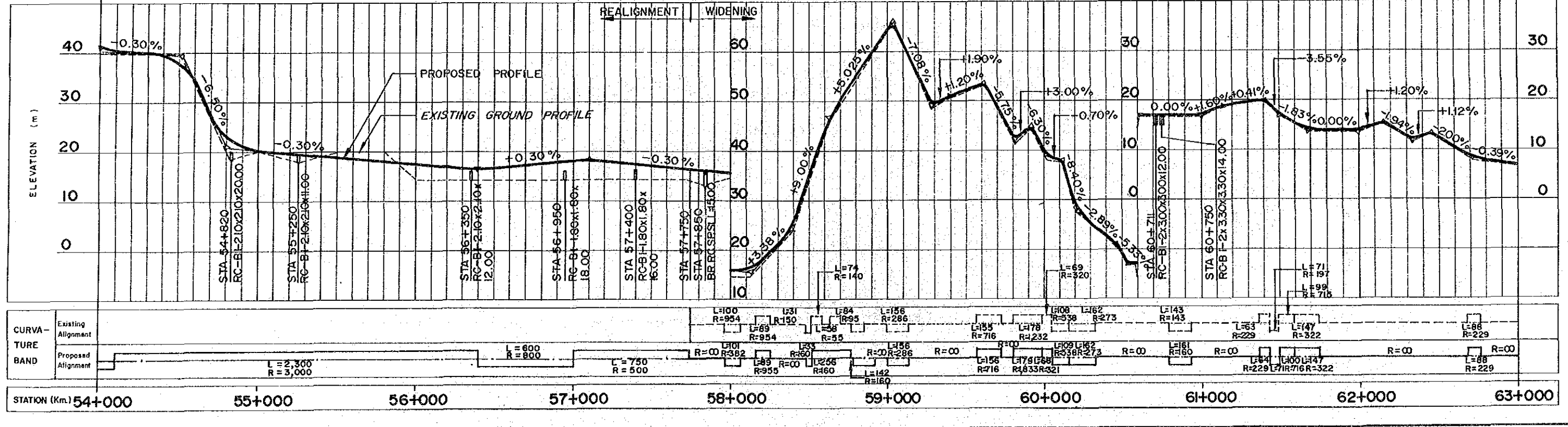
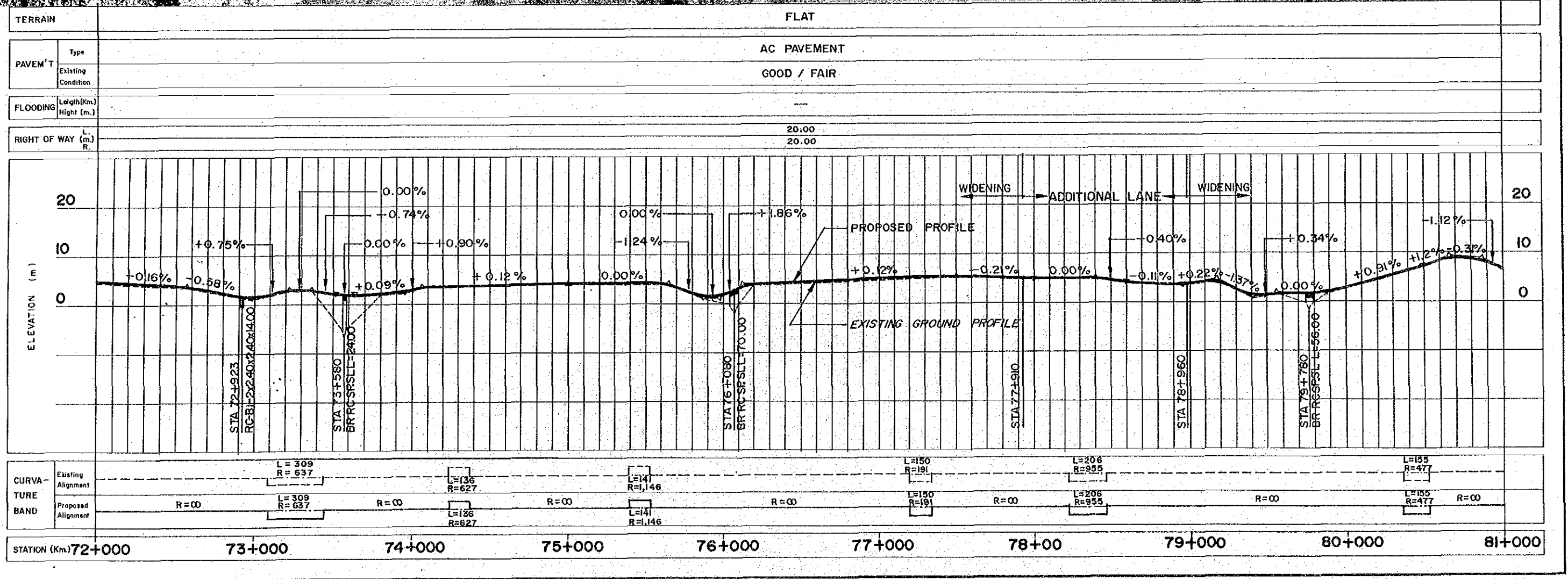
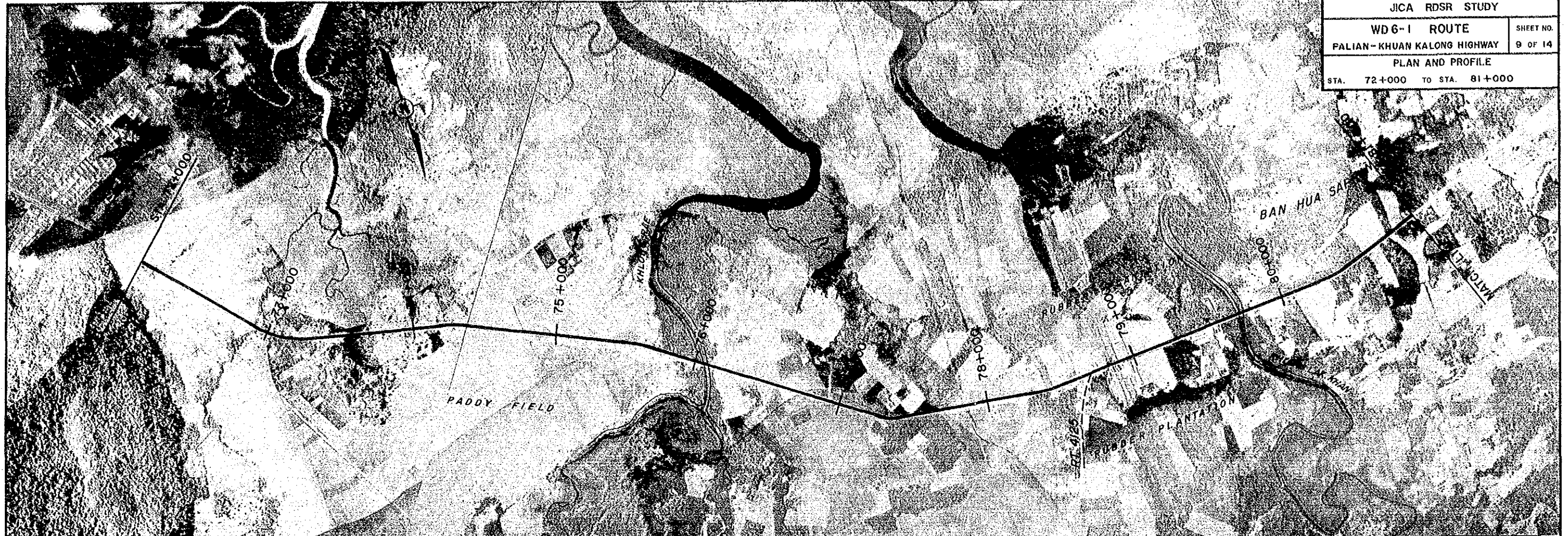
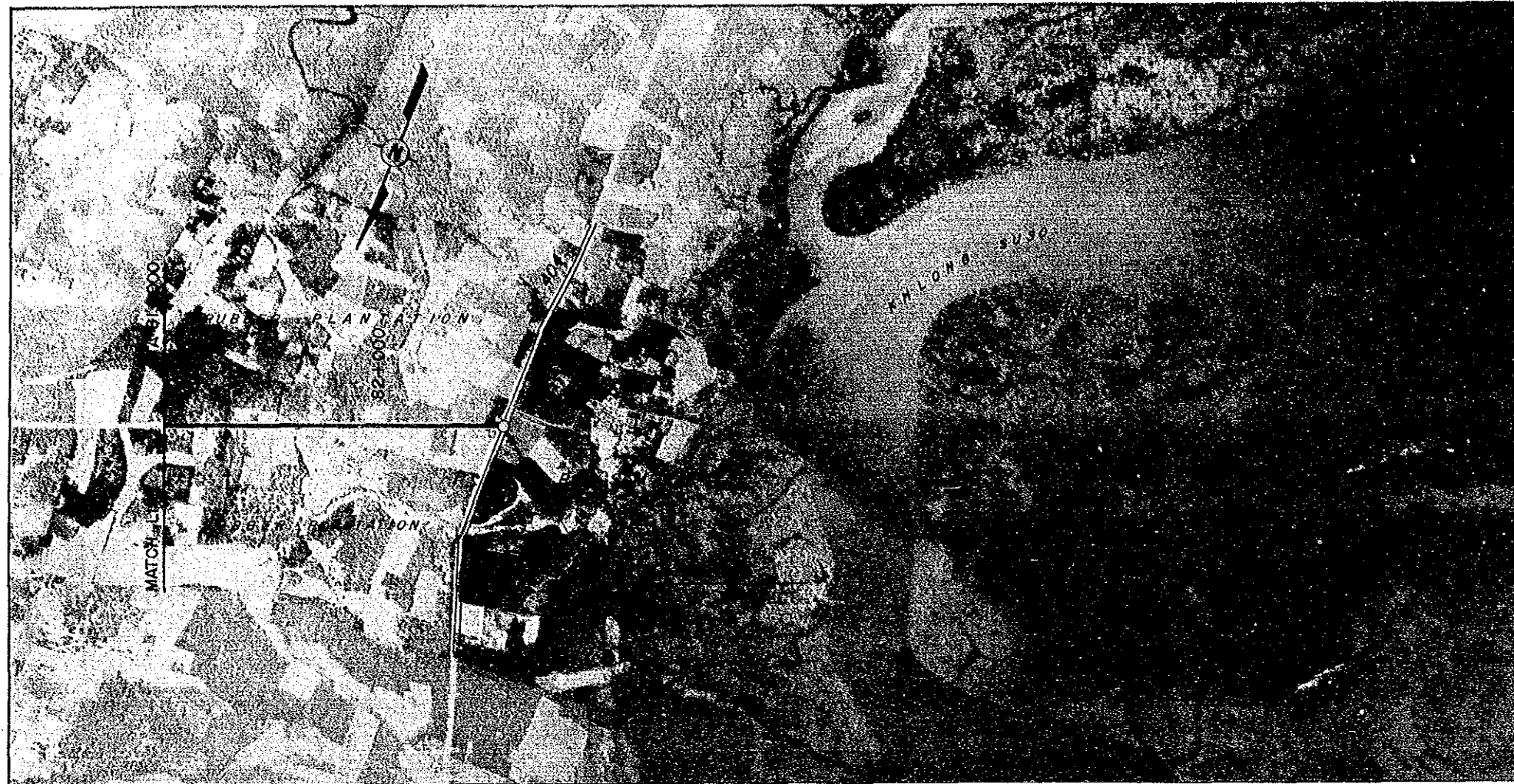




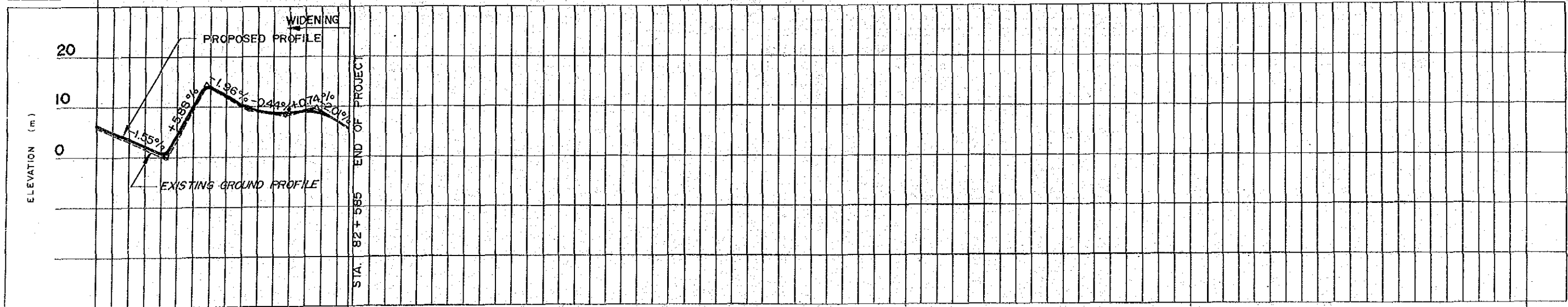
TERRAIN	Moderately Rolling	Flat
PAVEM'T	AC PAVEMENT	FAIR
FLOODING	-	
RIGHT OF WAY	L: 25.00 R: 25.00	L: 20.00 R: 20.00





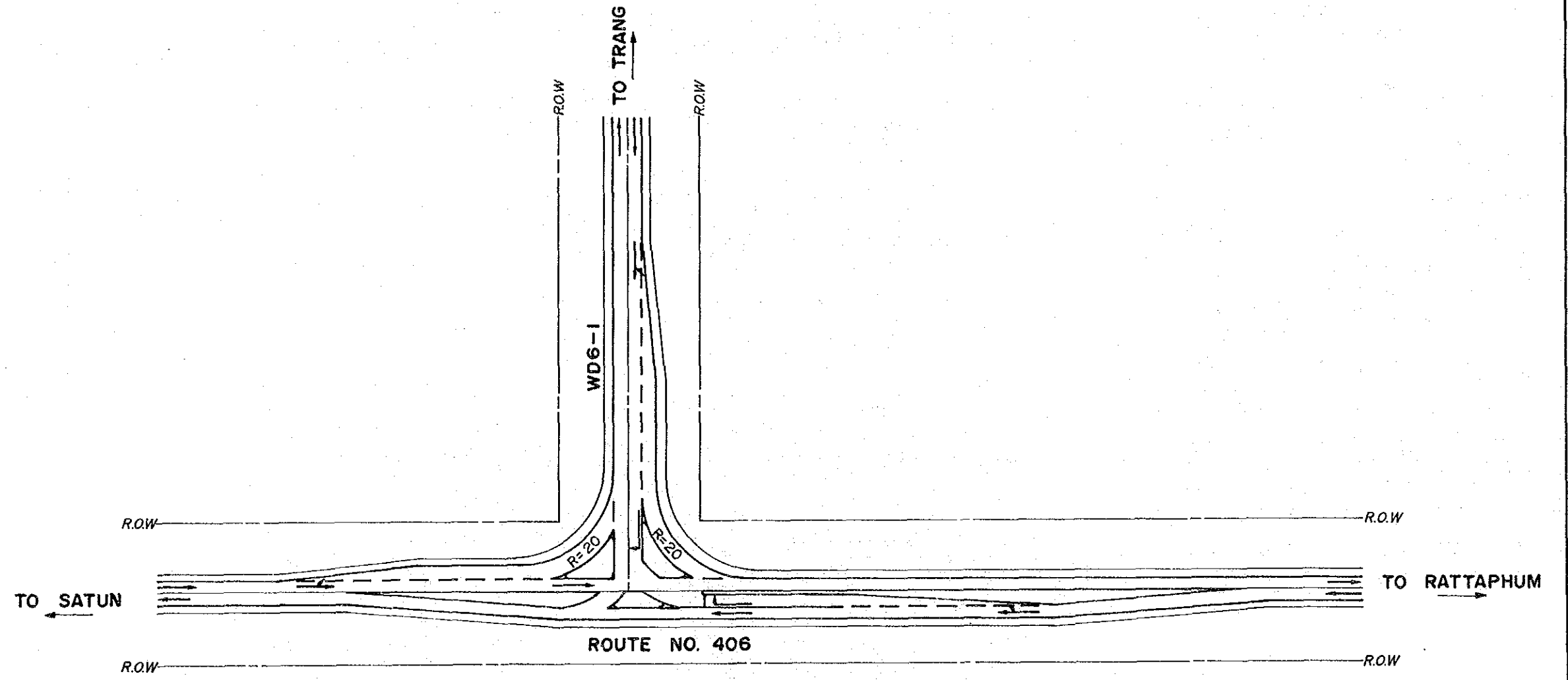


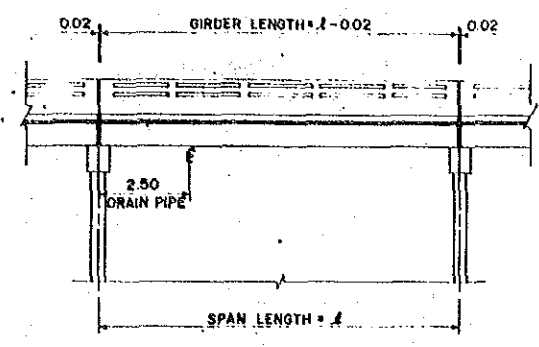
TERRAIN	FLAT	
PAVEM'T	Type	AC PAVEMENT
	Existing Condition	GOOD / FAIR
FLOODING	Length (km)	—
	Height (m.)	—
RIGHT OF WAY	L. (m)	20.00
	R. (m)	20.00



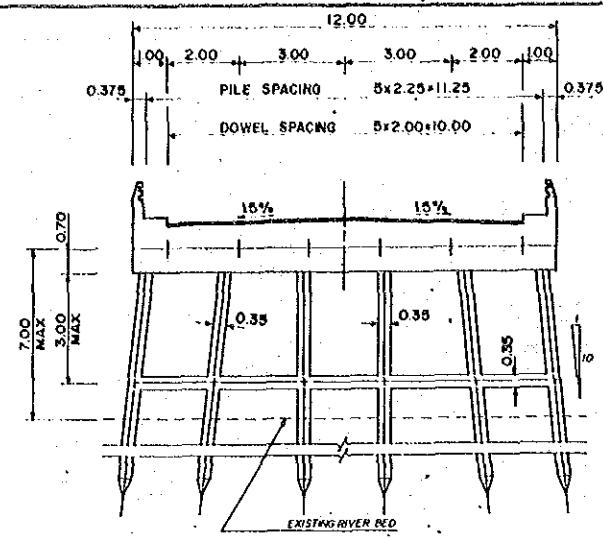
CURVA-TURE BAND	Existing Alignment	
	Proposed Alignment	R=∞

STATION (Km) 81+000 82+000

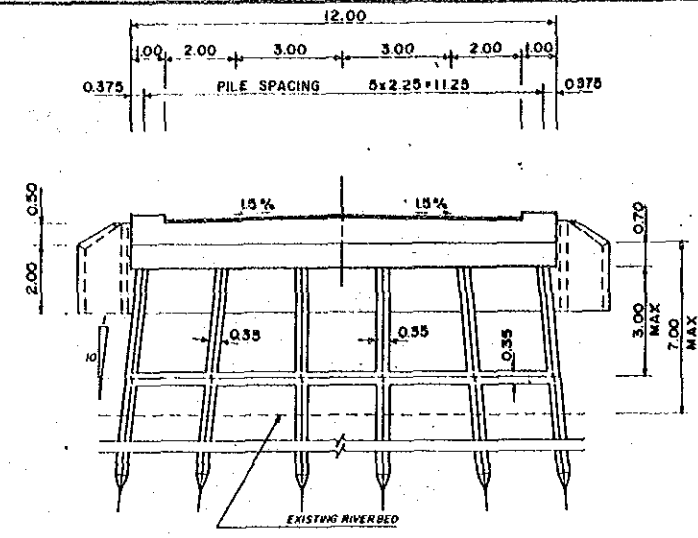




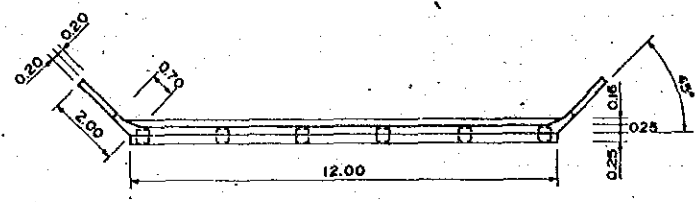
SECTION A-A
 SCALE 1:200



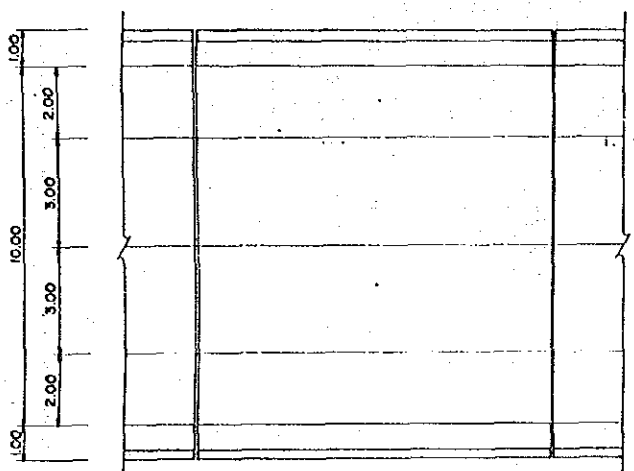
FOR 7.00-8.00 M. SPAN



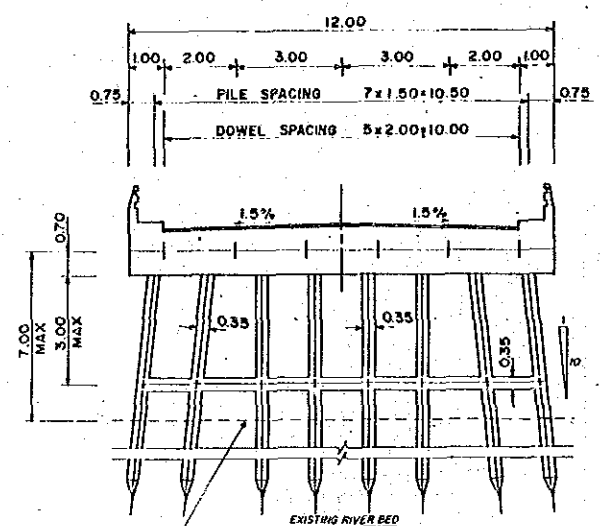
FOR 7.00-8.00 M. SPAN
 ELEVATION
 SCALE 1:200



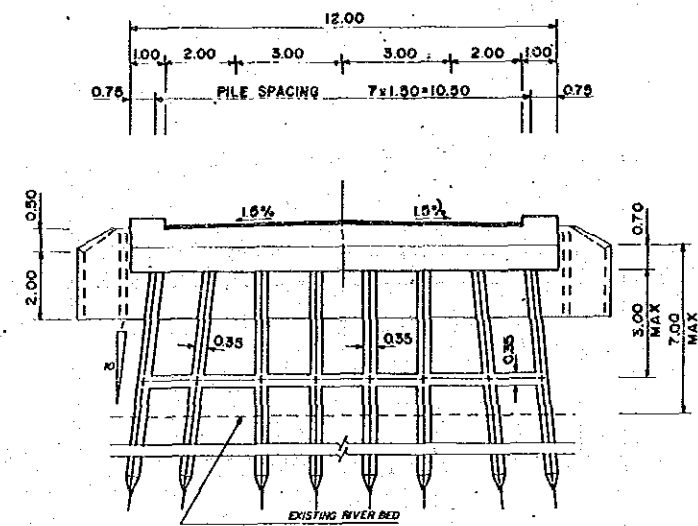
FOR 7.00-8.00 M. SPAN
 PLAN
 SCALE 1:200



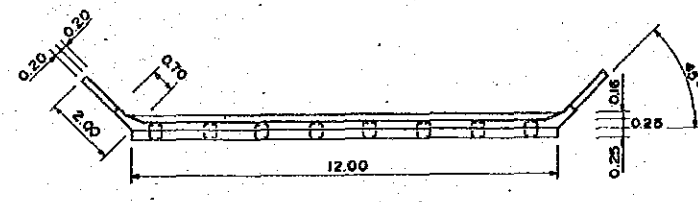
PLAN
 SCALE 1:200



FOR 9.00-10.00 M. SPAN
 PILE BENT ELEVATION
 SCALE 1:200



FOR 9.00-10.00 M. SPAN
 ELEVATION
 SCALE 1:200



FOR 9.00-10.00 M. SPAN
 PLAN
 SCALE 1:200

LIST OF BRIDGES

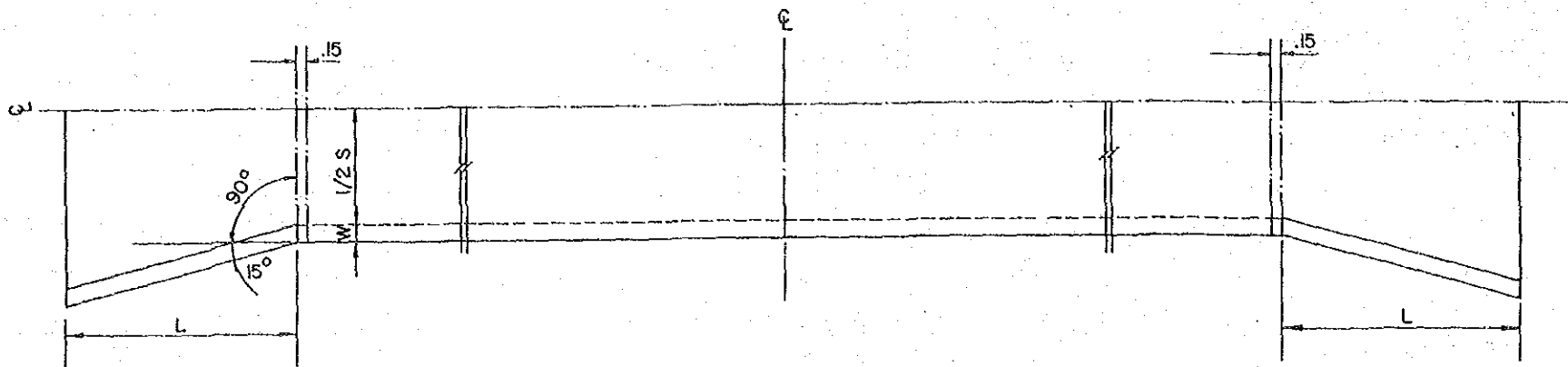
STATION	SPAN AND LENGTH (m)
27+600	7.00+8.00+7.00 = 22.00
31+100	4x 7.00 = 28.00
43+600	3x 8.00 = 24.00
45+100	1x10.00 = 10.00
46+500	3x 8.00 = 24.00

NOTES :

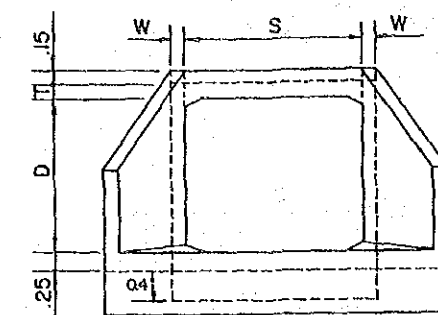
- DESIGN STRESSES :
 a) CONCRETE, f_c = 70 KSC.
 b) STEEL, f_s = 1,400 KSC. (INTERMEDIATE GRADE)
 f_s = 1,200 KSC. (STRUCTURAL GRADE)
- CONCRETE SHALL HAVE MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 210 KG/CM² FOR .15 X .15 X .15 CUBE AT 28 DAYS, AND APPROXIMATE MIX DESIGN PER CUBIC METER IS SUGGESTED AS FOLLOWS :
 PORTLAND CEMENT, MIN. 350 KG.
 SAND 0.43 M³
 CRUSHED ROCK OR GRAVEL 0.86 M³
 CONCRETE SLUMP, MAX 10 CM.
- CLEAR CONCRETE COVER FOR TOP REINFORCEMENT IN SLAB BRIDGE SHALL BE 2.5 CM. ELSEWHERE OF SLAB BRIDGE AND SIDEWALK SHALL BE 2.5 CM.
- ALL CONCRETE EXPOSED CORNERS SHALL HAVE 2 CM. CHAMFER UNLESS OTHERWISE INDICATED.
- REBARS #4 OR LARGER SHALL BE INTERMEDIATE GRADE DEFORMED BARS, OTHERS SHALL BE STRUCTURAL GRADE PLAIN BARS UNLESS OTHERWISE INDICATED.
- LOCATIONS OF LAP SPLICE OF REBARS SHALL BE APPROVED BY THE ENGINEER.
- LAP LENGTH SHALL NOT BE LESS THAN 40 DIAMETERS OF BIGGER BAR IN CASE OF PLAIN BARS AND 24 DIAMETERS OF BIGGER BAR FOR DEFORMED BARS.
- IN CASE OF SALINE PROTECTION, HIGH SULPHATE RESISTANT PORTLAND CEMENT TYPE 5 CONFORMED TO AASHTO SPECIFICATIONS SHALL BE USED AND ADDITIONAL CONCRETE COVER OF 2.5 CM. FROM NORMAL CASE ALL AROUND SHALL BE PROVIDED WITHOUT ALTERING THE LOCATIONS OF REBARS.
- ALL MATERIALS SHALL BE USED UNDER THE APPROVAL OF THE ENGINEER.
- PAINTING SHALL BE PROVIDED ON ALL SURFACES AT BRIDGE ENDS WHICH EXPOSED TO TRAFFIC. WHITE AND BLACK COLOUR SHALL BE PAINTED ALTERNATELY. WHITE COLOUR SHALL BE LIGHT REFLECTED TYPE.
- ALL DIMENSIONS SHOWN ARE IN METERS UNLESS OTHERWISE INDICATED.
- BAR MARK S101 MAY BE TAKEN OUT ONE BAR ON EACH SIDE OF THE BRIDGE WHEREVER THEY PASS THROUGH DRAIN PIPES. IF THE LOCATIONS OF THESE BARS ARE NEAR V-DRAIN SUCH THAT CONCRETE COVER IS NOT ADEQUATE, THEY SHALL BE PLACED ON TOP OF ST 101. OTHER BARS WHICH PASS THROUGH DRAIN PIPES SHALL BE BENT ALONG THE PIPES.
- ALL PIERS WHICH DO NOT HAVE LOG PROTECTION WALLS SHALL BE HAUNCH UNDER THE TOP CROSS BRACING.
- IF ANY NOTES ON THE DRAWINGS OF PIERS CONTRADICT THE NOTES ON THIS DRAWING, THEY WILL BE SUPERSEDED BY THESE NOTES.
- THIS DRAWING IS ADAPTED FROM DOH DWS NO. 3 ADS-108-14/1A IN CASE OF ANY DISCREPANCY BETWEEN SUCH DRAWINGS ARISES, THE DOH STANDARD DRAWING WILL PREVAIL UNDER THE APPROVAL OF THE ENGINEER.

BOX CULVERT

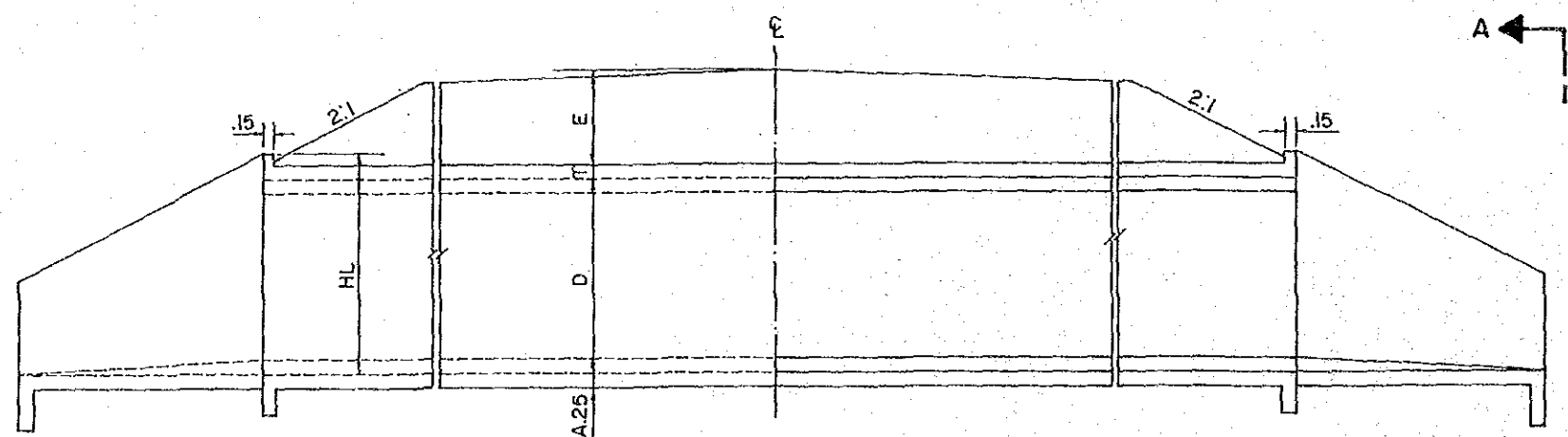
JICA RDSR STUDY	
WD6-1 ROUTE	SHEET NO.
PALIAN - KHUAN KALONG HIGHWAY	13 OF 14
BOX CULVERT	



HALF LONGITUDINAL PLAN

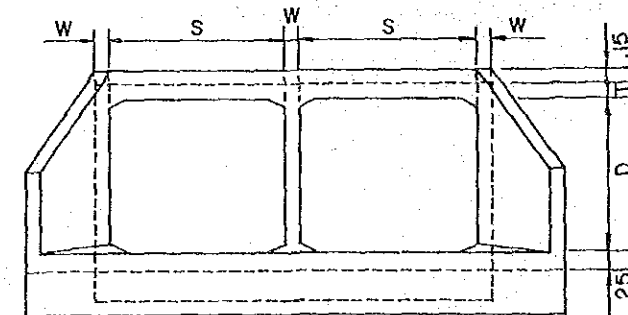


SINGLE TYPE



HALF LONGITUDINAL ELEVATION

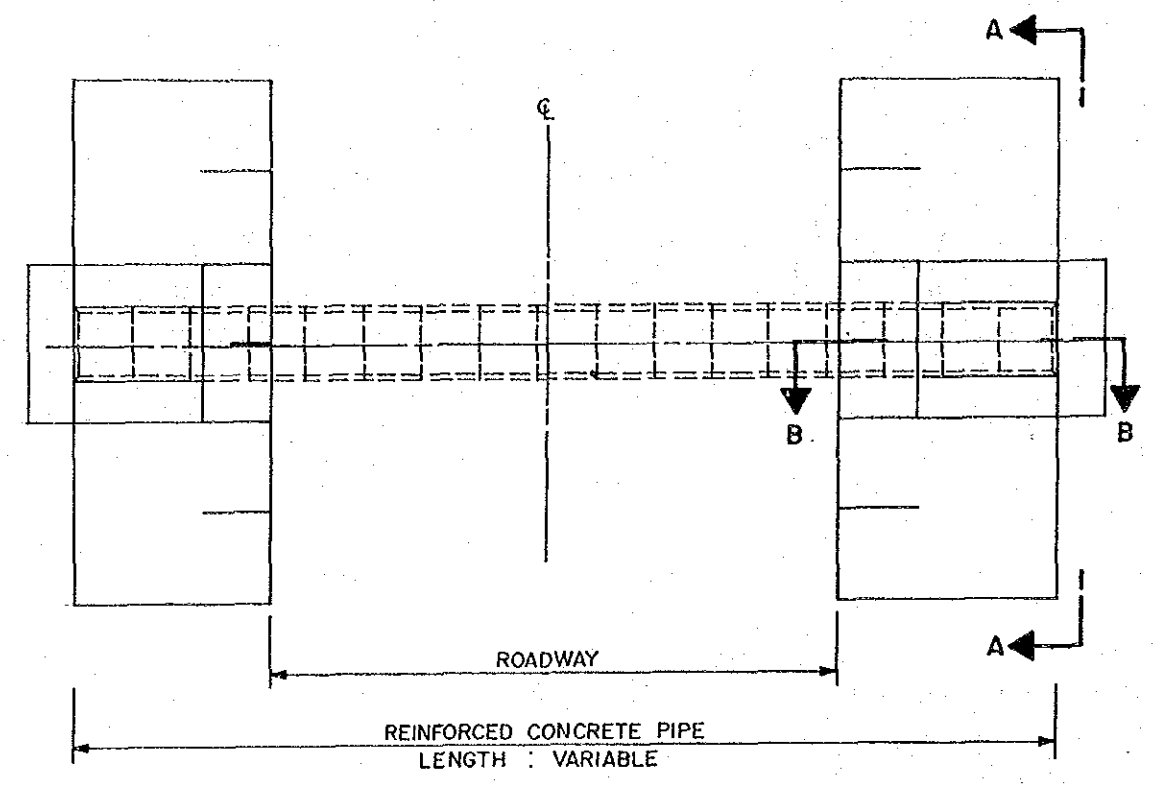
HALF LONGITUDINAL SECTION



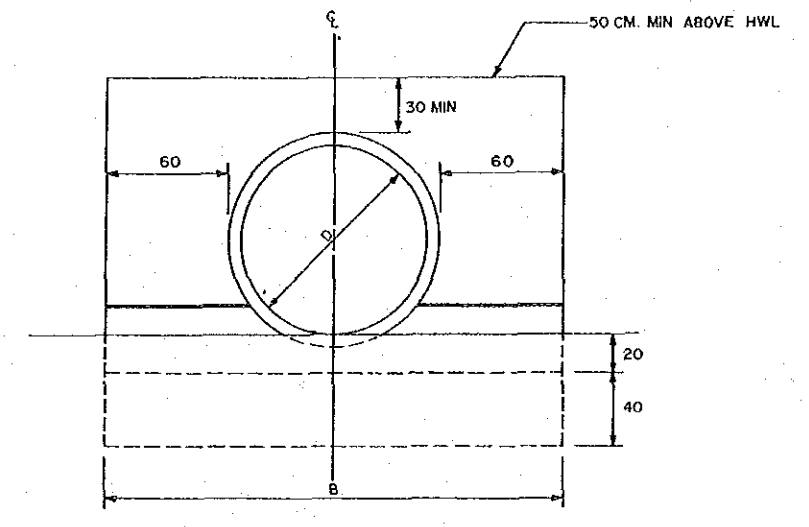
DOUBLE TYPE

SECTION A-A

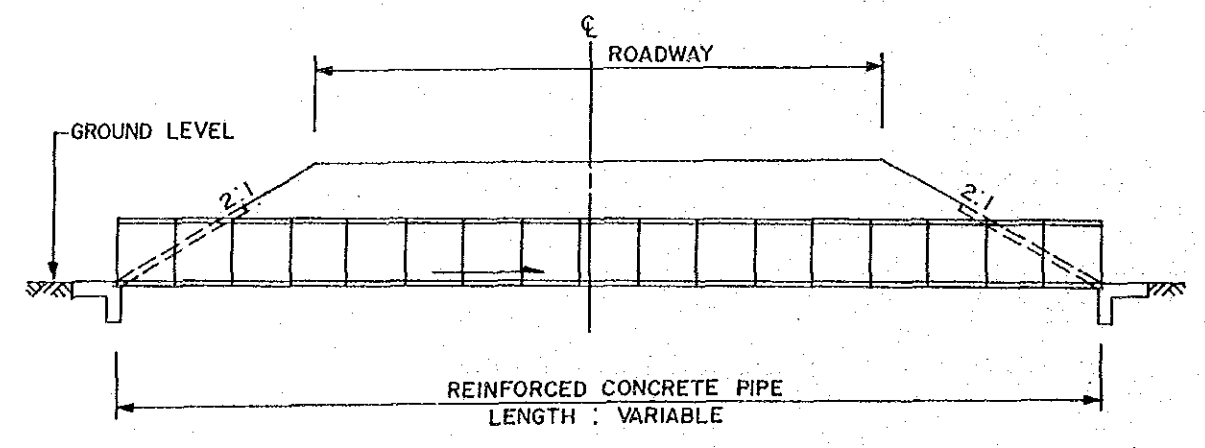
PIPE CULVERT



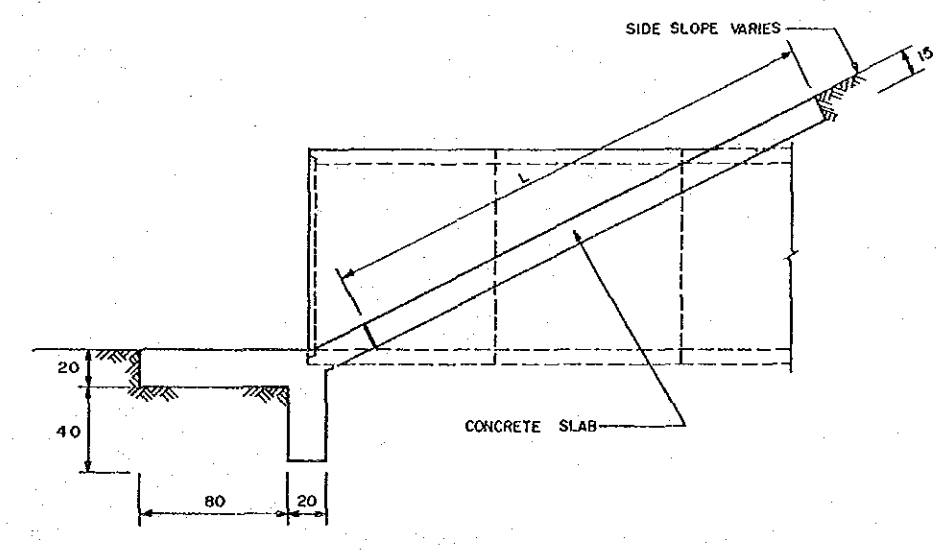
PLAN



SECTION A-A



PROFILE



SECTION B-B

List of Bridge

LIST OF BRIDGES (WD6-1:S3) (1/2)

Station	Materials	Structural System	Width (a+b+c+d+e:m)	Span and Length (m)	Remarks	(Fig.)
2+054	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	3*10.0=30.0	Used as existed	
5+156	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	1*10.0=10.0	Used as existed	
9+926	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	6.0+8.0+6.0=20.0	Used as existed	
13+120	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	8.0+10.0+8.0=26.0	Used as existed	
18+149	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	6.0+8.0+6.0=20.0	Used as existed	
19+532	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	1*10.0=10.0	Used as existed	
19+832	RC	SP.SL	0.5+0.0+8.0+0.0+0.5=9.0	1*10.0=10.0	Used as existed	
27+600	RC	SP.SL	0.3+0.7+10.0+0.7+0.3=12.0	7.0+8.0+7.0=22.0	New construction (New link)	
31+100	RC	SP.SL	0.3+0.7+10.0+0.7+0.3=12.0	4*7.0=28.0	New construction (New link)	
34+150 Kh.Langu	PC/RC	SP.T/SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	4*10.0+20.0+2*10.0=80.0	Used as existed	
38+550	RC	SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	1*10.0=10.0	Used as existed	
43+600	RC	SP.SL	0.3+0.7+10.0+0.7+0.3=12.0	3*8.0=24.0	New construction	
45+100	RC	SP.SL	0.3+0.7+10.0+0.7+0.3=12.0	1*10.0=10.0	New construction	
46+500	RC	SP.SL	0.3+0.7+10.0+0.7+0.3=12.0	3*8.0=24.0	New construction	

LIST OF BRIDGES (WD6-1:S3) (2/2)

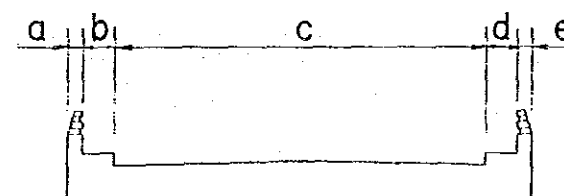
Station	Materials	Structural System	Width (a+b+c+d+e:m)	Span and Length (m)	Remarks	(Fig.)
57+850	RC	SP.SL	0.2+0.8+8.0+0.8+0.2=10.0	3*5.0=15.0	Used as existed	
67+630	RC	SP.SL	0.2+0.8+8.0+0.8+0.2=10.0	4*10.0=40.0	Used as existed	
69+180	RC	SP.SL	0.2+0.7+8.0+0.7+0.2=9.8	3*7.0=21.0	Used as existed	
70+400	RC	SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	3*10.0=30.0	Used as existed	
70+960	RC	SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	3*6.0=18.0	Used as existed	
73+580	RC	SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	3*8.0=24.0	Used as existed	
76+080	RC	SP.SL	0.3+0.7+8.0+0.7+0.3=10.0	7*10.0=70.0	Used as existed	
79+780	RC	SP.SL	0.3+1.2+8.0+1.2+0.3=11.0	8.0+4*10.0+8.0=56.0	Used as existed	

Note: (1) Materials

RC: Reinforced Concrete Bridge
 PC: Prestressed Concrete Bridge

(2) Structural System

SP.SL: Simply Supported Slab
 SP.T : Simply Supported T-shape Girder



List of Culvert

LIST OF BOX AND PIPE CULVERT

STATION	CULVERT TYPE	CULVERT SIZE (m)		NO. of LOCATIONS	CULVERT LENGTH (m)		
		PIPE	BOX		EXISTING	EXTENDED CONST-RUCTION	NEW CONST-RUCTION
		NO. of ROW x DIAMETER	NO. of CELLS (CLEAR SPAN x DEPTH)				
0+347	Pipe	1xØ1.00		1	12.0	3.0	
1+035	Pipe	1xØ1.00		1	12.0	3.0	
2+485	Pipe	1xØ0.80		1	13.0	3.0	
2+675	Pipe	1xØ0.80		1	13.0	3.0	
2+778	Pipe	1xØ0.80		1	14.0	3.0	
3+095	Pipe	1xØ0.80		1	10.0	3.0	
3+715	Pipe	2xØ0.80		1	14.0	3.0	
4+142	Pipe	1xØ0.80		1	14.0	3.0	
5+926	Box		2(1.00x1.50)	1	17.0	3.0	
6+142	Pipe	1xØ0.80		1	13.0	3.0	
6+385	Pipe	1xØ0.80		1	14.0	3.0	
7+396	Pipe	1xØ0.80		1	14.0	3.0	
8+181	Box		2(3.40x2.50)	1	10.0	3.0	
9+427	Pipe	1xØ0.80		1	12.0	3.0	
9+621	Pipe	1xØ1.00		1	13.0	3.0	
10+106	Pipe	1xØ0.80		1	15.0	3.0	
11+088	Pipe	1xØ0.80		1	11.0	3.0	
11+599	Pipe	1xØ0.80		1	10.0	3.0	
11+750	Pipe	1xØ0.60		1	7.0	3.0	
11+990	Pipe	1xØ0.60		1	11.0	3.0	
12+233	Pipe	1xØ0.80		1	12.0	3.0	
12+369	Pipe	1xØ0.60		1	9.0	3.0	
12+912	Pipe	1xØ0.80		1	18.0	3.0	
13+383	Pipe	2xØ0.80		1	11.0	3.0	
13+766	Pipe	1xØ0.60		1	14.0	3.0	
14+100	Pipe	1xØ0.80		1	14.0	3.0	
14+297	Pipe	1xØ1.00		1	16.0	3.0	
14+645	Pipe	1xØ1.00		1	16.0	3.0	
15+340	Pipe	1xØ0.80		1	16.0	3.0	
15+620	Pipe	1xØ0.80		1	16.0	3.0	
15+932	Pipe	1xØ0.60		1	12.0	3.0	
16+120	Pipe	1xØ0.80		1	15.0	3.0	
16+980	Pipe	1xØ0.80		1	15.0	3.0	
17+150	Pipe	1xØ0.80		1	12.0	3.0	
17+507	Pipe	1xØ1.00		1	12.0	3.0	
17+622	Pipe	1xØ1.00		1	13.0	3.0	
17+411	Pipe	1xØ1.00		1	13.0	3.0	
17+740	Pipe	1xØ1.00		1	14.0	3.0	
19+077	Pipe	1xØ1.00		1	14.0	3.0	
19+976	Pipe	1xØ0.60		1	12.0	3.0	

STATION	CULVERT TYPE	CULVERT SIZE (m)		NO. of LOCATIONS	CULVERT LENGTH (m)		
		PIPE	BOX		EXISTING	EXTENDED CONST-RUCTION	NEW CONST-RUCTION
		NO. of ROW x DIAMETER	NO. of CELLS (CLEAR SPAN x DEPTH)				
20+060	Pipe	1xØ0.60		1	12.0	3.0	
20+625	Pipe	1xØ0.80		1	15.0	3.0	
21+145	Pipe	1xØ0.80		1	19.0	3.0	
21+468	Pipe	1xØ0.80		1	19.0	3.0	
22+615	Pipe	1xØ0.80		1	24.0	3.0	
22+800	Box		1(1.80x1.80)	1			14.0
22+800-25+250	Pipe	1xØ1.00		5			20.0
	Pipe	1xØ0.60		3			20.0
23+250	Box		1(1.80x1.80)	1			16.0
23+750	Box		1(1.80x1.80)	1			16.0
24+250	Box		1(1.80x1.80)	1			15.0
24+750	Box		1(1.80x1.80)	1			13.0
25+250	Box		1(1.80x1.80)	1			15.0
25+250-27+800	Pipe	1xØ1.00		5			18.0
	Pipe	1xØ0.60		3			18.0
25+750	Box		1(1.80x1.80)	1			17.0
26+250	Box		1(1.80x1.80)	1			13.0
26+750	Box		1(1.80x1.80)	1			16.0
27+250	Box		1(1.80x1.80)	1			18.0
27+800-29+930	Pipe	1xØ1.00		4			26.0
	Pipe	1xØ0.60		5			26.0
29+400	Box		1(1.80x1.80)	1			14.0
29+930-32+700	Pipe	1xØ1.00		5			18.0
	Pipe	1xØ0.60		4			18.0
30+300	Box		1(1.80x1.80)	1			12.0
30+700	Box		1(1.80x1.80)	1			12.0
31+700	Box		1(1.80x1.80)	1			12.0
32+200	Box		1(1.80x1.80)	1			12.0
32+700	Box		1(1.80x1.80)	1			12.0
33+076	Pipe	1xØ0.80		1	15.0	2.0	
33+340	Pipe	1xØ0.80		1	14.0	2.0	
33+606	Pipe	1xØ0.80		1	15.0	2.0	
33+860	Pipe	1xØ0.80		1	15.0	2.0	
33+995	Pipe	1xØ0.80		1	14.0	2.0	
34+560	Pipe	1xØ0.80		1	18.0	2.0	
34+810	Pipe	1xØ0.80		1	16.0	2.0	
35+189	Pipe	1xØ0.80		1	24.0	2.0	
35+390	Pipe	1xØ0.60		1	14.0	2.0	
35+838	Box		4(1.50x1.50)	1	10.0	2.0	
38+754	Pipe	1xØ0.80		1	14.0	2.0	

LIST OF BOX AND PIPE CULVERT

STATION	CULVERT TYPE	CULVERT SIZE (m)		NO. of LOCATIONS	CULVERT LENGTH (m)		
		PIPE	BOX		EXISTING	EXTENDED CONST-RUCTION	NEW CONST-RUCTION
		NO. of ROW x DIAMETER	NO. of CELLS (CLEAR SPAN x DEPTH)				
39+478	Pipe	2xØ0.80		1	15.0	2.0	
39+667	Pipe	2xØ1.00		1	15.0	2.0	
39+684	Pipe	2xØ0.80		1	18.0	2.0	
40+030	Pipe	2xØ0.80		1	16.0	2.0	
40+455	Pipe	2xØ0.80		1	17.0	2.0	
40+724	Pipe	2xØ0.80		1	13.0	2.0	
40+919	Pipe	3xØ0.80		1	14.0	2.0	
40+925	Pipe	1xØ0.80		1	14.0	2.0	
41+100-42+800	Pipe	1xØ1.00		4			17.0
	Pipe	1xØ0.80		3			17.0
41+200	Box		1(1.80x1.80)	1			12.0
41+240	Pipe	3xØ0.80		1	14.0	2.0	
42+000	Box		1(1.80x1.80)	1			11.0
42+800-44+150	Pipe	1xØ1.00		2			18.0
	Pipe	1xØ0.60		3			18.0
43+000	Box		1(1.80x1.80)	1			11.0
44+000	Box		1(1.80x1.80)	1			13.0
44+150-44+600	Pipe	1xØ0.60		2			20.0
44+400	Box		2(2.10x2.10)	1			14.0
44+600-45+300	Pipe	1xØ1.00		2			22.0
	Pipe	1xØ0.60		2			22.0
45+300-46+350	Pipe	1xØ0.80		2			26.0
	Pipe	1xØ0.60		3			26.0
45+800	Box		1(1.80x1.80)	1			17.0
46+350-46+750	Pipe	1xØ1.00		2			26.0
	Pipe	1xØ1.00		7			18.0
	Pipe	1xØ0.60		8			18.0
47+450	Box		1(1.80x1.00)	1			12.0
48+400	Box		1(1.80x1.00)	1			13.0
50+150-50+800	Pipe	1xØ1.20		1			18.0
	Pipe	1xØ1.00		1			18.0
	Pipe	1xØ0.80		1			18.0
	Pipe	1xØ0.60		1			18.0
50+800-52+400	Pipe	1xØ1.00		1			18.0
	Pipe	1xØ0.60		6			18.0
51+350	Box		1(1.80x1.80)	1			13.0
52+400-56+950	Pipe	1xØ1.00		5			15.0
	Pipe	1xØ0.80		5			15.0
	Pipe	1xØ0.60		9			15.0
53+700	Box		1(2.10x2.10)	1			13.0

STATION	CULVERT TYPE	CULVERT SIZE (m)		NO. of LOCATIONS	CULVERT LENGTH (m)		
		PIPE	BOX		EXISTING	EXTENDED CONST-RUCTION	NEW CONST-RUCTION
		NO. of ROW x DIAMETER	NO. of CELLS (CLEAR SPAN x DEPTH)				
54+820	Box		1(2.10x2.10)	1			20.0
55+250	Box		1(2.10x2.10)	1			11.0
56+350	Box		1(2.10x2.10)	1			12.0
56+950	Box		1(1.80x1.80)	1			18.0
56+950-59+000	Pipe	1xØ1.00		4			20.0
	Pipe	1xØ0.60		5			20.0
57+400	Box		1(1.80x1.80)	1			16.0
59+316	Pipe	1xØ1.00		1	18.0	2.0	
59+815	Pipe	1xØ1.00		1	22.0	2.0	
60+040	Pipe	1xØ1.00		1	15.0	2.0	
60+376	Pipe	1xØ0.60		1	17.0	2.0	
60+509	Pipe	2xØ1.00		1	20.0	2.0	
60+566	Pipe	3xØ1.00		1	19.0	2.0	
60+711	Box		2(3.00x3.00)	1	10.0	2.0	
60+750	Box		2(3.30x3.30)	1	12.0	2.0	
60+938	Pipe	1xØ1.00		1	17.0	2.0	
61+144	Pipe	1xØ0.80		1	19.0	2.0	
61+326	Pipe	2xØ1.00		1	22.0	2.0	
61+761	Pipe	2xØ1.00		1	16.0	2.0	
61+793	Pipe	2xØ0.60		1	14.0	2.0	
61+966	Pipe	1xØ0.60		1	14.0	2.0	
62+169	Pipe	1xØ0.80		1	11.0	2.0	
62+361	Pipe	1xØ1.00		1	16.0	2.0	
62+556	Pipe	1xØ0.60		1	15.0	2.0	
62+707	Pipe	1xØ1.00		1	14.0	2.0	
62+954	Pipe	2xØ0.60		1	15.0	2.0	
63+106	Pipe	1xØ1.00		1	15.0	2.0	
63+243	Pipe	1xØ0.80		1	15.0	2.0	
63+340	Pipe	1xØ1.00		1	16.0	2.0	
63+511	Pipe	2xØ0.80		1	12.0	2.0	
63+527	Pipe	2xØ0.60		1	14.0	2.0	
63+623	Pipe	2xØ1.00		1	16.0	2.0	
63+789	Pipe	1xØ0.80		1	15.0	2.0	
63+944	Pipe	2xØ0.80		1	16.0	2.0	
64+270	Pipe	1xØ1.00		1	16.0	2.0	
64+416	Pipe	2xØ1.00		1	16.0	2.0	
64+717	Pipe	3xØ1.00		1	17.0	2.0	
64+930	Pipe	2xØ0.60		1	14.0	2.0	
65+034	Pipe	2xØ1.00		1	16.0	2.0	
65+419	Pipe	1xØ0.80		1	15.0	2.0	

LIST OF BOX AND PIPE CULVERT

STATION	CULVERT TYPE	CULVERT SIZE (m)		NO. of LOCATIONS	CULVERT LENGTH (m)		
		PIPE	BOX		EXISTING	EXTENDED CONST- RUCTION	NEW CONST- RUCTION
		NO. of ROW x DIAMETER	NO. of CELLS (CLEAR SPAN x DEPTH)				
65+850	Pipe	2x \odot 0.60		1	15.0	2.0	
66+000	Pipe	1x \odot 0.60		1	17.0	2.0	
66+199	Pipe	1x \odot 1.00		1	16.0	2.0	
66+485	Pipe	1x \odot 1.50		1	20.0	2.0	
66+671	Pipe	1x \odot 1.00		1	15.0	2.0	
66+749	Pipe	1x \odot 1.00		1	17.0	2.0	
66+897	Pipe	1x \odot 1.00		1	16.0	2.0	
66+994	Pipe	1x \odot 1.20		1	19.0	2.0	
67+329	Pipe	1x \odot 1.20		1	21.0	2.0	
68+289	Pipe	1x \odot 1.00		1	17.0	2.0	
68+546	Box		2(2.40x2.40)	1	16.0	2.0	
69+040	Pipe	1x \odot 1.00		1	19.0	2.0	
69+873	Pipe	1x \odot 1.00		1	17.0	2.0	
70+762	Pipe	1x \odot 1.00		1	18.0	2.0	
71+620	Box		1(2.40x2.40)	1	11.0	2.0	
72+115	Pipe	1x \odot 1.00		1	14.0	2.0	
72+923	Box		2(2.40x2.40)	1	12.0	2.0	
72+982	Pipe	1x \odot 1.00		1	16.0	2.0	
73+975	Pipe	1x \odot 1.00		1	18.0	2.0	
74+203	Pipe	1x \odot 0.60		1	16.0	2.0	
75+369	Pipe	1x \odot 0.80		1	14.0	2.0	
77+001	Pipe	1x \odot 1.00		1	14.0	2.0	
77+081	Pipe	1x \odot 0.80		1	14.0	2.0	
77+909	Pipe	1x \odot 1.00		1	15.0	2.0	
80+910	Pipe	1x \odot 0.80		1	14.0	2.0	
81+935	Pipe	1x \odot 1.00		1	14.0	2.0	
82+185	Pipe	2x \odot 0.60		1	14.0	2.0	