

Appendix

A.1 Present Socio-Economic Situations

Area and Population by Administration Unit along the Project Road

Project	Administration Unit		Area (km ²)	Population (persons)	Population Density (Per./km ²)	Pop. Growth Rate, '79-89 (% per annum)
	Changwat	Amphoe				
NC-1	Chumphon	Tha Sae	1,531.2	49,600	32	2.61
		Muang Chumphon	675.1	124,553	184	0.67
		(Total)	2,206.3	174,153	79	-
NC-3	Phangnga	Thap Put	272.4	20,198	74	2.15
		Muang Phangnga	549.5	32,401	59	1.91
		(Total)	821.9	52,599	64	-
NC-5	Songkhla	Hat Yai	660.0	276,020	418	2.24
		Ratta Phum	1,029.0	54,471	53	(1.44)
		(Total)	1,689.0	330,491	196	-
AD-1	Surat Thani	Phunphin	242.5	83,217	343	2.71
		Muang Surat Thani	1,201.0	112,646	94	1.98
		Kanchanadit	1,650.0	76,102	46	1.91
		(Total)	3,093.5	271,965	88	-
AD-2	Phuket	Tha Lang	252.0	48,633	193	2.10
		Muang Phuket	224.0	97,501	435	2.71
		(Total)	476.0	146,134	307	-
WD7-4	Nakhon Si Thamarat	Hua Sai	454.6	70,664	155	0.69
		Songkhla				
	Songkhla	Ranot	83.4	75,385	904	0.88
		Krasae Sin	96.4	17,152	178	0.47
		Sathing Phra	120.0	50,296	419	0.99
		Muang Songkhla	368.4	143,189	389	3.66
(Total)	1,122.8	163,201	318	-		
WD6-1	Satun	Khuang Kalong	620.7	31,791	51	2.39
		La Ngu	379.7	47,352	125	3.29
		Thung Wa	294.0	15,565	53	3.79
	Trang	Palian	636.2	66,530	105	2.30
		(Total)	1,930.6	161,238	84	-
RW-7-1	Narathiwat	Yi Ngo	200.5	32,669	163	1.46
		Ruso	525.6	46,679	89	2.49
	Yala	Raman	516.0	64,189	124	2.70
		Muang Yala	449.0	150,535	335	3.26
		(Total)	1,691.1	294,072	174	-

Employment Structure by Administration Unit along the Project Road

Project	Administration Unit		Total Employment in 1989 (persons)	Sector			
	Changwat	Amphoe		Agri- culture	Industry	Service	Others
NC-1	Chumphon	Tha Sae	25,703	15,525	204	8,794	1,180
		Muang Chumphon	64,543	38,985	1,872	20,722	2,964
		(Total)	90,246 (100%)	54,510 (60%)	2,076 (2%)	29,516 (33%)	4,144 (5%)
NC-3	Phangnga	Thap Put	7,349	4,298	67	2,810	174
		Muang Phangnga	11,900	6,895	217	4,510	278
		(Total)	19,249 (100%)	11,193 (58%)	284 (2%)	7,320 (38%)	452 (2%)
NC-5	Songkhla	Hat Yai	93,846	65,866	10,205	9,771	8,004
		Ratta Phum	18,520	14,515	497	1,928	1,580
		(Total)	112,366 (100%)	80,381 (72%)	10,702 (10%)	11,699 (10%)	9,584 (8%)
AD-1	Surat Thani	Phunphin	44,936	29,591	6,713	8,632	-
		Muang Surat Thani	60,827	40,055	9,087	11,685	-
		Kanchanadit	41,046	27,029	6,132	7,885	-
		(Total)	146,809 (100%)	96,675 (66%)	21,932 (15%)	28,202 (19%)	-
AD-2	Phuket	Tha Lang	20,647	8,900	718	9,629	1,400
		Muang Phuket	42,617	17,842	2,662	19,305	2,808
		(Total)	63,264 (100%)	26,742 (42%)	3,380 (5%)	28,934 (46%)	4,208 (7%)
WD7-4	Nakhon Si Thamarat	Hua Sai	23,219	16,282	210	4,070	2,657
		Songkhla					
	Songkhla	Ranot	25,630	20,488	287	2,669	2,186
		Krasae Sin	5,831	4,650	17	667	497
		Sathing Phra	17,100	13,722	140	1,780	1,458
		Muang Songkhla	48,680	36,898	2,565	5,065	4,152
(Total)	54,680 (100%)	41,420 (76%)	514 (3%)	7,406 (12%)	5,340 (9%)		
WD6-1	Satun	Khuang Kalong	11,037	7,388	95	3,166	388
		La Ngu	16,441	11,039	93	4,731	578
		Thung Wa	5,404	3,634	23	1,557	190
	Trang	Palian	23,098	15,564	52	6,670	812
		(Total)	55,980 (100%)	37,625 (67%)	263 (0%)	16,124 (29%)	1,968 (4%)
RW-7-1	Narathiwat	Yi Ngo	16,936	16,127	185	196	428
		Ruso	24,198	22,550	503	534	611
	Yala	Raman	26,740	18,615	140	7,600	385
		Muang Yala	65,256	43,655	2,875	17,823	903
		(Total)	133,130 (100%)	100,947 (76%)	3,703 (3%)	26,153 (19%)	2,327 (2%)

A.2 Traffic Demand

Sampling Rates of Roadside OD Survey by Station

Station	Direction	Passenger Car			Light Bus			Medium Bus			Heavy Bus			Pickup (passenger)		
		No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)
001	In	70	546	12.82	82	124	66.13	43	72	59.72	95	123	77.24	337	2124	15.87
	Out	63	571	11.03	70	148	47.30	36	71	50.70	113	126	89.68	384	2349	16.35
002	In	93	347	26.80	242	324	74.69	14	28	50.00	38	61	62.30	400	1581	25.30
	Out	98	374	26.20	190	256	74.22	3	6	50.00	51	78	65.38	286	1321	21.65
003	In	132	326	40.49	8	278	2.88	17	27	62.96	66	80	82.50	225	365	61.64
	Out	159	315	50.48	25	287	8.71	9	43	20.93	84	102	82.35	240	415	57.83
004	In	68	86	79.07	29	57	50.88	32	34	94.12	0	0	0.00	285	411	69.34
	Out	62	92	67.39	32	51	62.75	25	30	83.33	0	0	0.00	285	370	77.03
005	In	98	136	72.06	49	110	44.55	0	8	0.00	45	55	81.82	205	327	62.69
	Out	87	129	67.44	50	94	53.19	0	7	0.00	41	45	91.11	234	310	75.48
006	In	53	102	51.96	10	17	58.82	9	14	64.29	16	22	72.73	31	90	34.44
	Out	55	95	57.89	13	32	40.63	2	5	40.00	14	18	77.78	41	89	46.07
007	In	45	126	35.71	1	12	8.33	10	24	41.67	27	38	71.05	188	344	54.65
	Out	110	149	73.83	31	32	96.88	17	23	73.91	48	53	90.57	244	487	50.10
008	In	261	679	38.44	171	577	29.64	43	102	42.16	75	148	50.68	374	1438	26.01
	Out	363	1027	35.35	200	622	32.15	57	113	50.44	86	196	43.88	474	1718	27.59
Average		1,817	5,100	35.63	1,203	3,021	39.82	317	607	52.22	799	1,145	69.78	4,233	13,739	30.81

Station	Direction	4W Truck			6W Truck			10W Truck			Motorcycle			Total		
		No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)	No. of Samples	Counted Volume	Sampling Rate (%)
001	In	11	52	21.15	43	304	14.14	57	292	19.52	491	2536	19.36	1,292	6,275	20.59
	Out	4	39	10.26	62	367	16.89	56	316	17.72	374	2772	13.49	1,294	6,953	18.61
002	In	9	31	29.03	61	285	21.40	97	479	20.25	398	1847	21.55	1,392	5,449	25.55
	Out	5	22	22.73	74	204	36.27	119	437	27.23	219	1448	15.12	1,179	4,394	26.83
003	In	2	6	33.33	44	114	38.60	48	114	42.11	426	1106	38.52	1,127	3,084	36.54
	Out	0	6	0.00	53	115	46.09	75	133	56.39	430	1173	36.66	1,332	3,364	39.60
004	In	3	4	75.00	32	54	59.26	23	34	67.65	514	722	71.19	1,025	1,463	70.06
	Out	4	8	50.00	43	66	65.15	35	53	66.04	345	708	48.73	887	1,468	60.42
005	In	1	14	7.14	41	57	71.93	62	88	70.45	245	559	43.83	831	1,459	56.96
	Out	2	11	18.18	46	67	68.66	60	87	68.97	289	608	47.53	876	1,447	60.54
006	In	2	5	40.00	23	52	44.23	5	11	45.45	243	725	33.52	502	1,243	40.39
	Out	0	2	0.00	26	47	55.32	4	20	20.00	179	663	27.00	423	1,187	35.64
007	In	0	9	0.00	26	76	34.21	44	159	29.53	117	345	33.91	514	1,257	40.89
	Out	3	10	30.00	40	69	57.97	66	146	45.21	145	388	37.37	750	1,421	52.78
008	In	6	19	31.58	34	104	32.69	68	217	31.34	714	2718	26.27	1,802	6,121	29.44
	Out	5	14	35.71	32	154	20.78	58	231	25.11	766	3155	24.28	2,139	7,501	28.52
Average		57	252	22.62	680	2,135	31.85	877	2,807	31.24	5,895	21,473	27.45	17,365	54,086	32.11

Number of Empty Vehicle

Station	Vehicle Type	Pickup(Cargo)		4W-Truck		6W-Truck		10W-Truck	
		Number	(%)	Number	(%)	Number	(%)	Number	(%)
00-1		98	56.32	6	42.86	39	41.94	47	43.52
00-2		66	39.29	2	16.67	56	43.08	76	36.54
00-3		278	70.56	2	100.00	46	48.94	43	34.96
00-4		14	15.22	2	28.57	40	54.05	39	68.42
00-5		32	21.92	1	50.00	32	38.55	56	50.00
00-6		88	55.00	1	50.00	20	41.67	4	44.44
00-7		25	32.47	1	33.33	32	54.24	50	51.02
00-8		35	25.00	3	27.27	31	51.67	46	41.07

A.3 Road Inventory Survey

PROJECT: _____

RIGHT OF WAY LIST

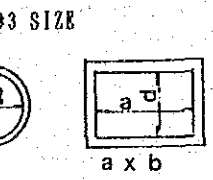
KM POST	RIGHT OF WAY		KM POST	RIGHT OF WAY		KM POST	RIGHT OF WAY	
	LEFT	RIGHT		LEFT	RIGHT		LEFT	RIGHT
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PROJECT: _____

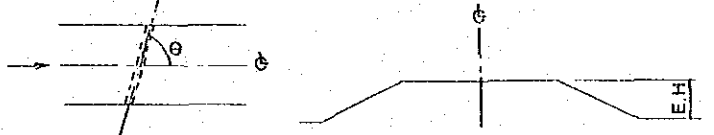
SURVEY DATA ON BOX AND PIPE CULVERT

KM POST	TYPE #1	MATERIAL #2	SIZE #3	LENGTH	ANGLE #4	E. H #5	REMARKS #6
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- #1 TYPE
1. BOX CULVERT
2. PIPE CULVERT
- #2 MATERIAL
1. RC
2. STEEL CORRUGATE
- #4 ANGLE
- #5 EMBANKMENT HEIGHT



- #6 CONDITIONS
1. FAIR
2. FAIR/GOOD
3. GOOD
4. GOOD/POOR
5. POOR



PROJECT: _____

SURVEY DATA ON BRIDGE

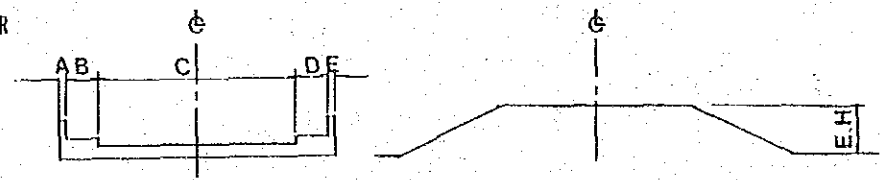
KM POST	NAME	CONSTRUCTION MATERIAL #1	STRUCTURAL SYSTEM #2	WIDTH OF BRIDGE #3					SPAN AND LENGTH	ANGLE OF ABUTMENT	H. W. L.	B. M #4	CONDITIONS
				A	B	C	D	E					
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#1 CONSTRUCTION MATERIAL
 1. PC
 2. RC
 3. STEEL
 4. TIMBER

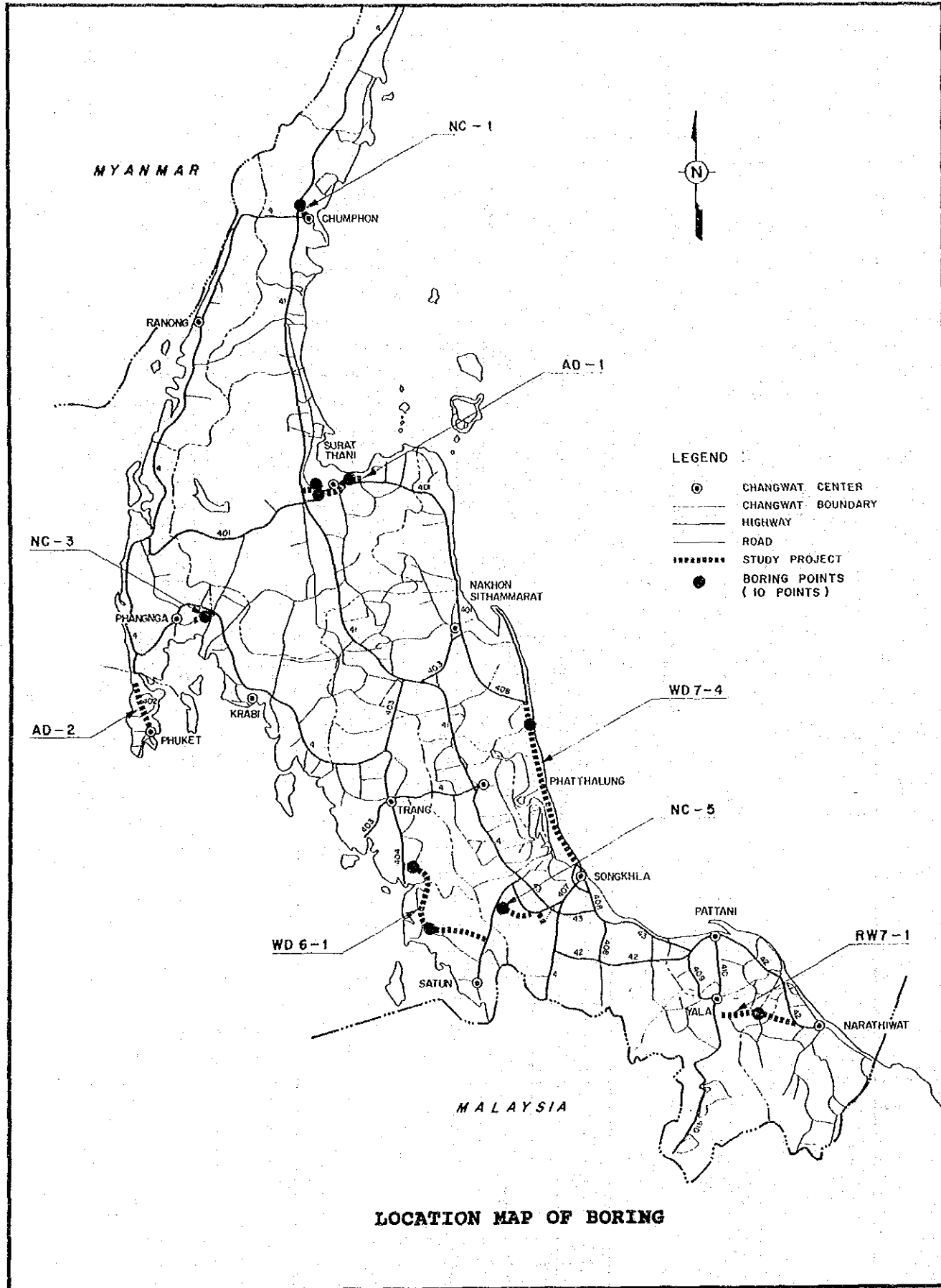
#2 STRUCTURE SYSTEM
 1. SIMPLY BEAM
 2. CONTINUOUS BEAM
 3. RIGIT FRAME
 4. TRUSS
 5. SUSPENSION

#3 WIDTH OF BRIDGE
 a. SLAB
 b. T. SECTION GIRDER
 c. BOX GIRDER

#4 EMBANKMENT HEIGHT



A.4 Soil Survey



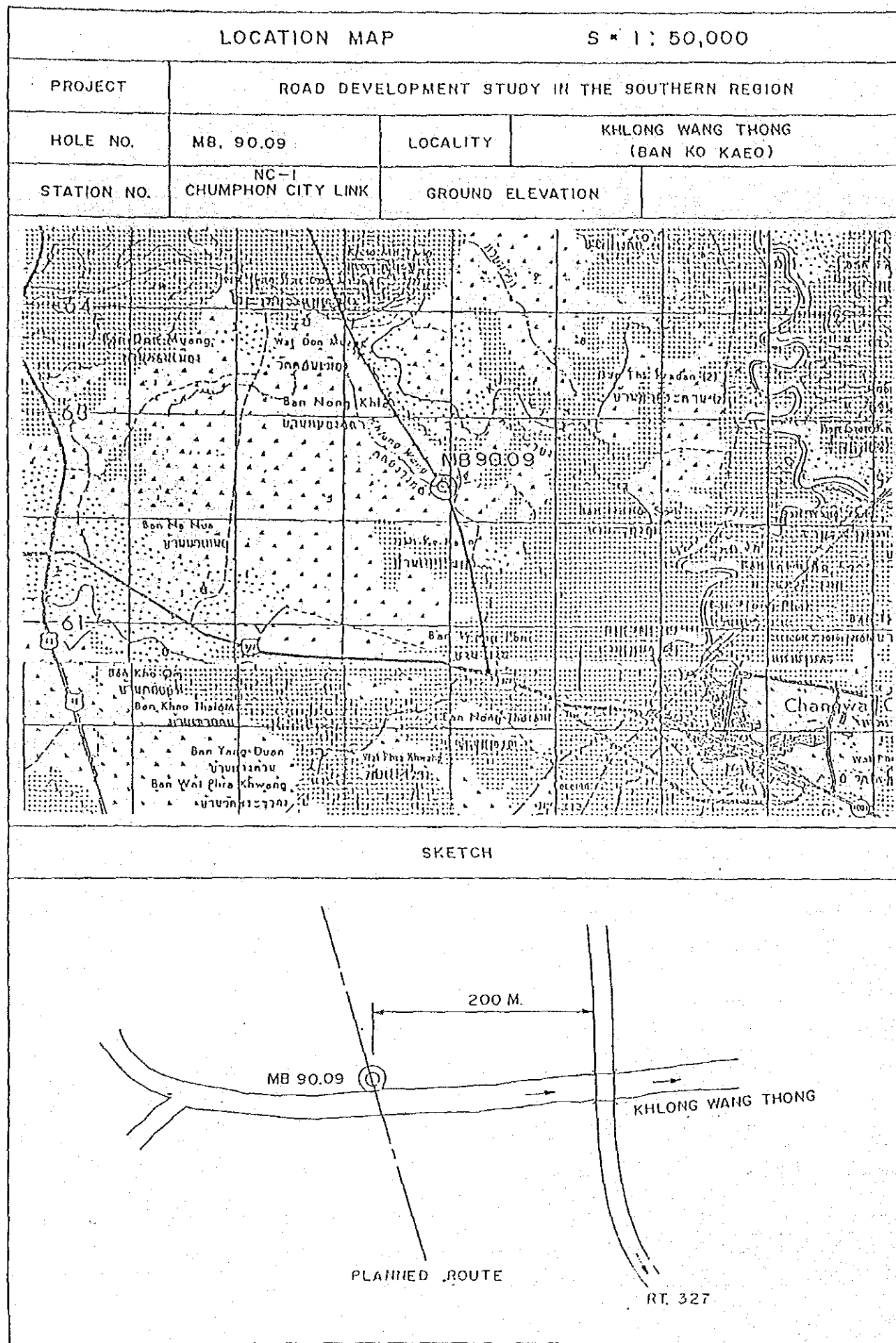
SUMMARY OF MATERIAL TEST RESULTS

STA	CLASSIFICATION	SIEVE ANALYSIS										ATTERBERG		COMPACTION T180		CBR AT		SP.GR	WET.DENSITY			
		FROM	TO	AASHTO	USCS	%PASSING										LL	PI			MOD	OMC%	CBR%
KM.	KM.					2"	1 1/2"	3/4"	3/8"	#4	#10	#40	#200			T/M*3	%	%	%	%		T/M*3
SPEC FOR SUBGRADE																						
AD-1 RT 4153 KM. 6+500	SC					100	93.10	169.20	150.10	141.80	127.60	24.01	9.31	2.15	8.00	14.00	0.42	7.70			2.071	
SURAT-THANI																						
AD-2 RT 402 KM. 20+000	SM-SC					100	86.80	82.10	72.80	49.80	13.80	25.02	5.43	1.78	11.30	11.00	0.52	11.30	2.38		1.741	
PHUKET-KOK KLOI																						
RW7-1 KM. 6	SM-SC					100	97.80	88.80	71.80	42.90	129.30	20.05	4.52	2.17	8.50	12.50	0.75	8.50			2.143	
RAMAN-TALOHALOE																						
WD7-4 RT 408 KM. 74+005	SM					100	89.40	85.70	181.30	67.40	123.90	-N	P.-	2.09	8.50	14.00	0.46	8.60	2.99		1.72	
HUA SAI- SONGKHLA																						

SUMMARY OF MATERIAL TEST RESULTS

STA	CLASSIFICATION	SIEVE ANALYSIS										ATTERBERG		COMPACTION T180		CBR AT		SP.GR	WET.DENSITY			
		FROM	TO	AASHTO	USCS	%PASSING										LL	PI			MOD	OMC%	CBR%
KM.	KM.					2"	1 1/2"	3/4"	3/8"	#4	#10	#40	#200			T/M*3	%	%	%	%		T/M*3
SPEC FOR EMBANKMENT MATERIAL																						
NC-1 RT 41 KM. 16+200	CL					100	91.20	80.70	75.70	72.10	61.50	43.00	16.65	1.88	18.00	10.30	1.37	2.86				
NC-1 RT 4 KM. 493+100	MH					100	94.20	84.90	79.30	73.80	57.80	50.05	19.82	1.80	17.60	9.80	0.21	2.52				
NC-3 RT 4 KM. 150+200	GM					79.5	39.90	24.40	20.10	19.00	14.20	-N	P.-	2.17	9.00	15.50	0.58	2.83				
NC-5 RT 4135 KM. 4	CL					100	97.30	94.00	81.80	30.09	10.37	1.96	10.40	17.50	1.05	2.73						
AD-1 RT 401 KM. 6	ML					100	98.30	92.50	85.00	78.10	64.50	-N	P.-	2.02	9.00	9.00	0.34	2.85	2.581			
AD-1 RT 401 KM. 23+920	SM					100	99.70	99.40	46.10	-N	P.-	2.03	11.80	5.80	0.31	2.67						
AD-2 RT 402 KM. 34+850	SM					100	99.00	84.00	55.80	44.00	-N	P.-	1.84	12.80	15.00	0.30	2.80					
AD-2 RT 4 KM. 10+800	SC					100	95.60	70.50	40.30	29.20	47.00	9.00	1.84	13.00	12.60	1.05	2.82					
WD6-1 RT 404 KM. 39	SM					99.80	95.50	93.70	91.90	32.70	-N	P.-	1.84	15.70	15.10	0.30	2.75					
RW7-1 RT 4058 KM. 8+135	MH					100.0	99.40	97.70	68.30	52.90	58.03	18.53	1.71	16.00	18.50	0.35	1.70	1.827				
RW7-1 RT 4107 KM. 16+160	SM					100	83.20	73.10	51.40	27.40	13.60	-N	P.-	1.98	9.50	*7.02	*0.22	2.14	1.796			

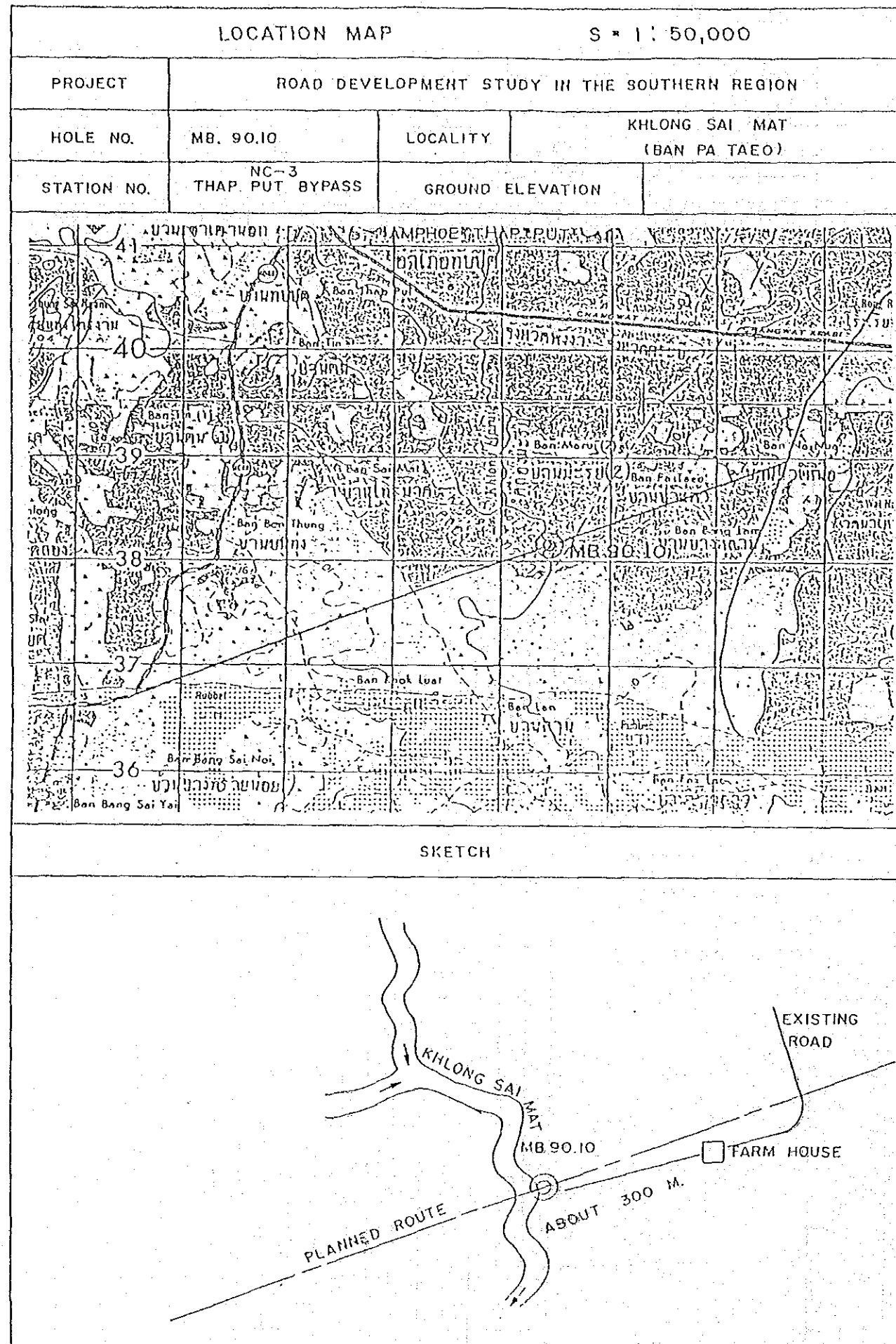
* = CBR 98% MODIFIED



SOIL DATA : BORING LOG

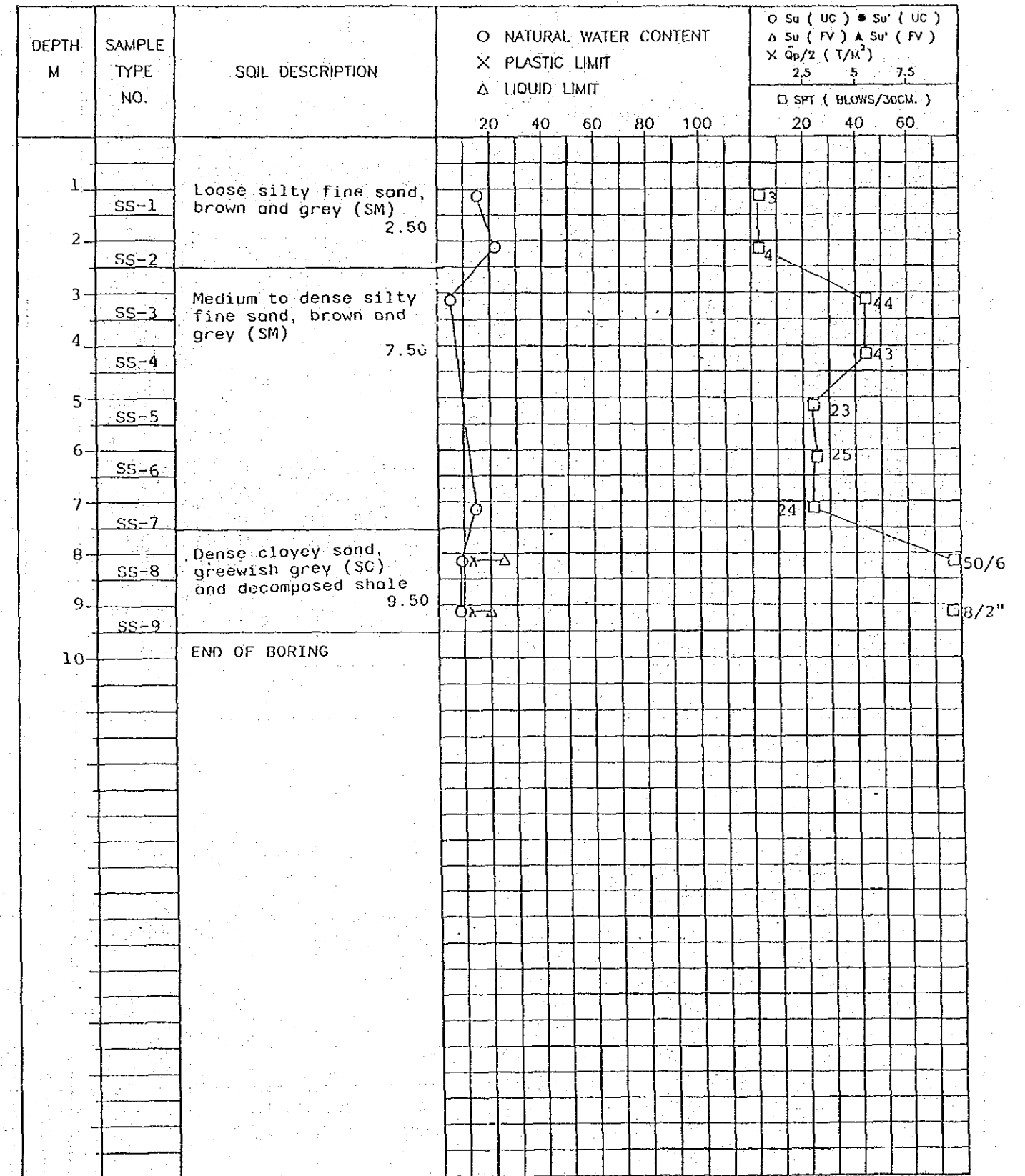
PROJECT	RDSR : NC - 1			LOCATION KHLONG WANG THONG	
BORING NO.	MB 90.09			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	27	12	1990		-0.30
COMPLETED	28	12	1990		

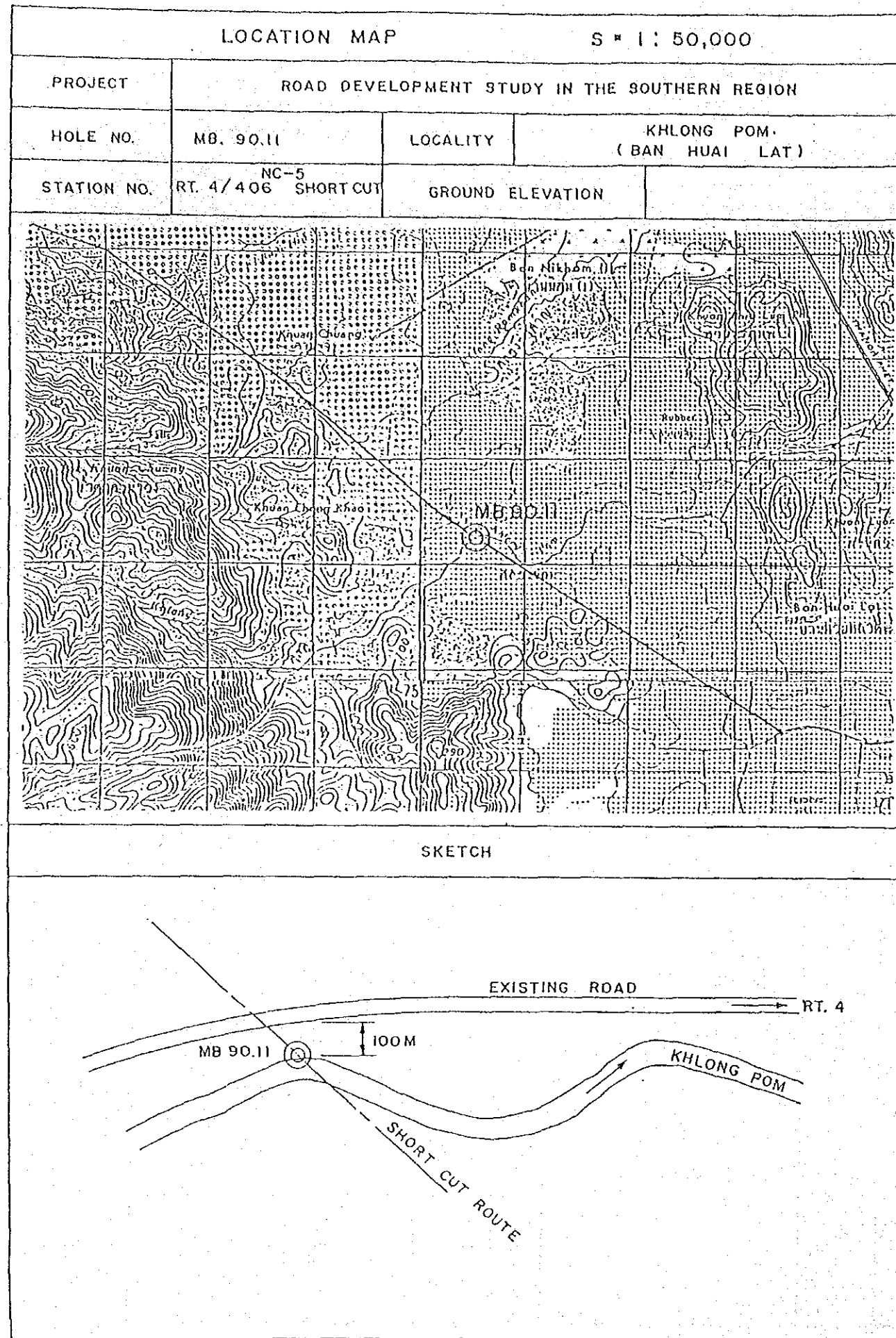
DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					X PLASTIC LIMIT			Δ LIQUID LIMIT			□ SPT (BLOWS/30CM.)				
			20	40	60	80	100	2.5	5	7.5	20	40	60					
1	SS-1	Top soil, loose silty clay and plant root																
2	SS-2	Stiff clay, brownish grey (CH)																
3	SS-3																	
4	SS-4		Very stiff silty clay brownish grey (CL)															
5	SS-5	Dense clayey sand, yellowish brown (SC)																
6	SS-6																	
7	SS-7	Hard silty clay, brownish yellow (CL)																
8	SS-8																	
9	SS-9	Dense decomposed shale																
10		END OF BORING																



SOIL DATA : BORING LOG

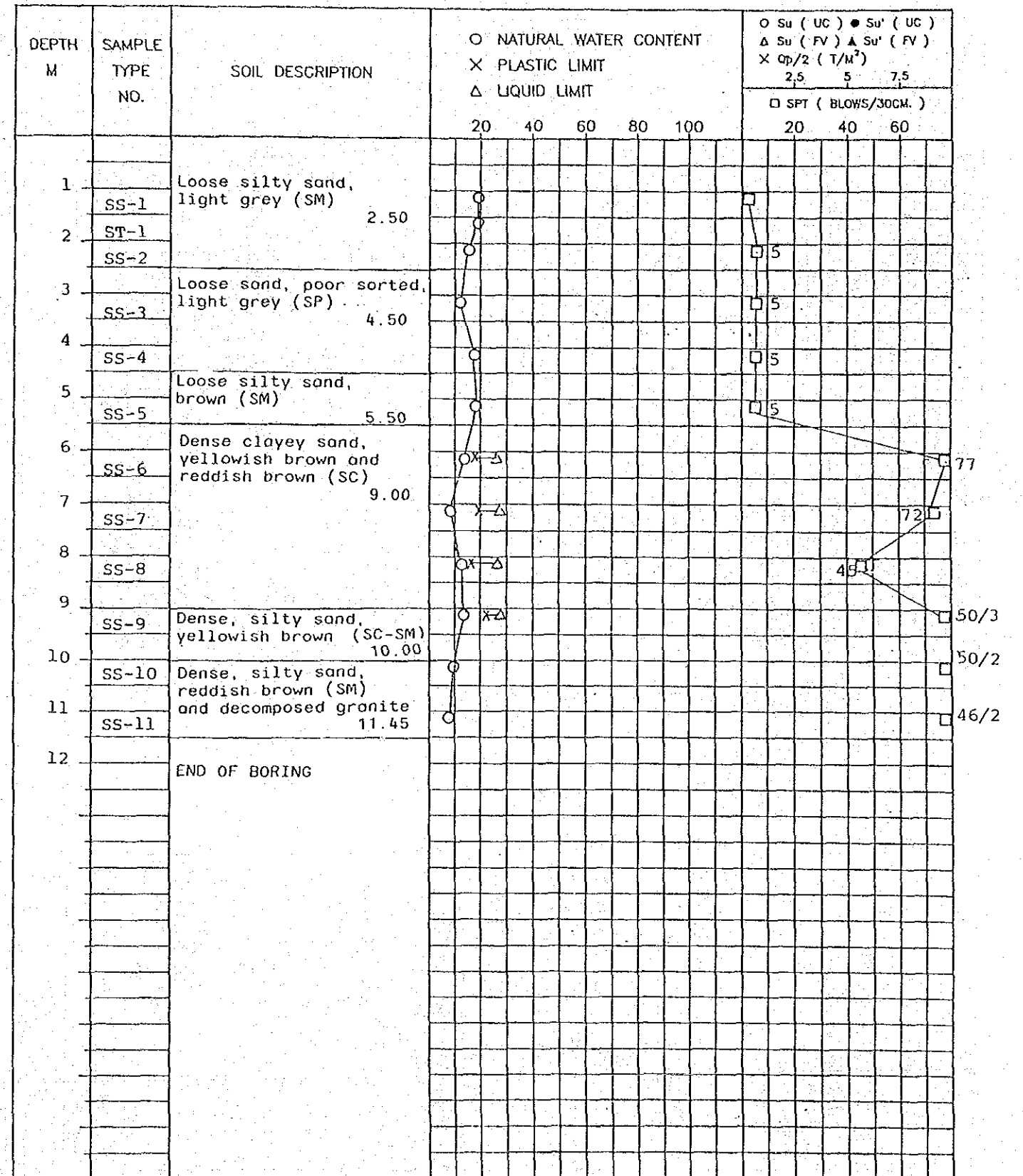
PROJECT	RDSR : NC - 3			LOCATION KHLONG HUAI SAI MAS	
BORING NO.	MB 90.10			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	11	12	1990		-1.65
COMPLETED	16	12	1990		

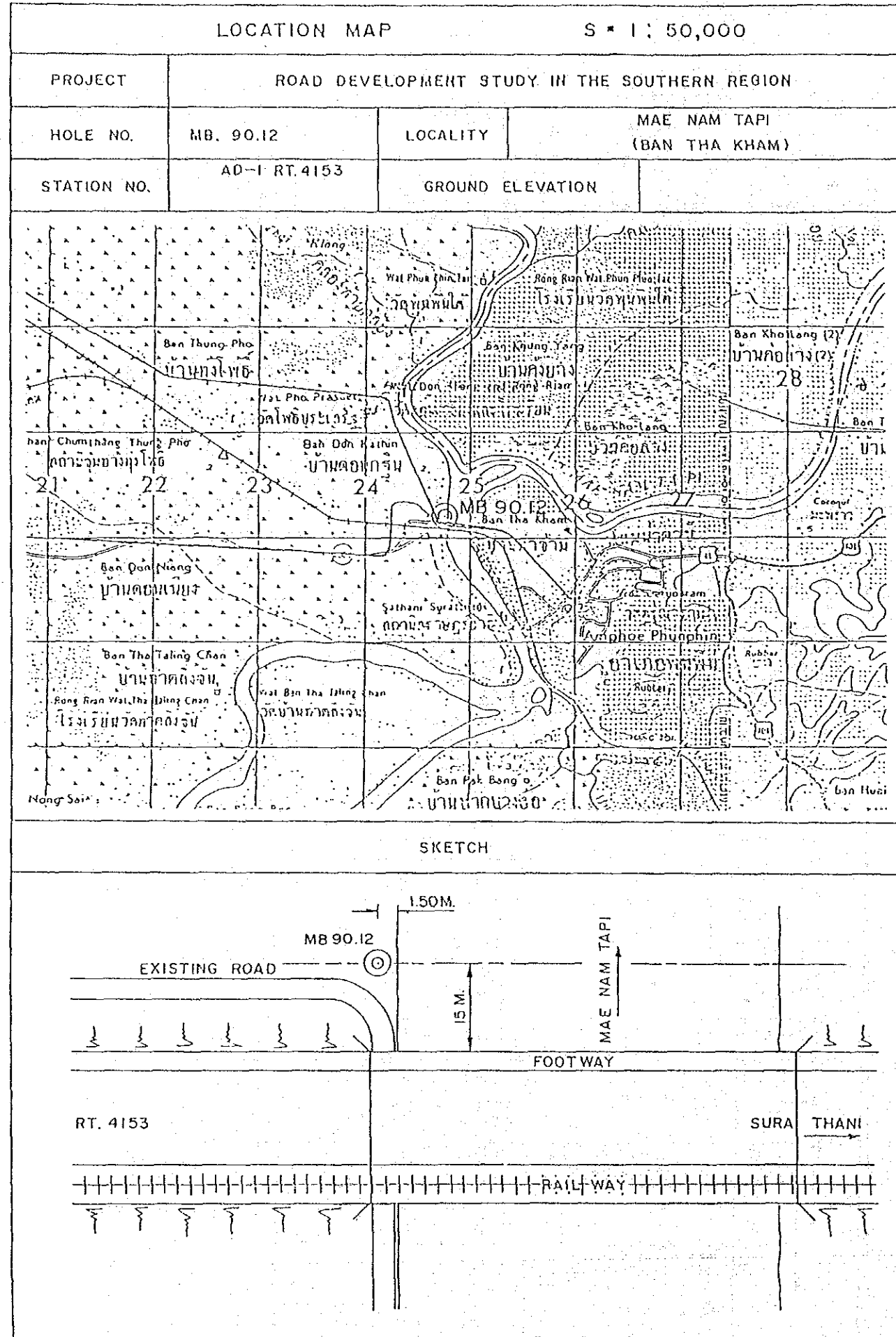




SOIL DATA : BORING LOG

PROJECT	RDSR : NC - 5			LOCATION KHLONG POM	
BORING NO.	MB 90.11			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	17	12	1990		-1.30
COMPLETED	18	12	1990		

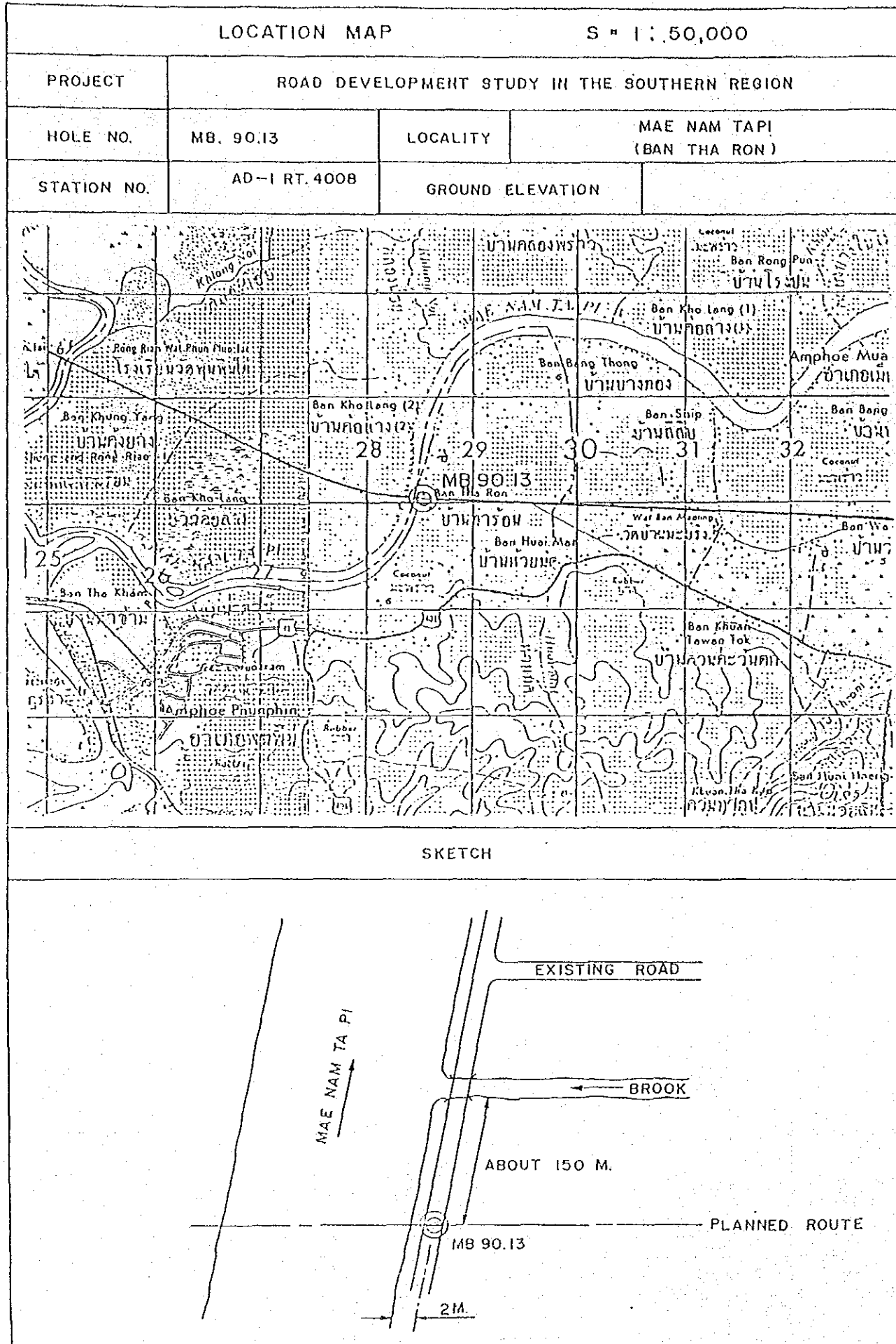




SOIL DATA : BORING LOG

PROJECT	RDSR : AD - 1			LOCATION MAE NAM TAPI	
BORING NO.	MB 90.12			GROUND LEVEL	GROUND WATER LEVEL
BORING DAY	MONTH	YEAR			
STARTED	18	12	1990		-1.40
COMPLETED	20	12	1990		

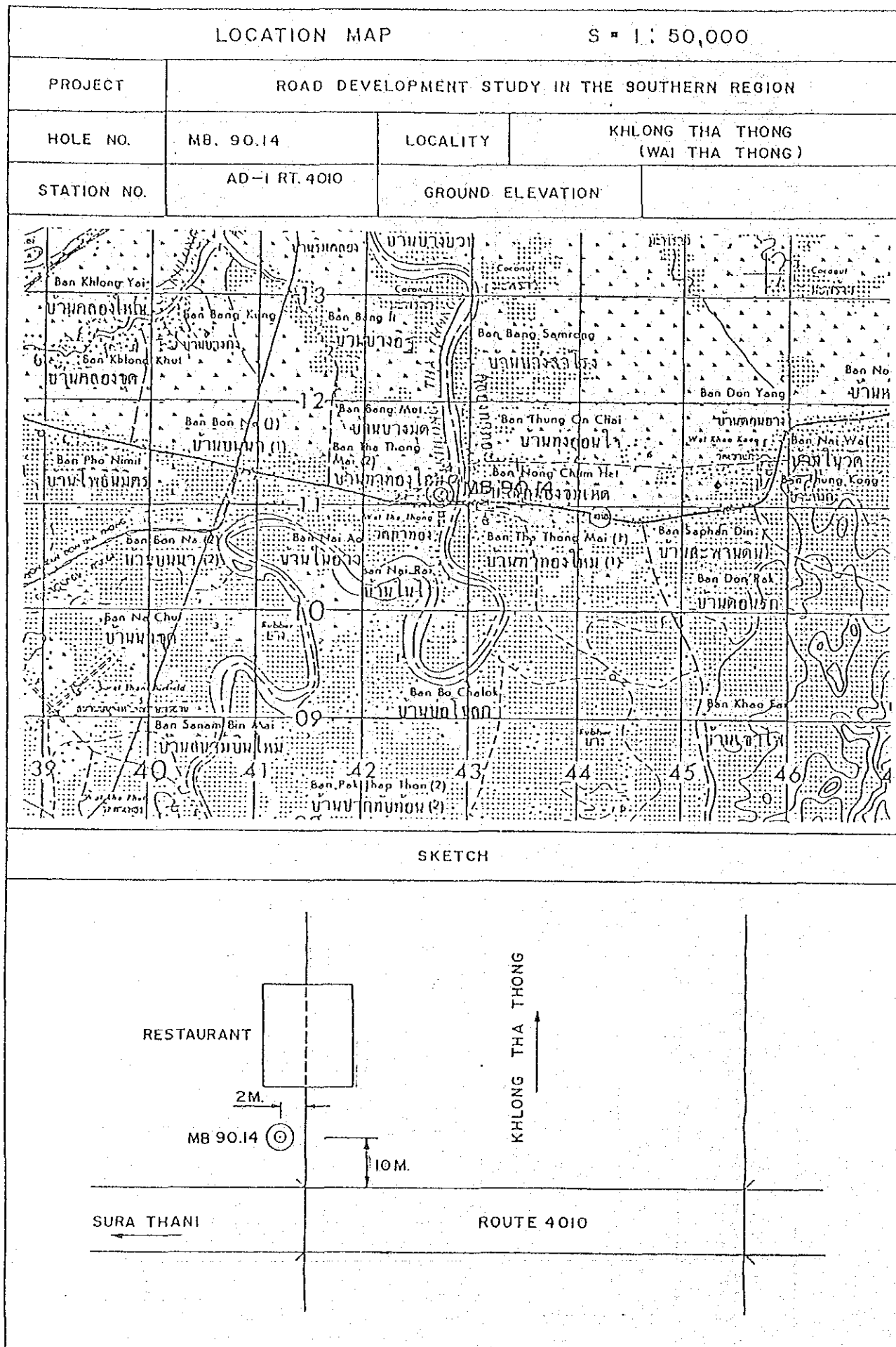
DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					O Su (UC) ● Su' (UC) Δ Su (FV) ▲ Su' (FV) × Op/2 (1/M ³)				
			20	40	60	80	100	2.5	5	7.5		
1	SS-1	Soft clay, brownish grey (CH) 4.00										
2	ST-1											
3	SS-2											
4	SS-3											
4	SS-4	Loose silty sand, dark grey (SM), trace of clay at depth 4.00, 8.00 and 13.00 m. 15.00										
5	SS-5											
6	SS-6											
7	SS-7											
8	SS-8											
9	SS-9											
10	SS-10											
11	ST-3											
12	SS-11											
13	SS-12											
13	ST-4											
14	SS-13											
14	SS-14											
15	SS-15	Medium silty clay, yellowish brown (CL) 18.50										
16	ST-5											
17	SS-16											
17	SS-17											
18	SS-18											
18	SS-19											
19	SS-20	Medium to hard silty clay, yellowish brown (CL) 19.50										
20	SS-21											
21	SS-22	Medium to hard silty clay, yellowish brown (CL) 24.50										
22	SS-23											
23	SS-24											
24	SS-25											
25	SS-26	END OF BORING										



SOIL DATA : BORING LOG

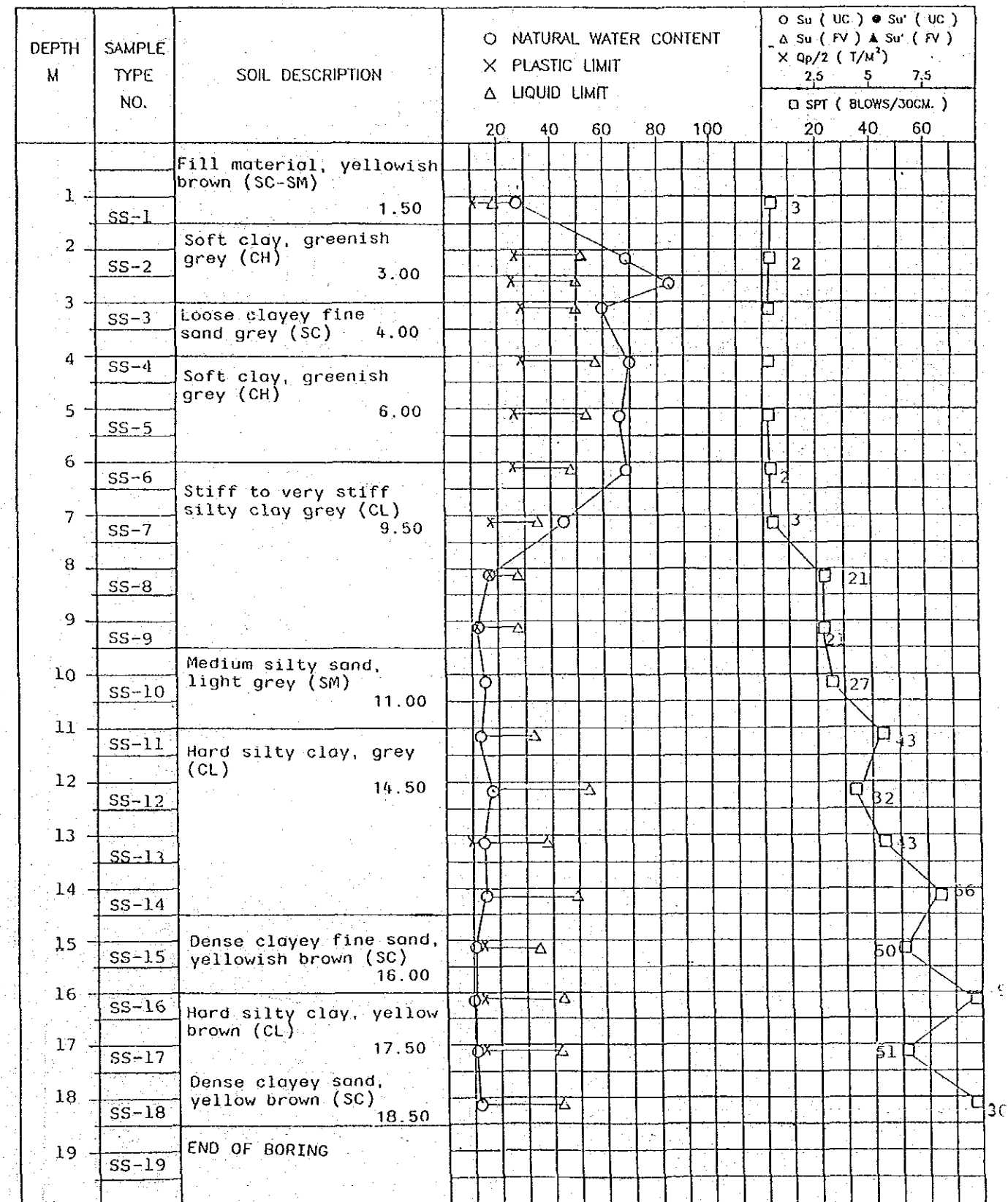
PROJECT	RDSR : AD - 1			LOCATION BAN THA RON	
BORING NO.	MB 90.13			GROUND LEVEL	GROUND WATER LEVEL
BORING DAY	MONTH	YEAR			
STARTED	21	12	1990		-1.25
COMPLETED	23	12	1990		

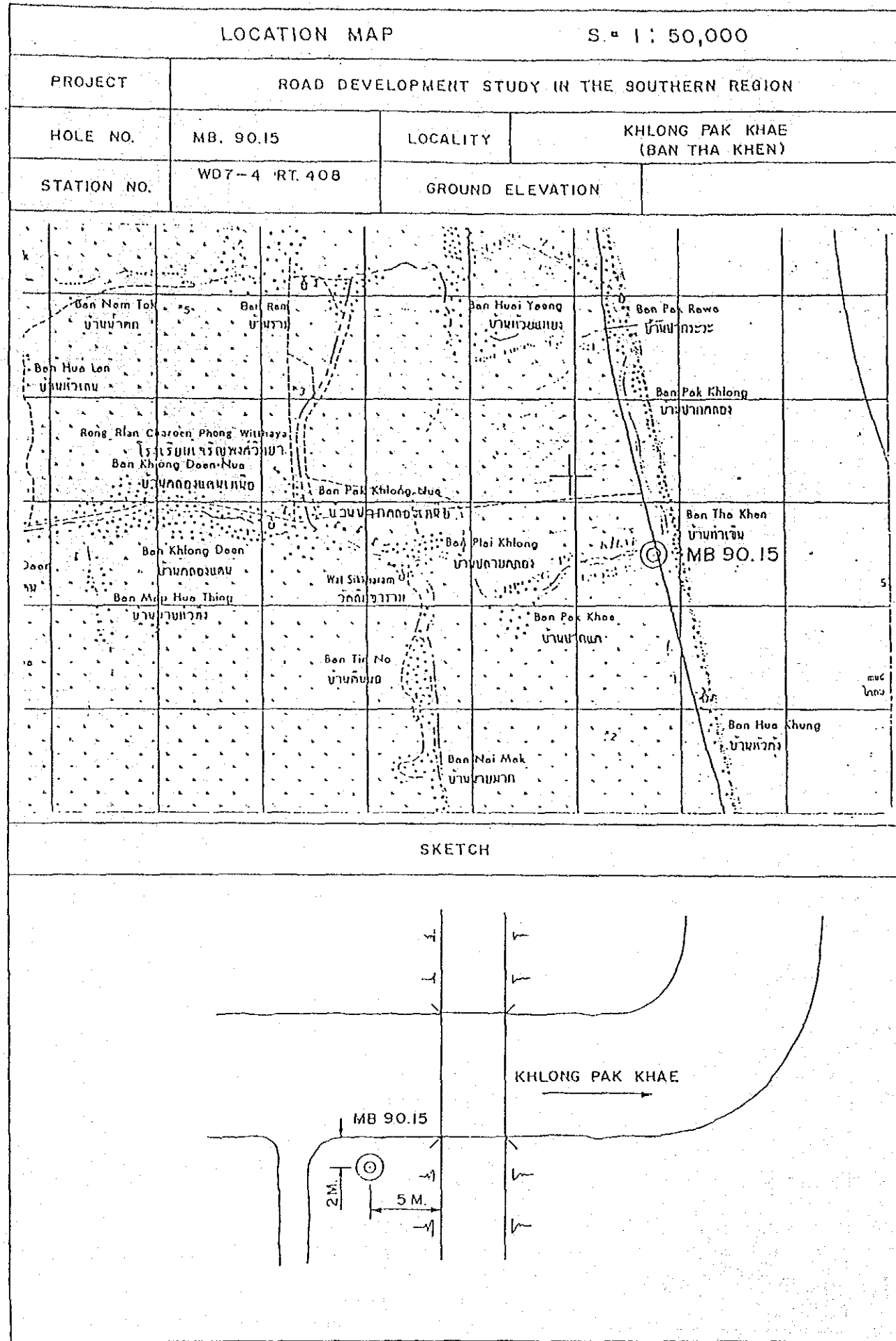
DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					O Su (UC) • Sv (UC)					
			X PLASTIC LIMIT					Δ Su (FV) Δ Sv (FV)					
			Δ LIQUID LIMIT					X Qp/2 (T/M ²)					
			20 40 60 80 100					2.5 5 7.5					
								□ SPT (BLOKS/30CM.)					
			20 40 60										
1	SS-1	Soft silty clay, dark grey (CL)											
	ST-1												
2	SS-2												
	ST-2												
3	SS-3												
4	SS-4												
5	SS-5												
6	SS-6												
7	SS-7												
8	SS-8	Soft silty clay, yellowish brown (CL-ML)											
9	SS-9												
10	SS-10	Medium silty clay, yellowish brown (CL)											
11	SS-11												
12	SS-12	Stiff to hard clay dark grey (CL)											
13	SS-13												
14	SS-14												
15	SS-15												
16	SS-16												
17	SS-17												
18	SS-18												
19	SS-19												
20	SS-20												
21	SS-21	Hard clay dark grey (CH)											
22	SS-22												
23	SS-23	Hard clay yellowish brown (CL)											
24	SS-24												
25	SS-25	Hard silty clay yellowish brown (CL-ML)											
		END OF BORING											



SOIL DATA : BORING LOG

PROJECT	RDSR : AD - 1			LOCATION THA THONG BRIDGE	
BORING NO.	MB 90.14			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	25	12	1990		-1.70
COMPLETED	26	12	1990		

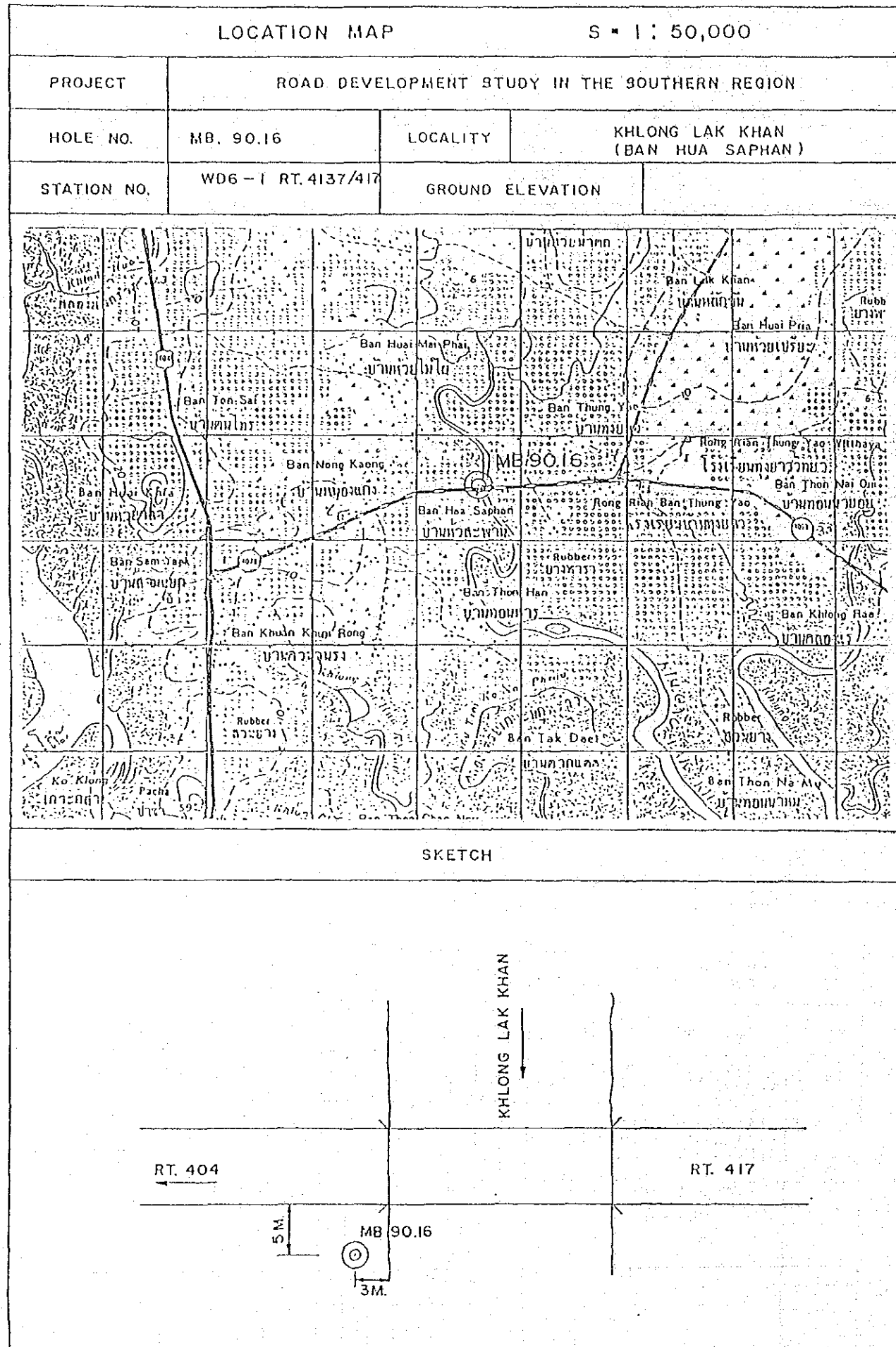




SOIL DATA : BORING LOG

PROJECT	BDSR : WD 7-4			LOCATION	RT. 408 74+500	
BORING NO.	MB 90.15			GROUND LEVEL	-0.58	
BORING	DAY	MONTH	YEAR			
STARTED	26	12	1990			
COMPLETED	29	12	1990			

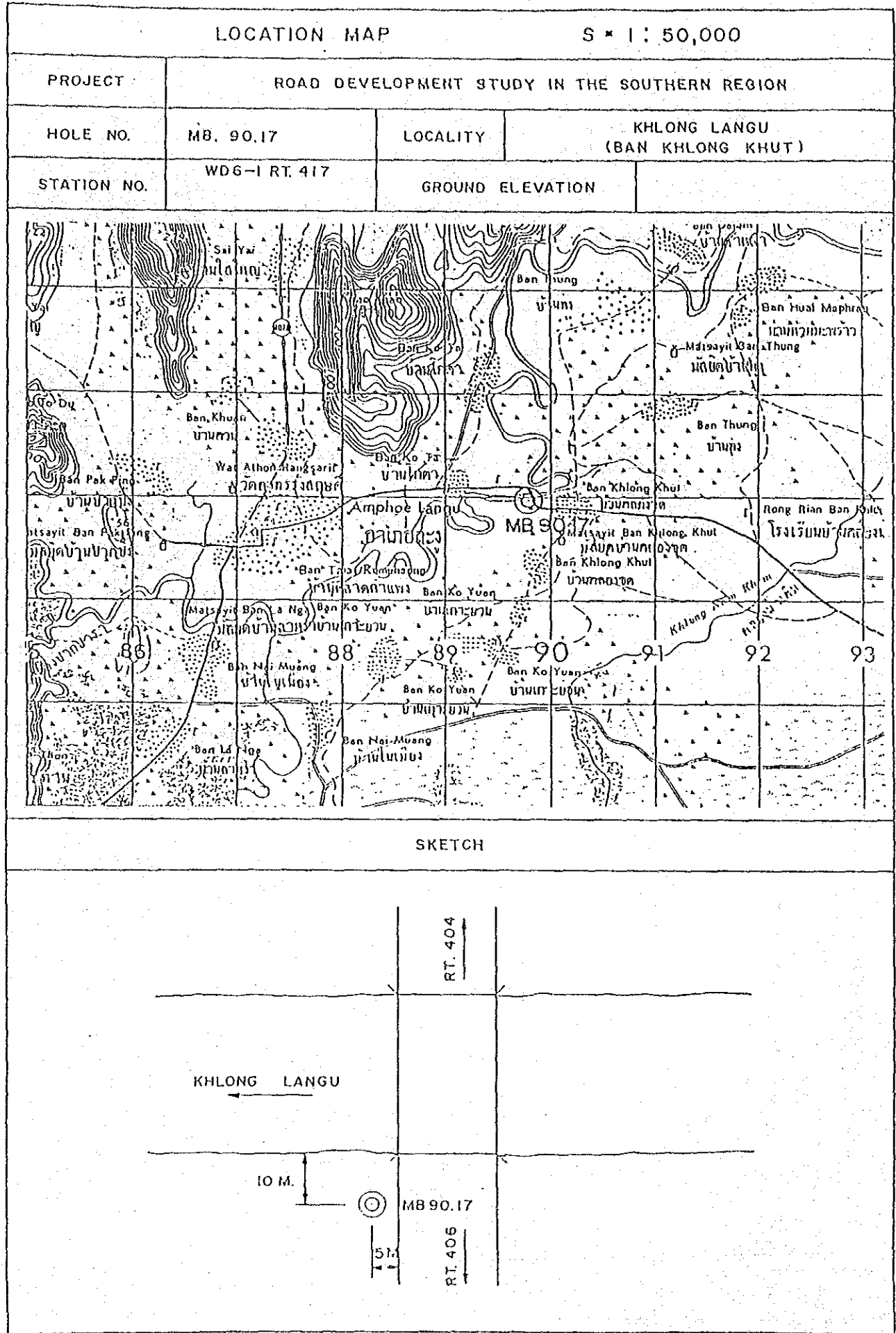
DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					O Su (UC) ● S _v (UC)						
			20	40	60	80	100	2.5	5	7.5				
1	SS-1	Soft grey, dark grey (CH) 3.00												
2	SS-2													
3	SS-3													
4	SS-4													
5	SS-5													
6	ST-1													
6	SS-6	Soft grey, dark grey (CH) 12.50												
7	SS-7													
8	SS-8													
9	SS-9													
10	SS-10													
11	SS-11													
12	ST-2													
12	SS-12													
13	SS-13	Soft clayey fine sand, grey (SC) 14.00												
14	SS-14													
15	SS-15													
15	SS-16	Soft clay, dark grey (CH) 17.00												
16	SS-16													
17	SS-17	Medium to hard clay, light brown (CL) 27.50												
18	SS-18													
19	SS-19													
20	SS-20													
21	SS-21													
22	SS-22													
23	SS-23													
24	SS-24													
25	SS-25													
26	SS-26													
27	SS-27													
28		END OF BORING												



SOIL DATA : BORING LOG

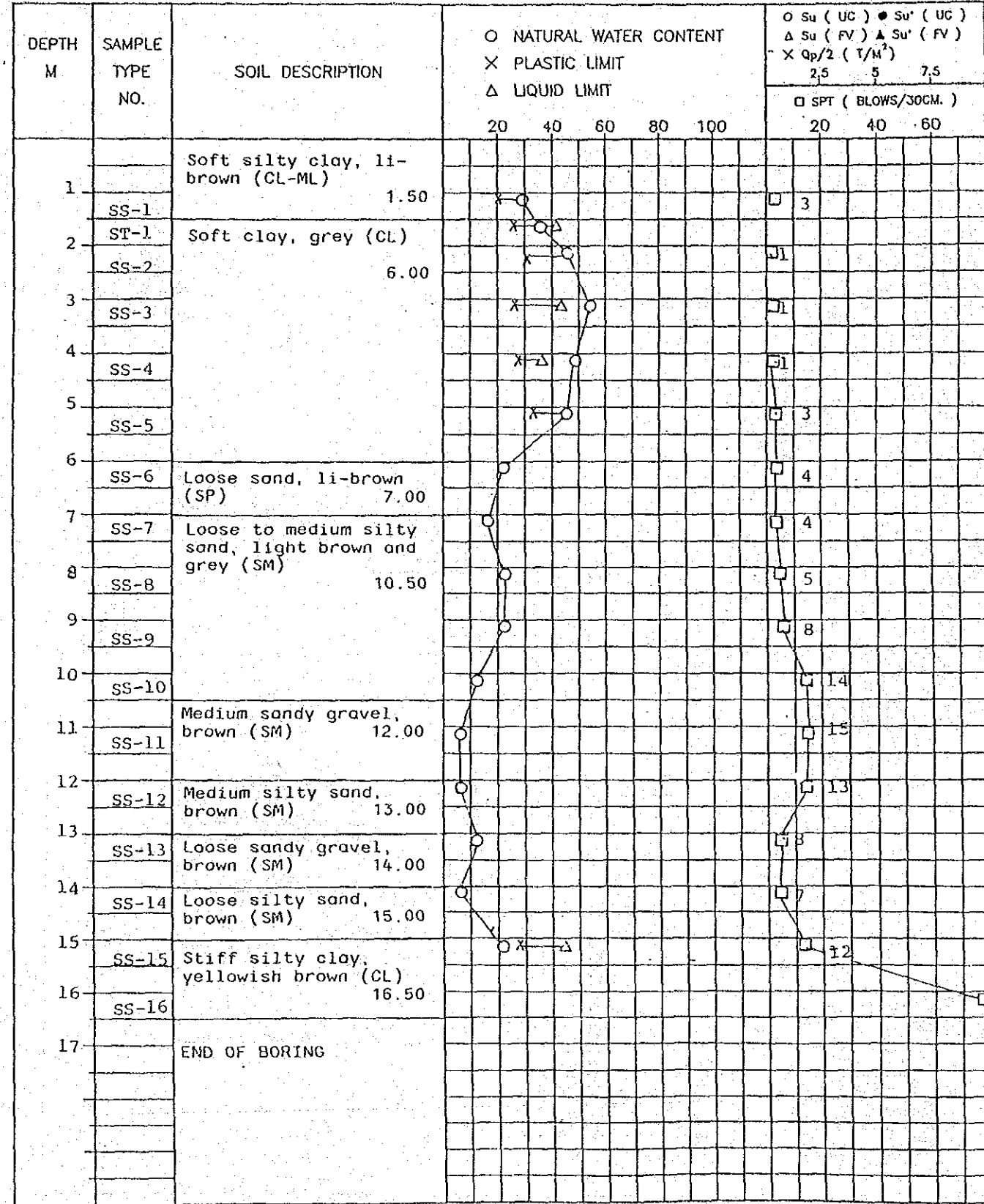
PROJECT	RDSR : WD 6-1			LOCATION AMPHOE PALIAN	
BORING NO.	MB 90.16			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	21	12	1990		-1.19
COMPLETED	22	12	1990		

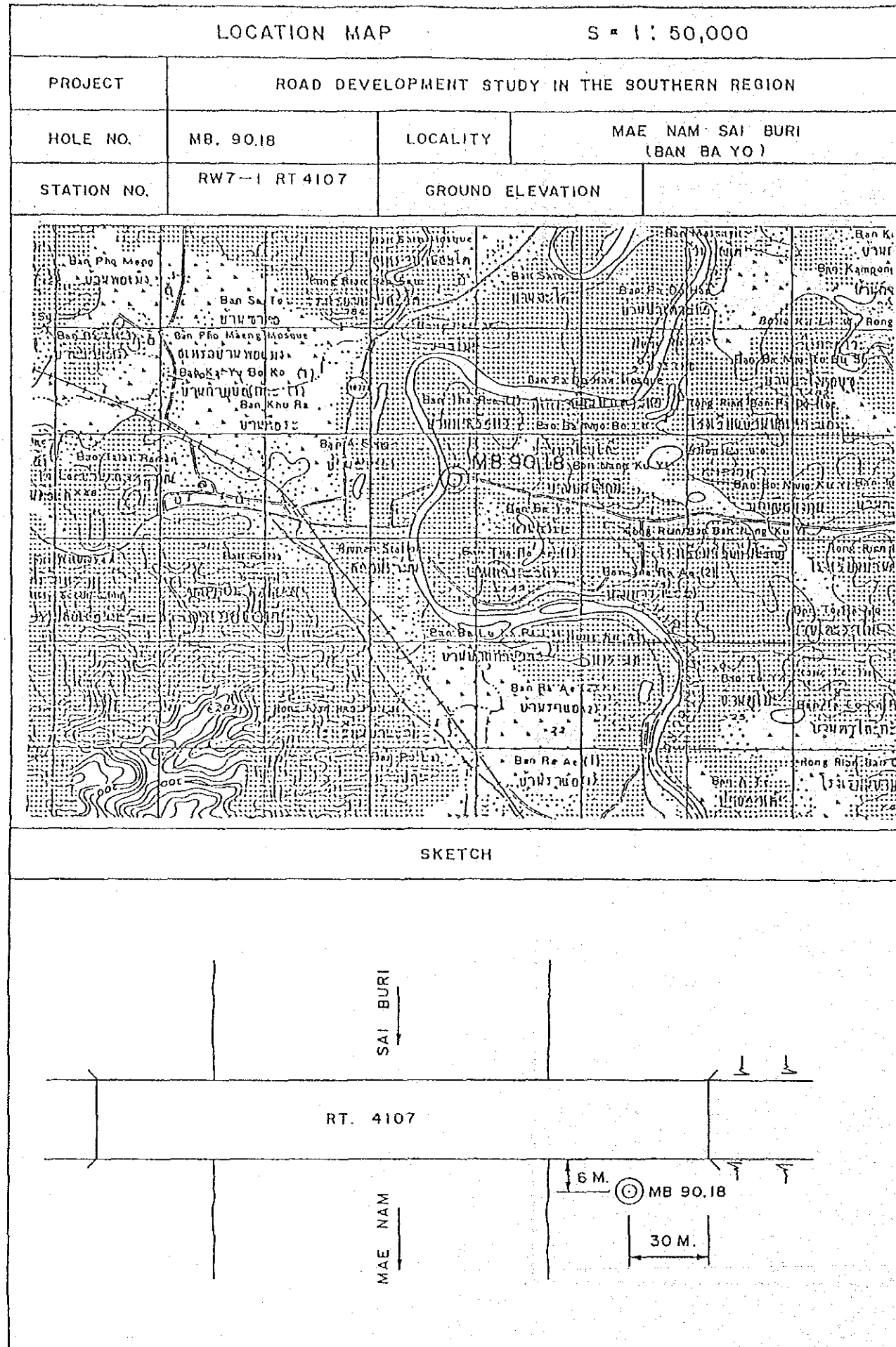
DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					X PLASTIC LIMIT			Δ LIQUID LIMIT			□ SPT (BLOWS/30CM.)				
			20	40	60	80	100	2.5	5	7.5	20	40	60					
1	SS-1	Loose clayey fine sand, dark grey (SC) 3.00																
2	SS-2																	
3	ST-1																	
3	SS-3	Very stiff silty clay greenish grey (CL) 4.00																17
4	SS-4	Medium, clayey fine sand brownish green (SC) 5.00																18
5	SS-5	Dense, decomposed rock 6.50																40/1
6	SS-6																	50/2
7		END OF BORING																



SOIL DATA : BORING LOG

PROJECT	RDSR : WD 6-1			LOCATION AMPHOE LAGOO	
BORING NO.	MB 90.17			GROUND LEVEL	GROUND WATER LEVEL
BORING	DAY	MONTH	YEAR		
STARTED	27	12	1990		-1.70
COMPLETED	28	12	1990		



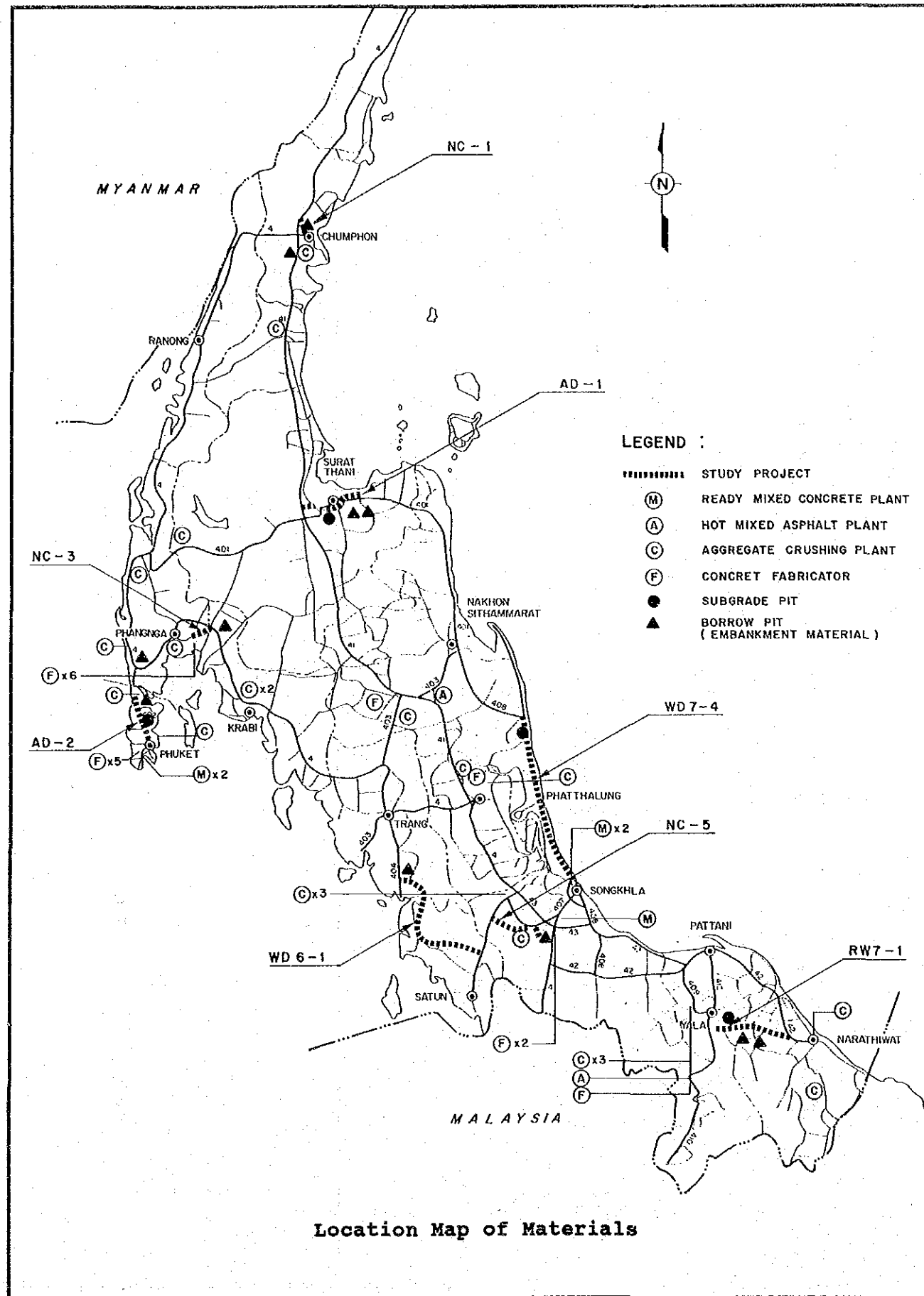


SOIL DATA : BORING LOG

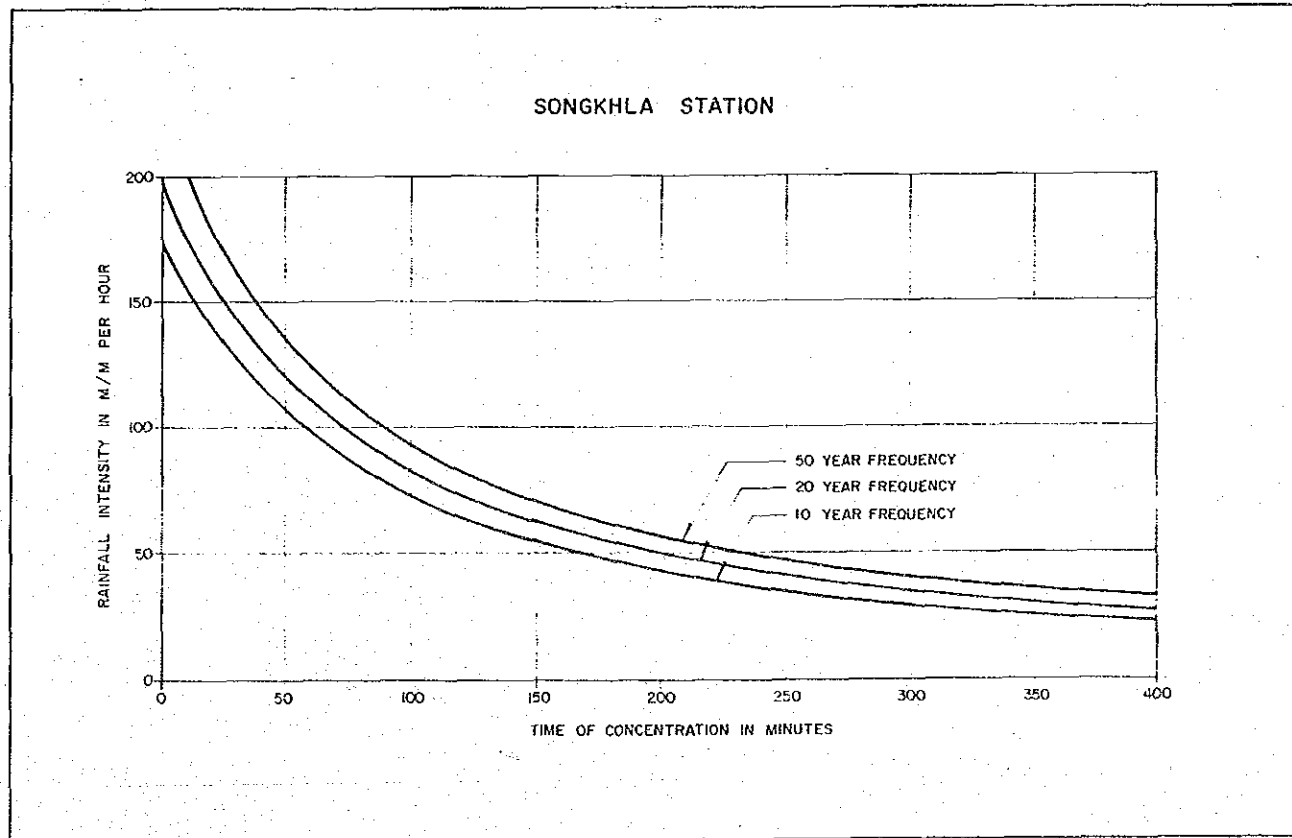
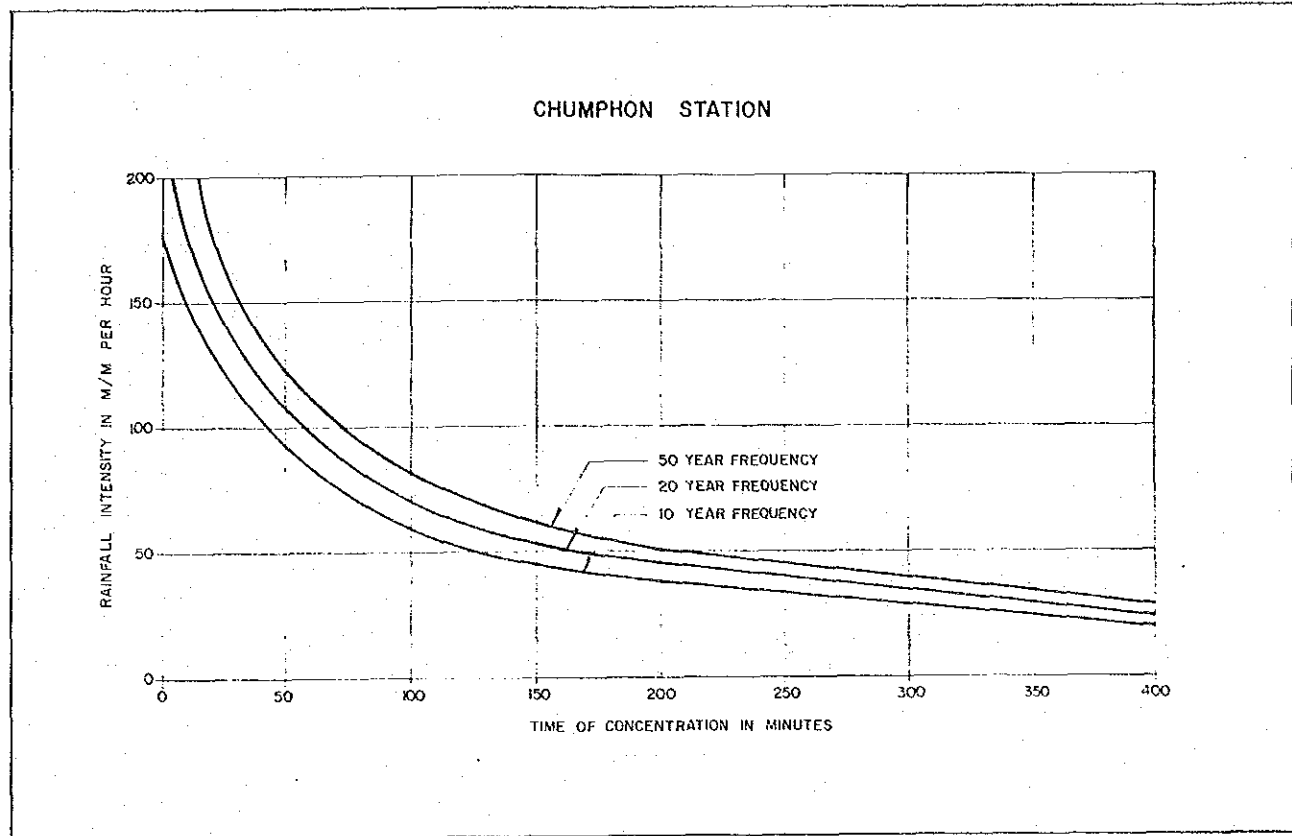
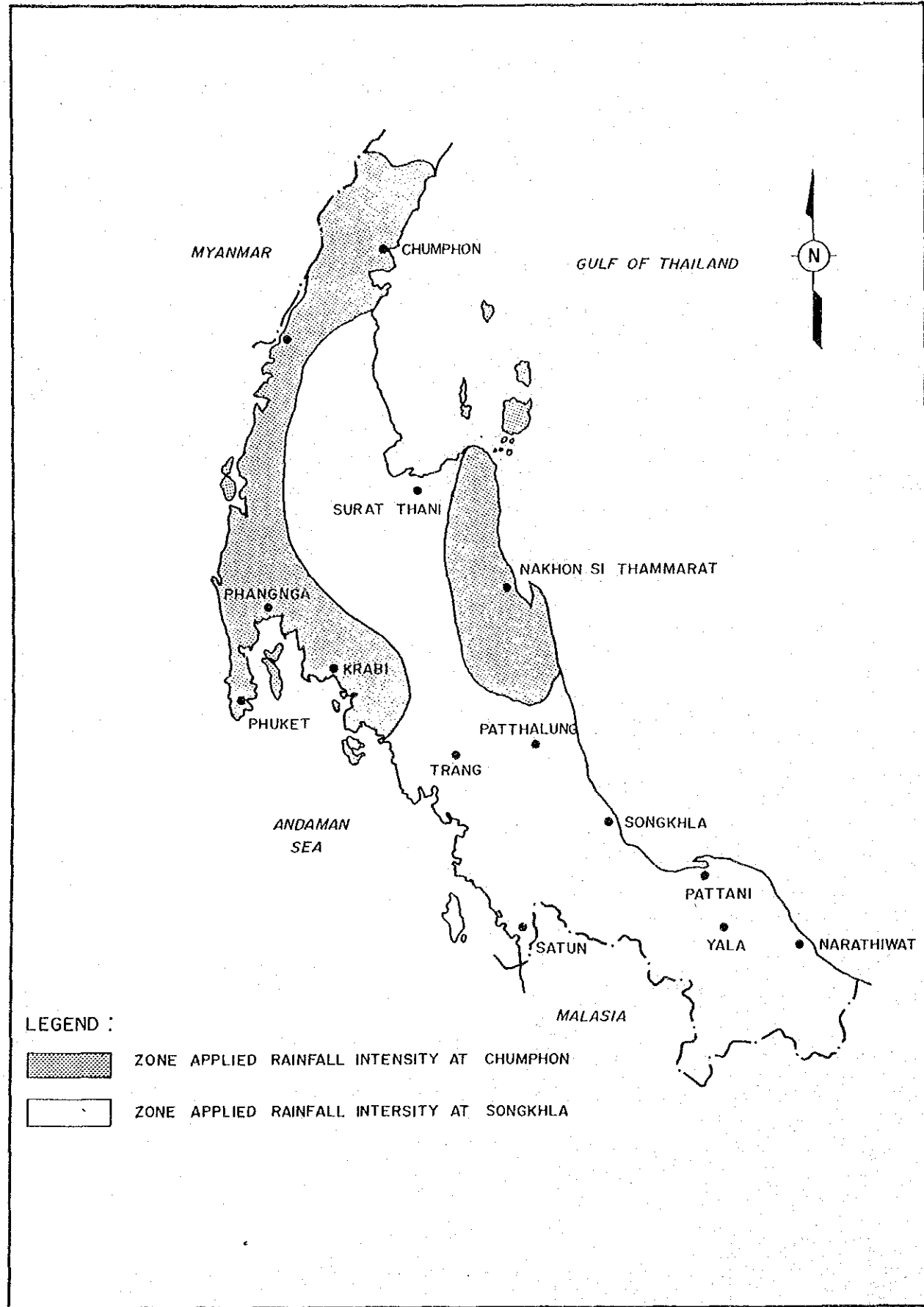
PROJECT	FDSR : RN 7-1			LOCATION RT. 4107 KM. 1-760	
BORING NO.	MB 90.18			GROUND LEVEL	GROUND WATER LEVEL
SCRINS	DAY	MONTH	YEAR		
STARTED	22	12	1990		-0.00
COMPLETED	24	12	1990		

DEPTH M	SAMPLE TYPE NO.	SOIL DESCRIPTION	O NATURAL WATER CONTENT					X PLASTIC LIMIT			Δ LIQUID LIMIT							
			20	40	60	80	100	2.5	5	7.5	20	40	60					
		Top soil, silty sand and root plant, brown																
1		1.00																
	SS-1	Medium clayey silt, brown (CL-ML)																
2		2.00																
	SS-2	Medium silty sand, brown (SM)																
3		3.00																
	SS-3	Medium sand, brown (SP)																
4		4.50																
	SS-4																	
5		7.00																
	SS-5	Medium silty sand, brown (SM)																
6																		
	SS-6																	
7																		
	SS-7	Medium sand, brown (SP)																
8		8.00																
	SS-8	Medium to dense silty sand, light brown (SM)																
9																		
	SS-9																	
10		14.50																
	SS-10																	
11																		
	SS-11																	
12																		
	SS-12																	
13																		
	SS-13																	
14																		
	SS-14																	
15																		
	SS-15	Dense sandy gravel, light brown (SP)																
16		16.00																
	SS-16	Medium sand, light brown (SP)																
17		19.00																
	SS-17																	
18																		
	SS-18																	
19																		
	SS-19	Dense sandy gravel, light brown (SP)																
20		20.00																
	SS-20	Dense silty sand, brown (SM)																
21		21.00																
	SS-21	Dense sand, light brown (SP)																
22		22.00																
	SS-22	Dense silty sand, brown (SM)																
23		23.00																
	SS-23	Dense sand, brown (SP)																
24		24.50																
	SS-24																	
25																		
	SS-25	Dense silty sand, brown (SM)																
26		27.50																
	SS-26																	
27																		
	SS-27																	
28																		
		END OF BORING																

A.5 Location Map of Materials



A.6 Discharge Calculation



JICA