

(5.1) 取水工損失水頭計算表 (バルングスダム)

損失名	管径 (mm)	流積		損失係数		
		Ai(m ²)	Ai ² (m ⁴)	算出根拠	fi	fi/Ai ²
1 流入	600	0.283	0.0801		0.100	1.248
2 急拡	600	0.283	0.0801	D1/D2=0.6/1.0=0.6	0.410	5.119
3 屈折(1)	1000	0.785	0.6162	45°	0.183	0.297
4 屈折(2)	1000	0.785	0.6162	45°	0.183	0.297
5 摩擦	1000	0.785	0.6162	124.5x0.013 ² x120/1.0 ^(4/3)	2.525	4.098
6 急縮	600	0.283	0.0801	D2/D1=0.60/1.0=0.60	0.380	4.744
7 摩擦	600	0.283	0.0801	124.5x0.013 ² x10/0.60 ^(4/3)	0.416	5.194
8 屈折(3)	600	0.283	0.0801	45°	0.183	2.285
9 副ゲート	600	0.283	0.0801	C=0.90	0.235	2.934
10 主ゲート	600	0.283	0.0801	C=0.90	0.520	6.492
11 流出	600	0.283	0.0801		1.000	12.484
合計					6.135	45.192
K=1/(fi/Ai ²) ^{0.5} =		0.1488		Q=K*√(2gh)=	0.659 √H	

(5.2) 取水工損失水頭計算表 (バンガサンダム)

損失名	管径 (mm)	流積		損失係数		
		Ai(m ²)	Ai ² (m ⁴)	算出根拠	fi	fi/Ai ²
1 流入	600	0.283	0.0801		0.100	1.248
2 急拡	600	0.283	0.0801	D1/D2=0.6/1.0=0.6	0.410	5.119
3 屈折(1)	1000	0.785	0.6162	45°	0.183	0.297
4 屈折(2)	1000	0.785	0.6162	45°	0.183	0.297
5 摩擦	1000	0.785	0.6162	124.5x0.013 ² x100/1.0 ^(4/3)	2.104	3.414
6 急縮	500	0.196	0.0384	D2/D1=0.60/1.0=0.60	0.380	9.896
7 摩擦	500	0.196	0.0384	124.5x0.013 ² x10/0.50 ^(4/3)	0.530	13.802
8 屈折(3)	500	0.196	0.0384	45°	0.183	4.766
9 副ゲート	500	0.196	0.0384	C=0.90	0.235	6.120
10 主ゲート	500	0.196	0.0384	C=0.90	0.520	13.542
11 流出	500	0.196	0.0384		1.000	26.042
合計					5.828	84.543
K=1/(fi/Ai ²) ^{0.5} =		0.1088		Q=K*√(2gh)=	0.482 √H	

(5.3) 放流工損失水頭計算表 (バルングスダム)

損失名	管径 (mm)	流積		損失係数		
		Ai(m ²)	Ai ² (m ⁴)	算出根拠	fi	fi/Ai ²
1 流入	600	0.283	0.0801		0.100	1.248
2 急拡	600	0.283	0.0801	D1/D2=0.6/1.0=0.6	0.410	5.119
3 屈折(1)	1000	0.785	0.6162	45°	0.183	0.297
4 屈折(2)	1000	0.785	0.6162	45°	0.183	0.297
5 摩擦	1000	0.785	0.6162	124.5x0.013 ² x120/1.0 ^(4/3)	2.525	4.098
6 急縮	750	0.442	0.1954	D2/D1=0.75/1.0=0.75	0.235	1.203
7 摩擦	750	0.442	0.1954	124.5x0.013 ² x10/0.75 ^(4/3)	0.309	1.581
8 屈折(3)	750	0.442	0.1954	45°	0.183	0.937
9 副ゲート	500	0.196	0.0384	C=0.90	0.235	6.120
10 主ゲート	500	0.196	0.0384	C=0.90	0.235	6.120
11 流出	500	0.196	0.0384		1.000	26.042
合計					5.598	53.062
K=1/(fi/Ai ²) ^{0.5} =		0.1373		Q=K*√(2gh)=	0.608 √H	

(5.4) 放流工損失水頭計算表 (バンガサンダム)

損失名	管径 (mm)	流積		損失係数		
		Ai(m ²)	Ai ² (m ⁴)	算出根拠	fi	fi/Ai ²
1 流入	600	0.283	0.0801		0.100	1.248
2 急拡	600	0.283	0.0801	D1/D2=0.6/1.0=0.6	0.410	5.119
3 屈折(1)	1000	0.785	0.6162	45°	0.183	0.297
4 屈折(2)	1000	0.785	0.6162	45°	0.183	0.297
5 摩擦	1000	0.785	0.6162	124.5x0.013 ² x100/1.0 ^(4/3)	2.104	3.414
6 急縮	750	0.442	0.1954	D2/D1=0.75/1.0=0.75	0.235	1.203
7 摩擦	750	0.442	0.1954	124.5x0.013 ² x10/0.75 ^(4/3)	0.309	1.581
8 屈折(3)	750	0.442	0.1954	45°	0.183	0.937
9 副ゲート	500	0.196	0.0384	C=0.90	0.235	6.120
10 主ゲート	500	0.196	0.0384	C=0.90	0.235	6.120
11 流出	500	0.196	0.0384		1.000	26.042
合計					5.177	52.378
K=1/(fi/Ai ²) ^{0.5} =		0.1382		Q=K*√(2gh)=	0.612 √H	

(6) 事業効果

以下の計算解析結果表を次頁より示す。

表6.1 ダム別土地所有面積

表6.2 作物生産費

表6.3 作物別生産高（財務価値）

表6.4 財務分析

表 6.1

ダム別土地所有面積

ダム	農地面積 (ha)								
	0.5	1	1.5	2	2.5	3	3.5	4	4.5
バルングスダム									
HH No.	16	89	32	43	8	11	6	5	0
HH No.(%)	7.5	41.8	15.0	20.2	3.8	5.2	2.8	2.3	0.0
Area(ha)	8	89	48	86	20	33	21	20	0
パンガサンダム									
HH No.	4	30	8	22	3	8	3	5	1
HH No.(%)	4.4	33.0	8.8	24.2	3.3	8.8	3.3	5.5	1.1
Area(ha)	2	30	12	44	7.5	24	10.5	20	4.5
合 計									
HH No.	20	119	40	65	11	19	9	10	1
HH No.(%)	6.6	39.1	13.2	21.4	3.6	6.3	3.0	3.3	0.3
Area(ha)	10	119	60	130	27.5	57	31.5	40	4.5

ダム	農地面積 (ha)							
	5	5.5	6	6.5	7	7.5	12	15
バルングスダム								
HH No.	2	0	0	0	0	0	0	1
HH No.(%)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Area(ha)	10	0	0	0	0	0	0	15
パンガサンダム								
HH No.	4	0	1	0	0	1	1	0
HH No.(%)	4.4	0.0	1.1	0.0	0.0	1.1	1.1	0.0
Area(ha)	20	0	6	0	0	7.5	12	0
合 計								
HH No.	6	0	1	0	0	1	1	1
HH No.(%)	2.0	0.0	0.3	0.0	0.0	0.3	0.3	0.3
Area(ha)	30	0	6	0	0	7.5	12	15

ダム	合 計	平均(ha)
バルングスダム		
HH No.	213	
HH No.(%)	100	
Area(ha)	350	1.6
パンガサンダム		
HH No.	91	
HH No.(%)	100	
Area(ha)	200	2.2
合 計		
HH No.	304	
HH No.(%)	100	
Area(ha)	550	1.8

Note: HH No. --- Number of farm households benefited by dams.

Source: "Individual Farmers Landholding in Pangasan CIP" and

"Masterlist of Farmers Beneficiaries" from Moriones Irrigators' Service Association.

a. Adjustment are made by Study Team.

表 6.2 作物生産費

稲作 (天水田、雨期)

Future Without Project Condition (Unit: Pesos)

Item	Input Quantity	Unit Value	Production Cost
I. Cash Costs			
1. Hired Farm Labor	40 Md	65	2,600
2. Material Inputs			
-Seeds			282
-Fertilizer			565
-Chemicals			611
3. Others			812
4. Sub-total			4,870
II. Non-cash Costs			
1. Family Farm Labor	29 Md	65	1,885
2. Others			94
3. Sub-total			1,979
III. Total Production Costs			
6,849			
IV. Total Returns			
	2,400 Kg	4.0	9,600
V. Cash Costs			
4,870			
VI. Cash Balance			
4,730			

稲作 (灌漑水田、雨期)

Future With Project Condition (Unit: Pesos)

Item	Input Quantity	Unit Value	Production Cost
I. Cash Costs			
1. Hired Farm Labor	61 Md	65	3,965
2. Material Inputs			
-Seeds			226
-Fertilizer			1,153
-Chemicals			940
3. Others			2,513
4. Sub-total			8,797
II. Non-cash Costs			
1. Family Farm Labor	51 Md	65	3,315
2. Others			166
3. Sub-total			3,481
III. Total Production Costs			
12,278			
IV. Total Returns			
	4,500 Kg	4.5	20,250
V. Cash Costs			
8,797			
VI. Cash Balance			
11,454			

コーン (灌漑畑、乾期)

Future With Project Condition (Unit: Pesos)

Item	Input Quantity	Unit Value	Production Cost
I. Cash Costs			
1. Hired Farm Labor	71 Md	65	4,615
2. Material Inputs			
-Seeds			130
-Fertilizer			1,335
-Chemicals			900
3. Others			2,792
4. Sub-total			9,772
II. Non-cash Costs			
1. Family Farm Labor	56 Md	65	3,640
2. Others			182
3. Sub-total			3,822
III. Total Production Costs			
13,594			
IV. Total Returns			
	4,000 Kg	3.5	14,000
V. Cash Costs			
9,772			
VI. Cash Balance			
4,228			

Source) Survey Team's estimate using the following data:

- Farm Economy Survey conducted by Study Team,
- Existing data collected by Study Team.

表 6.3

作物別生産高 (財務価値)

バルングスダム

Item	Planted Area (ha)	Unit Yield (ton/ha)	Production (ton)	Net Return per ha (Peso/ha)	Annual Profit ('000Peso)
I. Without Project					
1. Rainfed Palay	350	2.4	840	4,730	1,656
II. With Project					
1. Irrigated Palay	350	4.5	1,575	11,454	4,009
2. Irrigated Corn	350	4.0	1,400	4,228	1,480
3. Total	700				5,489
III. Net Benefit					
1. Palay	0	2.1	735	6,724	2,353
2. Corn	350	4.0	1,400	4,228	1,480
3. Total	350				3,833

バンガサンダム

Item	Planted Area (ha)	Unit Yield (ton/ha)	Production (ton)	Net Return per ha (Peso/ha)	Annual Profit ('000Peso)
I. Without Project					
1. Rainfed Palay	200	2.4	480	4,730	946
II. With Project					
1. Irrigated Palay	200	4.5	900	11,454	2,291
2. Irrigated Corn	200	4.0	800	4,228	846
3. Total	400				3,137
III. Net Benefit					
1. Palay	0	2.1	420	6,724	1,345
2. Corn	200	4.0	800	4,228	846
3. Total	200				2,191

合 計

Item	Planted Area (ha)	Unit Yield (ton/ha)	Production (ton)	Net Return per ha (Peso/ha)	Annual Profit ('000Peso)
I. Without Project					
1. Rainfed Palay	550	2.4	1,320	4,730	2,602
II. With Project					
1. Irrigated Palay	550	4.5	2,475	11,454	6,300
2. Irrigated Corn	550	4.0	2,200	4,228	2,325
3. Total	1100				8,625
III. Net Benefit					
1. Palay	0	2.1	1,155	6,724	3,698
2. Corn	550	4.0	2,200	4,228	2,325
3. Total	550				6,023

表 6 . 4

財務分析

Farm Size: 1 ha

Tenure: Tenant

Farm HH Size: 5.4

Item	Without Project			With Project		
	Q'ty	Unit(P/kg)	Value(P)	Q'ty	Unit(P/kg)	Value(P)
1. Marketable Production						
- Palay (Rainfed)	1,470 kg	4.0	5,880	0 kg	4.0	0
- Palay (Irrigated)	0 kg	4.5	0	3,570 kg	4.5	16,065
- Corn	0 kg	3.5	0	4,000 kg	3.5	14,000
(Sub-total)			5,880			30,065
2. Family Consumption						
- Palay (Rainfed)	930 kg	4.0	3,720	0 kg	4.0	0
- Palay (Irrigated)	0 kg	4.5	0	930 kg	4.5	4,185
(Sub-total)			3,720			4,185
3. Payment to Land Owner			2,130			7,150
4. Production Cost						
- Palay (Rainfed)	1 ha		4,870	0 ha		0
- Palay (Irrigated)	0 ha		0	1 ha		8,797
- Corn	0 ha		0	1 ha		9,772
(Sub-total)			4,870			18,569
5. Net Farm Income						
- Crops			2,600			8,531
- Livestocks			3,700			3,700
- Other Crops			1,590			1,590
(Sub-total)			7,890			13,821
6. Cash Income						
- Crops			5,880			30,065
- Net Livestock Income			3,700			3,700
- Net Other Crops Income			1,590			1,590
- Off Farm			3,870			3,870
(Sub-total)			15,040			39,225
7. Cash Expenditure						
- Crops Production			7,000			25,719
- Others			8,000			8,000
(Sub-total)			15,000			33,719
8. Farm Cash Balance			40			5,506

Note: Net income of livestock and other crops, annual off farm income and home expenditure are derived from adjusting the results of Farm Economy Survey.

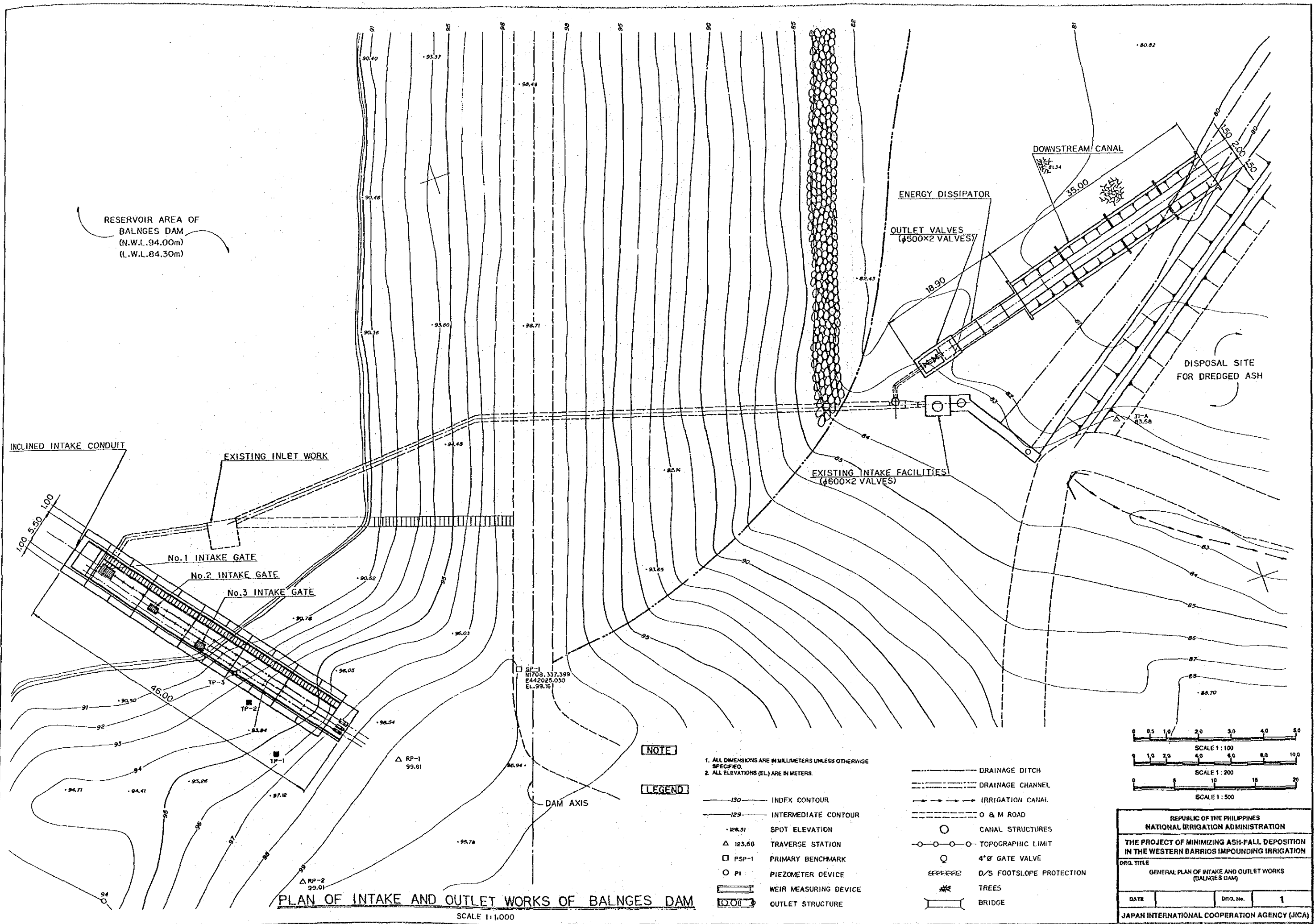
(7) ダム諸元表

項目	マンギロクダム	ブレラインダム	バルンガスダム	バンガサンダム
流域面積	8.1 (km ²)	2.0	27.9	10.8
年平均降水量	1,931.0 (km ²)	1,931.0	1,931.0	1,931.0
年平均河川流出量	14.0 (MCM)	3.6	50.4	23.8
ダム高	19.3 (m)	10.0	24.2	17.3
ダム天端標高	111.3 (El.m)	98.0	98.2	130.8
堤頂長	704.5 (m)	215.0	252.0	245.0
ダム天端幅	6.0 (m)	6.0	6.0	6.0
築堤量	363,000 (m ³)	37,000	158,000	81,000
洪水吐型式	自由越流型	自由越流型	自由越流型	自由越流型
対象洪水量	127.0 (m ³ /sec)	26.0	266.0	210.0
越流堰長	25.0 (m)	18.0	40.0	25.0
越流堰天端標高	108.0 (El.m)	96.0	94.0	126.5
設計洪水位	109.2 (El.m)	96.5	96.3	128.6
常時満水位	108.0 (El.m)	96.0	94.0	126.5
最低水位	99.0 (El.m)	91.3	84.3	120.1
総貯水量	3.21 (MCM)	0.73	1.82	1.14
有効貯水量	3.11 (MCM)	0.70	1.47	0.98
堆砂容量	0.10 (MCM)	0.03	0.35	0.16
取水型式	ドロップインレット	ドロップインレット	多孔式斜樋	多孔式斜樋
最大取水	0.72 (m ³ /sec)	0.20	0.70	0.40

圖面集

図 面 集

No.	図 面 名 称
1.	GENERAL PLAN OF INTAKE AND OUTLET WORKS (BALNGES DAM) (バルンゲスダム取水工・放流工一般計画平面図)
2.	GENERAL PLAN OF INTAKE AND OUTLET WORKS (PANGASAN DAM) (パンガサンダム取水工・放流工一般計画平面図)
3.	PLAN OF INCLINED INTAKE CONDUIT (BALNGES DAM) (バルンゲスダム斜樋式取水工計画図)
4.	PLAN OF INCLINED INTAKE CONDUIT (PANGASAN DAM) (パンガサンダム斜樋式取水工計画図)
5.	PLAN OF OUTLET WORKS (BALNGES DAM) (バルンゲスダム放流工計画図)
6.	PLAN OF OUTLET WORKS (PANGASAN DAM) (パンガサンダム放流工計画図)
7.	PLAN OF GABION WORKS (BALNGES RESERVOIR WATERSHED) (バルンゲスダム床止工計画図)
8.	PLAN OF GABION WORKS (PANGASAN RESERVOIR WATERSHED) (パンガサンダム床止工計画図)
9.	PLAN OF ASH DISPOSAL SITE (BALNGES DAM) (バルンゲスダム土捨場計画図)
10.	PLAN OF ASH DISPOSAL SITE (PANGASAN DAM) (パンガサンダム土捨場計画図)



RESERVOIR AREA OF
BALNGES DAM
(N.W.L. 94.00m)
(L.W.L. 84.30m)

INCLINED INTAKE CONDUIT

EXISTING INLET WORK

No. 1 INTAKE GATE

No. 2 INTAKE GATE

No. 3 INTAKE GATE

ENERGY DISSIPATOR

OUTLET VALVES
(4500x2 VALVES)

DOWNSTREAM CANAL

DISPOSAL SITE
FOR DREDGED ASH

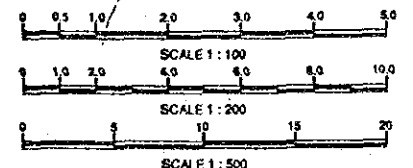
EXISTING INTAKE FACILITIES
(4600x2 VALVES)

NOTE

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS (EL.) ARE IN METERS.

LEGEND

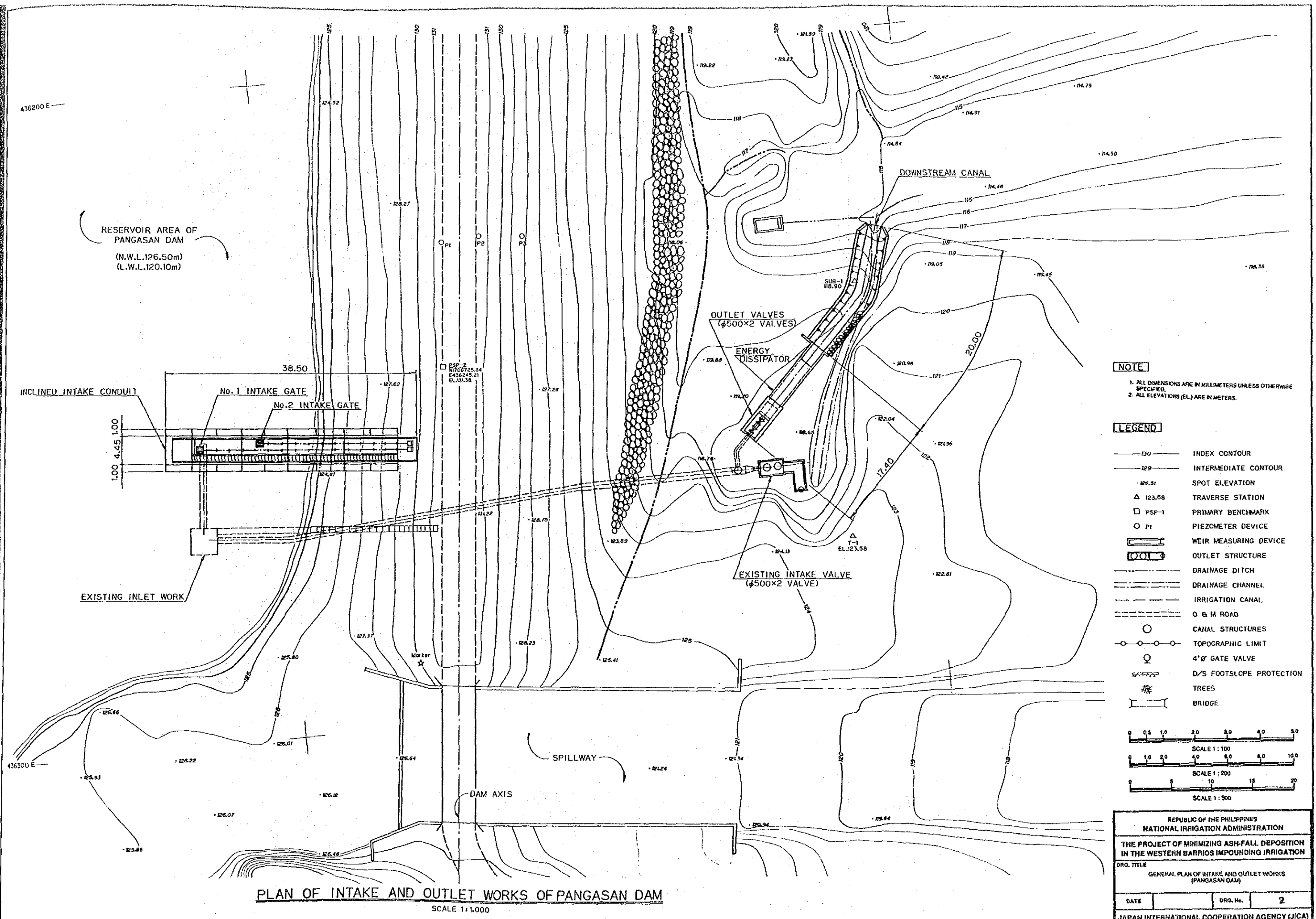
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- /29 — INTERMEDIATE CONTOUR
- 123.56 SPOT ELEVATION
- △ 123.56 TRAVERSE STATION
- PSP-1 PRIMARY BENCHMARK
- P1 PIEZOMETER DEVICE
- WEIR MEASURING DEVICE
- OUTLET STRUCTURE
- — — DRAINAGE DITCH
- — — DRAINAGE CHANNEL
- — — IRRIGATION CANAL
- — — O & M ROAD
- CANAL STRUCTURES
- TOPOGRAPHIC LIMIT
- 4" GATE VALVE
- — — D/S FOOTSLOPE PROTECTION
- — — TREES
- — — BRIDGE



PLAN OF INTAKE AND OUTLET WORKS OF BALNGES DAM

SCALE 1:1,000

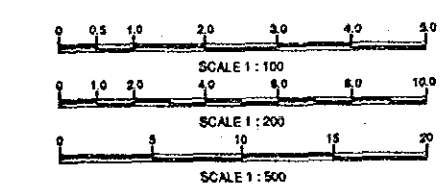
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE GENERAL PLAN OF INTAKE AND OUTLET WORKS (BALNGES DAM)		
DATE	DRG. No.	1
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



RESERVOIR AREA OF PANGASAN DAM
(N.W.L.126.50m)
(L.W.L.120.10m)

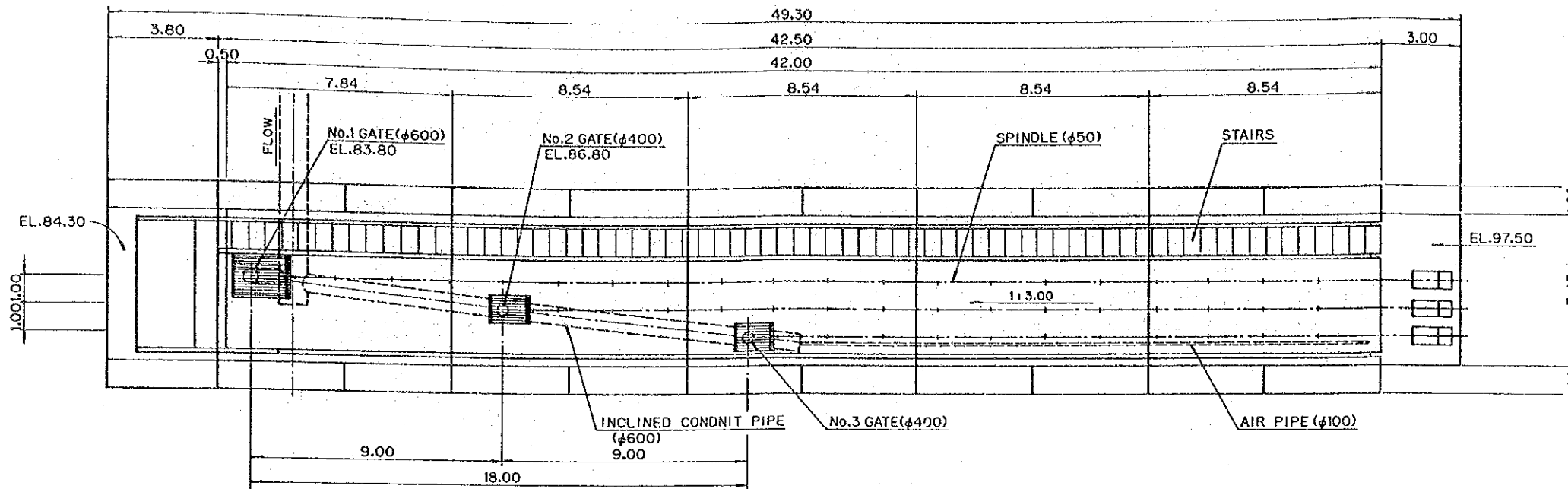
NOTE
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS (EL.) ARE IN METERS.

- LEGEND**
- 130 — INDEX CONTOUR
 - 129 — INTERMEDIATE CONTOUR
 - 126.51 SPOT ELEVATION
 - △ 123.58 TRAVERSE STATION
 - PSP-1 PRIMARY BENCHMARK
 - P1 PIEZOMETER DEVICE
 - ▭ WEIR MEASURING DEVICE
 - ▭ OUTLET STRUCTURE
 - DRAINAGE DITCH
 - DRAINAGE CHANNEL
 - IRRIGATION CANAL
 - O & M ROAD
 - CANAL STRUCTURES
 - TOPOGRAPHIC LIMIT
 - ♀ 4' GATE VALVE
 - ♂ D/S FOOTSLOPE PROTECTION
 - 🌳 TREES
 - ▭ BRIDGE



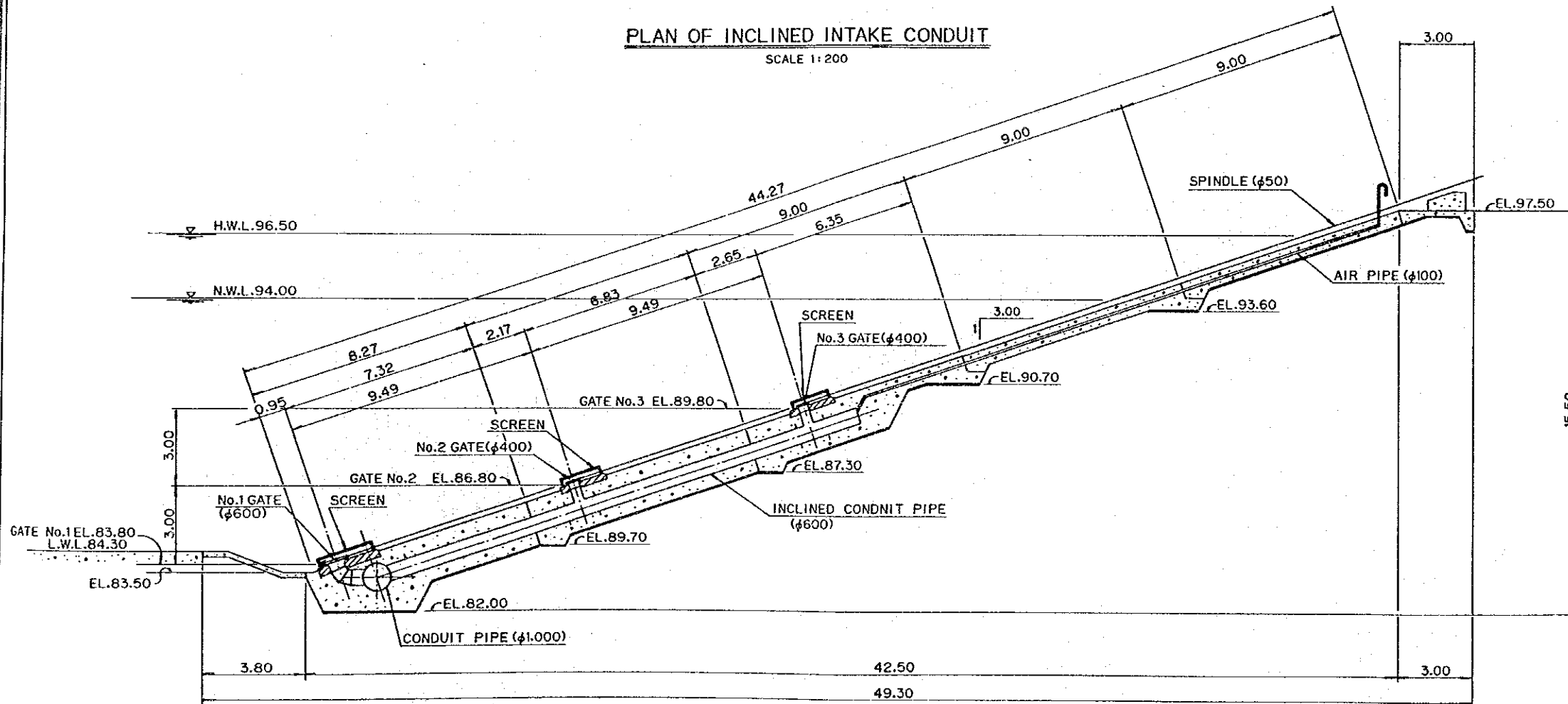
PLAN OF INTAKE AND OUTLET WORKS OF PANGASAN DAM
SCALE 1:1,000

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE GENERAL PLAN OF INTAKE AND OUTLET WORKS (PANGASAN DAM)		
DATE	DRG. No.	2
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



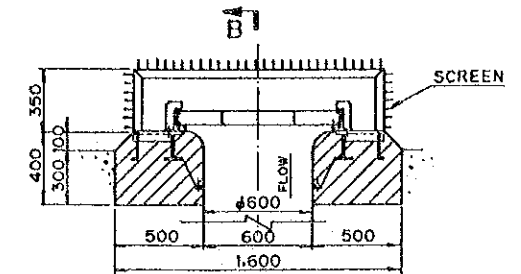
PLAN OF INCLINED INTAKE CONDUIT

SCALE 1:200



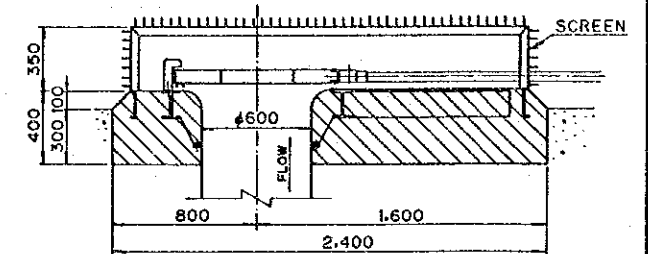
SECTION A-A

SCALE 1:200



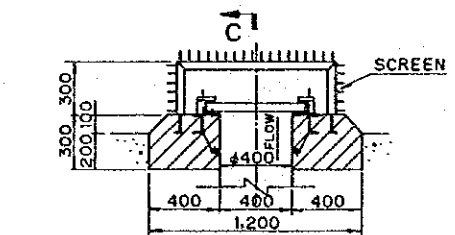
DETAIL OF INCLINED INTAKE GATE

SCALE 1:40



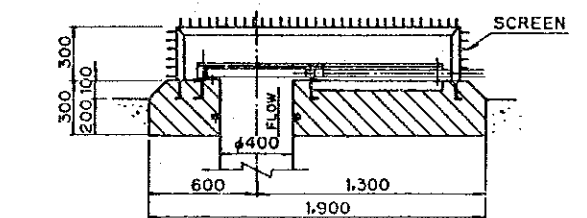
SECTION B-B

SCALE 1:40



DETAIL OF INCLINED INTAKE GATE

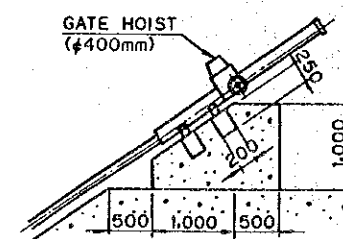
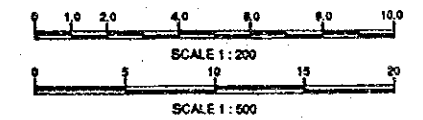
SCALE 1:40



SECTION C-C

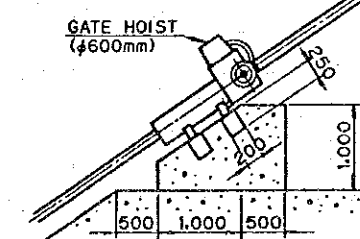
SCALE 1:40

- NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. ALL ELEVATIONS (EL.) ARE IN METERS.

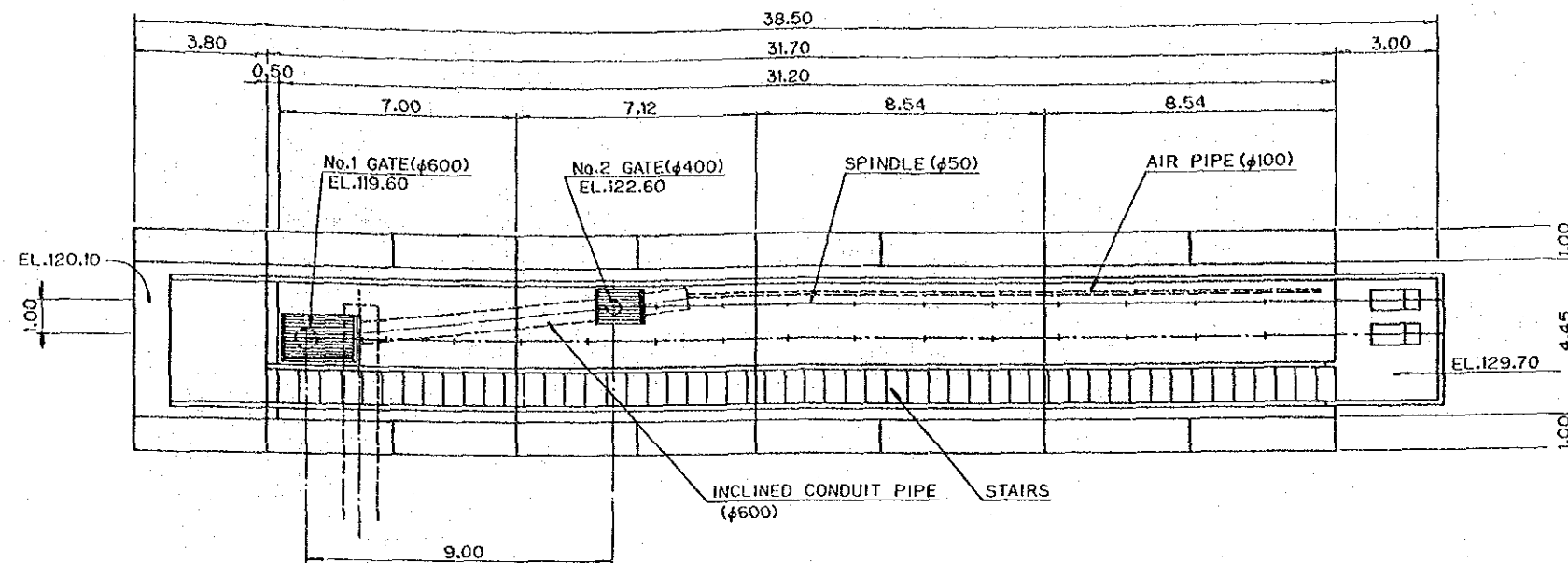


DETAILS OF GATE HOIST

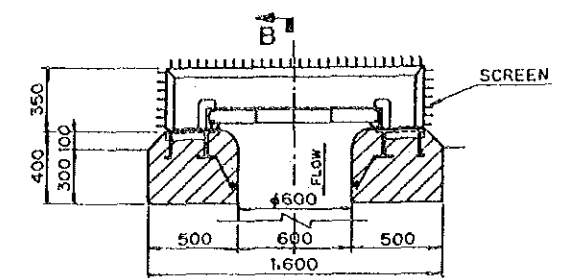
SCALE 1:50



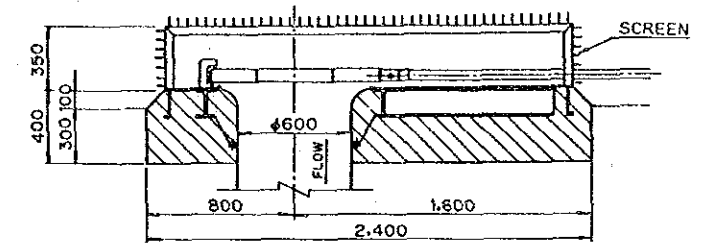
REPUBLIC OF THE PHILIPPINES		
NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION		
IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE		
PLAN OF INCLINED INTAKE CONDUIT		
(BALNAGES DAM)		
DATE	DRG. No.	3
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



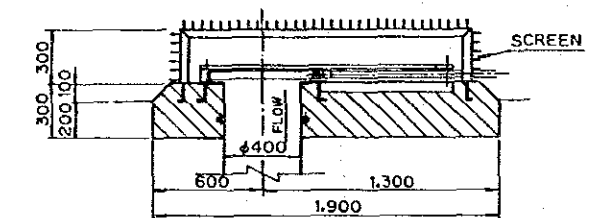
PLAN OF INCLINED INTAKE CONDUIT
SCALE 1:200



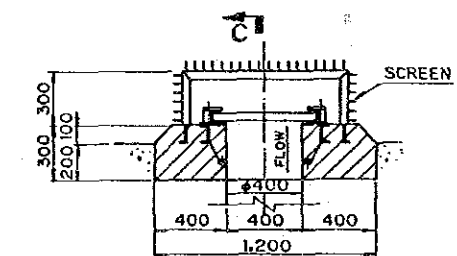
DETAIL OF INCLINED INTAKE GATE
SCALE 1:40



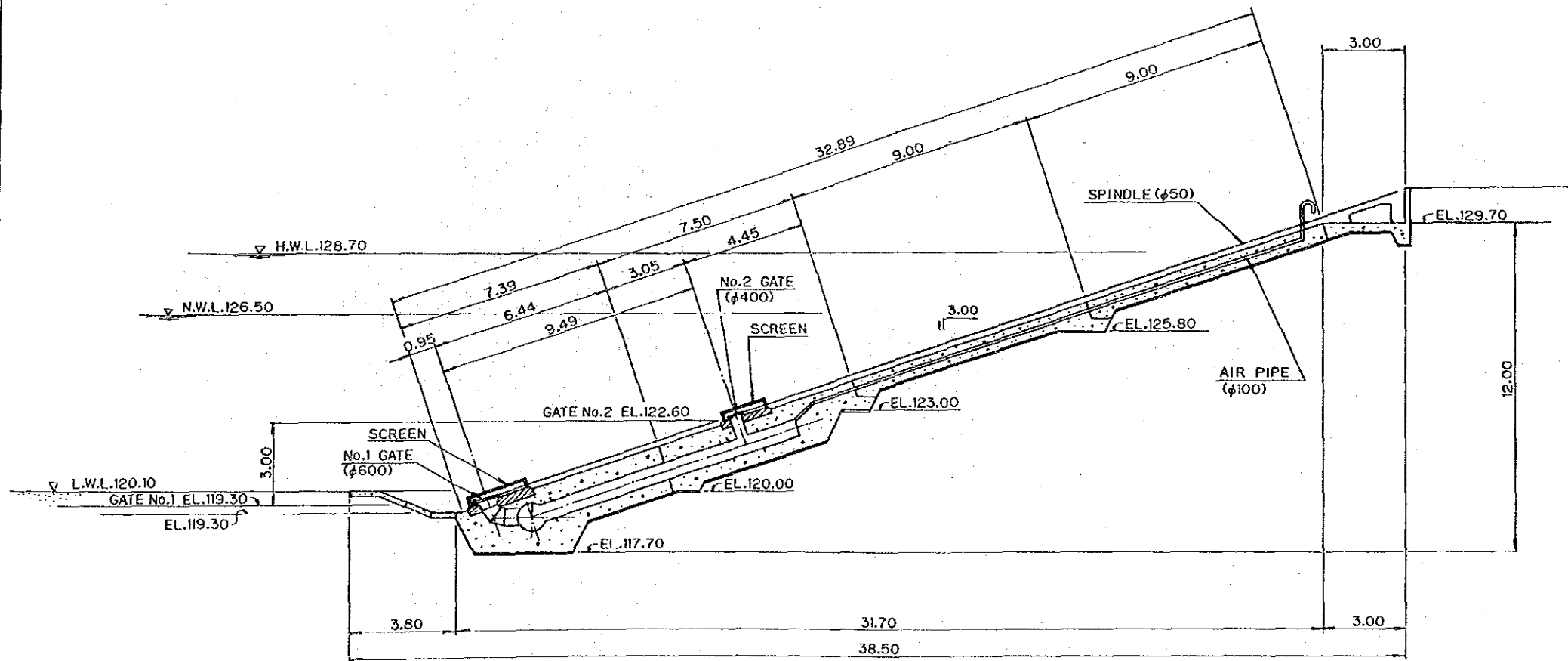
SECTION B-B
SCALE 1:40



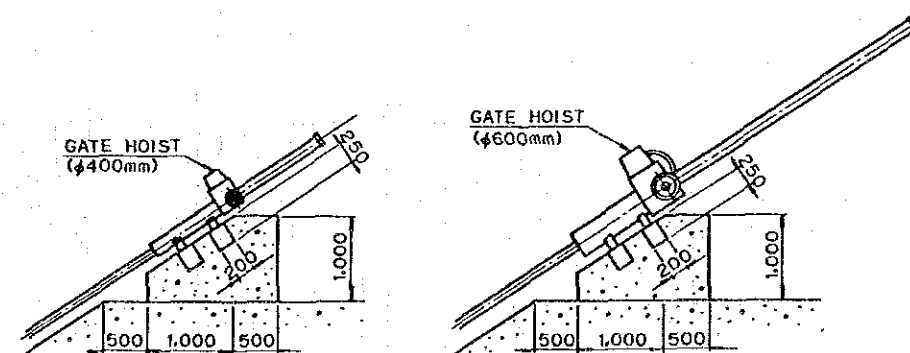
SECTION C-C
SCALE 1:40



DETAIL OF INCLINED INTAKE GATE
SCALE 1:40



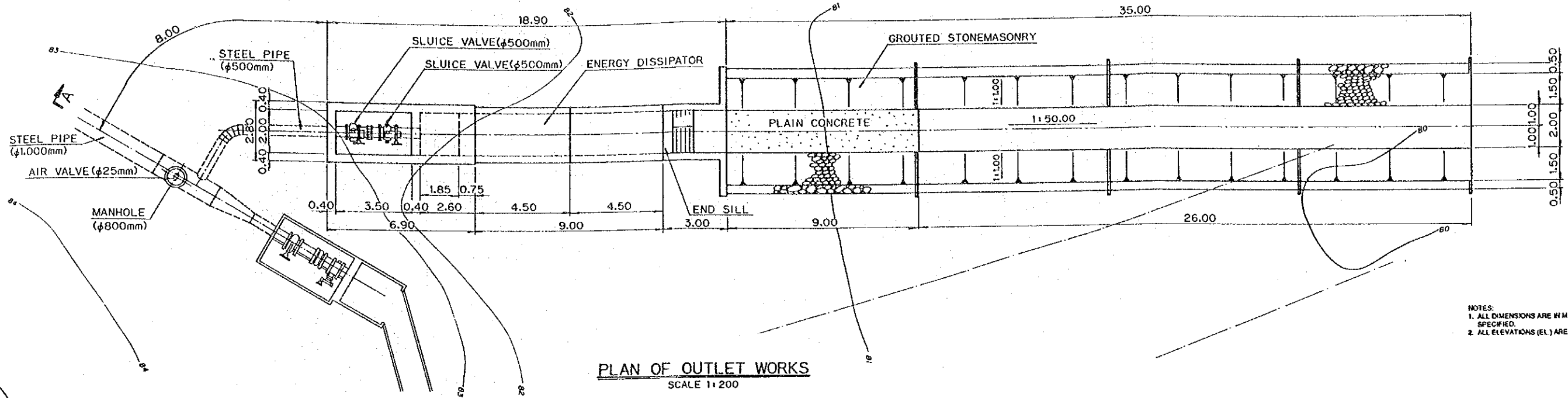
SECTION A-A
SCALE 1:200



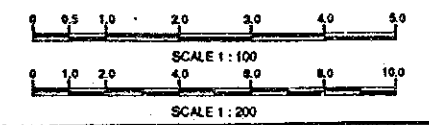
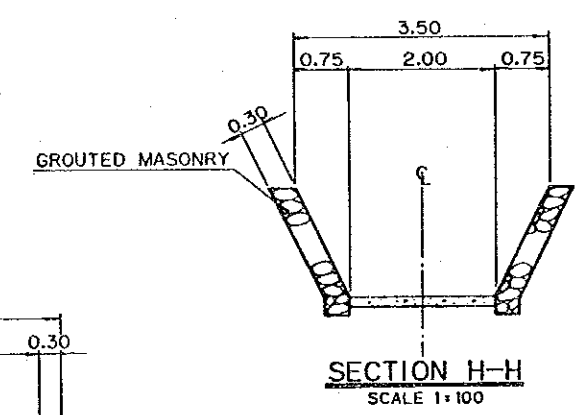
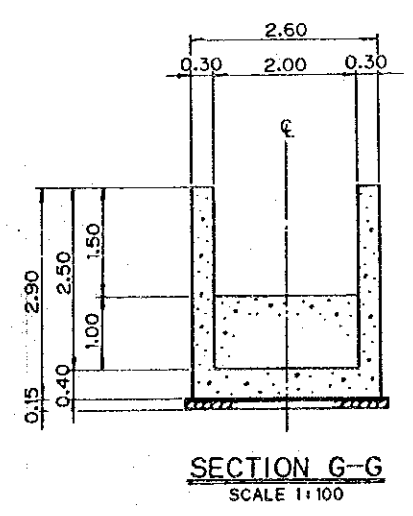
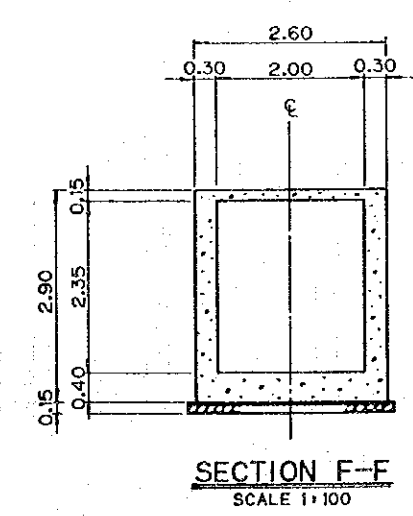
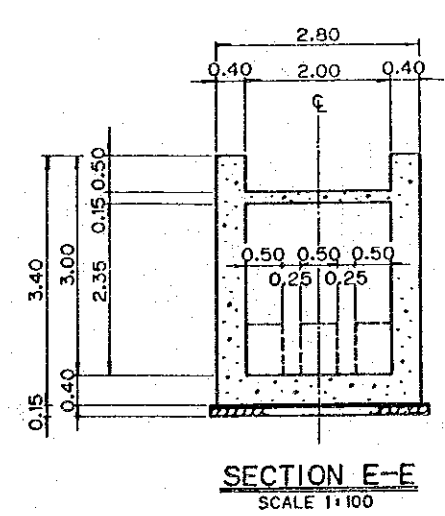
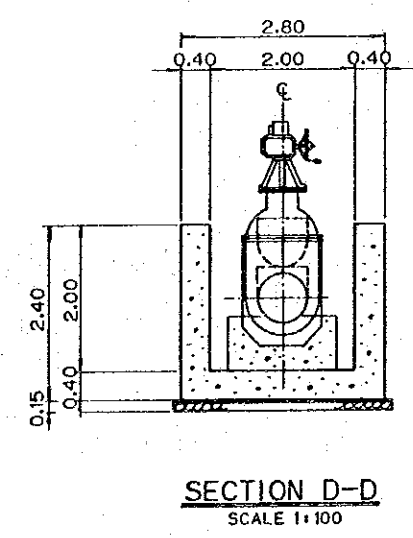
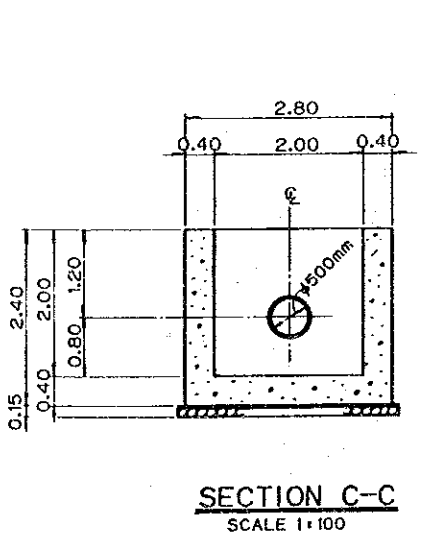
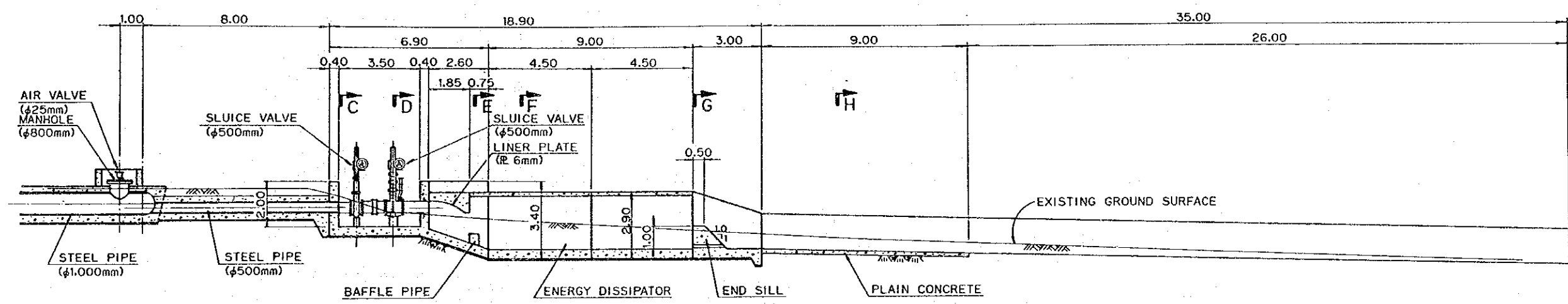
DETAILS OF GATE HOIST
SCALE 1:50

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS (EL.) ARE IN METERS.
- 0 0.5 1.0 2.0 3.0 4.0 5.0
SCALE 1:100
- 0 1.0 2.0 4.0 8.0 10.0
SCALE 1:200
- 0 5 10 15 20
SCALE 1:500

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE PLAN OF INCLINED INTAKE CONDUIT (PANGASAN DAM)		
DATE	DRG. No.	4
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		

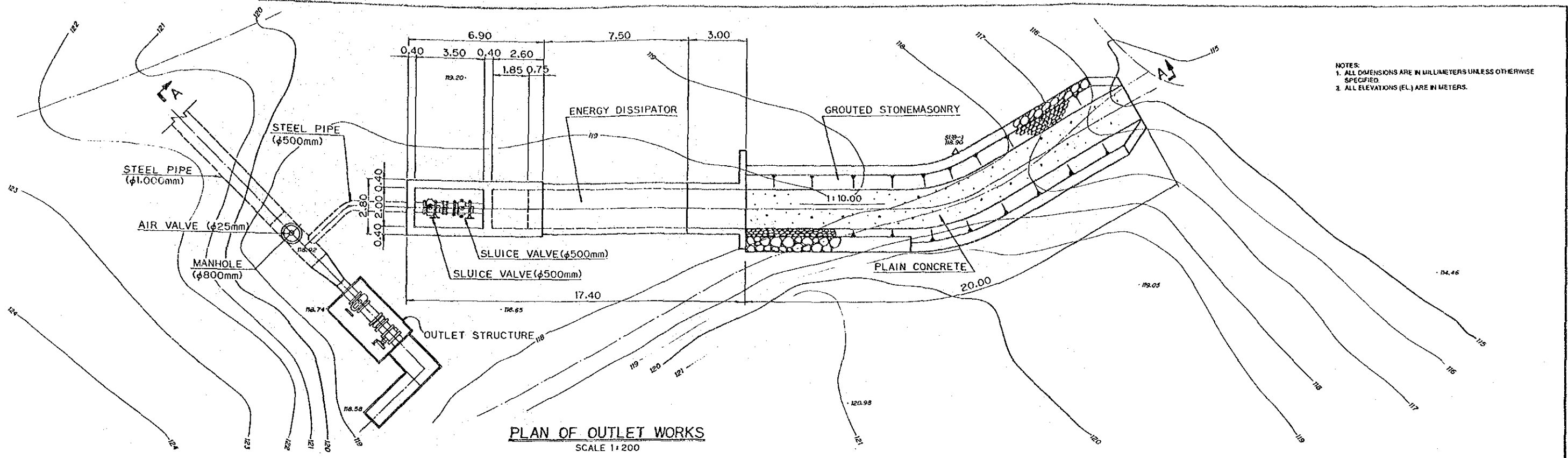


NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. ALL ELEVATIONS (EL.) ARE IN METERS.

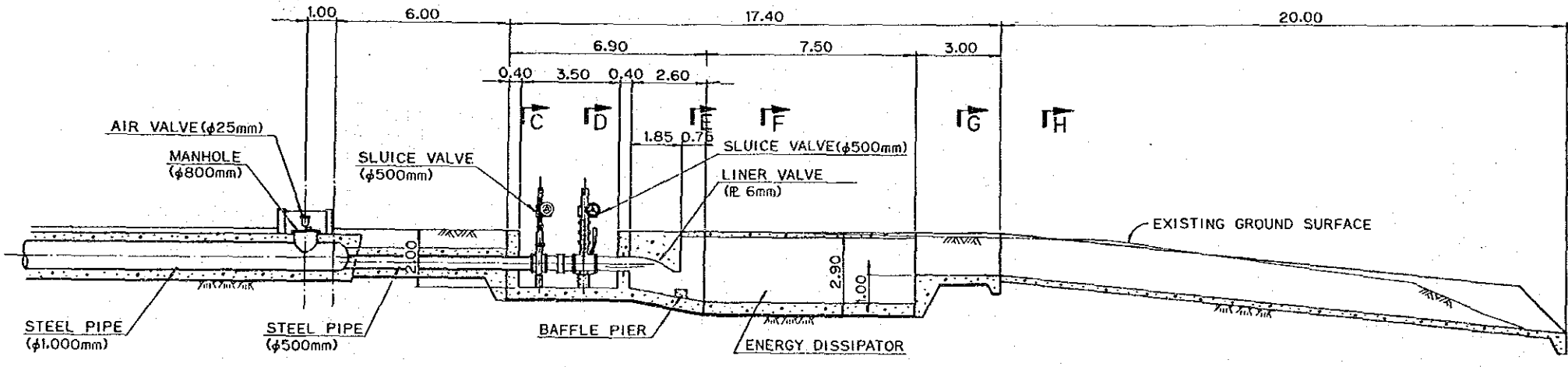


REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE PLAN OF OUTLET WORKS (BALNAGES DAM)		
DATE	DRG. No.	5
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		

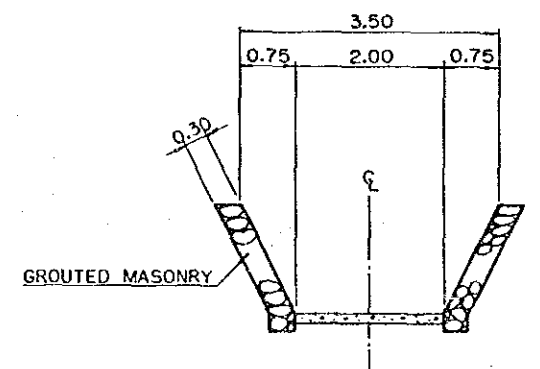
NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. ALL ELEVATIONS (EL.) ARE IN METERS.



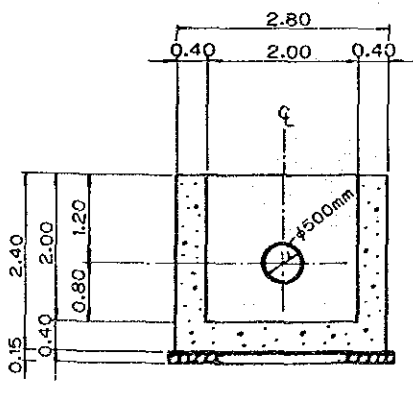
PLAN OF OUTLET WORKS
SCALE 1:200



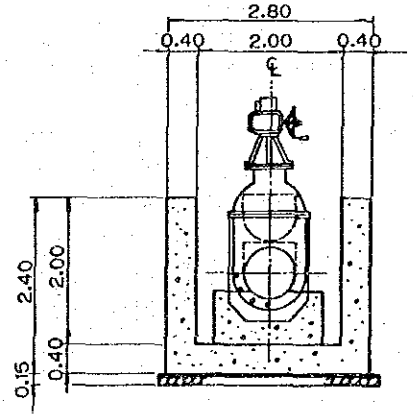
SECTION A-A
SCALE 1:200



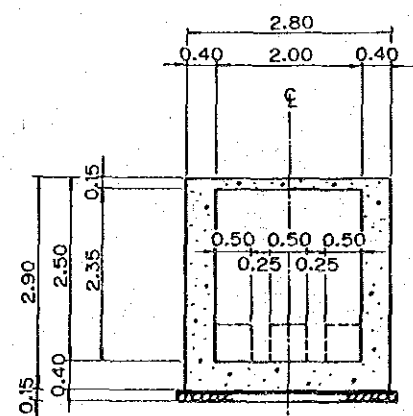
SECTION H-H
SCALE 1:100



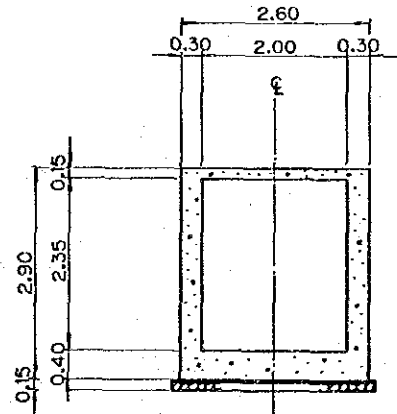
SECTION C-C
SCALE 1:100



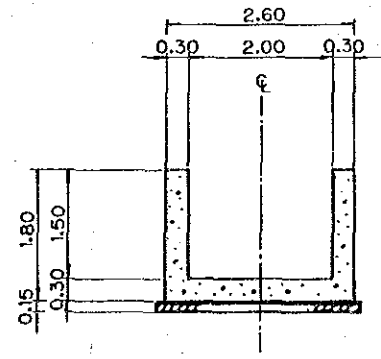
SECTION D-D
SCALE 1:100



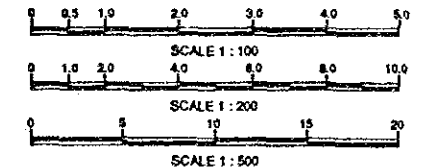
SECTION E-E
SCALE 1:100



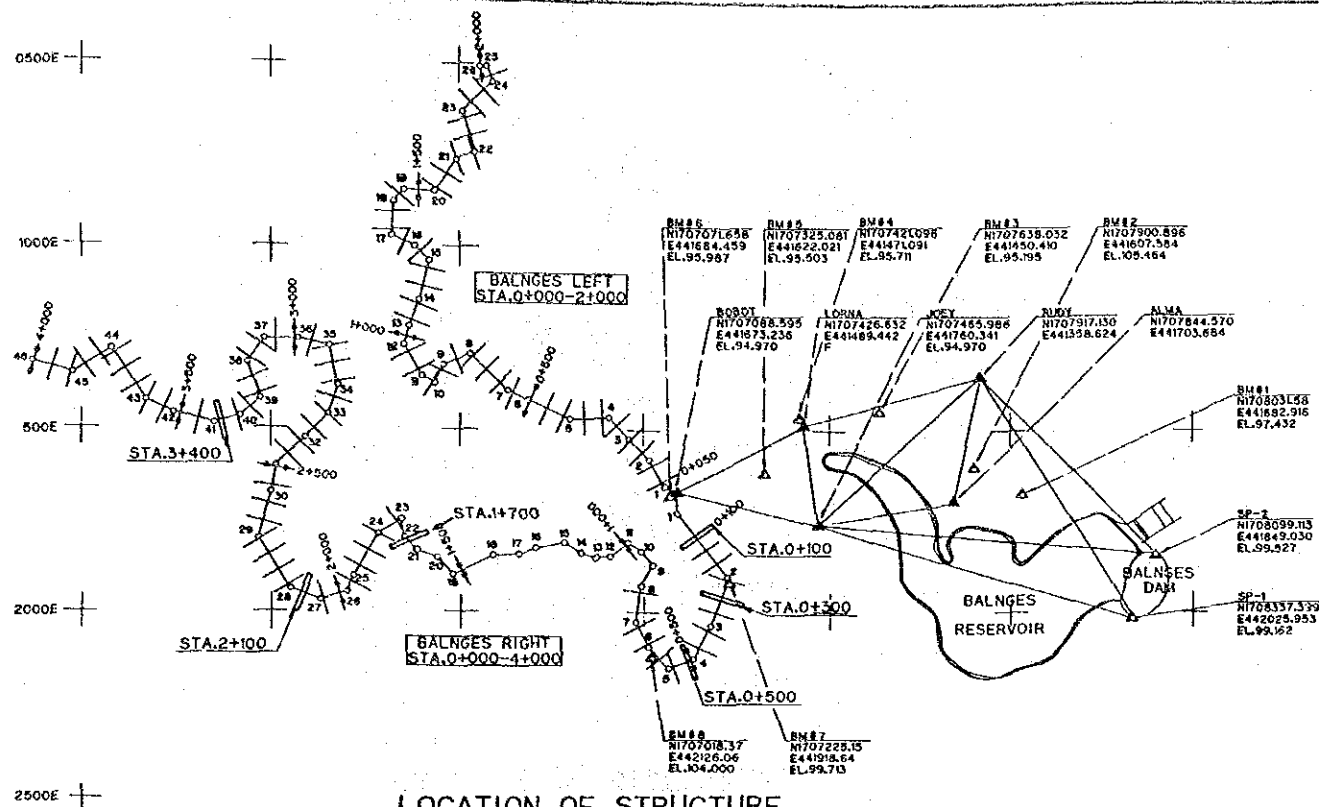
SECTION F-F
SCALE 1:100



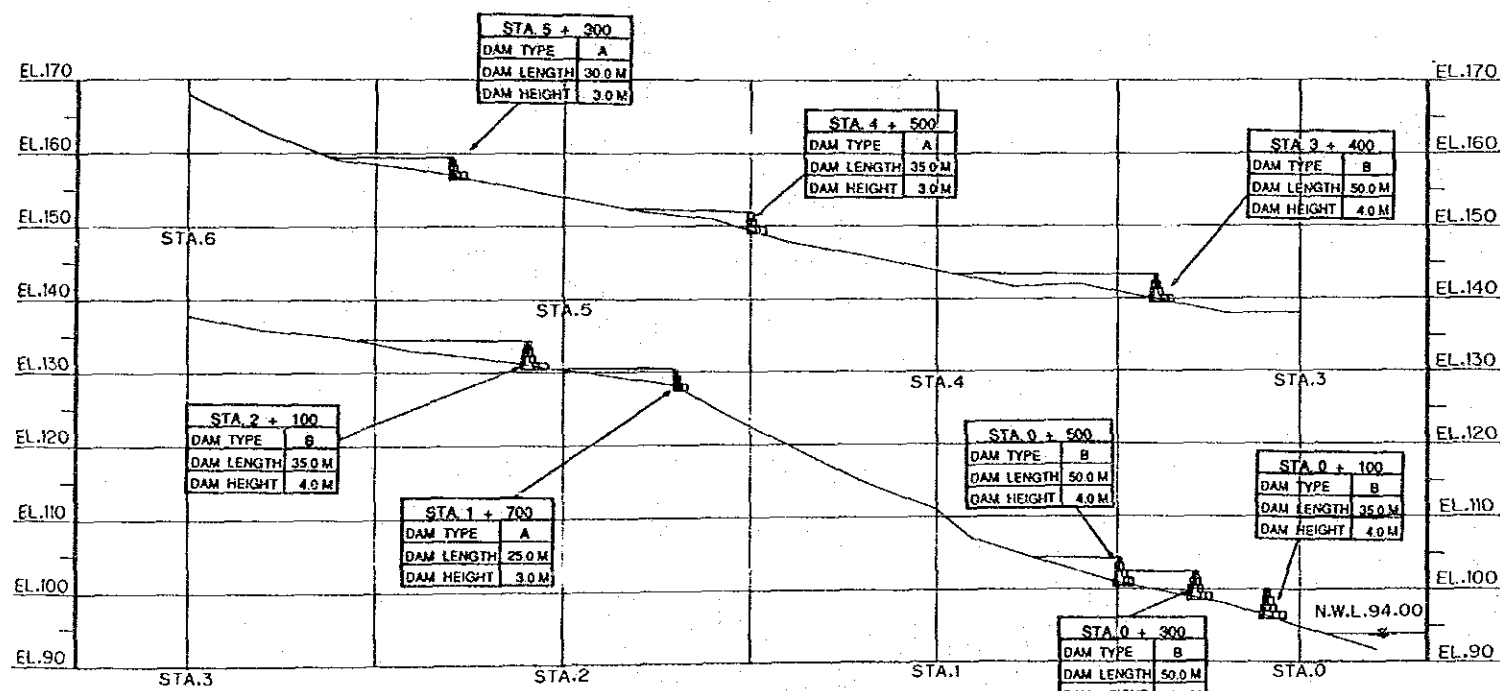
SECTION G-G
SCALE 1:100



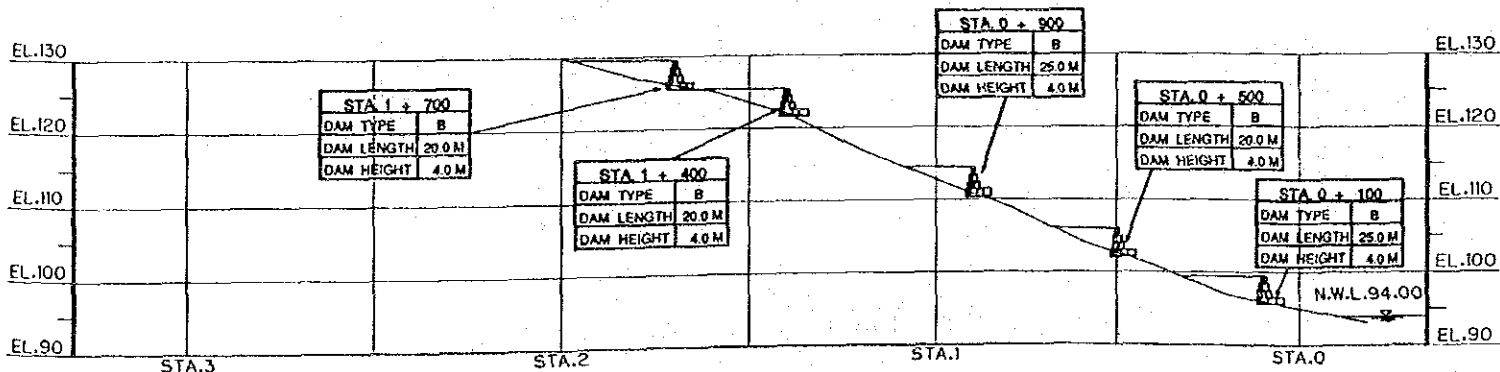
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
ORG. TITLE PLAN OF OUTLET WORKS (PANGASAN DAM)		
DATE	ORG. No.	6
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



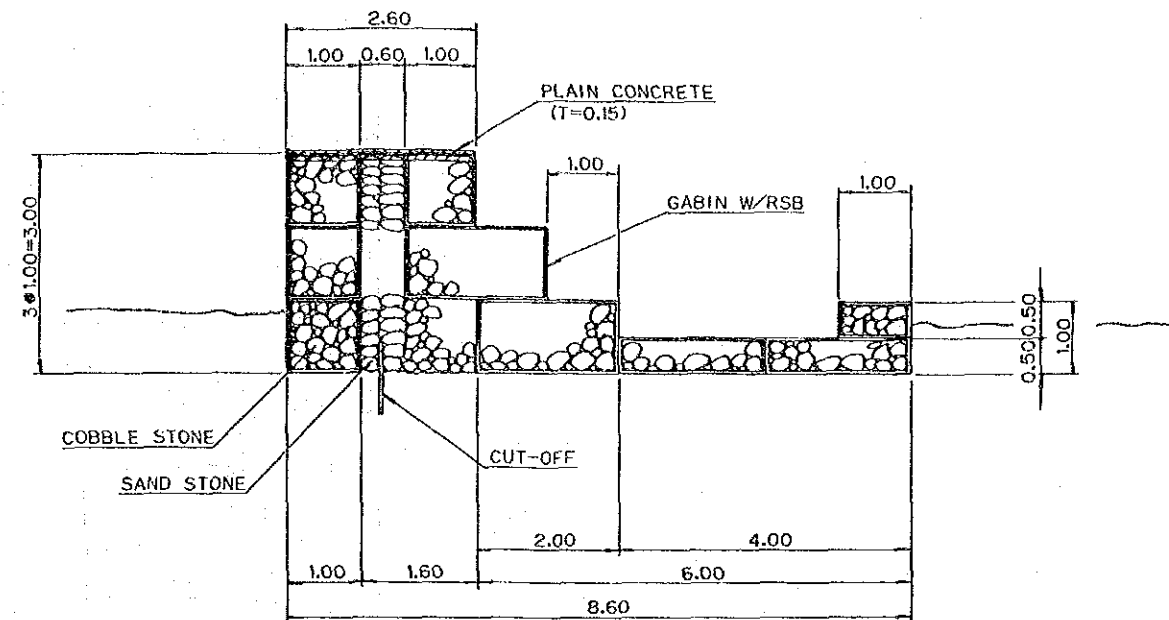
LOCATION OF STRUCTURE



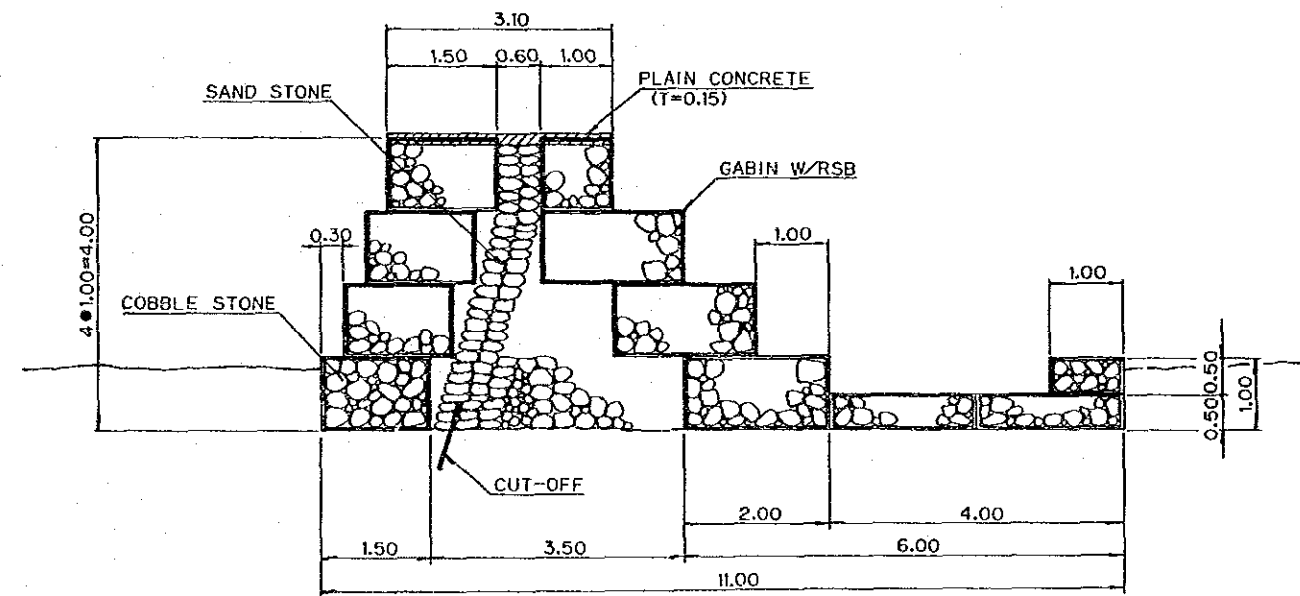
LONGITUDINAL SECTION (BALNGES DAM RIGHT) SCALE H:1:20,000 V:1:1,000



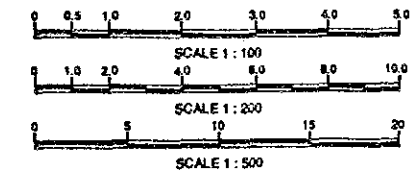
LONGITUDINAL SECTION (BALNGES DAM LEFT) SCALE H:1:20,000 V:1:1,000



STANDARD SECTION (TYPE A) SCALE 1:100

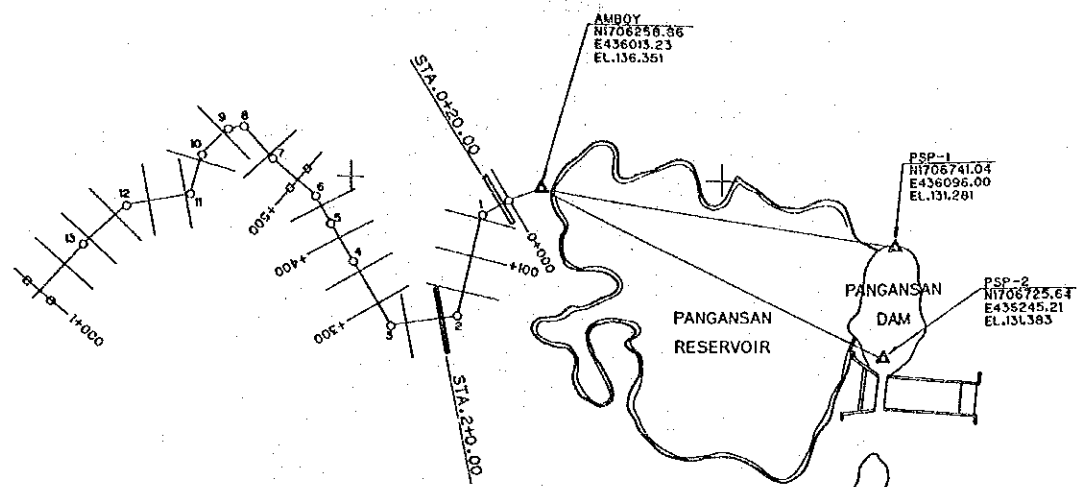


STANDARD SECTION (TYPE B) SCALE 1:100

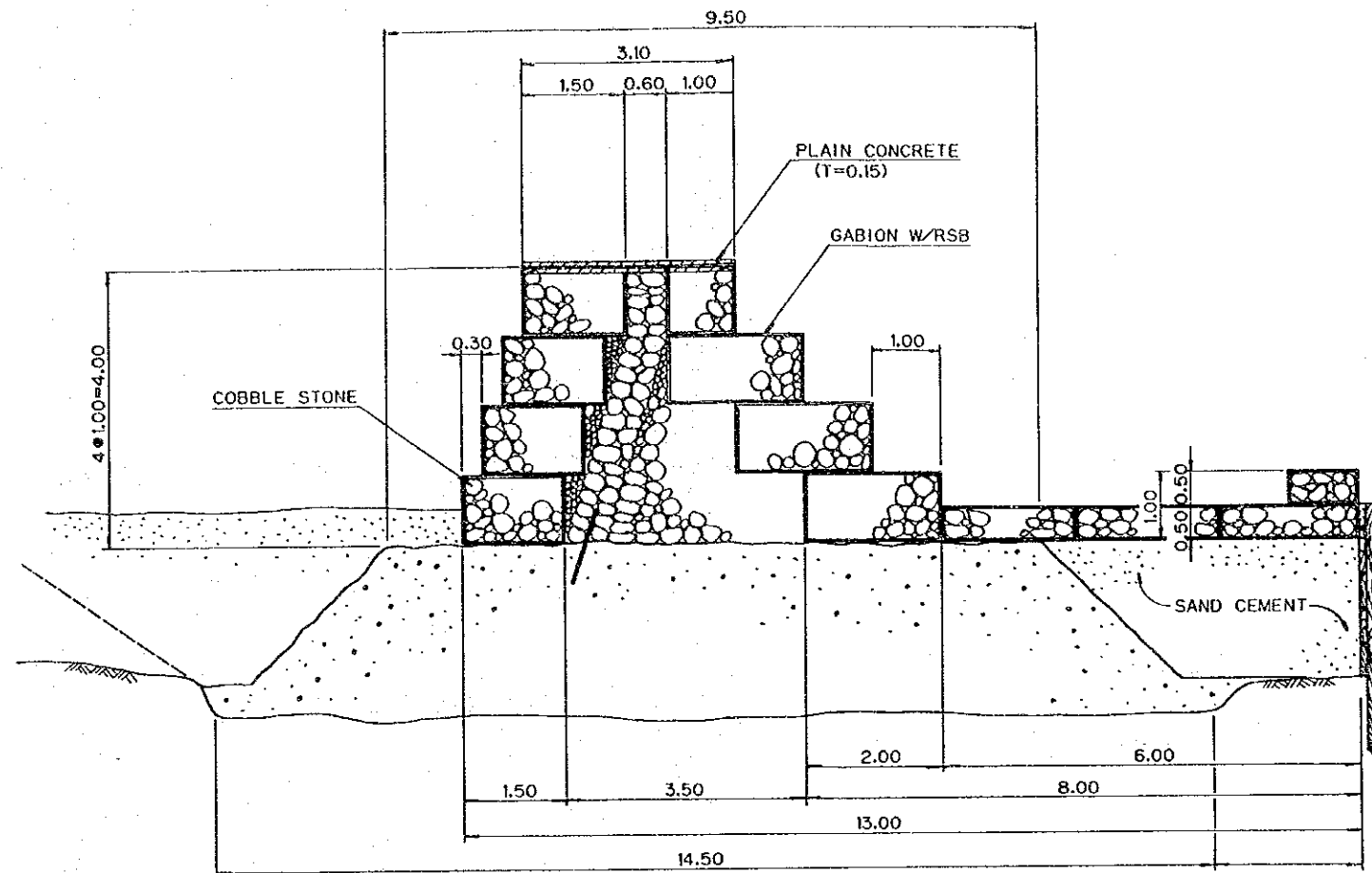


NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. ALL ELEVATIONS (EL.) ARE IN METERS.

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION			
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION			
DRG. TITLE PLAN OF GABION WORKS (BALNGES RESERVOIR WATERSHED)			
DATE		DRG. No.	7
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			



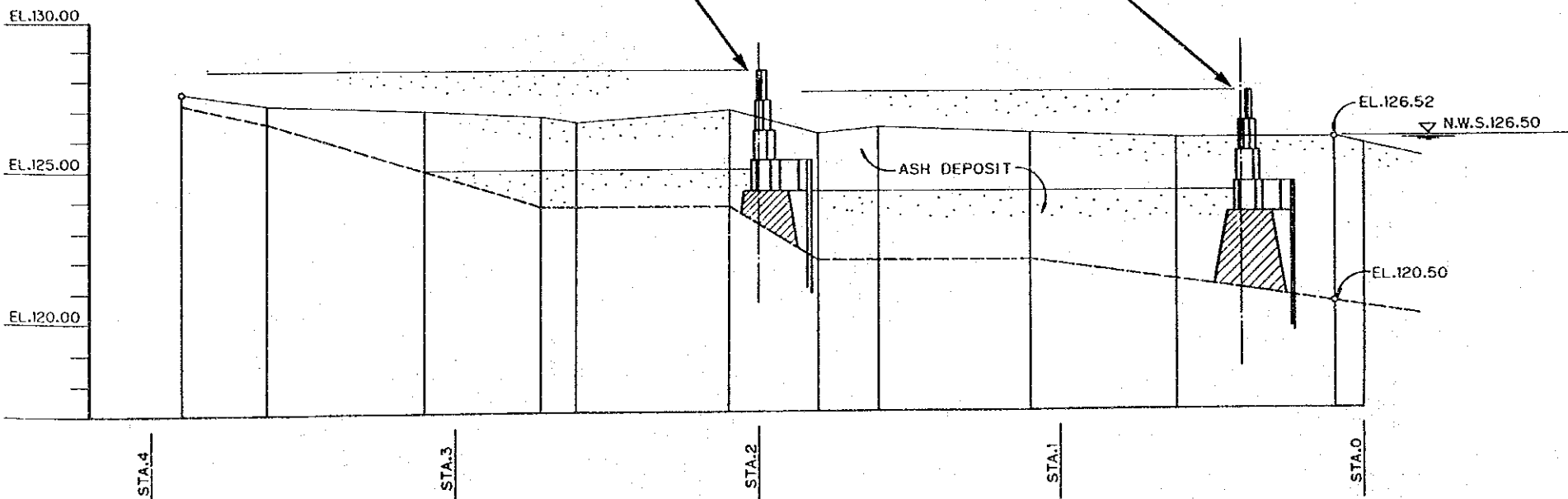
LOCATION OF STRUCTURE



STANDARD SECTION (TYPE C)
SCALE 1:100

STA. 2	
DAM TYPE	C
DAM LENGTH	95.0 M
DAM HEIGHT	4.0 M

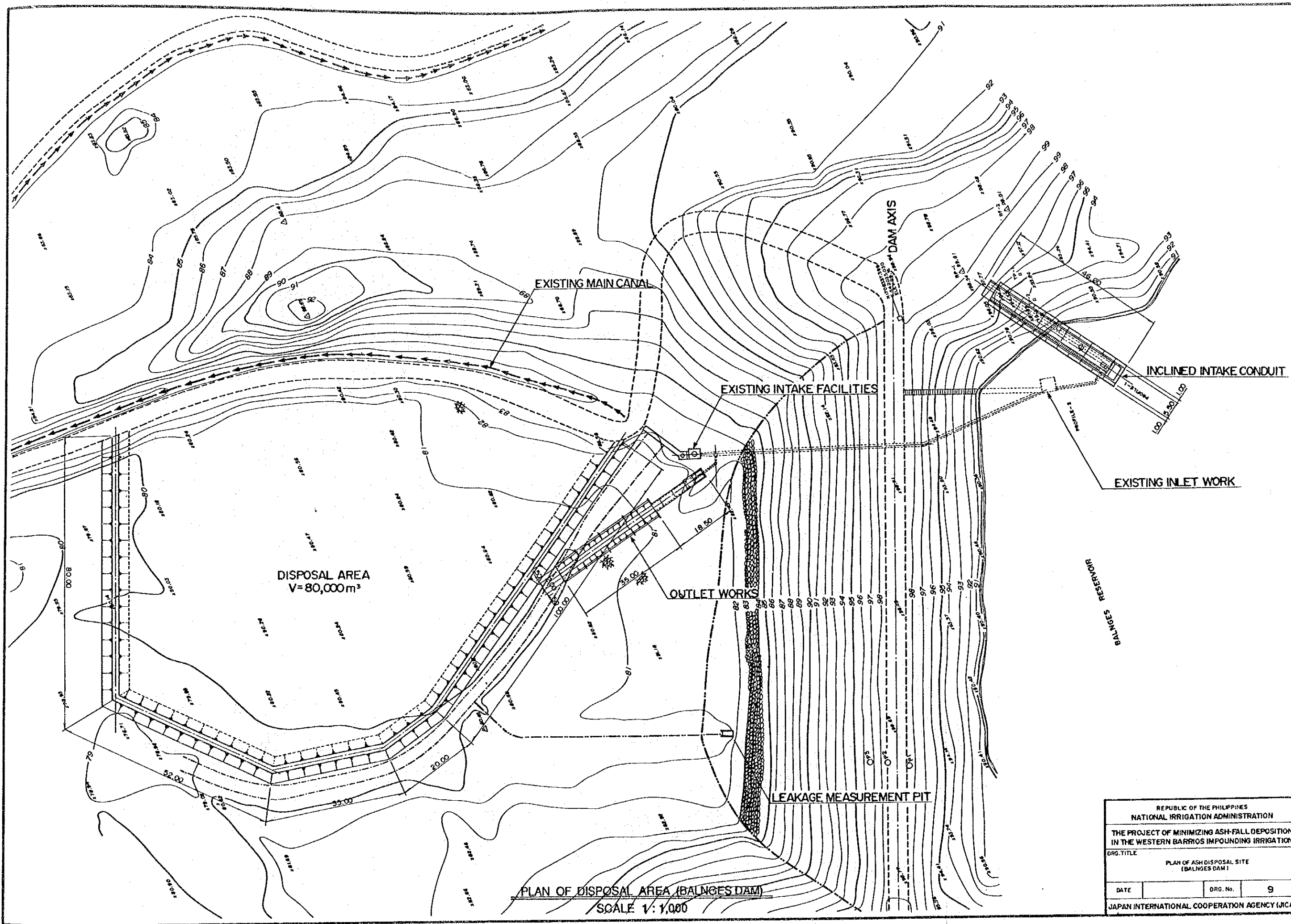
STA. 0 + 400	
DAM TYPE	C
DAM LENGTH	110.0 M
DAM HEIGHT	4.0 M



LONGITUDINAL SECTION
(PANGASAN DAM) SCALE H) 1:2,000 V) 1:200

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS (EL.) ARE IN METERS.
- 0 0.5 1.0 2.0 3.0 4.0 5.0
SCALE 1:100
- 0 1.0 2.0 4.0 6.0 8.0 10.0
SCALE 1:200
- 0 5 10 15 20
SCALE 1:500

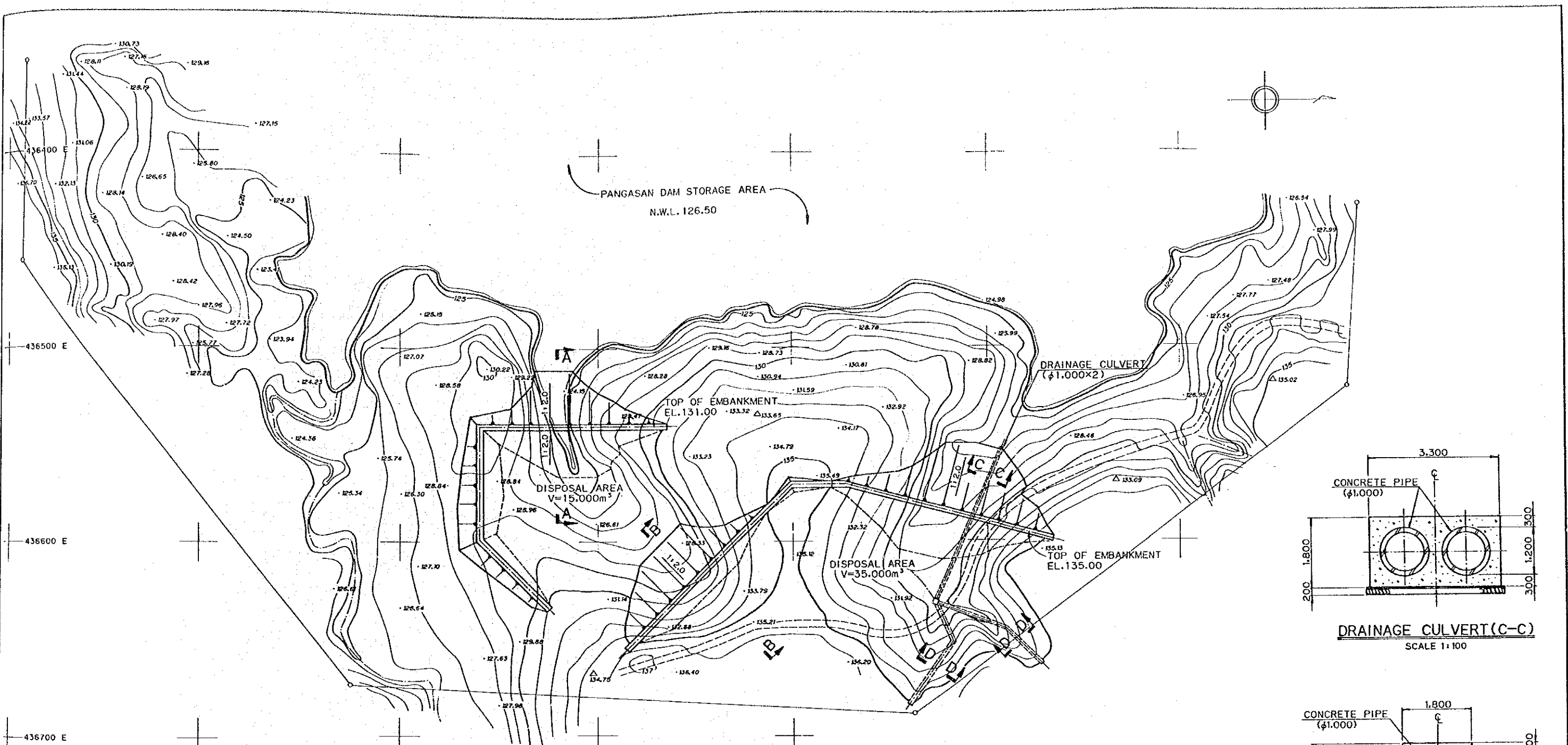
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION			
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION			
DRG. TITLE PLAN OF GABION WORKS (PANGASAN RESERVOIR WATERSHED)			
DATE	DRG. No.	8	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			



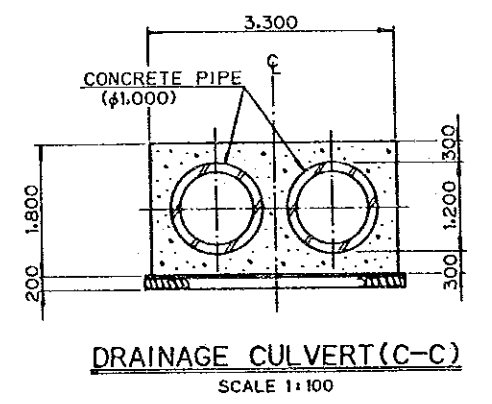
DISPOSAL AREA
V=80,000m³

PLAN OF DISPOSAL AREA (BALNGES DAM)
SCALE 1:1,000

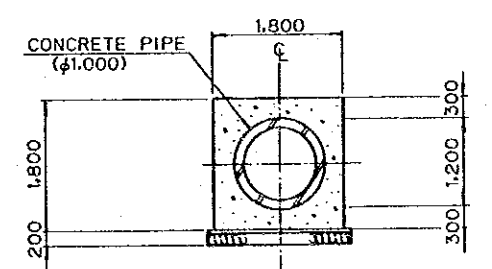
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
ORG. TITLE PLAN OF ASH DISPOSAL SITE (BALNGES DAM)		
DATE	DRG. No.	9
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		



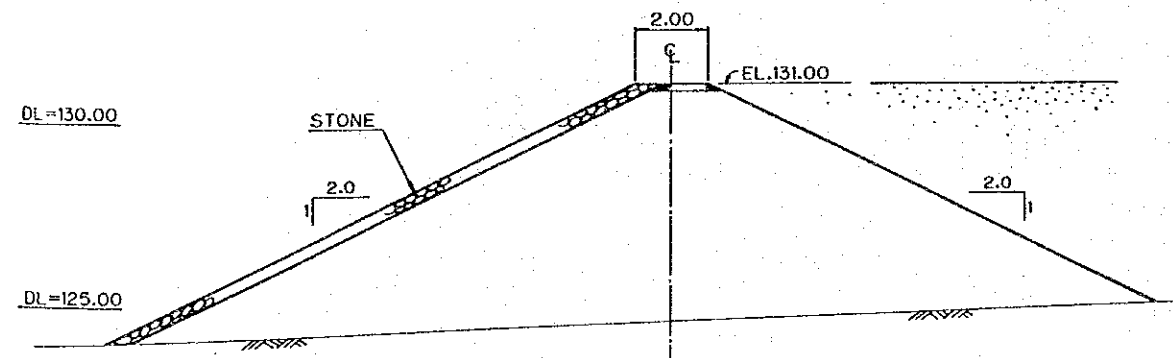
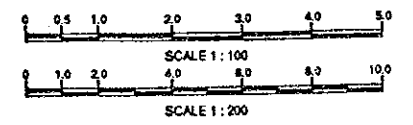
PLAN OF DISPOSAL AREA (PANGASAN DAM)
SCALE 1:1,000



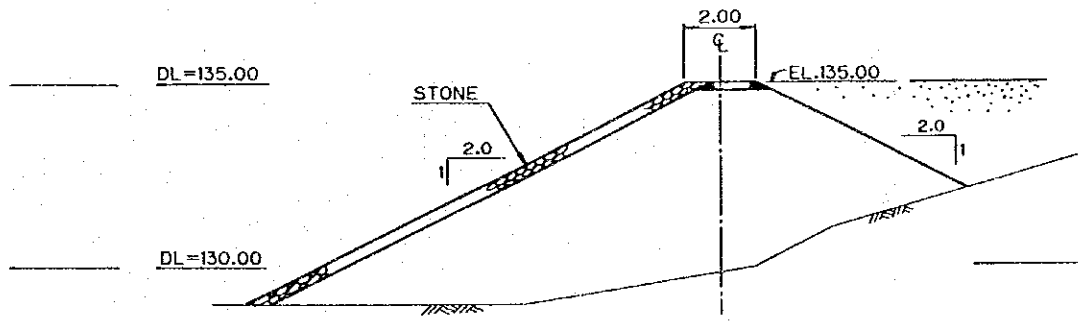
DRAINAGE CULVERT (C-C)
SCALE 1:100



DRAINAGE CULVERT (D-D)
SCALE 1:100



SECTION A-A
SCALE 1:200



SECTION B-B
SCALE 1:200

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. ALL ELEVATIONS (EL.) ARE IN METERS.

REPUBLIC OF THE PHILIPPINES		
NATIONAL IRRIGATION ADMINISTRATION		
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN THE WESTERN BARRIOS IMPOUNDING IRRIGATION		
DRG. TITLE		
PLAN OF ASH DISPOSAL SITE (PANGASAN DAM)		
DATE	DRG. No.	10
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		

資料編

資料編

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2. 現地調査日程表.....	(3)
3. 関係者リスト.....	(4)
4. 討議議事録.....	(6)
5. 当該国データ	
カントリープロフィール.....	(10)
ピナツボ火山噴火による被害リスト及び復旧計画)	(16)

1. 基本設計現地調査団員リスト

氏名	担当業務	所属
安中正実	調査団長	農林水産省 農業工学研究所 造構部 構造研究室長
小路克雄	計画管理	国際協力事業団 無償資金協力業務部 業務第1課
湯川義光	灌漑排水計画	日本技研(株)
岸 洋一	ダム/砂防計画	日本技研(株)
加藤孝宏	施設設計	日本技研(株)
麻崎清美	降灰調査/測量	日本技研(株)
塩瀬茂行	積算(国内作業のみ)	日本技研(株)

2. 現地調査日程表

日順	月日	団員	調査内容	調査地
1	4/9	木 3団員	日本出発→マニラ着	
2	10	金 3団員	大使館・JICA表敬、打合せ、NIA表敬、打合せ	マニラ
3	11	土 3団員	現地調査	ターラック州
4	12	日 3団員	現地調査	ターラック州
5	13	月 3団員	現地調査、資料収集	ターラック州
6	14	火 3団員	現地調査、資料収集	ターラック州
7	15	水 3団員	現地調査、資料収集	ターラック州
8	16	木 3団員	現地調査、資料収集	ターラック州
9	17	金 3団員	団内打合せ、資料整理、現場踏査	ターラック州
10	18	土 3団員	団内打合せ、資料整理、現場踏査	ターラック州
		1団員	日本出発→マニラ着	
11	19	日 3団員	現地調査、資料収集	ターラック州
		団長・3団員	日本出発→マニラ着、大使館・JICA表敬、打合せ	マニラ
12	20	月 2団員	現地調査、資料収集	ターラック州
		団長・3団員	NIA表敬、打合せ	マニラ
13	21	火 2団員	現地調査、資料収集	ターラック州
14	22	水 団長・全団員	現地踏査	ターラック州
15	23	木 団長・全団員	現地踏査	ターラック州
		団長・3団員	NIAリージョンオフィス表敬、打合せ	
16	24	金 2団員	現地踏査、資料収集	ターラック州
		団長・3団員	団内打合せ、資料整理	マニラ
17	25	土 2団員	現地調査	ターラック州
		団長・3団員	団内打合せ、資料整理	マニラ
18	26	日 2団員	現地調査	ターラック州
19	27	月 団長・5団員	ミニッツ署名、大使館、JICAへ報告、NEDAへ説明・協議	マニラ
		団長・1団員	マニラ発→日本着	
20	28	火 4団員	資料収集、整理	ターラック州
21	29	水 4団員	団内打合せ、フィールドレポート作成、追加資料収集	ターラック州
22	30	木 4団員	NIAとの基本設計打合せ、フィールドレポート説明・提出、大使館、JICAへの報告	マニラ
23	5/1	金 4団員	資料整理及び解析作業	マニラ
24	2	土 4団員	帰国準備・資料整理	マニラ
25	3	日 4団員	マニラ発→日本着	

3 . 関係者リスト

氏名	所属
国際協力事業団 (JICA)	
竹内 喜久男	JICA フィリピン事務所、次長
吉田 勝美	JICA フィリピン事務所、所員
菊地 文夫	JICA フィリピン事務所、所員
大石 純夫	JICA NIA専門家、灌漑計画 灌漑計画
日本大使館	
松田 祐吾	一等書記官
国家灌漑庁 (NIA)	
Mr. Domingo T. Bautista	Acting Administrator National Irrigation Administration (NIA)
Mr. Isidro R. Digal	Manager Project Development and Designing, NIA
Mr. Clemente T. Alanano	Project Manager, WBIP and Head, Dams and Reservoir Section, NIA
Mr. Nicasio T. San Miguel	Regional Irrigation Manager Regional Irrigation Office III, NIA
Mr. Clemencio M. Salvador	Chief Planning and Investigation Sect. Regional Irrigation Office III, NIA

氏名

所属

Mr. Honorio M. Encarnacion, Jr.	Project Manager Balog-Balog Multi-Purpose Project, NIA
Mr. Marcelino P. Manalo	Chief of Provincial Irrigation Office Tarlac, NIA
Mr. Alberto C. Cotaco	Chief Institutional Development Section and Coordinator of Service area of WBIIP Provincial Irrigation Office, Tarlac, NIA
Mr. Danilo C. Cortez	Chief O&M Dam, Reservoir Section of WBIIP, NIA
国家経済開発庁 (NEDA)	
Ms. Josefina U. Esguerra	Assistant Director Public Investment Staff

4. 討議議事録

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON
THE PROJECT OF MINIMIZING ASH-FALL DEPOSITION IN
WESTERN BARRIOS IMPOUNDING IRRIGATION IN
THE REPUBLIC OF THE PHILIPPINES

In response to the request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a Basic Design Study on the Project of Minimizing Ash-Fall Deposition in the Western Barrios Impounding Irrigation (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to the Philippines the study team, headed by Mr. Masami YASUNAKA, Director of Laboratory of Structures Analysis, Department of Structural Engineering, Ministry of Agriculture, Forestry and Fisheries, and scheduled to stay in the country from April 9 to May 3, 1992.

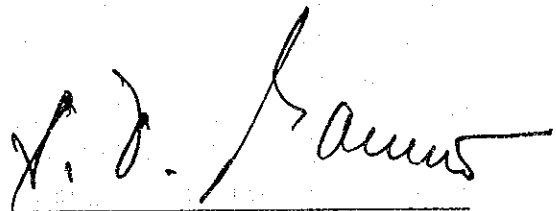
The team held a series of discussions with the officials concerned of the Government of the Philippines and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

April 27, 1992



MASAMI YASUNAKA
Leader
Basic Design Study Team
JICA



DOMINGO T. BAUTISTA
Acting Adiministrator
National Irrigation
Administration (NIA)

ATTACHMENT

1. OBJECTIVES

The objectives of the Project are to take proper countermeasures to prevent functional disorder of dam intake facilities and reduction of dam storage capacity caused by ash accumulation in the dam storage areas.

2. PROJECT SITES

The Project sites are located in the Municipality of San Jose, Province of Tarlac. The dams and irrigation facilities of Balnges and Pangasan dams including its drainage areas were requested as the subject of study and project implementation.

3. IMPLEMENTING AGENCY

National Irrigation Administration (NIA) is responsible for the administration and implementation of the Project.

4. ITEMS REQUESTED BY THE GOVERNMENT OF THE PHILIPPINES

After discussions with the Basic Design Team, the following items were finally requested by the Philippine side:

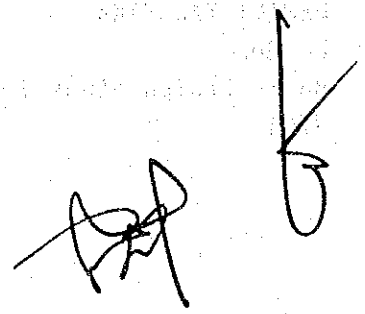
- 1) Construction of structures for minimizing ash-fall deposition in the reservoirs,
- 2) Dredging of ash-fall deposits in selected area of the reservoirs, and
- 3) Installation of inclined intake facilities and sand discharge valves.

5. JAPAN'S GRANT AID SYSTEM

- (1) The Government of the Philippines has understood the system of Japan's Grant Aid as explained by the Team.
- (2) The Government of the Philippines will take necessary measures, described in ANNEX I for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. SCHEDULE OF THE STUDY

- (1) The consultant will proceed to further studies in the Philippines until May 3, 1992.
- (2) Based on the Minutes of Discussions and technical examination of the study results, JICA will complete the final report and send it to the Government of the Philippines by the end of July, 1992.



ANNEX I: Necessary measures to be taken by the Government of the Republic of the Philippines in case Japan's Grant Aid is implemented

1. To secure the land or the right-of-way, including the disposal area, for the construction and to clear the sites as needed before the commencement of the construction,
2. To ensure the land or the right-of-way necessary for the construction of the temporary access road, stockyards, borrow areas, etc.,
3. To give necessary approval and assistance for the items of investigation that the consultant may require during the detailed design stage,
4. To secure permission in allowing transportation of vehicles, heavy equipment, machinery and construction materials on the existing national and rural roads,
5. To secure exemption on import duties and assume incidental expenses, and to take necessary procedures for customs clearance for materials, equipment and spare parts brought into the Philippines for the implementation of the Project,
6. To assume the Value Added Tax (VAT) which may be imposed on the purchase of Philippine supplies and materials for the Project,
7. To bear commission fees to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangements,
8. To assist without delay to the Japanese nationals whose services may be required in connection with the supply of products and the services under the verified contract such facilities as may be necessary for their entry into and stay in the Philippines for the performance of their works,
9. To secure exemption for the Japanese nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in the Philippines with respect to the supply of products and services under verified contracts,
10. To bear all expenses, other than those to be borne by the Grant Aid, necessary for the construction of facilities as well as for the internal transportation of the products and services under the Grant, and
11. To fully operate and maintain the project facilities for the benefit of the farmers concerned by providing adequate funds, staff and equipment to assure the effectiveness of implementation, operation and maintenance of the Project.

5. 当該国データ

(カントリープロフィール)

Country Profile of Philippines

1. Land Area

Land-Use Patterns, 1976 and 1987
('000 ha)

Land Category	1976		1987	
	Area	%	Area	%
National (Total)	30,000	100.0	30,000	100.0
Forest Area (Total)	17,025	56.8	13,750	45.8
Production Forest	9,756	32.5	8,376	27.9
Protection Forest (includes National Forests)	1,727	5.8	2,070	6.9
Man-made Protection Forest	239	0.8	923	3.1
Open Land/Cultivated	4,297	14.3	1,138	3.8
Forest Range/Pasture Land	934	3.1	934	3.1
Marshes	82	0.3	82	0.3
Mangrove Swamps	228	0.8	228	0.8
Nonforest Area (Total)	12,975	43.2	16,250	54.2
Crop Lands	7,488	25.0	7,507	25.1
Fishponds	176	0.6	229	0.7
Inland Water	231	0.8	231	0.8
Urban	1,986	3.6	1,400	4.7
Residential	3,994	13.3	6,863	22.9

2. Population

1. Population (1,000 persons)	May 1, 1990	60,684.9
2. Sex distribution		
Both sexes (1,000 persons)	May 1, 1990	
Male (percent)		50.2
Female (percent)		49.8
3. Regional distribution		
Philippines (1,000 persons)	May 1, 1990	60,685
Metropolitan Manila Area (National Capital Region)		7,929
CAR		1,146
Region 1		3,551
Region 2		2,341
Region 3		6,199
Region 4		8,266
Region 5		3,910
Region 6		5,392
Region 7		4,593
Region 8		3,055
Region 9		3,159
Region 10		3,510
Region 11		4,457
Region 12		3,171

3. Incomes and Prices

1. Average family income (pesos)		
Philippines	1988	40,408
Urban		60,330
Metropolitan Manila Area		79,314
Rural		28,284
2. Consumer price index for all items (1978 = 100)	July 1991	
Philippines		592.5
Metropolitan Manila Area (National Capital Region)		651.7
Areas Outside Metropolitan Manila		581.1

4. Economic Accounts			
1.	Gross national product (million pesos)	1990	
	At current prices		1,132,404
	At 1972 prices		110,143
2.	Gross domestic products		
	At current prices	1990	1,129,817
	At 1972 prices		109,890
	Gross domestic product by industrial origin (million pesos at 1972 prices)	1990	109,890
	Agriculture, fishery and forestry		29,620
	Mining and quarrying		1,603
	Manufacturing		27,259
	Construction		5,153
	Electricity, gas, and water		2,206
	Transport, communication and storage		5,977
	Trade		17,352
	Finance and Housing		7,205
	Private Services		6,997
	Government Services		6,519
5. National Resources			
1.	Classified and unclassified land area (in hectares)	1990	
	Alienable and disposable		14,117,729
	Forest Land		15,882,271
2.	Area reforested annually (in hectares)	1989	131,404
3.	Forest Destruction (in hectares)	1989	12,814
4.	Production of logs, lumber, plywood and veneer (1,000 m)	1990	
	Logs		1,916
	Lumber		449
	Plywood		407
	Veneer		33
5.	Mineral ore reserves (1,000 tones)	1989	34,508,227
	Metallic		6,480,712
	Non-metallic		28,027,515
6. Agriculture			
1.	Production of agricultural crops (1,000 m.t.)	Crop year	
		1990	59,806
	Cereals		14,173
	Palay		9,319
	Corn		4,854
	Major crops		36,926
	Coconut		11,940
	Sugarcane		16,908
	Banana		2,913
	Pineapple		1,156
	Coffee		134
	Other major crops		3,875
	Other crops		8,707
2.	Value of production of agricultural crops (million P)	Crop year	
		1990	161,905
	Cereals		109,242
	Palay		64,790
	Corn		44,452
	Major crops		64,250
	Coconut		18,865
	Sugarcane		9,976
	Banana		7,224
	Pineapple		4,751
	Coffee		2,659
	Other major crops		20,775

	Other crops		32,865
3.	Fish production (1,000 m.t.)	1990	2,503.6
	Commercial fishing		700.6
	Aquaculture		671.1
	Municipal fishing		1,131.9
4.	Value of fishing production (million pesos)	1990	52,177.2
	Commercial fishing		12,410.6
	Aquaculture		20,466.5
	Municipal fishing		19,300.1
7. Foreign Trade			
1.	Direction of external trade (million US dollars)	1990	
	Exports		8,186.0
	Imports		12,206.2
	Balance of trade (all countries)		(4,020.2)
2.	Total exports (million US\$)	1990	8,186
	Ten principal exports		1,123
	Copra		20
	Sugar		111
	Banana		149
	Logs and lumber		19
	Desiccated coconut		61
	Coconut oil		361
	Pineapples, canned		89
	Gold		90
	Abaca (unmanufactured)		16
	Copper concentrates		207
3.	Imports by end use (million US\$)	1990	12,206.2
	Producer goods		11,350.7
	Machinery and equipment		1,531.2
	Unprocessed raw materials		2,357.1
	Semi-processed raw materials		6,924.2
	Supplies		538.2
	Consumer goods		855.5
	Durable		81.7
	Non-durable		773.8
8. Vital, Health and Nutrition			
1.	Crude birth and death rates (per 1,000 population)	1988	
	Birth rate		26.7
	Death rate		5.5
2.	Number of registered marriages	1989	395,933
3.	Number of registered live births	1988	1,565,372
4.	Number of registered deaths	1988	325,098
5.	Number of hospitals	1990	1,733
6.	Number of government medical practitioners	1990	30,855
7.	Number of health stations	1990	
	Barangay		10,151
	Rural		2,295
9. Education			
1.	Number of government and private schools	SY 1989-90	
	Pre-School		3,837
	Elementary		34,382
	Secondary		5,518
	Tertiary		1,755
2.	Enrolment in government and private schools (in thousand)	SY 1989-90	
	Pre-school		321.4

	Elementary		10,284.9
	Secondary		3,961.6
	Tertiary	SY 1990-91	1,347.7
10. Labor and Employment			
1.	Total labor force (1,000 persons)	1990	24,525
	Employed		22,532
	Unemployed		1,993
2.	Labor force participation rate (percent)	1990	64.5
3.	Processed overseas contract worker	1990	598,769
	Land-based		468,591
	Sea-based		130,178
4.	Deployed overseas workers	1990	446,095
	Land-based		334,883
	Sea-based		111,212
11. Transportation and Communication			
1.	Rail transport	1990	
	Passengers (1,000 persons)		928.0
	Freight tones loaded (1,000 mt)		32.2
	Express tones loaded (1,000 mt)		16.8
2.	Flights and passengers carried by international carriers	1990	
	Passengers carried, total		4,367,357
	Arrivals		2,103,820
	Departures		2,263,537
	Flights, total		25,243
3.	Number of registered airports	1990	173
	National		86
	Private		87
4.	Total Kilometers of road	1990	160,560.12
	National		26,272.03
	Local		134,288.09
5.	Number of bridges	1990	11,562
	National government		7,201
	Local government		4,361
6.	Length of bridges (linear meters)	1990	314,184.23
	National government		235,519.67
	Local government		78,664.56
7.	Coastwise shipping movement at 26 major ports	1990	
	Number of vessels entered		81,475
	Number of vessels cleared		81,391
8.	International shipping movements at Port of Manila	1990	
	Number of vessels entered		2,896
	Number of vessels cleared		2,882
9.	Number of operational ports	1990	399
10.	Number of licensed radio stations	1990	53,725
11.	Total telephone connections	1990	987,890
12. Energy and Water Resources			
1.	Electric consumption by source (MBFOE)	1990	120.6
	Indigenous energy		42.1
	Imported energy		78.5
2.	Electric Energy Consumption (gigawatt hours)	1990	26,327
3.	Petroleum products consumption (thousand barrels)	1990	84,980
4.	Power generation	1990	26,326

13. Public Finance

1.	National Government Revenue (million pesos)	1990	180,644.0
	Tax Revenues		150,316
	Taxes on income and profits		48,549
	Taxes on property		279
	Taxes on goods and services		50,745
	Taxes on international trade and transactions		46,005
	Other taxes		4,738
	Non tax revenue		30,328
2.	National government expenditures (million pesos)	1991	254,385
	Economic services		64,344
	Social services		62,509
	National defense		26,010
	General public service		25,982
	Net lending		777
	Debt service fund		74,763
3.	Internal debt outstanding by level of government (million P)	1990	254,447.5
	National government		243,793.4
	Local government		-
	Government corporations		6,625.8
	Monetary institutions		4,028.3
4.	Internal debt outstanding by period of maturity (million P)	1990	254,447.5
	Long term		20,634.2
	Medium term		23,129.2
	Short term		210,684.1

14. Money and Banking

1.	Money supply (million pesos)	1990	89,012
2.	Loans and investments outstanding (million pesos)	1990	275,887.8
	Commercial banks		243,992.0
	Rural banks		9,735.7
	Development banks		6,139.9
	Savings banks		16,020.2
3.	Total assets and liabilities of Central Bank (million pesos)	1990	
	Total assets		444,893.2
	Total liabilities		442,977.4
4.	Total assets and liabilities of commercial banks (million pesos)	1990	
	Total assets		539,708.0
	Total liabilities		477,874.0
5.	Total assets and liabilities of development banks (million pesos)	1990	
	Total assets		11,251.3
	Total liabilities		9,323.5

(ピナツボ火山噴火による被害リスト及び復旧計画)

- (1) 農産物被害一覧表 (農業省) (17)
- (2) 主要省庁火山被害復旧計画費一欄表 (19)
- (3) 外国援助による復旧計画一覧表 (国家経済開発庁) (20)
- (4) ターラック州小規模灌漑システム(CIS)被害一覧表 (21)
- (5) 農業支援計画 (農業生産基盤復旧計画)、 (農業省) (25)
(バタン、バンバンガ、ターラック、サンバレス、ヌエバエシハ州)
- (6) 農業支援計画 (農業、畜産、移住計画)、 (農業省) (27)
(バタン、バンバンガ、ターラック、サンバレス、ヌエバエシハ州)
- (7) 農業支援計画 (農業、畜産、移住計画)、 (農業省) (28)
(ターラック州各町村)

(1) 農産物被害一覽表 (農業省) (1 / 2)

Particular	Bataan	Pampanga	Tarlac	Zambales	Total
Affected					
No. of Farmers	8,503	18,878	13,890	15,709	56,980
Total Area (ha.)	11,774	29,485	26,758	17,821	81,259
1. Rice					
- Area (ha.)	11,605	28,484	25,854	17,520	78,884
a. Planted	6,890	9,819	4,355	521	21,585
b. Not planted	4,715	18,665	21,499	16,999	57,299
- Value loss (P)	16,516,064.00	255,544,355.00	67,883,655.00	9,150,250.00	349,094,324.00
a) Actual	2,330,372	56,748,980	32,309,007	684,250	92,072,609
b) Opportunity	14,185,692	198,795,375	35,574,648	8,466,000	257,021,715
2. Vegetables					
- Area (ha.)	169	1,001	904	301	2,375
- Value loss (P)	6,629,296	107,830,760	42,660,700	4,770,200	161,890,956
a) Actual	-	10,529,160	-	60,200	10,589,360
b) Opportunity	6,629,296	97,301,600	42,660,700	4,710,000	151,301,596
3. Fruit Trees (area in ha.)					
a. Mango	255.00	190.75	15.96	726.00	1,187.71
- Value loss (P)	7,944,000	58,773,750	5,746,320	84,584,000	157,048,070
a) Actual	644,000	-	-	-	644,000
b) Opportunity	7,300,000	58,773,750	5,746,320	84,584,000	156,404,070
b. Other Fruit Trees (assorted)	164.50	709.56	70.00	1,702.00	2,646.06
- Value loss (P)	90,935,000	167,490,400	4,500,000	27,135,675	290,061,075
a) Actual	-	-	-	-	-
b) Opportunity	90,935,000	167,490,400	4,500,000	27,135,675	290,061,075
4. Livestock & Poultry (hds.)					
No. of heads loss	32,066	716,677	15,136	13,861	777,740
- Value loss (P)	5,511,080	176,822,180	4,985,640	15,523,050	202,841,950
a) Production	4,740,180	86,677,340	4,705,640	13,712,050	109,835,210
b) Facilities	770,900	90,144,840	280,000	1,811,000	93,006,740
5. Fisheries					
- Area damaged (ha.)	2,649.97	3,817.00	82.40	580.52	7,129.89
a. Brackishwater	2,648.53	3,767.00	-	526.40	6,941.93
b. Freshwater	1.44	50.00	82.40	54.12	187.96
- Value loss (P)	5,393,318	266,648,333	7,284,187	4,772,390	284,098,228
a. Brackishwater	5,297,060	263,690,000	-	4,215,455	273,202,515
b. Freshwater	96,258	2,958,333	7,284,187	556,935	10,895,713

Source: Republic of the Philippines, Department of Agriculture, Region III San Fernando, Pampanga

農産物被害一覽表 (2 / 2)

Particular	Bataan	Pampanga	Tarlac	Zambales	Total
6. Small Scale IGP					
- Number	194	641	21	-	856
- Value loss (P)	251,000	996,250	32,638	-	1,279,888
7. L.E.A.D					
I.D.P. (No.)	5	1	3	1	10
- Value loss (P)	482,000	37,000	102,000	126,000	747,000
I.G.P. (No.)	-	-	-	9	9
- Value loss (P)	-	-	-	602,920	602,920
8. SWIP					
- Number	3	6	1	4	14
- Value loss (P)	120,000	890,000	75,000	300,000	1,385,000
Total Value Loss (P)	133,781,758.00	1,035,033,028.00	133,270,140.00	146,964,485.00	1,449,049,411.00
A) Actual	14,731,770.00	512,671,903.00	44,788,472.00	22,068,810.00	594,260,955.00
B) Opportunity	199,049,988.00	522,361,125.00	88,481,668.00	124,895,675.00	854,788,456.00
9. D.A. Facilities					
a. Sacobia Seed Farm at Bamban, Tarlac (as corrected)					
- Assorted fruit trees (no.)	-----	-----	7,855.00	-----	-----
- Value of loss (P)	-----	-----	745,650.00	-----	-----
- Assorted seedlings	-----	-----	60,500.00	-----	-----
- Value loss	-----	-----	477,000.00	-----	-----
- Infrastructures/Building	-----	-----	7 units	-----	-----
- Value loss	-----	-----	655,000.00	-----	-----
- Total value loss	-----	-----	1,877,650.00	-----	-----
b. Zambales					
- Soils laboratory, Iba	-----	-----	30,000.00	-----	-----
- Provincial nursery, Iba	-----	-----	387,000.00	-----	-----
- Farmer's pavillon, Iba	-----	-----	150,000.00	-----	-----
- Provincial office, Iba	-----	-----	150,000.00	-----	-----
- Nat'l Bangus Breeding Project, (Masinloc)	-----	-----	75,200.00	-----	-----
- Zamb. Breeding station, (San Marcelino)	-----	-----	850,000.00	-----	-----
- Magsaysay Memorial Fish Nursery, (Castillejos)	-----	-----	250,000.00	-----	-----
- Total value loss	-----	-----	1,892,200.00	-----	-----
Ground Total Value Loss (P)	-----	-----	1,452,819,261.00	-----	-----
A) Actual	-----	-----	598,030,805.00	-----	-----
B) Opportunity	-----	-----	854,788,456.00	-----	-----

Source: Republic of the Philippines, Department of Agriculture, Region III San Fernando, Pampanga

(2) 主要省庁火山被害復旧計画費一覽表
Region III, As of 31 December 1991 (in thousand pesos)

Agency and Major Programs/Projects	Western Areas				Eastern Areas				Other Areas				Grand Total	Percent Dist.
	Zambales	Bataan	Olongapo	Total	Pampanga	Tarlac	Angles	Total	Bulacan	N. Ecuja	Regionwide	Total		
Dept. of Public Works & Highways	2,383,900	105,645	204,275	2,793,820	1,387,681	653,992	499,320	2,540,993	44,614	41,834	2,804,000	2,890,448	8,215,260	87.32
A. Road and Bridges	477,121	70,360	67,545	615,026	248,867	103,727	482,380	834,974	39,464	35,679	2,194,000	2,269,143	3,719,143	39.53
1. National	403,622	63,864	9,300	476,786	119,616	87,900	480,380	687,896	13,460	16,809	2,194,000	2,224,269	3,388,951	36.02
- Roads	328,472	63,500	9,300	401,272	31,666	34,250	16,270	82,186	9,160	13,120	-	22,280	505,738	5.38
- Bridges	75,150	364	-	75,514	87,950	53,650	464,110	605,710	4,300	3,689	-	7,989	689,213	7.33
- Alternate Routes	-	-	-	-	-	-	-	-	-	-	2,194,000	2,194,000	2,194,000	23.17
2. Local Roads and Bridges	73,499	6,496	58,245	138,240	129,251	15,827	2,000	147,078	26,004	18,870	-	44,874	330,192	3.51
- Provincial/City	8,653	1,769	-	10,422	56,551	1,895	-	58,446	3,701	-	-	3,701	72,569	0.77
- Municipal	28,072	270	58,245	86,587	16,100	255	2,000	18,355	6,155	-	-	6,155	111,097	1.18
- Bannagay	36,774	4,457	-	41,231	56,600	13,677	-	70,277	16,148	18,870	-	35,018	146,526	1.56
B. Flood Control/Drainage	1,421,123	-	-	1,421,123	973,788	503,325	-	1,477,113	-	-	610,000	610,000	3,508,236	37.29
- Water Supply (Level I)	1,665	-	-	1,665	4,365	-	-	4,365	-	-	-	-	6,030	0.06
D. School Buildings	409,690	33,475	141,930	585,096	129,811	13,050	11,940	154,801	5,050	3,155	-	8,205	748,101	7.95
E. Other Public Buildings/Structures	74,300	1,810	84,800	160,910	30,850	33,890	5,000	69,740	100	3,000	-	3,100	233,750	2.48
Dept. of Trans. & Communication	19,178	700	4,212	24,090	26,803	11,436	34,282	72,521	-	-	97,375	97,375	193,985	2.06
A. Telecom Facilities (TELOF)	6,702	-	2,712	9,413	1,707	344	160	2,211	-	-	3,375	3,375	15,000	0.16
B. Postal Facilities (PSO)	290	-	1,300	1,590	-	-	-	-	-	-	-	-	1,590	0.02
C. LTO Buildings (LTO)	186	700	200	1,086	96	92	122	310	-	-	-	-	1,396	0.01
D. Airport Facilities (ATO)	12,000	-	-	12,000	-	-	-	-	-	-	-	-	12,000	0.13
E. Railway Facilities (PNR)	-	-	-	-	25,000	11,000	34,000	70,000	-	-	-	-	70,000	0.74
F. Emergency Communication System	-	-	-	-	-	-	-	-	-	-	94,000	94,000	94,000	0.99
National Irrigation Administration	57,895	12,982	-	70,877	79,990	31,547	1,897	113,434	-	-	247,289	247,289	431,600	4.59
A. National Irrigation Systems	25,017	2,275	-	27,292	17,828	21,089	-	38,917	-	-	27,091	27,091	93,300	0.99
B. Communal Irrigation Systems	32,878	10,707	-	43,585	62,162	10,458	1,897	74,517	-	-	17,198	17,198	135,300	1.44
C. Other Projects	-	-	-	-	-	-	-	-	-	-	203,000	203,000	203,000	2.14
National Electrification Administration	21,711	1,739	-	23,450	14,771	9,070	-	23,841	-	-	-	-	47,291	0.50
National Power Corporation	860	1,199	3,244	5,304	-	2,025	298	2,323	-	-	-	-	7,627	0.08
Local Waterworks & Utilities Admin.	15,641	2,000	65,000	82,641	20,840	3,447	10,000	34,287	-	-	10,072	10,072	127,000	1.35
Department of Health	16,200	3,120	14,650	33,970	7,790	4,810	24,150	36,690	-	-	100,340	100,340	171,000	1.82
Armed Forces of the Philippines (AFP)	-	-	-	-	-	-	-	-	-	-	214,000	214,000	214,000	2.27
National Economic and Dev't. Authority	-	-	-	-	-	-	-	-	-	-	15	15	15	0.00
Grand Total	2,515,385	127,396	391,381	3,024,151	1,537,815	716,326	569,947	2,824,088	44,614	41,834	3,473,091	3,559,539	9,407,778	100.00
Percent Distribution	26.74	1.35	4.05	32.15	16.35	7.61	6.06	30.02	0.47	0.44	36.92	37.84	100.00	

Source: DPWH III

(3) 外国援助による復旧計画一覽表 (國家經濟開發庁)

Relief	Estimated Cost (P million)	Estimated Cost (\$ million)	Mitigation (B)	Estimated Cost (P million)	Estimated Cost (\$ million)	Rehabilitation (C)	Estimated Cost (P million)	Estimated Cost (\$ million)	Reconstruction and Development (D)	Estimated Cost (P million)	Estimated Cost (\$ million)
Bamboo Development (Phase I)	66.600	2,494	Bamboo Development (Phase II)	13.400	0,502	Agricultural Rehabilitation Program	197.000	7,378	Productivity Centers	1,120.000	41,948
Food for Work	156.100	5,846	Health and Nutrition Services	367.000	13,745	Agricultural Development Program	645.000	24,157	Lowland New Resettlement Sites	7,799.300	291,884
Continuing Relief Assistance	360.000	13,483	Production of IEC	10.000	0,375	Deep Sea Fishing Program	58.000	2,172	Area Resettlement Sites	344.700	12,910
Emergency Shelter Assistance	13.300	0,498	Community Organizing and Mobilizing	0.300	0,011	Integrated Cattle Fattening Program	120.000	4,494	Core Shelter Assistance	40.000	1,498
Supplemental Feeding	5.600	0,210	Critical Incidence Stress Debriefing	0.150	0,006	Integrated Poultry Livelihood Program	40.000	1,498	Utilization of NFE Literacy Teachers in Asia Centers	5.000	0,187
Administrative Services	4.140	0,155	Intervention for Children in Crisis/Difficult Situation	0.100	0,004	Micro-lending for Affected Workers	500.000	18,727	School Furnitures, Facilities, and Equipment Procurement	35.000	1,311
Roads and Bridges	140.000	5,243	Seminars on Disaster Preparedness	0.080	0,003	Lending to Small and Medium Businesses	2,000.000	74,906	Capas-Borolin Road	537.900	20,112
Mobile Health Facilities	40.000	1,498	Day Care Service	4.900	0,184	Common Service Facilities (CSFs)	50.000	1,873	San Fernando-Dinalupihan Road	1,428.000	53,483
			Roads and Bridges	35.000	1,311	Lending to Projects in CFSs	1,000.000	37,453	Angates-Porac-Floridablanca-Dinalupihan Road	169.000	6,330
			River Systems Improvement Project	1,082.000	40,524	Balik-Probinsiya	3,050	0,114	River Systems Improvement Project	627.000	23,483
						Organization of Teachers to conduct classes in health, nutrition, sanitation	10.000	0,375	Others	846.807	31,716
						Self-Employment Assistance	12.320	0,461			
						Rehabilitation of Schools/Public Buildings	982.000	36,779			
						Rehabilitation of National/Communal Irrigation System	229.000	8,577			
						Rehabilitation of PNR Structures	70.000	2,622			
						River Systems Improvement Project	1,189.000	44,532			
						Roads and Bridges	1,350.000	50,562			
Total	785.740	29,428		1,512.930	56,664		8,455.370	316,681		12,945.807	484,862
			and Total (A + B + C + D)	23,699,847	887,635						

for infra-02-92/infrag-cu/pinarubo.wk1

(4) ターラック州小規模灌漑システム (CIS) 被害一覧表

Location/Name of CIS	Service Area (ha.)	Amount (Peso)	Remarks (Nature of works to be done)
<u>Conception</u>			
1. Lucong CIS Level I	2,250	980,000.00	Desilting of canals, raising of canal embankment to serve as cofferdam to mudflow and channelization.
Level II		800,000.00	Repair of gates, desilting of canals and repair/replacement of collapsed falling shutter.
2. Sto. Rosario CIS Level I	150	148,000.00	Desilting of canals and raising of protection dike.
Level II		68,000.00	Replacement of flash board and collapsed falling shutter.
3. Sta. Monica CIS Level I	740	280,000.00	Desilting of canals, unclogging and raising of protection dike.
Level II		130,000.00	Repair of gates and collapsed falling shutter and repair of diversion dam.
4. Sta. Rita CIS Level I	165	800,000.00	Area was totally silted. Rehabilitation is not advisable in this season.
Level II		800,000.00	Reconstruction of irrigation facilities if area found to be feasible for cultivation.
5. Marita CIS Level I	100	800,000.00	Immediate rehabilitation of CIS totally silted by mudflow is impractical due to area is not advisable to cultivate in this season.
Level II		800,000.00	Reconstruction of intake structures, canal structures, canals and terminal facilities in area found to be feasible for cultivation.

Location/Name of CIS	Service Area (ha.)	Amount (Peso)	Remarks (Nature of works to be done)
6. San Martin CIS Level I	230	900,000.00	Immediate rehabilitation of CIS totally silted by mudflow is impractical due to area is not advisable to cultivate in this season.
Level II		900,000.00	Reconstruction of instructures, canal structures, canals and ternal facilities if to be feasiible for cultivation.
7. Lilibangan CIS Level I	240	900,000.00	Immediate rehabilitation of CIS totally silted mudflow is impractical due to area is not advisable to cultivate in this season.
Level II		900,000.00	Reconstruction of instructures, canal structures, canals and terminal facilities if found to be feasible for cultivation.
8. Magao CIS Level I	960	2,800,000.00	Immediate rehabilitation of CIS totally silted by mudflow is impractical due to area is not advisable to cultivate in this season.
Level II		2,800,000.00	Reconstruction of instructures, canal structures, canals and terminal facilities and diversion dams if area found to be feasible for cultivation.
9. Telabanca CIS Level I	328	160,000.00	Desilting of canals unclogging, channelization.
Level II		120,000.00	Desilting of canals and repair of intake structures.
10. San Bartolome CIS Level I	350	240,000.00	Raising of protection dike and desilting of canals.
Level II		160,000.00	Repair of diversion works, intake structures, desilting of canals and repair of gates.
11. Baluto CIS Level I	740	360,000.00	Desilting of canals, raising of protection dike, unclogging.
Level II		200,000.00	Repair of intake structures, repair of checkgate and desilting of canals.
12. Sta. Cruz-Guge Level I	200	40,000.00	Raising of protection dike and desilting of canals.
Level II		-	Program for CY-1992 (CIDIP).
13. Balucuk CIS Level I	100	30,000.00	Desilting of canals and raising of protection dike.
Level II		-	Program for CY-1992 (CIDIP).

Location/Name of CIS	Service Area (ha.)	Amount (Peso)	Remarks (Nature of works to be done)
<u>Bamban</u>			
1. Bamban CIS Level I	623	120,000.00	Immediate restoration is impractical, water source was silted and water supply is not suitable for irrigation in this season.
Level II		120,000.00	Channelization repair of intake structures and desilting of canal.
2. Panaisan CIS Level I	112	100,000.00	Desilting of canals, raising of protection dike, unclogging.
Level II		-	Program for CY-1992 regular project.
3. Malonzo CIS Level I	250	80,000.00	Immediate reconstruction is impractical, water source was silted and water supply is not suitable for irrigation in this season.
Level II		80,000.00	Channelization, desilting of canals and repair of intake structures.
(23) 4. Bancu CIS Level I	119	60,000.00	Immediate restoration is impractical, water source was silted and water supply is not suitable for irrigation in this season.
Level II		60,000.00	Repair of intake structures and desilting of canals.
5. San Pedro CIS Level I	140	140,000.00	Immediate restoration is impractical, water source was silted and available water supply is not suitable for irrigation in this season.
Level II		140,000.00	Repair of intake structures, channelization and desilting of canals.
<u>Capas</u>			
1. Susuba-Cutcut CIS Level I	30	260,000.00	Unclogging removal of debris and desilting of canals.
Level II		180,000.00	Repair of checkgate, raising of embankment and desilting of canals.

Location/Name of CIS	Service Area (ha.)	Amount (Peso)	Remarks (Nature of works to be done)
2. Lab CIS	340	120,000.00	
Level I		120,000.00	Desilting of canals, unclogging and raising or protection dike.
Level II		-	Program for CY-1992
3. O'Donnel #1	130	300,000.00	
Level I		80,000.00	Unclogging and desilting of canals.
Level II		220,000.00	Desilting of canals, and repair of intake structures.
4. O'Donnel #2	25	140,000.00	
Level I		-	Area was totally silted by mudflow, immediate rehabilitation of the system is impractical due to the area is not advisable to cultivate in this season.
Level II		140,000.00	Reconstruction of canals and intake structures.
<u>Tarlac</u>			
1. Sinait-Dolores CIS	150	140,000.00	
Level I		-	River source was silted by mudflow, water supply is not suitable for irrigation in this season.
Level II		140,000.00	Channelization and desilting of canals.
2. Sta. Maria CIS	416	260,000.00	
Level I		-	River source was silted by mudflow, water supply is not suitable for irrigation in this season. Immediate rehabilitation is impractical.
Level II		260,000.00	Desilting of canals and channelization.
3. Lubigan CIS	155	180,000.00	
Level I		180,000.00	Desilting of cut and cover, canals and construction of spurdiikes.
4. Iba-Sula CIS	250	120,000.00	
Level I		120,000.00	Desilting of canal lining, canals and channelization.
Total		10,458,000.00	
Level I		2,060,000.00	
Level II		8,398,000.00	

(5) 農業支援計画 (農業生産基盤復旧計画)、(農業省) (1/2)

(パタン、パンパンガ、ターラック、サンバレス、ヌエバエシハ州)

Particular	Bataan	Pampanga	Tarlac	Zambales	Total
1. Municipality (No.)	7	12	10	12	41
2. Barangay (No.)	85	187	144	112	528
3. Plowing Activities					
3.1 Farmers Served (no.)	6,169	14,605	11,188	13,945	45,907
3.2 Area Targetted (ha.)	9,082	22,049	22,949.5	17,289	71,370
(3 inches above with financial assistance on plowing)					
3.3 Total Area Plowed (ha.)	8,859	20,811	22,449.5	16,376	68,496
- Percent Accomplished	98	94	98	95	96
3.3.1 Area Plowed by Mode					
a. Rice	8,420	20,667	22,369.5	12,802	64,259
- Carabao	5,557	7,466	4,189.5	4,320	21,533
- Hand tractor	2,383	2,199	8,499.5	933	14,015
- 4-wheel tractor	480	11,002	9,680.5	7,549	28,712
b. Vegetables	319	13	30	2,344	2,706
- Carabao	251	13	30	644	938
- Hand tractor	22	-	-	13	35
- 4-wheel tractor	46	-	-	1,687	1,733
c. Root Crops	120	131	50	1,230	1,531
- Carabao	72	116	5	310	503
- Hand tractor	-	-	-	1	1
- 4-wheel tractor	48	15	45	919	1,027
3.3.2. Mode Used (no.)					
- Carabao	1,729	7,648	2,550	4,789	16,716
- Hand tractor	335	438	700	262	1,735
- 4-wheel tractor	14	137	200	27	378
3.3.3 Amount to be paid (P)	8,618,410	20,746,000	22,449,500	17,637,340	69,451,250
- Carabao	5,853,010	7,595,000	4,224,500	8,922,560	26,595,070
- Hand tractor	2,397,950	2,199,000	8,499,500	950,050	14,046,500
- 4-wheel tractor	367,450	10,952,000	9,725,500	7,764,730	28,809,680

Source: Republic of the Philippines, Department of Agriculture, Region III San Fernando, Pampanga

農業支援計画（農業生産基盤復旧計画）、（農業省）（2/2）

（バタン、パンパンガ、ターラック、サンバレス、ヌエバエシハ州）

Particular	Bataan	Pampanga	Tarlac	Zambales	Total
4. Area Planted (ha.)	8,661	20,570	22,450	8,818	60,499
(3 inches and above with financial assistance on plowing)					
4.1 Rice	8,225	20,426	22,369.5	5,729	56,750
4.2 Vegetables	316	13	30	2,033	2,392
4.3 Root Crops	120	131	50	1,056	1,357
5. Input Assistance (distributed)					
5.1 Palay (cav.)	982	6,277	-	350	7,609
5.2 Recipient (cav.)	883	5,968	-	15	6,866
5.3 Vegetable (pkt.)	182,623	307,758	408,312	236,284	1,134,977
5.4 Recipient (no.)	14,170	30,147	31,686	14,668	90,671
5.5 Fruit Tree Seedings (pcs.)	7,414	358,111	256,000	88,916	710,441
5.6 Recipient (no.)	1,112	23,874	17,066	5,927	47,979
5.7 Fertilizer (bags)	31,703	50,180	73,541	29,052	184,476
5.8 Recipient (no.)	8,105	15,299	14,456	13,028	50,888
6. Area Targetted below 3 inches ashfall with inputs/fertilizer assistance only (ha.)	2,692	7,436	5,652.5	2,535	18,316
6.1 Area planted (ha.)	2,639	7,436	5,652.5	2,535	18,263
6.1.1 Rice	2,607	7,436	5,652.5	2,535	18,231
6.1.2 Vegetables	10	-	-	-	10
6.1.3 Root Crops	22	-	-	-	22
6.2 Farmers served (no.)	1,979	3,502	3,059	2,138	10,678
6.2.1 Rice	1,949	3,502	3,059	2,138	10,648
6.2.2 Vegetables	10	-	-	-	10
6.2.3 Root Crops	20	-	-	-	20
7. Total Area Targetted (ha.)	11,774	29,485	28,602	19,824	89,685
8. Total Area Planted (ha.)	11,300	28,006	28,102	11,353	78,761
9. Percent Accomplished	96	95	98	57	88
10. Harvesting Operation (rice)					
10.1 Area harvested (ha.)	9,747	24,300	26,582	7,163	67,792
10.2 Production (cav.)	761,512	2,158,659	2,343,709	528,906	5,792,786
10.3 Ave. yield/ha. (cav.)	78	89	88	74	85

Source: Republic of the Philippines, Department of Agriculture, Region III San Fernando, Pampanga

(6) 農業支援計画 (農業、畜産、移住計画)、(農業省)

(バタン、パンパンガ、ターラック、サンパレス、ヌエバエシハ州)

(P 000)

f name: DEVTPROG

Project	Bataan	Pampanga	Tarlac	Zambales	N. Ecija	Region	Total
I. Agricultural Rehabilitation and Development							
1. Provision of inputs	-	-	-	10,940	-	-	10,940
2. Livestock Dev't. and Forage Production	1,750	11,900	10,300	10,990	-	-	35,000
3. Water Resource Dev't.	1,050	13,930	11,340	23,680	-	-	50,000
4. Fishery Dev't.	47	2,519	2,000	1,434	-	-	6,000
II. Livelihood for Settlement Areas							
1. Farming Provision and Livestock	-	14,400	12,800	22,800	-	-	50,000
III. Livelihood for Lahar Affected Area							
1. Organic Farmine	-	2,770	1,700	400	200	-	5,070
2. Basket Technology	-	3,670	4,450	1,360	660	-	10,140
3. Forage Production	-	250	2,900	700	-	-	3,850
IV. Administrative Support	283	4,500	3,500	5,132	95	3,500	17,000
Total	3,130	53,939	48,990	77,436	955	3,500	187,950

(7) 農業支援計画 (農業、畜産、移住計画)、(農業省) (ターラック州各町村)

Department of Agriculture, Region III

	Bamban	Capas	Concepcion	Carunungan	La Paz	Mayantoc	Moncada	San Jose	Tarlac	Victoria	San Clemente	Paniqui	Provincial Office	Total
I. Agricultural Rehabilitation & Development														
Livestock Development and Forage Production @P70,000/module														
Area (has.)	16	16	16	14	14	14	14	14	16	14				148
Cost (000) (Loan)	1,120	1,120	1,120	980	980	980	980	980	1,120	980				360
Water Resource Dev't @P70,000/unit														
STW (units)	20	20	31	12	12	12	12	12	19	12				162
Cost (000) (Loan)	1,400	1,400	2,170	840	840	840	840	840	1,330	840				11,340
Fishery Development @P0.35/pc.														
Fingerlings (pcs.)	672,600	672,600	960,450	567,150	567,150	567,150	299,250	299,250	795,150	299,250				5,700,000
Cost (000) (grant)	236	236	337	199	199	199	105	105	279	105				2,000
II. Livelihood for Lahar Affected Areas														
Basket Technology @P10,000/ha.														
Target (has.)	67	67	267	44										445
Cost (000) (grant)	670	670	2,670	440										4,450
Organic Farming @P10,000/ha.														
Target (has.)	15	31	70	17	1		13		11			12		170
Cost (000) (grant)	150	310	700	170	10		130		110			120		1,700
Forage Production @P20,000														
Target (has.)	29	29	43	22					22					145
Cost (000) (grant)	580	580	860	440					440					2,900
III. Livelihood for Settlement Areas														
Farming (Provision of farm inputs @P2,500/family)														
Cost (000) (grant)		6,500										500		7,050
No. of Families		2,500										200		2,700
Livestock (Animal Dispersal)														
Cost (000) (grant)		5,000										750		5,750
No. of Families		2,000										300		2,300
IV. Administrative Support														
Total	4,156	15,816	7,857	3,069	2,029	2,019	2,055	1,925	3,279	1,925	1,250	120	3,500	49,000
Loan	2,520	2,520	3,290	1,820	1,820	1,820	1,820	1,820	2,450	1,820	1,250	-	-	22,950
Grant	1,636	13,296	4,567	1,249	209	199	235	105	829	105	-	120	3,500	26,050

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