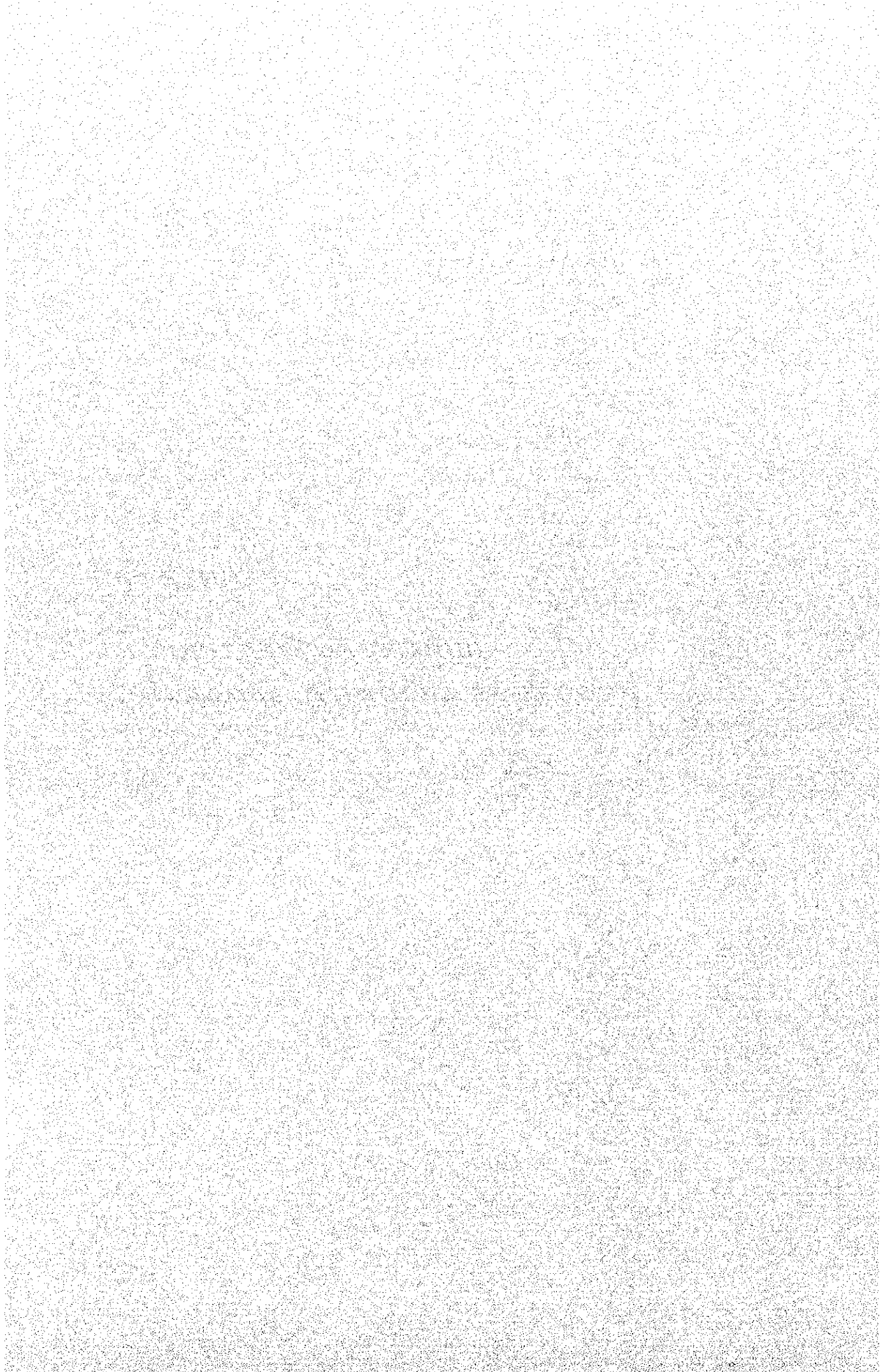


**ANNEX 6**

**NINETIES OF MEETING ON  
PROGRESS REPORT(1), SEMARANG**



Minute of Explanation Meeting  
for Progress Report (1)  
on  
The Detailed Design  
of  
Flood Control, Urban Drainage and Water Resources Development in Semarang  
in the Republic of Indonesia

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Date : December 7, 1998

Place : Conference Room of Jratunseluna River Development Project

Attendees : Please refer to the attached sheet.

Minutes :

A meeting regarding the captioned subject was held among JRATUNSELUNA Project Office, Dinas PU Pengairan, Semarang City and JICA Study Team. First, Progress Report (1) of the captioned project was summated to the Indonesian Side by the JICA Study Team. Then, the meeting was called to order at 9:00 with Mrs. Mestika the chief of Planning and Design Section of Jratunseluna Project Office, presiding.

At the beginning of the meeting, the presentation of the report was made by the Study Team, and discussion was held subsequently in the form of question and answer. All contents of the report was basically understood and accepted by the Indonesian Side. The main points discussed and confirmed in the meeting are summarized below.

West Floodway/Garang River Improvement

- (1) Preservation work for the existing Simongan Weir is included in the Project. A part of the left side weir including intake structure will be the objective part to be preserved. As to where the removed weir be placed, the final location has not been decided yet. Detailed preservation plan will be made in the next stage.
- (2) Semarang City has a plan to provide a drainage pumping station on the right bank of West floodway near the North Ring Road Bridge. The Study Team was requested to suggest where the pumping station be provided and how it should be connected with the floodway.

- (3) Regarding the possible spoil bank, the coastal areas which has been scheduled to be reclaimed under the land development program of Semarang City are the only target area for spoil bank. This has been confirmed through the discussion with land developers with the coordination of Semarang City. The actual spoil bank should be decided depending on the land reclamation schedule.
- (4) There was a question as to if the New Simongan Bridge which has been planned and designed by BINAMARGA meets the requirements of the proposed river channel or not. The study team requested BINAMARGA to check their detailed design especially in terms of embedding length of footing and freeboard of bridge girder. BINAMARGA promised to report to DINAS PENGAIRAN if any problem were founded

#### Jatibarang Dam Construction

- (1) As to the question how the final selection of dam type is made out of two alternatives, the Study Team replied that the selection should be made based on cost comparison, technical consideration reflecting the foundation condition, optimum use of material and ease of construction. The selection result will be presented in the Interim Report (3) in January 1999.
- (2) The Indonesian side confirmed that design discharge for spillway of fill type dam should be based on a probable maximum flood (PMF) in accordance with a letter from Directorate of Technical Guidance dated February 16, 1998.
- (3) A question was put as to why there was a difference of dam crest level between center core rockfill dam and concrete face rockfill dam. The Study Team replied that wave run-up on the dam slope of concrete face rockfill has been estimated 0.5 m higher than that of center core rockfill because the dam slope surface is much smoother in former case than in the latter case. However, to lower the crest level of concrete face rockfill dam a parapet wall with a height of 1.0 m has been provided on the top of dam crest.

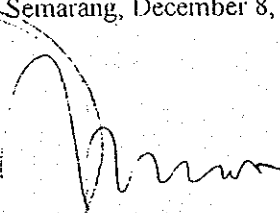
#### Urban Drainage System Improvement

- (1) Regarding the design of pump structure, there was a question about countermeasure against land subsidence anticipated. The Study Team answered that the water level allowance of 40 cm was taken into account for the design of pump assuming that pump facilities would subside at the average rate of 4 cm per year for the next 10 years. However, bigger

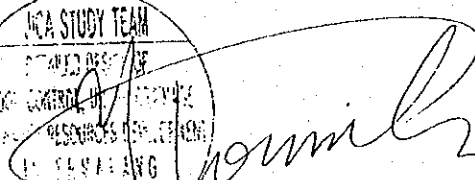
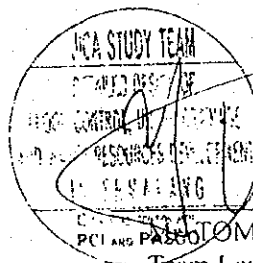
subsidence more than 40 cm may arise depending on the condition of the ground water exploitation. Therefore, the Study Team suggested that the local government should take necessary action for enacting effective regulation or law to prohibit usage of deep wells. Also the Study Team stressed that changing water resources from groundwater to river surface flow is very important. Furthermore, the Study Team requested Semarang City Office to continue leveling survey of Bench Marks established by the Team in 1997 to monitor the subsidence.

- (2) The proposed retarding pond is included in the authorized city planning area, the site of the proposed retarding pond has been approved by the Mayor of Semarang City.
- (3) A question was given as to if the proposed pump system was reasonable from the point of view of operation and maintenance cost including cost for electric power and fuel. The Study Team answered that the most economical and reasonable pump system has been selected through the comparative study on several alternatives.

Semarang, December 8, 1998



Ir. BAMBANG PRAMONO  
Project Manager  
JRATUNSELUNA River  
Development Project, Semarang  
Ministry of Public Works



TOMIOKA Yoshiyuki  
Team Leader  
JICA Study Team

**ANNEX 7**

**NINETIES OF MEETING ON  
PROGRESS REPORT(1), JAKARTA**

MINUTES OF MEETING  
ON  
PROGRESS REPORT (1)  
OF  
THE DETAILED DESIGN  
OF  
FLOOD CONTROL, URBAN DRAINAGE  
AND WATER RESOURCES DEVELOPMENT  
IN SEMARANG IN THE REPUBLIC OF INDONESIA

Date : January 26, 1999

Place : Conference room of Directorate General of Water Resources Development, 6th Floor of PU Head Office Building  
Jl. Pattimura No. 20/Perc. 7 Kebayoran Baru, Jakarta

Attendance : Please refer to the attached sheet.

A meeting regarding the captioned report was held between the Indonesian Side composed of Directorate General of Water Resources Development (DGWRD) and Directorate General of Human Settlements (DGHS), Ministry of Public Works, and JICA Study Team in the presence of JICA experts and a representative of JICA Indonesian Office.

The meeting was called to order at 10:00 a.m. and was chaired by Mr. Marhuarar Napitpulu Dipl. H.E, the Director of Technical Guidance of DGWRD. At the beginning of the meeting, the Study Team presented the contents of the Progress Report (1) and subsequently discussion was made to exchange ideas of their mutual concerns.

All the contents of the report are basically understood and accepted by the Indonesian Side. The main points discussed and confirmed in the meeting are summarized as follows.

- (1) Some comments on the report of Urban Drainage Improvement were made from CIPTA KARYA. The Study Team will explain about the comments later.
- (2) The chairman told the meeting that the Director General of DGWRD will send a letter to request the Governor of Central Java Province to commence the project preparation including compensation such as land acquisition and house evacuation.
- (3) The next meeting on the Interim Report (3) which presents the definitive plan of Jatibarang Multipurpose Dam will be held on February 23 at 1:00 p.m. The discussion on the Dam will be made in the meeting.

Jakarta, January 27, 1999



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Ir. Marhuarar Napitupulu Dipl. H.E  
Director of Technical Guidance,  
Directorate General  
of Water Resources Development  
Ministry of Public Works

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TOMIOKA Yoshiyuki  
Team Leader  
JICA Study Team



## LIST OF ATTENDANCE

Name	Position
<u>Indonesian Side</u>	
DGWRD	
1. Ir. M. Napitupulu Dipl. H.E	Director of Directorate of Technical Guidance
2. Ir. Sutanto Mardjono Dipl	Sub-Director of Large Structure, Directorate of Technical Guidance
3. Ir. Satriyo Untung	Sub-Director of Rivers, Directorate of Technical Guidance
4. Slameto Diyanto	Assistant of Technical Planning Jratunseluna Project Office
5. H.M. Nidhom Azhari	Dinas Pengairan Central Java Province
6. Sugeng. M.E	Chief Counterpart
7. Ir. S. Budi Santoso Dipl. H.E	Section Head of Rivers in Central Region, Directorate of Technical Guidance
8. Ir. Utama S.	Section Head of Sub-Directorate II, Directorate of Technical Guidance
DGHS	
1. Ir. Aris Hudijono	Staff of Sub-Directorate Environmental Sanitation, Directorate of Technical Development
<u>JICA Study Team</u>	
1. TOMIOKA Yoshiyuki	Team Leader
2. FURUTAGUCHI Masashi	Assistance Team Leader/River Planner
3. MIURA Mitsuo	Urban Drainage Engineer
<u>JICA Expert</u>	
1. UMEDA Kazuo	JICA Expert on Water Resources Development
2. SHINTAKU Hiroaki	JICA Expert on Water Resources Planning and Management
3. TANAKA Tsuyoshi	JICA Expert on Wastewater & Stomwater Engineering
<u>JICA Indonesia Office</u>	
1. Takeuchi Tomoko	Assistant Resident Representative , JICA

**ANNEX 8**

**NINETIES OF MEETING ON  
INTERIM REPORT(3), JAKARTA**

MINUTES OF MEETING  
ON  
INTERIM REPORT (3)  
OF  
THE DETAILED DESIGN  
OF  
FLOOD CONTROL, URBAN DRAINAGE  
AND WATER RESOURCES DEVELOPMENT  
IN SEMARANG IN THE REPUBLIC OF INDONESIA

Date : February 23, 1999

Place : Conference room of Directorate General of Water Resources Development, 6th Floor of PU Head Office Building  
Jl. Pattimura No. 20/Perc. 7 Kebayoran Baru, Jakarta

Attendance : Please refer to the attached sheet.

Minutes :

A meeting with the main purpose of presenting Interim Report (3) was held between the Directorate General of Water Resources Development (DGWRD), Ministry of Public Works and representatives of Semarang City (hereinafter referred to as Indonesian Side) and JICA Study Team in the presence of JICA advisory committee members (Japanese Side).

The meeting was called to order at 1:00 p.m. and was chaired by Mr. Sutanto Mardjono Dipl, the Sub-Director of Technical Guidance of DGWRD. At the beginning of the meeting, presentation of the report was made by Mr. Tomioka, Leader of the JICA Study Team, and subsequently discussion was made in the form of question and answer to exchange ideas of their mutual concerns.

All the contents of the report are basically understood and accepted by the Indonesian Side. The main points discussed and confirmed in the meeting are summarized as follows.

Technical Matters

- (1) A question was made as to how the in-situ permeability, mixing method and gradation limits of the impervious zone were proposed. The Study Team replied as follows:

The in-situ permeability is stipulated to be not more than  $1 \times 10^{-5}$  cm/sec when compacted.

According to the sufficient experience at Bili Bili Dam Project, the fine-grained soil and sand-gravel can be successfully mixed without any segregation by stockpiling horizontally and alternately, and cutting by bulldozer from the top of the stockpile to the bottom.

The gradation limits mentioned in the Report were estimated by the results of the laboratory test. They will be finalized by the trial embankment, which will

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be carried out by the same method as the actual construction using the material adopted.

- (2) Indonesian Side commented that the coarser gradation limits of the semi-pervious zone were supposed to be too coarse to prevent impervious material from piping. The Study Team explained as follows:

The gradation limits of the semi-pervious zone were estimated so as to prevent the protected impervious soil particles from washing into the voids of the semi-pervious material. In the Technical Specification, they will be stipulated to be finalized by the trial embankment before the commencement of the construction.

- (3) Regarding the hydraulic design of the spillway, Indonesian Side asked how much velocity was calculated at the entrance of the stilling basin.

The value will be reported to the Indonesian Side later. In case the velocity is bigger than 30 m/s, proper protection measures against cavitation will be taken in the design of stilling basin.

- (4) A question as to how the slope stability of the dam body was proposed.

The stability analysis by the slip circle method was carried out using the design value resulting from the laboratory test. Design Criteria such as the loading condition, the minimum safety factor and seismic coefficient followed the Indonesian Criteria advised by Directorate of Technical Guidance.

- (5) The Study Team was asked what the concept of deciding the freeboard at the dam crest was. The Study Team answered as follows:

The top of the impervious zone was designed so as not to be lower than the highest value determined among each water surface elevation plus freeboard of 0.75 m by Indonesian Criteria. The crest level is determined considering 0.9 m thickness of the protection layer covering erodible impervious material. The layer is including the pavement and sub-base of the dam crest road.

- (6) Regarding the lugeon map along dam axis (Fig.2.2.10 (1/2)), Indonesian Side pointed out that the Lugeon values deeper than around EL. 50.0 m of B-5 hole show very large. On the other hand, the values around the same elevation of B-6 hole show not so large. The Study Team was asked for the explanation of this inconsistency.

It will be explained in the next progress report and the P-Q curve will be sent for reference.

- (7) As for the Lugeon map along dam axis (Fig.2.2.10 (2/2)), the left bank at the dam axis shows a thin and long shape projecting into the river course. The ground water level is lower than the Normal Water Surface. A question was made as to how the curtain grout area to reduce the seepage water and prevent the piping failure was proposed. The Study Team explained as follows:

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The curtain grouting area at the left abutment was designed considering the existence of less pervious rock zone, the groundwater level and Normal Water Surface Elevation. The creep ratio analysis will be carried out to evaluate the sufficient curtain grouting area.

- (8) The more detailed description about the process of the selection of Jatibarang dam type, especially about the post construction settlement of the foundation rock will be described in the next report.
- (9) The geological profiles will be presented in the longitudinal profiles of the Spillway, Diversion Tunnel and Outlet Tunnel in the next report.
- (10) The geological cross sections at the Jatibarang dam site will be presented in the next report.
- (11) The future water supply plan to Semarang City, water transmission plan from Kudunombo Dam for instance, will be described in the Final Report.

#### General Matters

- (1) The chairman told the meeting that if anyone of the participant of the meeting has questions or suggestions to the Study Team send them to the chairman, then he will transfer them to the Study Team..
- (2) Mr. Watanabe, the chairman of the JICA Advisory Committee, requested the Indonesian Side to present the basic ideas or methodology for maintenance and operation of the facilities to be constructed in the Project by the personnel of relevant agencies of the Indonesian Government at the third Seminar which is scheduled to be held in October 1999.
- (3) Mr. Watanabe presented the past experience of land subsidence in Tokyo using a figure showing the relation between number of deep wells and annual subsidence ratio or accumulated subsidence amount. Mr. Watanabe also put stress on the importance of the restriction of ground water exploitation.
- (4) The chairman of the JICA Advisory Committee stressed the importance of enhancement of the institution and organization of Indonesian Side for water shed management of Garang River and other related rivers as well as land subsidence management.
- (5) The draft design criteria for the detailed design of Jatibarang Dam will be prepared by the Study Team by March 6, 1999, then the design criteria will be sent to the Directorate of Technical Guidance of DGWRD. The explanation and discussion on the draft design criteria will be made between the Study Team and the DGWRD.
- (6) The textbook for the first Seminar, which was held on October 14 and 15, 1998 will be sent to Mr. Sutanto Mardjono in which issues of watershed management in the Garang river basin are discussed.

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Jakarta, February 26, 1999

Ir. Marhuarar Napitupulu Dipl. H.E  
Director of Technical Guidance,  
Directorate General  
of Water Resources Development  
Ministry of Public Works

TOMIOKA Yoshiyuki  
Team Leader  
JICA Study Team

Witnessed by:

WATANABE Masayuki  
Chairman  
JICA Advisory Committee

## LIST OF ATTENDANCE

Name	Position
<b>Indonesian Side</b>	
<u>DGWRD</u>	
1. Ir. M. Napitupulu Dipl. H.E	Director of Directorate of Technical Guidance
2. Ir. Sutanto Mardjono Dipl	Sub-Director of Large Structure, Directorate of Technical Guidance
3. Ir. Mestika Djoeachir Dipl.HE	Sub-Director of Rivers, Directorate of Technical Guidance
4. Ir. Dicky Supodo Dipl. H.E	Section Head of Large Structure in Central Region, Directorate of Technical Guidance
5. Ir. Djohan Hidayat	DPU Semarang City
6. Mr. R.M Doake	Colenco Consultant for Dam Safety Project
7. Ir. Robert Sitohang	Chief of Dam Monitoring Unit
8. Ir. Gunto Nababan	Staff of Balai Kesenian Bandung
9. Ir. Soedaryanto	Section Head of West Region Sub-Directorate of Grand Water
<b>Japanese Side</b>	
<u>JICA Advisory Committee</u>	
1. WATANABE Masayuki	Chairman
2. YOKOMORI Motoharu	Member
<u>JICA Study Team</u>	
1. TOMIOKA Yoshiyuki	Team Leader
2. FURUTAGUCHI Masashi	Assistance Team Leader/River Planner
3. MISHINA Takahiro	Dam Engineer
<u>JICA Expert</u>	
1. UMEDA Kazuo	JICA Expert on Water Resources Development
2. SHINTAKU Hiroaki	JICA Expert on Water Resources Planning and
3. NAGATA Satoshi	JICA Expert on Hydrogeorogy and Engineering Geology
<u>JICA Indonesia Office</u>	
1. Takeuchi Tomoko	Assistant Resident Representative , JICA

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**ANNEX 9**

**NINETIES OF MEETING ON  
INTERIM REPORT(3), SEMARANG**



MINUTE OF MEETING  
FOR INTERIM REPORT (3)  
ON  
THE DETAILED DESIGN  
OF  
FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES  
DEVELOPMENT IN SEMARANG  
IN THE REPUBLIC OF INDONESIA

**Date** : February 20, 1999

**Place** : Meeting Room (B), Ministry of Public Works Regional Office,  
Central Java Province

**Attendance** : Please refer to the attached sheet.

**Minutes :**

A meeting regarding the captioned subject was held among JRATUNSELUNA Project Office, Water Resources Development Office of Provincial Public Works, Semarang City, State Electricity Enterprise (PLN), Water Supply Public Company (PDAM) (hereinafter referred to as Indonesian Side) and JICA Study Team.

Interim Report (3) of the captioned project was submitted to the Indonesian Side by the JICA Study Team prior to the Meeting. Then the meeting was called to order at 9:00 with Mr. Sugito the chief of Central Java Public Works Regional Office.

At the beginning of the meeting, the Study Team made the presentation of the report, and discussion was held subsequently in the form of question and answer. All contents of the report was basically understood and accepted by the Indonesian Side. The main points discussed and confirmed in the meeting are summarized as follows.

- (1) Regarding the selection of the rockfill dam type, Indonesian Side commented that the concrete face rockfill dam type was considered to be better than the center core rockfill dam because the center core rockfill dam was susceptible to the internal piping failure. The Study Team explained the process of the selection of Jatibarang dam type as follows:

The concrete face rockfill dam is a little more expensive than the center core rockfill dam. In addition, the post construction settlement of the foundation under the toe structure may

be so great that the face slab can not remain intact due to the soft rock foundation of Jatibarang Dam. To prevent the internal piping failure of the center core rockfill dam, the semi-pervious materials with special gradation characteristics are provided as a filter at the both sides of the impervious zone. From these discussions, the Indonesian Side understood that the center core rockfill type was the most suitable for Jatibarang Dam.

- (2) A question was made as for the information of the submerged area by Jatibarang dam. The Study Team answered as follows:

The reservoir area of Jatibarang Dam is about 120 ha, which is presently used for paddy, upland and small forest. No people are living there and valuable species has not yet found in the reservoir area. The Goa Kreo Park will become isolated, but not affected when the reservoir is filled up. The pedestrian bridge to the park is designed in this Project.

Power transmission line is crossing the reservoir area. At least four (4) steel towers have to be relocated as one of compensation works. It was counted in the construction cost.

- (3) Concerning the quarry for the rock material and concrete aggregate, the Study Team was asked how the exploration area to be used was proposed.

The geological investigation was made to clarify the quantity and quality of the material that can be obtained from the proposed quarry. The exploration area to be used depends on the contractor. The contractor will arrange the permission.

- (4) Concerning the access road to Jatibarang Dam, the Study Team was advised that the location plan should be coordinated with the Semarang City Office.

- (5) Representative from Central Java Public Work Office pointed out that the cost of the water treatment plant should be included in the water resources development project. The Study Team answered as follows:

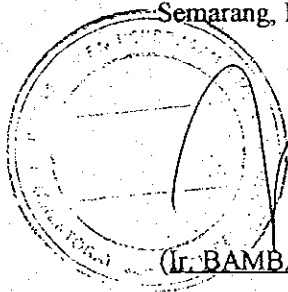
Although the water treatment plant is not included in the scope of the Project, the water resources development project was properly evaluated based on the raw water price.

- (6) A member of Water Supply Public Company (PDAM) commented to the Study Team as follows:

- Out of 1,000 l/sec of design discharge of the raw water taken from Garang River, the water treatment capacity of only 800 l/sec has been installed. The additional water from Jatibarang reservoir is expected to supplement the deficit.

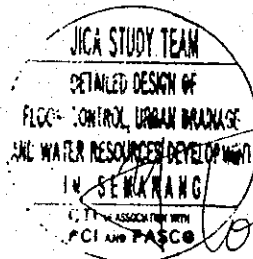
- Raw water deficit is expected to occur in year 2005.
- (7) A member of State Electricity Enterprise (PLN) commented to the Study Team as follows:
- PLN in Central Java currently has an excess install capacity of 4,000 to 6,000 MW, which does not include the private sectors. Therefore, the investment plan for the new project is very limited up to the year of 2003.
  - From the above reason, the budget of the Jatibarang Hydropower Station will not be prepared by PLN. However, if the Ministry of Public Works intends to construct the hydropower station, PLN will help the design.
  - PLN will be ready to connect the Jatibarang Hydropower Station to the PLN substation directly by a new transmission line under special agreement.
- (8) A question was made as to how the power transfer during construction is considered. The Study Team answered that the power transfer during construction will be discussed and coordinated with PLN.
- (9) Staff of Semarang City Planning Board informed that the Mayor of Semarang City had issued a letter that the Government will make the people stop the pumping of ground water when the water supply from surface water is available.
- (10) Concerning the land acquisition in the reservoir area, the Study Team was asked the training program for the people who will change their profession, besides giving compensation. The Study Team answered that the training program for people is not included in the scope of the Project.

Semarang, February 20, 1999



(Ir. BAMBANG PRAMONO)

Project Manager of  
JRATUNSELUNA Project, Semarang  
Ministry of Public Works



(TOMIOKA Yoshiyuki)

JICA STUDY TEAM  
Team Leader

### List of Attendance

No.	Name	Institution
1.	Sugito	Chief of Central Java P.W Regional Office
2.	Bambang Pramono	JRATUNSELUNA Project
3.	Mestika	JRATUNSELUNA Project
4.	Slamet Jiwantoro	JRATUNSELUNA Project
5.	Billy Parmono	JRATUNSELUNA Project
6.	Rustriyanti	JRATUNSELUNA Project
7.	Slamet Wiyanto	JRATUNSELUNA Project
8.	Kirman	JRATUNSELUNA Project
9.	Tomioka Yushiyuki	JICA Study Team
10.	Oshita Mitugu	JICA Study Team
11.	Furutaguchi Masashi	JICA Study Team
12.	Mishina Takahiro	JICA Study Team
13.	Sugeng	PT Indah Karya
14.	Makruf	PT Indah Karya
15.	Wukir Rahardjo	PT Indah Karya
16.	Moh Ali	PT Indah Karya
17.	Sutomo	P. W. Regional Office
18.	Triwidodo	Semarang City Planning Board
19.	M. Sakdi	Semarang City Planning Board
20.	Sugeng Riyadi	Steam power Electric
21.	Untung Sukardi	State Electricity Enterprise Middle of Java
22.	Eko Saptono	State Electricity Enterprise Tuntang Sector
23.	Into Susongko	State Electricity Enterprise Tragi Semarang
24.	Djumadi Maridi	State Electricity Enterprise Semarang Sector
25.	Dwi Prasetyo	Central Java Water Resources Development P. W
26.	Djumono	Central Java Water Resources Development P. W
27.	Mujakir	Human Settlement P. W Provincial Office
28.	Triwidodo	Human Settlement P. W Provincial Office
29.	M. Widodo	Human Settlement P. W Provincial Office
30.	Sutomo	Railway Public Corporation, Operation Area 4, Semarang
31.	Bambang NK	Water Supply Public Company Semarang
32.	AM Baswono	PT Tanah Emas Semarang
33.	Ir. Sumaryati	Central Java P.W Regional Office
34.	Ir. Iman Suwadi	Central Java P.W Regional Office
35.	Ir. Djohan Hidayat	Central Java P.W Regional Office
36.		PT Bumi Manyaran Purmai

**ANNEX 10**

**NINETIES OF MEETING ON  
INTERIM REPORT(4), JAKARTA**



MINUTES OF MEETING  
ON  
INTERIM REPORT (4)  
OF  
THE DETAILED DESIGN  
OF  
FLOOD CONTROL, URBAN DRAINAGE  
AND WATER RESOURCES DEVELOPMENT  
IN SEMARANG IN THE REPUBLIC OF INDONESIA

Date : October 7, 1999

Place : Conference room of Directorate General of Water Resources Development, 6th Floor of PU Head Office Building  
Jl. Pattimura No. 20/Perc. 7 Kebayoran Baru, Jakarta

Attendance : Please refer to the attached sheet.

Minutes :

A meeting on Interim Report (4), which was prepared as a draft final report for West Floodway/Garang River Improvement and the progress report for both Urban Drainage System and Construction of Jatibarang Multipurpose Dam, was held between the Indonesian Side consisting of Directorate General of Water Resources Development (DGWRD), the Directorate General of Human Settlement (DGHS) and a representative of Provincial Public Works Office of Central Java, and JICA Study Team in the presence of JICA Expert (Japanese Side).

The meeting was called to order at 1:15 p.m. and was chaired by Ir. Satriyo Untung M. Eng., the Sub-Director of Technical Guidance of DGWRD. At the beginning of the meeting, presentation of the report was made by Mr. Tomioka, Leader of the JICA Study Team, and subsequently a discussion was made in the form of question and answer to exchange ideas of their mutual concerns.

All the contents of the report were basically understood and accepted by the Indonesian Side except some technical matters that should be clarified in the next report. The main points discussed and confirmed in the meeting are summarized as follows:

Urban Drainage System Improvement

- (1) Questions were raised regarding both the treatment method of dredged material which contains heavy metals, and spoil bank area. The Study Team replied as follows:

To prevent leaching of heavy metals, the dredged material will be mixed with cement with a content of not less than 7% of the deposit material in dry state. The treated materials can be basically dumped in any place. Regarding the actual spoil bank area, further discussion is required among related agencies and the Study Team.

- (2) Cipta Karya asked the basis of the calculation of contribution from beneficiaries for the operation and maintenance expenses of the proposed urban drainage system.

The Study Team explained that the calculation in the report is just an example and that the actual amount of contribution including a system of cross subsidy among households, factories and commercial entities should be decided by the local government of Semarang City

- (3) Cipta Karya pointed out that there are some numerical discrepancy or difference of proposed work item and its quantity between the previous report and the Interim Report (4). The Study Team was requested to clear these points in the next Interim Report (5).

#### West Floodway/Garang River Improvement

- (1) A question regarding the type of temporary gate for Simongan Weir and its installation method was raised. The Study Team explained as follows:

The temporary gate is composed of H-shape steel posts and girder type steel panels. The steel posts are erected from the gate floor slab with the supports at the floor holes and the maintenance bridge. Steel panels are piled up between the steel posts forming a gate.

Installation of the temporary gate is carried out from the maintenance bridge by using a truck crane.

- (2) DGWRD commented that there is no explanation how the probable flood at Simongan Weir is estimated (See Table 3.3.14 in the Main Report), and questioned how the hydrographes of upper Garang River and Kripik are like.

The detailed explanation together with hydrographes for Upper Garang and Kripik rivers will be made in the Final Report. Also, the Study Team will comment on the channel storage effect of both Upper Garang and Kripik rivers.

- (3) Regarding the report writing, the Study Team was requested that figures and tables should be used in order to intelligibly describe the main points in the Final Summary Report. The Study Team agreed to the request.

#### Jatibarang Multipurpose Dam

- (1) DGWRD pointed out that there is no big difference in seepage volume between the cases of with grout and without grout in the seepage analysis, and questioned what is the major reason why grouting is provided under the impervious zone.

The answer to this question will be made in the next report by the dam engineer.



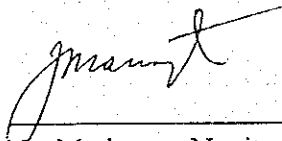
- (2) DGWRD requested that the Study Team should report the progress of dam design to the Dam Safety Committee from time to time.

The study Team promised to have a meeting on this matter with the Dam Safety Committee at an early time.

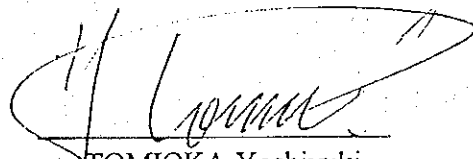
- (3) Regarding the outlet pipes, the question was made why two branched pipes are designed to be pipes with different diameter.

The Study Team replied that the detailed explanation will be made in the next report.

Jakarta, October 8, 1999



Ir. Marhuarar Napitupulu Dipl. H.E  
Director of Technical Guidance,  
Directorate General  
Of Water Resources Development  
Ministry of Public Works



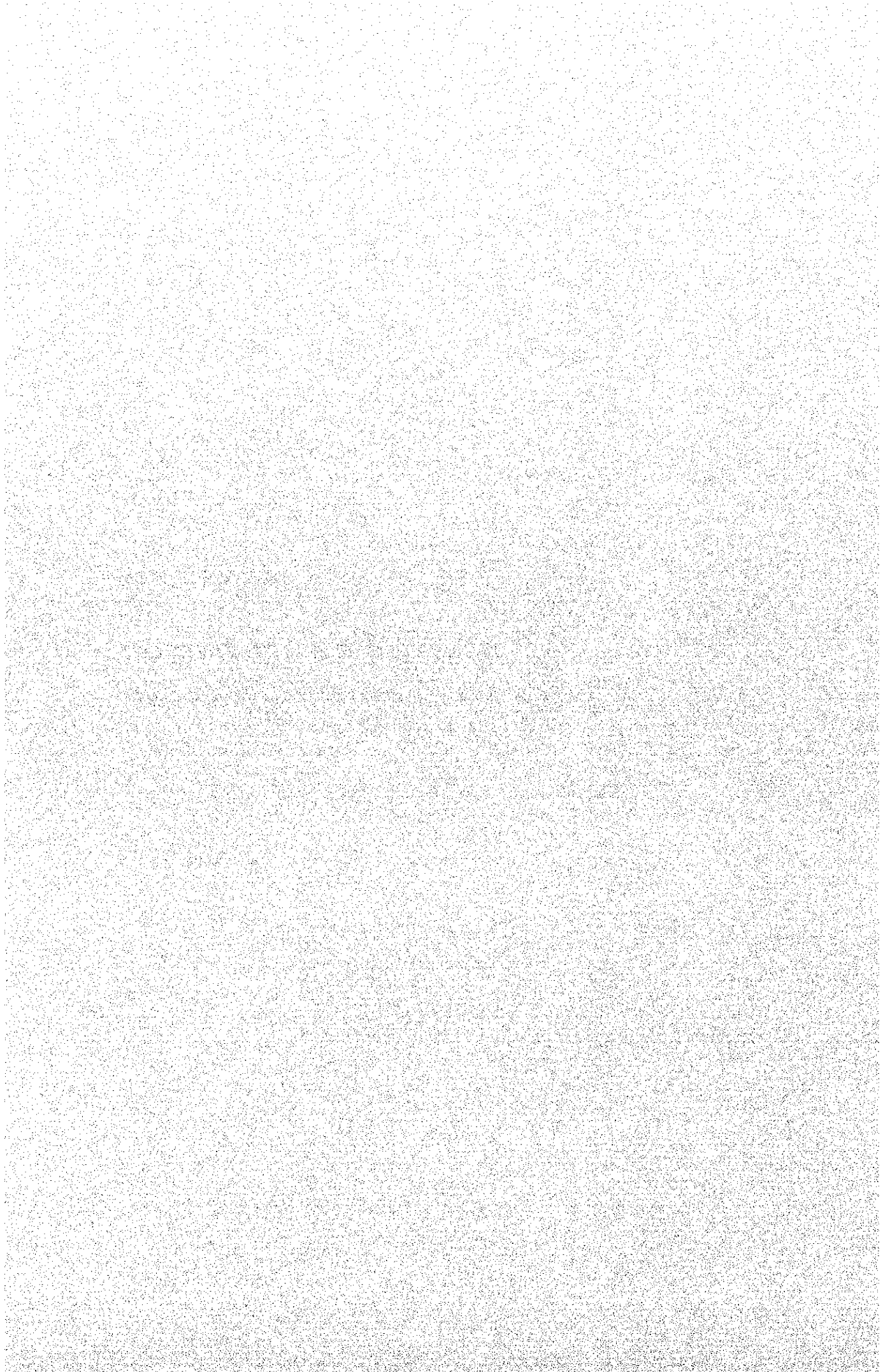
TOMIOKA Yoshiyuki  
Team Leader  
JICA Study Team

## LIST OF ATTENDANTS

Name	Position
<u>Indonesian Side</u>	
DGWRD	
1. Ir. Satriyo Untung	Sub-Director of Rivers, Directorate of Technical Guidance
2. Ir. Dicky Supodo Dipl. H.E	Section Head of Large Structure in Central Region, Directorate of Technical Guidance
3. Ir. Mestika Djoeachir Dipl.HE	Chief for Planing and Design, River Basin Development, Jratunseluna Project
4. Ir. Setyadi	Sub-Director of Directorate of Construction and Development, Central Region of Indonesia
5. Ir. Agus Purwadi	Water Resources Development Service, Central Java Province
6. Sugeng M.E	Chief Counter Part, Indah Karya
7. Maribat Nainggolan	Staff, of Dit. BPP, Sub-dit. PU
8. P. Gultom	Staff of Dit. BPP, Sub-dit. PU
DGHS	
9. Ir. Andi Zainal	Staff of Sub Directorate of Construction Guidance
10. Ir. Dwityo A. Soeranto	Staff of Sub Directorate of Environmental Sanitation, Directorate of Technical Development
11. Ir. Aris Hudijono	Staff of Directorate of Technical Development
<u>JICA Study Team</u>	
1. TOMIOKA Yoshiyuki	Team Leader
2. FURUTAGUCHI Masashi	Assistant Team Leader/River Planner/Facility Design
3. YAJIMA Makoto	Organization & Institute Specialist
<u>JICA Expert</u>	
1. ISHIZAKA Fumihiko	JICA Expert on Water Resources Planning and Management

**ANNEX 11**

**NINETIES OF MEETING ON  
INTERIM REPORT(4), SEMARANG**



Minute of Explanation Meeting  
for Interim Report (4)  
on  
The Detailed Design  
of  
Flood Control, Urban Drainage and Water Resources Development in Semarang  
in the Republic of Indonesia

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**Date :** October 13, 1999

**Place :** Conference Room of Kantor Wilayah PU Jawa Tengah  
Jl. Gubernur Budiono, Semarang

**Attendees :** Please refer to the attached sheet.

**Minutes :**

An explanation meeting regarding the captioned subject was held among Indonesian Side comprising of Kantor Wilayah PU, Jratunseluna Project Office, DINAS PU Pengairan, Semarang City and JICA Study Team. The meeting was called to order at 9:30 with a opening address by Mr. Sugito Prayitno, Ka-Kanwil of PU Central Jawa Province, and was chaired by Mr. Bambang Pramono, Project Manager of Jratunseluna.

First, the contents of the detailed design of West Floodway/Garang River Improvement were presented to the Indonesian Side by Mr. TOMIOKA, Leader of JICA Study Team. Then, the discussion was made in the form of question and answer. Finally, the progress of works was reported in terms of the detailed design of both components of Construction of Jatibarang Multi-purpose Dam and Urban Drainage System Improvement.

All the contents of the report were basically understood and accepted by the Indonesian Side. The main points discussed and confirmed in the meeting are summarized below.

**West Floodway/Garang River Improvement**

(1) Mr. Tasambar Mochtar, Kepala Dinas PU Pengairan, reported that he got the following information from the agencies concerns.

(a) According to PDAM, no additional capacity of water will be required up to 2005.

- (b) Regarding the reclamation in the coastal area, some land developers indicate that they don't want to use the excavated soil of the river channel such as Semarang River and West Floodway, because the materials in the rivers are contaminated.
- (c) PERUMKA has a plan to double-track the existing single track. In raising and shifting the railway bridge on West Floodway channel, what should be done for handling this matter.

Mr. TOMIOKA of the Study Team explained as follows:

- (a) Shortage of water in Semarang is an obvious fact, and developing new water resources by constructing Jatibarang Dam will be essential and urgent to meet the increasing water demand in the future. In addition, land subsidence of the low-lying area in Semarang City is continuing presently and the situation becomes worse year after year. The main cause of land subsidence is considered as a result of excessive pump up of ground water in the city. To prevent further land subsidence, change of water source from ground water to river water is indispensable. In that sense, Jatibarang Dam should be constructed urgently to supply water to Semarang City. To confirm the current policy of water supply, the Study Team is ready to discuss with PDAM.
- (b) Regarding the spoil bank area, we will not specify the location in the specification for construction. The contractor will be the one who decides where to dump the excavated materials. The coastal area in which the land reclamation is planned could be the most possible site as a spoil bank.
- (c) Bridge raising was planned due to the flood control purpose. On the other hand, bridge construction for the double-tracking will be implemented for the purpose of transportation. Therefore, the construction works relating to the double-tracking should be handled by PERUMKA themselves. All design drawings of bridge raising prepared by the Study Team were already approved by PERUMKA Bandung.

Mrs. Mestika, Chief of Planning & Design of Jratunseluna Project Office, added to the answer of Mr. Tomioka.

- (a) At the meeting on 16 September, 1999 between Jratunseluna Project Office and PDAM Semarang, PDAM mentioned that they do not need additional water from the municipal spring from now up to 2005, however the western part of Semarang City still needs more water which should be supplied by Jatibarang Reservoir.
- (b) When WRD Service had a meeting with land developers including PT. Tanah Mas, the developers agreed to use the excavated soils which maybe include heavy metals, on condition that the soil should be improved to be harmless material by applying special

treatment method. The cost for soil treatment is included in the unit price of construction.

- (c) Concerning the raising of Railway bridge on West Floodway, a joint cooperation between PERUMKA and Jratunseluna Project Office on behalf of WRD Service has been signed for the smooth implementation of the Project.
- (2) The following questions were asked by Mr. Supangat, Head of the Section of River and Swamp, Dinas PU Pengairan. And, the Study Team replied as follows:

- (a) A question regarding the type of temporary gate for Simongan Weir and its installation method.

The temporary gate is composed of H-shape steel posts and girder type steel panels. The steel posts are erected from the gate floor slab with the supports at the floor holes and the maintenance bridge. Steel panels are piled up between the steel posts forming a gate. Installation of the temporary gate is carried out from the maintenance bridge by using a truck crane.

- (b) Concerning the flood in 1993, most flood discharge in the downstream arose in the upper Garang River basin.

The probable peak discharge at Simongan Weir point was estimated based on the whole catchment areas of upper Garang, Kreo and Kripik rivers. The design scale of the West Floodway and Lower Garang River is 100-year return period with Jatibarang Dam. Without the dam, it is 25 year return period.

- (c) How do you treat the existing concrete sheet piles provided on the left bank in the downstream stretch from the Railway Bridge?

Most of the existing concrete sheet piles become an obstruction in the channel. Therefore, these will be removed or demolished. Instead, new wall type revetment will be provided in front of the existing ones.

#### Jatibarang Dam Construction

- (1) Mr. Tasambar Mochtar, Kepala Dinas PU Pengairan, pointed out that there is no big difference in seepage volume between the cases of with grout and without grout in the seepage analysis, and questioned what is the major reason why grouting is provided under the impervious zone.

Curtain grouting is designed to create a thin barrier in order to reduce leakage through the dam foundation, seepage erosion potential and uplift pressures. For the seepage analysis,

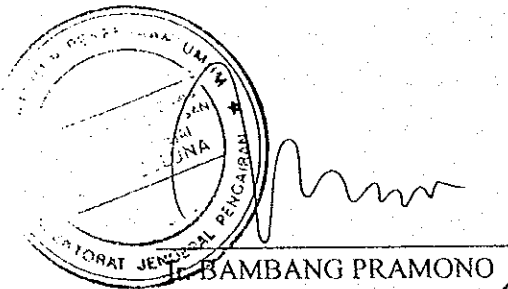
the permeability of the dam foundation was assumed based on the limited number of water pressure tests in drill holes. To ensure the uniformity of the rock mass permeability, curtain grouting is an essential measure. In addition, this foundation treatment is not so costly for its importance.

Others

Regarding the institutional matters and organization for operation and maintenance, further discussion shall be made between agencies concerns and the Study Team.

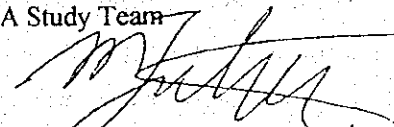
The meeting was closed at 12:30 with the closing address by Mr. Bambang Pramono.

Semarang, October 20, 1999



**BAMBANG PRAMONO**  
Project Manager  
JRATUNSELUNA River  
Development Project, Semarang  
Ministry of Public Works

Mr. TOMIOKA Yoshiyuki  
Team Leader  
JICA Study Team

For   
FURUTAGUCHI Masashi



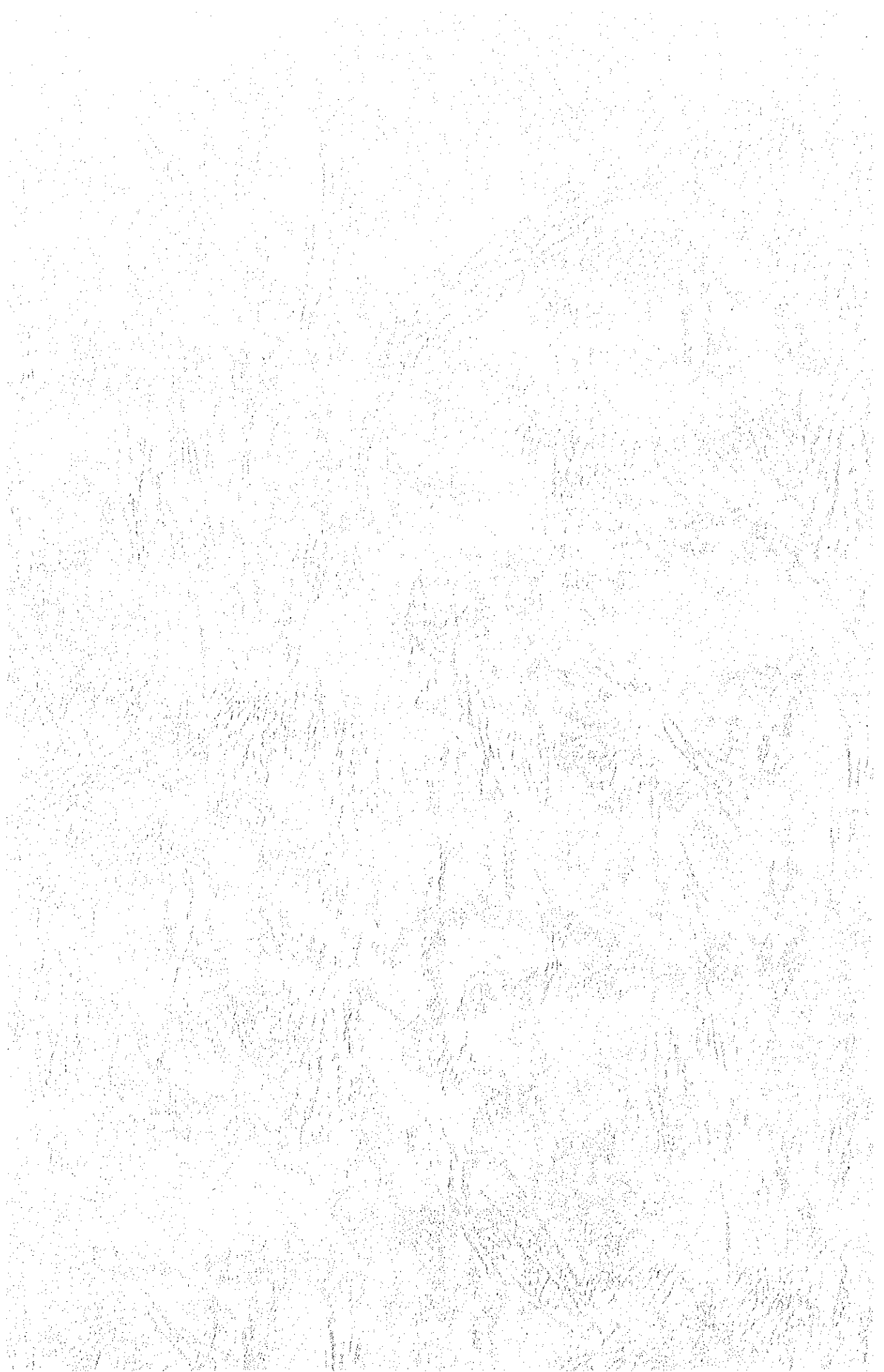
# DAFTAR HADIR

ACARA : SEMINAR  
 HARI, TGL. : RABU, 13-10-2010  
 TEMPAT : KANWIL PU.

No.	Nama	Instansi/Bagian/Bidang	Tanda Tangan
1	TOMIOKA Yoshinori	JICA Study Team	
2	FURUTAGUCHI Masashi	JICA Study Team	
3	MISHINA TAKAHIRO	"	
4	Yajima Makoto	"	
5	MIURA Mitsuo	"	
6	ISKANDAR ZULKARNAIN	PT INDAH KARYA	
7	Eri D	Departemen Teknik	
8	E. S. Mestika	"	
9	HARI WIDYAYANU	PDAM	
10	Billy Marwoto	P&AS Jember	
11	Hikim	Kanwil	
12	B. Pramono	Jember	
13	Mestika	Jember	
14	MUDZAKIR	DPU CK	
15	Sangji	Kanwil	
16	CODIRMAN	BAPPEDA KOTA SMO	
17	KINAR AMIN	BAPPEDA KOTA SMO	
18	M. Galan	Bappeda Prop	
19	Harso W	"	
20	Sudir Prihadi	PPU Air Prop	
21	Sumanjati	Manajemen Kanwil PU	
22	Supangas	Don. Pungira	
23	AM BASU NAWO	PT. TANAH MAS	
24	RIYO HARJO W	DPU KOTA	
25	FATZY	DPU Kota Sig	
26	SUDONO WATAYONO	"	
27	ANI PRASETYO	DPU PENGAIRAN JEMBER	
28	Tasambar M	"	
29	NOOR KHUS	PT KAI DPO 4 S	
30	AZMAN	PT KAI DPO 4 S	









JICA