

Appendixes

1. Member List of the Study Team

Field survey in the Philippines

1)	Mr. HAGIWARA Satoru	Team Leader	Group Director, Project Management Group III, Grant Aid Management Dept., JICA
2)	Mr. OZAKI Yoshihiro	Project Coordinator	Rural Development Team, Project Management Group III, Grant Aid Management Dept., JICA
3)	Mr. SAWANO Kunihiro	Chief Engineer/ Bridge Planner/ Maintenance Engineer	CTI Engineering International Co., Ltd.
4)	Dr. GOTO Yusuke	Agrarian Development Planner/ Socio-economist	CTI Engineering International Co., Ltd.
5)	Mr. SAGARA Hidetaka	Bridge Engineer	CTI Engineering International Co., Ltd.
6)	Mr. MORISHITA Kanehiro	Natural Condition Surveyor (River Topography / Hydrology)	CTI Engineering International Co., Ltd.
7)	Dr. TSUCHIDA Takayuki	Natural Condition Surveyor (Bridge Topography Geology)	CTI Engineering International Co., Ltd.
8)	Mr. KAWADA Shinya	Socio-Environmentalist	CTI Engineering International Co., Ltd.
9)	Mr. MIURA Minoru	Construction Planner/ Cost Estimator	CTI Engineering International Co., Ltd.

Explanation of draft report in the Philippines

1)	Ms. KITABAYASHI Harumi	Team Leader	Deputy Resident Representative, JICA Philippine Office
2)	Mr. MIYASHITA Akiko	Project Coordinator	Rural Development, JICA
3)	Mr. MORISHITA Kanehiro	Chief Engineer/ Natural Condition Surveyor (River Topography / Hydrology)	CTI Engineering International Co., Ltd.
4)	Dr. TSUCHIDA Takayuki	Natural Condition Surveyor (Bridge Topography Geology)	CTI Engineering International Co., Ltd.
5)	Mr. MIURA Minoru	Construction Planner/ Cost Estimator	CTI Engineering International Co., Ltd.

2. Study Schedule

Field survey in the Philippines

	Hagiwara, Ozaki	Sawano	Goto	Sagara, Miura	Morishita	Tsuchida	Kawada
March 3 Mon.	-	Move (Tokyo=>Manila) C/C (JICA)	-	Move (Tokyo=>Manila) C/C (JICA)	Move (Tokyo=>Manila) C/C (JICA)	Move (Tokyo=>Manila) C/C (JICA)	-
4 Tue.	-	C/C (EOJ, NEDA, DOF, DPWH)	-	C/C (EOJ, NEDA, DOF, DPWH)	C/C (EOJ, NEDA, DOF, DPWH)	C/C (EOJ, NEDA, DOF, DPWH)	-
5 Wed.	-	C/C (DAR)	Move (Tokyo=>Manila)	C/C (DAR)	C/C (DAR)	C/C (DAR)	-
6 Thu.	-	C/C (JBIC)	C/C (JBIC)	C/C (JBIC)	C/C (JBIC)	C/C (JBIC)	-
7 Fri.	-	C/C (DAR-Region IV) Discussion (DAR-Quezon)	C/C (DAR-Region IV) Discussion (DAR-Quezon)	Discussion (DAR-Quezon)	Discussion (DAR-Quezon)	Discussion (DAR-Quezon)	-
8 Sat.	-	Preparation of Site Investigation	Preparation of Site Investigation	Preparation of Site Investigation	Preparation of Site Investigation	Preparation of Site Investigation	-
9 Sun.	-	Move (Manila=>Cabanatuan)	Move (Manila=>Cabanatuan)	Move (Manila=>Cabanatuan)	Move (Manila=>Cabanatuan)	Move (Manila=>Cabanatuan)	-
10 Mon.	-	Move (Cabanatuan=>Baler) Discussion (DAR-Aurora) C/C (Ma. Aurora) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Discussion (DAR-Aurora) C/C (Ma. Aurora) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Discussion (DAR-Aurora) C/C (Ma. Aurora) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Discussion (DAR-Aurora) C/C (Ma. Aurora) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Discussion (DAR-Aurora) C/C (Ma. Aurora) Consultation Meeting (Bazal)	Move (Tokyo=>Manila)
11 Tue.	-	Site Inspection (Bazal) Move (Bazal=>Cabanatuan)	Site Inspection (Bazal) Move (Bazal=>Cabanatuan)	Site Inspection (Bazal) Move (Bazal=>Cabanatuan)	Site Inspection (Bazal) Move (Bazal=>Cabanatuan)	Site Inspection (Bazal) Move (Bazal=>Cabanatuan)	Move (Manila=>Baler) Site Inspection (Bazal) Move (Bazal=>Cabanatuan)
12 Wed.	-	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)	C/C (Dingalan) Consultation Meeting (Umiray, G. Nakar)
13 Thu.	-	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)
14 Fri.	-	Consultation Meeting (Umiray, G. Nakar and Dingalan)	Consultation Meeting (Umiray, G. Nakar and Dingalan)	Site Inspection (Umiray)	Site Inspection (Umiray)	Consultation Meeting (Umiray, G. Nakar and Dingalan)	Consultation Meeting (Umiray, G. Nakar and Dingalan)
15 Sat.	-	Move (Cabanatuan=>Baler) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Site Inspection (Bazal)	Move (Cabanatuan=>Baler) Site Inspection (Bazal)	Move (Cabanatuan=>Baler) Consultation Meeting (Bazal)	Move (Cabanatuan=>Baler) Consultation Meeting (Bazal)
16 Sun.	-	Site Inspection (Bazal)	Site Inspection (Bazal)	Site Inspection (Bazal)	Site Inspection (Bazal)	Site Inspection (Bazal)	Site Inspection (Bazal)
17 Mon.	-	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)	Discussion (DAR-Aurora) Move (Baler=>Cabanatuan)
18 Tue.	-	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)
19 Wed.	-	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)	Site Inspection (Umiray)
20 Thu.	-	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)
21 Fri.	-	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis
22 Sat.	-	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	Move (Manila=>Tokyo)	Data Collection and Analysis	Data Collection and Analysis
23 Sun.	Move (Tokyo=>Manila) Team Meeting	Team Meeting	Team Meeting	Team Meeting	-	Team Meeting	Team Meeting
24 Mon.	C/C (JICA, EOJ, DAR)	C/C (JICA, EOJ, DAR)	C/C (JICA, EOJ, DAR)	Preparation of Document	-	C/C (JICA, EOJ, DAR)	Data Collection and Analysis
25 Tue.	Explanation of I/R (DAR)	Explanation of I/R (DAR)	Explanation of I/R (DAR)	Explanation of I/R (DAR)	-	Explanation of I/R (DAR)	Explanation of I/R (DAR)

	Hagiwara, Ozaki	Sawano	Goto	Sagara, Miura	Morishita	Tsuchida	Kawada
26 Wed.	Move (Manila=>Baler) C/C (DAR-Region III)	Move (Manila=>Baler) C/C (DAR-Region III)	Move (Manila=>Baler) C/C (DAR-Region III)	Preparation of Document	-	Move (Manila=>Baler) C/C (DAR-Region III)	Preparation of Document
27 Thu.	C/C (DAR-Aurora) Site Inspection (Bazal) Move (Baler=>Cabanatuan)	C/C (DAR-Aurora) Site Inspection (Bazal) Move (Baler=>Cabanatuan)	C/C (DAR-Aurora) Site Inspection (Bazal) Move (Baler=>Cabanatuan)	Preparation of Document	-	C/C (DAR-Aurora) Site Inspection (Bazal) Move (Baler=>Cabanatuan)	Preparation of Document
28 Fri.	C/C (Dingalan) Site Inspection (Umiray)	C/C (Dingalan) Site Inspection (Umiray)	C/C (Dingalan) Site Inspection (Umiray)	Preparation of Document	-	C/C (Dingalan) Site Inspection (Umiray)	Preparation of Document
29 Sat.	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	Preparation of Document	-	Move (Cabanatuan=>Manila)	Move (Manila=>Tokyo)
30 Sun.	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	-	Data Collection and Analysis	-
31 Mon.	M/D Discussion and Signing (DAR)	M/D Discussion and Signing (DAR)	M/D Discussion and Signing (DAR)	M/D Discussion and Signing (DAR)	-	M/D Discussion and Signing (DAR)	-
April 1 Tue.	Report to JICA and EOJ	Move (Manila=>G. Nakar=> Lucena) C/C (G. Nakar)	Data Collection and Analysis	Preparation of Site Inspection	-	Move (Manila=>G. Nakar=> Lucena) C/C (G. Nakar)	-
2 Wed.	Move (Manila=>Tokyo)	Discussion (DAR-Quezon) C/C (Quezon) Move (Lucena=>Manila)	Data Collection and Analysis	Move (Manila=>Baler)	-	Discussion (DAR-Quezon) C/C (Quezon) Move (Lucena=>Manila)	-
3 Thu.	-	Data Collection and Analysis	Data Collection and Analysis	Site Inspection (Bazal)	-	Data Collection and Analysis	-
4 Fri.	-	Data Collection and Analysis	Data Collection and Analysis	Site Inspection (Bazal)	-	Data Collection and Analysis	-
5 Sat.	-	Preparation of Document	Preparation of Document	Site Inspection (Bazal) Move (Baler=>Cabanatuan)	-	Preparation of Document	-
6 Sun.	-	Preparation of Document	Preparation of Document	Site Inspection (Umiray)	-	Preparation of Document	-
7 Mon.	-	Preparation of Document	Move (Manila=>Baler)	Site Inspection (Umiray)	-	Move (Manila=>Baler)	-
8 Tue.	-	Preparation of Document	Site Inspection (Bazal) Move (Baler=>Cabanatuan)	Site Inspection (Umiray)	-	Site Inspection (Bazal) Move (Baler=>Cabanatuan)	-
9 Wed.	-	Preparation of Document	Site Inspection (Umiray) Move (Cabanatuan=>Manila)	Move (Cabanatuan=>Manila)	-	Site Inspection (Umiray) Move (Cabanatuan=>Manila)	-
10 Thu.	-	Discussion (DAR)	Discussion (DAR)	Discussion (DAR)	-	Discussion (DAR)	-
11 Fri.	-	Preparation of Document	Discussion (DAR)	Preparation of Document	-	Preparation of Document	-
12 Sat.	-	Preparation of Document	Preparation of Document	Preparation of Document	-	Preparation of Document	-
13 Sun.	-	Data Collection and Analysis	Data Collection and Analysis	Data Collection and Analysis	-	Data Collection and Analysis	-
14 Mon.	-	Technical Discussion (DAR)	Technical Discussion (DAR)	Technical Discussion (DAR)	-	Technical Discussion (DAR)	-
15 Tue.	-	Discussion (NEDA) Report to JICA	Discussion (NEDA) Report to JICA	Discussion (NEDA) Report to JICA	-	Discussion (NEDA) Report to JICA	-
16 Wed.	-	Move (Manila=>Tokyo)	Data Collection and Analysis	Move (Manila=>Tokyo)	-	Move (Manila=>Tokyo)	-
17 Thu.	-	-	Data Collection and Analysis	-	-	-	-
18 Fri.	-	-	Move (Manila=>Tokyo)	-	-	-	-

Note) EOJ: Embassy of Japan
 JICA: Japan International Cooperation Agency
 JBIC: Japan Bank for International Cooperation
 NEDA: National Economic and Development Authority
 DOF: Department of Finance
 DPWH: Department of Public Works and Highways

DAR: Department of Agrarian Reform (Central Office)
 DAR-Region III: Department of Agrarian Reform, Regional Office, Region III
 DAR-Region IV: Department of Agrarian Reform, Regional Office, Region IV
 DAR-Aurora: Department of Agrarian Reform, Provincial Office, Aurora Province
 DAR-Quezon: Department of Agrarian Reform, Provincial Office, Quezon Province

Accommodation: Manila
 Cabanatuan
 Baler
 Lucena

Explanation of draft report in the Philippines

Date			Kitabayashi, Miyashita		Morishita, Tsuchida, Miura	
			Activities	Accommodation	Activities	Accommodation
Sep.	12	Fri.			Move (Tokyo=>Manila) C/C (JICA)	Manila
	13	Sat.			Meeting (DAR)	ditto
	14	Sun.			Move (Manila=>Baler)	Baler
	15	Mon.			Discussion (DAR-Aurora) C/C (Ma. Aurora) Site Inspection (Bazal)	ditto
	16	Tue.			C/C (Aurora) Consultation Meeting (Bazal) Move (Bazal=>Cabanatuan)	Cabanatuan
	17	Wed.			Move (Cabanatuan=>Dingalan) C/C (Dingalan) Move (Dingalan=>Umiray) Consultation Meeting (Umiray) Move (Umiray=>Manila)	Manila
	18	Thu.			Move (Manila=>San Fernando) Discussion (DAR-Region III) Move (San Fernando=>Manila) Discussion DAR-Region IV-A)	ditto
	19	Fri.			Move (Manila=>Lucena) C/C and Discussion (Quezon, G. Nakar, DAR-Quezon) Move (Lucena=>Manila)	ditto
	20	Sat.			Team Meeting	ditto
	21	Sun.	Move (Tokyo=>Manila) Team Meeting	Manila	Team Meeting	ditto
	22	Mon.	C/C (JICA) C/C (EOJ) C/C (DAR)	ditto	C/C (JICA) C/C (EOJ) C/C (DAR)	ditto
	23	Tue.	Discussion (DAR) C/C (NEDA) C/C (DPWH)	ditto	Discussion (DAR) C/C (NEDA) C/C (DPWH)	ditto
	24	Wed.	Discussion of M/D (DAR)	ditto	Discussion of M/D (DAR)	ditto
	25	Thu.	Signing of M/D (DAR) Report to EOJ Report to JICA	ditto	Signing of M/D (DAR) Report to EOJ Report to JICA	ditto
26	Fri.	Move (Manila=>Tokyo)	-	Move (Manila=>Tokyo)	-	

Note) EOJ: Embassy of Japan
 JICA: Japan International Cooperation Agency
 NEDA: National Economic and Development Authority
 DPWH: Department of Public Works and Highways

DAR: Department of Agrarian Reform (Central Office)
 DAR-Region III: DAR Regional Office, Region III
 DAR-Region IV: DAR Regional Office, Region IV
 DAR-Aurora: DAR Provincial Office, Aurora Province
 DAR-Quezon: DAR Provincial Office, Quezon Province

3. List of Parties Concerned in the Recipient Country

Embassy of Japan: EOJ

ITO Mitsuhiro, First Secretary

Japan International Cooperation Agency: JICA

MATSUDA Norio, Resident Representative

TAKASHIMA Kiyofumi

Japan Bank for International Cooperation: JBIC

WATANABE Jun, Resident Representative

Department of Agrarian Reform: DAR

Central Office

Nasser Pangandaman, Secretary

Narciso B. Nieto, Undersecretary

Hermina Fe B. San Juan, Director

Ma. Celerina G. Afable, Project Development Officer V, Project Development and Management Services (PDMS)

Ma. Cristina C. Dagdag, Project Development Officer IV

Henry M. Zapata, Project Development Officer IV

Engr. Imelda G. Lamboon, Technical Coordinator/ Team Leader

Irma T. Canlas, Project Development and Management Services (PDMS)

Regional Office, Region III

Teofilo Q. Inocencio, Regional Director

Regional Office, Region IV

Antonio G. Evangelista, Regional Director

Provincial Office, Aurora Province

Darlene Anicia B. Galicia, Provincial Agrarian Reform Officer II

Provincial Office, Quezon Province

Plaridel C. Vera Cruz, Provincial Agrarian Reform Officer II

Lucia Campomanes, Provincial Agrarian Reform Officer I

Municipality Office, Maria Aurora

Nelson D. Belen, Development Facilitator

Municipality Office, Dingalan

Roberto S. Baliwag, Development Facilitator

Municipality Office, Genera Nakar

Romeo U. Viado, Municipal Agrarian Reform Officer

Corazon S. Mercado, Development Facilitator

National Economic and Development Authority: NEDA

Amy Benjamin
Aurora T. Collantes
Ederlyn Nott, Infrastructure Staff (IS)
Josue Mirabite, Infrastructure Staff (IS)
Katherine D. Firmeza, Agricultural Staff (AS)

Department of Finance: DOF

John Adrian M. Narag, Project Evaluation Officer, International Finance Group
Erwin Sta Ana, Planning Officer, International Finance Group

Department of Public Works and Highways: DPWH

Mr. Ernesto Gregorio, Jr., Director, Rural Water Supply/CARP Project Management Office
Manny Bulusan, Engineer II, Rural Water Supply/CARP Project Management Office
Rogelio A. Hernandez, O/C Highway Division, Bureau of Design
Roger F. David, Engineer. IV, Highway Division, Bureau of Design
Rufind D. Valiente, Engineer IV, Bridge Division, Bureau of Design

Provincial Government of Aurora

Bellaflor J. Angara Castillo, Governor

Provincial Government of Quezon

Rafael P. Nantes, Governor

Maria Aurora Municipality

Ariel S. Bitong, Municipal Mayor

Dingalan Municipality

Zenaida Padiernos, Municipal Mayor

General Nakar Municipality

Leovigildo R. Ruzol, Municipal Mayor

Barangay Bazal

Pedro Supsup, Barangay Captain

Barangay Malasin

Fernando Dumpit, Barangay Captain

Barangay Umiray, Dingalan

Francisco Rivera, Barangay Captain

Barangay Umiray, General Nakar

Bernabe Vargas, Barangay Captain

4. Minutes of Discussions

MINUTES OF DISCUSSION
FOR THE BASIC DESIGN STUDY ON
"THE BRIDGE CONSTRUCTION PROJECT
FOR EXPANDED AGRARIAN REFORM COMMUNITIES DEVELOPMENT"
IN REPUBLIC OF THE PHILIPPINES

In response to a request from the Government of Republic of the Philippines (hereinafter referred to as "GOP"), the Government of Japan decided to conduct a Basic Design Study on the Bridge Construction Project for Expanded Agrarian Reform Communities Development (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

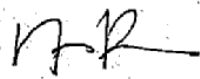
JICA sent to the Philippines the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Satoru Hagiwara, Group Director, Project Management Group III, Grant Aid Management Department, JICA, and is scheduled to stay in the country from 3rd March, 2008 to 18th April, 2008.

The Team held discussions with the concerned officials of the GOP and conducted a field survey at the study area.

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

Manila, 31st March, 2008


Mr. SATORU HAGIWARA
Team Leader
Basic Design Study Team
Japan International Cooperation Agency


Mr. NASSER C. PANGANDAMAN
Secretary
Department of Agrarian Reform
Republic of the Philippines

ATTACHMENT

1. Name of the Project

The Name of the Project is "The Bridge Construction Project for Expanded Agrarian Reform Communities Development".

2. Objective of the Project

The Objective of the Project is to construct the bridges in order to contribute to the Expanded ARC Development Program by connecting ARCs and markets or other facilities.

3. Project sites

The sites of the Project are located in the Municipality of Maria Aurora, Aurora Province and in the Municipalities of Dingalan, Aurora and General Nakar, Quezon Province in the Philippines as shown in Annex-1.

4. Responsible and Implementing Organization

The Responsible and Implementing Organization is the Department of Agrarian Reform (hereinafter referred to as "DAR"). Organization chart of DAR is shown in Annex-2.

5. Items requested by the GOP/DAR

The GOP/DAR requested components for the proposed Project as described in Annex-3. After discussions with the Team, GOP/DAR agreed that the Team will assess the appropriateness of requests through further study and will make suggestions of the Project.

Both sides agreed that based on results of the study, JICA would evaluate and finalize the components of the Project, then recommend a final proposed Project to the Government of Japan.

6. Japan's Grant Aid Scheme

6-1. The GOP/DAR understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-4.

6-2. As a condition for the Japan's Grant Aid to be implemented, the GOP/DAR will take the necessary measures and allocate necessary budget accordingly, as described in Annex-5, for smooth implementation of the Project.

6-3. The Team will clarify the necessary measures and budget to be taken by the GOP, in addition to the general measures described in Annex-5, by further studies.

7. Schedule of the Study

7-1. The consultant members of the Team will conduct further studies in the Philippines until 18th April, 2008.

7-2. JICA will prepare the draft final report of the Study in English and dispatch a

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mission in order to explain its contents around August 2008 at the earliest if some measures described in this document such as land acquisition, environmental and social consideration would be executed properly by the GOP/DAR.

7-3. In the case that the contents of the draft final report are accepted in principal by the GOP/DAR, JICA will complete the final report and send it to the GOP/DAR in around October 2008.

7-4. The GOP/DAR understood that the implementation of the Basic Design Study does not imply nor commit the implementation of the Project.

8. Tax Exemption

The GOP/DAR committed to take full responsibility in allocating the necessary budget for the Value Added Tax (VAT), and any other taxes and duties in the Philippines arising from the Project activities. These taxes would be borne by DAR in accordance with the Implementation schedule.

The Team explained to the GOP/DAR that confirmation of the budget allocation for VAT by the DAR is essential for the Project implementation. Both sides confirmed that these tax-related issues would be one of the preconditions to implement the Project.

9. Other Relevant Issues

9-1. Impacts of the Project

The GOP/DAR explained that the targeted two (2) bridges are considered of the highest priority among thirty four (34) bridges (of which six (6) bridges were already constructed under ARISP) to be constructed in terms of the impact to the Expanded ARC Development Program. The GOP/DAR also explained the expected impact of the Project as enumerated in the following section. The GOP/DAR committed to exert its best effort to source appropriate means to construct these twenty six (26) targeted bridges in order to apply the acquired knowledge through the Project to promote the Extended ARC Program on other areas.

The Team explained to consider the feasibility and relevance of the impacts and report to the Government of Japan.

(Umiray Bridge)

- greater access between market and farm land
- increased production of rice, coconut, root crops and other agriculture products
- minimized crop spoilage
- reduced the cost of hauling and transporting goods and people
- generation of employment
- serve as the emergency exit of the communities during calamity

(Bazal Bridge)

- greater access between market and farm land

- improved agricultural productivity through dissemination of technology from the Aurora State College of Technology (ASCOT)
- improved mobility of people in the ARC all year round
- minimized crop spoilage
- improved access to the elementary school which is on the Bazal side and to the high school which is on the Malasin side
- reduced suspension of classes in ASCOT and other educational institutions during rainy season thereby increasing the enrolment as well
- improved delivery of health services

9-2. Operation and Maintenance of the Bridge

The GOP/DAR explained that after completion of the proposed bridges, it will turn-over the Umiray Bridge to the Provincial Governments of Aurora and Quezon, and the Bazal Bridge to the Provincial Government of Aurora and the Municipality of Maria Aurora. DAR will enter into Memorandum of Understanding with the concerned Local Government Units (LGUs) for the maintenance and other GOP obligations and requirements for the bridges.

The GOP/DAR committed to submit organization chart and demarcation for the operation and maintenance to the Team by 17th April, 2008.

9-3. Land Acquisition

The GOP/DAR committed to secure the land for proposed bridges, approach road, temporary management office and construction yard. The GOP/DAR also committed to submit to the Team an official letter by 17th April, 2008, which would manifest the LGUs commitment and willingness to take full responsibility and take necessary measures on this issue in accordance with the implementation schedule.

9-4. Social Consideration

Both sides confirmed the necessity of social consideration about land acquisition, involuntary resettlement and dislocation of those who will lose their livelihood due to the Project. The Team explained that for the continuation of the Study, social consideration issues are inevitable and indispensable and must be taken care of by the GOP/DAR in a timely and appropriate manner. The GOP/DAR also committed to submit the Team an official letter by 17th April, 2008, which would manifest the LGUs commitment and willingness to take full responsibility and take necessary measures on this issue in accordance with the implementation schedule.

9-5. Environmental Consideration

The GOP/DAR committed to complete all ECC (Environmental Compliance Certificate) process including approval within the Philippine side by the end of October 2008 based on this Study.

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9-6. Related Infrastructure Construction Plan

Both sides confirmed the importance of approach road connecting to the project sites in order to secure the impacts by constructing two (2) bridges. The GOP/DAR committed to take necessary measures such as river improvement work and concreting related road based on the recommendation by the Team.

9-7. Investment Coordination Committee (ICC)

The GOP/DAR explained that if total cost of the Project (inclusive VAT) exceeds P 500,000,000 (Five Hundred Million Pesos), it shall undertake the necessary coordination with the NEDA to facilitate immediate endorsement to the ICC for the approval of the Project.

Annex 1 : Site Map

Annex 2 : Organization chart of responsible agency and implementing agency

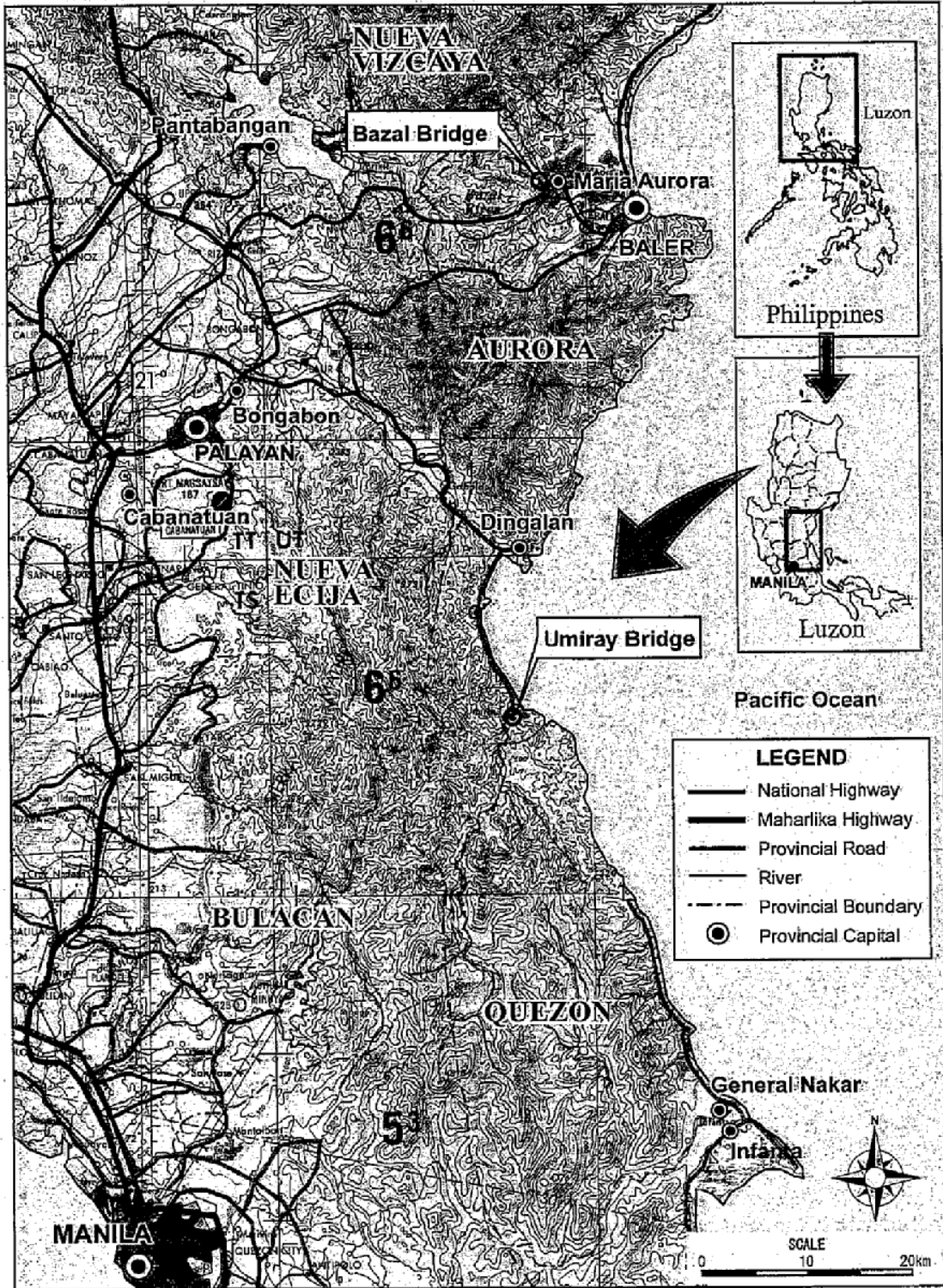
Annex 3 : Items requested by the GOP/DAR

Annex 4 : Japan's Grant Aid Scheme

Annex 5 : Major Undertakings to be taken by Each Government

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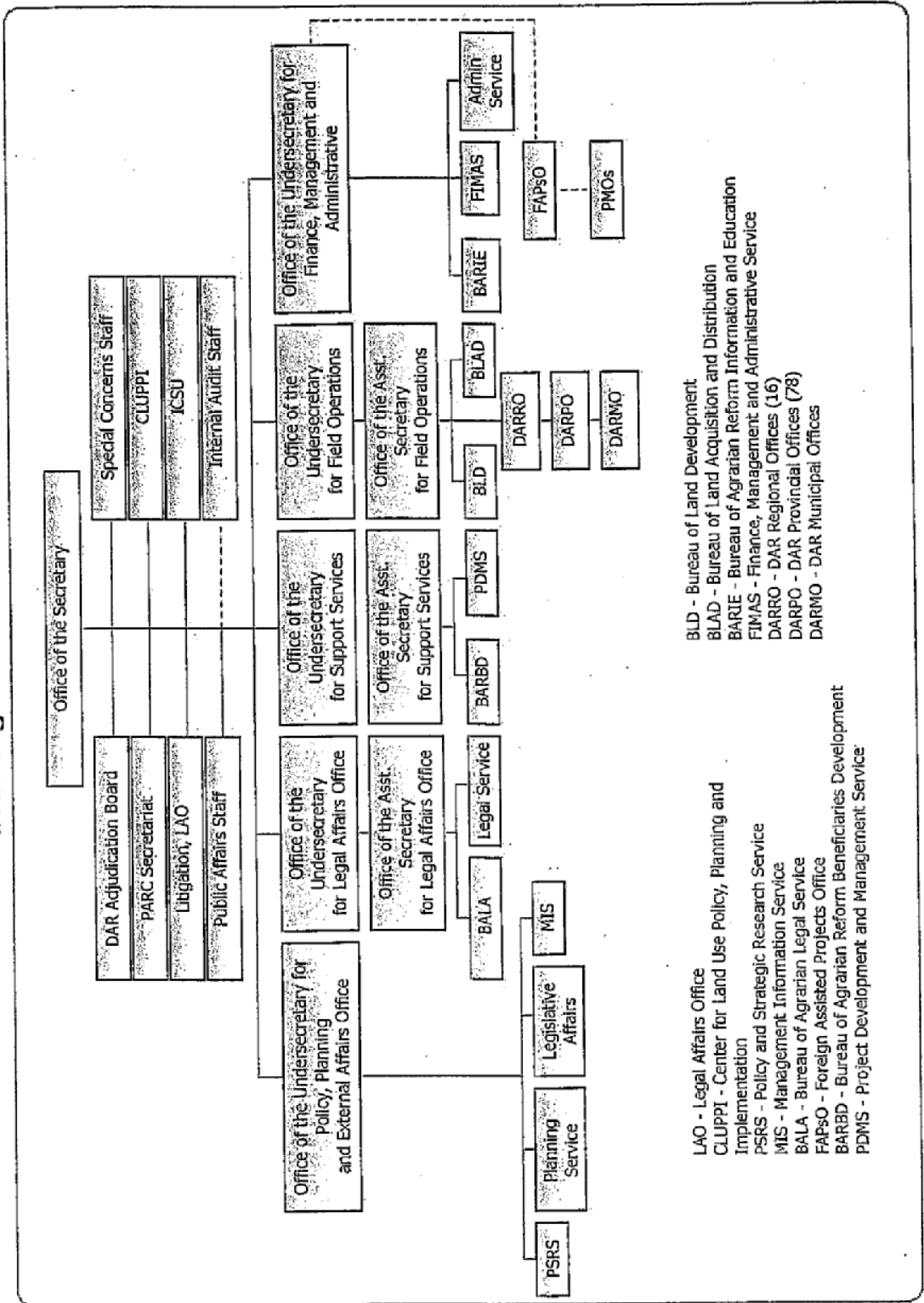


Location Map

map

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DAR Organizational Chart



BLD - Bureau of Land Development
 BLAD - Bureau of Land Acquisition and Distribution
 BARIE - Bureau of Agrarian Reform Information and Education
 FIMAS - Finance, Management and Administrative Service
 DARRO - DAR Regional Offices (16)
 DARPO - DAR Provincial Offices (78)
 DARMO - DAR Municipal Offices

LAO - Legal Affairs Office
 CLUPPI - Center for Land Use Policy, Planning and Implementation
 PSRS - Policy and Strategic Research Service
 MIS - Management Information Service
 BALA - Bureau of Agrarian Legal Service
 FAPSO - Foreign Assisted Projects Office
 BARBD - Bureau of Agrarian Reform Beneficiaries Development
 PDMS - Project Development and Management Service

Handwritten signatures and initials:
 [Signature] [Signature] [Signature] [Signature]

Items requested by the GOP/DAR

The main component of the request made by the GOP is as follows;

	Description	Bazal Bridge	Umiray Bridge
1	Bridge Construction		
	Bridge Length	80 – 150 m	315 – 385 m
	Roadway Width	4 – 6 m	4 – 6 m
	Bridge Width	5 – 8 m	5 – 8 m
	Foundation	Depend on soil condition	Depend on soil condition
	Pier Type	Depend on soil condition	Depend on soil condition
2	Approach Road Construction		
	Status of Road	Barangay Road	Barangay Road (G. Nakar side) Provincial Road (Dingalan side)
	Length	Depend on bridge height	Depend on bridge height
	Carriageway Width	4 – 6 m	4 – 6 m
	Shoulder Width	1 – 2 m	1 – 2 m
	Pavement	PCCP 20 - 25 cm, Gravel 30cm	PCCP20 - 25 cm Gravel 30cm
3	Bank Protection Works		
	Revetment Works	Lump Sum	Lump Sum
	Scouring Protection	Gabion/Mortared Riprap	Gabion/Mortared Riprap

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Japan's Grant Aid

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japan's Grant Aid scheme is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for the Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country.

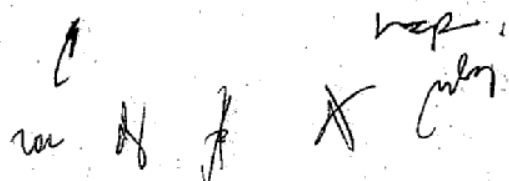
Finally, for the smooth implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.



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- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
- Preparation of a Basic Design of the Project
- Estimation of cost of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

- 2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as natural disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

- 3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the

A1-2

products or services of a third country.

However, the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

5) Undertakings required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

- ① To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,
- ② To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- ③ To secure buildings prior to the procurement in case the installation of the equipment,
- ④ To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- ⑤ To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,
- ⑥ To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

8) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account in

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the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

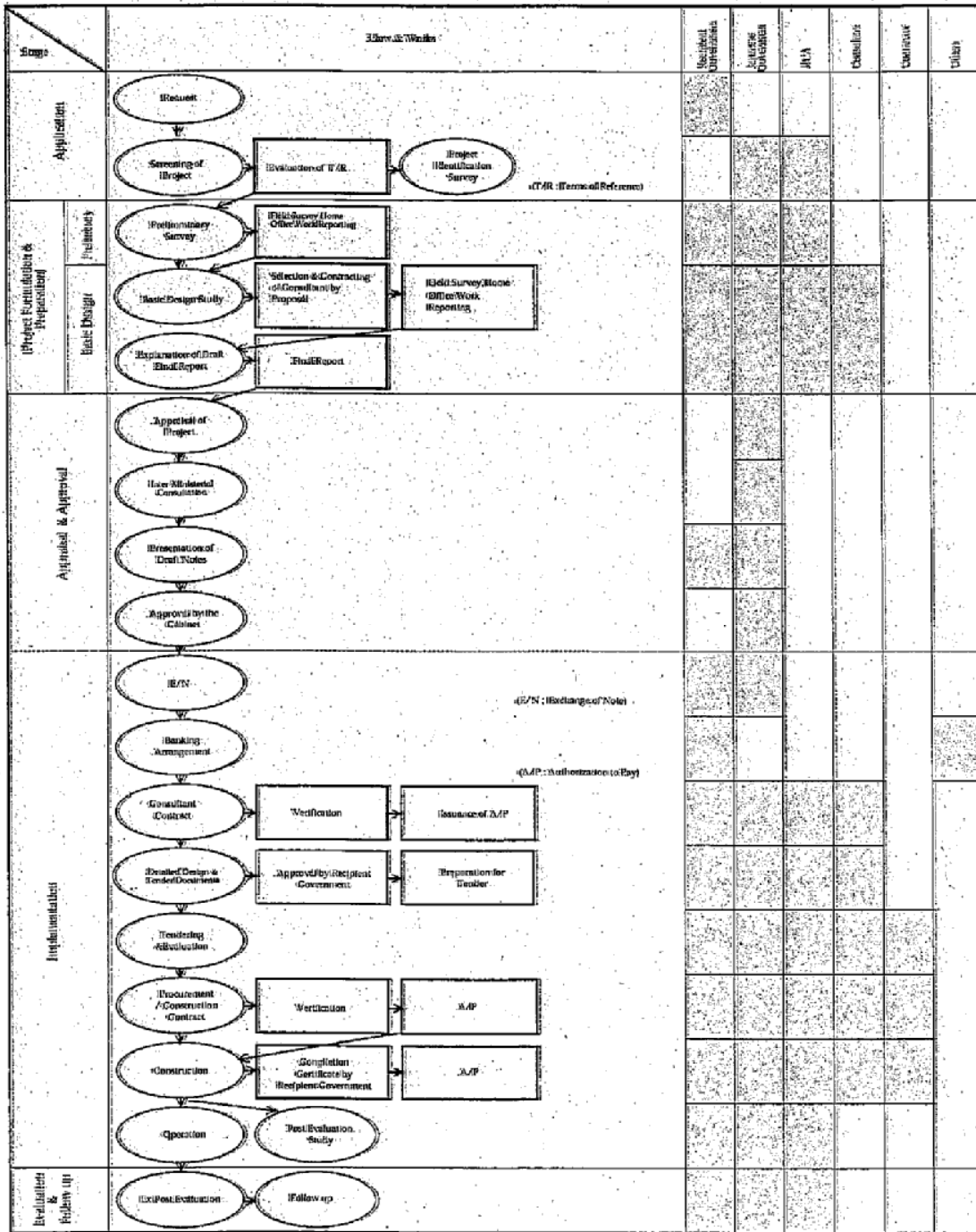
- b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay(A/P) issued by the Government of the recipient country or its designated authority.

9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

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The word "mbj" written below the signature.

Flow Chart of Japan's Grant Aid Procedures

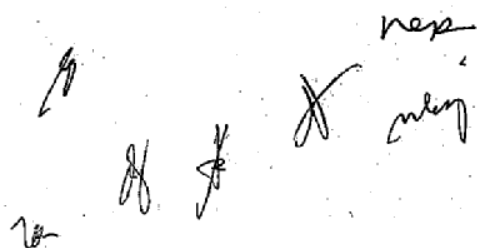


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Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To constructed gates and fences in and around the site		●
4	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
5	To ensure unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
6	To accord Japanese nationals whose service may be required in connection with the supply of the products and the services under the verified contract, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
7	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts		●
8	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
9	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to Pay)



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TECHNICAL NOTE

A joint meeting was held on 31 March 2008 among the Department of Agrarian Reform (DAR), the Department of Public Works and Highways (DPWH) and the Basic Design Study Team (the Team) to discuss basic conditions for the design of two study bridges (Bazal Bridge and Umiray Bridge). A list of attendance is shown in Attachment 1. The following design conditions set based on the joint meeting were reconfirmed between DAR and the Team.

The Team stated that the agreed design conditions are tentative and that the final decision shall be made after further analysis in Japan and consultation with JICA and concerned parties in Japan, and DAR understood it.

DESIGN CONDITIONS AGREED BETWEEN DAR AND THE TEAM

1. Location of Bridge

- Bazal Bridge : As shown in Attachment 2, Sheet No.1
Umiray Bridge : As shown in Attachment 2, Sheet No.2

2. Basic Design Conditions

1) Width

- Bazal Bridge : Carriageway 4.0 m, Walkway 0.35 m x 2, Railing 0.35m x 2 (Attachment 2, Sheet No.3)
Approach Road of Bazal Bridge : Carriageway 4.0 m, Shoulder 1.00 m x 2 (Attachment 2, Sheet No.3)
Umiray Bridge : Carriageway 5.5 m, Walkway 0.35 m x 2, Railing 0.35m x 2 (Attachment 2, Sheet No.4)
Approach Road of Umiray Bridge : Carriageway 5.5 m, Shoulder 1.00 m x 2 (Attachment 2, Sheet No.4)
(Note: Although the 5.5m of carriageway width of Umiray Bridge was agreed upon due to cost consideration, the GOP/DAR is recommending a standard width of 6.1m for provincial bridges.)

2) Design Loads

- Live Load : AASHTO HS 15-44 for Bazal Bridge
AASHTO HS 20-44 for Umiray Bridge
Seismic Load : NSCP Acceleration Coefficient=0.4 for both bridges
Temperature Change : 20°C~40°C for concrete for both bridges

3) Design Speed

- Bazal Bridge : 30 km/h
Umiray Bridge : 30 km/h

4) Freeboard

- 1.5 m for both bridges

5) Minimum Span Length

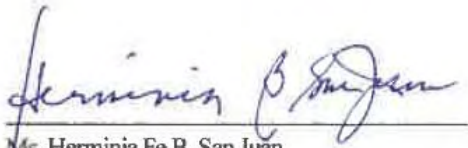
- Bazal Bridge : 22.8 m
Umiray Bridge : 33.5 m

3. Pavement Structure of Approach Roads

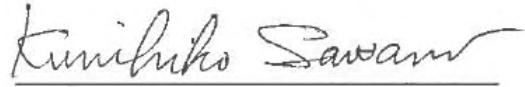
- PCCP : t=20 cm for both bridges (Attachment 2, Sheet No.3 & 4)
Sub-base Course : t=20 cm for both bridges (Attachment 2, Sheet No.3 & 4)

4. **Structure of Slope Protection of Approach Roads**
As shown in Attachment 2, Sheet No.5 for both bridges.
5. **Drainage Structure**
As shown in Attachment 2, Sheet No.5 for both bridges.

Manila, 14 April 2008



Ms. Herminia Fe B. San Juan
Director, Project Development & Management
Department of Agrarian Reform



Mr. Kunihiro Sawano
Chief Engineer
Basic Design Study Team



Attachment 1

LIST OF ATTENDANCE AT THE JOINT MEETING ON 31 MARCH 2008 ON THE DESIGN CONDITIONS

1. Department of Agrarian Reform, Central Office

Ma. Cristina C. Dagdag Project Development Officer IV

Imelda G Lamboon Project Development Officer III

2. Department of Public Works and Highways, Bureau of Design

Rogelio A. Hernandez O/C, Highways Division

Roger F. David Engineer IV, Highways Division

Rufino D. Valiente Engineer IV, Bridge Division

3. Department of Public Works and Highways, PMO-Rural Water Supply

Manny Bulusan Engineer II

4. Basic Design Study Team

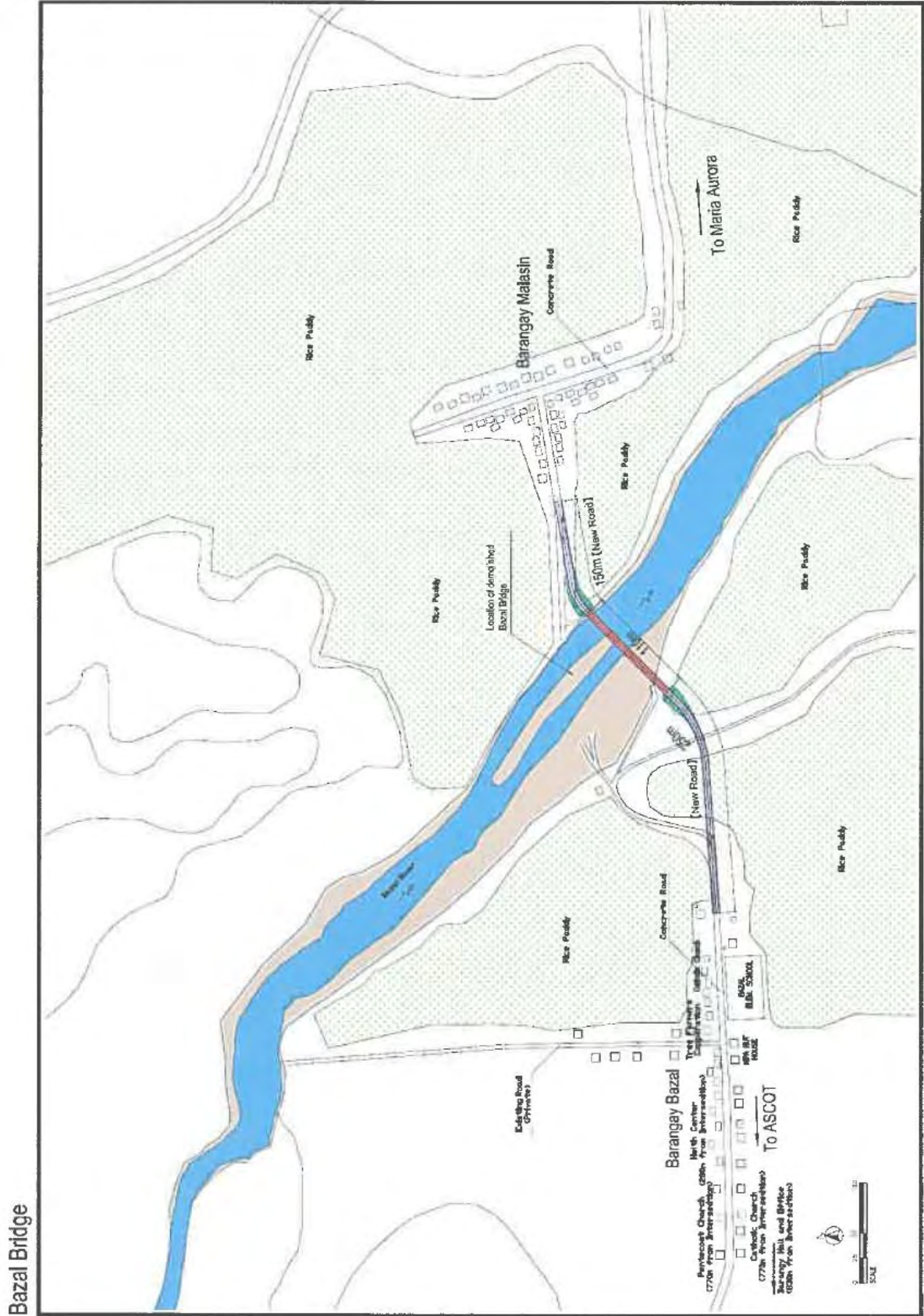
Kunihiko Sawano Chief Engineer

Hidetaka Sagara Bridge Engineer

Takayuki Tsuchida Natural Condition Surveyor

Minoru Miura Construction Planner / Cost Estimator

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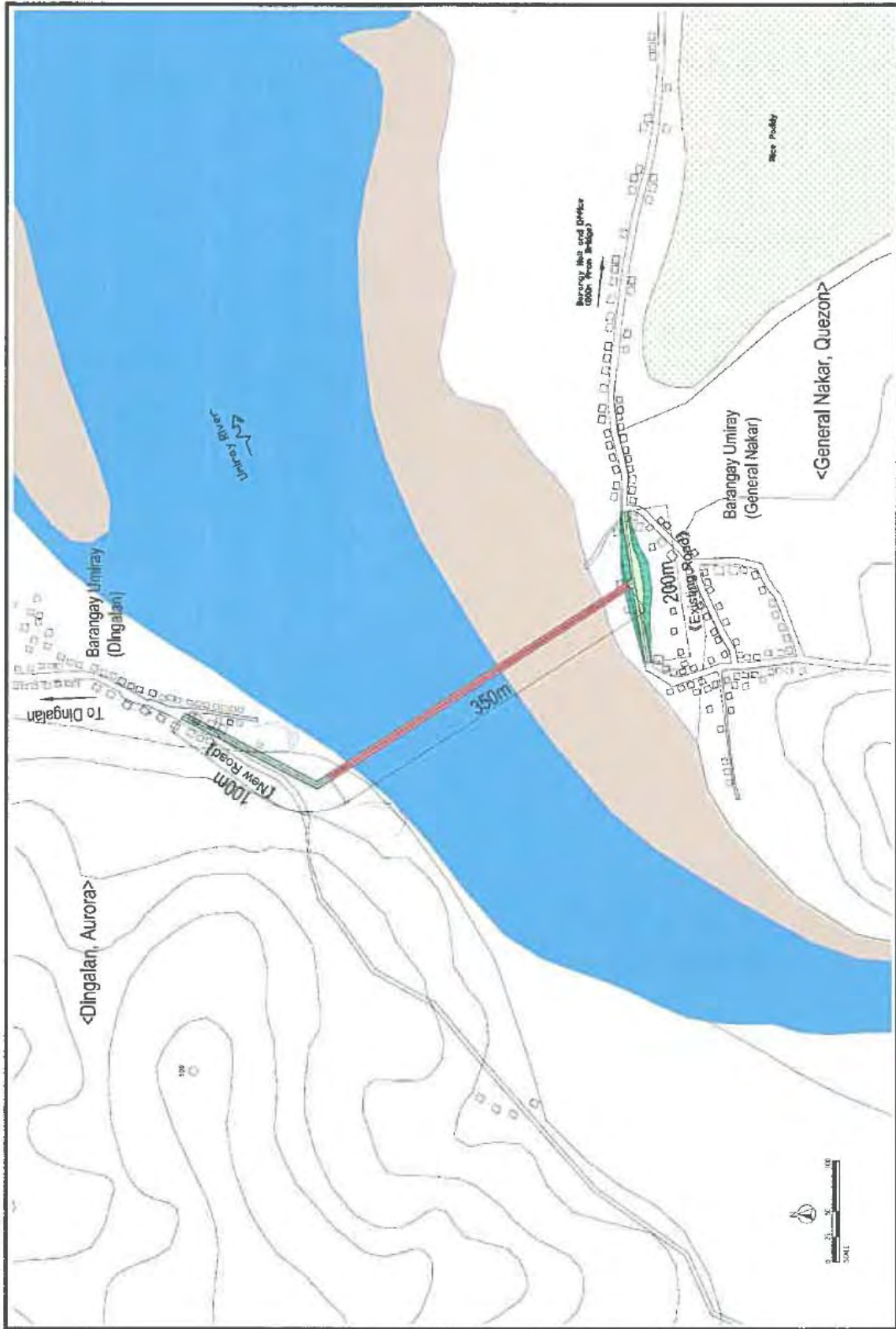


Bazal Bridge

Sheet No.1 Location of Bazal Bridge

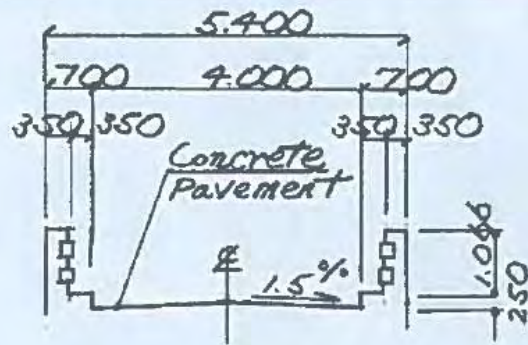
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Umiray Bridge

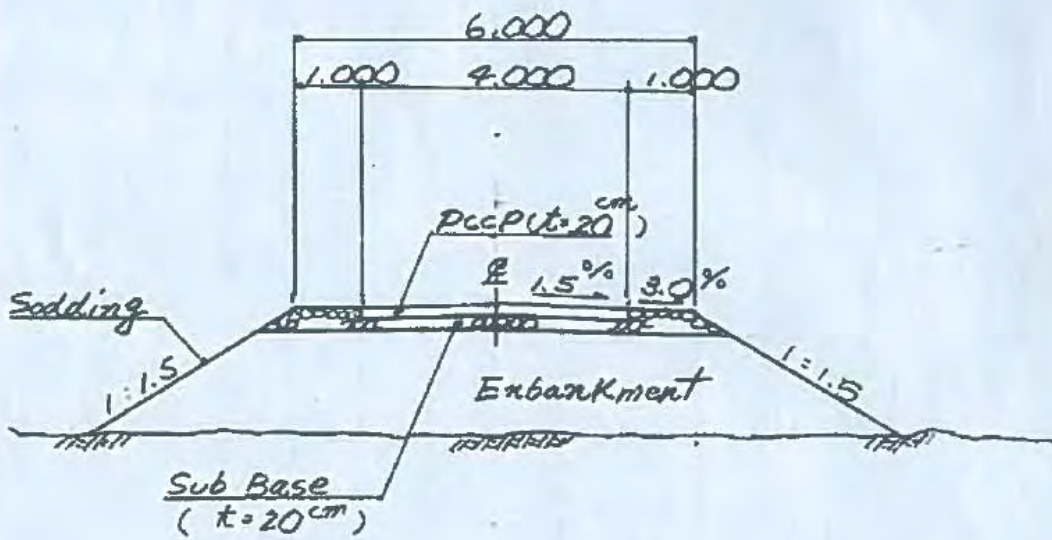


Sheet No.2 Location of Umiray Bridge

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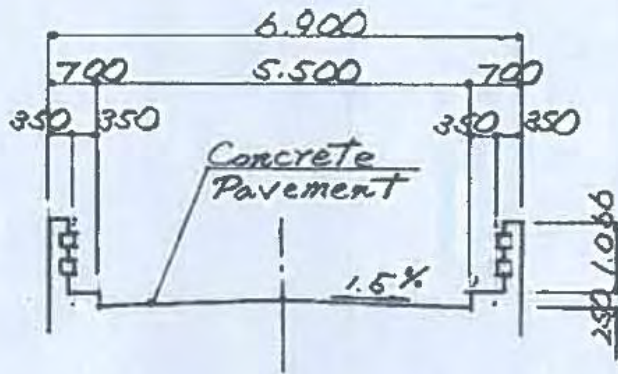
Cross Section of Bridge



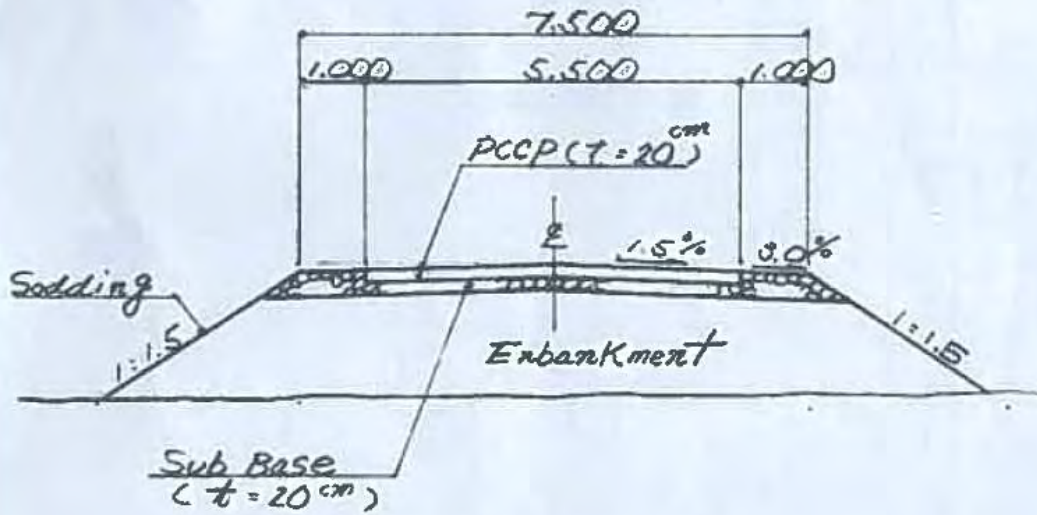
Cross Section of Approach Road

Sheet No.3 Cross Section of Bazal Bridge

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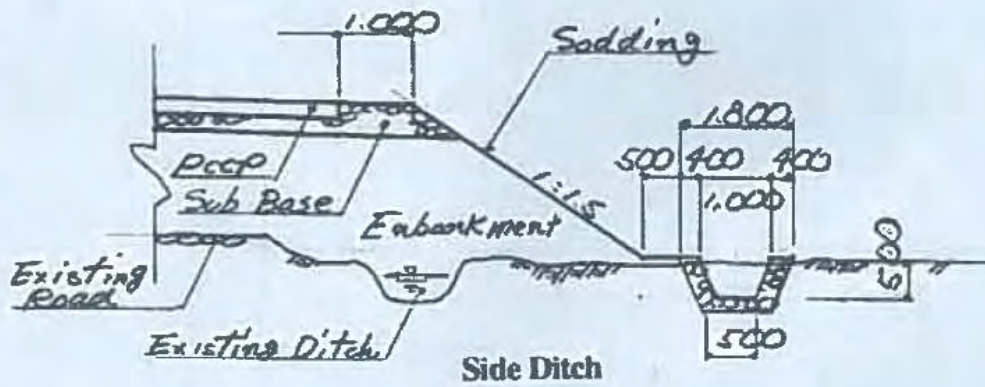
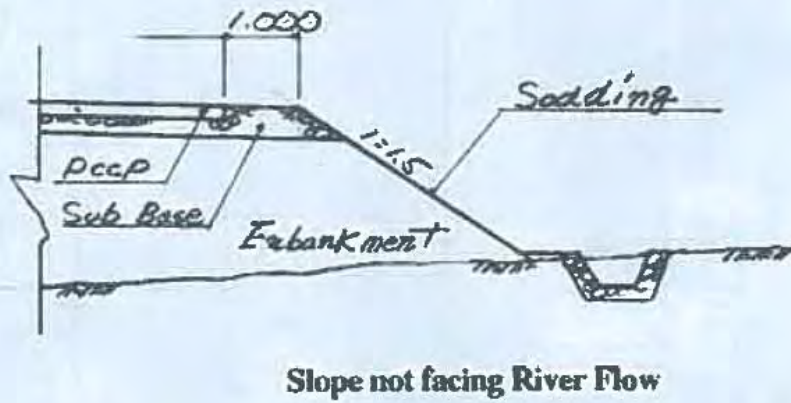
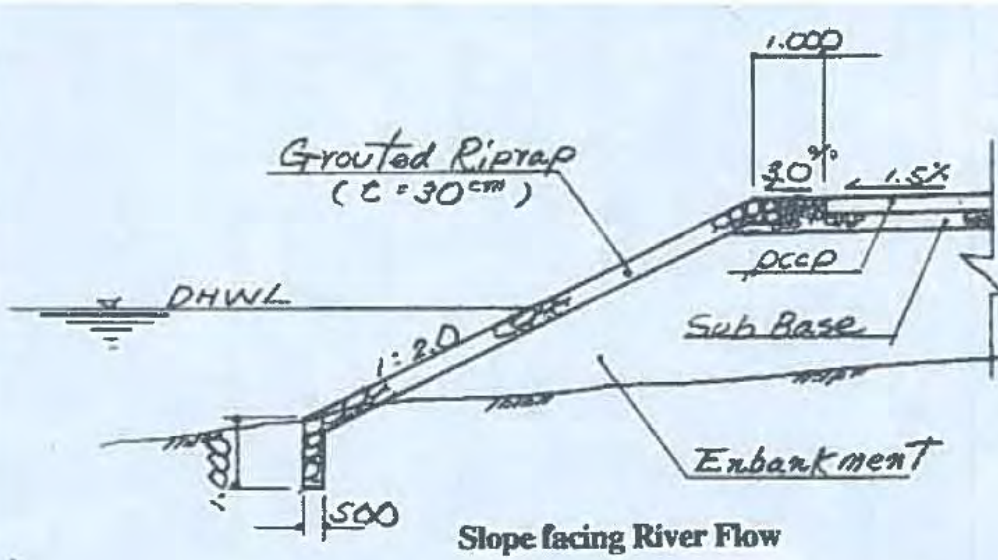
Cross Section of Bridge



Cross Section of Approach Road

Sheet No.4 Cross Section of Umiray Bridge

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Sheet No.5 Structure of Slope Protection and Drainage

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**MINUTES OF DISCUSSIONS ON
THE BASIC DESIGN STUDY
ON
“THE BRIDGE CONSTRUCTION PROJECT
FOR EXPANDED AGRARIAN REFORM COMMUNITIES DEVELOPMENT”
(EXPLANATION OF DRAFT FINAL REPORT)**

In March 2008, the Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a Basic Design Study Team on the Bridge Construction Project for Expanded Agrarian Reform Communities Development (hereinafter referred to as “the Project”) to the Republic of the Philippines (hereinafter referred to as “the Philippines”), and through discussion, field survey, and technical examination in Japan, JICA prepared a draft final report of the study.

In order to explain and to discuss with officials of the Government of the Philippines (hereinafter referred to as “GOP”) on the components of the draft final report, JICA sent to the Philippines the Draft Report Explanation Team (hereinafter referred to as “the Team”), headed by Ms. Harumi KITABAYASHI, Deputy Resident Representative, JICA Philippine Office from 12th to 26th September 2008.

As a result of discussion, both parties confirmed the items described on the attached sheets.

Manila, 24th September 2008

北林 春美

Ms. KITABAYASHI Harumi
Team Leader
Basic Design Study Team
Japan International Cooperation Agency



Mr. NASSER C. PANGANDAMAN
Secretary
Department of Agrarian Reform
Republic of the Philippines

ATTACHMENT

1. Components of the Draft Report

The Department of Agrarian Reform of the Philippines (hereinafter referred to as “the GOP/DAR”) agreed and accepted in principle the components of the draft report explained by the Team.

2. Japan's Grant Aid scheme

The GOP/DAR understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the GOP/DAR as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both parties on 31st March 2008.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the GOP/DAR by the end of December 2008.

4. Implementation Schedule

In view of several issues and concerns regarding the implementation of the Umiray Bridge, the Team has recommended to consider the immediate implementation of the Bazal Bridge. Hence, both sides agreed that construction of Bazal Bridge and Umiray Bridge would be independent projects and proposed to be constructed in accordance with the schedule as described in Annex-1. Accordingly, DAR will inform NEDA of the results of the Basic Design Study and will submit the revised proposal for Bazal Bridge by October 2008 and for Umiray Bridge by January 2009.

5. Confidentiality of the Project Cost Estimation

The Team explained the initial cost estimate of the Project as described in Annex-2. The GOP/DAR understood that the Project Cost Estimate attached as Annex-2 is not final and is subject to change. Both sides agreed that the Project Cost Estimate should be used only for official purposes and should not be duplicated or released to any outside parties before signing of all the Contract(s) for the Project.

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6. Other relevant issues

The Team explained that items described in 1) to 7) will be preconditions for the commencement of the bridge construction and if GOP/DAR cannot complete the procedure by each deadline, the commencement of the Project might be delayed:

For both bridges:

- 1) To secure Environmental Compliance Certificate (ECC) before the commencement of detailed designs for each project, i.e. by the end of November 2008 in the case of Bazal bridge.
- 2) To submit detailed operation and maintenance plan for each project, including Memorandum of Agreement (MOA) with the concerned Local Government Units (LGUs) by the end of March 2009.
- 3) To secure the right of way (ROW) for proposed bridges and approach roads, certificate for temporary use for the construction works, and to facilitate the issuance of permits for the quarry and borrow pit sites by the Provincial/Municipal LGUs by the end of March 2009 in the case of Bazal bridge and by the end of November 2009 in the case of Umiray bridge.
- 4) To undertake the necessary social consideration measures for stakeholders including the resettlement of affected households by the end of March 2009 in the case of Bazal bridge and by the end of November 2009 in the case of Umiray bridge.

For Bazal bridge:

- 5) To secure the NEDA Investment Coordination Committee (ICC) notation by the end of November 2008.

For Umiray bridge:

- 6) To secure NEDA-ICC approval for Umiray bridge construction before the commencement of the detailed design.
- 7) To complete all the improvement works on the access road between Dingalan and Umiray bridge based on the proposal from the Team (which is shown in Annex-3), before the commencement of the detailed design.

The GOP/DAR agreed to implement the above said arrangements in accordance with the schedule of the Project in Annex-1.

Annex -1	Tentative Implementation Schedule
Annex -2	Initial Cost Estimate of the Project
Annex -3	Proposal from the Team on Improvement Plan of the Access Road to Umiray Bridge



Tentative Implementation Schedule

Project Implementation Schedule (Bazal Bridge)

Detail Design Stage	1	2	3	4	5	6	7	8	9	10	11	12	13
	Site Survey			Analysis in Japan									
	(Total 3.0 months)												

Implementation Stage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	Tendering Service (Total 4.5 months)					Preparation works (Temporary works)		Sub-structure works				PC girder production		Girder erection		Crossing girder/Slab works				Approach road works			Revetment/Retaining wall works	
					Construction (Total 6.8 months)																			

Project Implementation Schedule (Umiray Bridge)

Detail Design Stage	1	2	3	4	5	6	7	8	9	10	11	12	
	Site Survey			Analysis in Japan									
	(Total 4.0 months)												

Implementation Stage	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	Tendering Service (Total 4.5 months)					Preparation works (Temporary works)		Sub-structure works				PC girder production		Girder erection		Crossing girder/Slab works				Approach road works			Revetment/Retaining wall works		Site clearing	
					Construction (Total 20.00 months)																					

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Proposal from the Team on Improvement Plan of the Access Road to Umiray Bridge**Umiray Bridge (From Umiray Bridge to Dingalan, Total Length L=23.0km)**

No.	Location (Distance in kilometer from Umiray Bridge)	Existing Contition	Rating	Ability of Transportation	Proposed Scheme
1	0.4	Box Culvert (2.9m x 2/3.0m)	Good	Available	Not Required
2	2.3	Crossing on Riverbed (Malacauyaan River)	No Good	Not Available	Improvement Schem-2 (Spillway Type)
3	2.6	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
4	3.6	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
5	4.5	Crossing on Riverbed	No Good	Not Available	Improvement Schem-2 (Spillway Type)
6	4.8	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
7	5.6	Crossing on Riverbed	No Good	Not Available	Improvement Schem-2 (Spillway Type)
8	6.0	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
9	6.6	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
10	6.8	Crossing on Riverbed	No Good	Not Available	Improvement Schem-2 (Spillway Type)
11	9.3	Driftway (Ibona River)	Good	Available	Not Required
12	9.3	Crossing on Riverbed (Ibona River)	No Good	Not Available	Improvement Schem-2 (Spillway Type)
13	9.3	Crossing on Riverbed (Ibona River)	No Good	Not Available	Improvement Schem-2 (Spillway Type)
14	11.7	Box Culvert (3.5m x 2/3.5m)	Good	Available	Not Required
15	12.3	Spillway (φ0.9m)	Good	Available	Not Required
16	13.1	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
17	13.8	Box Culvert (3.0m x 2/2.0m)	Good	Available	Not Required
18	14.8	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
19	15.7	Crossing on Riverbed	No Good	Not Available	Improvement Schem-1 (Drift Type)
20	15.9	Crossing on Riverbed	No Good	Not Available	Improvement Schem-2 (Spillway Type)
21	16.8	Sharp Curve (Road Width=4.0m)	No Good	Not Available	Improvement of Road Alignment, Widening with Enbankment
22	17.6	Crossing on Riverbed (AmtangRiver)	No Good	Not Available	Improvement Schem-2 (Spillway Type: 2-Location)
23	20.2	Drift Type	Good	Available	Not Required
24	20.5	Steep Slope (Gradient=20%)	No Good	Not Available	Improvement of Gradient with Enbankment, Proposed Gradient=12.5%)
25	21.2	Box Culvert (2.4m x 2/2.9m)	Good	Available	Not Required
26	22.3	Steel H-Beam Bridge (Dingalan River: Bridge Length=32.0m)	Good	Available	Not Required
27	22.7	Box Culvert (3.5m/3.2)	Good	Available	Not Required
	23.0	Dingalan			