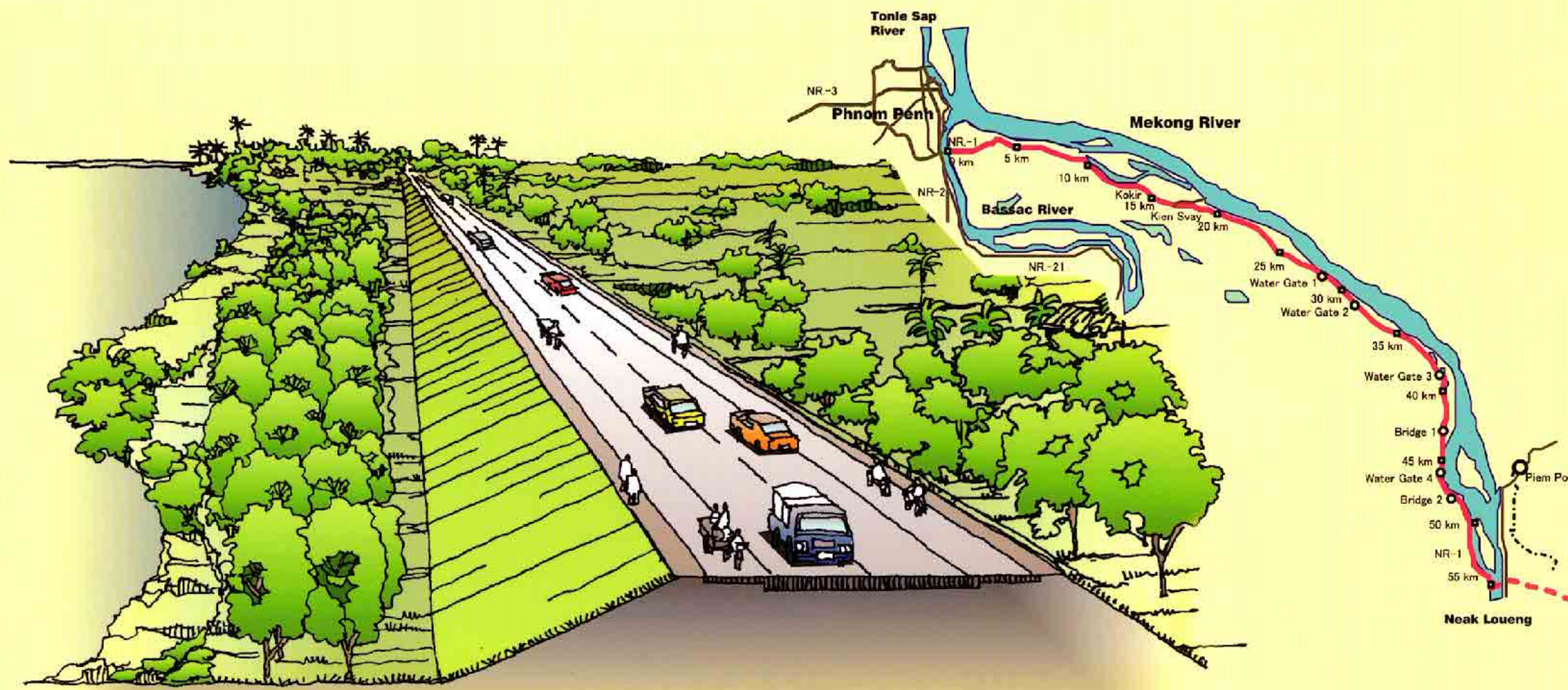


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)
THE ROYAL GOVERNMENT OF THE KINGDOM OF CAMBODIA

THE FEASIBILITY STUDY ON THE IMPROVEMENT OF NATIONAL ROAD No.1 (PHNOM PENH - NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA FINAL REPORT



Vol.3 DRAWINGS

March 2003

PACIFIC CONSULTANTS INTERNATIONAL KATAHIRA & ENGINEERS INTERNATIONAL

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**MINISTRY OF PUBLIC WORKS AND TRANSPORT
THE ROYAL GOVERNMENT OF THE KINGDOM OF CAMBODIA**

**THE FEASIBILITY STUDY
ON
THE IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH ~ NEAK LOUENG SECTION)
IN
THE KINGDOM OF CAMBODIA**

FINAL REPORT

Vol. 3 DRAWINGS

MARCH 2003

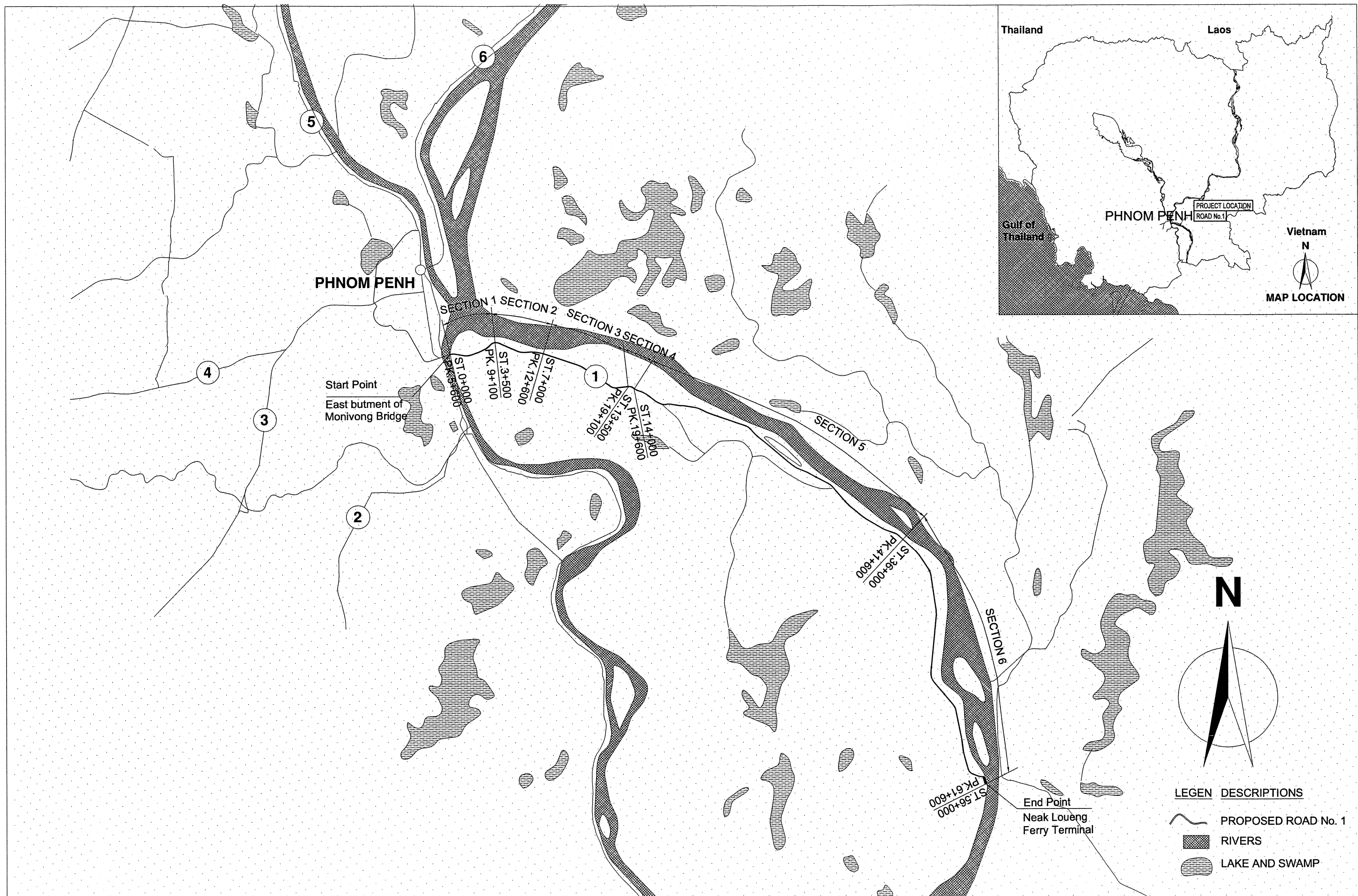
PACIFIC CONSULTANTS INTERNATIONAL

KATAHIRA & ENGINEERS INTERNATIONAL

DRAWING SCHEDULE

Title	Drawing No.
A. GENERAL	
1. Location Map	A - 01
2. Legend	A - 02
B. ROAD	
1. Typical Cross Section	B - 01
2. Plan and Profile	B - 05
3. Cross Section	B - 85
4. Tiger Road Intersection	B - 120
C. STRUCTURE	
1. General View of Bridge No.1	C - 01
2. General View of Bridge No.2	C - 02
3. General View of Bridge No.3	C - 03
4. General View of Box Culvert (without Water Gate)	C - 04
5. General View of Box Culverts (2 cells with Water Gate)	C - 05

Title	Drawing No.
6. General View of Box Culvert 11 (with Water Gate)	C - 06
7. General View of Pipe Culverts	C - 07
D. MISCELLANEOUS	
1. Drainage System	
1.1 Side Drainage Installation Plan for Chbar Ampav District	D - 01
1.2 Side Drainage Installation Plan for Kokir District	D - 02
2. Administration and Other Facilities	
2.1 Toll Gate & Weighing Station	D - 03
2.2 Bus Bays & Cross Walk	D - 04
2.3 Moto Stop & Shelter (Livestock Refuge)	D - 05
3. Traffic Safety and Control Facilities	
4.1 Pedesrian Bridge & Bus Bay	D - 06
4.2 Details of Miscellaneous of Road and Traffic Facilities	D - 07



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)








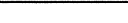



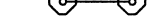

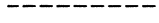

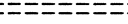
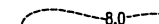


THE FEASIBILITY STUDY ON THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
PACIFIC CONSULTANTS INTERNATIONAL &
KATAHIRA & ENGINEERS INTERNATIONAL

TITLE :
LOCATION MAP

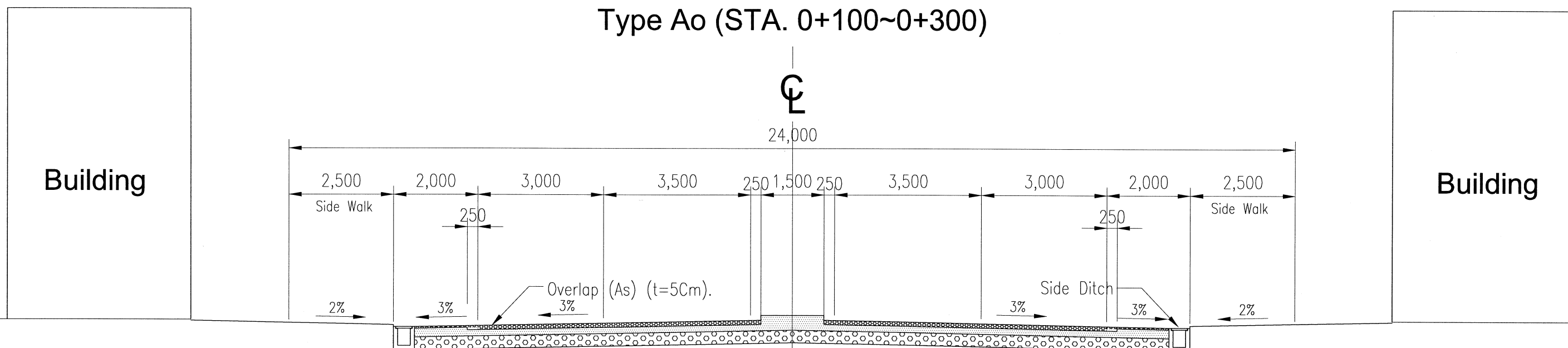
SCALE
NOT TO
SCALE

Drawing No.
A-01

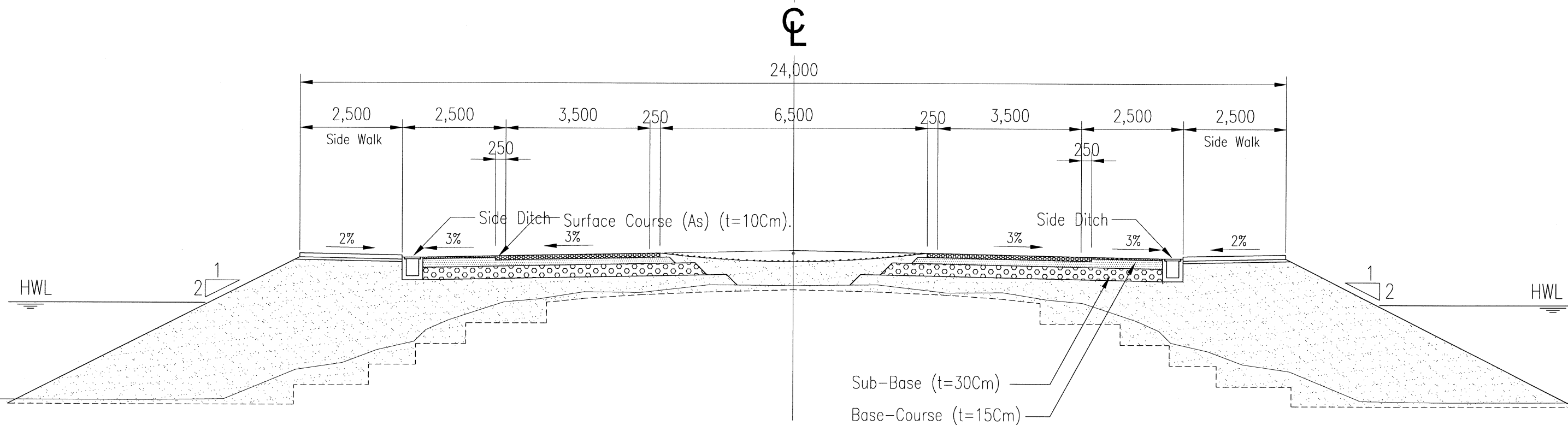
1		Intersection Point
2		Bench Mark (by GPS)
3		Bench Mark (Every 1Km)
4		Grid Mark
5	N125500	Northing (125500)
6	E495600	Easting (495600)
7		Electric Pole
8		Wooden Electric Pole
9		House
10		Fence
11		Tree
12		Advertising Board
13		Name Board
14		Existing Road
15		Existing Centerline
16		Design Centerline
17		Offset 15m And 30m From Centerline(Both Side)
18		Contour line
19		Slope Or Embankment
20		Pipe Or Box Culvert
21		Bridge

22	PI	Point Intersection
23	BC	Beginning Point Of Curve
24	EC	Ending Point Of Curve
25	TS	Tangent/Spiral Intersection
26	SC	Spiral/Curve Intersection
27	CS	Curve/Spiral Intersection
28	ST	Spiral/Tangent Intersection

Type Ao (STA. 0+100~0+300)



Type A (STA. 0+300~3+500)



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE FEASIBILITY STUDY ON THE
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IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
PACIFIC CONSULTANTS INTERNATIONAL &
KATAHIRA & ENGINEERS INTERNATIONAL

TITLE :
TYPICAL CROSS SECTION (1/4)

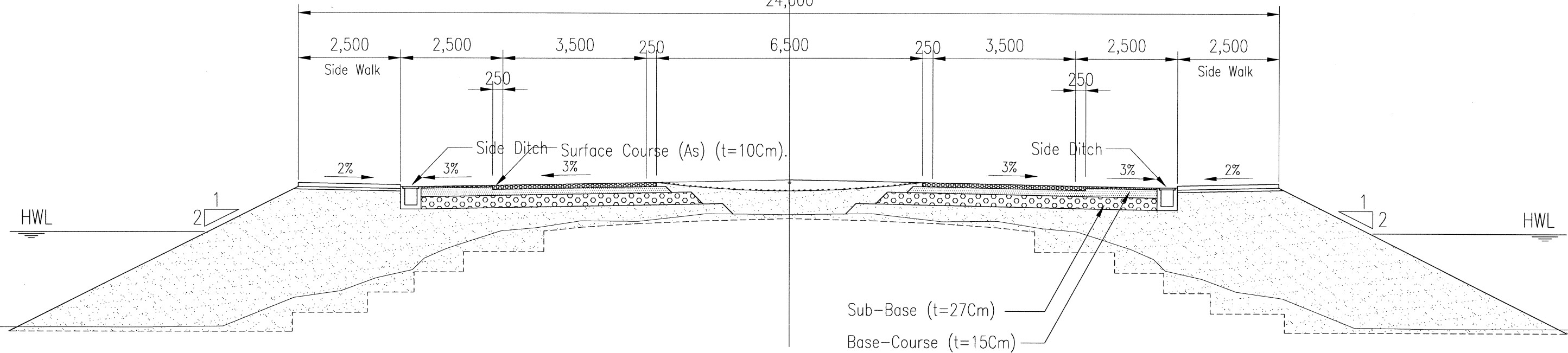
SCALE
1:100

Drawing No.
B - 01

Type B (STA. 3+500~7+000)



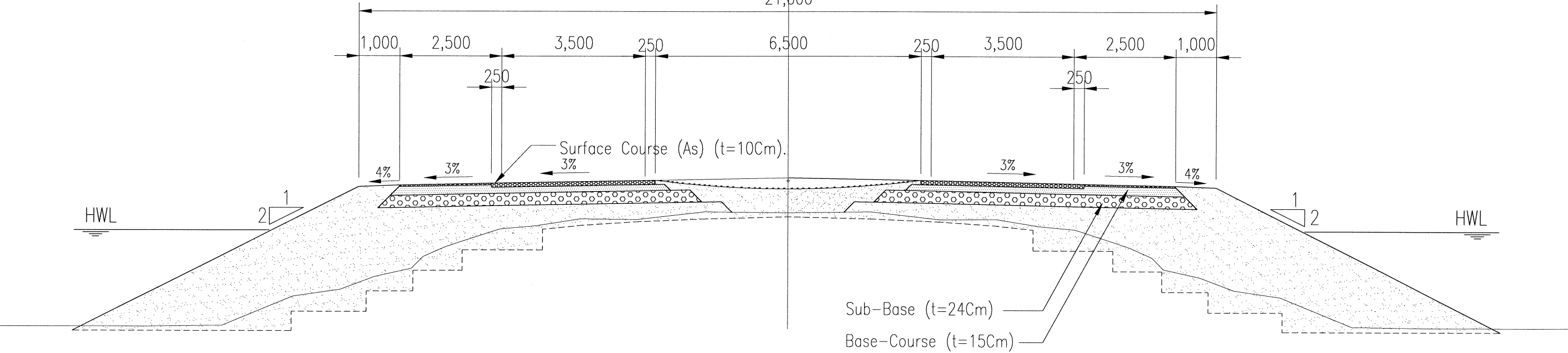
24,000



Type C (STA. 7+000~13+500)

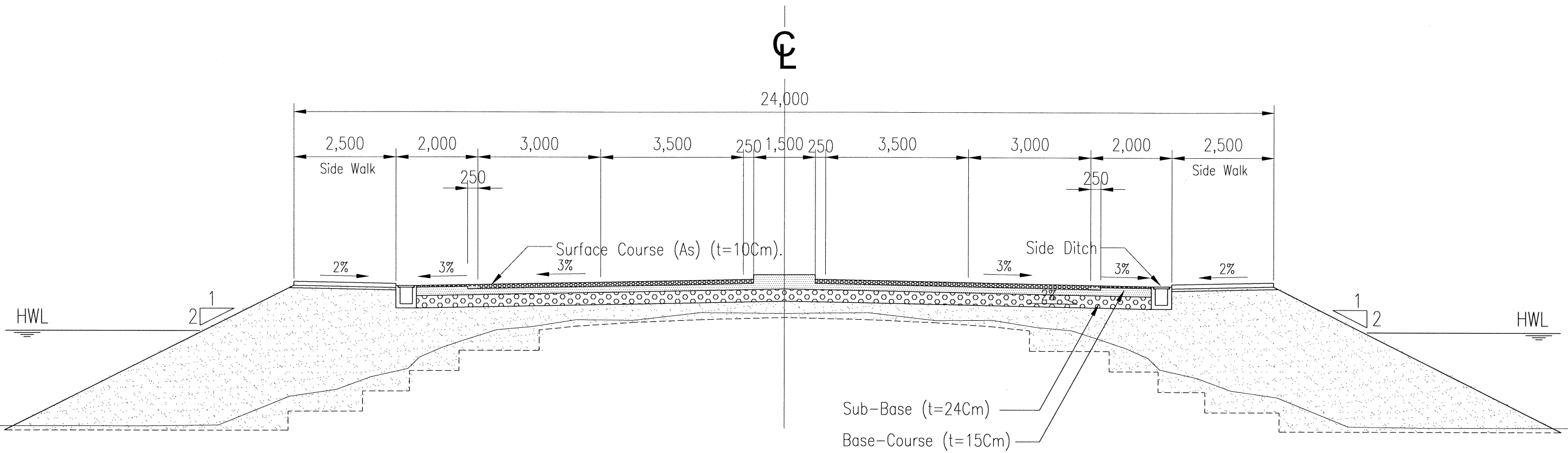


21,000

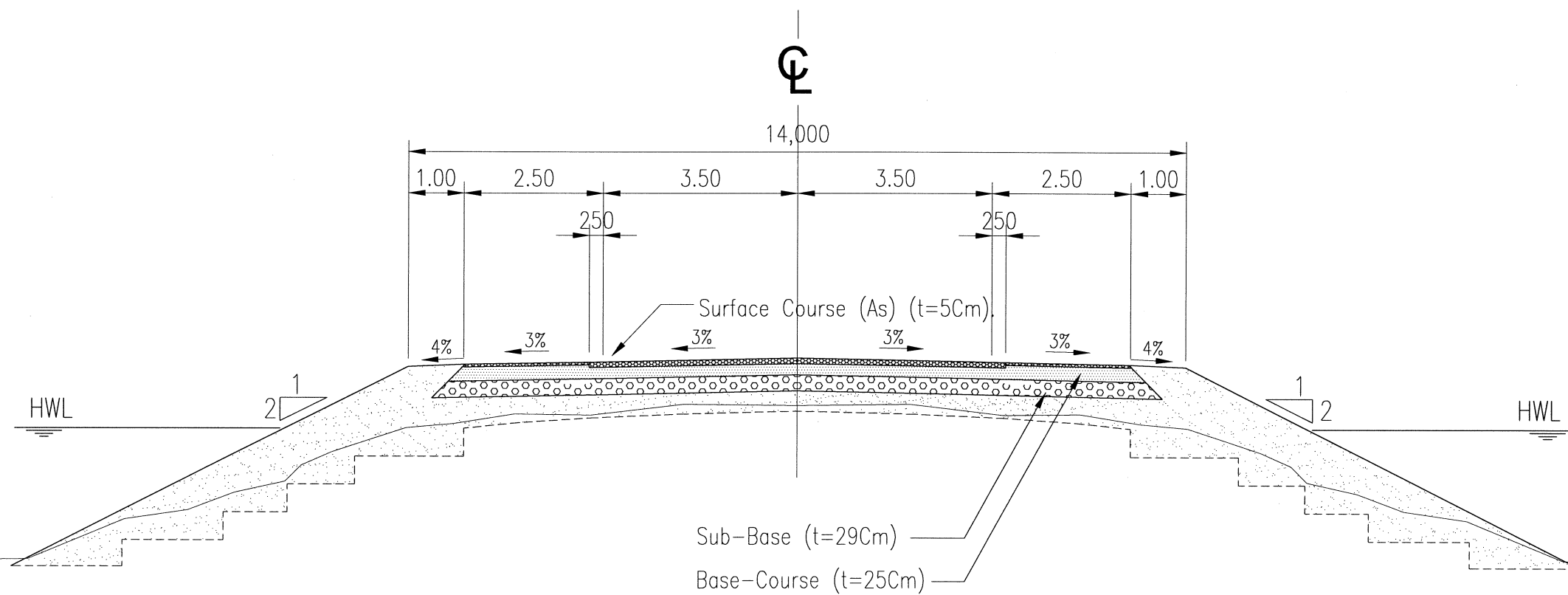


MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE FEASIBILITY STUDY ON THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL & KATAHIRA & ENGINEERS INTERNATIONAL	TITLE : TYPICAL CROSS SECTION (2/4)	SCALE 1:100	Drawing No. B - 02
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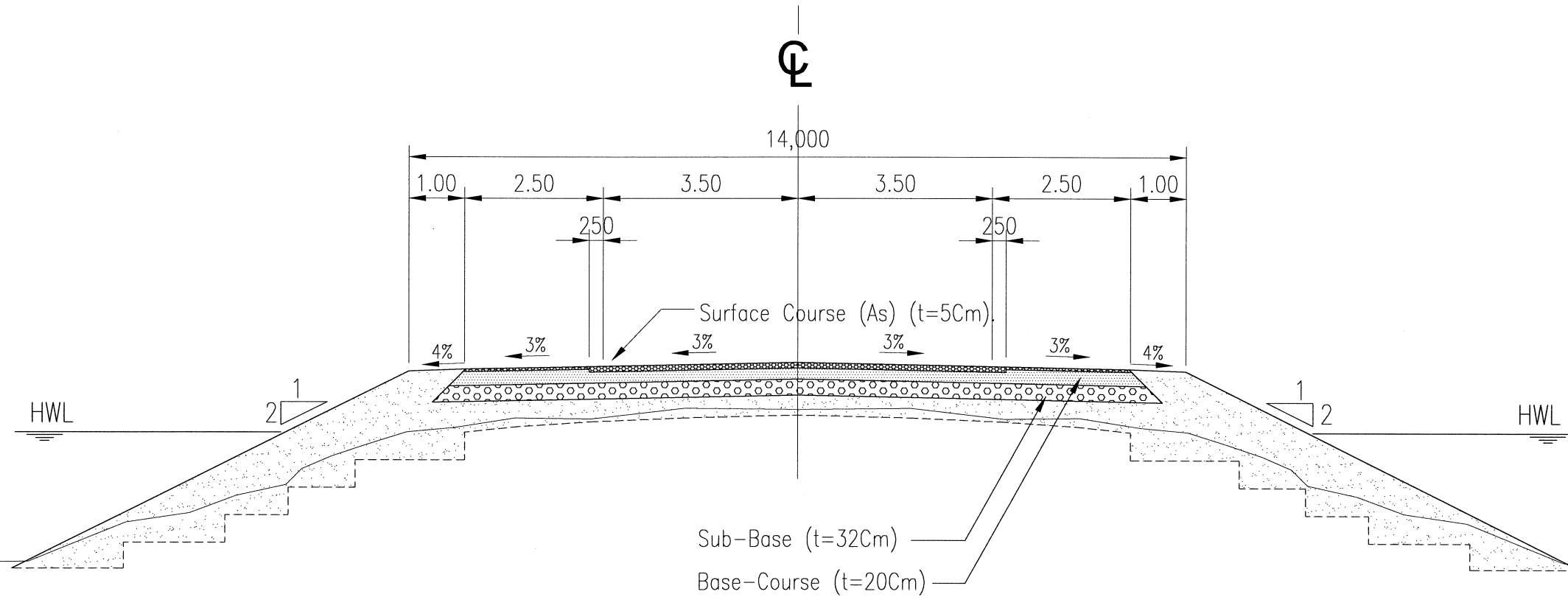
Type D (STA. 13+500~14+000)



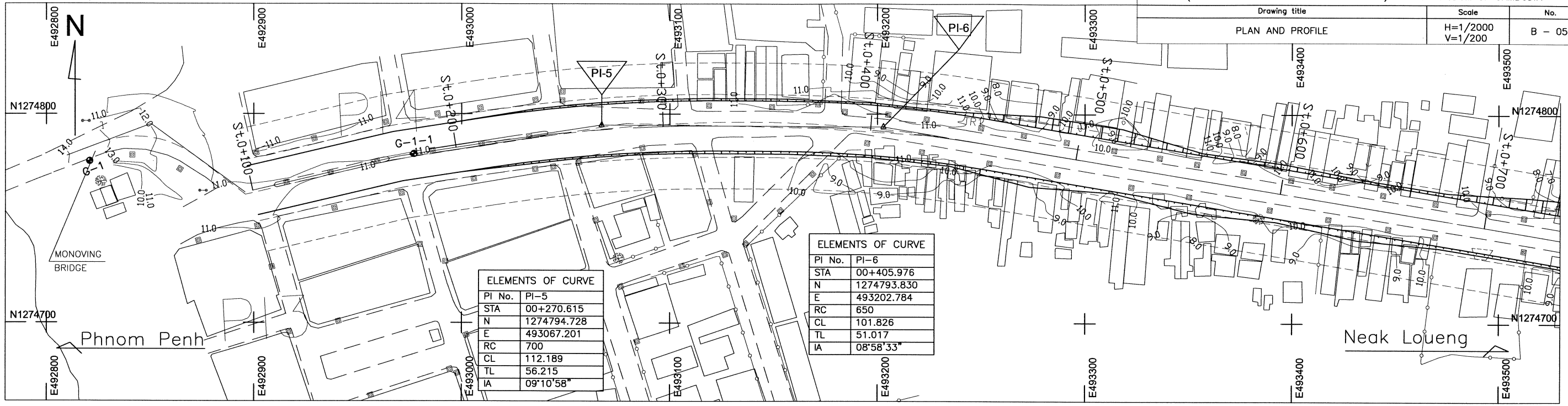
Type E (STA. 14+000~36+000)



Type F (STA. 36+000~55+300)

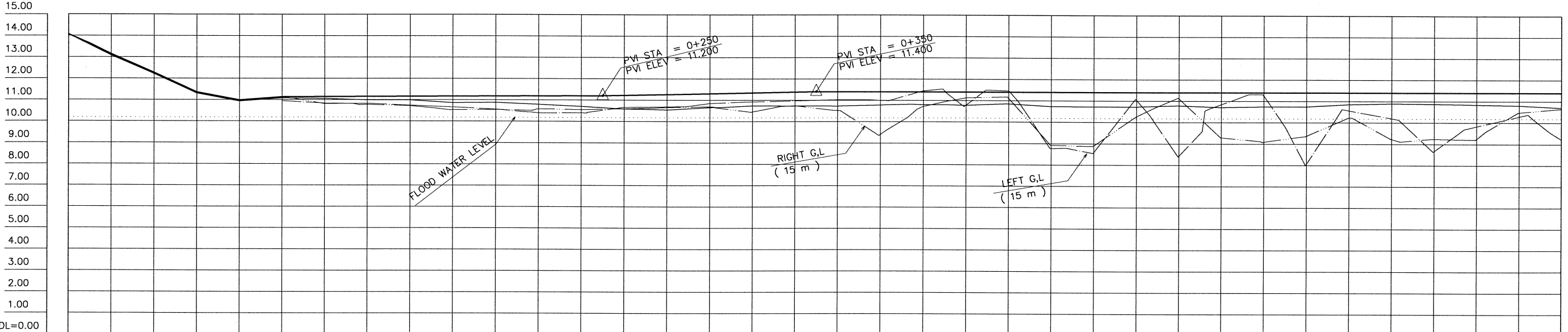


MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE FEASIBILITY STUDY ON THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY PACIFIC CONSULTANTS INTERNATIONAL & KATAHIRA & ENGINEERS INTERNATIONAL	TITLE : TYPICAL CROSS SECTION (4/4)	SCALE 1:100	Drawing No. B - 04
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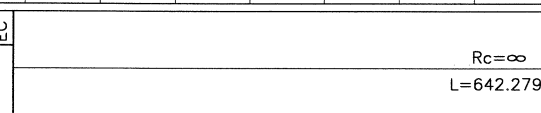
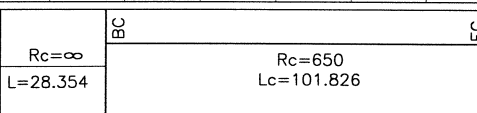
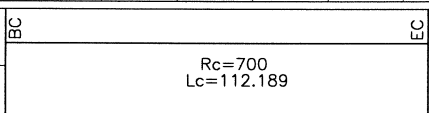
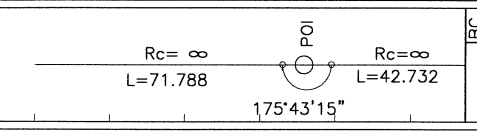


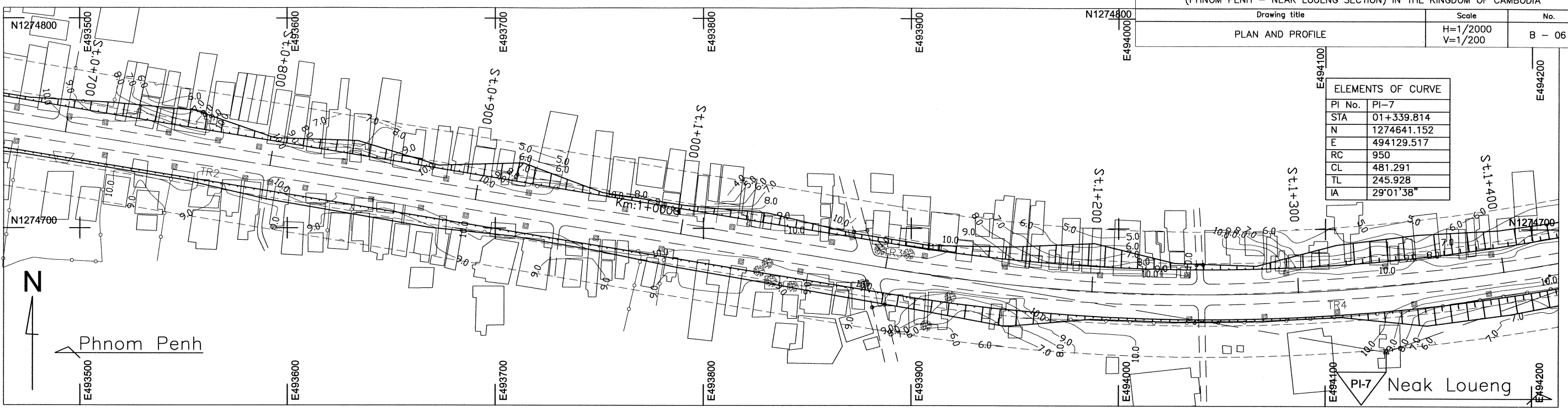
ELEMENTS OF CURVE	
PI No.	PI-5
STA	00+270.615
N	1274794.728
E	493067.201
RC	700
CL	112.189
TL	56.215
IA	09°10'58"

ELEMENTS OF CURVE	
PI No.	PI-6
STA	00+405.976
N	1274793.830
E	493202.784
RC	650
CL	101.826
TL	51.017
IA	08°58'33"

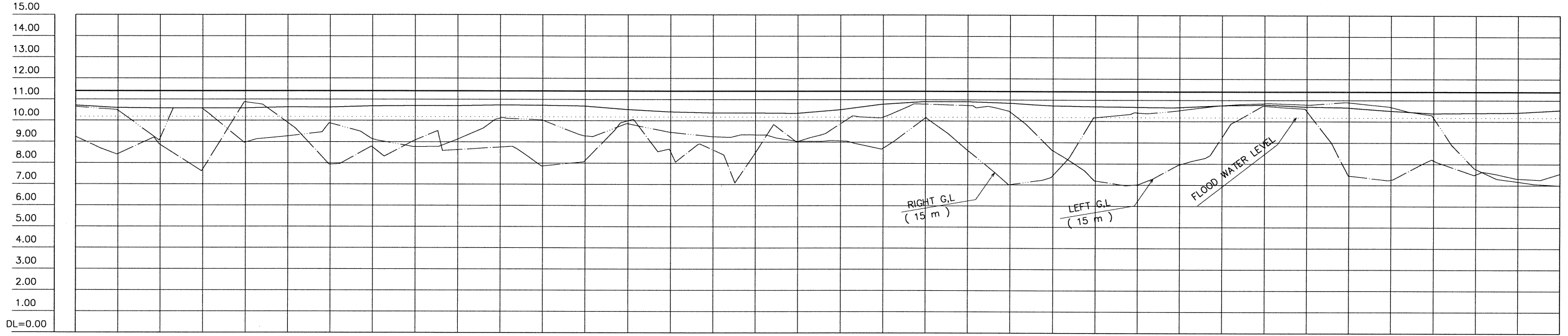


VERTICAL ALIGNMENT	GRADES		STATION	GROUND HEIGHT	PAVEMENT HEIGHT	HORIZONTAL CURVATURE	SUPER-ELEVATION	CROSS SECTION TYPE
	$i = 0.047\%$ $L = 150.00$	$i = 0.200\%$ $L = 100.00$	0+000	14.06	13.130		NC	TYPE-Ao
			+020	13.08	12.260		NC	
			+040	12.21	11.350		NC	
			+060	11.30	10.980		NC	
			+080	10.93	11.130		NC	
			+100	11.08	11.139		NC	
			+120	11.05	11.149		NC	
			+140	10.99	11.158		NC	
			+160	10.99	11.167		NC	
			+180	10.86	11.177		NC	
			+200	10.88	11.186		NC	
			+220	10.79	11.195		NC	
			+240	10.70	11.220		NC	
			+260	10.58	11.260		NC	
			+280	10.54	11.300		NC	
			+300	10.65	11.340		NC	
			+320	10.73	11.380		NC	
			+340	10.73	11.400		NC	
			+360	10.73	11.400		NC	
			+380	10.78	11.400		NC	
			+400	10.80	11.400		NC	
			+420	10.78	11.400		NC	
			+440	10.85	11.400		NC	
			+460	10.73	11.400		NC	
			+480	10.72	11.400		NC	
			+500	10.72	11.400		NC	
			+520	10.78	11.400		NC	
			+540	10.71	11.400		NC	
			+560	10.74	11.400		NC	
			+580	10.74	11.400		NC	
			+600	10.85	11.400		NC	
			+620	10.89	11.400		NC	
			+640	10.88	11.400		NC	
			+660	10.84	11.400		NC	
			+680	10.81	11.400		NC	
			+700	10.71	11.400		NC	TYPE-A

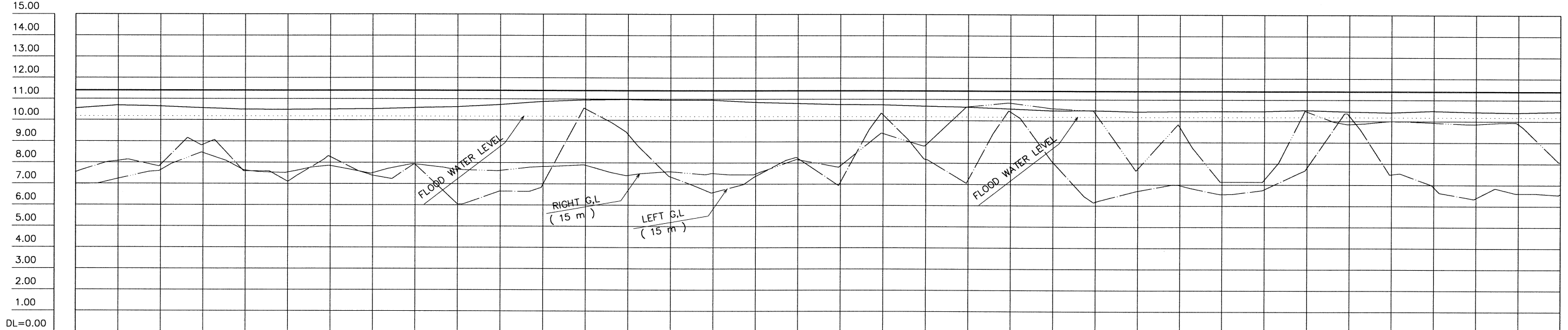
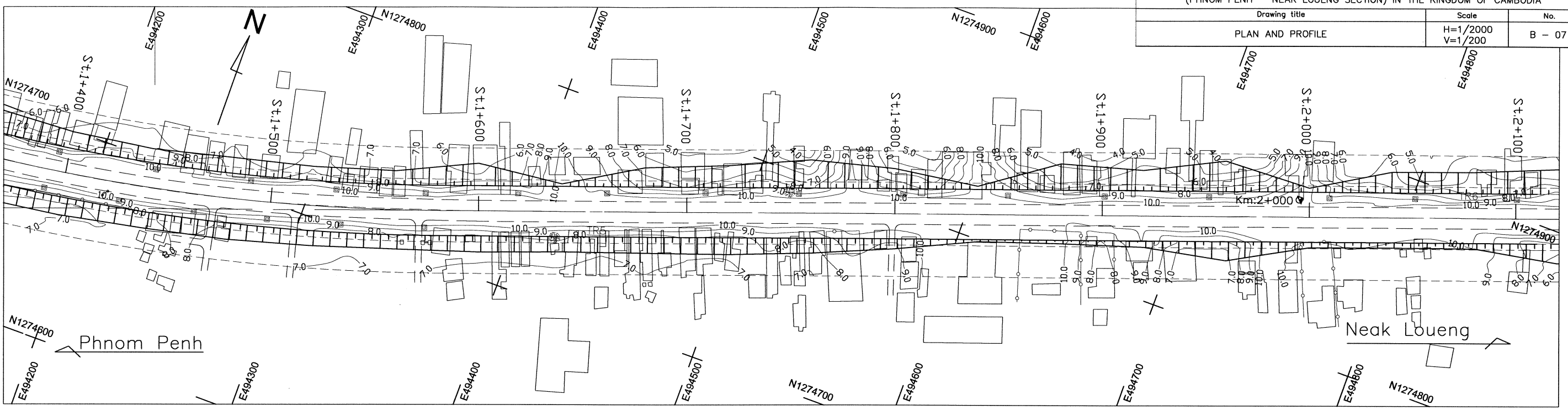




ELEMENTS OF CURVE	
PI No.	PI-7
STA	01+339.814
N	1274641.152
E	494129.517
RC	950
CL	481.291
TL	245.928
IA	29°01'38"

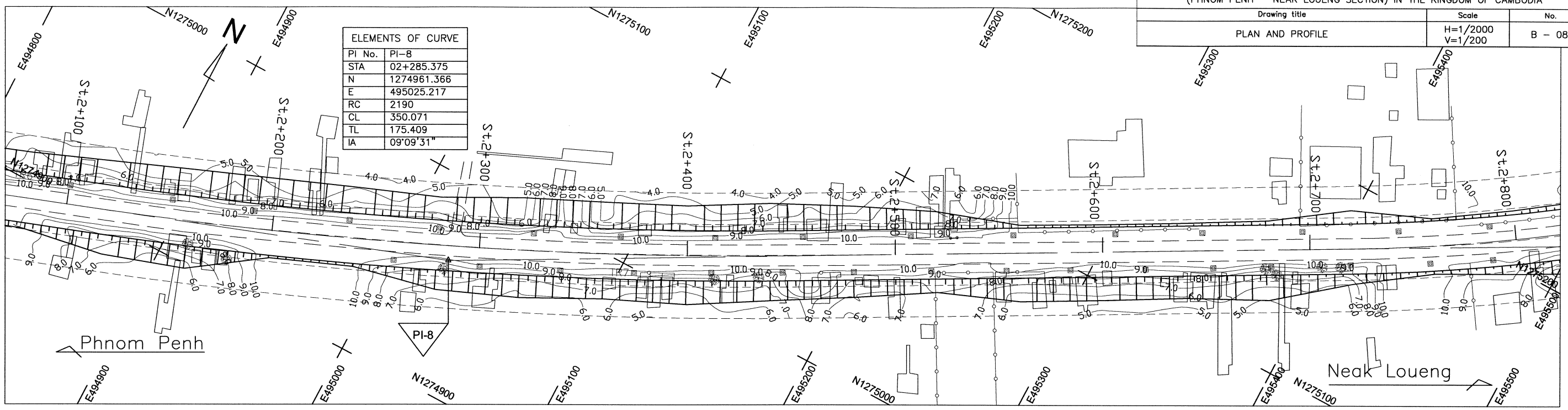


VERTICAL ALIGNMENT	I=0.000% L=2710.00																																			
PAVEMENT HEIGHT	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400							
GROUND HEIGHT	10.71	10.60	10.58	10.58	10.58	10.63	10.62	10.68	10.70	10.70	10.73	10.72	10.69	10.53	10.42	10.37	10.37	10.36	10.53	10.78	10.91	10.91	10.84	10.73	10.69	10.66	10.66	10.75	10.78	10.69	10.65	10.50	10.39	10.40	10.42	10.54
STATION	0+700	+720	+740	+760	+780	0+800	+820	+840	+860	+880	0+900	+920	+940	+960	+980	-1+000	-1+020	-1+040	-1+060	-1+080	-1+100	-1+120	-1+140	-1+160	-1+180	-1+200	-1+220	-1+240	-1+260	-1+280	-1+300	-1+320	-1+340	-1+360	-1+380	-1+400
HORIZONTAL CURVATURE	Rc=∞ L=642.279															BC		Rc=950 Lc=481.291																		
SUPER-ELEVATION	NC															NC																				
CROSS SECTION TYPE	TYPE-A															TYPE-A																				

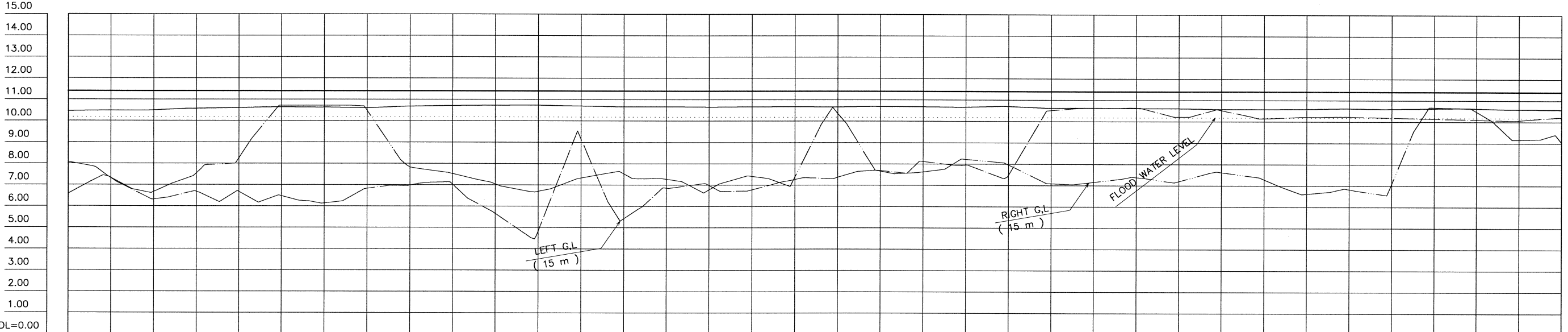


VERTICAL ALIGNMENT	I=0.000% L=2710.00																																			
PAVEMENT HEIGHT	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400	-11.400								
GROUND HEIGHT	10.54	10.69	10.65	10.56	10.49	10.49	10.50	10.52	10.58	10.62	10.73	10.88	10.95	10.98	10.95	10.95	10.85	10.80	10.75	10.74	10.68	10.64	10.56	10.48	10.49	10.44	10.45	10.46	10.46	10.51	10.45	10.41	10.49	10.44	10.41	10.45
STATION	-1+400	-1+420	-1+440	-1+460	-1+480	-1+500	-1+520	-1+540	-1+560	-1+580	-1+600	-1+620	-1+640	-1+660	-1+680	-1+700	-1+720	-1+740	-1+760	-1+780	-1+800	-1+820	-1+840	-1+860	-1+880	-1+900	-1+920	-1+940	-1+960	-1+980	-2+000	-2+020	-2+040	-2+060	-2+080	-2+100
HORIZONTAL CURVATURE	Rc=950 Lc=481.291										EC										Rc=∞ L=529.880															
SUPER-ELEVATION	NC										NC										NC															
CROSS SECTION TYPE	TYPE-A																				TYPE-A															

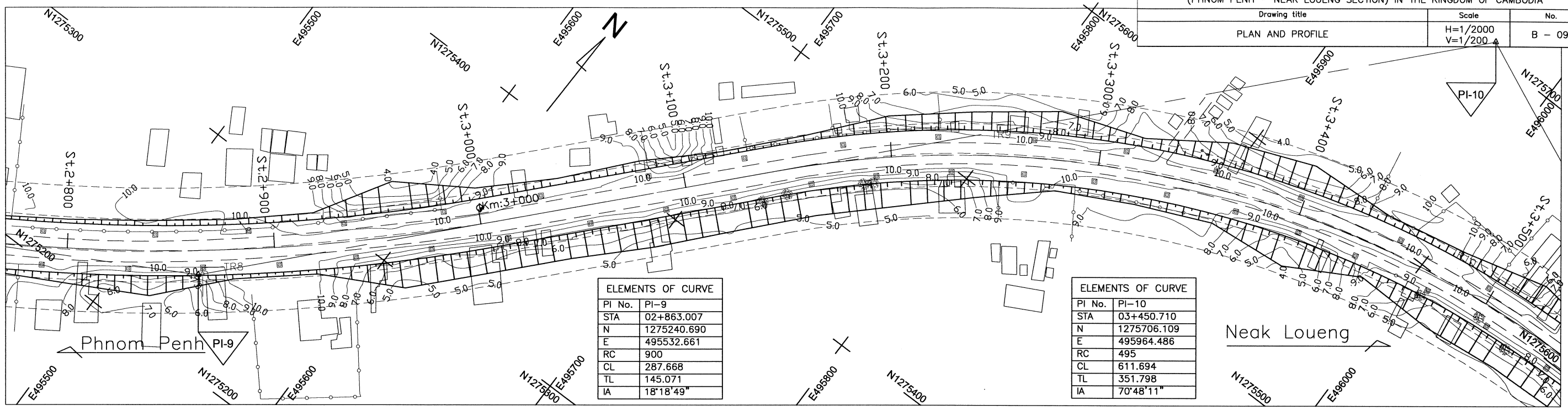
Drawing title	Scale	No.
PLAN AND PROFILE	H=1/2000 V=1/200	B - 08



ELEMENTS OF CURVE	
PI No.	PI-8
STA	02+285.375
N	1274961.366
E	495025.217
RC	2190
CL	350.071
TL	175.409
IA	09°09'31"



VERTICAL ALIGNMENT	I=0.000% L=2710.00																																			
PAVEMENT HEIGHT	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400	11.400					
GROUND HEIGHT	10.45	10.48	10.49	10.57	10.60	10.64	10.63	10.60	10.67	10.71	10.72	10.73	10.70	10.66	10.66	10.65	10.66	10.67	10.66	10.69	10.68	10.67	10.70	10.62	10.63	10.62	10.61	10.58	10.58	10.59	10.62	10.60	10.62	10.63	10.58	10.57
STATION	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400	2+420	2+440	2+460	2+480	2+500	2+520	2+540	2+560	2+580	2+600	2+620	2+640	2+660	2+680	2+700	2+720	2+740	2+760	2+780	2+800
HORIZONTAL CURVATURE	BC Rc=2190 Lc=350.071										EC Rc=∞ L=258.762										Rc=900 Lc=287.668															
SUPER-ELEVATION	NC																																			
CROSS SECTION TYPE	TYPE-A																																			

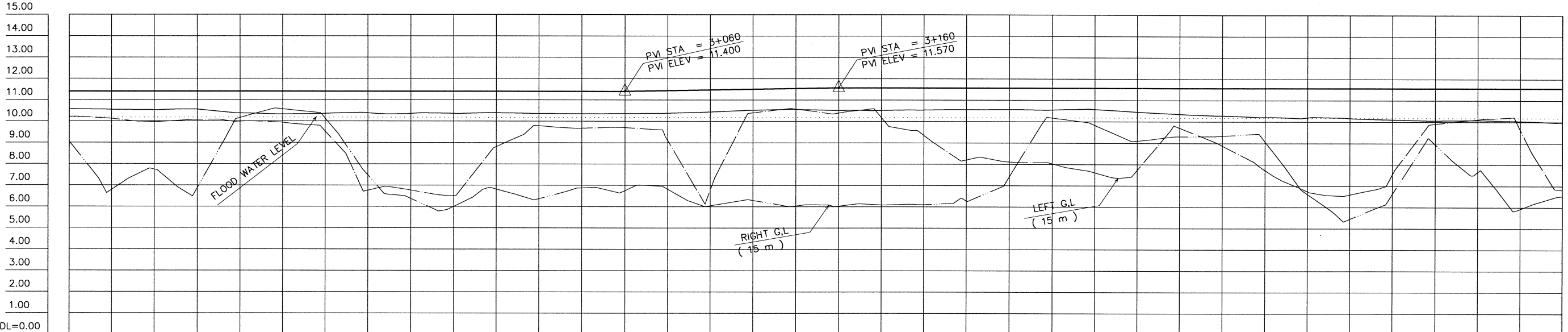


ELEMENTS OF CURVE

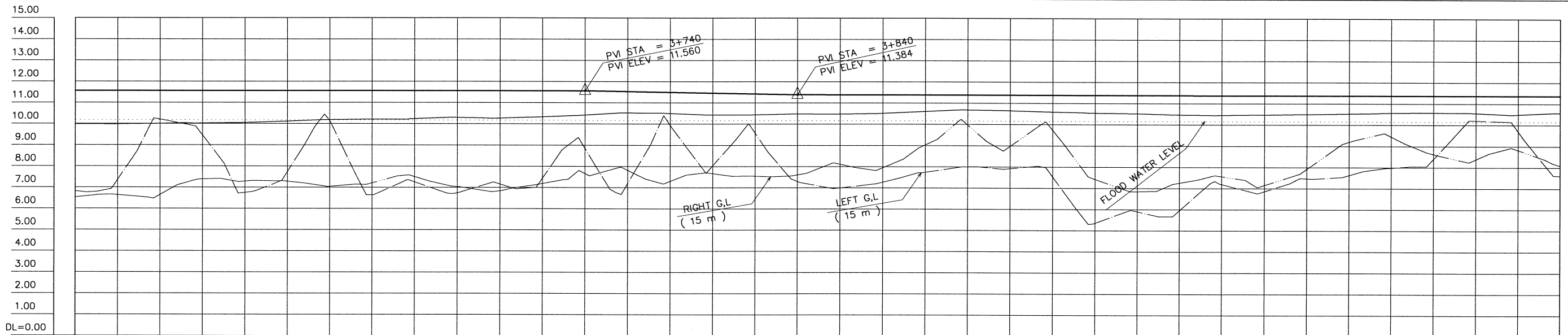
PI No.	PI-9
STA	02+863.007
N	1275240.690
E	495532.661
RC	900
CL	287.668
TL	145.071
IA	18°18'49"

ELEMENTS OF CURVE

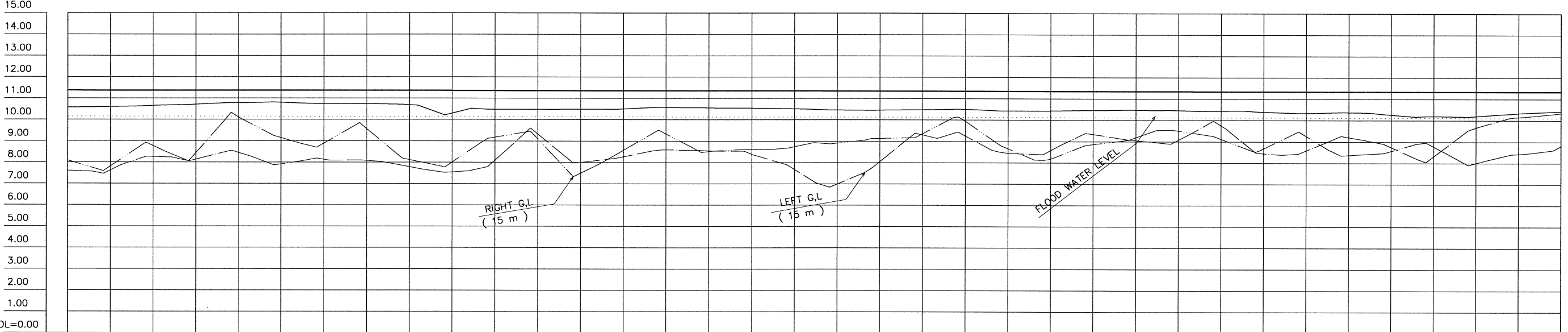
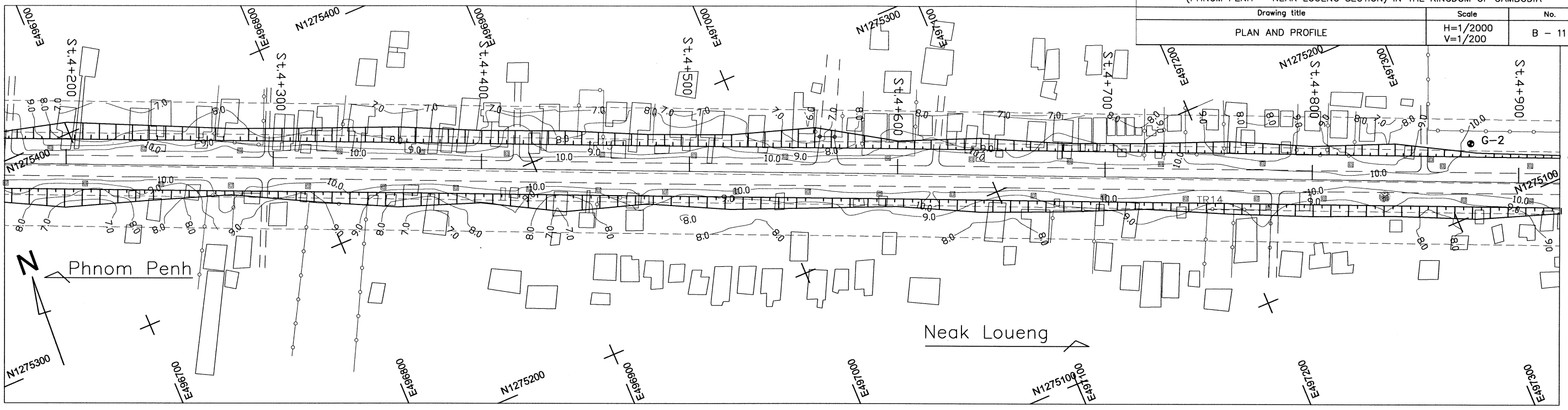
PI No.	PI-10
STA	03+450.710
N	1275706.109
E	495964.486
RC	495
CL	611.694
TL	351.798
IA	70°48'11"



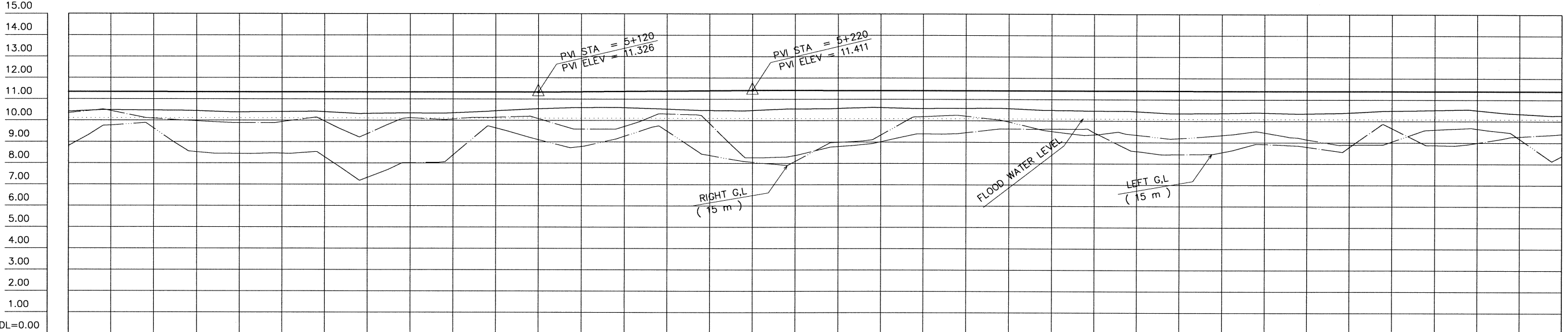
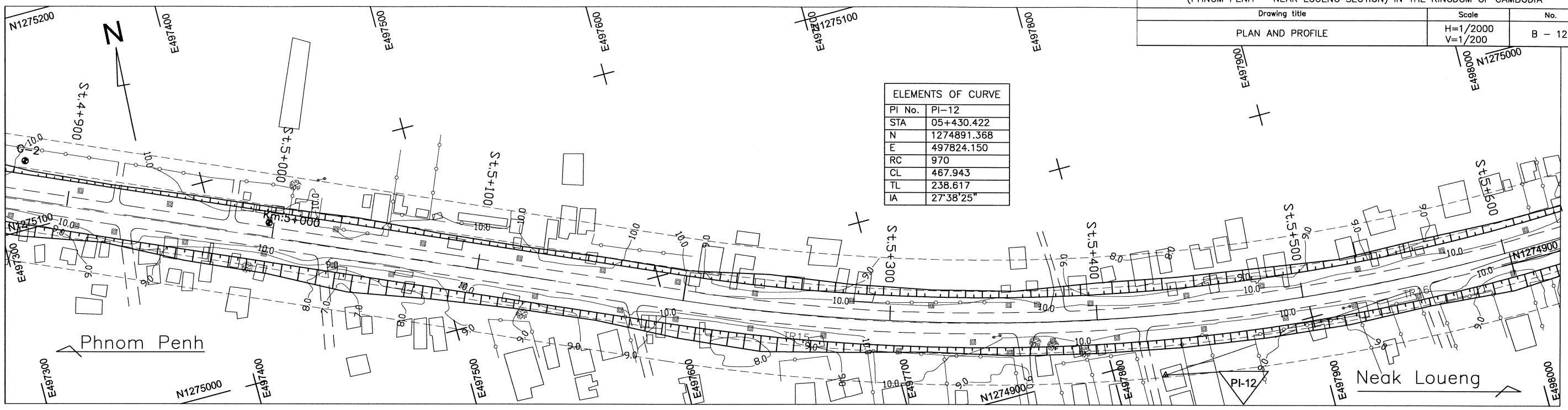
VERTICAL ALIGNMENT	I=0.000% L=2710.00		I=0.170% L=100.00	I=-0.002% L=580.00
PAVEMENT HEIGHT	11.400	11.400	11.400	11.400
GROUND HEIGHT	10.57	10.55	10.52	10.55
STATION	-2+800	-2+820	-2+840	-2+860
HORIZONTAL CURVATURE	Rc=900 Lc=287.668		EC Rc=∞ L=138.022	BC Rc=495 Lc=611.694
SUPER-ELEVATION	NC		NC	e=4%
CROSS SECTION TYPE	TYPE-A			TYPE-A



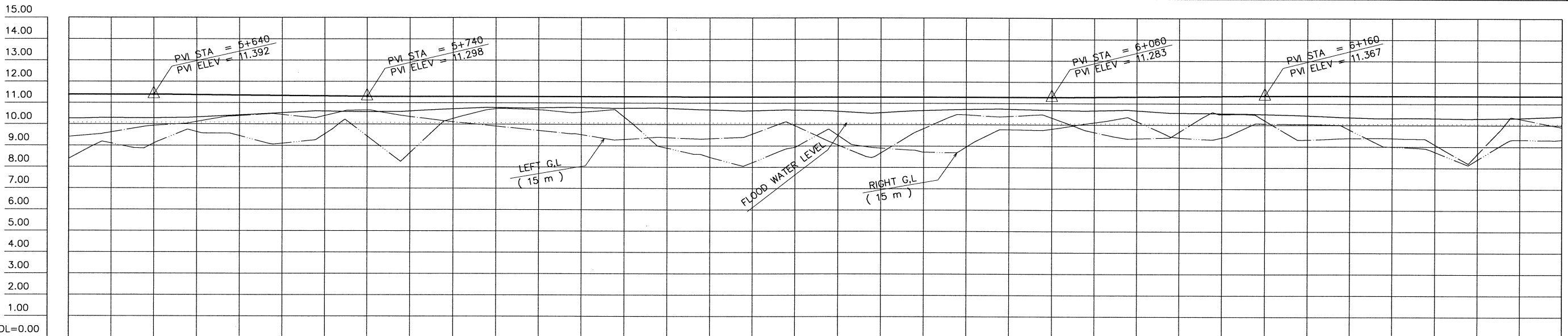
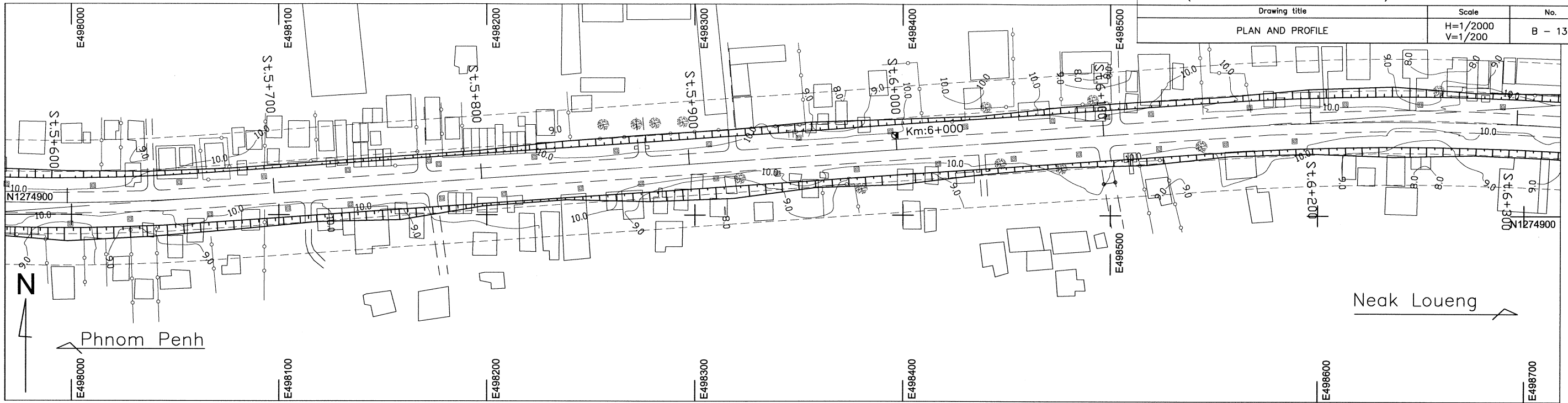
VERTICAL ALIGNMENT	PAVEMENT HEIGHT	GROUND HEIGHT	STATION	HORIZONTAL CURVATURE	SUPER-ELEVATION	CROSS SECTION TYPE
$I = -0.002\%$ $L = 580.00$	-11.564	9.98	-3+500	$R_c = 495$ $L_c = 611.694$	$e = 4\%$	TYPE-B
	-11.563	10.02	-3+540			
$I = -0.176\%$ $L = 100.00$	-11.562	10.11	-3+600	$R_c = \infty$ $L = 1439.893$	NC	TYPE-B
	-11.561	10.24	-3+660			
$I = -0.005\%$ $L = 1280.00$	-11.560	10.42	-3+740			
	-11.558	10.43	-3+800			
	-11.568	10.57	-4+120			
	-11.568	10.57	-4+200			



VERTICAL ALIGNMENT	$i = -0.005\%$ $L = 1280.00$																																			
PAVEMENT HEIGHT	-11.368	-11.367	-11.366	-11.365	-11.364	-11.363	-11.362	-11.361	-11.360	-11.359	-11.358	-11.357	-11.356	-11.355	-11.354	-11.353	-11.352	-11.352	-11.351	-11.350	-11.349	-11.348	-11.347	-11.346	-11.345	-11.344	-11.343	-11.342	-11.341	-11.341	-11.340	-11.339	-11.338	-11.337	-11.336	
GROUND HEIGHT	10.57	10.59	10.64	10.70	10.78	10.79	10.74	10.73	10.69	10.29	10.48	10.48	10.50	10.57	10.56	10.54	10.52	10.46	10.45	10.47	10.49	10.43	10.43	10.46	10.48	10.46	10.44	10.39	10.34	10.37	10.37	10.26	10.20	10.20	10.33	10.42
STATION	4+200	4+220	4+240	4+260	4+280	4+300	4+320	4+340	4+360	4+380	4+400	4+420	4+440	4+460	4+480	4+500	4+520	4+540	4+560	4+580	4+600	4+620	4+640	4+660	4+680	4+700	4+720	4+740	4+760	4+780	4+800	4+820	4+840	4+860	4+880	4+900
HORIZONTAL CURVATURE	$R_c = \infty$ $L = 1439.893$																																			
SUPER-ELEVATION	NC																																			
GROSS SECTION TYPE	TYPE-B															TYPE-B																				



VERTICAL ALIGNMENT	PAVEMENT HEIGHT	GROUND HEIGHT	STATION	HORIZONTAL CURVATURE	SUPER-ELEVATION	CROSS SECTION TYPE
$I = -0.005\%$ $L = 1280.00$	11.336	10.42	4+900	$R_c = \infty$ $L = 1439.893$	NC	TYPE-B
	11.335	10.49	4+920			
	11.334	10.47	4+940			
	11.333	10.44	4+960			
	11.332	10.39	4+980			
	11.331	10.40	5+000			
	11.331	10.40	5+020			
	11.330	10.32	5+040			
	11.329	10.34	5+060			
	11.328	10.35	5+080			
	11.327	10.45	5+100			
	11.326	10.54	5+120			
	11.343	10.60	5+140			
	11.360	10.60	5+160			
	11.377	10.53	5+180			
	11.394	10.47	5+200	BC		
	11.411	10.47	5+220			
	11.410	10.55	5+240			
	11.409	10.57	5+260			
	11.408	10.61	5+280			
	11.407	10.57	5+300			
	11.406	10.58	5+320			
	11.406	10.57	5+340			
	11.405	10.49	5+360			
	11.404	10.47	5+380			
	11.403	10.44	5+400			
	11.402	10.35	5+420			
	11.401	10.37	5+440			
	11.400	10.39	5+460			
	11.399	10.35	5+480			
	11.398	10.40	5+500			
	11.397	10.48	5+520			
	11.397	10.52	5+540			
	11.396	10.51	5+560			
	11.395	10.34	5+580			
	11.394	10.27	5+600			TYPE-B



VERTICAL ALIGNMENT	PAVEMENT HEIGHT	GROUND HEIGHT	STATION	HORIZONTAL CURVATURE	SUPER-ELEVATION	CROSS SECTION TYPE
I=-0.005% L=420.00	11.394	10.27	5+600	Rc=970 Lc=467.943	3.00 5+639	TYPE-B
	11.393	10.29	5+620			
I=-0.094% L=100.00	11.392	10.28	5+640	EC	-3.00 5+699	TYPE-B
	11.373	10.32	5+660			
I=-0.005% L=320.00	11.354	10.42	5+680	Rc=8 L=484.908	NC	TYPE-B
	11.335	10.52	5+700			
I=0.084% L=100.00	11.316	10.60	5+720	BC	3.00 6+174	TYPE-B
	11.298	10.58	5+740			
I=-0.004% L=340.00	11.297	10.61	5+760	Rc=1400 Lc=366.269	-3.00 6+114	TYPE-B
	11.296	10.72	5+780			
	11.295	10.78	5+800			
	11.294	10.77	5+820			
	11.293	10.78	5+840			
	11.292	10.75	5+860			
	11.291	10.75	5+880			
	11.290	10.68	5+900			
	11.289	10.64	5+920			
	11.288	10.67	5+940			
	11.288	10.62	5+960			
	11.287	10.56	5+980			
	11.286	10.66	6+000			
	11.285	10.72	6+020			
	11.284	10.73	6+040			
	11.283	10.68	6+060			
	11.300	10.67	6+080			
	11.317	10.67	6+100			
	11.333	10.56	6+120			
	11.350	10.54	6+140			
	11.367	10.50	6+160			
	11.366	10.45	6+180			
	11.365	10.36	6+200			
	11.365	10.33	6+220			
	11.364	10.32	6+240			
	11.363	10.31	6+260			
	11.362	10.34	6+280			
	11.361	10.42	6+300			