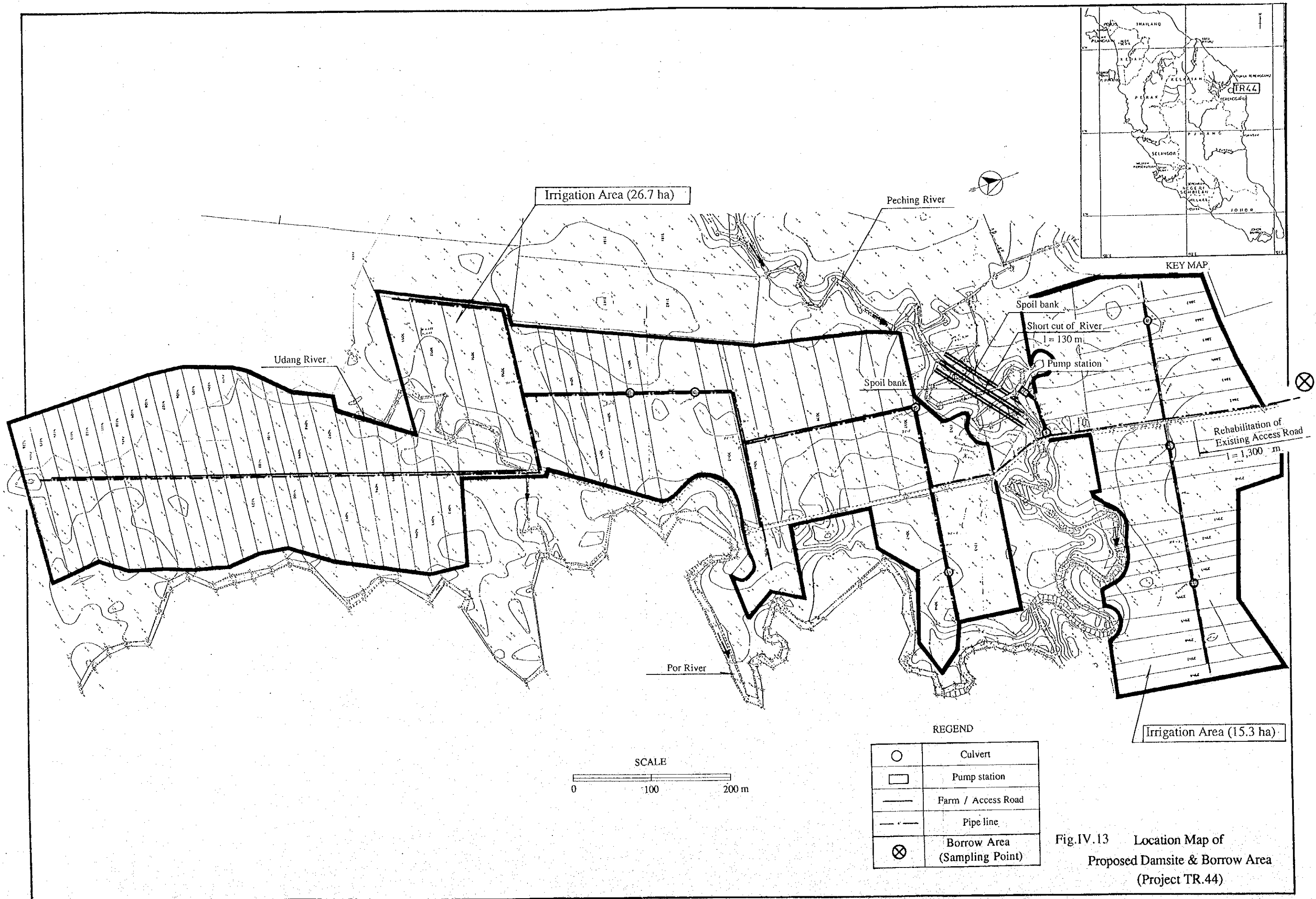


Fig.IV.13 Location Map of Proposed Damsite & Borrow Area (Project TR.44)

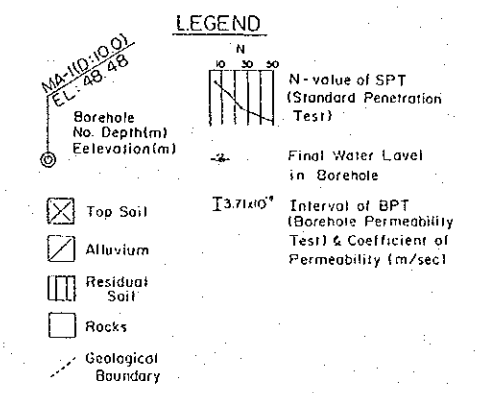
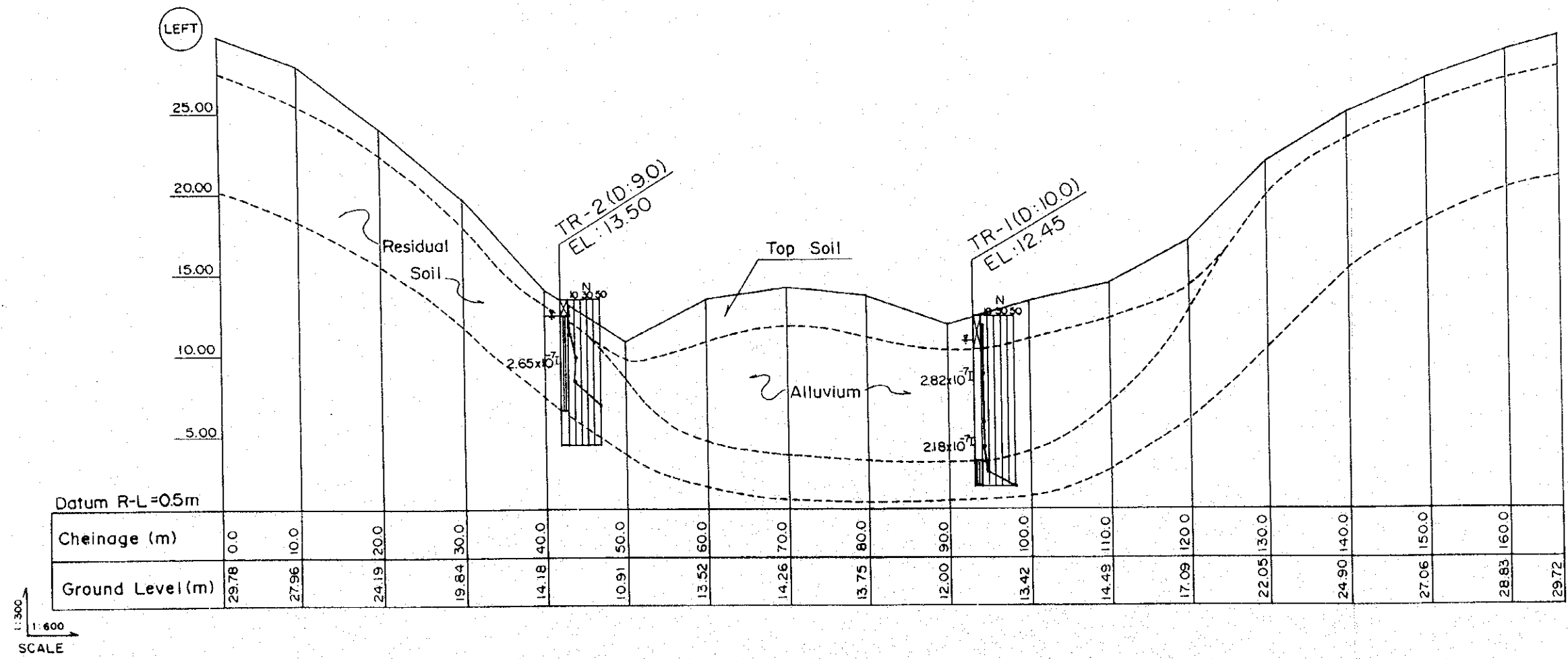
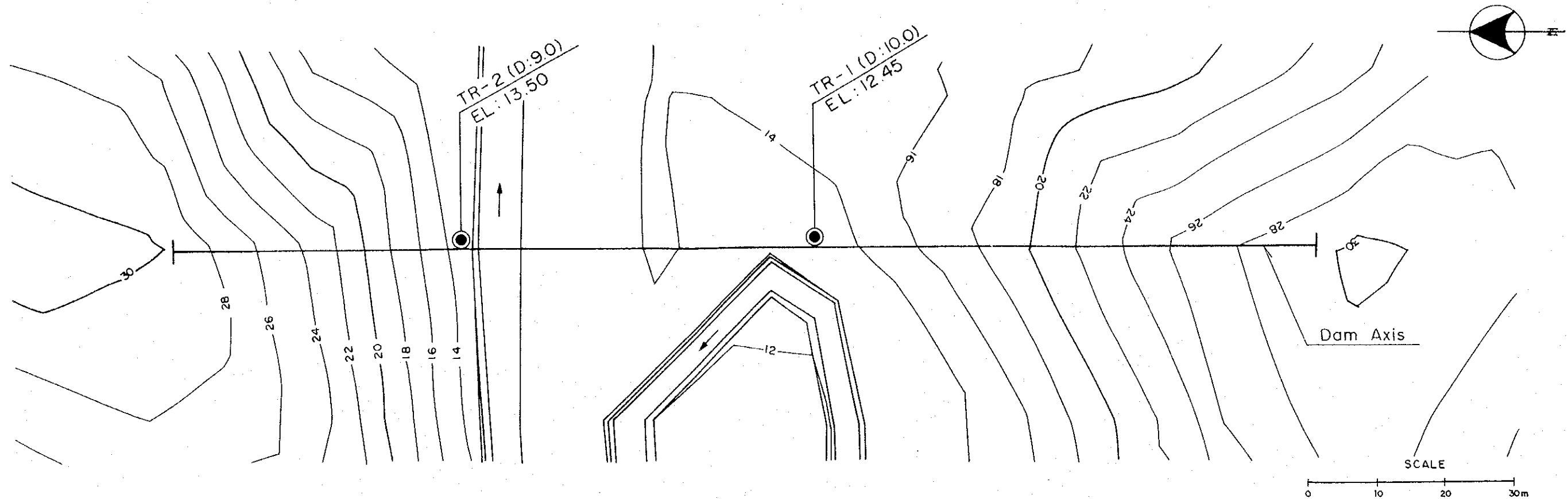


Fig. IV.14
Location Map of Borehole
&
Geological Profile of Dam Axis
Pasir Nering Project (TR.44)

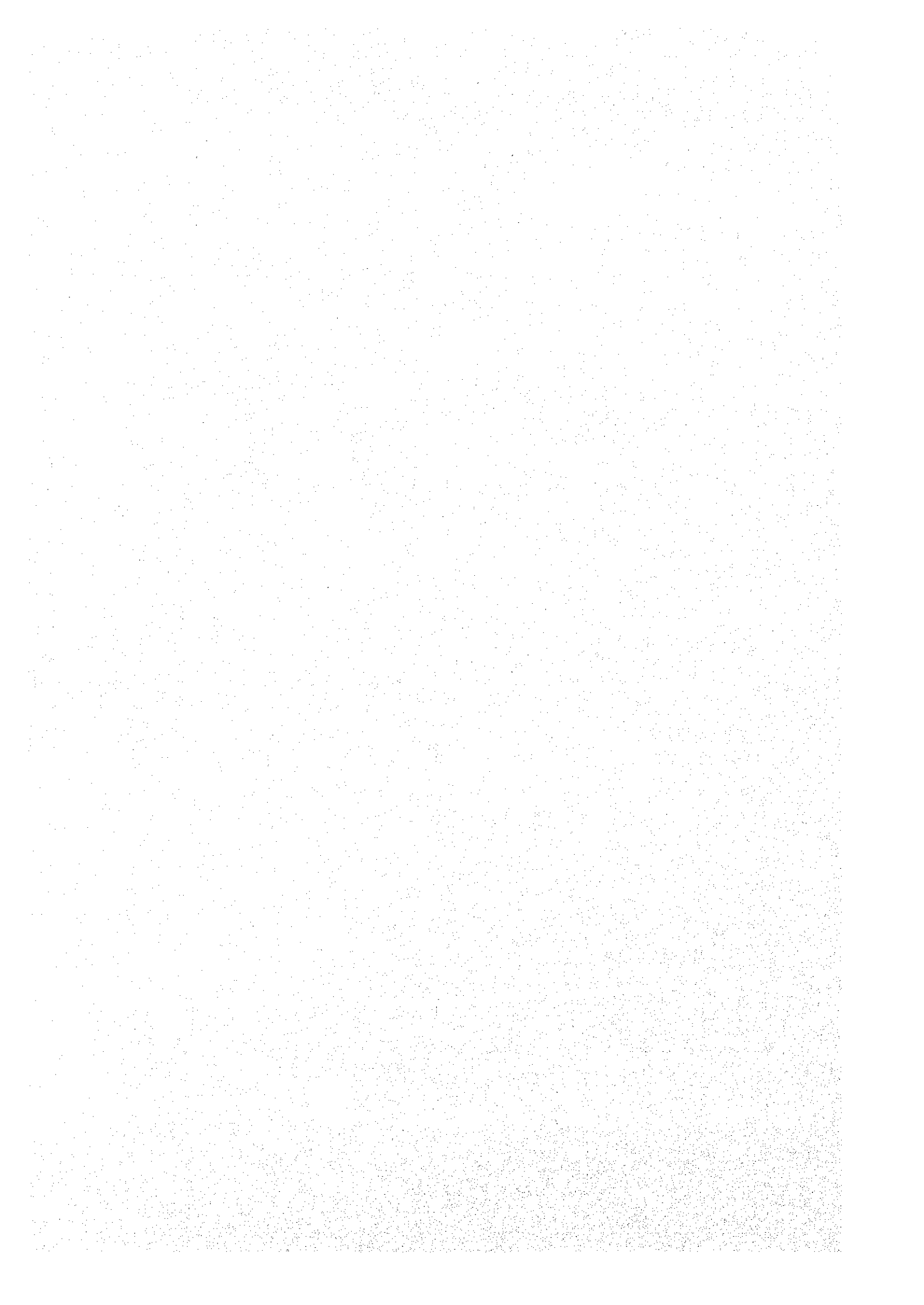


Fig.IV.15 Grading Curve of Soil (TR)

SYMBOL	SAMPLE	SPECIMEN	DEPTH (m)	SEDIMENTATION BY HYDROMETER			SIEVING		REMARKS					
				mass (g)	pretreatment method	pretreatment loss (%)	mass (kg)	method	clay (%)	silt (%)	sand (%)	gravel (%)	cobbles (%)	
				50.0	-	-	21.5	wet	46	11	32	11	0	

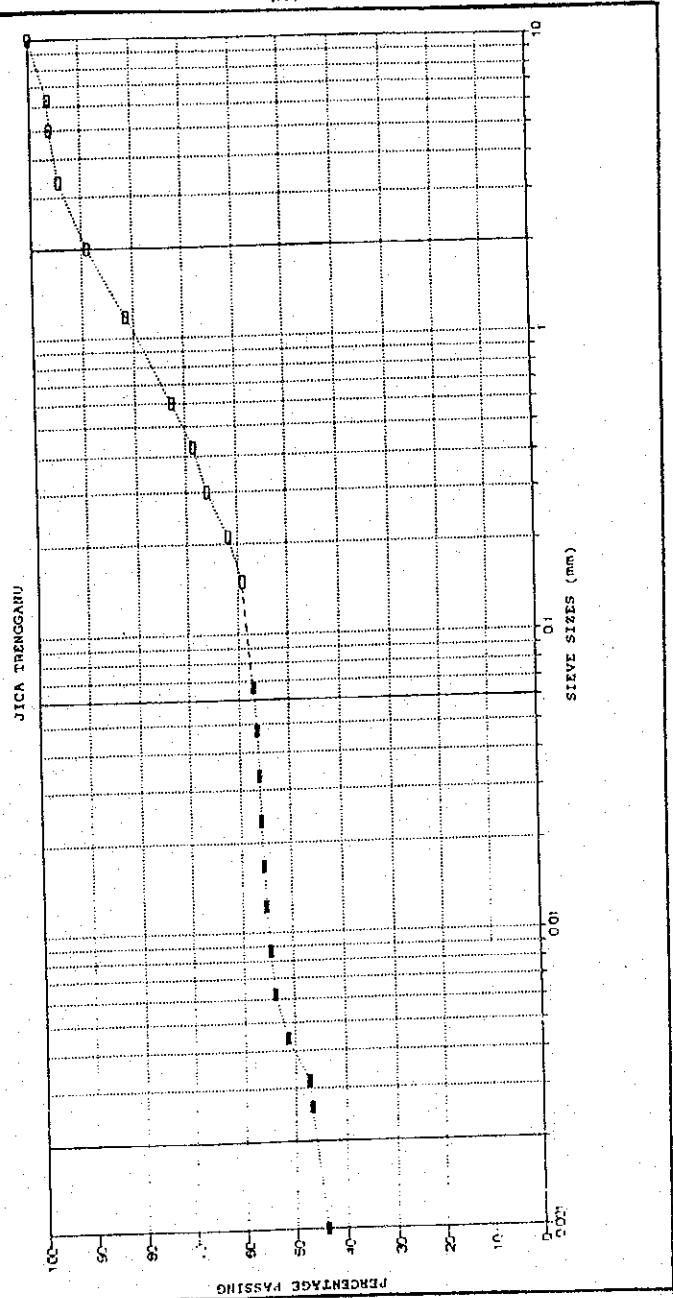


Fig. IV.16 Compaction Characteristics of Soil (TR)

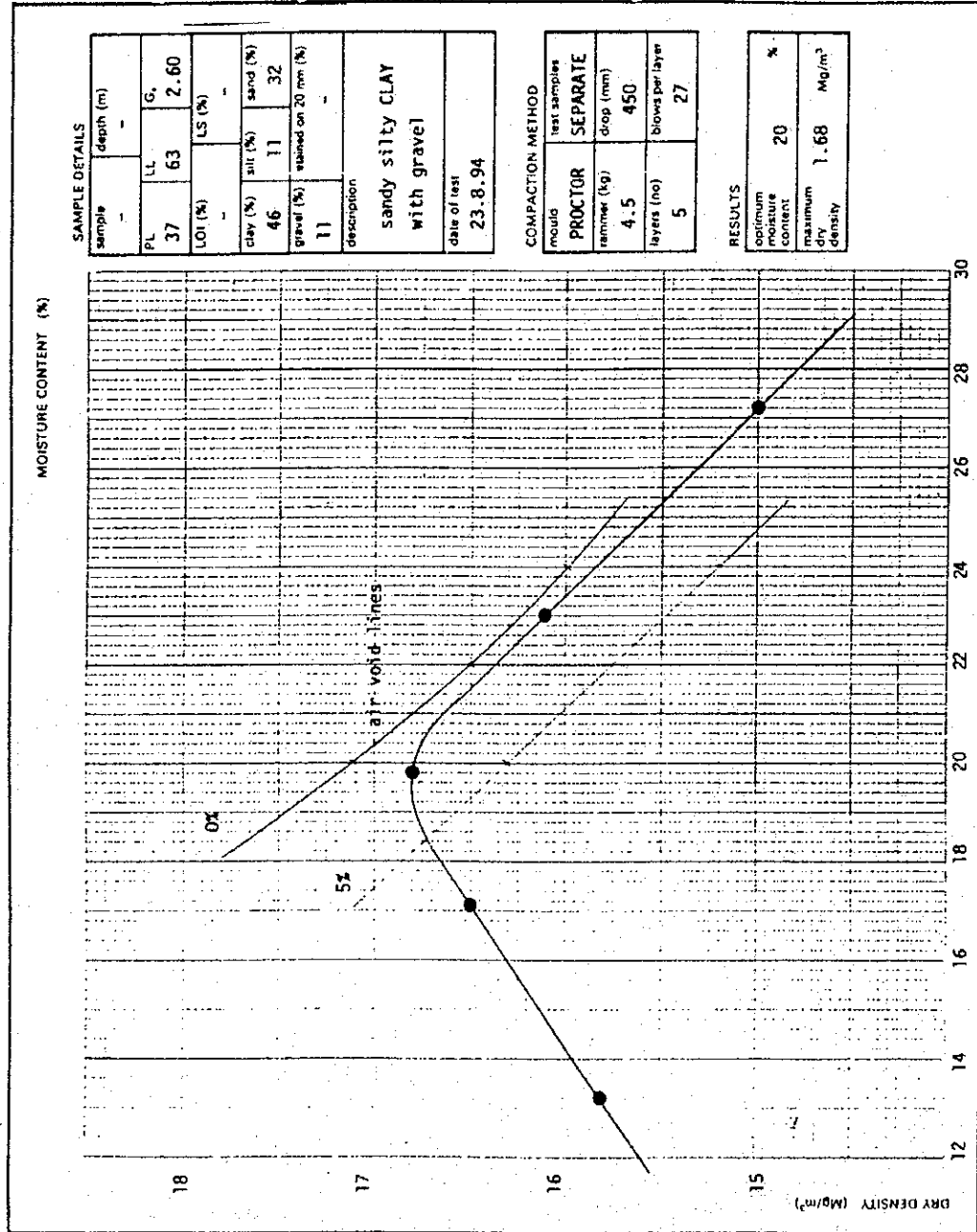


Fig. IV.17 $(\sigma_1 - \sigma_3) - \Sigma$ Curves and Mohr-Circle Diagram of Soil, UU Test (TR)

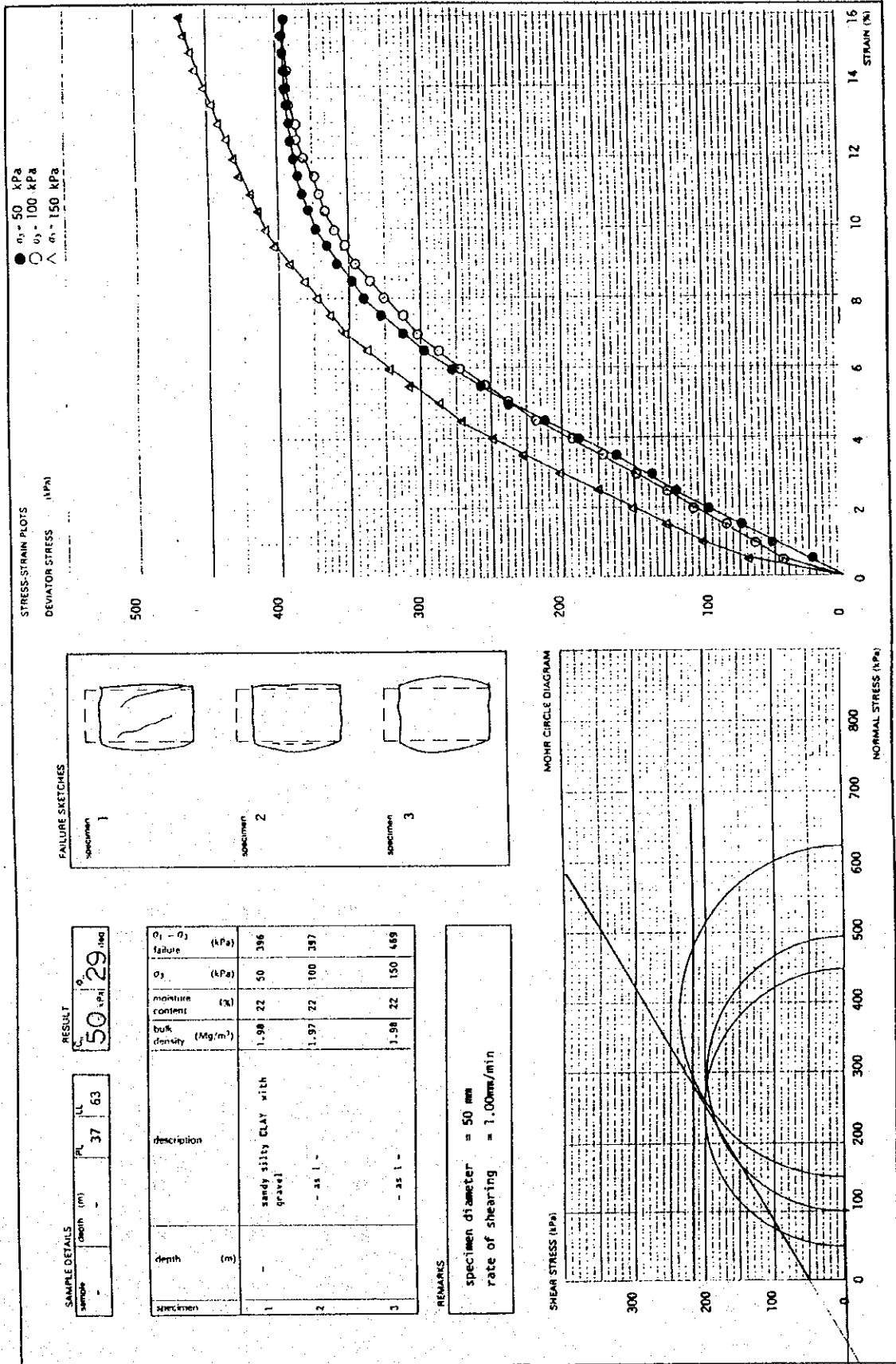


Fig.IV.18 Mohr-Circle Diagram of Soil CU Test (TR)

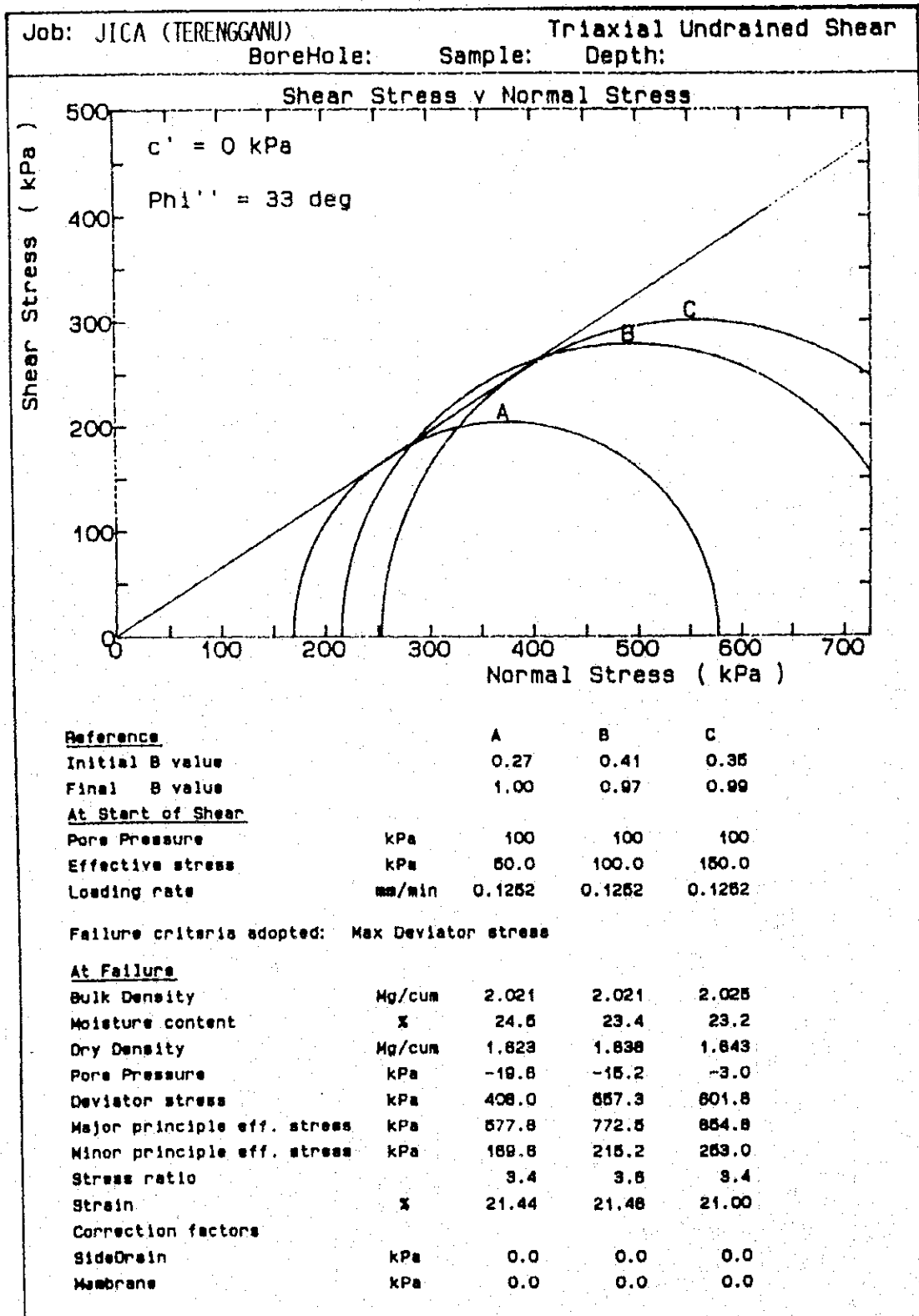
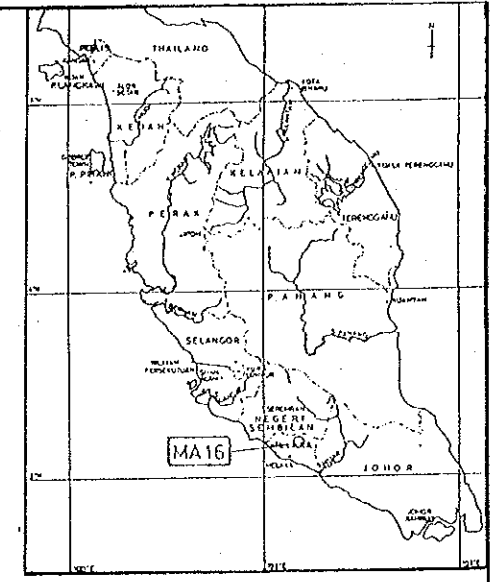
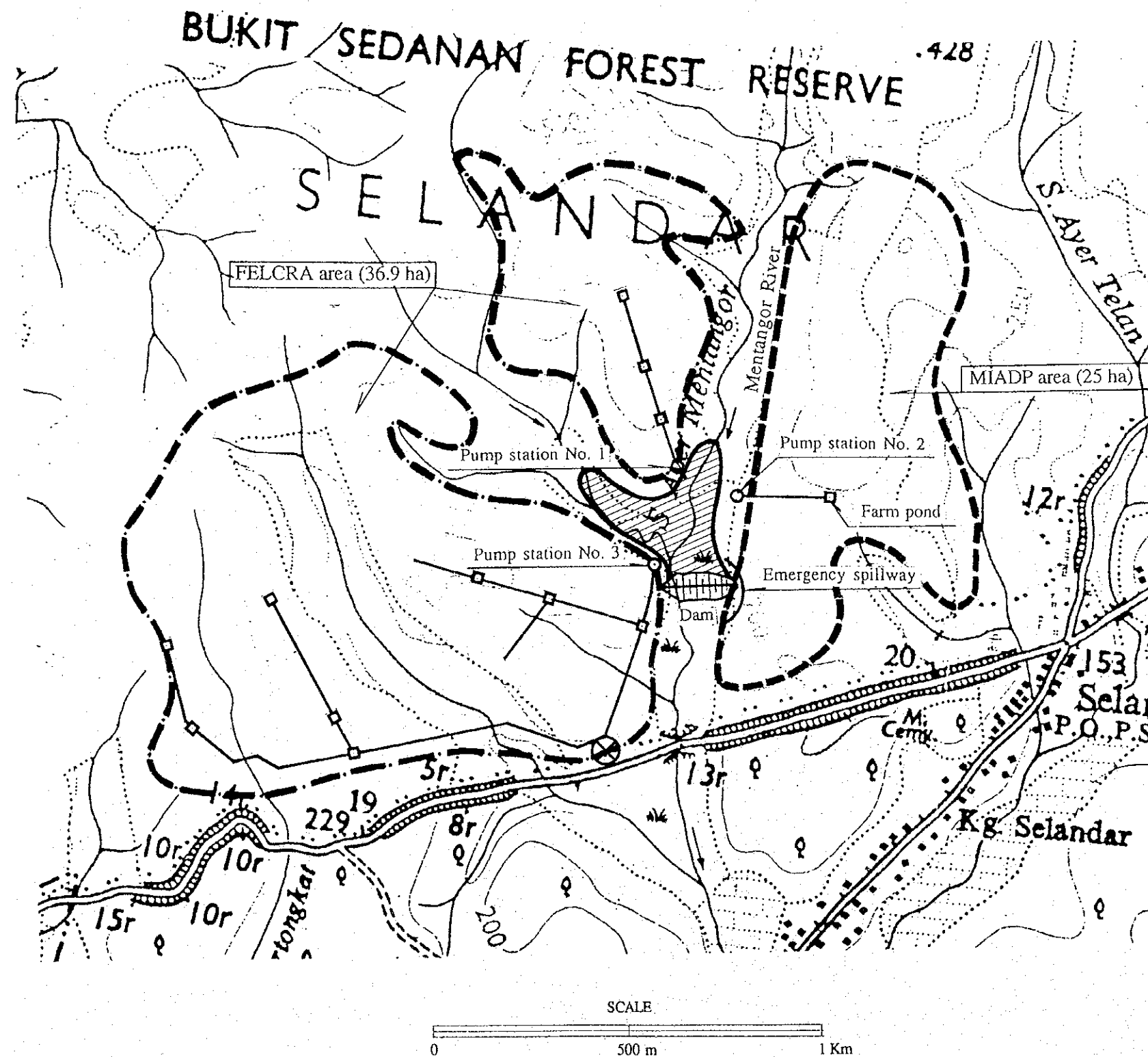


Fig.IV.19 Permeability of Soil (TR)

Location JICA (TERENGGANU)		Job ref :		
Soil description yellowish brown sandy silty CLAY with gravel		Borehole/ plt ref		
		Sample no		
		Depth (m)		
Test method BS 1377:Part 6:1990.6 Constant head permeability test in triaxial cell		Date		26.8.94
Type of specimen Undisturbed/compacted		undisturbed		
Method of preparation		cylinder		
Flow conditions Vertical upwards/downwards		upwards		
TEST SPECIMEN				
Diameter	D mm	52	Nominal effective stress	kPa 100.1
Area	A mm	2123.72	Cell pressure	kPa 200.1
	L mm	101.5	Back pressure	p2 kPa 80.0
Density	p Mg/m	1.97	Pressure difference (p1 - p2)	kPa 20.0
Moisture content	%	21	Inlet pressure	p1 kPa 100.0
Dry density	p Mg/m	1.63	Mean effective stress	kPa 110.1
Method of saturation		BS 1377 part 6 (5.4)		Hydraulic gradient
Final B value		98		

From graph, mean slope q =	5.00 - 0.00 57.50 - 17.00	mL/min	0.12
Corresponding pressure correction pc =		kPa	0.00 (assumed)
CALCULATIONS			
Coefficient of permeability	$k = \frac{1.63 q L Rt}{A((p1 - p2) - pc)} \times 10^{-4} \text{ m/s}$		
SPECIMEN AFTER TEST			
Density	Mg/m ³	2.10	Accepted permeability
Moisture content	%	24	
		4.67 x 10 ⁻⁸ m/s	
		Operator	Checked
			Approved



KEY MAP

LEGEND

○	Pump station
—	Pipe line
- - -	Boundary of Irrigation area (FELCRA)
- - -	Boundary of Irrigation area (MIADP)
⊗	Borrow Area (Sampling Point)

Fig.IV.20 Location Map of Proposed Damsite & Borrow Area (Project MA.16)

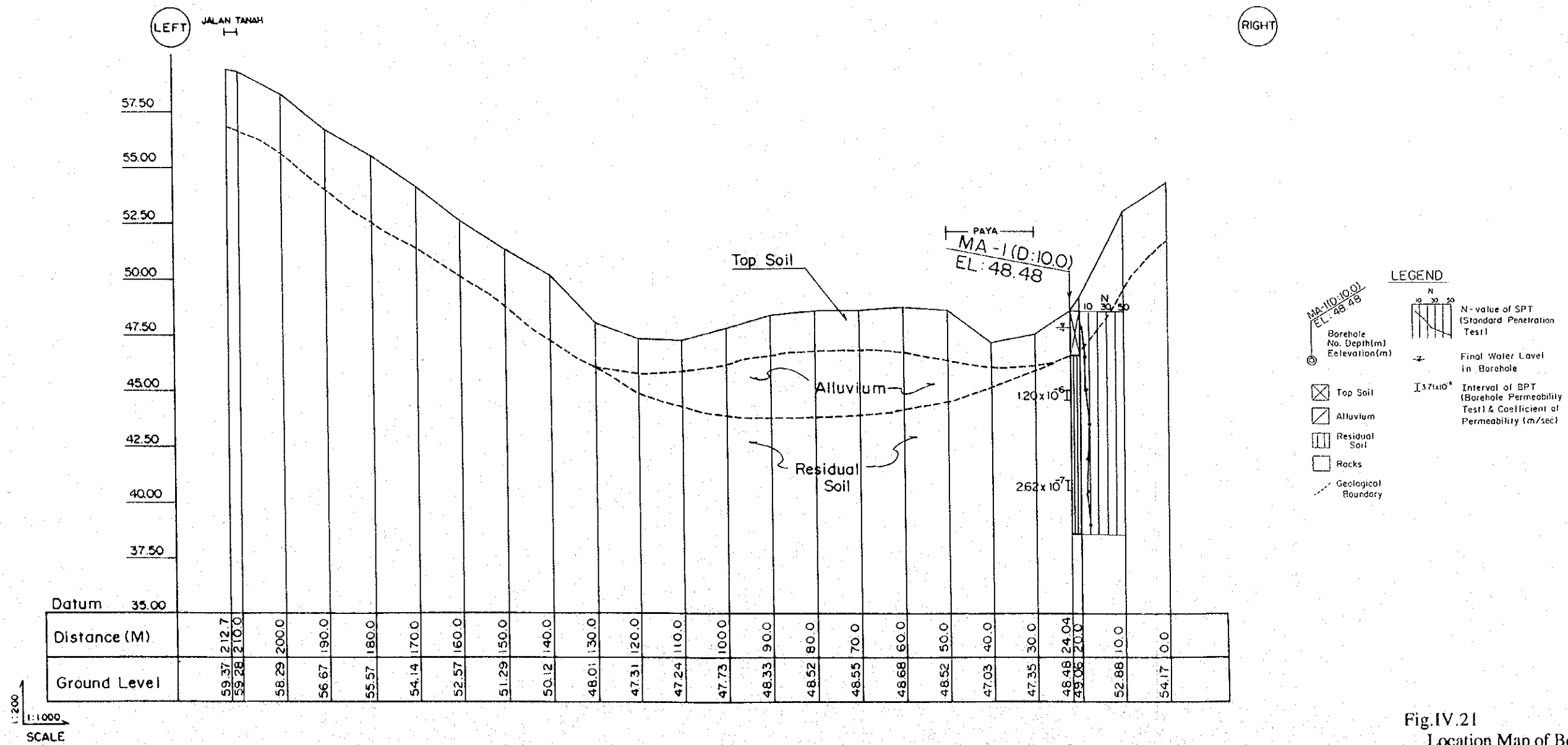
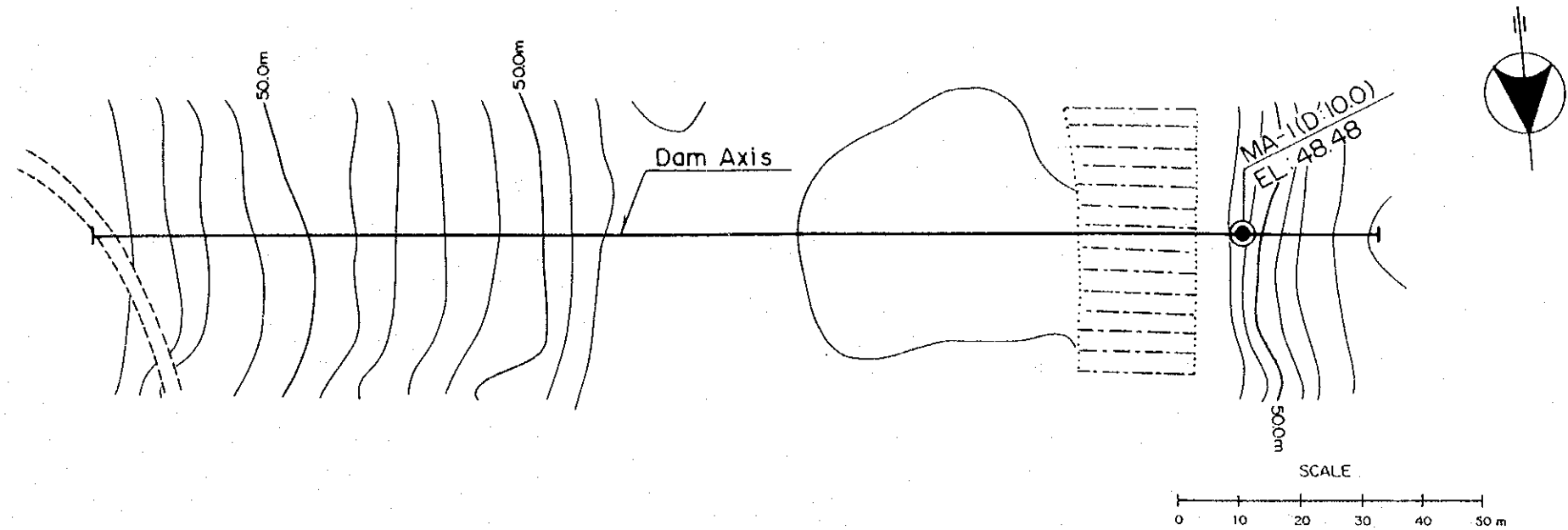


Fig.IV.21
Location Map of Borehole
&
Geological Profile of Dam Axis
Bukit Sedanan Project (MA.16)

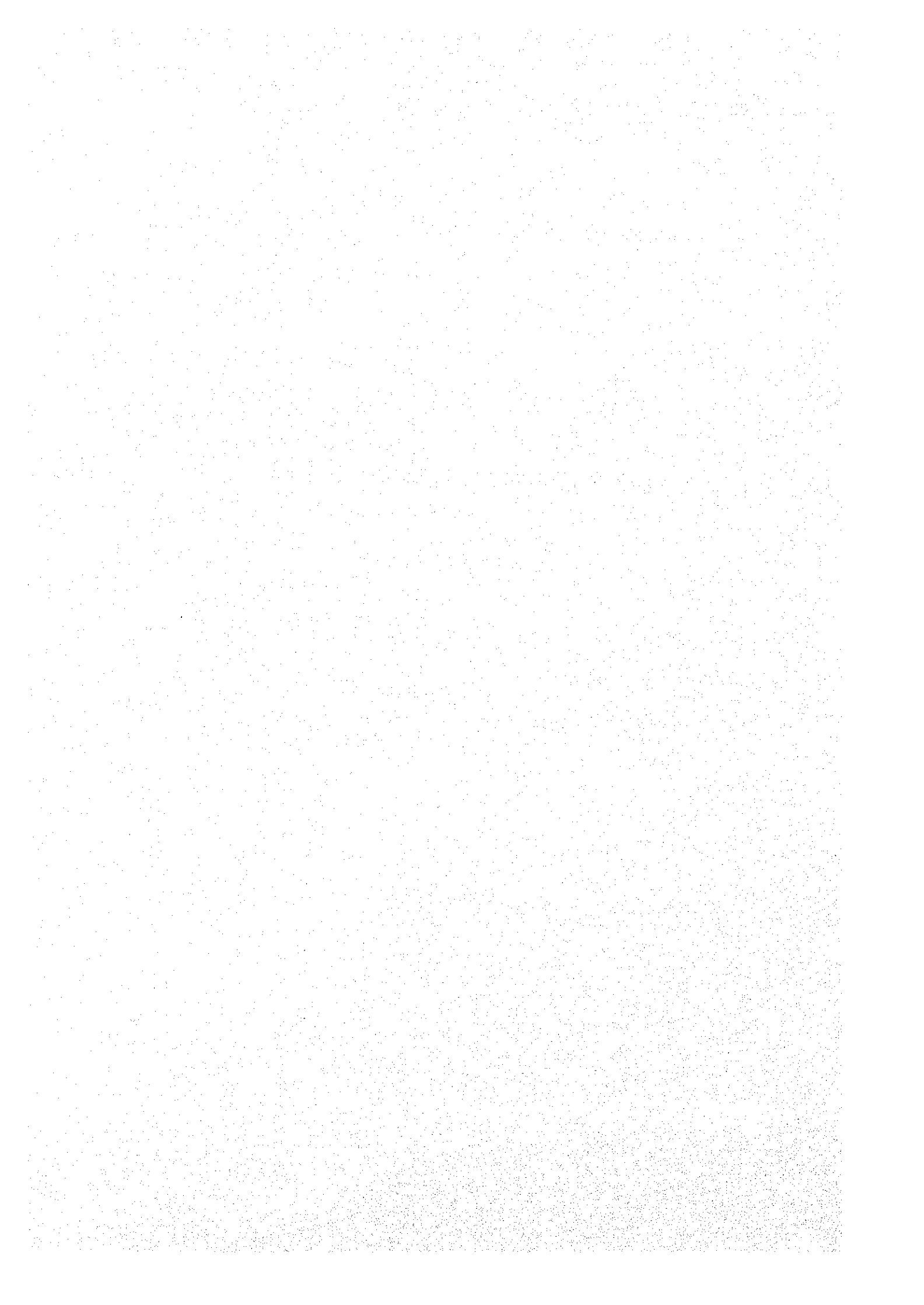


Fig. IV.22 Grading Curve of Soil (MA)

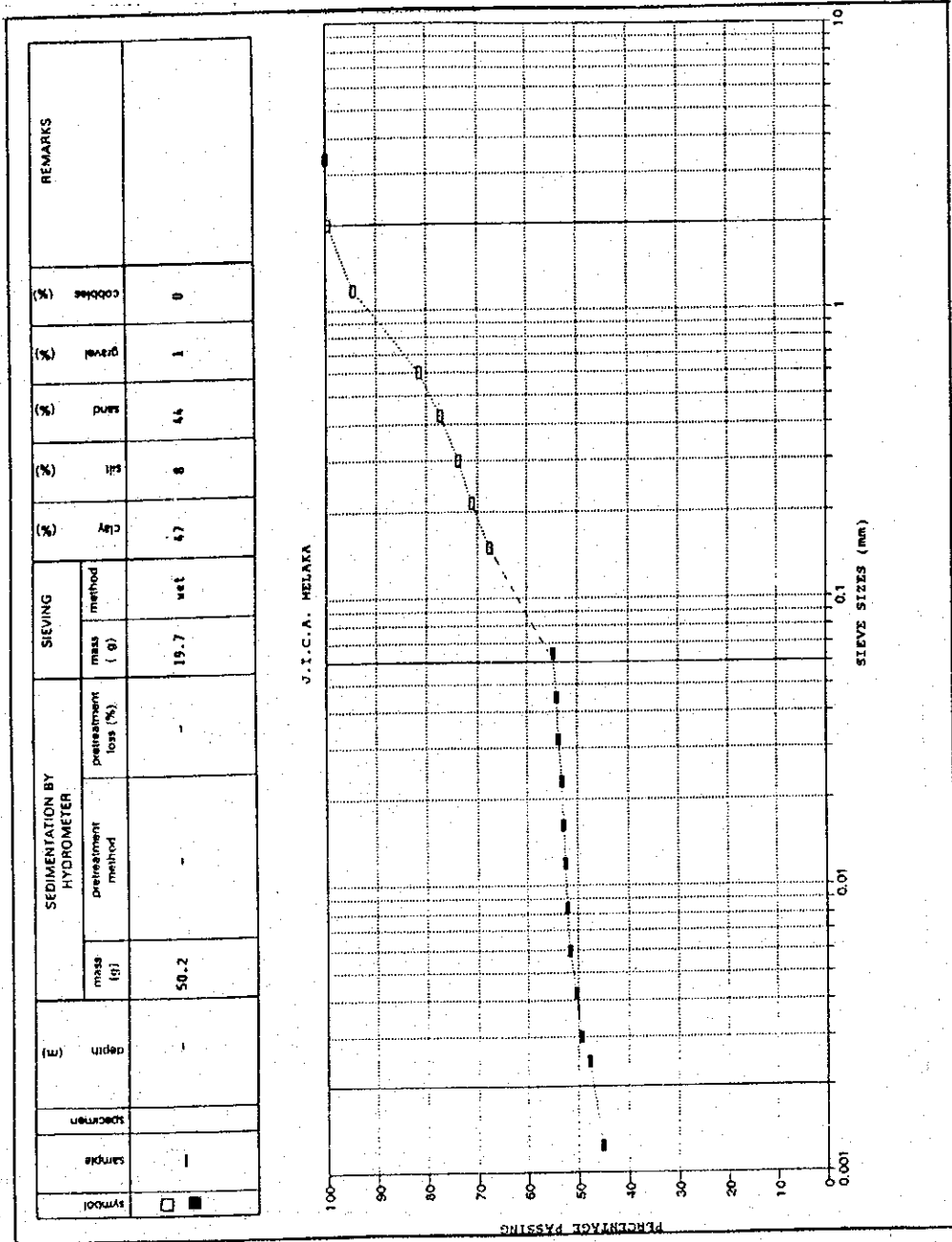
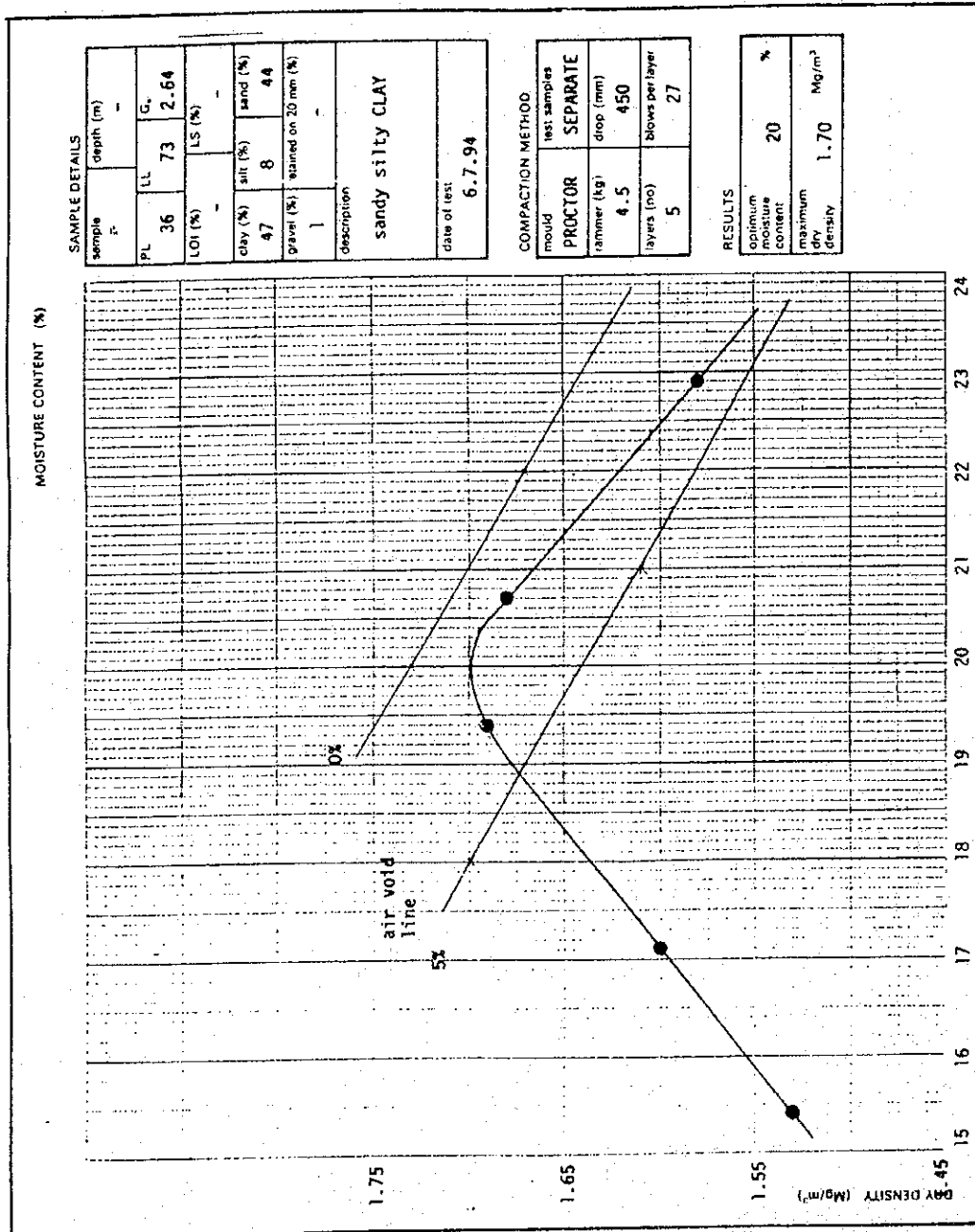


Fig.IV.23 Compaction Characteristics of Soil (MA)



SAMPLE DETAILS			
sample	depth (m)		
PL	36	LL	73
		G _s	2.64
LOI (%)		LS (%)	
clay (%)	silt (%)	clay (%)	sand (%)
47	8	44	44
gravel (%) retained on 20 mm (%)			
1			
description			
sandy silty CLAY			
date of test			
6.7.94			

COMPACTION METHOD	
mould	test samples
PROCTOR	SEPARATE
rammer (kg)	drop (mm)
4.5	450
layers (no)	blows per layer
5	27

RESULTS	
optimum moisture content	20 %
maximum dry density	1.70 Mg/m³

Fig. IV.24 $(\sigma_1 - \sigma_3) - \Sigma$ Carves and Mohr-Circle Diagram of Soil UU Test (MA)

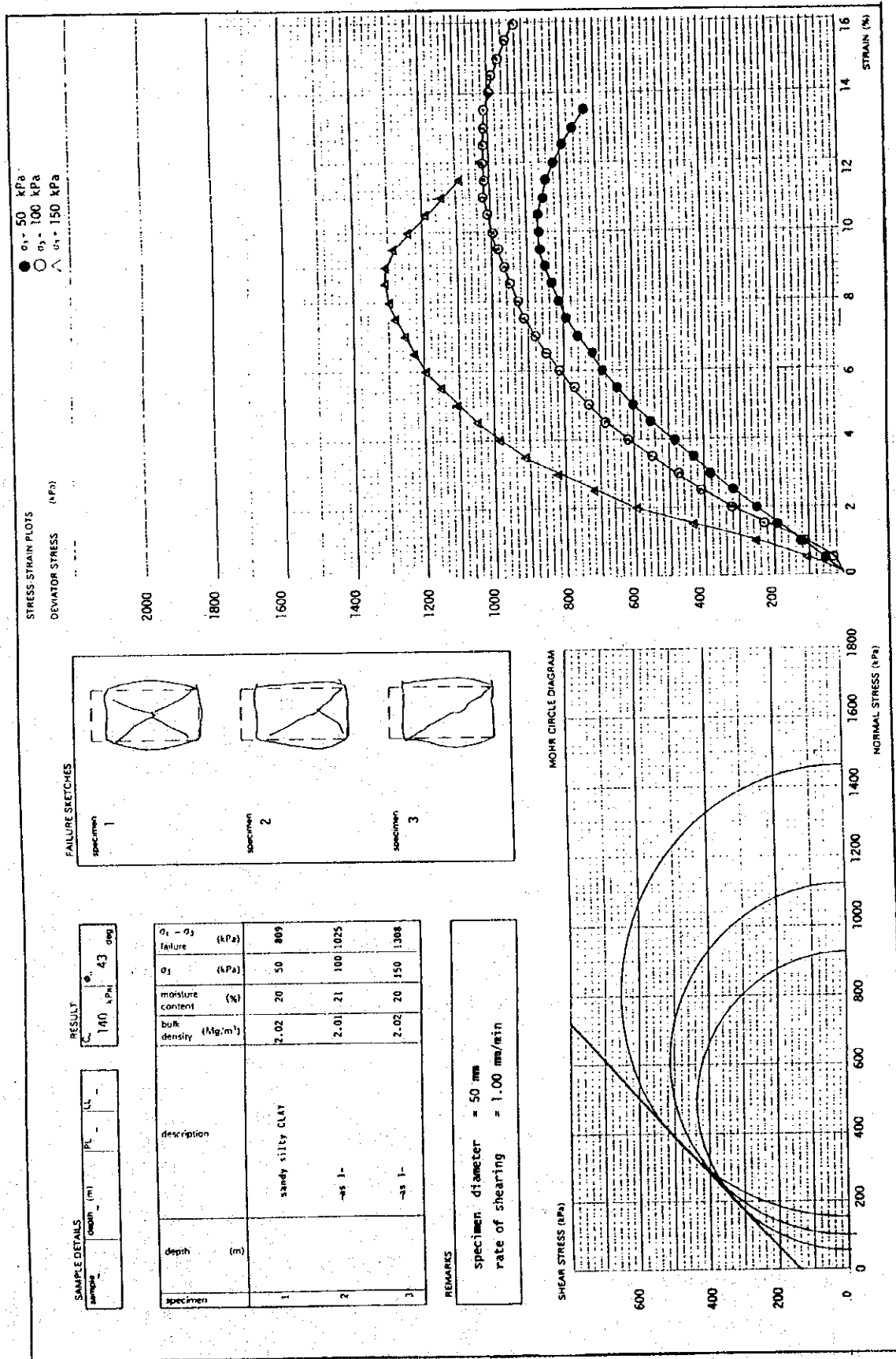


Fig.IV.25 Mohr-Circle Diagram of Soil \overline{CU} Test (MA)

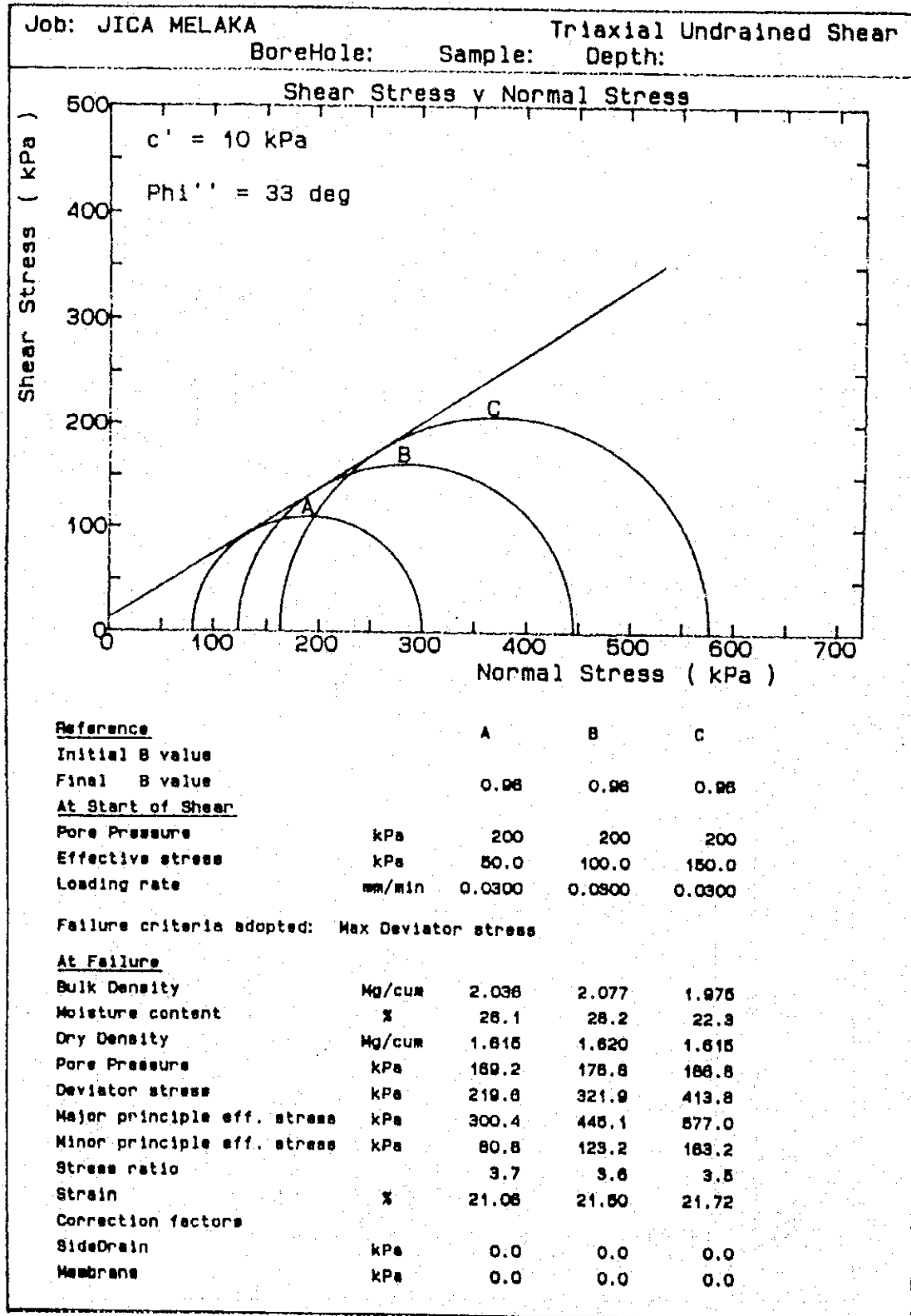


Fig.IV.26 Permeability of Soil (MA)

Location JICA (MELAKA)		Job ref : Borehole/ pit ref		
Soil description yellowish brown sandy silty CLAY		Sample no		BS 1
		Depth (m)		
		Date		15.7.94
Test method BS 1377:Part 6:1990:6 Constant head permeability test in triaxial cell				
Type of specimen Undisturbed/compacted		undisturbed		
Method of preparation		cylinder		
Flow conditions Vertical upwards/downwards		upwards		
TEST SPECIMEN				
Diameter	D mm	52	Nominal effective stress	kPa 100.4
Area	A mm ²	2123.72	Cell pressure	kPa 240.6
Length	L mm	100	Back pressure	p2 kPa 120.0
Density	ρ Mg/m ³	2.02	Pressure difference (p1-p2)	kPa 20.2
Moisture content	%	21	Inlet pressure	p1 kPa 140.2
Dry density	ρ Mg/m ³	1.67	Mean effective stress	kPa 110.5
Method of saturation		$\sigma'_3 = \sigma'_3 - 1/2(p1+p2)$		
BS 1377 part 6 (5.4)		Hydraulic gradient		
Final B value		100		
		20.64		

From graph, mean slope q =	1.60-0.00 59.00-19.00	mL/min	0.04
Corresponding pressure correction pc =		kPa	0.00 (assumed)
CALCULATIONS			
Coefficient of permeability	$k = \frac{1.63 q L R t}{A(p1-p2)-pc} \times 10^{-4} \text{ m/s}$		
SPECIMEN AFTER TEST			
Density	Mg/m ³	2.19	
Moisture content	%	26	
		Accepted permeability	1.52 x 10 ⁻⁸ m/s
		Operator	Checked
			Approved

