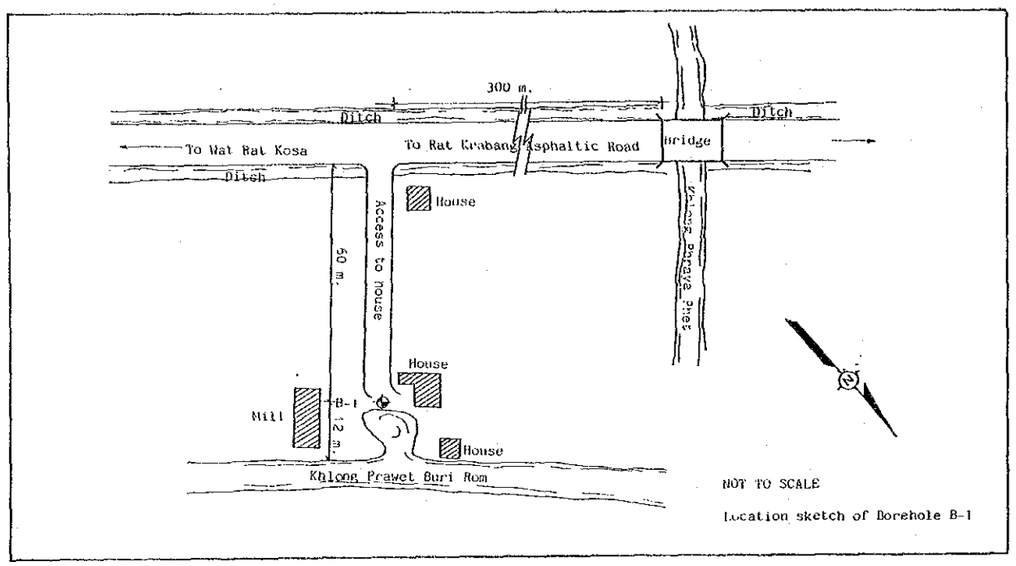
BOREHOLE LOCATION

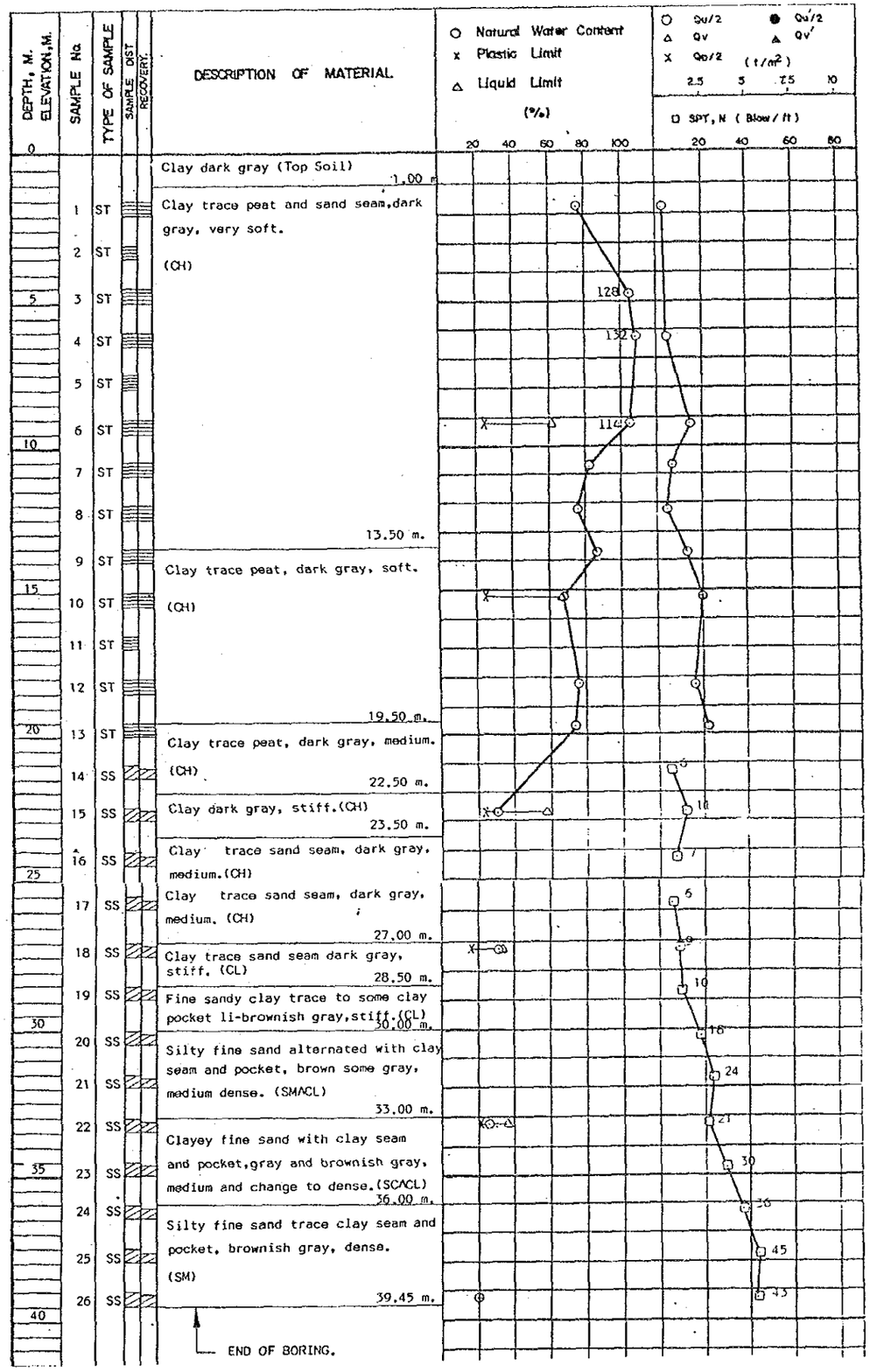


Location sketch of Borehole B-1

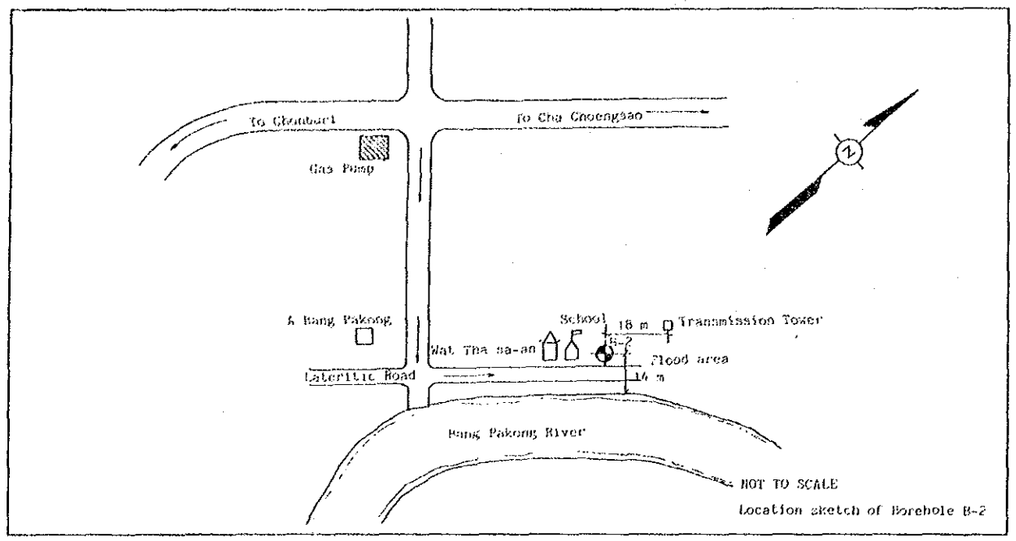
SUMMARY OF TEST RESULTS

SAMPLE No.	DEPTH M. FROM	DEPTH M. TO	WATER CONTENT %	ATTERBERG LIMIT % LL.	ATTERBERG LIMIT % PL.	ATTERBERG LIMIT % PI.	WET UNIT WEIGHT t/m³	SIEVE ANALYSIS % FINER No. 3/8"	No. 4	No. 10	No. 40	No. 100	CLASSIFICATION	UNDRAINED SHEAR STRENGTH t/m² UNCONFINED SHEAR Qu/2	UNDRAINED SHEAR STRENGTH t/m² UNCONFINED SHEAR Qu'/2	FIELD VANE SHEAR Qv	FIELD VANE SHEAR Qv'	POCKET PENETRATION Qp	STANDARD PENETRATION (N)
ST-1	1.50	2.00	76.1				1.49						CH	1.3				1.2	
ST-2	3.00	3.50		-No	Recovery-								(CH)					-	
ST-3	4.50	5.00	128.1				1.38						CH					1.2	
ST-4	6.00	6.50	132.3				1.37						CH	0.8				1.2	
ST-5	7.50	8.00		-No	Recovery-								(CH)					-	
ST-6	9.00	9.50	114.1	60.5	24.9	35.6	1.42						CH	1.8				1.2	
ST-7	10.50	11.00	81.7				1.51						CH	1.0				1.2	
ST-8	12.00	12.50	77.6				1.53						CH	0.9				1.2	
ST-9	13.50	14.00	86.7				1.40						CH	1.6				2.5	
ST-10	15.00	15.50	67.9	67.1	26.4	40.7	1.58						CH	2.5				2.5	
ST-11	16.50	17.00		-No	Recovery-								(CH)					-	
ST-12	18.00	18.50	77.2				1.54						CH	2.1				2.5	
ST-13	19.50	20.00	73.9				1.63						CH	2.7				3.7	
SS-14	21.00	21.45											CH					3.7	6
SS-15	22.50	22.95	29.6	58.4	23.7	34.7	1.99			100	99	91	CH	4.5				8.7	11
SS-16	24.00	24.45											CH					3.7	7
SS-17	25.50	25.95											CH					2.5	6
SS-18	27.00	27.45	31.7	33.2	15.5	17.7	1.92			100	99	92	CL	3.6				2.5	9
SS-19	28.50	28.95											CL					2.5	10
SS-20	30.00	30.45											SM/CH					-	19
SS-21	31.50	31.95											SM/CH					-	24
SS-22	33.00	33.45	24.0	34.6	20.8	13.8		100	98	97	97	25	SC/CL						21
SS-23	34.50	34.95											SC/CL						30
SS-24	36.00	36.45											SM						36
SS-25	37.50	37.95											SM						45
SS-26	39.00	39.45	20.7		-NP-					100	96	28	SM						43

BORING LOG



BOREHOLE LOCATION

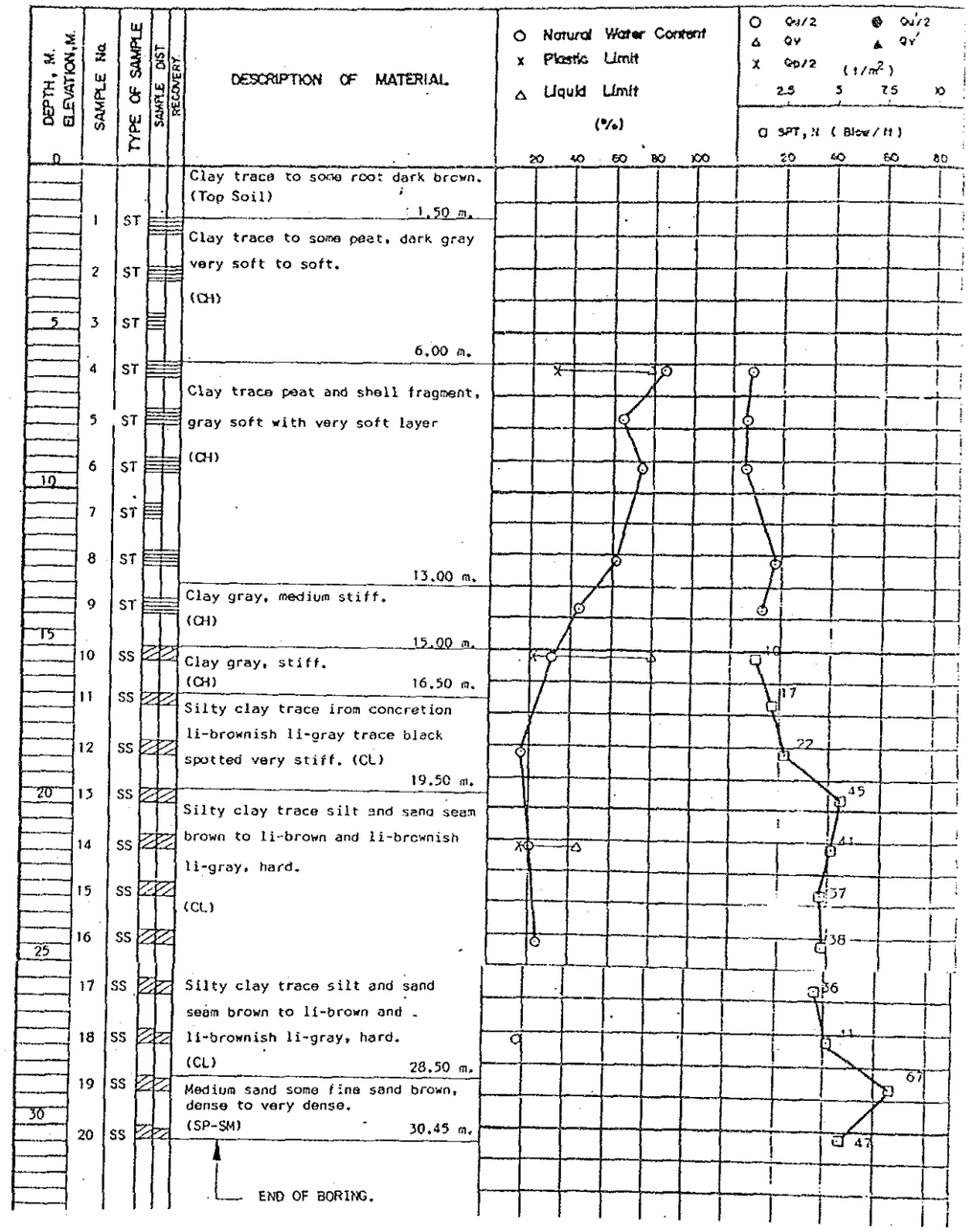


Location sketch of Borehole B-2

SUMMARY OF TEST RESULTS

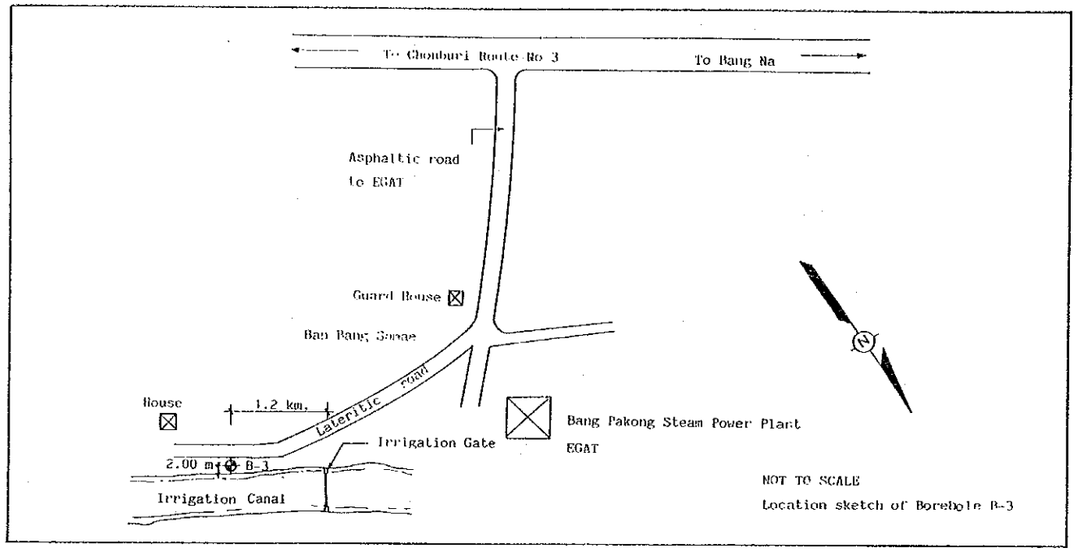
SAMPLE No.	DEPTH m. FROM	DEPTH m. TO	WATER CONTENT %	ATTERBERG LIMIT % LL.	PL.	PI.	WET UNIT WEIGHT t/m³	SIEVE ANALYSIS % FINER No 3/8"	No 4	No 10	No 40	No 200	CLASSIFICATION	UNDRAINED SHEAR STRENGTH t/m.² UNCONFINED SHEAR Qu/2	Qu/2	FIELD VANE SHEAR Qv	Qv'	POCKET PENETRATION Qp/2	STANDARD PENETRATION (N)
ST-1	1.50	2.00											CH					1.2	
ST-2	3.00	3.50											CH					2.5	
ST-3	4.50	5.00		-No	Recov	ery-							(CH)					-	
ST-4	6.00	6.50	85.0	78.0	32.1	46.7	1.46			100	99	96	CH	1.1				2.5	
ST-5	7.50	8.00	64.4				1.70						CH	1.0				2.5	
ST-6	9.00	9.50	73.0				1.50						CH	1.0				1.2	
ST-7	10.50	11.00											CH					-	
ST-8	12.00	12.50	60.7				1.65						CH	2.1				2.5	
ST-9	13.50	14.00	44.6				1.77						CH	1.4				12.5	
SS-10	15.00	15.45	29.7	79.5	21.9	57.6	1.86			100	99	93	CH	9.9				10.0	10
SS-11	16.50	16.95											CL					12.5	17
SS-12	18.00	18.45	15.8				2.20						CL	15.4				16.2	22
SS-13	19.50	19.95											CL					20.0	45
SS-14	21.00	21.45	19.6	44.8	15.2	29.6	2.06		100	99	98	85	CL	22.2				20.0	41
SS-15	22.50	22.95											CL					20.0	37
SS-16	24.00	24.45	22.9				2.04						CL	19.9				16.2	38
SS-17	25.50	25.95											CL					15.0	36
SS-18	27.00	27.45	10.0				2.17						CL	20.1				20.0	41
SS-19	28.50	28.95							100	95	32	7	SM-S					-	67
SS-20	30.00	30.45											SM-S					-	47

BORING LOG



(2) Boring Results

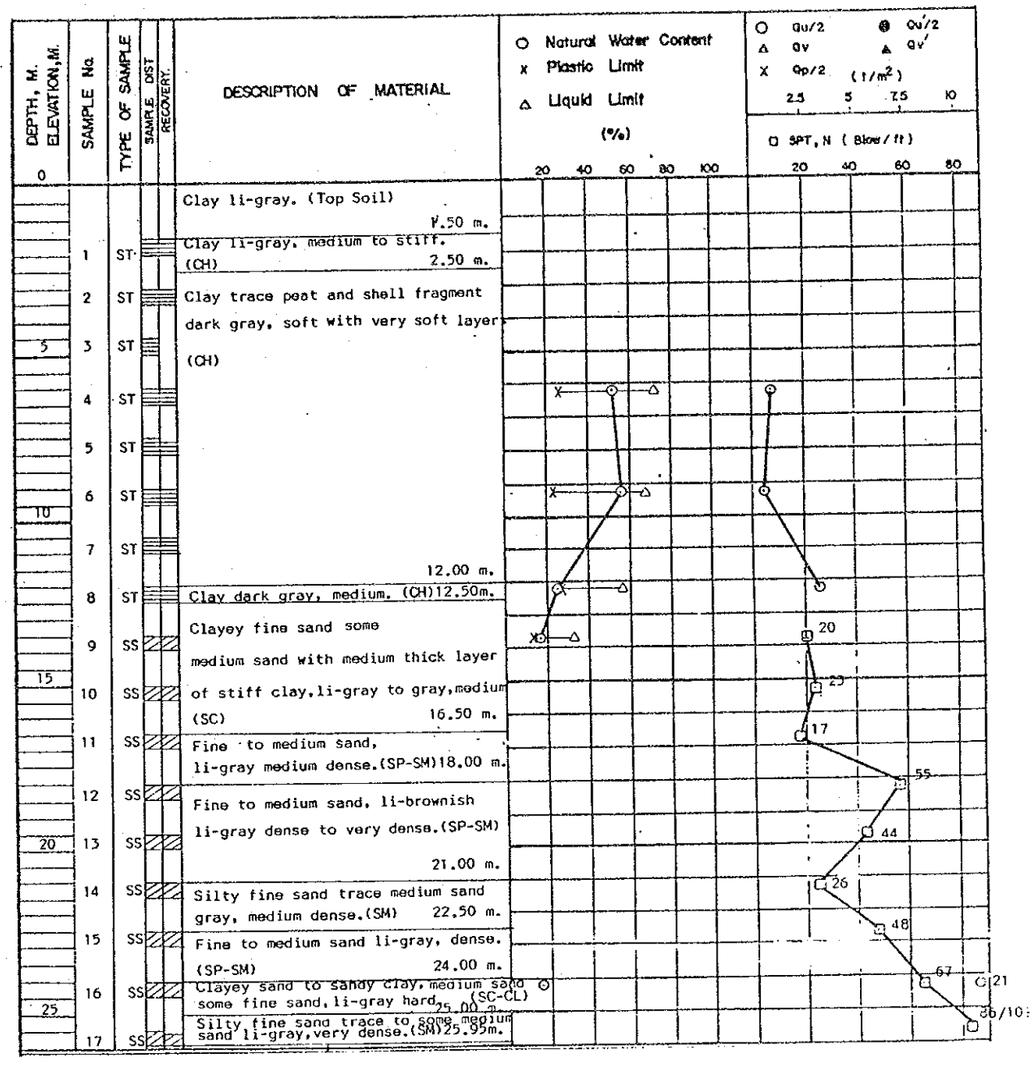
BOREHOLE LOCATION



SUMMARY OF TEST RESULTS

SAMPLE No.	DEPTH M. FROM	DEPTH M. TO	WATER CONTENT %	ATTERBERG LIMIT % LL.	ATTERBERG LIMIT % PL.	ATTERBERG LIMIT % PI.	WET UNIT WEIGHT t/m³	SIEVE ANALYSIS % FINER No. 3/8"	No. 4	No. 10	No. 40	No. 200	CLASSIFICATION	UNDRAINED SHEAR STRENGTH t/m.² UNCONFINED SHEAR Qu/2	Qu'/2	FIELD VANE SHEAR Qv	Qv'	POCKET PENETRATION Qp	STANDARD PENETRATION (N)
ST-1	1.50	2.00											CH					8.7	
ST-2	3.00	3.50											CH					2.5	
ST-3	4.50	5.00											CH					-	
ST-4	6.00	6.50	51.8	71.0	28.2	42.8	1.75			100	99	95	CH	1.0				2.5	
ST-5	7.00	8.00											CH					1.2	
ST-6	9.00	9.50	54.7	68.4	23.9	44.5	1.67			100	99	93	CH	0.9				1.2	
ST-7	10.50	11.00											CH					2.5	
ST-8	12.00	12.50	24.4	56.6	24.5	32.1	2.03			100	99	95	CH	3.1				5.0	
SS-9	13.50	13.95	16.4	32.7	14.2	18.5	2.05		100	99	64	25	CH	13.6				17.5	20
SS-10	15.00	15.45											SC						25
SS-11	16.50	16.95							100	97	52	12	SP-SM						17
SS-12	18.00	18.45											SP-SM						55
SS-13	19.50	19.95						100	99	92	41	10	SP-SM						44
SS-14	21.00	21.45											SM						26
SS-15	22.50	22.95											SP-SM						48
SS-16	24.00	24.45	15.4	42.4	18.9	23.5	2.13		100	95	71	52	SC-CL	21.(				20.0	67
SS-17	25.50	25.95											SM						86/10

BORING LOG



3.2 Preliminary Design

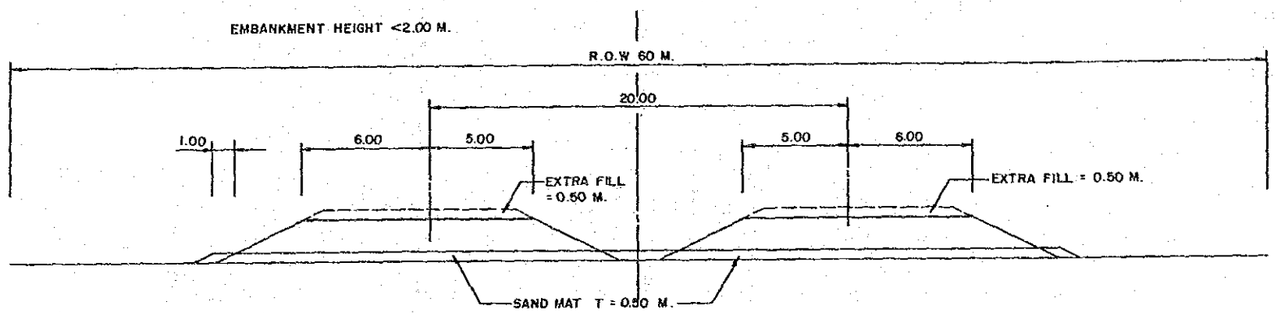
(1) Geometric Design Criteria

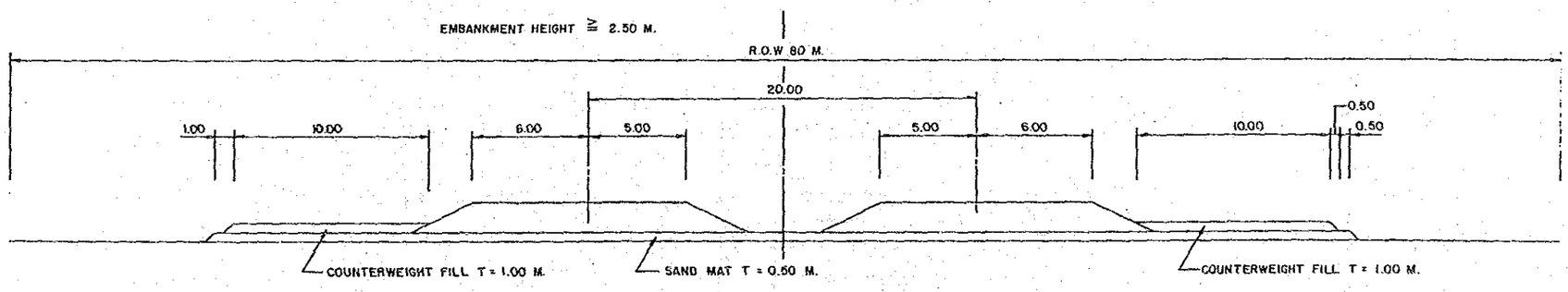
Design Standard : PD

Design Speed : 100 km/h

Geometric Design Criteria

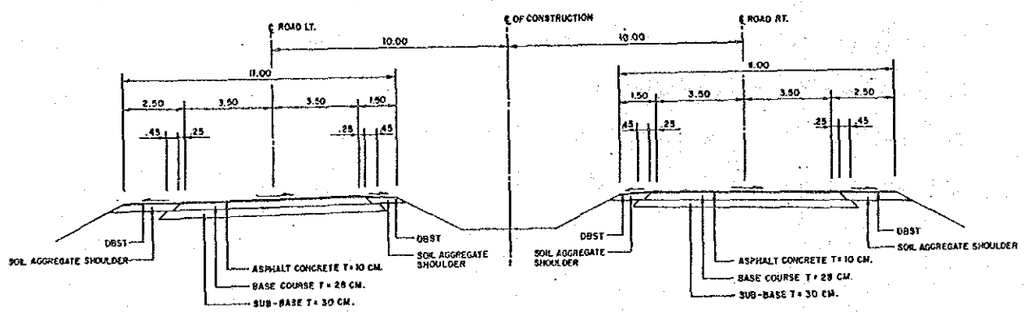
Description	Design Speed (km/h)	
	100	(120)
Minimum Radius & Curvature (m)	360	710
Minimum Stopping Sight Distance (m)	160	210
Maximum Gradient (%)	6	5





(2) Pavement Design

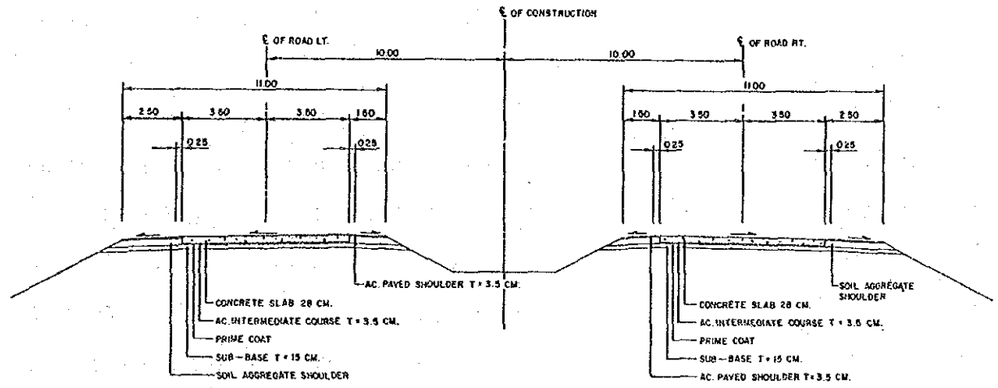
Design CBR of Subgrade	Cumulative No. of ESA W18 x 10 (10 years)	Thickness of Pavement Structure (cm)	
4.23	20,659	Surface	10
		Base	25
		Subbase	30



STA 0+774.552 TO STA 25+000

FIGURE TYPICAL PAVEMENT STRUCTURE FOR FLEXIBLE PAVEMENT ML-9.1
NEW CONSTRUCTION OF ASPHALT CONCRETE PAVEMENT

Design CBR of Subgrade	Cumulative No. of ESA W18 x 10 (10 years)	Thickness of Pavement Structure (cm)	
4.23	51,901	**Intermediate**	AC
		Concrete Slab	3.5
		Subbase	15



STA 66+950 TO 82+523.969

FIGURE TYPICAL PAVEMENT STRUCTURE FOR RIGID PAVEMENT ML-9.3
NEW CONSTRUCTION OF CONCRETE PAVEMENT

(3) Culverts

NO.	CHAINAGE	EXISTING CULVERT	NEW CULVERT	
			LT ROADWAY	RT ROADWAY
1	7+504	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
2	7+655	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
3	7+714	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
4	7+720	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
5	7+817	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
6	10+600	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
7	14+075	-	-	-
8	15+095	-	2-Dia 1.00x19.00	2-Dia 1.00x19.00
9	16+200	-	-	-
10	16+350	-	-	-
11	18+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
12	18+800	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
13	19+900	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
14	23+100	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
15	23+700	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
16	26+500	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
17	27+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
18	28+800	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
19	30+150	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
20	31+100	-	-	-
21	31+700	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
22	32+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
23	36+500	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
24	38+150	-	-	-
25	40+200	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
26	40+700	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
27	43+100	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
28	44+200	-	-	-
29	46+600	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
30	47+100	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
31	50+150	-	-	-
32	51+100	-	-	-
33	51+350	-	-	-
34	51+410	-	-	-
35	51+600	-	-	-
36	52+500	-	-	-
37	52+620	-	-	-
38	52+850	-	-	-
39	53+000	-	-	-
40	53+130	-	-	-
41	53+450	-	-	-
42	57+650	-	-	-

NO.	CHAINAGE	EXISTING CULVERT	NEW CULVERT	
			LT ROADWAY	RT ROADWAY
43	59+600	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
44	61+800	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
45	62+500	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
46	63+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
47	64+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
48	65+200	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
49	66+100	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
50	67+500	-	1-Dia 1.00x26.00	1-Dia 1.00x26.00
51	68+200	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
52	68+800	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
53	69+500	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
54	69+900	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
55	70+600	-	-	-
56	71+100	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
57	71+900	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
58	72+300	-	1-Dia 1.00x16.00	1-Dia 1.00x16.00
59	73+800	-	2-Dia 1.00x16.00	2-Dia 1.00x16.00
60	74+900	-	-	-
61	75+350	-	-	-
62	75+900	-	-	-
63	76+800	-	2-Dia 1.00x16.00	2-Dia 1.00x16.00
64	77+300	-	-	-
65	78+000	-	2-Dia 1.00x16.00	2-Dia 1.00x16.00
66	78+900	-	2-Dia 1.00x16.00	2-Dia 1.00x16.00
67	79+800	-	-	-
68	80+800	-	-	-
69	81+300	-	2-Dia 1.00x16.00	2-Dia 1.00x16.00
70	81+900	-	-	-

(4) Bridges

NO	CHAINAGE	PROPOSED BRIDGE		TYPE	REMARK
		LT ROADWAY	RT ROADWAY		
1	1+116	11x12	11x12	SLAB TYPE	
2	2+626	11x10	11x10	SLAB TYPE	
3	3+325	11x12	11x12	SLAB TYPE	
4	4+356	11x12	11x12	SLAB TYPE	
5	5+768	11x10	11x10	SLAB TYPE	
6	6+606	11x26	11x26	SLAB TYPE	
7	8+013	11x13	11x13	SLAB TYPE	
8	9+710	11x21	11x21	SLAB TYPE	
9	11+353	11x18	11x18	SLAB TYPE	
10	12+166	11x22	11x22	PC GIRDER	CROSS R. 3119
11	12+985	11x12	11x12	SLAB TYPE	
12	14+634	11x12	11x12	SLAB TYPE	
13	17+300	11x52	11x52	SLAB TYPE	
14	21+500	11x40	11x40	SLAB TYPE	
15	22+400	11x36	11x36	PC GIRDER	CROSS RAILWAY
16	24+400	11x39	11x39	SLAB TYPE	
17	24+950	11x55	11x55	SLAB TYPE	
18	27+800	11x24	11x24	SLAB TYPE	
19	29+600	11x80	11x80	SLAB TYPE	
20	32+850	11x42	11x42	SLAB TYPE	
21	33+850	11x40	11x40	SLAB TYPE	
22	34+650	11x12	11x12	SLAB TYPE	
23	35+300	11x35	11x35	SLAB TYPE	
24	37+300	11x33	11x33	SLAB TYPE	
25	39+350	11x32	11x32	SLAB TYPE	
26	41+900	11x18	11x18	SLAB TYPE	
27	45+350	11x19	11x19	SLAB TYPE	
28	45+600	11x31	11x31	SLAB TYPE	
29	47+700	11x64	11x64	PC GIRDER	CROSS R. 314
30	49+165	11x590	11x590	PC GIRDER	CROSS BANG PAKONG RIVER
31	51+550	11x7	11x7	SLAB TYPE	
32	51+800	11x10	11x10	SLAB TYPE	
33	54+600	11x8	11x8	SLAB TYPE	
34	54+900	11x10	11x10	SLAB TYPE	
35	55+700	11x14	11x14	SLAB TYPE	
36	57+200	11x8	11x8	SLAB TYPE	
37	58+200	11x8	11x8	SLAB TYPE	
38	58+800	11x60	11x60	SLAB TYPE	
39	60+800	11x40	11x40	SLAB TYPE	
40	66+950	11x32	11x32	PC GIRDER	CROSS R. 315
41	67+300	11x20	11x20	PC GIRDER	CROSS RAILWAY
42	74+300	11x38	11x38	PC GIRDER	CROSS R. 344

(1) CONSTRUCTION QUANTITIES AND COSTS

(Project ML-9 (I) Length = 24.2 km)

Item	Unit	Financial Unit Rate Baht	Quantity	Financial Total Cost 1000 Baht	Economic Cost %	Economic Cost 1000 Baht	Residual Value %	Residual Value 1000 Baht
EARTHWORK								
Clearing & Grubbing	ha	10,000	196	1,960	85	1,666	90	1,499
Roadway Excavation (Unclassified)	m^3	18	-	-	84	-	90	-
Roadway Excavation (Classified Unsuitable Material below Grade)	m^3	51	22,400	1,142	84	959	90	863
Embankment (Common)	m^3	33	-	-	86	-	90	-
Embankment (Borrow)	m^3	187	1,600,800	299,350	86	257,441	90	231,697
Sand Mat	m^3	309	380,300	117,513	86	101,061	90	90,955
Removal of Existing Structure (+Detour)	each	60,000	-	-	84	-	90	-
Sub Total				419,965		361,127		325,014
SUBBASE and BASE COURSES								
Subbase	m^3	229	133,000	30,457	83	25,279	50	12,640
Aggregate base	m^3	348	113,400	39,463	84	33,149	50	16,575
Shoulder (Soil Aggregate)	m^3	265	56,900	15,079	83	12,516	50	6,258
Sub Total				84,999		70,944		35,473
SURFACE COURSES								
Asphaltic Prime Coat	m^2	11	444,400	4,888	93	4,546	50	2,273
Asphaltic Tack Coat	m^2	5	305,700	1,529	93	1,422	50	711
Double Bituminous Surface Treatment	m^2	33	208,900	6,894	91	6,274	50	3,137
Asphalt Concrete Surfacing	ton	926	89,600	82,970	90	74,673	50	37,337
Portland Cement Concrete Pavement	m^3	1,665	-	-	90	-	50	-
Sub Total				96,281		86,915		43,458
STRUCTURES (Equivalent)								
RC Pipe Culvert (D=1.00 m)	m	1,800	428	770	88	678	50	339
RC Box Culvert (2-2.40x 2.40 m)	m	13,000	33	429	90	386	50	193
RC Bridge (W=11.0 m)	m	69,000	688	47,472	87	41,301	50	20,651
PC Bridge (W=11.0 m)	m	105,000	3,284	344,820	87	299,993	50	149,997
Bearing Unit	m^2	1,600	12,100	19,360	87	16,843	50	8,422
Sub Total				410,787		357,405		178,704
Total (a1)				1,012,032		876,391		582,649
LAND ACQUISITION								
Developed Land	ha	2,000,000	129	258,000				
Less Developed Land	ha	1,000,000	66	66,000				
Total (e1)				324,000	100	324,000	100	324,000

CONSTRUCTION QUANTITIES AND COSTS

(Project ML-9 (II) Length = 22.7 km)

Item	Unit	Financial Unit Rate Baht	Quantity	Financial Total Cost 1000 Baht	Economic Cost %	Economic Cost 1000 Baht	Residual Value %	Residual Value 1000 Baht
EARTHWORK								
Clearing & Grubbing	ha	10,000	182	1,820	85	1,547	90	1,392
Roadway Excavation (Unclassified)	m^3	18	-	-	84	-	90	-
Roadway Excavation (Classified Unsuitable Material below Grade)	m^3	51	4,400	224	84	188	90	169
Embankment (Common)	m^3	33	-	-	86	-	90	-
Embankment (Borrow)	m^3	177	1,187,300	210,152	86	180,731	90	162,658
Sand Mat	m^3	275	364,900	100,348	86	86,299	90	77,669
Removal of Existing Structure (+Detour)	each	60,000	-	-	84	-	90	-
Sub Total				312,544		268,765		241,888
SUBBASE and BASE COURSES								
Subbase	m^3	221	120,100	26,542	83	22,030	50	11,015
Aggregate base	m^3	339	89,500	30,341	84	25,486	50	12,743
Shoulder (Soil Aggregate)	m^3	256	42,800	10,957	83	9,094	50	4,547
Sub Total				67,840		56,610		28,305
SURFACE COURSES								
Asphaltic Prime Coat	m^2	11	378,500	4,164	93	3,873	50	1,937
Asphaltic Tack Coat	m^2	5	301,200	1,506	93	1,401	50	701
Double Bituminous Surface Treatment	m^2	33	183,500	6,056	91	5,511	50	2,756
Asphalt Concrete Surfacing	ton	927	77,500	71,843	90	64,659	50	32,330
Portland Cement Concrete Pavement	m^3	1,668	-	-	90	-	50	-
Sub Total				83,569		75,444		37,724
STRUCTURES (Equivalent)								
RC Pipe Culvert (D=1.00 m)	m	1,800	384	691	88	608	50	304
RC Box Culvert (2-2.40x 2.40 m)	m	13,000	26	338	90	304	50	152
RC Bridge (W=11.0 m)	m	69,000	732	50,508	87	43,942	50	21,971
PC Bridge (W=11.0 m)	m	105,000	-	-	87	-	50	-
Bearing Unit	m^2	1,600	7,260	11,616	87	10,106	50	5,053
Sub Total				63,153		54,960		27,480
Total (a2)				527,106		455,779		335,397
LAND ACQUISITION								
Developed Land	ha	1,250,000	-	-				
Less Developed Land	ha	625,000	182	113,750				
Total (e2)				113,750	100	113,750	100	113,750

CONSTRUCTION QUANTITIES AND COSTS

(Project ML-9 (III) Length = 34.8 km)

Item	Unit	Financial Unit Rate Baht	Quantity	Financial Total Cost 1000 Baht	Economic Cost %	Economic Cost 1000 Baht	Residual Value %	Residual Value 1000 Baht
EARTHWORK								
Clearing & Grubbing	ha	10,000	282	2,820	85	2,397	90	2,157
Roadway Excavation (Unclassified)	m^3	18	-	-	84	-	90	-
Roadway Excavation (Classified Unsuitable Material below Grade)	m^3	38	253,500	9,633	84	8,092	90	7,283
Embankment (Common)	m^3	33	-	-	86	-	90	-
Embankment (Borrow)	m^3	95	1,797,100	170,725	86	146,824	90	132,142
Sand Mat	m^3	252	363,300	91,552	86	78,735	90	70,862
Removal of Existing Structure (+Detour)	each	60,000	-	-	84	-	90	-
Sub Total				274,730		236,048		212,444
SUBBASE and BASE COURSES								
Subbase	m^3	145	141,200	20,474	83	16,993	50	8,497
Aggregate base	m^3	266	75,800	20,163	84	16,937	50	8,469
Shoulder (Soil Aggregate)	m^3	170	76,200	12,954	83	10,752	50	5,376
Sub Total				53,591		44,682		22,342
SURFACE COURSES								
Asphaltic Prime Coat	m^2	11	602,800	6,631	93	6,167	50	3,084
Asphaltic Tack Coat	m^2	5	241,200	1,206	93	1,122	50	561
Double Bituminous Surface Treatment	m^2	32	153,500	4,912	91	4,470	50	2,235
Asphalt Concrete Surfacing	ton	898	110,500	99,229	90	89,306	50	44,653
Portland Cement Concrete Pavement	m^3	1,567	65,500	102,639	90	92,375	50	46,188
Sub Total				214,617		193,440		96,721
STRUCTURES (Equivalent)								
RC Pipe Culvert (D=1.00 m)	m	1,800	820	1,476	88	1,299	50	650
RC Box Culvert (2-2.40x 2.40 m)	m	13,000	158	2,054	90	1,849	50	925
RC Bridge (W=11.0 m)	m	69,000	330	22,770	87	19,810	50	9,905
PC Bridge (W=11.0 m)	m	105,000	1,488	156,240	87	135,929	50	67,965
Bearing Unit	m^2	1,600	11,440	18,304	87	15,924	50	7,962
Sub Total				200,844		174,811		87,407
Total (a3)				743,782		648,981		418,914
LAND ACQUISITION								
Developed Land	ha	1,500,000	-	-				
Less Developed Land	ha	625,000	282	176,250				
Total (e3)				176,250	100	176,250	100	176,250

CONSTRUCTION QUANTITIES AND COSTS

(Project ML-9 Length = 81.7 km)

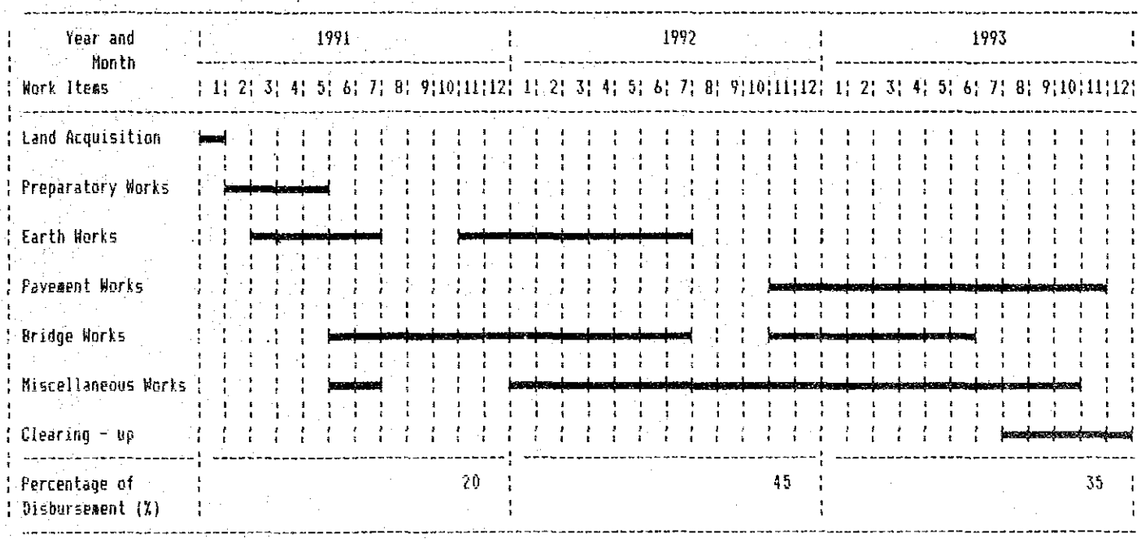
Item	Unit	Financial Unit Rate Baht	Quantity	Financial Total Cost 1000 Baht	Economic Cost %	Economic Cost 1000 Baht	Residual Value %	Residual Value 1000 Baht
CONSTRUCTION COST								
(I) (a1)				1,012,032		876,391		582,649
(II) (a2)				527,106		455,779		335,397
(III) (a3)				743,782		648,981		418,914
Total ((a1) + (a2) + (a3)) (a)				2,282,920		1,981,151		1,336,960
Miscellaneous Work ((a) x 7%)	ls			159,804	87	139,029	0	0
CONTRACT AMOUNT (b)				2,442,724		2,120,180		1,336,960
PHYSICAL CONTINGENCIES ((b) x 10%) (c)	ls			244,272		212,018		133,696
ENGINEERING AND SUPERVISION (((b) + (c)) x 10%) (d)	ls			268,700	100	268,700	0	0
LAND ACQUISITION								
(I) (e1)				324,000	100	324,000	100	324,000
(II) (e2)				113,750	100	113,750	100	113,750
(III) (e3)				176,250	100	176,250	100	176,250
Total ((e1) + (e2) + (e3)) (e)				614,000	100	614,000	100	614,000
PROJECT COST ((b) + (c) + (d) + (e))				3,569,696		3,214,898		2,084,656
AVERAGE COST PER KM				43,693				

(2) Road Maintenance Costs

(Unit : Baht/Year)

	Without Project	With Project
1994	-	1,302,929
2004	-	1,817,604

3.4 Construction Schedule



ROAD CONDITIONS

(unit : km)

Section	Without Project: Road Length	Paved: Good	Paved: Good /Fair	Paved: Fair	Paved: Fair /Poor	Paved: Poor	Laterite: Good	Laterite: Fair	Laterite: Poor	No. of Narrow Bridge	No. of Wooden Bridge	With Project: Road Length	Paved Good	No. of Narrow Bridge	No. of Wooden Bridge
Section-1	7.0	-	-	-	-	-	-	-	-	-	-	7.0	7.0	-	-
Section-2	4.5	-	-	-	-	-	-	-	-	-	-	4.5	4.5	-	-
Section-3	13.0	-	-	-	-	-	-	-	-	-	-	13.0	13.0	-	-
Section-4	22.5	-	-	-	-	-	-	-	-	-	-	22.5	22.5	-	-
Section-5	19.2	-	-	-	-	-	-	-	-	-	-	19.2	19.2	-	-
Section-6	7.4	-	-	-	-	-	-	-	-	-	-	7.4	7.4	-	-
Section-7	8.1	-	-	-	-	-	-	-	-	-	-	8.1	8.1	-	-

VOC AND TIME SAVINGS

(1000 BAHT)

Year	VOC Savings: Normal Traffic	VOC Savings: Induced Traffic	VOC Savings: Total	Time Savings: Normal Traffic	Time Savings: Induced Traffic	Time Savings: Total	Total Savings: Normal Traffic	Total Savings: Induced Traffic	Total Savings: Total
1994	540,204	-	540,204	864,164	-	864,164	1,404,368	-	1,404,368
2000	2,097,793	-	2,097,793	1,635,826	-	1,635,826	3,733,619	-	3,733,619
2008	6,044,138	-	6,044,138	3,780,942	-	3,780,942	9,825,080	-	9,825,080

COST AND BENEFIT STATEMENT

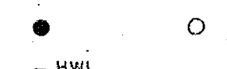
(1000 BAHT)

	COST	BENEFITS				DISCOUNTED(12%)	
YEAR	CONST. COST	VOC SAVING	TIME SAVING	MAINT. SAVING	TOTAL	COST	BENEFIT
1991	642,980				0	903,341	0
1992	1,446,704				0	1,814,745	0
1993	1,125,214				0	1,260,240	0
1994		540,205	864,164	(1,303)	1,403,066	0	1,252,737
1995		799,803	992,774	(1,337)	1,791,240	0	1,427,966
1996		1,059,401	1,121,385	(1,371)	2,179,415	0	1,551,265
1997		1,318,999	1,249,995	(1,405)	2,567,589	0	1,631,749
1998		1,578,597	1,378,606	(1,439)	2,955,764	0	1,677,180
1999		1,838,195	1,507,216	(1,473)	3,343,938	0	1,694,143
2000		2,097,793	1,635,826	(1,507)	3,732,112	0	1,688,218
2001		2,591,086	1,903,966	(1,541)	4,493,511	0	1,814,854
2002		3,084,379	2,172,105	(1,575)	5,254,909	0	1,894,973
2003		3,577,672	2,440,245	(1,609)	6,016,308	0	1,937,090
2004	187,544	4,070,965	2,708,384	(1,643)	6,777,706	60,384	1,948,429
2005		4,564,258	2,976,524	(1,677)	7,539,105	0	1,935,100
2006		5,057,551	3,244,663	(1,711)	8,300,503	0	1,902,261
2007		5,550,845	3,512,802	(1,745)	9,061,902	0	1,854,245
2008	(2,084,656)	6,044,138	3,780,942	(1,818)	9,823,262	(426,562)	1,794,673
TOTAL	1,317,786	43,773,887	31,489,597	(23,154)	75,240,330	3,612,148	26,004,883

NET PRESENT VALUE :	22,392,735
BENEFIT COST RATIO :	7.20
INTERNAL RATE OF RETURN :	39.6%
FIRST YEAR RATE OF RETURN :	31.5%

6. DRAWINGS

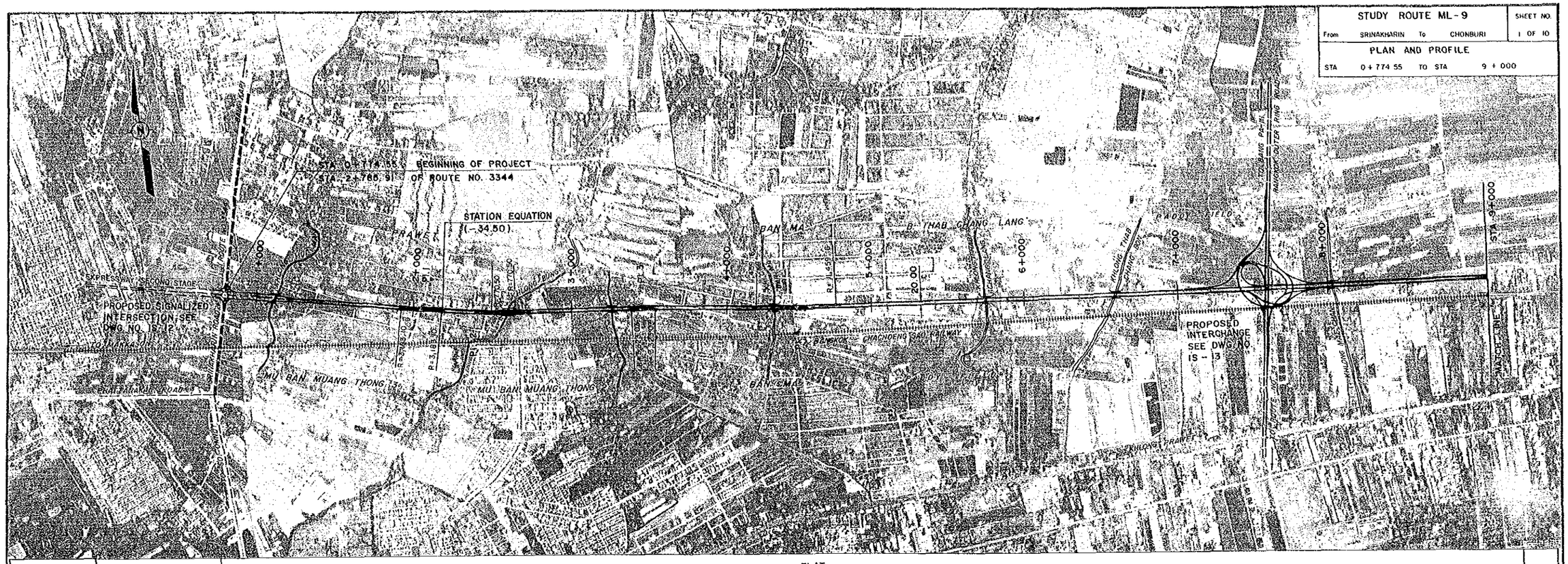
ABBREVIATIONS AND SYMBOLS FOR PLAN AND PROFILE

▬▬▬▬	NEW CONSTRUCTION SECTION OF STUDY ROUTE
▬ ▬ ▬ ▬	IMPROVEMENT SECTION OF STUDY ROUTE
	BRIDGE (PROPOSED , EXISTING)
	BOX CULVERT (PROPOSED , EXISTING)
	PIPE CULVERT (PROPOSED , EXISTING)
	HIGH WATER LEVEL

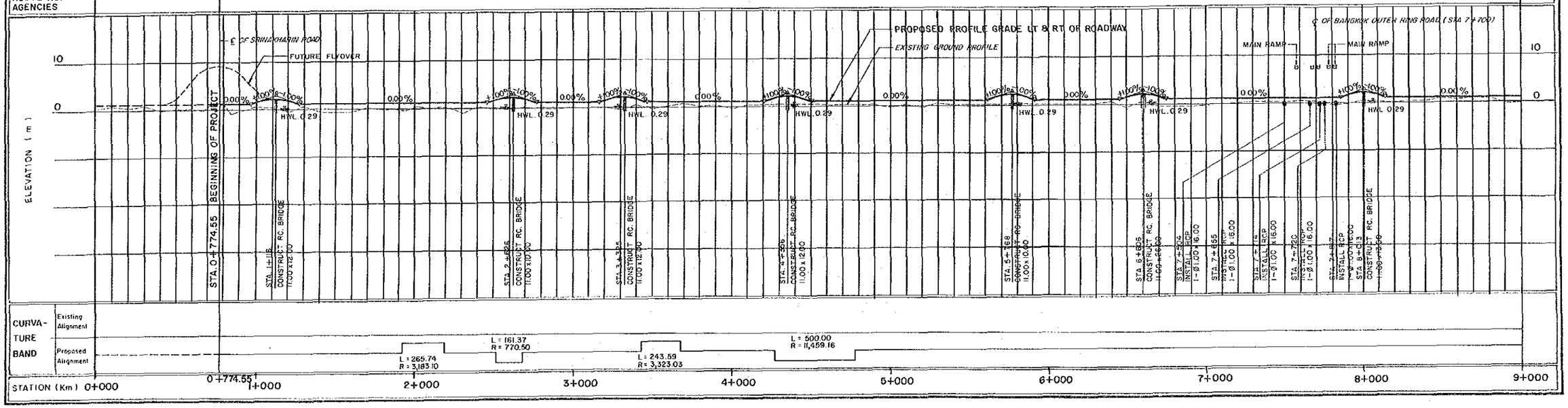
HWY	HIGHWAY
PI	POINT OF HORIZONTAL INTERSECTION
NO. or #	NUMBER
△	DEFLECTION ANGLE
R	RADIUS OF CURVATURE
T	TANGENT LENGHT
L	LENGHT OF CURVE
RT	RIGHT
LT	LEFT
EXIST.	EXISTING
EXTD.	EXTEND

RC−P−n−Øa x l	PIPE CULVERT, n (ROW), Øa (DIAMETER, m), l (LENGTH, m)
RC−B−n−a x b x l	BOX CULVERT, n (NO. OF CELLS), a x b x l (CLEAR SPAN x DEPTH x LENGTH, m)
BR−T−a x l−n	TIMBER BRIDGE, a x l (WIDTH x LENGTH, m), n (NO. OF SPANS)
BR−RC−a x l−n	CONCRETE BRIDGE, a x l (ROADWAY WIDTH x LENGTH, m) n (NO. OF SPANS)

STUDY ROUTE ML-9	SHEET NO.
From SRINAKHARIN To CHONBURI	1 OF 10
PLAN AND PROFILE	
STA 0+774.55 TO STA 9+000	

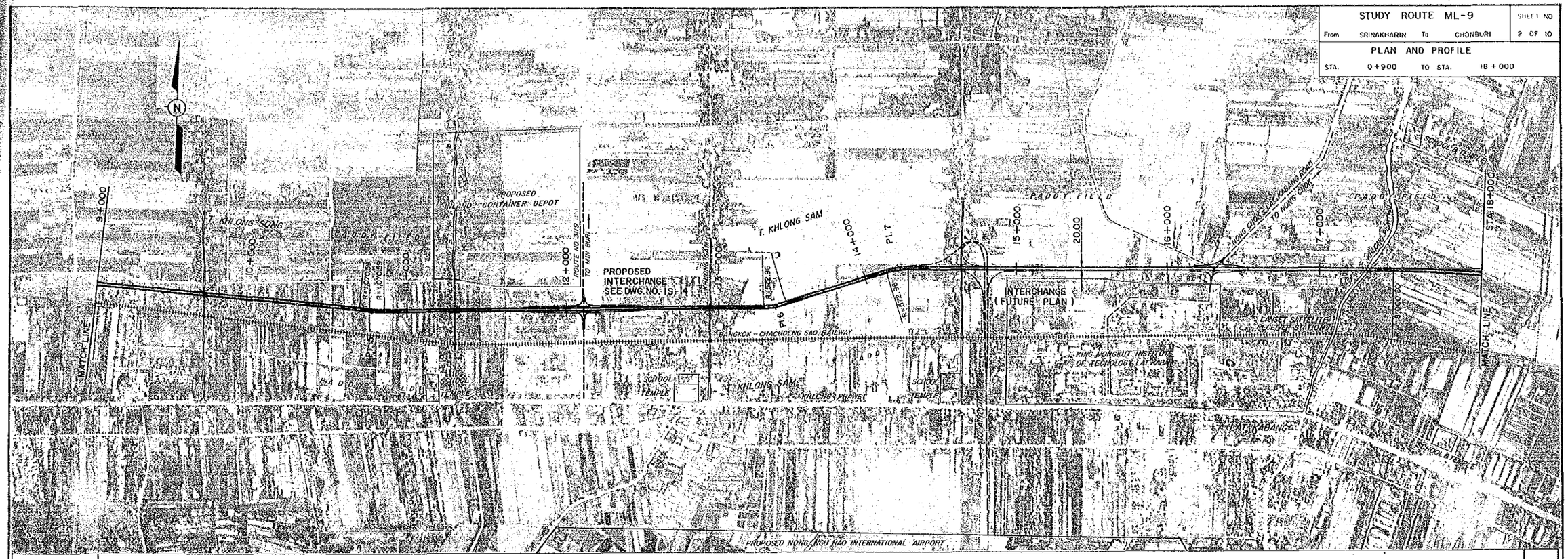


TERRAIN		FLAT
PAVEMENT	Type / Length	—
	Condition	—
FLOODING	Length (Km) Height (m)	—
RIGHT OF WAY (m.)	LT.	40.00
	RT.	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)

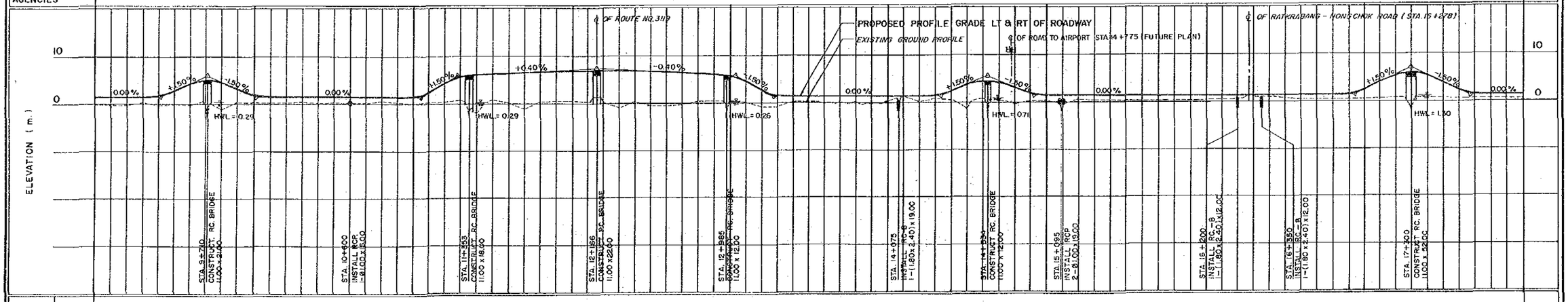


CURVATURE BAND	Existing Alignment	—
	Proposed Alignment	L = 265.74, R = 3,183.10 / L = 161.37, R = 770.50 / L = 243.59, R = 3,323.03 / L = 500.00, R = 11,459.16
STATION (Km)		0+000, 0+774.55, 1+000, 2+000, 3+000, 4+000, 5+000, 6+000, 7+000, 8+000, 9+000

STUDY ROUTE ML-9	SHEET NO
From SRINAKHARIN To CHONBURI	2 OF 10
PLAN AND PROFILE	
STA. 0+900 TO STA. 18+000	

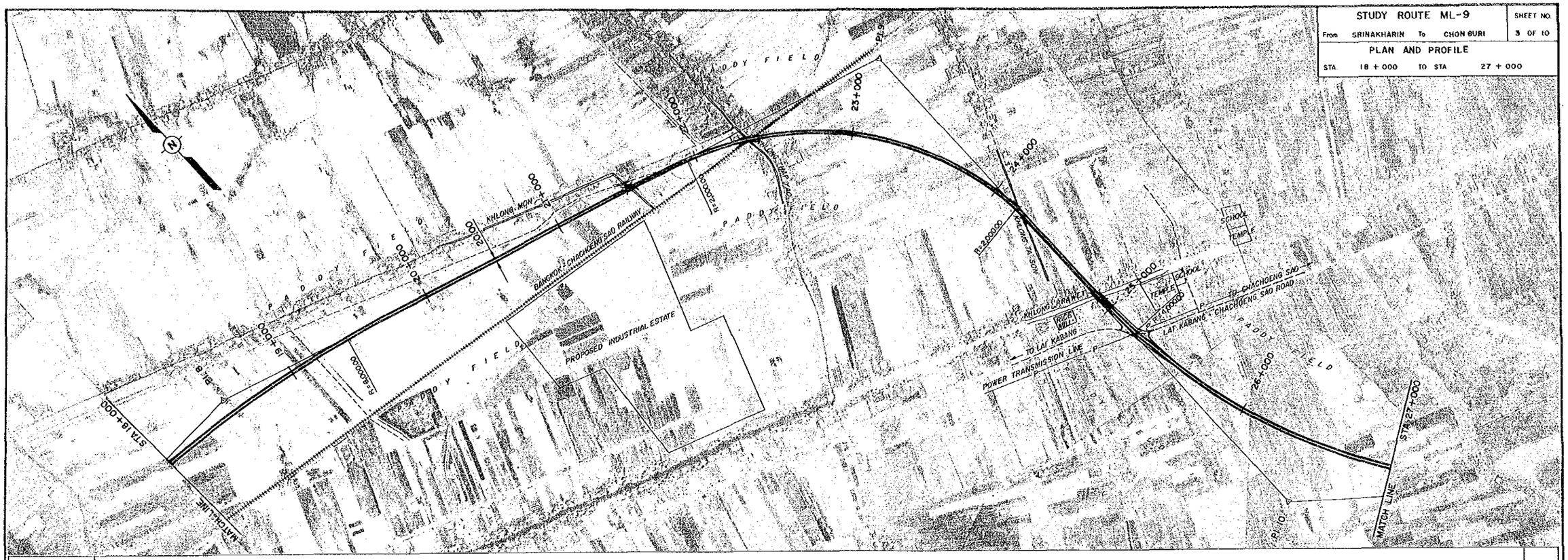


TERRAIN		FLAT
PAVEM'T	Type / Length	—
	Condition	—
FLOODING	Length (Km) / Height (m)	—
RIGHT OF WAY (m.)		40.00 — 40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)

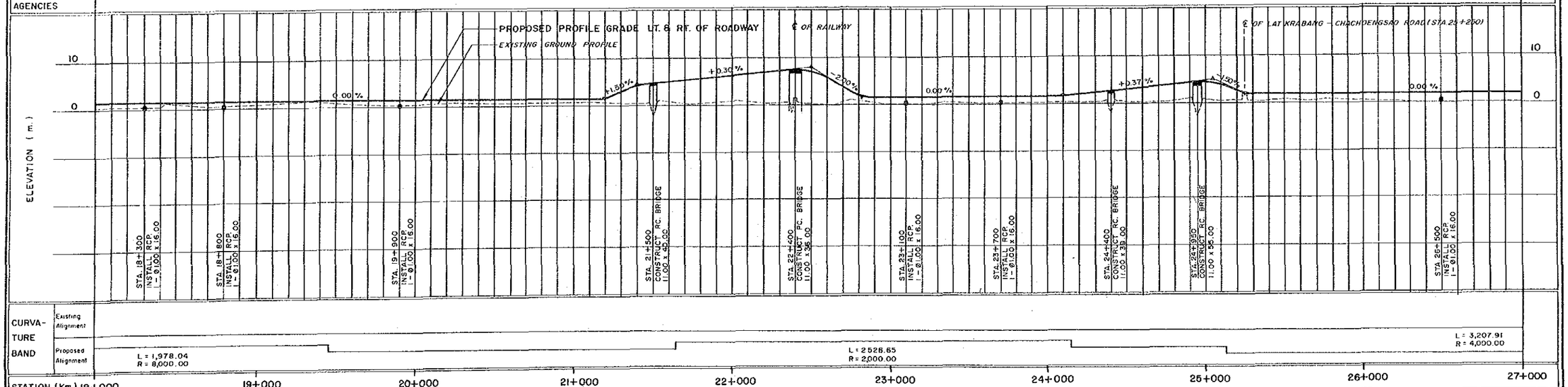


CURVATURE BAND	Existing Alignment	
	Proposed Alignment	L = 147.93, R = 1,070.59 / L = 130.00, R = 572.96 / L = 130.00, R = 572.96 / L = 1,978.04, R = 8,000.00
STATION (Km.)		9+000 10+000 11+000 12+000 13+000 14+000 15+000 16+000 17+000 18+000

STUDY ROUTE ML-9	SHEET NO.
From SRINAKHARIN To CHON BURI	3 OF 10
PLAN AND PROFILE	
STA. 18 + 000 TO STA 27 + 000	



TERRAIN		FLAT
PAVEMENT	Type / Length	—
	Condition	—
FLOODING	Length (Km) / Height (m)	—
RIGHT OF WAY (m.)	LT.	40.00
	RT.	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)



CURVATURE BAND	Existing Alignment	—
	Proposed Alignment	L = 1,978.04 R = 8,000.00 ; L = 2528.65 R = 2,000.00 ; L = 3,207.91 R = 4,000.00
STATION (Km.)		18+000 19+000 20+000 21+000 22+000 23+000 24+000 25+000 26+000 27+000

STUDY ROUTE ML-9 | SHEET NO 4 OF 10

From SRINAKHARIN To CHON BURI

PLAN AND PROFILE

STA 27+000 TO STA 36+000

TERRAIN: FLAT

PAVEMENT — Type / Length: —

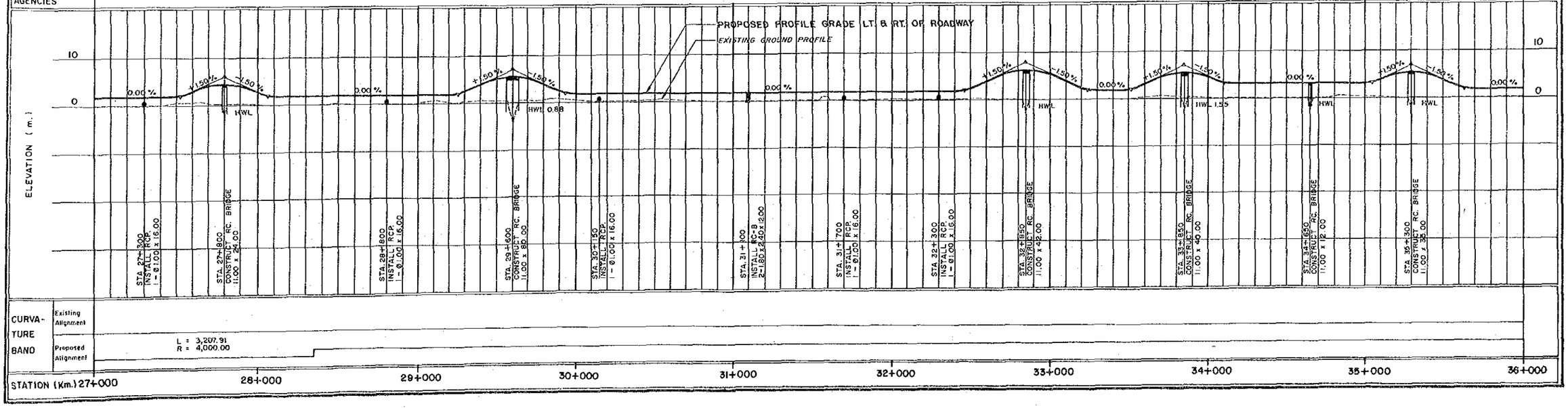
PAVEMENT — Condition: —

FLOODING — Length (Km.) / Height (m.): —

RIGHT OF WAY (m.) LT.: 40.00

RIGHT OF WAY (m.) RT.: 40.00

ROUTE NO. AGENCIES: NEW HIGHWAY (DOH)

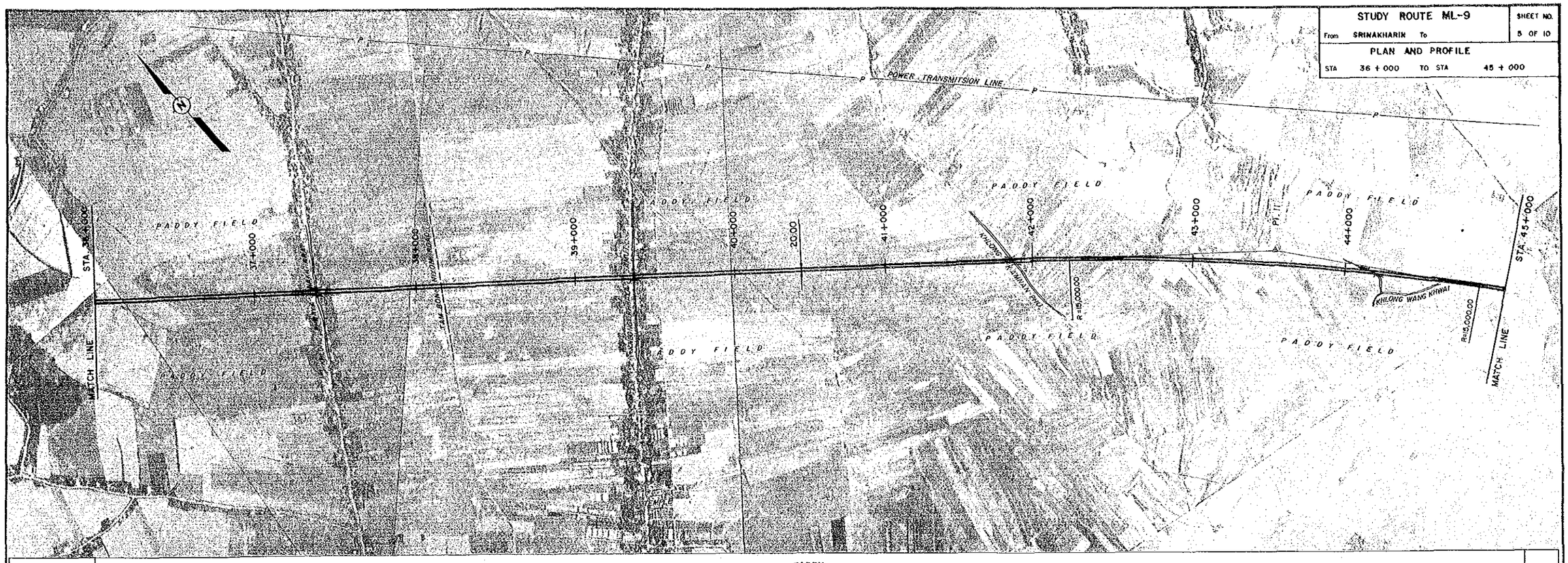


CURVATURE BAND — Existing Alignment

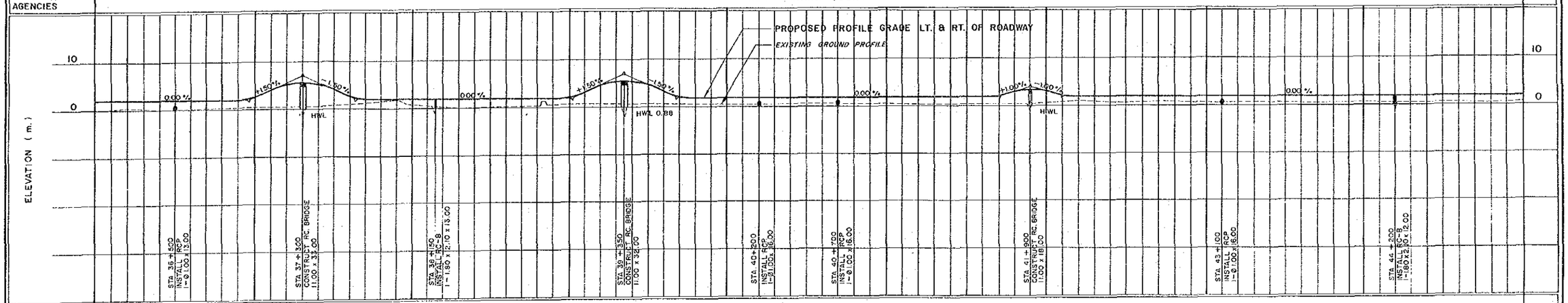
CURVATURE BAND — Proposed Alignment: L = 3,207.91, R = 4,000.00

STATION (Km.) 27+000 | 28+000 | 29+000 | 30+000 | 31+000 | 32+000 | 33+000 | 34+000 | 35+000 | 36+000

STUDY ROUTE ML-9	SHEET NO.
From SRINAKHARIN To	5 OF 10
PLAN AND PROFILE	
STA 36 + 000 TO STA 45 + 000	



TERRAIN		PADDY
PAVEMENT	Type / Length	—
	Condition	—
FLOODING	Length (Km) / Height (m.)	—
RIGHT OF WAY (m.)	LT.	40.00
	RT.	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)



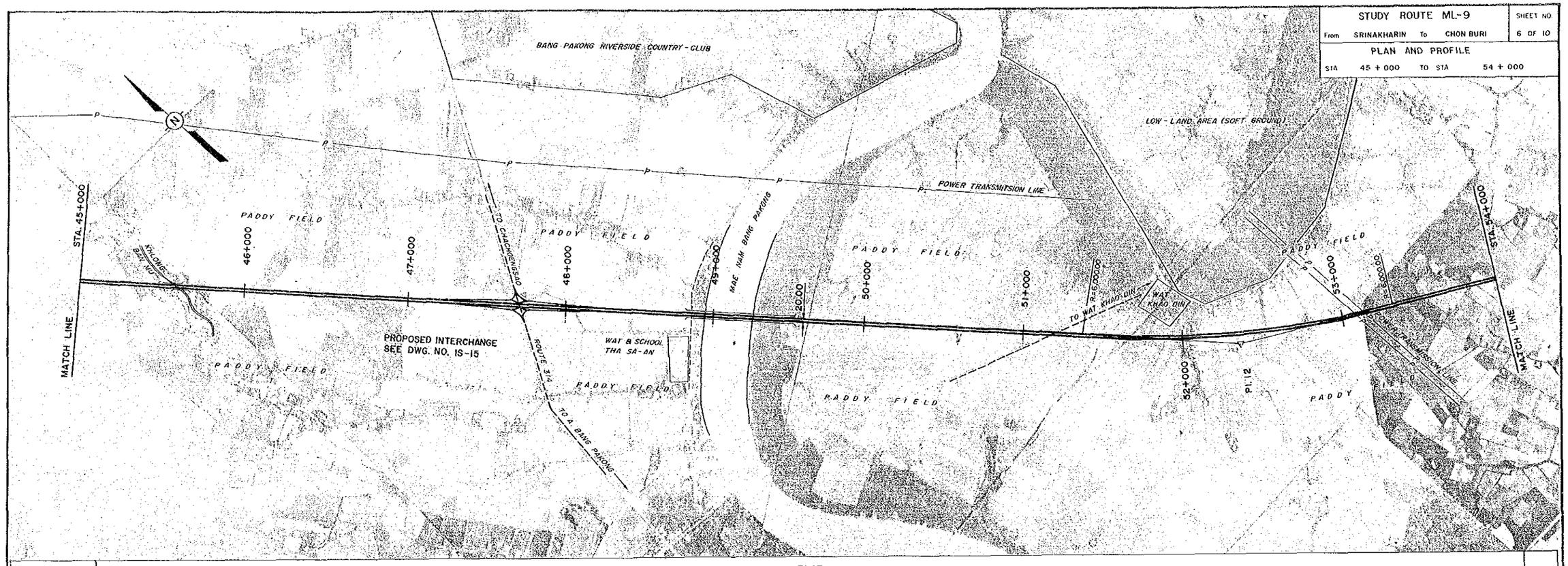
CURVATURE BAND	Existing Alignment	
	Proposed Alignment	L = 2,788.16 R = 15,000.00
STATION (Km.)		36+000 37+000 38+000 39+000 40+000 41+000 42+000 43+000 44+000 45+000

STUDY ROUTE ML-9 | SHEET NO. 6 OF 10

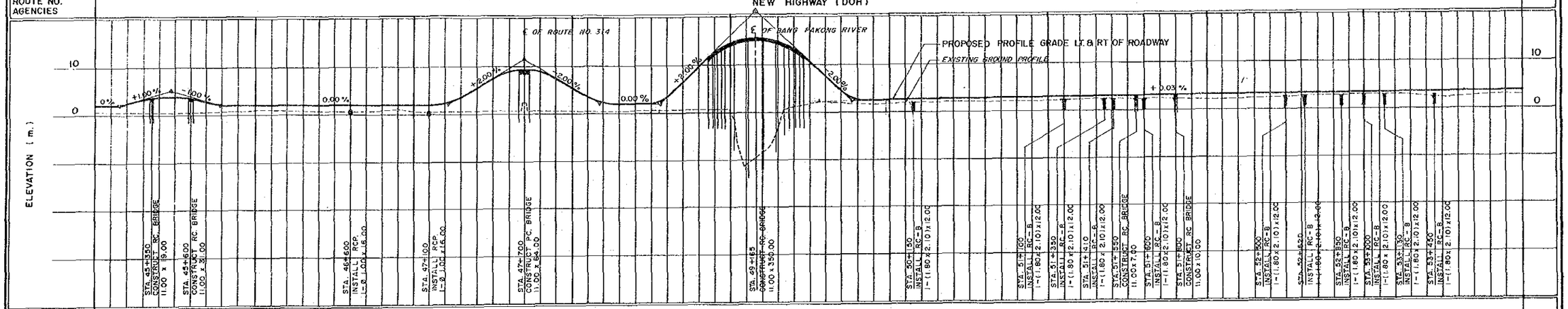
From SRINAKHARIN To CHON BURI

PLAN AND PROFILE

STA 45 + 000 TO STA 54 + 000



TERRAIN		FLAT
PAVEMENT	Type / Length	—
	Condition	—
FLOODING	Length (Km) Height (m)	—
RIGHT OF WAY (m.)	LT.	40.00
	RT.	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)



CURVATURE BAND	Existing Alignment	—
	Proposed Alignment	L = 1,958.26 R = 6,000.00

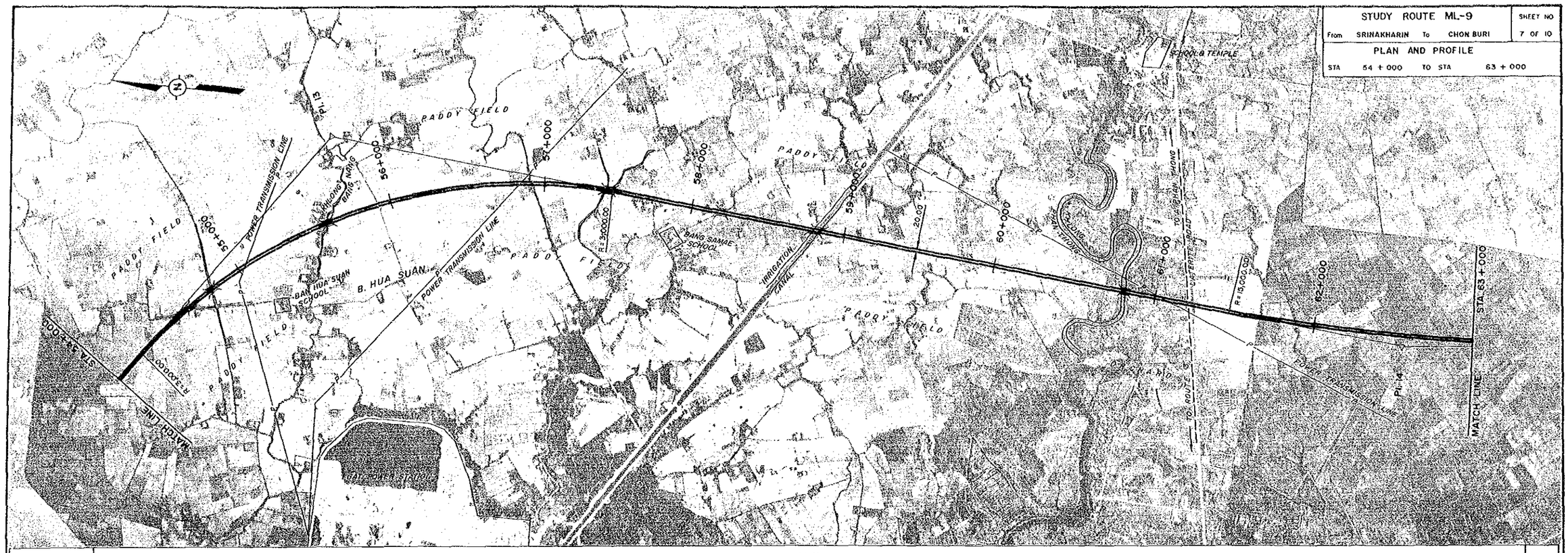
STATION (Km.) 45+000 | 46+000 | 47+000 | 48+000 | 49+000 | 50+000 | 51+000 | 52+000 | 53+000 | 54+000

STUDY ROUTE ML-9 | SHEET NO 7 OF 10

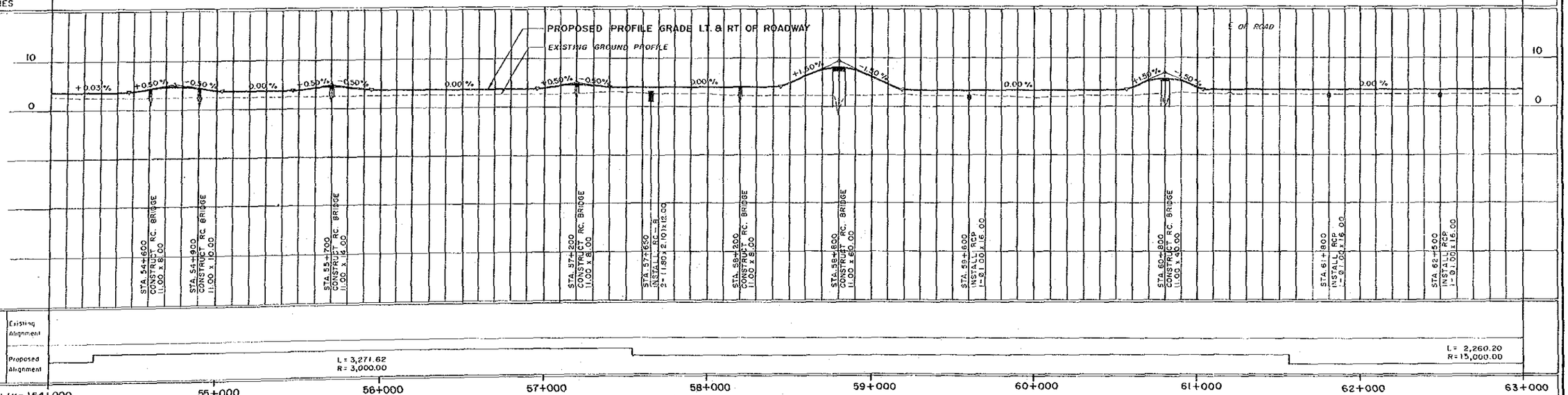
From SRINAKHARIN To CHON BURI

PLAN AND PROFILE

STA 54 + 000 TO STA 63 + 000



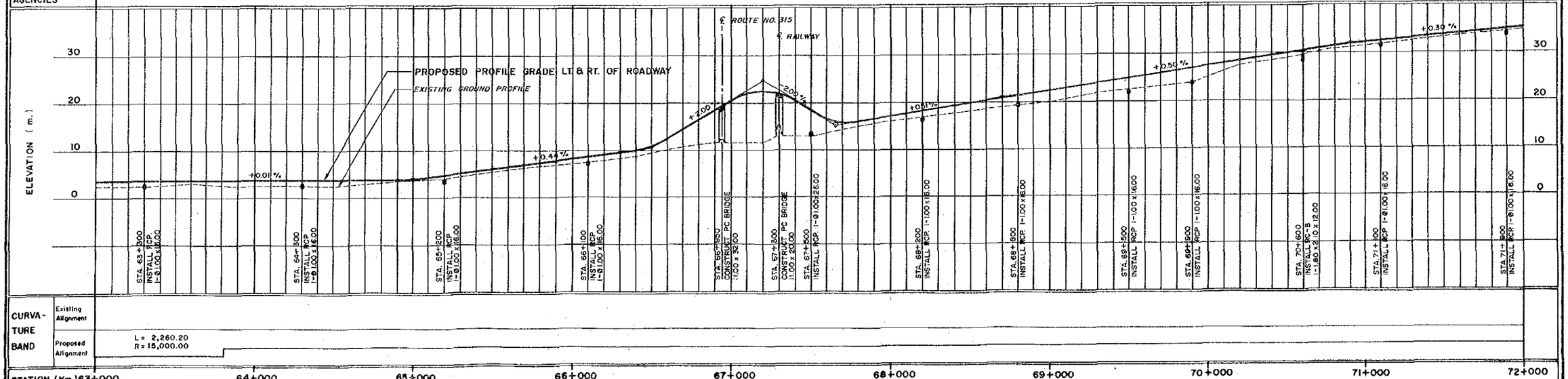
TERRAIN		FLAT
PAVEMT	Type / Length	—
	Condition	—
FLOODING	Length (Km) / Height (m)	—
RIGHT OF WAY (m.)	L	40.00
	R	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)



CURVATURE BAND	Existing Alignment	—
	Proposed Alignment	L = 3,271.62 R = 3,000.00 ; L = 2,260.20 R = 15,000.00
STATION (Km)		54+000 ; 55+000 ; 56+000 ; 57+000 ; 58+000 ; 59+000 ; 60+000 ; 61+000 ; 62+000 ; 63+000

STUDY ROUTE ML-9	SHEET NO.
From SRINAKHARIN To CHON BURI	8 OF 10
PLAN AND PROFILE	
STA 63 + 000 TO STA 72 + 000	

TERRAIN		FLAT
PAVEM'T	Type / Length	—
	Condition	—
FLOODING	Length (Km) Height (m)	—
RIGHT OF WAY (m.)	LT.	40.00
	RT.	40.00
ROUTE NO. AGENCIES		NEW HIGHWAY (DOH)



CURVATURE BAND	Existing Alignment	—
	Proposed Alignment	L = 2,260.20 R = 15,000.00

STATION (Km.) 63+000 64+000 65+000 66+000 67+000 68+000 69+000 70+000 71+000 72+000