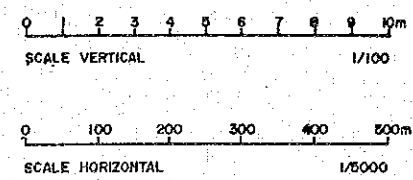
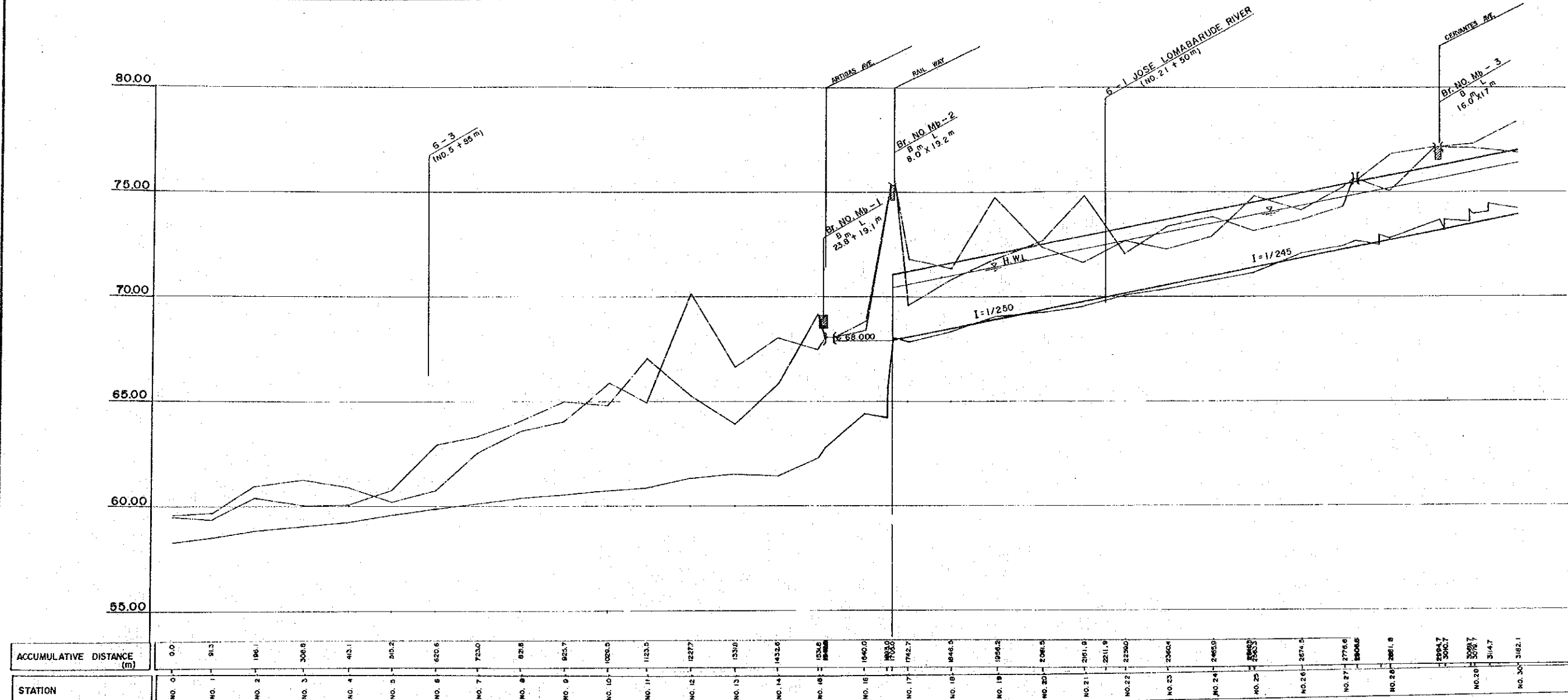


MBURICAO RIVER (1/3)



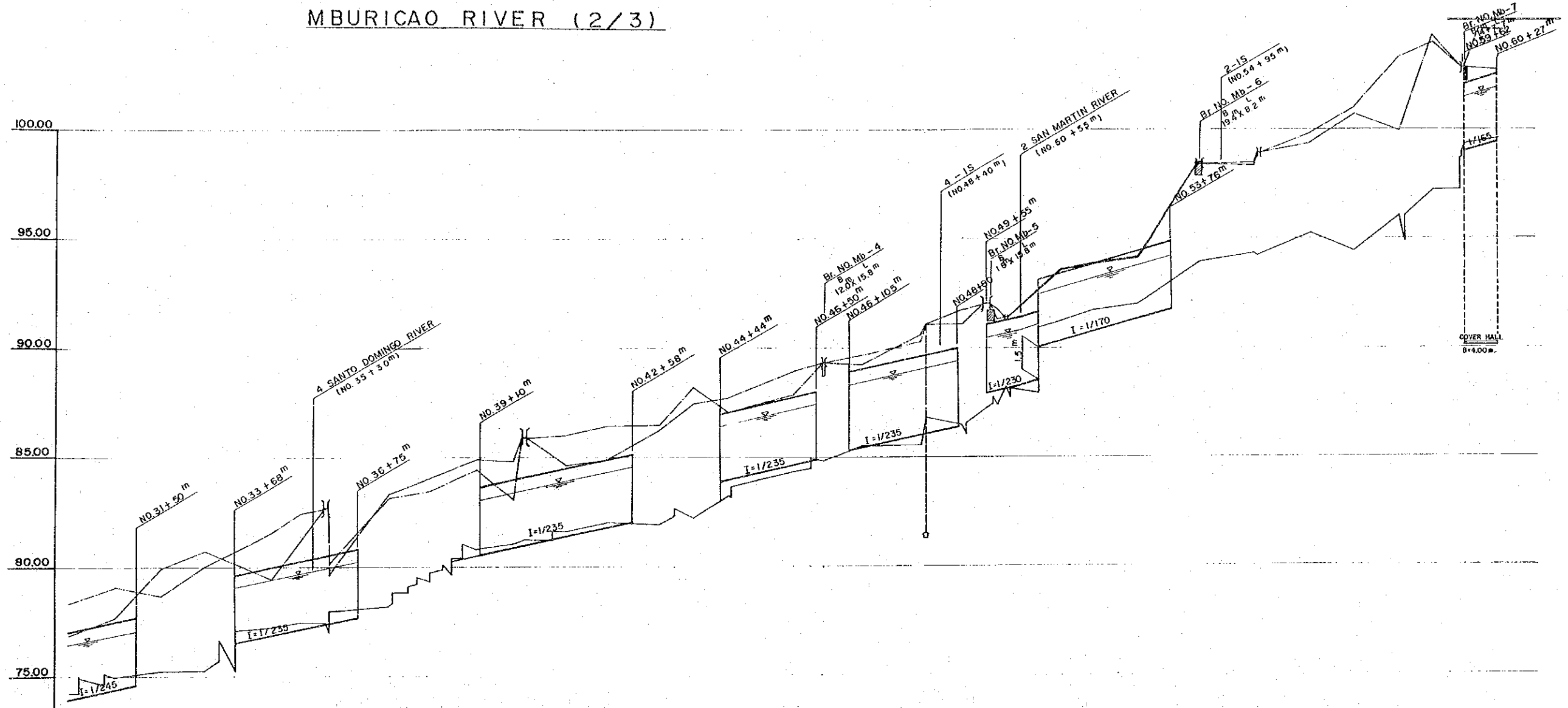
- LEGEND
- : EXISTING RIGHT BANK CROWN
 - : EXISTING LEFT BANK CROWN
 - : EXISTING RIVER BED
 - : DESIGN RIVER BED, DESIGN BANK CROWN
 - ▽ H.W.L. : DESIGN HIGH WATER LEVEL

Fig. 8-9(1/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

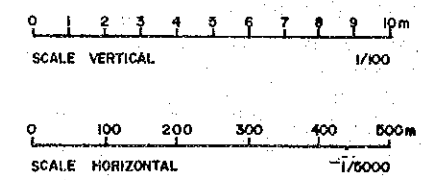
STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

MBURICAO RIVER (2/3)



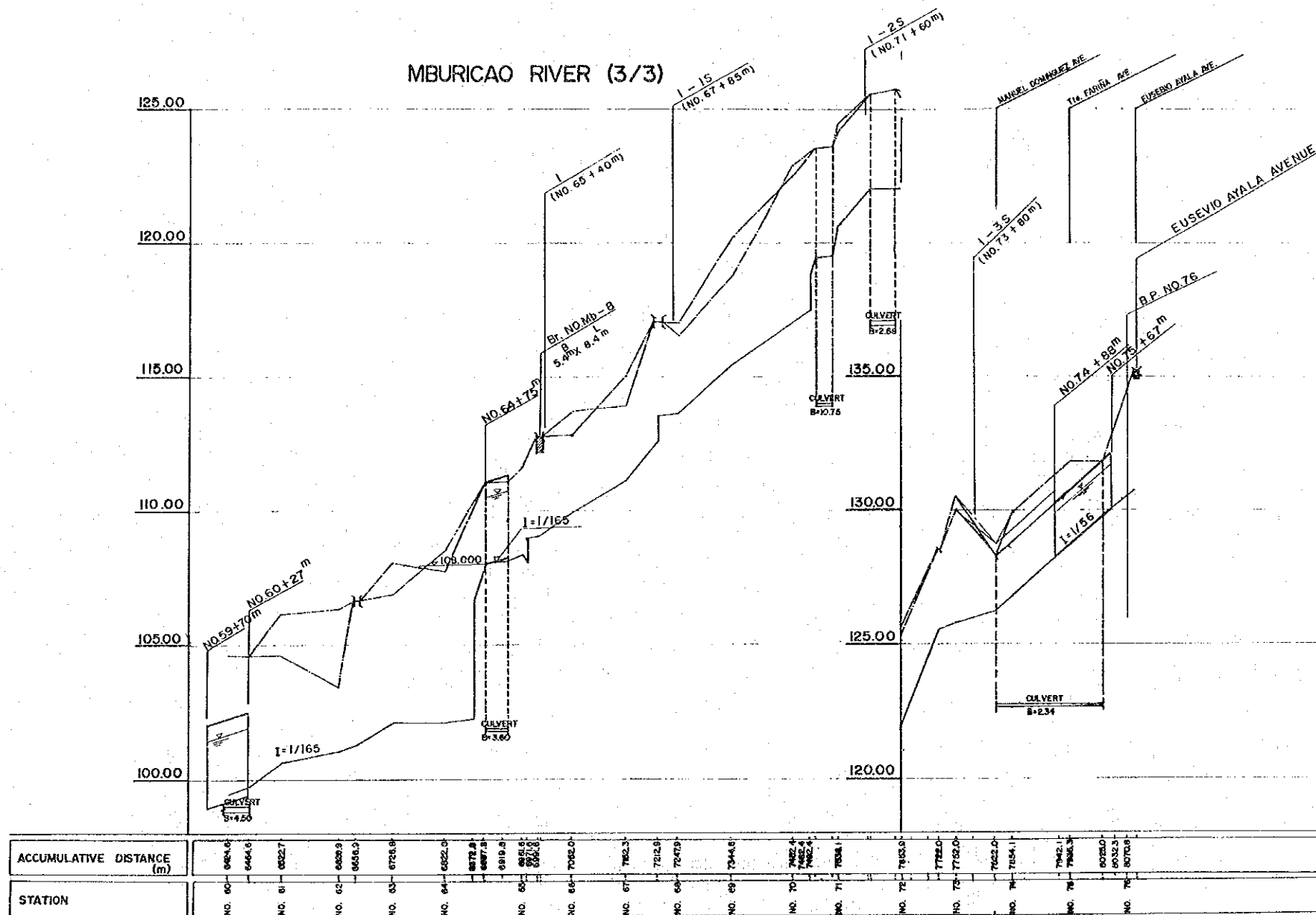
ACCUMULATIVE DISTANCE (m)	STATION
302.1	NO. 30
302.7	NO. 31
304.7	NO. 32
307.4	NO. 33
309.9	NO. 34
312.0	NO. 35
314.9	NO. 36
317.3	NO. 37
319.3	NO. 38
321.3	NO. 39
323.6	NO. 40
326.5	NO. 41
329.4	NO. 42
333.4	NO. 43
337.3	NO. 44
341.9	NO. 45
346.2	NO. 46
350.2	NO. 47
354.2	NO. 48
358.6	NO. 49
363.2	NO. 50
367.9	NO. 51
372.9	NO. 52
377.6	NO. 53
382.7	NO. 54
387.5	NO. 55
392.5	NO. 56
397.5	NO. 57
402.5	NO. 58
407.5	NO. 59
412.6	NO. 60
417.6	NO. 61
422.6	NO. 62
427.6	NO. 63
432.6	NO. 64
437.6	NO. 65
442.6	NO. 66
447.6	NO. 67
452.6	NO. 68
457.6	NO. 69
462.6	NO. 70
467.6	NO. 71
472.6	NO. 72
477.6	NO. 73
482.6	NO. 74
487.6	NO. 75
492.6	NO. 76
497.6	NO. 77
502.6	NO. 78
507.6	NO. 79
512.6	NO. 80
517.6	NO. 81
522.6	NO. 82
527.6	NO. 83
532.6	NO. 84
537.6	NO. 85
542.6	NO. 86
547.6	NO. 87
552.6	NO. 88
557.6	NO. 89
562.6	NO. 90
567.6	NO. 91
572.6	NO. 92
577.6	NO. 93
582.6	NO. 94
587.6	NO. 95
592.6	NO. 96
597.6	NO. 97
602.6	NO. 98
607.6	NO. 99
612.6	NO. 100



- LEGEND
- : EXISTING RIGHT BANK CROWN
 - : EXISTING LEFT BANK CROWN
 - : EXISTING RIVER BED
 - : DESIGN RIVER BED, DESIGN BANK CROWN
 - ▽ H.W.L. : DESIGN HIGH WATER LEVEL

Fig. 8-9(2/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND

- : EXISTING RIGHT BANK CROWN
- : EXISTING LEFT BANK CROWN
- : EXISTING RIVER BED
- : DESIGN RIVER BED, DESIGN BANK CROWN
- ▽ H.W.L. : DESIGN HIGH WATER LEVEL

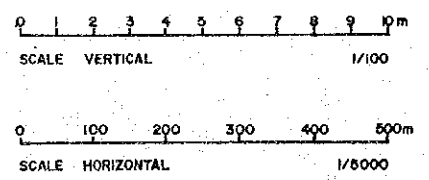
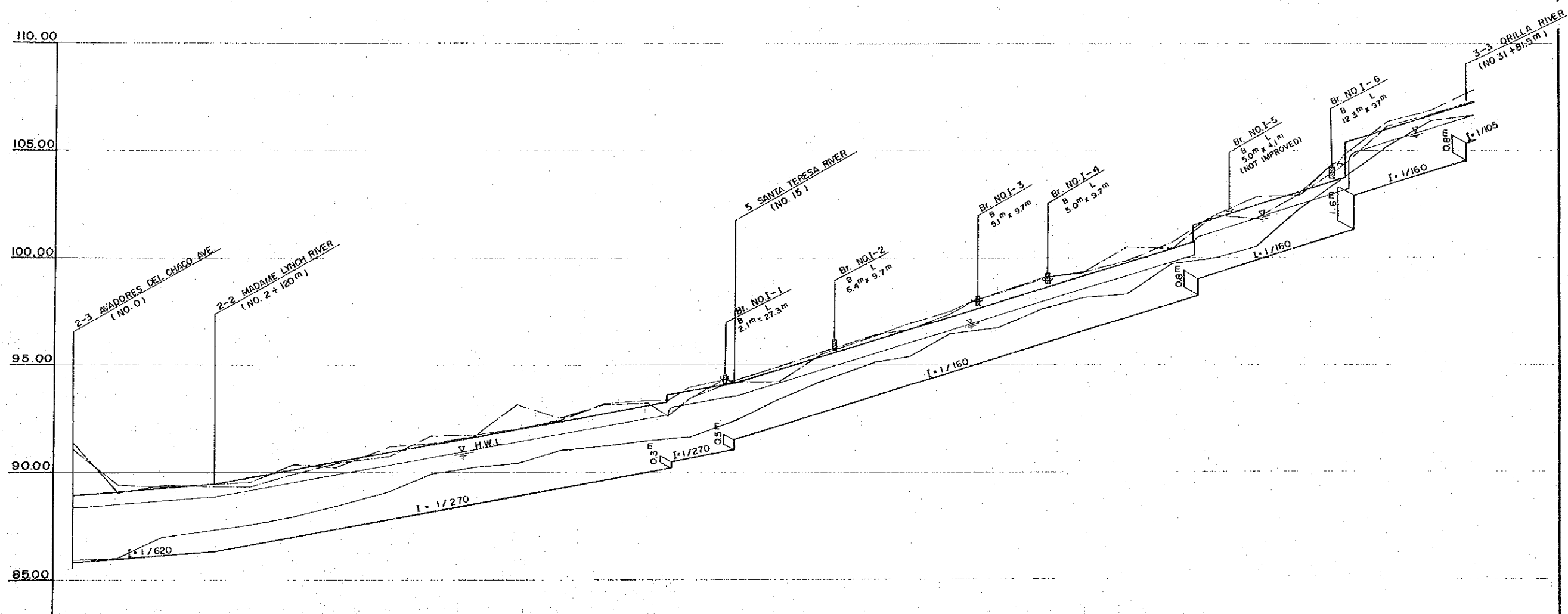


Fig. 8-9(3/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

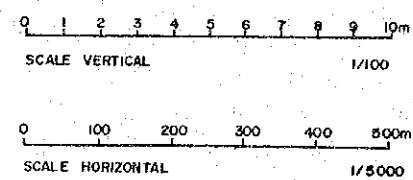
STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

ITAY RIVER (1/2)



ACCUMULATIVE DISTANCE (m)	0.0	100.0	205.4	323.4	423.3	507.1	604.9	728.7	823.6	923.3	1022.8	1122.6	1222.9	1322.4	1372.1	1422.2	1526.1	1630.3	1729.5	1823.3	1924.2	2024.0	2129.6	2224.2	2324.2	2441.3	2546.9	2646.6	2749.4	2845.1	2946.9	3046.1	3146.4	3250.6	3300.9
STATION	NO. 0	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32		

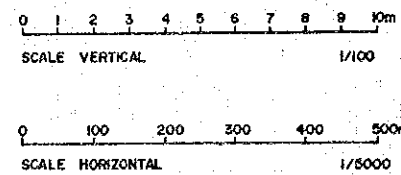
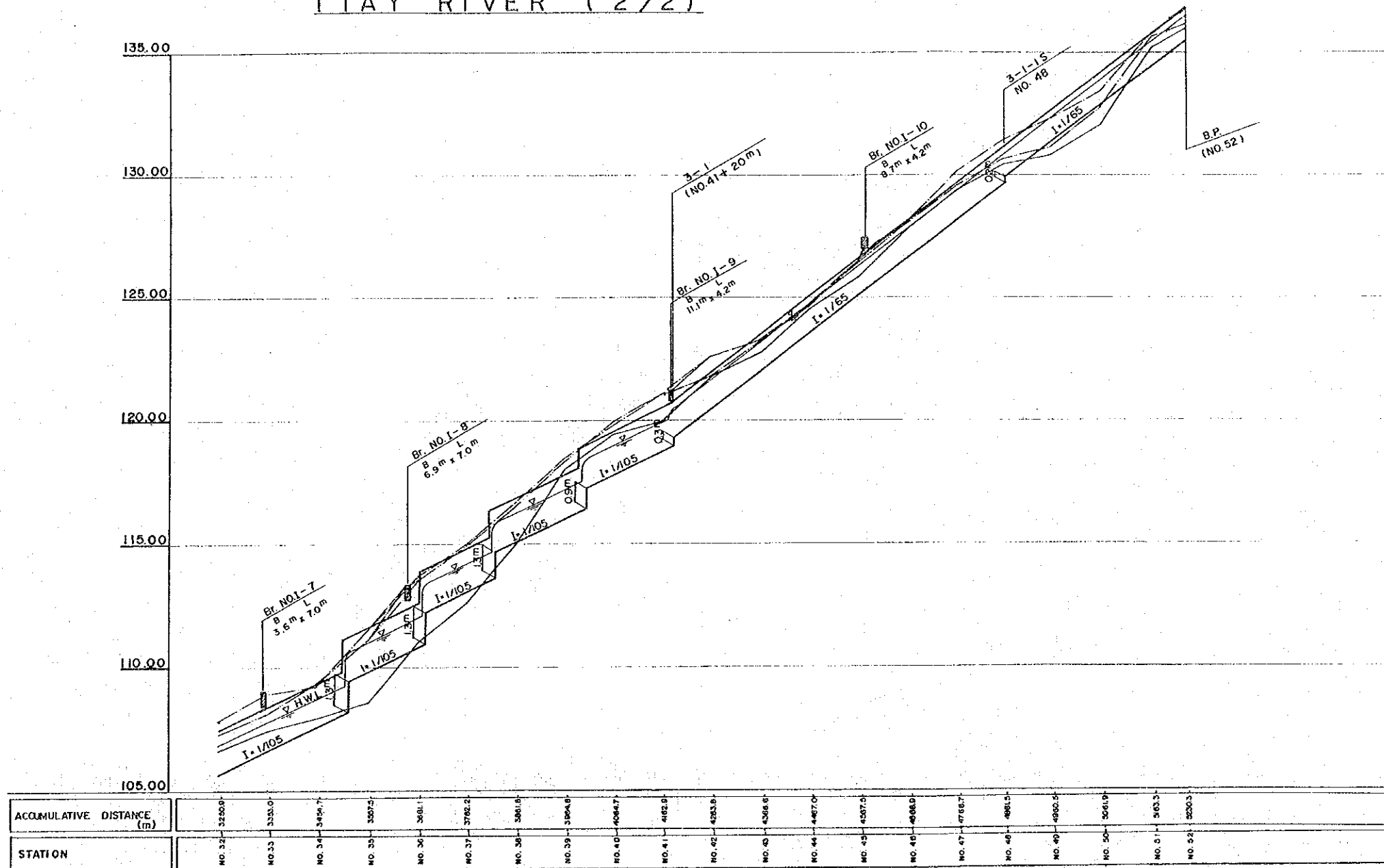


- LEGEND**
- : EXISTING RIGHT BANK CROWN
 - : EXISTING LEFT BANK CROWN
 - : EXISTING RIVER BED
 - : DESIGN RIVER BED, DESIGN BANK CROWN
 - ▽ H.W.L. : DESIGN HIGH WATER LEVEL

Fig. 8-9(4/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY

ITAY RIVER (2/2)

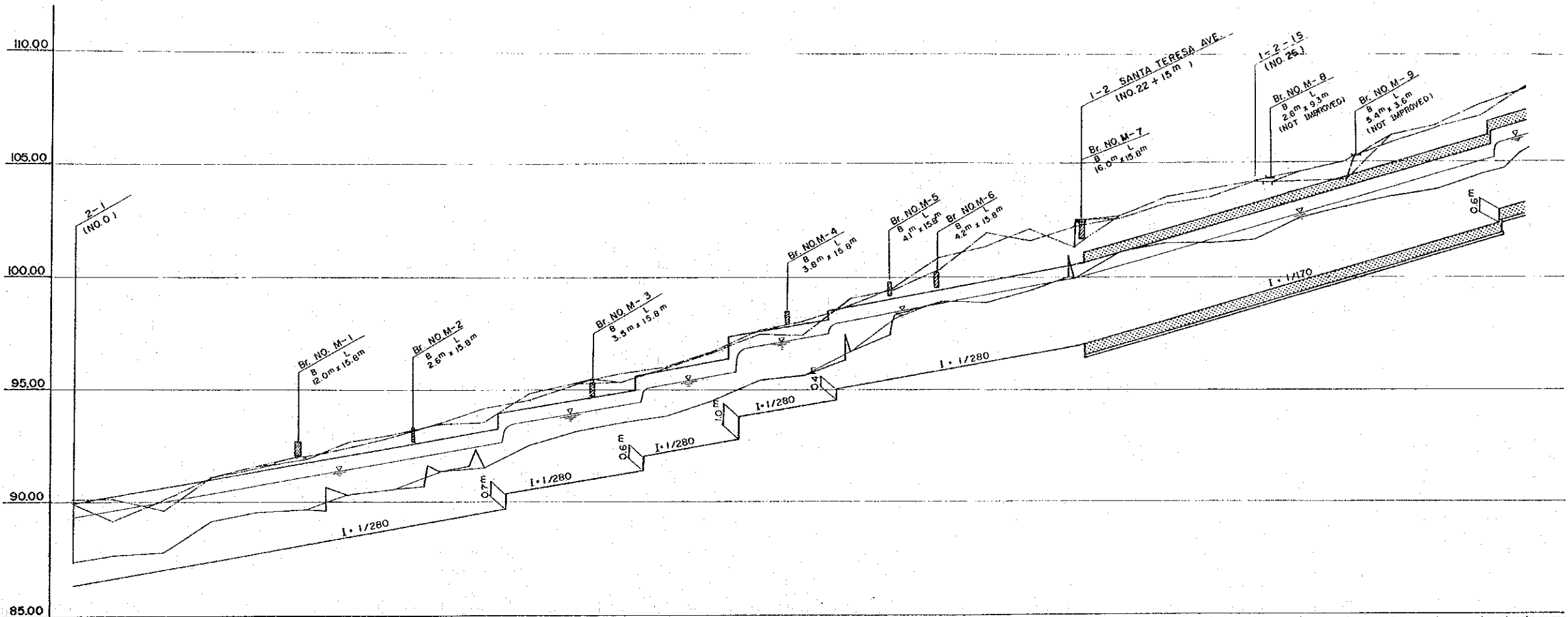


- LEGEND
- — — — — : EXISTING RIGHT BANK CROWN
 - — — — — : EXISTING LEFT BANK CROWN
 - — — — — : EXISTING RIVER BED
 - — — — — : DESIGN RIVER BED, DESIGN BANK CROWN
 - ▽ H.W.L. : DESIGN HIGH WATER LEVEL

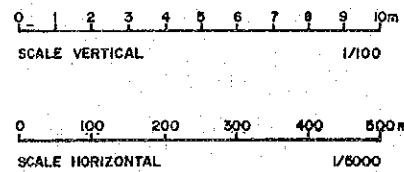
Fig. 8-9(5/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY

MADAME LYNCH RIVER (1/2)



ACCUMULATIVE DISTANCE (m)	0.0	69.3	198.0	299.2	390.7	502.5	597.9	697.3	799.9	900.1	1000.3	1101.1	1201.9	1301.1	1403.7	1504.5	1604.9	1700.6	1807.1	1906.5	2007.9	2102.6	2208.7	230.6	2400.9	2509.3	2608.9	2711.9	2815.0	2912.6	3013.3	312.2	3212.7
STATION	NO. 0	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32

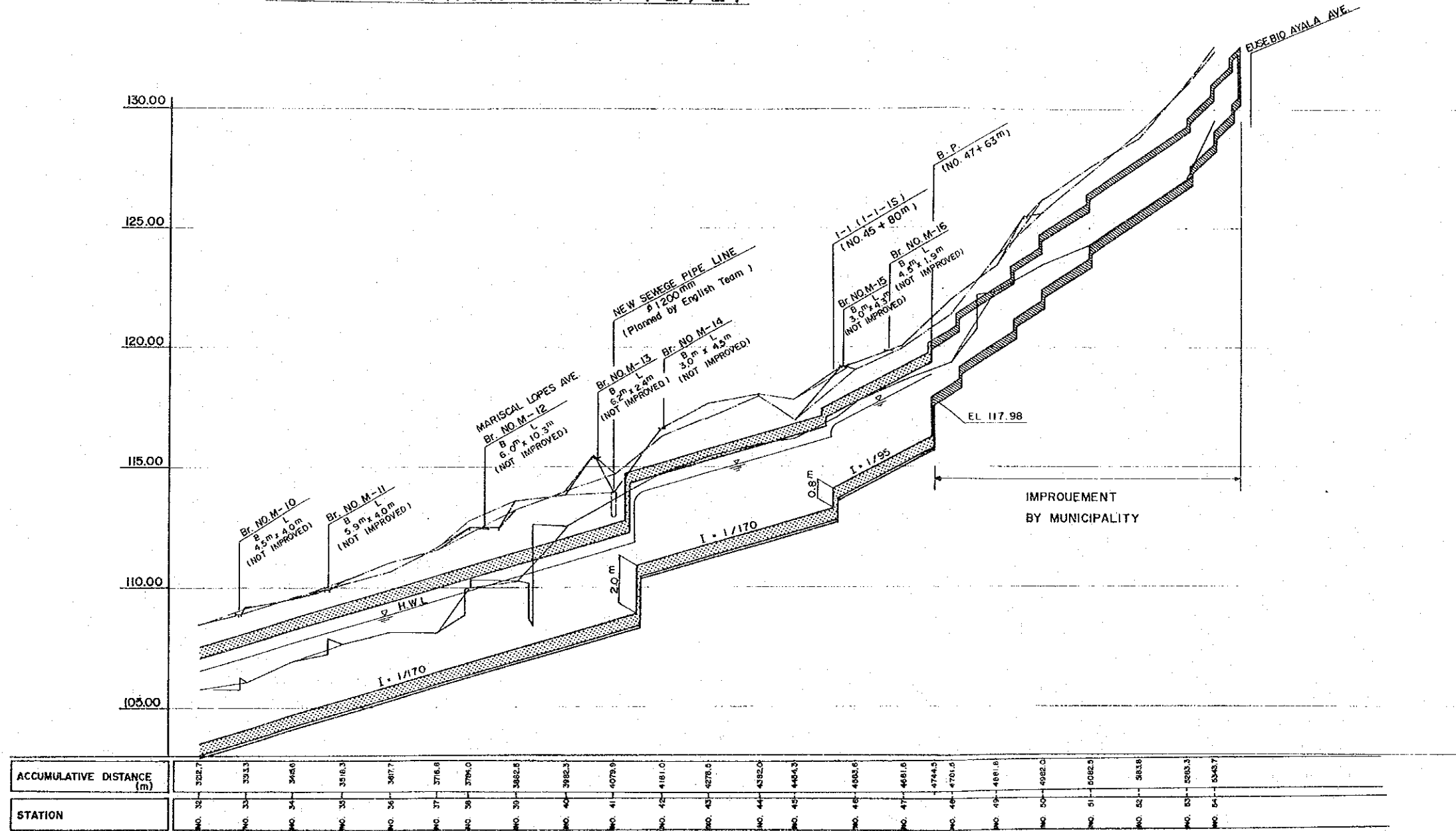


- LEGEND**
- : EXISTING RIGHT BANK CROWN
 - : EXISTING LEFT BANK CROWN
 - : EXISTING RIVER BED
 - : DESIGN RIVER BED, DESIGN BANK CROWN
 - ▽ H.W.L. : DESIGN HIGH WATER LEVEL
 - ▨ : PROPOSED BOX CULVERT

Fig. 8-9(6/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY

MADAME LYNCH RIVER (2/2)



LEGEND

- — — — — : EXISTING RIGHT BANK CROWN
- — — — — : EXISTING LEFT BANK CROWN
- — — — — : EXISTING RIVER BED
- — — — — : DESIGN RIVER BED, DESIGN BANK CROWN
- ▽ H.W.L. : DESIGN HIGH WATER LEVEL
- ▨ : PROPOSED BOX CULVERT

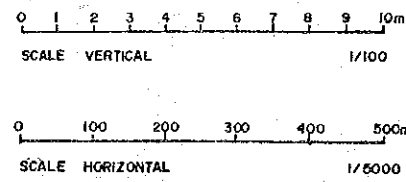
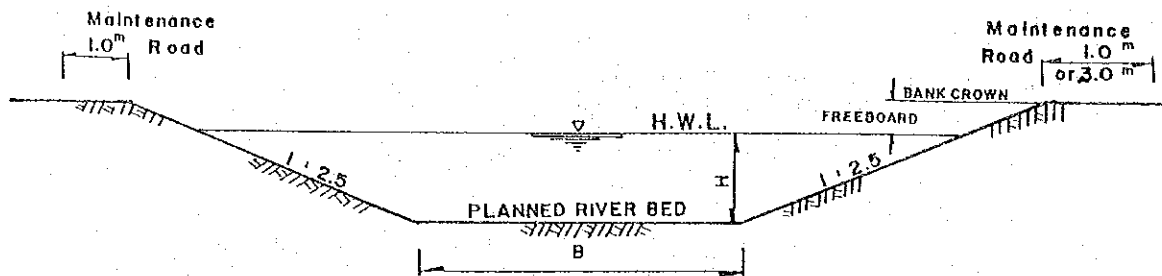


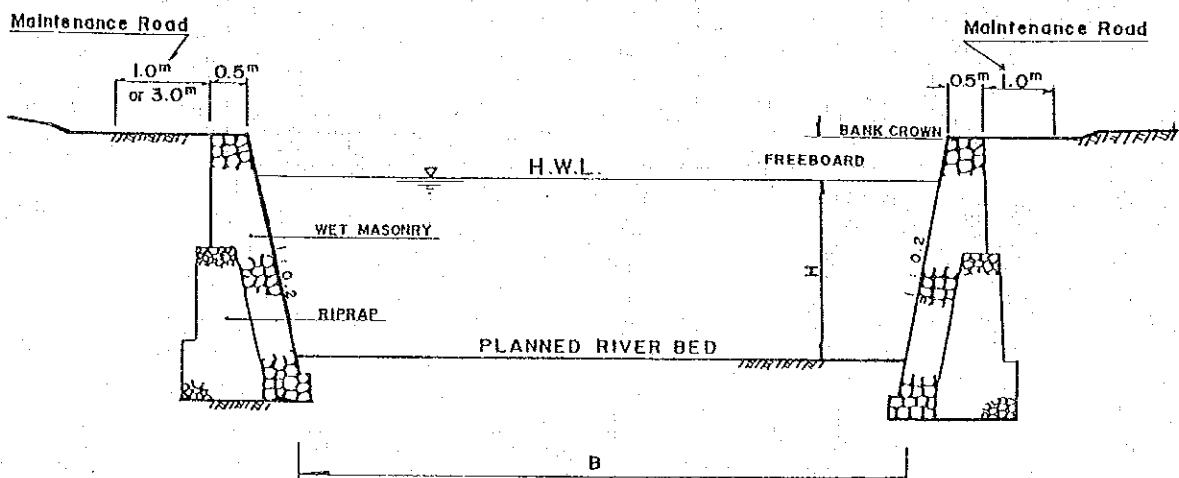
Fig. 8-9(7/7) LONGITUDINAL PROFILE OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY

Channel without Revetment (TYPE A)



Channel with Revetment and without Invert (TYPE B)



Channel with Revetment and Invert (TYPE C)

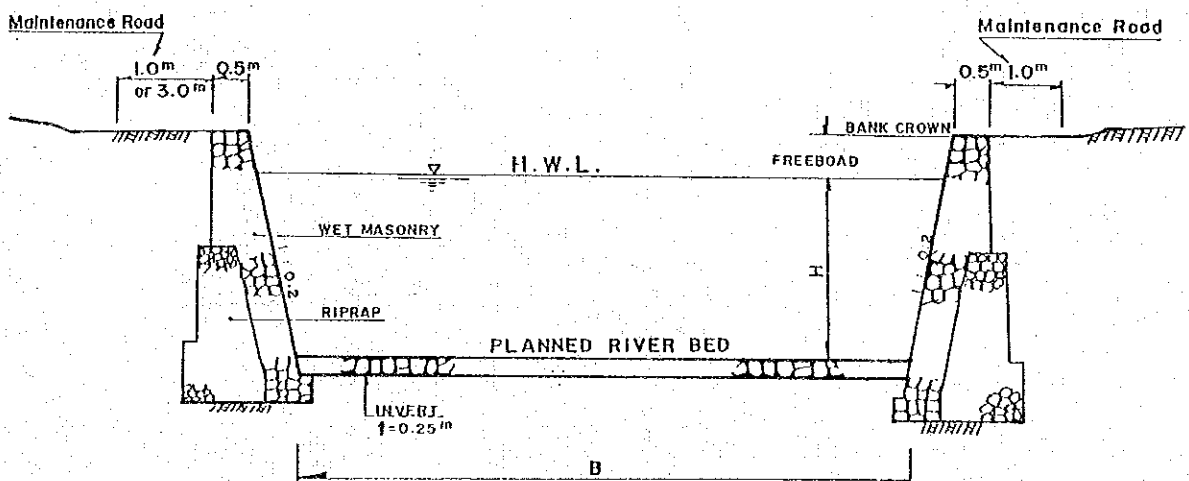


Fig.8-10(1/2) STANDARD CROSS SECTION OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

Box Culvert (TYPE D)

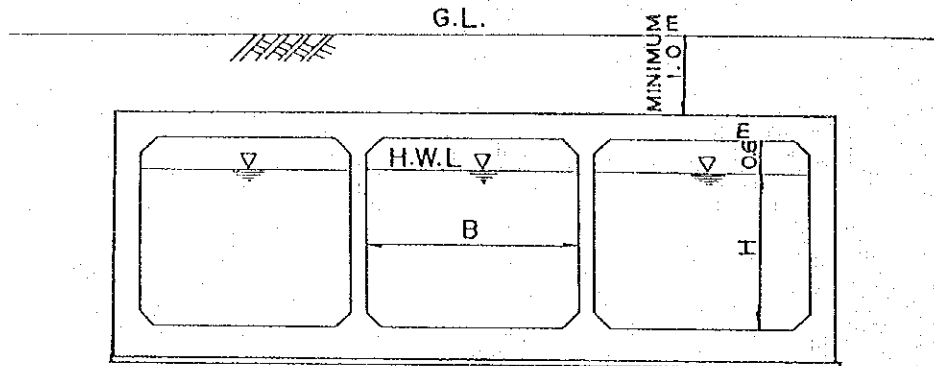


Fig.8-10(2/2) STANDARD CROSS SECTION OF PROPOSED RIVER CHANNEL FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

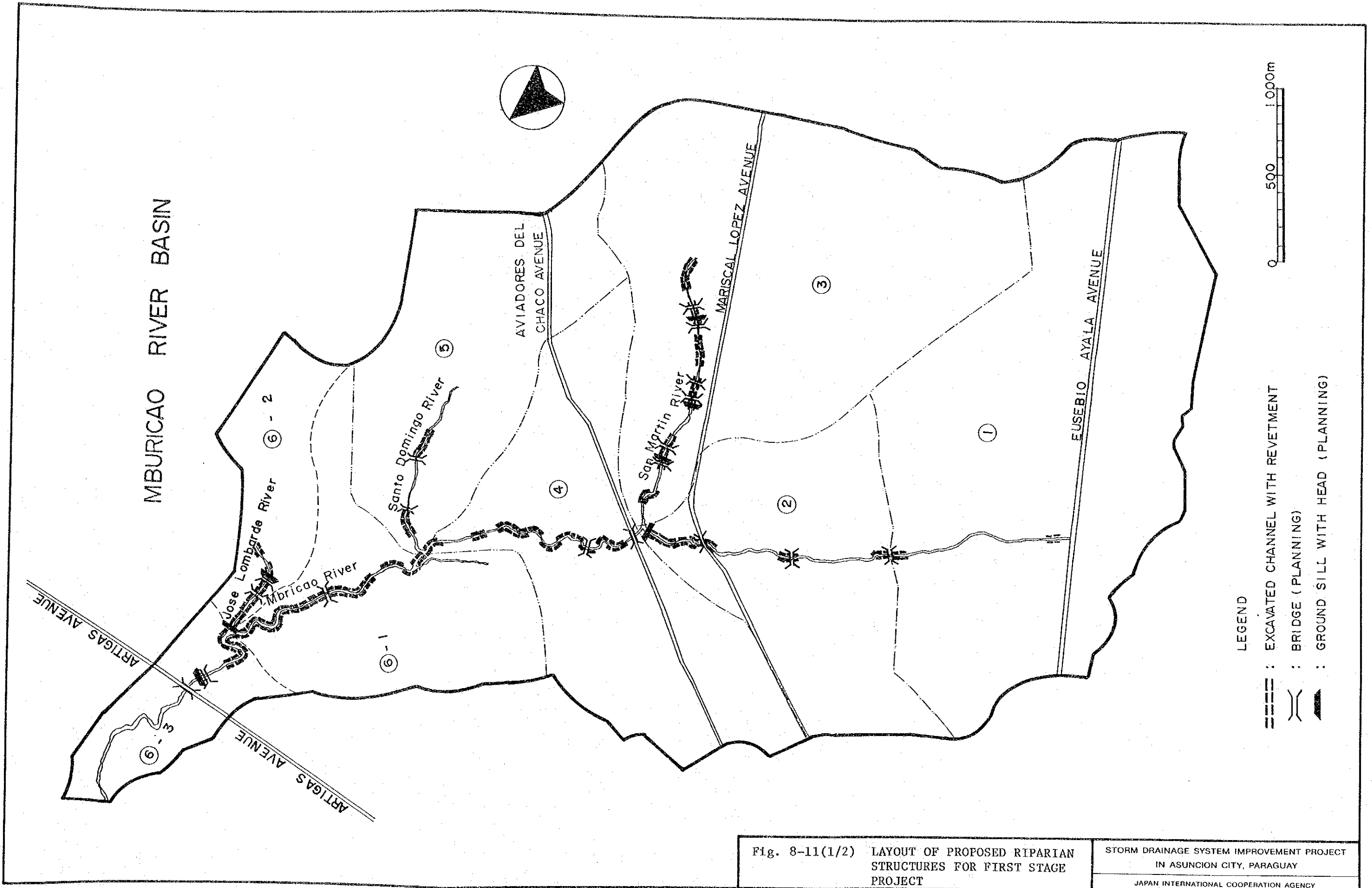
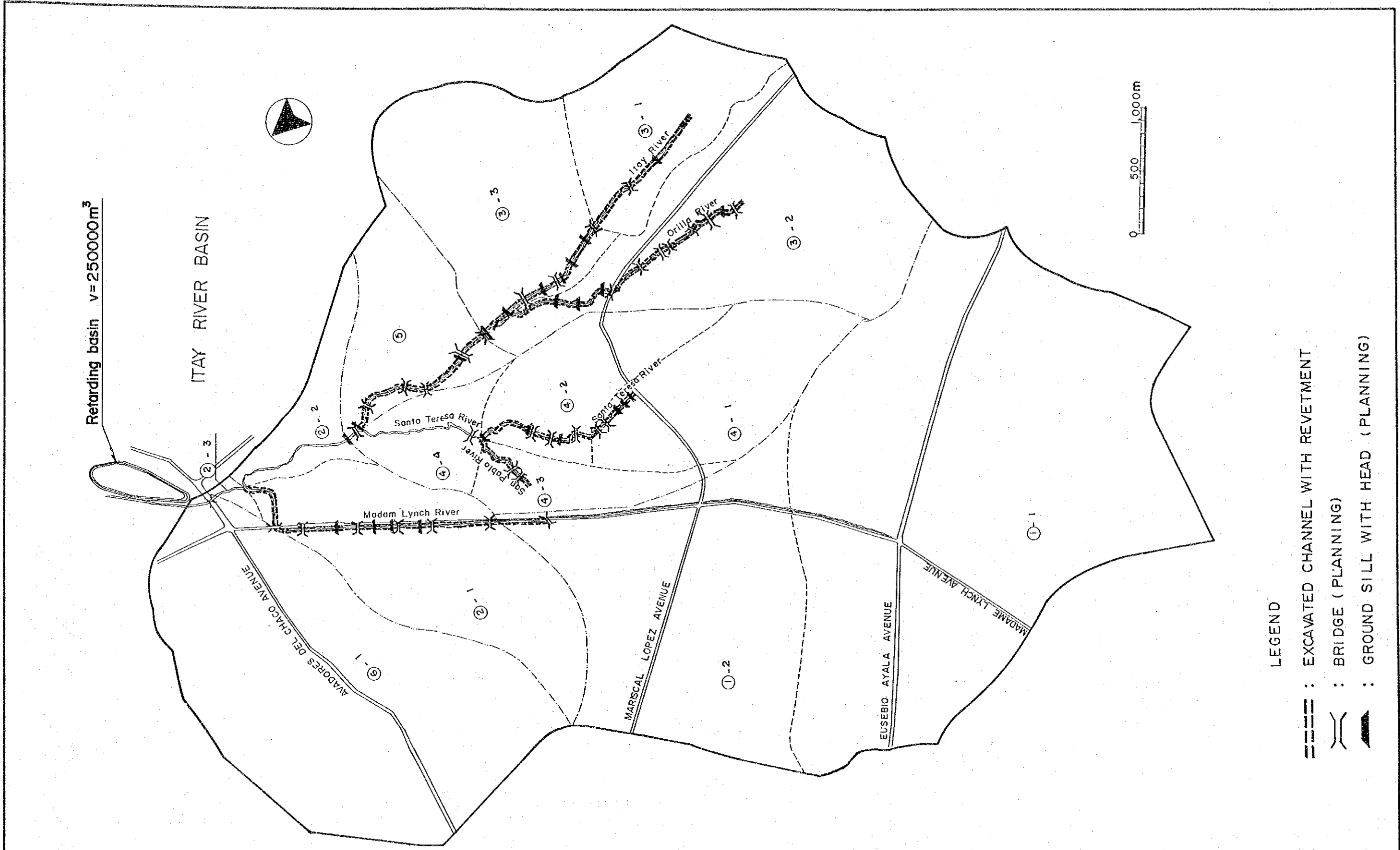


Fig. 8-11(1/2) LAYOUT OF PROPOSED RIPARIAN STRUCTURES FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY



Retarding basin v=250000m³

ITAY RIVER BASIN

ADORES DEL CHACO AVENUE

MARISCAL LOPEZ AVENUE

EUSEBIO AYALA AVENUE

MADAME LYNCH AVENUE

Modam Lynch River

Santa Teresa River

San Pablo River

Santa Teresa River

Orilla River

Itay River

- LEGEND
- : EXCAVATED CHANNEL WITH REVETMENT
 - : BRIDGE (PLANNING)
 - : GROUND SILL WITH HEAD (PLANNING)

Fig. 8-11(2/2) LAYOUT OF PROPOSED RIPARIAN STRUCTURES FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY
JAPAN INTERNATIONAL COOPERATION AGENCY

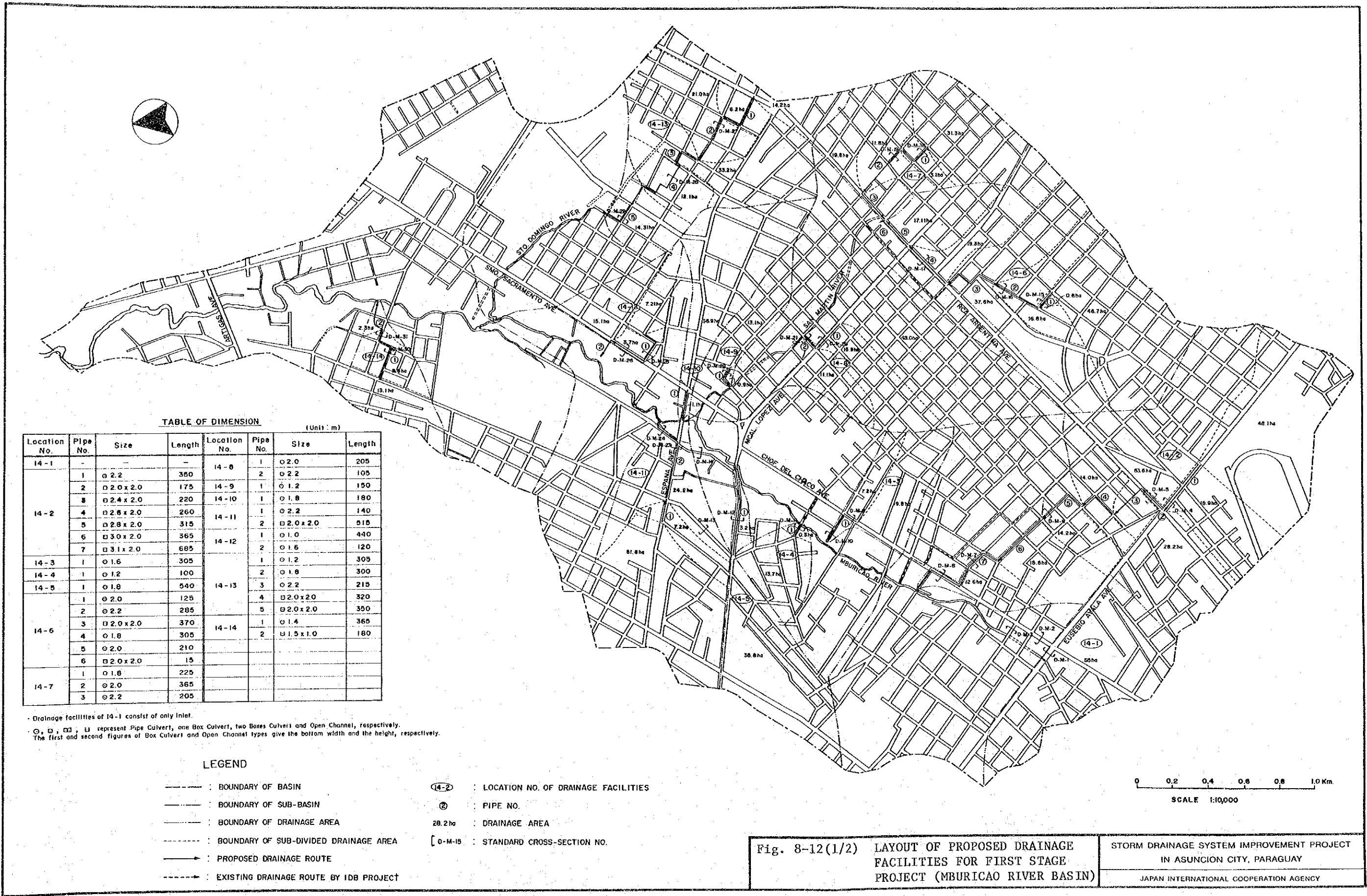


TABLE OF DIMENSION (Unit: m)

Location No.	Pipe No.	Size	Length	Location No.	Pipe No.	Size	Length
14-1	1	Ø 2.2	350	14-8	1	Ø 2.0	205
	2	Ø 2.0 x 2.0	175		14-9	1	Ø 1.2
	3	Ø 2.4 x 2.0	220	14-10		1	Ø 1.8
14-2	4	Ø 2.6 x 2.0	260	14-11	1	Ø 2.2	140
	5	Ø 2.8 x 2.0	315		14-12	2	Ø 2.0 x 2.0
	6	Ø 3.0 x 2.0	365	14-13		1	Ø 1.0
	7	Ø 3.1 x 2.0	685		14-14	2	Ø 1.6
14-3	1	Ø 1.6	305	14-13		1	Ø 1.2
	2	Ø 1.2	100		14-13	2	Ø 1.8
14-4	1	Ø 1.8	540	14-13		3	Ø 2.2
	2	Ø 2.0	125		14-13	4	Ø 2.0 x 2.0
14-5	3	Ø 2.0 x 2.0	370	14-14		5	Ø 2.0 x 2.0
	4	Ø 1.8	305		14-14	1	Ø 1.4
	5	Ø 2.0	210	14-14		2	Ø 1.5 x 1.0
	6	Ø 2.0 x 2.0	15				
14-6	1	Ø 1.8	225				
	2	Ø 2.0	365				
	3	Ø 2.2	205				

- Drainage facilities of 14-1 consist of only Inlet.
 ○, □, ▢, U represent Pipe Culvert, one Box Culvert, two Boxes Culvert and Open Channel, respectively.
 The first and second figures of Box Culvert and Open Channel types give the bottom width and the height, respectively.

LEGEND

- : BOUNDARY OF BASIN
- : BOUNDARY OF SUB-BASIN
- : BOUNDARY OF DRAINAGE AREA
- : BOUNDARY OF SUB-DIVIDED DRAINAGE AREA
- : PROPOSED DRAINAGE ROUTE
- : EXISTING DRAINAGE ROUTE BY IDB PROJECT
- ⑭-2 : LOCATION NO. OF DRAINAGE FACILITIES
- ⊙ : PIPE NO.
- 28.2ha : DRAINAGE AREA
- [D-M-15] : STANDARD CROSS-SECTION NO.

0 0.2 0.4 0.6 0.8 1.0 Km
 SCALE 1:10,000

Fig. 8-12(1/2) LAYOUT OF PROPOSED DRAINAGE FACILITIES FOR FIRST STAGE PROJECT (MBURICAO RIVER BASIN)
 STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

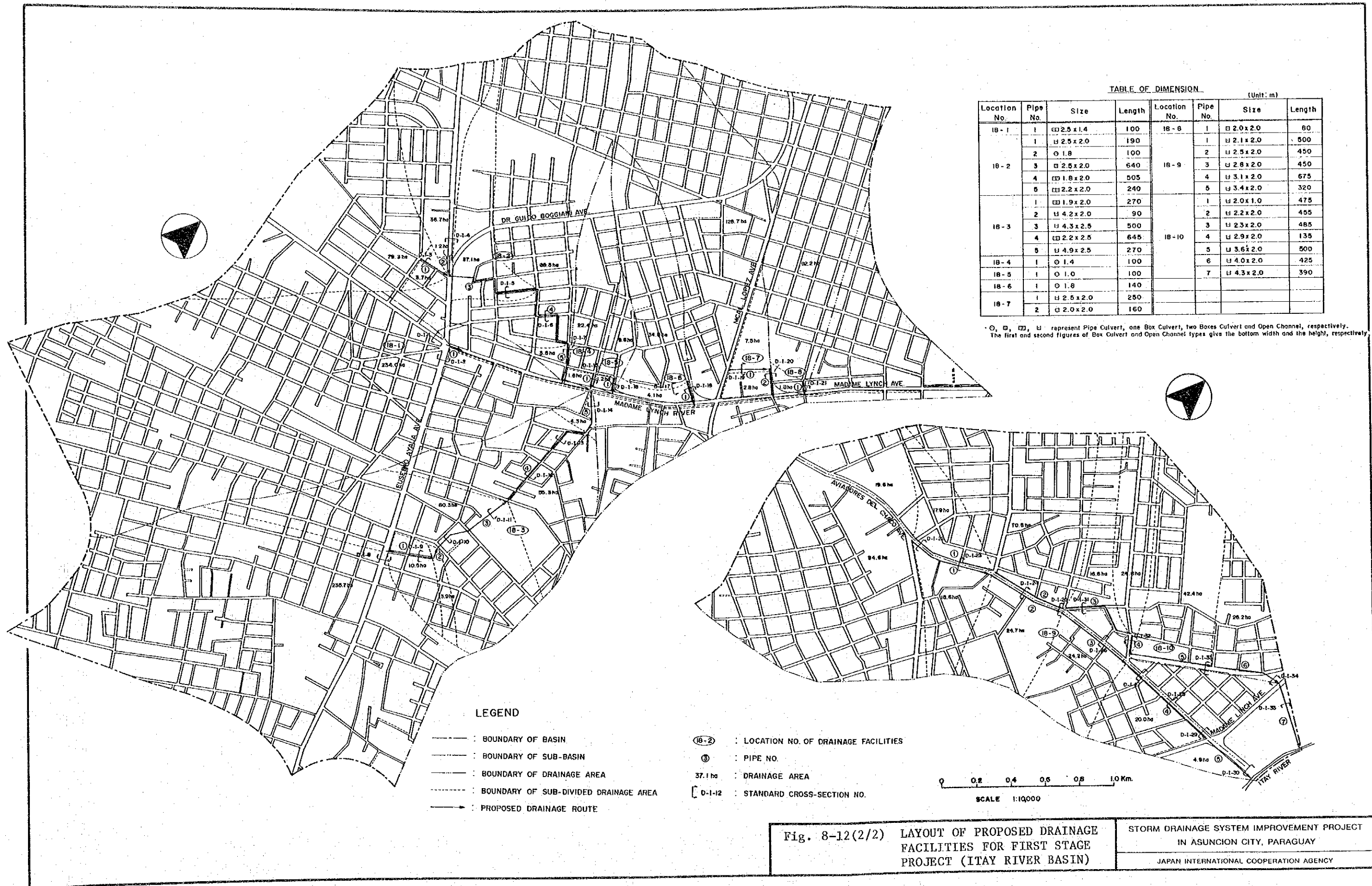


TABLE OF DIMENSION (Unit: m)

Location No.	Pipe No.	Size	Length	Location No.	Pipe No.	Size	Length
18-1	1	□ 2.5 x 1.4	100	18-8	1	□ 2.0 x 2.0	80
	1	□ 2.5 x 2.0	190		1	□ 2.1 x 2.0	500
	2	○ 1.8	100		2	□ 2.5 x 2.0	450
18-2	3	□ 2.5 x 2.0	640	18-9	3	□ 2.5 x 2.0	450
	4	□ 1.8 x 2.0	505		4	□ 3.1 x 2.0	675
	5	□ 2.2 x 2.0	240		5	□ 3.4 x 2.0	320
	1	□ 1.9 x 2.0	270		1	□ 2.0 x 1.0	475
	2	□ 4.2 x 2.0	90		2	□ 2.2 x 2.0	455
18-3	3	□ 4.3 x 2.5	500	18-10	3	□ 2.3 x 2.0	465
	4	□ 2.2 x 2.5	645		4	□ 2.9 x 2.0	135
	5	□ 4.9 x 2.5	270		5	□ 3.6 x 2.0	500
	1	○ 1.4	100		6	□ 4.0 x 2.0	425
	1	○ 1.0	100		7	□ 4.3 x 2.0	390
18-4	1	○ 1.4	100				
18-5	1	○ 1.0	100				
18-6	1	○ 1.8	140				
18-7	1	□ 2.5 x 2.0	250				
18-7	2	□ 2.0 x 2.0	160				

○, □, □, □ represent Pipe Culvert, one Box Culvert, two Boxes Culvert and Open Channel, respectively. The first and second figures of Box Culvert and Open Channel types give the bottom width and the height, respectively.

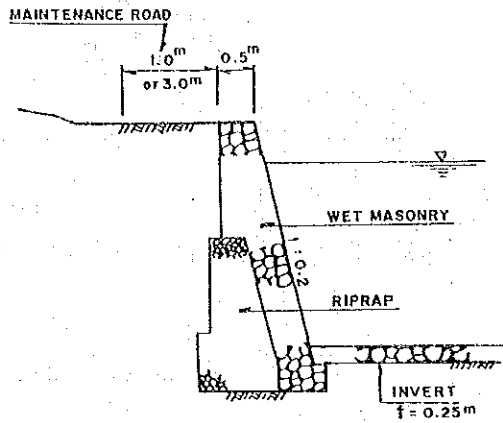
LEGEND

- BOUNDARY OF BASIN
- BOUNDARY OF SUB-BASIN
- BOUNDARY OF DRAINAGE AREA
- BOUNDARY OF SUB-DIVIDED DRAINAGE AREA
- PROPOSED DRAINAGE ROUTE
- ⑩-2 : LOCATION NO. OF DRAINAGE FACILITIES
- ③ : PIPE NO.
- 37.1 ha : DRAINAGE AREA
- D-1-12 : STANDARD CROSS-SECTION NO.

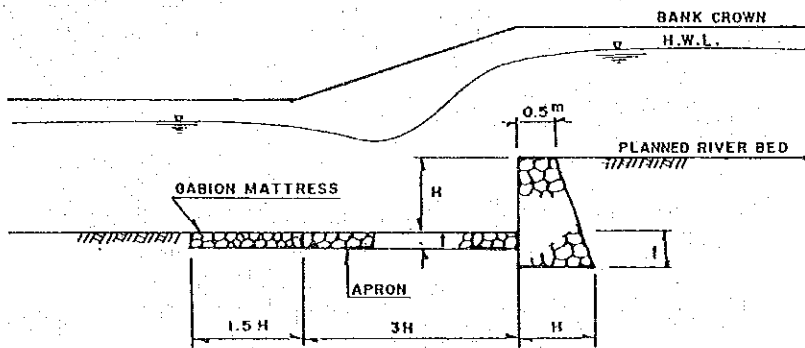
0 0.2 0.4 0.6 0.8 1.0 Km.
SCALE 1:10000

Fig. 8-12(2/2) LAYOUT OF PROPOSED DRAINAGE FACILITIES FOR FIRST STAGE PROJECT (ITAY RIVER BASIN) STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT IN ASUNCION CITY, PARAGUAY JAPAN INTERNATIONAL COOPERATION AGENCY

REVETMENT



GROUNDSILL WITH HEAD



BRIDGE

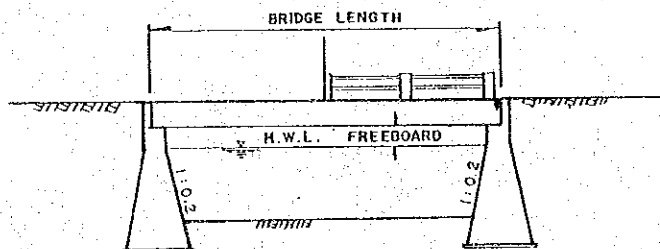


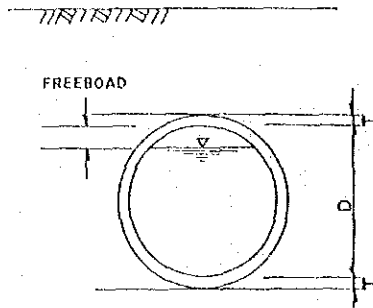
Fig. 8-13(1/3) STANDARD DRAWINGS OF PROPOSED STRUCTURES FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

DRAINAGE CONDUIT

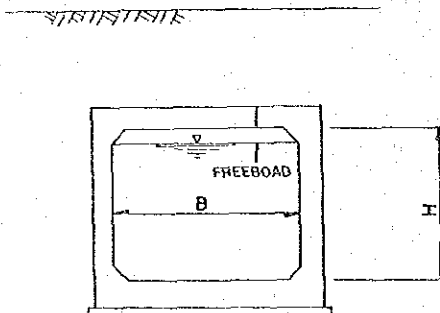
PIPE SECTION



DIMENSION

D (mm)	T (mm)
1,000	83.5
1,200	110.0
1,400	116.0
1,600	100.0
1,800	110.0
2,000	110.0
2,200	120.0

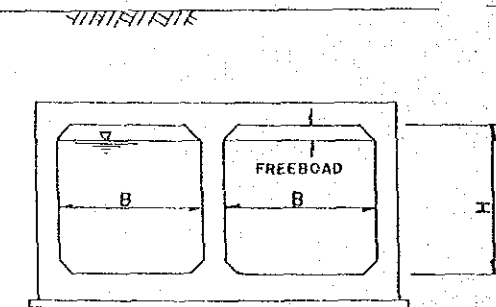
ONE-BOX SECTION



DIMENSION (mm)

B	H	B	H
2,000	2,000	3,000	2,000
2,400	2,000	3,100	2,000
2,500	2,000		
2,600	2,000		
2,800	2,000		

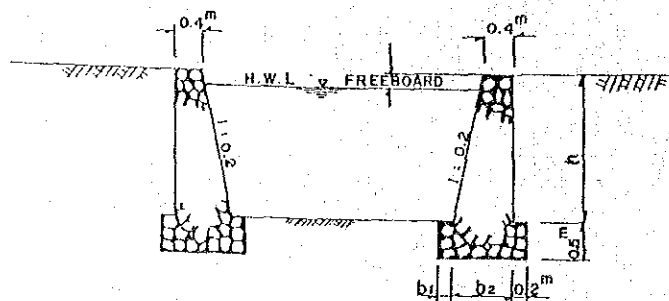
TWO-BOX SECTION



DIMENSION (mm)

B	H
1,800	2,000
1,900	2,000
2,200	2,000
2,200	2,500
2,500	1,400

CHANNEL SECTION



DIMENSION (mm)

h	b ₁	b ₂
1,000	100	600
2,000	200	800
2,500	300	900

Fig. 8-13(2/3) STANDARD DRAWINGS OF PROPOSED STRUCTURES FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

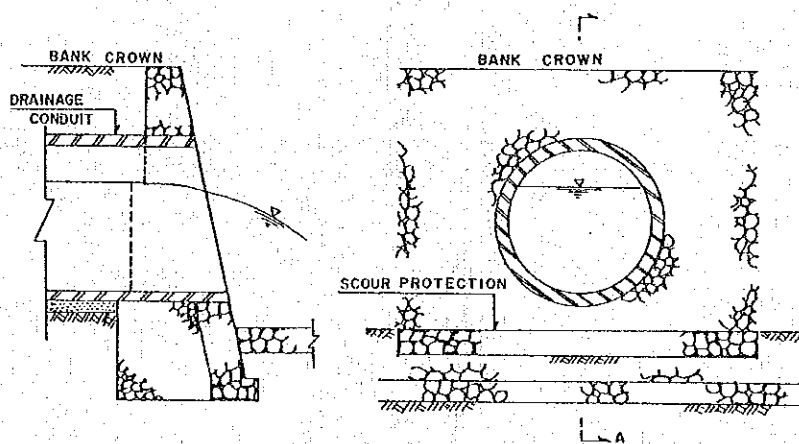
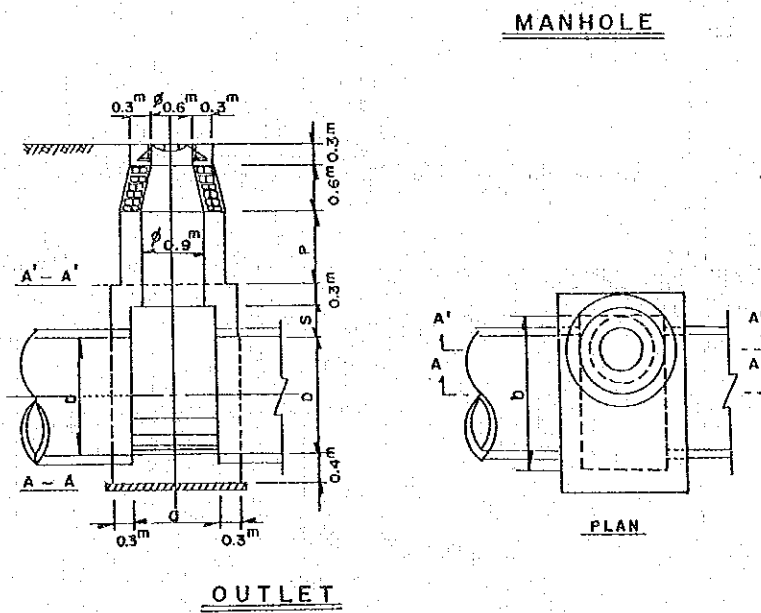
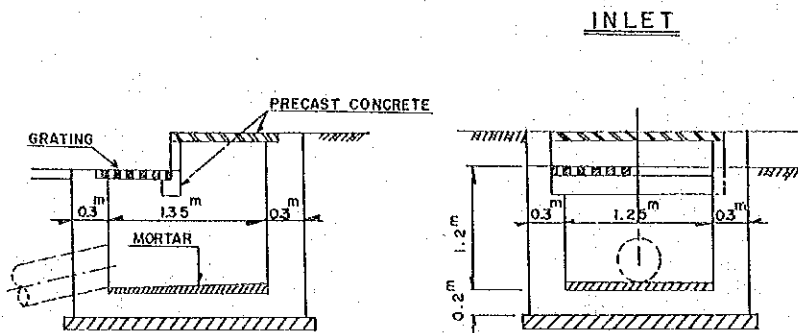


Fig. 8-13(3/3) STANDARD DRAWINGS OF PROPOSED STRUCTURES FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY

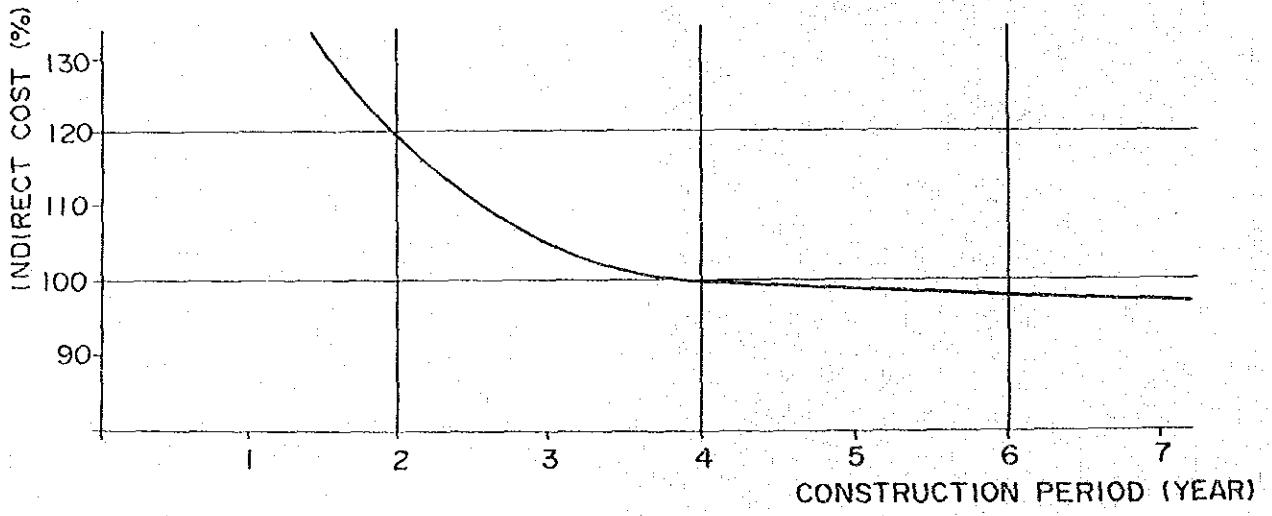


Fig. 8-14 CONSTRUCTION PERIOD AND COST

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

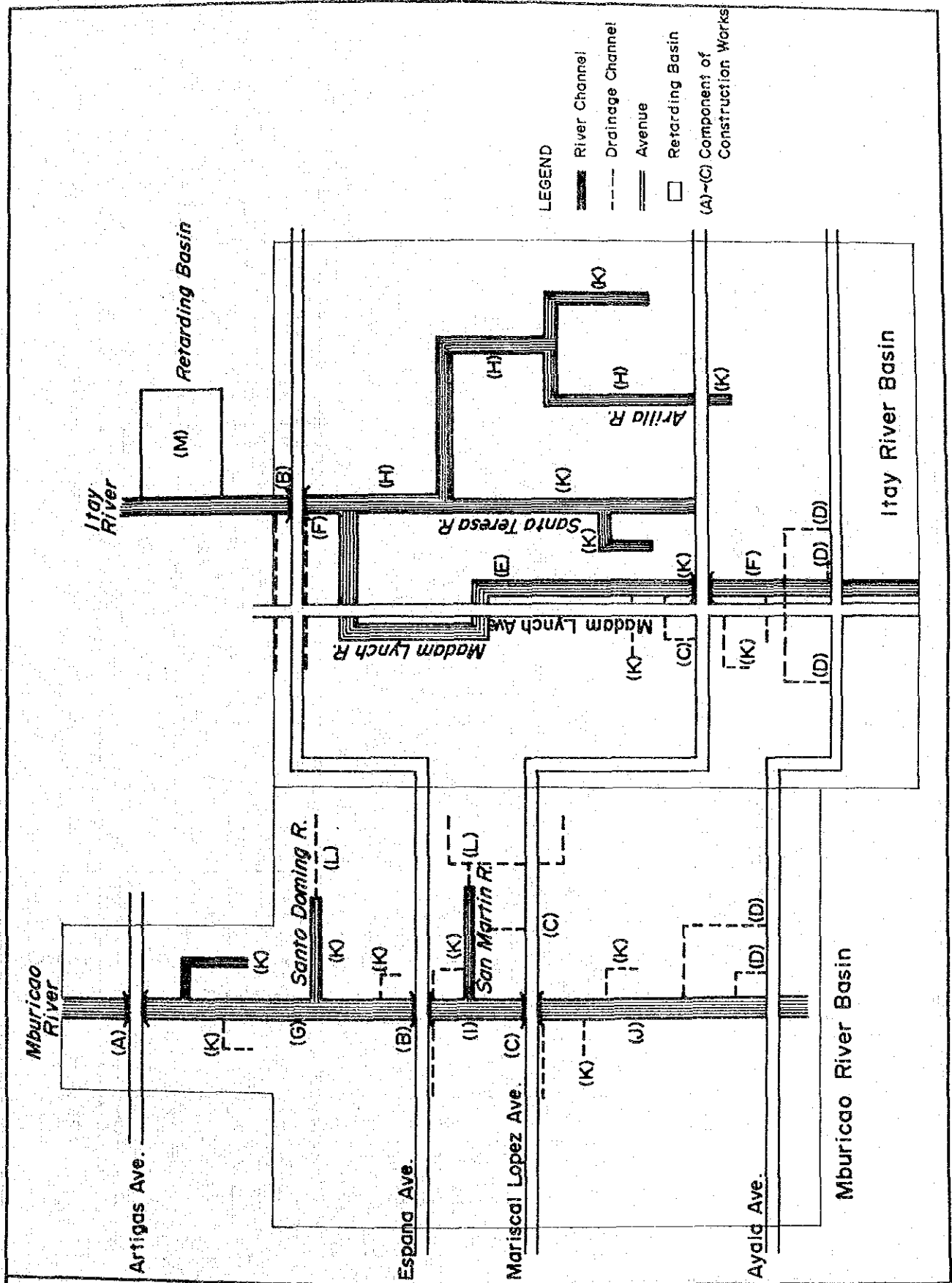


Fig. 8-15 COMPONENTS OF CONSTRUCTION WORKS FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

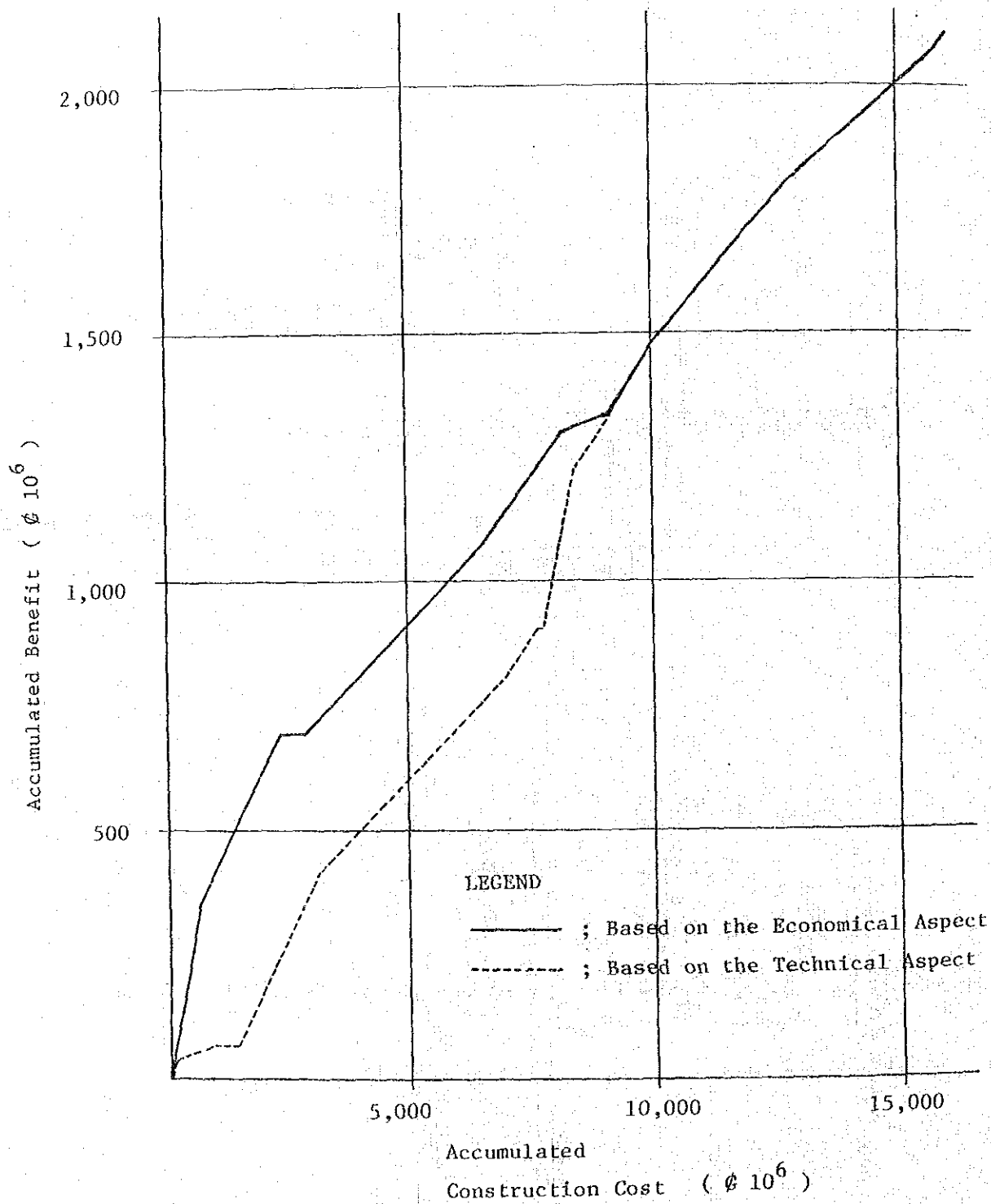


Fig. 8-16 ACCUMULATED CONSTRUCTION COST AND BENEFIT FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

Component	Descriptions	1st Yr (1990)	2nd Yr (1991)	3rd Yr (1992)	4th Yr (1993)
Mobilization and Preparatory Works		█			
Mariscal Lopez Avenue	Construction of 3 bridges and 3 routes of drainage facilities	█			
Artigas Avenue	Construction of 1 bridge	█			
Espana Avenue	Construction of 1 bridge, 4 routes of drainage facilities and ground-sill in Itay River	█			
Retarding Basin	Construction of retarding basin	█			
Madame Lynch River (I)	River improvement of Itay River and Madame Lynch River		█		
Madame Lynch River (II)	River improvement of Madame Lynch River		█		
River Channel (I)	River improvement of Mburicao River			█	
River Channel (III)	River improvement of Mburicao River			█	
River Channel (IV)	River improvement of Mburicao River			█	
Ayala Avenue	Construction of 5 routes of drainage facilities			█	
River Channel (II)	River improvement of Itay River and Orilla River			█	
River Channel (V)	River improvement of 7 tributaries and 7 routes of drainage facilities			█	
Drainage Facilities	Construction of 5 routes of drainage facilities				█

Fig. 8-17 CONSTRUCTION SCHEDULE FOR FIRST STAGE PROJECT

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

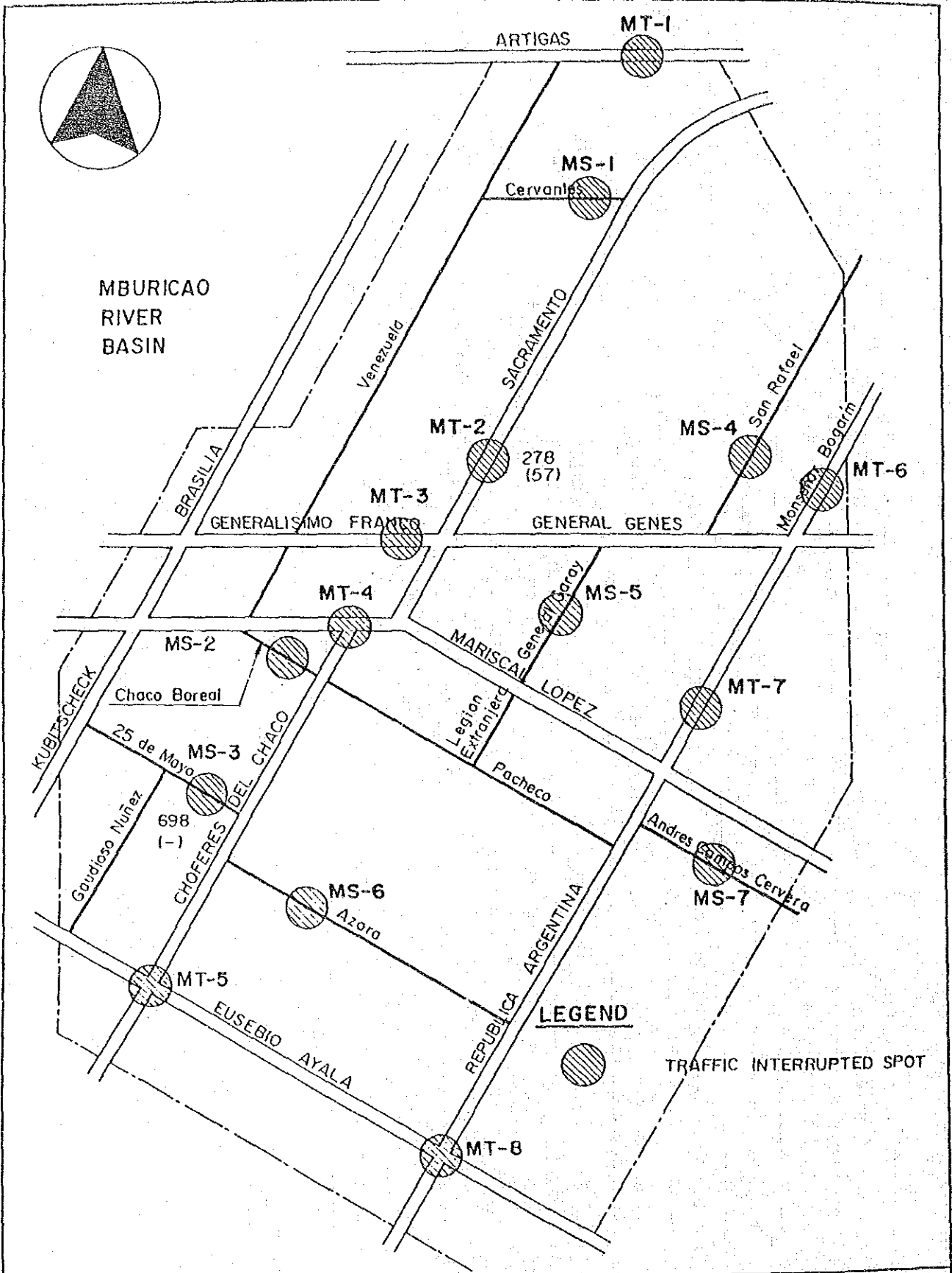


Fig. 8-18(1/2) TRAFFIC INTERRUPTION SPOTS (MBURICAO RIVER BASIN)

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
 IN ASUNCION CITY, PARAGUAY
 JAPAN INTERNATIONAL COOPERATION AGENCY

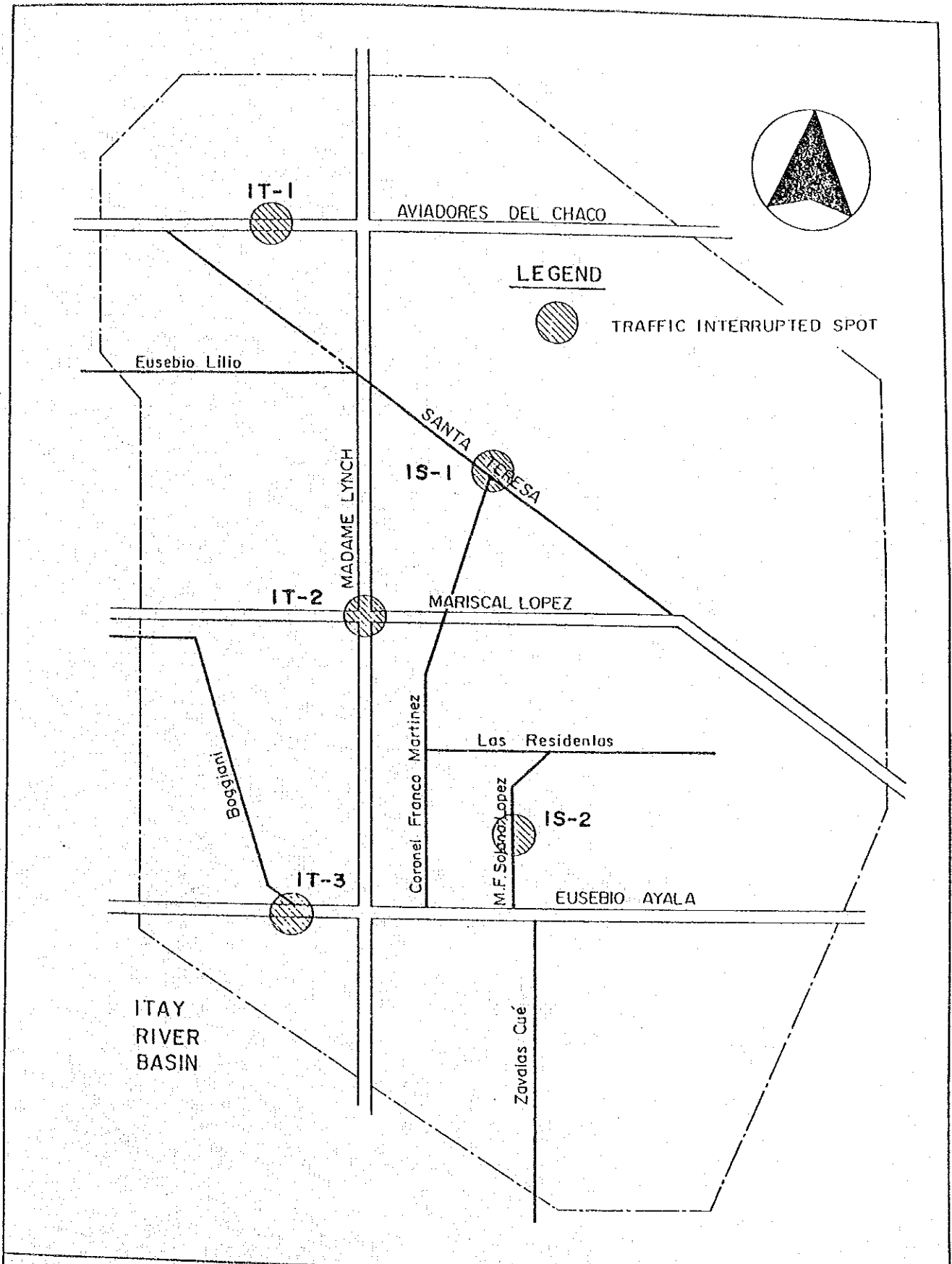
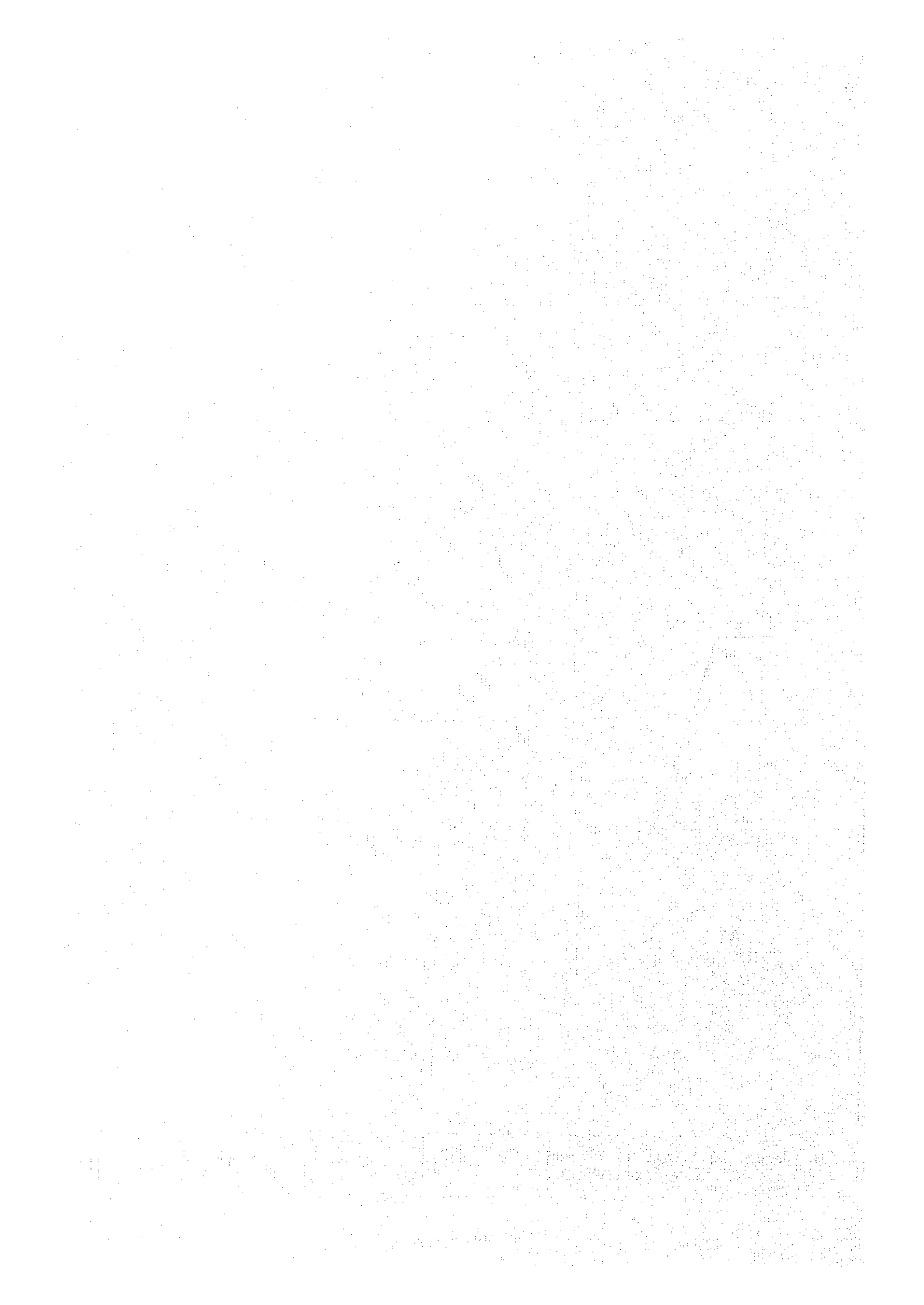


Fig. 8-18 (2/2) TRAFFIC INTERRUPTION SPOTS (ITAY RIVER BASIN)

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN ASUNCION CITY, PARAGUAY

JAPAN INTERNATIONAL COOPERATION AGENCY



ANNEX

MINUTES OF MEETING
FOR
MASTER PLAN AND FEASIBILITY STUDY
ON
STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN
ASUNCION CITY
OF
THE REPUBLIC OF PARAGUAY

Joint meeting between CORPOSANA (la Corporación de Obras Sanitarias) and the JICA Study Team together with the advisory committee was held on August 12, 1985 at the office of CORPOSANA.

The JICA Study Team submitted 35 copies of the Inception Report to CORPOSANA in compliance with the scope of works and explained such items described in the report as Methodology of the Study, Plan of Operation, Undertaking of both sides, etc.

The contents of the report except a part of undertaking of Paraguayan Side were duly agreed upon by and between the both parties.

The following items on the undertaking of Paraguayan Side were modified:

1. Four counterparts will be assigned as follows:
 - one counterpart for Team Leader (time to time),
 - one counterpart for Hydrologist and Flood analyst (full time),
 - one counterpart for River Planning Engr., Drainage Planning Engr. and Drainage Structural Engr. (full time),
 - and one counterpart for Institutional Expert and Project Economist (full time).
2. Non-technical support personnel consisting of one secretary, two typists, three assistants, two draftmen and one janitor will be provided.
3. Office space, and several desks with chairs being urgently needed will be prepared by the Team, while office equipments except the above will be supplied by CORPOSANA.

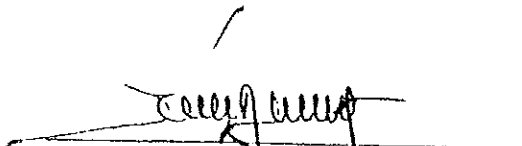
Besides the above, the following views were made:

1. CORPOSANA strongly desired early realization of the project by the aid of the Japanese Government.
2. CORPOSANA emphasized the necessity of training of the counterpart personnel for the project implementation. In this connection, CORPOSANA requested the dispatch of the Paraguayan trainees to Japan during the study period.


In response to the request, CORPOSANA was suggested to submit the application form of trainee to JICA by the end of October.

The list of attendance is attached hereto.


August 13, 1985 in Asunción



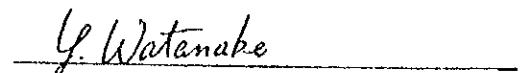
Ing. Ronald Chenú Abente
Gerente de Alcantarillado de la
Corporación de Obras Sanitarias



Katsuhisa Abe
Team Leader
JICA Study Team



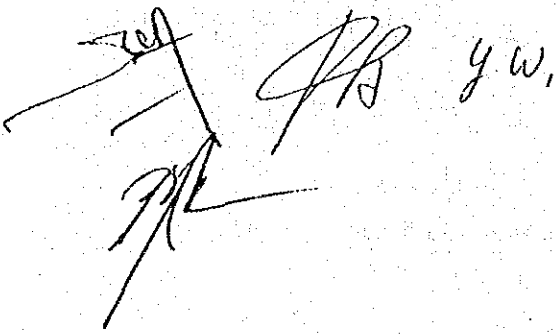
Dr. Alberto Ramírez Patiño
Gerente General de la
Corporación de Obras Sanitarias



Yoshinobu Watanabe
Acting Chairman
Advisory Committee

LIST OF ATTENDANCE.

Ing. Ronald Chenú Abente	Gerente de Alcantarillado
Ing. Elena María Mallorquín	Jefe de Sección Técnica y Cálculo
Ing. Moisés G. Cohenca	Counterpart
Mr. Yoshinobu Watanabe	Member of Advisory Committee
Mr. Noboru Yamaguchi	Member of Advisory Committee
Mr. Junji Ishizuka	Project Coordinator
Mr. Katsuhisa Abe	Team Leader of JICA Study Team
Mr. Yoshiyuki Tomioka	Assist. Team Leader of JICA Study Team
Mr. Yoshiharu Matsumoto	Member of JICA Study Team
Mr. Motonori Yoshii	Member of JICA Study Team
Mr. Junji Kamata	Member of JICA Study Team
Mr. Akio Shichijugari	Member of JICA Study Team
Mr. Hiroaki Sakamoto	Member of JICA Study Team

Handwritten signatures and initials, including 'y.w.', 'AB', and 'JK'.

MINUTES OF MEETING
FOR
MASTER PLAN AND FEASIBILITY STUDY
ON
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IN
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An explanatory meeting on the Progress Report (I) between CORPOSANA and the JICA Study Team together with the Advisory Committee was held at the office of CORPOSANA on November 21, 1985. The list of attendants is attached hereto.

In accordance with the scope of works, the JICA Study Team submitted 35 copies of the Progress Report (I) and 3 Albums of photographs related to the Study.

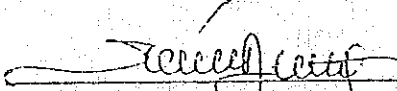
The JICA Study Team explained the methodology taken for the study, the progress and schedule of the study and the contents of the report, which were well understood. And CORPOSANA expressed a strong desire for further cooperation from the Government of Japan to put this project into implementation without losing time.

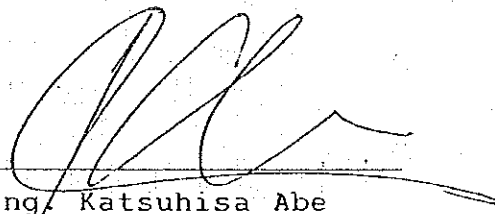
In addition to the above, the following were discussed and confirmed mutually:

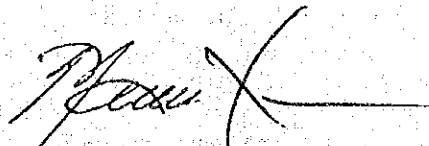
- (1) It would be most desirable from the social viewpoint that this project should be formulated on the 2- to 5-year return-period basis, though economic and financial considerations should be given to the determination of project scale.

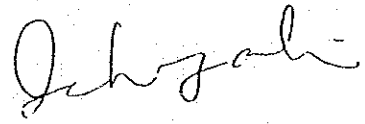
- (2) Itay and Mburicaó River Basins were taken up as the target areas for the Feasibility Study, and in addition, Lambaré and Sosa River Basins should be also taken into consideration.
- (3) JICA took note of the CORPOSANA's request for two vehicles to be supplied for the field study in 1986.

November 22, 1985


Ing. Ronald Chenú Abente
Gerente de Alcantarillado
Corporación de Obras
Sanitarias


Ing. Katsuhisa Abe
Team Leader
JICA Study Team


Dr. Alberto Ramírez Patiño
Gerente General de la
Corporación de Obras
Sanitarias


Dr. Katsuyoshi Ishizaki
Chairman
Advisory Committee

LIST OF ATTENDANTS

Ing. Ronald Chenú Abente	Gerente de Alcantarillado
Ing. Miguel Ramón Canale	Jefe Dpto. Alcantarillado Sanitario
Ing. Moisés Gabriel Cohenca	Counterpart
Dr. Katsuyoshi Ishizaki	Chairman of Advisory Committee
Mr. Eiichi Nakamura	Member of Advisory Committee
Mr. Junji Ishizuka	Project Coordinator
Ing. Katsuhisa Abe	Team Leader
Ing. Yoshiyuki Tomioka	Assistant Team Leader
Ing. Yoshiharu Matsumoto	Member of Study Team
Mr. Teru Sasaki	Member of Study Team
Ing. Akio Shichijugari	Member of Study Team
Ing. Motonori Yoshii	Member of Study Team
Ing. Junji Kamata	Member of Study Team
Mr. Kimio Shimomura	Member of Study Team

MINUTES OF MEETING
FOR
MASTER PLAN AND FEASIBILITY STUDY
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An explanatory meeting on the Interim Report between CORPOSANA and the JICA Study Team in presence of the Advisory Committee was held at the office of CORPOSANA on March 14, 1986. The list of attendance is attached hereto.

In accordance with the Scope of Study, the JICA Study Team submitted 35 copies of Interim Report in English (composed of main and supporting reports) and 30 copies of Summary Reports in Spanish.

Through the explanation, CORPOSANA has well understood the contents of the report without any objection on the technical aspects. Major Items discussed and mutually agreed in the meeting are summarized hereunder.

(1) Naming of the Storm Drainage Improvement Plans

The Master Plan and the Execution Plan incorporated in the Interim Report are re-named Basic Plan and Master Plan, respectively to facilitate better understanding.

(2) Additional Study

A study on the countermeasures against the incremental damage caused by future urbanization will be additionally undertaken in the Phase II Study.

This includes:

- Demonstration of pilot detention facilities, and
- Discussion with a so-called government coordinating group to successfully put the project into implementation.

The above-mentioned facilities will be installed by CORPOSANA under the direction of JICA Study Team, but the detailed scope is subject to mutual agreement.

(3) Documentation for Further Assistance

Documentation required for further financial assistance from foreign countries will be included in the Phase II Study.

(4) Surveying Works

CORPOSANA will conduct surveying works and if necessary boring works for the Phase II Study, covering Mburicao and Itay river basins under the direction of the JICA Study Team.


(5) Training of Counterparts in Japan

CORPOSANA strongly requested the JICA Study Team to program the training in Japan of its staff during the Phase II Study, and the JICA Study Team suggested CORPOSANA to submit the application to the Japanese side at the earliest date.


(6) Provision of Vehicles

CORPOSANA requested the JICA Study Team to provide two (2) vehicles which are required for the successful undertaking of the Phase II Study. The JICA Study Team promised to convey the request to the concerned authorities in Japan.


March 17, 1986




Ing. Ronald Chenú Abente
Gerente de Alcantarillado
Corporación de Obras
Sanitarias



Ing. Katsuhisa Abe
Team Leader
JICA Study Team



Dr. Alberto Ramírez Patiño
Gerente General de la
Corporación de Obras
Sanitarias



Dr. Katsuyoshi Ishizaki
Chairman
Advisory Committee

LIST OF ATTENDANTS

Ing. Ronald Chenú Abente	Gerente de Alcantarillado
Ing. Miguel Ramón Canale	Jefe Dpto. Alcantarillado Sanitario
Dr. Katsuyoshi Ishizaki	Chairman of Advisory Committee
Mr. Noboru Yamaguchi	Member of Advisory Committee
Mr. Hiroshi Saito	Project Coordinator
Mr. Chihiro Oishi	Staff of JICA Asunción Office
Mr. Katsuhisa Abe	Team Leader of JICA Study Team
Mr. Yoshiyuki Tomioka	Assistant Team Leader
Mr. Kimio Shimomura	Member of Study Team

MINUTES OF MEETING
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On the occasion of the commencement of Phase II Study, an explanatory meeting on the Plan of Operation between CORPOSANA and the JICA Study Team was held at the office of CORPOSANA on June 3, 1986. The list of attendance is attached hereto.

At first, it is confirmed that the target area for the feasibility study in this stage includes Mburicao river basin and the upper basin from Aviadores del Chaco in Itay river basin.


Then explanation was made putting emphasis on Undertaking of the Paraguayan Side. Major items discussed and mutually agreed in the meeting are summarized hereunder.


- (1) CORPOSANA will provide the necessary personnel and equipment in accordance with the request by the Team after the minor change of contents stipulated in the Plan of Operation.
- (2) CORPOSANA will recommend the sites for the infiltration test as early as possible after the field investigation with the Study Team.
- (3) CORPOSANA will make an arrangement for setting up a so-called Government Coordinating Group through the discussion with the Study Team.

CORPOSANA presented the following requests, which will be conveyed to the Japanese Side by the Study Team.

- (1) To put into implementation the project covering Mburicao and Itay river basins at the earliest date through the financial assistance of the Japanese Government.
- (2) To conduct a feasibility study on storm drainage system improvement project in Lambare river basin which also suffers severely from flood damages.

June 9, 1986

p.a. 
Ing. Ronald Chenu Abente
Gerente de Alcantarillado
Corporacion de Obras
Sanitarias


Ing. Katsuhisa Abe
Team Leader
JICA Study Team

LIST OF ATTENDANCE

Ing. Ronald Chenu Abente	Gerente de Alcantarillado
Ing. Miguel Ramon Canale	Counterpart
Ing. Moises G. Cohenca	Counterpart
Mr. Katsuhisa Abe	Team Leader of JICA Study Team
Mr. Yoshiyuki Tomioka	Assist. Team Leader of JICA Study Team
Mr. Yoshiharu Matsumoto	Member of JICA Study Team
Mr. Iwao Irie	Member of JICA Study Team
Mr. Motonori Yoshii	Member of JICA Study Team
Mr. Junji Kamata	Member of JICA Study Team
Mr. Akio Shichijugari	Member of JICA Study Team
Mr. Hiroaki Sakamoto	Member of JICA Study Team
Mr. Kimio Shimomura	Member of JICA Study Team

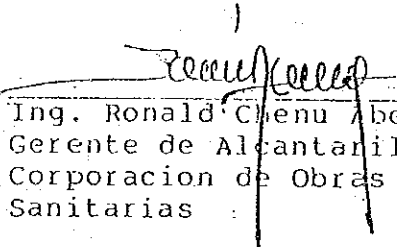
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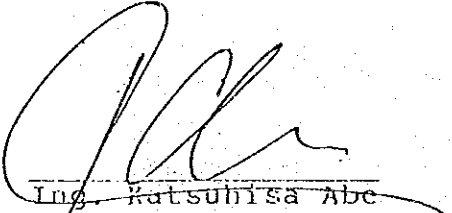
An explanatory meeting on the Progress Report (II) between CORPOSANA and the JICA Study Team in presence of the Advisory Committee was held at the office of CORPOSANA on August 20, 1986. The list of attendance is attached hereto.

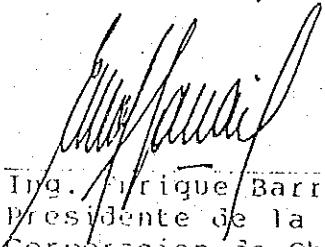
In accordance with the Scope of Study, the JICA Study Team submitted 35 copies of Progress Report (II) in English together with 30 copies of Summary Report in Spanish.

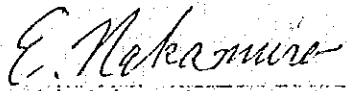
The contents of the report were satisfactorily understood without any objection to the technical aspects. Besides, CORPOSANA requested the Team to open a seminar on storm water control system by Japanese experts in November, 1986 when an explanatory meeting on the Draft Final Report is held in Asuncion.

August 20, 1986 in Asuncion


Ing. Ronald Chenu Abente
Gerente de Alcantarillado
Corporacion de Obras
Sanitarias


Ing. Ratsuhisa Abe
Team Leader
JICA Study Team


Ing. Enrique Barrail
Presidente de la
Corporacion de Obras
Sanitarias


Eiichi Nakamura
Acting Chairman
Advisory Committee

LIST OF ATTENDANCE

Ing. Ronald Chenu Abente	Gerente de Alcantarillado
Ing. Miguel Ramon Canale	Counterpart
Ing. Moises G. Cohenca	Counterpart
Mr. Eiichi Nakamura	Acting Chairman of Advisory Committee
Dr. Katsuhide Yoshikawa	Member of Advisory Committee
Mr. Toru Take	Project Coordinator
Mr. Nobukatsu Nakajima	Chief of Technical Cooperation Department of JICA Asuncion Office
Mr. Tsuneo Kishi	Member of Technical Cooperation Department of JICA Asuncion Office
Mr. Masatomi Sato	Member of Technical Cooperation Department of JICA Asuncion Office
Mr. Katsuhisa Abe	Leader of JICA Study Team
Mr. Yoshiyuki Tomioka	Assistant Leader of JICA Study Team
Mr. Yoshiharu Matsumoto	Member of JICA Study Team
Mr. Motonori Yoshii	Member of JICA Study Team
Mr. Kinio Shimomura	Member of JICA Study Team

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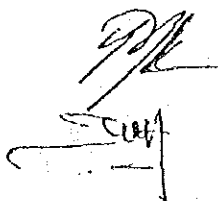
An explanatory meeting on the Draft Final Report between CORPOSANA and the JICA Study Team in the presence of the Advisory Committee was held at the office of CORPOSANA on December 1st., 1986. The list of attendance is attached hereto.

In accordance with the Scope of the Study, the JICA Study Team submitted 35 copies of the Draft Final Report in English together with 30 copies of Summary Report in Spanish.

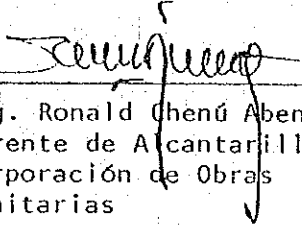
Through the explanation and the discussion in the meeting, the contents of the reports were satisfactorily understood by CORPOSANA without any objection to all aspects of the project formulation.

It is confirmed by and between both parties that the final report will be made by the end of January, 1987, and in case CORPOSANA has any comments for the Draft Final Report, the comments should be sent to JICA by December 15, 1986.


The meeting was concluded with the sincere gratitude of both parties.



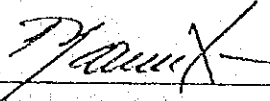
December 1st., 1986 in Asunción



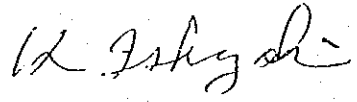
Ing. Ronald Chenú Abente
Gerente de Alcantarillado
Corporación de Obras
Sanitarias



Ing. Katsuhisa Abe
Team Leader
JICA Study Team



Dr. Alberto Ramírez Patiño
Gerente General de la
Corporación de Obras
Sanitarias



Dr. Katsuyoshi Ishizaki
Chairman
Advisory Committee

LIST OF ATTENDANTS

Paraguayan Side

Ing. Ronald Chenú Abente
Ing. Miguel Ramón Canale

Japanese Side

Dr. Katsuyoshi Ishizaki
Dr. Nobuyuki Tamai
Mr. Noboru Yamaguchi
Mr. Fumio Kikuchi
Mr. Masatomi Sato
Mr. Zentarou Ihara
Mr. Katsuhisa Abe
Mr. Yoshiyuki Tomioka

JICA