付－3　パラグァイ国政府要請書（Terms of Reference）

TERMS OF REFERENCE

OF THE

FEASIBILITY STUDY

ON

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT

IN

ASUNCION CITY, PARAGUAY

December, 1983

TABLE OF CONTENTS

I. BACKGROUND INFORMATION

Asuncion City, the capital of Paraguay, is located in a wavy hilly land, although not so steep, from 60 m to 120 m above the mean sea level. The central area of the city forms a ridge, from which 27 small rivers such as Mburicao, Ytay, Villa Elisa, Lambare, etc., originate and flow into the Paraguay River (refer to Fig.1). Recently, Asuncion City has been expanding with a considerable increase in population which is now approximately 500.000.

The city has been suffering from floods almost every year due to a poor drainage system and to the inadequate capacity of the above-mentioned small rivers. The most recent serious flood occurred in November 1982, and took two residents' lives. It also inflicted great damage on buildings and public facilities such as roads, bridges and water channel, and thus, indirectly hampered economic activities. All in all, living conditions have greatly deteriorated.

A city drainage system is now under construction and scheduled to be completed in December 1983; but it covers only the center of the city (700 ha). For some areas, only open channels along the main roads are functioning as drainage facilities for rain water, and these channels are so poorly maintained that their flow capacities are not sufficient. In areas having no drainage channel, roads play the role of channel at the time of heavy rain. The water flows down on the road surface and pours into the adjacent rivers, which have not been artificially improved at all. The lower reaches of these rivers are now being rapidly urbanized, which may bring about a further flood damage potential in the near future.

II. NECESSITY OF THE PROJECT

Asuncion City plays a very important role in the political, economic and cultural aspects of the nation as its capital. Needless to say, interruption or suspension of its function as capital city definitely inflicts a severe adverse effect on the whole country.

As described in the preceding section, living conditions greatly deteriorated due to occurrence of flood everytime there is a heavy rain.

Under this situation, the establishment of a storm drainage system and river improvement works, together with their maintenance system, are indispensable and urgently required to protect assets from flood damage, to promote the activities in many aspects and to upgrade the living conditions in the city.

III. OBJECTIVES AND SCOPE OF THE PROJECT

3.1 Objectives of the Project

1) To formulate a master plan of storm drainage system covering the whole Asuncion City, and to select the areas where the project shall primarily and urgently be implemented.

2) To carry out a feasibility study on a storm drainage system covering selected areas in Asuncion City based on the formulated master plan.

3.2 Scope of the Project

1) Review of the previous studies;

2) Execution of aerophotograph and necessary surveying;

3) Collection of necessary data;

4) Studies and analyses based on the collected data and the output of the survey;

5) Planning of the drainage system, including river improvement; preliminary design of the facilities; and preparation of the implementation schedule of the project;

6) Economic evaluation of the project; and

7) Transfer of knowledge through study at the project site and through overseas training in Japan.

IV. INSTITUTIONAL ASPECT

The entire work specified under this Terms of Reference (TOR) shall be under the general direction and coordination of the Corporacion de Obras Sanitarias (CORPOSANA), which is an autonomous corporation charged with the planning, construction and operation of waterworks including drainage and river improvement works in all the communities of the Republic of Paraguay.

V. PLAN OF OPERATION

5.1 Review of Previous Reports

Review of the related reports to identify the main

points which require necessary investigation for formulation of the storm drainage system improvement project.

5.2 Execution of Necessary Surveying and Mapping

Execution of survey and mapping required for project formulation as specified below:

1) Aerophotograph and mapping (Scale: 1/5000);
2) Longitudinal and cross sectional survey along the main drainage channel route;
3) Longitudinal and cross sectional survey along the rivers; and
4) Topographic survey and mapping covering the sites of the major facilities (Scale: 1/200).

5.3 Data Collection

Collection of available data and up-dating information regarding the following:

1) National and regional socio-economy;

2) Meteorology and hydrology;

3) Soil and geological conditions;

4) Existing facilities for storm drainage and other relevant facilities;

5) Future plan for city development; and

6) Other related data and information, if any.

5.4 Study and Analysis

Study and analysis required for project formulation, including;

1) Hydrological and hydraulic aspects;

2) Soil and geological condition;

3) Existing storm drainage system and facilities;

4) Present land use and assets, and their future plan;

5) Storm damage; and

6) Construction materials and laboratory tests, if meeded.

5.5 Planning of the Drainage System

1. Formulation of the overall storm drainage system, including river improvement plan, over Asunción City, and the priority study for the selection of area to conduct the feasibility study; and

2) Formulation of the optimun storm drainage system and river improvement plan for the selected area, including preliminary design of the required facilities, cost estimation and preparation of the imple - mentation schedule.

5.6 Economic Evaluation of the Project

Economic evaluation of the optimun storm drainage system for the slected area through the following studies:

1) Estimation of construction cost and benefit of the project; and

2) Evaluation of the project by means of internal rate of return and sensitivity analysis.

5.7 Transfer of Knowledge

Transfer of knowledge to and the training of the government staff, including;

1) Technical assistance in carrying out necessary survey and investigation through on-the-job training; and

2) Training in overseas country for selected government staff to obtain wider knowledge of modern practices regarding the project.

EXTERNAL AND INTERNAL INPUTS

VI. 6.1 External Input

The estimated total cost of external input shall amount to U$S 1.680.000, the breakdown of which is as follows:

1) Engineering services

This will include 115 man-months of engineering services with total cost U$S 1.200.000. The list of expatriates in Table 1 shows the required specialty and length of services of the experts.

2) Overseas training of counterpart staff

Special training of counterpart staff in drainage and river improvement works will require an amount of U$S 80.000 for 10 man-months.

3) Equipment

Equipment for survey and study will require an amount of U$S 200.000 as broken down in Table 2

4) Aerophotos and maps

Aerophotos of study area of 1:20,000 scale will require U$S 50.000 and its mapping in scale of 1:5,000, U$S 150.000

6.2 Internal Input

The CORPOSANA of Paraguay is prepared to provide the following facilities to support the project:

1) Data, information and all available documents relevant to the project;

2) A staff of counterpart with accommodation and facilities to assist the study team in conducting technical works;

3) Five (5) vehicles to carry out field works, including maintenance, fuel and drivers;

4) A staff as may be required to assist the study team concerning administrative works; and

5) Exemption from tax of materials, machines, equipment, and stationeries, which are needed for conducting the engineering services.

VII. REPORTING REQUIREMENTS

The study team shall prepare and submit the following reprots:

1) Inception Report: Two (2) months after commencement of the services in twenty five (25) copies. This report shall clarify the comments and/or any suggestion based on the review of the previous reports and data, and summarize main findings and technical problems obtained through field survey.

2) Progress Reports: First Progress Report; five (5) months and Second Progress Report; nine (9) months after submission of the Inception Report, in twenty five (25) copies each, giving summaries of the study team's activities, technical problems encountered, deviations from the original work schedule, and the programme and schedule of the works in the next period.

3) Draft Final Report: Seventeen (17) months after commencement of the services in fifteen (15) copies for discussion. The comments will be given to the study team within one (1) month after receipt of the Draft Final Report.

4) Final Report: At the completion of the services giving all the results of the project, in fifty (50) copies.

VIII. STUDY SCHEDULE

The study shall be carried out within eighteen (18) months as shown in Fig.2.

Table 1 LIST OF EXPERTISE REQUIRED

No.	Expert	Mon-months
1.	Team Leader	18
2.	Hydrologist	7
3.	Geomorphorogist	5
4.	River Planning Engineer	18
5.	Drainage Planning Engineer	18
6.	Structural Design Engineer I	8
7.	Structural Design Engineer II	8
8.	Cost Estimator and Construction Planner	4
9.	Urban Planner	7
10.	Survey Engineer I	5
11.	Survey Engineer II	5
12.	Engineering Economist	7
13.	Other Specialist	5
	TOTAL	115

Table 2 LIST OF EQUIPMENT REQUIRED FOR ENGINEERING SERVICES

1.	Electro-optical distance meter	1 set
2.	Transit w/ tripod	2 sets
3.	Level w/ tripod	2 sets
4.	Hand level	2 pcs
5.	Binocular	1 pc
6.	Mirror stereoscope	2 pcs
7.	Handy talky	2 pcs
8.	Small calculator	10 pcs
9.	Curent meter	2 pcs
10.	Stop watch	2 pcs
11.	Boring machine	1 set
12.	Rainfall recorder	3 sets
13.	Water level recorder	3 sets
14.	Levelling staff	6 sets
15.	Pole	6 sets
16.	Drafting equipment	2 sets
17.	Word processing device	1 set
18.	Printing machine	1 set
19.	Micro-computer	1 set
20.	Other expendables	1 lot.

FIG. 1 ASUNCION CITY AREA

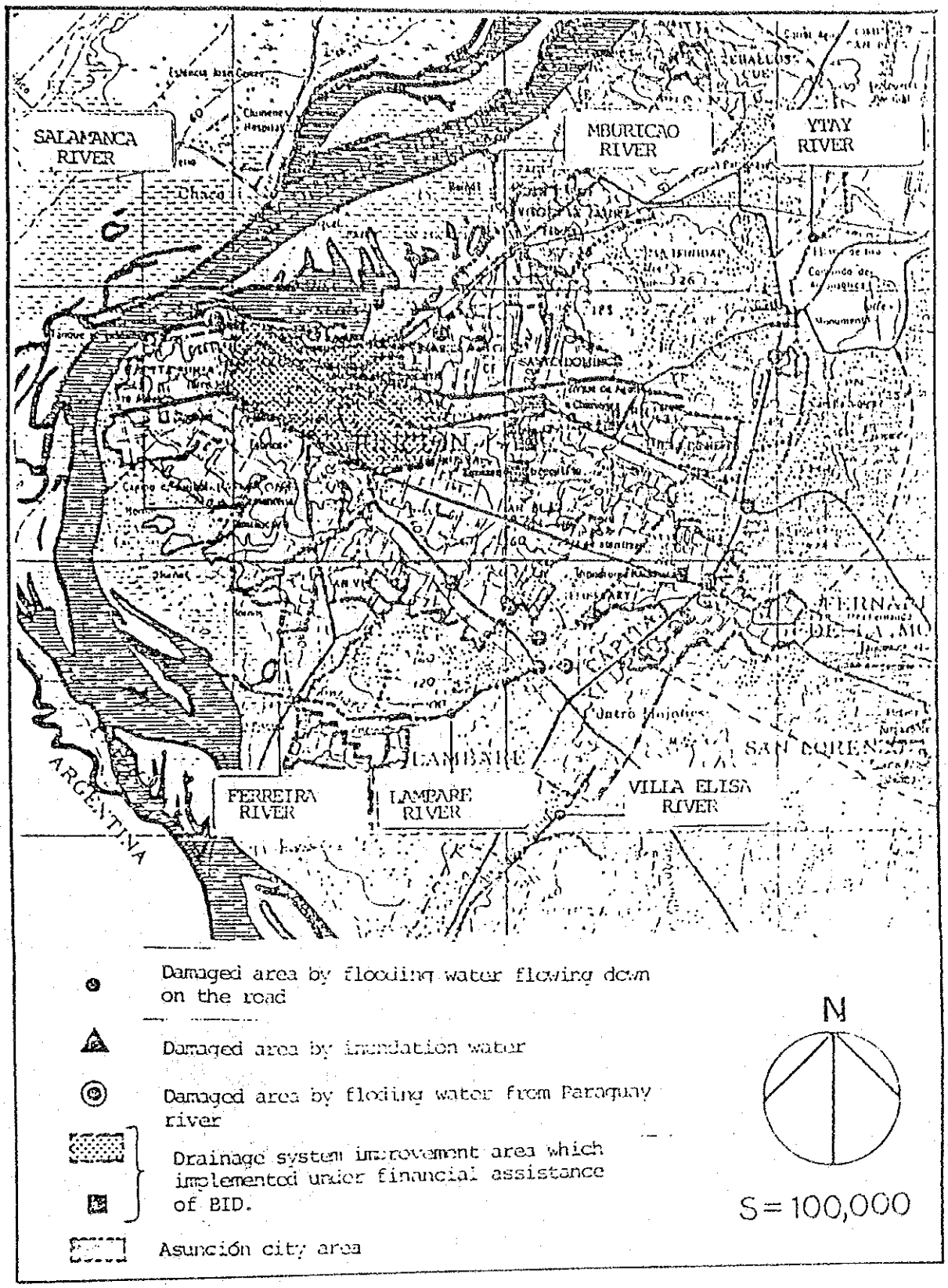


Fig. 2 WORK SCHEDULE

Work Item \ Duration	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Field Reconnaissance																		
2. Terrestrial Surveying and Mapping																		
3. Data Collection																		
4. Study and Analysis of Data																		
5. Masterplan Study																		
6. Feasibility Study																		
7. Project Evaluation																		
8. Transfer of Knowledge and Overseas Training	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =	= =
9. Reporting			*1					*2				*3					*4	*5

Reporting Schedule:

*1 Inception Report
*2 Progress Report I
*3 Progress Report II
*4 Draft Final Report
*5 Final Report

付－4－①　事前調査団メンバーリスト

MEMBER'S LIST
OF
PRELIMINARY SURVEY TEAM
FOR
STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT
IN
ASUNCION CITY
OF
THE REPUBLIC OF PARAGUAY

Mr. Katsuyoshi ISHIZAKI (Team Leader)
Chief of Disaster Preparedness
Section, Disaster Prevention Div.,
River Bureau, Ministry of Construction

Mr. Masamichi SHIRAHASE (Hydrology and Hydraulics)
Deputy Director, River Improvement Div.,
River Bureau, Ministry of Construction

Mr. Eiichi NAKAMURA (City Planning and Drainage Planning)
Senior Research Engineer. Sewage Works
Section, Public Works Reserch Institute,
Ministry of Construction

Mr. Noboru YAMAGUCHI (Facilities Planning)
Head of Research Section, Planning Div.,
Construction Dept., Sewerage Bureau,
Osaka Municipal Government

Mr. Junji ISHIZUKA (Project Coordinator)
Development Survey 2nd Div.,
Social Development Cooperation Dept.,
Japan International Cooperation Agency
(JICA)

organized by
JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO, JAPAN
Tel. : 03-346-5230 Telex : JICAHDQA J22271

JICA

付－４－②　行程表

SURVEY　SCHEDULE

DATE	DESCRIPTION
7 Feb. (Thu)	——— Arrived in Asuncion by RG 902
8 Feb. (Fri)	Courtesy call to Japanese Embassy and JICA Asuncion Office
9 Feb. (Sat)	Courtesy call to CORPOSANA
10 Feb. (Sun)	Holiday
11 Feb. (Mon)	Municipality Office, BID Office ,etc. Courtesy call to Organization concerned
12 Feb. (Tue)	Field Inspection to planning area
13 Feb. (Wed)	——— ditto
14 Feb. (Thu)	Meeting on the Scope of Work with CORPOSANA
15 Feb. (Fri)	——— ditto
16 Feb. (Sat)	Meeting within Team, Arrangement of collected data
17 Feb. (Sun)	Meeting within Team
18 Feb. (Mon)	Preparation of Minutes of Meeting
19 Feb. (Tue)	Final Meeting in CORPOSANA, Signing of the Scope of Work and Minutes of Meeting
20 Feb. (Wed)	Report the result of Survey to Japanese Embassy and JICA Asuncion Office, Leave for Tokyo by RG 903

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

I. INTRODUCTION

In response to the request of the Government of the Republic of Paraguay (hereinafter referred to as "Paraguay"), the Government of Japan has decided to conduct a master plan and feasibility study on Storm Drainage System Improvement Project in Asuncion City in the Republic of Paraguay (hereinafter referred to as "the Study"), in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Paraguay.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation Programmes of the Government of Japan, will undertake the Study in close cooperation with la Corporacion de Obras Sanitarias (hereinafter referred to as "CORPOSANA"), as well as other authorities concerned of the Government of Paraguay.

The present document sets forth the Scope of Work with regard to the above mentioned Study.

II . OBJECTIVE OF THE STUDY

The objectives of the Study are to prepare a master plan for the Storm Drainage System Improvement Project in Asuncion City with the target year 2005 (Phase I Study), and to carry out a feasibility study for a project selected from the result of the master plan Study (Phase II Study) .

III . SCOPE OF THE STUDY

1. Study Area

(1) The Study area of the master plan will cover Asuncion Municipality.

(2) The Study area of the Feasibility Study will be selected from the result of the master plan Study.

cf. The river improvement of Paraguay river will be excluded.

2. Contents of the Study

The Study will be composed of field surveys and data collection in Paraguay and of analysis works in both Paraguay and Japan.

(1) Phase I Study ; Preparation of Master Plan

① Data collection and analysis

a. land use, topographical map
b. drainage or related facilities
c. city development plan, road-traffic system
d. population
e. meteorology and hydrology
f. soil and geological condition
g. past storm damages
h. previous studies (BID project,etc.)
i. administration and socio-economic condition
j. others

② Study of present status of Storm Drainage based on above data

③ Definition of Planning Criteria
- a. target year (2005)
- b. definition of planning area
- c. design criteria

④ proposal of storm drainage improvement alternatives
- a. arrangement planning of required drainage facilities
- b. examination of alternative systems

⑤ formulation of optimum alternative
- a. cost estimation
- b. labour and materials planning
- c. economic and financial analysis
- d. organization and institution
- e. planning schedule
- f. definition of 1st stage project

(2) Phase II Study ; Execution of Feasibility Study

① Identification of proposed project

② Ground survey
- a. longitudinal and sectional survey for drainage channel and river
- b. topographic survey for proposed major facilities

③ Preliminary Design

a. new drainage facilities

b. river improvement works

c. rehabilitation of existing system

d. cost estimation

e. procurement planning of construction materials and estimation of labour

④ Institutional and organizational analysis

a. operation and management

b. stuff training program

⑤ Project Evaluation

a. financial analysis

b. economical analysis

c. benefit

⑥ Implementation program

a. implementation schedule

b. disbursement schedule

Ⅳ . STUDY SCHEDULE

The whole Study will be conducted in accordance with the attached tentative schedule.

V. REPORTS

JICA will prepare and submit the following reports in Spanish to the Government of Paraguay in the course of the Master Plan Study and Feasibility Study.

1. Inception Report, 35 copies, at the beginning of the field survey of Phase I Study
2. Progress Report (I), 35 copies, at the end of the field survey of Phase I Study
3. Interim Report, 35 copies, within three (3) months after completion of the field survey of Phase I Study.
   CORPOSANA will provide JICA with their comments within one (1) month after receipt of the Interim Report.
4. Progress Report (II), 35 copies, at the end of the field survey of Phase II Study
5. Draft Final Report, 35 copies, within three (3) months after completion of the field survey of Phase II Study
   CORPOSANA will provide JICA with their comments within two (2) months after receipt of the Draft Final Report.
6. Final Report, 50 copies, within two (2) months after receipt of comments on the Draft Final Report

VI. UNDERTAKING OF THE GOVERNMENT OF PARAGUAY

The Goverment of Paraguay will accord privileges, immunities and other benefits to the Japanese Study team in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Paraguay.

1. To facilitate smooth conduct of the Study, the Government of Paraguay shall take necessary measures:
   (1) to secure the safety of the Japanese Study team,
   (2) to permit the members of the Japanese study team to enter, leave and sojourn in Paraguay for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees ,
   (3) to exempt the members of the Japanese Study team , from taxes, duties and any other charges on equipment, machinery and other materials brought into Paraguay for the conduct of the Study,
   (4) to exempt the members of the Japanese Study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese Study team for their services in connection with the implementation of the Study,
   (5) to provide the necessary facilities to the Japanese Study team for the remittances as well as utilization of funds introduced into Paraguay from Japan in connection with the implementation of the Study
   (6) to secure permission for entry into private properties or restricted area for the conduct of the Study ,
   (7) to secure permission for the Japanese Study team to take all data and documents (including photographs) related to the Study out of Paraguay to Japan,
   (8) to provide medical services as needed, Its expenses will be chargeable members of the Japanese Study team.

2. The Government of Paraguay shall bear claims, if any arises, against the members of the Japanese Study team resulting from occuring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study , except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese Study team .
3. CORPOSANA shall act as counterpart agency to the Japanese Study team and also as coordinating body in relation to the other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. CORPOSANA shall, at its own expense, and in cooperation with other agencies concerned, if necessary , provide the Japanese Study team with the following :
   (1) available data and information related to the Study
   (2) counterpart personnel
   (3) non-technical support personnel
   (4) suitable office space with necessary equipment in Asuncion
   (5) credentials of identification cards
   (6) vehivles and drivers

Ⅶ. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

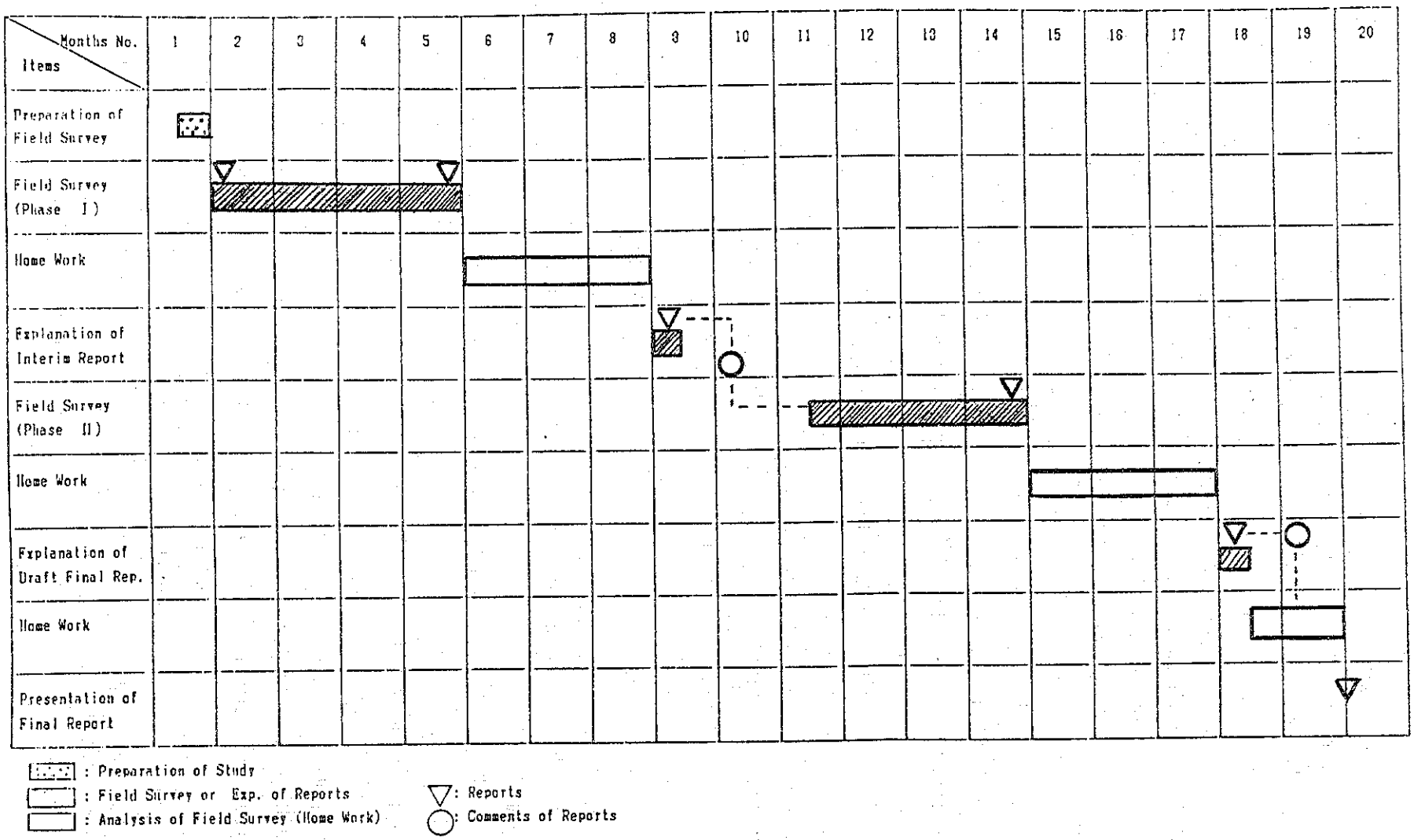
1. to dispatch, at its own expense, Japanese Study teams to Paraguay
2. to pursue technology transfer to the Paraguayan counterpart personnel in the course of the Study

Ⅷ . OTHERS

JICA and CORPOSANA will consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX

TENTATIVE SCHEDULE



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

LA CORPORACION DE OBRAS SANITARIAS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

IN ASUNCION, FEBRUARY, 1985.

SCOPE OF WORK

FOR

MASTER PLAN AND FEASIBILITY STUDY

ON

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT

IN

ASUNCION CITY

OF

THE REPUBLIC OF PARAGUAY

AGREED UPON BETWEEN

LA CORPORACION DE OBRAS SANITARIAS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

IN ASUNCION, 18, FEBRUARY, 1985

Ing. Enrique Barrail
Presidente del Consejo de
Administración

MR. KATSUYOSHI ISHIZAKI
LEADER OF THE PRELIMINARY
SURVEY TEAM, JAPAN INTERNATIONAL
COOPERATION AGENCY

Dr. Alberto Ramírez Patiño
Gerente General

I. INTRODUCTION

In response to the request of the Government of the Republic of Paraguay (hereinafter referred to as "Paraguay"), the Government of Japan has decided to conduct a master plan and feasibility study on Storm Drainage System Improvement Project in Asunción City in the Republic of Paraguay (hereinafter referred to as "the Study"), in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Paraguay.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation Programmes of the Government of Japan, will undertake the Study in close cooperation with la Corporación de Obras Sanitarias (hereinafter referred to as " CORPOSANA"), as well as other authorities concerned of the Government of Paraguay.

The present document sets forth the Scope of Work with regard to the above mentioned Study.

II. OBJECTIVE OF THE STUDY

The objectives of the Study are to prepare a master plan for the Storm Drainage System Improvement Project in Asunción City with the target year 2005 (Phase I Study), and to carry out a feasibility study for a project selected from the result of the master plan Study (Phase II Study).

III. SCOPE OF THE STUDY

1. Study Area

(1) The Study area of the master plan will cover Asuncion City and the neighbourhood area.

(2) The Study area of the Feasibility Study will be selected from the result of the master plan Study.

cf. The river improvement of Paraguay river will be excluded.

2. Contents of the Study

The Study will be composed of field surveys and data collection in Paraguay and of analysis works in both Paraguay and Japan.

(1) Phase I Study : Preparation of Master Plan

1) Data collection and analysis

a. land use, topographical map

b. drainage or related facilities

c. city development plan, road-traffic system

d. population

e. meteorology and hydrology

f. soil and geological condition

g. past storm damages

h. previous studies (BID project, etc)

i. administration and socio-economic condition

j. others

2) Study of present status of Storm Drainage based on above data

3) Definition of Planning Criteria

a. Target year (2005)

b. definition of planning area

c. design criteria

4) proporsal of storm drainage improvement alternatives

a. arrangement planning of required drainage facilities

b. examination of alternative systems

5) formulation of optimum alternative

a. cost estimation

b. labour and materials planning

c. economic and financial analysis

d. organization and institution

e. planning schedule

f. definition of 1st stage project

(2) Phase II Study : Execution of Feasibility Study

1) Identification of proposed project

2) Ground survey

a. longitudinal and sectional survey for drainage channel and river

b. topographic survey for proposed major facilities

3) Preliminary Design

a. new drainage facilities

b. river improvement works

c. rehabilitation of existing system

d. cost estimation

e. procurement planning of construction materials and estimation of labour

4) Institutional and organizational analysis

a. operation and management

b. stuff training program

5) Project Evaluation

a. financial analysis

b. economical analysis

c. benefit

6) Implementation program

a. implementation schedule

b. disbursement schedule

IV. STUDY SCHEDULE

The whole Study will be conducted in accordance with the attached tentative schedule.

V. REPORTS

JICA will prepare and submit the following reports in English to CORPOSANA in the course of the Master Plan Study and Feasibility Study.

1. Inception Report, 35 copies, at the beginning of the field survey of Phase I Study.
2. Progress Report (I) , 35 copies, at the end of the field survey of Phase I Study.
3. Interim Report, 35 copies, within three (3) months after completion of the field survey of Phase I Study.

   CORPOSANA will provide JICA with their comments within one (1) month after receipt of the Interim Report.
4. Progress Report (II), 35 copies, at the end of the field survey of Phase II Study.
5. Draft Final Report, 35 copies, within three (3) months after completion of the field survey of Phase II Study.

   CORPOSANA will provide JICA with their comments within two (2) months after receipt of the Draft Final Report.
6. Final Report, 50 copies, within two (2) months after receipt of comments on the Draft Final Report.

VI. UNDERTAKING OF GOVERNMENT OF PARAGUAY

CORPOSANA, as responsible authority of the Government of Paraguay, will take arrangements to obtain privileges, immunities and other benefits to the JICA Study team from the Government of Paraguay in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Paraguay.

1. To facilitate smooth conduct of the Study, CORPOSANA shall take necessary measures:
   (1) to secure the safety of the Japanese Study team,
   (2) to permit the members of the Japanese Study team to enter, leave and sojourn in Paraguay for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees,
   (3) to exempt the members of the Japanese Study team, from taxes, duties and any other charges on equipment, machinery and other materials brought into Paraguay for the conduct of the Study,
   (4) to exempt the members of the Japanese Study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese Study team for their services in connection with the implementation of the Study,
   (5) to provide the necessary facilities to the Japanese Study team for the remittances as well as utilization of funds introduced into Paraguay from Japan in connection with the implementation of the Study,
   (6) to secure permission for entry into private properties or restricted area for the conduct of the Study,
   (7) to secure permission for the Japanese Study team to take all data and documents (including photographs) related to the Study out of Paraguay to Japan,
   (8) to provide medical services as needed. Those expenses will be chargeable members of the Japanese Study team.

2. CORPOSANA shall bear claims, if any arises, against the members of the Japanese Study team resulting from occuring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese Study team.

3. CORPOSANA shall act as counterpart agency to the Japanese Study team and also as coordinating body in relation to the other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

4. CORPOSANA shall, at its own expense, and in cooperation with other agencies concerned, if necessary, provide the Japanese Study team with the following:

(1) available data and information related to the Study

(2) counterpart personnel

(3) non-technical support personnel

(4) suitable office space with necessary equipment in Asunción

(5) credentials of identification cards

VII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

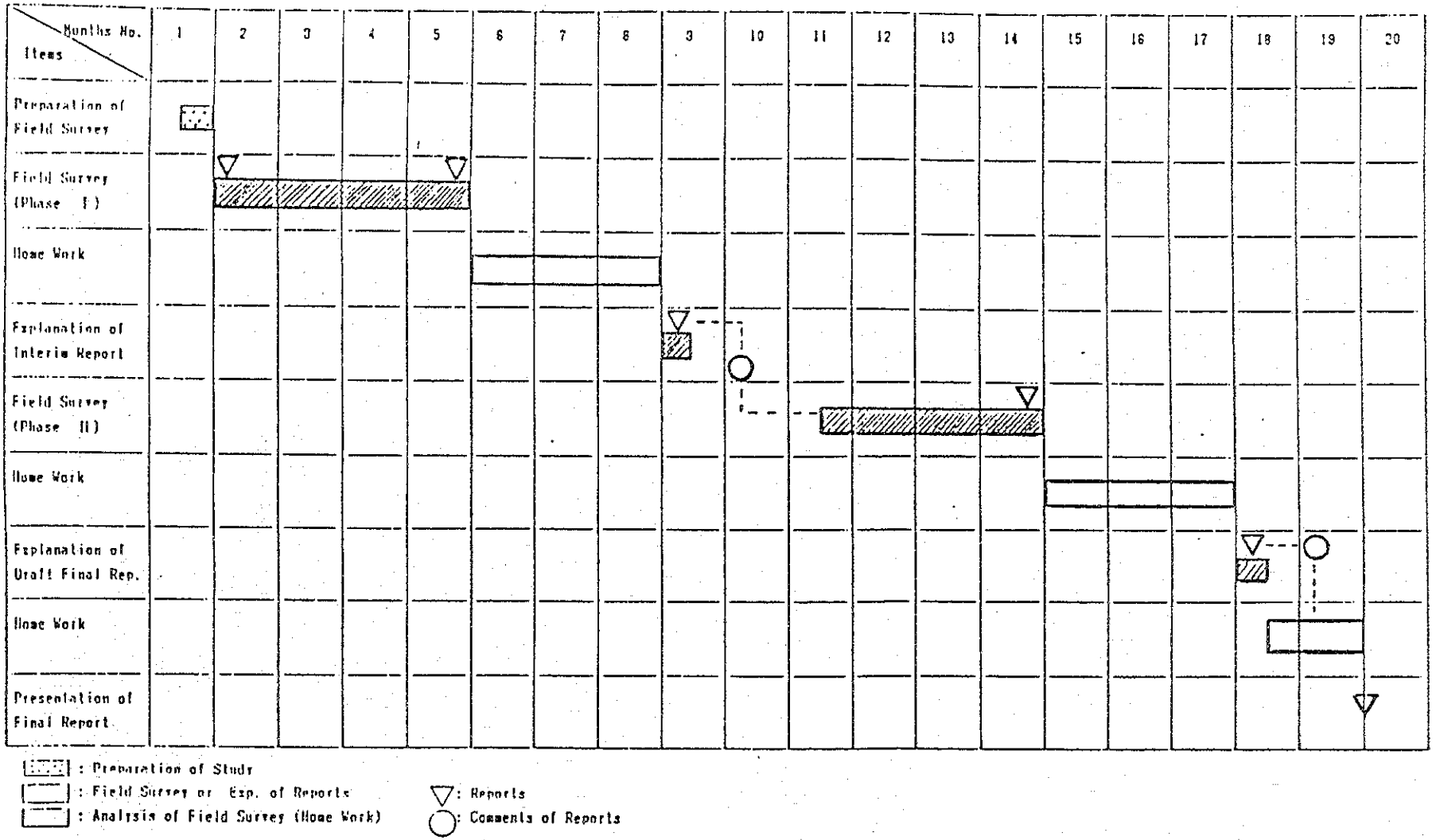
1. to dispatch, at its own expense, Japanese Study teams to Paraguay
2. to pursue technology transfer to the Paraguayan counterpart personnel in the course of the Study

VIII. OTHERS

JICA and CORPOSANA will consult with each other in respect of any matter that may arise from or in connection with the Study.

APPENDIX

TENTATIVE SCHEDULE



付－6　Minutes of Meeting

MINUTES OF MEETING

FOR

MASTER PLAN AND FEASIBILITY STUDY

ON

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT

IN

ASUNCION CITY

OF

THE REPUBLIC OF PARAGUAY

LA CORPORACION DE OBRAS SANITARIAS

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

FEBRUARY, 1985

MINUTES OF MEETING

FOR

MASTER PLAN AND FEASIBILITY STUDY

ON

STORM DRAINAGE SYSTEM IMPROVEMENT PROJECT

IN

ASUNCION CITY

OF

THE REPUBLIC OF PARAGUAY

In response to the request of the Government of Paraguay, the Japanese Preliminary Survey Team was sent by the Japan International Cooperation Agency (hereinafter referred to as "JICA") to discuss a Scope of Work (S/W) for the Master Plan and Feasibility Study on Storm Drainage System Improvement Project in Asunción City of the Republic of Paraguay (hereinafter referred to as " the Study ").

The Team headed by Mr. K. ISHIZAKI staying in Paraguay, from 7 th to 19 th of February 1985, had a series of meeting on the Study with Authorities concerned of the Government of Paraguay, in particular with la Corporación de Obras Sanitarias (hereinafter referred to as " CORPOSANA"), also carried out field reconnaissance surveys in the Asunción City and the neighbourhood area.
Consequently, Draft Scope of Work proposed by the Team was discussed in detail and agreed between the Team and CORPOSANA with minor modifications.

The main items which were discussed concurrently by the Team and CORPOSANA are attached herewith as ANNEX.

ANNEX

1. It was recognized by the Team that Asunción City and the neighbourhood area has been suffering from serious floods almost every year due to a poor drainage system and to the inadequate capacity of small rivers, and consequently it causes a severe economic and social problem in the above mentioned area.

2. The main items which was recognized important by both sides are as follows.

   (1) to cooperate mutually on the excution of the Study, especially for the data collection on past storm damages.

   (2) to execute the Study effectively by closely contacting with Asunción municipal office for suiting to the city planning on Asunción City etc.

3. Both sides agreed that the respective assignment of Paraguayan Counterpart personnels which will be required by Japanese Study Team would be decided at the chance of the Inception Report submitting.

4. CORPOSANA expressed their hope to realize the project economically and promptly by the aid of the Japanese Government.

5. CORPOSANA desired the training in Japan of Counterpart personnels during the Study.

   This matter will be concretely discussed in submitting the Inception Report.

(APPENDIX)

ATTENDANTS LIST

CORPOSANA

Ing.	Ronald CHENU Abente	Gerente de Alcantarillado
Ing.	Civil Miguel R. CANALE B.	

JICA PRELIMINARY SURVEY TEAM

Mr.	katsuyoshi ISHIZAKI	Leader of Team
Mr.	Masamichi SHIRAHASE	Member of Team
Mr.	Eiichi NAKAMURA	Member of Team
Mr.	Noboru YAMAGUCHI	Member of Team
Mr.	Junji ISHIZUKA	Member of Team

Asunción, 18 th February 1985

For la Corporación de Obras Sanitarias (CORPOSANA)

Ing. Enrique Barrail
Presidente del Consejo de Administración

For Japan International Cooperation Agency (JICA)

MR. KATSUYOSHI ISHIZAKI
LEADER OF THE PRELIMINARY SURVEY TEAM, JICA

Dr. Alberto Ramírez Patiño
Gerente General