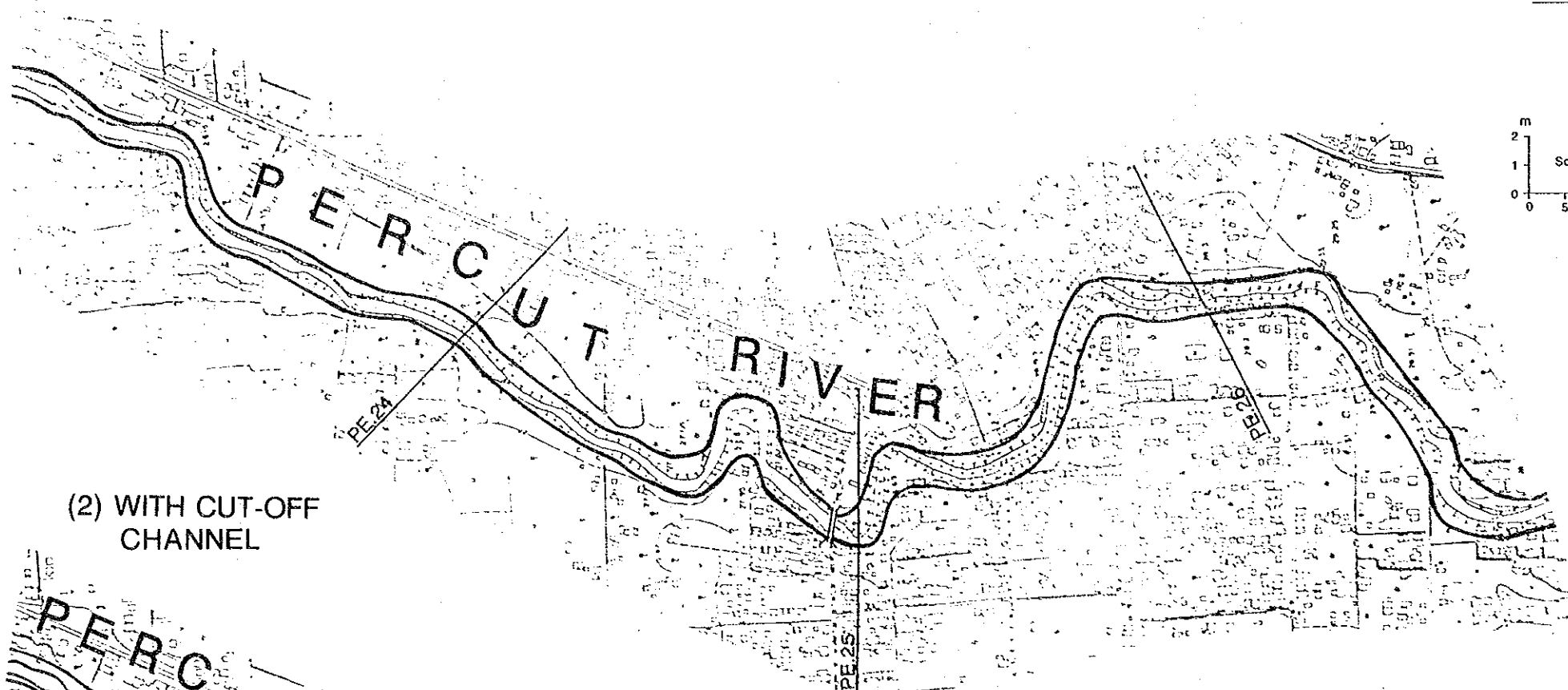


THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
 IN THE REPUBLIC OF INDONESIA  
 JAPAN INTERNATIONAL COOPERATION AGENCY

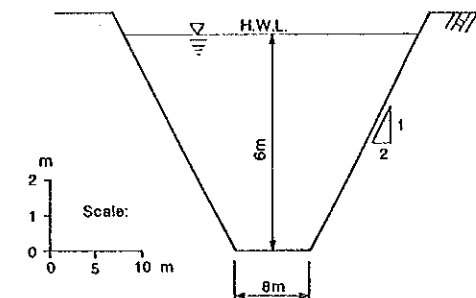
LONGITUDINAL PROFILE OF PERCUT RIVER  
 IMPROVEMENT RELATED TO BANDAR SIDORAS  
 INTAKE WEIR  
 Fig.4-5



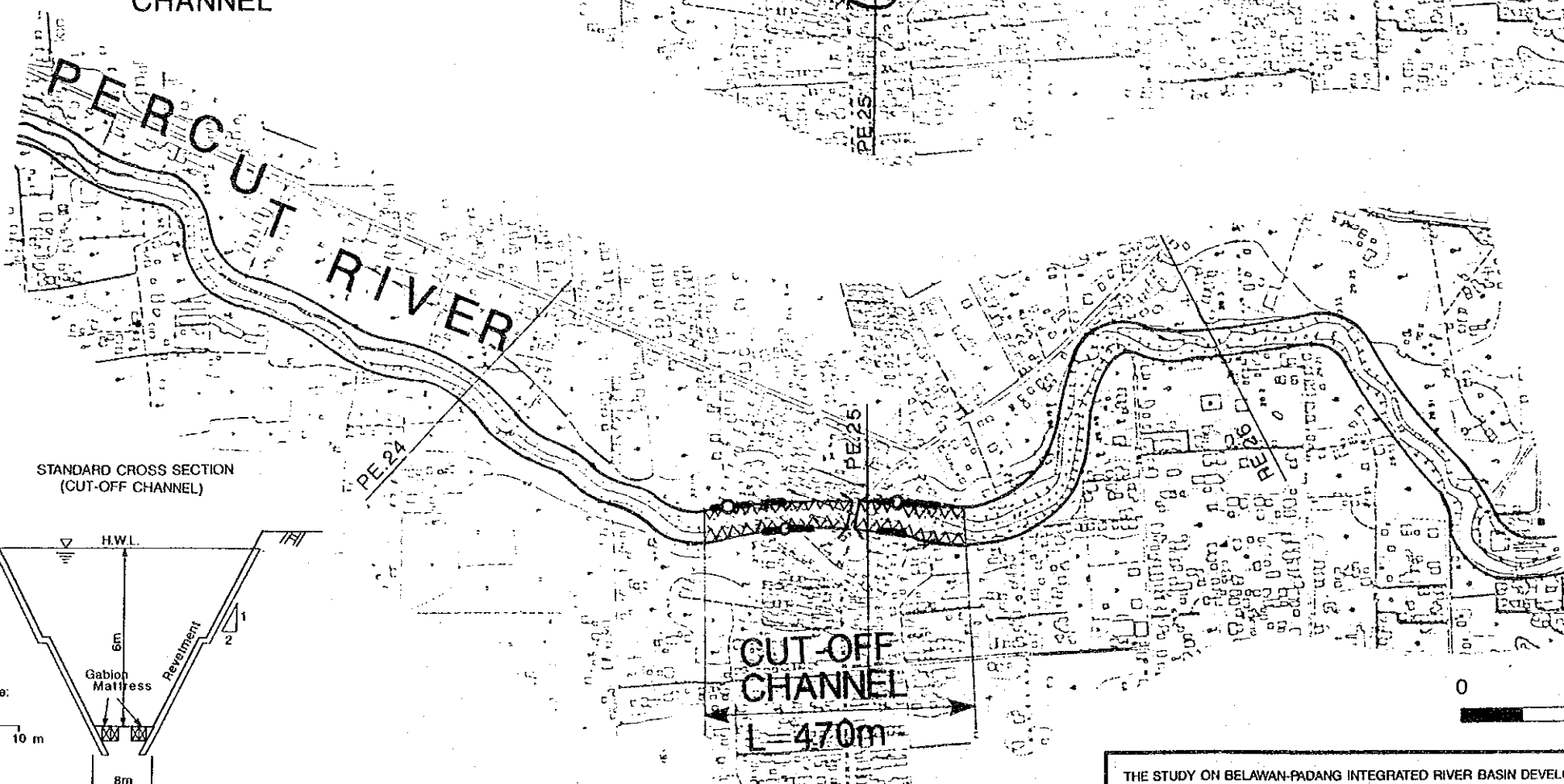
(1) EXISTING CHANNEL



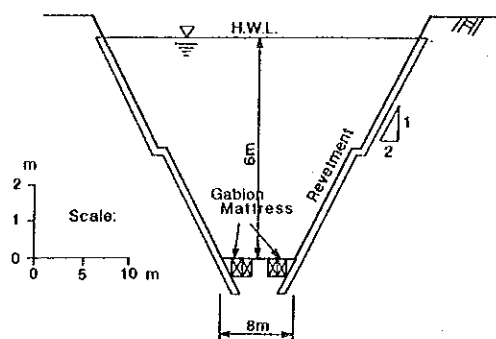
STANDARD CROSS SECTION  
(PE.10+800 - PE.28)



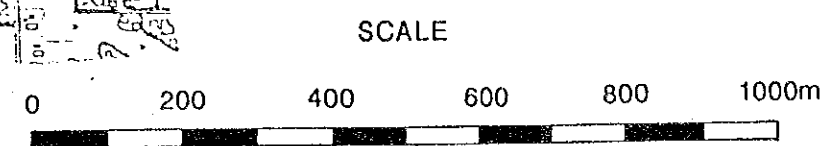
(2) WITH CUT-OFF CHANNEL



STANDARD CROSS SECTION  
(CUT-OFF CHANNEL)



LEGEND	
	CHANNEL ALIGNMENT
	EXISTING DIKE
	NEW EARTH DIKE
	NEW PARAPET WALL
	LOW WATER CHANNEL ALIGNMENT
	REVTMENT
	NEW IRRIGATION CANAL
	SLUICE WAY
	WATER GATE
	BRIDGE ( TO BE CONSTRUCTED )
	WEIR
	INUNDATION AREA

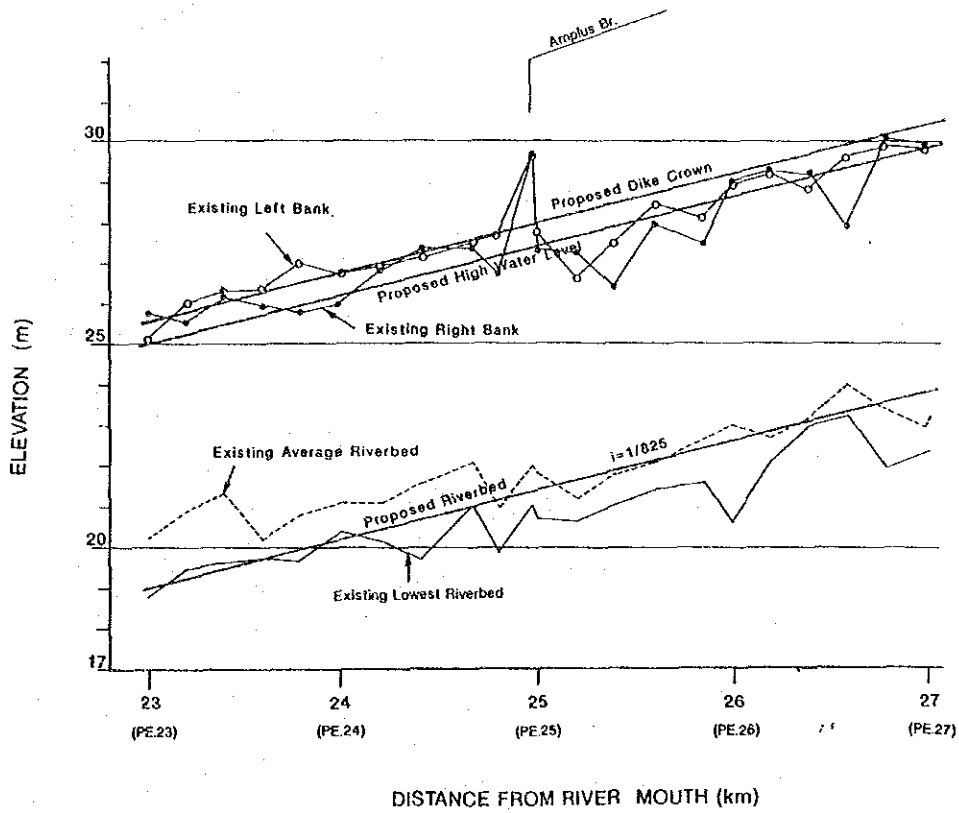


THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA  
JAPAN INTERNATIONAL COOPERATION AGENCY

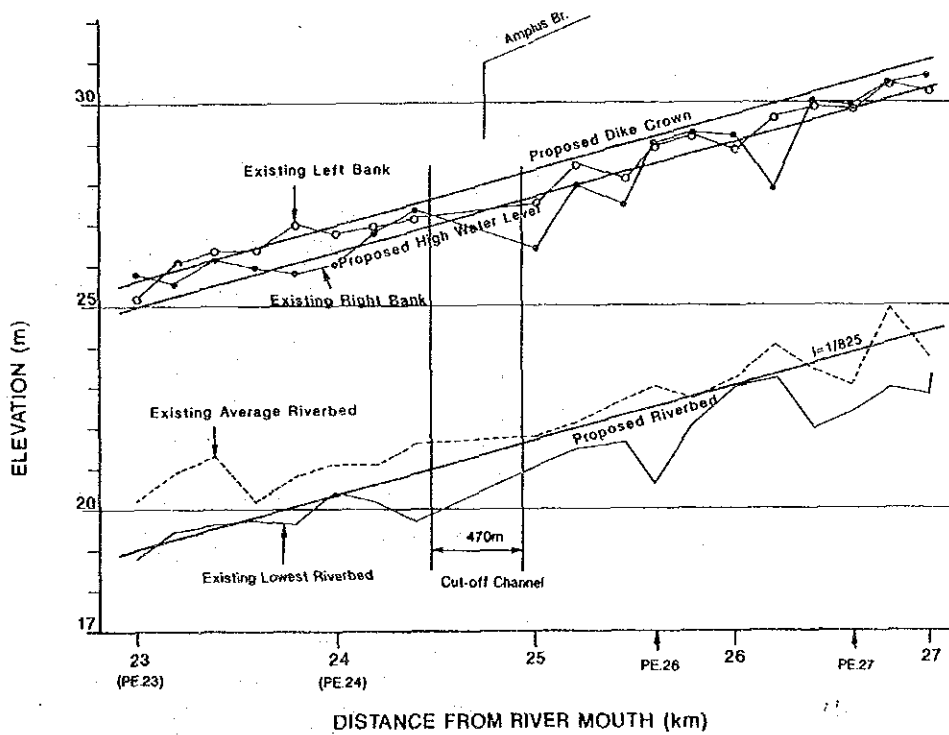
ALIGNMENT OF ALTERNATIVE SHORT-CUT  
PLAN OF PERCUT RIVER  
Fig.4-6



### (1) EXISTING CHANNEL



### (2) WITH CUT-OFF CHANNEL

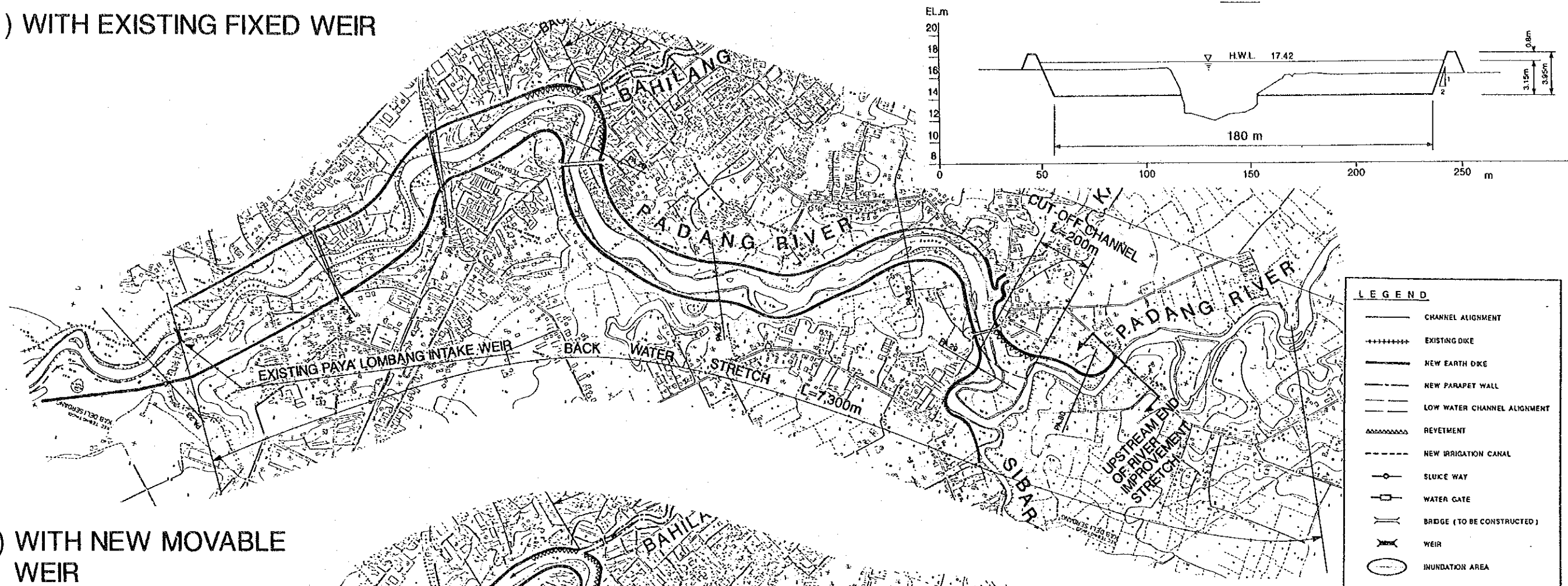


THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA  
JAPAN INTERNATIONAL COOPERATION AGENCY

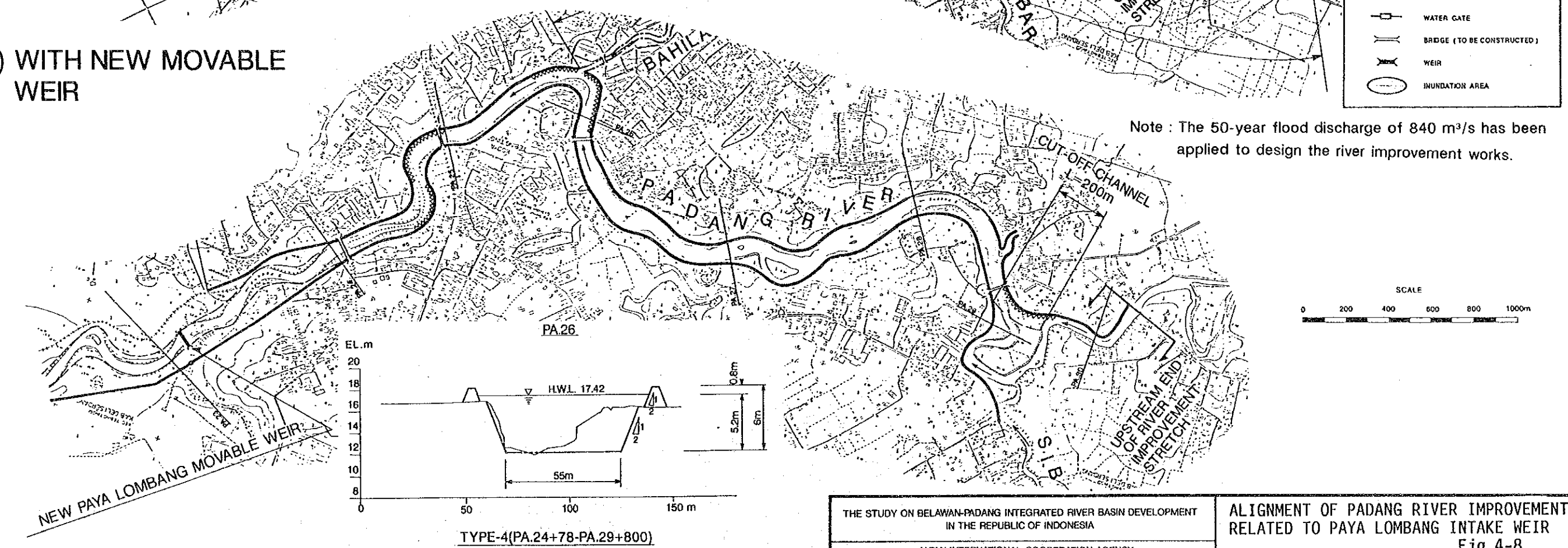
LONGITUDINAL PROFILE OF ALTERNATIVE  
SHORT-CUT PLAN OF PERCUT RIVER  
Fig.4-7



(1) WITH EXISTING FIXED WEIR



(2) WITH NEW MOVABLE WEIR



Note : The 50-year flood discharge of 840 m<sup>3</sup>/s has been applied to design the river improvement works.

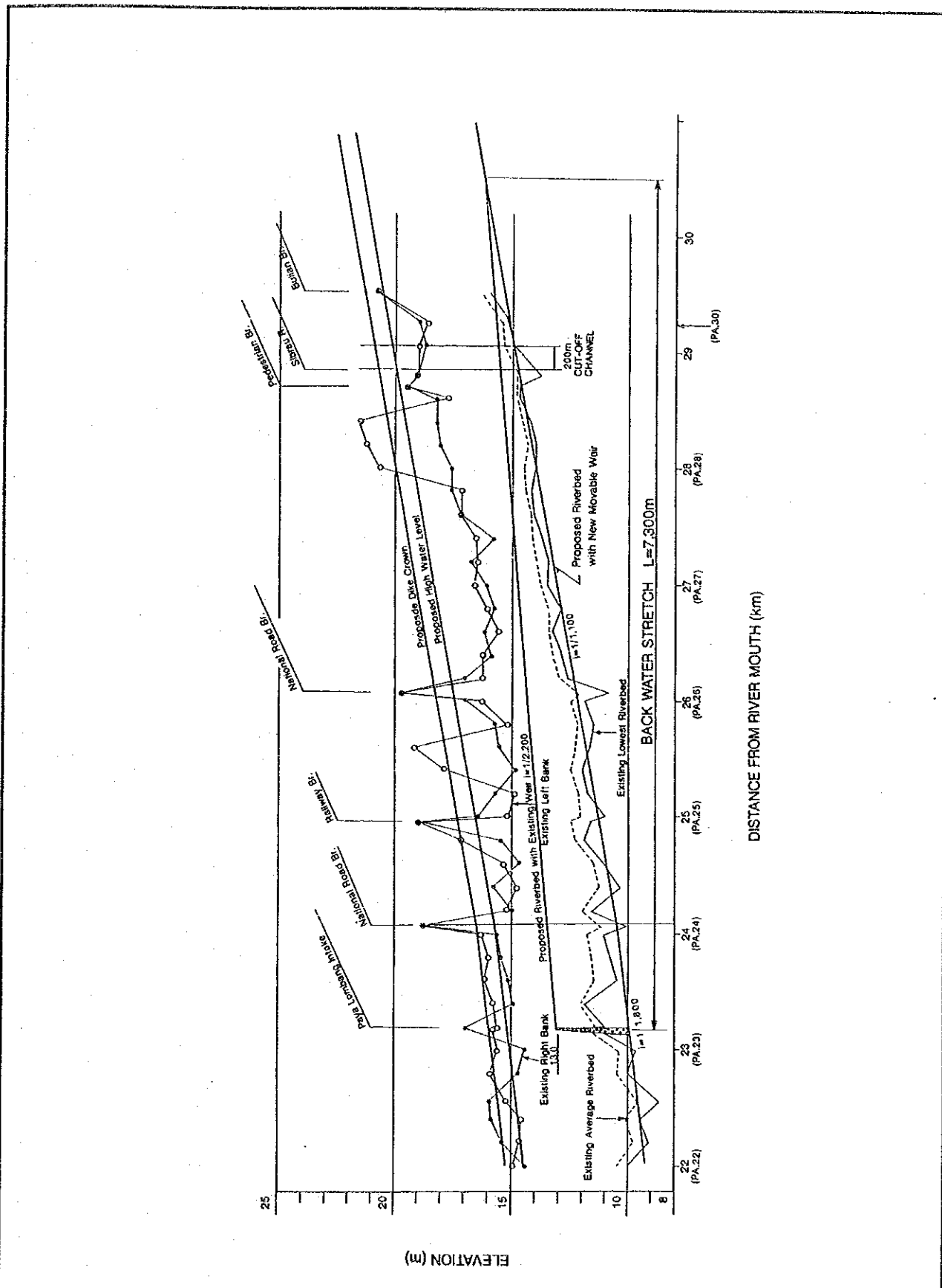
TYPE-4(PA.24+78-PA.29+800)

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA  
JAPAN INTERNATIONAL COOPERATION AGENCY

ALIGNMENT OF PADANG RIVER IMPROVEMENT  
RELATED TO PAYA LOMBANG INTAKE WEIR  
Fig.4-8





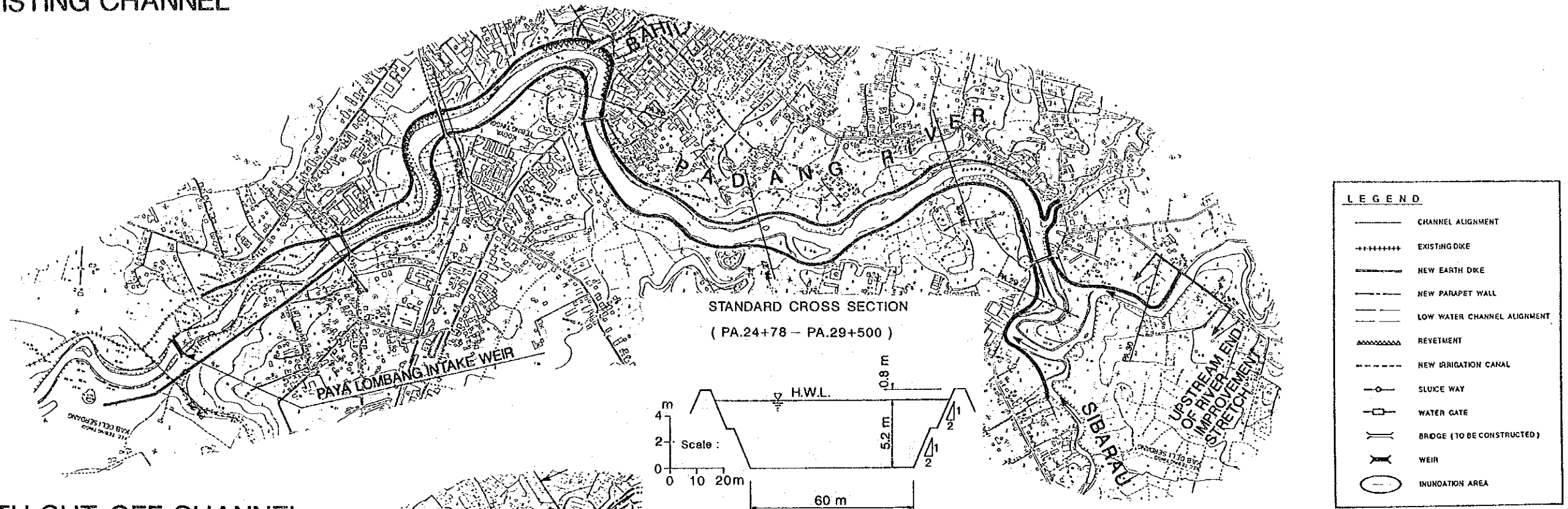


THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
 IN THE REPUBLIC OF INDONESIA  
 JAPAN INTERNATIONAL COOPERATION AGENCY

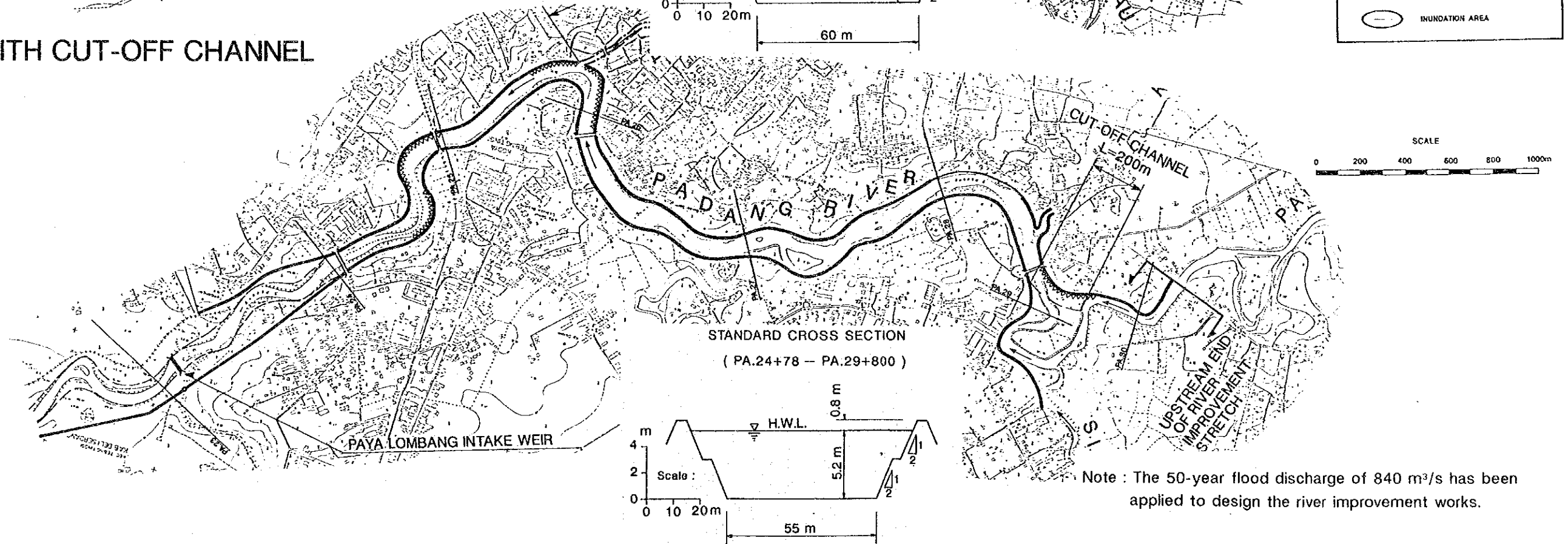
LONGITUDINAL PROFILE OF PADANG RIVER  
 IMPROVEMENT RELATED TO PAYA LOMBANG  
 INTAKE WEIR  
 Fig.4-9



(1) EXISTING CHANNEL

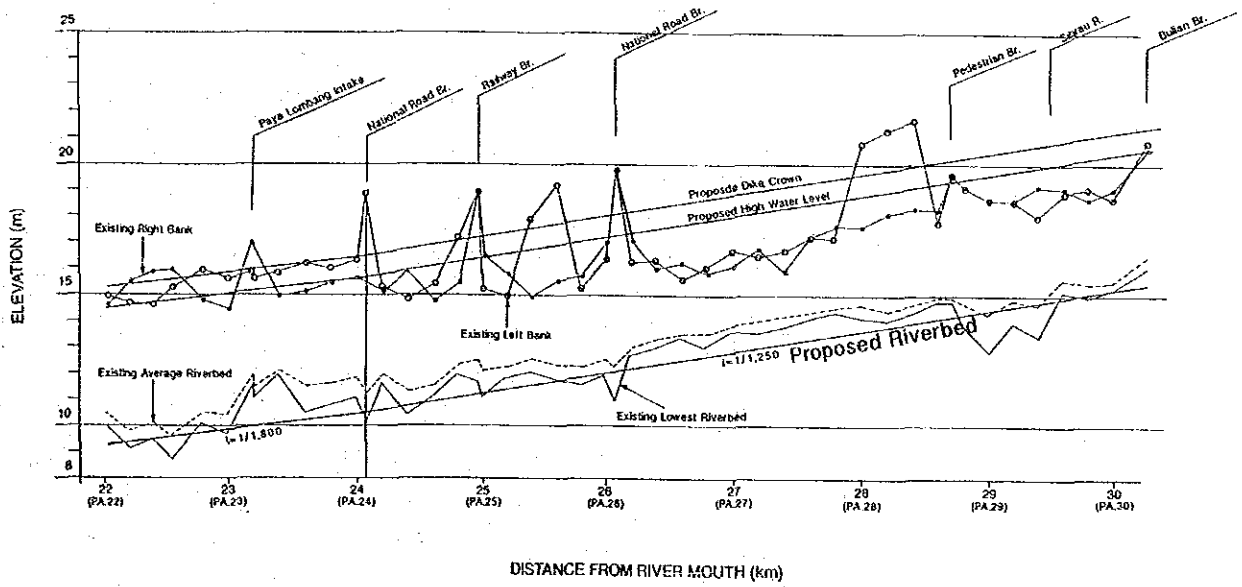


(2) WITH CUT-OFF CHANNEL

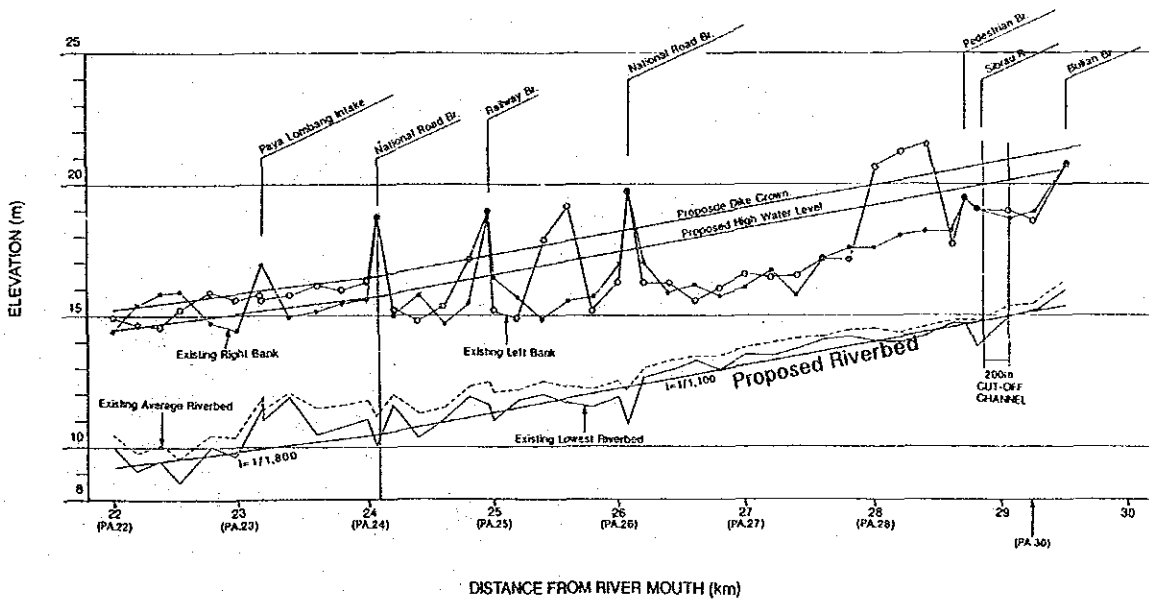




# (1) EXISTING CHANNEL

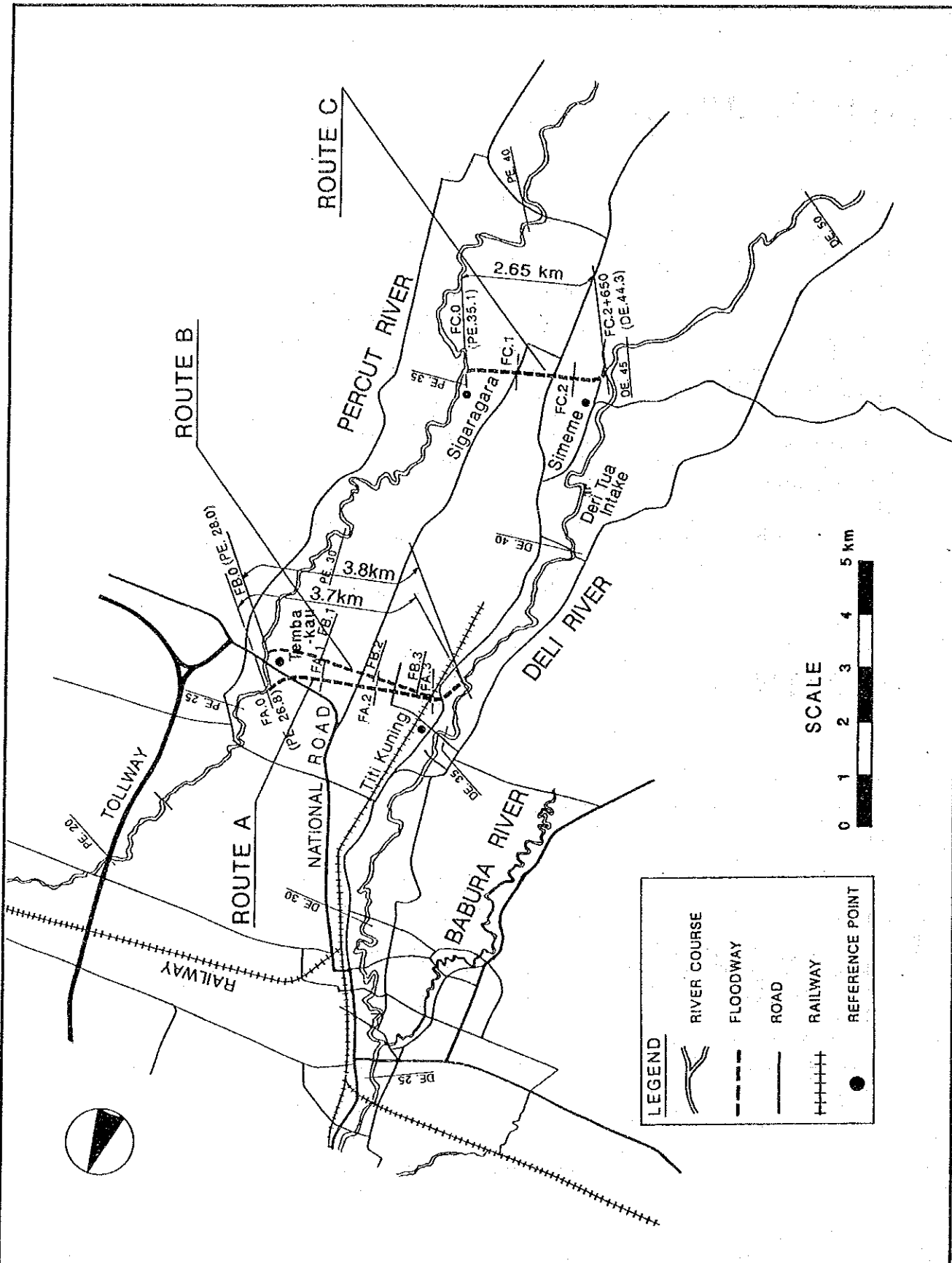


# (2) WITH CUT-OFF CHANNEL



THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
 IN THE REPUBLIC OF INDONESIA  
 JAPAN INTERNATIONAL COOPERATION AGENCY

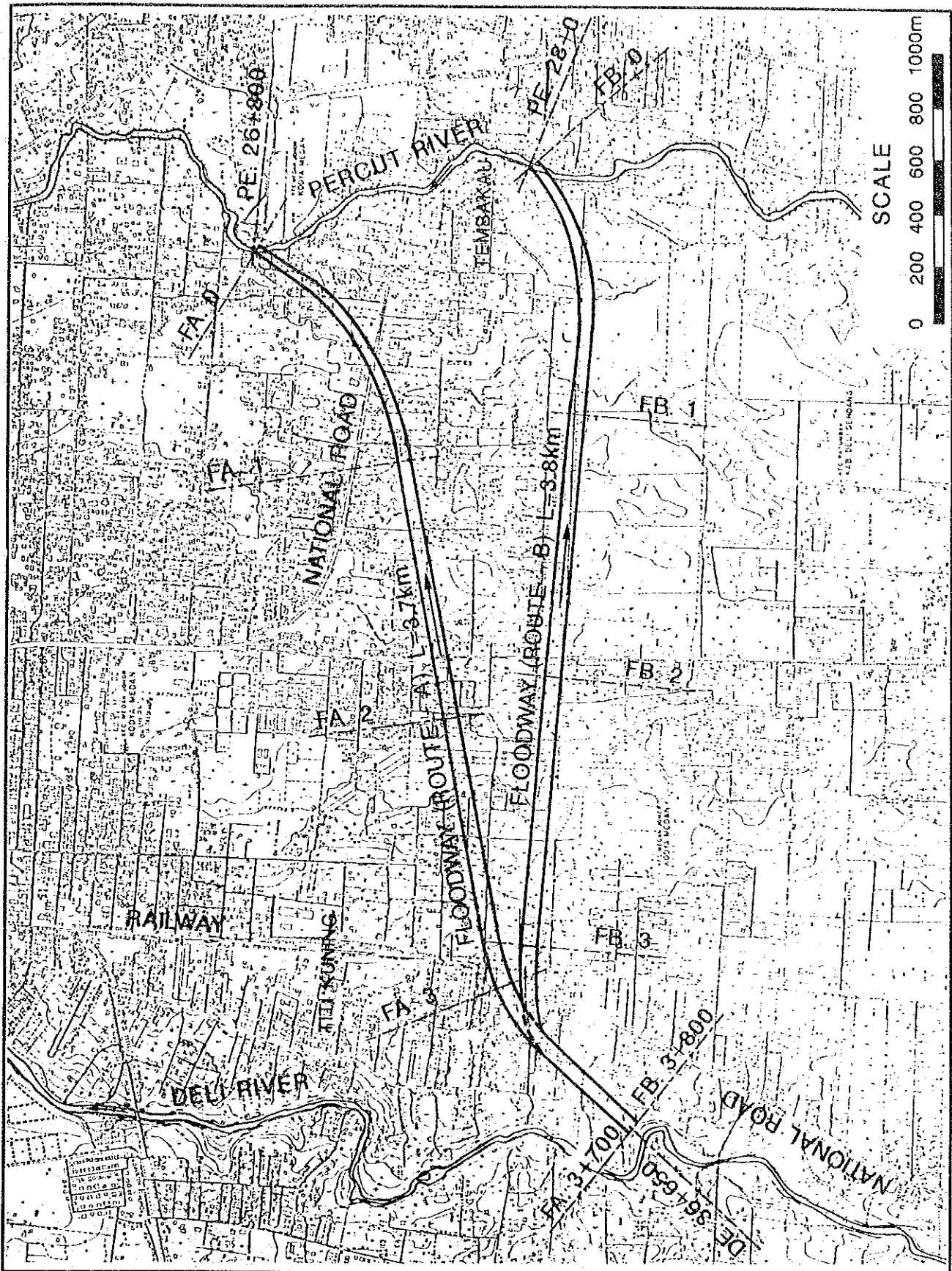
LONGITUDINAL PROFILE OF ALTERNATIVE  
 SHORT-CUT PLAN OF PADANG RIVER  
 Fig.4-11



THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
 IN THE REPUBLIC OF INDONESIA  
 JAPAN INTERNATIONAL COOPERATION AGENCY

ALTERNATIVE FLOODWAY ROUTES

Fig.4-12

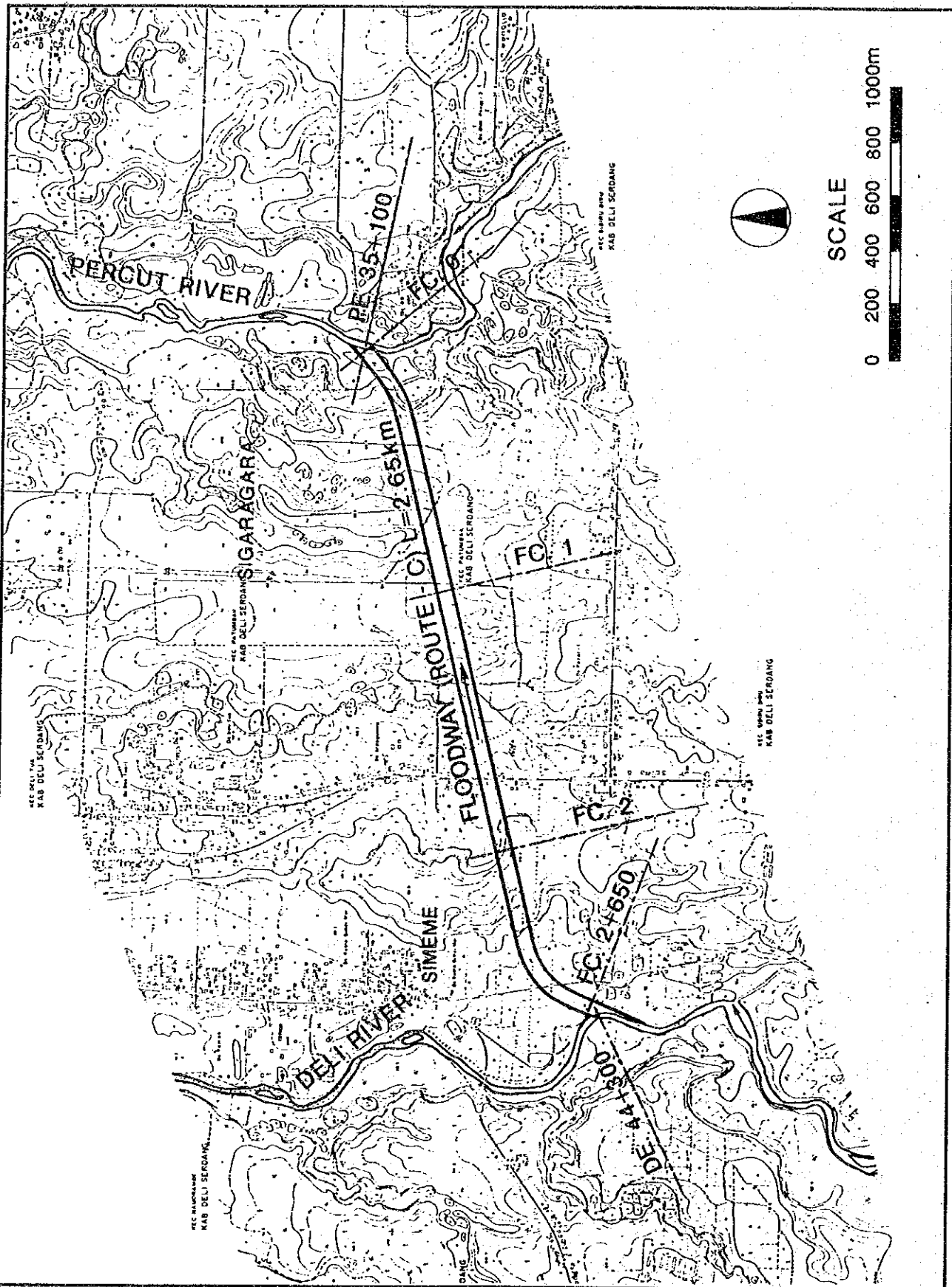


THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
 IN THE REPUBLIC OF INDONESIA

ALIGNMENT OF ALTERNATIVE FLOODWAY  
 ROUTES A AND B

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.4-13



THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

ALIGNMENT OF ALTERNATIVE FLOODWAY  
ROUTE C

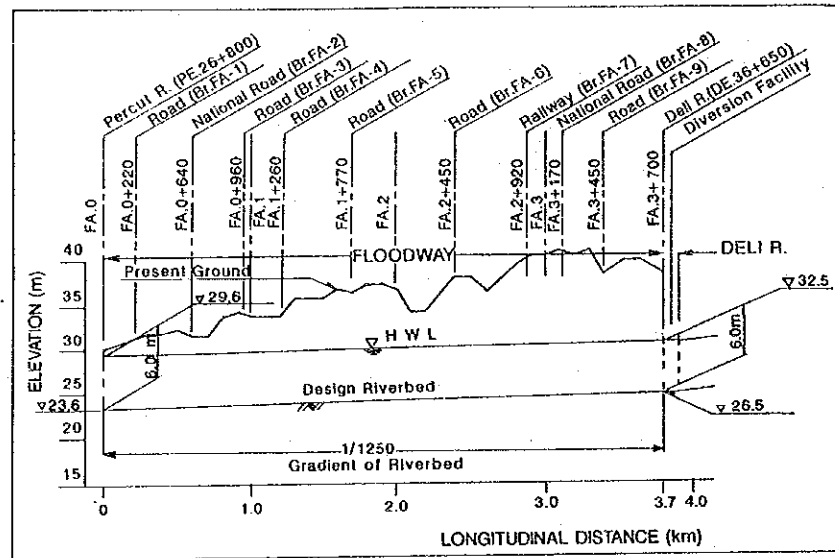
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig.4-14

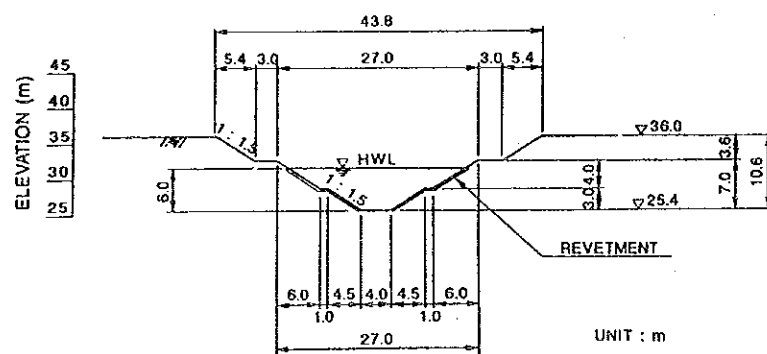


# ROUTE A

## ALTERNATIVE A



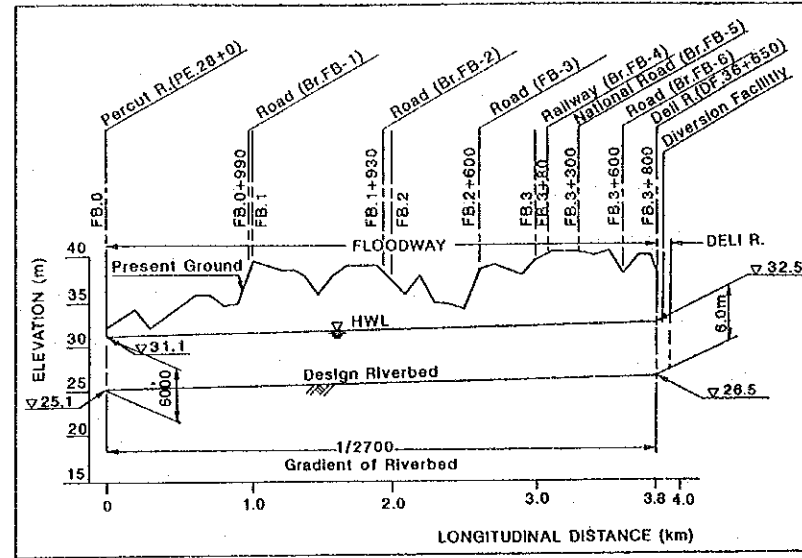
### PROFILE



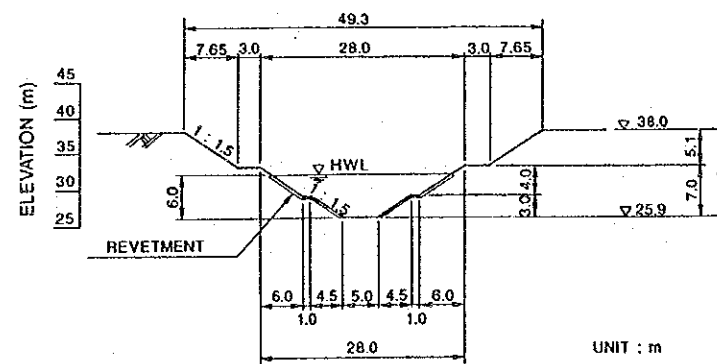
CROSS SECTION (FA.2+300)

# ROUTE B

## ALTERNATIVE B-1

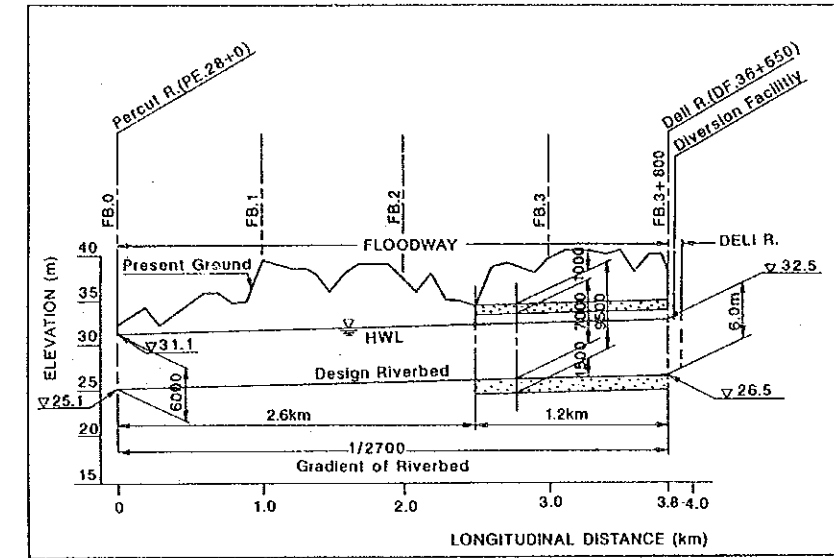


### PROFILE

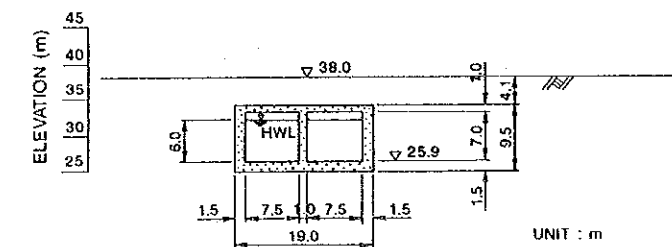


CROSS SECTION (FB.2+200)

## ALTERNATIVE B-2



### PROFILE



CROSS SECTION (FB.2+200)

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

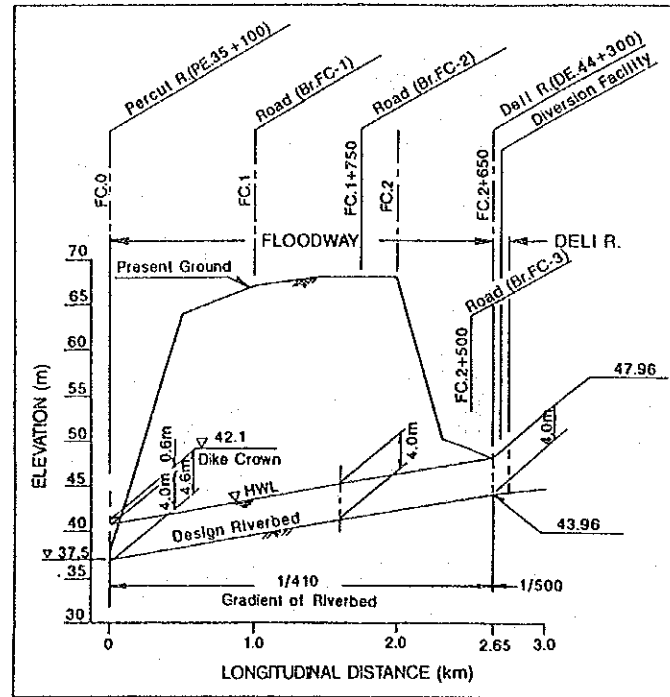
JAPAN INTERNATIONAL COOPERATION AGENCY

LONGITUDINAL PROFILE AND CROSS SECTION  
OF ALTERNATIVE ROUTES OF FLOODWAY

Fig.4-15(1/2)

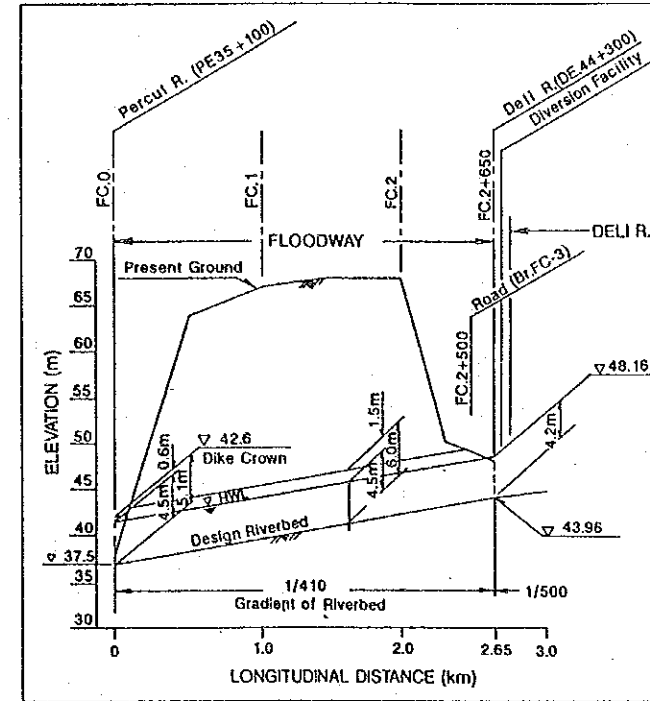
# ROUTE C

## ALTERNATIVE C-1

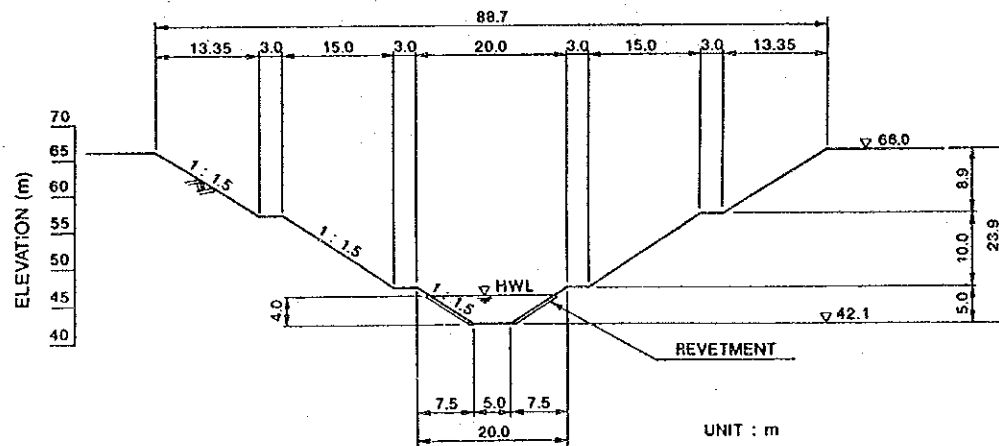


PROFILE

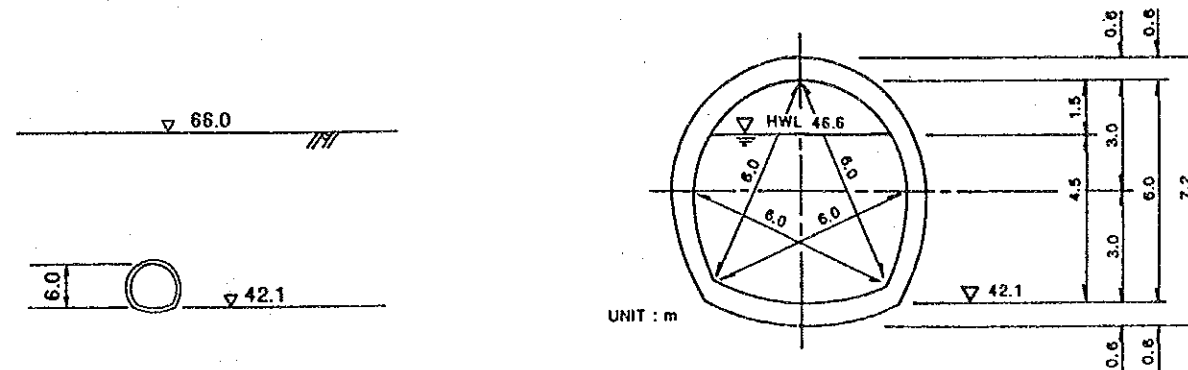
## ALTERNATIVE C-2



PROFILE



CROSS SECTION (FC.1+900)

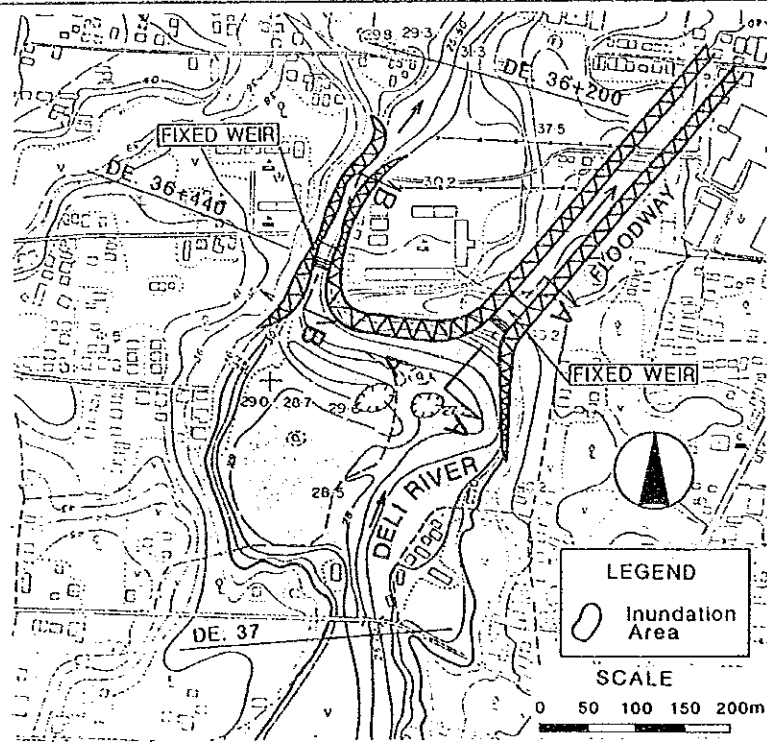


DETAIL OF TUNNEL SECTION

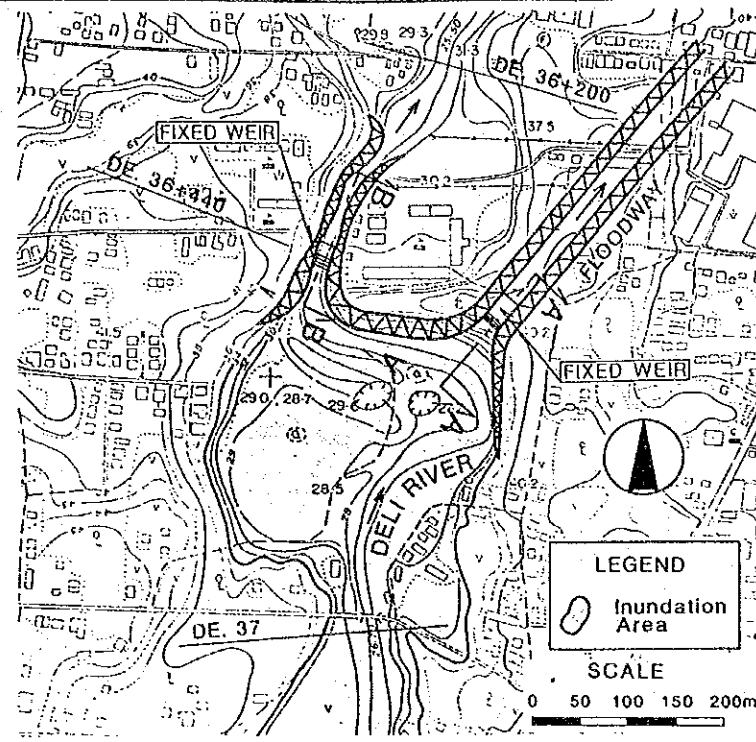
CROSS SECTION (FC.1+900)

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT IN THE REPUBLIC OF INDONESIA JAPAN INTERNATIONAL COOPERATION AGENCY	LONGITUDINAL PROFILE AND CROSS SECTION OF ALTERNATIVE ROUTES OF FLOODWAY Fig.4-15(2/2)
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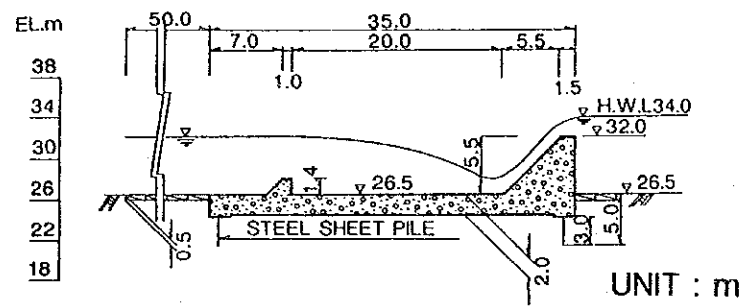
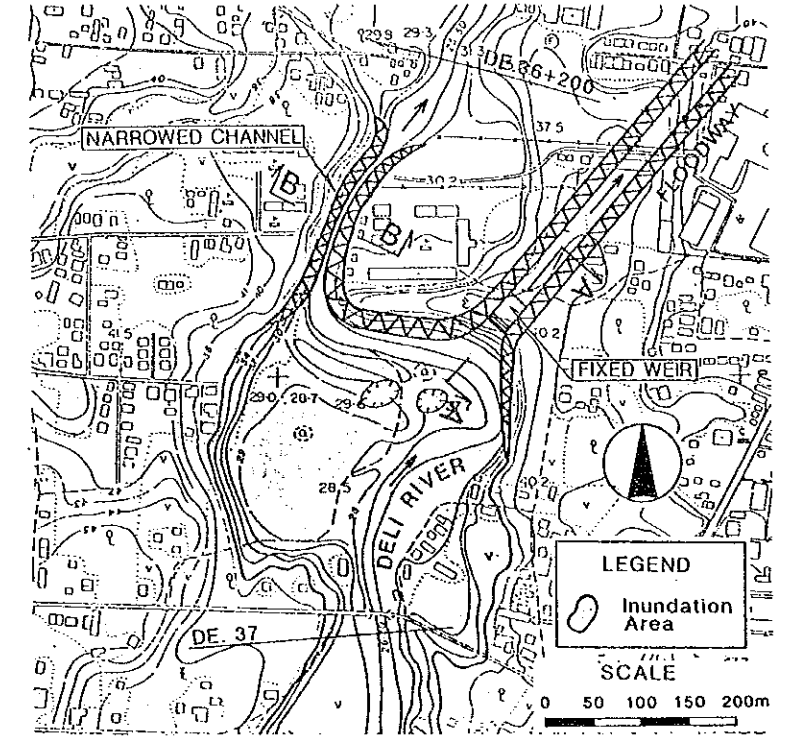
TYPE I



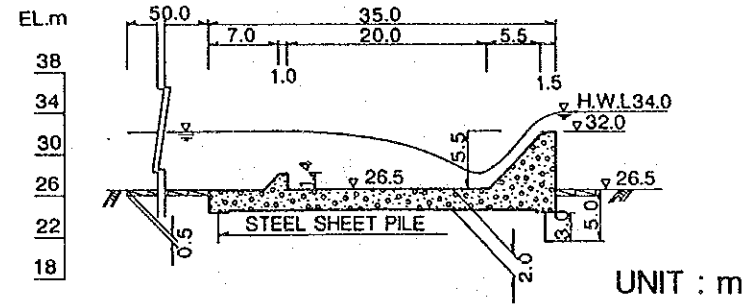
TYPE II



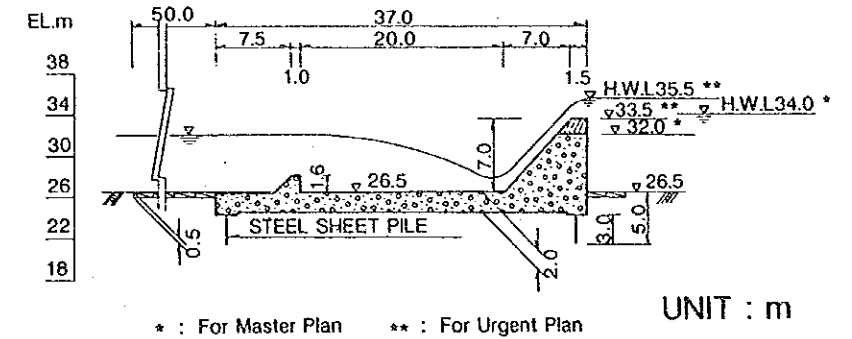
TYPE III



SECTION A-A



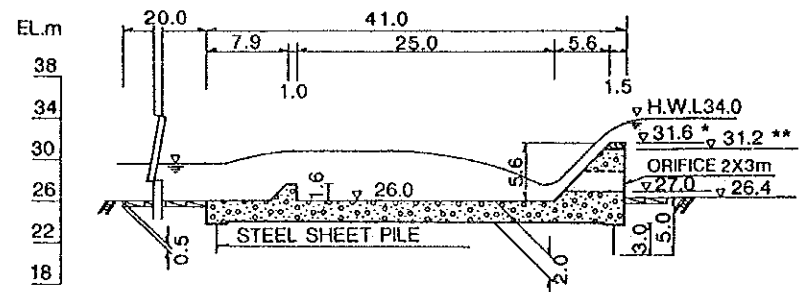
SECTION A-A



SECTION A-A

\* : For Master Plan    \*\* : For Urgent Plan

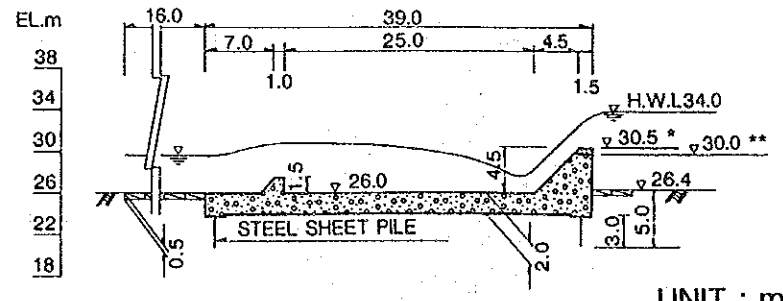
UNIT : m



SECTION B-B

\* : For Master Plan    \*\* : For Urgent Plan

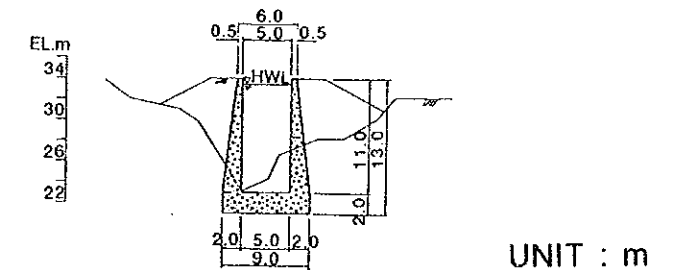
UNIT : m



SECTION B-B

\* : For Master Plan    \*\* : For Urgent Plan

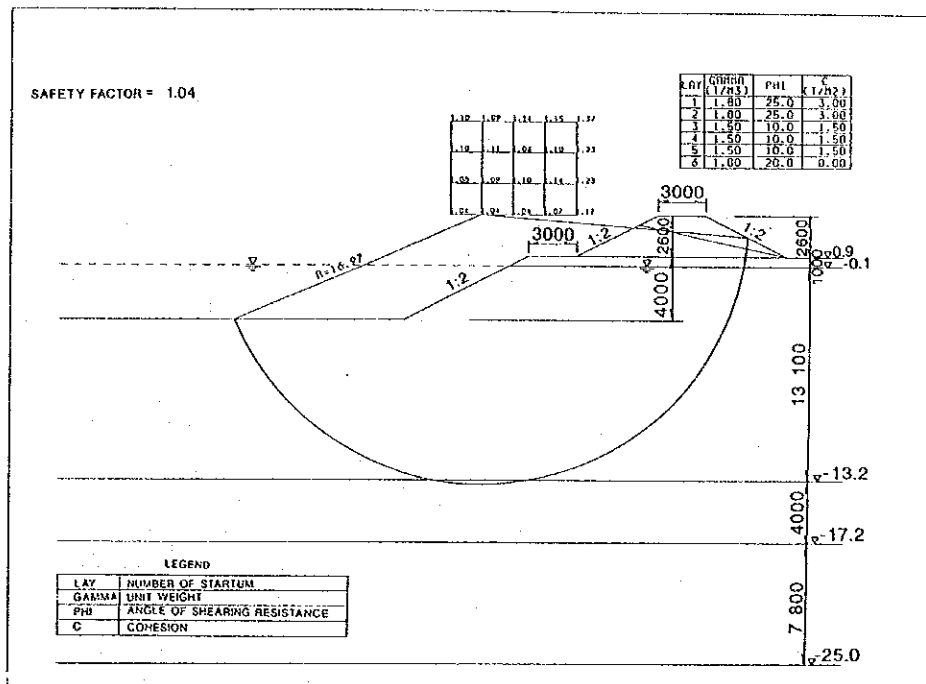
UNIT : m



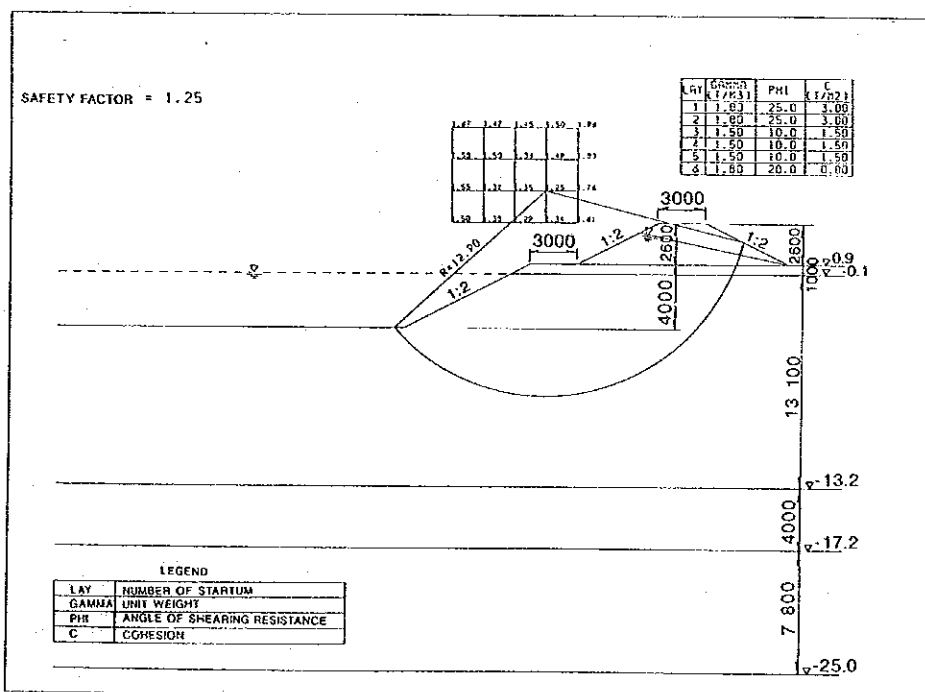
SECTION B-B

UNIT : m

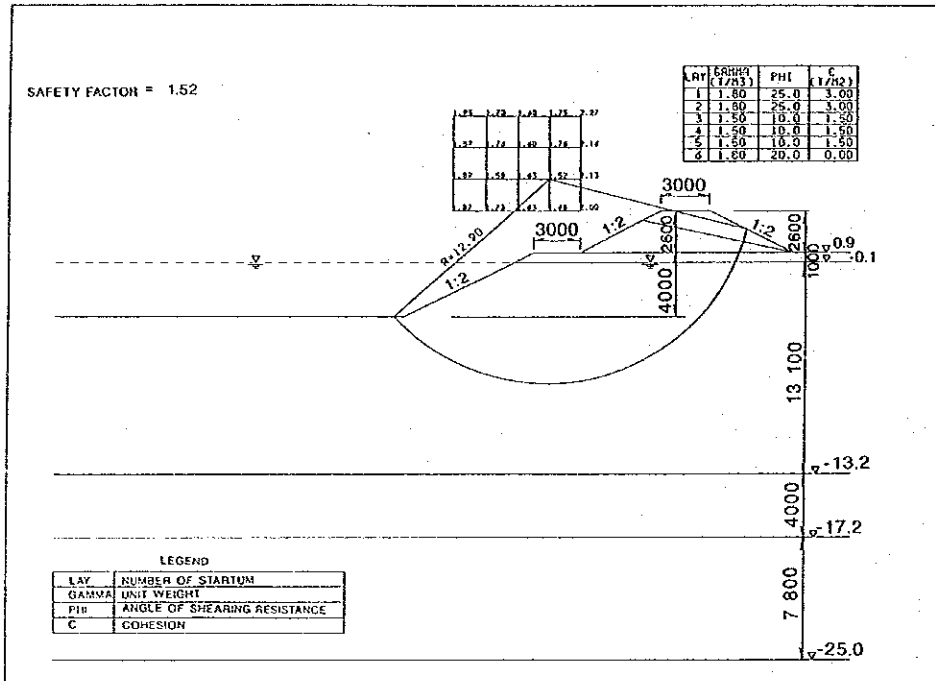




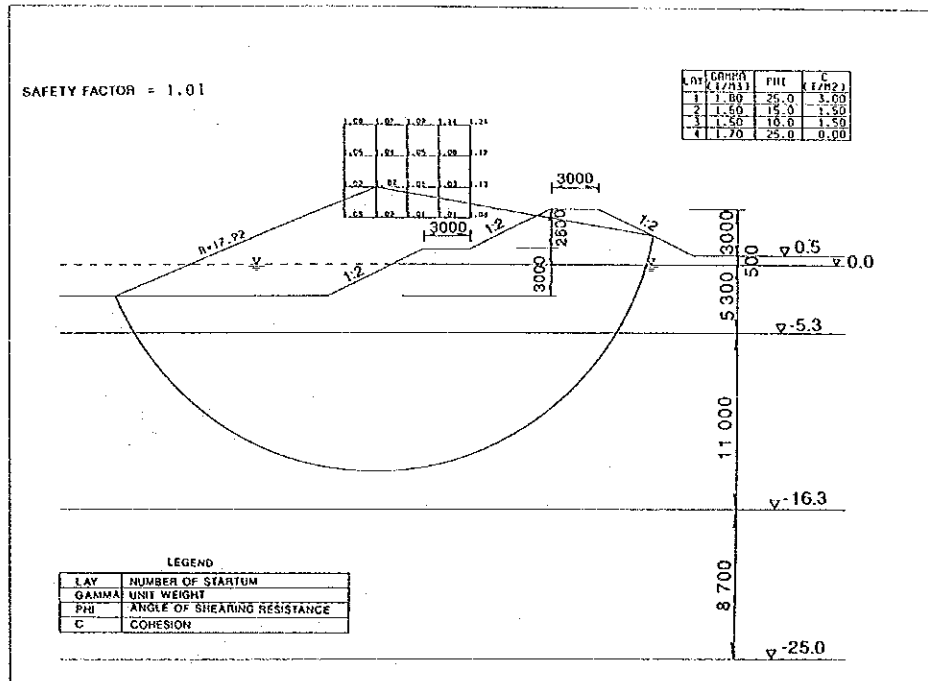
Case-1 Seismic Case (Horizontal Seismic Coefficient 0.1)



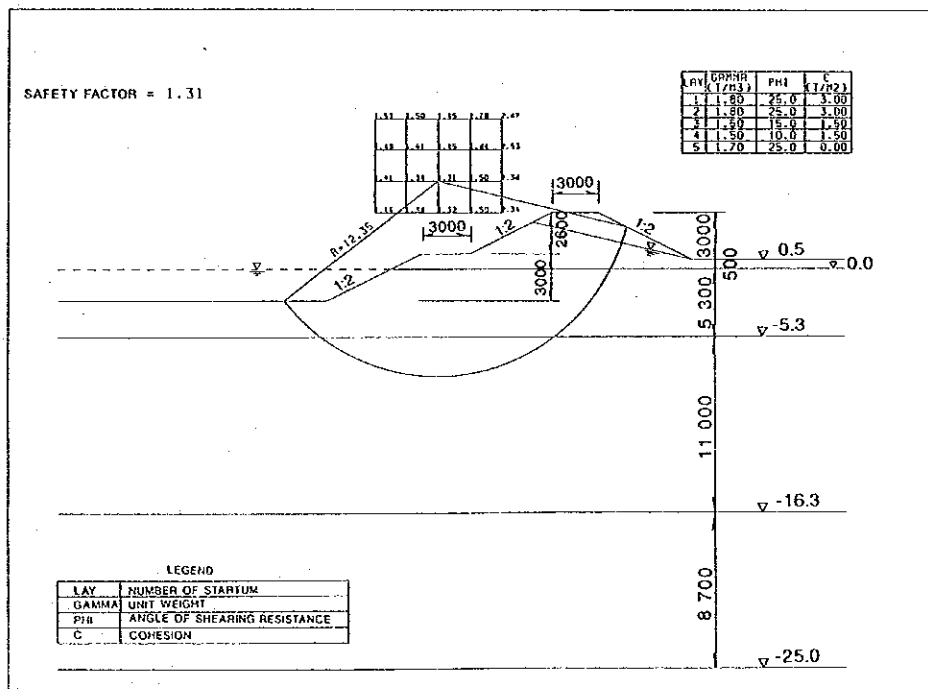
Case-2 In Case Residual High Water Level is Maximum



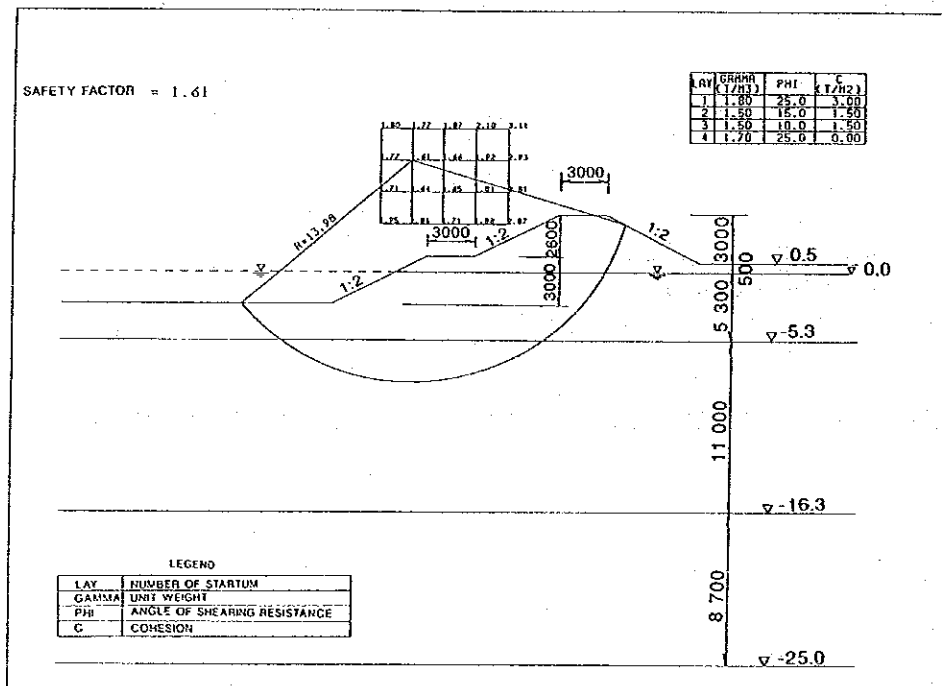
Case-3 Ordinary



Case-1 Seismic Case (Horizontal Seismic Coefficient 0.1)

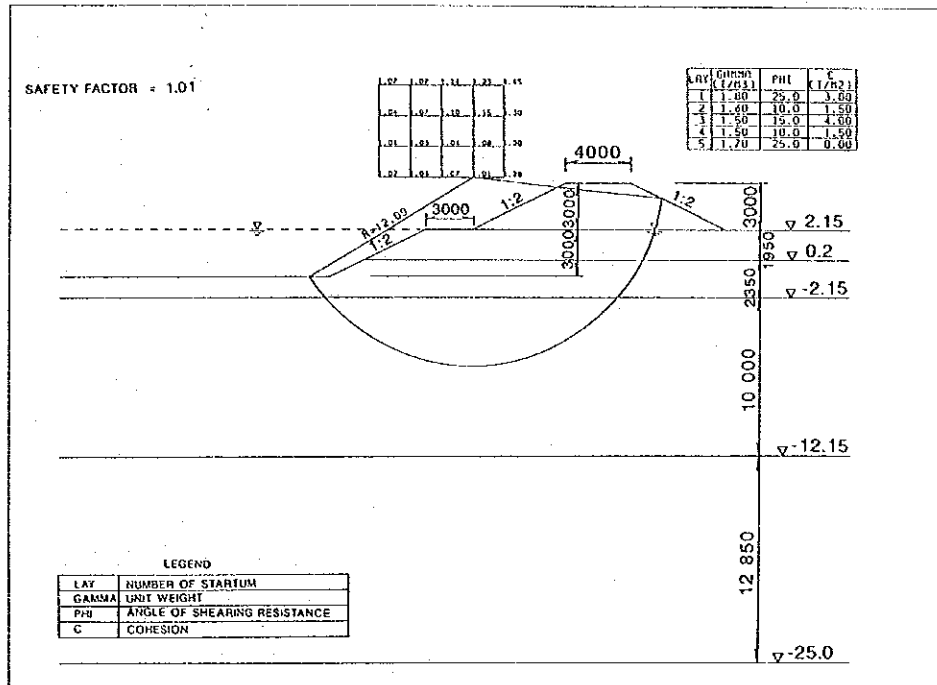


Case-2 In Case Residual High Water Level is Maximum

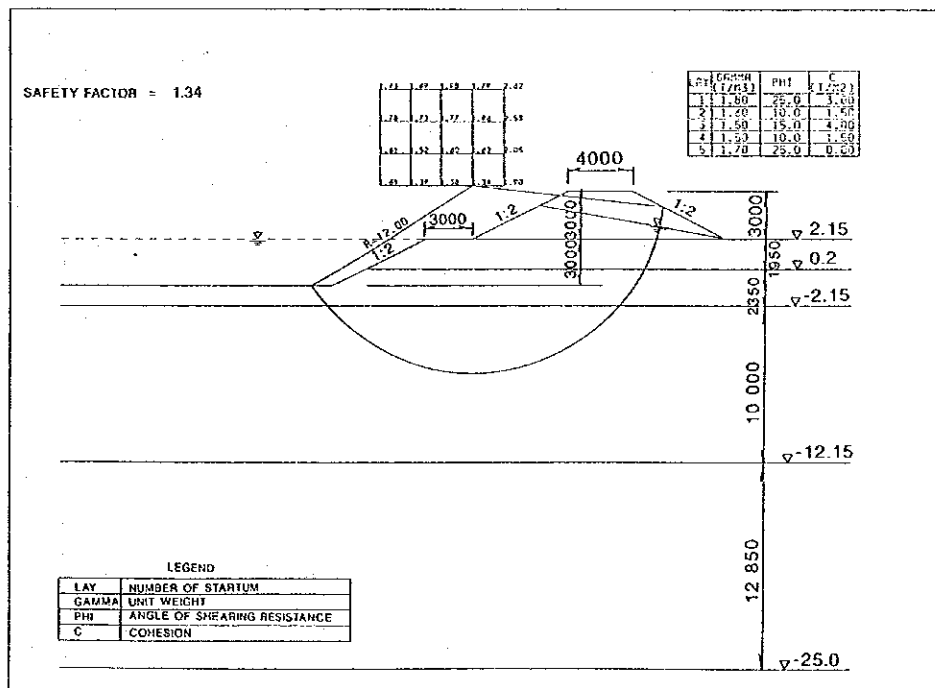


Case-3 Ordinary

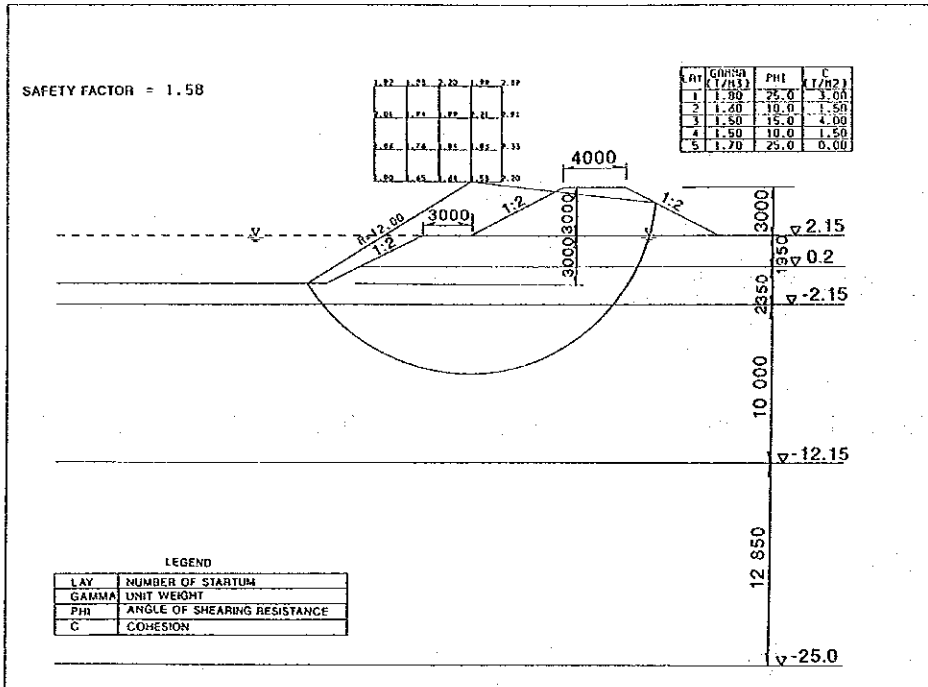




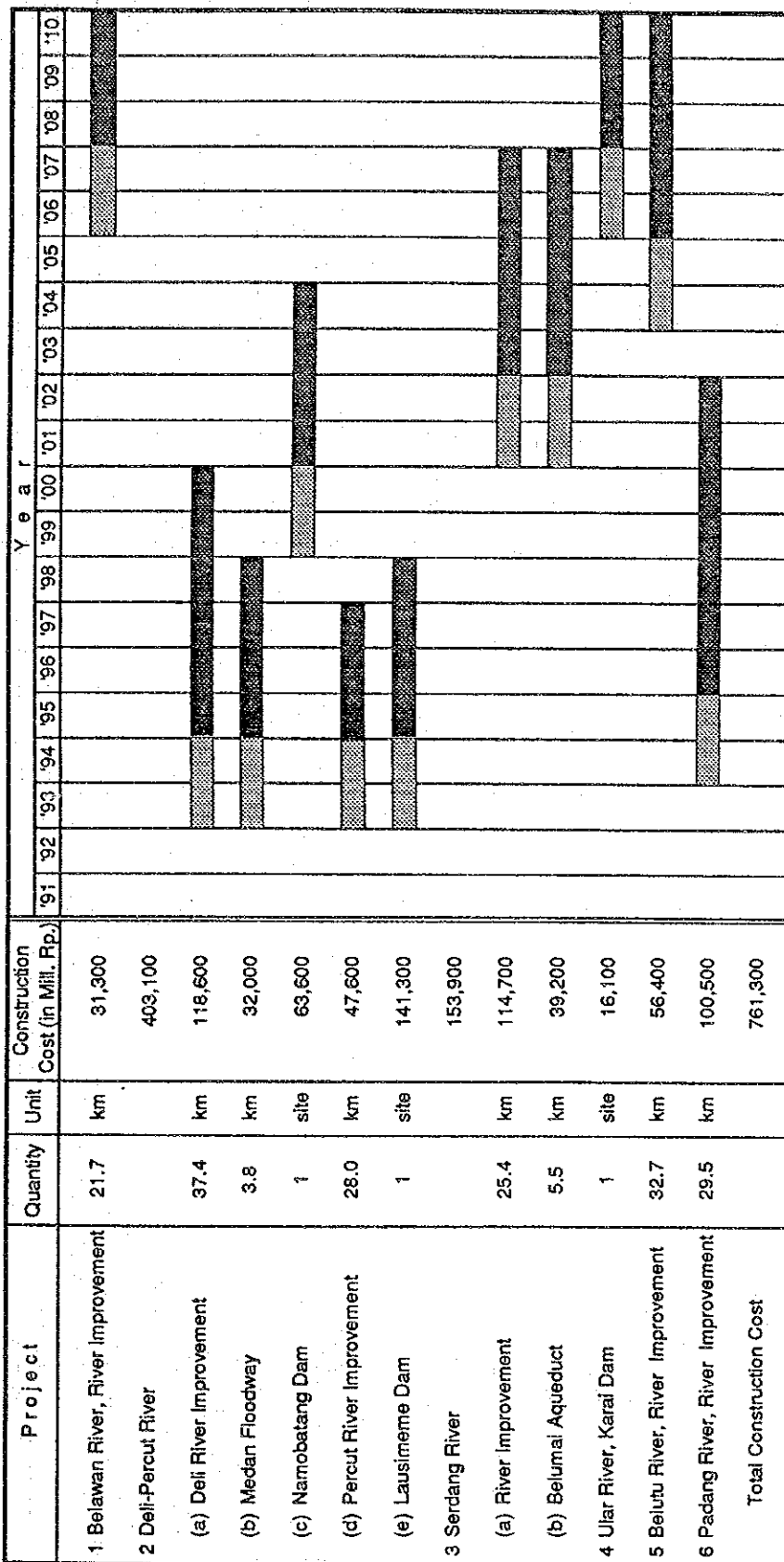
Case-1 Seismic Case (Horizontal Seismic Coefficient 0.1)





Case-2 In Case Residual High Water Level is Maximum



Case-3 Ordinary



 Detailed Design  
 Construction

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

IMPLEMENTATION SCHEDULE OF MASTER  
PLAN

Fig.5-1

WORK ITEM	QUANTITY	UNIT	YEAR						
			1ST	2ND	3RD	4TH	5TH	6TH	
<b>A. DELI RIVER</b>									
A-1 River Mouth to Sikambang River									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	1,888	1000 m3							
- Embankment	251	1000 m3							
- Revetment	330	1000 m2							
- Sluiceway	3	site							
- Drainpipe	57	site							
- Bridge	12	site							
A-2 Sikambang River to Babura River									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	272	1000 m3							
- Embankment	151	1000 m3							
- Revetment	125	1000 m2							
- Parapet Wall Along Sikambang River	2,400	m							
- Drainpipe	21	site							
- Bridge	5	site							
A-3 Babura River to Titi Kuning									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	193	1000 m3							
- Embankment	91	1000 m3							
- Revetment	91	1000 m2							
- Parapet Wall Along Babura River	100	m							
- Sluiceway	2	site							
- Drainpipe	19	site							
- Bridge	2	site							

WORK ITEM	QUANTITY	UNIT	YEAR						
			1ST	2ND	3RD	4TH	5TH	6TH	
<b>B. PERCUT RIVER</b>									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	1,433	1000 m3							
- Embankment	370	1000 m3							
- Revetment	6	1000 m2							
- Weir	1	m2							
- Sluiceway and Water Gate	5	site							
- Drainpipe	56	site							
- Bridge	13	site							
<b>C. MEDAN FLOODWAY</b>									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	1,166	1000 m3							
- Embankment	16	1000 m3							
- Revetment	97	1000 m2							
- Weir (Floodway Side)	1	site							
- Weir (Deli River Side)	1	site							
- Bridge	7	site							

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSTRUCTION SCHEDULE OF URGENT  
PROJECT (PERCUT RIVER AND MEDAN  
FLOODWAY)

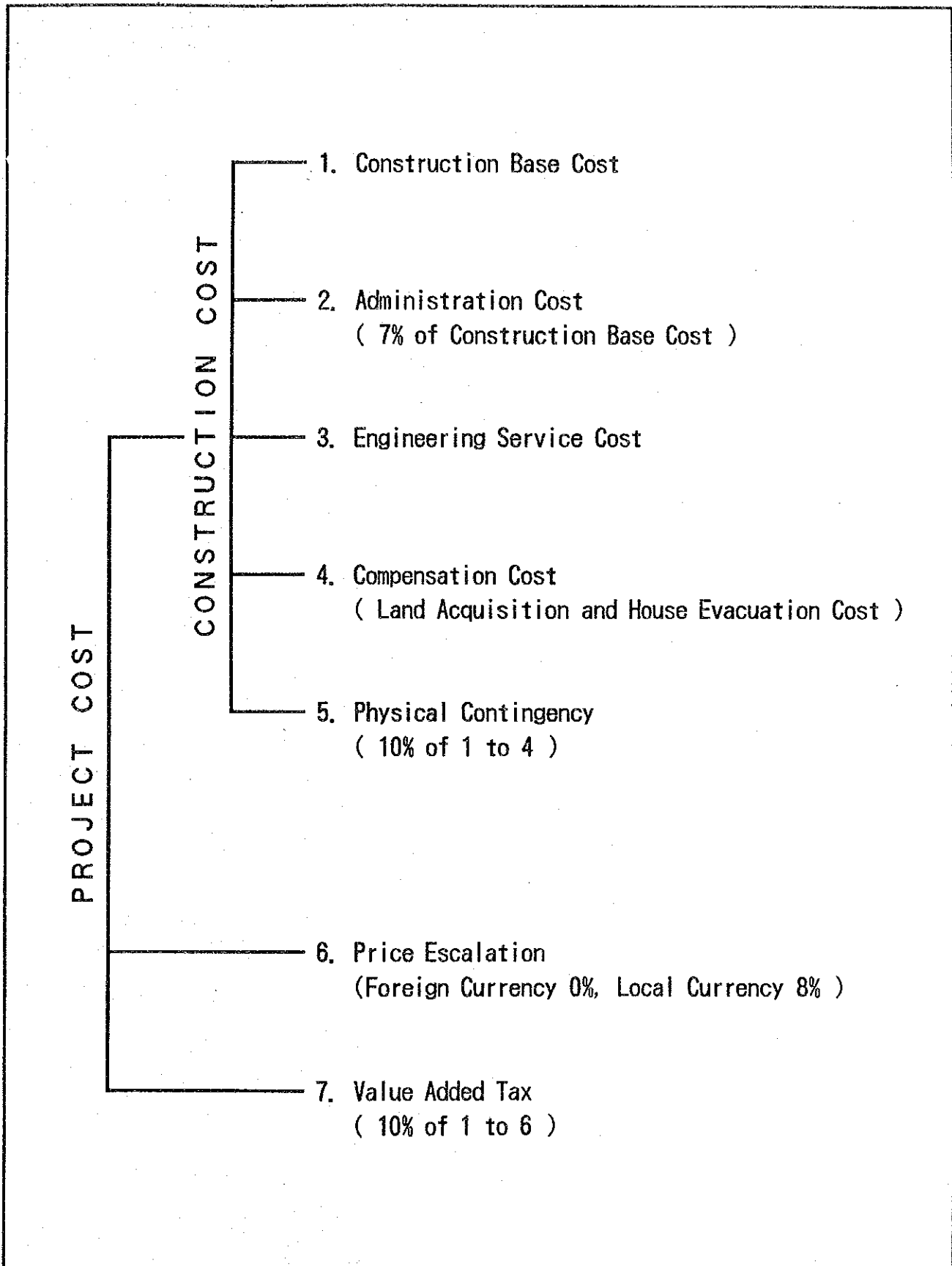
Fig.5-2(2/3)

WORK ITEM	QUANTITY	UNIT	YEAR						
			1ST	2ND	3RD	4TH	5TH	6TH	
D. PADANG RIVER									
1. Preparatory Works	L/S	-							
2. Main Works									
- Excavation	3,422	1000 m3							
- Embankment	848	1000 m3							
- Revetment	23	1000 m2							
- Weir	1	site							
- Parapet Wall Along Bahilang River	600	m							
- Sluiceway	4	site							
- Drainpipe	14	site							
- Bridge	6	site							

THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSTRUCTION SCHEDULE OF URGENT  
PROJECT (PADANG RIVER) Fig.5-2(3/3)



THE STUDY ON BELAWAN-PADANG INTEGRATED RIVER BASIN DEVELOPMENT  
IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSTITUTION OF PROJECT COST

Fig.5-3





ATTACHMENT



## BREAKDOWN OF UNIT COST

1 Item No. EX-A Works : Common Excavation  
 Price : F/C 3,810 Rp./m<sup>2</sup> L/C 1,690 Rp./m<sup>2</sup>  
 Total 5,500 Rp./m<sup>2</sup>  
 Remarks : 1,000 m<sup>3</sup> basis

Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
			Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>						
a) Foreman	md	2.0	0	0	12,000	24,000
b) Operator	md	10.0	0	0	10,000	100,000
c) Driver	md	36.8	0	0	6,500	239,200
d) Common labour	md	15.0	0	0	4,000	60,000
sub - total 1				0		423,200
<b>2. Material</b>						
a) Light oil	lit.	1,361.4	125	170,175	125	170,175
b) Lubricant: Light oil cost x 30 %	lit.			51,053		51,053
sub - total 2				221,228		221,228
<b>3. Equipment</b>						
a) Backhoe	0.6 m <sup>3</sup> hr	23.0	36,640	842,720	9,160	210,680
c) Dump truck, transportation(2 km) 11 t	hr	84.7	23,600	1,998,920	5,900	499,730
sub - total 3				2,841,640		710,410
Total 1, 2 & 3				3,062,868		1,354,838
Overhead and profit (25%)				750,403		331,935
Total for 1,000 m <sup>3</sup>				3,813,270		1,686,773
Unit cost for 1 m <sup>3</sup>				3,813		1,687

## BREAKDOWN OF UNIT COST

2 Item No. EX-B                      Works        : Excavation of river bed

Price        : F/C        4,800 Rp./m2    L/C        2,200 Rp./m2

Total                      7,000 Rp./m2

Remarks    : 1,000 m3 basis

Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
			Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>						
a) Foreman	md	3.6	0	0	12,000	43,200
b) Operator	md	18.0	0	0	10,000	180,000
c) Driver	md	37.0	0	0	6,500	240,500
d) Common labour	md	36.0	0	0	4,000	144,000
sub - total 1				0		607,700
<b>2. Material</b>						
a) Light oil	lit.	1,586.0	125	198,250	125	198,250
b) Lubricant: Light oil cost x 30 %	lit.			59,475		59,475
sub - total 2				257,725		257,725
<b>3. Equipment</b>						
a) Backhoe	0.6 m3    hr	23.0	36,640	842,720	9,160	210,680
b) Swamp bulldozer	14 t        hr	17.0	42,400	720,800	10,600	180,200
c) Dump truck, transportation(2 km) 11 t	hr	85.0	23,600	2,006,000	5,900	501,500
sub - total 3				3,569,520		892,380
<b>Total 1, 2 &amp; 3</b>				<b>3,827,245</b>		<b>1,757,805</b>
<b>Overhead and profit (25%)</b>				<b>970,207</b>		<b>445,604</b>
<b>Total for 1,000 m3</b>				<b>4,797,452</b>		<b>2,203,409</b>
<b>Unit cost for 1 m3</b>				<b>4,797</b>		<b>2,203</b>

## BREAKDOWN OF UNIT COST

3 Item No. EX-C                      Works        : Excavation of rock by blasting and breaker

Price        : F/C        9,500 Rp./m<sup>2</sup> L/C        6,500 Rp./m<sup>2</sup>

Total        16,000 Rp./m<sup>2</sup>

Remarks    : 1,000 m<sup>3</sup> basis

Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
			Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>						
a) Foreman	md	6.6	0	0	12,000	79,200
b) Operator	md	33.0	0	0	10,000	330,000
c) Driver	md	38.0	0	0	6,500	247,000
d) Skilled labour	md	10.0	0	0	7,500	75,000
e) Semi-skilled labour	md	40.0	0	0	5,000	200,000
f) Common labour	md	50.0	0	0	4,000	200,000
sub - total 1				0		1,131,200
<b>2. Material</b>						
a) Light oil	lit.	3,047.0	125	380,875	125	380,875
b) Lubricant: Light oil cost x 30 %	lit.			114,263		114,263
c) Explosives	kg	120.0	0	0	10,000	1,200,000
d) Percussion cap	pc	380.0	0	0	1,600	608,000
sub - total 2				495,138		2,303,138
<b>3. Equipment</b>						
a) Leg hammer	30 kg    hr	90.0	3,440	309,600	860	77,400
b) Compressor	5 m <sup>3</sup> /min    hr	15.0	16,320	244,800	4,080	61,200
c) Bulldozer with ripper	33 t        hr	25.0	120,800	3,020,000	30,200	755,000
d) Breaker	600 kg    hr	16.0	46,560	744,960	11,640	186,240
e) Backhoe	0.6 m <sup>3</sup> hr	20.0	36,640	732,800	9,160	183,200
e) Dump truck, transportation(1 km) 11 t	hr	88.0	23,600	2,076,800	5,900	519,200
sub - total 3				7,128,960		1,782,240
<b>Total 1, 2 &amp; 3</b>				7,624,098		5,216,578
<b>Overhead and profit (25%)</b>				1,876,290		1,283,800
<b>Total for 1,000 m<sup>3</sup></b>				9,500,388		6,500,377
<b>Unit cost for 1 m<sup>3</sup></b>				9,500		6,500



## BREAKDOWN OF UNIT COST

5 Item No. RE                      Works        : Wet Stone Masonry

Price        : F/C 21,110 Rp./m<sup>2</sup> L/C 28,900 Rp./m<sup>2</sup>

Total        50,010 Rp./m<sup>2</sup>

Remarks    :12.62 m<sup>2</sup> x 10. m basis (hight: 7.0 m ; slope: 1:1.5)

Particular	Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
				Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>							
a) Foreman		md	1.2	0	0	12,000	14,400
b) Operator		md	2.4	0	0	10,000	24,000
c) Concrete worker		md	4.0	0	0	7,000	28,000
d) Steel worker		md	4.0	0	0	7,000	28,000
e) Mason		md	8.0	0	0	7,000	56,000
f) Carpenter		md	4.0	0	0	7,000	28,000
g) Driver		md	7.0	0	0	6,500	45,500
h) Skilled labour		md	8.0	0	0	7,500	60,000
i) Semi-skilled labour		md	16.0	0	0	5,000	80,000
j) Common labour		md	32.0	0	0	4,000	128,000
sub - total 1						0	491,900
<b>2. Material</b>							
a) Light oil		lit.	191.4	125	23,930	125	23,930
b) Lubricant, 30 % of fuel cost					7,179		7,179
c) Cobblestone		cu.m	37.9	0	0	18,500	701,150
d) Backfilling gravel		cu.m	29.5	0	0	15,500	457,250
e) Cement		ton	7.1	72,500	514,750	72,500	514,750
f) Coarse aggregate		ton	25.0	0	0	13,000	325,000
g) Sand aggregate		ton	20.8	0	0	4,200	87,360
h) Reinforced bars		kg	540.0	1,300	702,000	0	0
i) Others, 5 % of a) to h) (weep hole pipe, concrete form, etc.)					62,393		105,831
sub - total 2					1,310,252		2,222,450
<b>3. Equipment</b>							
a) Cargo truck w/crane(5 km)	8 ton	hr	11.8	23,200	273,760	5,800	68,440
b) Concrete plant	25 m <sup>3</sup> /hr	hr	1.1	350,400	385,440	87,600	96,360
c) Diesel engine generator	200 KVA	hr	1.1	30,400	33,440	7,600	8,360
d) Truck mixer	4.5 m <sup>3</sup>	hr	4.4	29,600	130,240	7,400	32,560
sub - total 3					822,880		205,720
<b>Total of 1 to 3</b>					2,133,132		2,920,070
<b>Overhead and profit, ( 25 % )</b>					530,723		726,513
<b>Total for 126.2 m<sup>2</sup></b>					2,663,855		3,646,583
<b>Unit cost for 1 m<sup>2</sup></b>					21,108		28,895

## BREAKDOWN OF UNIT COST

6 Item No. CO-A Works : Mass Concrete

Price : F/C 71,940 Rp./m3 L/C 88,060 Rp./m3

Total 160,000 Rp./m3

Remarks : 10 m3 basis

Particular	Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
				Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>							
a) Foreman		md	0.7	0	0	12,000	8,400
b) Operator		md	1.4	0	0	10,000	14,000
c) Concrete worker		md	2.0	0	0	7,000	14,000
d) Carpenter		md	2.0	0	0	7,000	14,000
e) Driver		md	1.8	0	0	6,500	11,700
f) Skilled labour		md	2.0	0	0	7,500	15,000
g) Semi-skilled labour		md	4.0	0	0	5,000	20,000
h) Common labour		md	8.0	0	0	4,000	32,000
sub - total					0		129,100
<b>2. Material</b>							
a) Light oil		lit.	63.3	125	7,906	125	7,906
b) Lubricant, 30 % of fuel cost					2,372		2,372
c) Cement		ton	2.7	75,500	203,850	75,500	203,850
d) Coarse aggregate		ton	16.0	0	0	13,000	208,000
e) Sand aggregate		ton	6.0	0	0	4,200	25,200
f) Others, 10 % of a) to e) (concrete form, placing and curing material, etc.)					21,413		44,733
sub - total 2					235,541		492,061
<b>3. Equipment</b>							
a) Portable concrete plant	25 m3/hr	hr	0.5	350,400	175,200	87,600	43,800
b) Diesel engine generator	200 KVA	hr	0.5	30,400	15,200	7,600	3,800
c) Truck mixer	4.5 m3	hr	2.1	29,600	62,160	7,400	15,540
d) Cargo truck w/crane(5 km)	8 ton	hr	2.0	23,200	46,400	5,800	11,600
e) Crawler crane, 27 ton		hr	0.5	85,600	42,800	21,400	10,700
sub - total 3					341,760		85,440
<b>Total of 1, 2 &amp; 3</b>					<b>577,301</b>		<b>706,601</b>
<b>Overhead (25%)</b>					<b>142,137</b>		<b>173,972</b>
<b>Total for 10 m3</b>					<b>719,438</b>		<b>880,573</b>
<b>Unit cost for 1 m3</b>					<b>71,944</b>		<b>88,057</b>



## BREAKDOWN OF UNIT COST

7 Item No. CO-B Works : Reinforced Concrete

Price : F/C 300,030 Rp./m3 L/C 99,970 Rp./m3

Total 400,000 Rp./m3

Remarks : 10 m3 basis

Particular	Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
				Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>							
a) Foreman		md	0.7	0	0	12,000	8,400
b) Operator		md	1.4	0	0	10,000	14,000
c) Concrete worker		md	2.0	0	0	7,000	14,000
d) Carpenter		md	2.0	0	0	7,000	14,000
e) Steel worker		md	2.0	0	0	7,000	14,000
f) Driver		md	1.8	0	0	6,500	11,700
g) Skilled labour		md	4.0	0	0	7,500	30,000
h) Semi-skilled labour		md	4.0	0	0	5,000	20,000
i) Common labour		md	10.0	0	0	4,000	40,000
sub - total					0		166,100
<b>2. Material</b>							
a) Light oil		lit.	63.3	125	7,906	125	7,906
b) Lubricant, 30 % of fuel cost					2,372		2,372
c) Cement		ton	4.1	72,500	297,250	72,500	297,250
d) Coarse aggregate		ton	12.0	0	0	13,000	156,000
e) Sand aggregate		ton	8.0	0	0	4,200	33,600
f) Reinforced bars		kg	1,200.0	1,300	1,560,000	0	0
g) Others, 10 % of a) to f) (concrete form, placing and curing material, etc.)					186,753		49,713
sub - total 2					2,054,281		546,841
<b>3. Equipment</b>							
a) Portable concrete plant	25 m3/hr	hr	0.5	350,400	175,200	87,600	43,800
b) Diesel engine generator	200 KVA	hr	0.5	30,400	15,200	7,600	3,800
c) Truck mixer	4.5 m3	hr	2.1	29,600	62,160	7,400	15,540
d) Cargo truck w/crane(5 km)	8 ton	hr	2.0	23,200	46,400	5,800	11,600
e) Crawler crane, 27 ton		hr	0.5	85,600	42,800	21,400	10,700
sub - total 3					341,760		85,440
Total of 1, 2 & 3					2,396,041		798,381
Overhead (25%)					604,246		201,340
Total for 10 m3					3,000,287		999,721
Unit cost for 1 m3					300,029		99,972

## BREAKDOWN OF UNIT COST

8 Item No. SP                      Works        : Sheet Pile  
 Price        : F/C 245,270 Rp./m2 L/C    4,730 Rp./m2

Total        250,000 Rp./m2

Remarks    : H = 3 m (30 m2 basis), L = 10 m

Particular	Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
				Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>							
a) Foreman		md	0.6	0	0	12,000	7,200
b) Operator		md	1.3	0	0	10,000	13,000
g) Driver		md	0.2	0	0	6,500	1,300
c) Skilled labour, surveyor		md	3.0	0	0	7,500	22,500
d) Common labour		md	9.0	0	0	4,000	36,000
sub - total 1					0		80,000
<b>2. Material</b>							
a) Steel sheet pile, 3 m, II, 120 kg/m		kg	3,600.0	1,600	5,760,000	0	0
b) Light oil		lit	15.2	125	1,894	125	1,894
c) Lubricant, 30 % of fuel cost					568		568
sub - total 2					5,762,462		2,462
<b>3. Equipment</b>							
a) Vibro hammer, 30 kw		hr	1.0	20,000	20,000	5,000	5,000
b) Crawler crane, 27 ton		hr	1.0	85,600	85,600	21,400	21,400
c) Diesel engine generator 50 kVA		hr	1.0	7,200	7,200	1,800	1,800
d) Cargo truck w/crane(5 km) 8 ton		hr	0.5	23,200	11,600	5,800	2,900
sub - total 3					124,400		31,100
Total of 1, 2 & 3					5,886,862		113,562
Overhead (25%)					1,471,245		28,381
Total for 30 m2					7,358,106		141,943
Unit cost for 1 m2					245,270		4,731

## BREAKDOWN OF UNIT COST

9 Item GA      Works      : Gabion mattress 1.0 m x 2.0 m x 0.5 m

Price      : F/C      2,700 Rp./m2 L/C      29,300 Rp./m2

Total      32,000 Rp./m2

Remarks      : 100 m2 basis

Particular	Description	Unit	Q'ty	Foreign currency (Rp.)		Local currency (Rp.)	
				Unit Cost	Amount	Unit Cost	Amount
<b>1. Labour</b>							
a) Foreman		md	2.0	0.00	0	12,000	24,000
b) Driver		md	3.8	0.00	0	6,500	24,700
c) Semi-skilled labour		md	8.0	0.00	0	5,000	40,000
d) Common labour		md	16.0	0.00	0	4,000	64,000
sub - total 1					0		152,700
<b>2. Material</b>							
a) Cobblestone, 20 to 50cm		cu.m	50.0	0.00	0	18,500	925,000
b) Gabion mattress		sq.m	100.0	0.00	0	12,000	1,200,000
c) Light oil		lit	73.0	125	9,130	125	9,130
d) Lubricant, 30 % of fuel cost					2,739		2,739
sub - total 2					11,869		2,136,869
<b>3. Equipment</b>							
a) Cargo truck w/crane(5 km) 8 ton		hr	8.8	23,200	204,160	5,800	51,040
sub - total 3					204,160		51,040
Total of 1, 2 & 3					216,029		2,340,609
Overhead (25%)					54,374		589,131
Total for 100 m2					270,403		2,929,740
Unit cost for 1 m2					2,704		29,297

## Attachment-2 Breakdown of River Improvement Cost for Master Plan

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

1 Item No. : BE-50 ( Q = 550 m<sup>3</sup>/s )  
 Work Item : Belawan River Improvement  
 Stretch : 15 km - 36.7 km  
 Work Quantity : 21.70 km  
 Total Cost : 31,261 million Rp / 1,441 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total	Remarks
			F.C.	L.C.	F.C.	L.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>								
Excavation	1,665,000	m <sup>3</sup>			6,652	2,989	9,641	
Common	1,343,000	m <sup>3</sup>	3.8	1.7	5,097	2,290		
Riverbed	207,000	m <sup>3</sup>	4.8	2.2	1,000	449		
Dredging	115,000	m <sup>3</sup>	4.8	2.2	555	250		
Embankment	349,000	m <sup>3</sup>	7.9	4.1	2,764	1,424	4,188	
Weir	0	m <sup>2</sup>	10,500.0	3,500.0	0	0	0	
Revetment	0	m <sup>2</sup>	21.0	29.0	0	0	0	
Sheet Pile	0	m <sup>2</sup>	245.0	5.0	0	0	0	
Concrete	0	m <sup>3</sup>			0	0	0	
Mass	0	m <sup>3</sup>	72.0	88.0	0	0		
R.C.	0	m <sup>3</sup>	300.0	100.0	0	0		
Bridge	2,140	m <sup>2</sup>	1,275.0	425.0	2,729	910	3,638	
		6 place						
Sub-Total					12,145	5,322	17,467	
2. Preparation and Miscellaneous (20 %)	1				2,429	1,064	3,493	
<b>Total(1+2)</b>					<b>14,573</b>	<b>6,386</b>	<b>20,960</b>	
<b>3. Administration(7% of 1+2)</b>						<b>1,467</b>	<b>1,467</b>	
<b>4. Engineering Service(15% of 1+2)</b>					<b>2515.176</b>	<b>629</b>	<b>3,144</b>	
<b>Total(1+2+3+4)</b>					<b>17,089</b>	<b>8,482</b>	<b>25,571</b>	
5. Land Acquisition & Compensation	326,000	m <sup>2</sup>				2,848	2,848	
Low Density Area	45,000	m <sup>2</sup>		25.0		1,125		
High Density Area	0	m <sup>2</sup>		150.0		0		
Paddy & Agricultural Land	206,000	m <sup>2</sup>		8.0		1,648		
Plantation	0	m <sup>2</sup>		8.0		0		
Open Space	75,000	m <sup>2</sup>		1.0		75		
<b>Total(1+2+3+4+5)</b>					<b>17,089</b>	<b>11,330</b>	<b>28,419</b>	
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					<b>1,709</b>	<b>1,133</b>	<b>2,842</b>	
<b>G.Total(1+2+3+4+5+6)</b>					<b>18,797</b>	<b>12,463</b>	<b>31,261</b>	

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

2 Item No. : BE-10 ( Q = 410 m<sup>3</sup>/s )  
 Work Item : Belawan River Improvement  
 Stretch : 15 km - 36.7 km  
 Work Quantity : 21.70 km  
 Total Cost : 18,796 million Rp / 866 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total	Remarks
			F.C.	L.C.	F.C.	L.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1.Basic Construction Works</b>								
Excavation	602,000	m3			2,432	1,092	3,524	
Common	460,000	m3	3.8	1.7	1,746	784		
Riverbed	74,000	m3	4.8	2.2	357	161		
Dredging	68,000	m3	4.8	2.2	328	148		
Embankment	349,000	m3	7.9	4.1	2,764	1,424	4,188	
Weir	0	m2	10,500.0	3,500.0	0	0	0	
Revetment	0	m2	21.0	29.0	0	0	0	
Sheet Pile	0	m2	245.0	5.0	0	0	0	
Concrete	0	m3			0	0	0	
Mass	0	m3	72.0	88.0	0	0		
R.C.	0	m3	300.0	100.0	0	0		
Bridge	1,950	m2	1,275.0	425.0	2,486	829	3,315	
		6 place						
Sub-Total					7,682	3,345	11,027	
2.Preparation and Miscellaneous (20 %)	1				1,536	669	2,205	
<b>Total(1+2)</b>					<b>9,218</b>	<b>4,014</b>	<b>13,232</b>	
3.Administration(7% of 1+2)						926	926	
4.Engineering Service(15% of 1+2)					1,588	397	1,985	
<b>Total(1+2+3+4)</b>					<b>10,806</b>	<b>5,337</b>	<b>16,144</b>	
5.Land Acquisition & Compensation	108,000	m2				944	944	
Low Density Area	15,000	m2		25.0		375		
High Density Area	0	m2		150.0		0		
Paddy & Agricultural Land	68,000	m2		8.0		544		
Plantation	0	m2		8.0		0		
Open Space	25,000	m2		1.0		25		
<b>Total(1+2+3+4+5)</b>					<b>10,806</b>	<b>6,281</b>	<b>17,088</b>	
6.Physical Contl.(10% of 1+2+3+4+5)					1,081	628	1,709	
<b>G.Total(1+2+3+4+5+6)</b>					<b>11,887</b>	<b>6,910</b>	<b>18,796</b>	

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

3 Item No. : DE-11 ( Q = 460 m3/s)  
 Work Item : Deli River Improvement  
 Stretch : River Mouth to Sikanbing River  
 Work Quantity : 22.9 km  
 Total Cost : 65,884 million Rp / 2,877 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	1,888,000	m3			7,555	3,406	10,961
Common	1,511,000	m3	3.8	1.7	5,734	2,576	
Riverbed	283,000	m3	4.8	2.2	1,367	623	
Dredging	94,000	m3	4.8	2.2	454	207	
Embankment	251,000	m3	7.9	4.1	1,988	1,024	3,012
Gabion Mattress	36,000	m2	2.6	29.4	92	1,060	1,152
Revetment	360,000	m2	21.0	29.0	7,560	10,440	18,000
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	3,817	m2	1,275.0	425.0	4,867	1,622	6,489
		12 place					
Sub-Total					22,062	17,552	39,614
2. Preparation and Miscellaneous (20 %)	1				4,412	3,510	7,923
<b>Total(1+2)</b>					<b>26,474</b>	<b>21,062</b>	<b>47,536</b>
3. Administration(7% of 1+2)					0	3,328	3,328
4. Engineering Service(15% of 1+2)					5,704	1,426	7,130
<b>Total(1+2+3+4)</b>					<b>32,179</b>	<b>25,816</b>	<b>57,994</b>
<b>5. Land Acquisition &amp; Compensation</b>							
Low Density Area	41,000	m2		25.0		1,025	
High Density Area	4,000	m2		150.0		600	
Paddy & Agricultural Land	3,000	m2		8.0		24	
Plantation	22,000	m2		8.0		176	
Open Space	75,000	m2		1.0		75	
<b>Total(1+2+3+4+5)</b>					<b>32,179</b>	<b>27,716</b>	<b>59,894</b>
6. Physical Conti.(10% of 1+2+3+4+5)					3,218	2,772	5,989
<b>G. Total(1+2+3+4+5+6)</b>					<b>35,397</b>	<b>30,487</b>	<b>65,884</b>

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

4 Item No. : DE-12 ( Q = 400 to 420 m<sup>3</sup>/s )  
 Work Item : Deli River Improvement  
 Stretch : Sikambing River to Babura River  
 Work Quantity : 5.3 km  
 Total Cost : 38,233 million Rp / 7,214 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	272,000	m3			1,088	490	1,579
Common	218,000	m3	3.8	1.7	827	372	
Riverbed	54,000	m3	4.8	2.2	261	119	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	151,000	m3	7.9	4.1	1,196	616	1,812
Gabion Mattress	7,700	m2	2.6	29.4	20	227	246
Revetment	125,000	m2	21.0	29.0	2,625	3,625	6,250
Concrete	7,800	m3			2,340	780	3,120
Mass	0	m3	72.0	88.0	0	0	
R.C.	7,800	m3	300.0	100.0	2,340	780	
Bridge	1,849	m2	1,275.0	425.0	2,357	786	3,143
		5 place					
Sub-Total					9,626	6,524	16,150
2. Preparation and Miscellaneous (20 %)	1				1,925	1,305	3,230
<b>Total(1+2)</b>					<b>11,551</b>	<b>7,829</b>	<b>19,380</b>
3. Administration(7% of 1+2)					0	1,357	1,357
4. Engineering Service(15% of 1+2)					2,326	581	2,907
<b>Total(1+2+3+4)</b>					<b>13,877</b>	<b>9,767</b>	<b>23,644</b>
5. Land Acquisition & Compensation	225,000	m2			0	11,113	11,113
Low Density Area	141,000	m2		25.0		3,525	
High Density Area	49,000	m2		150.0		7,350	
Paddy & Agricultural Land	29,000	m2		8.0		232	
Plantation	0	m2		8.0		0	
Open Space	6,000	m2		1.0		6	
<b>Total(1+2+3+4+5)</b>					<b>13,877</b>	<b>20,880</b>	<b>34,757</b>
6. Physical Conti.(10% of 1+2+3+4+5)					1,388	2,088	3,476
<b>G.Total(1+2+3+4+5+6)</b>					<b>15,265</b>	<b>22,968</b>	<b>38,233</b>

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

5 Item No. : DE-13 ( Q = 150 m<sup>3</sup>/s )  
 Work Item : Deli River Improvement  
 Stretch : Babura River to Titi Kuning  
 Work Quantity : 9.2 km  
 Total Cost : 14,491 million Rp / 1,575 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	174,000	m <sup>3</sup>			690	311	1,001
Common	145,000	m <sup>3</sup>	3.8	1.7	550	247	
Riverbed	29,000	m <sup>3</sup>	4.8	2.2	140	64	
Dredging	0	m <sup>3</sup>	4.8	2.2	0	0	
Embankment	91,000	m <sup>3</sup>	7.9	4.1	721	371	1,092
Gabion Mattress	13,000	m <sup>2</sup>	2.6	29.4	33	383	416
Revetment	91,000	m <sup>2</sup>	21.0	29.0	1,911	2,639	4,550
Concrete	1,400	m <sup>3</sup>			420	140	560
Mass	0	m <sup>3</sup>	72.0	88.0	0	0	
R.C.	1,400	m <sup>3</sup>	300.0	100.0	420	140	
Bridge	290	m <sup>2</sup>	1,275.0	425.0	370	123	493
		2 place					
Sub-Total					4,145	3,967	8,112
2. Preparation and Miscellaneous (20 %)	1				829	793	1,622
<b>Total(1+2)</b>					<b>4,974</b>	<b>4,761</b>	<b>9,735</b>
3. Administration(7% of 1+2)					0	681	681
4. Engineering Service(15% of 1+2)					1,168	292	1,460
<b>Total(1+2+3+4)</b>					<b>6,142</b>	<b>5,734</b>	<b>11,877</b>
5. Land Acquisition & Compensation	60,000	m <sup>2</sup>			0	1,297	1,297
Low Density Area	33,000	m <sup>2</sup>		25.0		825	
High Density Area	2,000	m <sup>2</sup>		150.0		300	
Paddy & Agricultural Land	21,000	m <sup>2</sup>		8.0		168	
Plantation	0	m <sup>2</sup>		8.0		0	
Open Space	4,000	m <sup>2</sup>		1.0		4	
<b>Total(1+2+3+4+5)</b>					<b>6,142</b>	<b>7,031</b>	<b>13,174</b>
6. Physical Conti.(10% of 1+2+3+4+5)					614	703	1,317
<b>G. Total(1+2+3+4+5+6)</b>					<b>6,757</b>	<b>7,734</b>	<b>14,491</b>



**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

6 Item No. : DE-14 ( Q = 260 m<sup>3</sup>/s )  
 Work Item : Deli River Improvement  
 Stretch : Babura River to Titi Kuning  
 Work Quantity : 9.2 km  
 Total Cost : 26,454 million Rp / 2,875 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	416,000	m3			1,665	750	2,415
Common	333,000	m3	3.8	1.7	1,264	568	
Riverbed	83,000	m3	4.8	2.2	401	183	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	91,000	m3	7.9	4.1	721	371	1,092
Gabion Mattress	13,000	m2	2.6	29.4	33	383	416
Revetment	91,000	m2	21.0	29.0	1,911	2,639	4,550
Concrete	1,400	m3			420	140	560
Mass	0	m3	72.0	88.0	0	0	
R.C.	1,400	m3	300.0	100.0	420	140	
Bridge	3,579	m2	1,275.0	425.0	4,563	1,521	6,084
		6 place					
Sub-Total					9,313	5,804	15,117
<b>2. Preparation and Miscellaneous (20 %)</b>	<b>1</b>				<b>1,863</b>	<b>1,161</b>	<b>3,023</b>
<b>Total(1+2)</b>					<b>11,175</b>	<b>6,965</b>	<b>18,141</b>
<b>3. Administration(7% of 1+2)</b>					<b>0</b>	<b>1,270</b>	<b>1,270</b>
<b>4. Engineering Service(15% of 1+2)</b>					<b>2,177</b>	<b>544</b>	<b>2,721</b>
<b>Total(1+2+3+4)</b>					<b>13,352</b>	<b>8,779</b>	<b>22,132</b>
<b>5. Land Acquisition &amp; Compensation</b>					<b>0</b>	<b>1,917</b>	<b>1,917</b>
Low Density Area	41,000	m2		25.0		1,025	
High Density Area	3,000	m2		150.0		450	
Paddy & Agricultural Land	54,000	m2		8.0		432	
Plantation	0	m2		8.0		0	
Open Space	10,000	m2		1.0		10	
<b>Total(1+2+3+4+5)</b>					<b>13,352</b>	<b>10,696</b>	<b>24,049</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					<b>1,335</b>	<b>1,070</b>	<b>2,405</b>
<b>G. Total(1+2+3+4+5+6)</b>					<b>14,688</b>	<b>11,766</b>	<b>26,454</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

7 Item No. : MF (Q = 120 m<sup>3</sup>/s)  
 Work Item : Floodway Improvement  
 Stretch : Tembakau to Titi Kuning  
 Work Quantity : 3.80 km  
 Total Cost : 32,035 million Rp / 8,430 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	956,800	m3			3,830	1,720	5,550
Common	764,800	m3	3.8	1.7	2,902	1,304	
Riverbed	192,000	m3	4.8	2.2	927	417	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	8,200	m3	7.9	4.1	65	34	99
Revetment	106,000	m2	21.0	29.0	2,226	3,074	5,300
Sheet Pile	270	m2	245.0	5.0	66	1	68
Concrete	10,700	m3			1,796	996	2,792
Mass	6,200	m3	72.0	88.0	446	546	
R.C.	4,500	m3	300.0	100.0	1,350	450	
Bridge	2,358	m2	1,275.0	425.0	3,007	1,002	4,009
		7 place					
Sub-Total					10,990	6,827	17,817
<b>2. Preparation and Miscellaneous ( 20 % )</b>					2,198	1,365	3,563
<b>Total(1+2)</b>					<b>13,188</b>	<b>8,192</b>	<b>21,380</b>
<b>3. Administration(7% of 1+2)</b>						1,497	1,497
<b>4. Engineering Service(15% of 1+2)</b>					2,566	641	3,207
<b>Total(1+2+3+4)</b>					<b>15,753</b>	<b>10,331</b>	<b>26,084</b>
<b>5. Land Acquisition &amp; Compensation</b>						3,039	3,039
Low Density Area	45,000	m2		25.0		1,125	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	121,000	m2		8.0		968	
Plantation	47,000	m2		8.0		376	
Open Space	570,000	m2		1.0		570	
<b>Total(1+2+3+4+5)</b>					<b>15,753</b>	<b>13,370</b>	<b>29,123</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					1,575	1,337	2,912
<b>G.Total(1+2+3+4+5+6)</b>					<b>17,329</b>	<b>14,706</b>	<b>32,035</b>

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

8 Item No. : PE-50 ( Q = 300 m<sup>3</sup>/s )  
 Work Item : Percut River Improvement  
 Stretch : 0km - 28.0km  
 Work Quantity : 28.00 km  
 Total Cost : 47,589 million Rp / 1,700 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C. (1000Rp)	L.C. (1000Rp)	F.C. (Mill.Rp)	L.C. (Mill.Rp)	L.C. (Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	1,610,000	m <sup>3</sup>			6,527	2,932	9,459
Common	1,207,500	m <sup>3</sup>	3.8	1.7	4,582	2,059	
Riverbed	322,000	m <sup>3</sup>	4.8	2.2	1,555	699	
Dredging	80,500	m <sup>3</sup>	4.8	2.2	389	175	
Embankment	440,000	m <sup>3</sup>	7.9	4.1	3,485	1,795	5,280
Inflatable Weir	120	m <sup>2</sup>	10,500.0	3,500.0	1,260	420	1,680
Revetment	10,000	m <sup>2</sup>	21.0	29.0	210	290	500
Sheet Pile	1,000	m <sup>2</sup>	245.0	5.0	245	5	250
Concrete	4,000	m <sup>3</sup>			516	364	880
Mass	3,000	m <sup>3</sup>	72.0	88.0	216	264	
R.C.	1,000	m <sup>3</sup>	300.0	100.0	300	100	
Bridge	3,600	m <sup>2</sup>	1,275.0	425.0	4,590	1,530	6,120
		13 place					
Sub-Total					16,832	7,337	24,169
<b>2. Preparation and Miscellaneous ( 20 % )</b>					3,367	1,467	4,834
<b>Total(1+2)</b>					20,199	8,804	29,003
<b>3. Administration(7% of 1+2)</b>					0	2,030	2,030
<b>4. Engineering Service(15% of 1+2)</b>					3,480	870	4,350
<b>Total(1+2+3+4)</b>					23,679	11,704	35,383
<b>5. Land Acquisition &amp; Compensation</b>						7,880	7,880
Low Density Area	160,000	m <sup>2</sup>		25.0		4,000	
High Density Area	6,000	m <sup>2</sup>		150.0		900	
Paddy & Agricultural Land	220,000	m <sup>2</sup>		8.0		1,760	
Plantation	40,000	m <sup>2</sup>		8.0		320	
Open Space	900,000	m <sup>2</sup>		1.0		900	
<b>Total(1+2+3+4+5)</b>					23,679	19,584	43,263
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					2,368	1,958	4,326
<b>G.Total(1+2+3+4+5+6)</b>					26,047	21,542	47,589

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

9 Item No. : PE-10 ( Q = 230 m<sup>3</sup>/s )  
 Work Item : Percut River Improvement  
 Stretch : 0km - 28.0km  
 Work Quantity : 28.00 km  
 Total Cost : 34,184 million Rp / 1,221 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1.Basic Construction Works</b>							
Excavation	812,000	m3			3,293	1,479	4,772
Common	608,000	m3	3.8	1.7	2,307	1,037	
Riverbed	162,000	m3	4.8	2.2	782	352	
Dredging	42,000	m3	4.8	2.2	203	91	
Embankment	320,000	m3	7.9	4.1	2,534	1,306	3,840
Inflatable Weir	88	m2	10,500.0	3,500.0	924	308	1,232
Revetment	10,000	m2	21.0	29.0	210	290	500
Sheet Pile	1,000	m2	245.0	5.0	245	5	250
Concrete	4,000	m3			516	364	880
Mass	3,000	m3	72.0	88.0	216	264	
R.C.	1,000	m3	300.0	100.0	300	100	
Bridge	3,380	m2	1,275.0	425.0	4,310	1,436	5,746
	13 place						
Sub-Total					12,032	5,188	17,220
2.Preparation and Miscellaneous ( 20 % )					2,406	1,038	3,444
<b>Total(1+2)</b>					<b>14,438</b>	<b>6,226</b>	<b>20,664</b>
3.Administration(7% of 1+2)						1,446	1,446
4.Engineering Service(15% of 1+2)					2,480	620	3,100
<b>Total(1+2+3+4)</b>					<b>16,918</b>	<b>8,293</b>	<b>25,210</b>
5.Land Acquisition & Compensation	1,142,000	m2				5,866	5,866
Low Density Area	112,000	m2		25.0		2,800	
High Density Area	3,000	m2		150.0		450	
Paddy & Agricultural Land	190,000	m2		8.0		1,520	
Plantation	37,000	m2		8.0		296	
Open Space	800,000	m2		1.0		800	
<b>Total(1+2+3+4+5)</b>					<b>16,918</b>	<b>14,159</b>	<b>31,076</b>
6.Physical Conti.(10% of 1+2+3+4+5)					1,692	1,416	3,108
<b>G.Total(1+2+3+4+5+6)</b>					<b>18,610</b>	<b>15,574</b>	<b>34,184</b>

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

10 Item No. : SE-51 ( Q = 850 m<sup>3</sup>/s )  
 Work Item : Serdang River Improvement  
 Stretch : River Mouth to Baru  
 Work Quantity : 9.3 km  
 Total Cost : 65,275 million Rp / 7,019 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	3,688,000	m3			14,758	6,652	21,410
Common	2,952,000	m3	3.8	1.7	11,203	5,033	
Riverbed	552,000	m3	4.8	2.2	2,666	1,214	
Dredging	184,000	m3	4.8	2.2	889	405	
Embankment	329,000	m3	7.9	4.1	2,606	1,342	3,948
Inflatable Weir	0	m2	10,500.0	3,500.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Revetment	0	m2	21.0	29.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	4,600	m2	1,275.0	425.0	5,865	1,955	7,820
		3 place					
Sub-Total					23,228	9,950	33,178
<b>2. Preparation and Miscellaneous (20 %)</b>							
	1				4,646	1,990	6,636
<b>Total(1+2)</b>					<b>27,874</b>	<b>11,940</b>	<b>39,814</b>
<b>3. Administration(7% of 1+2)</b>							
					0	2,787	2,787
<b>4. Engineering Service(15% of 1+2)</b>							
					4,778	1,194	5,972
<b>Total(1+2+3+4)</b>					<b>32,652</b>	<b>15,921</b>	<b>48,573</b>
<b>5. Land Acquisition &amp; Compensation</b>							
Low Density Area	1,488,000	m2			0	10,768	10,768
High Density Area	25,000	m2		25.0		625	
Paddy & Agricultural Land	0	m2		150.0		0	
Plantation	1,240,000	m2		8.0		9,920	
Open Space	0	m2		8.0		0	
	223,000	m2		1.0		223	
<b>Total(1+2+3+4+5)</b>					<b>32,652</b>	<b>26,689</b>	<b>59,341</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>							
					3,265	2,669	5,934
<b>G.Total(1+2+3+4+5+6)</b>					<b>35,917</b>	<b>29,358</b>	<b>65,275</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

11 Item No. : SE-52 ( Q = 330 m<sup>3</sup>/s )  
 Work Item : Belunai River Improvement  
 Stretch : Baru to Buntu  
 Work Quantity : 7.2 km  
 Total Cost : 16,711 million Rp / 2,321 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C. (1000Rp)	L.C. (1000Rp)	F.C. (Mill.Rp)	L.C. (Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	786,000	m3			3,146	1,418	4,565
Common	628,000	m3	3.8	1.7	2,383	1,071	
Riverbed	158,000	m3	4.8	2.2	763	348	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	30,000	m3	7.9	4.1	238	122	360
Inflatable Weir	132	m2	10,500.0	3,500.0	1,386	462	1,848
Sheet Pile	1,000	m2	245.0	5.0	245	5	250
Revetment	1,500	m2	21.0	29.0	32	44	75
Concrete	4,400	m3			636	404	1,040
Mass	3,000	m3	72.0	88.0	216	264	
R.C.	1,400	m3	300.0	100.0	420	140	
Bridge	288	m2	1,275.0	425.0	367	122	490
		1 place					
Sub-Total					6,050	2,578	8,627
<b>2. Preparation and Miscellaneous (20 %)</b>					1,210	516	1,725
<b>Total(1+2)</b>					<b>7,260</b>	<b>3,093</b>	<b>10,353</b>
<b>3. Administration(7% of 1+2)</b>					0	725	725
<b>4. Engineering Service(15% of 1+2)</b>					1,242	311	1,553
<b>Total(1+2+3+4)</b>					<b>8,502</b>	<b>4,128</b>	<b>12,630</b>
<b>5. Land Acquisition &amp; Compensation</b>					0	2,561	2,561
Low Density Area	54,000	m2		25.0		1,350	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	150,000	m2		8.0		1,200	
Plantation	0	m2		8.0		0	
Open Space	11,000	m2		1.0		11	
<b>Total(1+2+3+4+5)</b>					<b>8,502</b>	<b>6,689</b>	<b>15,191</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					850	669	1,519
<b>G. Total(1+2+3+4+5+6)</b>					<b>9,352</b>	<b>7,358</b>	<b>16,711</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

12 Item No. : SE-53 ( Q = 480 m<sup>3</sup>/s )  
 Work Item : Batugingging River Improvement  
 Stretch : Baru to Gang Melaya  
 Work Quantity : 8.9 km  
 Total Cost : 32,689 million Rp / 3,673 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	2,030,000	m3			8,124	3,662	11,786
Common	1,624,000	m3	3.8	1.7	6,163	2,769	
Riverbed	406,000	m3	4.8	2.2	1,961	893	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	181,000	m3	7.9	4.1	1,434	738	2,172
Inflatable Weir		m2	10,500.0	3,500.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Revetment	0	m2	21.0	29.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	900	m2	1,275.0	425.0	1,148	383	1,530
		1 place					
Sub-Total					10,705	4,783	15,488
<b>2. Preparation and Miscellaneous (20 %)</b>					2,141	957	3,098
<b>Total(1+2)</b>					12,846	5,740	18,586
<b>3. Administration(7% of 1+2)</b>					0	1,301	1,301
<b>4. Engineering Service(15% of 1+2)</b>					2,230	558	2,788
<b>Total(1+2+3+4)</b>					15,076	7,598	22,675
<b>5. Land Acquisition &amp; Compensation</b>					0	7,043	7,043
Low Density Area	0	m2		25.0		0	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	840,000	m2		8.0		6,720	
Plantation	0	m2		8.0		0	
Open Space	323,000	m2		1.0		323	
<b>Total(1+2+3+4+5)</b>					15,076	14,641	29,718
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					1,508	1,464	2,972
<b>G.Total(1+2+3+4+5+6)</b>					16,584	16,105	32,689

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

13 Item No. : SE-11 ( Q = 680 m<sup>3</sup>/s )  
 Work Item : Serdang River Improvement  
 Stretch : River Mouth to Baru  
 Work Quantity : 9.3 km  
 Total Cost : 54,311 million Rp / 5,840 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	2,515,000	m3			10,065	4,537	14,602
Common	2,012,000	m3	3.8	1.7	7,636	3,430	
Riverbed	378,000	m3	4.8	2.2	1,826	832	
Dredging	125,000	m3	4.8	2.2	604	275	
Embankment	329,000	m3	7.9	4.1	2,606	1,342	3,948
Inflatable Weir	0	m2	10,500.0	3,500.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Revetment	0	m2	21.0	29.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	4,600	m2	1,275.0	425.0	5,865	1,955	7,820
		3 place					
Sub-Total					18,536	7,834	26,370
<b>2. Preparation and Miscellaneous (20 %)</b>							
	1				3,707	1,567	5,274
<b>Total(1+2)</b>					<b>22,243</b>	<b>9,401</b>	<b>31,644</b>
<b>3. Administration(7% of 1+2)</b>							
					0	2,215	2,215
<b>4. Engineering Service(15% of 1+2)</b>							
					3,797	949	4,747
<b>Total(1+2+3+4)</b>					<b>26,040</b>	<b>12,566</b>	<b>38,606</b>
<b>5. Land Acquisition &amp; Compensation</b>							
Low Density Area	1,488,000	m2			0	10,768	10,768
Low Density Area	25,000	m2		25.0		625	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	1,240,000	m2		8.0		9,920	
Plantation	0	m2		8.0		0	
Open Space	223,000	m2		1.0		223	
<b>Total(1+2+3+4+5)</b>					<b>26,040</b>	<b>23,334</b>	<b>49,374</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>							
					2,604	2,333	4,937
<b>G.Total(1+2+3+4+5+6)</b>					<b>28,644</b>	<b>25,667</b>	<b>54,311</b>



## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

14 Item No. : SE-12 ( Q = 270 m<sup>3</sup>/s )  
 Work Item : Belumai River Improvement  
 Stretch : Baru to Buntu  
 Work Quantity : 7.2 km  
 Total Cost : 13,189 million Rp / 1,832 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Basic Construction Works</b>							
Excavation	560,000	m3			2,241	1,010	3,251
Common	448,000	m3	3.8	1.7	1,700	764	
Riverbed	112,000	m3	4.8	2.2	541	246	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	30,000	m3	7.9	4.1	238	122	360
Inflatable Weir	111	m2	10,500.0	3,500.0	1,166	389	1,554
Sheet Pile	1,000	m2	245.0	5.0	245	5	250
Revetment	1,500	m2	21.0	29.0	32	44	75
Concrete	4,400	m3			636	404	1,040
Mass	3,000	m3	72.0	88.0	216	264	
R.C.	1,400	m3	300.0	100.0	420	140	
Bridge	246	m2	1,275.0	425.0	314	105	418
		1 place					
Sub-Total					4,870	2,078	6,949
<b>2. Preparation and Miscellaneous (20 %)</b>					974	416	1,390
<b>Total(1+2)</b>					5,844	2,494	8,338
<b>3. Administration(7% of 1+2)</b>					0	584	584
<b>4. Engineering Service(15% of 1+2)</b>					1,001	250	1,251
<b>Total(1+2+3+4)</b>					6,845	3,328	10,173
<b>5. Land Acquisition &amp; Compensation</b>					0	1,817	1,817
Low Density Area	33,000	m2		25.0		825	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	123,000	m2		8.0		984	
Plantation	0	m2		8.0		0	
Open Space	8,000	m2		1.0		8	
<b>Total(1+2+3+4+5)</b>					6,845	5,145	11,990
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					685	514	1,199
<b>G. Total(1+2+3+4+5+6)</b>					7,530	5,659	13,189

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

15 Item No. : SE-13 ( Q = 390 m<sup>3</sup>/s )  
 Work Item : Batugingging River Improvement  
 Stretch : Baru to Gang Melaya  
 Work Quantity : 8.9 km  
 Total Cost : 29,090 million Rp / 3,269 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1.Basic Construction Works</b>							
Excavation	1,645,000	m3			6,583	2,968	9,551
Common	1,316,000	m3	3.8	1.7	4,994	2,244	
Riverbed	329,000	m3	4.8	2.2	1,589	724	
Dredging	0	m3	4.8	2.2	0	0	
Embankment	181,000	m3	7.9	4.1	1,434	738	2,172
Inflatable Weir		m2	10,500.0	3,500.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Revetment	0	m2	21.0	29.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	900	m2	1,275.0	425.0	1,148	383	1,530
		1 place					
Sub-Total					9,164	4,089	13,253
<b>2.Preparation and Miscellaneous (20 %)</b>					1,833	818	2,651
<b>Total(1+2)</b>					10,997	4,906	15,903
<b>3.Administration(7% of 1+2)</b>					0	1,113	1,113
<b>4.Engineering Service(15% of 1+2)</b>					1,908	477	2,386
<b>Total(1+2+3+4)</b>					12,906	6,497	19,402
<b>5.Land Acquisition &amp; Compensation</b>					0	7,043	7,043
Low Density Area	0	m2		25.0		0	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	840,000	m2		8.0		6,720	
Plantation	0	m2		8.0		0	
Open Space	323,000	m2		1.0		323	
<b>Total(1+2+3+4+5)</b>					12,906	13,540	26,446
<b>6.Physical Conti.(10% of 1+2+3+4+5)</b>					1,291	1,354	2,645
<b>G.Total(1+2+3+4+5+6)</b>					14,196	14,894	29,090

16 Item No. : BT-50 ( Q = 340 m3/s at S. Rampah, Q = 210 m3/s at Bakaran Batu )  
 Work Item : Belutu River Improvement  
 Stretch : 0 km - 32.7 km  
 Work Quantity : 32.70 km  
 Total Cost : 56,401 million Rp / 1,725 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C. (1000Rp)	L.C. (1000Rp)	F.C. (Mill.Rp)	L.C. (Mill.Rp)	L.C. (Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	2,080,000	m3			9,289	4,173	13,462
Common	732,000	m3	3.8	1.7	2,778	1,248	
Riverbed	490,000	m3	4.8	2.2	2,367	1,063	
Dredging	858,000	m3	4.8	2.2	4,144	1,862	
Embankment	895,000	m3	7.9	4.1	7,088	3,652	10,740
Revetment	0	m2	21.0	29.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	2,870	m2	1,275.0	425.0	3,659	1,220	4,879
		6 place					
Sub-Total					20,036	9,045	29,081
2. Preparation and Miscellaneous (20 %)	1				4,007	1,809	5,816
-----							
Total(1+2)					24,044	10,853	34,897
3. Administration(7% of 1+2)						2,443	2,443
4. Engineering Service(15% of 1+2)					4187.664	1,047	5,235
Total(1+2+3+4)					28,231	14,343	42,575
5. Land Acquisition & Compensation	1,367,000	m2				8,699	8,699
Low Density Area	120,000	m2		25.0		3,000	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	636,000	m2		8.0		5,088	
Plantation	0	m2		8.0		0	
Open Space	611,000	m2		1.0		611	
Total(1+2+3+4+5)					28,231	23,042	51,274
6. Physical Conti.(10% of 1+2+3+4+5)					2,823	2,304	5,127
-----							
G. Total(1+2+3+4+5+6)					31,055	25,346	56,401

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN**

17 Item No. : BT-10 ( Q = 260 m3/s at S. Rampah, Q = 160 m3/s at Bakaran Batu )  
 Work Item : Belutu River Improvement  
 Stretch : 0 km - 32.7 km  
 Work Quantity : 32.70 km  
 Total Cost : 48,729 million Rp / 1,490 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C. (1000Rp)	L.C. (1000Rp)	F.C. (Mill.Rp)	L.C. (Mill.Rp)	L.C. (Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	1,348,000	m3			6,002	2,696	8,698
Common	492,000	m3	3.8	1.7	1,867	839	
Riverbed	317,000	m3	4.8	2.2	1,531	688	
Dredging	539,000	m3	4.8	2.2	2,603	1,170	
Embankment	895,000	m3	7.9	4.1	7,088	3,652	10,740
Revetment	0	m2	21.0	29.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	
R.C.	0	m3	300.0	100.0	0	0	
Bridge	2,870	m2	1,275.0	425.0	3,659	1,220	4,879
		6 place					
Sub-Total					16,749	7,568	24,317
2. Preparation and Miscellaneous (20 %)	1				3,350	1,514	4,863
<b>Total(1+2)</b>					<b>20,099</b>	<b>9,081</b>	<b>29,180</b>
3. Administration(7% of 1+2)						2,043	2,043
4. Engineering Service(15% of 1+2)					3,502	875	4,377
<b>Total(1+2+3+4)</b>					<b>23,601</b>	<b>11,999</b>	<b>35,600</b>
5. Land Acquisition & Compensation	1,367,000	m2				8,699	8,699
Low Density Area	120,000	m2		25.0		3,000	
High Density Area	0	m2		150.0		0	
Paddy & Agricultural Land	636,000	m2		8.0		5,088	
Plantation	0	m2		8.0		0	
Open Space	611,000	m2		1.0		611	
<b>Total(1+2+3+4+5)</b>					<b>23,601</b>	<b>20,698</b>	<b>44,299</b>
6. Physical Conti.(10% of 1+2+3+4+5)					2,360	2,070	4,430
<b>G.Total(1+2+3+4+5+6)</b>					<b>25,961</b>	<b>22,768</b>	<b>48,729</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

18 Item No. : PA-50 ( Q = 840 m<sup>3</sup>/s )  
 Work Item : PADANG River Improvement  
 Stretch : 0km - 29.5 km  
 Work Quantity : 29.50 km  
 Total Cost : 100,544 million Rp / 3,408 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	6,098,000	m <sup>3</sup>			24,405	10,964	35,369
Common	4,878,000	m <sup>3</sup>	3.8	1.7	18,512	8,317	
Riverbed	915,000	m <sup>3</sup>	4.8	2.2	4,419	1,986	
Dredging	305,000	m <sup>3</sup>	4.8	2.2	1,473	662	
Embankment	820,000	m <sup>3</sup>	7.9	4.1	6,494	3,346	9,840
Inflatable Weir	216	m <sup>2</sup>	10,500.0	3,500.0	2,268	756	3,024
Revetment	27,000	m <sup>2</sup>	21.0	29.0	567	783	1,350
Sheet Pile	1,700	m <sup>2</sup>	245.0	5.0	417	9	425
Concrete	8,000	m <sup>3</sup>			1,260	740	2,000
Mass	5,000	m <sup>3</sup>	72.0	88.0	360	440	
R.C.	3,000	m <sup>3</sup>	300.0	100.0	900	300	
Bridge	3,619	m <sup>2</sup>	1,275.0	425.0	4,614	1,538	6,152
		6 place					
Sub-Total					40,025	18,135	58,160
2. Preparation and Miscellaneous (20 %)	1				8,005	3,627	11,632
<b>Total(1+2)</b>					<b>48,030</b>	<b>21,762</b>	<b>69,792</b>
3. Administration(7% of 1+2)						4,885	4,885
4. Engineering Service(15% of 1+2)					8,375	2,094	10,469
<b>Total(1+2+3+4)</b>					<b>56,405</b>	<b>28,742</b>	<b>85,147</b>
5. Land Acquisition & Compensation	1,280,000	m <sup>2</sup>				6,257	6,257
Low Density Area	25,000	m <sup>2</sup>		25.0		625	
High Density Area	1,000	m <sup>2</sup>		150.0		150	
Paddy & Agricultural Land	292,000	m <sup>2</sup>		8.0		2,336	
Plantation	312,000	m <sup>2</sup>		8.0		2,496	
Open Space	650,000	m <sup>2</sup>		1.0		650	
<b>Total(1+2+3+4+5)</b>					<b>56,405</b>	<b>34,999</b>	<b>91,404</b>
6. Physical Contl.(10% of 1+2+3+4+5)					5,641	3,500	9,141
<b>G.Total(1+2+3+4+5+6)</b>					<b>62,045</b>	<b>38,499</b>	<b>100,544</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR MASTER PLAN

19 Item No. : PA-10 ( Q = 620 m<sup>3</sup>/s )  
 Work Item : PADANG River Improvement  
 Stretch : 0km - 29.5 km  
 Work Quantity : 29.50 km  
 Total Cost : 73,481 million Rp / 2,491 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C. (1000Rp)	L.C. (1000Rp)	F.C. (Mill.Rp)	L.C. (Mill.Rp)	L.C. (Mill.Rp)
<b>1. Basic Construction Works</b>							
Excavation	3,391,000	m <sup>3</sup>			13,572	6,097	19,669
Common	2,712,000	m <sup>3</sup>	3.8	1.7	10,292	4,624	
Riverbed	509,000	m <sup>3</sup>	4.8	2.2	2,458	1,105	
Dredging	170,000	m <sup>3</sup>	4.8	2.2	821	369	
Embankment	820,000	m <sup>3</sup>	7.9	4.1	6,494	3,346	9,840
Inflatable Weir	171	m <sup>2</sup>	10,500.0	3,500.0	1,796	599	2,394
Revetment	27,000	m <sup>2</sup>	21.0	29.0	567	783	1,350
Sheet Pile	1,400	m <sup>2</sup>	245.0	5.0	343	7	350
Concrete	6,400	m <sup>3</sup>			1,008	592	1,600
Mass	4,000	m <sup>3</sup>	72.0	88.0	288	352	
R.C.	2,400	m <sup>3</sup>	300.0	100.0	720	240	
Bridge	3,619	m <sup>2</sup>	1,275.0	425.0	4,614	1,538	6,152
		6 place					
Sub-Total					28,394	12,962	41,355
2. Preparation and Miscellaneous (20 %)	1				5,679	2,592	8,271
<b>Total(1+2)</b>					<b>34,072</b>	<b>15,554</b>	<b>49,626</b>
<b>3. Administration(7% of 1+2)</b>						<b>3,474</b>	<b>3,474</b>
<b>4. Engineering Service(15% of 1+2)</b>					<b>5,955</b>	<b>1,489</b>	<b>7,444</b>
<b>Total(1+2+3+4)</b>					<b>40,028</b>	<b>20,517</b>	<b>60,544</b>
5. Land Acquisition & Compensation	1,280,000	m <sup>2</sup>				6,257	6,257
Low Density Area	25,000	m <sup>2</sup>		25.0		625	
High Density Area	1,000	m <sup>2</sup>		150.0		150	
Paddy & Agricultural Land	292,000	m <sup>2</sup>		8.0		2,336	
Plantation	312,000	m <sup>2</sup>		8.0		2,496	
Open Space	650,000	m <sup>2</sup>		1.0		650	
<b>Total(1+2+3+4+5)</b>					<b>40,028</b>	<b>26,774</b>	<b>66,801</b>
<b>6. Physical Conti.(10% of 1+2+3+4+5)</b>					<b>4,003</b>	<b>2,677</b>	<b>6,680</b>
<b>G.Total(1+2+3+4+5+6)</b>					<b>44,030</b>	<b>29,451</b>	<b>73,481</b>

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

1 Work Item : DE-1  
 Stretch : River Mouth to Sikambing R.  
 Work Quantity : 22.90 km  
 Total Cost : 49,432 million Rp 2,159 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					27,198	20,345	47,543
<b>1.1 Basic Construction Works</b>					22,665	16,954	39,619
Excavation	1,888,047	m3			7,517	3,377	10,894
Common	1,548,199	m3	3.8	1.7	5,875	2,640	8,515
Riverbed	283,207	m3	4.8	2.2	1,368	615	1,982
Dredging	56,641	m3	4.8	2.2	274	123	396
Embankment	250,622	m3	7.9	4.1	1,985	1,023	3,007
Revetment	329,659	m2	21.0	29.0	6,923	9,560	16,483
Sheet Pile with Revetment	1,400	m2	245.0	5.0	343	7	350
Concrete for Parapet	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	0
R.C.	0	m3	300.0	100.0	0	0	0
Gabion Mattress with Revetment	35,730	m2	2.6	29.4	91	1,052	1,143
Sluice A 1 place	13	m3	1,875.0	625.0	24	8	33
Sluice C 2 place	183	m3	2,250.0	750.0	412	137	549
Drain 57 place	671	m2	750.0	250.0	503	168	671
Bridge 12 place	3,817	m2	1,275.0	425.0	4,867	1,622	6,489
<b>1.2 Preparatory Works ( 20 % ) *</b>	1				4,533	3,391	7,924
<b>2. Compensation Base Cost</b>					0	1,889	1,889
<b>2.1 Land Acquisition</b>	145,035				0	620	620
Urban Area	8,346	m2	0.0	20.0	0	167	167
Rural Area	38,718	m2	0.0	5.0	0	194	194
Paddy Field	0	m2	0.0	8.0	0	0	0
Plantation(palm oil)	22,128	m2	0	8	0	177	177
Plantation(rubber)	0	m2	0	4	0	0	0
Plantation(cacao)	0	m2	0	2	0	0	0
Agricultural Area	3,338	m2	0	3	0	10	10
Fishpond	0	m2	0	3	0	0	0
Open Space	72,505	m2	0	1	0	73	73
<b>2.2 House Evacuation</b>	64				0	1,269	1,269
Private House Class A	0	p.c.	0	51,000	0	0	0
Private House Class B	35	p.c.	0	15,000	0	525	525
Private House Class C	22	p.c.	0	2,000	0	44	44
Office Building	0	p.c.	0	76,000	0	0	0
Factory	7	p.c.	0	100,000	0	700	700
<b>Total (1 + 2)</b>					27,198	22,234	49,432

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in urban area.

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT**

2 Work Item : DE-2  
 Stretch : Sikambang R. to Babura R.  
 Work Quantity : 5.30 km  
 Total Cost : 30,495 million Rp 5,754 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					<b>11,537</b>	<b>7,815</b>	<b>19,351</b>
<b>1.1 Basic Construction Works</b>					<b>9,614</b>	<b>6,512</b>	<b>16,126</b>
Excavation	271,562	m3			1,073	482	1,555
Common	230,828	m3	4	2	876	394	1,270
Riverbed	40,734	m3	5	2	197	88	285
Dredging	0	m3	5	2	0	0	0
Embankment	151,245	m3	8	4	1,198	617	1,815
Revetment	124,797	m2	21	29	2,621	3,619	6,240
Sheet Pile with Revetment	0	m2	245	5	0	0	0
Concrete for Parapet	7,200	m3			2,160	720	2,880
Mass	0	m3	72	88	0	0	0
R.C.	7,200	m3	300	100	2,160	720	2,880
Gabion Mattress with Revetment	7,695	m2	3	29	20	227	246
Sluice A 0 place	0	m3	1,875	625	0	0	0
Sluice C 0 place	0	m3	2,250	750	0	0	0
Drain 21 place	247	m2	750	250	185	62	247
Bridge 5 place	1,849	m2	1,275	425	2,357	786	3,143
<b>1.2 Preparatory Works ( 20 % ) *</b>	1				<b>1,923</b>	<b>1,302</b>	<b>3,225</b>
<b>2. Compensation Base Cost</b>					<b>0</b>	<b>11,144</b>	<b>11,144</b>
<b>2.1 Land Acquisition</b>	225,381				<b>0</b>	<b>3,899</b>	<b>3,899</b>
Urban Area	190,290	m2	0	20	0	3,806	3,806
Rural Area	0	m2	0	5	0	0	0
Paddy Field	0	m2	0	8	0	0	0
Plantation(palm oil)	0	m2	0	8	0	0	0
Plantation(rubber)	0	m2	0	4	0	0	0
Plantation(cacao)	0	m2	0	2	0	0	0
Agricultural Area	29,184	m2	0	3	0	88	88
Fishpond	0	m2	0	3	0	0	0
Open Space	5,907	m2	0	1	0	6	6
<b>2.2 House Evacuation</b>	556				<b>0</b>	<b>7,245</b>	<b>7,245</b>
Private House Class A	0	p.c.	0	51,000	0	0	0
Private House Class B	285	p.c.	0	15,000	0	4,275	4,275
Private House Class C	245	p.c.	0	2,000	0	490	490
Office Building	5	p.c.	0	76,000	0	380	380
Factory	21	p.c.	0	100,000	0	2,100	2,100
<b>Total (1 + 2)</b>					<b>11,537</b>	<b>18,959</b>	<b>30,495</b>

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in urban area.



## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

3 Work Item : DE-3  
 Stretch : Babura R. to Titi Kuning  
 Work Quantity : 9.20 km  
 Total Cost : 11,492 million Rp 1,249 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total L.C. (Mill.Rp)
			F.C.	L.C.	F.C.	L.C.	
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	
<b>1. Construction Base Cost</b>					5,189	4,756	9,945
<b>1.1 Basic Construction Works</b>					4,324	3,963	8,287
Excavation	192,713	m3			761	342	1,103
Common	163,806	m3	4	2	622	279	901
Riverbed	28,907	m3	5	2	140	63	202
Dredging	0	m3	5	2	0	0	0
Embankment	90,615	m3	8	4	718	370	1,087
Revetment	90,698	m2	21	29	1,905	2,630	4,535
Sheet Pile with Revetment	900	m2	245	5	221	5	225
Concrete for Parapet	200	m3			60	20	80
Mass	0	m3	72	88	0	0	0
R.C.	200	m3	300	100	60	20	80
Gabion Mattress with Revetment	13,140	m2	3	29	34	387	420
Sluice A 2 place	27	m3	1,875	625	51	17	68
Sluice C 0 place	0	m3	2,250	750	0	0	0
Drain 19 place	224	m2	750	250	168	56	224
Bridge 2 place	320	m2	1,275	425	408	136	544
<b>1.2 Preparatory Works ( 20 % ) *</b>	1				865	793	1,657
<b>2. Compensation Base Cost</b>					0	1,547	1,547
<b>2.1 Land Acquisition</b>	85,450				0	751	751
Urban Area	28,782	m2	0	20	0	576	576
Rural Area	10,057	m2	0	5	0	50	50
Paddy Field	0	m2	0	8	0	0	0
Plantation(palm oil)	0	m2	0	8	0	0	0
Plantation(rubber)	0	m2	0	4	0	0	0
Plantation(cacao)	0	m2	0	2	0	0	0
Agricultural Area	39,290	m2	0	3	0	118	118
Fishpond	0	m2	0	3	0	0	0
Open Space	7,321	m2	0	1	0	7	7
<b>2.2 House Evacuation</b>	142				0	796	796
Private House Class A	0	p.c.	0	51,000	0	0	0
Private House Class B	28	p.c.	0	15,000	0	420	420
Private House Class C	112	p.c.	0	2,000	0	224	224
Office Building	2	p.c.	0	76,000	0	152	152
Factory	0	p.c.	0	100,000	0	0	0
<b>Total (1 + 2)</b>					5,189	6,303	11,492

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in urban area.

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

4 Work Item : FL-CH  
 Stretch : Floodway Channel(Tembakau to Titi Kuning)  
 Work Quantity : 3.84 km  
 Total Cost : 19,098 million Rp      4,973 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					<b>10,509</b>	<b>6,443</b>	<b>16,953</b>
<b>1.1 Basic Construction Works</b>					<b>9,554</b>	<b>5,858</b>	<b>15,412</b>
Excavation	1,165,731	m3			4,665	2,096	6,761
Common	932,585	m3	3.8	1.7	3,539	1,590	5,129
Riverbed	233,146	m3	4.8	2.2	1,126	506	1,632
Dredging	0	m3	4.8	2.2	0	0	0
Embankment	0	m3	7.9	4.1	0	0	0
Revetment	96,917	m2	21.0	29.0	2,035	2,811	4,846
Gabion Mattress	0	m2	2.6	29.4	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	0
R.C.	0	m3	300.0	100.0	0	0	0
Sluice A	0 place	m3	1,875.0	625.0	0	0	0
Sluice B	0 place	m3	2,250.0	750.0	0	0	0
Drain	0 place	m3	750.0	250.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Bridge	6 place	m2	1,275.0	425.0	2,853	951	3,805
<b>1.2 Preparatory Works ( 10 % ) *</b>	1				955	586	1,541
<b>2. Compensation Base Cost</b>					0	2,145	2,145
<b>2.1 Land Acquisition</b>	202,429				0	582	582
Urban Area	0	m2	0.0	10.0	0	0	0
Rural Area	44,853	m2	0.0	2.0	0	90	90
Paddy Field	26,418	m2	0.0	8.0	0	211	211
Plantation(palm oil)	0	m2	0.0	8.0	0	0	0
Plantation(rubber)	0	m2	0.0	4.0	0	0	0
Plantation(cacao)	47,483	m2	0.0	2.0	0	95	95
Agricultural Area	51,011	m2	0.0	3.0	0	153	153
Fishpond	0	m2	0.0	3.0	0	0	0
Open Space	32,664	m2	0.0	1.0	0	33	33
<b>2.2 House Evacuation</b>	97				0	1,563	1,563
Private House Class A	3	p.c.	0.0	51,000.0	0	153	153
Private House Class B	94	p.c.	0.0	15,000.0	0	1,410	1,410
Private House Class C	0	p.c.	0.0	2,000.0	0	0	0
Office Building	0	p.c.	0.0	76,000.0	0	0	0
Factory	0	p.c.	0.0	100,000.0	0	0	0
<b>Total (1 + 2)</b>					<b>10,509</b>	<b>8,588</b>	<b>19,098</b>

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

5 Work Item : WE-FL  
 Stretch : Floodway Channel ( Weir --- Floodway Side)  
 Total Cost : 1,938 million Rp

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					1,167	772	1,938
<b>1.1 Basic Construction Works</b>					1,061	701	1,762
Excavation	19,865	m3			80	36	116
Common	15,510	m3	3.8	1.7	59	26	85
Riverbed	4,355	m3	4.8	2.2	21	9	30
Dredging	0	m3	4.8	2.2	0	0	0
Embankment	1,000	m3	7.9	4.1	8	4	12
Revetment	3,576	m2	21.0	29.0	75	104	179
Gabion Mattress	1,890	m2	2.6	29.4	5	56	60
Concrete	5,420	m3			853	501	1,354
Mass	3,390	m3	72.0	88.0	244	298	542
R.C.	2,030	m3	300.0	100.0	609	203	812
Sheet Pile	161	m2	245.0	5.0	39	1	40
Bridge	6 place	0	1,275.0	425.0	0	0	0
<b>1.2 Preparatory Works ( 10 % ) *</b>					106	70	176

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.

6 Work Item : WE-DE  
 Stretch : Floodway Channel ( Weir -- Deli River Side)  
 Total Cost : 2,029 million Rp

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					1,253	777	2,029
<b>1.1 Basic Construction Works</b>					1,139	706	1,845
Excavation	10,895	m3			44	20	64
Common	7,900	m3	3.8	1.7	30	13	43
Riverbed	2,995	m3	4.8	2.2	14	6	21
Dredging	0	m3	4.8	2.2	0	0	0
Embankment	3,300	m3	7.9	4.1	26	13	40
Revetment	5,364	m2	21.0	29.0	113	156	268
Gabion Mattress	990	m2	2.6	29.4	3	29	32
Concrete	5,210	m3			927	488	1,414
Mass	2,790	m3	72.0	88.0	201	246	446
R.C.	2,420	m3	300.0	100.0	726	242	968
Sheet Pile	105	m2	245.0	5.0	26	1	26
Bridge	6 place	0	1,275.0	425.0	0	0	0
<b>1.2 Preparatory Works ( 10 % ) *</b>					114	71	185

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

7 Work Item : FL-UP  
 Stretch : Compensation and Embankment Work for Upstream of Deli River : 3.2 km  
 Total Cost : 1,409 million Rp

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					305	126	431
<b>1.1 Basic Construction Works</b>					277	115	392
Excavation	0	m3			0	0	0
Common	0	m3	3.8	1.7	0	0	0
Riverbed	0	m3	4.8	2.2	0	0	0
Dredging	0	m3	4.8	2.2	0	0	0
Embankment	15,660	m3	7.9	4.1	124	64	188
Revetment	0	m2	21.0	29.0	0	0	0
Gabion Mattress	0	m2	2.6	29.4	0	0	0
Concrete	0	m3			0	0	0
Mass	0	m3	72.0	88.0	0	0	0
R.C.	0	m3	300.0	100.0	0	0	0
Sluice A	0 place	m3	1,875.0	625.0	0	0	0
Sluice B	0 place	m3	2,250.0	750.0	0	0	0
Drain	0 place	m3	750.0	250.0	0	0	0
Sheet Pile	0	m2	245.0	5.0	0	0	0
Bridge	1 place	m2	1,275.0	425.0	153	51	204
1.2 Preparatory Works ( 10 % ) *	1				28	11	39
<b>2. Compensation Base Cost</b>					0	978	978
<b>2.1 Land Acquisition</b>	580,000				0	889	889
Urban Area	0	m2	0.0	10.0	0	0	0
Rural Area	0	m2	0.0	2.0	0	0	0
Paddy Field	0	m2	0.0	8.0	0	0	0
Plantation(palm oil)	31,200	m2	0.0	8.0	0	250	250
Plantation(rubber)	0	m2	0.0	4.0	0	0	0
Plantation(cacao)	0	m2	0.0	2.0	0	0	0
Agricultural Area	45,300	m2	0.0	3.0	0	136	136
Fishpond	0	m2	0.0	3.0	0	0	0
Open Space	503,500	m2	0.0	1.0	0	504	504
<b>2.2 House Evacuation</b>	25				0	89	89
Private House Class A	0	p.c.	0.0	51,000.0	0	0	0
Private House Class B	3	p.c.	0.0	15,000.0	0	45	45
Private House Class C	22	p.c.	0.0	2,000.0	0	44	44
Office Building	0	p.c.	0.0	76,000.0	0	0	0
Factory	0	p.c.	0.0	100,000.0	0	0	0
<b>Total (1 + 2)</b>					305	1,104	1,409

Note \* : Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.

## BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT

8 Work Item : Percut River  
 Stretch : River Mouth to Tembakau R.  
 Work Quantity : 28.00 km  
 Total Cost : 36,810 million Rp      1,315 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					20,348	8,729	29,077
<b>1.1 Basic Construction Works</b>					18,498	7,936	26,434
Excavation	1,432,804	m3			5,734	2,576	8,310
Common	1,146,243	m3	3.8	1.7	4,350	1,954	6,304
Riverbed	243,577	m3	4.8	2.2	1,176	529	1,705
Dredging	42,984	m3	4.8	2.2	208	93	301
Embankment	370,410	m3	7.9	4.1	2,934	1,511	4,445
Revetment      Junction with Floodway	6,261	m2	21.0	29.0	131	182	313
Revetment      for Weir	3,109	m2	21.0	29.0	65	90	155
Gabion Mattress      for Weir	8,900	m2	2.6	29.4	23	262	285
Pavement      with Embankment	11,520	m2	75.0	25.0	864	288	1,152
Inflatable Weir	120	m2	10,500.0	3,500.0	1,260	420	1,680
Concrete      for Weir	4,052	m3			509	368	877
Mass	3,100	m3	72.0	88.0	223	273	496
R.C.	952	m3	300.0	100.0	286	95	381
Sheet Pile      for Weir	1,140	m2	245.0	5.0	279	6	285
Sluice A      3 place	48	m3	1,875.0	625.0	90	30	120
Sluice B      1 place	138	m3	2,250.0	750.0	311	104	414
Drain      56 place	660	m3	750.0	250.0	495	165	660
Gate      1 place	12	m2	97,500.0	32,500.0	1,170	390	1,560
Bridge      13 place	3,634	m2	1,275.0	425.0	4,633	1,544	6,178
<b>1.2 Preparatory Works 10 % *</b>	1				1,850	794	2,643
<b>2. Compensation Base Cost</b>					0	7,732	7,732
<b>2.1 Land Acquisition</b>	1,313,918				0	3,183	3,183
Urban Area	81,207	m2	0.0	10.0	0	812	812
Rural Area	71,783	m2	0.0	2.0	0	144	144
Paddy Field	17,610	m2	0.0	8.0	0	141	141
Plantation(palm oil)	37,798	m2	0.0	8.0	0	302	302
Plantation(rubber)	0	m2	0.0	4.0	0	0	0
Plantation(cacao)	360	m2	0.0	2.0	0	1	1
Agricultural Area	209,011	m2	0.0	3.0	0	627	627
Fishpond	130,140	m2	0.0	3.0	0	390	390
Open Space	766,009	m2	0.0	1.0	0	766	766
<b>2.2 House Evacuation</b>	409				0	4,549	4,549
Private House Class A	0	p.c.	0.0	51,000.0	0	0	0
Private House Class B	253	p.c.	0.0	15,000.0	0	3,795	3,795
Private House Class C	151	p.c.	0.0	2,000.0	0	302	302
Office Building	2	p.c.	0.0	76,000.0	0	152	152
Factory	3	p.c.	0.0	100,000.0	0	300	300
<b>Total (1 + 2)</b>					20,348	16,462	36,810

Note \* : Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.

**BREAKDOWN OF RIVER IMPROVEMENT COST FOR URGENT PROJECT**

9 Work Item : Padang River  
 Stretch : River Mouth to Sibarau  
 Work Quantity : 29.50 km  
 Total Cost : 56,005 million Rp 1,898 million Rp/km

Item	Quantity	Unit	Unit Price		Amount		Total
			F.C.	L.C.	F.C.	L.C.	L.C.
			(1000Rp)	(1000Rp)	(Mill.Rp)	(Mill.Rp)	(Mill.Rp)
<b>1. Construction Base Cost</b>					<b>33,503</b>	<b>15,955</b>	<b>49,458</b>
<b>1.1 Basic Construction Works</b>					<b>30,457</b>	<b>14,505</b>	<b>44,962</b>
Excavation	3,422,000	m3			13,695	6,153	19,848
Common	2,737,600	m3	3.8	1.7	10,389	4,668	15,057
Riverbed	581,740	m3	4.8	2.2	2,810	1,262	4,072
Dredging	102,660	m3	4.8	2.2	496	223	719
Embankment	848,000	m3	7.9	4.1	6,716	3,460	10,176
Revetment	22,875	m2	21.0	29.0	480	663	1,144
Gabion Mattress	7,425	m2	2.6	29.4	19	219	238
Revetment with Weir	4,150	m2	21.0	29.0	87	120	208
Gabion Mattress with Weir	19,200	m2	2.6	29.4	49	565	614
Pavement with Embankment	0	m2	75.0	25.0	0	0	0
Inflatable Weir	216	m2	10,500.0	3,500.0	2,268	756	3,024
Concrete	8,230	m3			1,329	763	2,092
Mass	5,000	m3	72.0	88.0	360	440	800
R.C. for weir	1,430	m3	300.0	100.0	429	143	572
R.C. for parapet of Bahilan	1,800	m3	300.0	100.0	540	180	720
Sheet Pile with Weir	1,724	m2	245.0	5.0	422	9	431
Sluice A 1 place	17	m3	1,875.0	625.0	32	11	43
Sluice B 3 place	276	m3	2,250.0	750.0	621	207	828
Drain 14 place	165	m3	750.0	250.0	124	41	165
Gate 0 place	0	m2	97,500.0	32,500.0	0	0	0
Bridge 6 place	3,619	m2	1,275.0	425.0	4,614	1,538	6,152
<b>1.2 Preparatory Works ( 10 % ) *</b>	<b>1</b>				<b>3,046</b>	<b>1,450</b>	<b>4,496</b>
<b>2. Compensation Base Cost</b>					<b>0</b>	<b>6,547</b>	<b>6,547</b>
<b>2.1 Land Acquisition</b>	<b>1,280,000</b>				<b>0</b>	<b>4,849</b>	<b>4,849</b>
Urban Area	44,800	m2	0.0	10.0	0	448	448
Rural Area	60,800	m2	0.0	2.0	0	122	122
Paddy Field	139,900	m2	0.0	8.0	0	1,119	1,119
Plantation(palm oil)	41,400	m2	0.0	8.0	0	331	331
Plantation(rubber)	283,100	m2	0.0	4.0	0	1,132	1,132
Plantation(cacao)	0	m2	0.0	2.0	0	0	0
Agricultural Area	475,300	m2	0.0	3.0	0	1,426	1,426
Fishpond	18,000	m2	0.0	3.0	0	54	54
Open Space	216,700	m2	0.0	1.0	0	217	217
<b>2.2 House Evacuation</b>	<b>252</b>				<b>0</b>	<b>1,698</b>	<b>1,698</b>
Private House Class A	0	p.c.	0.0	51,000.0	0	0	0
Private House Class B	54	p.c.	0.0	15,000.0	0	810	810
Private House Class C	192	p.c.	0.0	2,000.0	0	384	384
Office Building	4	p.c.	0.0	76,000.0	0	304	304
Factory	2	p.c.	0.0	100,000.0	0	200	200
<b>Total ( 1 + 2 )</b>					<b>33,503</b>	<b>22,502</b>	<b>56,005</b>

Note \* :Includes the temporary works such as the construction road, borrow pit for embankment works and spoil bank for excavation works in rural area.









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