Ministry of Public Works
The Republic of Indonesia

Special Assistance for Project Formation (SAPROF)
for
Urban Flood Control System Improvement
in Selected Cities

FINAL REPORT

(ANNEXES)

January 2009

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

IDEA CONSULTANTS, INC.

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PREFACE

This ANNEX to Final Report for the Special Assistance for Project Formation (SAPROF) on Urban Flood Control System Improvement in Selected Cities is detailed data of the study results during the study period conducted by the International Consultant employed by Japan International Cooperation Agency (JICA) to formulate the project to enhance regional development, solve the economic disparity and alleviate poverty through increasing the safety level against flood disaster in the key cities for regional and national economic development.

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SPECIAL ASSISTANCE FOR PROJECT FORMATION (SAPROF)

ON

URBAN FLOOD CONTROL SYSTEM IMPROVEMENT IN SELECTED CITIES

FINAL REPORT

(ANNEXES)

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ANNEX 1:

DETAILS OF LONG-LISTED SUB-PROJECTS

DETAILS OF LONG-LISTED SUB-PROJECTS
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1. General

In this ANNEX 1, Details of the Long-listed Sub-projects are presented counterclockwise from the northwest.

2. Dumai Sub-project (Riau Province)

2.1 Present Condition

Dumai City is a port town facing Rupat Strait with the area of 1,727 km^2. Although the Dumai City can be categorized into middle scale city in Indonesia, the city is the center of transportation and trade regionally and internationally, and its importance has been increasing, as export of palm oil has been increasing. And one of the largest refineries in Indonesia is located at the coastal area. The city area is topographically flat and the elevation ranges from about + 1.0 m up to + 15.0 m above mean sea water level. And the city suffers from flood damage almost every year caused overflow from the Dumai River and inundation of inland water. Damaged area widely spreads from the downstream of the Dumai River to the coastal area near the city center. Location map is presented in Figure A1. 1.

2.2 Scope of Works

Based on the basic design prepared in December 2000, scope of works for Dumai sub-project is summarized below.

- Channel normalization with dyke for the Dumai River: 9.8 km
  (from river mouth to Dumai Lake)
- Channel normalization of other rivers/drainage channels: 16.8 km
  (Parit Purnama, Parit Sesai, Parit Penghulu, etc.)
- Installation of drainage pumping station: 3 units
- Construction of flap gate: 8 units

Regarding the adaptation of climate change, following will be applicable to Dumai sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

River basin of the Dumai is managed by BWS Sumatra III.

2.3 Preparation of Study and Design

Even though the detailed design was prepared in December 2000, both technical soundness and economical feasibility are insufficient to implement the construction works. According to the I/P in July 2008, a feasibility study on flood control system was being conducted. Based on the results of

feasibility study, flood control facility plan will be clarified. Then preparation of detailed design is proposed.

2.4 Environmental Consideration

At present, no EIA study is conducted for the detailed design in December 2000. After preparation of detailed design, both EIA study and preparation of LARAP are proposed. Considering the housing density of Dumai City, no serious issue is expected on land acquisition and resettlement. As the Dumai River empties into the Rupat Strait, saline-water intrusion should be taken into consideration for EIA.

3. Pekanbaru Sub-project (Riau Province)

3.1 Present Condition

Pekanbaru City is capital city of Riau Province that locates at regional economic cooperation zone of Singapore-Johor-Riau (SIJORI). The city is located at 156 km from river mouth of the Siak River that the catchment area is 11,026km^2 and channel length is 345 km. And the city area is topographically flat and the elevation ranges from about + 1.50 m up to + 2.50 m above mean sea water level. Area of the city is approximately 700 km^2 with total population of about 1.5 million in 2006.

The city area frequently suffers from floods of the Siak River. The annual inundation area is about 2,000 hectares consisting of about 700 hectares of urban areas and about 1,300 hectares of sub urban areas. The floods hinder peoples' daily life and business with not only inundation but also disconnection of water and electric supplies, and finally disturb the sustainability of regional development. Recent major floods are summarized in table below.

Flood Damage in Pekanbaru

Month/Year	Inundation Area (ha)	Dead	Affected
May 1995	N.A.	N.A.	3,670 houses
2002	500	N.A.	N.A.
2004	510	N.A.	N.A.
2005	350	N.A.	N.A.
Dec. 2006	510	1	5,001 houses

Since the city area has been developed on the right bank side of the Siak River, river improvement works have been concentrated on the right bank. As the population of the city has increased rapidly, the urbanization of right bank has progressed and residential area has expanded to the left bank. As a result, further improvement is required at left bank side, too.

The city area is divided into six (6) drainage systems tabulated below and urban flood control has been conducted at each system. Provincial Public Works Office has formulated the development program of flood control facility and has conducted construction work i.e., dike, gate and bank protection on the right bank side. BWS Sumatra III and Provincial Public Works Office currently prioritize flood control on the left bank side. Drainage system in Pekanbaru is illustrated in Figure A1. 2.

6 Systems of Urban Flood Control in Pekanbaru City

Sector	District	Area (Ha)	Households
I	Senapelan	150	300
II	Lima Puluh	120	350
III	Rumbai	850	3,800
IV	Rumbai	350	380
V	Rumbai	190	100
VI	Tampan	200	100
Total		1,860	5,030

Source: "Profil Pengendalian Banjir" Kota Pekanbaru

3.2 Scope of Works

The I/P in July 2008 proposes the following works for Pekanbaru sub-project.

- Dyke construction on left bank of Siak River (for Sector IV): 6.5 km
- Screw type drainage pumping station (for Sector III): 2 units
- Construction of gate (for Sector III): 2 units
- Channel improvement of tributary in Sector III: 2.0 km
- River bank protection: 5.6 km

Regarding the adaptation of climate change, following will be applicable to Pekanbaru sub-project.

- Development of existing operation and maintenance manual for drainage pumping stations.
- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

River basin of the Siak is managed by BWS Sumatra III.

3.3 Preparation of Study and Design

Even though the detailed design was prepared in January 2000, both technical soundness and economical feasibility are insufficient to implement the construction works. Further the master plan (or comprehensive plan) for water management of the Siak River has not been carried out.

Within the framework of the master plan and the feasibility study, appropriate facility plan should be formulated and then the detailed design can be prepared.

3.4 Environmental Consideration

At present, no EIA study is conducted for the detailed design in January 2000. After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

4. Rengat Sub-project (Riau Province)

4.1 Present Condition

Rengat City is the largest city in the Indragiri River basin and the center of development of the Indragiri Hulu and Indragiri Hilir regencies. Location map of Rengat sub-project is shown in Figure A1. 3. The city area is located on the right bank of the Indragiri River at about 174 km upstream from the river mouth. Middle reach of the Indragiri River basin including the Rngat City frequently suffers from flood damage hinders the regional development. Inundated area in the basin expands to 900 km^2 and inundation continues for 7 to 10 days in average. Recent major floods are summarized in table below.

Flood Damage in Rengat

Month/Year	Inundation Area (ha)	Dead	Affected	Damage Cost (Rp. billion)
2002	5,000	N.A.	N.A.	N.A.
Dec. 2004	20,345	1	3,117 houses	3.15
2005	8,346	N.A.	N.A.	N.A.

4.2 Scope of Works

The JICA conducted "Kamapr-Indragiri River Basin Development Project Study" in 1995. In this study the master plan on the Indragiri River basin development was formulated and a feasibility study for flood control system in Rengat City was conducted as one of the priority projects. Summary of "Rengat Area Flood Protection Works" proposed in the JICA study are as follows and the plane figure is presented in Figure A1. 4.

- Ring dike: Ring dike around the area of 21 km^2 in Rengat City, was proposed in order to protect the area from flood overflowed from the Indragiri River. Dike alignment was determined to follow the Indragiri River Improvement Plan in the Overall Development Plan in the riverside, and considering the existing road alignment and possible new road to Tembilahan in the land side. Design scale of the ring dike was 10-year return period.
- Landside drainage: For the area surrounded by ring dike, landside drainage plan was prepared. The plan consists of drainage channel, pumping station, retarding basin and related facilities. A 5-year return period was adopted as design scale.

Detailed design of flood control in Rengat City was prepared by Ministry of Public Works in 2000. On this case, alignment of dike on the river bent was shifted to along the existing river course.

Based on the master plan and detailed design, the I/P in July 2008 proposes the following works.

- Ring dike construction: 24 km (Earth) and 1.4 km (Concrete)
- Sluice gate of existing canal: 5 units
- Outlet at the lower end of canal: 1 unit
- Pump station at the lower end of ring dike: 1 unit
- Groin: 8 units
- Bridge: 1 unit
- Bank Protection: 0.5 km

Regarding the adaptation of climate change, following will be applicable to Rengat sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

River basin of the Indragiri is managed by BWS Sumatra III.

4.3 Preparation of Study and Design

Even though the detailed design was prepared in December 2000, technical soundness is insufficient to implement the construction works. Further there is no final consensus on the scope of works between DGWR and local government. After decision of scope of works for Rengat sub-project, review of detailed design is required.

4.4 Environmental Consideration

Together with the above detailed design, the Environmental Management Plan (UKL) and Environmental Monitoring Plan (UPL) were prepared in December 2000 as preliminary study level. After review of detailed design for the definite scope of works, EIA study and preparation of LARAP are proposed.

5. Jambi Sub-project (Jambi Province)

5.1 Present Condition

Jambi is the capital city of Jambi Province with the population of about 450,000 in 2006 and located at about 140 km from river mouth of the Batanghari River. Channel length and catchment area of

Batanghari River are 775 km and 49,000 km^2, respectively.

Location map of Jambi sub-project is presented in Figure A1. 5. The lowland area along Batanghari River and its tributaries annually suffer from floods. The causes of flood in Jambi City are as follows.

- Flood intrusion and backwater effect of the Batanghari River during its high-water stage
- Insufficient channel capacity of city drainage channels such as the Asam, Tombeku and Lubuk Raman Rivers
- Flow stagnant due to illegal garbage dumping
- Increasing peak runoff discharge caused by urbanization
- Decreasing storage function of natural retarding pond due to reclamation and/or illegal garbage dumping

To cope with the frequent inundation, some residents in semi-urban area adopt piloti type houses equipped with wooden canoes. Flood prone area in the city is estimated at 1,311 ha in 2005. Flood damages in recent years are summarized below.

Flood Damage in Jambi

Month/Year	Inundation Area	Dead	Affected	Damage Cost
Jan. 2001	608 ha	N.A.	4,300 houses	N.A.
Feb. 2003	300 ha	N.A.	N.A.	N.A.
Apr. 2003	10,300 ha	N.A.	N.A.	N.A.
May 2003	11,000 ha	4	N.A.	N.A.
Dec. 2003	N.A.	N.A.	11,496 houses	Rp.8.7 billion

5.2 Scope of Works

The Study on the Integrated Regional Development Plan for the Southern Part of Sumatra was conducted in 1993 by JICA. The study covers the southern part of Sumatra (Region) i.e., Jambi, South Sumatra, Bengkulu and Lampung provinces. Its objectives are to:

- formulate a 20-year long-term development plan (1990-2010) for the Region;
- identify priority areas and projects; and
- strengthen the planning capability of Indonesian counterpart personnel.

The study concluded that the Batanghari Integrated Basin Development Plan was given a high priority. The plan consists of 1) basin-wide water resources development plan, 2) basin-wide flood control plan and 3) basin-wide sediment control plan.

Detailed design for drainage pumping station of the Asam River was conducted in October 1998 by Ministry of Public Works based on the social master plan of Asem River Basin Revitalization Study prepared by Jambi City with Gajah Mada University. The pumping station is located at river mouth of the Asam River and has 3 pumps (848m^3/hr or 2.36 m^3/s in total). Based on the master plan and detailed design, the I/P in July 2008 proposes the following works.

- Drainage improvement of Asem River:
  - Rehabilitation of existing gate: 1 unit
  - Pump station: 1 unit (2.5 m^3/s)
  - Channel improvement: 1,000 m
- Drainage improvement of Tombeku River:
  - Gate: 1 unit
  - Pump station: 1 unit (2.5 m^3/s)
- Drainage improvement of Lubuk Raman River:
  - Gate: 1 unit
  - Pump station: 1 unit (2.5 m^3/s)

Regarding the adaptation of climate change, following will be applicable to Jambi sub-project.

- Development of existing operation and maintenance manual for Asem Gate.
- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

River basin of the Batanghari is managed by BWS Sumatra VI.

5.3 Preparation of Study and Design

Even though the detailed design for the Asem River Improvement was prepared in October 1998, both technical soundness and economical feasibility are insufficient to implement the construction works. Further the feasibility study and detailed design for the Tombeku and Lubuk Raman Rivers have not been carried out. According to the general view of the facility layout, drainage pumping station for the Lubuk Raman River should not be constructed and the capacity of the pumping station of the Tombeku River should be increased because the Lubuk Raman River is a tributary of the Tombeku River. Therefore a feasibility study and detailed design is proposed to be carried out.

5.4 Environmental Consideration

At present, neither EIA study nor LARAP is conducted. After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

6. Gunungsari Sub-project (Surabaya City, East Java Province)

6.1 Present Condition

Gunungsari River is located in the western part of Surabaya City as shown in Figure A1. 6. The channel was constructed for irrigation purpose in those days but now becomes drainage channel because of no function of irrigation water supply. As the flow capacity of the channel is very small, the area along the channel suffers habitual damage from floods. In order to cope with the above situation, improvement of the Gunungsari River was planed and detailed design was conducted twice in 1988 and 1993 under the current BBWS Brantas. But up to now the implementation has not been implemented due to difficulty of land acquisition and resettlement.

6.2 Scope of Works

Project works of the Gunungsari Drainage Improvement consist of the following works:

i) Improvement of the Gunungsari Channel system including the use of drainage channel of the Margomulyo Street (5.06 km) and improvement of a part of the Gunungsari Channel (9.80 km) with a design flood of 5 year-return period.

ii) Improvement of the Balong River System including the Balong River (4.29 km), a part of the Gunungsari Channel (2.46 km) with a design flood of 5-year return period.

iii) Improvement of the Kandangan River System including the Kandangan River (4.27 km), a part of the Gunungsari Channel (2.48 km) with a design flood of 5-year return period.

iv) Improvement of the Semimi River System including the Semimi River (5.21 km), a part of the Gunungsari Channel (2.39 km) with a design flood of 5-year return period.

Regarding the adaptation of climate change, following will be applicable to Gunungsari sub-project.

- Evaluation of existing functions of pump and gates along the Gunungsari River.
- Development of adequate operation and maintenance plan for pump and gates.
- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

The demarcation of jurisdiction for the Gunungsari drainage system is not clear between BBWS Brantas and Surabaya city hall. Organization of BBWS Brantas is presented in Figure A1. 7.

6.3 Preparation of Study and Design

Detailed design for the Gunungsari Drainage Improvement has been prepared in 1993 including Gunungsari Channel, Balong River, Kandangan River, and Semimi River under the supervision of current BBWS Brantas. Modification of design to cope with the reduction of land

acquisition/resettlement and new design for the Margomulyo channel with drainage pumping station are required prior to the implementation.

6.4 Environmental Consideration

The environmental impact assessment (EIA) has not been conducted yet. Enormous number of houses shall be resettled in case of the previous design. After modification of existing detailed design, both EIA study and preparation of LARAP are proposed.

7. Upper Kedurus Sub-project (Surabaya City, East Java Province)

7.1 Present Condition

The Kedurus River is located in the southwestern part of Surabaya City as shown in Figure A1. 8. The lower basin of the Kedurus River suffered from habitual flooding due to its gentle topographic conditions. In order to mitigate flood damage in this area, channel improvement works (8.30 km) with construction of drainage pumping station (10 m^3/s with 21 ha retarding pond) were completed in 1996 using OECF Loan IP-362 under Surabaya River Improvement Project, Stage II-1, and is managed by BBWS Brantas. The upstream reaches of the Kedurus River from Jl. Bangkingan (upper end of SRIP II-1 works) have not been improved and inundation occurs annually in the surrounding area. Rapid housing development is remarkable in the Kedurus River basin following the river improvement works of the Lower Kedurus River. In order to cope with the flooding in the upper Kedurus River basin, flood control measures are required.

7.2 Scope of Works

The I/P in July 2008 proposes the following works for Kedurus sub-project.

- Channel improvement (excavation and dyke construction): 9,860 m
- Construction of 4 retarding ponds with pump facility
- Reconstruction of existing bridges

Regarding the adaptation of climate change, following will be applicable to Upper Kedurus sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

The Kedurus River is managed by BBWS Brantas. Organization chart of BBWS Brantas is shown in Figure A1. 7.

7.3 Preparation of Study and Design

Even though the design for the Upper Kedurus River Improvement was prepared in December 2005, both technical soundness and economical feasibility are insufficient to implement the construction works. Therefore a feasibility study and detailed design is proposed to be carried out.

7.4 Environmental Consideration

At present, neither EIA study nor LARAP is conducted. After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

8. Nganjuk Sub-project (East Java Province)

8.1 Present Condition

Nganjuk is the capital of Nganjuk Regency located at 119 km from Surabaya Metropolitan to the southwest. This Regency occupies 1,224 km^2 flat plain areas at altitude 56 m above mean sea water level in average. The Widas Hulu, Kuncir and Ulo rivers flow in Nganjuk City and the surrounding area suffers from flood disaster and inundation caused by overflow from these rivers. Location map of Nganjuk sub-project is presented in Figure A1. 9. A severe flood occurred in 1979 and 9,237 ha including 870 ha residential area was inundated. River improvement works have been conducted mainly in the Widas River by BBWS Brantas. However, flood control measures are not sufficient. Main causes of flood are summarized as follows.

- Limited flow capacity at crossing bridge and river meandering cased morphology and topography condition
- Decreasing carrying capacity of Kuncir River due to sedimentation

8.2 Scope of Works

Following works are proposed in the I/P in July 2008.

- River improvement of the Kuncir River providing revetment: 10.3 km
- River improvement of the Ulo River providing revetment: 3.3 km

Regarding the adaptation of climate change, following will be applicable to Nganjuk sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

The Kuncir and Ulo Rivers are tributaries of the Widas River. The Widas River basin is managed by BBWS Brantas. Organization chart of BBWS Brantas is shown in Figure A1. 7.

8.3 Preparation of Study and Design

The master plan study "Widas Flood Control and Drainage Project" for this area was conducted by JICA in 1979. Afterwards, various studies have been conducted including objective rivers. Study and design is being conducted in 2008.

8.4 Environmental Consideration

At present, neither EIA study nor LARAP is conducted. After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

9. Tulungagung Sub-project (East Java Province)

9.1 Present Condition

Tulungagung, the capital of Tulungagung Regency, is located at 154 km from Surabaya Metropolitan to the southwest. The area in Tulungagung Regency and adjacent Trenggalek Regency suffers from flood disaster caused by overflow of the Ngasinan River.

The Ngasinan River has a complicated river system. Location map is presented in Figure A1.10 and the system is schematically illustrated in Figure A1. 11. Originally the Ngasinan River flew into the Brantas River through the Ngrowo River. After construction of Miyama tunnel (or Tulungagung tunnel) in 1961, the Ngasinan River empties into Indian Ocean through the tunnel during floods.

The flood on April 21, 2006 inundated 8 sub-districts with 2.0 m depth in average and incurred 16 casualties. This flood was caused by heavy storm with 165 mm rainfall during 7 hours and severe mud deposition was recorded in the inundated area. Following are considered as main causes of flooding.

- Flow capacity of the Ngasinan River is very small with less than 2-year return period, while original scale of channel design was10 year years.
- Flow capacity has decreased due to rapid sedimentation caused by insufficient vegetative cover in the upstream basin.

The flood also damaged various river facilities of the Ngasinan River and Parit Raya Canal. The Parit Raya Canal is an artificial channel diverted from the Ngasinan River at Bendo Gate into Miyama tunnel.

9.2 Scope of Works

Following works are proposed in the I/P in July 2008.

- Channel Improvement of the Ngasinan River
  - between Sbr. Gayam Gate and Bendo Gate 10.0 km
  - dyke heightening 712,600 m^3
  - construction of groin
  - revetment works
- Other miscellaneous works in the Ngasinan River System

Regarding the adaptation of climate change, following will be applicable to Tulungagung sub-project.

- Study on hydrological characteristics using the available rainfall and water level data.
- Installation of hydrological observation equipment.
- Hydrological analysis using collected data.
- Establishment of Early Flood Warning System (FEWS)
- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

While the water usage is managed by Perum Jasa Tirta I (PJT I: Water Supply Public Cooperation), construction and maintenance of river facilities are managed by BBWS Brantas. Organization chart of BBWS Brantas is shown in Figure A1. 7.

9.3 Preparation of Study and Design

The BBWS prepared basic design on drainage improvement of Ngasinan River drainage improvement in October 2006, but both technical soundness and economical feasibility are insufficient to implement the construction works. Therefore review of feasibility study and preparation of detailed design is proposed.

9.4 Environmental Consideration

At present, no EIA study is conducted for the design in October 2006. After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

10. Balikpapan Sub-project (East Kalimantan Province)

10.1 Present Condition

The city of Balikpapan is the second biggest city in East Kalimantan Province following Samarinda, capital of the Province. Number of population is 515,529 in the city area of 503.3 km^2 with

population density of 1,024 person/km^2. Through the central and southern part of the city, the Klandasan Besar, Klandasan Ilir and Klandasan Kecil Rivers flow to the south and empties into the Strait of Makassar as shown in Figure A1. 12. These rivers originate in the city's hilly area with altitude less than 70 m. Housing development of headwaters increases the peak flood discharges of these rivers, then the excess water over the existing channel capacity causes flooding in the downstream basins. In recent years following flood damages are reported.

Month/Year	Inundation Area (ha)	Dead	Inundated Houses	Evacuated People
Aug. 1998	100,000	4	N.A	N.A.
Feb. 20, 2004	N.A.	-	N.A.	N.A.
May 2007	60,000	4	N.A.	N.A.
Sep. 1, 2007	1,000	4	79	471
July 5, 2008	N.A.	3	1,200	N.A.

10.2 Scope of Works

Following works are newly proposed in order to mitigate flood damage in Balikpapan City.

- River channel improvement of the Klandasan Besar River
  - Channel normalization from river mouth to Jl. Haryono Bridge 2,200 m
  - Construction of retarding ponds 4 sites
- River channel improvement of the Klandasan Kecil River
  - Channel normalization from river mouth to Jl. Banjar Bridge 2,150 m

Regarding the adaptation of climate change, following will be applicable to Balikpapan sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

Major river basins in East Kalimantan Province are managed by BWS Kalimantan III.

10.3 Preparation of Study and Design

No technical report has been prepared officially on the drainage of Balikpapan City. First of all, drainage master plan should be prepared clarifying i) drainage conditions, ii) hydrological study, iii) alternative study on drainage/flood control, and iv) formulation of drainage master plan.

Within the framework of the master plan, feasibility study can be conducted. Above scope of works will be justified through the said feasibility study. Finally detailed design is required for the implementation of the project.

10.4 Environmental Consideration

After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

11. Makassar Sub-project (South Sulawesi)

11.1 Present Condition

Makassar City, the capital of South Sulawesi Province, is located at the southern part of Sulawesi Island and formulates MAMMINASATA Metropolitan Area. Urban area has been developed from the lowland area between Tallo River and Jeneberang River. River improvement woks have been conducted in the Jeneberang River intensively and safety degree against flood in the lower Jeneberang River basin has been drastically improved. However, the urban area of Makassar City has expanded northward. This area is not equipped sufficient flood control facilities and is still vulnerable to flood disaster. Major floods in recent years are summarized in table below.

Flood Damage in Makassar

Date	Inundation Area	Dead	Affected	Damage
1998	N.A.	3	1,400 houses & 102 facilities	N.A.
Feb. 2000	N.A.	6	1,400 houses & 42 facilities	N.A.
Dec. 2000	900 ha	25	7,000 houses	N.A.
Apr. 2001	N.A.	11	N.A.	N.A.
Oct. 2005	N.A.	N.A.	4,454 houses	Rp.200 billion
Feb. 2006	N.A.	22	N.A.	N.A.

11.2 Scope of Works

Makassar city is divided into 5 areas, and BBWS Pompengan-Jeneberang sets the priority for flood control improvement on the Area-V, which has the area of 9,000 ha and is located in Tallo River basin mainly. Following works are proposed in the I/P in July 2008, and its layout is shown in Figure A1. 13.

- Construction of retardind basin at Nipa-Nipa: 84 ha (with gated facilities)
- Channel improvement of Tallo River: 14.5 km (normalization with dyke)
- Construction of drainage pumping station: 5 locations
- Drainage improvement in Area V: 5 channels

After preparation of I/P in July 2008, BBWS Pompengan-Jeneberang has intension to modify the scope of works to cope with the inundation around new highway.

Regarding the adaptation of climate change, following will be applicable to Makassar sub-project.

- Preparation of flood risk map based on flood flow analysis.

- Proposal on flood disaster management plan.

11.3 Preparation of Study and Design

Detailed design on flood control in Makassar City was conducted in 2004. This project aims to protect Makassar City from flood damage due to overflow of Tallo River. Proposed scope of works in I/P was based on this design, but review of master plan is required considering the change of basin conditions due to construction of new highway. Within the framework of the master plan, feasibility study can be conducted. Finally detailed design is necessary for the implementation of the project.

11.4 Environmental Consideration

After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

12. Manado Sub-project (North Sulawesi)

12.1 Present Condition

Manado City, the capital of North Sulawesi Province, is located at the northeastern part of Sulawesi Island and faces the Manado Bay. Urban areas in Manado City suffer from floods almost every year due to poor urban flood control and drainage system and improper land use in the upstream of Tondano River watershed, such as deforestation, bare land abandoned after cultivation and so on. Major floods in recent years and flood prone areas are shown in below tables.

Flood Damage in Manado

Month/Year	Inundation Area (ha)	Dead	Affected Houses/Person	Damage Cost (Rp. billion)
1996	1,676	15	250 houses	N.A.
Dec. 2000	1,500	27	2,686 houses	300
Apr. 2001	200	N.A.	40 houses	N.A.
Nov. 2001	N.A.	11	N.A.	N.A.
Feb. 2004	400	N.A.	70 houses	N.A.
Mar. 2004	N.A.	N.A.	Thousands houses	N.A.
Feb. 2006	N.A.	39	17,539 people	180

Flood Prone Areas of Tondano, Sario and Malalayang rivers

River	Flood prone area
Tondano River	Kampung Tubir (Left bank) kec. Dendengan dalam Kampung Tanjung Kelurahan Ternate Baru Kelurahan Ketang Baru Kelurahan Karame Kampung Mahakam
Sario River	Kelurahan Sario Around Jl. Bouleverd
Malalayang River	River mouth in kelurahan Bahu

Source : Executive summary/Pekerjaan: Survey Pengukuran Sungai Todano dan Perencanaan Tanggul Banjir Kota Manado

12.2 Scope of Works

Following works are proposed in the I/P in July 2008. Location of these rivers is presented in Figure A1. 14.

- River improvement of the Tondano River: 6,780 m (normalization with flood wall)
- River improvement of the Sario River: 1,520 m (normalization with flood wall)
- River improvement of the Malalayan River: 1,150 m (construction of flood wall)
- Procurement of portable pumps: 5 sets
- Establishment of simple early warning system

After preparation of I/P in July 2008, the BWS Sulawesi I proposes the following scope of works.

- Improvement of Tondano River
  - stretches to be improved: River mouth to confluence of the Tikala
  - improvement length: 2,250 m
  - construction of parapet wall: 5,000 m in total (by wet masonry)
  - foot protection of bank: 3,000 m in total (by gabion)
- Improvement of Tikala River
  - stretches to be improved: Confluence of the Tondano River to Dendengan Dalam bridge
  - improvement length: 1,900 m
  - construction of parapet wall: 3,000 m in total (by wet masonry)
  - foot protection of bank: 3,000 m in total (by gabion)
- Improvement of Sario River
  - stretches to be improved: River mouth to Pikat bridge (Jl. Yani)
  - improvement length: 570 m
  - construction of parapet wall: 1,000 m in total (by wet masonry)
  - foot protection of bank: 1,000 m in total (by gabion)

- Improvement of Malalayang River
  - stretches to be improved: River mouth to Kampus bridge
  - improvement length: 1,200 m
  - construction of parapet wall: 1,000 m in total (by wet masonry)
- Improvement of Bailang River
  - stretches to be improved: River mouth to150 m upstream of Bailan bridge (Jl. Pogidon)
  - improvement length: 1,050 m
  - construction of parapet wall: 1,500 m in total (by wet masonry)
  - foot protection of bank: 1,500 m in total (by gabion)
- Procurement of Mobile Pumps: 5 units

Regarding the adaptation of climate change, following will be applicable to Makassar sub-project.

- Preparation of flood risk map based on flood flow analysis.
- Proposal on flood disaster management plan.

Organization of BWS Sulawesi I is presented in Figure A1. 15.

12.3 Preparation of Study and Design

The BWS Sulawesi I has prepared the reports of "Tondano River Watershed Management" and "Manado City Flood Control Plan". According to these reports, peak flood discharges are calculated as below.

Existing Carrying Capacity and Design Discharge

River	Catchement Area (km^2)	Existing Capacity (m^3/s)	Discharge (m^3/s)			
			5-year	10-year	25-year	50-year
Tondano R.	545	61.4	603	690	789	861
Sario R.	31	4.1	24	29	35	39
Malalayang R.	50	6.6	36	43	52	58

Source : Executive summary/Pekerjaan: Survey Pengukuran Sungai Todano dan Perencanaan Tanggul Banjir Kota Manado

However, design discharge of the Tondano River is subject to the regulation of proposed Kuwil dam to be constructed at about 20 km from the mouth. Alternative study on discharge distribution is required with feasibility study level together with hydrological study. After determination of the design discharges, detailed design for river improvement can be prepared.

12.4 Environmental Consideration

After preparation of detailed design, both EIA study and preparation of LARAP are proposed.

FIGURES

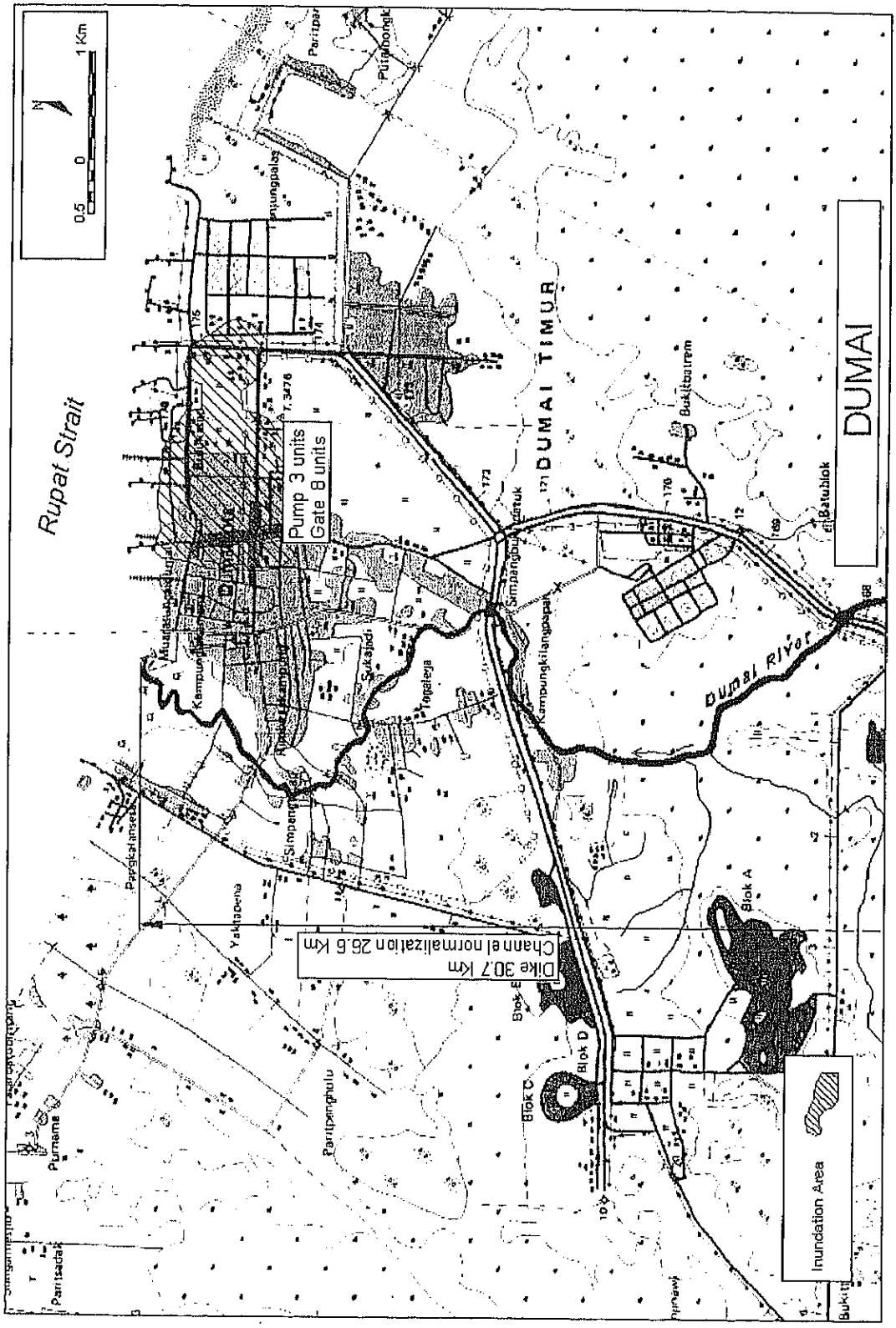

Figure A1. 1 Location Map of Dumai Sub-project

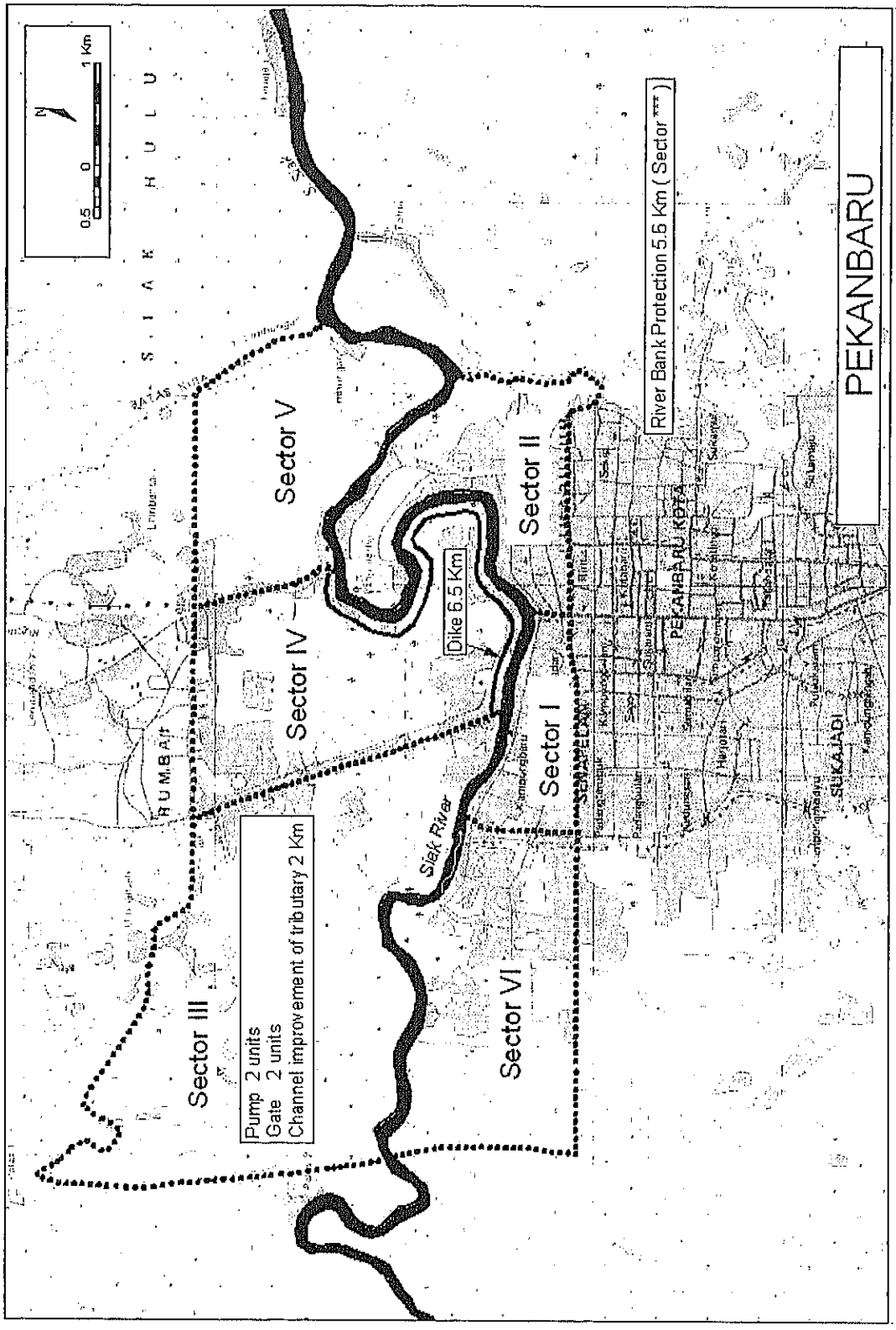

Figure A1. 2 Location Map of Pekanbaru Sub-project

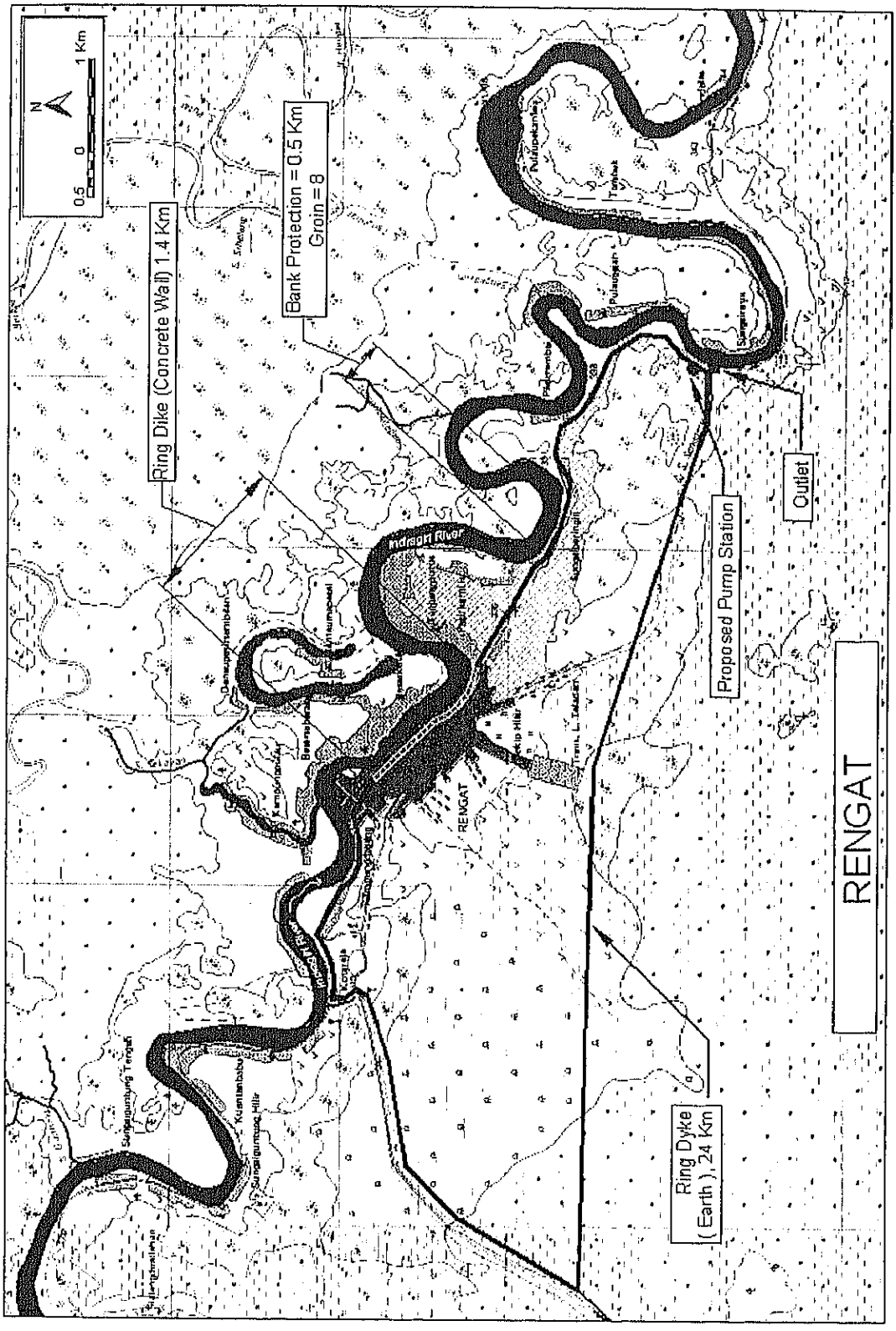

Figure A1. 3 Location Map of Rengat Sub-project

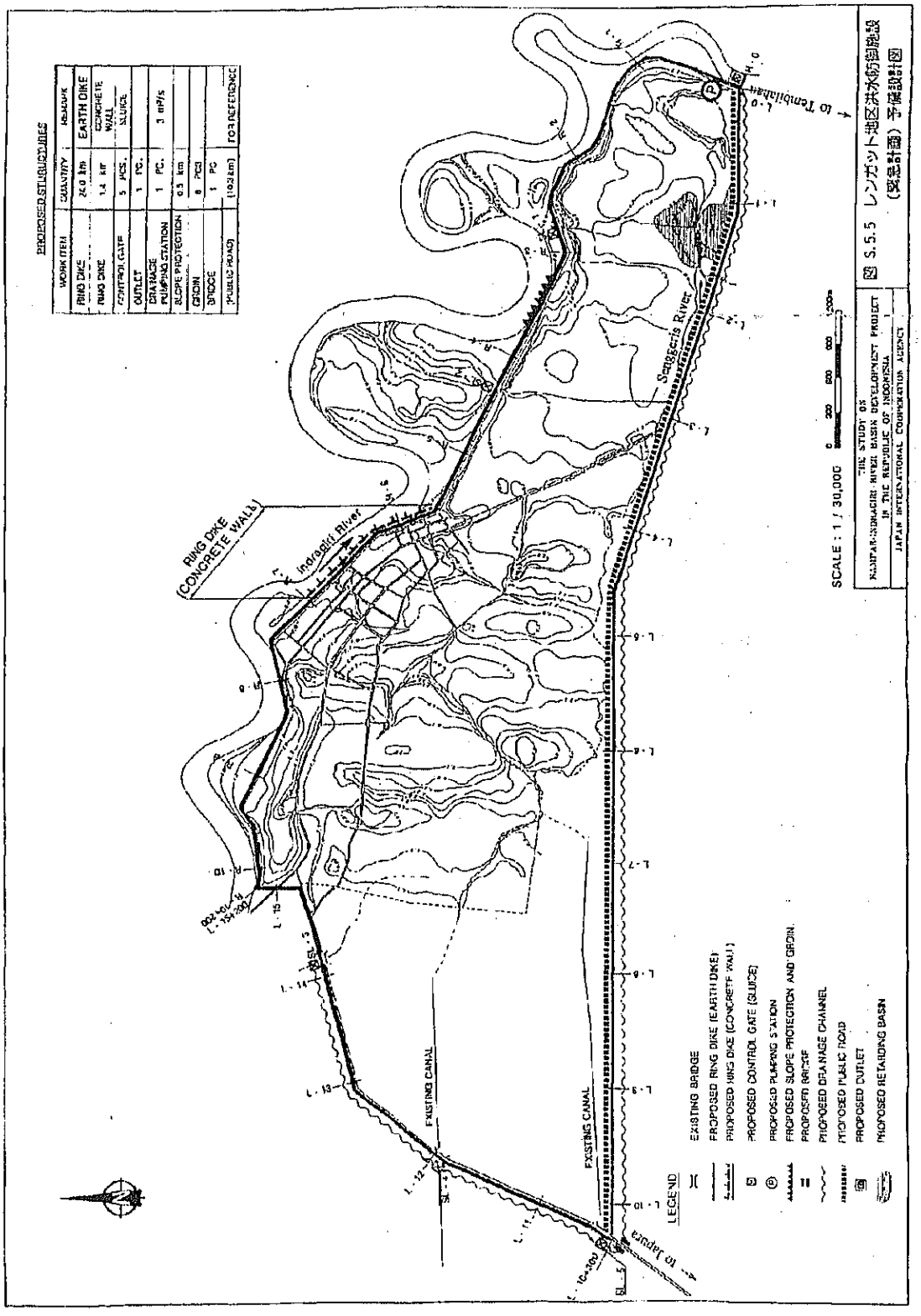

Figure A1. 4 Facility Layout of Rengat Sub-project proposed by JICA

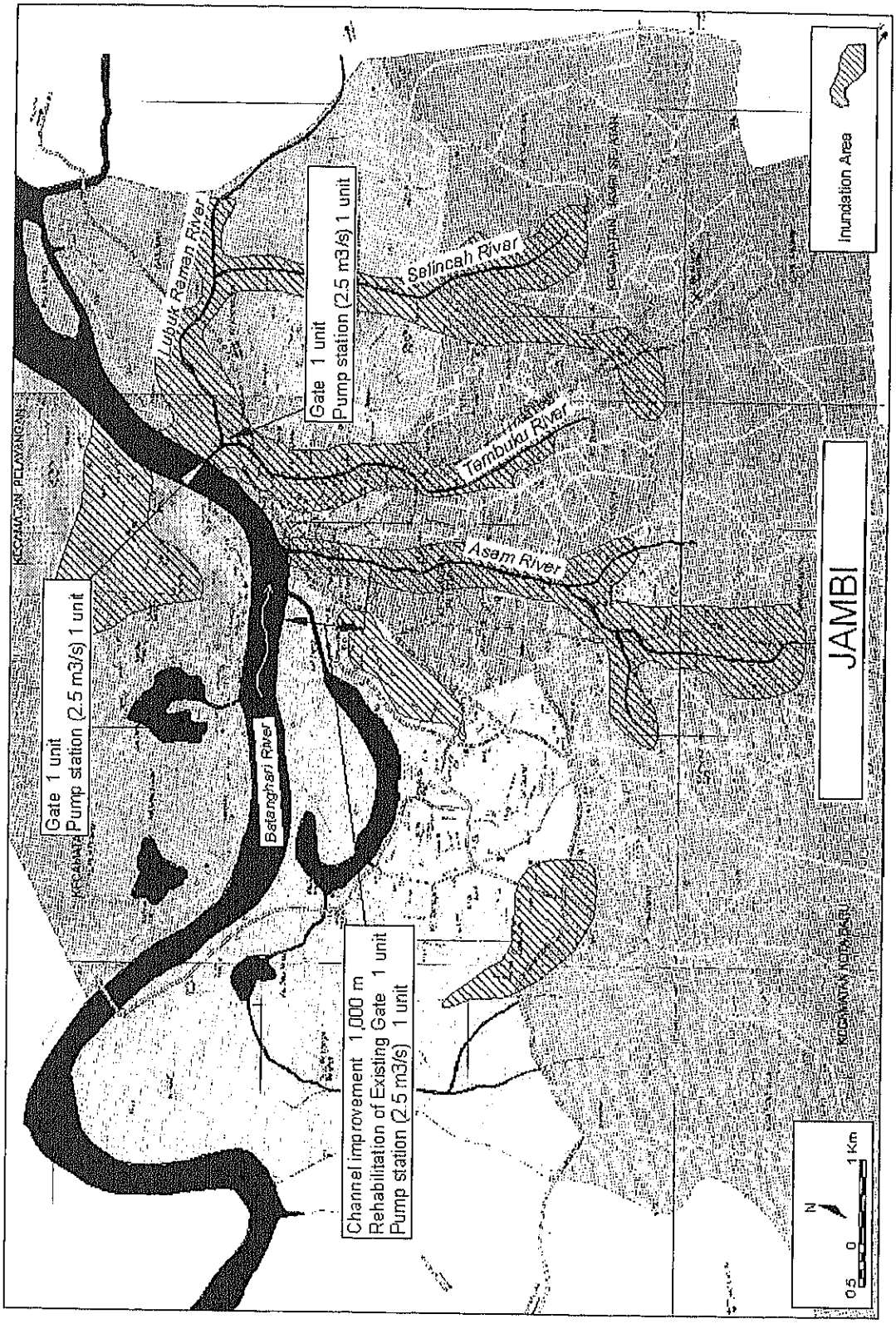

Figure A1. 5 Location Map of Jambi Sub-project

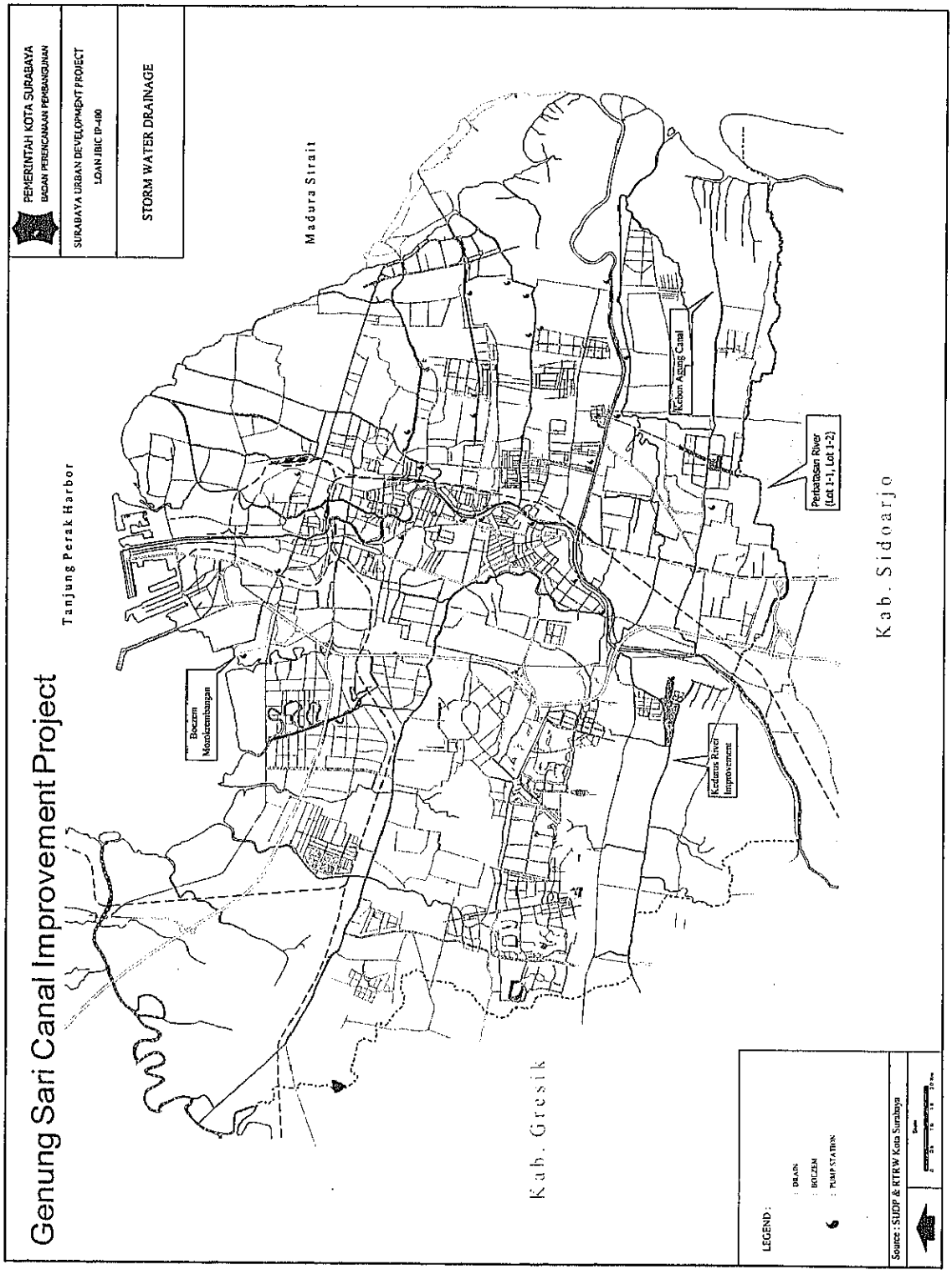

Figure A1. 6 Location Map of Surabaya-Gunungsari Sub-project

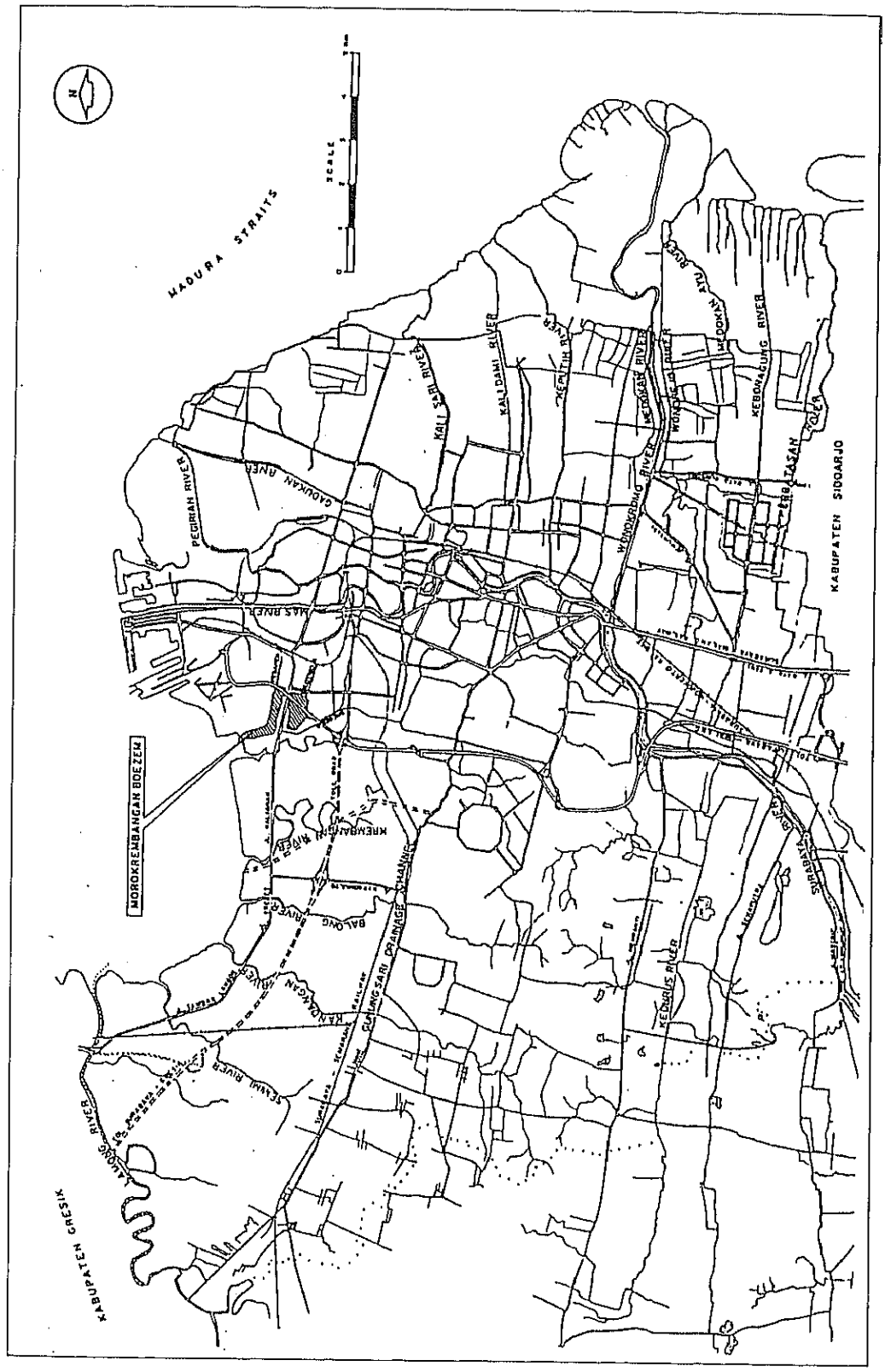

Figure A1. 6 Location Map of Surabaya-Gunungsari Sub-project

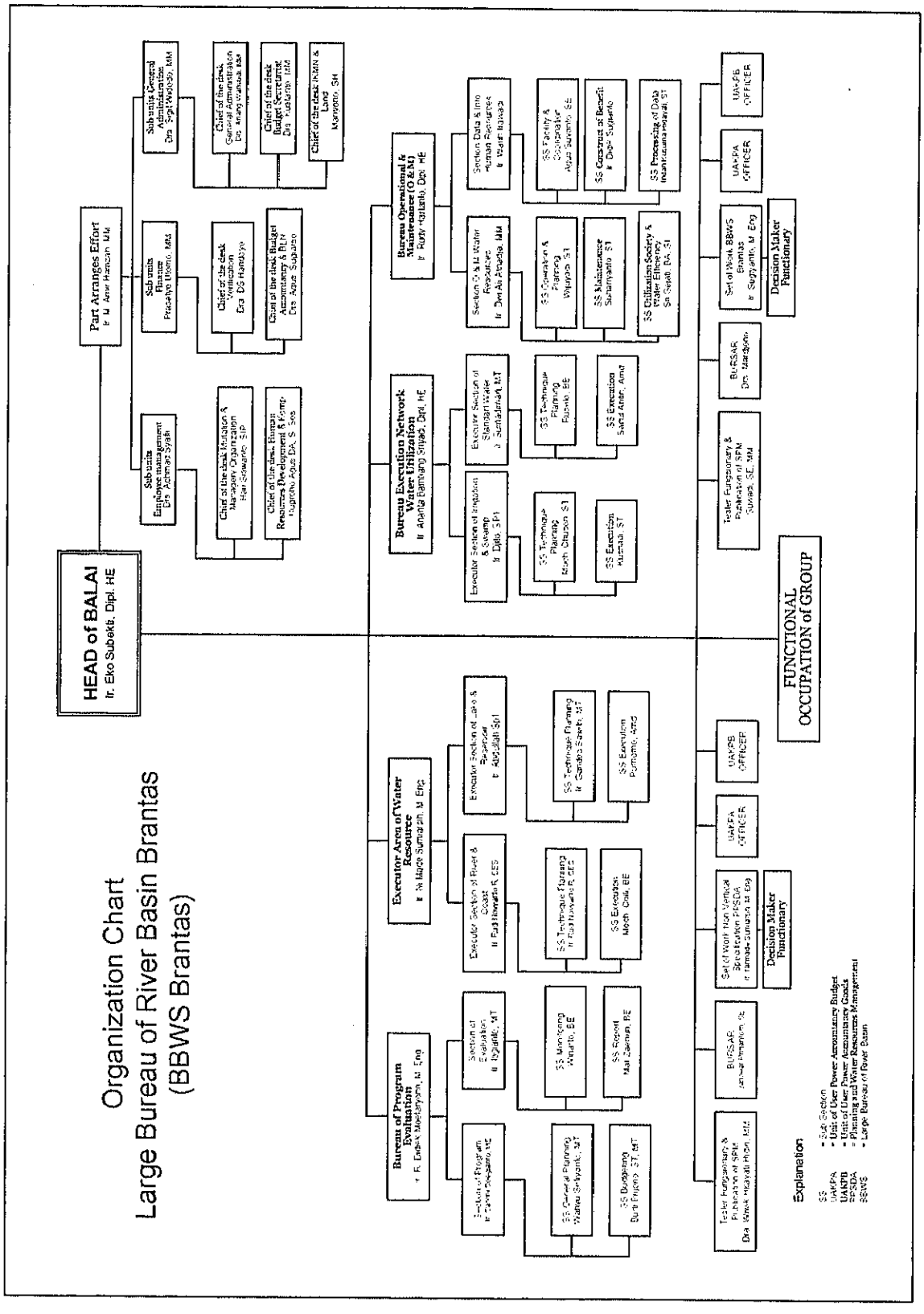

Figure A1. 7 Organization Chart of BBWS Brantas

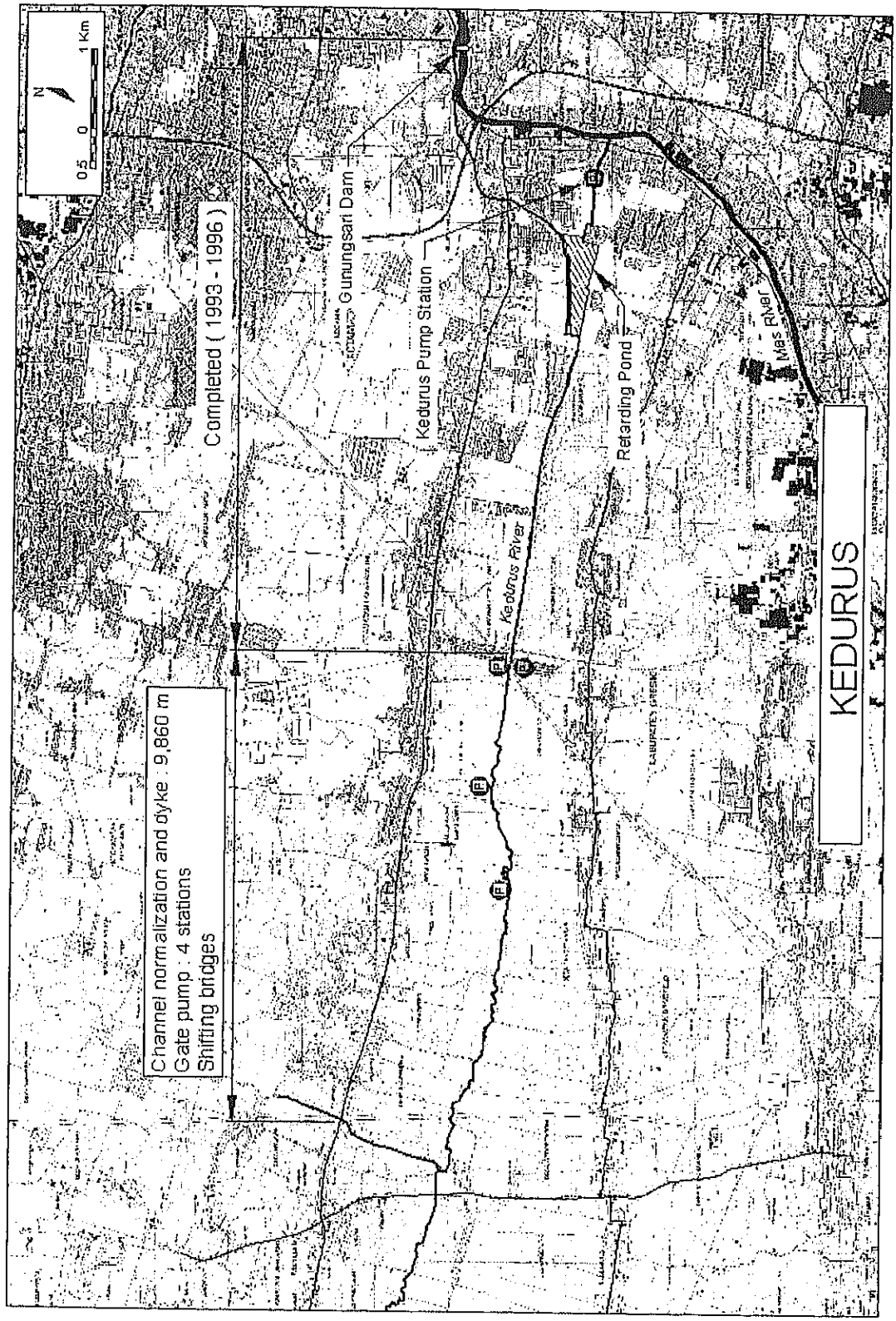

Figure A1.8 Location Map of Surabaya-Upper Kedurus Sub-project

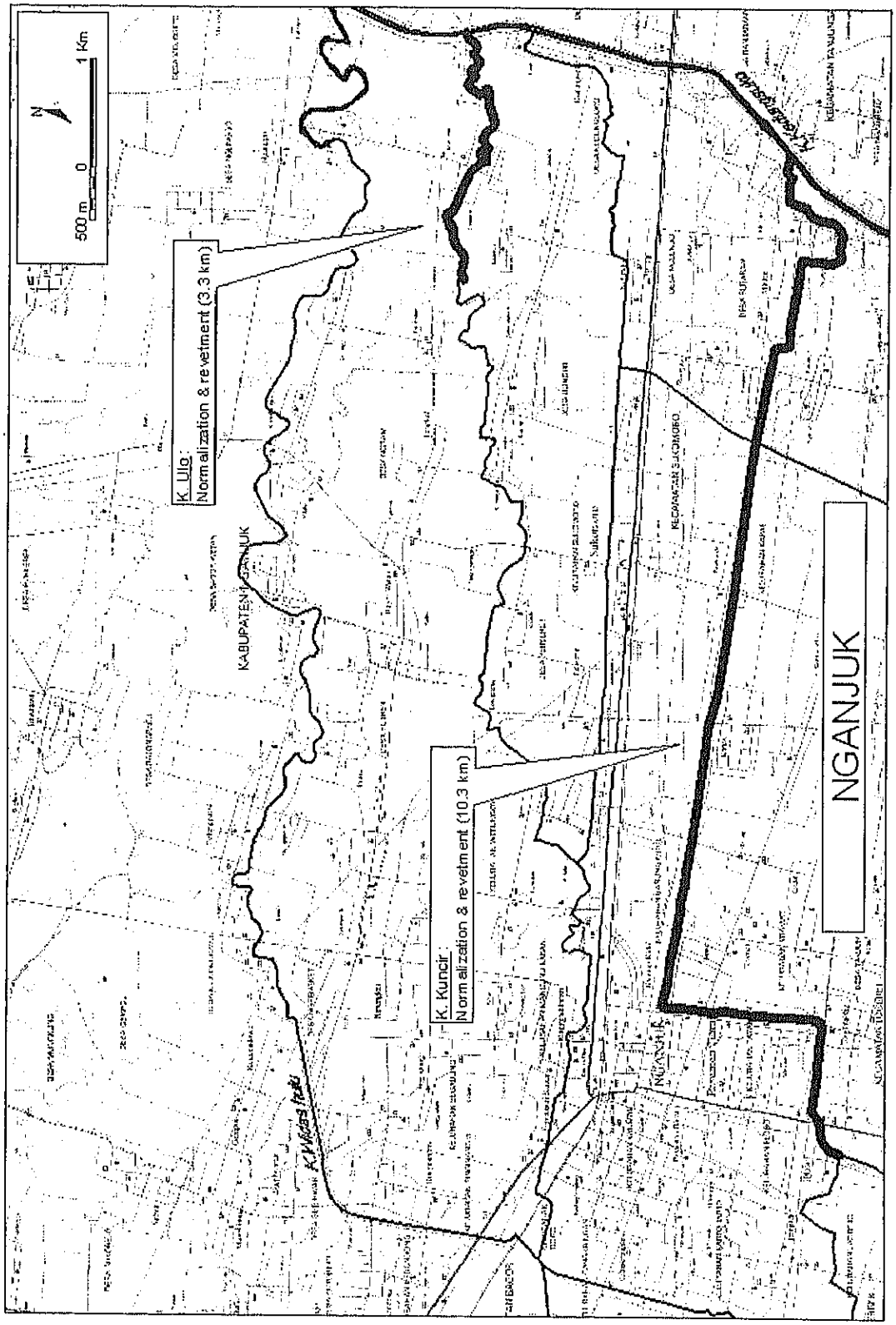

Figure A1.9 Location Map of Nganjuk Sub-project

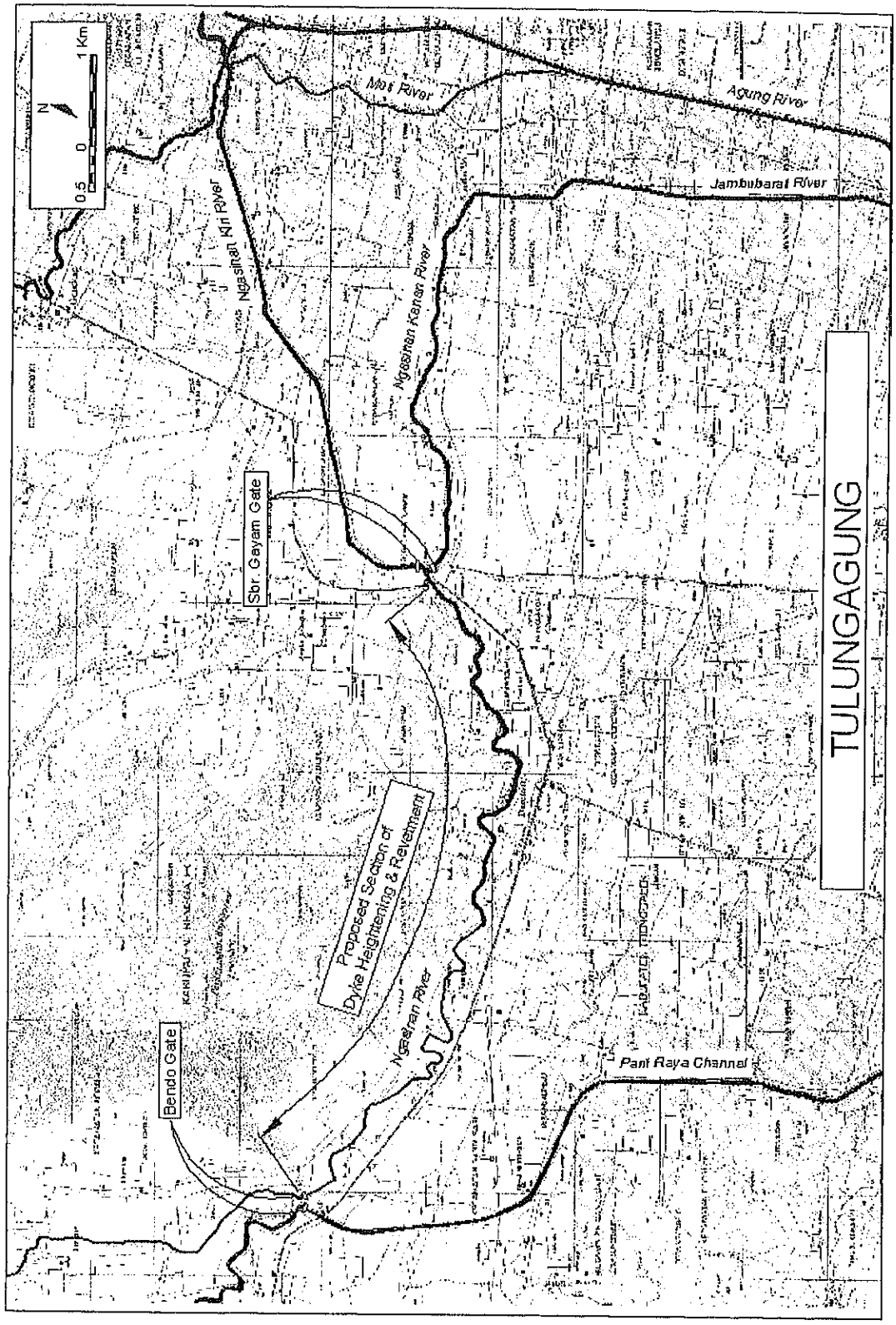

Figure A1.10 Location Map of Tulungagung Sub-project

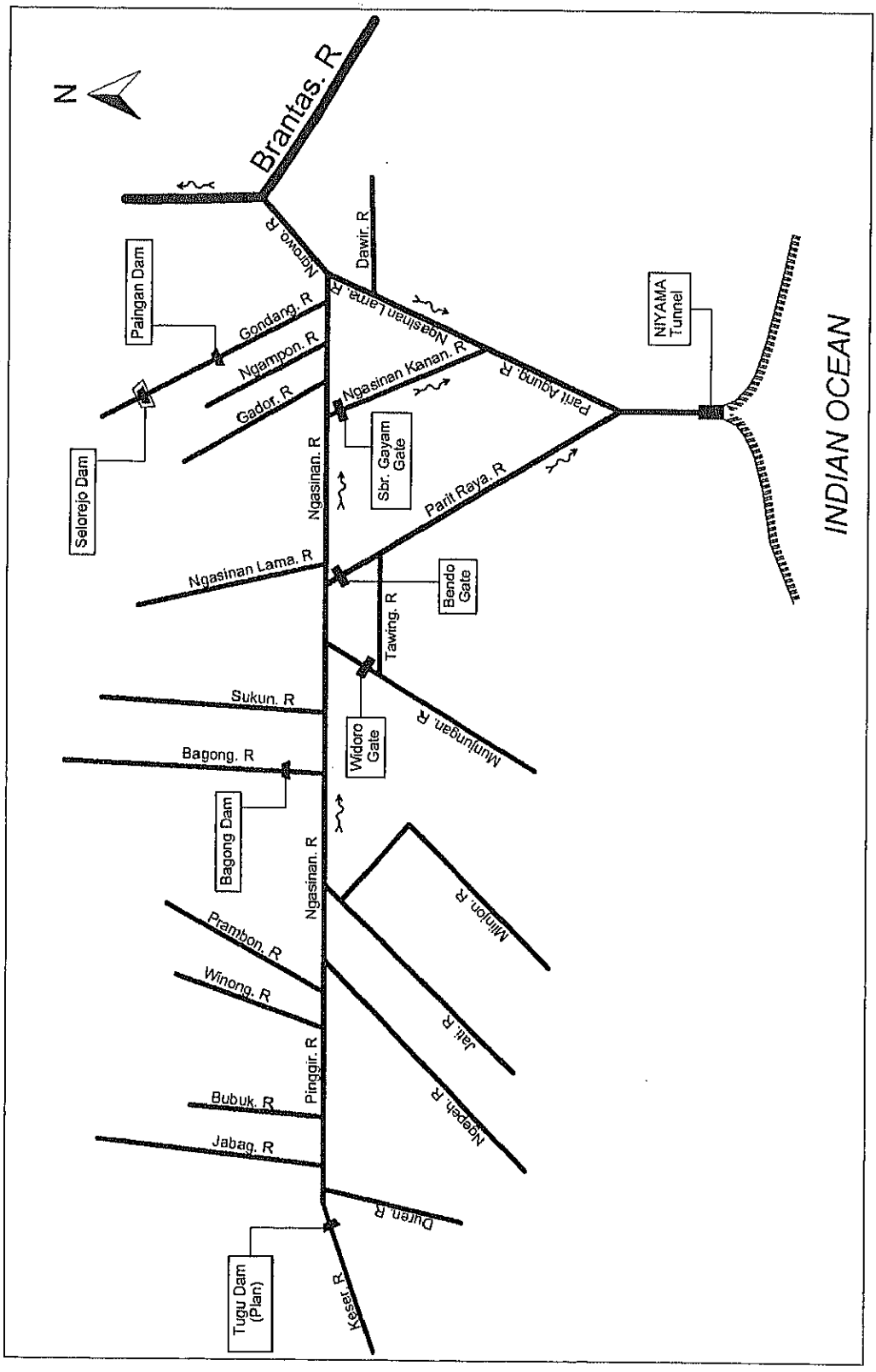

Figure A1.11 River System of Ngasinan River

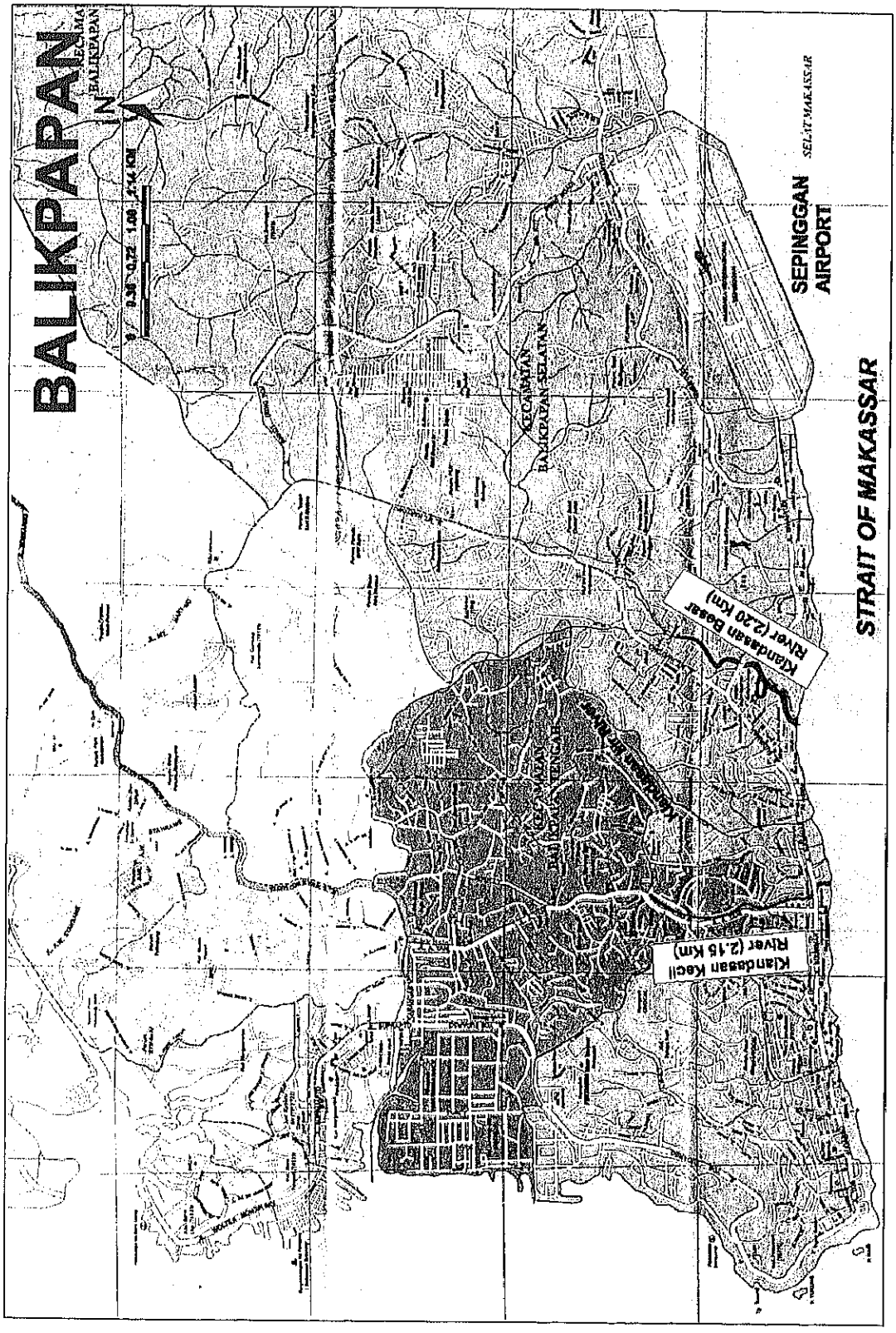

Figure A1.12 Location Map of Balikpapan Sub-project

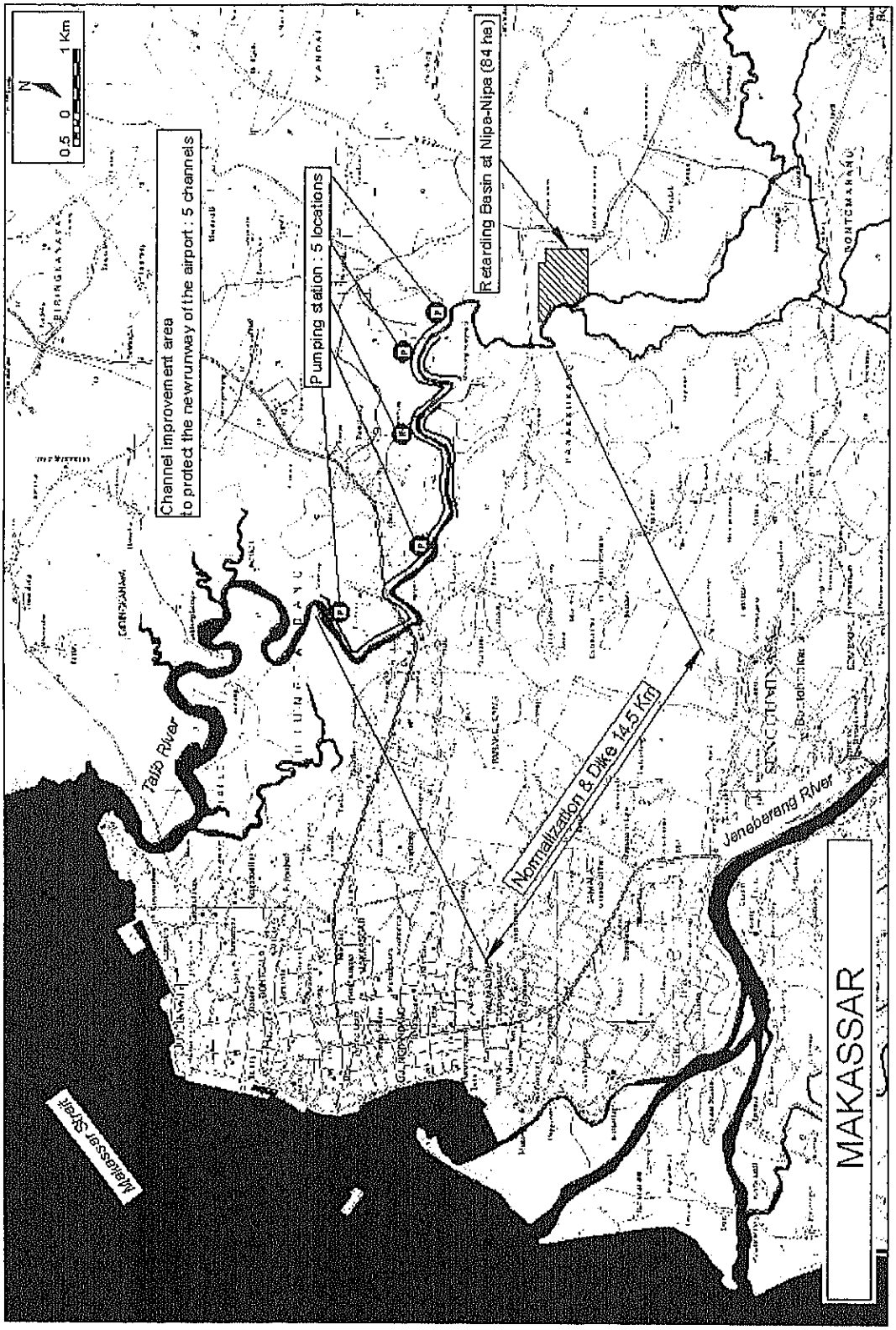

Figure A1.13 Location Map of Makassar Sub-project

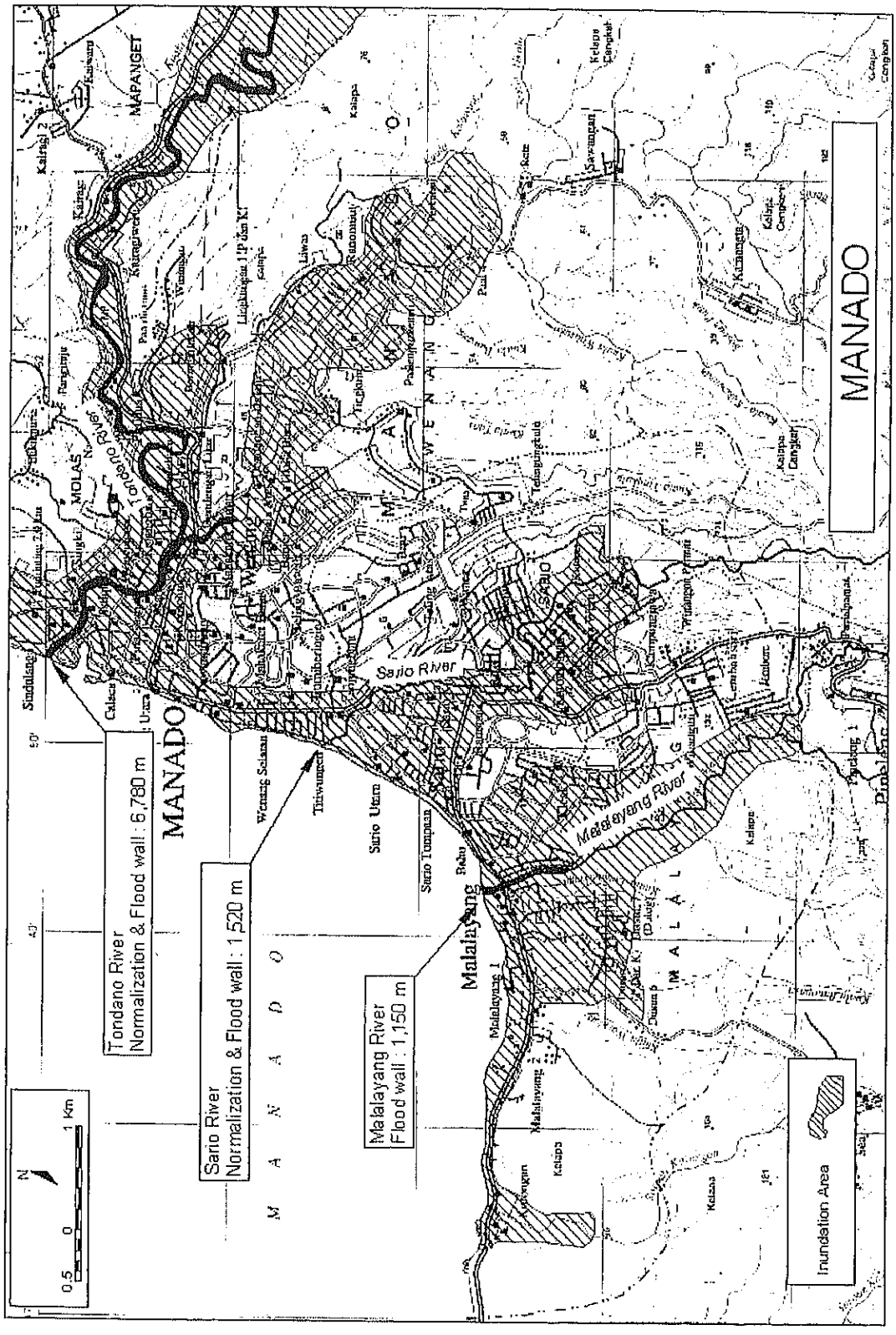

Figure A1.14 Location Map of Manado Sub-project

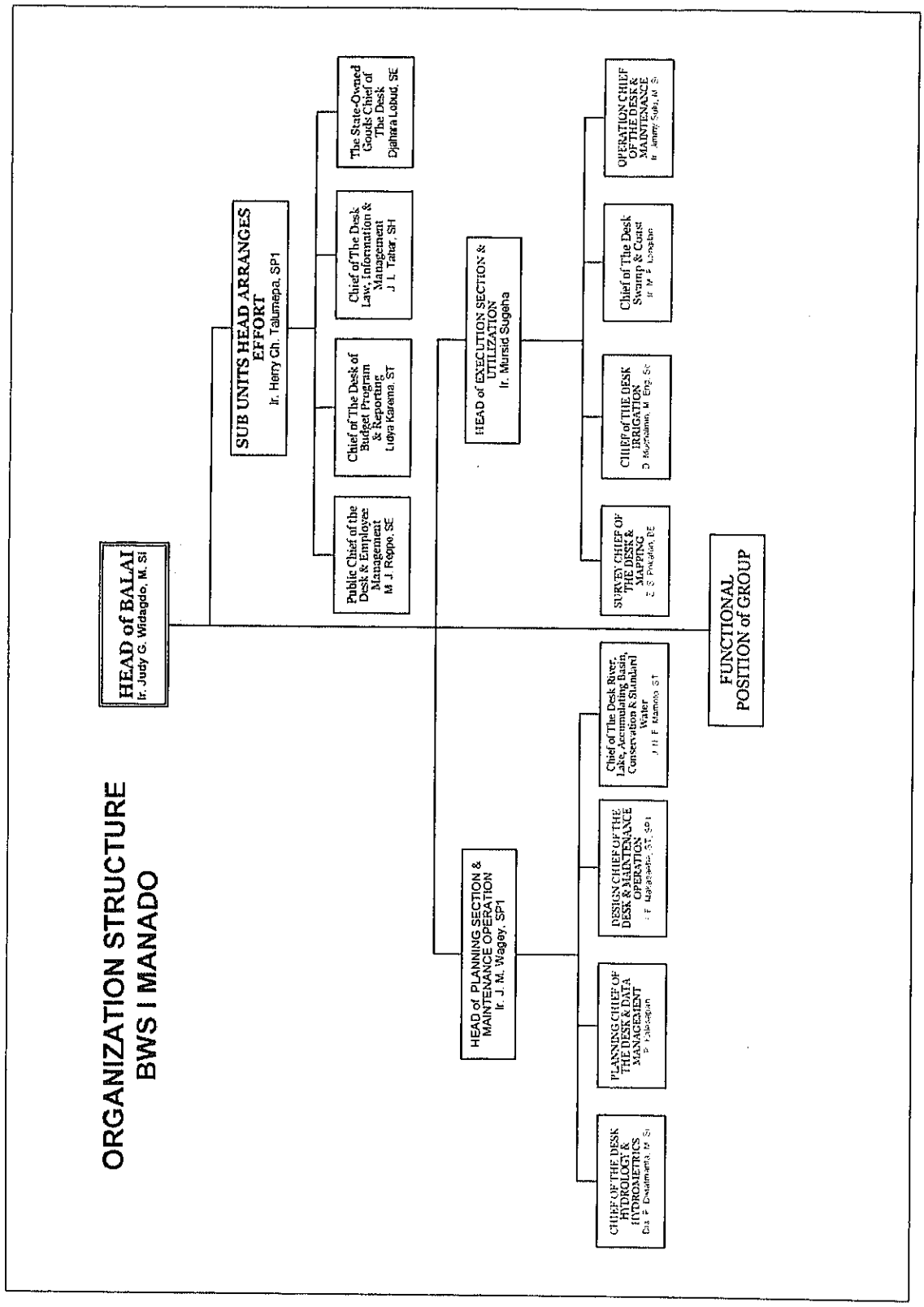

Figure A1.15 Organization Chart of BWS Sulawesi I

ANNEX 2:

REVIEW OF SCOPE FOR SHORT-LISTED SUB-PROJECT

REVIEW OF SCOPE
(Short-listed Sub-projects)

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Figure A2. 2 Longitudinal Profile of Bendung River

1. General

This ANNEX 2 presents the reason of changing scope for sub-project from the original one in the I/P in July 2008 to the proposed one. Summary of change of scope is presented in Table A2. 1.

2. Padang Sub-project

(1) Original Scope of the Sub-project

The proposed components of Anai-Kandis River improvement are as follows:

- Package I: Anai River channel improvement from river mouth to the section around 50m upstream of the Bypass Bridge with the river length of 4,100m, and construction of river structures and Muaro Bungo Bridge.
- Package II: Anai River channel improvement from the section around 50m upstream of the Bypass Bridge to Railway Bridge with the river length of 7,688m, and construction of river structures and bridge.
- Package III: Kandis River channel improvement from river mouth to the Bypass Bridge with the river length of 3,179m, and construction of river structures and bridge.
- Package IV: Kasang River channel improvement from confluence of the Kandis River to Railway Bridge with the river length of 4,621m, and construction of river structures and bridge.

Work quantity of the original scope is summarized in Table A2. 2.

(2) Propose Scope of the Sub-project

Among these works some improvement works have been implemented utilizing national and local government budget (*APBN* and *APBD*) due to its urgency. As for the Anai River, river mouth jetty was constructed with a half length of original design and a cutoff channel was also constructed. A 261m length diversion floodway and river improvement of in the lower reaches of the Kandis River is under construction with total length of 800m. Design discharge distribution is presented in Figure A2. 1.

Under these site conditions, BWS Sumatera V proposes the channel improvement works of Package I (Lower Anai River, 4.1 km) and a part of Package III (Upper Kandis River, 1.4 km).

As the total project cost is limited to US$ 70 million, proposed works in Padang sub-project are

selected from two (2) components of the Anai River and the Kandis River. Comparing with these two (2) components, the Anai River has larger beneficial area including Minangkabau International Airport than the Kandis River. Finally proposed scope of this sub-project is summarized below.

(a) Anai River channel improvement
(b) From river mouth to the section around 50m upstream of the Bypass Bridge
(c) 4,100 m river length
(d) Construction of river structures
(Muaro Bungo Bridge and Sasak Ubi Sluice are excluded)

3. Palembang

(1) Original Scope of the Sub-project

Considering the natural conditions such as topography and hydrology, flood system improvement is the most critical issue in Palembang. The existing system is divided into 19 sub-systems. BWS Sumatera VIII and the local government have given priority to 4 sub-systems namely Bendung, Sekanak, Buah and Sriguna Rivers considering the population and assets accumulated in the basins, while JICA study in September 2003 describes that the Bendung and Buah drainage systems have the most serious drainage issues in Palembang City. Major inundation sites in the Bendung, Sekanak, Buah and Sriguna are listed in Table A2. 3.

According to the I/P in July 2008, major drainage areas will be improved with the following works.

(a) Bendung River:
- Catchment Area = 19.186 km^2
- Dredging of primary channel (2.8 km)
- Construction of one (1) drainage pumping station (6 m^3/s x 3 units)
- Dyke improvement (4,000m)

(b) Sekanak River:
- Catchment Area = 11.395 km^2
- Dredging of primary channel (3.55 km)
- Construction of one (1) drainage pumping station

(c) Buah River:
- Catchment Area = 10.422 km^2
- Dredging of primary channel (2.86 km)
- Construction of floodway (785m)
- Construction of Retention pond (3 sites, 7 ha in total)

(d) Sriguna River: - Catchment Area = 4.910 km^2
- Channel normalization (1.5 km)

(2) Propose Scope of the Sub-project

As the total project cost is limited to US$ 70 million, proposed works in Palembang sub-project are selected from the above four (4) components. BWS Sumatra VIII gives the high priority to the Bendung and Sekanak Rivers as these river basins occupy the central part of Palembang city.

The I/P in July 2008 proposes pump drainage for the Bendung and Sekanak Rivers, while the JICA Study in September 2003 proposed gravity drainage for the Bendung River. Longitudinal profile of the Bendung River is presented in Figure A2. 2 showing the calculated water levels. Considering the construction cost of drainage pumping stations and gated facilities, and also the operation and maintenance for these facilities, gravity drainage scheme is proposed. Even though the detailed design for the Sekanak River proposed pump drainage, runoff from this river might be drained by gravity because of the topographic conditions. Comparing the number of resettlement for the improvement of these rivers, Bendung River is selected as a proposed river to be improved in the sub-project. Proposed scope of this sub-project is summarized below.

(a) Channel improvement of the Bendung River (19,186 km^2 of catchment area)
(b) From the confluence with the Musi River to Talang Aman Pond
(c) 5,500 m river length

4. Bandung

The I/P in July 2008 proposed the following two (2) components.

- Channel widening of the Citarum Main River for 3.0 km from Curug Jompong to Ciharuman (30m existing bottom width to 55m)
- Construction of Cikapundung diversion channel (715 m) with Jl. Moh Toha Road bridge

After the preparation of the I/P in July 2008, BBWS Citarum examined the effect of channel widening around Curug Jompong, the lower end of Upper Citarum River. As the result, channel widening contributes less effect to Dayeuhkolot area. Therefore BBWS Citarum withdraws the scheme of channel widening.

5. Wonokromo

(1) Original Scope of the Sub-project

The I/P in July 2008 proposes 11,000m long river improvement with concrete wall and dike from the point about 2.5 km upstream of the mouth to Jagir diversion weir. On the other hand considering the ADB works and ongoing works, the detailed design in December 2005 proposed the concrete sheet-pile driving with earth embankment for the following stretches.

- Left bank
  - WO.003 + 378 ~ WO.005 + 505 : 2,127 m
  - WO.005 + 906 ~ WO.007 + 529 : 1,623 m
  - Sub-total : 3,750 m
- Right bank
  - WO.002 + 376 ~ WO.002 + 926 : 550 m
  - WO.003 + 248 ~ WO.006 + 326 : 3,078 m
  - WO.006 + 708 ~ WO.007 + 219 : 511 m
  - Sub-total : 4,139 m
- Total 7,889 m

(2) Proposed Scope of the sub-project

As mentioned in I/P in July 2008, there are many houses on the left bank just upstream of Semolo Waru I drainage pumping station located at section WO.006 + 775. About 100 houses are counted on the "Google Earth." Considering total cost for the whole Project and the difficulty of land acquisition and house relocation, downstream stretches from WO.005 + 906 are proposed to be excluded from this sub-project.

6. Brangkal

(1) Original Scope of the Sub-project

Based on the detailed design for the conservation of the Brangkal River basin, the I/P in July 2008 proposes river improvement for 3 km stretches and procurement of 5 sets of mobile pumps.

(2) Proposed Scope of the Sub-project

Considering the densely built houses along the channel, objective stretches to be improved are extended to the provincial road bridge connecting Surabaya and Jomban. Following are proposed scope of works.

- Channel normalization: 7,950 m from confluence with Ngotok River to Provincial Road Bridge
- Improvement of Weir: 1 nos. (Prajurit Kulon Weir)
- Procurement of mobile pump: 5 sets (0.25 m^3/s per each)

7. Gorontalo

(1) Original Scope of the Sub-project

The BWS Sulawesi II proposes the following works in the I/P in July 2008.

- Bolango River improvement (11.2 km from mouth to Talaga bridge)
- Bone River improvement (750 m of right bank by dyke heightening)
- Procurement of mobile pumps (5 sets)
- Improvement of 5 primary drainage channels

(2) Proposed Scope of the Sub-project

As the total project cost is limited to US$ 70 million, proposed works in Gorontalo sub-project are selected from the above four (4) components. BWS Sulawesi II gives the top priority to the Bone River including downstream portion of the Tamalate River, and the second priority to the Bolango River because the heart of Golontaro city lies between these two (2) rivers near their confluence.

Dyke heightening of the Bone River is proposed in the detailed design with bank slope of 1 : 1 and about 4 m height dyke. Considering stability of the dyke, bank slope of 1 : 1 is not acceptable for 4 m height dyke. Bank slope 1 : 3 or 1 : 2 with berm is proposed for the dyke stability, and this change of design requires wider space for bank foundation. Total number of resettlement might increase two (2) or three (3) times of the present number of 85.

Table A2. 1 Summary of Change of Scope

Sub-Project	Original in I/P in July 2008	Proposed Scope	Reason of Change
Padang	- Anai River channel improvement (4.1 km) - Upper Kandis River channel improvement (1.4 km)	- Anai River channel improvement (4.1 km)	- Benefit of Anai River improvement is larger than that of Upper Kandis River improvement - Minangkabau International Airport is located in the flooding area of the Anai River
Palembang	- Bendung River improvement (2.8 km) with pump drainage - Sekanak River improvement - Buah River improvement - Sriguna River improvement	- Bendung River improvement (5.5 km) without pump drainage	- BWS Sumatra VIII gives high priority to the Bendung and Sekanak Rivers in central Palembang - JICA report (Sep.2003) gives high priority to the Bendung and Buah Rivers - Gravity drainage is expected for Bendung River according to JICA report
Bandung	- Channel widening of Citarum Main River around Curug Jompong (3.0 km) - Construction of Cikapundung Diversion Channel (700 m)	- Construction of Cikapundung Diversion Channel (700 m)	- Withdraw by BBWS Citarum due to less effect to Dayeuhkolot area where most sever flooding occurs.
Surabaya-Wonokromo	- Channel improvement of Wonokromo River (11,000 m)	- Channel improvement of Wonokromo River (3,950 m)	- 11 km improvement requires a large number of resettlement (more than 100). - Fishponds expand in downstream area of Semolo Waru I drainage pumping station and less benefit will be expected.
Surabaya-Brangkal	- Channel improvement of Brangkal River (3.0 km) - Procurement of mobile pump (5 units)	- Channel improvement of Brangkal River (7.95 km to provincial road bridge) - Procurement of mobile pump (5 units)	- Densely built area expands both banks of stretches downstream of provincial road bridge
Gorontalo	- Bolango River improvement (11.2 km from the mouth) - Bone River improvement around Bugisu (750 m) - Drainage channel improvement (5 channels) - Procurement of mobile pump (5 units)	- Bolango River improvement (5.3 km from the mouth) - Procurement of mobile pump (5 units)	- Design of dyke heightening of Bone River is not acceptable considering dyke stability. If bank slope is changed to gentle, a large number of resettlement will occur. - Inundation in Gorontalo is mainly caused by flooding of the Bolango and Bone Rivers. Drainage channel improvement should be postponed after improvement of Bolango and Bone Rivers. - Upstream sections of the Bolango River from the confluence with the Tapadu River have larger capacity than the lower sections (5.3 km).

Table A2. 2 Summary of Quantities proposed in DD Report for Padang Project

No.	Description	Item	Unit	Package I	Package II	Package III	Package IV	Total
A. Land Acquisition & House Compensation								
1	Land Acquisition		sq.m	270,163	720,234	155,530	159,070	1,304,997
2	House Compensation		nos.	48	93	21	3	165
B. Civil Works								
1	General		L.S	1	1	1	1	
2	River Improvement		m	4,100	7,688	3,179	4,621	19,588
2.1	Earth Work	Clearing, grubbing and striping	sq.m	78,323	85,577	53,656	68,779	286,335
		Temporary coffering by SSP (double)	m	2,445	512	0	0	2,957
		Temporary coffering by SSP (single)	m	0	5,848	5,043	6,077	16,968
		Channel excavation	cu.m	1,059,447	1,138,884	311,214	119,561	2,629,106
		Embankment	cu.m	112,778	51,516	67,832	106,755	338,881
		Grading of disposal area	cu.m	649,418	1,087,368	163,220	0	1,900,006
2.2	Closing Dike		Site	7	0	22	13	42
		Structural excavation	cu.m	32,313	0	0	0	32,313
		Backfill	cu.m	2,772	0	0	0	2,772
		Embankment	cu.m	324,522	0	78,276	104,988	507,786
		Gabion	cu.m	24,000	0	0	0	24,000
2.3	Bank Protection		m	945	6,360	6,358	9,350	23,013
		Structural excavation	cu.m	12,844	71,779	33,888	47,498	166,009
		Wet masonry	cu.m	7,054	37,333	14,159	18,513	77,059
		Sodding	sq.m	33,267	25,791	24,562	27,507	111,127
2.4	Side Drain		m	7,657	13,774	6,340	9,112	36,883
		Structural excavation	cu.m	15,314	27,548	12,680	18,224	73,766
		Grading of disposal area	cu.m	15,314	24,711	12,680	0	52,705
2.5	Inspection Road		m	7,657	13,774	6,340	9,112	36,883
		Gravel pavement	cu.m	22,971	3,223	1,484	2,132	29,810
		Asphalt pavement	sq.m	1,792	41,322	19,020	27,331	89,465
2.6	Access Road & Turnout	Access road	unit	20	25	16	14	75
		Turnout	unit	8	10	8	12	38
		Clearing, grubbing and striping	sq.m	264	330	264	396	1,254
		Embankment	cu.m	2,270	2,837	1,886	1,869	8,862
		Asphalt pavement	sq.m	264	330	264	396	1,254
		Sodding	sq.m	2,600	3,250	2,080	1,820	9,750
3	Related Structures							
3.1	Drainage Box/Pipe Culvert		nos	28	52	32	47	159
		Box culvert Type II	nos	1	2	0	1	4
		Box culvert Type III	nos	1	1	2	11	15
		Box culvert Type IV	nos	1	5	3	1	10
		Box culvert Type V	nos	5	2	4	2	13
		Pipe culvert φ800mm	nos	20	42	23	32	117
3.2	Bridge	Construction of Bridge	nos	1	1	2	3	7
		Protection of Existing Bridge	nos	0	1	0	0	1
		Demolishing of Existing Bridge	sq.m	0	0	30	335	365
3.3	Jetty		m	320	0	120	0	440
		Excavation	cu.m	12,328	0	13,764	0	26,092
		Geotexstile	sq.m	12,631	0	6,184	0	18,815
		Cobble stone	cu.m	24,219	0	10,542	0	34,761
3.4	Sluice Gate		nos	1	0	0	2	3
4	Water Level Gauging Station Including Gauding Equipment							
			unit	0	2	1	1	4

River Length to be improved

Anai River : 11,788 m

Kandis River : 3,179 m

Kasang River : 4,621 m

Table A2. 3 Major Inundation Location in Palembang City (Kodama Report)

Locations	Kecamatan	Kelurahan	Inundation Condition		
			Area (ha)	Duration (hr)	Depth (m)
Bendung System			**14.62**		
12) Around Jl Basuki Rachmat/Simpang Polda	Kemuning	Ario Kemuning	1.50	9	0.40
13) Around Jl. Kol H. Burlian, Simpang Jl. AKBP H.Umara. In front of KOREM Office	Kemuning	Ario Kemuning	0.37	2	0.20
15) Around Jl. Veteran/Mitsubishi Dealer	Ilir Timur I	20 Ilir D I	1.50	6	0.50
16) Around Bendung Primary Canal-Tengah part/Jl Rawa Bendung	Ilir Timur I	20 Ilir D I/20 Ilir D III	4.50	9	0.50
17) Around Jl. Seduduk Putih Secondary Canal-Hilir Part	Ilir Timur II	8 Ilir	3.50	4	0.50
18) Around Jl. Letda Rozak	Ilir Timur II	5 Ilir	2.00	2	0.30
19) Around Jl. Kol. H Burlian, Simpang Jl. Kamil	Kemuning	Ario Kemuning	1.25	6	0.25
Sekanak System			**16.75**		
10) Around Jl. Lethan Yasin	Ilir Timur I	20 Ilir III	1.00	2	0.20
2) Around Sekanak Primary Canal, a part of Hulu/the area of Kancil Putih	Ilir Barat I	Bukit Lama	2.00	6	0.50
7) Along Sahang Secondary Canal	Ilir Barat I	Lorok Pakjo	4.00	3	0.30
6) Around Hilir Part of Pakjo Secondary Canal	Ilir Barat I	Lorok Pakjo	6.00	4	0.30
8) Around Jl. Puncak Sekuning	Ilir Barat I	Lorok Pakjo	1.60	3	0.20
9) Around Jl. Sumpah Pemuda	Ilir Barat I	Lorok Pakjo	0.35	1	0.15
4) Around part of Hilir Sungai Sekanak	Ilir Barat II	27/28 Ilir	1.80	4	0.20
Buah System			**6.30**		
19) Around Jl. Tos Sudaraso, near PDAM	Ilir Timur II	3 Ilir	0.45	1	0.20
20) Around Jl. Ratu Sianom	Ilir Timur II	1 Ilir	0.30	1.5	0.15
21) Around Tali Gawe Primary Canal-Hulu Part	Ilir Timur II	1 Ilir	0.75	2	0.40
22) Around Rengas Primary Canal-Hulu Part	Ilir Timur II	1 Ilir	0.80	2	0.30
23) Around Buah Secondary Canal-Hilir Part	Ilir Timur II	Sei. Buah and 1 Ilir	2.50	6	0.50
31) Around Jl. Simapng Tiga Patal PUSRI/Settlement of PHDM II	Kalidoni	Kalidoni	1.50	2	0.20
Sriguna System			**11.00**		
38) Around STM, Lorong Pegagan	Seberang Ulu II	16 Ulu	0.80	4	0.20
33) Around Jl. DI Panjaitan RT 15, 49, 45, 34	Plaju	Plaju Ilir	2.25	4	0.15
42) Around Simapng Tiga Jl. Kapten Abdullah	Plaju	Plaju Ilir/Plaju Darat	0.60	6	0.15
34) Around Jl D I Panjaitan with Jl Pintu Besi	Plaju	Plaju Ilir	1.85	3	0.15
40) Around Jl Palapa	Plaju	Plaju Ulu	0.15	3	0.15
39) Around Jl. Sudirja	Seberang Ulu II	Sentosa	0.85	4	0.20
43) Around Lorong Asli	Seberang Ulu II	16 Ulu	2.50	6	0.20
44) Around Primary Canal-part of Tengah	Seberang Ulu II	16 Ulu	2.00	3	0.20

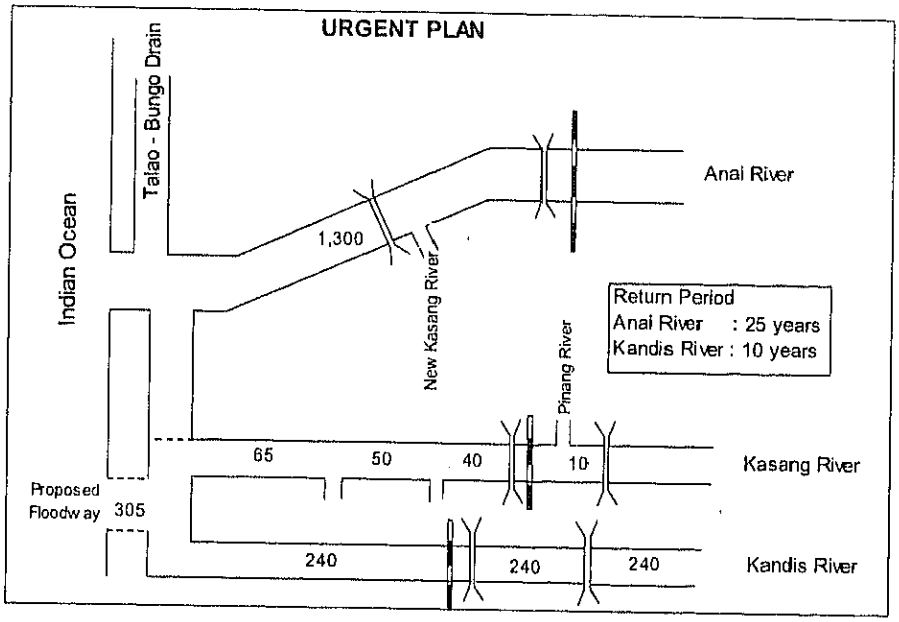

Figure A2. 1 Design Discharge Distribution for Padang Project

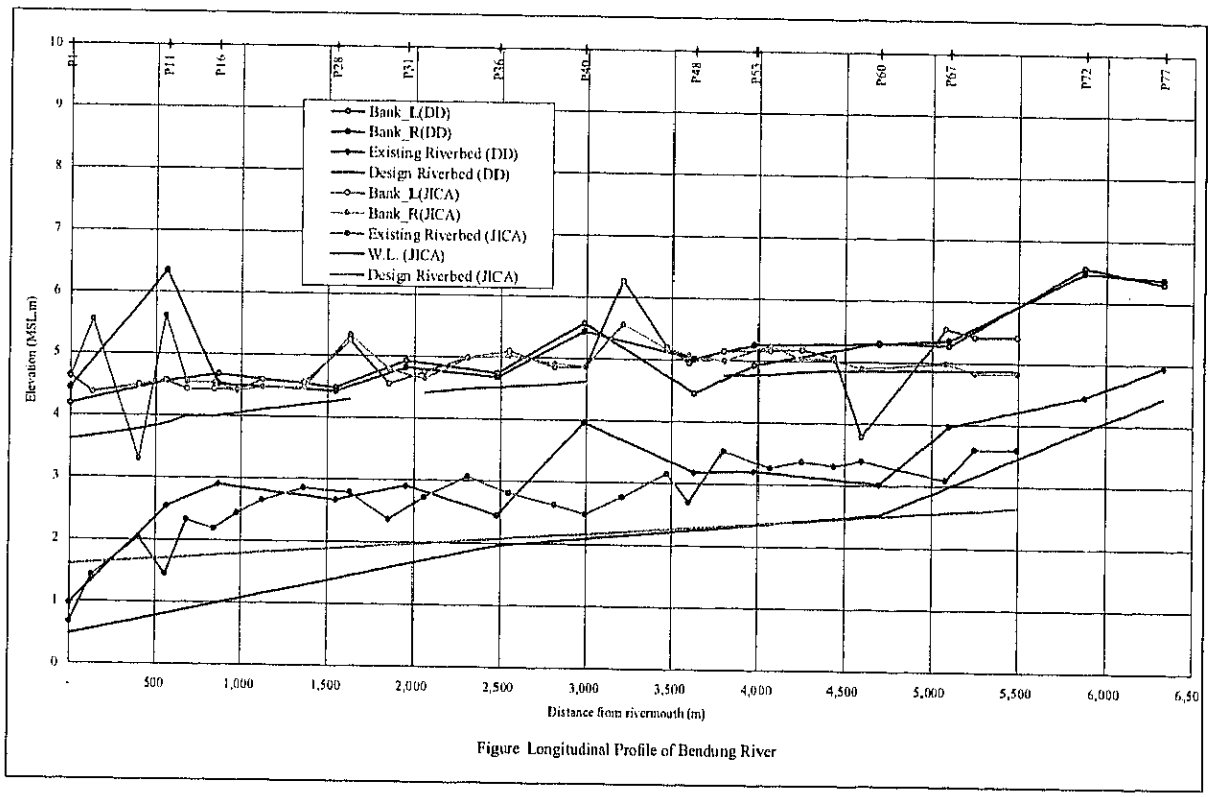

Figure A2. 2 Longitudinal Profile of Bendung River

ANNEX 3:

ECONOMIC EVALUATION

ECONOMIC EVALUATION

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1. Basic Condition

The costs are estimated for each work item by multiplying the work quantity and unit cost. Following assumptions are employed for estimation.

(a) Price level: August 2008

(b) Exchange rate: US$1 = Rp. 9,291 = ¥ 107, ¥ 1 = Rp. 86.957

(c) Currency: - Local currency portion

- Foreign currency portion

2. Economic Cost

The project cost consists of;

- Direct construction cost,
- Land acquisition and house compensation cost,
- Government administration cost,
- Consulting service cost,
- Physical contingency,
- Price escalation, and
- Value added tax (VAT).

Among the above, Land acquisition/House compensation Cost, Price Escalation and Value Added Tax are excluded from the economic cost. Considering the opportunity cost, economic cost is estimated deducted 10 % from the local portion of financial cost and 0 % from the foreign portion. Cost for the consulting services is assumed to be allocated from the services for whole Project in proportion to the direct construction cost of respective sub-projects. Cost for adaptation of climate change is not included in the economic cost of consulting services.

In addition, the annual operation and maintenance (O/M) cost is necessary to evaluate the project economy. The O/M cost is assumed at 0.5 % of economic direct construction cost, referring other economic evaluation for similar flood control projects in Indonesia. Replacement cost for mobile pumps is also considered with life time of 10 years. Total project life is assumed at 50 years.

3. Economic Benefit

Basically expected annual flood damage is estimated for two (2) cases; "Without Project" and "With Project" with the following equation.

$$D = SUM [(L_{m-1} - L_m) / 2 \quad x \quad (N_{m-1} - N_m)]$$

where, D : Annual Flood Damage in monetary value,

L : Damage Potential corresponding to Probability of Flood in monetary value,

N : Probability of Flood such as 1/1.1, 1/2, 1/5, 1/10, 1/25, 1/50 and

m : ordinal number (suffix to each item).

Return Period (Year)	Exceed-ance N	Proba-bility	Damage Potential L	Average Damage Potential	Annual Average Flood Damage	Annual Flood Damage (accumulated)
T_0	N_0	-	$L_0 (= 0)$	-	-	-
T_1	N_1	$N_0 - N_1$	L_1	$(L_0+L_1)/2$	$(N_0-N_1) \times (L_0+L_1)/2$	$(N_0-N_1) \times (L_0+L_1)/2$
T_2	N_2	$N_1 - N_2$	L_2	$(L_1+L_2)/2$	$(N_1-N_2) \times (L_1+L_2)/2$	$(N_0-N_1) \times (L_0+L_1)/2 + (N_1-N_2) \times (L_1+L_2)/2$
|	|	|	|	|	|	|
|	|	|	|	|	|	|
T_m	N_m	$N_{m-1} - N_m$	L_m	$(L_{m-1}+L_m)/2$	$(N_{m-1}-N_m) \times (L_{m-1}+L_m)/2$	$(N_0-N_1) \times (L_0+L_1)/2 + (N_1-N_2) \times (L_1+L_2)/2 + \cdots + (N_{m-1}-N_m) \times (L_{m-1}+L_m)/2$

4. Padang Sub-project (West Sumatra Province)

4.1 General

According to the Appendix K in Design Note Volume V, Anai-Kandis River Improvement in Padang Area Flood Control Project (II) under JBIC Loan IP-451 prepared in October 2001, benefit of the Stage III project is expressed by the difference between the expected flood damages of "without project" and "with project." Padang Area Flood Control Project (III) consists of the following work packages.

Package I: Anai River Channel Improvement from river mouth to the section around 50 m upstream of the Bypass Bridge with the river length of 4,100 m, and Construction of river structures and bridge.

Package II: Anai River Channel Improvement from the section around 50 m upstream of the Bypass Bridge to Railway Bridge with the river length of 7,688 m, and construction of river structures and bridge

Package III: Kandis River Channel Improvement from the river mouth to the Bypass Road Bridge with the river length of 3,179 m, and construction of river structures and bridge.

Package IV: Kasang River Channel Improvement from the confluence of the Kandis River to the railway bridge with the river length of 4,621 m, and construction of river structures and bridge.

4.2 Asset in Project Area

Following assets are counted for damage estimation.

(a) General Assets

- Residential house/building
- Household effects
- Commercial building/factory
- Assets and stock in factory

(b) Agricultural Products

- Paddy
- Upland crops
- Fishpond products

4.3 Damage Ratio

Following damage ratio is adopted according to Japanese Standard (1997 version) prepared by Ministry of Land, Infrastructure and Transport, which was normally applied in the similar flood control projects in Indonesia.

	Inundation Depth above Floor Level (m)					
	0.00 – 0.49	0.50 – 0.99	1.00 – 1.49	1.50 – 1.99	2.00 – 2.99	3.00 -
Residential Building						
Building	0.053	0.072	0.109	0.109	0.152	0.220
Household Effects	0.086	0.191	0.331	0.331	0.499	0.690
Non-residential Building						
Depreciable Assets	0.180	0.314	0.419	0.419	0.539	0.632

Inundation Depth	0.00 – 0.49 m				0.50 – 0.99 m				1.00 m -			
Duration (Days)	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -
Lowland Paddy	0.21	0.30	0.36	0.50	0.24	0.44	0.50	0.71	0.37	0.54	0.64	0.74
Upland Crop	0.27	0.42	0.54	0.67	0.35	0.48	0.67	0.74	0.51	0.67	0.81	0.91

4.4 Flood Damage

Direct general flood damages in the inundation area of 32 km^2 are calculated multiplying quantity of building/agricultural land in flooding area by unit asset value and damage ratio corresponding inundation depth/duration.

Direct flood damage to public facilities such as road, bridge, power supply facilities, water supply facilities, telecommunication facilities, irrigation facilities is assumed at 20 % of damages to the

general direct damages.

In addition to the direct damages mentioned above, damages to business activities and indirect damages are counted. Damages to business activities including suspension of airport operation are estimated at 9 % of direct damages. Indirect damages are included into the flood damages with assumption of 20 % of sum of general direct damages and damages to business activities.

4.5 Annual Benefit brought by Proposed Sub-project

According to the detailed design report for Anai-Kandis River Improvement, total inundation area of 25-year flood is 32.0 km^2, and expected annual benefit is Rp. 86.577 billion in 2001 price level. Annual benefit in 2008 price level is calculated at Rp. 188.738 billion using the price escalation of 218 % from 2001 to 2008.

Beneficial area owing to the implementation of the sub-project (corresponding Package I works) is estimated at 7.5 km^2, that is 23.4 % of total inundation area. Considering the unbalanced asset distribution, that is the flooding area along the Anai River has smaller asset than the Kandis-Kasang basin has, annual benefit to be brought by the implementation of the sub-project is estimated at 15 % of the total benefit of Stage III works. Therefore, Rp. 188.738 billion times 15 % equals Rp. 28.310 billion. Specific annual benefit becomes Rp. 3.775 billion/km^2.

5. Palembang Sub-project (South Sumatra Province)

5.1 General

According to the Sector H in Supporting Report Volume 3, The Study on Comprehensive Water Management of Musi River Basin in the Republic of Indonesia prepared in September 2003, benefit of the Bendung River Drainage Improvement Project is expressed by the difference between the expected flood damages of "without project" and "with project."

5.2 Asset in Project Area

Following assets are counted for damage estimation.

(a) General Assets

- House (79 permanent/semi-permanent houses and 3 simple houses in 2002)
- Household goods (TV, cupboard, bed, table/chair, radio-cassette player, etc.)

(b) Infrastructure

- Road (2.4 km trunk road and 2.7 km city road)

5.3 Damage Ratio

Following damage ratio is adopted according to Japanese Standard (May 2000 version) prepared by Ministry of Land, Infrastructure and Transport, which is normally applied in the similar flood control projects in Indonesia.

	Inundation Depth above Floor Level (m)					
Residential Building	0.00 – 0.49	0.50 – 0.99	1.00 – 1.49	1.50 – 1.99	2.00 – 2.99	3.00 -
Building	0.092	0.119	0.266	0.266	0.380	0.834
Household Goods	0.145	0.326	0.508	0.508	0.928	0.991

5.4 Flood Damage

Direct general flood damages in inundation area of 0.82 km^2 are calculated multiplying quantity of building in inundation area by unit asset value and damage ratio corresponding inundation depths.

Major flood damages to infrastructure are damages to national, provincial, and city road. Reduction of maintenance costs for trunk road (2.4 km) and city road (2.7 km) is the benefit of project implementation.

In addition to the direct damages mentioned above, following indirect damages are counted.

- Economic loss due to work absence of flood affected people
- Economic loss due to traffic jam caused by inundation
- Detriment to health

Based on the calculation for 2002, flood damages for 2020 are estimated using population projection and future per capita GDP.

5.5 Annual Benefit brought by Proposed Sub-project

According to the JICA report, 100,000 people in 2002 and 166,000 people in 2020 will directly benefit from the implementation of the project. The expected annual benefits are Rp. 1,620 million for 2002 and Rp. 3,319 million for 2020 both in September 2002 price level. Annual benefit in 2008 price level is calculated at Rp. 6.870 billion using the price escalation of 207 % from 2002 to 2008. Specific annual benefit becomes Rp. 8.340 billion/km^2.

6. Bandung Sub-project (West Java Province)

6.1 General

According to the Implementation Program for Construction Stage-III in Upper Citarum Basin Urgent

Flood Control Project (II) under JBIC Loan IP-497 prepared in September 2007, benefit of the Stage III project is expressed by the difference between the expected flood damages of "without project" and "with project." Upper Citarum Basin Urgent Flood Control Project (III) consists of the following work packages.

Package	River Channel	Improvement Stretch			Length (km)
I	Citarum Upstream River	Kantren	-	Majalaya	5.45 km
II	Citarik Upstream River	Bojong Gempol	-	Citarik	4.87 km
III	Cimande River	Langensari	-	Bojong Menja	9.50 km
IV	Cikijing River	Tanggeung	-	Cikijing	6.68 km
V	Cikeruh River	Ranca Kamuning	-	Sirna Garih	7.65 km
	Cibeusi River	Buah Dua	-	Cipacing	1.36 km
VI	Cisangkuy Upstream R.	Ranca Enggang	-	Kamasan	3.72 km
	Ciputat River	Ciputat	-	Kulalet Hilir	0.96 km
VII	Citalugtug River	Waas	-	Cileutik	4.06 km
Total					**44.30 km**

6.2 Asset in Project Area

Following assets are counted for damage estimation.

(a) General Assets
- Residential house/building
- Household effects
- Commercial building/factory
- Depreciable assets and inventory stock in factory

(b) Agricultural Products
- Paddy
- Upland crops

(c) Road (provincial, regional, district and village roads)

(d) Social Infrastructure (medical, educational, religious and administrative facilities)

6.3 Damage Ratio

Following damage ratio is adopted according to Japanese Standard (1997 version) prepared by Ministry of Land, Infrastructure and Transport, which was applied in the previous Stage I and II project and normally applied in the similar flood control projects in Indonesia.

	Inundation Depth above Floor Level (m)					
	0.00 – 0.49	0.50 – 0.99	1.00 – 1.49	1.50 – 1.99	2.00 – 2.99	3.00 -
Residential Building						
Building	0.053	0.072	0.109	0.109	0.152	0.220
Household Effects	0.086	0.191	0.331	0.331	0.499	0.690
Non-residential Building						
Depreciable Assets	0.180	0.314	0.419	0.419	0.539	0.632
Inventory Stock	0.127	0.276	0.379	0.379	0.479	0.562

Inundation Depth	0.00 – 0.49 m				0.50 – 0.99 m				1.00 m -			
Duration (Days)	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -
Lowland Paddy	0.21	0.30	0.36	0.50	0.24	0.44	0.50	0.71	0.37	0.54	0.64	0.74
Upland Crop	0.27	0.42	0.54	0.67	0.35	0.48	0.67	0.74	0.51	0.67	0.81	0.91

6.4 Flood Damage

Direct general flood damages in the inundation area are calculated multiplying quantity of building/agricultural land in flooding area by unit asset value and damage ratio corresponding inundation depth/duration. In addition to the direct damages mentioned above, indirect damages are counted. Indirect damages are assumed at 5 % of general direct damages.

6.5 Annual Benefit brought by Proposed Sub-project

According to the Subject Report on Economic Evaluation for Review of Flood Control Plan in Upper Citarum Basin Urgent Flood Control Project (II) under JBIC Loan IP-497 prepared in September 2007, flood inundation survey was conducted for February 2005 flood. Within the survey area of 282 km^2 in Bandung basin, whole inundation area expanded 44 km^2 and inundation area in Dayeuhkolot is reported 2.67 km2. Following are the inundation survey results, especially on Dayeuhkolot area.

	Survey Area		Beneficial Area		Dayeuhkolot	
	Total	Inundated	Total	Inundated	Total	Inundated
Administrative area (km^2)	704.45	-	404.11	-	11.03	-
Population (thousand)	2,190.3	-	1,400.9	-	105,6	-
Survey area (km^2)	281.94	44.05	214.82	37.08	8.10	2.67
Houses (nos.)	243,240	39,960	194,915	38,438	18,955	4,549
Paddy (km^2)	129.21	22.50	100.12	19.20	1.41	0.46
Upland crop area (km^2)	55.80	10.46	46.62	9.27	0.34	0.11
Factories (nos.)	1,349	257	763	118	89	21
Road (km)						

	Survey Area		Beneficial Area		Dayeuhkolot	
	Total	Inundated	Total	Inundated	Total	Inundated
Provincial road	39.8	6.893	28.8	4.99	2.00	1.86
Regional road	194.2	24.73	182.2	22.69	6.00	1.58
District road	55.7	17.65	46.7	16.07	8.00	6.54
Village road	468.4	171.91	378.2	147.65	25.30	10.90
Social facilities (nos.)	5,486	965	4,233	812	349	115

The expected annual benefit by Stage III is reported at Rp. 83.839 billion in 2007 price level, while the Cikapundung diversion channel is not included in the proposed Stage III works. Annual benefit in 2008 price level is calculated at Rp. 95.577 billion using the price escalation of 114 % from 2007 to 2008. The beneficial area by the construction of the diversion channel occupies 30 % of Dayeuhkolot area, therefore, the annual benefit becomes at Rp. 3.392 billion in proportion to the number of inundated houses (Rp. 97.577 billion x 5,549/38,438 x 30 %). Specific annual benefit is calculated at Rp. 4.235 billion/km^2.

7. Surabaya-Wonokromo Sub-project (East Java Province)

7.1 General

There is no available data on economic evaluation for Wonokromo Sub-project. Therefore annual benefit for this sub-project is estimated using specific annual benefit per km^2.

7.2 Inundation Area

Existing inundation damage area expands on both banks downstream of Jl. Raya Nginden Bridge with 2.5 km^2 concentrated to the western or upstream densely-built housing area.

7.3 Affected People and Households

Left bank or northern area belongs to Sukosilo District, while Rungkat District expands right bank or southern area, both in Surabaya City. These two (2) districts have fishponds in their eastern part along seacoast. According to the statistic data of Surabaya in 2005, number of population and households are as follows:

Kecamatan (District)	Area (km^2)	Population	Population Density (person/km^2)	Household	Household Density (nos./km^2)
Sukosilo	23.68	100,148	4,227.24	29,793	1,258.15
Rungkat	21.08	111,286	5,279.22	34,479	1,635.63
Total	44.76	211,434	4,723.73	64,272	1,435.92

In these districts, housing area occupies 60 % and remaining 40% is fishpond area. Therefore population density and household density in flooding area are estimated at **7,870 person/km^2** and **2,390 households/km^2**, respectively. These values are close to those in central part of Palembang City presented below.

Kecamatan (District)	Area (km^2)	Population	Population Density (person/km^2)	Household	Household Density (nos./km^2)
Ilir Timur I	6.50	80,599	12,399.85	16,604	2,554.46
Kemuning	9.00	85,351	9,483.44	19,656	2,184.00
Total	15.50	165,950	**10,706.45**	36,260	**2,339.35**

7.4 Annual Benefit brought by Proposed Sub-project

As the population density and household density in Surabaya-Wonokromo sub-project are similar to those of Palembang sub-project, the specific annual benefit of Rp. 8.340 billion/km^2 is applied for the Wonokromo sub-project. Annual benefit of Wonokromo sub-project becomes Rp. 20.850 billion (= Rp. 8.340 billion/km^2 x 2.50 km^2).

8. Surabaya-Brangkal Sub-project (Mojokerto, East Java Province)

8.1 Genaral

There is no available data on economic evaluation for Brangkal Sub-project. Therefore annual benefit for this sub-project is estimated using specific annual benefit per km^2.

8.2 Inundation Area

Existing inundation damage area expands downstream of the provincial road bridge with 1.8 km^2.

8.3 Annual Benefit brought by Proposed Sub-project

Population density of Mojokerto City is 6,833 person/km^2, and this value is about 70 % of that of Dayeuhkolot in Bandung sub-project. As the specific annual benefit of Dayeuhkolot is Rp. 4.235 billion/km^2, specific annual benefit of Brangkal sub-project is estimated at Rp. 2.965 billion/km^2. Then the expected annual benefit by implementation of Brangkal sub-project becomes Rp. 5.334 billion.

9. Gorontalo Sub-project

9.1 General

According to the Supporting Report: Part C (Feasibility Study for Priority Projects) in Volume-V,

The Study on Flood Control and Water Management in Limboto-Bolango-Bone Basin in the Republic of Indonesia prepared by JICA in December 2002, benefit of the Bolango-Tapadu River Improvement is expressed by the difference between the expected flood damages of "without project" and "with project." About 20 thousand people in 25 km2 will be affected by flood of the Bolango River with 20-year return period.

9.2 Asset in Project Area

Following assets are counted for damage estimation.

(a) General Assets
- Residential house/building (5,040 nos.)
- Household effects

(b) Manufacturing Sector (330 nos.)

(c) Wholesale and Retail Trade Sector (460 nos)

(d) Agricultural Products
- Irrigated paddy field (1,148 ha)
- Rainfed paddy field (82 ha)
- Upland crops

(e) Fishpond Products (25 ha)

(f) Educational (35) and Medical (23) Facilities

9.3 Damage Ratio

Following damage ratio is adopted according to Japanese Standard (May 2000 version) prepared by Ministry of Land, Infrastructure and Transport, which is normally applied in the similar flood control projects in Indonesia.

	Inundation Depth above Floor Level (m)					
	0.00 – 0.49	0.50 – 0.99	1.00 – 1.49	1.50 – 1.99	2.00 – 2.99	3.00 -
Residential Building						
Building	0.092	0.119	0.266	0.266	0.380	0.834
Household Goods	0.145	0.326	0.508	0.508	0.928	0.991
Non-residential Building						
Depreciable Assets	0.232	0.453	0.789	0.789	0.966	0.995
Inventory Stock	0.128	0.267	0.586	0.586	0.897	0.982

Inundation Depth	0.00 – 0.49 m				0.50 – 0.99 m				1.00 m -			
Duration (Days)	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -	1 - 2	3 - 4	5 - 6	7 -
Lowland Paddy	0.21	0.30	0.36	0.50	0.24	0.44	0.50	0.71	0.37	0.54	0.64	0.74
Upland Crop	0.27	0.42	0.54	0.67	0.35	0.48	0.67	0.74	0.51	0.67	0.81	0.91

9.4 Flood Damage

Direct general flood damages in the inundation area of 29 km^2 are calculated multiplying quantity of building/agricultural land in flooding area by unit asset value and damage ratio corresponding inundation depth/duration.

Direct flood damage to public facilities such as road, bridge, power supply facilities, water supply facilities, telecommunication facilities, irrigation facilities is assumed at 30 % of damages to the general direct damages.

In addition to the direct damages mentioned above, following are selected as indirect flood damage.

(a) Residence, clearing away materials damaged after inundation,

(b) Business losses of private business enterprises, and

(c) Other indirect damages.

9.5 Annual Benefit brought by Proposed Sub-project

According to the JICA report, total inundation area by 20-year flood of Bolango-Tapadu River system is 25.44 km^2 and the beneficial area by the improvement of the Bolango River is 2.75 km^2, 10.81 % of the total.

Annual benefit by the improvement of Bolango-Tapadu River system is Rp. 30.490 billion in 2001 November price level. This value is equivalent to Rp. 66.468 billion in 2008 price level using the price escalation of 218 % from 2001 to 2008. Accordingly the annual benefit by Bolango improvement works is Rp. 7.186 billion (= Rp.66.468 billion x 10.81 %). Specific annual benefit becomes Rp. 2.613 billion/km^2.

ANNEX 4:

COMMITMENT LETTERS (Padang and Gorontalo)

Padang

PEMERINTAH PROPINSI SUMATERA BARAT

DINAS PENGELOLAAN SUMBER DAYA AIR

Jln. Khatib Sulaiman No. 106 Telp. (0751) 57801 – 57802 – 57803 fax. (0751) 50424

PADANG (25133)

TELAAHAN STAF

No. 903/1230/PSDA-IV/2006.

Kepada Yth : **Gubernur Sumatera Barat**

Dari : **Kepala Dinas PSDA Sumatera Barat**

Perihal : **Usulan Dana Pengadaan Tanah dan Bangunan untuk Pelaksanaan Pengendalian Banjir Bt. Anai - Kandis**

Tanggal : *28* **Maret 2006**

Sehubungan dengan Surat Bapak No.614/603/PSDA-IX/2005 tanggal 26 September 2005 yang ditujukan kepada Menteri Pekerjaan Umum, Menteri Perencanaan Pembangunan Nasional/Ketua Bapenas dan Menteri Keuangan Republik Indonesia (terlampir) perihal Usulan Padang Area Flood Control Project III dan kami mendapat tembusannya, bersama ini dengan hormat kami sampaikan hal-hal sebagai berikut :

1. Rencana Pembebasan Tanah dan Bangunan yang terkena kegiatan Padang Area Flood Control Project III (Pengendalian Banjir Batang Anai - Kandis) meliputi Batang Anai sepanjang 11.788 m, Batang Kandis sepanjang 3.179 m dan Batang Kasang sepanjang 4.621 m, maka untuk tapak kegiatan perlu dilaksanakan pembebasan tanah seluas ± 130.5 Ha dan bangunan 165 unit.

2. Untuk rencana pembebasan tanah seluas ± 130.5 Ha dan bangunan 165 unit diperlukan dana sebesar Rp. 34.6 Milyar. Dari Pemerintah Pusat melalui APBN tahun 2001 s/d 2005 telah dibebaskan tanah seluas ± 18,71 Ha dan masih tersisa 111,79 Ha dengan perkiraan dana sebesar Rp. 32.708.397.863,- (terlampir rencana dan realisasi pembebasan tanah yang telah dilaksanakan).

3. Untuk menunjang kelancaran pelaksanaan Padang Area Flood Control Project III (Pengendalian Banjir Bt. Anai - Kandis) sesuai dengan maksud surat Bapak tersebut pada butir 4 dimana telah disepakati porsi pembayaran pembebasan tanah untuk Pemerintah Pusat 50 %, Pemerintah Propinsi Sumatera Barat 25 %, Pemerintah Kota Padang 12.5 % dan Pemerintah Kabupaten Padang Pariaman 12.5 % dapat ditindaklanjuti.

4. Berdasarkan hal tersebut diatas, mohon bantuan Bapak Gubernur, untuk mengalokasikan dananya melalui APBD Propinsi Sumatera Barat dan mohon juga bantuan Bapak menyampaikan program ini kepada Bapak Bupati Padang Pariaman dan Walikota Padang agar dana yang telah disepakati tersebut secara bertahap dapat direalisasikan mulai Tahun Anggaran 2007 mendatang.

Demikian usulan ini disampaikan, atas perhatian dan petunjuk Bapak selanjutnya kami ucapkan terima kasih.

PEMERINTAH PROPINSI

KEPALA DINAS

GUBERNUR SUMATERA BARAT

Nomor : 614 / 603 / PSDA - IX / 2005
Lampiran :
Perihal : Usulan Padang Area Flood Control Project III

Padang, 26 September 2005

Kepada Yth;
1. Menteri Pekerjaan Umum
2. Menteri Perencanaan Pembangunan Nasional / Ketua Bappenas
3. Menteri Keuangan

di-
JAKARTA

Sehubungan dengan rencana pelaksanaan Padang Area Flood Control Project III (Pengendalian Banjir Anai – Kandis) bersama ini dengan hormat kami sampaikan hal-hal sebagai berikut :

1. Kami atas nama masyarakat Sumatera Barat mengucapkan terima kasih kepada Pemerintah Pusat atas telah terealisasinya pelaksanaan Padang Area Flood Control Project I dan II yang manfaatnya telah dirasakan oleh masyarakat, selanjutnya masyarakat sangat berharap, mendukung dan akan berpartisipasi dalam pelaksanaan Padang Area Flood Control Project III.
2. Rencana pelaksanaan Padang Area Flood Control Project III (Pengendalian Anai – kandis) merupakan lanjutan dari tahapan pelaksanaan Padang Area Flood Control Project I dan II untuk mengamankan areal seluas 6000 Ha dari bencana banjir yang meliputi daerah pemukiman: 1850 ha, Pertanian: 3000 ha, daerah perindustrian: 650 ha, Bandara Internasional Minangkabau: 500 ha.
3. Untuk pelaksanaan tapak kegiatan dimaksud dibutuhkan pembebasan lahan seluas 130,5 ha dimana sampai TA.2005 sudah terealisasi 30 %
4. Sesuai dengan rapat tanggal 8 Januari 2005 diruang Sidang Direktorat Bina Teknik Sumber Daya Air telah disepakati porsi pembayaran pembebasan tanah adalah Pemerintah Pusat 50%, Pemerintah Propinsi Sumatera Barat 25%, Pemerintah Kota Padang 12,5% dan Pemerintah Kabupaten Padang Pariaman 12.5 %.

5. Selanjutnya perlu kami sampaikan bahwa setelah selesainya pelaksanaan konstruksi, kami Pemerintah Propinsi Sumatera Barat akan berpartisipasi dalam kegiatan Operasi dan Pemeliharaan Sungai seperti partisipasi kami dalam Operasi dan Pemeliharaan tahap I dan II.

Berdasarkan hal tersebut diatas, kami Pemerintah Propinsi Sumatera Barat beserta masyarakat siap untuk mendukung serta berpartisipasi untuk menerima kegaitan ini.

Demikianlah, atas perhatian dan persetujuan Bapak dan Ibu Menteri kami ucapkan terima kasih

Gubernur Sumatera Barat

GUBERNUR SUMATERA BARAT

H. GAMAWAN FAUZI

Tembusan disampaikan kepada Yth:
1. Direktur Jenderal Sumber Daya Air Departemen Pekerjaan Umum
2. Deputi Pendanaan Pembangunan Bappenas
3. Deputi Sarana dan Prasarana Beppenas
4. Direktorat Jenderal Anggaran Departemen Keuangan
5. Wali Kota Padang
6. Bupati Padang Pariaman
7. Kepala Dinas Pengelolaan Sumber Daya Air Propinsi Sumatera Barat
8. Kepala SKS Pengendalian Banjir dan Pengamanan Pantai Sumatera Barat
9. Arsip

Gorontalo

DEPARTEMEN PEKERJAAN UMUM
DIREKTORAT JENDERAL SUMBER DAYA AIR
BALAI WILAYAH SUNGAI SULAWESI II
Jln. Gunung Tilongkabila No. 71 Telp.(0435) 882272 Limboto-Email: bws_sul2banjir@yahoo.co.id

Nomor : Pr.01.01/BWS-SUL.II./ 37 Gorontalo, 9 Juli 2008
Lampiran : -

Kepada Yth.
Bapak Gubernur Gorontalo
c/q Sekretaris Daerah Provinsi Gorontalo
di -
Gorontalo

Perihal : Permohonan Comitment Letter Land Acquisition

Sehubungan dengan adanya persetujuan dari JBIC mengenai Proposal Urban Flood Control System Improvement on Selected Cities untuk penanganan Banjir Kota Gorontalo pada Satuan Kerja Balai Wilayah Sungai Sulawesi II, maka dengan hormat mohon kiranya kami mendapatkan Surat Comitment Letter Land Acquisition sebagai pelengkap data yang dibutuhkan.

Demikian kami sampaikan, Atas Perkenaan Bapak diucapkan Terima Kasih.

Kepala Balai Wilayah Sungai Sulawesi II

Ir. SUGIARTO, Dipl. HE
NIP. 110 026 630

Tembusan Yth.:
1. Bapak Direktur Sungai, Danau dan Waduk Ditjen SDA di Jakarta
2. Ketua Bappeda Provinsi Gorontalo
3. Kepala Dinas PU Kimpraswil Provinsi Gorontalo
4. Arsip.

PEMERINTAH PROVINSI GORONTALO
SEKRETARIAT DAERAH
Jl. Sapta Marga Kel. Botu Kec. Kota Timur Telp. (0435) 827484 Fax.(0435) 828281

SURAT PERNYATAAN

NO. 100/Pem/1556/VIII/2008.-

Memperhatikan Surat Kepala Balai Wilayah Sungai Sulawesi II No. Pr.01.01/BWS-Sul.II/37 tanggal 9 Juli 2008, perihal Permohonan *Comitment Letter Land Acquisition*, maka Pemerintah Provinsi Gorontalo dengan ini menyatakan sebagai berikut :

1. Bahwa pada prinsipnya Pemerintah Provinsi Gorontalo akan menyiapkan lahan untuk kebutuhan penanggulangan banjir Kota Gorontalo.
2. Bahwa lahan dimaksud terdapat di wilayah Kota Gorontalo dan Kabupaten Bone Bolango serta diproses sesuai peraturan perundangan yang ada.

Demikian surat pernyataan ini untuk digunakan seperlunya.

Gorontalo, 29 Juli 2008
GUBERNUR GORONTALO
SEKRETARIS DAERAH

PEMERINTAH PROVINSI GORONTALO SEKRETARIAT DAERAH

Drs. H. IDRIS RAHIM, MM
PEMBINA UTAMA MADYA
NIP. 560 004 832

ANNEX 5:

DRAFT PROJECT STATUS REPORT

Draft Project Status Report (PSR)

Project Status Report on Urban Flood Control System Improvement in Selected Cities Loan Agreement No. IP-XXX

Organization Information

Borrower	The Government of Indonesia	
	Person in Charge	XXXXX
		(Division)
	Contacts	Address:
		Phone/FAX:
		Email:
Executing Agency	Ministry of Public Works	
	Person in Charge	XXXXX
		(Division)
	Contacts	Address:
		Phone/FAX:
		Email:
Guarantor	Not Applicable	
	Person in Charge	
		(Division)
	Contacts	Address:
		Phone/FAX:
		Email:

Outline of Loan Agreement:

Source of Finance	JICA: Not exceeding ¥ 7,490 mil. (=US$ 70 mil. x 107) Government of Indonesia: XXXX Rupiah
Terms and Conditions	For JICA - Interest Rate: 1.40% p.a. (other than consulting services) 0.10 % p.a. (consulting services) - Repayment Period: 30 years, including 10 years of grace period (other than consulting services) 30 years, including 10 years of grace period (consulting services) - Tying Status General Untying (Japan tied for consulting service)

1: Project Description (Relevance)

1-1 Project Objective

Original: (P/M)

The objective of the Project is to mitigate flood damage in important urban cities vulnerable against flood damage by improving flood control infrastructure, assisting developing integrated river basin plans, upgrading administrative capacity of river basin management offices, and strengthening flood early warning systems, and thereby contribute to economic and industrial development in urban cities in Indonesia.

Modified objective and its reason(s): (P/R and PCR)

1-2 Necessity and Priority of the Project

- Consistency with development policy, sector plan, national/regional development plans and demand of target group and the recipient country.

Original: (P/M)

Indonesia of which population in 215 million has been accomplished stable economic development after the economic crisis in late 1990s. However, economic disparity among region/provinces is still large and the large portions of assets and economic activities are concentrated in Java Island, especially in Jakarta.

In the Mid-term National Development Plan (RPJM) 2004-2009, "Decrease of Regional Development Gap" is one of the basic targets under the national development agenda of "Enhancing the prosperity of Indonesia people." To achieve the balanced development among the regions and mitigate economic disparity, infrastructure improvement in urban cities across the nation is one of the effective measures as well as rural area development program.

However, most of the major regional cities have suffered from natural disasters such as flood, earthquake and land slide therefore, stable economic development has been discouraged in the cities. Especially, flood disaster is the major obstacle, and flood damage causes not only direct physical loss of infrastructure/buildings but also indirect economical/social loss due to suspension of economic activities and/or increase of the poor, which is one adverse factor of sustainable economic development in Indonesia

According to the database on International Disaster (OFDA/CRED), the number of flood disaster over the past 10 years arose forty seven (47) including 2,592 of death toll, 3,023,310 of affected people and US$ 1,613 million in Indonesia. The number of flood disaster is the largest among other natural disasters such as earthquake, land slide and epidemic. In addition, the number of flood disaster over the past 10 years in Indonesia is the largest among that of other Southeast Asia countries.

Moreover, flood menace caused by the climate change will worsen the situation of flood impact so that the further strengthening of management capacity against flood and improvement of related infrastructures are necessary.

Under the above circumstances, the Government of the Republic of Indonesia (GOI) stipulates in the RPJM that the mitigation of flood damage under the comprehensive water resources management is one of the important strategy programs with promotion of construction/improvement of flood mitigation infrastructures and disaster mitigation activities through public involvement. In addition, the Law on Water Resources (U.U. No.7, 2004) stipulated that 1)to cope with unbalance between decreasing water availability and increasing demands for water, water resources must be managed by considering social, environmental and economic functions in a harmonious way, 2) water resource management shall mean the efforts of planning, implementing, monitoring, and evaluating the conservation and utilization of water resources as well as the control of the destructing power of water, and 3)improvement of water management system is conducted drafting the regulations on water resources committee.

Actual: (P/R and PCR)

1-3 Rationale of the Project Design

- Timing, scale, technology of the project

Original: (P/M)

【Scope of the Project】

The Project is a Sector Loan, which composes of sub-projects in multiple cities across the country. Currently, six (6) sub-projects in five (5) cities nationwide are the targets of this Project. The screening of the target subproject is conducted by using two-stage selection criteria: "priority" and "readiness". Firstly, long-listed sub-projects are selected in terms of immediate priority, such as the volume of direct and indirect flood damage, the frequency of flood, and the existence of economic disparity, important infrastructure and existing flood control facilities; therefore, 17 sub-projects in 14 cities are in the list as of this moment. (The result of the first screening is attached as Attachment 1). Secondly, short-listed sub-projects are selected from the said long-list in terms of the maturity of project preparation, namely, readiness, i.e. the status of project design preparation, such as the existence of preliminary studies, master plans, feasibility studies, and detailed designs, and the status of environmental and social safeguard consideration, such as EIA and LARAP preparation and the scale of land acquisition and resettlements. (The result of the second screening is attached as Attachment 1).

In this Project, physical construction works to reduce flood damage and consulting services to respond to climate change will be conducted for each short-listed sub-project.

【Scope of Short listed Sub-projects】

At this moment, the GOI expects that the short-listed 6 sub-projects in 5 cities, listed below, are of the immediate priority. However, these sub-projects are replaceable in consideration of changing circumstances in Indonesia as far as sub-projects are listed in the long-list and can be covered within the total cost of the loan amount as stated in Section 2-3, Project Cost. The GOI shall submit the Implementation Plan to justify the necessity and readiness of each sub-project and obtain JICA's concurrence prior to commencement of

sub-projects.

1) Padang Sub-project

(a) Rivers to be improved

Anai River channel improvement from river mouth to the section around 50m upstream of the Bypass Bridge with the river length of 4,100m, and construction of river structures (Muaro Bungo Bridge and Sasak Ubi Gate are excluded)

(b) Design scale and design discharge

Design discharge: 1,300 m^3/s for whole stretches (25-year return period)

(c) Channel dimensions

- Longitudinal slope:	1/1,950
- Water depth:	6.5 m
- Velocity in design flood:	2.67 m/s
- Channel width at design high-water level:	144 m
- Bank slope of channel:	1 : 2
- Required width of channel:	172 m

(d) Work quantity (to be Revised)

- Temporary coffering by SSP:	2,445 m
- Chanel excavation:	1,050,000 m^3
- Embankment:	110,000 m^3
- Closing dike:	4 sites
- Bank protection by wet masonry:	945 m
- Inspection road with side drain:	7,657 m
- Access road:	20 units
- Box culvert:	5 nos.
- Pipe culvert:	20 nos.

2) Palembang Sub-project

(a) Rivers to be improved

Bendung River for 5.5 km from the confluence with the Musi River to Talang Aman Pond

(b) Design scale and design discharge

45.5 m3/s at the mouth to 14.2 m3/s at the outlet of Talang Aman Pond with 15-year return period

(c) Channel dimensions

- Channel width: 10 to 15 m (existing channel width)
- Channel excavation: 1.0 m in average.
- Longitudinal bed slope: 1/5,500
- Bank slope: existing with protection works

(d) Work quantity

- Channel bed excavation (including hauling and disposal): 110,000 m^3
- Protection of existing revetment: 32,400 m^3
- Miscellaneous work: L/S

3) Bandung Sub-project

(a) Design scale and design discharge: 60 m^3/s (5-year return period)

(b) Channel dimensions:

- channel width: 8.0 m
- water depth: 3.0 m
- longitudinal slope 1/1,000

(c) Work quantity:

- excavation: 57,500 m3
- wet stone masonry 2,760 m3
- Moh Toha Road bridge 1 nos.
- I/M road bridge at outlet 1 nos.
- diversion structure at inlet 1 nos.

4) Surabaya (Wonokromo R.) Sub-project

- Left bank
  WO.003 + 378 ~ WO.005 + 505 : 2,127 m
- Right bank
  WO.002 + 376 ~ WO.002 + 926 : 550 m
  WO.003 + 248 ~ WO.006 + 326 : 3,078 m
  Sub-total : 3,628 m
- Total 5,755 m

5) Surabaya (Brangkal R.) Sub-project

- Channel normalization: 8.0 km from confluence with Ngotok River to Provincial Road
- Improvement of Weir: 1 nos. (Prajurit Kulon Weir)

- Procurement of mobile pump: 5 sets

6) Gorontalo Sub-project

(a) Rivers to be improved

Bolango River channel improvement from river mouth to the confluence with the Tapadu River for 5.3 km and construction of river structures including reconstruction of 3 bridges.

(b) Design scale and design discharge

200 m^3/s for whole stretches with return period of 20-year (under master plan)

(c) Channel dimensions

- Longitudinal slope:	1/1,200
- Water depth:	4.0 m
- Velocity in design flood:	2.67 m/s
- Channel width at design high-water level:	32.6 m
- Bank slope of channel:	1 : 2
- Required width of channel:	about 50 m

(d) Procurement of mobile pump: 5 sets

【Technology】

No specific technology is required.

Actual: (P/R and PCR)

2: Project Implementation (Efficiency)

2-1 Project Scope

Table 2-1-1a: Comparison of Original and Actual Location

Location	Original: (P/M) Nationwide, Indonesia. The locations of candidate sub-projects currently listed in the short-list are as follows: 1) Padang Sub-project • Padang City and Padang Pariaman Regency in West Sumatra Province 2) Palembang Sub-project • Palembang City in South Sumatra Province 3) Bandung Sub-project • Bandung Regency in West Java Province 4) Surabaya (Brangkal R.) Sub-project • Mojokerto City in East Java Province 5) Surabaya (Wonokromo R.) Sub-project • Surabaya City in East Java Province 6) Gorontalo Sub-project • Gorontalo City and Gorontalo Regency in Gorontalo Province Attachment 2: Location Maps	Actual: (P/R & PCR)

Table 2-1-1b: Comparison of Original and Actual Scope

Items	Original	Actual
As stated in Scale of Sub-projects, Section 1-3 Rationale of the Project Design, the below sub-projects are of high priority at this moment (short-listed sub-projects). Each sub-project will include construction works and programs responding to climate change. The GOI shall submit Implementation Plan and obtain JICA's concurrence prior to the commencement of each sub-project. The process of sub-project determination and detailed description of each item of Implementation plan are shown as Attachment 3 and 4 respectively.		
(P/M) 1 Padang Sub-project Civil Works	(P/M) (Attachment 5)	(P/R and PCR)

(a) Design scale		
Design discharge	1,300 m^3/s (25-yr)	
(b) Channel dimensions		
Longitudinal slope	1/1,950	
Water depth	6.5 m	
Channel width at DHWL	144 m	
Bank slope of channel	1:2	
Required wieth of channel	172 m	
(c) Work quantity		
Temporary coffering by SSP	2,445 m	
Channel excavation	1,050,000 m^3	
Embankment	110,000 m^3	
Closing dike	4 sites	
Bank protection by wet masonry	945 m	
Inspection road with side drain	7,657 m	
Access road	20 units	
Box culvert	5 nos.	
Pipe culvert	20 nos	
Consulting Services	Detailed design for Anai-Kandis River Improvement in Padang Area Flood Control Project (III) was prepared in 2001. As the channel condition has changed remarkably due to APBN improvement works and sand mining, review of detailed design is necessary including subletting of channel survey. Unit construction cost will also be reviewed. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BWS Sumatra V and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of flood due to climate change (b) Strengthen of Disaster Prevention and Preparedness for community and local government	

	(c) Enhancement of O/M for flood control facilities (d) Enhancement of simple early warning system	
2 Palembang Sub-project Civil Works (a) River improvement Bendung River	(Attachment 6) L=5.5km (from river mouth to Talang Aman Pond)	
(b) Design scale Design discharge	$45.5m^3/s$ at the river mouth to $14.2m^3/s$ at the oulet of Talang Aman Pond (15-year)	
(c) Channel dimensions Channel width Channel excavation Longitudinal bed slope Bank slope	 10 to 15 m 1.0 m in average 1/5,500 Existing with protection works	
(d) Work quantity Channel bed excavation Protection of existing revetment	 110,000 m^3 32,400 m^3	
Consulting Services	Detailed design for the Bendung River was prepared in 2003 based on the drainage plan with pump drainage. On the other hand, JICA Feasibility Study proposed gravity drainage in September 2003. Therefore during the review of detailed design, the drainage plan for the Bendung River will be examined together with channel profile survey by subletting for quantity estimate. Unit construction cost will also be reviewed. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BWS Sumatra VIII and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of	

	flood due to climate change (b) Strengthen of Disaster Prevention and Preparedness for community and local government (c) Improvement of watershed management plan	
3 Bandung Sub-project Civil Works (a) Design scale Design discharge (b) Channel dimensions Channel width Water depth Longitudinal slope (c) Work quantity Excavation Wet stone masonry Moh Toha Road bridge I/M road bridge at outlet Diversion structure at inlet	(Attachment 7) 60 m^3/s (5-year) 8.0 m 3.0 m 1/1,000 57,500 m^3 2,760 m^3 1 nos. 1 nos. 1 nos.	
Consulting Services	Detailed design for the Cikapundung Diversion Channel was prepared in March 2008. Review of detailed design will be carried out concentrating the review of unit construction cost. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BBWS Citarum and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of flood due to climate change (b) Strengthen of Disaster Prevention and Preparedness for community and local government (c) Enhancement of O/M for flood control facilities (d) Capacity strengthen of	

	meteorological/hydrologic al observation (e) Enhancement of simple Early Warning System (g) Improvement of watershed management plan	
4 Surabaya (Wonokromo R.) Sub-project	(Attachment 8)	
Civil Works (Wonokromo R.) Sub-project		
Earth dike with concrete sheet-pile		
Left bank	2,127 m	
Right bank	3,628 m	
Consulting Services	Detailed design for the Wonokromo River was prepared in 2005. But the revision of structure design might be necessary considering the geological condition along the channel. Channel profile survey and detailed soil-mechanical investigation will be conducted by subletting. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BBWS Brantas and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of flood due to climate change (b) Enhancement of O/M for flood control facilities	
5 Surabaya (Brangkal) Sub-project	(Attachment 9)	
Civil Works		
Channel normalization	8.0 km from confluence with Ngotok River to Provincial Road	
Improvement of weir	1 nos. (Prajurik Kulon Weir)	
Procurement of mobile pump	5 sets	
Consulting Services	Detailed design for the	

	Brangkal River Basin was prepared in 2005 for the basin conservation. It is judged the current detailed design is insufficient for the proposed project works. Channel profile survey will be conducted by subletting for channel design and quantity estimate. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BBWS Brantas and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of flood due to climate change (b) Strengthen of Disaster Prevention and Preparedness for community and local government (c) Enhancement of O/M for flood control facilities (d) Enhancement of simple Early Warning System (e) Improvement of watershed management plan	
6 Gorontalo Sub-project Civil Works (a) River improvement Bolango River River structures (b) Design scale Design discharge (c) Channel dimensions Longitudinal slopte Water depth Channel width at DHWL Bank slope of channel (d) Procurement of mobile pump	(Attachment 10) 5.3 km form river mouth to the confluence with the Tapadu River 200 m^3/s (20-year) 1/1,200 4.0 m 32.6 m 5 sets	

Consulting Services	Detailed design for the Bolango River was prepared in 2007. Channel profile survey will be conducted by subletting for channel design and quantity estimate. Subsequently, the consultant will carry out the services of assistance in tendering and construction supervision. In parallel with these services, engineering services on adaptation of climate change will be conducted with participants from BWS Sulawesi II and inhabitants.	
Adaptation of Climate Change	(a) Assessment on vulnerabilities and risks regarding the impact of flood due to Climate Change (b) Strengthen of Disaster Prevention and Preparedness for community and local government (c) Enhancement of O/M for flood control facilities (d) Enhancement of simple Early Warning System (e) Improvement of watershed management plan	

2-1-2 Reason(s) for the modification if there have been any.

(P/R and PCR)

2-2 Implementation Schedule

Table 2-2-1: Comparison of Original and Actual Schedule

Items	Original	Actual
The below schedule is for short-listed sub-projects. Even if the sub-projects are replaced or the scope of sub-projects is modified, the overall Project shall be completed by the date of final disbursement.		
(P/M) 1) Selection of Consultant 2) P/Q, Tender and Contract Padang Sub-project	(P/M) Mar. 2009 - Dec. 2009 Jul. 2010 - Oct. 2011	(P/R, PCR)

Palembang Sub-project	Jul. 2010 - Jul. 2011	
Bandung Sub-project	Jun 2010 - Jun 2011	
Surabaya (Wonokromo) Sub-project	Jul. 2010 - Oct. 2011	
Surabaya (Brangkal) Sub-project	Jul. 2010 - Jul. 2011	
Gorontalo Sub-project	Jul. 2010 - Jul. 2011	
3) Civil Works		
Padang Sub-project	Nov. 2011 - Apr. 2014	
Palembang Sub-project	Aug. 2011 - Jul. 2013	
Bandung Sub-project	Jul.. 2011 - Oct. 2013	
Surabaya (Wonokromo) Sub-project	Nov. 2011 - Jul. 2013	
Surabaya (Brangkal) Sub-project	Aug. 2011 - Jul. 2013	
Gorontalo Sub-project	Aug. 2011 - Jul. 2013	
4) Consulting Services	Jan. 2010 - Jul. 2014	
5) Adaptation of Climate Change	Jan. 2010 - Jul. 2014	
Project Completion Date*	**** 2015	
Attachment 11: Implementation Schedule		

* Project completion on the "Sector Program Loan" is defined as the expiration of the loan period.

2-2-2 Reasons for any changes of the schedule, and their effects on the project

(P/R and PCR)

2-3 Project Cost

2-3-1

Table 2-3-1a: Comparison of Original and Actual cost BY ITEM

Unit: (JPY mil (Foreign)

Breakdown of Cost	Original								
	Foreign Currency Portion			Local Currency Portion			Total		
	Total	JICA Portion	Others	Total	JICA Portion	Others	Total	JICA Portion	Others
Item	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)
(P/M)									
Padang Sub-project	560	560	0	1,440	1,440	0	2,000	2,000	0
Palembang Sub-project	29	29	0	450	450	0	479	479	0
Bandung Sub-project	24	24	0	206	206	0	230	230	0
Surabaya (Wonokromo) Sub-project	141	141	0	1,313	1,313	0	1,454	1,454	0
Surabaya (Brangkal) Sub-project	63	63	0	309	309	0	371	371	0
Gorontalo Sub-project	158	158	0	280	280	0	438	438	0
Price Escalation	102	102	0	962	962	0	1,065	1,065	0
Physical Contingency	54	54	0	248	248	0	302	302	0
Consulting Services	419	419	0	732	732	0	1,151	1,151	0
Ordinary Consulting Services	315	315	0	558	558	0	873	873	0
Policy making for Climate Change	69	69	0	32	32	0	101	101	0
Activities for Adaptation of Clomate Change	35	35	0	142	142	0	176	176	0
Land Acquisition	0	0	0	196	0	196	196	0	196
Administration Cost	0	0	0	384	0	384	384	0	384
VAT	0	0	0	769	0	769	769	0	769
Import Tax	0	0	0	0	0	0	0	0	0
Sub-total	**1,551**	**1,551**	**0**	**7,288**	**5,939**	**1,349**	**8,839**	**7,490**	**1,349**
Interest during construction	280	0	280	0	0	0	280	0	280
Commitment Charge	28	0	28	0	0	0	28	0	28
Total	**1,859**	**1,551**	**308**	**7,288**	**5,939**	**1,349**	**9,147**	**7,490**	**1,657**

(Note) Exchange Rate: US$ 1 = IDR 9,291 = ¥ 107 (IDR 1 = ¥ 0.0115)

Assumed rate of Price escalation (including consulting service)

- Foreign currency portion : 2.6%
- Local currency portion : 5.8%

Physical Contingency : 5.0%

Base Year for Cost Estimation: August 2008

You can use any currencies in this chart, i.e. you may use your local currency as well as Yen for each figure.

Unit: (JPY mil (Foreign)

Breakdown of Cost	Actual								
	Foreign Currency Portion			Local Currency Portion			Total		
	Total	JICA Portion	Others	Total	JICA Portion	Others	Total	JICA Portion	Others
Item	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)	(JPY mil)
(P/R PCR) Padang Sub-project Palembang Sub-project Bandung Sub-project Surabaya (Wonokromo) Sub-project Surabaya (Brangkal) Sub-project Gorontalo Sub-project Price Escalation Physical Contingency Consulting Services Ordinary Consulting Services Policy making for Climate Change Activities for Adaptation of Clomate Change Land Acquisition Administration Cost									
VAT									
Import Tax									
Sub-total									
Interest during construction									
Commitment Charge									
Total									

Attachment(s): Disbursement Status

(Note) Exchange Rate: US$ 1 = IDR X = ¥ X (IDR 1 =¥ X)

Assumed rate of Price escalation (including consulting service)

- Foreign currency portion: X.X%
- Local currency portion: X.X%

Physical Contingency: X%

Base Year for Cost Estimation: August 2008

Table 2-3-1b: Comparison of Original and Actual Cost BY YEAR

Fiscal Year starting in January and ending in December

Unit: (JPY mil (JICA Portion)

Breakdown of Cost	Original			Actual		
	JICA Portion	Others	Total	JICA Portion	Others	Total
Year	(JPY mil)	(JPY mil)	(JPY mil)	( )	( )	( )
(P/M)	*(P/M)*	*(P/M)*	*(P/M)*	*(P/R, PCR)*	*(P/R, PCR)*	*(P/R, PCR)*
2009	183	94	89			
2010	692	508	184			
2011	2,648	2,218	430			
2012	3,592	3,059	533			
2013	1,908	1,580	328			
2014	124	31	94			
Total	9,147	7,490	1,657			

Attachment(s): Disbursement Status

(Note) Exchange Rate used (P/R, PCR): US$ 1 = IDR 9291 = ¥ 107 (IDR 1 = ¥ 0.0115)

Base Year for Cost Estimation: August 2008

You can use any currencies in this chart, i.e. you may use your local currency as well as Yen for each figure.

If there is any other portion than your own budget, such as financial resources of the World Bank, ADB and so forth, please fill in another column between "JICA Portin" and "Others" and fill in the figure of them.

2-3-2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken and their results.

(P/R and PCR)

2-4 Organizations for Implementation

2-4-1 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc.,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original: (P/M)

Executing Agency:

Directorate General of Water Resources (DGWR) of Ministry of Public Works (MPW).

Responsibility:

DGWR will be responsible for the implementation of the overall Project including appointing SATKER (Project Management Personnel), supervising preparation of Implementation Plan of each sub-project, requesting review and concurrence of project commencement to JICA, tender process, tender evaluation, contract, supervision of construction, and monitoring and evaluation of the Project.

Others:

The DGWR has no major problems in practical capacity since they have managed a number of similar projects in the whole of Indonesia.

National Project Management Unit (NPMU):

National Project Management Unit shall be established during the Project, which consists of members from related governmental sectors, namely,

Chairperson: Director of River, Lake & Dam (MPW);

Members: Bureau Chairman for Planning & Foreign Cooperation (MPW) and Director of Programming (MPW);

Secretaries: Sub-Director of Implementation for West Region, (DoRLR, MPW), Sub-Director of Implementation for East Region, (DoRLR, MPW) and Head of Bureau for Planning & Foreign Cooperation (MPW).

National Steering Committee:

A coordination committee shall be established during the Project, which consists of members from related governmental sectors, namely,

Chairperson: Deputy for Infrastructure (BAPPENAS)

Members: Director General of Water Resources (DGWR, MPW), Director General of Budget and Fiscal Balance (MoF) and Director General of Treasury (MoF);

Secretaries: Director of Water Resources and Irrigation (BAPPENAS) and Head of Bureau for Planning & Foreign Cooperation (MPW)

BAPPENAS's role within National Steering Committee is to give advice on the implementation of the overall project so as to avoid deviation from the Project goal, to organize discussions on crucial subject such as the implementation plan, the amendment of scope of the Project works, packaging plan and consulting services with DGWR.

Attachment 12: Organizations for Implementation
Attachment 13: Organization Chart of DGWR

Implementing Agency:

For the candidate sub-projects, the following river basin management offices (BBWS/BWS) under the DGWR will implement sub-projects:

- Balai Wilayah Sungai (BWS) Sumatra V: Padang Sub-project;
- Balai Wilayah Sungai (BWS) Sumatra VIII: Palembang Sub-project;
- Balai Besar Wilayah Sungai (BBWS) Citarum: Bandung Sub-project;
- Balai Besar Wilayah Sungai (BBWS) Brantas: Surabaya Brangkal and Wonokromo Sub-projects; and
- Balai Besar Wilayah Sungai (BBWS) Sulawesi II : Gorontalo Sub-projects.

Responsibility:

BBWS/BWS are responsible for the implementation of each sub-project.

Others:

Each BBWS/BWS has no major problems in practical capacity since they have implemented similar projects in each river basin.

Balai Wilayah Sungai (BWS) Sumatra V: Padang Sub-project

The BWS Sumatra V consists of 41 engineers, 42 technician, 58 administration staff and the other 16 staffs (total 157 persons). BWS Sumatra V was established in 2007 originating Padang Area Flood Control and Coast Protection Project Office, and the office conducted two (2) stages of the OECF/JBIC project. Even total number of staff in flood control and water resources conservation sections is 31, other engineers of swamp development (16 persons) and irrigation (67 persons) sections can be assigned for the

sub-project holding two (2) posts. Annual expenditure in 2007 budget for this BWS was Rp.104.6 billion and budget in 2008 is Rp.184.6 billion.

Balai Wilayah Sungai (BWS) Sumatra VIII: Palembang Sub-project

The BWS Sumatra VIII consists of 35 engineers, 41 technician, 34 administration staff and the other 39 staffs (total 149 persons). Annual expenditure for this BWS was drastically increased from Rp.58.2 billion in 2005 to Rp.106.5 billion. in 2006 and Rp.276.3 billion. in 2007.

Balai Besar Wilayah Sungai (BBWS) Citarum: Bandung Sub-project

The BBWS Citarum consists of 33 engineers, 110 technician, 104 administration staff and the other 306 staffs (total 553 persons). Annual expenditure for this BBWS was Rp. 220.32 billion in 2007 and Rp. 227.55 billion in 2008, respectively.

Balai Besar Wilayah Sungai (BBWS) Brantas: Surabaya Wonokromo and Brangkal Sub-projects

The BBWS Brantas consists of 81 engineers, 307 technicians, 337 administration staff and the other 323 staffs (total 1,048 persons). The BBWS Brantas has sufficient experiences on project implementation under Japanese OECF/JBIC loans. Annual expenditure in 2007 budget for this BBWS was Rp.489,12 billion and budget in 2008 is Rp.429,30 billion.

Balai Wilayah Sungai (BWS) Sulawesi II: Gorontalo Sub-project

The BWS Sulawesi II consists of 21 engineers, 38 technician, 28 administration staff and the other 76 staffs (total 163 persons). Annual expenditure in 2008 budget for this BWS was Rp.145,56 billion.

As to the operational side, all abovementioned implementing units are in close coordination with the Local Government through the provincial Water Resources Management Office

Attachment 14: Organization Chart of BWS Sumatra V
Attachment 15: Organization Chart of BWS Sumatra VIII
Attachment 16: Organization Chart of BBWS Citarum
Attachment 17: Organization Chart of BBWS Brantas
Attachment 18: Organization Chart of BWS Sulawesi II

Actual, if changed: (P/R and PCR)

2-4-2 Contractor(s)/Supplier(s), and Consultant(s) and Their Performance

2-4-2-1 Procurement and Consultant

Table 2-4-2: Procurement of Contractor(s)/Supplier(s) and Consultant(s)

Contact Package	Selection Method	
	Original: (P/M)	Actual: (P/R and PCR)
Contractor(s)	Goods and Services shall be procured in accordance with the "Guidelines for Procurement under JBIC ODA Loan " dated October 1999, and relevant law and regulations of Government of Indonesia are valid as long as not contradicted with JBIC Guidelines. The packaging plan and procurement methods of contractors for each sub-project will be submitted to JICA to obtain JICA's review and concurrence at the time of sub-project determination, as a part of Implementation Plan. The procurement packages for candidate sub-projects at this moment are listed below. The below procurement concept is applicable to actual sub-projects to be implemented. In addition, In case Pre Qualification procedure for international and/or local consultant selection is applied, prior to the preparation for the short-list of consultant, the written invitations for prequalification shall be subject to review and concurrence of JICA.	
1. Civil work on Padang Sub-project	1. ICB with P/Q	
2. Civil work on Palembang Sub-project	2. LCB post P/Q	
3. Civil work on Bandung Sub-project	3. LCB post P/Q	
4. Civil work on Surabaya (Wonokromo R.) Sub-project	4. ICB with P/Q	
5. Civil work on Surabaya (Brangkal) Sub-project	5. LCB post P/Q	
6. Civil work on Gorontalo Sub-project	6. LCB post P/Q	
Supplier(s) Not applicable	Not applicable	

Consultant(s) Consulting services	To be selected in accordance with JICA Guideline	

2-4-2-2 Performance

(P/R and PCR) Information on the Contractor(s)/Supplier(s): Evaluation:
Information on the Consultant(s): Evaluation:

2-5 Precautions (Measures To Be Adopted/Points Which Require Special Attention)

- Risks and issues, if any, which may affect the project implementation and planned countermeasures to be adapted, in terms of physical and inevitable aspects (e.g., natural disasters). Environmental or social aspects should be filled in 3-3 "Environmental and Social Impacts.

Original issues and Countermeasure(s)	Actual issues and Countermeasure(s)
(P/M) **(1) Method to determine sub-projects and replace candidate sub-projects** Since the Project is a "Sector Loan", sub-projects can be replaced taking into consideration the circumstances in Indonesia. The DGWR shall submit Implementation Plan, composed of following information, and obtain JICA's and concurrence prior to the commencement of each sub-project. - Reviewed Detailed Design - Analysis of Technical Feasibility - Assessment and Monitoring of Natural	(P/R and PCR)

and Social Environmental Impact (approved LARAP and EIA if necessary)
- Implementation Program to Respond to Adaptation of Climate Change
- Procurement Plan including Packaging
- Project Cost, Schedule, Disbursement Plan
- Project Implementation and Operation and Maintenance Plan
- Operation and Effect Indicators

(2) Land Acquisition and Resettlement

The DGWR in coordination with the local government is required to inform JICA of the scale of land acquisition and the number of legal/illegal residents in the areas concerned before the determination of sub-projects. The DGWR shall complete land acquisition and resettlement before commencement of physical construction work of each sub-project.

The cost of land acquisition and resettlement shall be secured by Central Government and/or Local Governments. The DGWR shall submit a copy of written agreement between Central Government and Local Governments regarding budget allocation and sharing such a responsibility before the commencement of the Project.

In case that any sub-project is classified as Category A in light of "JBIC Guideline for Confirmation of Environmental and Social Considerations," the DGWR shall prepare EIA including certified English translated version and submit to JICA.

(3) Implementation of the Project

DGWR will make every effort to accelerate the procedures necessary for the implementation of the Project in order to

complete the Project by 2015. Implementation schedule of the Project is attached as Attachment 11. **(4) Budgetary appropriation** DGWR, MOF and Local Governments shall take necessary measures to secure the balance of total project cost from JICA financing portion in a timely manner. After DIPA is allocated to each sub-project, DGWR shall appoint a SATKER of each sub-project from each Balai / Balai-Besar. **(5) Environmental and Social Obligation of Contractor(s) including HIV/AIDS prevention** DGWR agreed to include HIV/AIDS prevention clause in contract documents to specify contractors' responsibility for the HIV/ADIS prevention for the Project construction workers in accordance with JBIC Sample Bidding Documents. The action plan for HIV/AIDS prevention program to be clarified in the contract documents shall be adopted by DGWR in consultation with Indonesian Ministry of Health and Ministry of Manpower and Transmigration. The outline of HIV/AIDS prevention program can be promotion of use of condoms, opportunity for diagnosis and medical treatment, educational activities and opportunity for voluntary counseling and check-up. **(6) Safety Management** DGWR confirmed to properly manage safety control during construction.	

2-6 Photographs of Output of the project (P/R and PCR): Attachment **

3: Benefit Derived from the Project (Effectiveness)

3-1 Operational and physical condition of each facility developed/supplied by the project.

Facilities	Description of condition	Problems, its Background and Remedial Action Plan
(P/R and PCR) (1) Padang Sub-project Bank protection Inspection road Access road Box culvert Pipe culvert (2) Palembang Sub-project Protection of existing revetment (3) Bandung Sub-project Wet stone masonry Moh Toha Road bridge I/M road bridge at outlet Diversion structure at inlet (4) Surabaya (Wonokromo) Sub-project Embankment Bank protection (5) Surabaya (Brangkal) Sub-project Prajurit Kulon Weir Mobile pump (5 sets) (6) Gorontalo Sub-project Embankment Bank protection Reconstructed bridge (3 nos) Mobile pump (5 sets)	(P/R and PCR)	(P/R and PCR)

3-2 Precautions (Measures To Be Adopted/Points Which Require Special Attention)

- Risks and issues, if any, which may affect the project outcome and planned countermeasures to be adapted, in terms of physical and inevitable aspects.

Original issues and Countermeasure(s)	Actual issues and Countermeasure(s)
(P/M) (1) Monitoring of LARAP after Relocation and Compensation DGWR agreed to have close coordination with the local governments for smooth and appropriate implementation of resettlement and land acquisition, and to report the Project Affected Peoples' situations after resettlement and land acquisition in PSR or PCR together with the relevant information from the local governments.	(P/R and PCR)

3-3 Environmental and Social Impacts

- Major environmental and social impacts have occurred during project implementation (e.g., land acquisition, resettlement, HIV awareness and prevention program, gender consideration and EIA clearance)
- Environmental Checklist or report of monitoring indicator (if applicable)

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
(P/M) Environmental Monitoring Program River Water Quality Dredging Soil Disposal Necessity of HIV/AIDS Prevention Measures Environmental and Social Obligation of Contractor(s) including Measures against HIV/AIDS	(P/R and PCR)

3-4 Qualitative and Quantitative Data of Monitoring Indicators

- Operation and Effect Indicator, EIRR and/or FIRR

- Supporting data for computing EIRR and/or FIRR

EIRR	Original: (P/M) 12.26 % • Cost: Construction, mobile pump and O&M • Benefit: Mitigation of flood and inundation damages and improvement of natural and social environment conditions along the river • Project Life: 50 years (1) Padang Sub-project 12.01 % • Project Life: 50 years (2) Palembang Sub-project 12.04 % • Project Life: 50 years (3) Bandung Sub-project 13.27 % • Project Life: 50 years (4) Surabaya (Wonokromo) Sub-project 12.81 % • Project Life: 50 years (5) Surabaya (Brangkal) Sub-project 12.32 % • Project Life: 50 years (6) Gorontalo Sub-project 12.13 % • Project Life: 50 years Attachment 19: Supporting data for computing EIRR	Actual: (PCR)
FIRR	Original: (P/M) Not applicable	Actual: (PCR)

Indicators	Original (Yr 2008)	Present (Yr 20**)	Target (Yr 2015)
(P/M)	(P/M)	(P/M, PCR)	(P/M)
(Padang Sub-project)			
Operation Indicator			
- Maximum channel capacity	1,000m^3/s (average)		1,300m^3/s (Design Discharge: Q25)
Effect Indicator			
- Flood inundation area	7.5 km^2 (25-year return period)		0 km^2 (25-year return period)
- Number of inundated houses by flooding	1,530 houses (25-year return period)		0 nos. (25-year return period)
(Palembang Sub-project)			
Operation Indicator			
- Maximum channel capacity at the mouth	20m^3/s (average)		45.5m^3/s (Design Discharge: Q15)
- Maximum channel capacity at the outlet of Talang Amam Pond	N.A.		14.2m^3/s (Design Discharge: Q15)
Effect Indicator			
- Flood inundation area	82.378 ha (15-year return period)		0 ha (15-year return period)
- Number of inundated houses by flooding	1,830 houses (15-year return period)		0 nos. (15-year return period)
(Bandung Sub-project)			
Operation Indicator			
- Maximum channel capacity	0m^3/s (No channel)		60m^3/s (Design Discharge: Q5)
Effect Indicator			
- Flood inundation area	2.67 km^2 (Feb. 2005)		0 km^2 (5-year return period)
- Number of inundated houses by flooding	4,549 houses (Feb. 2005)		0 nos. (5-year return period)
(Surabaya (Wonokromo) Sub-project)			
Operation Indicator			
- Maximum channel capacity	330m^3/s (average)		420m^3/s (Design Discharge: Q25)
Effect Indicator			

- Flood inundation area	2.5 km^2 (25-year return period)		0 km^2 (25-year return period)
- Number of inundated households by flooding	5,980 households (25-year return period)		0 nos. (25-year return period)
(Surabaya (Brangkal) Sub-project)			
Operation Indicator			
- Maximum channel capacity	125m^3/s (average)		275m^3/s (Design Discharge: Q25)
- Frequency of mobile pump drainage operation	No operation		More than 1 time/year for each unit
Effect Indicator			
- Flood inundation area	6.0 km^2 (25-year return period)		0 km^2 (25-year return period)
- Number of inundated households by flooding	10,800 households (25-year return period)		0 nos. (25-year return period)
(Gorontalo Sub-project)			
Operation Indicator			
- Maximum channel capacity at the upstream of Tenda Bridge	65m^3/s (average)		200m^3/s (Design Discharge: Q20)
- Maximum channel capacity at the Siendeng-2 Bridge (Stretch II_R)	40m^3/s (average)		125m^3/s (Design Discharge: Q20)
- Frequency of mobile pump drainage operation	No operation		More than 1 time/year for each unit
Effect Indicator			
- Flood inundation area	2.75 km^2 (20-year return period)		0 ha (20-year return period)
- Number of inundated houses by flooding	637 houses (20-year return period)		0 (20-year return period)

3-5 Monitoring Plan for the indicators

- Monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term and so forth.

Original: (P/M) Monitoring shall be conducted by a comparative analysis of the target and actual figures of operation and effect indicators once a year by 2017
Actual: (P/R and PCR)

3-6 Achievement of the Project Objective

(PCR)

4: Operation and Maintenance (O&M) (sustainability)

4-1 O&M and Management

- Organization chart of O&M
- Operation and Maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc.)

Original: (P/M)

(Balai and Balai-Besar of each sub-project under Ministry of Public Works shall continue to take responsiblity for operation and maintenance after the completion of the Project. O&M cost will be covered by each Balai and Balai-Besar.)

【Overall】

The operational and maintenance of the candidate sub-projects will be conducted by the following agencies. If the candidate sub-projects are replaced to any long-listed sub-projects, the operational and maintenance scheme needs to be modified and submitted to JICA as a part of Implementation Plan.

【Padang】
Balai Wilayah Sungai (BWS) Sumatra V
Public Works Services of West Sumatra Province

【Palembang】
Balai Wilayah Sungai (BWS) Sumatra VIII
Public Works Services of Palembang City

【Bandung】
Balai Besar Wilayah Sungai (BBWS) Citarum
Public Works Services of West Java Province

【Surabaya-Wonokromo】
Balai Besar Wilayah Sungai (BBWS) Brantas

【Surabaya-Brangkal】
Balai Besar Wilayah Sungai (BBWS) Brantas

【Gorontalo】
Balai Wilayah Sungai (BWS) Sulawesi II
Public Works Services of Gorontalo Province

Actual: (PCR)

4-2 O&M Cost and Budget

- The actual annual O&M cost, as well as the annual O&M budget

(PCR)

5: Evaluation

5-1 JICA and Borrower/Executing Agency Performance

Please evaluate the performance of the two bodies.

JICA: (PCR)
Borrower/Executing Agency: (PCR)

5-2 Overall evaluation

Please describe your evaluation on the overall outcome of the project

(PCR)

5-3 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future JICA assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability

(PCR)

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Attachment 1: Selection Criteria and Allocation of Marks

Table Priority Criteria

Scoring Item		Alocated Score			Scoring						
Direct Affected Flood Damage		35									
	Population in Flood Prone Area		10		> 40,000	30,000 - 39,999	20,000 - 29,999	10,000 - 19,999	5,000 - 9,999	4,999 >	
					10	8	6	4	2	0	
	Household in Flood Prone Area		5		> 10,000	8,000 - 9,999	6,000 - 7,999	3,000 - 5,999	1,000 - 2,999	999 >	
					5	4	3	2	1	0	
	Inundation Area (ha)		10		> 25.0	20.0 - 24.9	15.0 - 19.9	10.0 - 14.9	5.0 - 9.9	4.9 >	
					10	8	6	4	2	0	
	GRDP (Rp. Billion)		10		> 1,000	800 - 999	600 - 799	400 - 599	100 - 300	99 >	
					10	8	6	4	2	0	
Flood Frequency		10			10 times or more	9 - 8 times	7 - 6 times	5 times	4 times	3 thimes	twice or less
					10	9	8	6	4	2	0
Indirect Affected Flood Damage		25									
	Population		5								
	Related City/Regency			3	> 400,000	200,000-399,999	100,000-199,999	99,999 >			
					3	2	1	0			
	Indirect Area			2	> 1,000,000	500,000-999,999	499,999 >				
					2	1	0				
	Household		5								
	Related City/Regency			3	> 100,000	40,000 - 99,000	20,000 - 39,999	19,999 >			
					3	2	1	0			
	Indirect Area			2	> 200,000	100,000-199,999	99,999 >				
					2	1	0				
	GRDP (Rp. Billion)		10								
	Related City/Regency			7	> 20,000	10,000 - 19,999	5,000 - 9,999	2,000 - 4,999	1,000 - 1,999	999 >	
					7	5	3	2	1	0	
	Indirect Area			3	> 50,000	20,000 - 49,999	5,000 - 19,999	4,999 >			
					3	2	1	0			
	Ratio of GRDP in Province		5								
	Related City/Regency			3	> 15 %	5.0 % - 14.9 %	1.0 % - 4.9 %	0.9 % >			
					3	2	1	0			
	Indirect Area			2	> 30 %	10 % - 29.9 %	9.9 % >				
					2	1	0				
Economic Disparity		10									
	Percentage of Poverty in Province		5		> 20 %	15.0 % - 19.9 %	10.0 % - 14.9 %	7.5 % - 9.9 %	5.0 % - 7.4 %	4.9 % >	
					5	4	3	2	1	0	
	Per Capita GRDP (Rp. Thousand)		5								
	Related City/Regency			3	> 4,999	5,000 - 9,999	10,000 - 19,999	20,000 >			
					3	2	1	0			
	Indirect Area			2	> 4,999	5,000 - 19,999	20,000 >				
					2	1	0				
Important Infrastructure		10									
	Government Office		3		Province		City/Regency		District		
					Inside	fringe	Inside	fringe	Inside	fringe	
					3	2	2	1	1	0	
	Airport		3		International		Domestic		None		
					Inside	fringe	Inside	fringe			
					3	1	2	1	0		
	Harbor		2		Inside	fringe	None				
					2	1	0				
	Railway		2		Inside	fringe	None				
					2	1	0				
Flood Control Facilities		10			None	Poor	Faire	Good	Excellent		
					10	8	3	1	0		
Total		100									

Table Readiness Criteria

Scoring Item			Allocated Score		Scoring							
Study and Design			40									
	Preliminary Study			1	Conducted	Ongoing	Scheduled	Not Yet				
					1	0	0	0				
	Master Plan			4	Conducted	Ongoing	Scheduled	Not Yet				
					4	2	1	0				
	F/S or Basic Design			10	Conducted		Ongoing	Scheduled	Not Yet			
					Sufficient	Insufficient						
					10	8	5	7	0			
	Detailed Design			25	Conducted		Ongoing	Scheduled	Not Yet			
					Sufficient	Insufficient						
					25	35	10	5	0			
Social Consideration			60									
	EIA Study Including Public Consultation			25	Approved by Authorities	Conducted	Ongoing		Scheduled in 2009		Preliminary Study (UKL/UPL)	No Schedule
							Review	New Study	Review	New Study		
					25	20	15	10	10	5	2	0
	Natural Consideration			5								
		Protective Area			1	No	Included					
						1	0					
		Ecologically Valuable habits			2	No Influence	Less Influence	Some Influence				
						2	1	0				
		Saline Water Intrusion			2	No Influence	Less Influence	Some Influence				
						2	1	0				
	Land Acquisition & Resettlement			30								
		Preparation of LARAP			5	Completed	Ongoing	Scheduled	Not Yet			
						5	4	3	0			
		Commitment Letter			5	Completed	Ongoing	Imperfect	Scheduled	Not Yet		
						5	4	3	1	0		
		Number of Resettlement			5	None	Less	5 - 19	20 - 49	50 - 199	> 200	
						5	4	3	2	1	0	
		Acquisition Area (ha)			5	None	Less	5 - 19	20 - 49	50 - 99	> 100	
						5	4	3	2	1	0	
		Budget in 2009			5	Sufficient for All	50% of Remaining	A part of Remaining	No Schedule			
						5	3	1	0			
		Category of Project			5	C	B	A				
						5	3	1				
TOTAL			100									

Table Scoring for Priory in Long-listed Sub-Projects

No	City/ Regency	Actual Flood Damage					Flood Fre-quency	Indirectly Affected Factors									Poverty Alleviation				Important Infrastructure					Flood Control Facilities	TOTAL SCORE	Rank
		Flood Prone Area						Population		Number of Household		GRDP (Rp.billion)		Ratio in Province		Sub-Total	Percent of Poverty	Per Capita GRDP (Rp. Thousand)		Sub-Total	Govern-ment Office	Air-port	Har-bor	Rail-way	Sub-Total			
		Popu-lation	House-hold	Area (km2)	GRDP (Rp.b)	Sub-Total		Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect			Direct	Indirect									
		10	5	10	10	35	10	3	2	3	2	7	3	3	2	25	5	3	2	10	3	3	2	2	10	10	100	
1	Dumai	0	0	6	0	6	0	1	1	1	1	3	2	1	1	11	1	0	0	1	2	1	2	0	5	10	33	16
2	Pekanbaru	2	1	2	6	11	8	3	2	3	2	7	2	2	1	22	1	0	0	1	2	1	0	0	3	3	48	9
3	Rengat	4	1	6	2	13	9	0	0	0	0	1	0	0	0	1	1	1	1	3	2	1	0	0	3	8	37	14
4	Padang	4	2	10	2	18	10	1	2	2	2	2	1	2	2	14	3	1	1	5	2	3	1	2	8	10	65	2
5	Jambi	4	1	2	2	9	10	3	1	3	1	2	1	3	2	16	4	2	1	7	3	1	2	0	6	3	51	7
6	Palembang	10	4	4	8	26	8	3	2	3	2	7	2	3	2	24	5	0	1	6	3	1	2	1	7	8	79	1
7	Bandung	8	4	2	2	16	9	2	2	2	2	2	3	0	1	14	3	2	1	6	1	1	0	1	3	8	56	6
8	Surabaya (Wonokromo)	10	5	2	10	27	2	2	2	2	2	3	3	1	1	16	3	0	0	3	2	1	1	2	6	3	57	5
9	Surabaya (Gunungsari)	10	5	2	10	27	2	3	2	3	2	5	3	1	1	20	3	0	0	3	1	0	1	2	4	8	64	3
10	Surabaya (Kedurus)	4	2	2	4	12	2	2	2	2	2	3	3	1	1	16	3	0	0	3	0	0	0	0	0	8	41	12
11	Surabaya (Benangkal)	8	4	2	2	16	2	1	2	1	2	0	2	0	0	8	3	2	1	6	2	0	0	2	4	1	37	14
12	Nganjuk	6	3	6	2	17	0	1	2	1	2	0	1	0	0	7	3	2	1	6	2	0	0	2	4	8	42	11
13	Tulungagung	2	1	2	0	5	0	0	2	0	2	0	1	0	0	5	3	3	2	8	0	0	0	1	1	3	22	17
14	Balikpapan	2	1	0	4	7	6	2	1	2	1	5	2	2	1	16	3	0	0	3	2	2	2	0	6	3	41	13
15	Makassar	10	5	2	4	21	9	3	2	2	2	2	1	2	1	15	1	1	1	3	2	1	1	0	4	10	62	4
16	Gorontalo	4	2	2	0	8	10	1	1	2	1	0	0	3	2	10	4	2	2	8	2	1	2	0	5	10	51	7
17	Manado	2	1	0	2	5	9	3	0	3	1	3	1	3	1	15	0	1	1	2	3	1	2	0	6	8	45	10

Table Scoring for Readiness in Long-listed Sub-Projects

No	City/ Regency	Study and Design					Environmental and Social Consideration														TOTAL SCORE	Rank
							Progress	Natural Consideration				Land Acquisition & Resettlement								Total of Social Consid.		
		Pre-Study	M/P	F/S, B/D	D/D	Total of Study	of EIA	Protective Area	Ecological Valuales	Saline Water Intrusion	Score	LARAP	Commitment Letter	Number of Resettlement	Acquisition Area	Budget in 2009	Project Category	Sub-Total				
		1	4	10	25	40	25	1	2	2	5	5	5	5	5	5	(※)	5	30	60	100	
1	Dumai	0	0	0	15	15	0	1	2	1	4	0	0	2	3	0	A	1	6	10	25	14
2	Pekanbaru	0	0	0	15	15	0	1	2	2	5	0	3	1	3	0	A	1	8	13	28	13
3	Rengat	0	4	10	15	29	2	1	2	2	5	0	0	0	0	0	A	1	1	8	37	9
4	Padang	1	4	10	25	40	10	1	2	1	4	3	5	2	3	5	B	3	21	35	75	2
5	Jambi	0	4	1	5	10	0	1	2	2	5	0	0	1	2	0	A	1	4	9	19	16
6	Palembang	0	4	10	15	29	10	1	2	1	4	3	4	1	3	1	A	1	13	27	56	4
7	Bandung	1	4	10	25	40	25	1	2	2	5	3	1	3	4	3	B	3	17	47	87	1
8	Surabaya (Wonokromo)	0	4	10	15	29	10	1	2	1	4	3	1	1	4	1	A	1	11	25	54	6
9	Surabaya (Gunungsari)	0	4	10	15	29	0	1	2	2	5	0	0	0	0	0	A	1	1	6	35	11
10	Surabaya (Kedurus)	0	4	10	15	29	0	1	2	2	5	0	0	2	1	0	A	1	4	9	38	8
11	Surabaya (Brangkal)	0	4	10	15	29	5	1	2	2	5	3	1	5	4	5	B	3	21	31	60	3
12	Nganjuk	0	4	10	10	24	0	1	2	2	5	0	0	1	2	0	A	1	4	9	33	12
13	Tulunagung	0	4	10	15	29	0	1	2	2	5	0	0	4	4	0	B	3	11	16	45	7
14	Balikpapan	0	0	0	0	0	0	1	2	1	4	0	0	1	1	0	A	1	3	7	7	17
15	Makassar	1	0	0	15	16	0	1	2	1	4	0	1	2	0	0	A	1	4	8	24	15
16	Gorontalo	0	4	10	15	29	10	1	2	1	4	3	4	0	3	1	A	1	12	26	55	5
17	Manado	1	4	0	15	20	0	1	2	1	4	0	1	4	4	0	B	3	12	16	36	10

(※) Uncertain sub-projects are categorized as "A" tentatively.

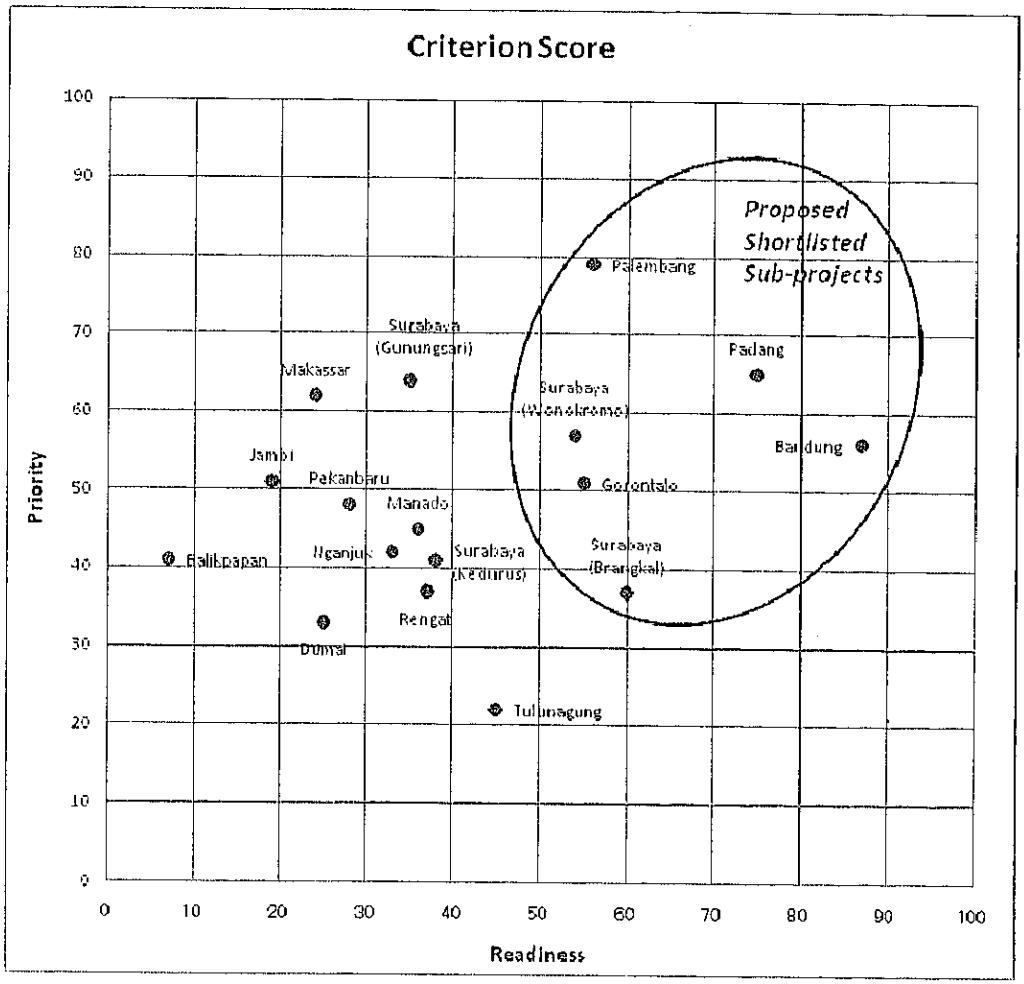
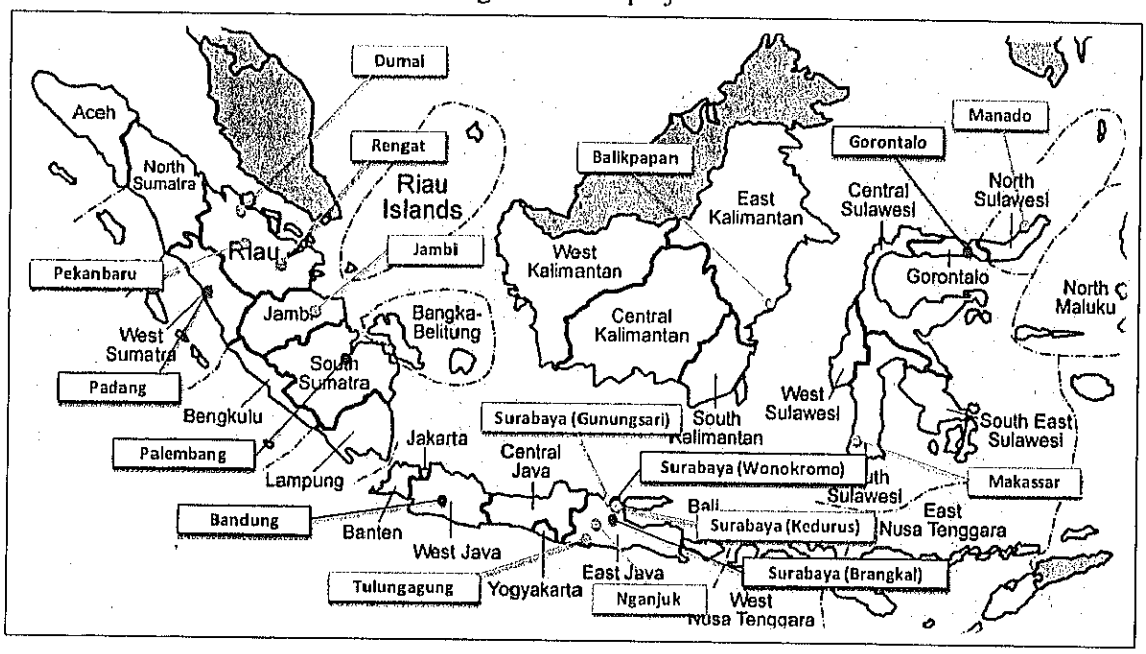


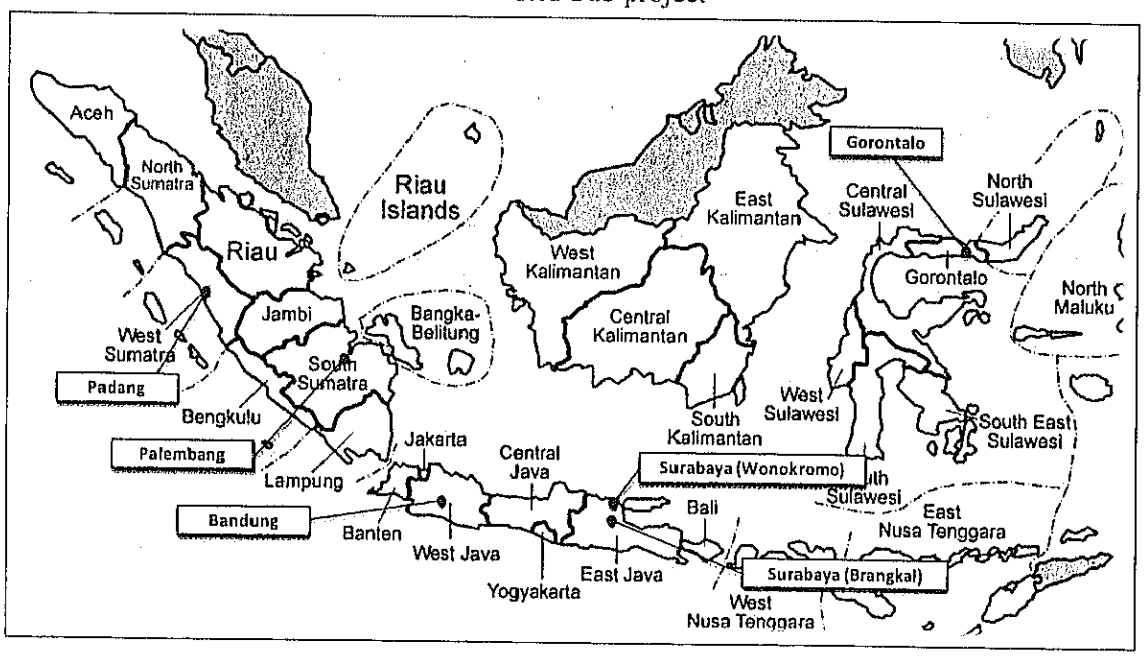
Figure Criterion Score

Attachment 2: Location Map of Sub-projects

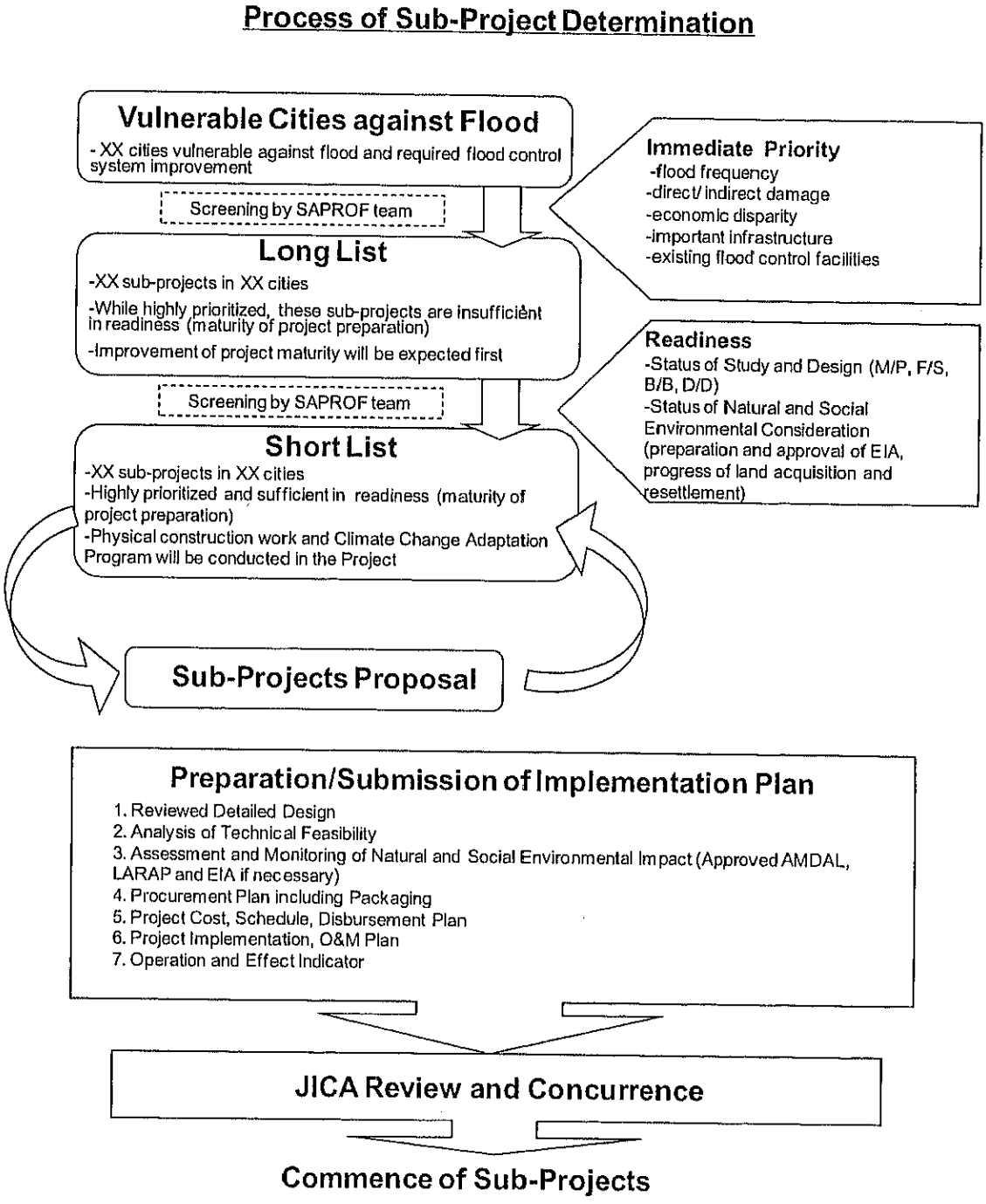
Long-listed Sub-project



Short-listed Sub-project



Attachment 3: Process of Sub-project Determination



Attachment 4: Detailed Description for Each Item of Implementation Plan

Detailed Description for Each Item of Implementation Plan

1. Analysis of Technical Feasibility – to justify the necessity of the sub-project and its scope

- Project Objective
- Scope of Works
- (To start PQ (prequalification) and tender process for construction without detailed design or its review) Detailed Design must be approved from the relevant line agencies

2. Necessary Environmental/Social Impact Assessment and Monitoring Plan

- Responsible agency to monitor the environmental impact during the construction
- Result of Socialization
- Record of Discussion on Socialization or Stakeholders meetings
- Grievance mitigation and follow-up plan (if necessary)
- JICA environmental screening form, check-list
- Environment Impact Assessment with certificated English translation (if needed)
- Resettlement / Land Acquisition Action Plan with certificated English Translation (if needed)

3. Procurement Plan including Packaging

- Contract packaging
- Procurement method, and schedule

4. Project Cost, Schedule, and Disbursement Plan

- Project cost
- Annual fund requirement
- Project Implementation Schedule
- Consultant TOR (M/M staffing schedule and cost)

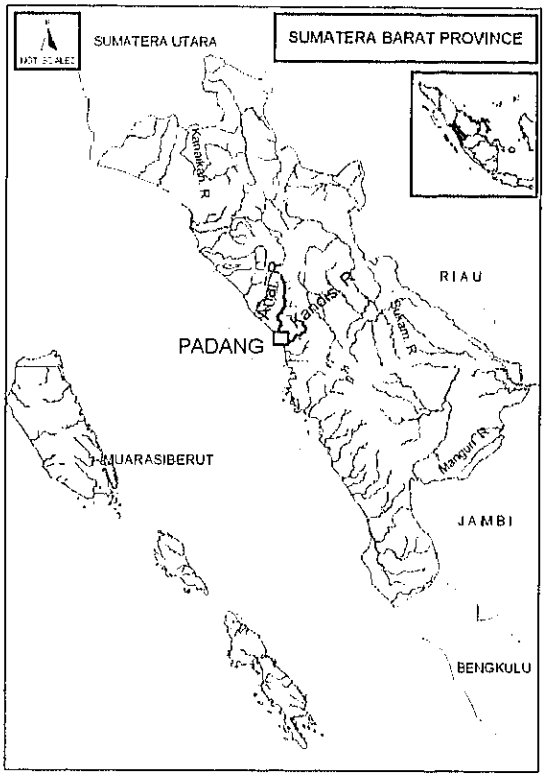
5. Project Implementation and O&M Plan

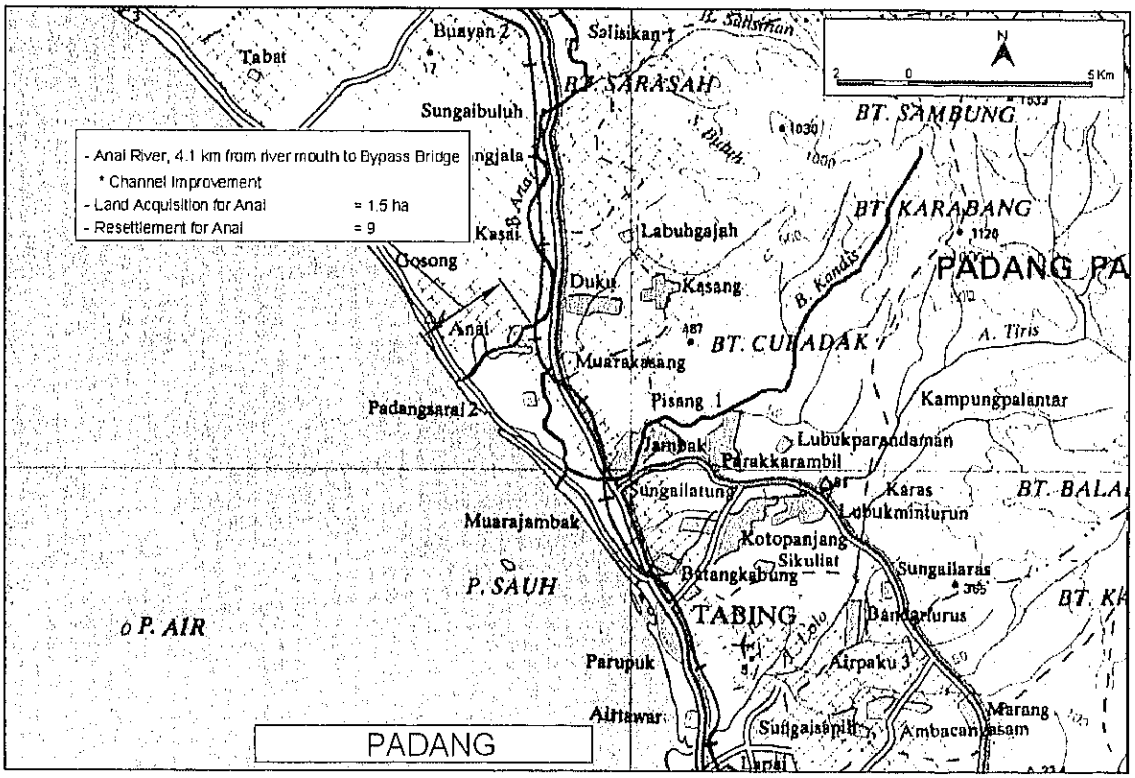
- Implementing Agency (should be decided and agreed among relevant agencies)
- Operation and Maintenance Plan, and Organization

6. Operation and Effect Indicator

- Operation and Effect Indicators (Base and Target)
- Economic Rate of Return (EIRR), other benefits

Attachment 5: Location Map and Description of Padang Sub-project





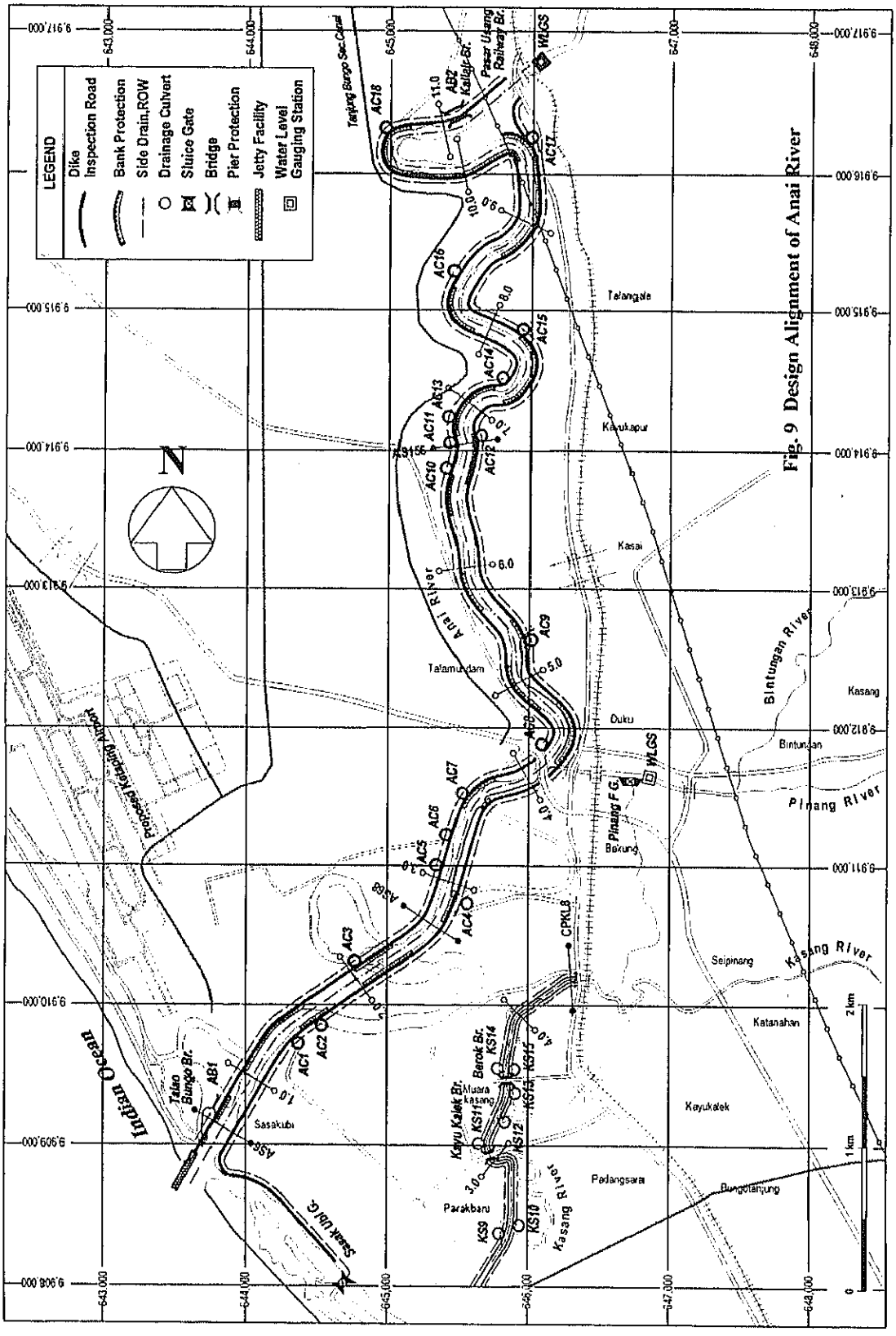
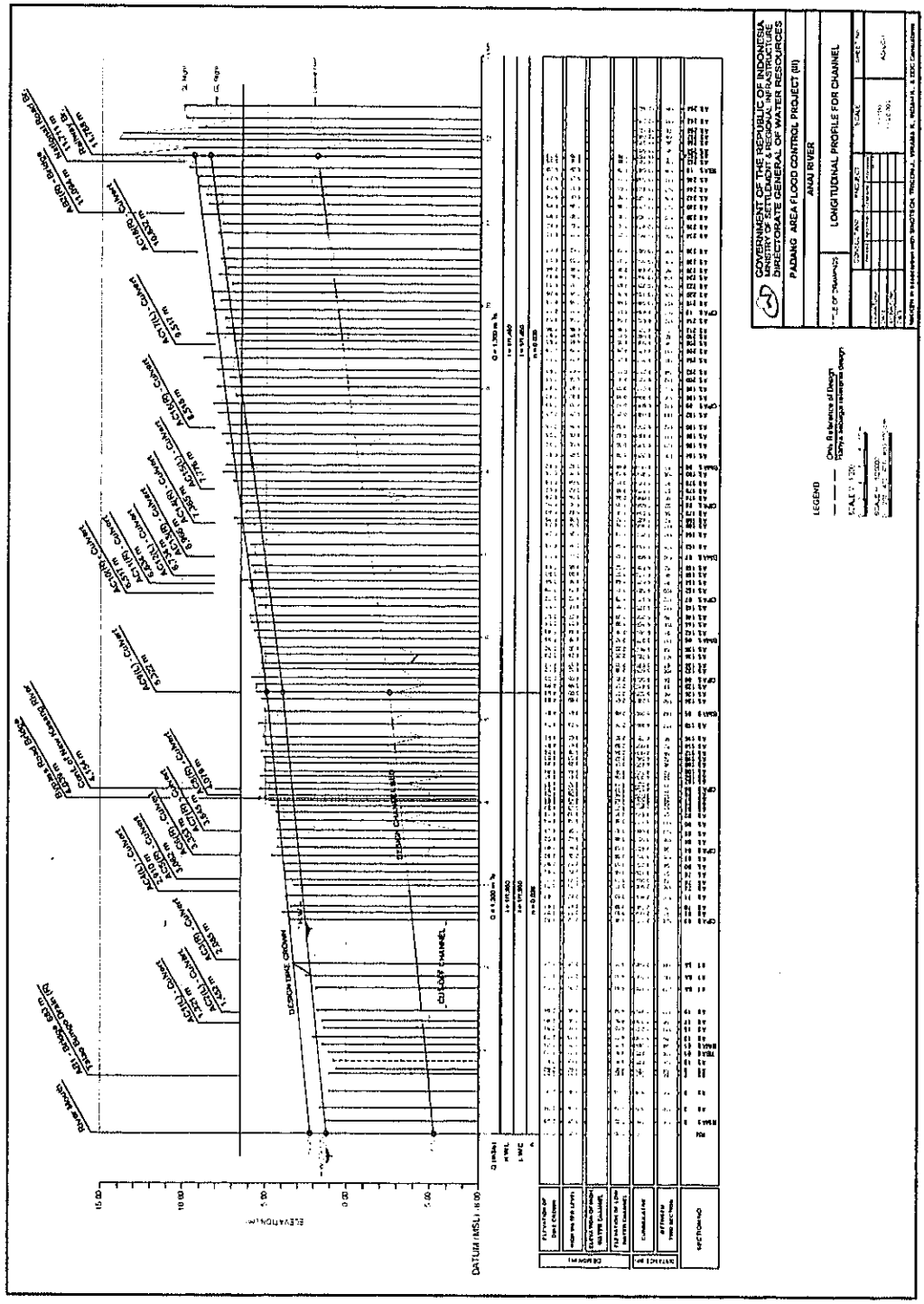
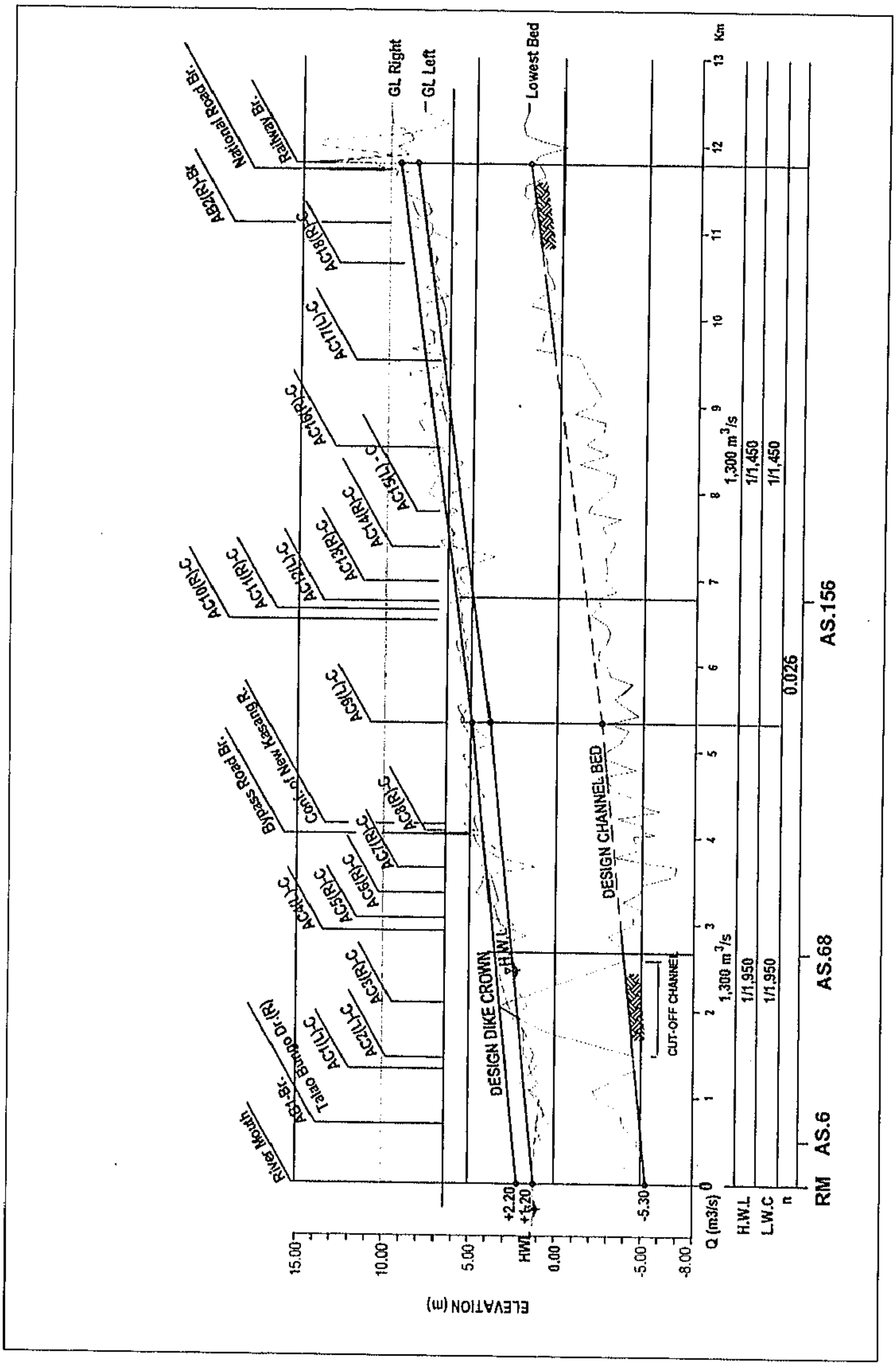
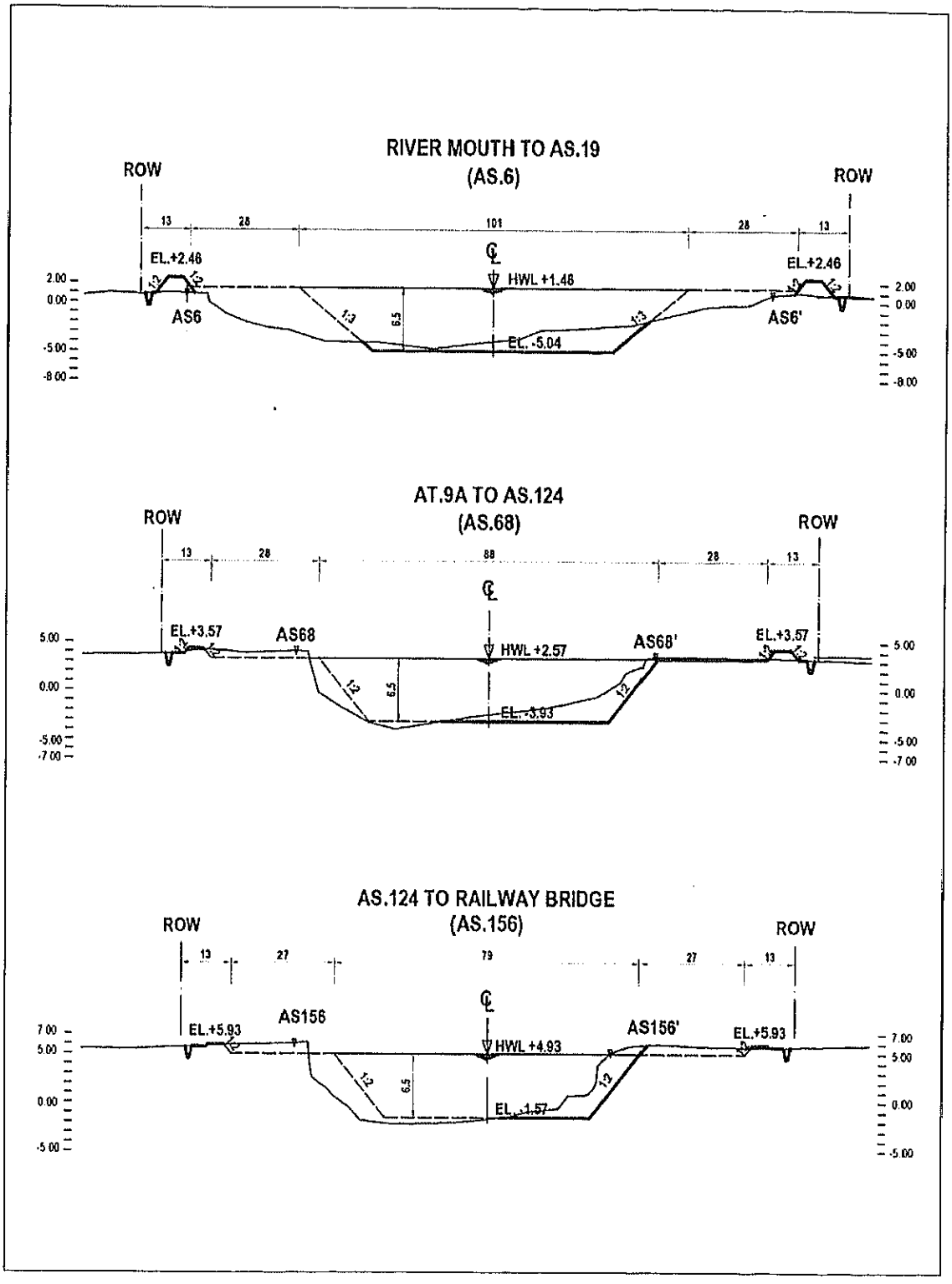


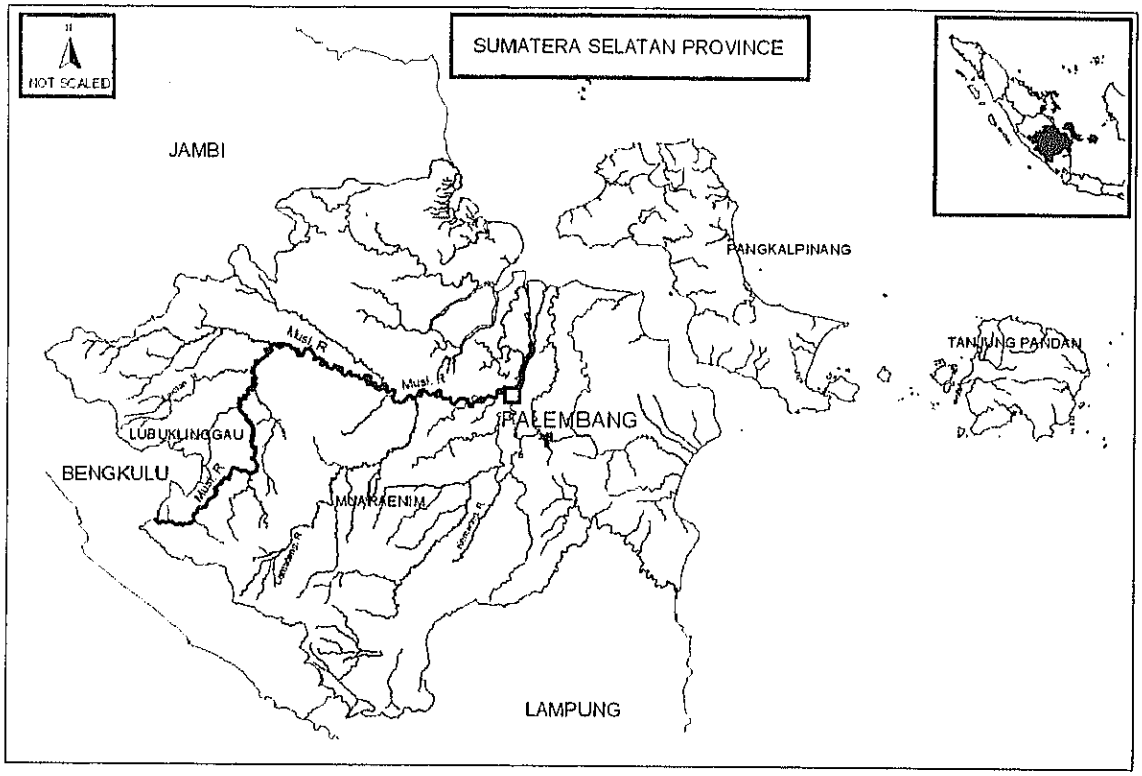
Fig. 9 Design Alignment of Anai River

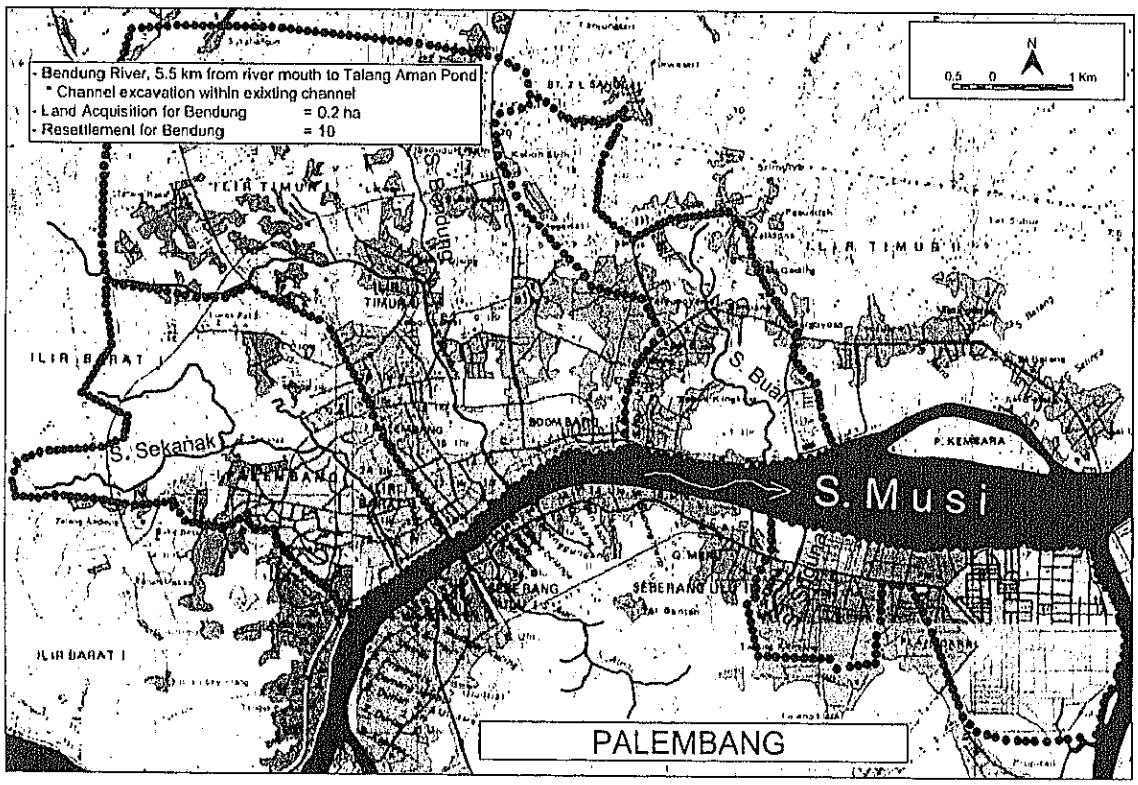

GOVERNMENT OF THE REPUBLIC OF INDONESIA
MINISTRY OF SETTLEMENT & REGIONAL INFRASTRUCTURE
DIRECTORATE GENERAL OF WATER RESOURCES
PADANG AREA FLOOD CONTROL PROJECT (III)
ANAI RIVER
LONGITUDINAL PROFILE FOR CHANNEL
LEGEND
DESIGN CHANNEL BED
CULVERT CHANNEL
DATUM (MSL)

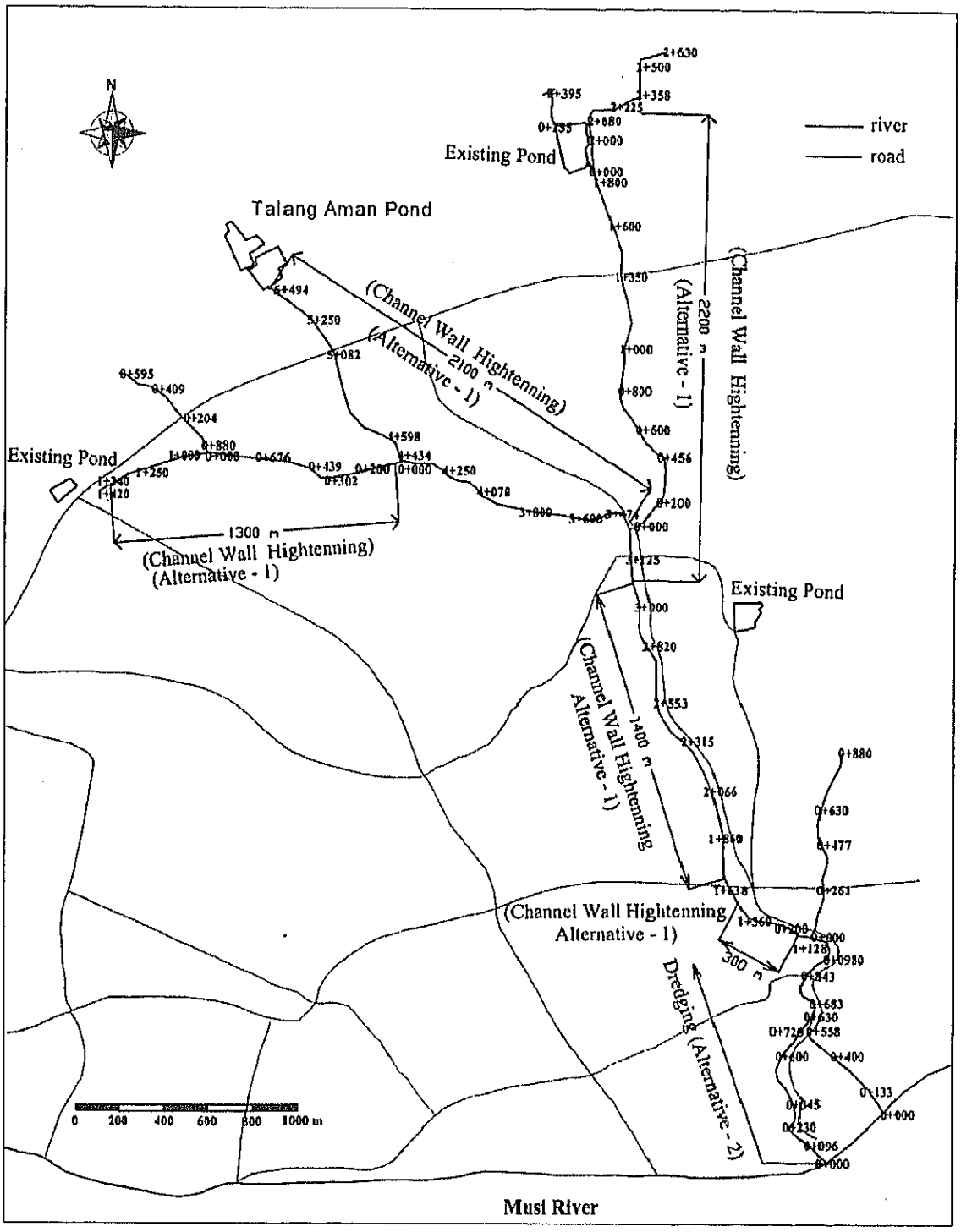

River Mouth
AC1-Br.
Talao Bumbo Dr.(R)
AC1(L)-C
AC2(L)-C
AC3(R)-C
AC4(L)-C
AC5(R)-C
AC6(R)-C
AC7(R)-C
AC8(R)-S
Bypass Road Br.
Conf. of New Kasang R.
AC9(L)-C
AC10(R)-C
AC11(R)-C
AC12(L)-C
AC13(R)-C
AC14(R)-C
AC15(L)-C
AC16(R)-C
AC17(L)-C
AC18(R)-C
AB2(R)-Br.
National Road Br.
Railway Br.
GL Right
GL Left
Lowest Bed
DESIGN DIKE CROWN
H.W.L
DESIGN CHANNEL BED
CUT-OFF CHANNEL
ELEVATION (m)
15.00
10.00
5.00
HWL
0.00
-5.00
-8.00
+2.20
+1.20
-5.30
Q (m3/s)
H.W.L
L.W.C
n
1,300 m3/s
1/1,950
1/1,950
1,300 m3/s
1/1,450
1/1,450
0.026
RM
AS.6
AS.68
AS.156
Km


RIVER MOUTH TO AS.19
(AS.6)
ROW
ROW
13
28
101
28
13
EL.+2.46
EL.+2.46
HWL +1.48
AS6
AS6'
EL. -5.04
6.5
2.00
0.00
-5.00
-8.00
AT.9A TO AS.124
(AS.68)
ROW
ROW
13
28
88
28
13
EL.+3.57
AS68
HWL +2.57
AS68'
EL.+3.57
EL. -3.93
6.5
5.00
0.00
-5.00
-7.00
AS.124 TO RAILWAY BRIDGE
(AS.156)
ROW
ROW
13
27
79
27
13
EL.+5.93
AS156
HWL +4.93
AS156'
EL.+5.93
EL. -1.57
6.5
7.00
5.00
0.00
-5.00

Attachment 6: Location Map and Description of Palembang Sub-project






N
river
road
Existing Pond
Talang Aman Pond
(Channel Wall Hightenning)
(Alternative - 1)
2100 m
2200 m
(Channel Wall Hightenning)
(Alternative - 1)
Existing Pond
1300 m
(Channel Wall Hightenning)
(Alternative - 1)
Existing Pond
(Channel Wall Hightenning
Alternative - 1)
1400 m
(Channel Wall Hightenning
Alternative - 1)
300 m
Dredging (Alternative - 2)
0 200 400 600 800 1000 m
Musi River

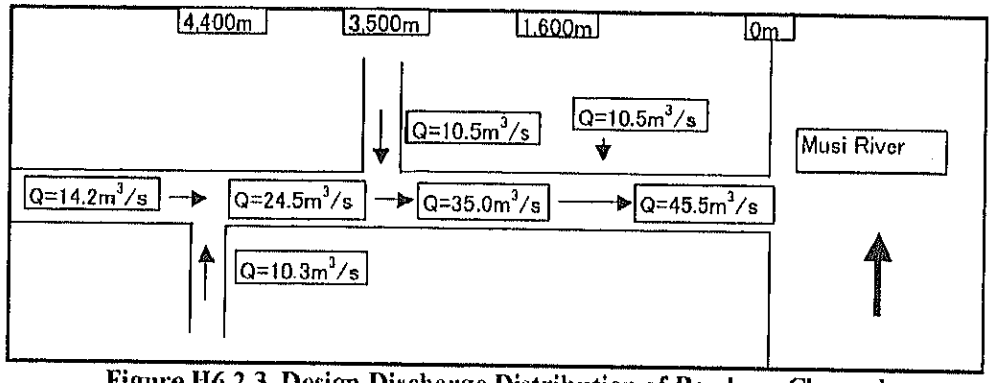


Figure H6.2.3 Design Discharge Distribution of Bendung Channel

(b) Alternative-2

Alternative-2 proposes excavation of channel bed by 1 m in average and smoothing of the longitudinal profile. Stone masonry protection works are employed to protect the existing revetment. Proposed profile for Alternative-2 presented in **Figure H6.2.5.**

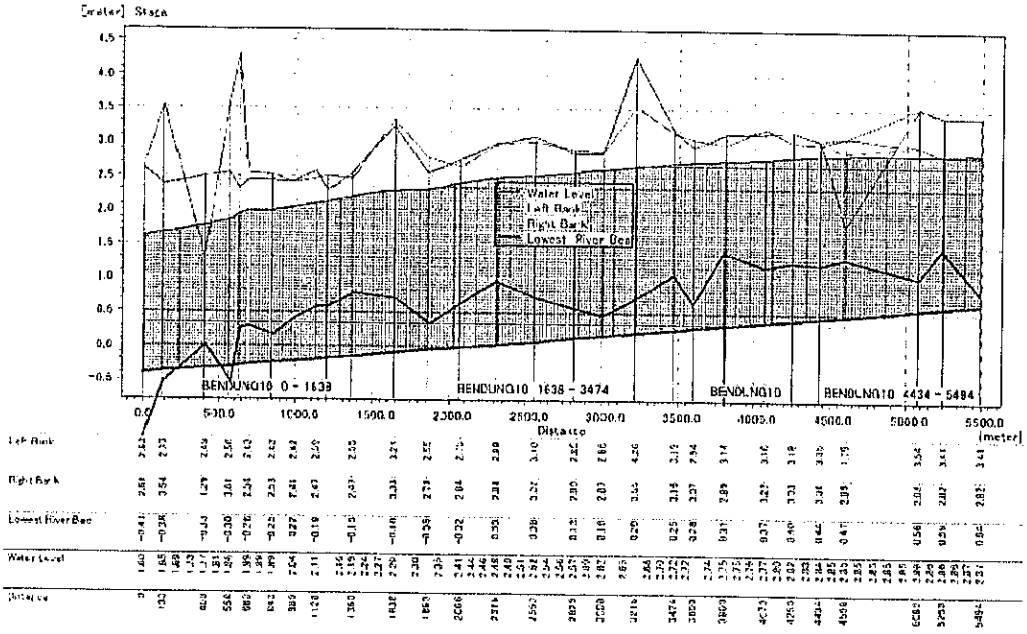
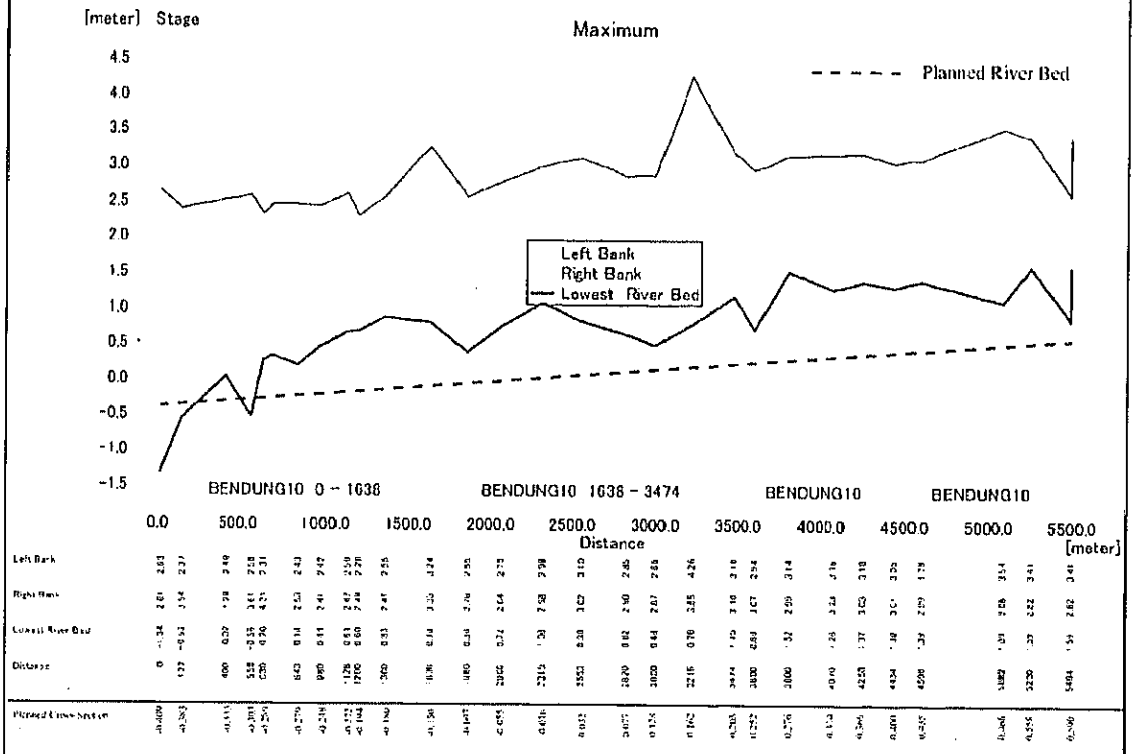
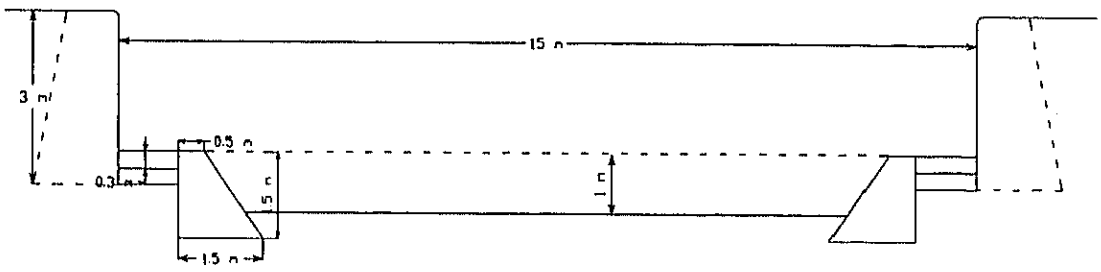


Figure H6.2.5 Proposed Profile for Alternative-2

Planned Londitudinal Profile of Channel Bed



Planned Cross-Section



DAERAH ALIRAN SUNGAI BENDUNG

Pembebasan Lahan DAS Bendung
Mulai Dari Jalan Veteran Sampai Muara Sungai Bendung

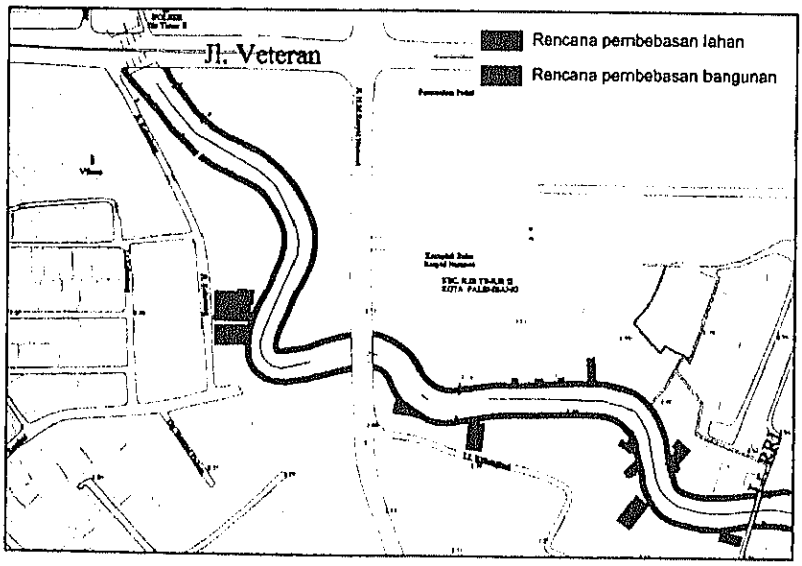
Jumlah Bangunan			
Lembar Gambar	Kn Sungai	Kanan Sungai	Keterangan
C-3-4-05	7	9	Dari Jl. Veteran sampai Lr. RRI
D-3-3-01	15	16	Dari Lr RRI sampai Jl. Segaran/Jl. Slamet Riyadi
D-3-1-21	39	31	Dari Jl. Segaran/Jl. Slamet Riyadi sampai Muara S. Bendung
Total		117	

Jadi jumlah Total bangunan yang direkomendasikan adalah 117 bangunan (bagian kanan dan kiri sungai)
Perhitungan dimulai dari hulu ke hilir/searah aliran sungai

Pembebasan Lahan DAS Bendung
Mulai Dari Jalan Veteran Sampai Muara Sungai Bendung

Jumlah Bangunan				Luas Lahan Yang Dibebaskan	
Lembar Gambar	Kn Sungai	Kanan Sungai	Keterangan	Kn Sungai	Kanan Sungai
C-3-4-05	7	9	Dari Jl. Veteran sampai Lr. RRI	1466.85 m²	1364.90 m²
D-3-3-01	15	16	Dari Lr RRI sampai Jl. Segaran/Jl. Slamet Riyadi	1319.57 m²	1434.50 m²
D-3-1-21	39	31	Dari Jl. Segaran/Jl. Slamet Riyadi sampai Muara S. Bendung	2000.15 m²	2019.45 m²
Total		117			

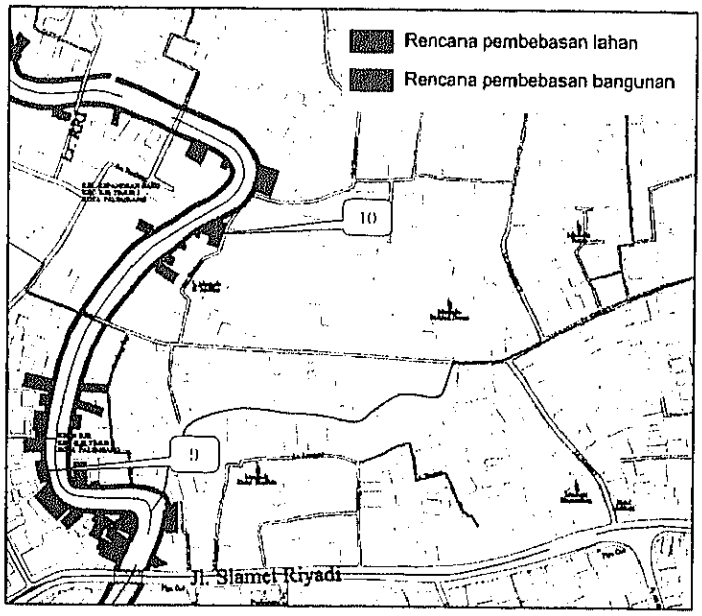
Jadi jumlah Total bangunan yang direkomendasikan adalah 117 bangunan (bagian kanan dan kiri sungai)
Perhitungan dimulai dari hulu ke hilir/searah aliran sungai



Gambar 1 : Lokasi Pembebasan Lahan & Bangunan Jl. Veteran – Lr. RRI

Rencana jumlah rumah yang dibebaskan mulai dari **Jl. Veteran – Lr. RRI** :

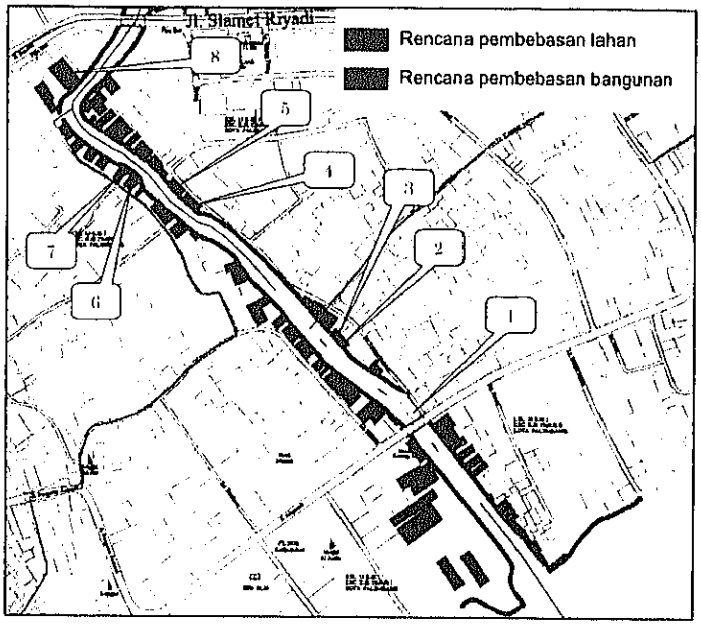
1. Bagian Kiri Sungai (searah aliran) sebanyak 7 (tujuh) buah
2. Bagian Kanan Sungai (searah aliran) sebanyak 9 (sembilan) buah



Gambar 2 : Lokasi Pembebasan Lahan & Bangunan Lr. RRI – Jl. Slamet Riyadi

Rencana jumlah rumah yang dibebaskan mulai dari **Lr. RRI – Jl. Slamet Riyadi** :

3. Bagian Kiri Sungai (searah aliran) sebanyak 15 (lima belas) buah
4. Bagian Kanan Sungai (searah aliran) sebanyak 16 (enam belas) buah

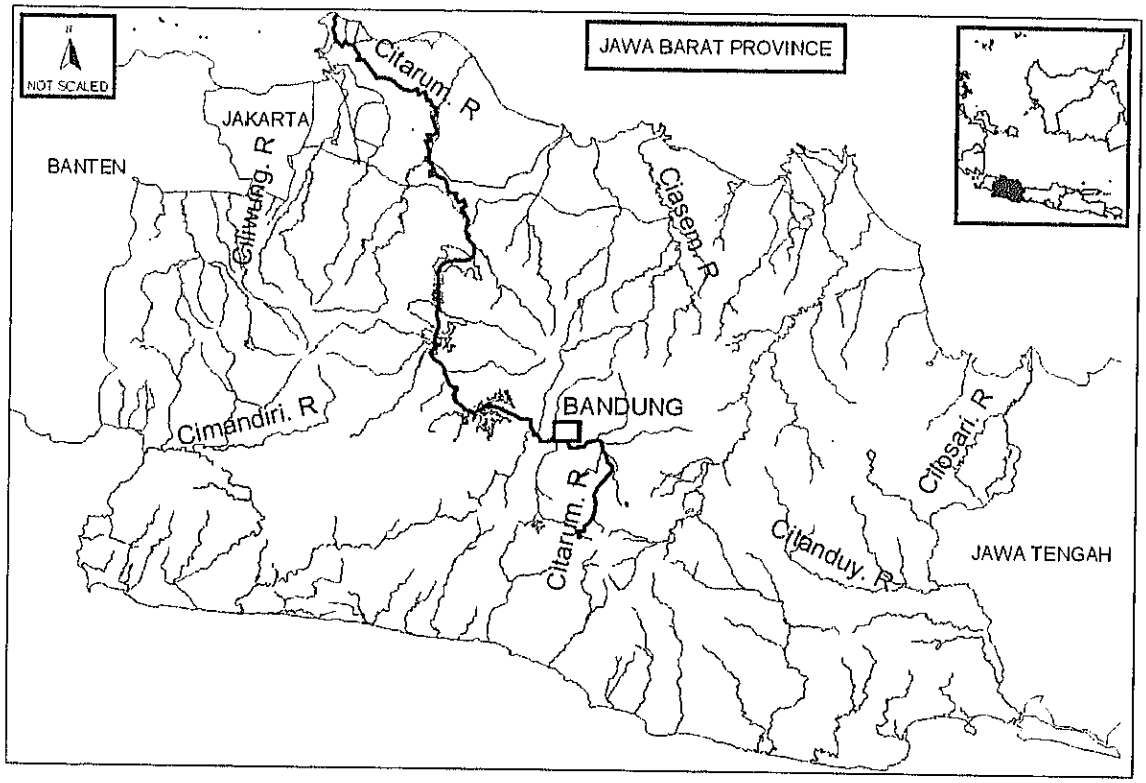


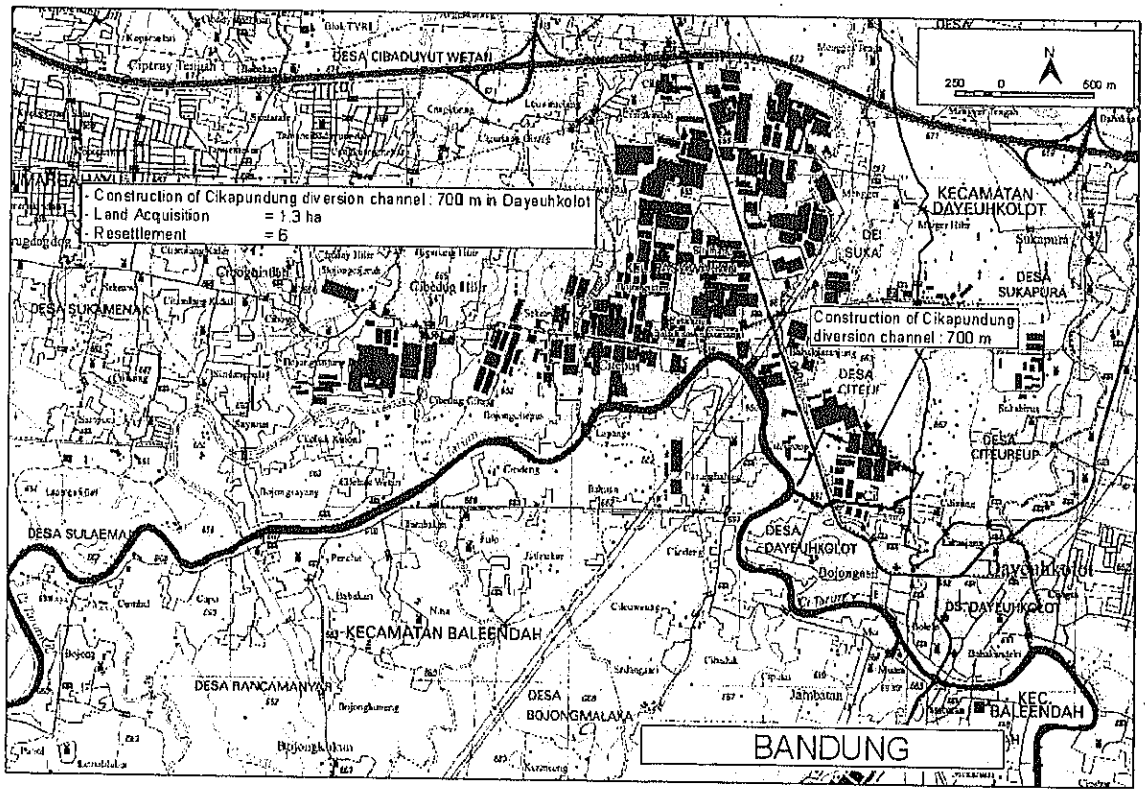
Gambar 3 : Lokasi Pembebasan Lahan & Bangunan Jl. Slamet Riyadi – Muara S. Bendung

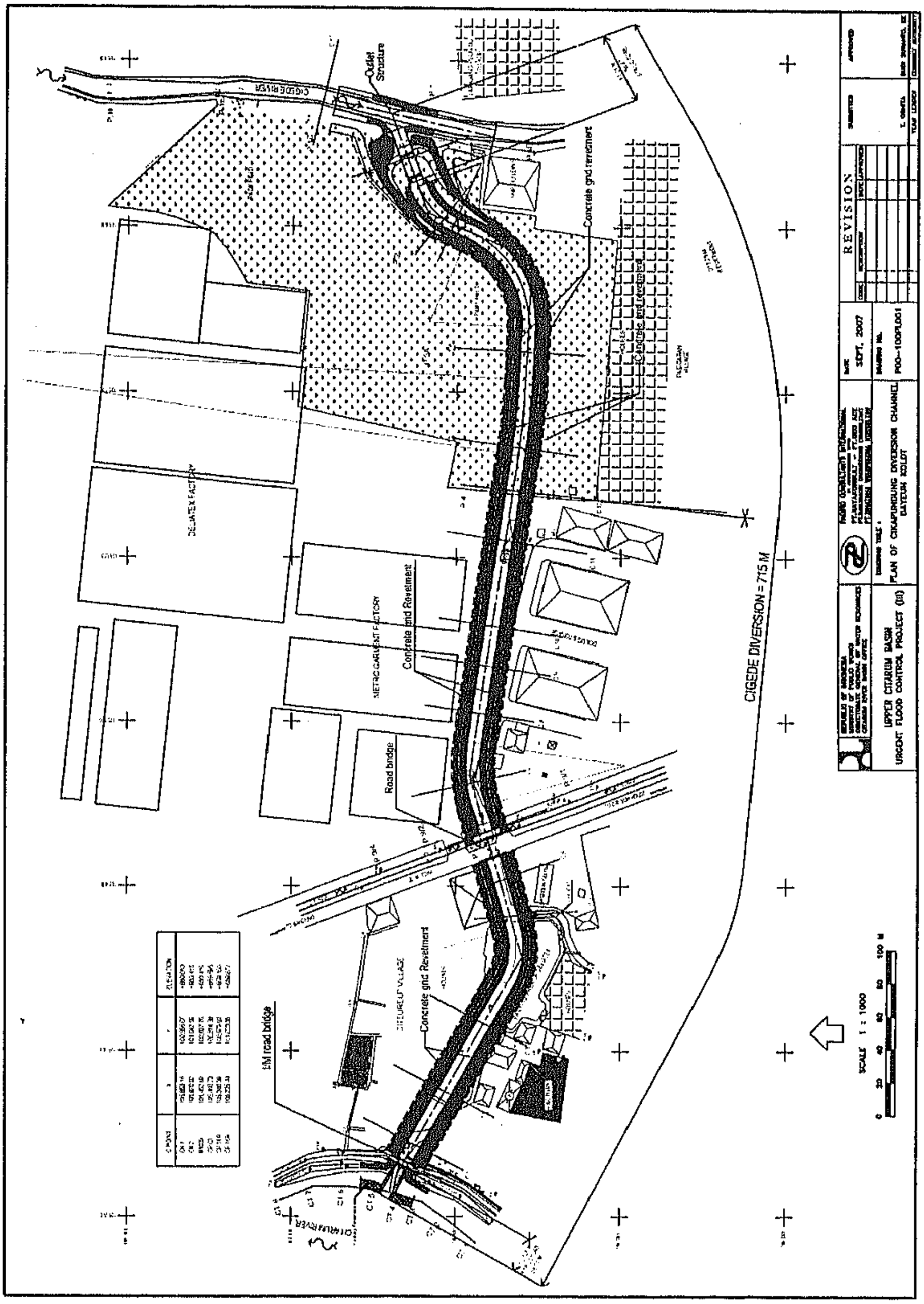
Rencana jumlah rumah yang dibebaskan mulai dari **Jl. Slamet Riyadi – Muara S. Bendung** :

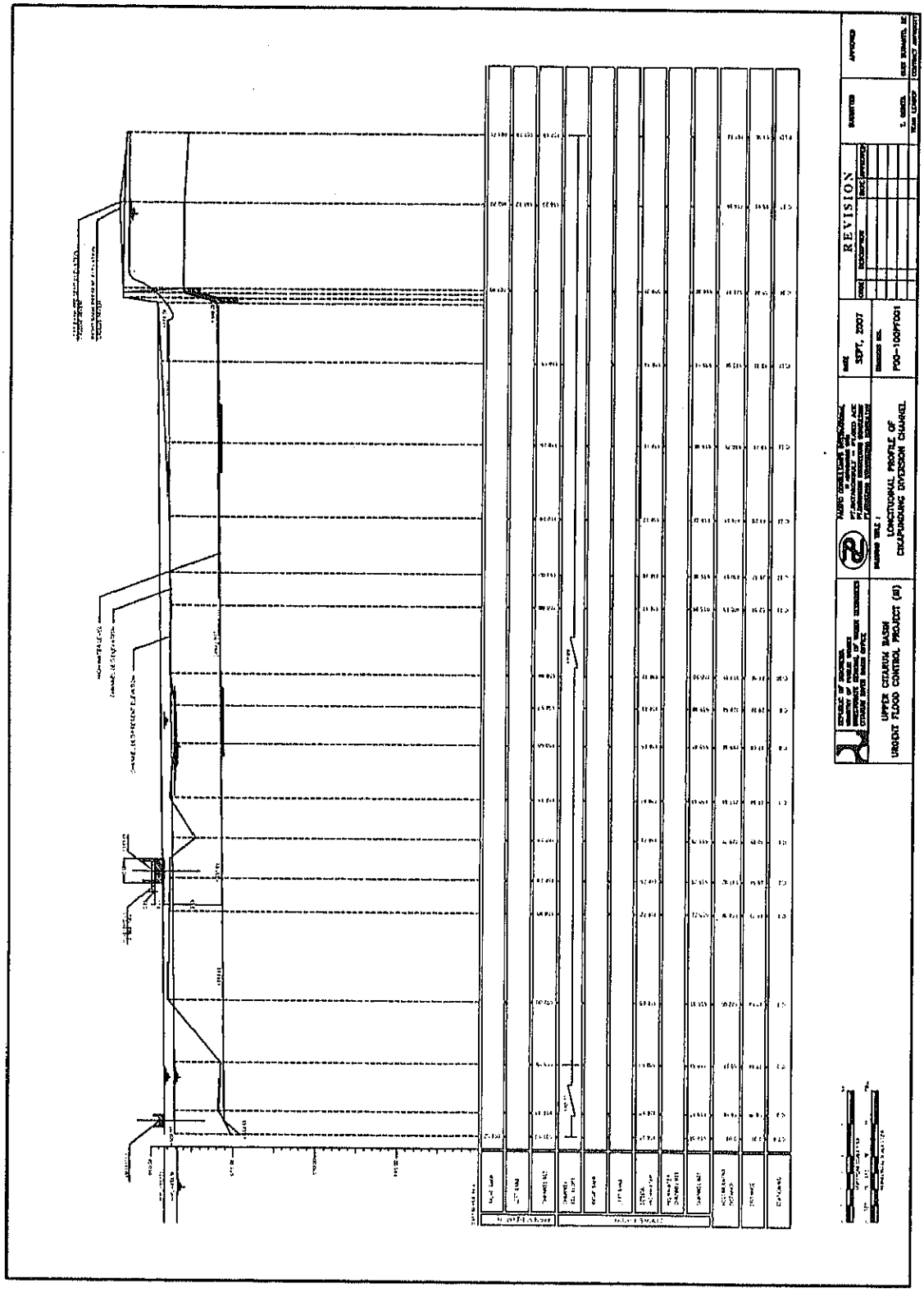
5. Bagian Kiri Sungai (searah aliran) sebanyak 39 (tiga puluh sembilan)) buah
6. Bagian Kanan Sungai (searah aliran) sebanyak 31 (tiga puluh satu) buah

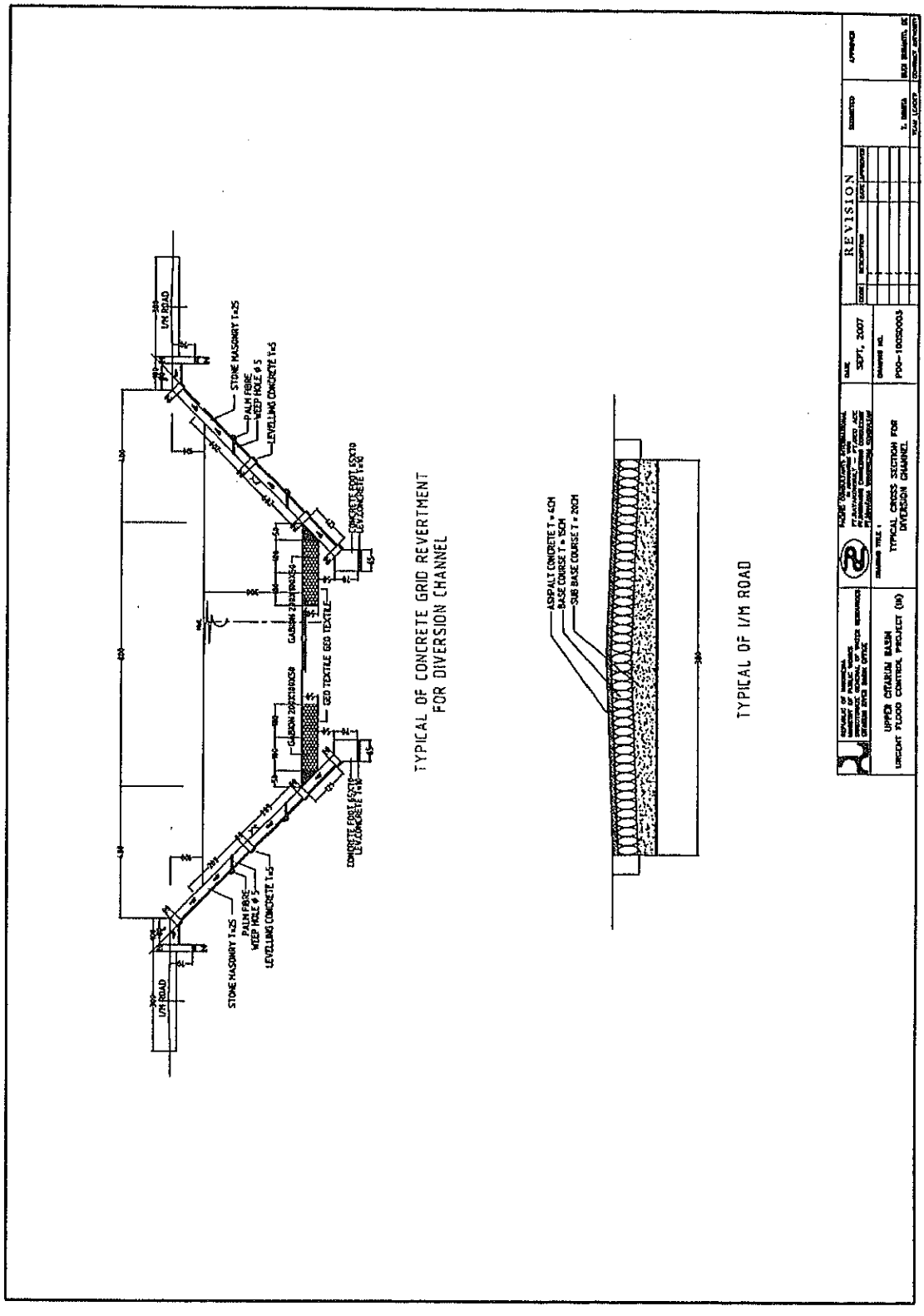
Attachment 7: Location Map and Description of Bandung Sub-project

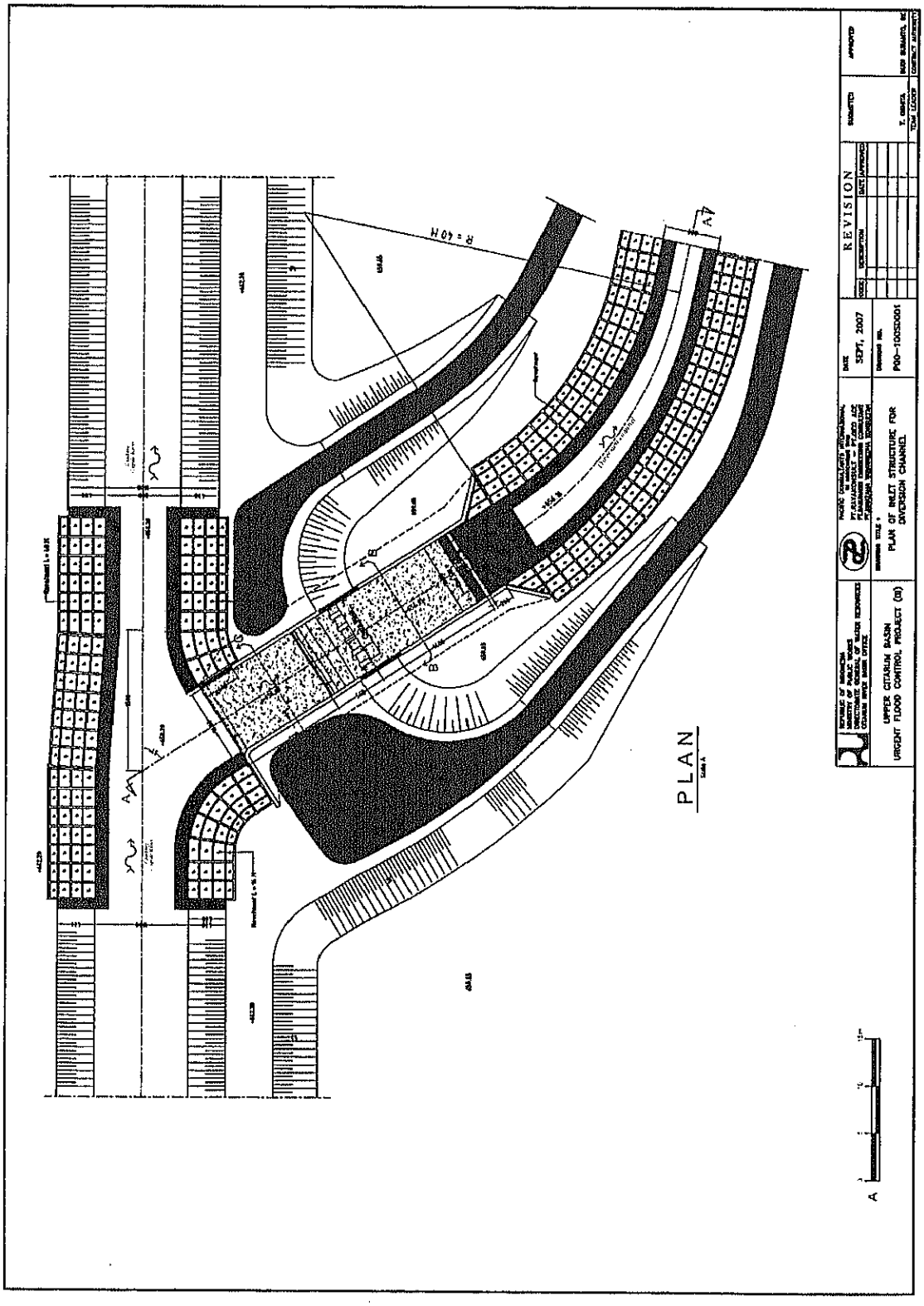


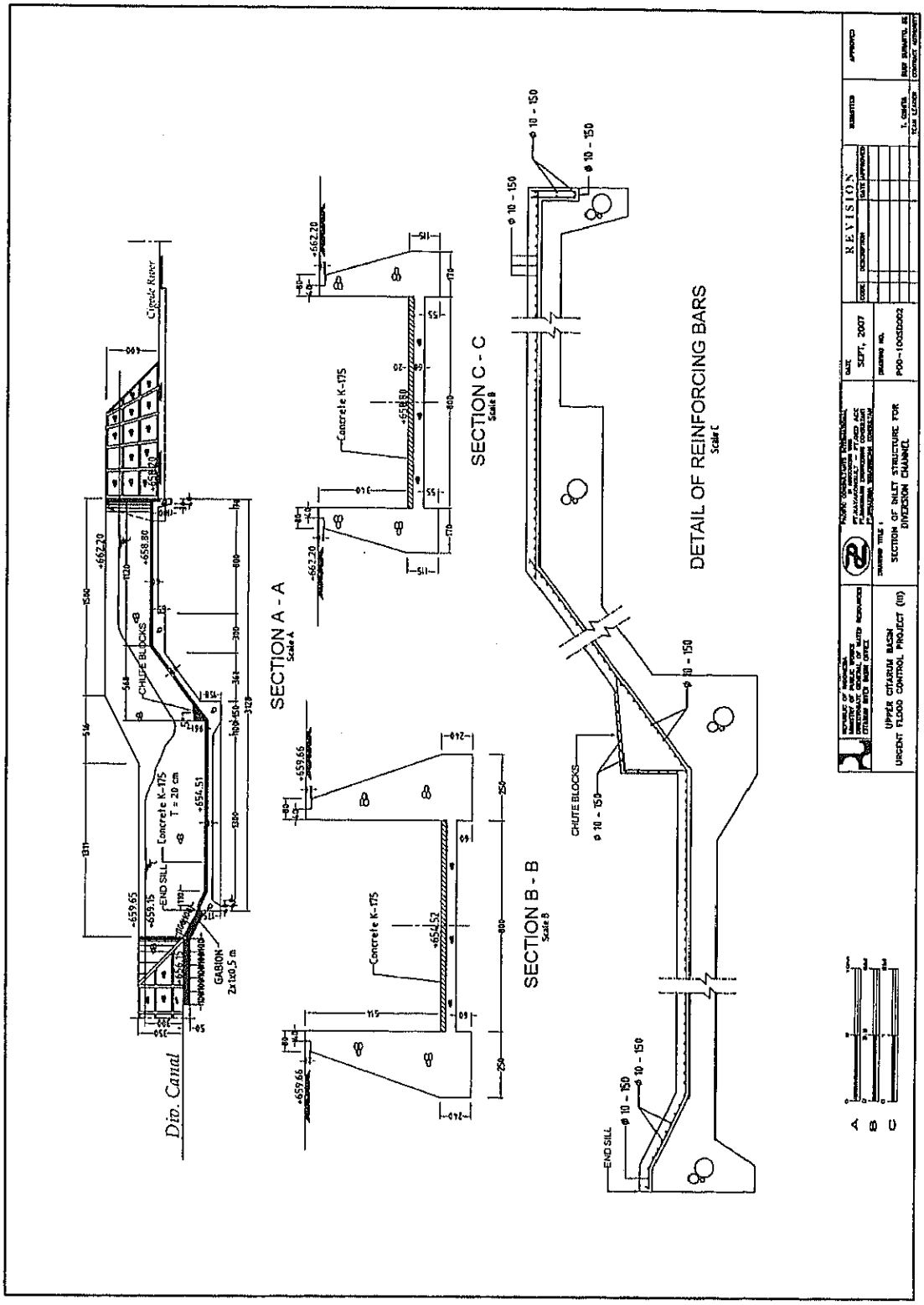



Outlet Structure
CIGEDE RIVER
Concrete grid revetment
DELIATEX FACTORY
METRO GARMENT FACTORY
Concrete grid Revetment
Road bridge
1M road bridge
CITARUM RIVER
CIGEDE DIVERSION = 715 M
SCALE 1 : 1000
REVISION
SEPT. 2007
UPPER CITARUM BASIN
URGENT FLOOD CONTROL PROJECT (III)
PLAN OF CIKAPUNDUNG DIVERSION CHANNEL
CAYEUH KOLOT

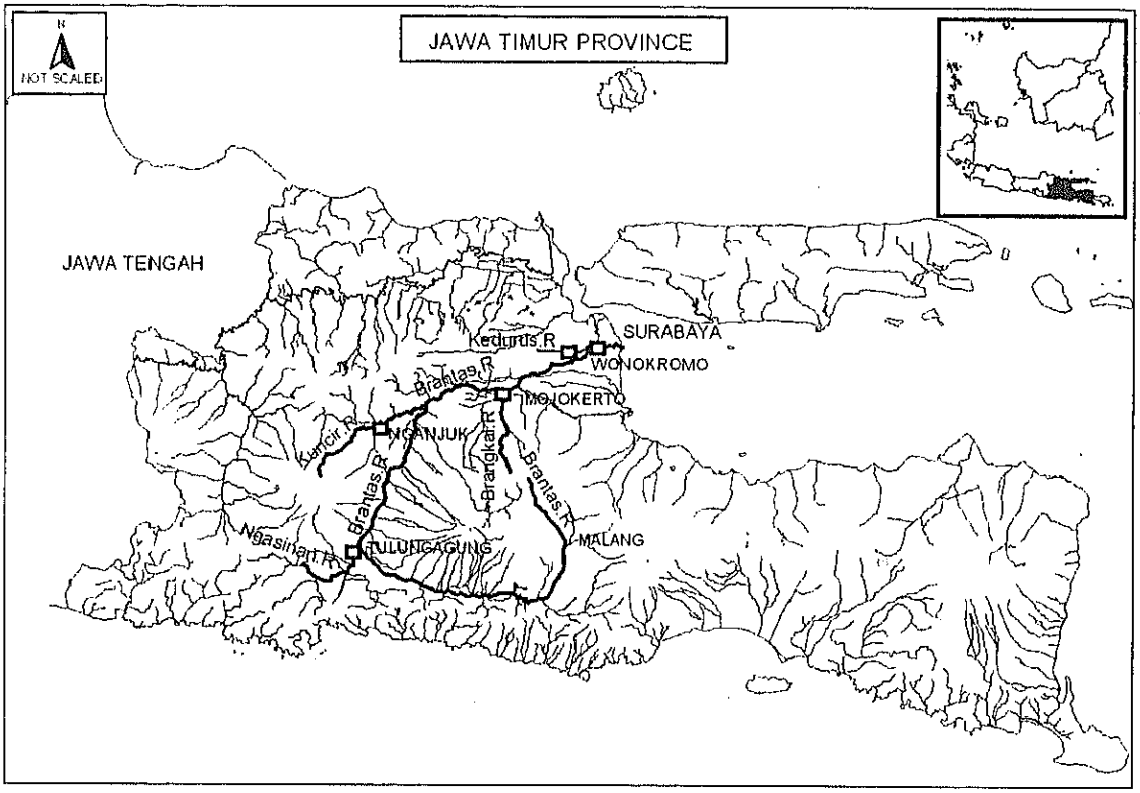

REVISION
UPPER CITARUM BASIN
URGENT FLOOD CONTROL PROJECT (II)
LONGITUDINAL PROFILE OF
CHAPUNDANG DIVERSION CHANNEL
SEPT, 2007
P00-1009T001

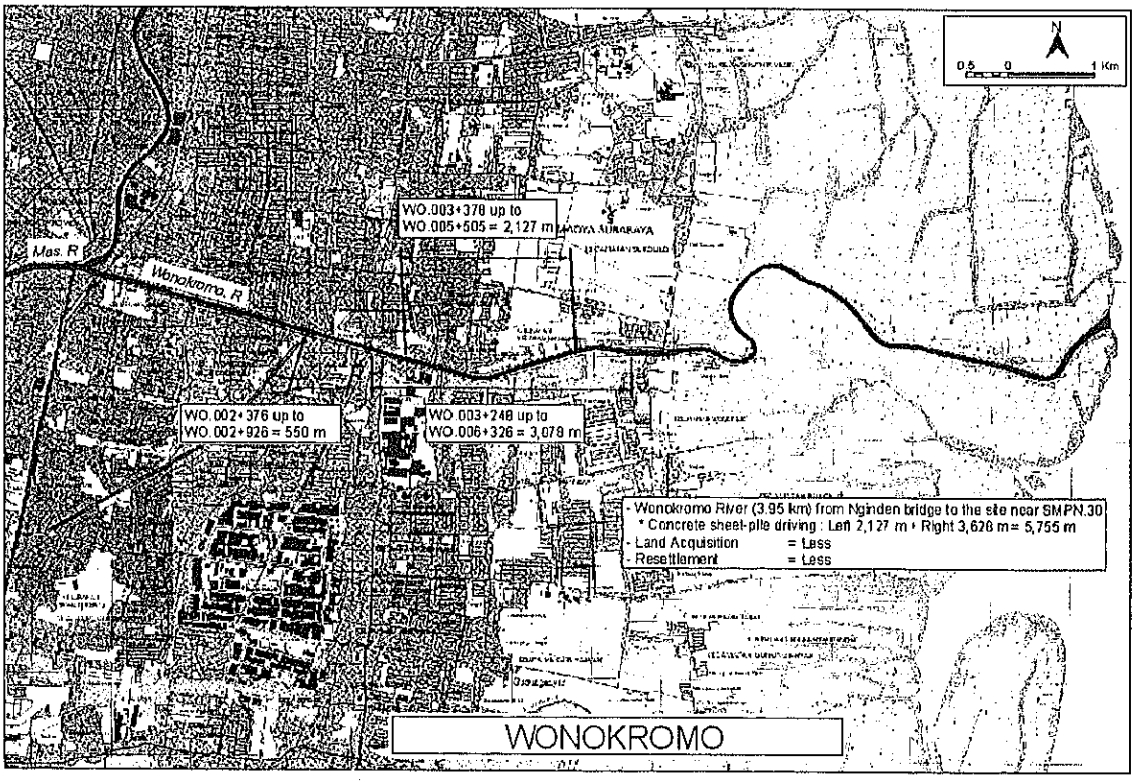

TYPICAL OF CONCRETE GRID REVERTMENT
FOR DIVERSION CHANNEL
TYPICAL OF I/M ROAD
REVISION
UPPER CITARUM BASIN
URGENT FLOOD CONTROL PROJECT (III)
TYPICAL CROSS SECTION FOR
DIVERSION CHANNEL
SEPT, 2007
P00-10052003

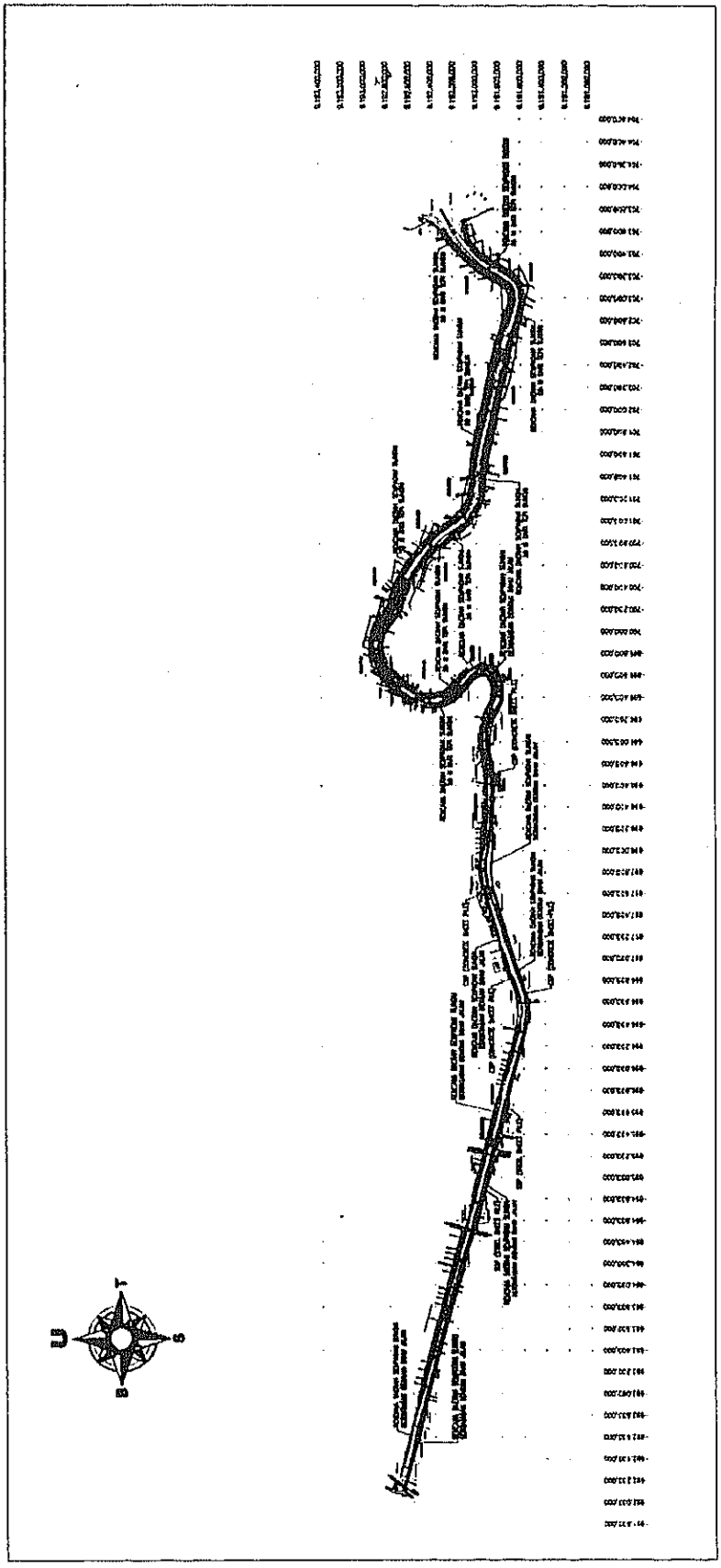

PLAN
REVISION
UPPER CITARUM BASIN
URGENT FLOOD CONTROL PROJECT (III)
PLAN OF INLET STRUCTURE FOR DIVERSION CHANNEL
SEPT. 2007
P00-10000001

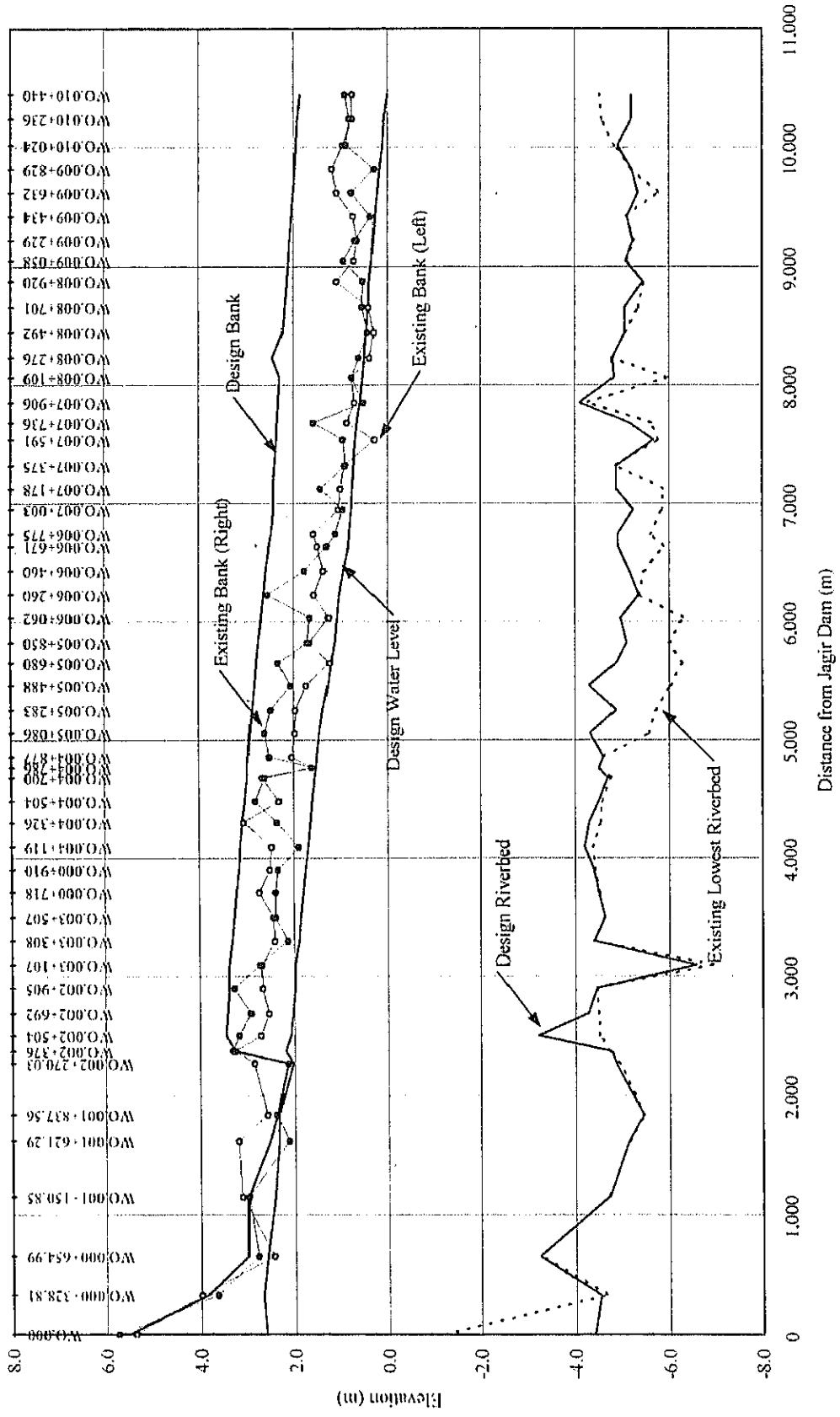

Cipook River
Div. Canal
CHUTE BLOCKS
END SILL
GABION
Concrete K-175
T = 20 cm
SECTION A - A
Scale A
SECTION B - B
Scale B
SECTION C - C
Scale B
DETAIL OF REINFORCING BARS
Scale C
REVISION
SECTION OF INLET STRUCTURE FOR DIVERSION CHANNEL
UPPER CITARUM BASIN
URGENT FLOOD CONTROL PROJECT (III)

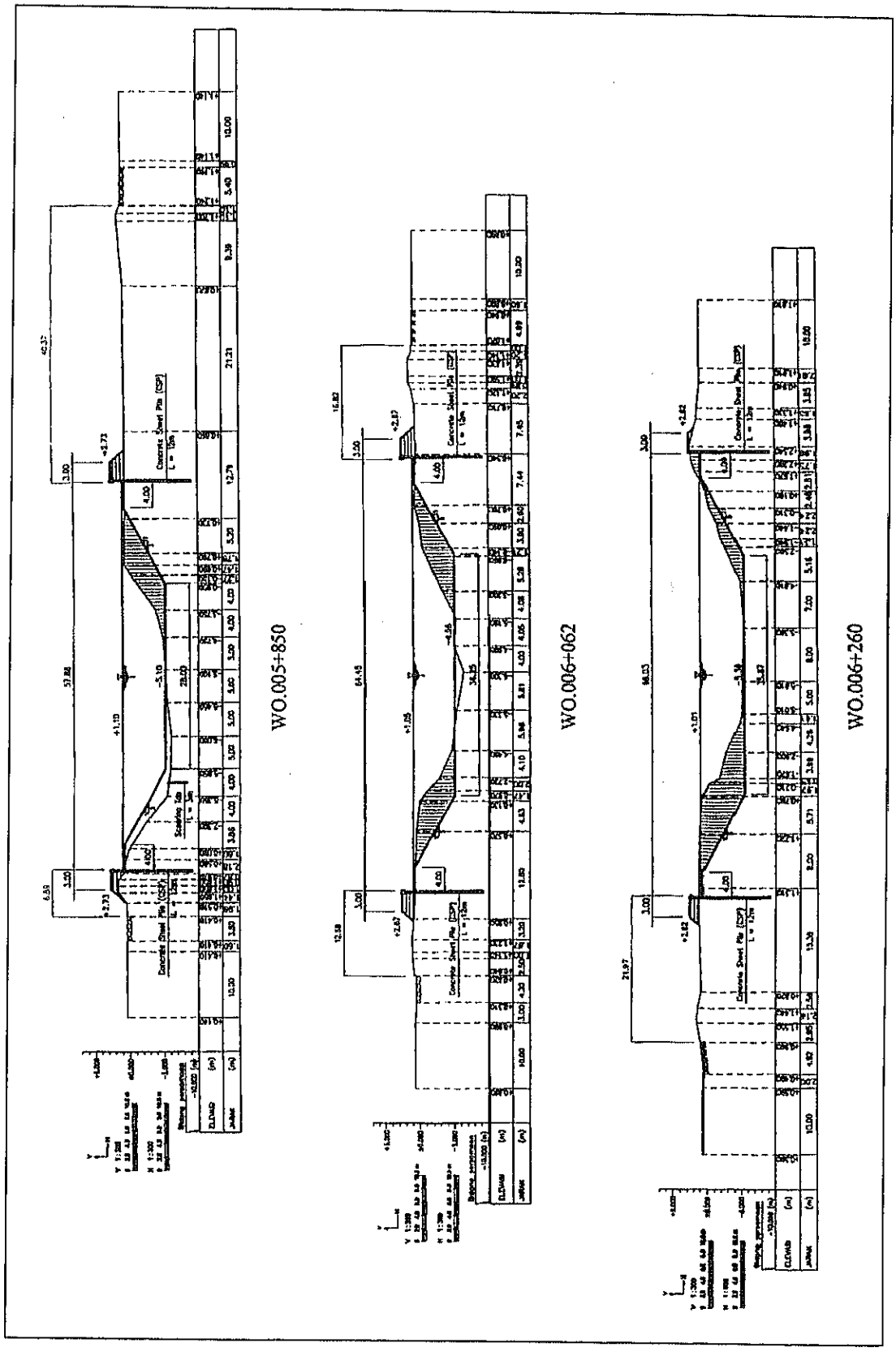
Attachment 8: Location Map and Description of Wonokromo Sub-project



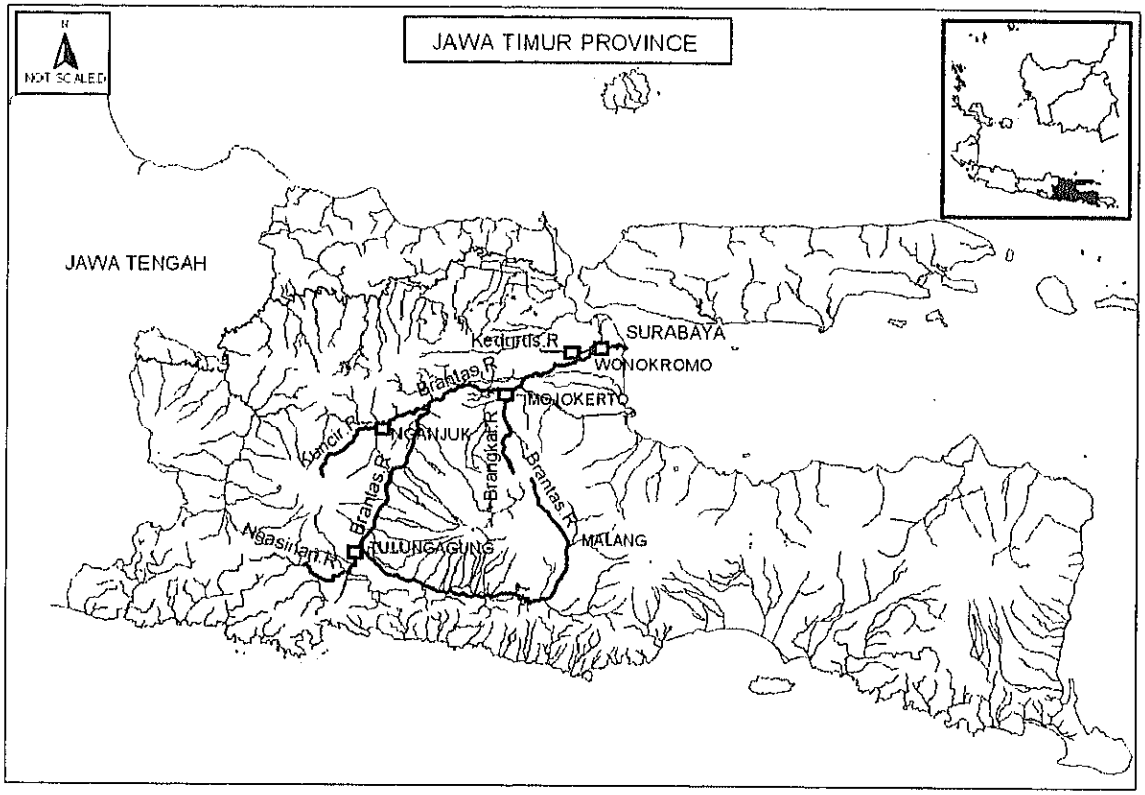


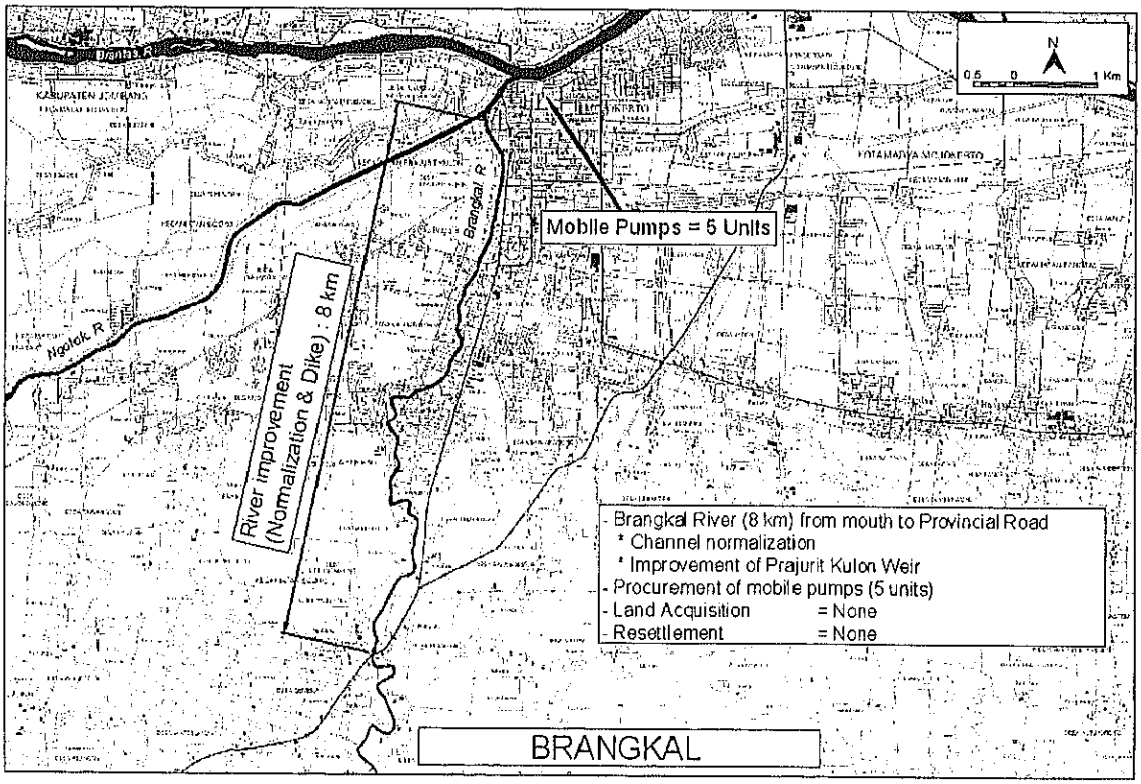



Design Bank
Existing Bank (Left)
Existing Bank (Right)
Design Water Level
Design Riverbed
Existing Lowest Riverbed
Elevation (m)
Distance from Jagir Dam (m)


WO.005+850
WO.006+062
WO.006+260

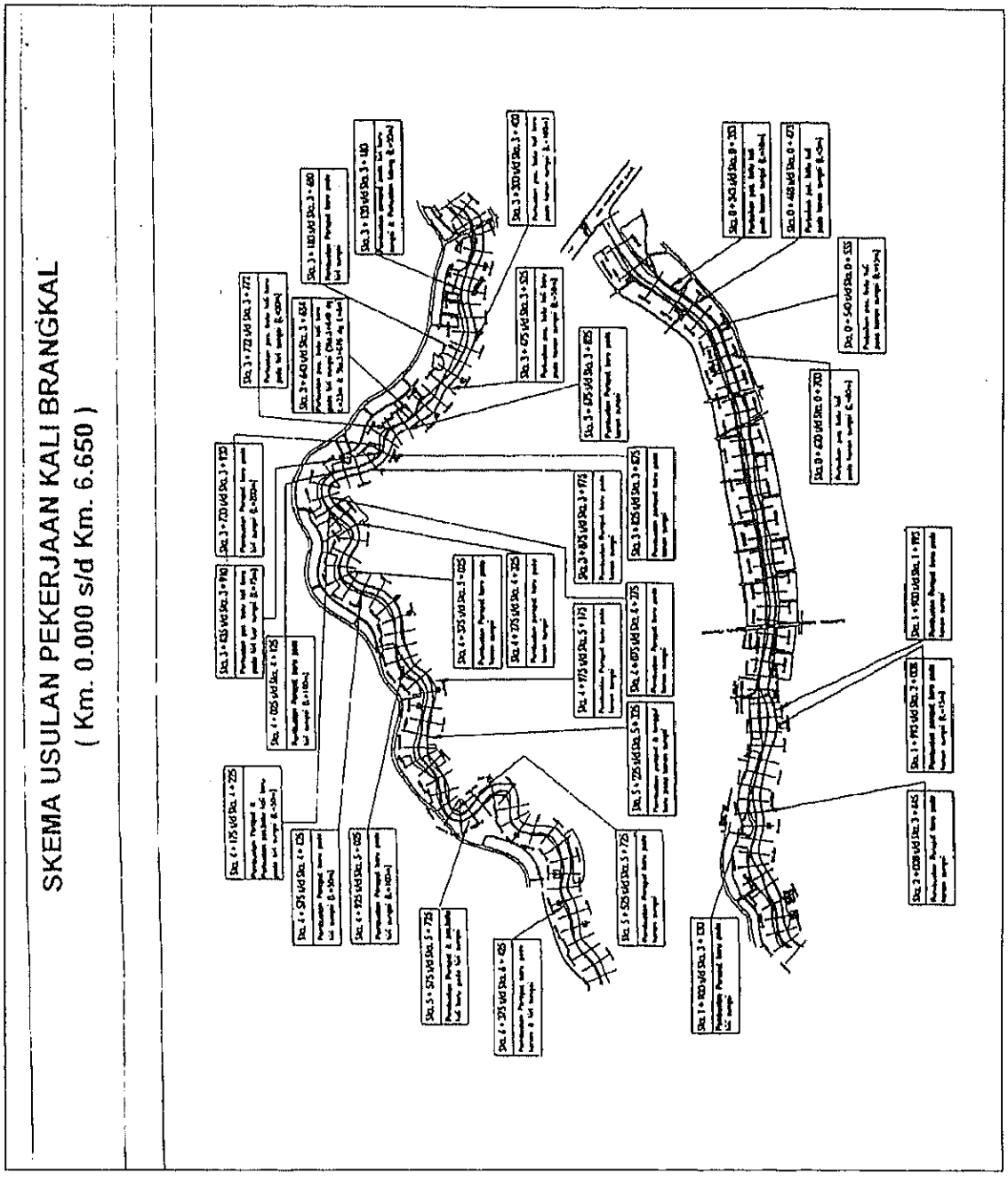
Attachment 9: Location Map and Description of Brangkal Sub-project

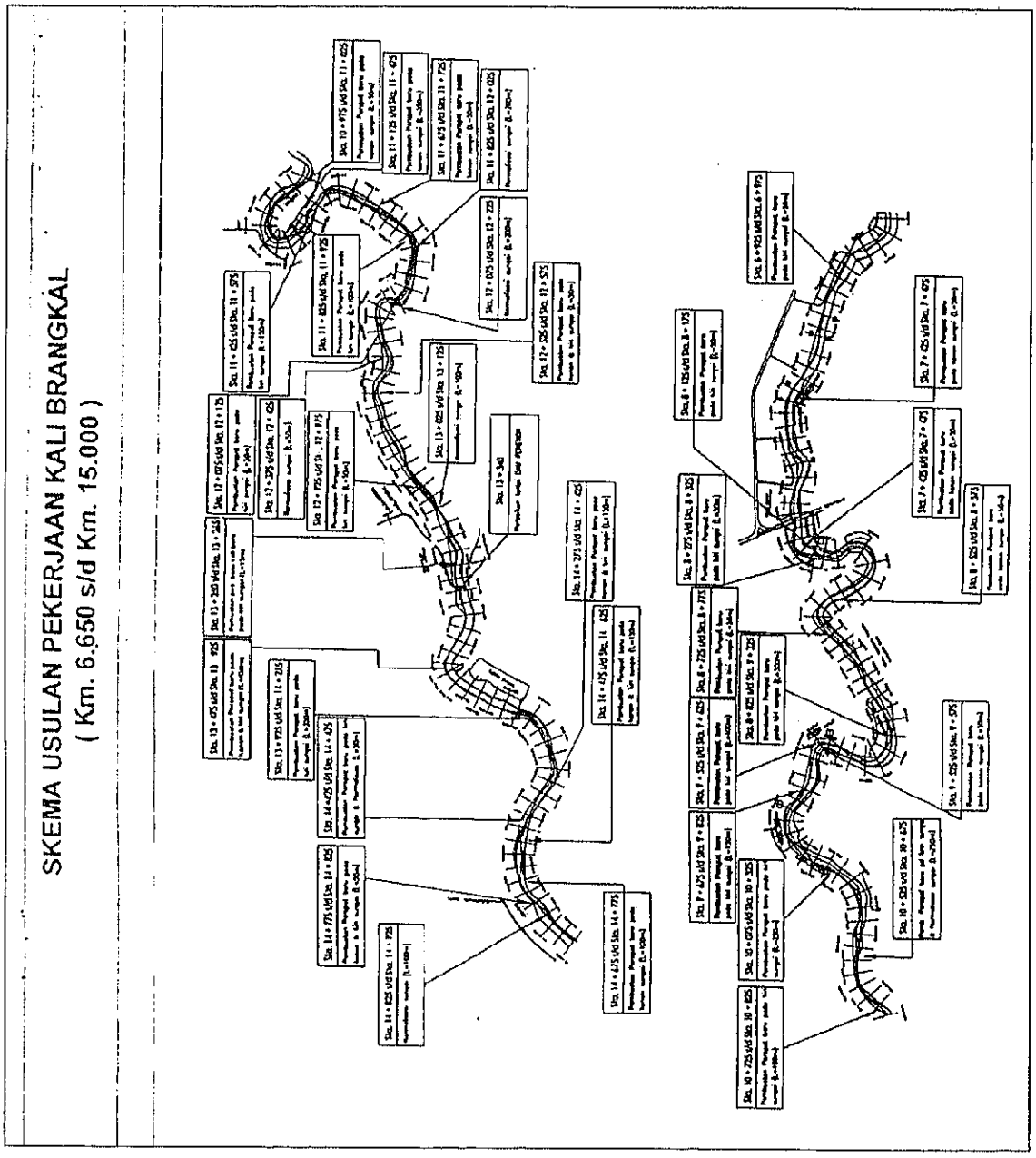




SKEMA USULAN PEKERJAAN KALI BRANGKAL

(Km. 0.000 s/d Km. 6.650)

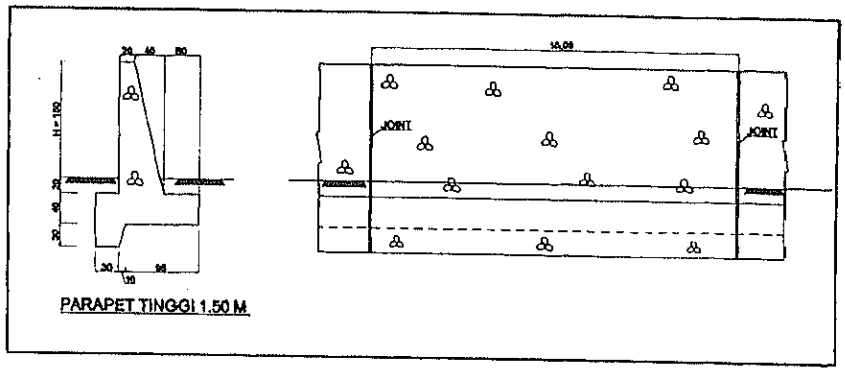



SKEMA USULAN PEKERJAAN KALI BRANGKAL
(Km. 6.650 s/d Km. 15.000)

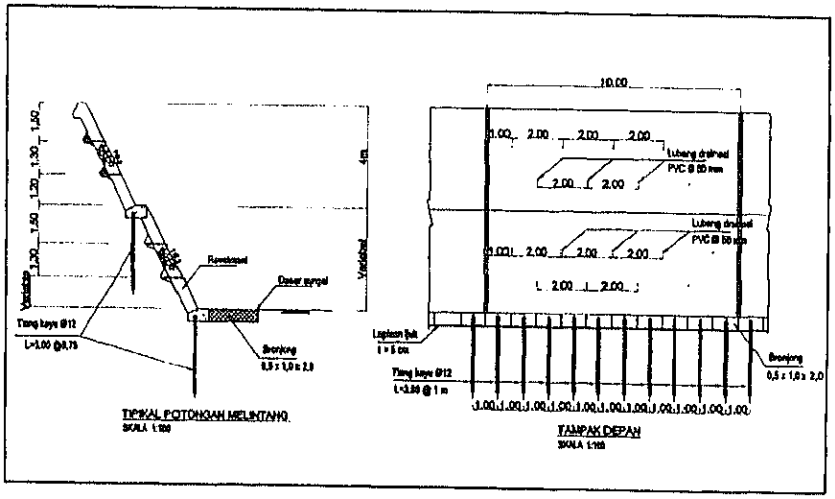
Penanganan Kali Brangkal Secara Komprehensif Untuk Pengamanan Banjir Kota Majokerto

TYPICAL BANGUNAN MAIN STREAM SUNGAI

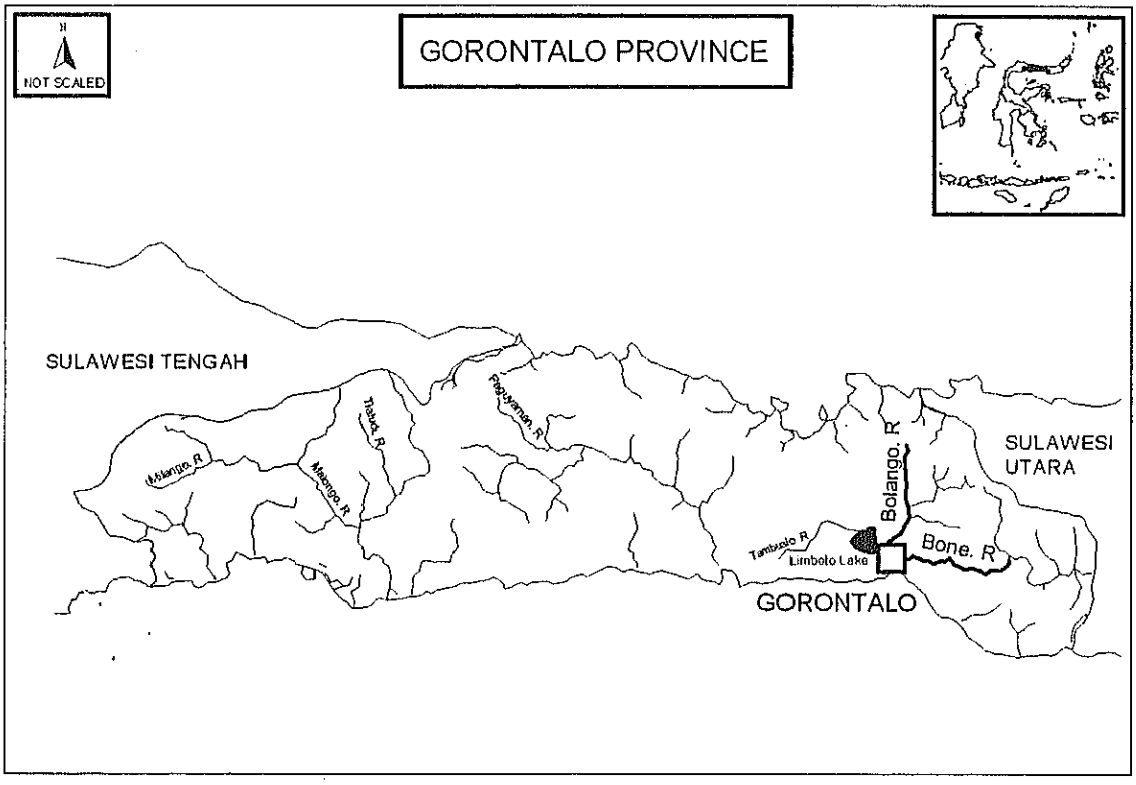
Typical Bangunan Parapet

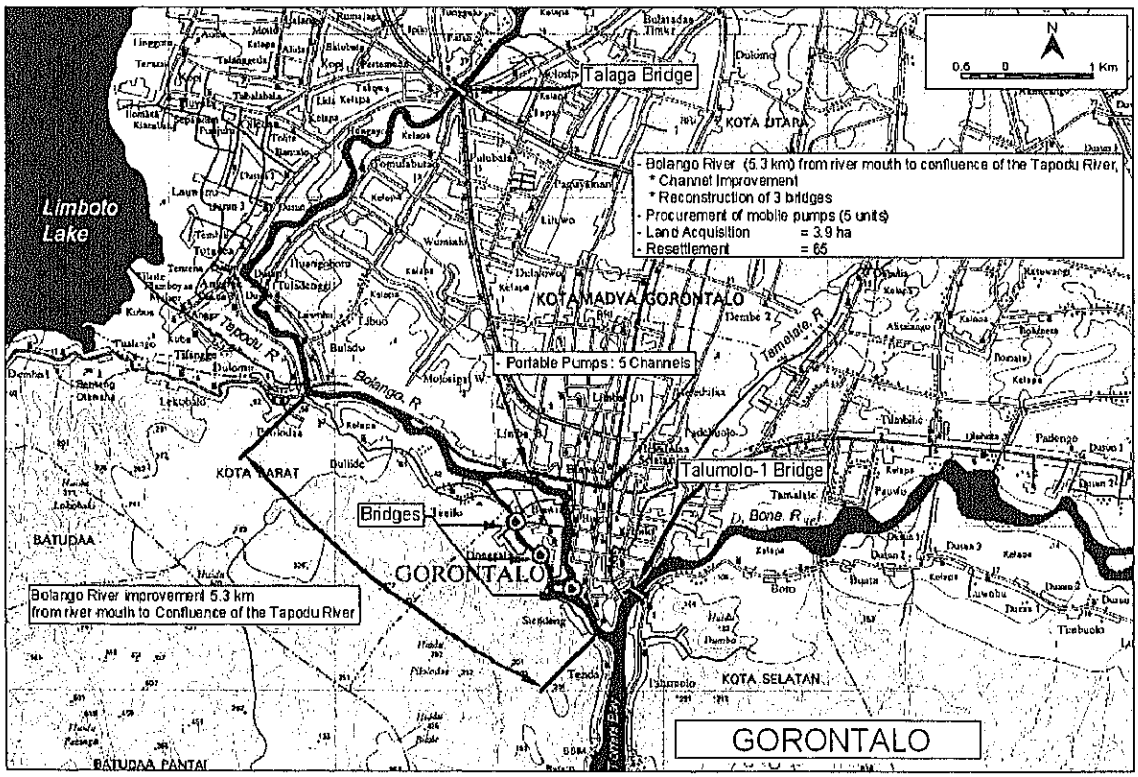


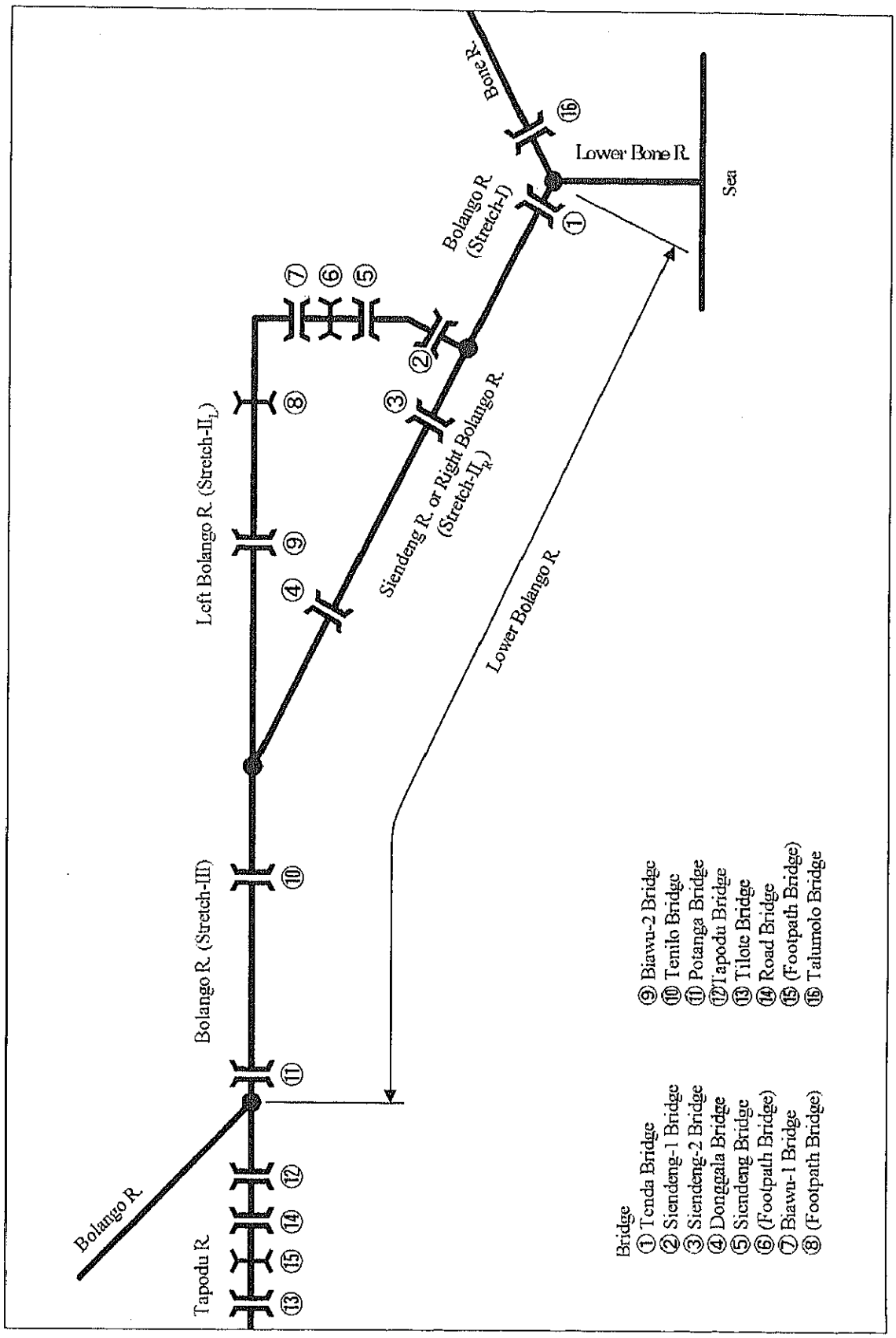
Typical Bangunan Revertment

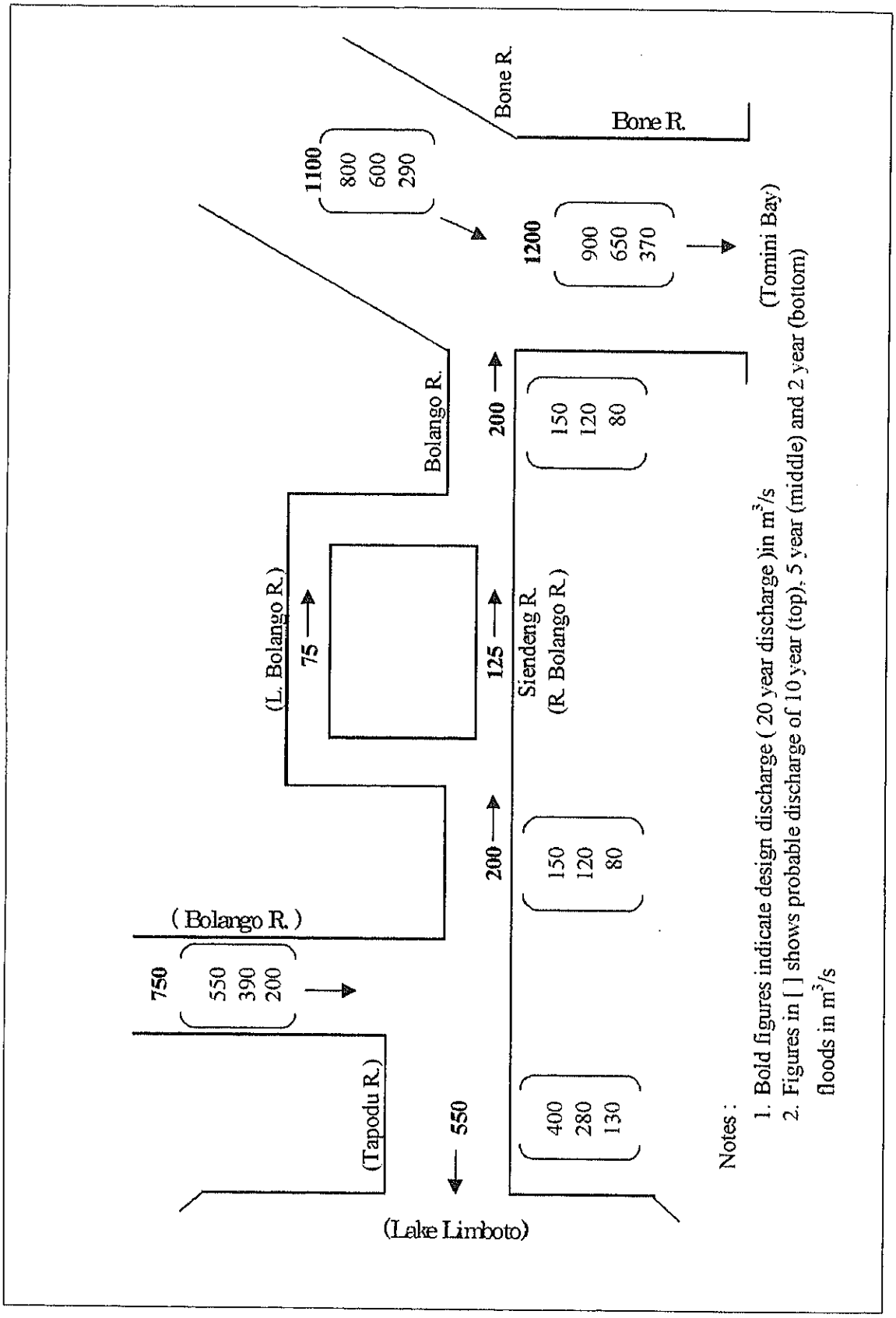


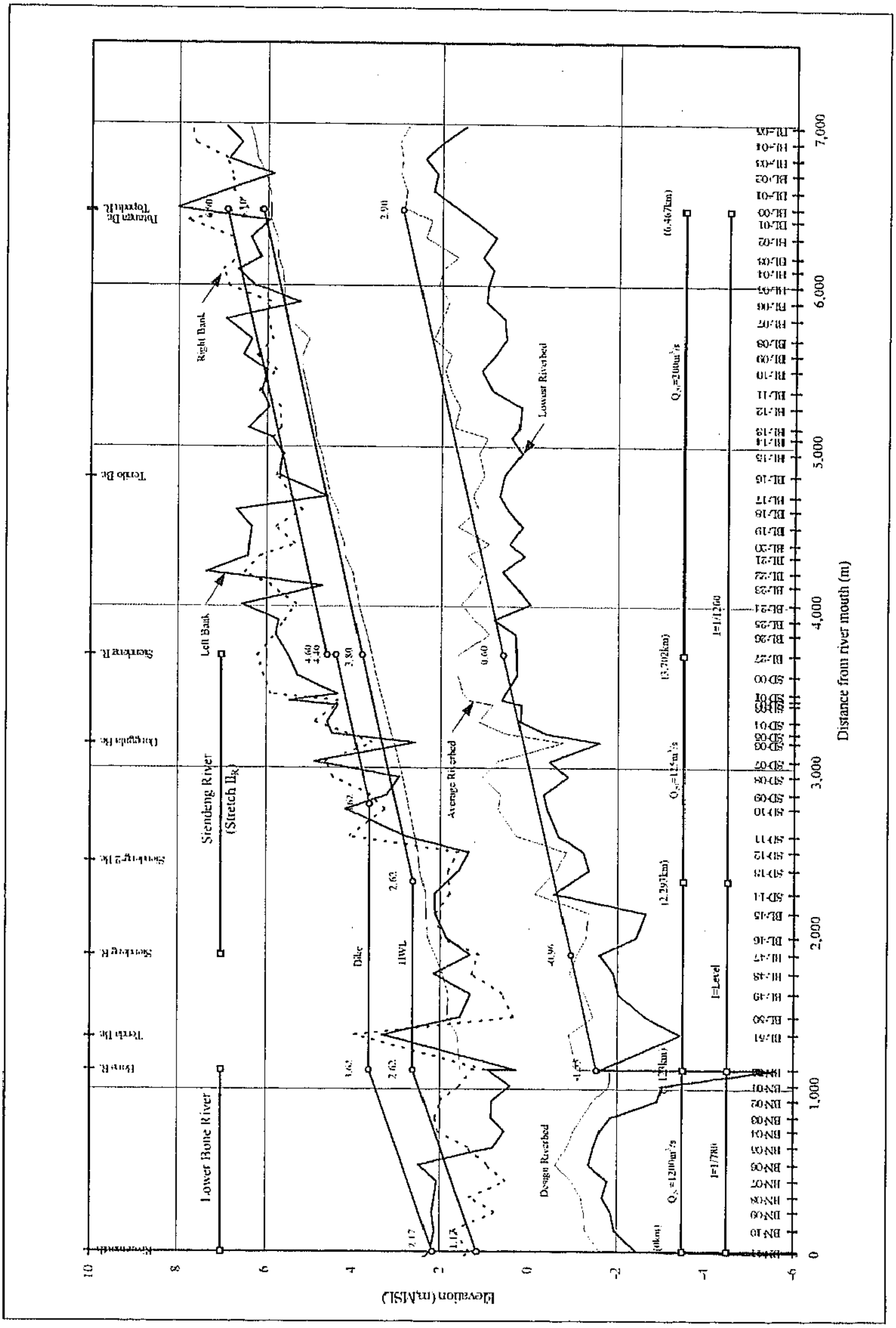
Attachment 10: Location Map and Description of Gorontalo Sub-project

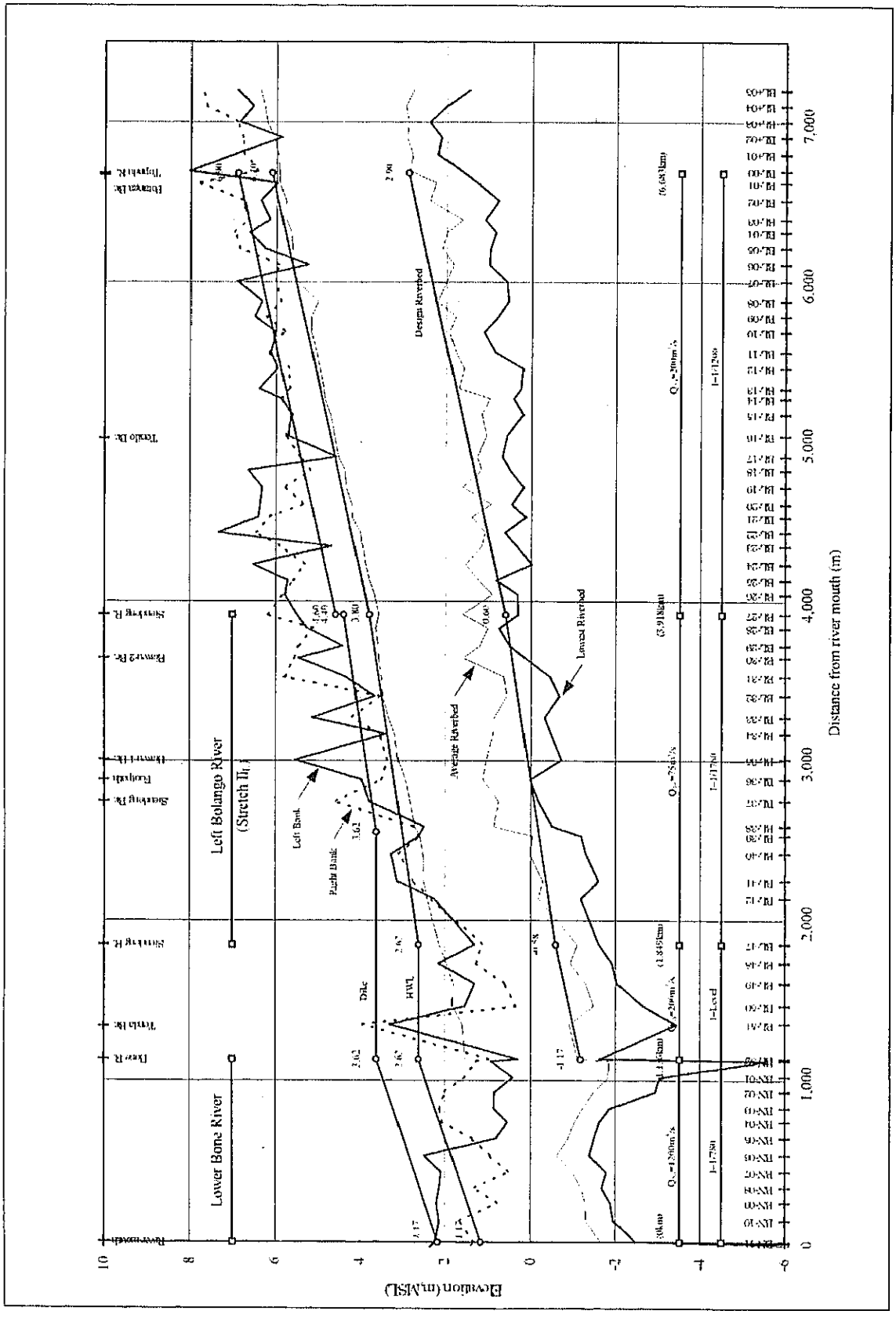


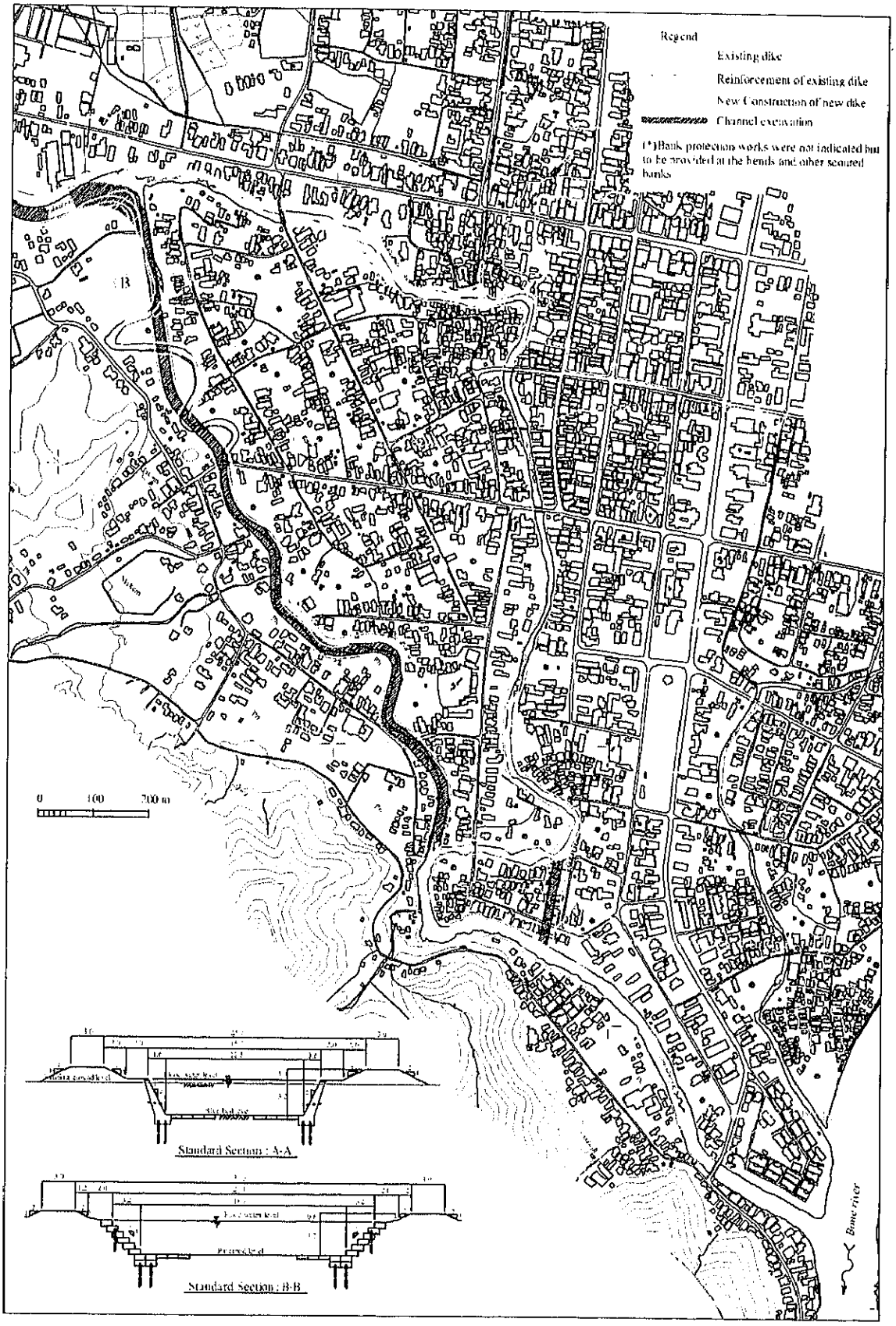


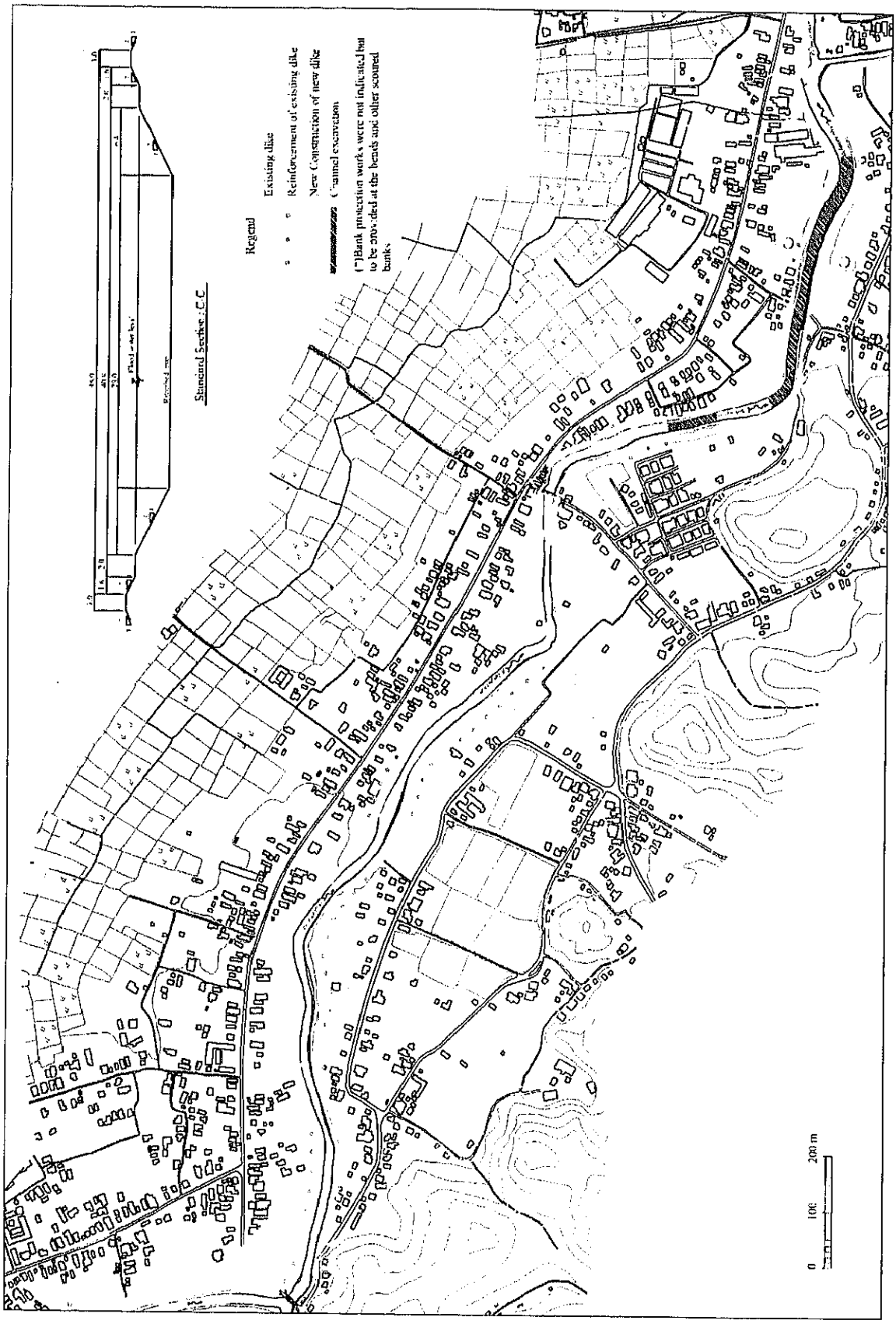

Bone R.
Lower Bone R.
Sea
Bolango R (Stretch-I)
Left Bolango R. (Stretch-II$_L$)
Siendeng R. or Right Bolango R. (Stretch-II$_R$)
Lower Bolango R.
Bolango R (Stretch-III)
Bolango R.
Tapodu R.
Bridge
① Tenda Bridge
② Siendeng-1 Bridge
③ Siendeng-2 Bridge
④ Donggala Bridge
⑤ Siendeng Bridge
⑥ (Foolpath Bridge)
⑦ Biawu-1 Bridge
⑧ (Footpath Bridge)
⑨ Biawu-2 Bridge
⑩ Tenilo Bridge
⑪ Potanga Bridge
⑫ Tapodu Bridge
⑬ Tilote Bridge
⑭ Road Bridge
⑮ (Footpath Bridge)
⑯ Talumolo Bridge

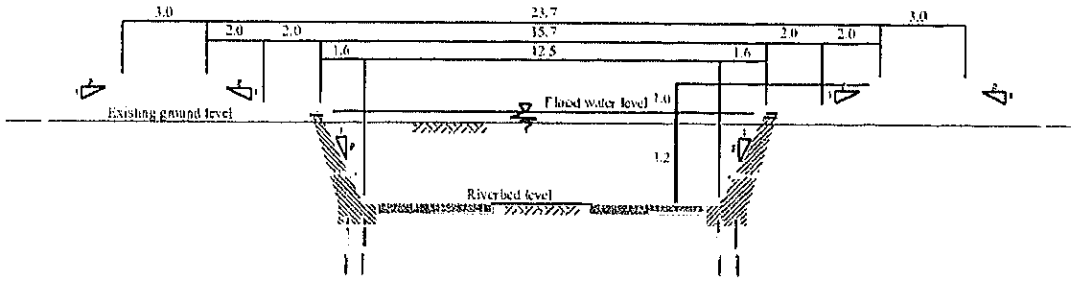

Bone R.
Bone R.
1100
800
600
290
1200
900
650
370
(Tomini Bay)
Bolango R.
200
(L. Bolango R.)
75
125
Siendeng R.
(R. Bolango R.)
150
120
80
200
150
120
80
(Bolango R.)
750
550
390
200
(Tapodu R.)
550
400
280
130
(Lake Limboto)
Notes :
1. Bold figures indicate design discharge (20 year discharge)in m3/s
2. Figures in [ ] shows probable discharge of 10 year (top), 5 year (middle) and 2 year (bottom) floods in m3/s


Lower Bone River
Siendeng River
(Stretch II_R)
Left Bank
Right Bank
Lowest Riverbed
Average Riverbed
Design Riverbed
Dike
HWL
I=Level
I=1/1200
I=1/780
Distance from river mouth (m)
Elevation (m MSL)

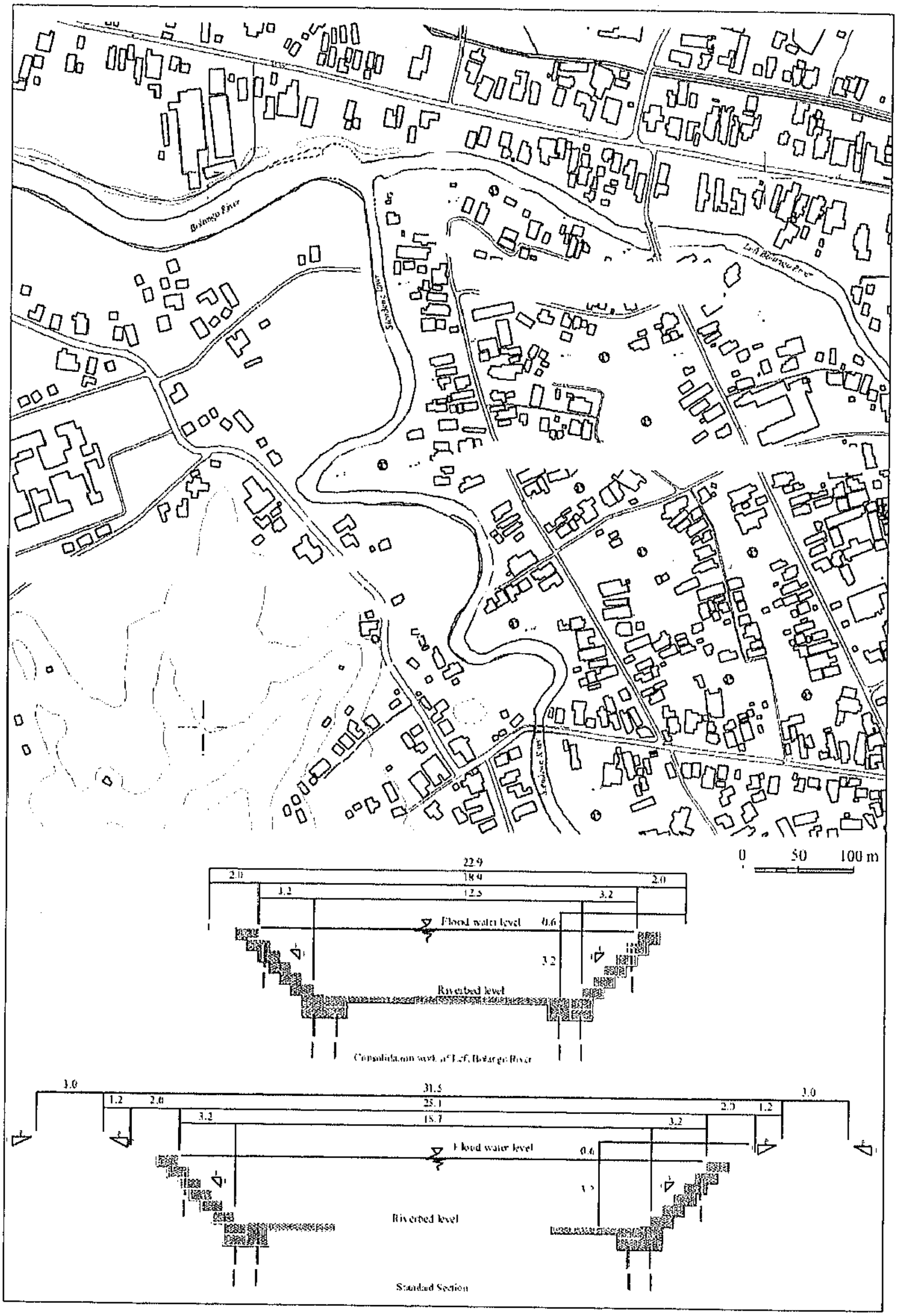

Lower Bone River
Left Bolungo River
(Stretch II)
Left Bank
Right Bank
Design Riverbed
Average Riverbed
Lowest Riverbed
Distance from river mouth (m)
Elevation (m.MSL)

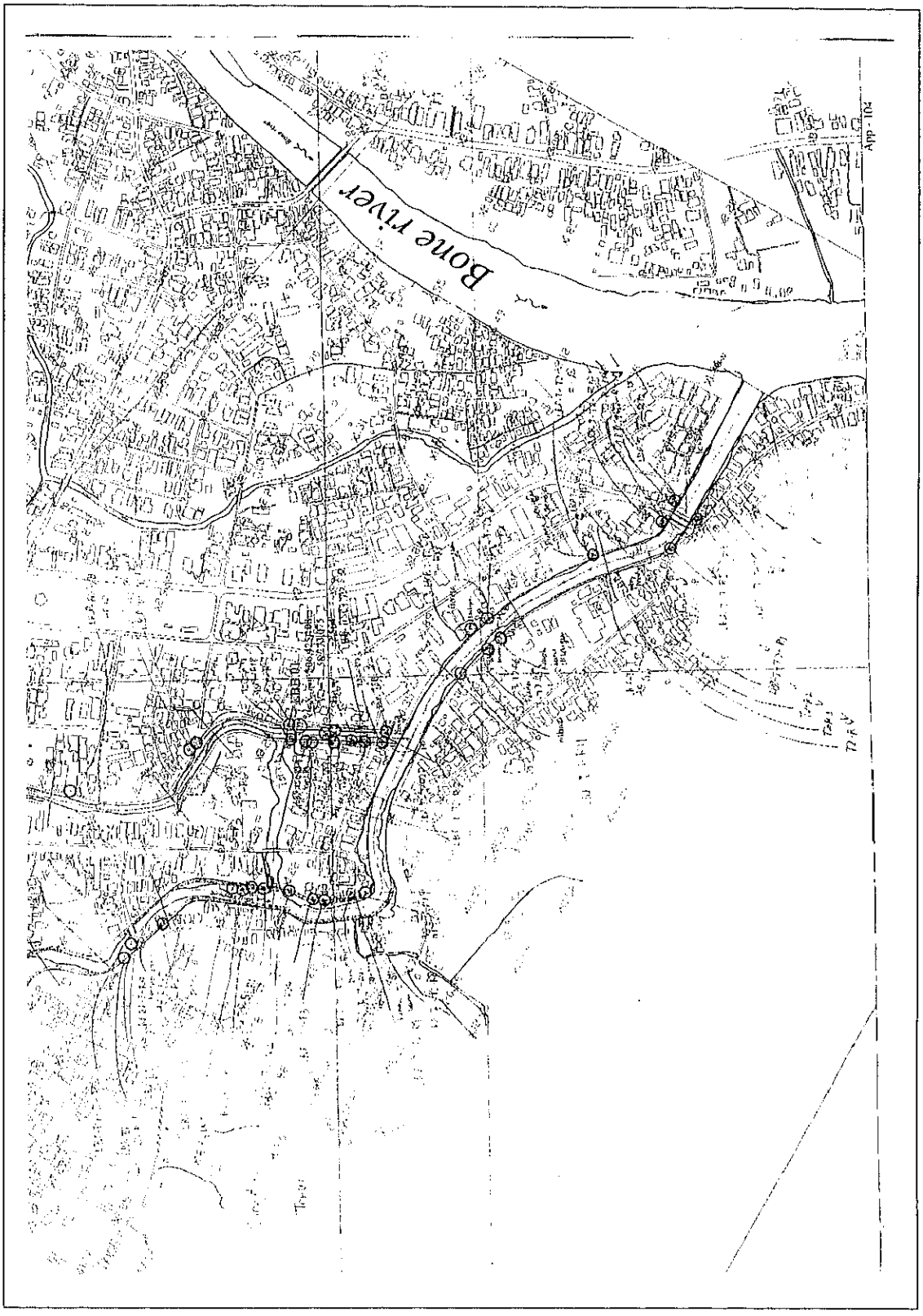

Legend
Existing dike
Reinforcement of existing dike
New Construction of new dike
Channel excavation
(*)Bank protection works were not indicated but to be provided at the bends and other scoured banks
0
100
200 m
Standard Section : A-A
Standard Section : B-B
Bonoi river


Legend
Existing dike
Reinforcement of existing dike
New Construction of new dike
Channel excavation
(*)Bank protection works were not indicated but to be provided at the bends and other scoured banks
Standard Section : C-C
0
100
200 m

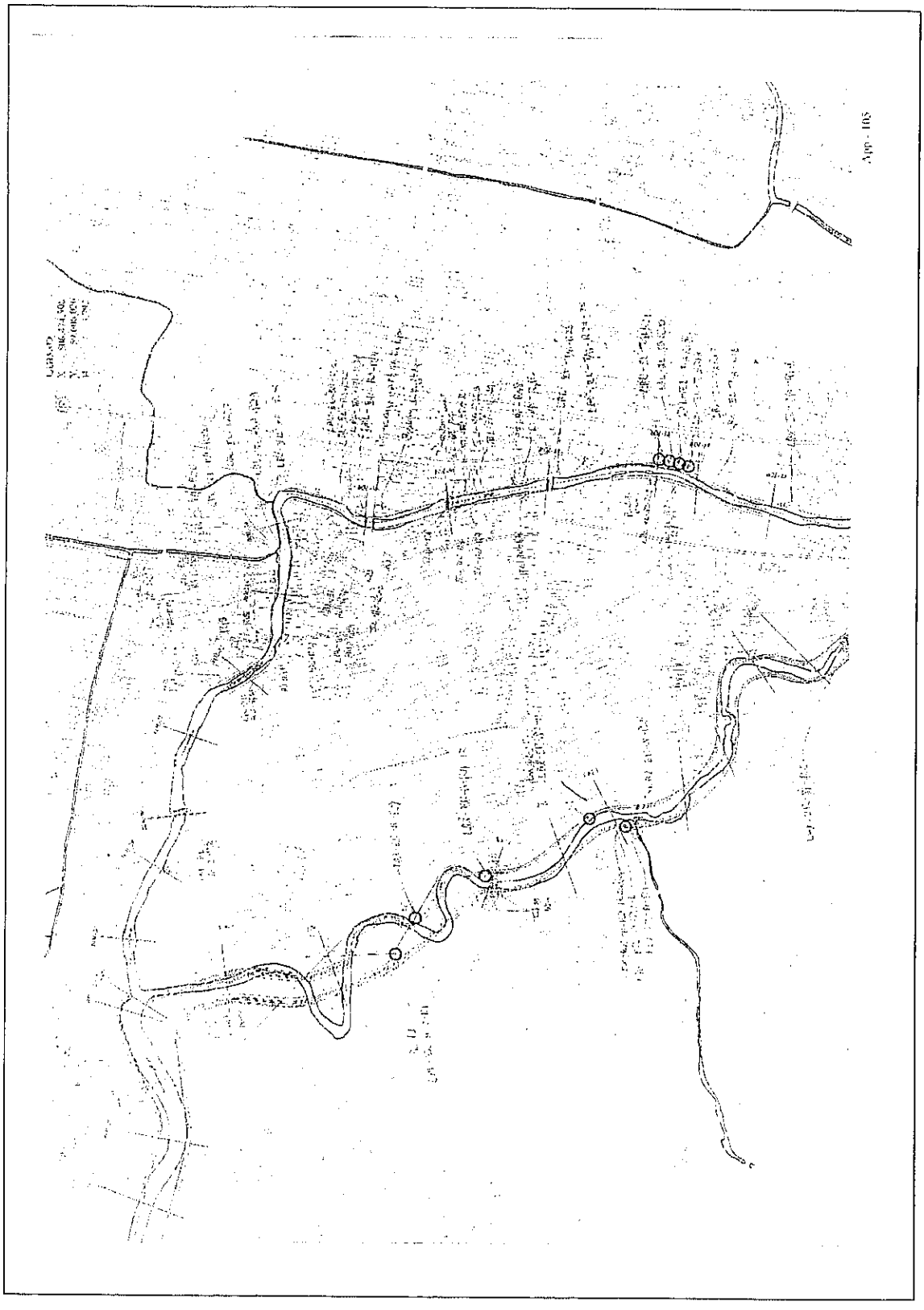


Standard COC Section

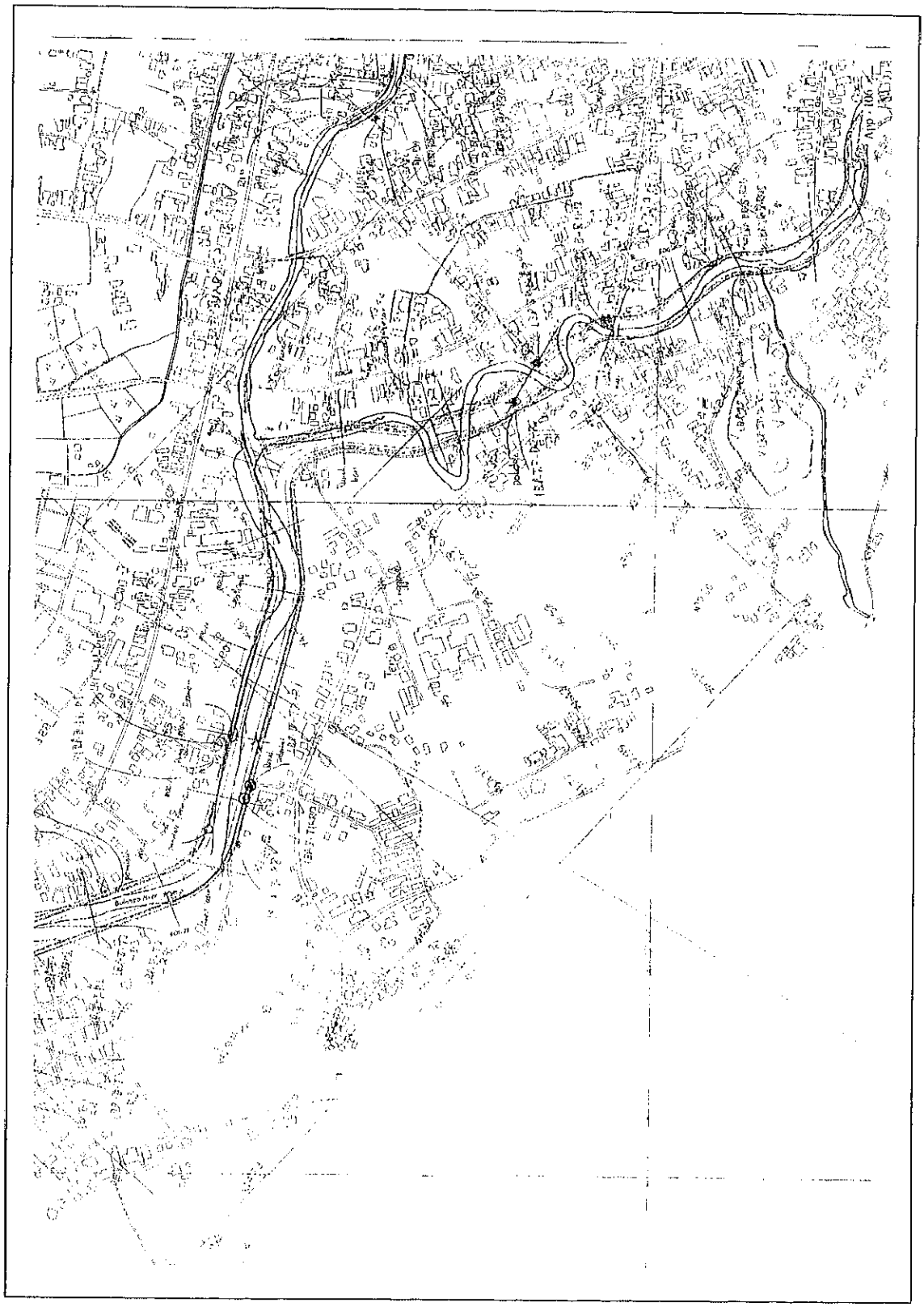

0 50 100 m
22.9
2.0
18.9
2.0
3.2
12.5
3.2
Flood water level
0.6
3.2
Riverbed level
Consolidation work of Left Bolango River
3.0
31.5
3.0
1.2
2.0
25.1
2.0
1.2
3.2
15.7
3.2
Flood water level
0.6
Riverbed level
Standard Section



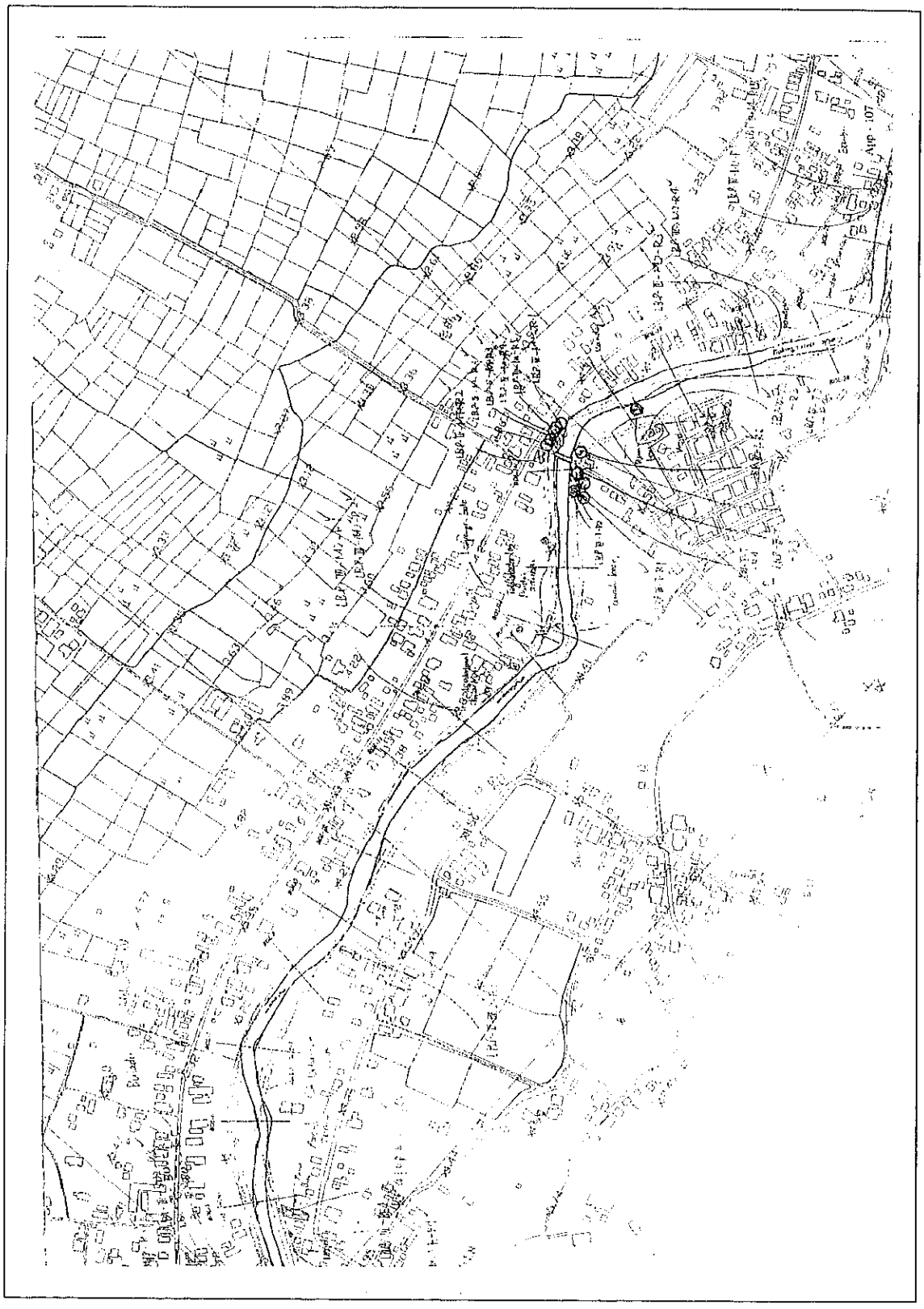
Houses Potentially Affected by the Project (1/5)



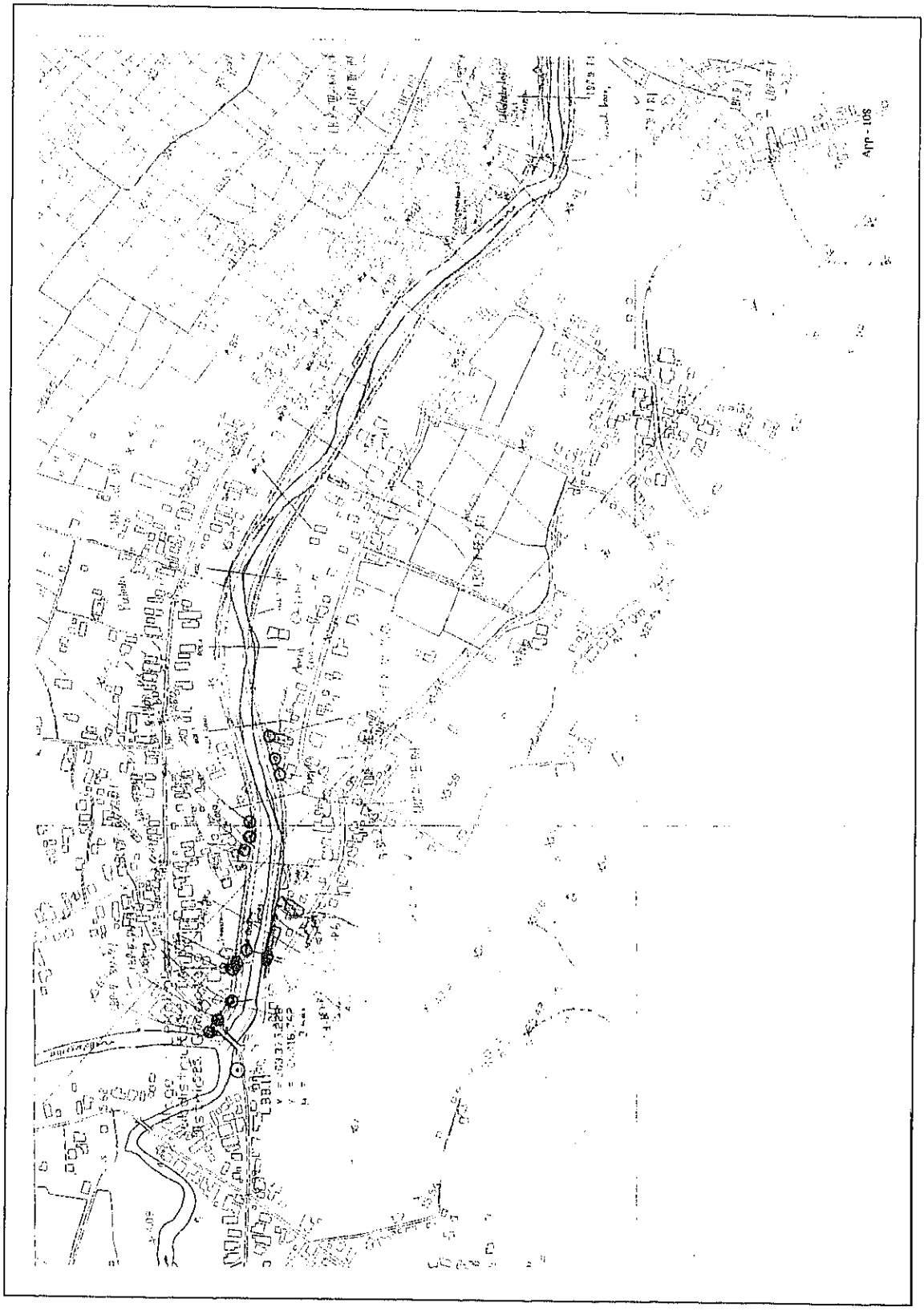
Houses Potentially Affected by the Project (2/5)



Houses Potentially Affected by the Project (3/5)

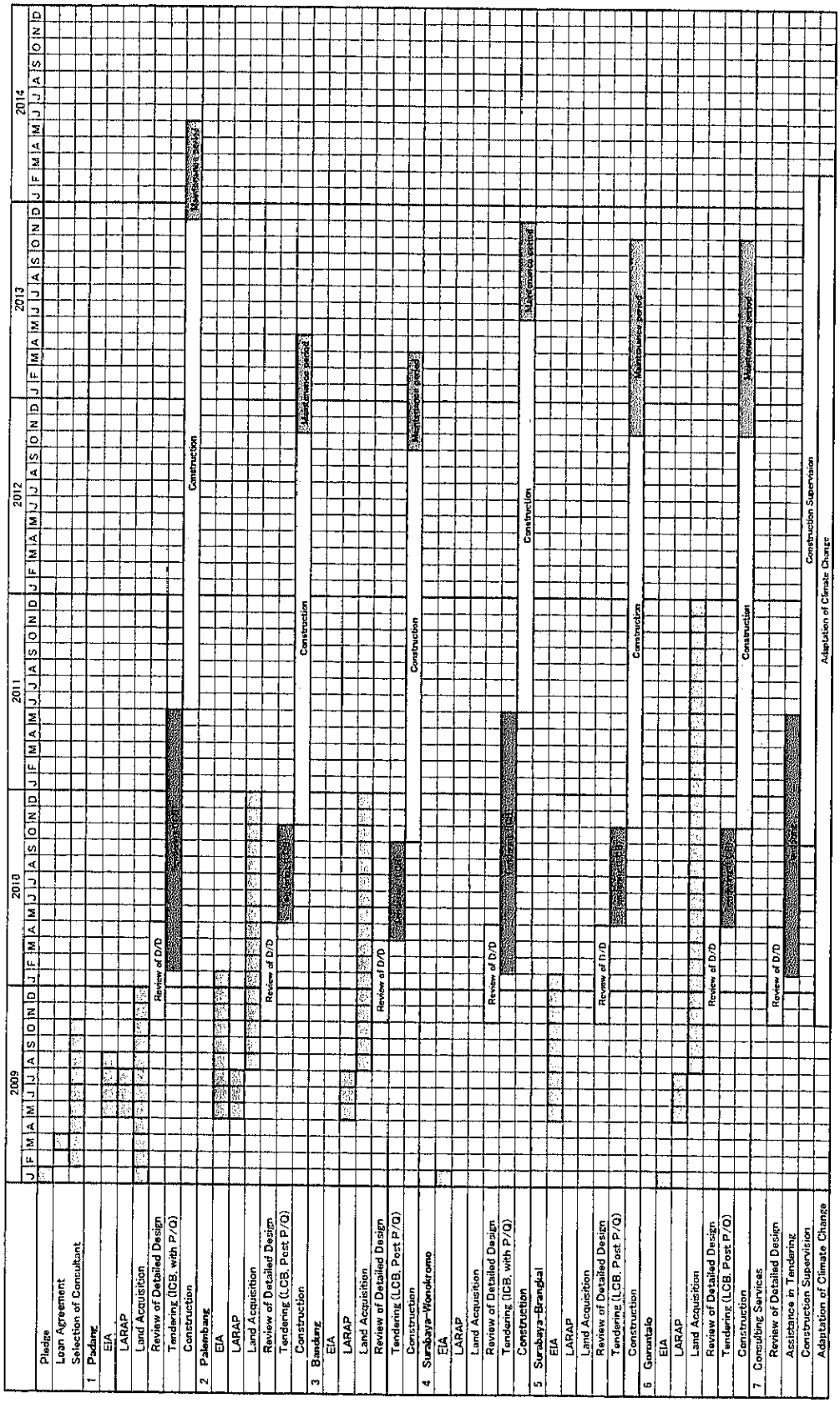


Houses Potentially Affected by the Project (4/5)

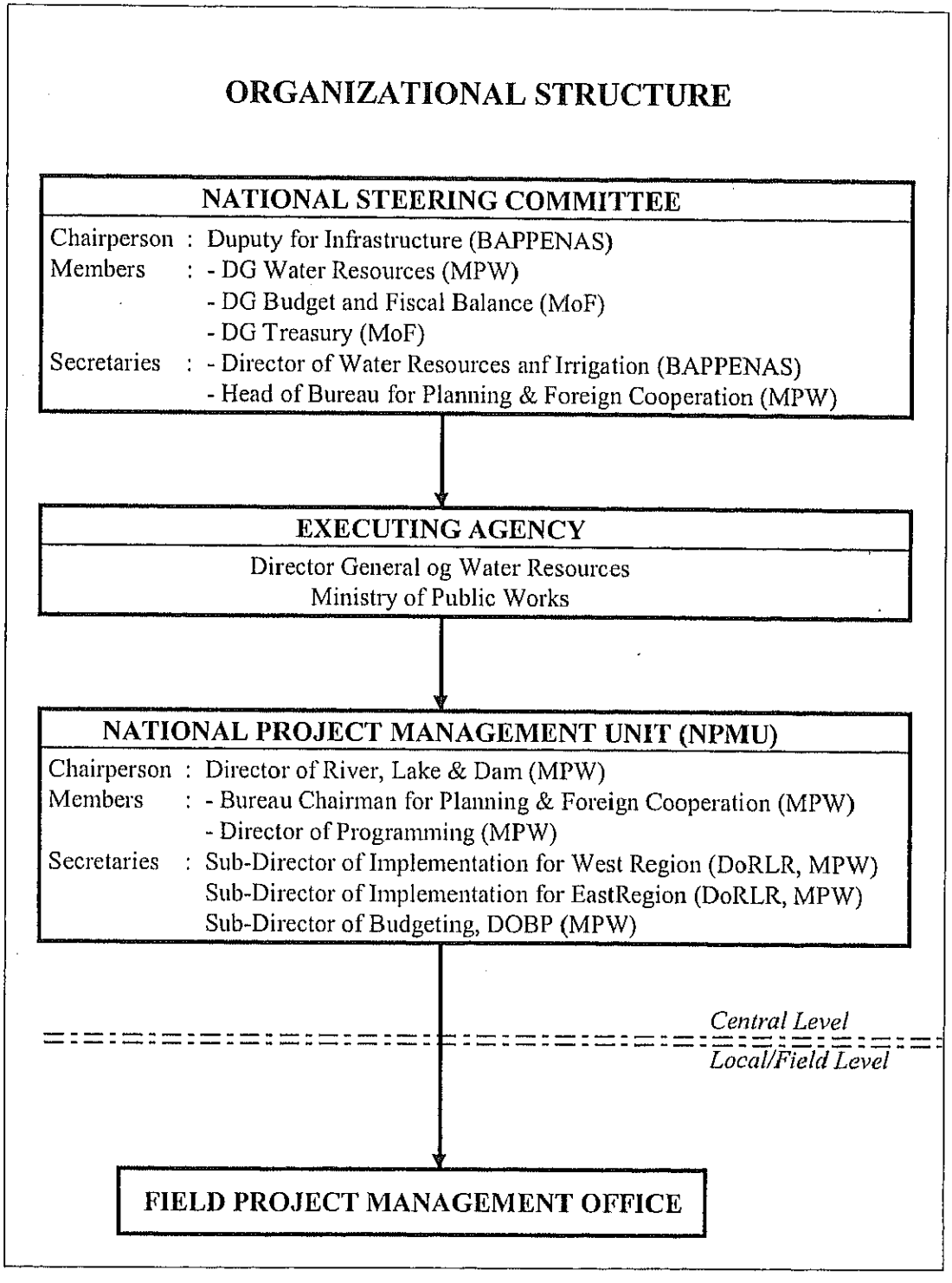


Houses Potentially Affected by the Project (5/5)

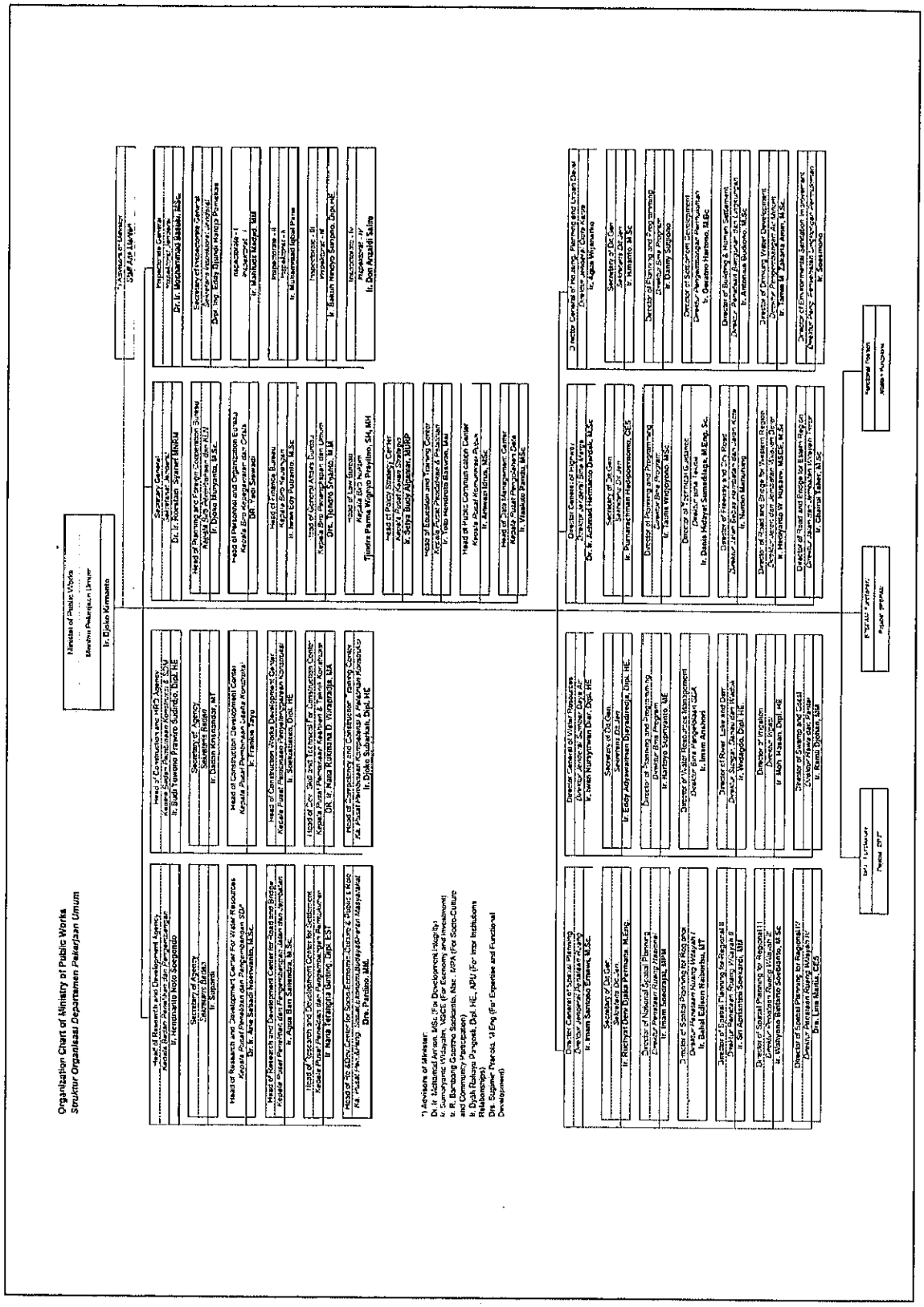
Attachment 11: Implementation Schedule

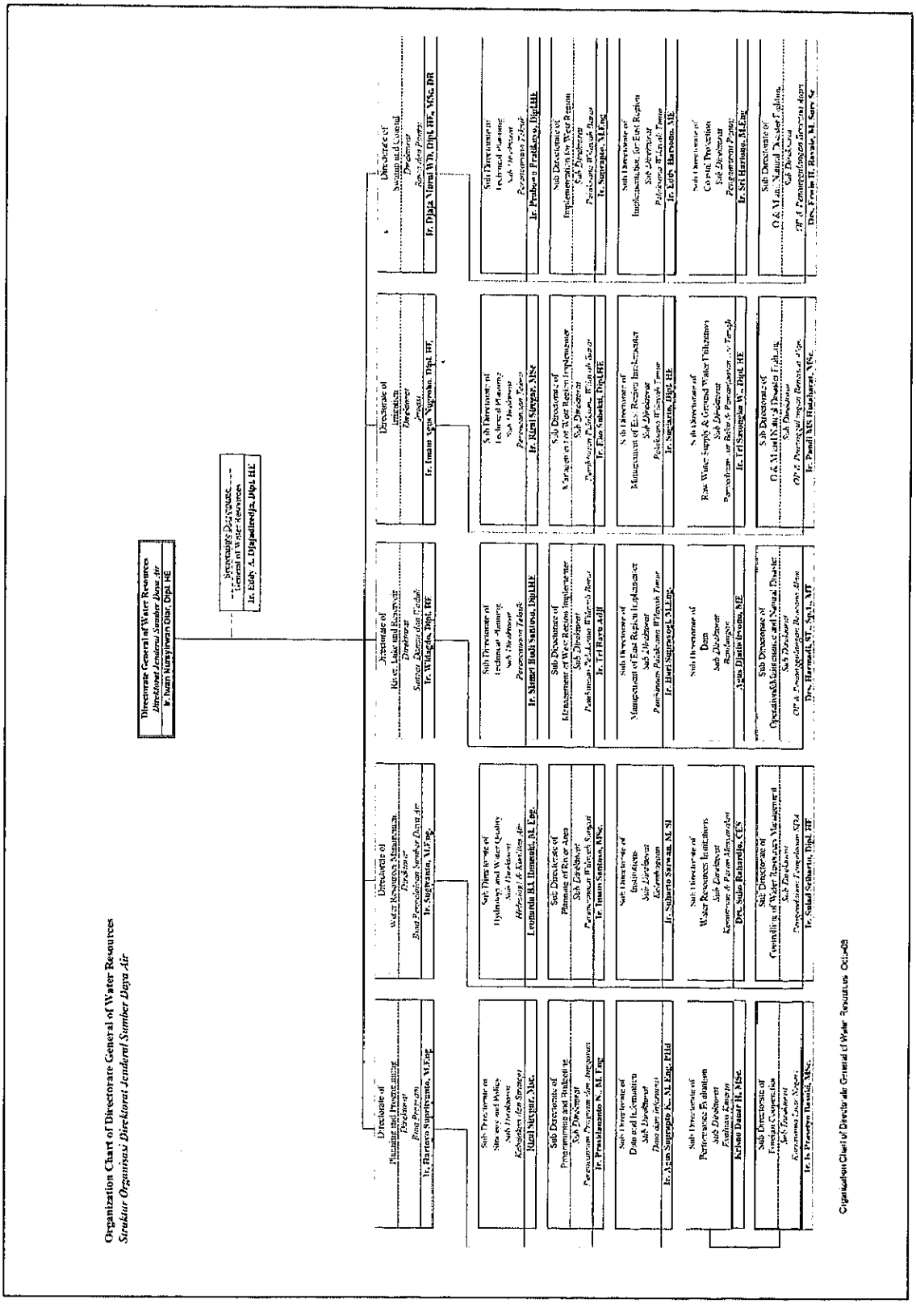


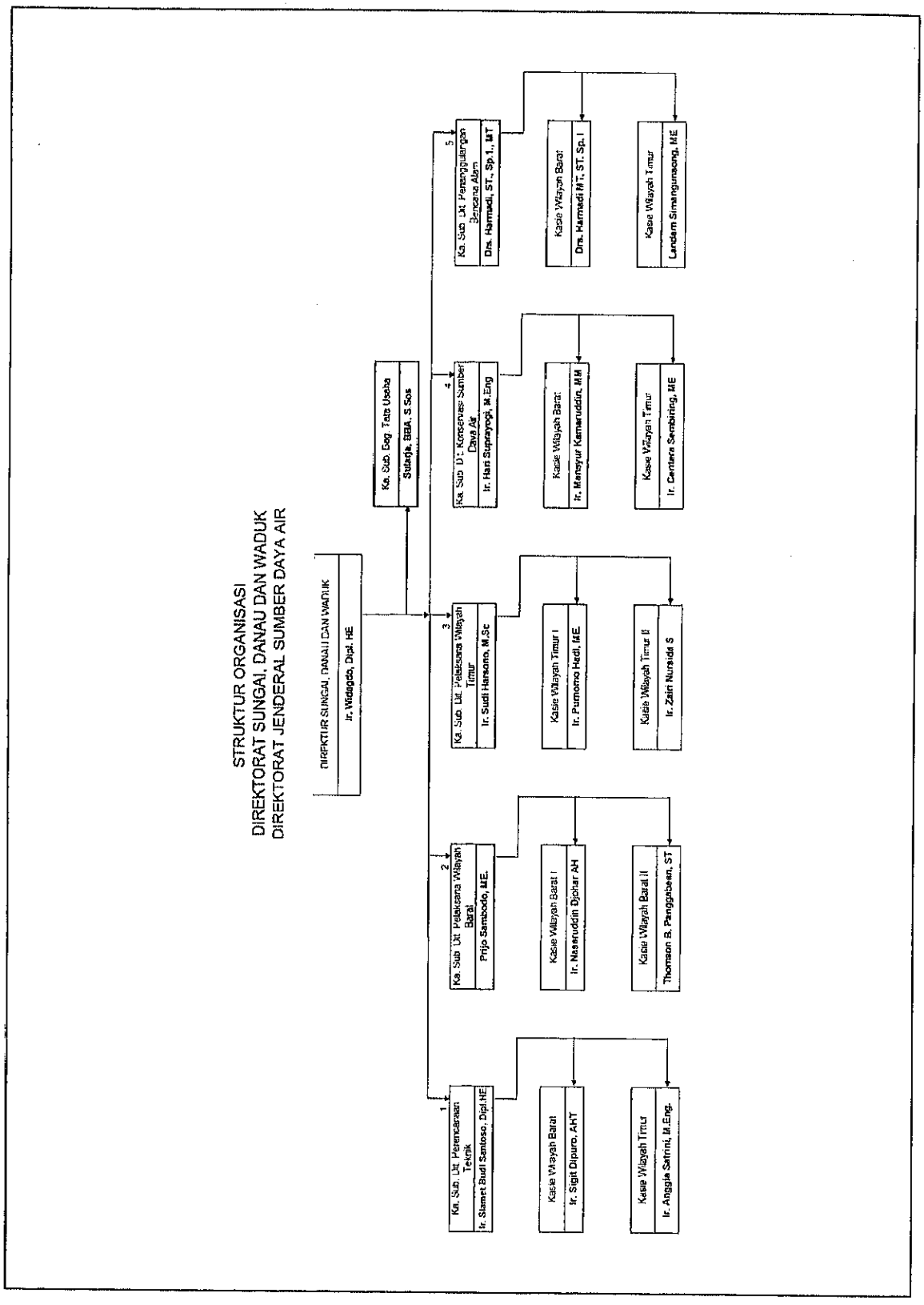
Attachment 12: Organizations for Implementation



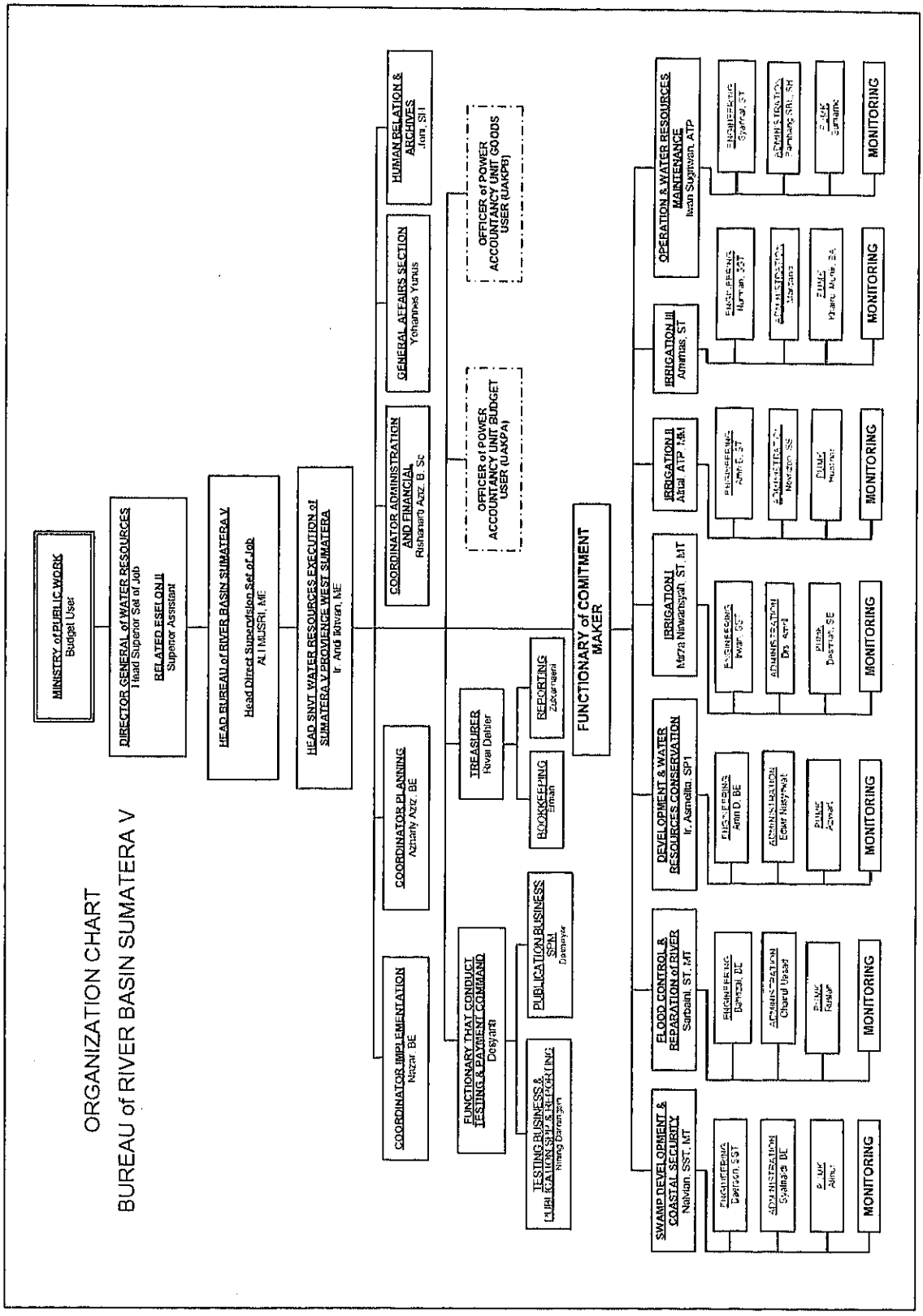
Attachment 13: Organization Chart of DGWR



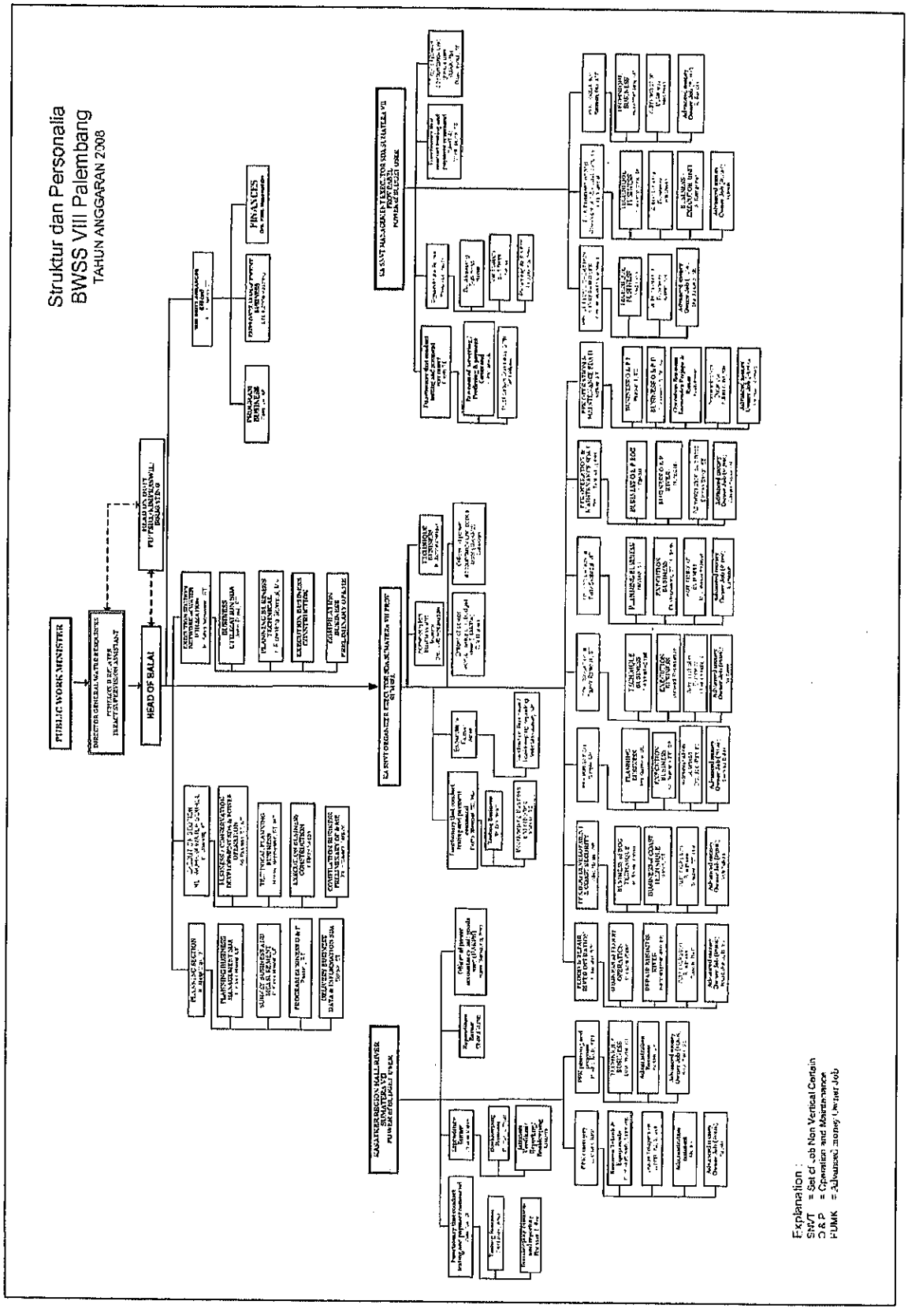

Organization Chart of Directorate General of Water Resources
Struktur Organisasi Direktorat Jenderal Sumber Daya Air
Directorate General of Water Resources
Direktorat Jenderal Sumber Daya Air
Ir. Iwan Nursyirwan Dilar, Dipl. HE
Secretariat's Directorate
General of Water Resources
Ir. Eddy A. Digdodimedja, Dipl. HE
Directorate of
Water Resources Management
Direktorat
Ir. Sugiyanto, M.Eng.
Directorate of
River, Lake and Reservoir
Direktorat
Ir. Widagdo, Dipl. HE
Directorate of
Irrigation
Direktorat
Ir. Imam Agus Nugroho, Dipl. HE
Directorate of
Swamp and Coastal
Direktorat
Ir. Dipa Vimal Wh, Dipl. HE, MSc. DR
Sub Directorate of
Site Survey and Policy
Sub Direktorat
Kebijakan dan Survey
Rizal Maryat, MSc.
Sub Directorate of
Programming and Evaluation
Sub Direktorat
Perencanaan Program dan Evaluasi
Ir. Prasiasmanto R., M. Eng.
Sub Directorate of
Data and Information
Sub Direktorat
Data dan Informasi
Ir. Agus Suprapto R., M. Eng. Field
Sub Directorate of
Performance Evaluation
Sub Direktorat
Evaluasi Kinerja
Achsin Dasar H., MSc.
Sub Directorate of
Foreign Cooperation
Sub Direktorat
Kerjasama Luar Negeri
Ir. Ir. Wasekso Hariadi, MSc.
Sub Directorate of
Hydrology and Water Quality
Sub Direktorat
Hidrologi & Kualitas Air
Leonardo H.I. Hasudak, DI. Eng.
Sub Directorate of
Planning of Rivers Area
Sub Direktorat
Perencanaan Wilayah Sungai
Ir. Imam Santoso, MSc.
Sub Directorate of
Institutions
Sub Direktorat
Kelembagaan
Ir. Suharto Sarwan, M. Si
Sub Directorate of
Water Resources Institutions
Sub Direktorat
Kewenangan & Kelembagaan
Dra. Sulis Rahardjo, CES
Sub Directorate of
Controlling of Water Resources Management
Sub Direktorat
Pengendalian Sumber Daya Air
Ir. Sakal Sidhartia, Dipl. HE
Sub Directorate of
Technical Planning
Sub Direktorat
Perencanaan Teknis
Ir. Sumet Hadi Santoso, Dipl.HE
Sub Directorate of
Management of West Region Implementation
Sub Direktorat
Pembinaan Pelaksana Wilayah Barat
Ir. Tri Baru Adji
Sub Directorate of
Management of East Region Implementation
Sub Direktorat
Pembinaan Pelaksana Wilayah Timur
Ir. Heri Supriyadi, M.Eng.
Sub Directorate of
Dam
Sub Direktorat
Bendungan
Nata Diatie Irvana, ME
Sub Directorate of
Operation&Maintenance and Natural Disaster
Sub Direktorat
OP & Penanggulangan Bencana Alam
Drs. Harmadi, ST., Sp.1, MT
Sub Directorate of
Technical Planning
Sub Direktorat
Perencanaan Teknis
Ir. Rizal Siregar, MSc
Sub Directorate of
Management of the West Region Implementation
Sub Direktorat
Pembinaan Pelaksana Wilayah Barat
Ir. Edi Subakti, Dipl.HE
Sub Directorate of
Implementation of the East Region
Sub Direktorat
Pembinaan Pelaksana Wilayah Timur
Ir. Supriyadi, M.Eng
Sub Directorate of
Inspection&Rehabilitation for East Region
Sub Direktorat
Pelaksana Wilayah Timur
Ir. Eddy Barudin, ME
Sub Directorate of
Coastal Protection
Sub Direktorat
Pengamanan Pantai
Ir. Sri Hartanto, M.Eng
Sub Directorate of
O & M and Natural Disaster Fighting
Sub Direktorat
OP & Penanggulangan Bencana Alam
Ir. Pandi MS Hutabarat, MSc.
Sub Directorate of
Technical Planning
Sub Direktorat
Perencanaan Teknis
Ir. Prabowo Pradikto, Dipl.HE
Sub Directorate of
Implementation in the West Region
Sub Direktorat
Pelaksana Wilayah Barat
Ir. Supriyadi, M.Eng
Sub Directorate of
Inspection&Rehabilitation for East Region
Sub Direktorat
Pelaksana Wilayah Timur
Ir. Eddy Barudin, ME
Sub Directorate of
Coastal Protection
Sub Direktorat
Pengamanan Pantai
Ir. Sri Hartanto, M.Eng
Sub Directorate of
O & M and Natural Disaster Fighting
Sub Direktorat
OP & Penanggulangan Bencana Alam
Drs. Fewie H. Rawis, M. Sure Se
Organization Chart of Directorate General of Water Resources Oct.2003


STRUKTUR ORGANISASI
DIREKTORAT SUNGAI, DANAU DAN WADUK
DIREKTORAT JENDERAL SUMBER DAYA AIR
DIREKTUR SUNGAI, DANAU DAN WADUK
Ir. Widagdo, Dipl. HE
Ka. Sub. Dag Tata Usaha
Sutarja, BBA, S.Sos
1
Ka. Sub. Dit. Perencanaan Teknik
Ir. Slamet Budi Santoso, Dipl.HE
Kasie Wilayah Barat
Ir. Sigit Dipuro, AHT
Kasie Wilayah Timur
Ir. Anggia Setrini, M.Eng.
2
Ka. Sub. Dit. Pelaksana Wilayah Barat
Prijo Sambodo, ME.
Kasie Wilayah Barat I
Ir. Naseruddin Djohar AH
Kasie Wilayah Barat II
Thomson S. Panggabean, ST
3
Ka. Sub. Dit. Pelaksana Wilayah Timur
Ir. Sudi Hansono, M.Sc
Kasie Wilayah Timur I
Ir. Purnomo Hadi, ME
Kasie Wilayah Timur II
Ir. Zakir Nursida S
4
Ka. Sub. Dit. Konservasi Sumber Daya Air
Ir. Hari Supranoyoji, M.Eng
Kasie Wilayah Barat
Ir. Mansyur Kamaruddin, MM
Kasie Wilayah Timur
Ir. Centana Sembiring, ME
5
Ka. Sub. Dit. Penanggulangan Bencana Alam
Drs. Hamadi, ST., Sp.1., MT
Kasie Wilayah Barat
Drs. Hamadi MT, ST, Sp.1
Kasie Wilayah Timur
Landam Simangunsong, ME

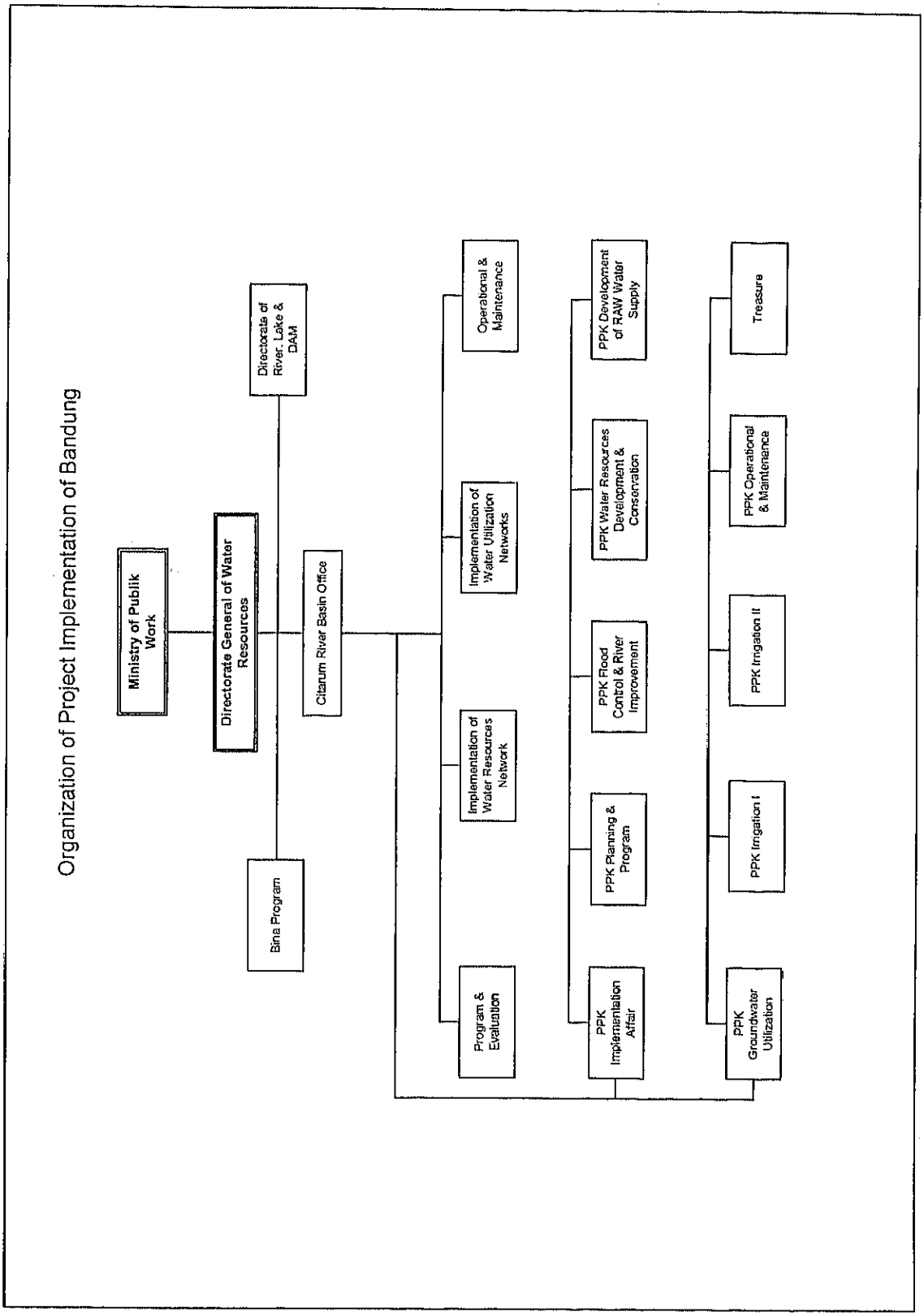
Attachment 14: Organization Chart of BWS Sumatra V



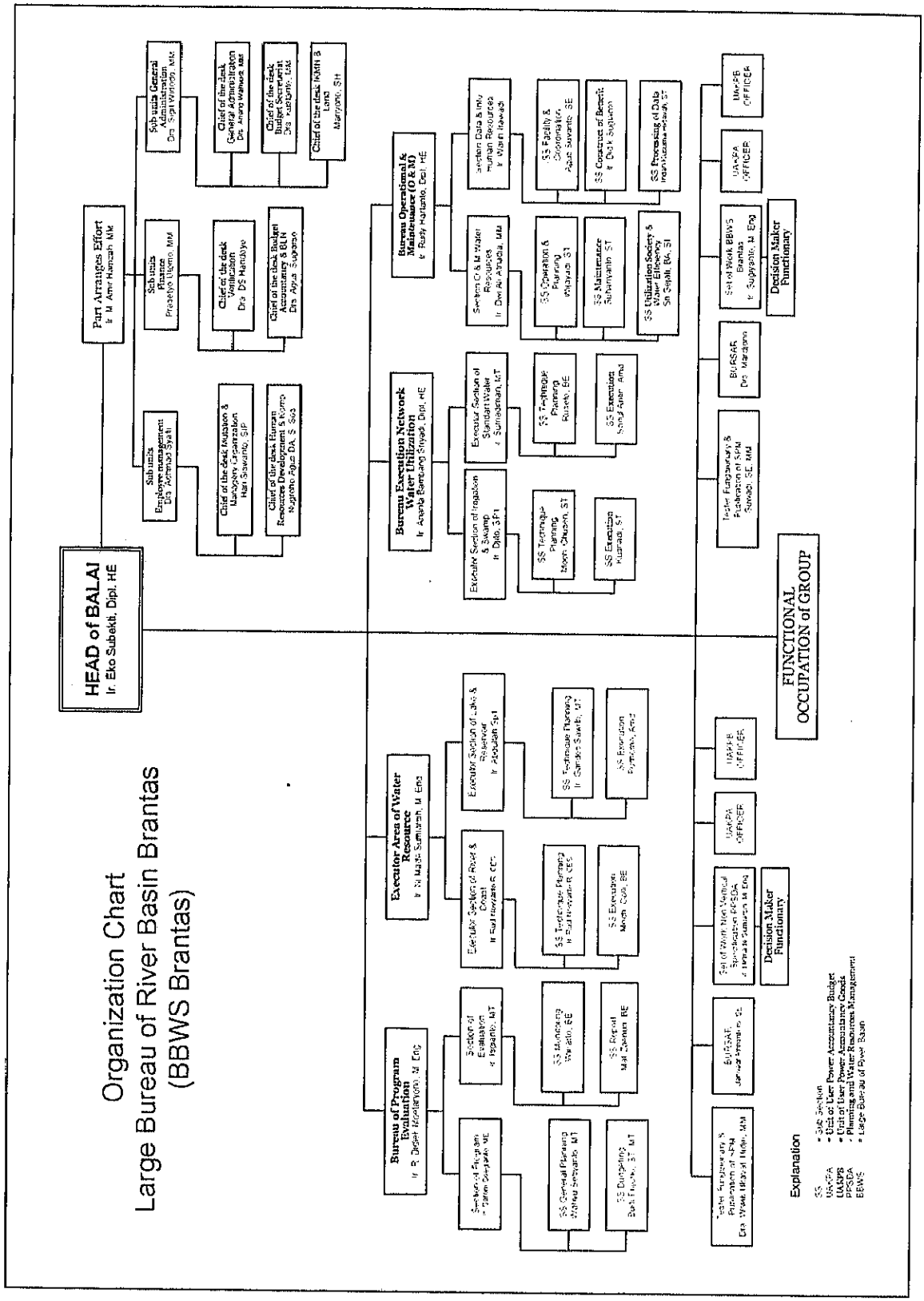
Attachment 15: Organization Chart of BWS Sumatra VIII



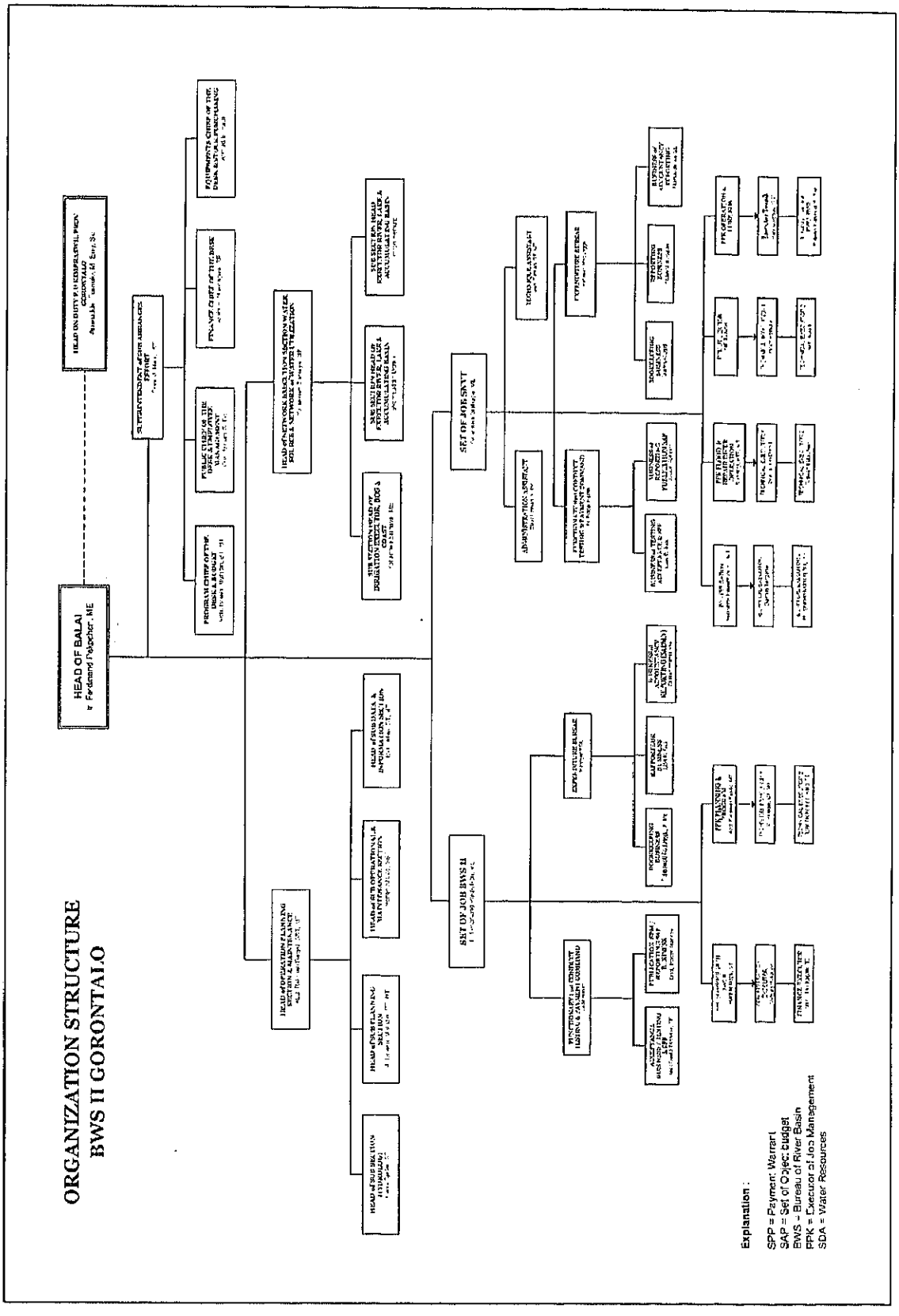
Attachment 16: Organization Chart of BBWS Citarum



Attachment 17: Organization Chart of BBWS Brantas



Attachment 18: Organization Chart of BWS Sulawesi II



Attachment 19: Supporting data for computing EIRR

Unit: Rp. million

Year		Total of 6 Sub-projects					Net Cash Flow	Remarks
		Benefit	Cost					
			Project	O/M	Replace.	Total		
2009		-	5,913	-	-	5,913	-5,913	
2010		-	34,917	-	-	34,917	-34,917	
2011		-	156,188	-	-	156,188	-156,188	
2012		-	206,023	114	-	206,137	-206,137	
2013		33,525	99,846	1,059	-	100,905	-67,381	
2014		68,648	776	2,088	-	2,864	65,784	
2015	1	69,149	-	2,088	-	2,088	67,061	
2016	2	69,666	-	2,088	-	2,088	67,578	
2017	3	70,205	-	2,088	-	2,088	68,117	
2018	4	70,762	-	2,088	-	2,088	68,674	
2019	5	71,343	-	2,088	-	2,088	69,255	
2020	6	71,943	-	2,088	-	2,088	69,855	
2021	7	71,943	-	2,088	-	2,088	69,855	
2022	8	71,943	-	2,088	8,352	10,440	61,503	
2023	9	71,943	-	2,088	-	2,088	69,855	
2024	10	71,943	-	2,088	-	2,088	69,855	
2025	11	71,943	-	2,088	-	2,088	69,855	
2026	12	71,943	-	2,088	-	2,088	69,855	
2027	13	71,943	-	2,088	-	2,088	69,855	
2028	14	71,943	-	2,088	-	2,088	69,855	
2029	15	71,943	-	2,088	-	2,088	69,855	
2030	16	71,943	-	2,088	-	2,088	69,855	
2031	17	71,943	-	2,088	-	2,088	69,855	
2032	18	71,943	-	2,088	8,352	10,440	61,503	
2033	19	71,943	-	2,088	-	2,088	69,855	
2034	20	71,943	-	2,088	-	2,088	69,855	
2035	21	71,943	-	2,088	-	2,088	69,855	
2036	22	71,943	-	2,088	-	2,088	69,855	
2037	23	71,943	-	2,088	-	2,088	69,855	
2038	24	71,943	-	2,088	-	2,088	69,855	
2039	25	71,943	-	2,088	-	2,088	69,855	
2040	26	71,943	-	2,088	-	2,088	69,855	
2041	27	71,943	-	2,088	-	2,088	69,855	
2042	28	71,943	-	2,088	8,352	10,440	61,503	
2043	29	71,943	-	2,088	-	2,088	69,855	
2044	30	71,943	-	2,088	-	2,088	69,855	
2045	31	71,943	-	2,088	-	2,088	69,855	
2046	32	71,943	-	2,088	-	2,088	69,855	
2047	33	71,943	-	2,088	-	2,088	69,855	
2048	34	71,943	-	2,088	-	2,088	69,855	
2049	35	71,943	-	2,088	-	2,088	69,855	
2050	36	71,943	-	2,088	-	2,088	69,855	
2051	37	71,943	-	2,088	-	2,088	69,855	
2052	38	71,943	-	2,088	8,352	10,440	61,503	
2053	39	71,943	-	2,088	-	2,088	69,855	
2054	40	71,943	-	2,088	-	2,088	69,855	
2055	41	71,943	-	2,088	-	2,088	69,855	
2056	42	71,943	-	2,088	-	2,088	69,855	
2057	43	71,943	-	2,088	-	2,088	69,855	
2058	44	71,943	-	2,088	-	2,088	69,855	
2059	45	71,943	-	2,088	-	2,088	69,855	
2060	46	71,943	-	2,088	-	2,088	69,855	
2061	47	71,943	-	2,088	-	2,088	69,855	
2062	48	71,943	-	2,088	8,352	10,440	61,503	
2063	49	71,943	-	2,088	-	2,088	69,855	
2064	50	71,943	-	2,088	-	2,088	69,855	
2065								
2066								
2067								
2068								
2069								
2070								
Total		3,690,721	503,663	107,649	41,760	653,072	3,037,649	
NPV	12.00%	353,125	332,267	10,515	2,512	345,294	7,831	EIRR
NPV	12.26%	342,084	329,487	10,191	2,406	342,084	-	12.26%

B/C
1.02
1.00

Unit: Rp. million

Year	Padang (Future Land Use in 2003)						Net Cash Flow	Remarks
		Benefit	Cost					
			Project	O/M	Replace.	Total		
2009		-	2,378	-	-	2,378	-2,378	
2010		-	9,227	-	-	9,227	-9,227	
2011		-	45,879	-	-	45,879	-45,879	
2012		-	77,840	-	-	77,840	-77,840	
2013		2,359	68,532	71	-	68,603	-66,244	
2014		28,311	312	847	-	1,159	27,151	
2015	1	28,311	-	847	-	847	27,463	
2016	2	28,311	-	847	-	847	27,463	
2017	3	28,311	-	847	-	847	27,463	
2018	4	28,311	-	847	-	847	27,463	
2019	5	28,311	-	847	-	847	27,463	
2020	6	28,311	-	847	-	847	27,463	
2021	7	28,311	-	847	-	847	27,463	
2022	8	28,311	-	847	-	847	27,463	
2023	9	28,311	-	847	-	847	27,463	
2024	10	28,311	-	847	-	847	27,463	
2025	11	28,311	-	847	-	847	27,463	
2026	12	28,311	-	847	-	847	27,463	
2027	13	28,311	-	847	-	847	27,463	
2028	14	28,311	-	847	-	847	27,463	
2029	15	28,311	-	847	-	847	27,463	
2030	16	28,311	-	847	-	847	27,463	
2031	17	28,311	-	847	-	847	27,463	
2032	18	28,311	-	847	-	847	27,463	
2033	19	28,311	-	847	-	847	27,463	
2034	20	28,311	-	847	-	847	27,463	
2035	21	28,311	-	847	-	847	27,463	
2036	22	28,311	-	847	-	847	27,463	
2037	23	28,311	-	847	-	847	27,463	
2038	24	28,311	-	847	-	847	27,463	
2039	25	28,311	-	847	-	847	27,463	
2040	26	28,311	-	847	-	847	27,463	
2041	27	28,311	-	847	-	847	27,463	
2042	28	28,311	-	847	-	847	27,463	
2043	29	28,311	-	847	-	847	27,463	
2044	30	28,311	-	847	-	847	27,463	
2045	31	28,311	-	847	-	847	27,463	
2046	32	28,311	-	847	-	847	27,463	
2047	33	28,311	-	847	-	847	27,463	
2048	34	28,311	-	847	-	847	27,463	
2049	35	28,311	-	847	-	847	27,463	
2050	36	28,311	-	847	-	847	27,463	
2051	37	28,311	-	847	-	847	27,463	
2052	38	28,311	-	847	-	847	27,463	
2053	39	28,311	-	847	-	847	27,463	
2054	40	28,311	-	847	-	847	27,463	
2055	41	28,311	-	847	-	847	27,463	
2056	42	28,311	-	847	-	847	27,463	
2057	43	28,311	-	847	-	847	27,463	
2058	44	28,311	-	847	-	847	27,463	
2059	45	28,311	-	847	-	847	27,463	
2060	46	28,311	-	847	-	847	27,463	
2061	47	28,311	-	847	-	847	27,463	
2062	48	28,311	-	847	-	847	27,463	
2063	49	28,311	-	847	-	847	27,463	
2064	50	28,311	-	847	-	847	27,463	
2065								
2066								
2067								
2068								
2069								
2070								
Total		1,446,204	204,169	43,283	-	247,451	1,198,752		B/C
NPV	12.00%	134,794	130,649	4,034	-	134,683	111	EIRR	1.00
NPV	12.01%	134,636	130,607	4,029	-	134,636	-	12.01%	1.00

Unit: Rp. million

Year	Palembang (Population in 2020)						Net Cash Flow	Remarks
		Benefit	Cost					
			Project	O/M	Replace.	Total		
2009		-	570	-	-	570	-570	
2010		-	5,681	-	-	5,681	-5,681	
2011		-	21,863	-	-	21,863	-21,863	
2012		885	18,946	33	-	18,979	-18,095	
2013		5,502	789	198	-	987	4,515	
2014		5,699	75	198	-	273	5,426	
2015	1	5,893	-	198	-	198	5,695	
2016	2	6,088	-	198	-	198	5,890	
2017	3	6,285	-	198	-	198	6,086	
2018	4	6,479	-	198	-	198	6,281	
2019	5	6,676	-	198	-	198	6,477	
2020	6	6,870	-	198	-	198	6,672	
2021	7	6,870	-	198	-	198	6,672	
2022	8	6,870	-	198	-	198	6,672	
2023	9	6,870	-	198	-	198	6,672	
2024	10	6,870	-	198	-	198	6,672	
2025	11	6,870	-	198	-	198	6,672	
2026	12	6,870	-	198	-	198	6,672	
2027	13	6,870	-	198	-	198	6,672	
2028	14	6,870	-	198	-	198	6,672	
2029	15	6,870	-	198	-	198	6,672	
2030	16	6,870	-	198	-	198	6,672	
2031	17	6,870	-	198	-	198	6,672	
2032	18	6,870	-	198	-	198	6,672	
2033	19	6,870	-	198	-	198	6,672	
2034	20	6,870	-	198	-	198	6,672	
2035	21	6,870	-	198	-	198	6,672	
2036	22	6,870	-	198	-	198	6,672	
2037	23	6,870	-	198	-	198	6,672	
2038	24	6,870	-	198	-	198	6,672	
2039	25	6,870	-	198	-	198	6,672	
2040	26	6,870	-	198	-	198	6,672	
2041	27	6,870	-	198	-	198	6,672	
2042	28	6,870	-	198	-	198	6,672	
2043	29	6,870	-	198	-	198	6,672	
2044	30	6,870	-	198	-	198	6,672	
2045	31	6,870	-	198	-	198	6,672	
2046	32	6,870	-	198	-	198	6,672	
2047	33	6,870	-	198	-	198	6,672	
2048	34	6,870	-	198	-	198	6,672	
2049	35	6,870	-	198	-	198	6,672	
2050	36	6,870	-	198	-	198	6,672	
2051	37	6,870	-	198	-	198	6,672	
2052	38	6,870	-	198	-	198	6,672	
2053	39	6,870	-	198	-	198	6,672	
2054	40	6,870	-	198	-	198	6,672	
2055	41	6,870	-	198	-	198	6,672	
2056	42	6,870	-	198	-	198	6,672	
2057	43	6,870	-	198	-	198	6,672	
2058	44	6,870	-	198	-	198	6,672	
2059	45	6,870	-	198	-	198	6,672	
2060	46	6,870	-	198	-	198	6,672	
2061	47	6,870	-	198	-	198	6,672	
2062	48	6,870	-	198	-	198	6,672	
2063	49	6,870	-	198	-	198	6,672	
2064	50	6,870	-	198	-	198	6,672	
2065								
2066								
2067								
2068								
2069								
2070								
Total		352,671	47,924	10,343	-	58,267	294,404		B/C
NPV	12.00%	34,326	33,126	1,068	-	34,194	132	EIRR	1.00
NPV	12.04%	34,147	33,084	1,063	-	34,147	-	12.04%	1.00

Unit: Rp. million

Year		Bandung					Net Cash Flow	Remarks	
		Benefit	Cost						
			Project	O/M	Replace.	Total			
2009		-	273	-	-	273	-273		
2010		-	3,571	-	-	3,571	-3,571		
2011		-	10,541	-	-	10,541	-10,541		
2012		806	8,296	24	-	8,320	-7,514		
2013		3,392	378	96	-	474	2,918		
2014		3,392	36	96	-	132	3,261		
2015	1	3,392	-	96	-	96	3,296		
2016	2	3,392	-	96	-	96	3,296		
2017	3	3,392	-	96	-	96	3,296		
2018	4	3,392	-	96	-	96	3,296		
2019	5	3,392	-	96	-	96	3,296		
2020	6	3,392	-	96	-	96	3,296		
2021	7	3,392	-	96	-	96	3,296		
2022	8	3,392	-	96	-	96	3,296		
2023	9	3,392	-	96	-	96	3,296		
2024	10	3,392	-	96	-	96	3,296		
2025	11	3,392	-	96	-	96	3,296		
2026	12	3,392	-	96	-	96	3,296		
2027	13	3,392	-	96	-	96	3,296		
2028	14	3,392	-	96	-	96	3,296		
2029	15	3,392	-	96	-	96	3,296		
2030	16	3,392	-	96	-	96	3,296		
2031	17	3,392	-	96	-	96	3,296		
2032	18	3,392	-	96	-	96	3,296		
2033	19	3,392	-	96	-	96	3,296		
2034	20	3,392	-	96	-	96	3,296		
2035	21	3,392	-	96	-	96	3,296		
2036	22	3,392	-	96	-	96	3,296		
2037	23	3,392	-	96	-	96	3,296		
2038	24	3,392	-	96	-	96	3,296		
2039	25	3,392	-	96	-	96	3,296		
2040	26	3,392	-	96	-	96	3,296		
2041	27	3,392	-	96	-	96	3,296		
2042	28	3,392	-	96	-	96	3,296		
2043	29	3,392	-	96	-	96	3,296		
2044	30	3,392	-	96	-	96	3,296		
2045	31	3,392	-	96	-	96	3,296		
2046	32	3,392	-	96	-	96	3,296		
2047	33	3,392	-	96	-	96	3,296		
2048	34	3,392	-	96	-	96	3,296		
2049	35	3,392	-	96	-	96	3,296		
2050	36	3,392	-	96	-	96	3,296		
2051	37	3,392	-	96	-	96	3,296		
2052	38	3,392	-	96	-	96	3,296		
2053	39	3,392	-	96	-	96	3,296		
2054	40	3,392	-	96	-	96	3,296		
2055	41	3,392	-	96	-	96	3,296		
2056	42	3,392	-	96	-	96	3,296		
2057	43	3,392	-	96	-	96	3,296		
2058	44	3,392	-	96	-	96	3,296		
2059	45	3,392	-	96	-	96	3,296		
2060	46	3,392	-	96	-	96	3,296		
2061	47	3,392	-	96	-	96	3,296		
2062	48	3,392	-	96	-	96	3,296		
2063	49	3,392	-	96	-	96	3,296		
2064	50	3,392	-	96	-	96	3,296		
2065									
2066									
2067									
2068									
2069									
2070									
Total		177,190	23,096	4,996	-	28,091	149,099		B/C
NPV	12.00%	18,426	16,099	520	-	16,619	1,807	EIRR	1.11
NPV	13.27%	15,987	15,536	451	-	15,987	-	13.27%	1.00

Unit: Rp. million

Year		Surabaya (Wonokromo)					Net Cash Flow	Remarks
		Benefit	Cost					
			Project	O/M	Replace.	Total		
2009		-	1,729	-	-	1,729	-1,729	
2010		-	6,709	-	-	6,709	-6,709	
2011		-	40,163	-	-	40,163	-40,163	
2012		-	68,261	-	-	68,261	-68,261	
2013		12,163	28,815	352	-	29,167	-17,005	
2014		20,850	227	604	-	831	20,019	
2015	1	20,850	-	604	-	604	20,246	
2016	2	20,850	-	604	-	604	20,246	
2017	3	20,850	-	604	-	604	20,246	
2018	4	20,850	-	604	-	604	20,246	
2019	5	20,850	-	604	-	604	20,246	
2020	6	20,850	-	604	-	604	20,246	
2021	7	20,850	-	604	-	604	20,246	
2022	8	20,850	-	604	-	604	20,246	
2023	9	20,850	-	604	-	604	20,246	
2024	10	20,850	-	604	-	604	20,246	
2025	11	20,850	-	604	-	604	20,246	
2026	12	20,850	-	604	-	604	20,246	
2027	13	20,850	-	604	-	604	20,246	
2028	14	20,850	-	604	-	604	20,246	
2029	15	20,850	-	604	-	604	20,246	
2030	16	20,850	-	604	-	604	20,246	
2031	17	20,850	-	604	-	604	20,246	
2032	18	20,850	-	604	-	604	20,246	
2033	19	20,850	-	604	-	604	20,246	
2034	20	20,850	-	604	-	604	20,246	
2035	21	20,850	-	604	-	604	20,246	
2036	22	20,850	-	604	-	604	20,246	
2037	23	20,850	-	604	-	604	20,246	
2038	24	20,850	-	604	-	604	20,246	
2039	25	20,850	-	604	-	604	20,246	
2040	26	20,850	-	604	-	604	20,246	
2041	27	20,850	-	604	-	604	20,246	
2042	28	20,850	-	604	-	604	20,246	
2043	29	20,850	-	604	-	604	20,246	
2044	30	20,850	-	604	-	604	20,246	
2045	31	20,850	-	604	-	604	20,246	
2046	32	20,850	-	604	-	604	20,246	
2047	33	20,850	-	604	-	604	20,246	
2048	34	20,850	-	604	-	604	20,246	
2049	35	20,850	-	604	-	604	20,246	
2050	36	20,850	-	604	-	604	20,246	
2051	37	20,850	-	604	-	604	20,246	
2052	38	20,850	-	604	-	604	20,246	
2053	39	20,850	-	604	-	604	20,246	
2054	40	20,850	-	604	-	604	20,246	
2055	41	20,850	-	604	-	604	20,246	
2056	42	20,850	-	604	-	604	20,246	
2057	43	20,850	-	604	-	604	20,246	
2058	44	20,850	-	604	-	604	20,246	
2059	45	20,850	-	604	-	604	20,246	
2060	46	20,850	-	604	-	604	20,246	
2061	47	20,850	-	604	-	604	20,246	
2062	48	20,850	-	604	-	604	20,246	
2063	49	20,850	-	604	-	604	20,246	
2064	50	20,850	-	604	-	604	20,246	
2065								
2066								
2067								
2068								
2069								
2070								
Total		1,075,513	145,904	31,153	-	177,057	898,456		B/C
NPV	12.00%	105,187	95,326	3,047	-	98,372	6,815	EIRR	1.07
NPV	12.81%	95,589	92,820	2,769	-	95,589	-	12.81%	1.00

Unit: Rp. million

Year		Surabaya (Brangkal)					Net Cash Flow	Remarks	
		Benefit	Cost						
			Project	O/M	Replace.	Total			
2009		-	442	-	-	442	-442		
2010		-	4,433	-	-	4,433	-4,433		
2011		-	17,131	-	-	17,131	-17,131		
2012		889	14,839	26	-	14,865	-13,976		
2013		5,334	611	155	-	766	4,568		
2014		5,334	58	155	-	213	5,121		
2015	1	5,334	-	155	-	155	5,179		
2016	2	5,334	-	155	-	155	5,179		
2017	3	5,334	-	155	-	155	5,179		
2018	4	5,334	-	155	-	155	5,179		
2019	5	5,334	-	155	-	155	5,179		
2020	6	5,334	-	155	-	155	5,179		
2021	7	5,334	-	155	-	155	5,179		
2022	8	5,334	-	155	4,176	4,331	1,003		
2023	9	5,334	-	155	-	155	5,179		
2024	10	5,334	-	155	-	155	5,179		
2025	11	5,334	-	155	-	155	5,179		
2026	12	5,334	-	155	-	155	5,179		
2027	13	5,334	-	155	-	155	5,179		
2028	14	5,334	-	155	-	155	5,179		
2029	15	5,334	-	155	-	155	5,179		
2030	16	5,334	-	155	-	155	5,179		
2031	17	5,334	-	155	-	155	5,179		
2032	18	5,334	-	155	4,176	4,331	1,003		
2033	19	5,334	-	155	-	155	5,179		
2034	20	5,334	-	155	-	155	5,179		
2035	21	5,334	-	155	-	155	5,179		
2036	22	5,334	-	155	-	155	5,179		
2037	23	5,334	-	155	-	155	5,179		
2038	24	5,334	-	155	-	155	5,179		
2039	25	5,334	-	155	-	155	5,179		
2040	26	5,334	-	155	-	155	5,179		
2041	27	5,334	-	155	-	155	5,179		
2042	28	5,334	-	155	4,176	4,331	1,003		
2043	29	5,334	-	155	-	155	5,179		
2044	30	5,334	-	155	-	155	5,179		
2045	31	5,334	-	155	-	155	5,179		
2046	32	5,334	-	155	-	155	5,179		
2047	33	5,334	-	155	-	155	5,179		
2048	34	5,334	-	155	-	155	5,179		
2049	35	5,334	-	155	-	155	5,179		
2050	36	5,334	-	155	-	155	5,179		
2051	37	5,334	-	155	-	155	5,179		
2052	38	5,334	-	155	4,176	4,331	1,003		
2053	39	5,334	-	155	-	155	5,179		
2054	40	5,334	-	155	-	155	5,179		
2055	41	5,334	-	155	-	155	5,179		
2056	42	5,334	-	155	-	155	5,179		
2057	43	5,334	-	155	-	155	5,179		
2058	44	5,334	-	155	-	155	5,179		
2059	45	5,334	-	155	-	155	5,179		
2060	46	5,334	-	155	-	155	5,179		
2061	47	5,334	-	155	-	155	5,179		
2062	48	5,334	-	155	4,176	4,331	1,003		
2063	49	5,334	-	155	-	155	5,179		
2064	50	5,334	-	155	-	155	5,179		
2065									
2066									
2067									
2068									
2069									
2070									
Total		278,257	37,515	8,109	20,880	66,504	211,753		B/C
NPV	12.00%	28,736	25,929	837	1,256	28,022	713	EIRR	1.03
NPV	12.32%	27,687	25,689	807	1,191	27,687	-	12.32%	1.00

Unit: Rp. million

Year	Gorontalo (Future Socio-Economic in 2020)						Net Cash Flow	Remarks	
		Benefit	Cost						
			Project	O/M	Replace.	Total			
2009		-	521	-	-	521	-521		
2010		-	5,297	-	-	5,297	-5,297		
2011		-	20,611	-	-	20,611	-20,611		
2012		750	17,840	31	-	17,871	-17,121		
2013		4,775	721	187	-	908	3,867		
2014		5,062	68	187	-	256	4,807		
2015	1	5,369	-	187	-	187	5,181		
2016	2	5,692	-	187	-	187	5,504		
2017	3	6,033	-	187	-	187	5,846		
2018	4	6,396	-	187	-	187	6,209		
2019	5	6,780	-	187	-	187	6,593		
2020	6	7,186	-	187	-	187	6,999		
2021	7	7,186	-	187	-	187	6,999		
2022	8	7,186	-	187	4,176	4,363	2,823		
2023	9	7,186	-	187	-	187	6,999		
2024	10	7,186	-	187	-	187	6,999		
2025	11	7,186	-	187	-	187	6,999		
2026	12	7,186	-	187	-	187	6,999		
2027	13	7,186	-	187	-	187	6,999		
2028	14	7,186	-	187	-	187	6,999		
2029	15	7,186	-	187	-	187	6,999		
2030	16	7,186	-	187	-	187	6,999		
2031	17	7,186	-	187	-	187	6,999		
2032	18	7,186	-	187	4,176	4,363	2,823		
2033	19	7,186	-	187	-	187	6,999		
2034	20	7,186	-	187	-	187	6,999		
2035	21	7,186	-	187	-	187	6,999		
2036	22	7,186	-	187	-	187	6,999		
2037	23	7,186	-	187	-	187	6,999		
2038	24	7,186	-	187	-	187	6,999		
2039	25	7,186	-	187	-	187	6,999		
2040	26	7,186	-	187	-	187	6,999		
2041	27	7,186	-	187	-	187	6,999		
2042	28	7,186	-	187	4,176	4,363	2,823		
2043	29	7,186	-	187	-	187	6,999		
2044	30	7,186	-	187	-	187	6,999		
2045	31	7,186	-	187	-	187	6,999		
2046	32	7,186	-	187	-	187	6,999		
2047	33	7,186	-	187	-	187	6,999		
2048	34	7,186	-	187	-	187	6,999		
2049	35	7,186	-	187	-	187	6,999		
2050	36	7,186	-	187	-	187	6,999		
2051	37	7,186	-	187	-	187	6,999		
2052	38	7,186	-	187	4,176	4,363	2,823		
2053	39	7,186	-	187	-	187	6,999		
2054	40	7,186	-	187	-	187	6,999		
2055	41	7,186	-	187	-	187	6,999		
2056	42	7,186	-	187	-	187	6,999		
2057	43	7,186	-	187	-	187	6,999		
2058	44	7,186	-	187	-	187	6,999		
2059	45	7,186	-	187	-	187	6,999		
2060	46	7,186	-	187	-	187	6,999		
2061	47	7,186	-	187	-	187	6,999		
2062	48	7,186	-	187	4,176	4,363	2,823		
2063	49	7,186	-	187	-	187	6,999		
2064	50	7,186	-	187	-	187	6,999		
2065									
2066									
2067									
2068									
2069									
2070									
Total		364,216	45,057	9,765	20,880	75,702	288,514		B/C
NPV	12.00%	33,772	31,139	1,008	1,256	33,403	369	EIRR	1.01
NPV	12.13%	33,251	31,027	994	1,230	33,251	-	12.13%	1.00

Attachment 20: Draft Consultant Services TOR

TERMS OF REFERENCE
FOR
CONSULTING SERVICES
OF
URBAN FLOOD CONTROL SYSTEM IMPROVEMENT
IN SELECTED CITIES

PART – A

Review of Detailed Design and Construction Supervision

1. DESCRIPTION OF PROJECT

(1) Background of the Project

According to the database on International Disaster (OFDA/CRED), number of flood damage arose forty (47) including 2,592 of death toll, 3,023,310 of affected person and US$ 1,613 million in Indonesia during recent 10 years from 1998 to the end of 2007. These flood damage causes not only direct physical loss of infrastructure/buildings but also indirect economical/social loss due to suspension of economic activities and/or increase of the poor, which is one adverse factor of sustainable economic development in Indonesia. In addition, flood menace caused by the future climate change will worsen the situation of flood management so that the further strengthening of countermeasures against flood and improvement of related infrastructures are necessary.

Under the above circumstances, the Government of the Republic of Indonesia (GOI) stipulates the Mid-term National Development Plan (RPJM) 2004-2009 describing that the mitigation of flood damage under the comprehensive water resources management is one of the important strategy program with promotion of construction/improvement of flood mitigation infrastructures and disaster mitigation activities through public involvement. Based on the Law on Water Resources (U.U. No.7, 2004), improvement of water management system is conducted drafting the regulations on water resources committee.

With such background, the Japan Bank for International Cooperation (JBIC; current Japan International Cooperation Agency: JICA), the Directorate General of Water Resources

(DGWR), Ministry of Public Works and the Directorate for Water Resources and Irrigation, National Development Planning Agency (BAPPENAS) have agreed to implement the "Flood Control Sector Program Loan on Urban Flood Control System Improvement in Selected Cities" (the Project).

(2) Objective of the Project

The objective of the Project is to mitigate flood damage in important urban cities vulnerable against flood damage by improving flood control infrastructure, and thereby contribute to economic and industrial development in urban cities in Indonesia.

(3) Project Area

The project area is expanding in urban cities in whole Indonesia. These cities are vulnerable against flood damage.

2. OBJECTIVE OF CONSULTING SERVICES

The consulting services are required for implementation of the Project; Urban Flood Control System Improvement in Selected Cities. The objectives of the consulting services are to facilitate the implementation of the Project by assisting the Directorate General of Water Resources, Ministry of Public Works in review of detailed design, tendering and supervision of construction works.

3. SCOPE OF SERVICES

The scope of the services for the consulting services is itemized as follows:

- Review of the existing study and detailed design
- Review of documents for tendering
- Assistance of tendering and contracting
- Assistance in construction supervision
- Transfer of knowledge to counterpart personnel
- Reporting

3.1 Review of Detailed Design

The following works are to be included:

- to review previous study and design
- to review previous detailed design including quantity and cost estimate
- to prepare pre-qualification documents for International Competitive Bidding (ICB)

- to prepare documents for tendering

3.2 Assistance of Supervision of Construction Works

The Consultants shall perform the following services through the period from the preparation of construction works to the completion of all construction works of the Project.

1) To assist the Ministry in evaluation of pre-qualification documents submitted by the applicants for ICB sub-projects.
2) To assist the Ministry in evaluation of bids and awarding of contract for construction of the project works.
3) To check the detailed working drawings for construction of all the structures and facilities which are prepared and submitted by contractors.
4) To execute revision of design, if it is deemed necessary in the case of construction.
5) To check shop works and tests of contractors/suppliers in their factories before shipment and issue necessary certificates of inspection, if it is requested by the Ministry.
6) To carry out additional investigation and surveys, if it is deemed necessary in the course of construction.
7) To assist the Ministry in receiving and approval of working and shop drawing, construction program and schedule to be furnished by contractors/suppliers.
8) To assist the Ministry in carrying out the inspection of the works during the construction.
9) To assist the Ministry in keeping the progress of the work including checking modified working schedule that is proposed by the contractor in response to change of situation.
10) To assist the Ministry to evaluate progress and quality of the works and to certify the payment to contractors, if requested.
11) To assist the Ministry in final inspection and completion test of completed works.
12) To assist and advice the Engineer for the Project in preparing monthly construction schedule and works records.
12) To assist the Ministry in monitoring the influence against environmental condition.
13) To assist the Ministry in monitoring the river-mouth conditions.
14) To prepare completion reports for all the construction works of the Project including completion drawings of the structures and facilities.
15) To prepare report on Operation and Maintenance of the Project Facilities, if required.

3.3 Transfer of Knowledge

The consultant shall conduct the transfer of knowledge on the related field to the related government's personnel during the whole services period. Transfer of knowledge shall be conducted through on-the-job training.

3.4 Required Expertise for Consulting Services

The required expertise for the consulting services is as shown below, but not limited to the following:

Review of Detailed Design and Construction Supervision

1) Team Leader
   Professional A with at least 25 years of experience in study, detailed design, construction supervision, and operation and maintenance of flood control/river improvement project. He shall have master degree(s) of science/engineering and shall have experiences as project manager or leader in similar detailed design or construction supervision in Indonesia at least two (2) projects and more than five (5) years.
2) Sector Leader I, II, III, IV and V
   Professional A with at least 18 years of experience in study, detailed design and construction supervision of flood control/river improvement works in similar project. He shall have experience in similar detailed design or construction supervision in Indonesia at least two (2) projects.
3) Sector Co-Leader I, II, III, IV, V and VI
   Professional B with at least 15 years of experience in study, detailed design and construction supervision of flood control/river improvement works in similar project.
4) Design Engineer I, II, III, IV, V and VI
   Professional B with at least 12 years of experience in study, detailed design and construction supervision of flood control/river improvement works in similar project.
5) Survey Engineer I, II, III, IV, V and VI
   Professional B with at least 8 years of experience in geodetic survey for detailed design of flood control/river improvement works in similar project.
6) Soil-mechanics Engineer IV and VI
   Professional B with at least 10 years of experience in detailed design in similar project.
7) Bridge Engineer
   Professional B with at least 10 years of experience in detailed design in similar project.

8) Pump Mechanical Engineer A-I
Professional A with at least 10 years of experience in study and design of pump mechanical works for drainage facilities in similar project.

9) Pump Mechanical Engineer B-V and B-VI
Professional B with at least 12 years of experience in study and design of pump mechanical works for drainage facilities in similar project.

10) Construction Plan Engineer I, II, III, IV, V and VI
Professional B with at least 10 years of experience in detailed design, construction planning and cost estimate in similar project.

11) Cost Estimate Engineer I, II, III, IV, V and VI
Professional B with at least 8 years of experience in detailed design, construction planning and cost estimate in similar project.

12) Documents Engineer I, II, III, IV, V and VI
Professional B with at least 15 years of experience in preparation of specifications for detailed design of flood control/river improvement works in similar project.

13) Bid Evaluator I, II, III, IV and VI
Professional B with at least 15 years of experience in preparation of specifications for detailed design of flood control/river improvement works in similar project.

14) Social Environmentalist I, II, III, IV, V and IV
Professional B with at least 8 years of experience in social environmental analysis in similar project.

15) Construction Engineer I, II, III, IV, and IV
Professional B with at least at least 10 years experience in detailed design and construction supervision of control/river improvement works in similar project.

3.5 Assignment of Consultants for the Services

The services period of the Consultants is 52 months. The total man-months for the services are 525 man-months comprising 105 man-months for Professional A and 420 man-months for Professional B.

3.6 Reporting

The metric system shall be used exclusively in all the reports, drawings and calculations. Reports and calculations shall be edited in English.

(1) Overall Management

a) Inception Report giving comment and/or suggestion based on review of previous studies and detailed design, summary of main findings and technical problem obtained through field survey, detailed work plan and program of the Consultant's Services, and recommendation of possible alternative plan, if any (25 copies).

b) Monthly and quarterly progress reports giving a summary of progress of the works during the reporting period including the Consultant's activities and the program and schedule of the works in next period (25 copies).
c) Annual report which gives the details of the works executed in the past twelve months and the program and schedule of the next twelve months including the budgetary schedule (25 copies).
d) Service completion report giving the summary of all Consultant's activities in the service Period. (25 copies).

(2) Review of Study and Detailed Design

a) Finalized Pre-qualification Documents (30 copies for each Sub-project)
b) Finalized Bid Documents for international competitive bidding (10 copies for each Sub-project).
c) Review of Design Report giving all the results of the reviewed design including tender drawings (25 copies for each Sub-project).

(3) Construction Supervision

a) Environmental Monitoring Report (10 copies for each Sub-project)
b) Inspection report giving the detail of shop inspection and tests at supplier's factories before shipment (10 copies for each Sub-project).
c) Technical Advice Note for special topics on technical issues (4 times for each Sub-project with 5 copies)
d) Project completion report and drawings of all the aspects of construction of the Project at completion of services (25 copies).

PART – B

Adaptation of Climate Change

1. DESCRIPTION OF PROJECT

(1) Background

Adverse impacts of climate change are already expanding worldwide, and this presents unavoidable risks in the coming decades. Even though the mitigation of emission volume of carbon dioxide would be possible, climate change cannot be stopped in a short time. Climate change causes unexpected climatic phenomena such as frequent heavy storm, flooding by extreme high tide, etc. These phenomena reduce the safety level of river facilities even they are constructed in accordance with the original plan/design.

It is a matter of course that the structural measures should be implemented securely by the government, and it is also important for the inhabitants to take proper actions against such disasters. Therefore the adaptation of climate change through preparing disaster management plan and execution of countermeasures by the inhabitants against unexpected disaster is very important to enhance effects from structural measures implemented in the Project of "Urban Flood Control System Improvement in Selected Cities."

(2) Objective of the Adaptation of Climate Change

One of the major objectives of the adaptation of climate change is to mitigate flood disaster with participation of inhabitants in important urban cities vulnerable against flood damage and to enhance the capacity of BBWS/BWS personnel.

(3) Project Area

The project area is selected urban cities in whole Indonesia. These cities are vulnerable against flood damage.

2. OBJECTIVE OF CONSULTING SERVICES

The consulting services are required for adaptation of climate change in the Project; Urban Flood Control System Improvement in Selected Cities. The objectives of the consulting services are to design the adaptation of climate change, to facilitate the implementation of the adaptation of climate change with inhabitants, and to support the Directorate General of Water Resources, Ministry of Public Works.

3. SCOPE OF SERVICES

The scope of the services for the consulting services is itemized initially, as follows:

- Supporting inhabitant's activities for adaptation of climate change
- Transfer of knowledge to counterpart personnel
- Reporting

3.1 Assistance in Adaptation of Climate Change

The Consultants shall perform the following services to the defined cities/river basins throughout the service period. Through these activities, practical use of simple rainfall observation by local people can develop an understanding on rainfall characteristics which will be affected by the Global Warming.

(1) Overall

For respective cities/river basins of the sub-projects, flood risks accompanied to the climate change will be evaluated based on the field reconnaissance including inventory survey and interview survey, review of previous reports, and various data/information respecting Japanese adaptation methods to the climate change. Following scopes are changeable after evaluation of the flood risks.

(2) Padang Sub-project

(a) Study on hydrological characteristics using the available rainfall and water level data.
(b) Installation of adequate and simple hydrological observation equipment in cooperation with inhabitants. Number and location will be determined based on the above study on hydrological characteristics. Exercise or demonstration of sandbag construction method will be done at the time of above installation to understand simple and easy measures to prevent or reduce flood water damage.
(c) Compilation of hydrological data observed by inhabitants together with BWS staff.
(d) Determination of accumulated rainfall amount and/or water levels for flood warning such as rainfall-water level relationship, which gives river water warning level by measuring on site rainfall amount, ans water-level-water level relationship, which also gives river water warning level by measuring upstream river water level.
(e) Transfer of knowledge to the inhabitants on the Flood Early Warning Procedures (FEWP) based on the understanding of the above (b) and (d).
(f) Proposal on flood disaster management plan as adaptation of climate change.

(3) Palembang Sub-project

(a) Inventory survey of existing ponds through topographic survey.
(b) Flood runoff analysis with existing ponds and without existing ponds.
(c) Estimation of stormwater detention/retention volume in the basin required for the

condition of "without flood" in several probabilities, i.e. difference between runoff discharge and existing channel capacity. Excess runoff over the channel capacity flows into adjacent terrain as flooding. If these volumes could be stored in detention/retention pond or reservoir, no flooding will occur.

(d) Proposal on stormwater detention/retention facilities with their location, area and volume: "Basin Runoff Control." Under such conditions as densely built area along the channel, channel widening cannot be expected for flood mitigation. Based on the above study (c), conceivable sites for stormwater detention/retention facilities will be proposed.

(e) Auger boring and permeability test for proposed pilot site of stormwater detention/retention facilities. The pilot site will be selected at the appropriate location for demonstration of effectiveness of stormwater storage/infiltration.

(f) Construction of infiltration well at the pilot site of stormwater detention/retention facilities together with BWS staff.

(g) Demonstration of infiltration exercise.

(h) Proposal on flood disaster management plan as adaptation of climate change.

(4) Bandung

(a) Channel profile survey for the Cikapundung River and Citarum Main River including inventory survey on existing 3 drainage pumping stations along the Citarum Main River.

(b) Estimation of existing channel capacities of the above two rivers by non-uniform flow.

(c) Assessment of flood risks in Dayeuhkolot area based on the existing channel capacities, past flood/inundation records and forecast flooding/inundation condition by extraordinary floods brought by future climate change.

(d) Evaluation on operation and maintenance plan for river facilities, watershed management plan, flood plain management plan, and telemetering plan.

(e) Proposal on flood disaster management plan as adaptation of climate change.

(5) Surabaya-Wonokromo Sub-project

(a) Topographic survey on ground elevation around the Wonokromo River as the basic data for flood flow analysis mentioned below.

(b) Flood flow analysis using unsteady flow simulation.

(c) Preparation of flood risk map based on the field survey and simulation results.

(d) Proposal on flood disaster management plan as adaptation of climate change.

(e) Evaluation of existing functions of Jagir Weir on the Wonokromo River and Wonokromo Sluice on the Mas River clarifying (i) their dimensions, (ii) operation and maintenance manuals, and (iii) confirmation of operation manual against extraordinary flood event and emergency.

(f) Proposal on operation and maintenance plan for Jagir Weir including the operation for extraordinary flood events.

(6) Surabaya-Brangkal (Mojokerto) Sub-project

(a) Study on hydrological characteristics using the available rainfall and water level data.

(b) Installation of adequate and simple hydrological observation equipment in cooperation with inhabitants. Number and location will be determined based on the above study on hydrological characteristics. Exercise or demonstration of sandbag construction method will be done at the time of above installation to understand simple and easy measures to prevent or reduce flood water damage.

(c) Compilation of hydrological data observed by inhabitants together with BBWS staff.

(d) Determination of accumulated rainfall amount and/or water levels for flood warning such as rainfall-water level relationship, which gives river water warning level by measuring on site rainfall amount, ans water-level-water level relationship, which also gives river water warning level by measuring upstream river water level.

(e) Transfer of knowledge to the inhabitants on the Flood Early Warning Procedures (FEWP) based on the understanding of the above (b) and (d).

(f) Topographic survey on ground elevation in the heart of Mojokerto as the basic data for flood flow analysis mentioned below.

(g) Flood flow analysis using unsteady flow simulation.

(h) Preparation of flood risk map.

(i) Formulation of operation plan of mobile pumps utilizing the above flood risk map and FEWP.

(j) Proposal on flood disaster management plan as adaptation of climate change.

(7) Gorontalo Sub-project

(a) Study on hydrological characteristics using the available rainfall and water level data including the review of master plan study by JICA in 2002.

(b) Installation of adequate and simple hydrological observation equipment in cooperation with inhabitants. Number and location will be determined based on the above study on hydrological characteristics. Exercise or demonstration of sandbag construction method will be done at the time of above installation to understand simple and easy measures to prevent or reduce flood water damage.

(c) Compilation of hydrological data observed by inhabitants together with BWS staff.

(d) Determination of accumulated rainfall amount and/or water levels for flood warning such as rainfall-water level relationship, which gives river water warning level by measuring on site rainfall amount, ans water-level-water level relationship, which also gives river water warning level by measuring upstream river water level.

(e) Transfer of knowledge to the inhabitants on the Flood Early Warning Procedures (FEWP) based on the understanding of the above (b) and (d).

(f) Topographic survey on ground elevation in the center of Gorontalo as the basic data for flood flow analysis mentioned below.

(g) Flood flow analysis using unsteady flow simulation.

(h) Preparation of flood risk map expanding existing Tsunami hazard map.

(i) Formulation of operation plan of mobile pumps utilizing the above flood risk map and FEWP.
(j) Proposal on flood disaster management plan as adaptation of climate change.

3.2 Transfer of Knowledge

The consultant shall conduct the transfer of knowledge on the related field to the related government's personnel during the whole services period. Transfer of knowledge shall be conducted through on-the-job training.

3.3 Required Expertise for Consulting Services

The required expertise for the consulting services is as shown below, but not limited to the following:

Adaptation of Climate Change

1) Climate Change Adaptation Expert-A
Professional A with at least 18 years of experience in study on disaster prevention, flood policy, flood management and planning/study/detailed design of flood control/river improvement project. He shall have experiences in similar study or detailed design in Indonesia at least two (2) projects and more than twelve (12) months.
2) Climate Change Adaptation Expert-B
Professional B with at least 15 years of experience in study on disaster prevention, flood policy, flood management and planning/study/detailed design of flood control/river improvement works in similar project.
3) Disaster Management Engineer A
Professional A with at least 18 years of experience in study on disaster prevention, flood management and planning/study/detailed design of flood control/river improvement works in similar project.
4) Disaster Management Engineer B
Professional B with at least 15 years of experience in study on disaster prevention, flood management and detailed design of flood control/river improvement project.
5) Monitoring & Evaluation Engineer-A
Professional A with at least 8 years of experience in project management and monitoring in similar project.
6) Monitoring & Evaluation Engineer-B
Professional A with at least 8 years of experience in project management and monitoring in similar project.

7) Watershed Management Engineer
Professional B with at least 12 years of experience in study or detailed design on watershed management, flood management and flood control/river improvement project.

8) Flood Forecasting & Early Warning Engineer
Professional B with at least 10 years experience in study on hydraulics/hydrology, disaster prevention, flood management and study/detailed design of flood forecasting, warning and evacuation planning in similar project.

9) Community Development Engineer
Professional B with at least 8 years experience in hydraulic study. He shall also have experience in community participant project.

10) River Facility Management Engineer
Professional B with at least 8 years experience in study and detailed design of mechanical design for pump equipment/gate facilities in similar project.

3.4 Assignment of Consultants for the Services

The services period of the Consultants is 52 months. The total man-months for the services are 201 man-months comprising 34 man-months for Professional A and 167 man-months for Professional B.

3.5 Reporting

a) Inception Report giving comment and/or suggestion based on review of previous studies and detailed design, summary of main findings and technical problem obtained through field survey, detailed work plan and program of the Consultant's Services, and recommendation of possible alternative plan, if any (25 copies).
b) Monthly and quarterly progress reports giving a summary of progress of the works during the reporting period including the Consultant's activities and the program and schedule of the works in next period (25 copies).
c) Annual report which gives the details of the works executed in the past twelve months and the program and schedule of the next twelve months including the budgetary schedule (25 copies).
d) Engineering Study Report on Adaptation of Climate Change (25 copies)
e) Flood Risk Map (100 copies for selected Sub-projects)
f) Service completion report giving the summary of all Consultant's activities in the service Period. (25 copies).

Summary of Consulting Service Cost

Rp. 1.0 = yen 0.0115

	Unit	Qty.	Foreign Portion (Yen) Rate	Foreign Portion (Yen) Amount ('000)	Local Portion Rp. Rate	Local Portion Rp. Amount ('000)	Combined Total ('000) Yen
A Remuneration							
1 Professional (A)	M/M	105	2,500,000	262,500	0	0	262,500
2 Professional (B)	M/M	420	0	0	30,000,000	12,600,000	144,900
3 Supporting Staffs	M/M	2215	0	0	3,360,722	7,444,000	85,606
Subtotal of A				262,500		20,044,000	493,006
							0
B Direct Cost							0
1 International Travel	trip	30	522,000	15,660		0	15,660
2 Inland Travel							0
Prof. A	trip	24		0	2,485,000	59,640	686
Prof. B, Single	trip	84		0	1,940,000	162,960	1,874
Prof. B, Family	trip	100		0	1,610,000	161,000	1,852
3 Duty Trip	trip	303		0	4,105,000	1,243,815	14,304
4 Hotel Charge							0
Prof. A	M/M	37		0	12,000,000	444,000	5,106
Prof. B	M/M	98		0	7,500,000	735,000	8,453
5 Office Supply & Consumable	Office/M	259		0	6,615,000	1,713,285	19,703
6 Printing / Report	L.S.	1		0	648,250,000	648,250	7,455
7 Vehicle Rental	Car/M	109		0	7,250,000	790,250	9,088
8 Housing Allowance							0
Prof. A (Jakarta)	M/M	44		0	13,000,000	572,000	6,578
Prof. A (Others)	M/M	24		0	9,000,000	216,000	2,484
Prof. B	M/M	322		0	4,500,000	1,449,000	16,664
9 International & Domestic Communications	Office/M	259		0	5,690,000	1,473,710	16,948
10 Establishment Allowance	L.S.	1		0	228,000,000	228,000	2,622
11 Office Equipment & Materials	L.S.	1		0	2,752,500,000	2,752,500	31,654
12 Sub-contracting	L.S.	1		0	1,706,100,000	1,706,100	19,620
13 Vehicle Purchase & O/M	Car	7		0	240,000,000	1,680,000	19,320
14 Office Preparation & Running Cost	Office/M	259		0	10,770,000	2,789,430	32,078
Subtotal of B				15,660		18,824,940	232,147
Total (A+B)				278,160		38,868,940	725,153
C Remuneration for Climate Change							
1 Professional (A)	M/M	34	2,500,000	85,000	0	0	85,000
2 Professional (B)	M/M	167	0	0	30,000,000	5,010,000	57,615
3 Supporting Staffs	M/M	378	0	0	4,855,820	1,835,500	21,108
Subtotal of C				85,000		6,845,500	163,723
D Direct Cost for Adaptation of Climate Change							0
1 International Travel	trip	10	519,500	5,195		0	5,195
2 Inland Travel	trip	10		0	400,000	4,000	46
3 Duty Trip	trip	125		0	5,200,000	650,000	7,475
4 Hotel Charge							0
Prof. A	M/M	25		0	12,000,000	300,000	3,450
Prof. B	M/M	0		0	7,500,000	0	0
5 Office Supply & Consumable	Office/M	52		0	6,000,000	312,000	3,588
6 Printing / Report	L.S.	1		0	431,500,000	431,500	4,962
7 Vehicle Rental	Car/M	29		0	7,250,000	210,250	2,418
8 Housing Allowance							0
Prof. A (Jakarta)	M/M	0		0	13,000,000	0	0
Prof. A (Others)	M/M	0		0	9,000,000	0	0
Prof. B	M/M	0		0	4,500,000	0	0
9 International & Domestic Communications	Office/M	52		0	7,500,000	390,000	4,485
10 Establishment Allowance	L.S.	1		0	56,750,000	56,750	653
11 Office Equipment & Materials	L.S.	1		0	587,000,000	587,000	6,751
12 Sub-contracting	L.S.	1		0	486,300,000	486,300	5,592
13 Vehicle Purchase & O/M	Car	1		0	240,000,000	240,000	2,760
14 Office Preparation & Running Cost	Office/M	52		0	14,800,000	769,600	8,850
15 In-country Seminar and Training	time	12		0	45,000,000	540,000	6,210
Subtotal of D				5,195		4,977,400	62,435
Total (C+D)				90,195		11,822,900	226,158
Grand Total				368,355		50,691,840	951,311

Cost Breakdown for Ordinary Consulting Services

International Travel Cost

Engineer	(¥)			(¥)
Air Fare (TYO – JKT, Round)	400,500 /Trip		24 Trips	9,612,000
Excess Baggage	4,600 /kg	10 kg	24 Trips	1,104,000
Unaccompanied Baggage	4,600 /kg	25 kg	0 time	0
Travel Documents				
First Trip	25,000 /Time		7 times	175,000
Subsequent Trip	8,000 /Time		17 times	136,000
Inland Transportation	15,000 /Trip		18 Trips	270,000
Relocation Allowance	215,000 /Time		0 time	0
Airport Charge at TYO	2,040 /Trip		24 Trips	48,960
Fuel Surcharge	44,000 /Trip		24 Trips	1,056,000
Insurance Premium	600 /Trip		24 Trips	14,400
Total				12,416,360

Spouse	(¥)			(¥)
Air Fare (TYO – JKT, Round)	400,500 /Trip		6 Trips	2,403,000
Excess Baggage	4,600 /kg	10 kg	6 Trips	276,000
Unaccompanied Baggage	4,600 /kg	40 kg	1 time	184,000
Travel Documents				
First Trip	25,000 /Time		1 times	25,000
Subsequent Trip	8,000 /Time		5 times	40,000
Inland Transportation	15,000 /Trip		6 Trips	90,000
Relocation Allowance	215,000 /Time		1 time	215,000
Airport Charge at TYO	2,040 /Trip		6 Trips	12,240
Fuel Surcharge	44,000 /Trip		6 Trips	264,000
Insurance Premium	600 /Trip		6 Trips	3,600
Total				3,245,240

GRAND-TOTAL 15,661,600

522,053 /Trip

Inland Travel Cost

Prof. A	Air Fare (Rp.)	Airport Charge (Rp.)	Taxi Charge (Rp.)	Hotel in JKT (Rp.)	Total (Rp.)	Prof. A Leader	Pump	Doc	Pro.B Engr.	Family	Total	(Rp.)
Jakarta	0	0	400,000	0	400,000	5	0	0			5	2,000,000
Padang	1,920,000	55,000	700,000	500,000	3,175,000	4		0			4	12,700,000
Palembang	1,120,000	55,000	700,000	500,000	2,375,000	3		0			3	7,125,000
Bandung	86,000	0	800,000	500,000	1,386,000	1		0			1	1,386,000
Surabaya	1,556,000	55,000	700,000	500,000	2,811,000	5	2	0			7	19,677,000
Gorontalo	2,956,000	55,000	700,000	500,000	4,211,000	3	1	0			4	16,844,000
Total (Prof. A)						21	3	0			24	59,732,000
												2,488,833 /Trip
Prof. B (Single)												
Padang	1,920,000	55,000	250,000	0	2,225,000				12		12	26,700,000
Palembang	1,120,000	55,000	250,000	0	1,425,000				12		12	17,100,000
Bandung	86,000	0	300,000	0	386,000				12		12	4,632,000
Surabaya	1,556,000	55,000	250,000	0	1,861,000				30		30	55,830,000
Gorontalo	2,956,000	55,000	250,000	0	3,261,000				18		18	58,698,000
Total (B Single)						0	0	0	84		84	162,960,000
												1,940,000 /Trip
Prof. B (Family)												
Padang	1,920,000	55,000	75,000	0	1,993,750				5	15	20	39,875,000
Palembang	1,120,000	55,000	75,000	0	1,193,750				4	12	16	19,100,000
Bandung	86,000	0	100,000	0	111,000				4	12	16	1,776,000
Surabaya	1,556,000	55,000	75,000	0	1,629,750				8	24	32	52,152,000
Gorontalo	2,956,000	55,000	75,000	0	3,029,750				4	12	16	48,476,000
Total (B Family)						0	0	0	25	75	100	161,379,000
												1,613,790 /Trip
												384,071,000

(Note) : Toll road fee for Bandung sub-project
One family consists of spouse and 2 children (adult fare)

Duty Trip Cost

	Air Fare (Rp.)	Airport Charge (Rp.)	Period (month) DD	Bid	Construc.	Times DD	Bid	Construction (from) Site	JKT	Total Times	Air Fare (Rp.)	Accom + Allowance Unit (Rp.)	Amount	Total (Rp.)
Padang	1,920,000	55,000	6	13	33	11	4	33	15	63	124,425,000	2,500,000	157,500,000	281,925,000
Palembang	1,120,000	55,000	6	9	27	11	2	27	11	51	59,925,000	2,500,000	127,500,000	187,425,000
Bandung	86,000	55,000	5	9	27	10	2	27	11	50	7,050,000	2,500,000	125,000,000	132,050,000
Wonokromo	1,556,000	55,000	6	13	27	11	4	27	12	54	86,994,000	2,500,000	135,000,000	221,994,000
Brangkal	1,556,000	55,000	6	9	27	8	2	18	6	34	54,774,000	2,500,000	85,000,000	139,774,000
Gorontalo	2,956,000	55,000	6	9	27	11	2	27	11	51	153,561,000	2,500,000	127,500,000	281,061,000
						62	16	159	66	303	486,729,000		757,500,000	1,244,229,000
									33					4,106,366

Accomodation Rp. 500,000 x 2 1,000,000
Allowance Rp. 500,000 x 3 1,500,000

(Note) : Toll road fee for Bandung sub-project

Accommodation Period

	Long (MM)	Short (MM)	Total
Professional A			
Team Leader	44	0	44
Sector Leader (Padang)	6	8	14
Sector Leader (Palembang)	6	5	11
Sector Leader (Bandung)	0	5	5
Sector Leader (Wonokromo/Brangkal)	6	10	16
Sector Leader (Gorontalo)	6	5	11
Pump Mechanical Engineer A-1	0	4	4
Documents Specialist A-1	0	0	0
Sub-total	68	37	105
Sector Co-Leader (Padang)	43	0	43
Design Engineer B-1	4	0	4
Survey Engineer B-1	0	2	2
Construction Planner B-1	0	2	2
Cost Estimator B-1	0	2	2
Document Specialist B-1	0	2	2
Bid Evaluator B-1	0	1	1
Social Environmentalist B-1	0	5	5
Construction Engineer B-1	10	0	10
Sub-total	57	14	71
Sector Co-Leader (Palembang)	37	0	37
Design Engineer B-2	4	0	4
Survey Engineer B-2	0	2	2
Construction Planner B-2	0	2	2
Cost Estimator B-2	0	2	2
Document Specialist B-2	0	2	2
Bid Evaluator B-2	0	1	1
Social Environmentalist B-2	0	4	4
Construction Engineer B-2	8	0	8
Sub-total	49	13	62
Sector Co-Leader (Bandung)	36	0	36
Design Engineer B-3	3	0	3
Survey Engineer B-3	0	2	2
Construction Planner B-3	0	2	2
Cost Estimator B-3	0	2	2
Document Specialist B-3	0	2	2
Bid Evaluator B-3	0	1	1
Social Environmentalist B-3	0	4	4
Construction Engineer B-3	8	0	8
Sub-total	47	13	60
	Long (MM)	Short (MM)	Total
Sector Co-Leader (Wonokromo)	38	0	38
Design Engineer B-4	4	0	4
Survey Engineer B-4	0	2	2
Soil-mechanics Engineer B-4	0	2	2
Pump Mechanics Engineer B-1	0	0	0
Construction Planner B-4	0	2	2
Cost Estimator B-4	0	2	2
Document Specialist B-4	0	2	2
Bid Evaluator B-4	0	1	1
Social Environmentalist B-4	0	5	5
Construction Engineer B-4	17	0	17
Sub-total	59	16	75
Sector Co-Leader (Brangkal)	37	0	37
Design Engineer B-5	4	0	4
Survey Engineer B-5	0	2	2
Pump Mechanics Engineer B-5	0	6	6
Construction Planner B-5	0	2	2
Cost Estimator B-5	0	2	2
Document Specialist B-5	0	2	2
Bid Evaluator B-5	0	1	1
Social Environmentalist B-5	0	4	4
Construction Engineer B-5	0	0	0
Sub-total	41	19	60
Sector Co-Leader (Gorontalo)	37	0	37
Design Engineer B-6	4	0	4
Survey Engineer B-6	0	2	2
Soil-mechanics Engineer B-6	0	2	2
Bridge Engineer B-6	0	2	2
Pump Mechanics Engineer B-6	0	6	6
Construction Planner B-6	0	2	2
Cost Estimator B-6	0	2	2
Document Specialist B-6	0	2	2
Bid Evaluator B-6	0	1	1
Social Environmentalist B-6	0	4	4
Construction Engineer B-6	8	0	8
Sub-total	49	23	72
Total (B)	302	98	400

Office Supply and Communication Cost

Office		Total Period (Month)	Work Period D/D (Month)	S/V (Month)	Total (Month)	Office Supply Unit (Rp./Month) D/D	S/V	Amount	Communication Cost	
Jakarta	Nov., 2009 - Feb. 2014	52	0	52	52	5,000,000	5,000,000	260,000,000	8,000,000	416,000,000
Padang	Nov., 2009 - Feb. 2014	52	6	39	45	11,000,000	5,500,000	280,500,000	5,000,000	225,000,000
Palembang	Nov., 2009 - Jan. 2013	39	6	33	39	11,000,000	5,500,000	247,500,000	5,000,000	195,000,000
Bandung	Nov., 2009 - Dec. 2012	38	5	33	38	11,000,000	5,500,000	236,500,000	5,000,000	190,000,000
Surabaya	Nov., 2009 - Aug. 2013	46	6	40	46	17,000,000	8,500,000	442,000,000	5,500,000	253,000,000
Gorontalo	Nov., 2009 - Jan. 2013	39	6	33	39	11,000,000	5,500,000	247,500,000	5,000,000	195,000,000
Total		266	29	230	259			1,714,000,000		1,474,000,000
								6,617,761		5,691,120

Office Preparation and Running Cost

Office		Total Period (Month)	Work Period D/D (Month)	S/V (Month)	Total (Month)	Max. Person A + B	Staff	Total	Area (m2)	Unit Cost (Rp./month)	Amount	Running Cost (Rp./month)	Amount	Total Cost (Rp.)
Jakarta	Nov., 2009 - Feb. 2014	52	0	52	52	1	3	4	45	100,000	234,000,000	4,000,000	208,000,000	442,000,000
Padang	Nov., 2009 - Feb. 2014	52	6	39	45	5	6	11	78	60,000	243,360,000	5,000,000	225,000,000	468,360,000
Palembang	Nov., 2009 - Jan. 2013	39	6	33	39	5	6	11	78	60,000	182,520,000	5,000,000	195,000,000	377,520,000
Bandung	Nov., 2009 - Dec. 2012	38	5	33	38	5	6	11	78	60,000	177,840,000	5,000,000	190,000,000	367,840,000
Surabaya	Nov., 2009 - Aug. 2013	46	6	40	46	10	11	21	123	80,000	452,640,000	6,000,000	276,000,000	728,640,000
Gorontalo	Nov., 2009 - Jan. 2013	39	6	33	39	7	6	13	90	60,000	210,600,000	5,000,000	195,000,000	405,600,000
Total		266	29	230	259						1,500,960,000		1,289,000,000	2,789,960,000
														10,772,046

Printing/Report Cost

	Unit Cost (Rp.)	Package/ times	Copies	Amount (Rp.)
Inception Report				
Draft	200,000	1	15	3,000,000
Final	250,000	1	25	6,250,000
Monthly Progress Report	150,000	52	25	195,000,000
Quarterly Progress Report	150,000	17	25	63,750,000
Annual Report	200,000	4	25	20,000,000
Service Completion Report				
Draft	250,000	1	10	2,500,000
Final	300,000	1	25	7,500,000
Sub-total				298,000,000
Review Design Report				
Draft	250,000	6	15	22,500,000
Final	350,000	6	25	52,500,000
P/Q Documents				
Draft	200,000	2	10	4,000,000
Final	250,000	2	30	15,000,000
P/Q Evaluation Report				
Draft	100,000	2	10	2,000,000
Final	150,000	2	20	6,000,000
Bid Documents				
Draft	250,000	6	10	15,000,000
Final	350,000	6	10	21,000,000
Drawings	250,000	6	10	15,000,000
Bid Evaluation Report				
Draft	150,000	6	10	9,000,000
Final	200,000	6	20	24,000,000
Sub-total				186,000,000
Environmental Report	100,000	6	10	6,000,000
Inspection Report	150,000	2	10	3,000,000
Technical Advice Note	50,000	17	10	8,500,000
Explanatory Note/				
Discussion Material	50,000	52	10	26,000,000
Project Completion Report				
Completion Report				
Draft	250,000	6	10	15,000,000
Final	350,000	6	25	52,500,000
Completion Drawings				0
Draft	200,000	6	10	12,000,000
Final	250,000	6	25	37,500,000
Draft PCR	150,000	1	25	3,750,000
Sub-total				164,250,000
TOTAL				648,250,000

Professional A	M/M			Trip	IWPL		Work Permit				Residence Permit				Registration of Foreigner				Exist Permit		Exist Charge	Total
	Long	Short	Total				1,200,000	1st	1,000,000	Extension	300,000	1st	1,500,000	Extension	1,000,000	1st	500,000	Extension	300,000		400,000	1,000,000	
Team Leader	44	0	44	6	44		52,800,000	1	1,000,000	4	1,200,000	1	1,500,000	4	4,000,000	1	500,000	4	1,200,000	1	400,000	6,000,000	68,600,000
Sector Leader (Padang)	6	8	14	4	14		16,800,000	4	4,000,000	0	0	4	6,000,000	0	0	4	2,000,000	0	0	4	1,600,000	4,000,000	34,400,000
Sector Leader (Palembang)	6	5	11	3	11		13,200,000	2	2,000,000	1	300,000	2	3,000,000	1	1,000,000	2	1,000,000	1	300,000	2	800,000	3,000,000	24,600,000
Sector Leader (Bandung)	0	5	5	0	5		6,000,000	1	1,000,000	0	0	1	1,500,000	0	0	1	500,000	0	0	1	400,000	1,000,000	10,400,000
Sector Leader (Surabaya)	6	10	16	5	16		19,200,000	2	2,000,000	1	300,000	2	3,000,000	1	1,000,000	2	1,000,000	1	300,000	2	800,000	5,000,000	32,600,000
Sector Leader (Gorontalo)	6	5	11	3	11		13,200,000	2	2,000,000	1	300,000	2	3,000,000	1	1,000,000	2	1,000,000	1	300,000	2	800,000	3,000,000	24,600,000
Pump Mechanical Engr. A-1	0	4	4	3	4		4,800,000	3	3,000,000	0	0	3	4,500,000	0	0	3	1,500,000	0	0	3	1,200,000	3,000,000	18,000,000
Sub-total	68	37	105	24	105		126,000,000	15	15,000,000	7	2,100,000	15	22,500,000	7	7,000,000	15	7,500,000	7	2,100,000	15	6,000,000	25,000,000	213,200,000
																							2,030,476
Spouse of Team Leader	44	0	44	6	0		0	0	0	4	1,200,000	1	1,500,000	4	4,000,000	1	500,000	4	1,200,000	1	400,000	6,000,000	14,800,000
																							2,466,667
Total	112	37	149	30	105		126,000,000	15	15,000,000	11	3,300,000	16	24,000,000	11	11,000,000	16	8,000,000	11	3,300,000	16	6,400,000	31,000,000	228,000,000

Office Staff including Ass. Engineer

Office	Period (Month)	Staff	Period (Month)			Person	Billing Rate	Amount
			DD	CS	Total			
Jakarta	64	Office Manager	6	46	52	1	6,000,000	312,000,000
		Accountant	6	46	52	1	5,000,000	260,000,000
		Computer Operator	6	46	52	1	2,500,000	130,000,000
		Office Boy	6	46	52	1	1,500,000	78,000,000
		Driver	0	46	46	1	2,000,000	92,000,000
		Sub-total						872,000,000
Padang	55	Assistant Engineer	18	39	57	1	9,000,000	513,000,000
		Jr. Office Manager	6	39	45	1	5,000,000	225,000,000
		CAD Operator	6	32	38	1	5,000,000	190,000,000
		Computer Operator	6	35	41	1	2,500,000	102,500,000
		Office Boy	6	39	45	1	1,500,000	67,500,000
		Driver	0	39	39	1	2,000,000	78,000,000
		Watchman	6	46	52	1	1,000,000	52,000,000
			6	46	52	1	1,000,000	52,000,000
			6	46	52	1	1,000,000	52,000,000
		Sub-total						1,332,000,000
Palembang	49	Assistant Engineer	18	33	51	1	9,000,000	459,000,000
		Jr. Office Manager	6	33	39	1	5,000,000	195,000,000
		CAD Operator	6	26	32	1	5,000,000	160,000,000
		Computer Operator	6	31	37	1	2,500,000	92,500,000
		Office Boy	6	33	39	1	1,500,000	58,500,000
		Driver	0	33	33	1	2,000,000	66,000,000
		Watchman	6	33	39	1	1,000,000	39,000,000
			6	33	39	1	1,000,000	39,000,000
			6	33	39	1	1,000,000	39,000,000
		Sub-total						1,148,000,000
Bandung	48	Assistant Engineer	15	33	48	1	9,000,000	432,000,000
		Jr. Office Manager	5	33	38	1	5,000,000	190,000,000
		CAD Operator	5	26	31	1	5,000,000	155,000,000
		Computer Operator	5	31	36	1	2,500,000	90,000,000
		Office Boy	5	33	38	1	1,500,000	57,000,000
		Driver	0	32	32	1	2,000,000	64,000,000
		Watchman	5	33	38	1	1,000,000	38,000,000
			5	33	38	1	1,000,000	38,000,000
			5	33	38	1	1,000,000	38,000,000
		Sub-total						1,102,000,000
Surabaya	51	Assistant Engineer	18	27	45	1	9,000,000	405,000,000
			18	33	51	1	9,000,000	459,000,000
		Jr. Office Manager	6	40	46	1	5,000,000	230,000,000
		CAD Operator	12	39	51	1	5,000,000	255,000,000
		Computer Operator	6	40	46	1	2,500,000	115,000,000
			6	0	6	1	2,500,000	15,000,000
		Office Boy	6	40	46	1	1,500,000	69,000,000
		Driver	0	40	40	1	2,000,000	80,000,000
			0	38	38	1	2,000,000	76,000,000
		Watchman	6	40	46	1	1,000,000	46,000,000
			6	40	46	1	1,000,000	46,000,000
			6	40	46	1	1,000,000	46,000,000
		Sub-total						1,842,000,000
Gorontalo	49	Assistant Engineer	18	33	51	1	9,000,000	459,000,000
		Jr. Office Manager	6	33	39	1	5,000,000	195,000,000
		CAD Operator	6	26	32	1	5,000,000	160,000,000
		Computer Operator	6	31	37	1	2,500,000	92,500,000
		Office Boy	6	33	39	1	1,500,000	58,500,000
		Driver	0	33	33	1	2,000,000	66,000,000
		Watchman	6	33	39	1	1,000,000	39,000,000
			6	33	39	1	1,000,000	39,000,000
			6	33	39	1	1,000,000	39,000,000
		Sub-total						1,148,000,000
Total	316							7,444,000,000
		Assistant Engineer	105	198	303		9,000,000	2,727,000,000
		Office Manager	6	46	52		6,000,000	312,000,000
		Accountant	6	46	52		5,000,000	260,000,000
		Jr. Office Manager	29	178	207		5,000,000	1,035,000,000
		CAD Operator	35	149	184		5,000,000	920,000,000
		Computer Operator	41	214	255		2,500,000	637,500,000
		Office Boy	35	224	259		1,500,000	388,500,000
		Driver	0	261	261		2,000,000	522,000,000
		Watchman	87	555	642		1,000,000	642,000,000
					2,215			7,444,000,000

2,989,405

Cost Breakdown of Office Equipment and Materials

Item	Specification	Q'ty	Unit Price (Rp.)	Amount (Rp.)
1. Desktop Personal Computer - 1	Windows MS Office Core2 DUO 2 GB RAM 500 GB HDD 17" Color Monitor DVD/CD WR Keyboard, etc.	6 sets	30,000,000	180,000,000
2. Desktop Personal Computer - 2	Windows MS Office Core2 DUO 2 GB RAM 250 GB HDD 17" Color Monitor Keybord, etc.	6 sets	15,000,000	90,000,000
3. Notebook Personal Computer	Windows MS Office Core2 DUO 2 GB RAM	6 sets	30,000,000	180,000,000
4. Computer Software - 1	AUTOCAD	6 nos.	30,000,000	180,000,000
5. Computer Software - 2	Symantec Anti Virus 2008	18 nos.	1,000,000	18,000,000
6. Computer Software - 3	Acrobat Illustrator	6 nos.	10,000,000	60,000,000
7. Computer Software - 4	Engineering Software	6 nos.	30,000,000	180,000,000
9. Computer Software - 5	Administrative Software	6 set	1,750,000	10,500,000
8. Wireless Lan Router		6 set	7,000,000	42,000,000
10. Uninterrupted Power Supply	Back-up Battery 500VA	6 set	1,250,000	7,500,000
11. Stabilizer - 1 (Capasity 500 VA)	for Computer	6 set	1,250,000	7,500,000
12. Stabilizer - 2 (Capacity 1KVA)	for Photocoty Machine	6 set	2,250,000	13,500,000
13. Scanner (A3 size)		0 units	20,000,000	0
14. Scanner (A4 size)		0 units	17,500,000	0
15. Laser Printer (A3 size)	Color	6 set	32,500,000	195,000,000
16. Laser Printer (A3 size)	Monochrome	0 set	15,000,000	0
17. Laser Printer (A4 size)	Color	6 set	10,000,000	60,000,000
18. Laser Printer (A4 size)	Monochrome	0 set	7,500,000	0
19. Color Inject Printer (A3 size)		6 set	2,500,000	15,000,000
20. Color Inject Printer (A4 size)		6 set	1,750,000	10,500,000
21. Cartridge for Laser Printer	Color	100 nos.	10,000,000	1,000,000,000
22. Cartridge for Laser Printer	Monochrome	300 nos.	1,000,000	300,000,000
23. Cartridge for Inject Printer	Color	0 nos.	1,000,000	0
24. Cartridge for Inject Printer	Monochrome	0 nos.	300,000	0
25 Photocopy Machine	copy speed : 45 m/sec.	0 sets	200,000,000	0
26. Photo Copy Paper (A3 size)	500 sheets/pack	400 packs	100,000	40,000,000
27. Photo Copy Paper (A4 size)	500 sheets/pack	2000 packs	50,000	100,000,000
28. Facsimille Machine		0 set	7,000,000	0
29. Filing Cabinet	Model Elite 444C	18 units	1,500,000	27,000,000
30. Locker	Model Elite 448	18 units	1,250,000	22,500,000
31. Helmet		18 nos.	250,000	4,500,000
.32 Life Jacket		18 nos.	500,000	9,000,000
TOTAL				**2,752,500,000**

Breakdown of Topographic Survey and Soil-mechanical Investigation

A. Padang

1. Topographic Survey Works (4.1 km + 7.7 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			14,600,000	
(2) Cross Sectional Survey	sect.	1,250,000	84	105,000,000	Anai River, 100 - 200 m interval
(3) Longitudinal Survey	km	1,750,000	12	21,000,000	
(4) River Structure Survey	site	2,000,000	10	20,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				160,600,000	
(6) Miscellaneous (15% of 5.)	L.S			24,090,000	preparation of report, etc.
TOTAL				**184,690,000**	
			(Rounded)	**184,400,000**	

2. Soil-mechanics Investigation Works (0 nos.)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (15% of 2.)	L.S			0	
(2) Fiels Works					
2.1 Installation of drilling machine	site	0	0	0	
2.2 Core boring	m	0	0	0	30 m x 1 + 25 m x 1
2.3 STP	nos.	0	0	0	1nos./2 m
2.4 Undisturbed sampling	nos.	0	0	0	3nos./site
2.5 Sub-total (sum of 2.1 to 2.4)				0	
(3) Laboratory Test	nos.	0	0	0	
(4) Sub-total (sum of 1.to 3.)				0	
(5) Miscallaneous (30% of 4.)	L.S			0	preparation of report, etc.
TOTAL				**0**	

B. Palembang

1. Topographic Survey Works (5.5 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			14,375,000	
(2) Cross Sectional Survey	sect.	750,000	151	113,250,000	25 - 50 m interval
(3) Longitudinal Survey	km	1,750,000	6	10,500,000	
(4) River Structure Survey	site	2,000,000	10	20,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				158,125,000	
(6) Miscellaneous (15% of 5.)	L.S			23,718,750	preparation of report, etc.
TOTAL				**181,843,750**	
			(Rounded)	**181,700,000**	

C. Bandung

1. Topographic Survey Works (0.7 km + 3.5 km + 2.5 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			11,400,000	
(2) Cross Sectional Survey	sect.	500,000	29	14,500,000	25 m interval
	sect.	750,000	70	52,500,000	50 m interval
	sect.	1,000,000	25	25,000,000	100 m interval
(3) Longitudinal Survey	km	1,750,000	8	14,000,000	
(4) River Structure Survey	site	2,000,000	4	8,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				125,400,000	
(6) Miscellaneous (15% of 5.)	L.S			18,810,000	preparation of report, etc.
TOTAL				**144,210,000**	
			(Rounded)	**143,600,000**	

D. Wonokromo

1. Topographic Survey Works (4.0 km + 10 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (5% of 2.+3.+4	L.S			11,325,000	
(2) Cross Sectional Survey	sect.	1,000,000	196	196,000,000	50 - 100 m interval
(3) Longitudinal Survey	km	1,750,000	14	24,500,000	
(4) River Structure Survey	site	2,000,000	3	6,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				237,825,000	
(6) Miscellaneous (10% of 5.)	L.S			23,782,500	preparation of report, etc.
TOTAL				**261,607,500**	
			(Rounded)	**261,200,000**	

2. Soil-mechanics Investigation Works (6 nos.)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.)	L.S			20,520,000	
(2) Field Works					
2.1 Installation of drilling machine	site	1,000,000	6	6,000,000	
2.2 Core boring	m	650,000	240	156,000,000	40 m x 6
2.3 SPT	nos.	300,000	126	37,800,000	1nos./2 m
2.4 Undisturbed sampling	nos.	300,000	18	5,400,000	3nos./site
2.5 Sub-total (sum of 2.1 to 2.4)				205,200,000	
(3) Laboratory Test	nos.	1,500,000	18	27,000,000	
(4) Sub-total (sum of 1.to 3.)				252,720,000	
(5) Miscallaneous (15% of 4.)	L.S			37,908,000	preparation of report, etc.
TOTAL				**290,628,000**	
			(Rounded)	**290,400,000**	

E. Brangkal

1. Topographic Survey Works (7.9 km + 4.1 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (5% of 2.+3.+4	L.S			7,430,000	
(2) Cross Sectional Survey	sect.	800,000	142	113,600,000	50 - 200 m interval
(3) Longitudinal Survey	km	1,750,000	12	21,000,000	
(4) River Structure Survey	site	2,000,000	7	14,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				156,030,000	
(6) Miscellaneous (10% of 5.)	L.S			15,603,000	preparation of report, etc.
TOTAL				**171,633,000**	
			(Rounded)	**171,400,000**	

E. Gorontalo

1. Topographic Survey Works (7.42 km + 3.58 km)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (5% of 2.+3.+4	L.S			9,762,500	
(2) Cross Sectional Survey	sect.	800,000	175	140,000,000	50 - 200 m interval
(3) Longitudinal Survey	km	1,750,000	11	19,250,000	
(4) River Structure Survey	site	2,000,000	18	36,000,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				205,012,500	
(6) Miscellaneous (10% of 5.)	L.S			20,501,250	preparation of report, etc.
TOTAL				**225,513,750**	
			(Rounded)	**224,900,000**	

2. Soil-mechanics Investigation Works (6 nos.)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.)	L.S			17,200,000	
(2) Field Works					
2.1 Installation of drilling machine	site	1,000,000	6	6,000,000	
2.2 Core boring	m	650,000	200	130,000,000	30m x 2 + 35m x 4
2.3 SPT	nos.	300,000	102	30,600,000	1nos./2 m
2.4 Undisturbed sampling	nos.	300,000	18	5,400,000	3nos./site
2.5 Sub-total (sum of 2.1 to 2.4)				172,000,000	
(3) Laboratory Test	nos.	1,500,000	18	27,000,000	
(4) Sub-total (sum of 1.to 3.)				216,200,000	
(5) Miscallaneous (15% of 4.)	L.S			32,430,000	preparation of report, etc.
TOTAL				**248,630,000**	
			(Rounded)	**248,500,000**	

TOTAL (Topographic Survey)	**1,167,200,000**
TOTAL (Soil-mechanics Investigation)	**538,900,000**
GRAND TOTAL	**1,706,100,000**

Cost Breakdown for Adaptation to Climate Change

International Travel Cost

	(¥)			(¥)
Air Fare (TYO – JKT, Round)	400,500 /Trip		10 Trips	4,005,000
Excess Baggage	4,600 /kg	10 kg	10 Trips	460,000
Unaccompanied Baggage	4,600 /kg	25 kg	0 time	0
Travel Documents				
First Trip	25,000 /Time		2 times	50,000
Subsequent Trip	8,000 /Time		8 times	64,000
Inland Transportation	15,000 /Trip		10 Trips	150,000
Relocation Allowance	215,000 /Time		0 time	0
Airport Charge at TYO	2,040 /Trip		10 Trips	20,400
Fuel Surcharge	44,000 /Trip		10 Trips	440,000
Insurance Premium	600 /Trip		10 Trips	6,000
Total				5,195,400

519,540 /Trip

Inland Travel Cost

Prof. A	Air Fare (Rp.)	Airport Charge (Rp.)	Taxi Charge (Rp.)	Hotel in JKT (Rp.)	Total (Rp.)	Prof. A Leader	Engr.	Doc	Pro.B Engr. Family	Total	(Rp.)
Jakarta	0	0	400,000	0	400,000	6	4	0		10	4,000,000
Padang	1,920,000	55,000	700,000	500,000	3,175,000			0		0	0
Palembang	1,120,000	55,000	700,000	500,000	2,375,000			0		0	0
Bandung	86,000	0	800,000	500,000	1,386,000			0		0	0
Surabaya	1,556,000	55,000	700,000	500,000	2,811,000			0		0	0
Gorontalo	2,956,000	55,000	700,000	500,000	4,211,000			0		0	0
Total (Prof. A)						6	4	0		10	4,000,000

400,000 /Trip

Prof. B (Single)											
Padang	1,920,000	55,000	250,000	0	2,225,000				0	0	0
Palembang	1,120,000	55,000	250,000	0	1,425,000				0	0	0
Bandung	86,000	0	300,000	0	386,000				0	0	0
Surabaya	1,556,000	55,000	250,000	0	1,861,000				0	0	0
Gorontalo	2,956,000	55,000	250,000	0	3,261,000				0	0	0
Total (B Single)						0	0	0	0	0	0

/Trip

Prof. B (Family)											
Padang	1,920,000	55,000	75,000	0	1,993,750				0	0	0
Palembang	1,120,000	55,000	75,000	0	1,193,750				0	0	0
Bandung	86,000	0	100,000	0	111,000				0	0	0
Surabaya	1,556,000	55,000	75,000	0	1,629,750				0	0	0
Gorontalo	2,956,000	55,000	75,000	0	3,029,750				0	0	0
Total (B Family)						0	0	0	0	0	0

/Trip

4,000,000 /Trip

(Note) : Toll road fee for Bandung sub-project
One family consists of spouse and 2 children (adult fare)

Duty Trip Cost

Professional A

	Air Fare (Rp.)	Airport (Rp.)	T/L (16 mon)	Disaster (9 mon)	Total Times	Air Fare Amount (Rp.)	Accomodation + Allowance Unit (Rp.)	Accomodation + Allowance Amount	Total
Padang	1,920,000	55,000	3		3	5,925,000	2,500,000	7,500,000	13,425,000
	1,920,000	55,000		2	2	3,950,000	6,500,000	13,000,000	16,950,000
Palembang	1,120,000	55,000	3		3	3,525,000	2,500,000	7,500,000	11,025,000
	1,120,000	55,000		1	1	1,175,000	6,500,000	6,500,000	7,675,000
Bandung	86,000	55,000	3		3	423,000	2,500,000	7,500,000	7,923,000
	86,000	55,000		2	2	282,000	6,500,000	13,000,000	13,282,000
Surabaya	1,556,000	55,000	2		2	3,222,000	2,500,000	5,000,000	8,222,000
	1,556,000	55,000		1	1	1,611,000	6,500,000	6,500,000	8,111,000
Brangkal	1,556,000	55,000	2		2	3,222,000	2,500,000	5,000,000	8,222,000
	1,556,000	55,000		1	1	1,611,000	6,500,000	6,500,000	8,111,000
Gorontalo	2,956,000	55,000	3		3	9,033,000	2,500,000	7,500,000	16,533,000
	2,956,000	55,000		2	2	6,022,000	6,500,000	13,000,000	19,022,000
			16	9	25	40,001,000		98,500,000	138,501,000

Team Leader					
Accomodation	Rp.	500,000	x	2	1,000,000
Allowance	Rp.	500,000	x	3	1,500,000
Disaster Engineer					
Accomodation	Rp.	500,000	x	6	3,000,000
Allowance	Rp.	500,000	x	7	3,500,000

Professional B

	Air Fare (Rp.)	Airport (Rp.)	Deputy T/L (47 mon)	Engineers (53 mon)	Total Times	Air Fare Amount (Rp.)	Accomodation + Allowance Unit (Rp.)	Accomodation + Allowance Amount	Total
Padang	1,920,000	55,000	10	5	15	29,625,000	3,350,000	50,250,000	79,875,000
	1,920,000	55,000		2	2	3,950,000	5,900,000	11,800,000	15,750,000
Palembang	1,120,000	55,000	9	7	16	18,800,000	2,950,000	47,200,000	66,000,000
	1,120,000	55,000		3	3	3,525,000	5,900,000	17,700,000	21,225,000
Bandung	86,000	55,000	9	7	16	2,256,000	2,950,000	47,200,000	49,456,000
	86,000	55,000		3	3	423,000	5,900,000	17,700,000	18,123,000
Surabaya	1,556,000	55,000	6	4	10	16,110,000	2,950,000	29,500,000	45,610,000
	1,556,000	55,000		5	5	8,055,000	5,900,000	29,500,000	37,555,000
Brangkal	1,556,000	55,000	4	5	9	14,499,000	2,950,000	26,550,000	41,049,000
	1,556,000	55,000		2	2	3,222,000	5,900,000	11,800,000	15,022,000
Gorontalo	2,956,000	55,000	9	7	16	48,176,000	2,950,000	47,200,000	95,376,000
	2,956,000	55,000		3	3	9,033,000	5,900,000	17,700,000	26,733,000
			47	53	100	157,674,000		354,100,000	511,774,000

Reconnaissance					
Accomodation	Rp.	450,000	x	3	1,350,000
Allowance	Rp.	500,000	x	4	2,000,000
Detailed Services					
Accomodation	Rp.	400,000	x	6	2,400,000
Allowance	Rp.	500,000	x	7	3,500,000

Total Trip Number	125	
Total Amount	650,275,000	5,202,200

Office Supply and Communication Cost

		Period (Month)	Office Supply Unit	Office Supply Amount	Communication	
Jakarta	Nov.. 2009 – Feb. 2014	52	6,000,000	312,000,000	7,500,000	390,000,000
Padang	– – –	0	5,500,000	0	5,000,000	0
Palembang	– – –	0	5,500,000	0	5,000,000	0
Bandung	– – –	0	5,500,000	0	5,000,000	0
Surabaya	– – –	0	8,500,000	0	5,500,000	0
Gorontalo	– – –	0	5,500,000	0	5,000,000	0
Total		52		312,000,000		390,000,000

7,500,000

Wonokromo Jun. 2010 – Jun. 2014 49
Brangkal Apr. 2010 – Sep. 2013 42

Office Preparation and Running Cost

		Period (Month)	Max. Person A + B	Max. Person Staff	Max. Person Total	Area (m2)	Unit Cost (Rp./month)	Amount	Running Cost (Rp./month)	Amount	Total Cost (Rp.)
Jakarta	Nov.. 2009 – Feb. 2014	52	5	6	11	78	100,000	405,600,000	7,000,000	364,000,000	769,600,000
Padang	– – –	0	0	0	0	30	60,000	0	5,000,000	0	0
Palembang	– – –	0	0	0	0	30	60,000	0	5,000,000	0	0
Bandung	– – –	0	0	0	0	30	60,000	0	5,000,000	0	0
Surabaya	– – –	0	0	0	0	30	80,000	0	6,000,000	0	0
Gorontalo	– – –	0	0	0	0	30	60,000	0	5,000,000	0	0
Total		52						405,600,000		364,000,000	769,600,000

14,800,000

Printing/Report Cost

	Unit Cost (Rp.)	Package/ times	Copies	Amount (Rp.)
Inception Report				
Draft	200,000	1	15	3,000,000
Final	250,000	1	25	6,250,000
Monthly Progress Report	150,000	52	25	195,000,000
Quarterly Progress Report	150,000	17	25	63,750,000
Annual Report	200,000	4	25	20,000,000
Service Completion Report				
Draft	250,000	1	10	2,500,000
Final	300,000	1	25	7,500,000
Review Design Report				
Draft	250,000	0	15	0
Final	350,000	0	25	0
P/Q Documents				
Draft	200,000	0	10	0
Final	250,000	0	30	0
P/Q Evaluation Report				
Draft	100,000	0	10	0
Final	350,000	0	20	0
Bid Documents				
Draft	250,000	0	5	0
Final	350,000	0	10	0
Drawings	250,000	0	10	0
Bid Evaluation Report				
Draft	150,000	0	10	0
Final	200,000	0	20	0
Environmental Report	150,000	0	10	0
Inspection Report	150,000	0	10	0
Technical Advice Note	50,000	0	10	0
Explanatory Note/				
Discussion Material	50,000	52	10	26,000,000
Engineering Report (Draft)				
Executive Summary	150,000	1	20	3,000,000
Main Repot	250,000	1	15	3,750,000
Supporting Report				
Padang Sub-project	200,000	1	10	2,000,000
Palembang Sub-project	200,000	1	10	2,000,000
Bandung Sub-project	200,000	1	10	2,000,000
Wonokromo Sub-project	200,000	1	10	2,000,000
Brangkal Sub-project	200,000	1	10	2,000,000
Gorontalo Sub-project	200,000	6	5	6,000,000
Flood Risk Map	50,000	4	5	1,000,000
Engineering Report (Final)				
Executive Summary	200,000	1	25	5,000,000
Main Repot	350,000	1	25	8,750,000
Supporting Report				
Padang Sub-project	250,000	1	25	6,250,000
Palembang Sub-project	250,000	1	25	6,250,000
Bandung Sub-project	250,000	1	25	6,250,000
Wonokromo Sub-project	250,000	1	25	6,250,000
Brangkal Sub-project	250,000	1	25	6,250,000
Gorontalo Sub-project	250,000	6	10	15,000,000
Flood Risk Map	50,000	4	100	20,000,000
Project Completion Report				
Completion Report				
Draft	250,000	0	10	0
Final	350,000	0	25	0
Completion Drawings				0
Draft	200,000	0	10	0
Final	250,000	0	25	0
Draft PCR	150,000	1	25	3,750,000
TOTAL				431,500,000

Professional A	M/M Long	M/M Short	M/M Total	Trip	IWPL	1,200,000	Work Permit 1st	Work Permit 1,000,000	Work Permit Extension	Residence Permit 300,000	Residence Permit 1st	Residence Permit 1,500,000	Residence Permit Extension	Registration of Foreigner 1,000,000	Registration of Foreigner 1st	Registration of Foreigner 500,000	Registration of Foreigner Extension	Exist Permit 300000	Exist Permit 400,000	Exist Charge 1,000,000	Total
Team Leader	0	16	16	6	16	19,200,000	2	2,000,000	2	600,000	2	3,000,000	2	2,000,000	2	1,000,000	2	600000	2	6	35,200,000
Disaster		9	9	4	9	10,800,000	2	2,000,000	0	0	2	3,000,000	0	0	2	1,000,000	0	0	2	4	21,600,000
Sector Leader (Padang)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sector Leader (Palembang	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sector Leader (Bandung)	0	0	0	0	0	0												0			
Sector Leader (Surabaya)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sector Leader (Gorontalo,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pump Mechanical Engr. A-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total		0	25	25	10	25	30,000,000	4	4,000,000	2	600,000	4	6,000,000	2	2,000,000	4	2,000,000	2	600,000	4	1,600,000	10	10,000,000	56,800,000
																								2,272,000

Office Staff including Ass. Engineer

Office	Period (Month)	Staff	Period (Month)			Person	Billing Rate	Amount
			DD	CS	Total			
Jakarta	64	Assistant Engineer	0	52	52	1	9,000,000	468,000,000
		Office Manager	0	52	52	1	6,000,000	312,000,000
		Accountant	0	52	52	1	5,000,000	260,000,000
		Computer Operator	0	43	43	1	2,500,000	107,500,000
		Office Boy	0	43	43	1	1,500,000	64,500,000
		Driver	0	43	43	1	2,000,000	86,000,000
Total		Sub-total						830,000,000 1,660,000,000

Breakdown of Topographic Survey and Soil-mechanical Investigation

A. Padang

1. Topographic Survey Works

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			0	
(2) Cross Sectional Survey	sect.	1,250,000	0	0	
(3) Longitudinal Survey	km	1,750,000	0	0	
(4) River Structure Survey	site	1,500,000	0	0	
(5) Sub-total (sum of 1.to 4.)				0	
(6) Miscellaneous (15% of 5.)	L.S			0	preparation of report, etc.
TOTAL				**0**	
			(Rounded)	**0**	

B. Palembang

1. Topographic Survey Works (Talang Aman Pond)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (15% of 2.+3.+	L.S			8,175,000	
(2) Cross Sectional Survey	sect.	750,000	9	6,750,000	25 m interval
(3) Longitudinal Survey	km	1,750,000	23	40,250,000	
(4) River Structure Survey	site	1,500,000	5	7,500,000	scale = 1/500
(5) Sub-total (sum of 1.to 4.)				62,675,000	
(6) Miscellaneous (20% of 5.)	L.S			12,535,000	preparation of report, etc.
TOTAL				**75,210,000**	
			(Rounded)	**75,000,000**	

C. Bandung

1. Topographic Survey Works (Dayeuhkolot Area)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (20% of 2.+3.+	L.S			7,350,000	
(2) Cross Sectional Survey	sect.	500,000	0	0	
(3) Longitudinal Survey	km	1,750,000	21	36,750,000	
(4) River Structure Survey	site	1,500,000	0	0	
(5) Sub-total (sum of 1.to 4.)				44,100,000	
(6) Miscellaneous (30% of 5.)	L.S			13,230,000	preparation of report, etc.
TOTAL				**57,330,000**	
			(Rounded)	**56,700,000**	

D. Wonokromo

1. Topographic Survey Works (Flood Plain)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			13,125,000	
(2) Cross Sectional Survey	sect.	1,000,000	0	0	
(3) Longitudinal Survey	km	1,750,000	75	131,250,000	
(4) River Structure Survey	site	1,500,000	0	0	
(5) Sub-total (sum of 1.to 4.)				144,375,000	
(6) Miscellaneous (10% of 5.)	L.S			14,437,500	preparation of report, etc.
TOTAL				**158,812,500**	
			(Rounded)	**158,200,000**	

E. Brangkal

1. Topographic Survey Works (Mojokerto Area)

Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (10% of 2.+3.+	L.S			11,540,000	
(2) Cross Sectional Survey	sect.	800,000	13	10,400,000	25 m interval
(3) Longitudinal Survey	km	1,750,000	60	105,000,000	
(4) River Structure Survey	site	1,500,000	0	0	
(5) Sub-total (sum of 1.to 4.)				126,940,000	
(6) Miscellaneous (10% of 5.)	L.S			12,694,000	preparation of report, etc.
TOTAL				**139,634,000**	
			(Rounded)	**138,900,000**	

E. Gorontalo

1. Topographic Survey Works (Flood Plain)

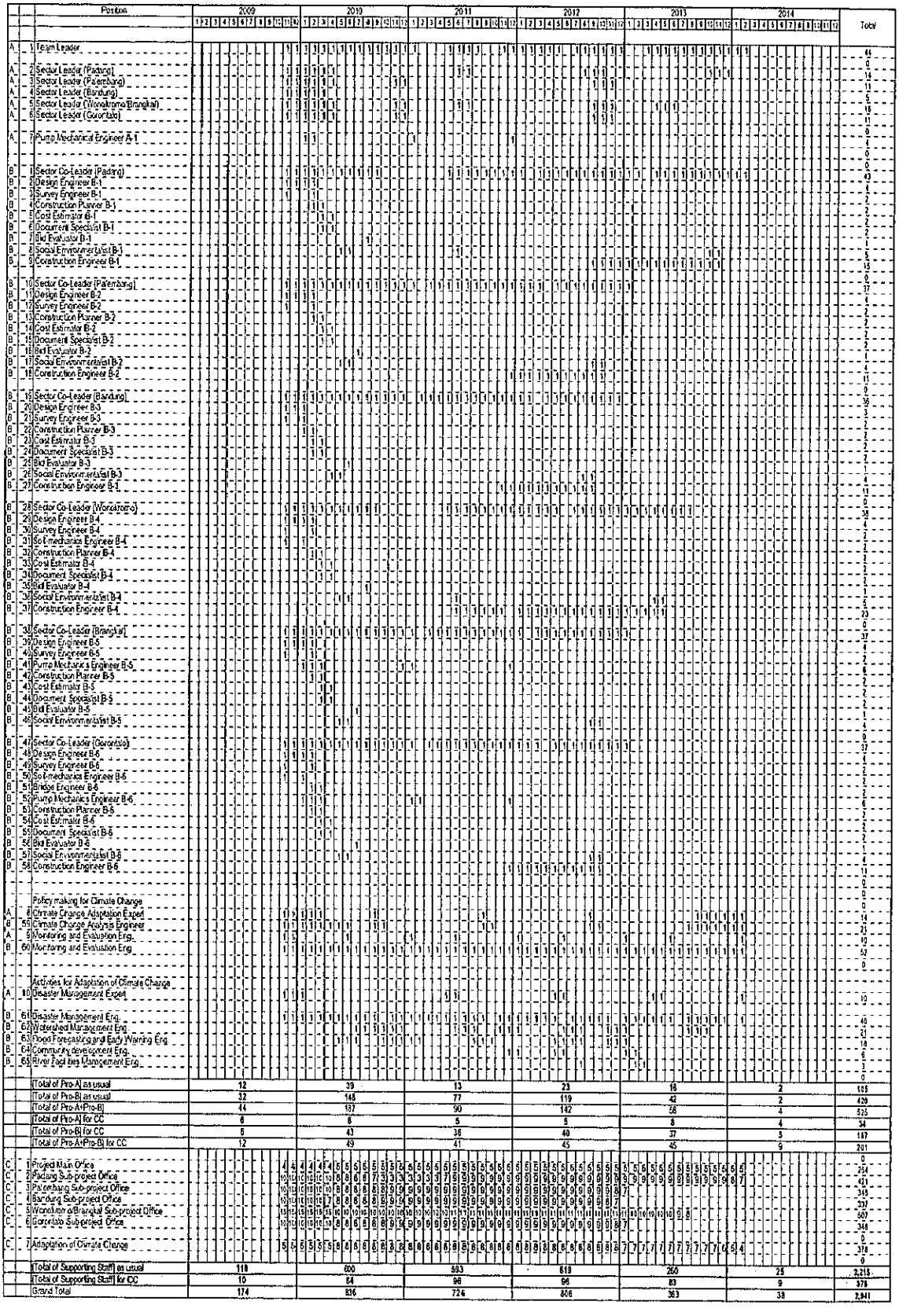
Description	Unit	Unit Price (Rp.)	Q'ty	Amount (Rp.)	Remarks
(1) Preparatory Works (20% of 2.+3.+	L.S			8,050,000	
(2) Cross Sectional Survey	sect.	800,000	0	0	
(3) Longitudinal Survey	km	1,750,000	23	40,250,000	
(4) River Structure Survey	site	1,500,000	0	0	
(5) Sub-total (sum of 1.to 4.)				48,300,000	
(6) Miscellaneous (20% of 5.)	L.S			9,660,000	preparation of report, etc.
TOTAL				**57,960,000**	
			(Rounded)	**57,500,000**	

TOTAL (Topographic Survey) **486,300,000**

Cost Breakdown of Office Equipment and Materials

Item	Specification	Q'ty	Unit Price (Rp.)	Amount (Rp.)
1. Desktop Personal Computer - 1	Windows MS Office Core2 DUO 2 GB RAM 500 GB HDD 17" Color Monitor DVD/CD WR Keyboard, etc.	1 sets	30,000,000	30,000,000
2. Desktop Personal Computer - 2	Windows MS Office Core2 DUO 2 GB RAM 250 GB HDD 17" Color Monitor Keybord, etc.	2 sets	15,000,000	30,000,000
3. Notebook Personal Computer	Windows MS Office Core2 DUO 2 GB RAM	1 sets	30,000,000	30,000,000
4. Computer Software - 1	AUTOCAD	1 nos.	30,000,000	30,000,000
5. Computer Software - 2	Symantec Anti Virus 2008	4 nos.	1,000,000	4,000,000
6. Computer Software - 3	Acrobat Illustrator	1 nos.	10,000,000	10,000,000
7. Computer Software - 4	Engineering Software	1 nos.	30,000,000	30,000,000
9. Computer Software - 5	Administrative Software	1 set	1,750,000	1,750,000
8. Wireless Lan Router		1 set	7,000,000	7,000,000
10. Uninterrupted Power Supply	Back-up Battery 500VA	1 set	1,250,000	1,250,000
11. Stabilizer - 1 (Capasity 500 VA)	for Computer	1 set	1,250,000	1,250,000
12. Stabilizer - 2 (Capacity 1KVA)	for Photocoty Machine	1 set	2,250,000	2,250,000
13. Scanner (A3 size)		0 units	20,000,000	0
14. Scanner (A4 size)		0 units	17,500,000	0
15. Laser Printer (A3.size)	Color	1 set	32,500,000	32,500,000
16. Laser Printer (A3 size)	Monochrome	0 set	15,000,000	0
17. Laser Printer (A4 size)	Color	1 set	10,000,000	10,000,000
18. Laser Printer (A4 size)	Monochrome	0 set	7,500,000	0
19. Color Inject Printer (A3 size)		1 set	2,500,000	2,500,000
20. Color Inject Printer (A4 size)		1 set	1,750,000	1,750,000
21. Cartridge for Laser Printer	Color	26 nos.	10,000,000	260,000,000
22. Cartridge for Laser Printer	Monochrome	52 nos.	1,000,000	52,000,000
23. Cartridge for Inject Printer	Color	0 nos.	1,000,000	0
24. Cartridge for Inject Printer	Monochrome	0 nos.	300,000	0
25 Photocopy Machine	copy speed : 45 m/sec.	0 sets	200,000,000	0
26. Photo Copy Paper (A3 size)	500 sheets/pack	80 packs	100,000	8,000,000
27. Photo Copy Paper (A4 size)	500 sheets/pack	580 packs	50,000	29,000,000
28. Facsimille Machine		0 set	7,000,000	0
29. Filing Cabinet	Model Elite 444C	5 units	1,500,000	7,500,000
30. Locker	Model Elite 448	5 units	1,250,000	6,250,000
TOTAL				**587,000,000**

Attachment 21: Draft Manning Schedule for Consulting Services



		Position	2009	2010	2011	2012	2013	2014	Total
A	1	Team Leader							44
									0
A	2	Sector Leader (Padang)							13
A	3	Sector Leader (Palembang)							13
A	4	Sector Leader (Bandung)							5
A	5	Sector Leader (Wonokromo Brangkal)							16
A	6	Sector Leader (Gorontalo)							11
									0
A	7	Pump Mechanical Engineer A-1							4
									0
									0
B	1	Sector Co-Leader (Padang)							5
B	2	Design Engineer B-1							43
B	3	Survey Engineer B-1							4
B	4	Construction Planner B-1							2
B	5	Cost Estimator B-1							2
B	6	Document Specialist B-1							2
B	7	Bid Evaluator B-1							2
B	8	Social Environmentalist B-1							1
B	9	Construction Engineer B-1							5
									15
B	10	Sector Co-Leader (Palembang)							0
B	11	Design Engineer B-2							37
B	12	Survey Engineer B-2							4
B	13	Construction Planner B-2							2
B	14	Cost Estimator B-2							2
B	15	Document Specialist B-2							2
B	16	Bid Evaluator B-2							2
B	17	Social Environmentalist B-2							1
B	18	Construction Engineer B-2							4
									11
B	19	Sector Co-Leader (Bandung)							0
B	20	Design Engineer B-3							36
B	21	Survey Engineer B-3							3
B	22	Construction Planner B-3							2
B	23	Cost Estimator B-3							2
B	24	Document Specialist B-3							2
B	25	Bid Evaluator B-3							2
B	26	Social Environmentalist B-3							1
B	27	Construction Engineer B-1							4
									11
B	28	Sector Co-Leader (Wonokromo)							0
B	29	Design Engineer B-4							38
B	30	Survey Engineer B-4							4
B	31	Soil-mechanics Engineer B-4							2
B	32	Construction Planner B-4							2
B	33	Cost Estimator B-4							2
B	34	Document Specialist B-4							2
B	35	Bid Evaluator B-4							2
B	36	Social Environmentalist B-4							1
B	37	Construction Engineer B-4							5
									23
B	38	Sector Co-Leader (Brangkal)							0
B	39	Design Engineer B-5							37
B	40	Survey Engineer B-5							4
B	41	Pump Mechanics Engineer B-5							2
B	42	Construction Planner B-5							6
B	43	Cost Estimator B-5							2
B	44	Document Specialist B-5							2
B	45	Bid Evaluator B-5							2
B	46	Social Environmentalist B-5							1
									4
B	47	Sector Co-Leader (Gorontalo)							0
B	48	Design Engineer B-6							37
B	49	Survey Engineer B-6							4
B	50	Soil-mechanics Engineer B-6							2
B	51	Bridge Engineer B-6							2
B	52	Pump Mechanics Engineer B-6							6
B	53	Construction Planner B-6							2
B	54	Cost Estimator B-6							2
B	55	Document Specialist B-6							2
B	56	Bid Evaluator B-6							2
B	57	Social Environmentalist B-6							1
B	58	Construction Engineer B-6							4
									12
									0
		Policy making for Climate Change							0
A	8	Climate Change Adaptation Expert							0
B	59	Climate Change Analysis Engineer							14
A	9	Monitoring and Evaluation Eng.							23
B	60	Monitoring and Evaluation Eng.							10
									52
									0
		Activities for Adaptation of Climate Change							
A	10	Disaster Management Expert							10
B	61	Disaster Management Eng.							46
B	62	Watershed Management Eng.							21
B	63	Flood Forecasting and Early Warning Eng.							14
B	64	Community development Eng.							6
B	65	River Facilities Management Eng.							3
									0
		Total of Pro-A] as usual	12	39	13	23	16	2	103
		Total of Pro-B] as usual	32	148	77	119	42	2	420
		Total of Pro-A+Pro-B]	44	187	90	142	58	4	525
		Total of Pro-A] for CC	8	8	5	5	8	4	34
		Total of Pro-B] for CC	5	43	36	40	37	5	167
		Total of Pro-A+Pro-B] for CC	12	49	41	45	45	9	201
C	1	Project Main Office							0
C	2	Padang Sub-project Office							254
C	3	Palembang Sub-project Office							421
C	4	Bandung Sub-project Office							345
C	5	Wonokromo Brangkal Sub-project Office							337
C	6	Gorontalo Sub-project Office							507
									348
									0
C	7	Adaptation of Climate Change							378
									0
		Total of Supporting Staff] as usual	118	600	593	619	260	25	2,215
		Total of Supporting Staff] for CC	10	84	96	96	83	9	378
		Grand Total	174	836	724	806	363	38	2,841

ANNEX 6:

LIST OF COLLECTED DATA

Annex 6 - 1

List of Collected Data

No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
1	Map		Atlas Persada & Dunia	A4	Original	Gramedia	No	Publisher by Titik Terang (Multi Edisi, 2007 Aug.)	
2	Book		Statistik Indonesia 2007 (Statistical Yearbook of Indonesia 2007)	A4	Original	(BPS)	No		
3	Book		Indikator Ekonomi (Economic Indicators)	A4	Original	IDEA Consultans, Inc	No	Monthly Statistical Bulletin (2008 June), Statistics Indonesia	
4	Report		Necessary Data & Documents on Urban Flood Control System Improvement in Selected Cities (JBIC Fact Finding Mission)	A4	Copy	IDEA Consultans, Inc	No	Republic of Indonesia, Ministry of Public Works Directorate General of Water Resources Development (2008 July)	
5	Report		Perkembangan Ekspor dan Impor Indonesia Agustus 2008	A4	Original	IDEA Consultans, Inc	No	Berita Resmi Statistik (2008 Oct.), Badan Pusat Statisitik Indonesia	
6	Report		The President of The Republic of Indonesia, The Republic of Indonesia, Law No. 7/2004 On Water Resources	A4	Copy	Web	No	Law No. 7_2004 on Water Resources ins48775. doc	
7	Document		Peraturan Pemerintah RI No. 27 Tahun 1999 Tentang Analisis Mengenai Dampak Lingkungan (AMDAL)	A4	Copy	Mr. Ricky Sulistyo	Yes		
8	Document		Undang-undang RI No. 23 Tahun 1997 Tentang Pengelolaan Lingkungan Hidup	A4	Copy	Mr. Ricky Sulistyo	Yes		
9	Document		Keputusan Menteri Permukiman dan Prasarana Wilayah No. 17/KPTS/M/2003, tentang Penetapan Jenis Usaha dan atau Kegiatan Bidang Permukiman dan Prasarana Wilayah yang Wajib Dilengkapi dengan Upaya Pengelolaan Lingkungan Hidup (UKL) dan Upaya Pemantauan Lingkungan Hidup (UPL)	A4	Copy	Mr. Ricky Sulistyo	Yes		
10	Document		Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi DKI Jakarta	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	
11	Document		Notulen Rapat Sosialisasi Usulan Penanggulangan Banjir Program URBAN FLOOD CONTROL SYSTEM IMPROVEMENT IN SELECTED CITY	A4	Original	Mr. Riki Sulistyo	No	BBWS Brantas Surabaya, Oct 17 2008	
12	Document		Keputusan Menteri Negara Lingkungan Hidup	A4	Original	Mr. Riki Sulistyo	Yes	No. 11 Tahun 2006, tentang Jenis Rencana Usaha dan atau Kegiatan yang Wajib Dilengkapi dengan Analisis Mengenai Dampak Lingkungan	
13	Report		Project : Urban Flood Control System Improvement in Selected Cities	A4	Copy	IDEA Consultans, Inc	Yes	Screening Form, Directorate General of Water Resources, Ministry of Public Works, July 2008	

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
14	Report		Project : Urban Flood Control System Improvement in Selected Cities	A4	Copy	IDEA Consultans, Inc	Yes	Implementation Program, Directorate General of Water Resources, Ministry of Public Works, July 2008	
15	Map	Riau/Pekanbaru	Pekanbaru, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 0816-52	
16	Book	Riau/Pekanbaru	Kabupaten Bengkalis Dalam Angka 2005 (Sub-Province Bengkalis In Figured 2005)	A4	Copy	(BPS)	No		
17	Book	Riau/Pekanbaru	Riau Dalam Angka 2008 (Riau In Figure 2008)	A4	Copy	(BPS)	No		
18	Document	Riau/Pekanbaru	Pekanbaru Flood Control Project	A4	Copy	Mr. Asril (BWS Sumatera III)	No	No : 601/KIMPRASWIL/1619, Pekanbaru 8 November 2003	
19	Document	Riau/Pekanbaru	Usulan Dana Bantuan Luar Negeri untuk Pengendaliaan Banjir Kota Rengat Kabupaten Indragiri Hulu Propinsi Riau	A4	Copy	Mr. Asril (BWS Sumatera III)	No	No : 339.A/DPUPPW-TU/VI/2008, Rengat 12 Juni 2008	
20	Document	Riau/Pekanbaru	Bantuan Kegiatan Pengendalian Banjir Kota Dumai dari Alokasi Dana Luar Negeri (JBIC) Jepang	A4	Copy	Mr. Asril (BWS Sumatera III)		No : 050/Bappeko/611, Dumai 6 Juni 2008	
21	Report	Riau/Pekanbaru	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Riau	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	A7
21	Report	Riau/Pekanbaru	Profil Pengendalian Banjir Kota Pekanbaru	A4	Copy	Mr. Asril (BWS Sumatera III)	No	Government of The Republic of Indonesia, Ministry of Settlement & Regional Infrastructure, Directorate General of Water Resources	
22	Report	Riau/Pekanbaru	Laporan Kerusakan Bangunan Pengendali Banjir Akibat Kejadian Banjir Sungai Siak di Kota Pekanbaru Bulan Maret-April 2008	A4	Copy	Mr. Asril (BWS Sumatera III)	No	Government of The Republic of Indonesia, Ministry of Settlement & Regional Infrastructure, Directorate General of Water Resources, Bureau of River Basin of Sumatera III	
23	Report	Riau/Pekanbaru	Laporan Kerusakan Bangunan Pengendali Banjir Akibat Kejadian Banjir Sungai Siak di Kota Pekanbaru Bulan September 2008	A4	Copy	Mr. Asril (BWS Sumatera III)	No	Government of The Republic of Indonesia, Ministry of Settlement & Regional Infrastructure, Directorate General of Water Resources, Bureau of River Basin of Sumatera III	
24	Report D/D	Riau/Pekanbaru	Pekerjaan : Pengukuran dan Perencanaan Penanggulangan Banjir Sungai Siak Seluas 1.800 Ha	A4	Copy	Mr. Asril (BWS Sumatera III)	No	FINAL REPORT, Ministry of Public Works, Region Office Provience of Riau, Repair and Maintenance Project River of Riau 1992/1993	
25	Report D/D	Riau/Pekanbaru	Pekerjaan : Pembuatan Detail Desain Pengendalian Banjir Kotamadya Pekanbaru Propinsi Riau	A4	Copy	Mr. Asril (BWS Sumatera III)	No	SUMMARY REPORT, Ministry of Public Works, Region Office Provience of Riau 1992/2000	
26	Report D/D	Riau/Pekanbaru	Pekerjaan : Pembuatan Detail Desain Pengendalian Banjir Kotamadya Pekanbaru Propinsi Riau	A4	Copy	Mr. Asril (BWS Sumatera III)	No	FINAL REPORT, Ministry of Public Works, Region Office Provience of Riau 1992/2000	

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
27	Report D/D	Riau/Pekanbaru	Pekerjaan : Detail Desain Bangunan Induk Pengendalian Banjir Kotamadya Dumai Propinsi Riau	A4	Copy	Mr. Asril (BWS Sumatera III)	No	LAPORAN AKHIR, Depkimpraswil, Dirjen Penataan Ruang dan Pengembangan Wilayah, Tahun Anggaran 2000	
28	Report D/D	Riau/Pekanbaru	Pekerjaan : Detail Desain Bangunan Induk Pengendalian Banjir di Kota Rengat	A4	Copy	Mr. Asril (BWS Sumatera III)	No	LAPORAN AKHIR : UPAYA PENGELOLAAN LINGKUNGAN (UKL) DAN UPAYA PEMANTAUAN LINGKUNGAN (UPL), Depkimpraswil, Dirjen Penataan Ruang dan Pengembangan Wilayah, Tahun Anggaran 2000	
29	Map	Riau/Pekanbaru	Dumai, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 0817-52	
30	Map	Riau/Pekanbaru	Rengat, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 0915-51	
31	Map	Sumatera Barat / Padang	Padang, Skala 1 : 250.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 0715	
32	Book	Sumatera Barat / Padang	Sumatera Barat Dalam Angka 2007 (West Sumatera In Figured 2007)	A4	Copy	(BPS)	No		B2
33	Book	Sumatera Barat / Padang	Kota Padang Dalam Angka 2007 (Padang City In Figure 2007)	A4	Copy	(BPS)	No		B3
34	Book	Sumatera Barat / Padang	Padang Pariaman Dalam Angka 2007 (Padang Pariaman In Figure 2007)	A4	Copy	(BPS)	No		B4
35	Document	Sumatera Barat / Padang	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Sumatera Barat	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	
36	Document	Sumatera Barat / Padang	Usulan Dana Pengadaan Tanah dan Bangunan untuk Pelaksanaan Pengendalian Banjir Bt. Anai-Kandis	Letter	Copy	PSDA Sumatera Barat	No		
37	Document	Sumatera Barat / Padang	Usulan Padang Area Flood Control Project III		Copy	Gubernur Sumatera Barat	No		
38	Document	Sumatera Barat / Padang	Contract for Enviromental Study (Part-1 : Enviromental Impact Analysis) of Anai Kandis River Improvement on Padang Area Flood Control Project (II)	A4	Copy	Mr. Sarbaini BWS Sumatera V SUMATERA BARAT	No	Nikken Consultant, Inc and PT. Bina Lingkungan Lestari, 2001 May.	B8
39	Document	Sumatera Barat / Padang	Kontribusi Sasaran Pencapaian Renja-KL 2009, SNVT Pegelolaan SDA Sumatera V Prov. Sum-Bar, Pengendalian Banjir dan Perbaikan Sungai Sumatera Barat	A4	Copy	Sub Directorate of Implementation for West Region, Dit. RLR	No		
40	Report	Sumatera Barat / Padang	Engineer's Cost Estimate for Package III on Padang Area Flood Control Project (II) (Agreement No. IP-451)	A4	Copy	JICA Report	Yes	Government of The Republic of Indonesia Ministry of Settlement & Regional Infrastructure Directorate of Water Resources. (2001 Oct.)	B10

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
41	Report F/S	Sumatera Barat / Padang	Studi Lingkungan Pengelolaan Sumberdaya Air Proyek Pengendalian Banjir Kota Padang II (Anai Kandis and Kuranji River Basin and Water Resources Management)	A4	Copy	Mr. Sarbaini BWS Sumatera V SUMATERA BARAT	No		B11
42	Report D/D	Sumatera Barat / Padang	Additional Consulting Services on Detailed Design of Anai-Kandis River Improvement in Padang Area Flood Control Project (II)	A4	Copy	IDEA Consultans, Inc	Yes	Design Report (JBIC Loan IP-451), Goverment of The Republic of Indonesia, Ministry of Settlement & Regional Infrastructure, Directorate General of Water Resources	B12
43	AMDAL	Sumatera Barat / Padang	Perbaikan Sungai Anai-Kandis, Proyek Pengendalian Banjir Kota Padang (II)	A4	Copy	BWS Sumatera V SUMATERA BARAT	No	Kerangka Acuan, Studi Analisis Mengenai Dampak Lingkungan, DEPKIMPRASWIL DIRJEN SDA Bagian Proyek Pengendalian Banjir Kota Padang, Tahun 2001	B13
44	AMDAL	Sumatera Barat / Padang	Perbaikan Sungai Anai-Kandis, Proyek Pengendalian Banjir Kota Padang (II)	A4	Copy	BWS Sumatera V SUMATERA BARAT	No	Studi Analisis Mengenai Dampak Lingkungan, Analisis Dampak Lingkungan (ANDAL), DEPKIMPRASWIL DIRJEN SDA Bagian Proyek Pengendalian Banjir Kota Padang Tahun 2001	B14
45	AMDAL	Sumatera Barat / Padang	Perbaikan Sungai Anai-Kandis, Proyek Pengendalian Banjir Kota Padang (II)	A4	Copy	BWS Sumatera V SUMATERA BARAT	No	Rencana Pemantauan Lingkungan (RPL), Studi Analisis Mengenai Dampak Lingkungan, DEPKIMPRASWIL DIRJEN SDA Bagian Proyek Pengendalian Banjir Kota Padang Tahun 2001	B15
46	AMDAL	Sumatera Barat / Padang	Perbaikan Sungai Anai-Kandis, Proyek Pengendalian Banjir Kota Padang (II)	A4	Copy	Mr. Sarbaini BWS Sumatera V SUMATERA BARAT	No	Rencana Pengelolaan Lingkungan (RKL), Studi Analisis Mengenai Dampak Lingkungan, DEPKIMPRASWIL DIRJEN SDA Bagian Proyek Pengendalian Banjir Kota Padang Tahun 2001	B16
47	Map	Sumatera Selatan / Palembang	Kota Palembang 1 : 30.000	A0	Original	Gramedia	No	Publisher by : PT.Indoprima Sarana, Surabaya	
48	Map	Sumatera Selatan / Palembang	Plaju Darat, Skala 1 : 25.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2118-I-1012-64	
49	Map	Sumatera Selatan / Palembang	Kertapati, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2118-IV-1012-63	
50	Map	Sumatera Selatan / Palembang	Boom Baru, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2119—II-1013-32	
51	Map	Sumatera Selatan / Palembang	Palembang, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2119—III-1013-31	
52	Map	Sumatera Selatan / Palembang	Airmolek 1 : 50.000	A0	Copy in CD	BAKOSURTANAL	Yes	Sheet 0915-42	
53	Book	Sumatera Selatan / Palembang	Sumatera Selatan Dalam Angka 2007 (South Sumatera In Figure 2007)	A4	Copy	(BPS)	No		C7

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
54	Book	Sumatera Selatan / Palembang	Kota Palembang Dalam Angka 2007 (Palembang City In Figure 2007)	A4	Copy	(BPS)	No		C8
55	Report	Sumatera Selatan / Palembang	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Sumatera Selatan	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	C8a
55	Report	Sumatera Selatan / Palembang	Palembang Flood Control Project	A4	Copy	Mr. Muis BWS VIII SUMATERA SELATAN)	No	Departemen PU Dirjen Sumberdaya Air BWS Sumatera VIII Palembang	C9
56	Report F/S	Sumatera Selatan / Palembang	The Study of Comprehensive Water Management of Musi River Basin in The Republic of Indonesia (JICA, 2003)	A4	Copy	Mr. Muis BWS VIII SUMATERA SELATAN)	Yes	Final Report, Volume I, Summary, DIRECTORATE GENERAL OF WATER RESOURCES, MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE THE REPUBLIC OF INDONESIA, September 2003	C24
57	Report F/S	Sumatera Selatan / Palembang	The Study of Comprehensive Water Management of Musi River Basin in The Republic of Indonesia (JICA, 2003)	A4	Copy	Mr. Muis BWS VIII SUMATERA SELATAN)	Yes	Final Report, Volume II, Main Report, DIRECTORATE GENERAL OF WATER RESOURCES, MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE THE REPUBLIC OF INDONESIA, September 2003	C25
58	Report F/S	Sumatera Selatan / Palembang	The Study of Comprehensive Water Management of Musi River Basin in The Republic of Indonesia (JICA, 2003)	A4	Copy	Mr. Muis BWS VIII SUMATERA SELATAN)	Yes	Final Report, Volume III, Supporting Report, DIRECTORATE GENERAL OF WATER RESOURCES, MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE THE REPUBLIC OF INDONESIA, September 2003	C26
59	Report F/S	Sumatera Selatan / Palembang	The Study of Comprehensive Water Management of Musi River Basin in The Republic of Indonesia (JICA, 2003)	A4	Copy	Mr. Muis BWS VIII SUMATERA SELATAN)	Yes	Final Report, Volume IV, Data Book, DIRECTORATE GENERAL OF WATER RESOURCES, MINISTRY OF SETTLEMENT AND REGIONAL INFRASTRUCTURE THE REPUBLIC OF INDONESIA, September 2003	C27
60	Report M/P	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan DED Drainase DAS Sekanak Kota Palembang	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Final Report	C11
61	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan DED Drainase DAS Sekanak Kota Palembang	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Album Gambar Perencanaan	C12
62	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan Detail Desain Drainase DAS Sungai Sekanak	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Laporan Akhir	C17
63	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan Detail Desain Drainase DAS Sungai Sekanak	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Spesifikasi Teknik dan RAB	C18

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
64	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan Detail Desain Drainase DAS Sungai Sekanak	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Executive Summary	C19
65	Report M/P	Sumatera Selatan / Palembang	Pembuatan Masterplan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Final Report	C10
66	Report D/D	Sumatera Selatan / Palembang	Pembuatan Masterplan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copyc in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Bill Of Quantity (BOQ)	C14
67	Report D/D	Sumatera Selatan / Palembang	Pembuatan Masterplan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Hydrometri	C15
68	Report D/D	Sumatera Selatan / Palembang	Pembuatan Masterplan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Album Gambar Perencanaan	C16
69	Report D/D	Sumatera Selatan / Palembang	Perencanaan Master Plan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Interim Report	C24
70	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase Kota Palembang dan DED Drainase Sungai Buah, Sungai Gasin, Sungai Borang dan Sungai Sriguna	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Executive Summary	C25
71	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan Detail Desain Drainase DAS Sungai Bendung	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Album Gambar Perencanaan	C20
72	Report D/D	Sumatera Selatan / Palembang	Perencanaan Masterplan Drainase dan Detail Desain Drainase DAS Sungai Bendung	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Executive Summary	C21

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
73	Report D/D	Sumatera Selatan / Palembang	Perencanaan Master Plan Drainase dan Detail Desain Drainase DAS Sungai Bendung	A4	Copy in CD	BWS Sumatera VIII SUMATERA SELATAN	Yes	Final Report	C22
74	AMDAL	Sumatera Selatan / Palembang	Project Preparation of Palembang Urban Development Project II ADB Loan 1383 INO	A4	Copy	IDEA Consultans, Inc	No	Executive Summary, DEPKIMPRASWIL, Direktorat Program dan Evaluasi Dirjen Pengembangan Perkotaan, Pemerintah Kota Palembang	C23
75	Map	Sulawesi Utara / Manado	Propinsi Sulawesi Utara 1 : 18.700	A0	Original	Gramedia	No	Publisher by : PT. Harsena	
76	Map	Sulawesi Utara / Manado	Kota Manado 1 : 18.700	A0	Original	Gramedia	No	Publisher by : PT. Harsena	
77	Map	Sulawesi Utara / Manado	Manado, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2417-23	
78	Book	Sulawesi Utara / Manado	Sulawesi Utara Dalam Angka 2006 (North Sulawesi In Figure 2006)	A4	Copy	(BPS)	No		
79	Book	Sulawesi Utara / Manado	Kabupaten Minahasa Dalam Angka 2007 (Sub-Province Minahasa In Figured 2007)	A4	Copy	(BPS)	No		
80	Book	Sulawesi Utara / Manado	Manado Dalam Angka 2006 (Manado In Figure 2006)	A4	Copy	(BPS)	No		
81	Document	Sulawesi Utara / Manado	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Manado	A4	Copy	IDEA Consultans, Inc	No	Saprof on Urban Flood Control System Improvement in Selected Cities	
82	Photo	Sulawesi Utara / Manado	Banjir Sungai Tondano (Kelurahan Ternate Baru, Kel Kombos, Kel PAAL II, Kel Ternate Tanjung)	Letter	Copy	BWS Sulawesi I SULAWESI UTARA	No		
83	Report M/P	Sulawesi Utara / Manado	Pekerjaan Master Plan Pengendalian Daya Rusak Air di Kota Manado	A4	Copy	BWS Sulawesi I SULAWESI UTARA	No	Final Report/Executive Summary Vol-1 (Dirjen SDA)	
84	Report M/P	Sulawesi Utara / Manado	Pekerjaan Master Plan Pengendalian Daya Rusak Air di Kota Manado	A4	Copy	BWS Sulawesi I SULAWESI UTARA	No	Final Report/Laporan Utama Vol-2 (Dirjen SDA)	
85	Report F/S	Sulawesi Utara / Manado	The Study on Critical Land and Protection Forest Rehabilitation at Tondano Watershed in The Republic of Indonesia	A4	Copy	Mr. Dave Muchaimin (Head of Irrigation in BWS Sulawesi I)	No	Field Report, JICA (Japan International Cooperation Agency), Directorate General of Land Rehabilitation and Social Forestry, The Republic of Indonesia , 2001 January	
86	Report D/D	Sulawesi Utara / Manado	Pekerjaan Survey Pengukuran Sungai Tondano dan Perencanaan Tanggul Banjir Kota Manado	A4	Copy	BWS Sulawesi I SULAWESI UTARA	No	Laporan Pendukung (Dirjen Sumber Daya Air), DEPKIMPRASWIL	
87	AMDAL	Sulawesi Utara / Manado	Bangunan Pengendali Banjir dan Sedimen Danau Tondano	A4	Copy	Mr. Dave Muchaimin (Head of Irrigation in BWS Sulawesi I)	No	Departemen PU Dirjen Sumber Daya Air, SNVT Pengendalian Banjir dan Pengamanan Pantai Sulawesi Utara, 2006	
88	Map	Jawa Barat / Bandung	Cililin, Skala 1 : 25.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 1209-222	

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
89	Map	Jawa Barat / Bandung	Bandung, Skala 1 : 25.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 1209-311	
90	Book	Jawa Barat / Bandung	Jawa Barat Dalam Angka 2007 (West Java In Figured 2007)	A4	Copy	(BPS)	No		E2
91	Book	Jawa Barat / Bandung	Bandung Dalam Angka 2006 (Bandung In Figure 2006)	A4	Copy	(BPS)	No		E3
92	Document	Jawa Barat / Bandung	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Jawa Barat	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	E6
93	Document	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project (III), RI Ministry of Public Work Directorate General of Water Resources Citarum River Basin Office	A3	Copy	BBWS Citarum JAWA BARAT	Yes	Bidding Documents Civil Works For Cunstructions Package, Volume III, 2007	
94	Document	Jawa Barat / Bandung	Penetapan KA-ANDAL Proyek Perbaikan dan Pengaturan Sungai Citarum Hulu	A4	Copy	BBWS Citarum JAWA BARAT	No	Berita Acara Penilaian, Dept P.U, Komisi Pusat AMDAL Bidang P.U, Desember 1991	E8
95	Document	Jawa Barat / Bandung	Contract for Enviromental Impact Assesment Survey	A4	Copy	BBWS Citarum JAWA BARAT	No	Republic of Indonesia, Ministry of Public Works Directorate General of Water Resources Development, Contract No : UCES.SC.002/1992	E9
96	Report	Jawa Barat / Bandung	Study on Heavy Metal Issue in River Sediment (2008, JBIC)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Monitoring Work	E10
97	Report	Jawa Barat / Bandung	Upper Citarum Basin Urgen Flood Control Project III, Construction Package IV	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Addendum No. 6, December 26, 2005, JBIC Loan IP-497	E15a
98	Report	Jawa Barat / Bandung	On Cunstruction Works and Consulting Services For Flood Control and Drainage Improvement	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Explanatory Note (No. 10), Ministry of Public Works Directorate General of Water Resources, Citarum Flood Control and Coastal Protection Project Office	E15b
99	Report	Jawa Barat / Bandung	The Study on The Flood Control Plan of Upper Citarum Basin (JICA, 1988)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes		E16
100	Report D/D	Jawa Barat / Bandung	Review of Flood Control Plan and Detailed Design Preparation Under Upper Citarum Basin Urgent Flood Control Project II (2007 Sept.)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Subject Report-IV, Price Bill of Quantity (2007 Sept.)	E17
101	Report D/D	Jawa Barat / Bandung	Review of Flood Control Plan and Detailed Design Preparation Under Upper Citarum Basin Urgent Flood Control Project II (2007 Sept.)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Final Engineering Report (JBIC Loan No. IP-497) (2007 Sept.)	E18
102	Report D/D	Jawa Barat / Bandung	Pengajuan Typical Design dan EE	A4	Copy	BBWS Citarum JAWA BARAT	No		E19

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
103	Report D/D	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project-II on Hydraulic Effect of Riverbed Dredging along Citarum Main River (Curug-Jompong-Dayeuhkolot) (2008 Mar.)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Discussion Materials (1)	E20
104	Report D/D	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project-II on Hydraulic Effect of Riverbed Dredging along Citarum Main River (Curug-Jompong-Dayeuhkolot) (2008 Mar.)	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Discussion Materials (2)	E21
105	Report D/D	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Materi Dalam Rangka Penanganan Banjir di Cekungan Bandung	E22
106	Report D/D	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Rencana Pengelolaan Lingkungan (RKL)	E23
107	Report D/D	Jawa Barat / Bandung	Upper Citarum Basin Urgent Flood Control Project	A4	Copy in CD	BBWS Citarum JAWA BARAT	Yes	Rencana Pemantauan Lingkungan (RPL)	E24
108	AMDAL	Jawa Barat / Bandung	Proyek Perbaikan dan Pengaturan Sungai Citarum Hulu	A4	Copy	BBWS Citarum JAWA BARAT	No	Ringkasan, Studi Analisis Dampak Ligkungan (ANDAL) Dept P.U, Dirjen Pengairan, Maret 1993	E25
109	AMDAL	Jawa Barat / Bandung	Proyek Perbaikan dan Pengaturan Sungai Citarum Hulu	A4	Copy	BBWS Citarum JAWA BARAT	No	Laporan Akhir, Studi Analisis Dampak Ligkungan (ANDAL), Dept P.U, Dirjen Pengairan, Maret 1993	E26
110	AMDAL	Jawa Barat / Bandung	Summary Report on Revision of Enviromental Impact Assessment (EIA) Enviromental Management Plan (RKL) and Enviromental Monitoring Plan (RPL) for Upper Citarum Basin Urgen Flood Control Project (III)	A4	Copy	BBWS Citarum JAWA BARAT	No	Summary Report, Ministry of Public Works, Dirjen of Water Resources, Citarum River Basin Office	E27
111	Map	Gorontalo	Gorontalo, Skala 1 : 50.000	A1	Copy in CD	BAKOSURTANAL	Yes	Sheet 2316-41	
112	Map	Gorontalo	Propinsi Gorontalo 1 : 300.000	A0	Original	Gramedia	No	Publisher by PT Fitratama Sempurna	
113	Book	Gorontalo	Gorontalo Dalam Angka 2006 (Gorontalo In Figure 2006)	A4	Copy	(BPS)	No		F3
114	Document	Gorontalo	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Gorontalo	A4	Copy	IDEA Consultans, Inc	No	Saprof on Urban Flood Control System Improvement in Selected Cities	F4
115	Document	Gorontalo	Permohonan Comitment Letter Land Acquisition	Letter	Copy	BWS Sulawesi II Gorontalo	No		F5
116	Document	Gorontalo	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Gorontalo	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	F6
117	Document	Gorontalo	Surat Pernyataan	Letter	Copy	Sekda Pemprov Gorontalo	No		F7

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
118	Report M/P	Gorontalo	Rencana Strategi (Renstra) Dinas P.U 2007-2012	A4	Copy	BWS Sulawesi II Gorontalo	No	Dinas P.U Pemerintah Provinsi Gorontalo 2007	F8
119	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Final Report, Volume I Summary, JICA December 2002	F9
120	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Main Report, Volume II, JICA December 2002	F10
121	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Supporting Report : Part-A Existing Conditions (Volume III), JICA December 2002	F11
122	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Supporting Report : Part-B Flood Mitigation Master Plan (Volume IV), JICA December 2002	F12
123	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Supporting Report : Part-C Feasibility Study for Priority Projects (Volume V), JICA December 2002	F13
124	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republik of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Supporting Report : Part-D Execution of Study (Volume VI, JICA December 2002	F14
125	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republik of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Data Book, Volume VII, JICA December 2002	F15
126	Report F/S	Gorontalo	The Study on The Flood Control and Water Management in Limboto-Bolango-Bone Basin in The Republic of Indonesia, (JICA 2002 Dec.)	A4	Original	IDEA Consultans, Inc	No	Drawings, Volume VIII, JICA December 2002	F16
127	Report F/S	Gorontalo	Kegiatan Pengendalian Banjir dan Perbaikan Sungai Tondano	A4	Copy	BWS Sulawesi I Manado	No	Laporan Tahunan T.A 2007 Departemen P.U Dirjen SDA Satuan Kerja BWS Sulawesi I	F17
128	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Laporan Akhir (2007 Agst.)	F18

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
129	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Executive Summary Laporan Akhir (2007 Agst.)	F19
130	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Laporan Sosial Ekonomi (2007 Agst.)	F20
131	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir Sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Laporan Nota Desain 2007	F21
132	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir Sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Laporan Topografi 2007	F22
133	Report D/D	Gorontalo	Pekerjaan Survei Investigasi dan Desain (SID) Pengendalian Banjir Sungai Bolango di Provinsi Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Laporan Hidrologi/Hidrometri 2007	F23
134	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Akhir Departemen P.U Dirjen SDA BWS Sulawesi II	F24
135	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Volume Pekerjaan dan RAB, Departemen P.U Dirjen SDA BWS Sulawesi II	F25
136	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Pemodelan Sungai, Departemen P.U Dirjen SDA BWS Sulawesi II	F27
137	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Buku Gambar, Departemen P.U Dirjen SDA BWS Sulawesi II	F26

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
138	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Nota Perencanaan, Departemen P.U Dirjen SDA BWS Sulawesi II	F28
139	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Penunjang Hidrologi, Departemen P.U Dirjen SDA BWS Sulawesi II	F29
140	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Penunjang Penyelidikan Mekanika Tanah, Departemen P.U Dirjen SDA BWS Sulawesi II	F30
141	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Spesifikasi Teknis, Departemen P.U Dirjen SDA BWS Sulawesi II	F31
142	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Topografi 2007, Departemen P.U Dirjen SDA BWS Sulawesi II	F32
143	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Executive Summary/Laporan ringkasan, Departemen P.U Dirjen SDA BWS Sulawesi II	F33
144	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Penunjang untuk Sosial Ekonomi, Departemen P.U Dirjen SDA BWS Sulawesi II	F34
145	Report D/D	Gorontalo	Survei Investigasi dan Desain Pengendalian Banjir sungai Bone Provinsi Gorontalo	A4	Copy	Departemen P.U Dirjen SDA BWS Sulawesi II	No	Laporan Akhir/Final Report, Departemen P.U Dirjen SDA BWS Sulawesi II	F35
146	Report D/D	Gorontalo	Rehabilitasi & Peningkatan Saluran Pembuangan dan Jaringan Irigasi Sebagai Antisipasi Penanggulangan Banjir dan Genangan di Kota Gorontalo	A4	Copy	BWS Sulawesi II Gorontalo	No	Dinas P.U Kota Gorontalo Bidang Pengairan	F36
147	Map	Makassar	Makassar dan Perkembangannya, Skala 1 : 25.000	A0	Original	Gramedia	No	Publisher by : El_SENA Surabaya	

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
148	Book	Makassar	Sulawesi Selatan Dalam Angka 2007 (South Sulawesi In Figure 2007)	A4	Copy	(BPS)	No		
149	Document	Makassar	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Sulawesi Selatan	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008)	M3
150	Book	Bitung	Kota Bitung Dalam Angka 2007 (Bitung City In Figured 2007)	A4	Copy	(BPS)	No		
151	Map	Jambi	Jambi, Skala 1 : 25.000	A0	Copy in CD	Gramedia	Yes	Publisher by CV. Indo Prima Sarana, Surabaya	
152	Map	Jambi	Kota Jambi Skala 1 : 25.000	A0	Original	Gramedia	No		
153	Book	Jambi	Jambi Dalam Angka 2007 (Jambi In Figure 2007)	A4	Copy	(BPS)	No		
154	Document	Jambi	Propose Study of Urgent Flood Management for Jambi City, Jambi Province	A4	Copy	IDEA Consultans, Inc	No	Sub Dinas Pengembangan Perdesaan & Pengairan, Dinas Kimpraswil Provinsi Jambi, 2005	I4
155	Document	Jambi	Proposal Pengendalian Banjir Kota Jambi	A4	Copy	IDEA Consultans, Inc	No	Sub Dinas Pengembangan Perdesaan & Pengairan, Dinas Kimpraswil Provinsi Jambi, 2004	I5
156	Document	Jambi	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Jambi	A4	Copy	IDEA Consultans, Inc	No	Saprof on Urban Flood Control System Improvement in Selected Cities	
	Report	Jambi	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Jambi	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008)	I7
157	Report F/S	Jambi	Studi Revitalisasi Daerah Aliran Sungai Asam Kotamadya DATI II Jambi	A4	Copy	IDEA Consultans, Inc	No	Laporan Interim (Kerjasama BAPPEDA Kotamadya DATI II Jambi dengan UGM Jurusan Teknik Arsitektur Fakultas Teknik, 1995)	
158	Report D/D	Jambi	Detail Desain Instalasi Pompa Banjir Pintu Sungai Asam di Kotamadya Jambi-Propinsi DATI I Jambi	A4	Copy	IDEA Consultans, Inc	No	Laporan Akhir, Departemen PU Kantor Wilayah Propinsi Jambi, Tahun Anggaran 1998/1999	
159	Map	Jawa Timur / Surabaya	Surabaya Skala 1 : 20.000	A0	Original	Gramedia	No	Publisher by : PT Karya Pembina Swajaya, Surabaya	
160	Map	Jawa Timur / Surabaya	Sooko 1 : 25.000	A0	Copy in CD	BAKOSURTANAL	Yes	Sheet 1508-344	
161	Book	Jawa Timur / Surabaya	Surabaya Dalam Angka 2006 (Surabaya In Figure 2006)	A4	Copy	(BPS)	No		J3
162	Book	Jawa Timur / Surabaya	Kabupaten Gresik Dalam Angka 2003 (Sub-Province Gresik In Figured 2003)	A4	Copy	(BPS)	No		J4
163	Book	Jawa Timur / Surabaya	Mojokerto Dalam Angka 2004 (Mojokerto In Figure 2004)	A4	Copy	(BPS)	No		J5

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
164	Document	Jawa Timur / Surabaya	Standar Satuan Harga Dasar Konstruksi (Kebutuhan Pemerintah Propinsi Jawa Timur Tahun Anggaran 2008)	A4	Copy	IDEA Consultans, Inc	No	BAPPEDA Propinsi Jawa Timur (Keputusan Gubernur Jawa Timur) No : 188/300/KPTS/013/2007	J6
165	Document	Jawa Timur / Surabaya	Harga Satuan Bahan Bangunan dan Upah Pekerja Propinsi Jawa Timur	A4	Copy	IDEA Consultans, Inc	No	Jurnal Harga Satuan Bahan Bangunan (Konstruksi dan Interior Edisi XXVII Tahun XV 2008	J7
166	Document	Jawa Timur / Surabaya	Surat Perjanjian Kerja Pelaksanaan Paket Pekerjaan : AMDAL PRASARANA PENGENDALI DAYA RUSAK AIR KALI WONOKROMO	A4	Copy	BBWS Brantas JAWA TIMUR	No	Departemen PU Dirjen Sumberdaya Air BBWS Brantas Tahun Anggaran 2008	J8
167	Document	Jawa Timur / Surabaya	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Kedurus	A4	Copy	IDEA Consultans, Inc	Yes	Saprof on Urban Flood Control System Improvement in Selected Cities	J9
168	Document	Jawa Timur / Surabaya	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Brangkal	A4	Copy	IDEA Consultans, Inc	Yes	Saprof on Urban Flood Control System Improvement in Selected Cities	J10
169	Document	Jawa Timur / Surabaya	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Wonokromo	A4	Copy	IDEA Consultans, Inc	Yes	Saprof on Urban Flood Control System Improvement in Selected Cities	J11
170	Document	Jawa Timur / Surabaya	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Nganjuk	A4	Copy	IDEA Consultans, Inc	Yes	Saprof on Urban Flood Control System Improvement in Selected Cities	J12
171	Document	Jawa Timur / Surabaya	Questionnaire on The Land Acquisition and Resttlement Related to The Project in Tulungagung / Trenggalek	A4	Copy	IDEA Consultans, Inc	Yes	Saprof on Urban Flood Control System Improvement in Selected Cities	J13
172	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur (2005 Des.)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Akhir (2005 Des.)	J14
173	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur (2005 Des.)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Album Gambar (Data Sekunder) (2005 Desember)	J15
174	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur (2005 Des.)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Gambar Rencana (data primer) (2005, Des)	J16
175	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur (2005 Des.)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Design Note, Spesifikasi Teknik dan RAB	J17

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176	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur 2005	A4	Copy	BBWS Brantas JAWA TIMUR	No	Rencana Mutu Kontrak 2005	J18
177	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur 2005	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Hidrologi, Oktober 2005	J19
178	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur 2005	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Pengukuran, September 2005	J20
179	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur 2005	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Hidrolika, Oktober 2005	J21
180	Report D/D	Jawa Timur / Surabaya	Studi Komprehensif Sungai Kali Wonokromo Surabaya Jawa Timur 2005	A4	Copy	BBWS Brantas JAWA TIMUR	No	Pedoman Operasi dan Pemeliharaan Sungai Kali Wonokromo	J22
181	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto (2005 APBN)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Final Report (2005, APBN)	J23
182	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto (2005 APBN)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Summary Report, Departemen P.U Dirjen SDA BBWS Brantas	J24
183	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto (2005 APBN)	A3	Copy	BBWS Brantas JAWA TIMUR	No	Peta Tematik Konservasi & SID Kali Brangkal, Depkimpraswil, Dirjen SDA BBWS Brantas	J25
184	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto (2005 APBN)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Buku Ukur, Departemen P.U Dirjen SDA BBWS Brantas	J26
185	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto (2005 APBN)	A4	Copy	BBWS Brantas JAWA TIMUR	No	Album Gambar (2005 APBN)	J27
186	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Penyelidikan Geologi Teknik & Mekanika Tanah	J28

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
187	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Kajian Sosial Ekonomi Kelembagaan	J29
188	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Deskripsi BM & CP	J30
189	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Spesifikasi Teknik	J31
190	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Pengukuran	J32
191	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Panduan O&P Sungai	J33
192	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Analisa Hidrologi	J34
193	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Sosialisasi Masyarakat	J35
194	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Perhitungan Hidrolika	J36
195	Report D/D	Jawa Timur / Surabaya	SID Perbaikan Sungai Kali Brangkal & Perencanaan Konservasi Das Kali Brangkal Kabupaten Mojokerto	A4	Copy	BBWS Brantas JAWA TIMUR	No	Laporan Rencana Anggaran Biaya (RAB) dan Bill of Quantity (BOQ)	J37
196	Report SID	Jawa Timur / Surabaya	Pekerjaan : SID Drainase Kali Kedurus Kota Surabaya	A4	Copy	BBWS Brantas JAWA TIMUR	No	RENCANA ANGGARAN BELANJA (RAB) ALTERNATIF 1, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas	

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No	Type	Province/Sub Province	Title	Size	Original/ Copy	Collected from	Digital Data	Remarks	Code
197	Report SID	Jawa Timur / Surabaya	Pekerjaan : SID Drainase Kali Kedurus Kota Surabaya	A4	Copy	BBWS Brantas JAWA TIMUR	No	RENCANA ANGGARAN BELANJA (RAB) ALTERNATIF 2, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas	
198	Report SID	Jawa Timur / Surabaya	Pekerjaan : SID Drainase Kali Kedurus Kota Surabaya	A4	Copy	BBWS Brantas JAWA TIMUR	No	LAPORAN RINGKAS, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas	
199	Report SID	Jawa Timur / Surabaya	Pekerjaan : SID Drainase Kali Kedurus Kota Surabaya	A4	Copy	BBWS Brantas JAWA TIMUR	No	DOKUMEN GAMBAR ALTERNATIF 2, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas	
200	Report SID	Jawa Timur / Surabaya	SID Sistem Drainase Kali Ngasinan di Kabupaten Trenggalek/Tulungagung	A4	Copy	BBWS Brantas JAWA TIMUR	No	LAPORAN RAB & Metode Pelaksanaan Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali	
201	Report SID	Jawa Timur / Surabaya	SID Sistem Drainase Kali Ngasinan di Kabupaten Trenggalek/Tulungagung	A4	Copy	BBWS Brantas JAWA TIMUR	No	LAPORAN AKHIR, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas (2006 Oct.)	
202	Report SID	Jawa Timur / Surabaya	SID Sistem Drainase Kali Ngasinan di Kabupaten Trenggalek/Tulungagung	A4	Copy	BBWS Brantas JAWA TIMUR	No	ALBUM GAMBAR PERENCANAAN, Departemen P.U Dirjen SDA, Induk Pelaksanaan Kegiatan Pengembangan Wilayah Sungai Kali Brantas (2006 Oct.)	
203	AMDAL	Jawa Timur / Surabaya	AMDAL Prasarana Pengendali Daya Rusak Air Kali Wonokromo	A4	Copy	BBWS Brantas JAWA TIMUR	No	Draft Kerangka Acuan (KA) ANDAL, Departemen PU, Dirjen Sumber Daya Air, BBWS Brantas Surabaya.	J43
204	Map	Kalimatan Timur		A0	Original	Gramedia	No	Publisher by : PT. Harsena	
205	Book	Kalimatan Timur	Kalimantan Timur Dalam Angka 2007 (Kalimantan Timur In Figured 2007)	A4	Copy	(BPS)	No		
206	Book	Kalimatan Timur	Kota Balikpapan Dalam Angka 2008 (Balikpapan City In Figured 2008)	A4	Copy	(BPS)	No		
207	Book	Kalimatan Timur	Kabupaten Kampar Dalam Angka 2005 (Sub-Province Kampar In Figured)	A4	Copy	(BPS)	No		


JICA