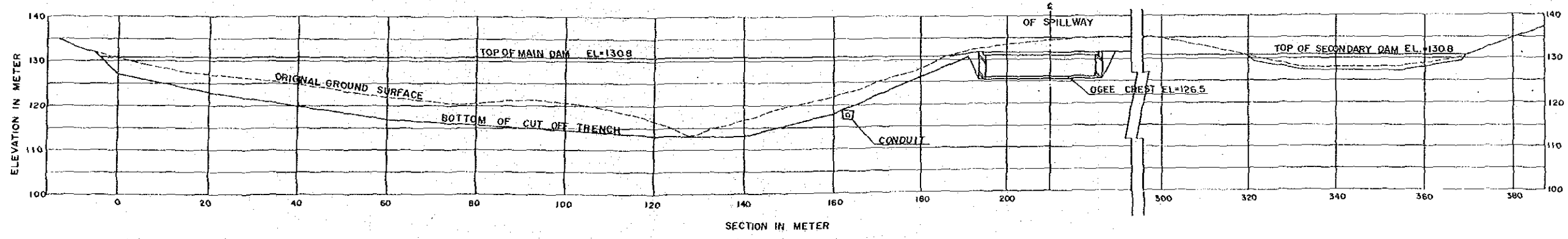
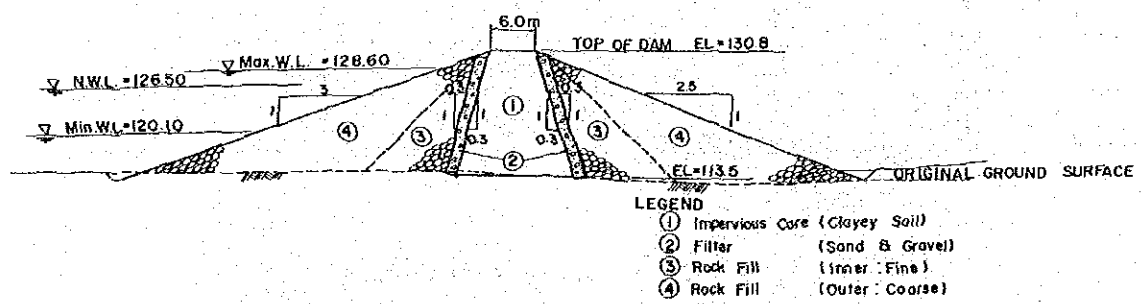


GENERAL PLAN

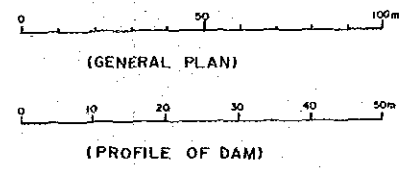


PROFILE ON  $\frac{1}{2}$  OF DAM

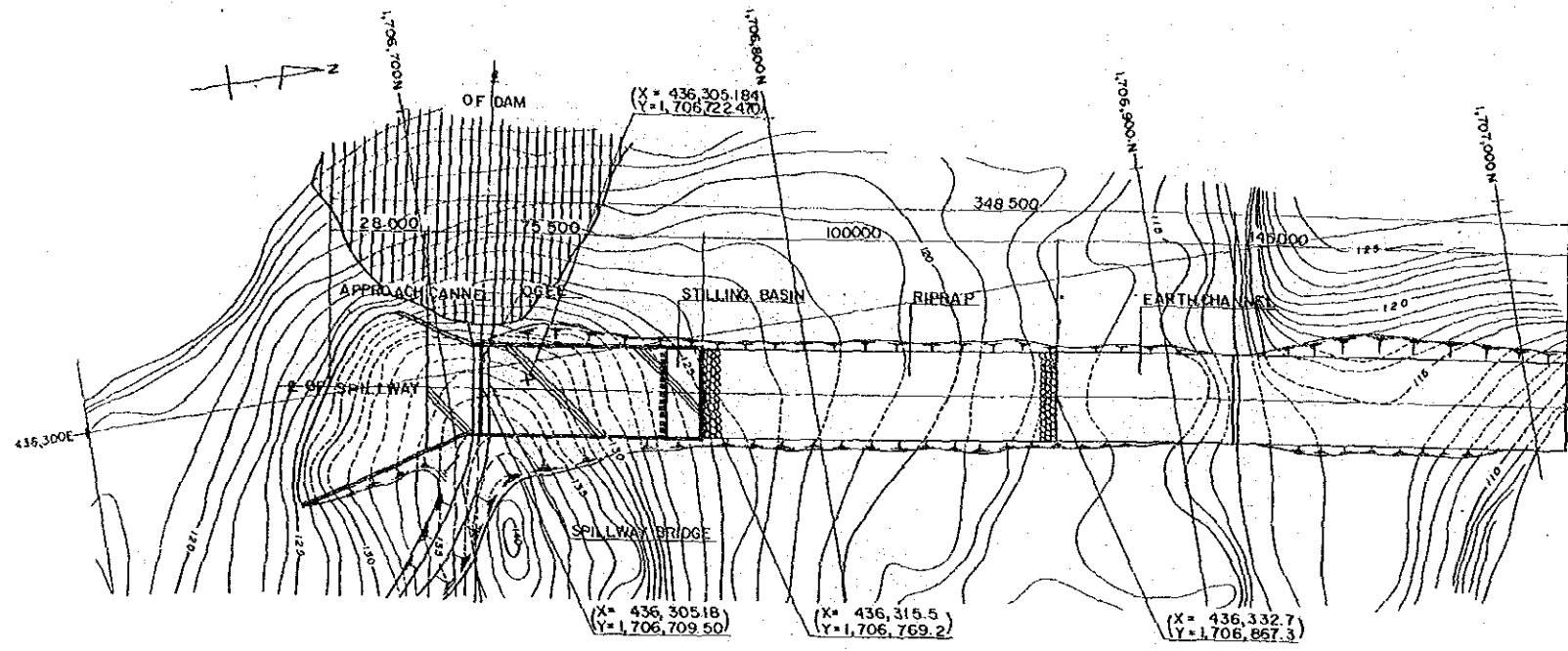


TYPICAL SECTION OF DAM

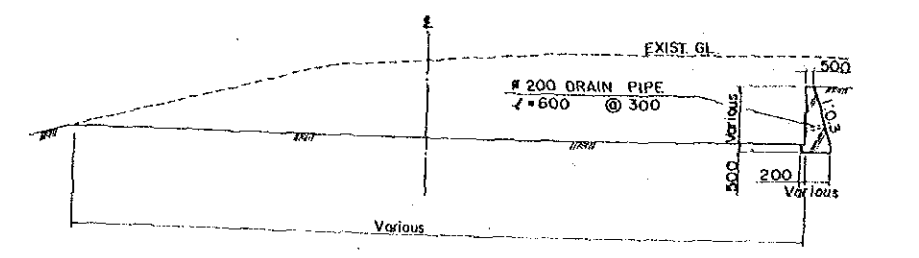
- LEGEND
- ① Impervious Core (Clayey Soil)
  - ② Filter (Sand & Gravel)
  - ③ Rock Fill (Inner: Fine)
  - ④ Rock Fill (Outer: Coarse)



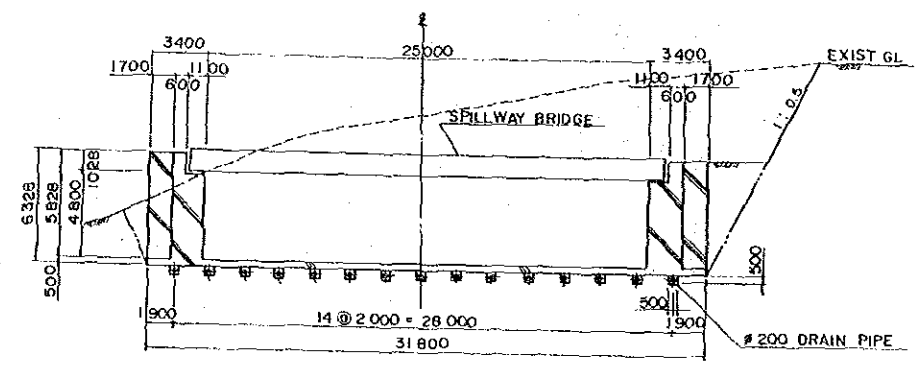
THE REPUBLIC OF PHILIPPINES	
NATIONAL IRRIGATION ADMINISTRATION	
WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT	
PANGASAN DAM	
GENERAL PLAN, PROFILE AND TYPICAL SECTION OF DAM	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PLATE 10



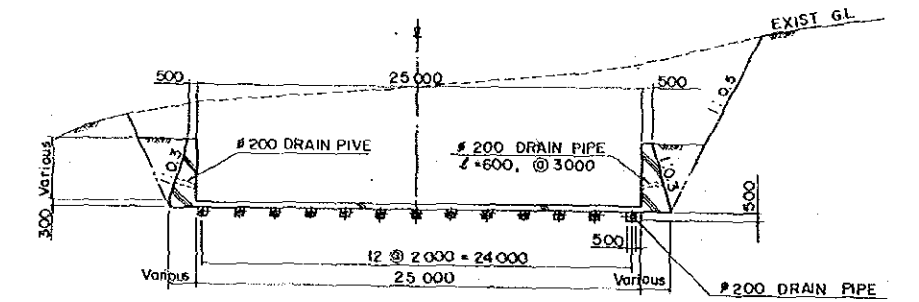
PLAN OF SPILLWAY



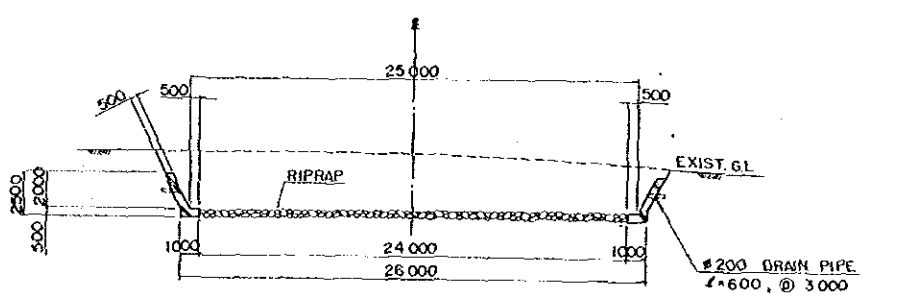
SECTION a-a



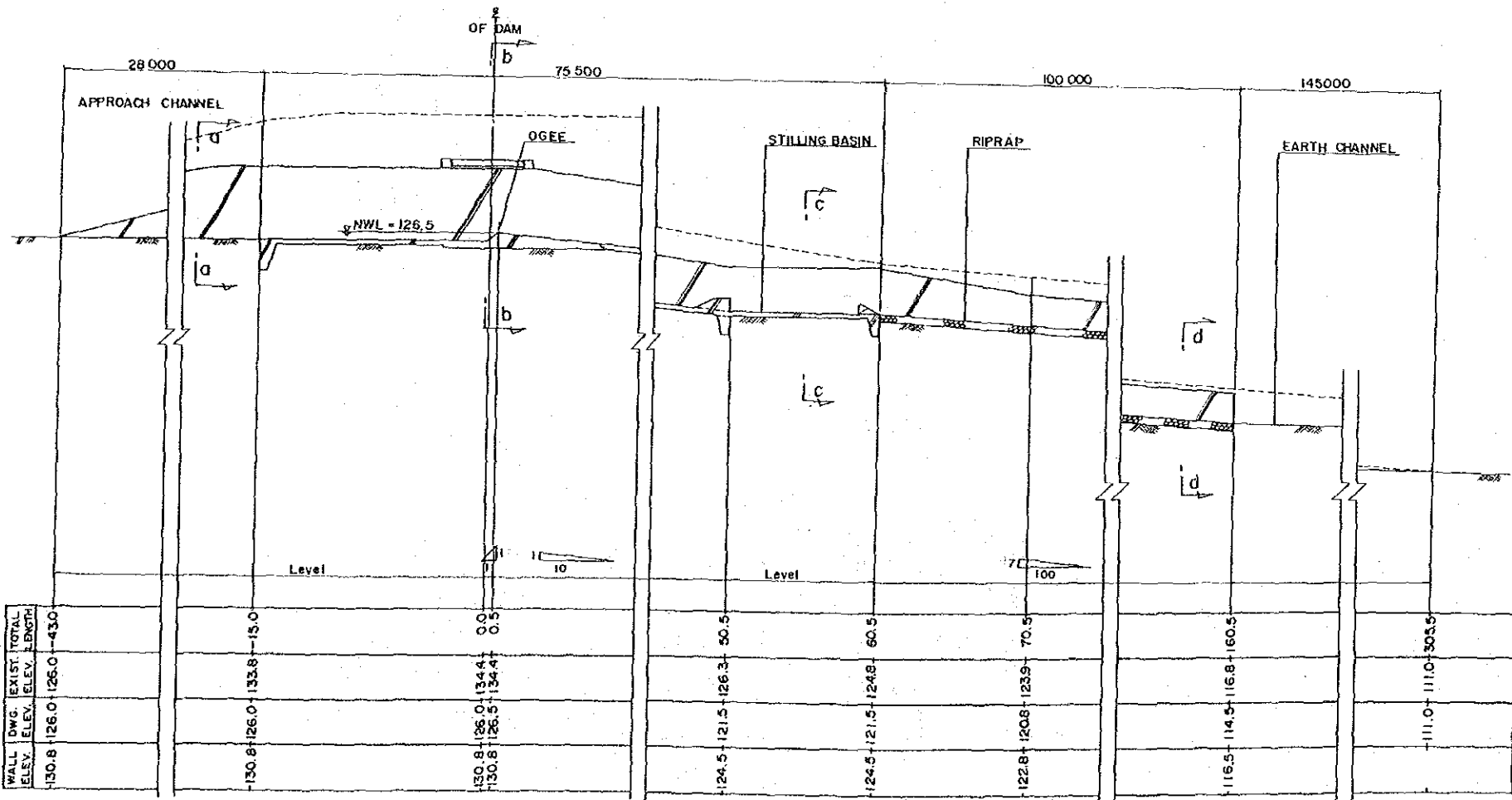
SECTION b-b



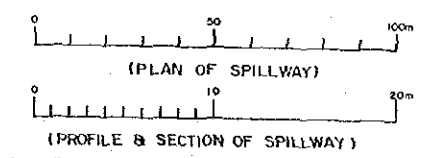
SECTION c-c



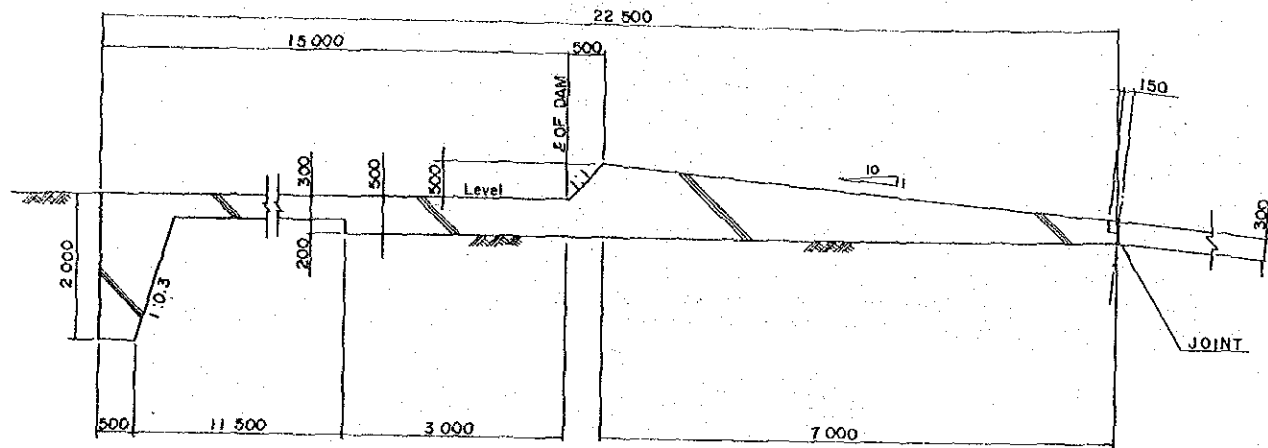
SECTION d-d



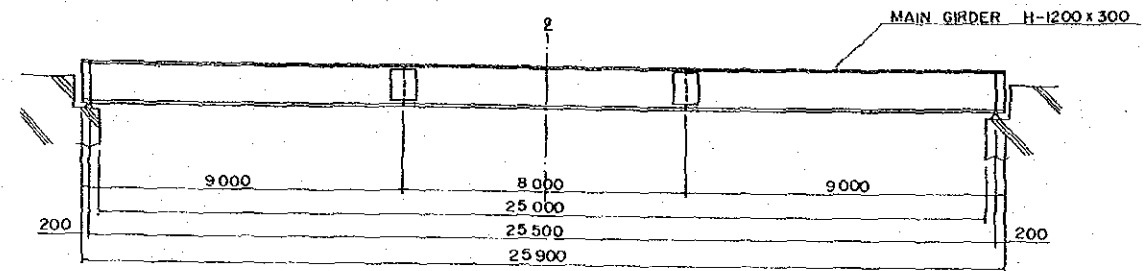
PROFILE ON E OF SPILLWAY



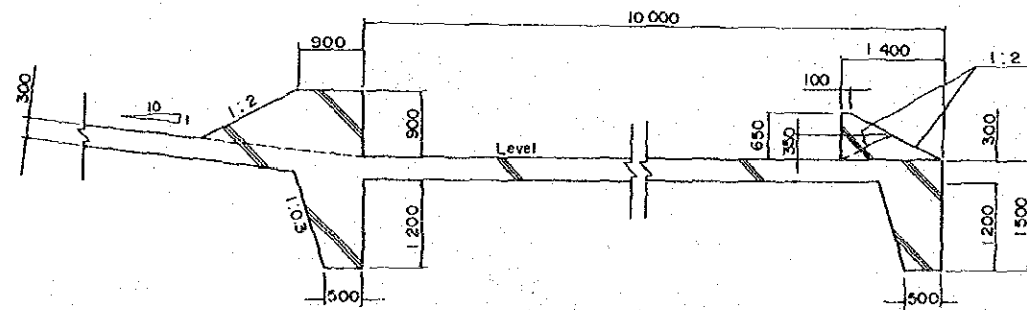
THE REPUBLIC OF PHILIPPINES  
 NATIONAL IRRIGATION ADMINISTRATION  
 WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT  
 PANGASAN DAM  
 PLAN, PROFILE AND SECTION OF SPILLWAY  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) PLATE 11



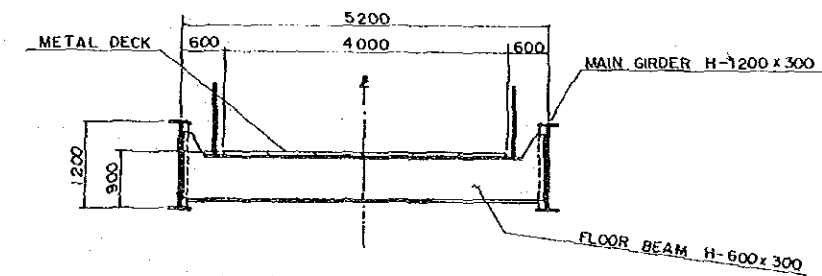
SECTION OF OGEE



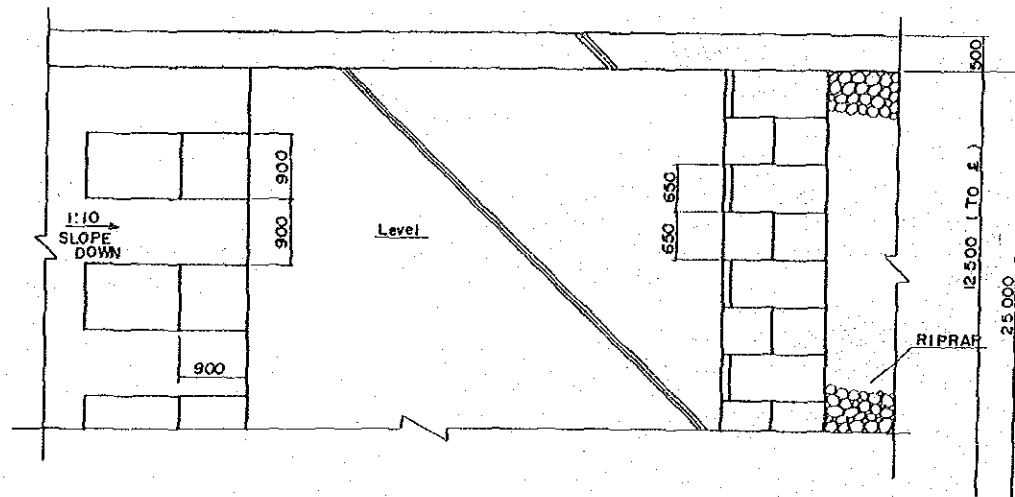
ELEVATION OF SPILLWAY BRIDGE



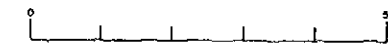
SECTION OF STILLING BASIN



CROSS SECTION OF SPILLWAY BRIDGE



PLAN OF STILLING BASIN

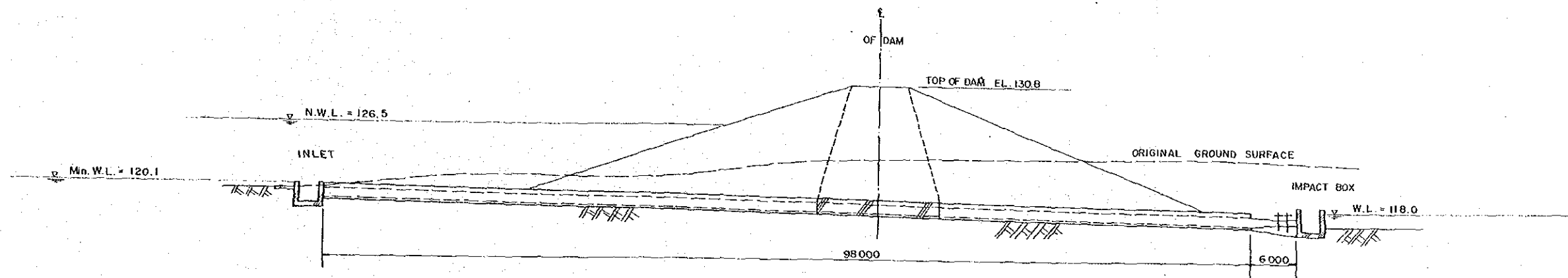


(OGEE & STILLING BASIN)

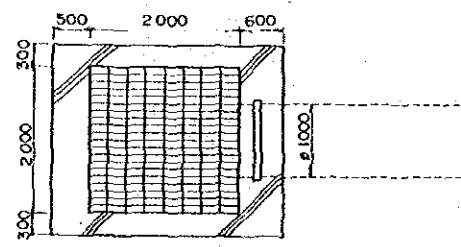


(SPILLWAY BRIDGE)

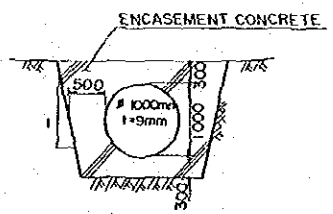
THE REPUBLIC OF PHILIPPINES	
NATIONAL IRRIGATION ADMINISTRATION	
WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT	
PANGASAN DAM	
DETAIL OF SPILLWAY	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PLATE 12



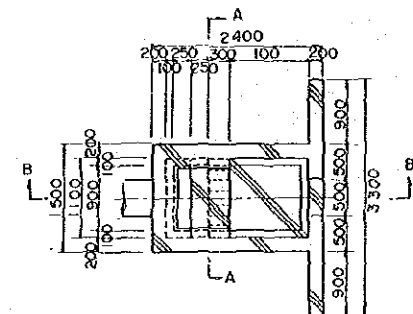
PROFILE ON  $\epsilon$  OF OUTLET WORKS CONDUIT



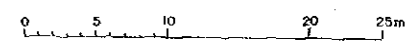
PLAN OF INLET



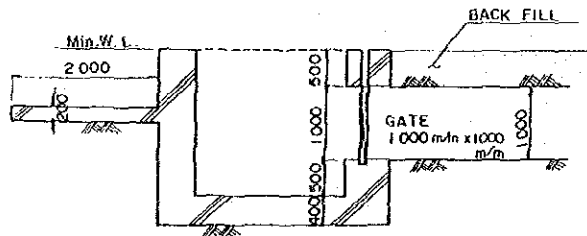
SECTION OF CONDUIT IN CORE TRENCH



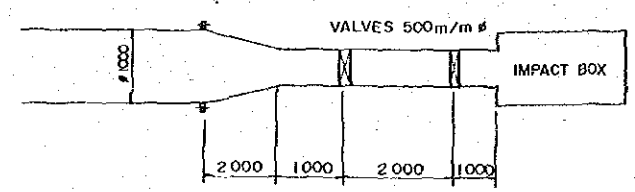
PLAN OF IMPACT BOX



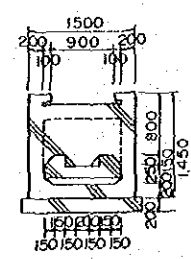
(PROFILE OF OUTLET)



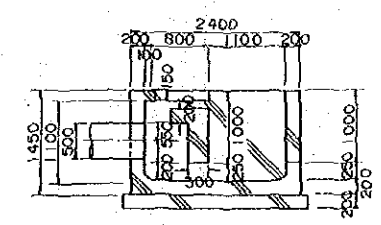
SECTION OF INLET



VALVES OF OUTLET



SECTION A-A

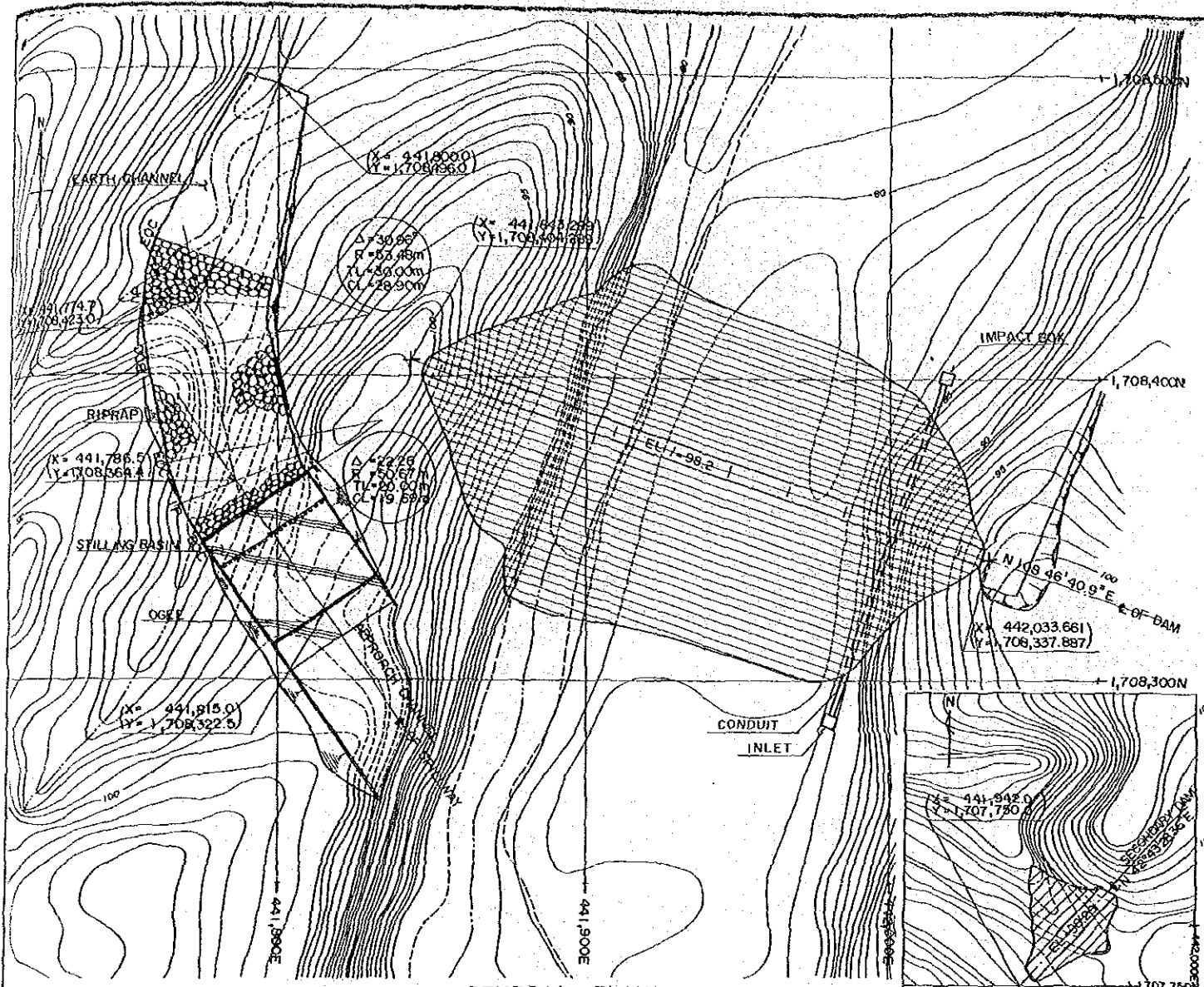


SECTION B-B

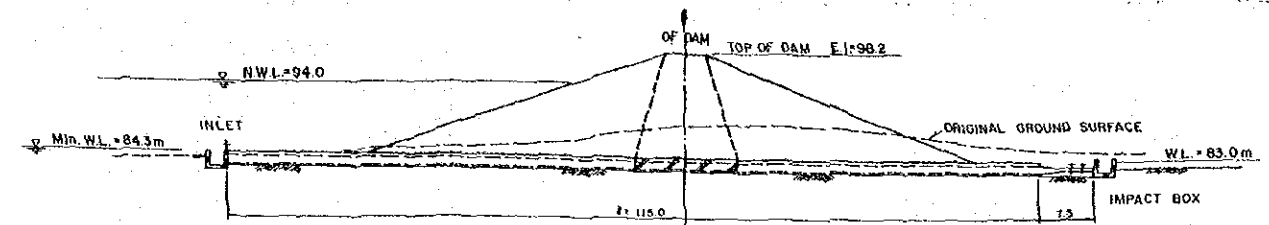


(DETAIL OF OUTLET)

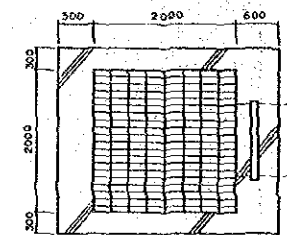
THE REPUBLIC OF PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT	
PANGASAN DAM DETAIL OF OUTLET WORKS	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PLATE 13



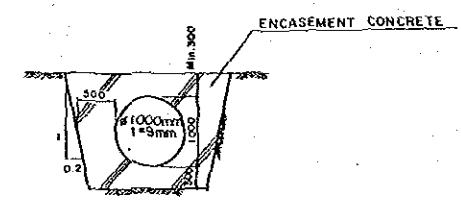
GENERAL PLAN



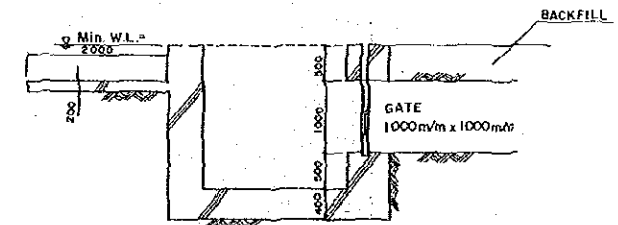
PROFILE ON & OF OUTLET WORKS CONDUIT



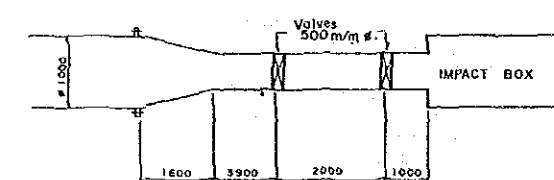
PLAN OF INLET



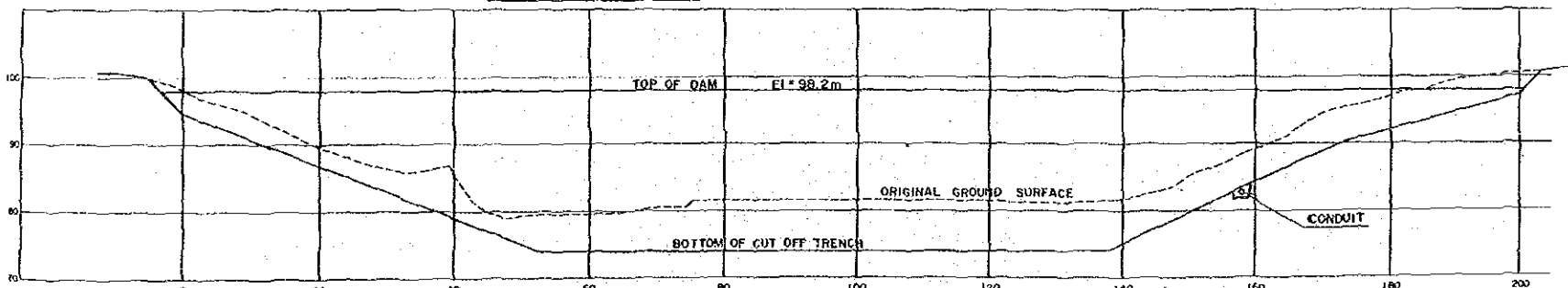
SECTION OF CONDUIT IN CORE TRENCH



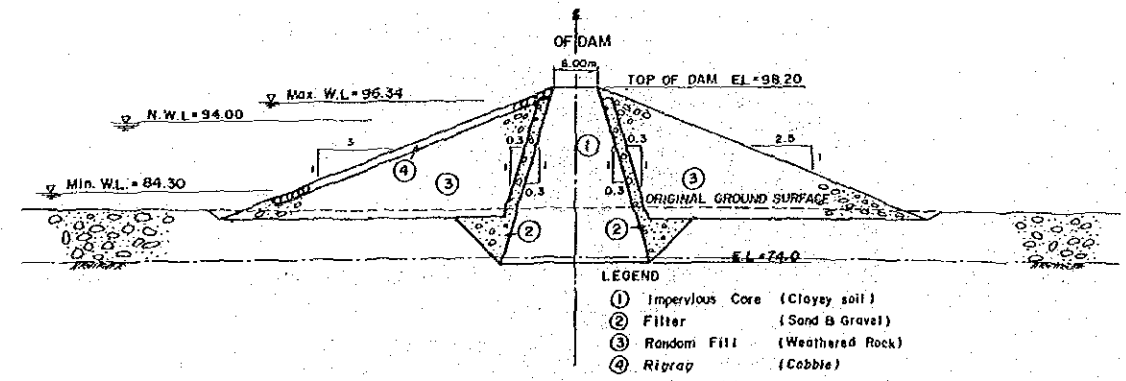
SECTION OF INLET



VALVES OF OUTLET

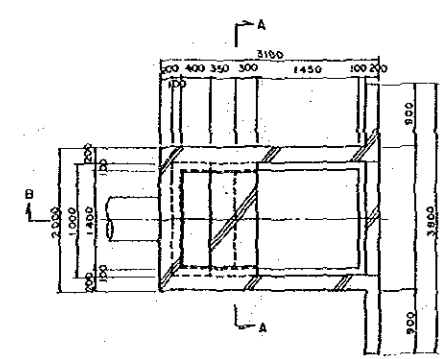


PROFILE ON & OF DAM

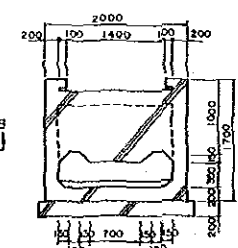


TYPICAL SECTION OF DAM

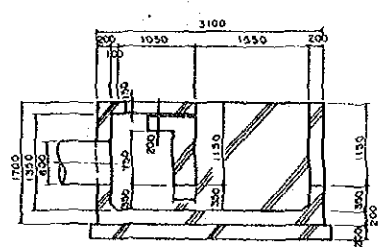
- LEGEND
- ① Impervious Core (Clayey soil)
  - ② Filter (Sand & Gravel)
  - ③ Random Fill (Weathered Rock)
  - ④ Riprap (Cobble)



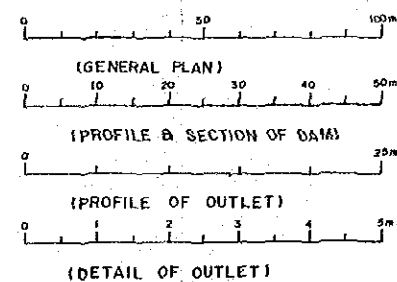
PLAN OF IMPACT BOX



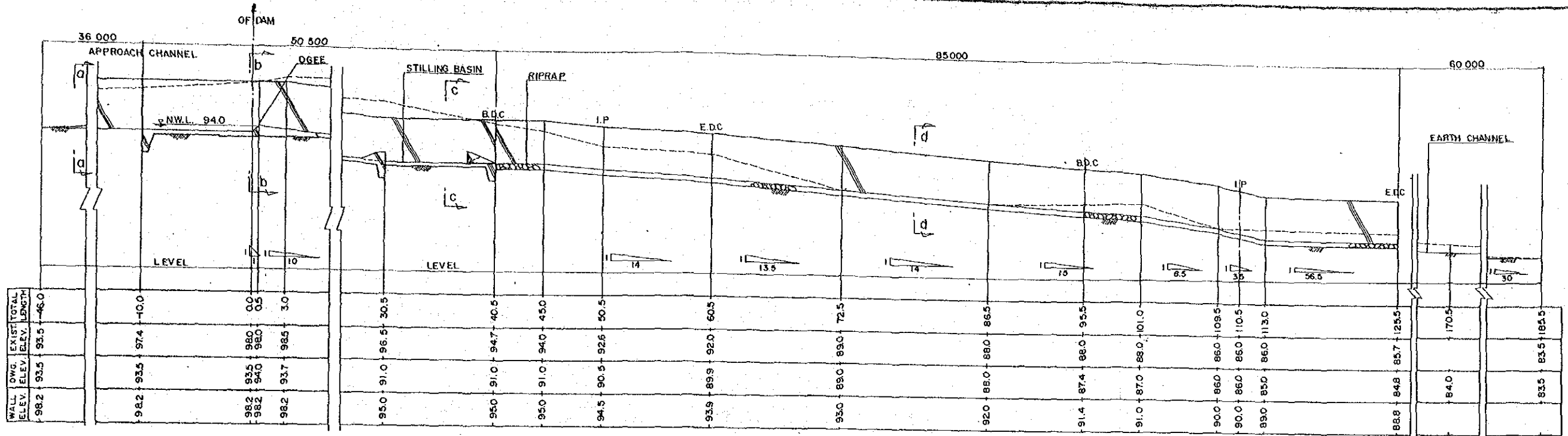
SECTION A-A



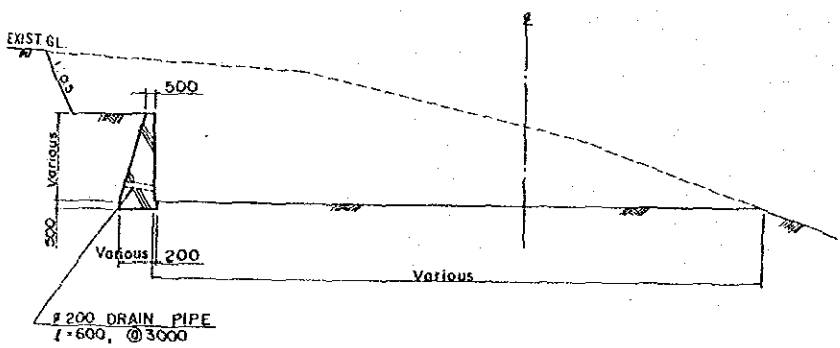
SECTION B-B



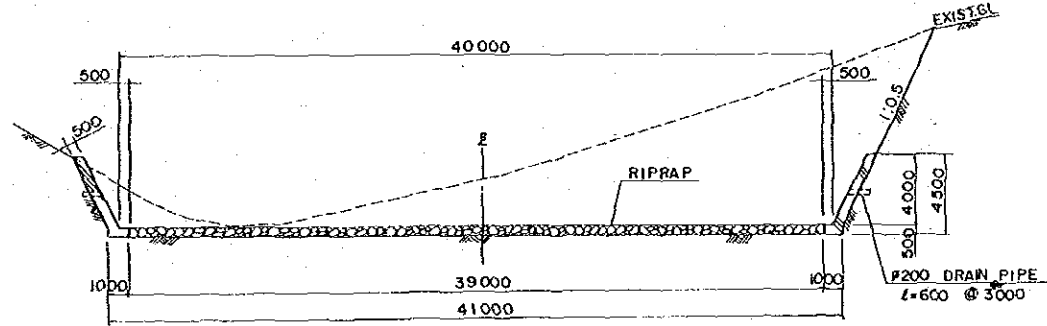
THE REPUBLIC OF PHILIPPINES	
NATIONAL IRRIGATION ADMINISTRATION	
WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT	
BALNGES DAM	
PLAN, PROFILE AND TYPICAL SECTION OF DAM, DETAIL OF OUTLET WORKS	
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	PLATE 14



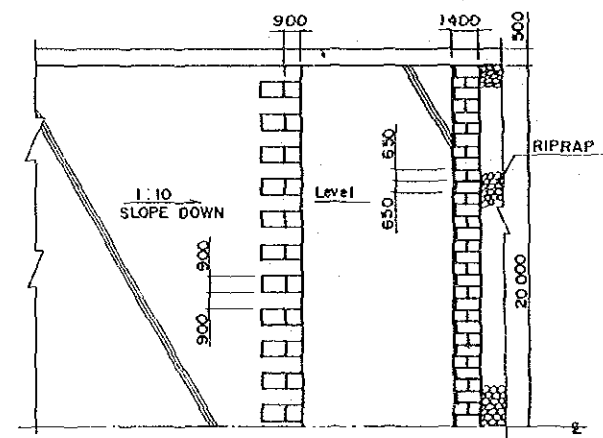
PROFILE ON 2 OF SPILLWAY



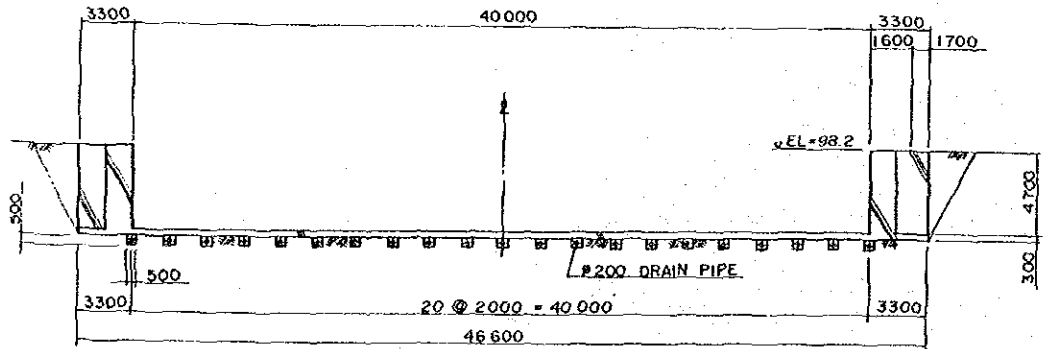
SECTION a-a



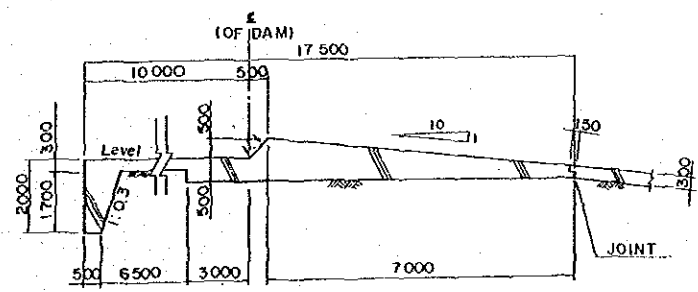
SECTION d-d



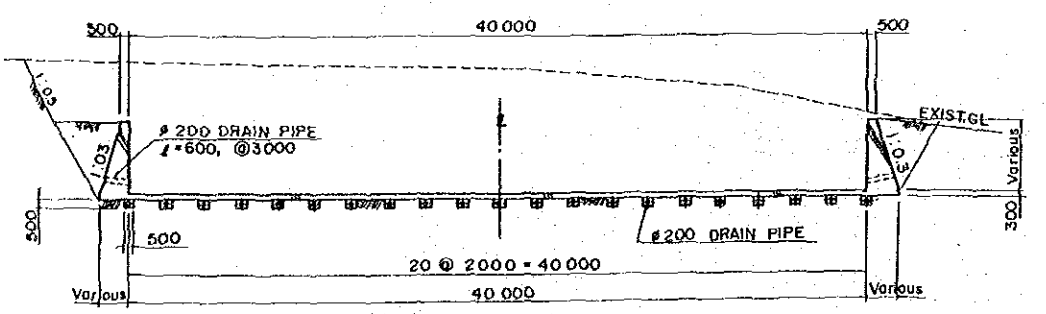
PLAN OF STILLING BASIN



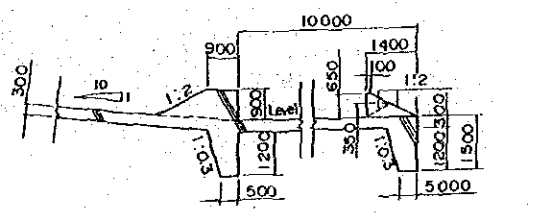
SECTION b-b



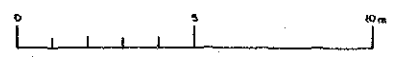
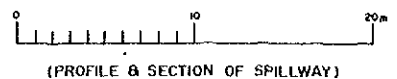
SECTION OF OGEE



SECTION c-c

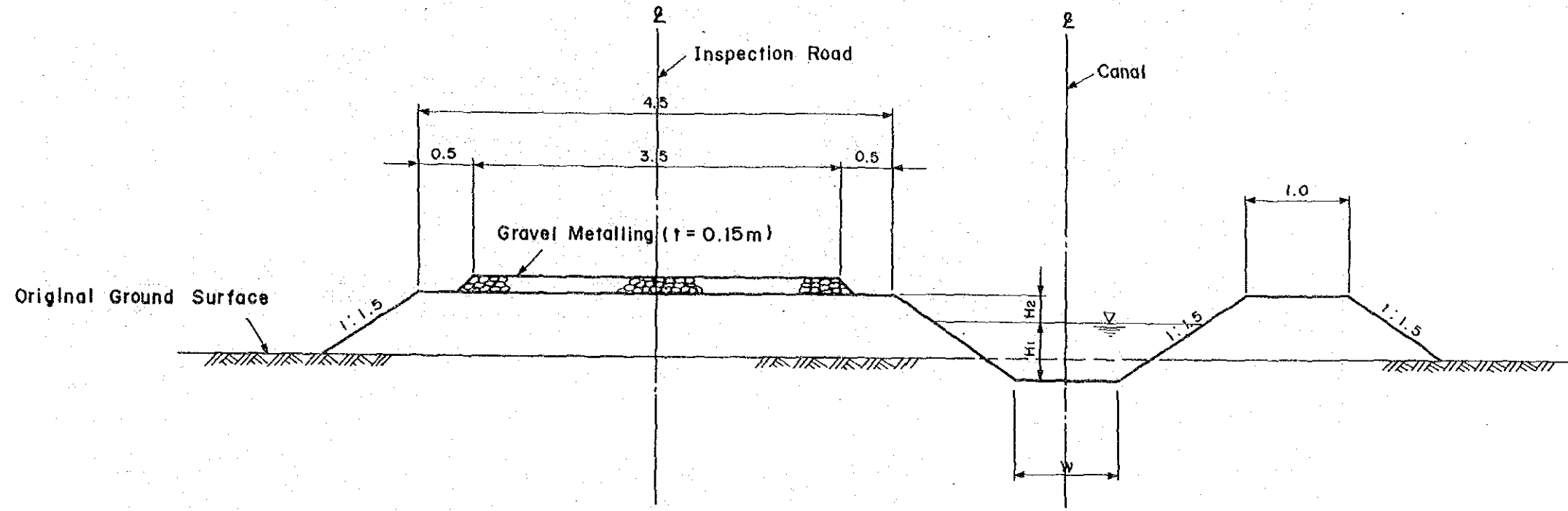


SECTION OF STILLING BASIN



THE REPUBLIC OF PHILIPPINES  
 NATIONAL IRRIGATION ADMINISTRATION  
 WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT  
 BALNGES DAM  
 DETAIL OF SPILLWAY  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) PLATE 15

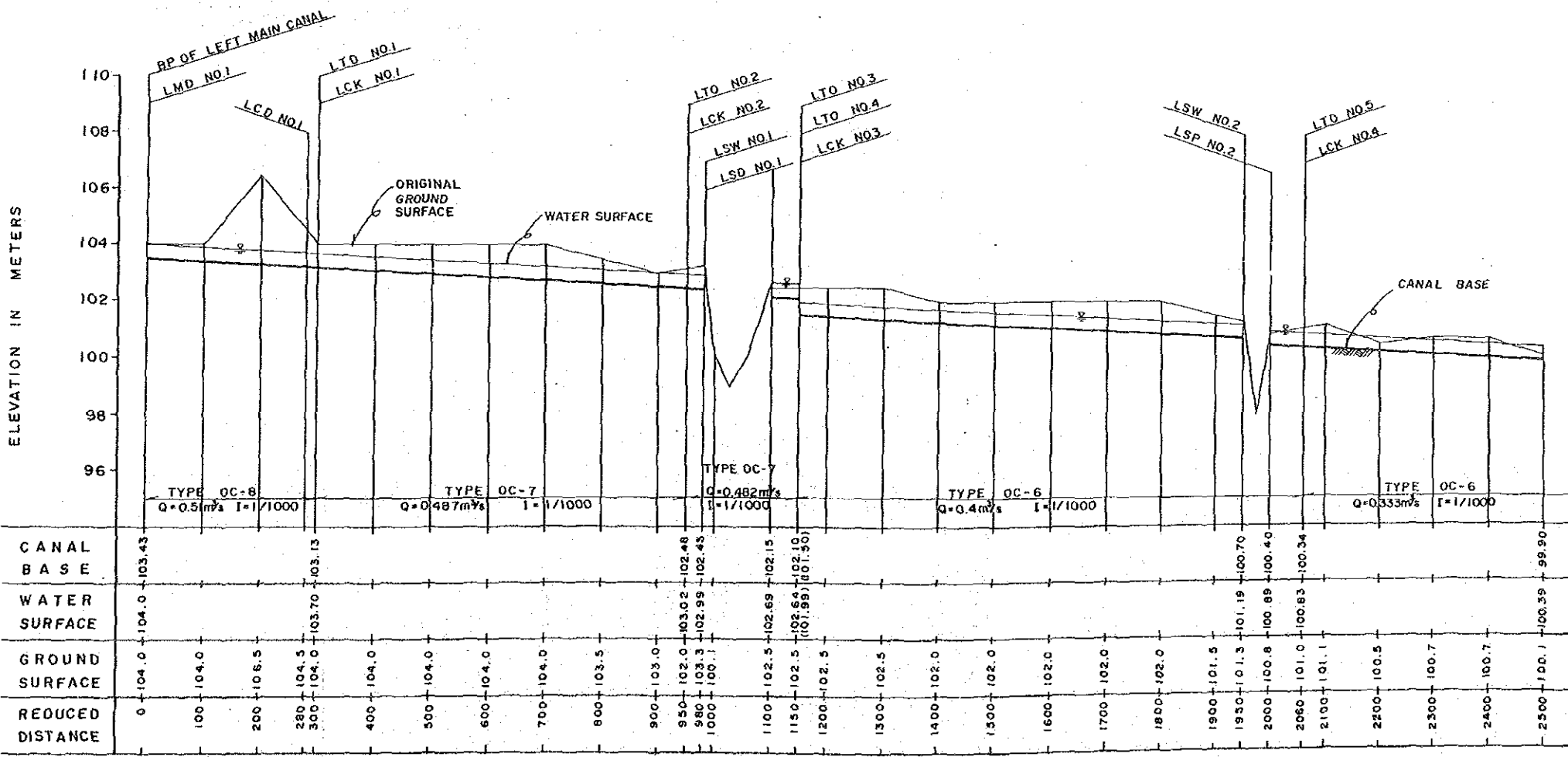
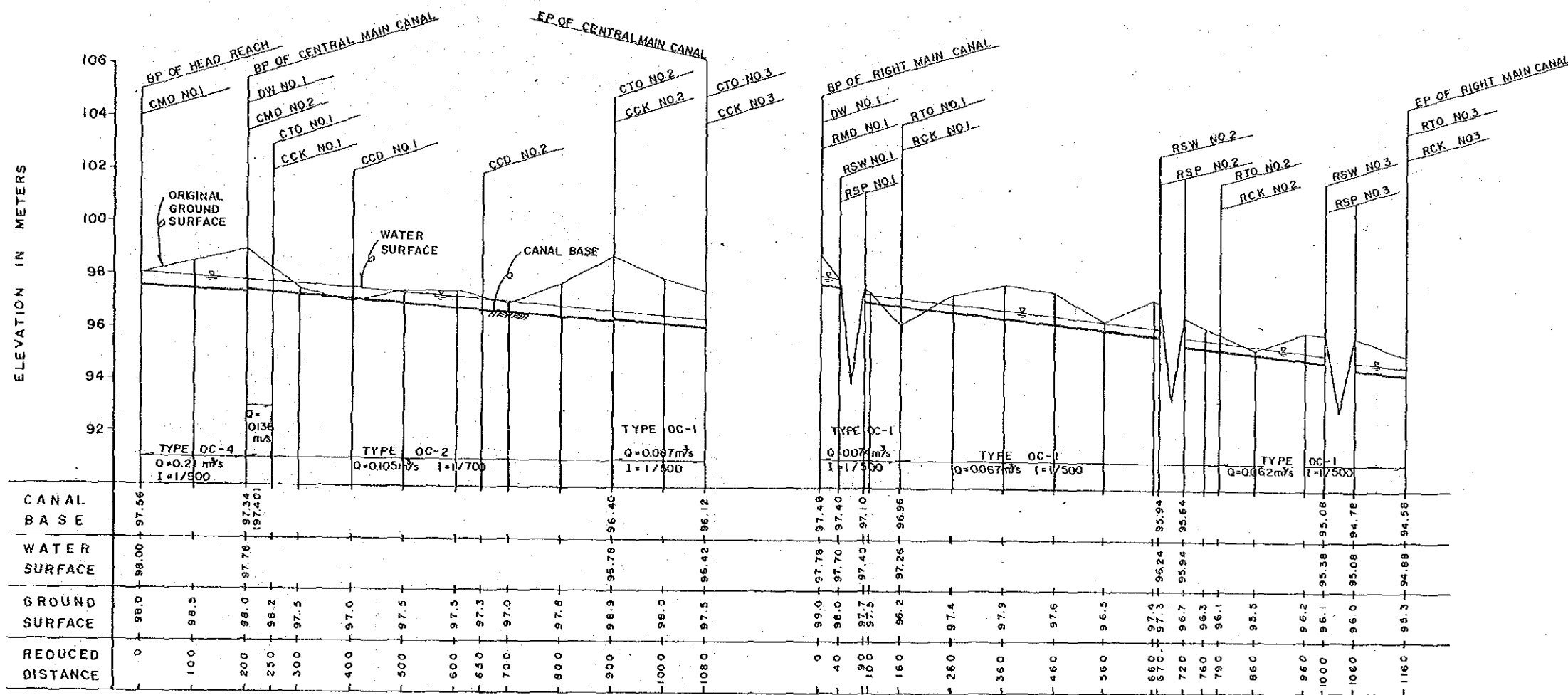
# IRRIGATION CANAL & INSPECTION ROAD



**DIMENSION**

(Unit : m)

TYPE	DISCHARGE (m <sup>3</sup> /s)	GRADIENT	W	H <sub>1</sub>	H <sub>2</sub>
OC - 1	0.10	1 / 500	0.30	0.30	0.30
OC - 2	0.15	1 / 700	0.38	0.38	0.30
OC - 3	0.20	1 / 800	0.53	0.41	0.30
OC - 4	0.25	1 / 900	0.66	0.44	0.30
OC - 5	0.30	1 / 1000	0.88	0.44	0.30
OC - 6	0.40	1 / 1000	0.98	0.49	0.30
OC - 7	0.50	1 / 1000	1.08	0.54	0.30
OC - 8	0.60	1 / 1000	1.14	0.57	0.30
OC - 9	0.70	1 / 1000	1.22	0.61	0.30



ABBREVIATIONS	
BP	BEGINNING POINT
EP	END POINT
MD	MEASURING DEVICE
TO	TURNOUT
CK	CHECK AND DROP
SW	SPILLWAY
SP	SYPHON
CD	CROSS DRAIN
RC	ROAD CROSSING
DW	DIVERSION WORKS

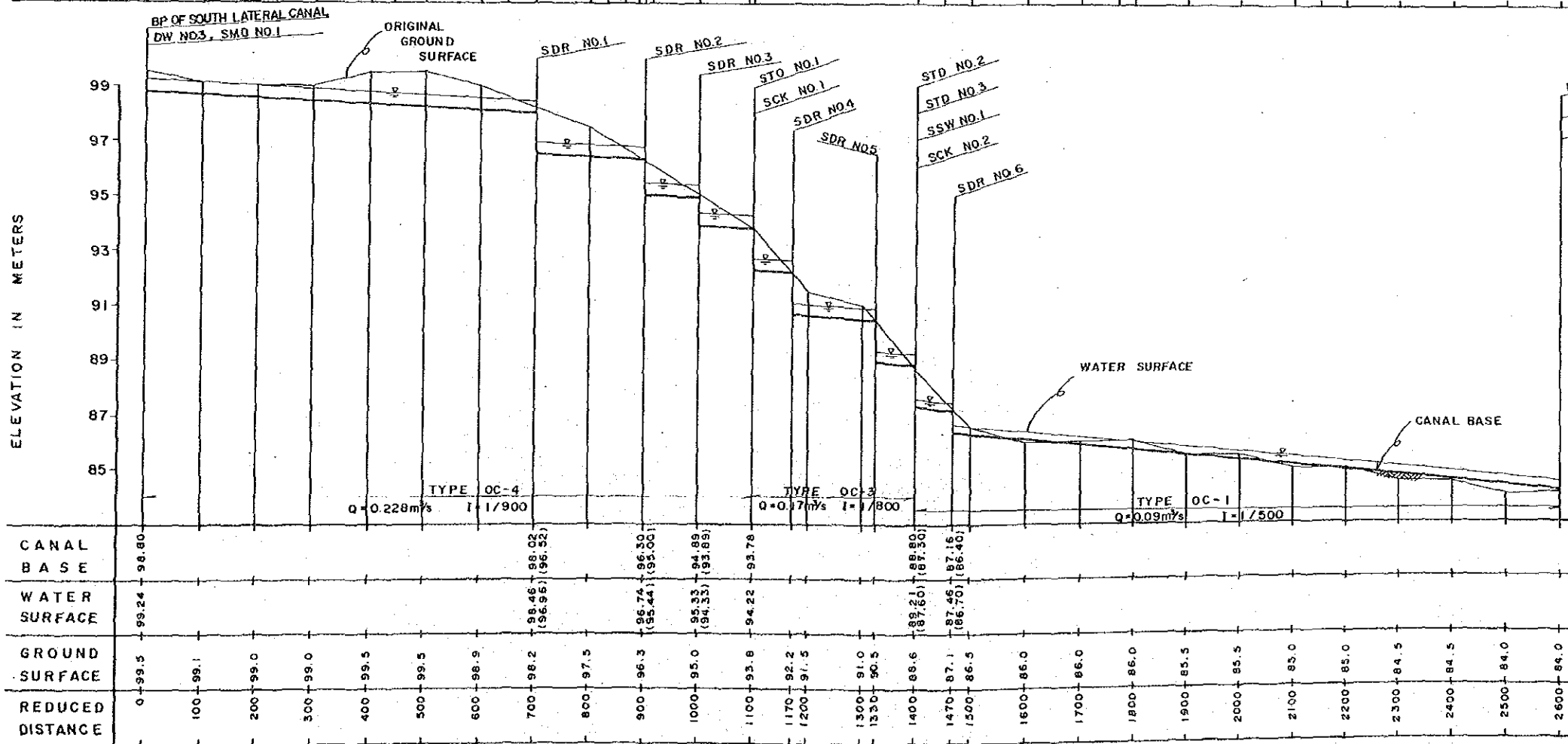
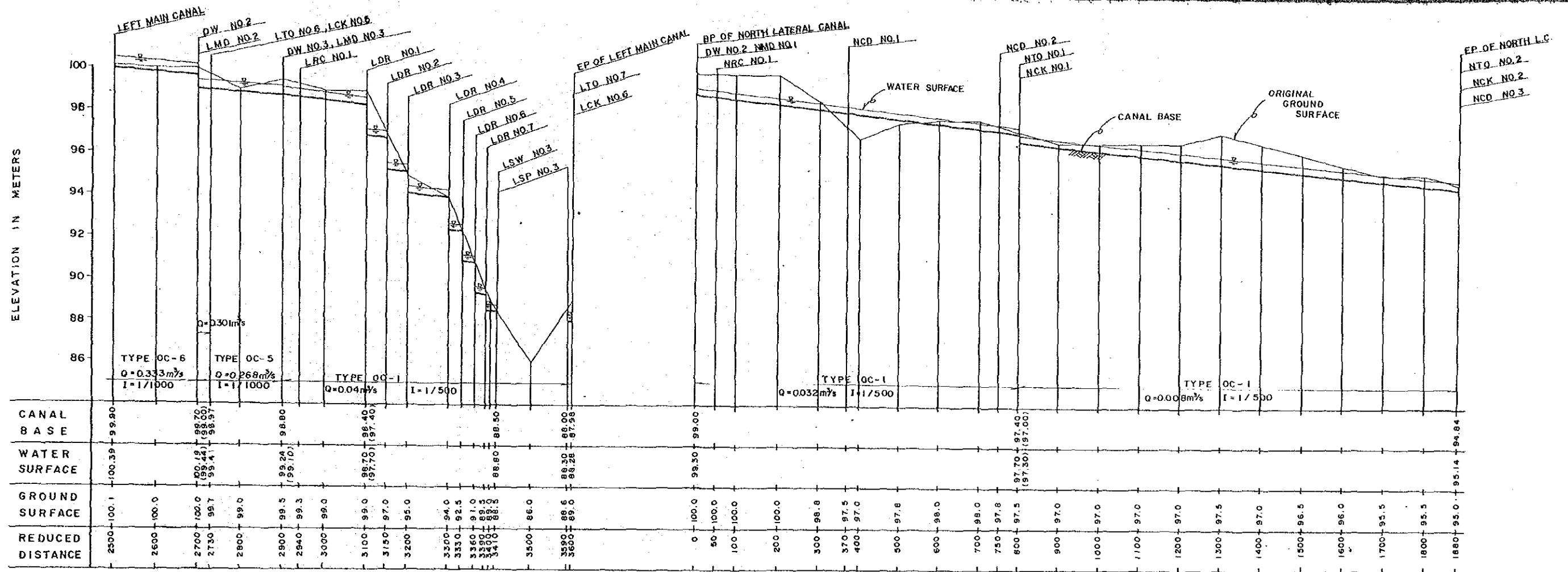
THE REPUBLIC OF PHILIPPINES  
NATIONAL IRRIGATION ADMINISTRATION

WESTERN BARRIOS IMPOUNDING IRRIGATION PROJECT

CANAL PROFILE OF MANGILLOG  
IRRIGATION SYSTEM (1/2)

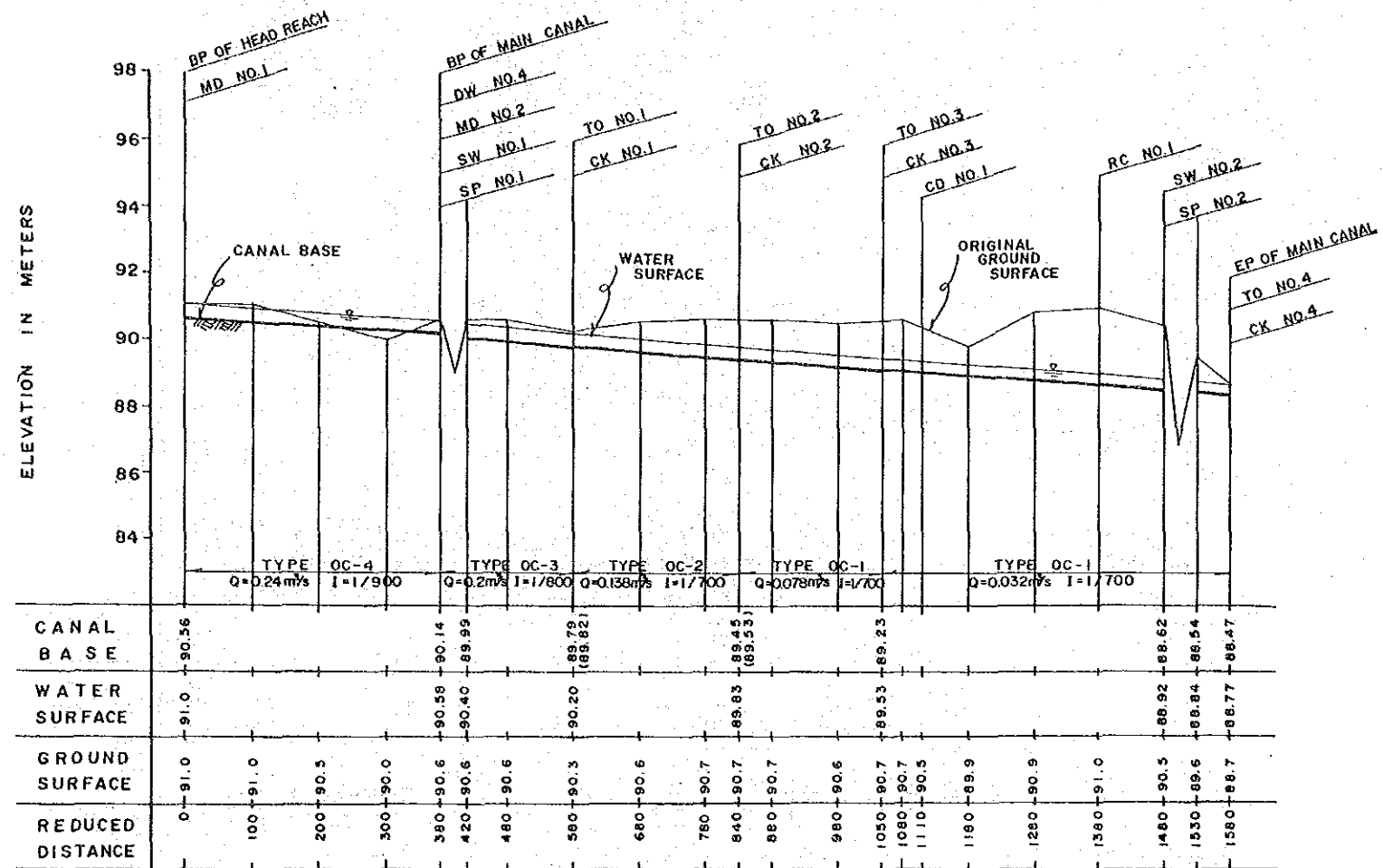
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) PLATE 17





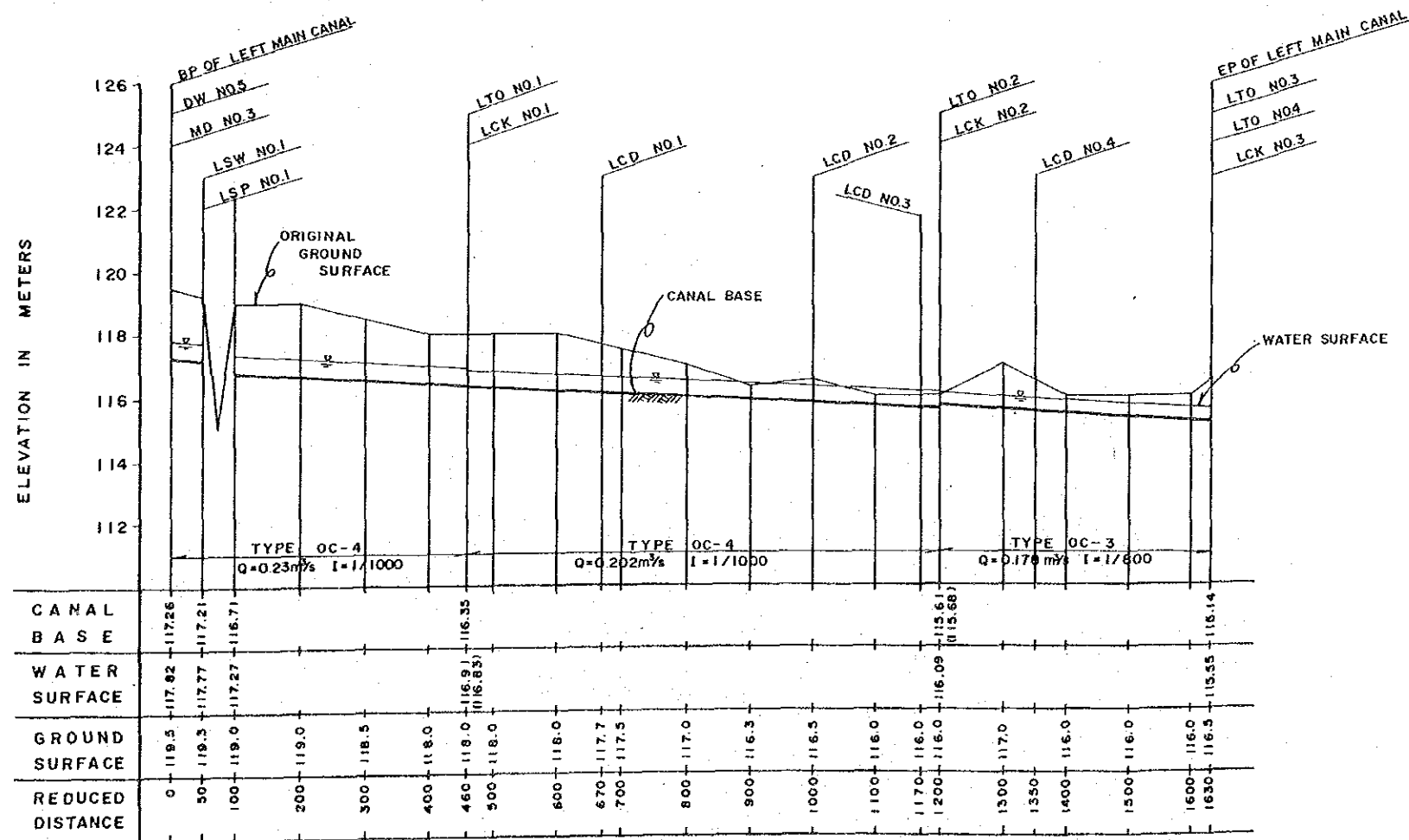
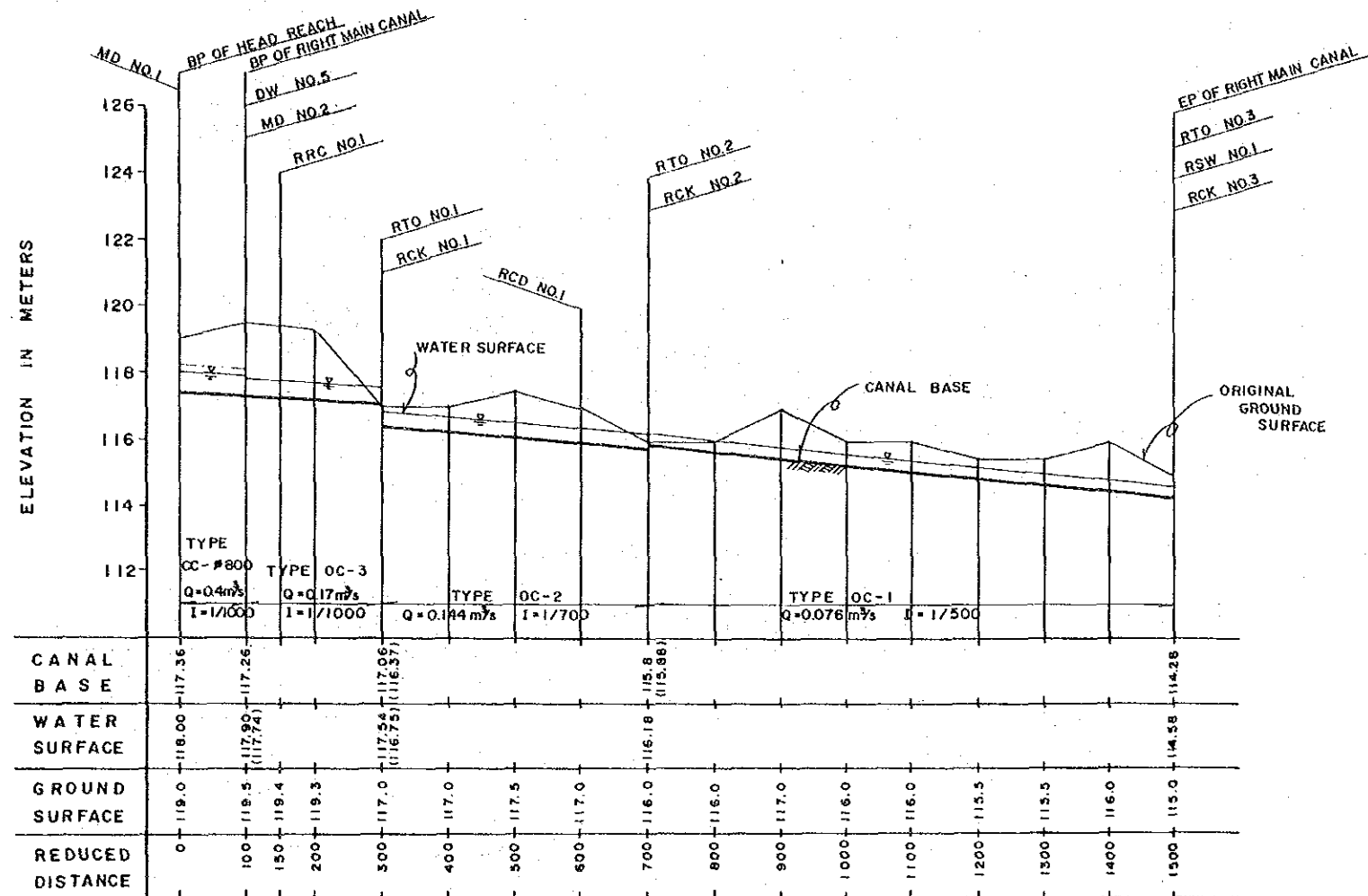
EP OF SOUTH L.C.  
STO NO. 4  
SCK NO. 3

ABBREVIATIONS	
BP	BEGINNING POINT
EP	END POINT
MD	MEASURING DEVICE
TO	TURNOUT
CK	CHECK AND DROP
SW	SPILLWAY
SP	SYPHON
CD	CROSS DRAIN
RC	ROAD CROSSING
DW	DIVERSION WORKS
DP	DROP



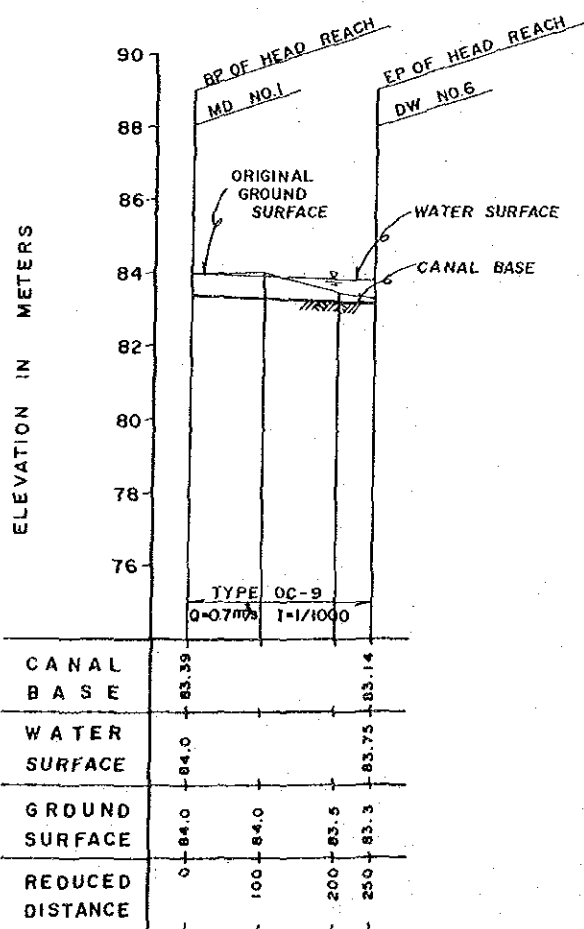
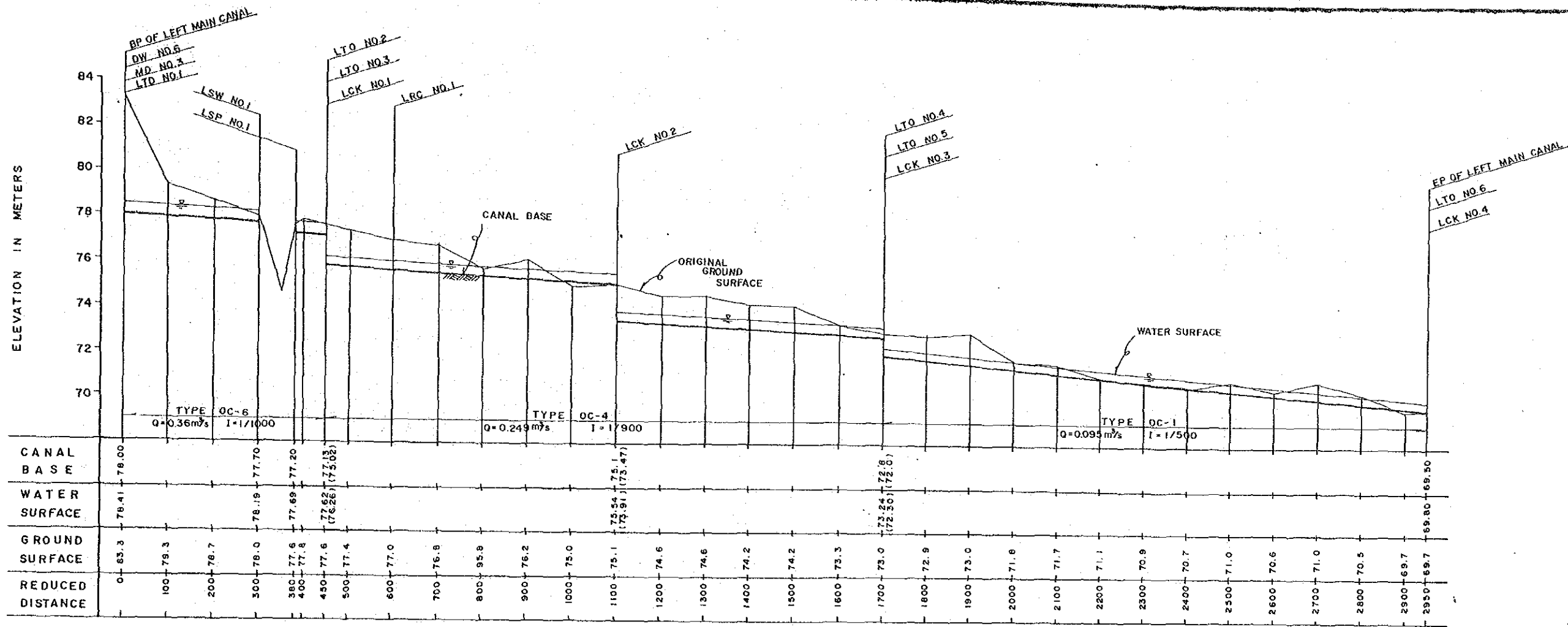
ABBREVIATIONS

- BP : BEGINNING POINT
- EP : END POINT
- MD : MEASURING DEVICE
- TO : TURNOUT
- CK : CHECK AND DROP
- SW : SPILLWAY
- SP : SYPHON
- CD : CROSS DRAIN
- RC : ROAD CROSSING
- DW : DIVERSION WORKS



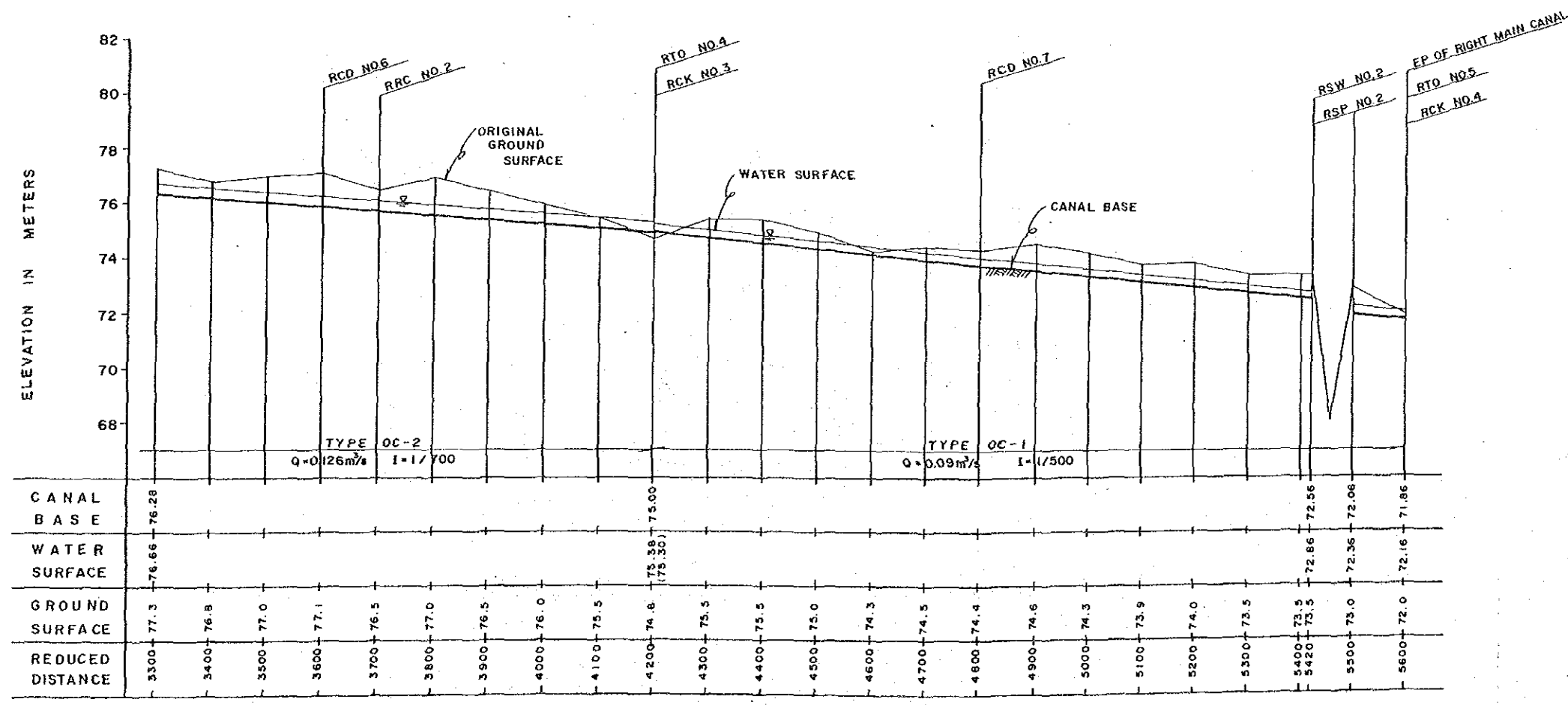
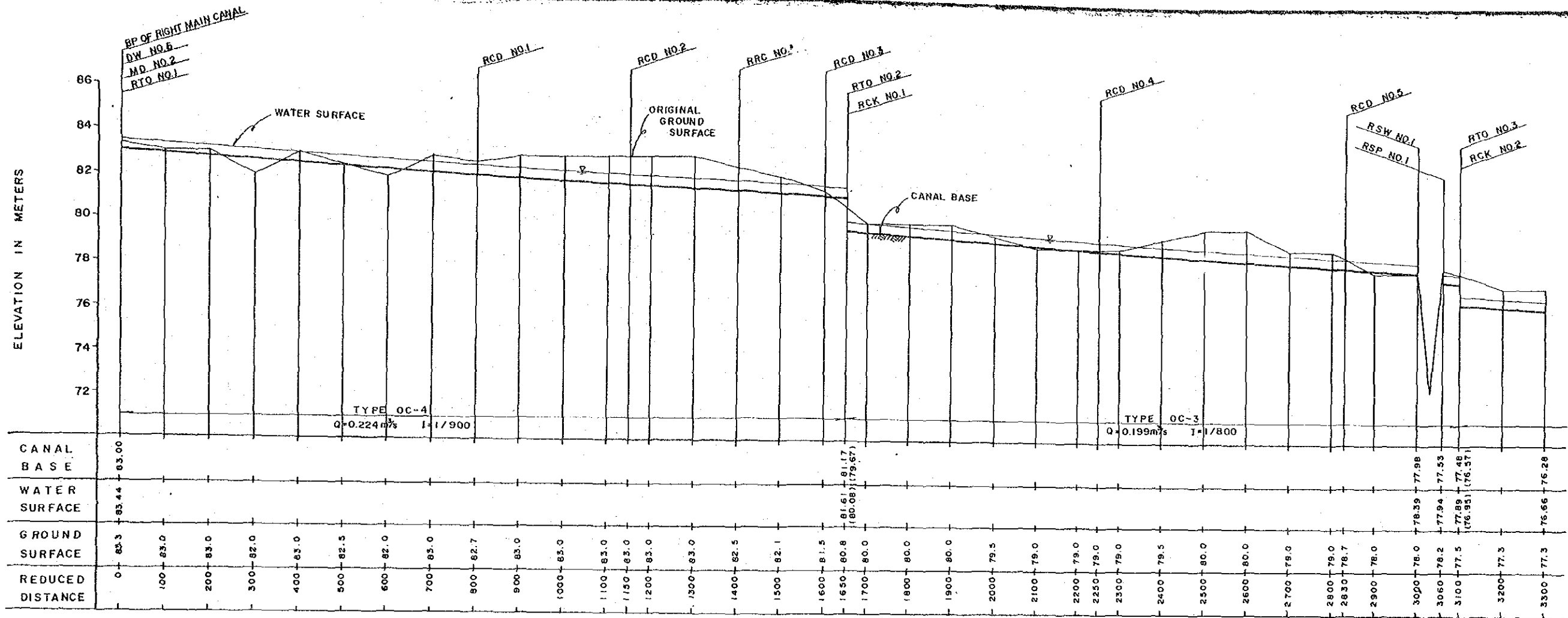
**ABBREVIATIONS**

- BP : BEGINNING POINT
- EP : END POINT
- MD : MEASURING DEVICE
- TO : TURNOUT
- CK : CHECK AND DROP
- SW : SPILLWAY
- SP : SYPHON
- CD : CROSS DRAIN
- RC : ROAD CROSSING
- DW : DIVERSION WORKS

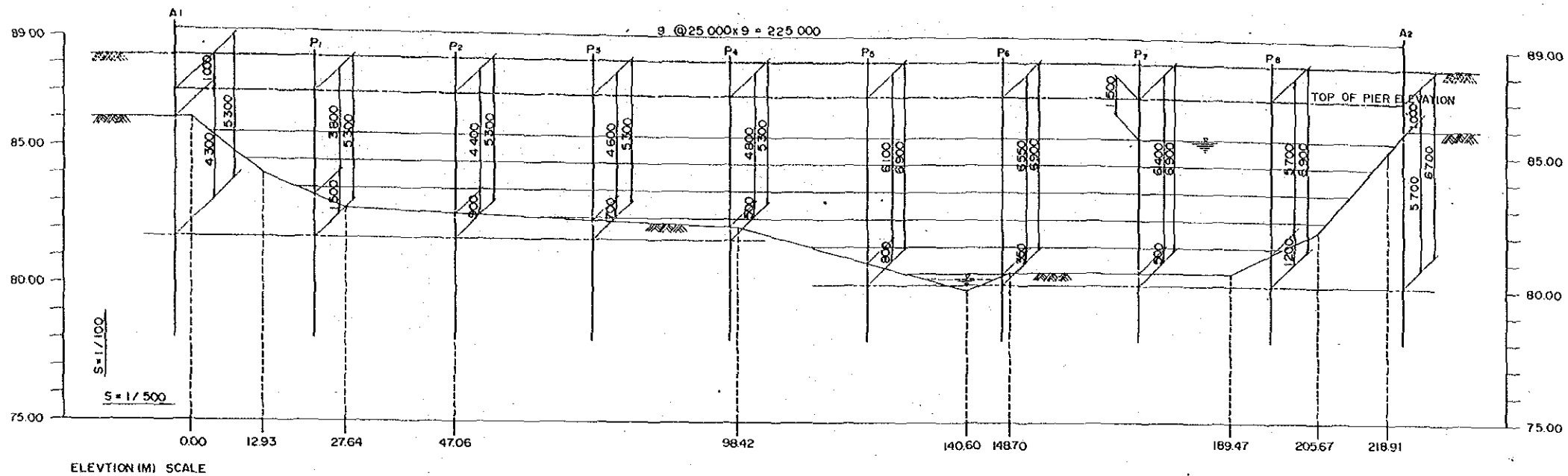


ABBREVIATIONS

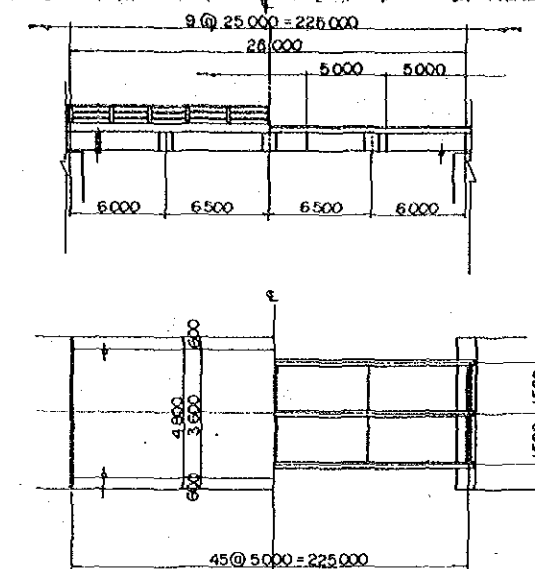
- BP : BEGINNING POINT
- EP : END POINT
- MD : MEASURING DEVICE
- TO : TURNOUT
- CK : CHECK AND DROP
- SW : SPILLWAY
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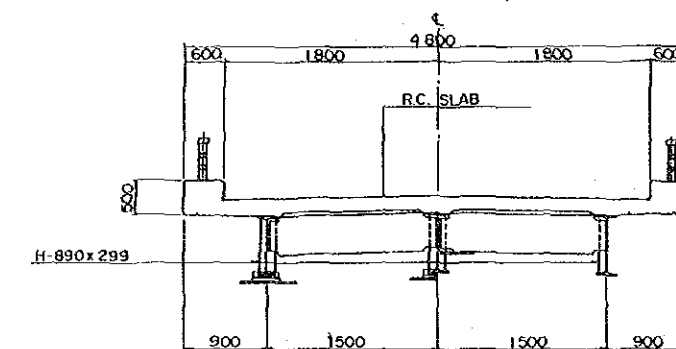
ABBREVIATIONS	
BP	BEGINNING POINT
EP	END POINT
MD	MEASURING DEVICE
TO	TURNOUT
CK	CHECK AND DROP
SW	SPILLWAY
SP	SYPHON
CD	CROSS DRAIN
RC	ROAD CROSSING
DW	DIVERSION WORKS



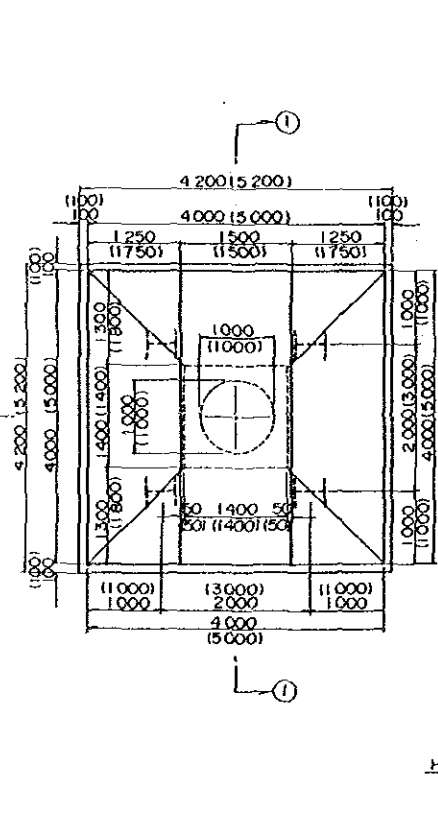
PROFILE OF BRIDGE



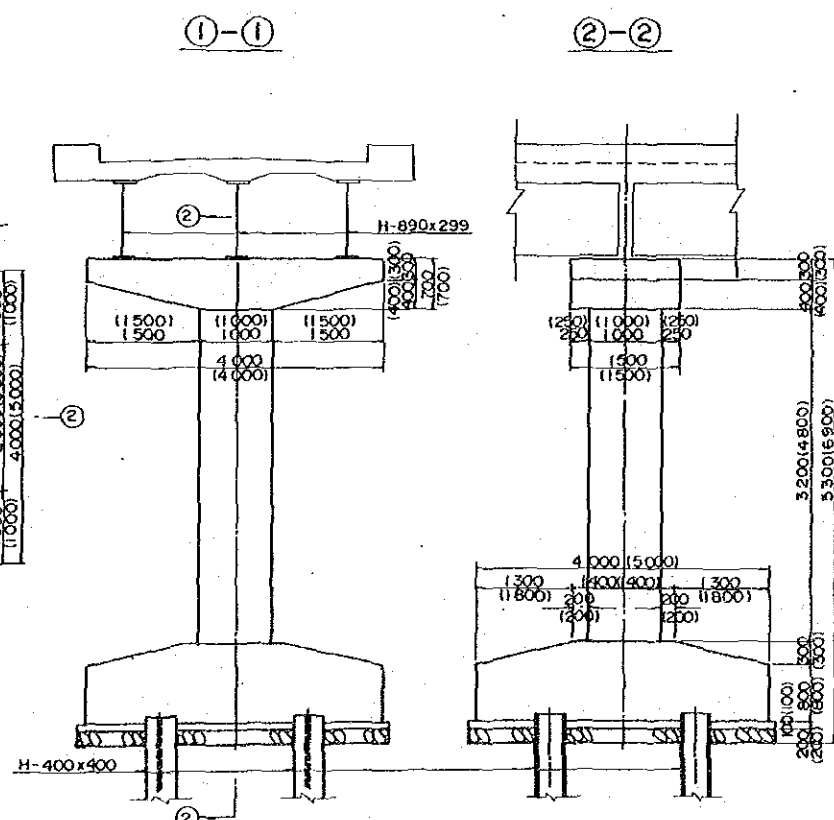
GENERAL PLAN OF SUPER STRUCTURE



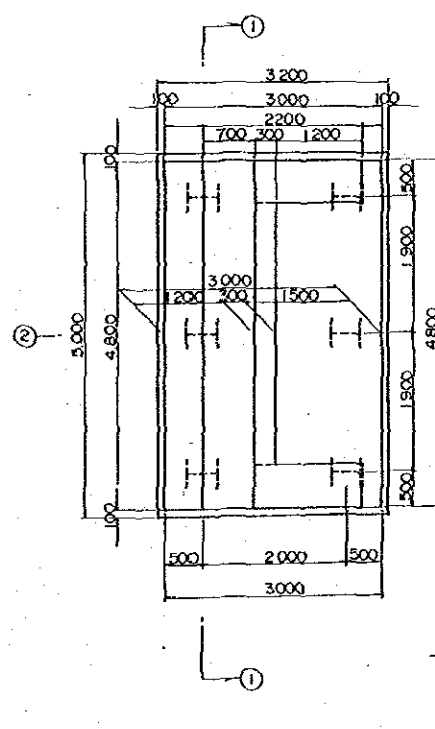
TYPICAL SECTION OF SUPER STRUCTURE



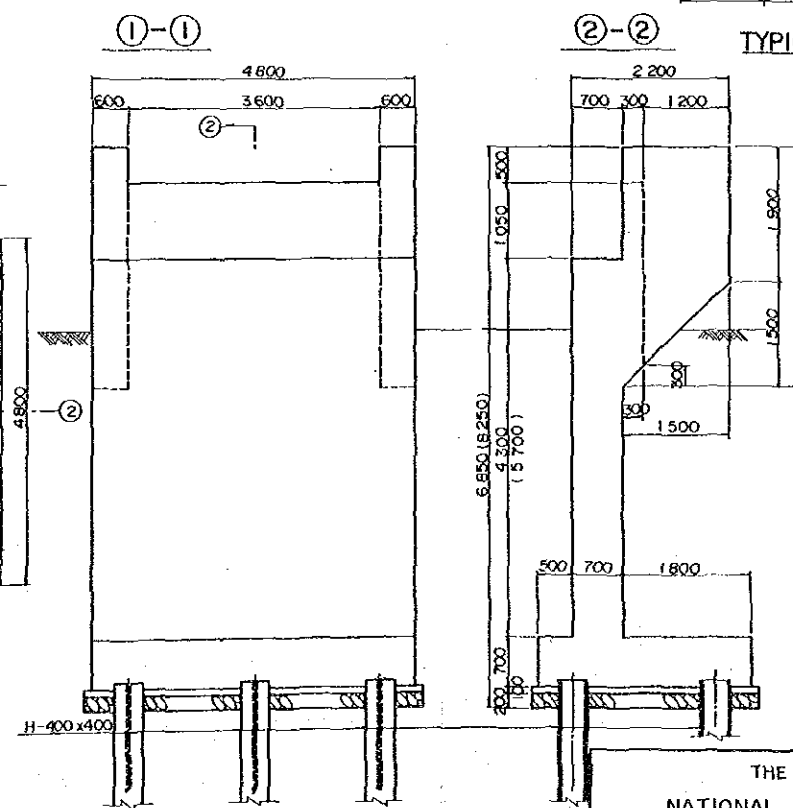
PLAN OF PIER P<sub>1</sub>~P<sub>4</sub> (P<sub>2</sub>~P<sub>3</sub>)



SECTION OF PIER P<sub>1</sub>~P<sub>4</sub> (P<sub>2</sub>~P<sub>3</sub>)



PLAN OF ABUTMENT A<sub>1</sub> (A<sub>2</sub>)



SECTION OF ABUTMENT A<sub>1</sub> (A<sub>2</sub>)



## Appendix





## Contents of Appendix

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## 1. Members of the Team

### 1-1 Basic Design Study

Name	Speciality	Organization
Mr. Yoshiro OKAMOTO	Team Leader	Senior Engineer, Agricultural Structure Improvement Bureau, Design Department
Mr. Tadanori SUZUKI	Project Coordination	First Basic Design Study Division, Grant Aid Planning & Survey Department, JICA
Mr. Masaharu MATSUI	Irrigation & Drainage Engineering	Nippon Giken Inc.
Mr. Yoichi KISHI	Dam Engineering	Nippon Giken Inc.
Mr. Kenichiro KONDO	Civil Engineering	Nippon Giken Inc.
Mr. Akihiro IRIE	Geology & Soil Mechanics	Nippon Giken Inc.
Mr. Kenichi KUDO	Topographic Survey Supervision	Nippon Giken Inc.
Mr. Shoji MIZUMA	Cost Estimates	Nippon Giken Inc.

### 1-2 Explanation for Draft Final Report

Name	Speciality	Organization
Mr. Yoshiro OKAMOTO	Team Leader	Senior Engineer, Agricultural Structure Improvement Bureau, Design Department
Mr. Masaharu MATSUI	Irrigation & Drainage Engineering	Nippon Giken Inc.
Mr. Yoichi KISHI	Dam Engineering	Nippon Giken Inc.



2. Survey Schedule  
 2 - 1 Basic Design Study

No.	Date	day	Member	Work Schedule	Site
1	1/19	Thu.	5	Departure from Japan and arrival at Manira, Courtesy call to Embassy of Japan and JICA	Manila
2	20	Fri.	5	Courtesy call to NIA, Preliminary discussion on Inception Report , Discussion on local contractors for topographic survey, geological and earth materials investigation	Manila
3	21	Sat.	5	Preparations for field survey, Field reconnaissance (1)	Site
4	22	Sun.	5	Data arrangement	
5	23	Mon.	5	Discussion meeting with NIA on field survey and data collection, Selection of local contractor	Manila
6	24	Tue.	5	Courtesy call and discussion meeting at Provincial Government of Tarlac and NIA Provincial Office, Field reconnaissance (2)	Site
7	25	Wed.	5	Field reconnaissance (3)	Site
8	26	Thu.	2	Commencement of topographic survey, geological and earth materials investigation (1)	Site
			3	Field survey and data collection on the Project, agriculture and farmer's association, O&M, etc. (1)	Site
9	27	Fri.	2	The same as the previous day (2)	Site
			3	- do - (2)	Site
10	28	Sat.	2	- do - (3)	Site
			3	- do - (3)	Site
11	29	Sun.	5	Data arrangement	
12	30	Mon.	2	Leader and coordinator leave Japan and arrive at Philippines, Courtesy call to Embassy of Japan and JICA	Manila

No.	Date	day	Member	Work Schedule	Site
			3	Meeting with leader and coordinator on progress of field survey	Manila
			2	Topographic survey, geological and earth materials investigation (4)	Site
13	31	Tue.	5	Discussion meeting with NIA and concerned agencies	Manila
			2	The same as the previous day (5)	Site
14	2/1	Wed.	3	Discussion meeting with NEDA and concerned agencies	Manila
			2	The same as the previous day (6)	Site
			2	Field survey and data collection on the project, agriculture and farmer's association, O&M, etc. (4)	Site
15	2	Thu.	3	Discussion meeting with the Provincial Government of Tarlac, Project site inspection (1)	Site
			2	The same as the previous day (7)	Site
			2	- do - (5)	Site
16	3	Fri.	3	- do - (2)	Site
			2	- do - (8)	Site
			2	- do - (6)	Site
17	4	Sat.	3	- do - (3)	Site
			2	- do - (9)	Site
			2	- do - (7)	Site
18	5	Sun.	7	Inter-team meeting, Data arrangement	Manila
19	6	Mon.	5	Inception Report discussion and meeting with NIA and other agencies, Data collection	Manila
			2	Topographic survey, geological and earth materials investigation (10)	Site
20	7	Tue.	5	Sign of minutes of Inception report meeting, Reporting to JICA and Embassy of Japan	Manila
			2	The same as the previous day (11)	Site
21	8	Wed.	2	Leader and coordinator leave for Japan	
			5	Data collection, Data arrangement	Manila

No.	Date	day	Member	Work Schedule	Site
22	9	Thu.	3	Field survey and data collection on agriculture and rural infrastructure, etc. (1)	Site
			2	The same as the previous day (12)	Site
23	10	Fri.	3	- do - (2)	Site
			2	- do - (13)	Site
24	11	Sat.	3	- do - (3)	Site
			2	- do - (14)	Site
25	12	Sun.	5	Data arrangement	
26	13	Mon.	3	Field survey and data collection on agriculture and rural infrastructures, etc. (4)	Site
			2	Topographic survey, geological and earth materials investigation (15)	Site
27	14	Tue.	3	The same as the previous day (5)	Site
			2	- do - (16)	Site
28	15	Wed.	3	- do - (6)	Site
			2	- do - (17)	Site
29	16	Thu.	3	- do - (7)	Site
			2	- do - (18)	Site
30	17	Fri.	3	- do - (8)	Site
			2	- do - (19)	Site
31	18	Sat.	3	- do - (9)	Site
			2	- do - (20)	Site
32	19	Sun.	5	Data arrangement	
33	20	Mon.	5	Additional data collection, Data arrangement (1)	Manila/Site
34	21	Tue.	5	- do - (2)	Manila/Site
35	22	Wed.	5	Inter-team meeting	Manila/Site
36	23	Thu.	5	Final discussion meeting with NIA	Manila
37	24	Fri.	5	Data collection and arrangement, Reporting to Embassy of Japan and JICA	Manila
38	25	Sat.	5	Preparations on departure, collected data arrangement	Manila
39	26	Sun.	5	Departure from Philippines and arrival at Japan	



2 - 2 Explanation for Draft Final Report

No.	Date	day	Member	Work Schedule	Site
1	5/15	Mon.	3	Departure from Japan and arrival at Manila, Courtesy call to Embassy of Japan and JICA	Manila
2	16	Tue.	3	Courtesy call to NIA, Submitting Draft Final Report and explanation of the Report	Manila
3	17	Wed.	3	Discussion meeting with NIA on Draft Final Report	Manila
4	18	Thu.	3	Discussion meeting with NIA on minutes of discussions, Courtesy call to NEDA	Manila
5	19	Fri.	3	Sign of minutes of discussions on Draft Final Report, Reporting to JICA and Embassy of Japan	Manila
6	20	Sat.	3	Departure from Philippines and arrival at Japan	

**3. Member List of Persons Concerned**

- Embassy of Japan in Philippines  
Naoki HAYASHIDA First Secretary
  
- JICA Philippine Office  
Moriya MIYAMOTO Resident Representative  
Noriaki NIWA Asst. Resident Representative
  
- Yasuhiko MISHIMA JICA Expert (NIA)  
Yukinori OUCHI JICA Expert (NIA)
  
- Federico N. Alday, Jr. Administrator, NIA  
Eduardo G. Fernandez Asst. Administrator  
for Project Development  
and Implementation, NIA  
Avelino S. Rivera Manager, Project  
Development Department, NIA  
Guillermo N. Carague Secretary, Department of  
Budget and Management  
Mariano Un. Ocampo Governor, Province of Tarlac  
Jose G. Macapinlac Mayor, Municipality of Tarlac  
Charlie Gatdula Administrator, Municipality of  
Tarlac

### Coordinating Committee

Eduardo G. Fernandez - Asst. Administrator, PDI  
Avelino S. Rivera - Manager, PDD  
Maximo A. Eclipse - Manager, DSD  
Abelardo M. Demetillo - Manager, CMD  
Jose M. Alcantara - Manager, CIDP  
Rolando Bonrostro - Regional Manager, Region III

### Technical Committee

Isidro R. Digal - Manager, Plan Formulation Div., PDD  
Romeo F. Potenciano - Manager, Water Resources Utilization Div., PDD  
Rogelio P. dela Rosa - Manager, Project Investigation Div., PDD  
Epifanio C. Gacusan - Manager, Land Resources Utilization Div., PDD  
Marcelino P. Manalo - Provincial Irrigation Engineer, Tarlac

### Counterparts

Clemente T. Alanano - Project Coordinator  
Erdolfo B. Domingo - Dam Engineering  
Emerson M. Coloma - Irrigation and Drainage Engineering  
Cesar B. Ramos - Civil Engineering  
Othelo L. Razon - Hydrology  
Romy Potenciano - Hydrology  
Wilson Layaoen - Soil Mechanics/Geology  
Danilo Fajardo - Soil Mechanics/Geology  
Dominador D. Pascua - Agri-institution  
Rogelio Aguinaldo - Agronomy  
Fernando E. Antolin - Agro-Economy  
Bernardo Valenzuela - Pedology  
Herminigildo S. Tabares - Land & Soil  
Abelardo Y. Armenia - Topo-Survey  
Danilo Cortez - General Aspect

### COORDINATING AGENCY

Honorio M. Encarnacion - Manager, Balog-Balog Multi-Purpose Project

**4. Minutes of Meeting**

**4-1 Basic Design Study**

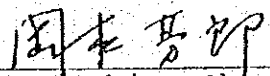


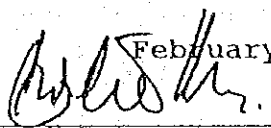
MINUTES OF MEETING  
ON THE PROJECT  
FOR WESTERN BARRIOS IMPOUNDING IRRIGATION

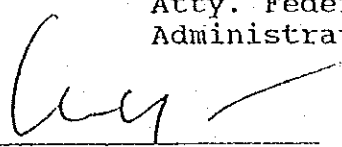
In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a Basic Design Study on the Project for THE WESTERN BARRIOS IMPOUNDING IRRIGATION and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Philippines the study team headed by Mr. Yoshiro Okamoto, Senior Engineer, Design Department, Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries, from January 19, to February 26, 1989.

The team had a series of discussions on the Project with officials concerned from the Government of the Republic of the Philippines headed by Atty. Federico N. Alday, Jr., Administrator, National Irrigation Administration (NIA), including Atty. Mariano Un. Ocampo III, Governor, Province of Tarlac, and conducted a field survey in Manila and Tarlac province.

As a result of the study, both parties agreed to recommend to their respective Governments the review of the major points of understanding reached between them, towards the realization of the Project.

  
Mr. Yoshiro Okamoto  
Leader of Mission, JICA

February 7, 1989  
  
Atty. Federico N. Alday, Jr.  
Administrator, NIA

  
Atty. Mariano Un. Ocampo  
Governor, Province of Tarlac

## MAJOR POINTS OF UNDERSTANDING

### OBJECTIVE

1. Objectives of the Project are to provide and improve the present conditions of agricultural infrastructure thus encouraging small farmers to increase income and agricultural productivity.

### PROJECT SITE

2. The site of the Project is located in the eastern slopes of the Zambales mountains in the municipality of Tarlac, Tarlac Province.

(site map is attached as ANNEX I)

### REQUEST

3. The Project components requested by the Philippine side are as follows:

- (1) Construction of four (4) small impounding dams across the tributaries of the Bulsa River
- (2) Construction of irrigation facilities
- (3) Construction of two (2) temporary bridges crossing Bulsa River
- (4) Construction of maintenance roads

### IMPLEMENTING AGENCY

4. The National Irrigation Administration (NIA) shall be responsible for realization and execution of the Project. Operation and maintenance of the Project may be turned over to the Provincial Government of Tarlac when, as determined by NIA, the capability to operate and maintain the same is assured.

**JAPAN'S GRANT AID SYSTEM**

5. It is understood that the Japanese grant aid system as explained by the team includes the employment of a Japanese consulting firm and a Japanese general contractor in the implementation of the Project.

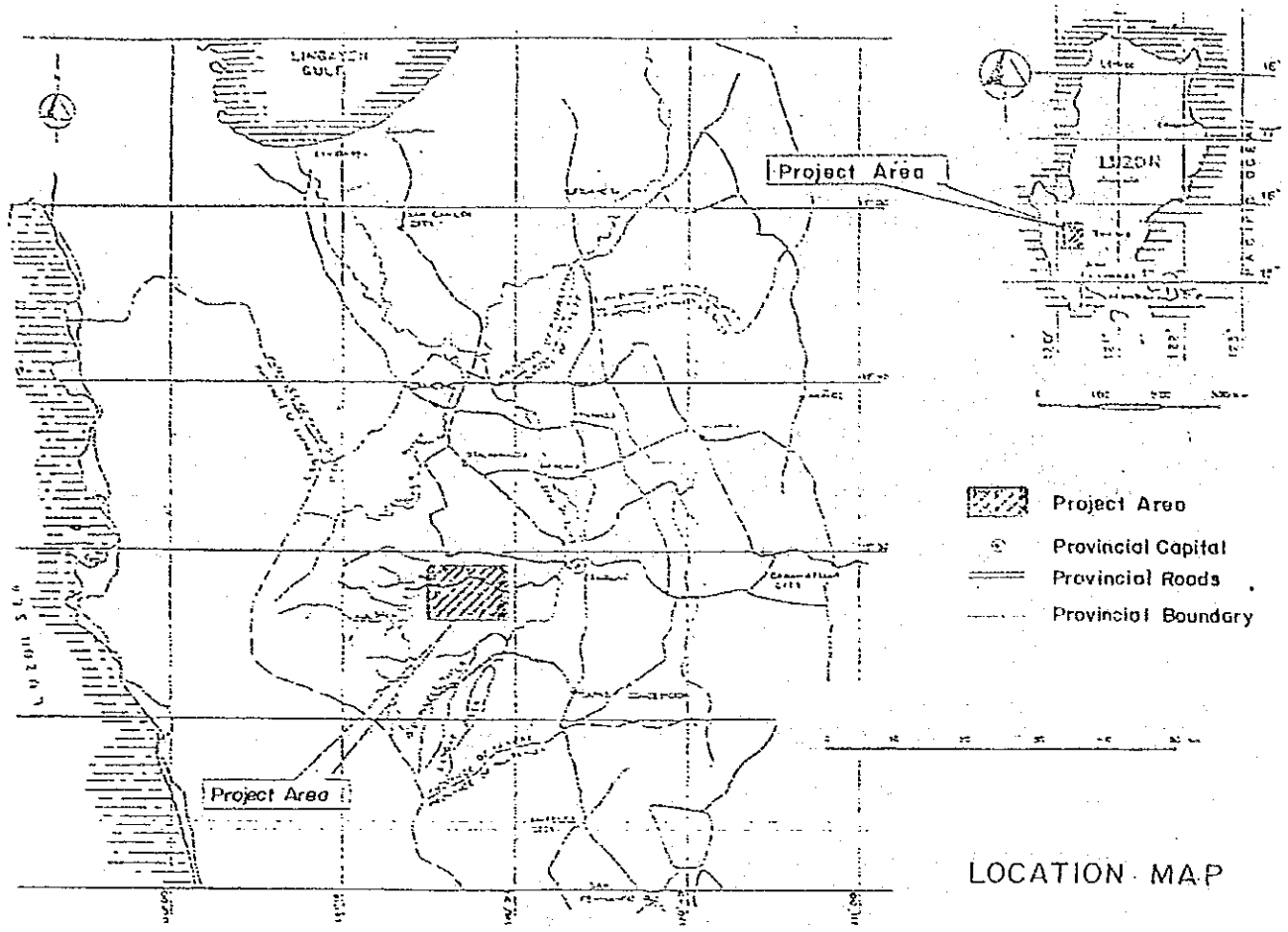
**UNDERTAKING OF THE GOVERNMENT OF JAPAN**

6. The team will convey to the Government of Japan the request of the Government of the Republic of the Philippines that the former shall take necessary measures to implement the Project.

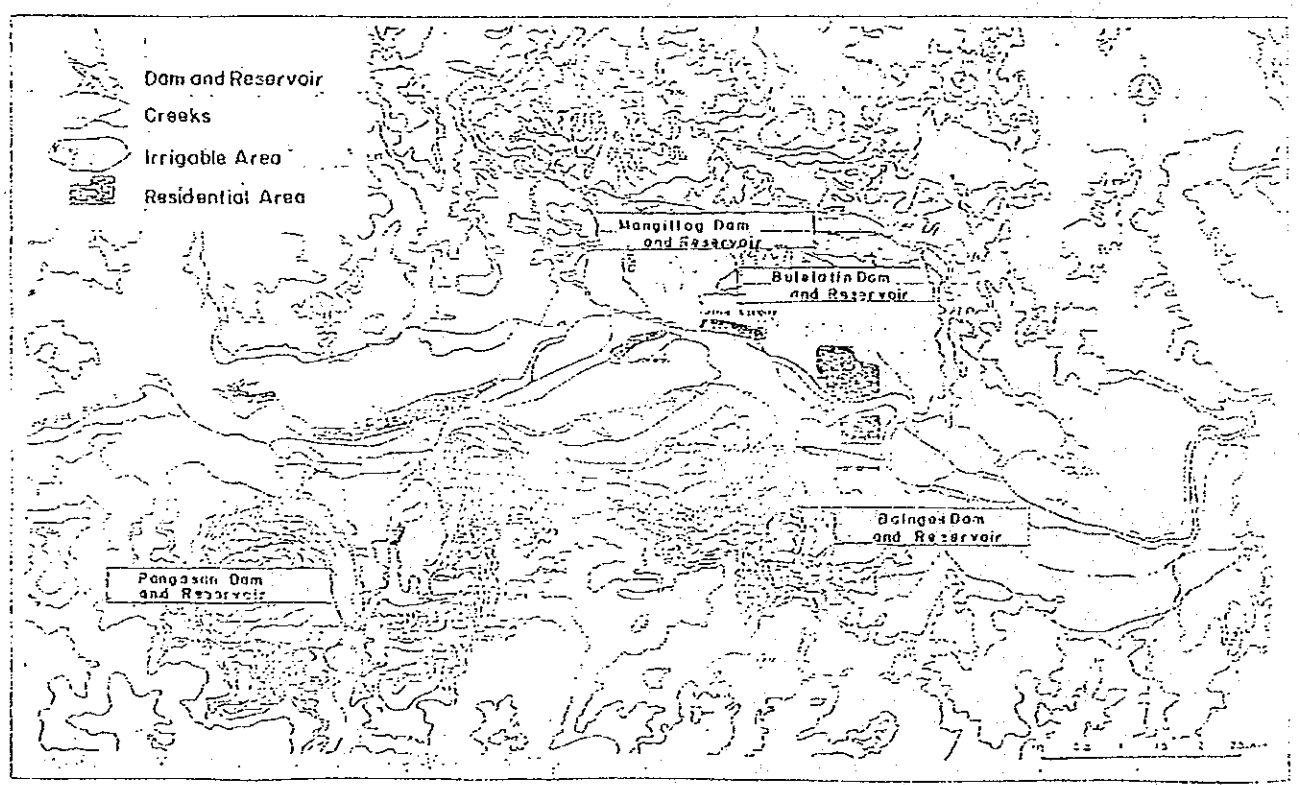
**UNDERTAKING OF THE GOVERNMENT OF THE REPUBLIC OF THE PHILIPPINES**

7. The Government of the Republic of the Philippines will take necessary measures listed in ANNEX II, as proposed by the team on condition that the Japan's grant aid would be extended to the Project.





LOCATION MAP


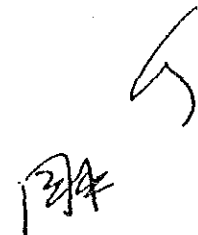


GENERAL PLAN OF THE PROJECT

*[Handwritten signature]*

ANNEX II

1. To acquire the land or the right-of-way required for the Project implementation. In connection with the smooth project implementation, NIA shall inform the team by February 26, 1989 that NIA has secured written commitments in which all land owners in the project facilities sites have agreed to transfer their ownership to the Philippine Government.
2. To ensure the land or right-of-way necessary for construction of the temporary access roads from existing rural roads to the proposed construction sites.
3. To secure the permission in allowing transportation of vehicles, machinery and construction materials on the existing national and rural roads.
4. To secure exemption on import duties and assume incidental expenses, and to take necessary measures for customs clearance for the materials, equipment and spare parts brought into the Philippines for the implementation of the Project.
5. To assume the Value Added Tax (VAT) which is imposed on the purchase of Philippine supplies and materials for the Project.
6. To shoulder commission fees to the Japanese foreign exchange bank for banking services based on the banking arrangements as follows:

6.1 Advising Commission of Authorization to Pay

6.2 Payment Commission

7. To assist Japanese nationals whose services may be required in connection with the supply of products and services under the verified contracts, such facilities as may be necessary for their entry into and stay in the Philippines for the performance of their work.
8. To secure exemption for Japanese nationals 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 the verified contracts.
9. To bear all expenses, other than those to be borne by the grant aid, necessary for the implementation of the Project.
10. To fully operate and maintain the completed project facilities for the benefit of the farmers concerned.

## **4-2 Explanation for Draft Final Report**



MINUTES OF DISCUSSIONS  
THE DRAFT REPORT OF THE BASIC DESIGN STUDY  
FOR THE PROJECT ON THE WESTERN BARRIOS IMPOUNDING  
IRRIGATION IN TARLAC, TARLAC

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a Basic Design Study of the Project on the Western barrios Impounding Irrigation in Tarlac, Tarlac (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent the Basic Design study team to the Philippines from January 30 to February 26, 1989.

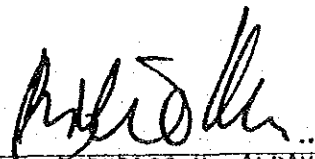
As a result of the study and discussions, JICA prepared a draft final Report on the Project and sent a Mission headed by Mr. YOSHIRO OKAMOTO, Senior Engineer, Agricultural Structure Improvement Bureau, Design Department, Ministry of Agriculture, Forestry and Fishery, to explain and discuss the report from May 15 to 20, 1989.

Both parties, after series of discussions on the report, agreed to recommend to their respective governments the review of the major points of understanding reached between them, attached herewith, toward the realization of the Project.

May 19, 1989

岡本芳郎

YOSHIRO OKAMOTO  
Leader of Japanese Basic  
Design Study Team, JICA.

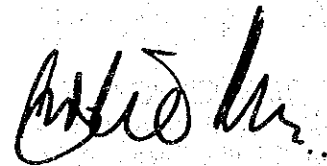


Atty. FEDERICO N. ALDAY, JR.  
Administrator, NIA

MAJOR POINTS OF UNDERSTANDING

1. The Philippine side has agreed in principle to the basic design proposed in the draft final report.
2. The Philippine side understood the system of Japan's grant aid programme and confirmed the arrangement which is mentioned in the minutes of discussions on the Project signed on February 7, 1989 between Japanese team leader and Administrator of National Irrigation Administration.
3. The final report (10 copies in English) on the Project will be submitted to the Philippine side by the end of July 1989.

岡本芳郎



## 5. Country Data





SUMMARY OF MAJOR STATISTICAL SERIES

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
<b>Part 1. General Statistics</b>					
<b>Chapter 1. Population and Housing Statistics</b>					
1. Population (1,000 persons)	May 1, 1980	48,098.0	May 1, 1975	42,071.0	14.3
2. Sex distribution					
Both sexes (1,000 persons)	May 1, 1980	48,098.0	May 1, 1975	42,071.0	14.3
Male (percent)		50.2		50.6	
Female (percent)		49.3		49.4	
3. Regional distribution					
Philippines (1,000 persons)	May 1, 1980	48,098.0	May 1, 1975	42,071.0	14.3
Metropolitan Manila Area (National Capital Region)		5,926.0		4,970.0	19.2
Region 1		3,541.0		3,269.0	8.3
Region 2		2,216.0		1,933.0	14.6
Region 3		4,893.0		4,210.0	14.1
Region 4		6,118.0		5,214.0	17.3
Region 5		3,477.0		3,194.0	8.9
Region 6		4,526.0		4,146.0	9.2
Region 7		3,787.0		3,387.0	11.8
Region 8		2,800.0		2,600.0	7.7
Region 9		2,528.0		2,048.0	23.4
Region 10		2,758.0		2,314.0	19.2
Region 11		3,347.0		2,715.0	23.3
Region 12		2,271.0		2,070.0	9.7

Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
4. Total City population (1,000 persons)	May 1, 1980	10,181.0	May 1, 1975	8,725.0	15.7
Ten most populous cities					
Manila		5,730.0		4,866.0	17.8
Quezon		1,630.0		1,479.0	10.2
Davao		1,156.0		957.0	21.5
Cebu		610.0		485.0	25.8
Caloocan		490.0		413.0	18.6
Zamboanga		468.0		397.0	17.9
Pasay		344.0		265.0	29.8
Bacolod		288.0		255.0	12.9
Iloilo		262.0		223.0	17.5
Cagayan de Oro		245.0		227.0	7.9
		227.0		165.0	37.6
<b>Chapter 2. Income and Prices</b>					
1. Average family income (pesos)					
Philippines	1985	31,052	1971	3,726	733.4
Urban		46,127		5,867	686.2
Metropolitan Manila Area		57,193		7,785	634.7
Rural		21,875		2,818	676.3
2. Consumer price index for all items (1975=100)					
Philippines	June 1988	400.6	June 1987	367.5	9.0

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data			Compared to			Percent change
	Reference period	Value	Reference period	Value	Reference period	Value	
Metropolitan Manila Area (National Capital Region)	1987	437.6	1986	394.5	1986	95,948	10.9
Areas Outside Metropolitan Manila	1987	353.5	1986	362.3	1986	91,287	5.6
Region 1	1987	380.5	1986	349.2	1986	70,260	9.0
Region 2	1987	379.2	1986	346.7	1986	66,597	9.4
Region 3	1987	420.4	1986	388.4	1986	6,774	8.2
Region 4	1987	379.8	1986	347.2	1986	8,187	9.4
Region 5	1987	401.1	1986	359.6	1986	12,190	11.5
Region 6	1987	405.2	1986	377.0	1986	10,181	7.5
Region 7	1987	396.9	1986	367.7	1986	6,343	7.9
Region 8	1987	375.4	1986	343.6	1986	5,505	9.3
Region 9	1987	365.9	1986	345.9	1986	4,552	5.8
Region 10	1987	392.8	1986	369.9	1986	124	6.2
Region 11	1987	402.2	1986	364.2	1986	23,299	10.4
Region 12	1987	393.8	1986	368.0	1986	21,952	7.0
Chapter 3. Economic accounts							
1. Gross national product							
(million pesos)	1987	706,251	1986	619,615	1986	9,736	13.9
At current prices	1987	94,680	1986	89,611	1986	1,281	5.7
At 1972 prices	1987	95,948	1986	91,287	1986	8,481	5.1
2. Gross domestic product by industrial origin (million pesos)							
at 1972 prices)	1987	27,331	1986	27,233	1986	8,853	19.0
Agriculture, fishery & forestry	1987	1,521	1986	1,558	1986	1,281	2.0
Mining and quarrying	1987	23,263	1986	21,717	1986	1,189	7.2
Manufacturing	1987	3,964	1986	3,382	1986	1,189	3.0
Construction	1987	1,908	1986	1,723	1986	8,481	7.2
Electricity, gas, and water	1987	5,251	1986	5,105	1986	1,189	3.0
Transport, communication and storage	1987	15,153	1986	14,337	1986	8,481	7.2
Commerce	1987	5,754	1986	4,831	1986	1,189	3.0
Finance and Housing	1987	6,106	1986	6,039	1986	1,189	3.0
Private Services	1987	5,697	1986	5,362	1986	1,189	3.0
Government Services	1987	5,697	1986	5,362	1986	1,189	3.0
3. Expenditures on gross domestic product at 1972 prices (million pesos)							
Personal consumption expenditures	1987	70,260	1986	66,597	1986	8,481	12.8
General government expenditures	1987	8,774	1986	8,187	1986	1,189	14.6
Gross domestic capital formation	1987	12,190	1986	10,181	1986	1,189	19.7
Construction	1987	6,343	1986	5,505	1986	8,481	15.2
Durable equipment	1987	5,293	1986	4,552	1986	1,189	16.3
Increase in stocks	1987	554	1986	124	1986	1,189	346.8
Exports (Less) imports	1987	23,299	1986	21,952	1986	1,189	(11.1)
4. Per capita national income (pesos)							
At current prices	1987	9,736	1986	8,853	1986	1,189	13.9
At 1972 prices	1987	1,307	1986	1,281	1986	1,189	2.0
5. Per capita personal consumption expenditure (pesos)							
At current prices	1987	9,095	1986	8,481	1986	1,189	13.9
At 1972 prices	1987	1,225	1986	1,225	1986	1,189	3.0
Part II. Economic Statistics							
Chapter 4. Natural Resources							
1. Classified land area (1,000 hectares)							
1987	1986	14,108,967	1986	13,852,398	1986	1,189	1.8
1987	1986	15,010,616	1986	14,961,027	1986	1,189	0.3

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data			Compared to		
	Reference period	Value	Percent change	Reference period	Value	Percent change
2. Fish production (1,000 m.t.)	1987	2,213.0	5.9	1986	2,089.5	
Commercial fishing		591.2	8.2		546.2	
Aquaculture		560.3	19.1		470.9	
Municipal fishing and sustenance fishing		1,060.9	(90.1)		10,724.0	
3. Value of fishing production (million pesos)	1987	37,241.9	(0.2)	1986	37,331.5	
Commercial fishing		9,820.7	6.2		9,247.9	
Aquaculture		11,313.6	4.4		10,832.2	
Municipal fishing and sustenance fishing		16,107.5	(6.6)		17,251.5	
4. Production of logs, lumber, plywood and veneer (1,000 m.)	1987			1986		
Logs		4,142	20.6		3,434	
Lumber		964	(1.3)		977	
Plywood		504	18.9		424	
Veneer		75	2.7		73	
Chapter 5. Agriculture						
1. Production of agricultural crop (1,000 m.t.)	Crop year 1987	30,963.6	(2.0)	Crop year 1986	31,588.8	
Food crops		25,568.5	(1.8)		25,980.5	
Palay (Rough Rice)		8,539.9	(7.6)		9,246.8	
Corn (Shelled)		4,278.1	4.6		4,090.7	
Rootcrops		3,769.2	1.5		3,714.4	
Fruits and vegetables		8,561.1	(0.1)		8,588.9	
Other food crops		360.2	0.1		359.7	
Commercial Crops		5,455.1	(2.7)		5,608.3	
Coconut		3,262.5	3.2		3,182.4	
Sugarcane		1,861.2	(12.8)		2,135.3	
Abaca and other crops		136.4	35.6		100.6	
Tobacco		58.3	4.1		56.0	
Rubber		136.7	(11.2)		154.0	
2. Value of production of agricultural crops (million P)	Crop year 1987	93,183.0	9.5	Crop year 1986	85,129.8	
Food crops		73,277.7	3.2		70,978.1	
Palay (Rough Rice)		26,302.9	(0.2)		26,353.4	
Corn (Shelled)		12,406.5	20.8		10,267.7	
Rootcrops		5,276.2	2.0		5,172.5	
Fruits and vegetables		27,712.6	(0.7)		27,907.3	
Other food crops		1,578.6	23.6		1,277.2	
Commercial crops		9,905.3	40.7		14,151.7	
Coconut		8,231.6	83.1		4,498.1	
Sugarcane		8,562.9	11.7		7,882.9	
Abaca and other crops		1,300.7	77.9		731.1	
Tobacco		1,005.8	31.9		762.5	
Rubber		804.3	61.2		493.1	
3. Number of registered Saabang Bayon	1987	17,115	0.0	1986	17,115	
4. Membership of registered Saabang Bayon	1987	727,029	0.0	1986	727,029	
Chapter 6. Establishment Characteristics; Industrial Sectors						
1. Number of newly registered corporations and partnerships	1987	7,055	41.0	1986	5,003	
Corporations		1,212	21.3		939	

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
2. Capital increases & withdrawals of corporations & partnerships (million pesos)	1987		1986		
Increases	4,938.5	3,024.8			63.3
Withdrawals	1,603.8	598.8			167.8
Net effect	3,334.7	2,425.0			37.5
3. Amount of investments approved under P.D. 1789 and P.D. 218 (million pesos)	1986	8,360.2	1986	3,146.3	165.7
Local	4,932.8	1,552.5			217.7
Foreign	3,427.3	1,593.8			115.0
4. Value of manufacturing output (million pesos)	1986	247,461	1985	224,766	10.1
Food	59,861	46,169			29.7
Beverages	15,877	14,083			12.7
Tobacco	13,995	13,169			6.3
Textiles	31,564	10,309			12.4
Footwear & wearing apparel	6,999	5,018			37.5
Wood and cork	6,241	5,435			14.8
Furniture and fixtures	1,469	1,180			24.5
Paper	7,651	5,427			44.7
Printing	2,917	2,425			20.3
Leather	195	181			7.7
Rubber	3,337	2,823			18.2
Chemicals	27,066	22,561			20.0
Petroleum and coal	38,348	48,472			(20.9)
Non-metallic mineral products	1,049	947			10.8
Basic metal	19,272	15,006			28.4
Metal products	3,595	3,789			(4.6)
Machinery except electrical	1,553	1,691			(8.2)
Electrical machinery	14,102	10,809			30.5
Transport equipment	2,606	2,546			2.4
Miscellaneous	1,219	1,071			13.6

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
5. Value of mining production (million pesos)	1986		1985		
Precious metal		8,570.1		6,274.1	36.6
Base metals		5,884.3		7,544.6	(22.0)
Non-metallics		2,768.6		2,946.0	(6.0)
Other minerals		2,814.4		4,221.9	(33.3)
6. Value of private building construction (million pesos)	1987	11,124.0	1986	6,531.0	70.3
Metropolitan Manila Area (National Capital Region)		6,110.0		3,115.0	96.1
Rest of the Regions		5,014.0		3,416.0	46.8
Residential buildings		5,832.0		3,317.0	75.8
Metropolitan Manila Area (National Capital Region)		3,062.0		1,581.0	93.7
Rest of the Regions		2,771.0		1,736.0	59.6
Non-residential buildings		4,108.0		2,325.0	76.7
Metropolitan Manila Area (National Capital Region)		2,289.0		992.0	130.7
Rest of the Regions		1,820.0		1,333.0	36.5
Additions/alterations		1,184.0		889.0	33.2
Metropolitan Manila Area (National Capital Region)		759.0		542.0	40.0
Rest of the Regions		424.0		347.0	22.2

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data		Compared to	
	Reference period	Value	Reference period	Value
<b>Chapter 7. Foreign Trade, Balance of Payments</b>				
<b>1. Direction of external trade (million dollars)</b>				
Exports	1987	5,720.2	1986	4,841.8
Imports		6,737.0		5,043.6
Balance of trade (all countries)		(1,016.8)		(201.8)
				18.1
				33.6
				403.9
<b>2. Total exports (million pesos)</b>				
	1987	5,720.2	1986	4,841.8
				18.1
<b>Ten principal exports</b>				
		1,121.7		1,057.6
				5.1
Copra		32.0		17.6
Sugar		86.3		86.8
Banana		121.2		130.2
Logs and lumber		154.5		129.7
Desiccated coconut		75.3		44.3
Coconut oil		380.5		332.8
Pineapples, canned		86.3		83.5
Gold		90.5		139.9
Alcaca (unmanufactured)		11.8		12.9
Copper concentrates		109.1		89.9
				21.4
<b>3. Imports by end use (million \$)</b>				
	1987	6,737.0	1986	5,043.6
				33.6
Consumer goods		2,019.1		1,643.9
Capital goods		1,210.4		863.9
Raw materials and intermediate goods		3,507.5		2,535.6
				38.3
<b>4. Exports of non-traditional manufactures (million dollars)</b>				
	1987	3,604.5	1986	2,684.9
				34.3
<b>5. Balance of payments (million \$)</b>				
	1987	264	1986	1,247
				(78.8)

Statistical series	Latest data		Compared to	
	Reference period	Value	Reference period	Value
<b>Chapter 8: Tourism</b>				
<b>1. Number of visitor arrivals</b>				
	1987	794,700	1986	781,517
				1.7
<b>2. Total tourist receipts (thousand dollars)</b>				
	1987	458,000	1986	647,060
				(29.2)
<b>Part III. Social Statistics</b>				
<b>Chapter 9. Vital, Health and Nutrition Statistics</b>				
<b>1. Crude birth and death rates (per 1,000 population)</b>				
	1985		1984	
Birth rate		26.3		27.7
Death rate		6.1		5.9
				(5.1)
				3.4
<b>2. Number of registered marriages</b>				
	1985	378,550	1984	380,171
				(0.4)
<b>3. Daily per capita available food supply (grams/day)</b>				
	1986		1985	
Cereals and cereal products		330.1		329.0
Roots and tubers		62.9		63.6
Sugar and syrup		26.1		25.2
Pulses and nuts		5.4		4.9
Vegetables		99.7		95.0
Fruits		146.9		149.5
Meat products		56.2		51.2
Milk and milk products		74.3		75.1
Eggs		11.3		11.3
Fish and other marine products		90.4		89.5
Fats and oil		14.5		12.7
Miscellaneous food		131.8		118.1
				11.6

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data			Compared to		
	Reference period	Value	Percent change	Reference period	Value	Percent change

4. Calorie and nutrient values of available food supply (daily per capita)

Statistical series	Reference period	Value	Percent change
Calorie (number)	1986	2,308	2.7
Protein (grams)	1985	56	3.1
Fats (grams)	1985	43	7.5

5. Bed capacity of government and private hospitals

Statistical series	Reference period	Value	Percent change
Government	1987	46,330	(4.8)
Private	1986	40,491	1.9

6. Number of hospitals

Statistical series	Reference period	Value	Percent change
Government	1987	581	(5.8)
Private	1986	1,173	(4.6)

Chapter 19. Education

1. Number of government and private schools

Statistical series	Reference period	Value	Percent change
Pre-School	SY 1985-86	2,254.0	...
Government	SY 1985-86	1,257.0	...
Private	SY 1985-86	997.0	...

Elementary Government Private

Statistical series	Reference period	Value	Percent change
Elementary Government	1987	33,485.0	1.0
Private	1986	32,037.0	0.7
Secondary Government	1987	1,448.0	8.1
Private	1986	5,375.0	0.4
Tertiary Government	1987	3,327.0	(0.9)
Private	1986	2,018.0	2.4

Tertiary Government Private

Statistical series	Reference period	Value	Percent change
Tertiary Government	1987	1,189.0	8.4
Private	1986	351.0	19.8
Government	1987	1,078.0	8.4
Private	1986	293.0	19.8
Government	1987	818.0	4.2
Private	1986	785.0	4.2

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data			Compared to		
	Reference period	Value	Percent change	Reference period	Value	Percent change

2. Enrolment in government and private schools (in thousand)

Statistical series	Reference period	Value	Percent change
Elementary Government	SY 1985-86	8,229.6	3.7
Private	SY 1985-86	8,392.1	2.9
Secondary Government	SY 1985-86	590.2	16.9
Private	SY 1985-86	3,269.4	62.9
Government	SY 1985-86	1,969.9	1.0
Private	SY 1985-86	3,957.0	154.3

Chapter 11. Labor and Employment

1. Total labor force (1,000 persons)

Statistical series	Reference period	Value	Percent change
Total labor force	1987	14,316.0	2.0
Employed	1986	13,339.0	(1.0)
Unemployed	1986	978.0	78.1

2. Labor force participation rate (percent)

Statistical series	Reference period	Value	Percent change
Philippines	1987	68.2	66.3
Philippines	1986	66.2	2.9

3. Filipino workers sent overseas during the year by major occupation group (land-based)

Statistical series	Reference period	Value	Percent change
Professional, technical and related workers	1987	425,861.0	19.1
Managerial, executive, administrative workers	1986	357,687.0	19.1
Clerical workers	1986	112,236.0	28.2
Sales workers	1986	1,675.0	27.2
Service workers	1986	15,923.0	4.4
Agricultural, animal husbandry, forestry workers and fishermen	1986	4,268.0	19.8
Production process workers, transport equipment operators and laborers	1986	144,542.0	23.4
Production process workers, transport equipment operators and laborers	1986	2,590.0	72.8
Production process workers, transport equipment operators and laborers	1986	144,541.0	10.1

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

## SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data			Compared to		
	Reference period	Value	Percent change	Reference period	Value	Percent change
4. Total kilometers of road	1987	157,909.77	(2.8)	1986	162,325.13	(2.8)
National		26,082.34	(0.6)		26,225.68	(0.6)
Local		131,727.43	(3.2)		136,095.45	(3.2)
5. Number of Bridges	1987	11,572	(1.4)	1986	11,740	(1.4)
National government		7,211	(2.3)		7,379	(2.3)
Local government		4,361	0.0		4,361	0.0
6. Length of bridges (linear meters)	1987	304,305.31	(1.5)	1986	308,890.91	(1.5)
National government		230,226.35	(2.0)		230,226.35	(2.0)
Local government		78,664.56	0.0		78,664.56	0.0
7. Coastwise shipping movement at 26 major ports	1987	72,649	6.1	1986	68,442	6.1
Number of vessels entered		72,598	6.3		68,275	6.3
Number of vessels cleared						
8. International shipping movements at Port of Manila	1987			1986		
Number of vessels entered		2,141	7.4		1,993	7.4
Number of vessels cleared		2,114	6.9		1,977	6.9
9. Number of licensed radio stations	1987	28,117	(49.9)	1986	56,113	(49.9)
10. Volume of mail handled (1,000 pieces)	1987	812,663	4.5	1986	777,872	4.5
Received from Foreign Countries		199,021	2.1		194,992	2.1
Dispatched to Foreign Countries		89,588	(11.6)		101,353	(11.6)
Delivered in the Philippines		524,074	8.6		481,527	8.6
<b>Chapter 12. Social Services</b>						
1. Benefits paid by the Government Service Insurance System (million pesos)	1987	2,163.0	13.0	1986	1,931.3	13.0
2. Benefits paid by the Social Security System (million pesos)	1987	2,095.4	42.6	1986	1,470.3	42.6
<b>Part IV. Infrastructure Statistics</b>						
<b>Chapter 13. Transportation and Communication</b>						
1. Rail transport	1987			1986		
Passengers (1,000 persons)		3,201.8	(14.5)		3,744.3	(14.5)
Freight tonnes (1,000 mt)		62.2	(2.8)		64.0	(2.8)
Express tonnes (1,000 mt)		27.7	28.8		21.5	28.8
2. Flights and passengers carried by international carriers	1987			1986		
Passengers carried, total		3,542,828	10.2		3,213,675	10.2
Arrivals		1,678,943	9.1		1,538,394	9.1
Departures		1,863,883	11.3		1,675,281	11.3
Flights, total		20,879	6.2		19,656	6.2
3. Total number of newly-registered motor vehicles	1987			1986		
Cars		10,657	40.8		7,571	40.8
Utility vehicles		23,144	57.4		13,826	57.4
Trucks		5,112	49.8		3,413	49.8
Buses		545	76.4		309	76.4
Trailers		1,112	45.5		764	45.5
Motorcycles		30,430	(12.4)		34,750	(12.4)



SUMMARY OF MAJOR STATISTICAL SERIES (continued)

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

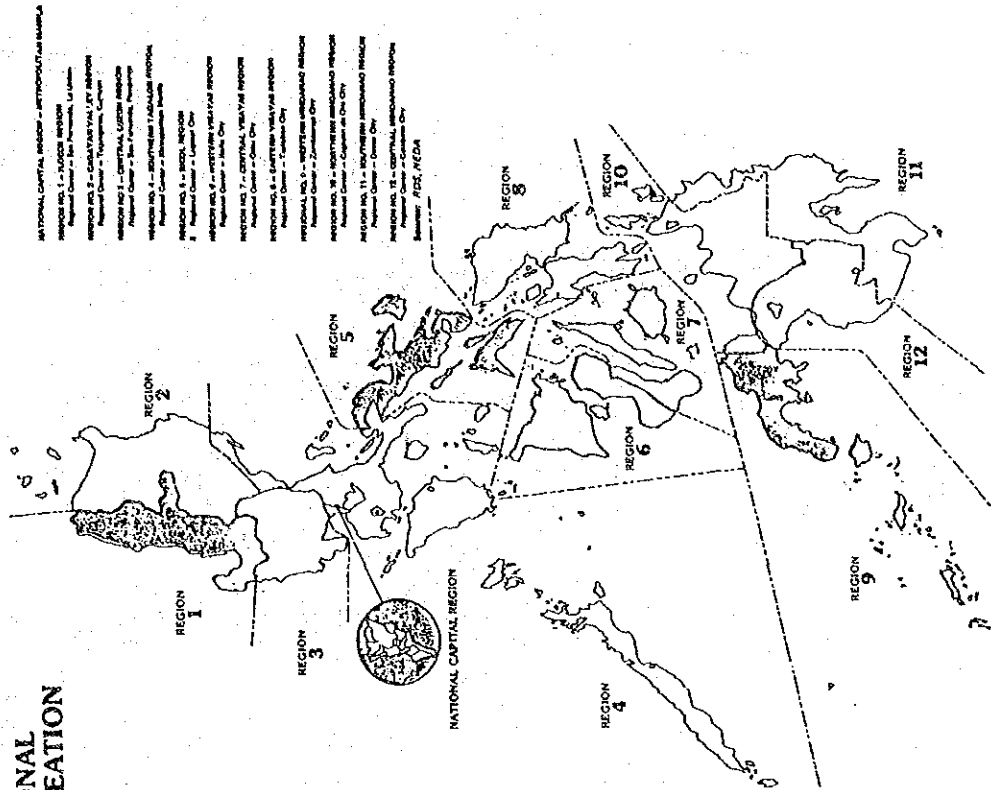
Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
<b>Chapter 14. Energy and Water Resources</b>					
<b>1. Electric Energy (million kWh)</b>					
	1987		1986		
Production		20,958.0		19,254.0	8.9
Consumption		16,849.8		15,326.1	9.9
<b>Part V. Financial Statistics</b>					
<b>Chapter 15. Public Finance</b>					
<b>1. Holdings on government securities (million P) by holders</b>					
	Dec. 1987	150,299.6	1986	123,711.1	21.5
In percent		100.0		100.0	
Central Bank		6.1		8.9	
Commercial and other banks		14.4		21.1	
Trust funds		6.7		6.3	
Seci-government entities		13.7		12.2	
Private sector		59.1		51.5	
<b>2. National government expenditures (million pesos)</b>					
	1988	169,728	1987	160,416	5.8
In percent		100.0		100.0	
Economic services		20.9		17.9	
Social services		20.9		19.5	
National defense		5.7		5.1	
General public service		11.7		11.3	
Net lending		4.5		5.1	
Debt Service Fund		36.2		41.1	

Statistical series	Latest data		Compared to		Percent change
	Reference period	Value	Reference period	Value	
<b>3. Internal debt outstanding by level of government (million pesos)</b>					
	4th Qtr 1987	162,828.7	1986	144,351.6	12.8
National government		192,479.8		108,065.2	41.1
Local government		116.0		161.3	(28.1)
Government corporations		9,313.3		12,411.1	(25.0)
Monetary Institutions		918.6		23,694.0	(96.1)
<b>4. Internal debt outstanding by period of maturity (million pesos)</b>					
	4th Qtr 1987	162,828.7	1986	144,351.6	12.8
Long term		25,959.9		27,595.8	(5.9)
Medium term		23,014.6		16,976.2	35.6
Short term		113,854.3		99,779.6	14.1
<b>Chapter 16. Money and Banking</b>					
<b>1. Money supply (million pesos)</b>					
	December 1987	52,090.3	1986	42,657.2	22.1
<b>2. Net foreign assets (million pesos)</b>					
	December 1987	(108,213.1)	1986	(112,514.3)	(3.6)
<b>3. Net domestic credits (million pesos)</b>					
	December 1987	108,380.4	1986	124,728.0	(13.1)
<b>4. Non-Money supply deposits (million pesos)</b>					
	December 1987	119,346.5	1986	101,463.5	8.8
<b>5. Net other accounts (million pesos)</b>					
	December 1987	(162,265.5)	1986	(113,907.0)	42.5
<b>6. Loans and investment outstanding (million pesos)</b>					
	1987	143,814.0	1986	189,052.4	(23.9)

SUMMARY OF MAJOR STATISTICAL SERIES (continued)

Statistical series	Latest data		Compared to	
	Reference period	Value	Reference period	Value
In percent		100.0		100.0
Commercial banks		78.8		86.4
Rural banks		5.3		3.8
Development banks		10.2		6.6
Savings banks		5.7		3.1
<b>7. Total assets and liabilities of Central Bank (million pesos)</b>	<b>Dec. 1987</b>		<b>1986</b>	
Total assets		325,185.0		294,810.1
Total liabilities		324,473.0		294,149.0
				10.3
				10.3
<b>8. Total assets and liabilities of commercial banks (million pesos)</b>	<b>Dec. 1987</b>		<b>1986</b>	
Total assets		274,562.2		293,418.9
Total liabilities		242,516.4		271,013.0
				(6.4)
				(10.5)
<b>9. Total assets and liabilities of development banks (million pesos)</b>	<b>Dec. 1987</b>		<b>1986</b>	
Total assets		18,498.8		75,037.4
Total liabilities		12,077.5		68,944.6
				(75.3)
				(82.5)

REGIONAL DELINEATION



REGIONS ..... 12  
PROVINCES & SUB PROVINCES ..... 72 plus 2  
CITIES ..... 60  
MUNICIPALITIES ..... 1,571  
BARANGAYS ..... 41,186

Table 1.1 - POPULATION, LAND AREA AND DENSITY

Region and province	Population (thousands)					1918 (Dec 31)	
	1980 (May 1)	1975 (May 1)	1970 (May 6)	1960 (Feb. 15)	1948 (Oct 1)		
Philippines	48,098	42,071	36,684	27,088	19,234	15,999	10,316
Metropolitan Manila Area (National Capital Region)	5,925	4,970	3,967	2,462	1,569	994	461
Manila	1,630	1,479	1,331	1,139	984	623	285
Caloccan City	468	397	275	145	55	39	19
Pasay City	268	255	206	133	89	55	19
Quezon City	1,166	957	754	398	111	39	0
Las Pinas	136	82	46	16	9	7	3
Makati	373	334	265	115	41	34	13
Malabon	191	175	142	76	46	33	22
Mandaluyong	205	182	149	72	26	18	6
Marikina	212	188	113	40	24	15	5
Muntinlupa	137	95	65	22	19	9	5
Navotas	126	97	83	49	29	21	13
Paranaque	209	159	97	62	29	21	22
Pasig	269	210	157	62	35	28	17
Pateros	40	33	26	13	8	7	4
San Juan del Monte	130	122	105	57	32	19	6
Taguig	134	74	55	22	15	12	8
Valenzuela	212	151	98	41	17	13	9
Region 1	3,541	3,269	2,991	2,428	1,944	1,728	1,376
Abra	160	147	146	115	87	88	73
Benguet	355	302	264	184	110	122	44
Ilocos Norte	391	372	343	287	251	238	219
Ilocos Sur	444	420	385	338	276	272	247
La Union	453	415	374	293	237	208	178
Mt. Province	103	94	93	86	62	59	49
Pangasinan	1,636	1,520	1,386	1,124	921	742	566
Region 3	4,803	4,210	3,615	2,524	1,837	1,568	1,039
Bataan	323	283	216	145	93	86	58
Bulacan 2	1,096	900	738	514	395	319	240
Nueva Ecija	1,069	948	851	608	468	417	227
Pampanga	1,182	1,042	907	617	416	375	258
Tarlac	689	641	560	427	264	264	172
Zambales	444	416	343	213	138	107	84

BY REGION AND PROVINCE: CENSUS YEARS 1918 to 1980

Land area (km)	Density (persons/km)					
	1980 (May 1)	1975 (May 1)	1970 (May 6)	1960 (Feb 15)	1948 (Oct 1)	1918 (Dec 31)
300,000	160.3	140.2	122.3	90.3	64.1	53.3
636.0	9,317.4	7,814.5	6,236.9	3,871.8	2,467.0	1,561.3
38.3	42,571.4	38,619.2	34,746.4	29,728.7	25,689.5	16,279.2
55.8	8,383.8	7,118.3	4,918.5	2,607.9	980.8	695.7
13.9	20,702.9	18,345.2	14,840.5	9,544.8	6,383.3	3,968.4
166.2	7,014.8	5,757.3	4,539.4	2,394.6	668.9	234.7
41.5	3,289.5	1,966.5	1,102.0	387.8	223.6	164.4
29.9	12,462.6	11,185.5	8,860.1	3,830.8	1,382.4	1,121.4
23.4	8,162.4	7,473.4	6,047.6	3,266.6	1,985.3	1,422.4
26.0	7,898.7	7,010.3	5,746.4	2,754.6	1,011.9	700.0
38.9	5,439.9	4,330.4	2,915.2	1,040.0	600.3	389.9
46.7	2,926.7	2,024.9	1,393.1	468.8	394.9	198.9
2.6	48,517.7	37,345.4	32,017.3	18,946.9	11,111.2	8,023.5
38.3	5,445.2	4,150.7	2,538.2	1,616.1	754.2	551.6
13.0	20,659.2	16,147.3	12,037.8	4,779.2	2,723.6	2,118.5
10.4	3,873.8	2,155.9	2,448.8	1,266.6	805.8	688.5
10.4	12,508.5	11,778.0	10,053.8	5,467.4	3,028.2	1,814.4
33.7	3,980.3	2,187.0	1,693.7	648.5	455.2	358.7
47.0	4,518.4	3,204.4	2,094.8	882.4	356.2	286.6
21,568.4	164.2	151.6	138.7	112.6	90.1	80.1
3,975.5	40.3	37.0	36.5	29.0	21.8	22.1
2,655.4	113.6	113.8	99.3	69.2	41.4	45.9
3,398.3	114.9	109.4	101.0	84.5	74.0	70.0
2,579.6	172.0	162.7	149.3	131.1	107.1	105.4
1,493.1	303.1	277.7	250.3	196.5	159.0	139.3
2,097.3	49.1	44.9	44.4	40.9	29.6	28.1
5,368.2	304.8	283.2	258.2	209.4	171.5	138.2
18,230.8	263.4	230.9	198.3	138.5	100.8	86.1
1,373.0	235.4	191.7	157.5	105.8	67.7	62.6
2,625.0	417.5	342.7	281.1	196.9	150.1	121.9
5,284.3	202.4	179.4	161.1	115.1	88.6	78.9
2,180.7	541.8	477.9	416.0	283.1	191.2	172.0
3,053.4	225.5	209.9	183.3	139.7	107.1	86.5
3,714.4	119.5	112.1	92.4	57.5	37.4	28.8

Table 1.4 - POPULATION BY AGE GROUP AND SEX,  
(Figures are estimates based

BY REGION, URBAN-RURAL: 1980 (continued)  
on the 20 percent sample)

Age group	Region 3				Urban				Rural			
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
All ages .....	4,802,793	2,406,886	2,395,907	2,009,259	988,245	1,021,014	2,793,534	1,418,641	1,374,893			
Under 1 year ...	171,558	88,549	83,009	68,853	35,813	33,040	102,705	52,736	49,969			
1-4 .....	577,501	297,290	280,211	229,782	118,700	111,082	347,719	178,590	168,129			
5-9 .....	655,895	338,834	317,061	258,072	132,760	125,312	397,823	206,074	191,749			
10-14 .....	611,061	312,759	298,302	246,472	124,323	122,149	364,589	188,436	176,153			
15-19 .....	524,457	261,883	262,574	222,625	107,070	115,555	301,832	154,813	147,019			
20-24 .....	459,487	223,532	235,955	204,525	95,370	109,155	254,962	128,162	126,800			
25-29 .....	383,618	187,629	195,989	169,370	80,361	89,009	214,248	107,268	106,980			
30-34 .....	318,705	159,955	158,750	143,284	71,010	72,274	175,421	88,945	86,476			
35-39 .....	231,728	117,152	114,576	98,972	49,227	49,745	132,756	67,925	64,831			
40-44 .....	202,083	101,111	100,972	86,357	42,449	43,908	115,726	58,662	57,064			
45-49 .....	162,480	79,457	83,023	69,052	33,384	35,668	93,428	46,073	47,355			
50-54 .....	134,840	66,457	68,383	58,471	28,903	29,568	76,369	37,554	38,815			
55-59 .....	108,478	50,357	58,121	44,161	20,139	24,022	64,317	30,218	34,099			
60-64 .....	88,487	41,392	47,095	36,510	16,502	20,008	51,977	24,890	27,087			
65-69 .....	73,980	34,568	39,412	30,855	13,603	17,252	43,125	20,965	22,150			
70-74 .....	45,361	21,663	23,698	19,147	8,687	10,460	26,214	12,976	13,238			
75 and over .....	53,074	24,298	28,776	22,751	9,944	12,807	30,323	14,354	15,969			

Table 1.7b - POPULATION PROJECTIONS FOR THE PHILIPPINES,  
(Medium Assumption - Moderate Fertility and  
Moderate Mortality Decline)  
(In thousands)

BY SEX AND BY REGION: 1980 TO 2000  
Moderate Mortality Decline)

Year	Philippines			Metropolitan Manila Area (National Capital Region)			Region 1			Region 3		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
1980	48,316	24,232	24,084	5,970	2,872	3,098	3,543	1,763	1,780	4,827	2,418	2,409
1981	49,536	24,846	24,690	6,156	2,958	3,198	3,612	1,798	1,813	4,947	2,479	2,468
1982	50,783	25,475	25,308	6,345	3,046	3,299	3,682	1,835	1,847	5,070	2,541	2,529
1983	52,055	26,117	25,936	6,540	3,137	3,403	3,754	1,872	1,882	5,196	2,605	2,592
1984	53,351	26,772	26,579	6,740	3,230	3,509	3,828	1,910	1,918	5,325	2,670	2,655
1985	54,668	27,437	27,231	6,974	3,358	3,616	3,903	1,949	1,954	5,456	2,735	2,720
1986	56,004	28,112	27,891	7,148	3,423	3,725	3,979	1,988	1,990	5,590	2,804	2,786
1987	57,356	28,796	28,560	7,354	3,520	3,834	4,056	2,028	2,028	5,726	2,872	2,853
1988	58,721	29,486	29,235	7,561	3,618	3,943	4,133	2,068	2,065	5,863	2,941	2,922
1989	60,097	30,182	29,914	7,768	3,716	4,052	4,212	2,109	2,103	6,002	3,011	2,990
1990	61,480	30,883	30,598	7,974	3,814	4,160	4,292	2,150	2,142	6,142	3,082	3,060
1991	62,868	31,585	31,283	8,178	3,911	4,267	4,371	2,191	2,180	6,282	3,153	3,129
1992	64,259	32,290	31,969	8,380	4,007	4,373	4,452	2,233	2,219	6,423	3,224	3,199
1993	65,649	32,995	32,654	8,579	4,101	4,478	4,531	2,274	2,257	6,564	3,295	3,269
1994	67,038	33,699	33,339	8,776	4,195	4,582	4,611	2,315	2,296	6,704	3,366	3,338
1995	68,424	34,402	34,021	8,971	4,287	4,684	4,690	2,356	2,334	6,844	3,437	3,407
1996	69,804	35,103	34,701	9,162	4,378	4,785	4,768	2,396	2,372	6,984	3,507	3,476
1997	71,175	35,800	35,375	9,350	4,466	4,884	4,846	2,437	2,410	7,122	3,577	3,545
1998	72,536	36,492	36,044	9,534	4,554	4,981	4,923	2,476	2,447	7,259	3,647	3,612
1999	73,886	37,178	36,708	9,716	4,640	5,076	4,998	2,515	2,483	7,395	3,715	3,679
2000	75,224	37,859	37,365	9,895	4,724	5,171	5,073	2,554	2,519	7,529	3,783	3,745

Table 5.1 - QUANTITY AND VALUE OF AGRICULTURAL PRODUCTION  
(Quantity in thousand metric tons;

BY KIND OF CROP, PHILIPPINES: CROPTEAR 1950 TO 1987  
Value in million pesos)

Crop Year	All Crops						Food Crops						Other fruits and nuts 1					
	Total	Commercial	Palay (Rough Rice)	Food	Commercial	Palay (Rough Rice)	Corn (shelled)	Banana	Mango	Pineapple	Other fruits and nuts 1	Corn (shelled)	Banana	Mango	Pineapple	Other fruits and nuts 1		
	Quantity	Value	Quantity	Quantity	Value	Quantity	Quantity	Value	Quantity	Value	Quantity	Quantity	Value	Quantity	Value	Quantity	Value	
1950	8011.0	1497.9	4275.8	1014.9	483.0	2806.1	573.7	89.4	161.4	37.8	27.4	11.7	56.5	8.5	80.6	17.2		
1955	8885.1	1563.2	6054.1	935.7	2831.0	3202.9	770.1	106.0	294.8	21.3	50.4	17.7	103.2	14.6	147.0	25.1		
1960	10411.4	2046.1	7315.1	1167.9	3096.3	3739.5	1165.3	149.7	307.3	24.1	57.6	13.9	133.9	19.3	175.6	31.4		
1965	12242.9	3278.5	8478.8	1965.2	3784.1	3992.5	1312.7	272.8	684.8	44.1	129.4	27.6	176.1	25.3	223.2	41.3		
1970	15486.8	8154.0	10670.0	4750.3	4816.8	3403.7	2008.2	525.9	896.0	656.9	151.7	142.9	233.4	109.5	288.4	212.5		
1971	15863.8	8269.8	11016.1	5685.1	4847.7	3584.7	2011.8	723.4	1034.8	811.8	137.5	127.0	234.3	121.4	256.6	198.5		
1972	15657.5	10525.8	10865.7	6933.2	4751.8	3392.6	2024.2	1048.1	980.1	781.2	143.4	132.3	282.1	146.6	337.2	287.5		
1973	15515.4	10930.7	10096.5	6392.4	5418.9	4538.3	1842.8	831.4	1012.6	814.7	187.6	180.0	293.4	166.4	309.8	284.6		
1974	17826.7	18031.2	12288.0	10557.0	5638.7	7474.2	2257.5	1504.6	1235.5	1038.1	191.5	297.8	338.3	285.7	325.8	427.0		
1975	20002.4	20329.4	13743.9	13603.1	6238.5	6726.3	2513.9	2160.9	1886.0	1542.6	239.3	254.9	424.4	504.1	337.4	569.2		
1976	23551.5	20433.7	15651.9	14504.6	7889.6	5929.1	2717.3	2394.6	2270.6	917.0	293.1	592.8	419.9	521.5	347.1	552.4		
1977	24722.5	28092.2	17072.9	17217.9	7649.6	10874.3	2774.8	2605.3	2447.4	1043.9	307.6	584.7	421.8	558.1	470.9	749.5		
1978	26340.7	27065.2	18615.8	18373.1	7724.9	8692.1	2796.1	2671.4	3155.8	1510.4	335.2	678.5	464.9	707.0	506.4	825.5		
1979	28240.5	34032.2	20478.7	20900.8	7761.8	13131.4	3090.3	2851.1	3581.8	1749.0	363.3	1056.5	504.5	736.1	607.7	1055.5		
1980	32115.0	40378.1	24143.0	26554.4	7972.0	14423.7	3050.2	3224.4	4093.4	2349.4	544.5	1894.8	1004.8	1173.2	1459.3	1948.2		
1981	32082.9	45708.3	24323.7	29880.0	7759.2	15828.3	3295.9	3985.8	3996.1	2145.4	369.2	1809.6	936.1	588.9	1597.3	2898.1		
1982	33122.4	46152.8	25671.8	33051.9	7450.6	13100.9	3404.1	4343.3	4067.9	2417.8	426.2	1894.8	1213.7	1047.1	1721.3	3297.5		
1983	30493.7	48574.6	23349.2	31856.1	7144.5	15718.5	3134.1	4339.3	3685.4	2519.4	360.7	1403.7	1699.1	1599.8	1646.5	3155.4		
1984	28854.9	74641.4	22380.8	49222.2	6474.1	25415.2	3250.3	7716.6	3850.8	4258.4	366.7	2649.8	1553.5	2286.1	1360.8	2785.5		
1985	30767.1	91435.8	24796.1	67285.2	6001.0	24150.6	3862.8	10794.7	3704.9	4605.7	380.6	3082.8	1979.6	2834.1	1431.8	4339.6		
1986	31568.8	85129.8	25980.5	70978.1	5608.3	14151.7	4080.7	10267.7	3631.7	6264.6	300.8	3010.0	2065.6	3954.0	1451.7	5356.7		
1987	30363.6	93183.0	25508.5	73277.7	5455.1	19905.3	4278.1	12406.5	3530.6	6037.7	346.4	3465.4	2302.0	4738.0	1426.3	5304.1		

Table 5.1 - QUANTITY AND VALUE OF AGRICULTURAL PRODUCTION  
(Quantity in thousand metric tons;  
Value in million pesos)

BY KIND OF CROP, PHILIPPINES: CROPPERS 1950 TO 1987 (continued)

Crop Year	F O O D										C R O P S					
	Citrus 2		Rootcrops 3		Vegetables including onions & potatoes 4		Beans & peas 5		Coffee		Cacao		Peanuts (unshelled)		Other food crops 6	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1950	19.8	5.2	664.3	47.0	52.5	11.7	15.4	7.4	4.0	4.8	0.7	1.5	42.3	4.1	1.1	...
1955	31.5	9.7	1200.0	50.7	189.4	36.2	40.0	18.4	7.0	10.6	1.5	4.5	17.5	5.4	4.7	0.4
1960	43.3	10.5	1411.6	84.3	185.2	45.6	42.3	28.3	25.9	38.1	3.1	9.0	15.3	5.2	8.2	1.4
1965	70.8	17.5	1536.7	149.5	215.0	60.9	25.7	14.0	44.0	58.6	4.2	11.3	13.2	5.6	49.5	9.0
1970	70.7	41.0	1316.3	404.5	310.2	245.8	23.0	37.8	49.0	222.8	4.3	20.5	17.4	16.0	58.0	40.5
1971	62.7	37.7	1220.8	426.8	304.4	275.1	23.6	39.5	49.5	219.6	3.6	18.9	18.9	19.1	79.2	52.7
1972	65.5	41.8	1217.7	446.7	305.6	302.7	23.6	41.0	51.6	236.8	3.5	18.9	18.9	19.8	87.4	60.5
1973	63.8	50.7	1220.5	490.5	345.1	382.1	25.9	51.6	50.9	233.8	3.6	19.6	16.2	24.3	113.1	91.5
1974	61.6	67.6	1410.6	560.9	400.0	588.7	23.2	67.0	53.0	291.3	4.1	34.9	21.6	41.3	123.4	152.0
1975	77.9	102.5	1807.1	811.9	444.6	1000.9	34.9	128.6	91.4	647.1	3.3	35.3	36.2	98.5	138.0	226.1
1976	120.2	242.8	2143.5	892.4	463.6	873.1	41.1	152.7	80.8	640.5	3.2	45.0	40.8	128.5	289.7	450.3
1977	125.0	266.6	2773.6	1275.6	497.8	743.5	41.7	174.2	105.1	1562.4	2.9	62.2	46.2	148.6	316.5	453.2
1978	122.7	263.8	3004.4	1060.2	524.3	853.9	41.1	162.7	118.8	1871.8	3.1	78.8	37.8	115.1	306.4	479.5
1979	122.1	311.2	3568.8	1562.9	467.2	992.3	42.0	195.5	115.5	1755.0	3.8	132.8	49.2	181.4	347.6	747.6
1980	128.0	373.7	5027.8	2371.6	505.3	1247.4	105.8	266.2	136.2	1979.4	4.2	106.8	48.9	188.3	387.0	645.1
1981	135.7	477.9	4865.4	2624.3	502.3	1411.9	121.5	305.0	161.6	2399.1	4.5	94.9	29.5	129.1	397.8	578.6
1982	131.6	363.5	5071.6	3209.2	516.2	1506.3	132.4	372.3	173.0	1977.1	6.6	138.2	48.6	233.5	424.9	656.7
1983	118.4	357.9	4342.3	2610.7	447.5	1271.5	127.2	311.8	114.0	1944.7	4.9	81.4	35.8	175.4	333.4	604.0
1984	125.5	537.7	2962.2	2425.3	476.8	2095.1	86.0	226.4	122.1	3387.4	5.0	139.1	42.2	281.5	350.0	765.2
1985	130.2	594.5	3399.0	4145.5	467.2	2681.9	94.7	416.1	135.3	3239.7	6.0	191.6	45.2	383.7	353.2	1196.5
1986	145.7	720.0	3714.4	5172.5	487.3	2868.5	96.0	480.0	139.6	4597.8	6.6	204.6	43.9	430.9	359.7	1277.2
1987	150.0	713.0	3769.2	5276.2	473.0	2184.8	96.6	578.4	132.0	4051.9	7.2	190.5	47.0	449.7	360.2	1578.6





Table 5.2 - AGRICULTURAL AREA HARVESTED AND MEAN YIELD,  
(Area in thousand hectares);

BY KIND OF CROP, PHILIPPINES: 1950 to 1987  
mean yield in metric tons per hectare)

Crop year	Total area harvested	Food						Other fruits and nutral						Vegetables including onions and potatoes <sup>4</sup>					
		Palay (rough rice)		Corn (shelled)		Banana		Mango		Pineapple		Citrus 2		Rootcrops <sup>3</sup>		Mean yield			
		Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield		
1950	5,076.2	2,214.0	1.177	909.0	0.631	97.7	1.652	32.9	0.833	15.2	3.717	48.8	1.652	16.6	1.193	185.5	3.581	20.1	2.612
1955	6,435.3	2,655.5	1.206	1,388.4	0.555	167.0	1.765	56.2	0.897	25.9	3.985	83.2	1.767	19.7	1.599	272.7	4.400	97.9	1.873
1960	7,596.0	3,306.5	1.131	1,845.5	0.631	161.5	1.903	52.5	1.097	22.6	5.925	83.1	2.125	22.9	1.891	289.1	4.883	80.7	2.295
1965	8,252.0	3,189.7	1.248	1,922.9	0.683	220.5	3.106	50.6	2.557	30.1	5.850	70.8	3.153	28.6	2.476	273.7	5.615	53.2	4.060
1970	8,946.6	3,113.4	1.581	2,419.6	0.830	235.2	3.810	45.5	3.334	28.9	6.076	70.8	4.073	21.3	3.319	252.4	5.215	62.8	4.939
1971	9,214.8	3,195.0	1.746	2,427.8	0.829	227.1	4.557	40.5	3.395	28.0	8.368	65.1	3.942	19.0	3.300	246.0	4.963	55.5	5.293
1972	9,490.4	3,332.3	1.598	2,454.3	0.825	243.8	4.020	40.8	3.515	29.5	9.530	70.8	4.763	18.7	3.503	258.5	4.711	55.9	4.537
1973	9,320.7	3,194.2	1.443	2,350.6	0.784	250.4	4.044	43.6	4.303	27.6	10.630	67.6	4.563	19.0	3.358	266.3	4.563	68.4	5.045
1974	10,171.4	3,527.8	1.656	2,726.4	0.828	211.8	5.832	43.5	4.402	28.4	11.912	67.1	4.870	19.1	3.225	313.9	4.494	68.8	5.814
1975	10,800.9	3,632.5	1.627	3,009.9	0.835	233.3	7.227	46.5	5.135	30.5	13.915	67.8	4.976	20.1	3.876	351.2	5.146	75.3	5.904
1976	11,569.0	3,674.0	1.750	3,193.2	0.851	297.7	7.627	35.8	6.187	35.2	11.929	64.8	5.356	22.3	5.390	400.9	5.347	73.7	6.230
1977	11,958.7	3,641.4	1.851	3,242.5	0.856	300.4	8.147	36.2	8.497	36.1	11.684	68.3	6.895	22.1	5.701	451.2	6.147	75.6	6.885
1978	11,896.0	3,601.7	1.989	3,158.1	0.885	284.4	11.096	35.4	9.469	45.3	10.263	65.9	7.684	23.5	5.221	460.7	6.521	78.1	6.713
1979	12,040.1	3,560.7	2.110	3,252.4	0.950	312.0	11.480	38.7	9.388	54.6	11.073	70.4	8.632	24.9	4.904	480.7	7.424	87.7	6.901
1980	12,155.4	3,470.5	2.155	3,199.0	0.976	286.7	12.522	38.7	9.622	62.7	20.426	231.1	7.314	20.8	5.241	523.0	7.135	68.8	7.344
1981	12,182.2	3,419.0	2.233	3,294.8	0.960	285.4	13.063	40.7	8.646	57.9	19.294	236.3	7.139	24.1	5.155	522.6	7.150	66.5	7.553
1982	12,348.4	3,351.1	2.359	3,382.9	0.979	292.4	12.304	39.2	10.322	64.8	20.667	249.8	7.770	24.2	5.140	511.5	6.616	69.3	7.449
1983	11,802.5	3,054.3	2.386	3,132.0	0.990	314.2	11.919	44.7	9.414	62.1	18.751	266.6	5.989	25.3	4.802	513.1	6.150	65.2	6.882
1984	11,957.1	3,162.3	2.497	3,227.0	1.023	322.1	12.024	43.4	8.611	57.3	27.273	261.9	4.999	25.0	5.027	426.7	5.453	65.2	7.241
1985	12,407.3	3,306.5	2.545	3,510.9	1.037	320.5	11.267	45.3	8.465	55.5	26.776	268.0	4.735	25.9	4.916	451.6	5.815	66.1	7.068
1986	12,624.6	3,464.2	2.873	3,595.0	1.106	329.8	11.574	46.2	6.079	59.5	26.909	271.2	4.573	28.2	5.007	456.3	6.314	67.0	7.294
1987	12,539.7	3,255.9	2.632	3,662.6	1.126	324.1	11.362	49.4	5.605	59.2	54.436	272.2	6.766	28.8	4.945	468.8	6.464	64.0	7.368

Table 5.2 - AGRICULTURAL AREA HARVESTED AND MEAN YIELD,  
(Area in thousand hectares)

BY KIND OF CROP, PHILIPPINES: 1950 to 1987 (continued)  
mean yield in metric tons per hectare

Crop year	Food crops												Commercial crops							
	Beans & Peas <sup>5</sup>		Coffee		Cacao		Peanuts (unshelled)		Other food crops <sup>6</sup>		Coconut <sup>7</sup>		Sugarcane <sup>8</sup>		Abaca		Native tobacco		Virginia tobacco	
	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield
1950	34.0	0.453	9.8	0.409	4.0	0.175	21.0	0.595	0.5	2.200	385.0	0.859	129.5	5.050	291.5	0.282	46.1	0.573	...	...
1955	87.7	0.591	18.2	0.365	6.5	0.231	28.4	0.620	2.2	2.136	990.0	1.154	267.7	5.777	217.0	0.482	37.1	0.539	15.5	0.652
1960	78.2	0.541	30.5	0.849	6.5	0.470	24.3	0.630	4.0	2.050	1059.4	1.055	242.2	7.468	175.2	0.539	44.1	0.676	51.7	0.662
1965	56.0	0.459	44.3	0.995	9.6	0.438	24.1	0.548	11.4	4.342	1604.7	0.956	350.5	5.805	199.3	0.672	47.3	0.605	28.8	0.597
1970	50.0	0.460	54.0	0.907	8.4	0.512	32.5	0.535	11.7	5.812	1883.9	1.068	366.1	7.087	173.0	0.708	54.0	0.726	33.4	0.659
1971	49.2	0.480	54.3	0.912	7.4	0.486	32.5	0.582	12.9	6.140	2048.5	0.820	441.6	6.749	155.3	0.674	46.6	0.763	29.0	0.690
1972	44.6	0.529	54.8	0.942	6.9	0.507	32.8	0.576	15.9	5.497	2125.5	0.961	441.0	5.790	145.2	0.758	45.7	0.783	31.9	0.643
1973	46.7	0.555	60.8	0.837	7.1	0.507	33.2	0.548	16.9	6.692	2133.3	0.944	455.2	7.010	163.3	0.730	51.9	0.842	32.1	0.657
1974	44.9	0.517	64.9	0.817	6.9	0.594	36.7	0.589	18.1	6.818	2206.0	0.831	490.7	7.030	170.1	0.740	58.6	0.765	28.5	0.653
1975	55.3	0.631	65.4	1.398	6.6	0.500	54.8	0.661	20.8	6.635	2279.5	1.195	536.1	6.133	179.7	0.743	46.7	0.717	36.0	0.617
1976	62.8	0.654	76.8	1.052	4.0	0.800	60.6	0.673	83.8	3.457	2521.2	1.411	572.6	7.109	243.8	0.571	51.9	0.644	34.4	0.741
1977	62.8	0.664	76.2	1.379	4.4	0.659	62.7	0.737	88.1	3.593	2728.2	1.409	573.2	6.178	250.3	0.602	45.2	0.617	30.8	0.731
1978	63.1	0.651	84.5	1.406	4.2	0.738	47.9	0.789	85.1	3.600	2956.9	1.419	521.6	6.292	243.8	0.532	43.3	0.797	30.5	0.728
1979	62.6	0.671	85.2	1.213	4.5	0.844	53.8	0.914	85.2	4.090	3063.6	1.402	451.2	7.090	234.7	0.532	37.3	0.753	29.6	0.784
1980	105.4	0.711	91.0	1.231	6.8	0.872	55.1	0.906	84.9	4.558	3125.9	1.462	424.6	7.350	235.9	0.666	36.7	0.840	24.4	0.758
1981	108.8	0.707	132.8	1.236	7.1	0.568	38.7	0.765	87.4	4.551	3105.3	1.389	421.1	7.583	230.1	0.558	32.6	0.850	22.6	0.792
1982	110.3	0.725	125.5	1.263	10.8	0.486	55.5	0.860	88.3	4.812	3182.3	1.197	470.8	7.227	206.8	0.579	33.2	0.663	23.9	1.038
1983	112.9	0.790	142.7	1.006	12.0	0.495	48.5	0.739	80.6	4.199	3209.0	1.089	423.6	8.103	189.0	0.538	29.1	0.584	25.4	1.075
1984	78.5	0.781	144.5	0.833	11.8	0.418	46.1	0.917	77.3	4.527	3216.1	0.908	479.4	6.891	170.3	0.521	26.0	0.776	40.7	1.131
1985	81.0	0.803	145.8	0.917	14.9	0.402	50.2	0.900	60.3	4.398	3274.9	0.905	407.1	6.749	169.5	0.494	17.0	0.765	34.4	0.990
1986	86.5	0.750	148.2	0.923	15.8	0.405	49.9	0.879	81.7	4.402	3261.5	0.869	355.9	5.999	161.5	0.512	22.4	0.857	34.4	1.069
1987	88.0	0.752	149.7	0.900	17.0	0.390	54.5	0.861	79.1	4.554	3360.0	0.971	274.2	6.788	157.2	0.576	26.0	0.631	29.6	1.232

Table 5.2 - AGRICULTURAL AREA HARVESTED AND MEAN YIELD, BY KIND OF CROP, PHILIPPINES: 1950 to 1987 (continued). (Area in thousand hectares; mean yield in metric tons per hectare)

Crop year	Rice		Rubber		Maize		Other commercial crops <sup>9</sup>	
	Area	Mean yield	Area	Mean yield	Area	Mean yield	Area	Mean yield
1950	...	...	3.4	0.382	7.0	0.257	4.6	26.826
1955	2.9	0.586	5.0	0.400	4.0	0.050	5.6	43.766
1960	1.7	1.294	5.2	0.596	2.9	0.724	5.6	0.786
1965	3.2	1.719	17.0	0.347	2.7	0.926	3.1	0.545
1970	2.4	1.292	21.8	0.872	2.8	0.857	2.7	0.630
1971	2.4	1.292	23.0	0.909	2.7	0.889	2.4	0.667
1972	2.4	1.292	24.7	0.879	2.6	0.962	1.7	0.647
1973	2.4	1.333	26.1	0.885	2.6	0.962	1.4	0.786
1974	2.2	1.273	33.2	0.861	2.6	1.038	1.2	0.833
1975	1.4	1.000	45.4	1.007	2.5	0.720	1.5	5.480
1976	0.2	2.000	55.1	1.040	2.7	0.963	1.5	2.200
1977	0.2	2.000	58.5	0.995	2.6	1.038	1.7	0.765
1978	0.3	4.667	53.7	1.013	3.5	0.943	3.5	0.666
1979	0.3	4.667	53.7	1.095	3.8	1.026	2.5	1.480
1980	0.3	0.667	54.1	1.251	3.3	1.333	5.7	1.667
1981	0.5	1.000	53.9	1.336	3.3	1.691	10.7	0.991
1982	0.7	1.000	56.9	1.381	3.3	1.691	11.8	1.102
1983	0.6	1.000	57.7	1.210	3.2	1.063	10.7	0.841
1984	0.6	0.886	64.4	1.912	3.2	1.053	7.2	1.403
1985	0.7	1.000	71.8	2.036	3.1	1.064	6.4	1.203
1986	3.4	2.382	75.3	2.045	3.2	1.062	5.5	1.163
1987	10.7	2.785	75.7	1.806	3.2	1.062	9.5	1.340

- 1 Includes atis, avocado, calamansi, casabe, chico, Emabano, Jackfruit, lanzones, pill and watermelon from 1950 to the present. Grapes were included starting 1975.
- 2 Includes calamansi, mandarin, orange and pomelo.
- 3 Includes camote, cassava, saba pao (galing), tugi and ubi.
- 4 Vegetables include cabbage, eggplant, garlic, radish and tomatoes from 1950 to the present. Ginger was included starting 1970.
- 5 Includes drybeans and mungo from 1950 to the present. Soybeans were included starting 1970.
- 6 Includes other fruits and vegetables.
- 7 Includes nuts used for making copra, desiccated coconut, home-made oil and as food nuts from 1950 to the present. Nuts used for commercial manufacturing were included starting 1970.
- 8 Includes sugarcane used for centrifugal sugar, muscovado, panocha and molasses.
- 9 Includes kapok from 1950 to the present. Starting 1975, castor beans and cotton (seeded) were added to this category.

Sources: National Economic and Development Authority (formerly NRC), The Raw Materials Resources Survey Bulletin Series No. 1 June 1959; Department of Agriculture (DA), Bureau of Agricultural Statistics.

Table 5.3b - AREA OF FARMS BY LAND USE, BY REGION AND BY PROVINCE: 1960

Region/ Province	Total Farm Area (Ha.)	Arable Land			Land Under Permanent Crops			Land Under Pastures			Land Covered with Forest (Ha.)	All other Lands
		Under temporary crops (Ha.)	Lying idle (Ha.)	Permanent (Ha.)	Under permanent crops (Ha.)	Meadows and Pastures (Ha.)	Under permanent crops (Ha.)	Under permanent crops (Ha.)	Under permanent crops (Ha.)			
Philippines	9,725,150	4,365,163	838,551	3,468,978	530,035	336,476	185,913	530,035	336,476	185,913	18,863	13,948
Metropolitan Manila Area (National Capital Region)	9,359	4,987	2,649	1,099	98	113	405	1,099	98	113	18,863	13,948
Region 1	430,875	308,571	17,097	21,960	50,430	1,298	505	21,960	50,430	1,298	1,298	505
Alaba	28,542	21,323	354	1,512	3,551	2,392	2,884	3,551	2,392	2,884	2,392	2,884
Batangas	40,777	17,477	6,717	3,147	8,159	2,651	1,911	8,159	2,651	1,911	2,651	1,911
Ilocos Norte	49,082	34,800	1,069	912	7,739	2,555	1,849	7,739	2,555	1,849	2,555	1,849
Ilocos Sur	46,476	36,837	704	1,456	3,275	2,555	1,849	3,275	2,555	1,849	2,555	1,849
La Union	47,332	32,875	533	2,676	5,582	3,301	2,385	5,582	3,301	2,385	3,301	2,385
Mt. Province	27,837	9,479	2,773	2,137	12,087	1,236	125	12,087	1,236	125	1,236	125
Pangasinan	190,829	156,778	4,947	10,120	10,038	5,430	4,589	10,120	10,038	5,430	5,430	4,589
Region 2	699,030	415,720	54,431	38,007	95,614	18,111	17,146	38,007	95,614	18,111	18,111	17,146
Batanes	4,653	1,426	297	474	1,727	228	506	1,426	474	228	228	506
Cagayan	162,843	127,536	7,505	7,362	12,390	3,559	4,491	7,362	12,390	3,559	3,559	4,491
Ifugao	49,176	16,994	1,246	2,136	27,718	291	791	2,136	27,718	291	291	791
Isabela	241,986	162,286	27,639	6,918	13,741	4,149	7,258	6,918	13,741	4,149	4,149	7,258
Ialing-Albayon	81,866	34,939	7,522	13,860	17,686	6,733	1,145	13,860	17,686	6,733	6,733	1,145
Mueva Vizcaya	70,053	35,770	4,075	4,469	21,005	2,006	2,737	4,469	21,005	2,006	2,006	2,737
Quirino	28,454	16,781	6,147	2,856	1,347	1,076	247	2,856	1,347	1,076	1,076	247
Region 3	501,924	444,471	16,524	13,769	17,075	3,259	6,323	13,769	17,075	3,259	3,259	6,323
Bataan	24,318	13,142	1,358	4,567	4,557	851	43	4,567	4,557	851	851	43
Bulacan	75,602	65,604	1,042	3,819	2,214	949	1,974	3,819	2,214	949	949	1,974
Mueva Ecija	190,785	175,712	7,274	1,735	3,851	243	1,979	1,735	3,851	243	243	1,979
Pampanga	80,820	76,704	2,404	1,008	86	146	472	1,008	86	146	146	472
Tarlac	101,183	94,690	2,071	966	2,197	403	856	2,071	966	403	403	856
Zambales	28,215	18,620	2,375	1,673	4,171	667	1,508	1,673	4,171	667	667	1,508



