



MINISTRY OF PUBLIC WORKS AND ELECTRIC POWER
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
DIRECTORATE OF IRRIGATION
AND PROSIDA

JRAGUNG DAM

MULTI - PURPOSE IRRIGATION FLOOD CONTROL
HYDROELECTRIC AND MUNICIPAL
AND INDUSTRIAL WATER SUPPLY PROJECT

MONTHLY PROGRESS REPORT

No. 20

OCTOBER 1978

SUBMITTED BY :

ENGINEERING CONSULTANTS, INC.

Denver, Co., USA -- Semarang, Indonesia



MINISTRY OF PUBLIC WORKS AND ELECTRIC POWER
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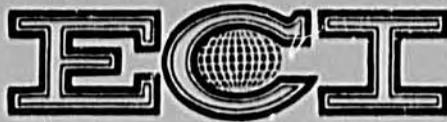
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ENGINEERING CONSULTANTS, INC.

CABLE ADDRESS
ECISEMARANG
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INDONESIA
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JRAGUNG DAM PROJECT
P.O. BOX 220
SEMARANG
CENTRAL JAVA
INDONESIA

November 15, 1978

Director General of
Water Resources Development
Ministry of Public Works
Jl. Pattimura 20/7
Kebayoran Baru
Jakarta Selatan

Our file: 1196/MR/20
403/78

Attention: Ir. Oesman Djojoadinoto
Director Irrigation

Subject : Monthly Progress
Report No. 20.

Dear Sir:

We submit herewith fifteen (15) copies of the Monthly Progress Report No. 20 for the month of October, 1978. The report is prepared in pursuance of Section 10.15 of Contract No. KAB. 9/3/12 between the Directorate General of Water Resources Development and the Engineering Consultants, Inc. for providing engineering services for the design of Jragung Dam Project. The draft of the report was shown to the Jragung Dam Project Management at Semarang before its printing.

Your comments, if any, on the contents of the report are respectfully requested.

cc. U.S. AID Jakarta
(Attention: Mr. P. Thorn)
with eight (8) copies of
the report.
General Manager PROSIDA
Ten (10) copies
Project Manager
Jratunseluna Basin Project
ECI Denver (SD 322)
ECI Semarang

Very truly yours,
Engineering Consultants, Inc.

Saeed A. Rana
Saeed A. Rana
Resident Manager

SAR/ m.

JRAGUNG DAM PROJECT

MONTHLY
PROGRESS REPORT
NO. 20

PERIOD

OCTOBER 1978

CONTRACT NO. KAB. 9/3/12
U.S. AID LOAN NO. 497 - T - 040

ENGINEERING CONSULTANTS, INC.
DENVER, COLORADO SEMARANG
U.S.A. INDONESIA

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SECTION I

GENERAL

This report has been prepared in pursuance of Section 10.15 of Contract No. KAB. 9/3/12 dated March 15, 1977 between the Directorate General of Water Resources Development of the Ministry of Public Works and Engineering Consultants, Inc. for consulting services for the Jragung Dam Project. The design job is being financed by the United States of America acting through the Agency for International Development for which a loan No. 497-T-040 dated July 28, 1978 was obtained by the Government of Indonesia.

During the period under report, the Project was visited by Messrs. Fred Trylston, Walter McAleer and Paul Thorn of U.S. AID, Mr. R.E. Mathe, President of ECI and by Governor Soepardjo of the province of Central Java. The final analysis of the Jragung reservoir operation studies and the project economics were completed and a report has been prepared. On the basis of the technical and economic feasibility studies, the normal maximum reservoir level at Jragung has been fixed at elevation 131.0. The corresponding crest level of the dam will be at elevation 135.30. The design of the main dam and of the appurtenant structures progressed satisfactorily.

The events which took place, the actions that were initiated or completed and the points pertinent to the project design including those mentioned above are described in the following.

1. Mr. Fred Trylston of U.S. AID Washington DC accompanied by Messrs. Walter McAleer and Paul Thorn of U.S. AID Jakarta visited the Consultant's office at Semarang on October 13. They were given a briefing on the Project design work and other related matters. A field visit to the damsite was made by Messrs. Trylston and Thorn accompanied by Mr. Rana

of ECI and Mr. Maryono Bony of the Jratunseluna Basin Project.

The Project was visited on October 29-30 by Mr. R.E. Mathe, the President of ECI. In addition to discussions on the Project matters held with the Ministry authorities and U.S. AID during his stay at Jakarta, a meeting was held with the authorities of the Jratunseluna Basin Development Project at Semarang on October 30. In that meeting all aspects of the Consultant's job on the design of the Jragung Dam were discussed.

On October 31, Governor Soepardjo of Central Java visited the damsite and the project field office. Various aspects of the Project in general, and the problem of reservoir sedimentation in particular, were explained to him. He agreed that actions should be taken to improve the existing water and land management practices in the upper watershed of Jragung so that excessive erosion in the watershed leading to sedimentation in the Jragung reservoir would be controlled. In that connection he decided that the matter would be given priority and would be discussed at the provincial governmental level during the next meeting concerning the implementation of the greening program in the province.

2. The mapping of the damsite and of all the appurtenant structures is complete. The secondary mapping work and other miscellaneous structures progressed on schedule.

3. The geological field investigation work is complete. More results of the foundation material testing currently being done in North America have been received. Those results are being incorporated in the final report on the project geology.

4. The revision to the alignment of the River Diversion Works was completed and the final design and specification drawings have been submitted to the Proyek. The drafting of the construction drawings is expected to be completed by the end of November.

The final design and specification drawings of the Tuntang Diversion Works have almost been completed. The final drafting of these drawings will be completed by the end of November.

The model testing for the Jragung Spillway currently in progress in the DPMA Laboratory at Bandung is now in the final stage of completion. The study is presently concentrated on the shape and the size of the flip, sufficient data from which have already been collected. It is expected that the final results of model testing will be available by the end of the next month. The design and specification drawings of the structure will be completed by the middle of December. The testing of model was observed by the U.S. AID visiting team on October 4.

5. During the period when the final material testing results for the design of the dam were being obtained and the slope stability analyses were being carried out in the Consultant's Denver office, design effort at Semarang was concentrated on the reservoir rim stability and the dikes on the sides of the spillway. The work in that area has already been completed. More results of material and foundation testing for the dam have become available and a material testing report has been prepared. The slope stability analyses of the dam on various alignments are being conducted and design of the embankment is being optimized. A final meeting of the Consultant's dam design specialists is scheduled to be held at Semarang in the last week of November and the first week of December. During that time the design of the main embankment will be finalized.

A report prepared by Caterpillar, at the Consultant's request, on the suitability of the material in Penawangan borrow area shows that the material can be used in the main dam embankment. That material is now being considered in the final design section of the dam.

Detailed reports of progress achieved in the design of various components of the Project are given in Sections IV-A and IV-B of this report.

6. As requested by the Proyek, an other draft of contract documents in the form following that which was prepared by PROSIDA and approved by IBRD has been submitted by the Consultant. This draft supersedes the draft of the documents submitted in February 1978. The drafts of the technical specifications and other contract documents for two main electrical contracts have also been submitted to the concerned agencies. The PLN authorities have been requested by the Proyek to review those documents.

A detailed report on the preparation of contract documents is given in Section IV-C of this report.

7. The operation studies for the Jragung reservoir have been completed. The results of optimization suggest that the maximum operation level of the reservoir should be at elevation 131. The maximum surcharge elevation under PMP flood conditions, for spillway crest at elevation 131.00, will be 134.4. Accordingly, it has been decided to keep the crest of the dam at elevation 135.30.

The results of the reservoir operation and the economic analysis are being reported separately in detail. However, a summary of those results is given in the following.

- a. The Project including the hydropower component will yield an Internal Rate of Return (IRR) of 13.2 percent and a benefit-cost ratio (B/C) of 1.38 at 10 percent rate of interest. If the hydro-power component is excluded from the Project, the IRR and the B/C ratio will be 13.44 percent and 1.43, respectively.
- b. The results of sensitivity testing of the overall Project economics including hydropower show that:
 - (1) If the irrigation benefits are reduced by 25 percent from those provided in the analysis, the IRR will be 11.3 percent, and

- (ii) if the Project costs go up by 10 percent, the IRR will be 12.2 percent.

The detailed report on this subject is expected to be issued by the Consultant in the first week of November.

8. It was stated in the preceding quarterly progress report that although the Consultant had been making every effort to finish the entire design job within the manpower and the time schedule given in the Contract, yet, due to additional work which the Consultant had to perform, it appeared that the total estimated contract dollar costs might be exceeded and extension of contract period might become necessary. A request has already been made to the Ministry for extending the time limit in the contract for submitting the estimates of additional costs and the needed extension of time. A report on this subject will be submitted before the middle of December.

9. During the period under report, the Consultant's economist, Mr. Berger was on TDY assignment at Semarang for a period of about one week to work on the economic analysis of the project. An other visit by him is scheduled during the next month to finalize the project economics.

The schedules of the expatriate personnel of the Consultant are given in Section II of the Report.

10. The reimbursable Dollar expenditure up to the end of September amounted to \$ 1,161,290.88. As of the end of October, the reimbursable Rupiah expenditure amounted to Rp. 32,927,240.-

A detailed description of Rupiah and Dollar expenditures is given in Section VII of this Report.

SECTION II
PERSONNEL

A. EXPATRIATE

1. At Semarang on September 30, 1978

Saeed A. Rana	Resident Manager
Carlos A. Borinelli	Materials and Dam Engineer
Robert G. McLaughlin	Structural Engineer
Jeffery P. Frey	Specification Engineer

2. Arrived in Semarang during October 1978

Mr. R.E. Mathe	President ECI
Mr. Robert Berger	Economist

3. Departed from Semarang during October 1978

Mr. R.E. Mathe	President ECI
Mr. Robert Berger	Economist

4. At Semarang on November 1, 1978

Saeed A. Rana	Resident Manager
Carlos A. Borinelli	Materials and Dam Engineer
Robert G. McLaughlin	Structural Engineer
Jeffery P. Frey	Specification Engineer

B. COUNTERPART

1. Assigned Full Time as of October 31, 1978

Mr. Maryono Bony M.E.
Ir. Wisnu Suharto
Ir. Sudaryanto Hs.
Drs. Redjiono
Triyono B.E. (Assistant Counterpart)
Sutardjo B.E. (Assistant Counterpart)
Ir. Haryono Wardi
Ir. Sudarno
Ir. Supriyo
Ir. Rustiyanti (Assistant Counterpart)
Eddy Arifin (Assistant Counterpart)
Buang Sukardjono (Assistant Counterpart)
Ir. Muhammad Ali
Ir. Tri Hardono
Djasriansyah Aht.
Harris BME
Ir. Bambang Sujono
Nursalim B.Sc.

C. TECHNICAL

During the period under report, the following technical personnel provided by the Proyek worked with the Consultant:

Mr. Mukiyat	Draftsman
Mr. Barleyanto	Draftsman
Mr. Bambang Prayitno	Draftsman
Mr. Aris Mudjianto	Draftsman
Mr. Baryono	Geology Field Supervision

D. ADMINISTRATIVE

On-Hand as of November 1, 1978

Mrs. Tan Ik Goen	Interpreter I
Miss Dra. Djoa Sioe Lan	Interpreter II
Miss Dra. L. Murtianingsih	Secretary
Miss Sri Anon	Clerk/Typist
Mr. Suhandi	Messenger

Dates of arrival and departure of the Consultant's resident staff, TDY Staff, the ministry personnel and the direct hire administrative personnel are given in Annexures I, II and III, respectively.

SECTION III
MEETINGS CONFERENCES AND MAJOR EVENTS

<u>Date</u>	<u>Place</u>	<u>Event</u>	<u>Participation</u>	<u>Organization</u>
October 4-5, 1978	Bandung	Spillway Model Testing	Mr. F. Trylston Mr. W. McAleer Mr. P. Thorn Mr. Rana Mr. Maryono Ir. Memed Ir. Erman	U.S. AID ECI Jratunseluna DPMA
October 13, 1978	Semarang	Discussion Project Design and Progress. Inspection damsite.	Mr. F. Trylston Mr. W. McAleer Mr. P. Thorn Resident Staff at Semarang	U.S. AID ECI
October 14, 1978	Semarang	Discussion Project Matters	Ir. Bambang Mr. Rana	Jratunseluna ECI
October 16, 1978	Semarang	Discussion Assignments Counterparts	Ir. Gayo Mr. Maryono Mr. Rana	Jratunseluna ECI
October 20, 1978	Jragung Damsite	Reconnaissance Tuntang Diversion Intake Area	Rana and Frey	ECI
October 26, 1978	Jakarta	Discussion Project Matters	Ir. Soewasono Mr. A. Grayson Mr. P. Thorn Mr. R.E. Mathe Mr. G.E. Rogers Mr. Rana	PROSIDA U.S. AID ECI
October 27, 1978	Jakarta	Discussion Project Matters and Finances	Mr. A. Grayson Mr. P. Thorn Mr. Rana	U.S. AID ECI
October 30, 1978	Semarang	Discussion Project Matters	Ir. Martopo Ir. Bambang Mr. Maryono	Jratunseluna

<u>Date</u>	<u>Place</u>	<u>Event</u>	<u>Participation</u>	<u>Organization</u>
			Mr. R.E. Mathe Mr. G.E. Rogers Mr. Rana	ECI
October 31, 1978	Jragung Damsite	Inspection Jragung	Mr. Soepardjo and staff Mr. Martopo Mr. Takrim Mr. Maryono Mr. Rana	Governor of Central Java Jratunseluna ECI

In addition to the above mentioned events, regular field trip were made to the project area and the damsite by the Consultant's resident staff at Semarang.

SECTION IV

PROGRESS REPORT BY ACTIVITIES

A brief description of work being done in the major fields of activity on the Project was given in Section I. A detailed description of the work involved and the progress achieved during the period under report are given in the following.

A. Structural Design

The progress of the structural design work for the period under report is described hereunder according to the various structures involved. Most of the work effort was directed towards the Tuntang Diversion Works as this is scheduled to be completed during this period and the first part of the next period. Although all of the appurtenant structures have been designed, the work now is directed at turning the design sketches into contract document drawings with some checking work occurring along with this. Three additional counterparts have been assigned to this area of structural design and it is hoped that with their help work will continue to progress on schedule.

Tuntang Diversion

Most of the work effort of the period under report has been spent on this appurtenant structure. The work of turning the design sketches into specification drawings involves the checking and layout of existing designs. Ten contract document drawings will result from this work when completed. About half of these drawings are presently complete while the other half are in various stages of completion. Some time this month was also spent investigating the possibility of raising the Tuntang Works by about one and a half meters. If this were to be actualized, it would not affect the general scheme of the specification drawings, but would be shown in

revisions at the time of preparation of the construction drawings; the cost would not be much affected, since the entire structure would be raised.

Spillway

Some time has also been spent in checking the design and layout of the spillway structure as the specification drawings for this structure are scheduled to be completed by the end of the next period. There will be approximately ten specification drawings required each of which will be layed out in a manner that it can be used as a contract document drawing. Also, the model testing in Bandung continues in order to ascertain the effects of raising the spillway crest from elevation 125.00 to elevation 131, on the flip bucket and the terminal end of the structure.

River Diversion

All the work on this structure including the preparation of construction drawings has been completed.

Power and Irrigation

No work was done in this area either, as most of the work is finished; there are about four drawings in which certain minor revisions have to be incorporated and these are scheduled to be completed during the next period.

B. Dam Design

The month of October was spent preparing the Material and Dam Design Report.

The following work was accomplished:

1. Materials: a. Preparation of all final boring logs for all the five borrow pits deep borings.

- b. Preparation of final 50 (fifty) geological cross sections for the five mentioned borrow pits.
- c. Preparation of all the soil testing data for the embankment materials final report.
- d. Final determination of the borrow pits embankment materials quantities for all the five borrow pit studies.
- e. In addition, Caterpillar provided their final report concerning their study of the Penawangan Borrow Pit. According to the seismic refraction study done by Caterpillar the Penawangan Agglomerate is rippable. The use of a D8k Caterpillar bulldozer would be required to rip the Penawangan Agglomerate.

2. Dam Design:
- a. Preparation of the final borrow logs for all the 49 deep borings accomplished in the damsite are in the final design stage.
 - b. Computation and tabulation of foundation permeability values from water pressure tests.
 - c. Evaluation and tabulation of piezometer data.
 - d. Design of left dike.
 - e. Design of dike located at the left end upstream of the spillway.
 - f. The final Soil Mechanics testing report including all the testing done overseas is under preparation.

C. Specifications

During the month of October, various contract documents were prepared and submitted to the concerned agencies for review, comment and approval. Full-size prints of the final River Diversion Works contract document drawings, signed by the Consultant, were submitted to the Jragung Proyek authorities for their approval and signature on behalf of the Directorate General of Water Resources Development. Appropriate revisions suggested

by them will be incorporated. The drawings will then be readied for reproduction and publication when required for the issuance of Bid and Contract Documents for the River Diversion Works Contract.

Draft volumes of the technical specifications portion of the following two electrical contracts were submitted by mid-October: "Furnish, Deliver and Install Power Plant Electrical Equipment" and "Furnish, Deliver and Install Switchyard and 20 KV Distribution Line". Complete sets of the contract document drawings, in full-size blueprints, were also provided. The draft volumes and drawings are intended for review by U.S. AID, PLN and the Proyek engineers. These draft documents supersede our earlier submittal entitled "Electrical Design Criteria and Specifications of Electrical Equipment for the Jragung Dam Project" of July 10, 1978.

The final draft of the general conditions portion of the Bid and Contract Documents for the River Diversion Works Contract was submitted to PROSIDA, Director Irrigation, U.S. AID and the Proyek in mid-October. The documents include "Part I, Bidding Form"; "Part II, General Conditions and Contract Agreement"; "Part V, Supplemental Conditions" and a separate volume, "General Information". Parts III and IV of the Bid and Contract Documents are "Technical Specifications" and "Contract Drawings", respectively, which have previously been submitted. The form in which the contract documents are now presented follows that which was approved by PROSIDA and the World Bank for the New Rentang Barrage and Appurtenant Works Contract.

SECTION V
PREPARATION OF REPORTS

The schedule of submittals and the current status of all the reports required to be prepared by the Consultant is stated in the following:

<u>Name of Report</u>	<u>Date Due</u>	<u>Status</u>	<u>Date Submitted</u>
1. Inception Report (draft)	May 15, 1977	Completed	May 12, 1977
2. Final Design Report (draft)	November 15, 1978		
3. Final Completion and Engineering Report on Construction Contracts	March 15, 1979		
4. Monthly Progress Reports	10th Day of the following month	Schedule being met	
5. Quarterly Progress Reports	20th Day of the following month	Schedule being met	
6. General Design Criteria Civil Works			July 8, 1977
7. Appendix I to (6) Dam and Dikes Design Criteria			August 1, 1977
8. Advance Notice of Intent to Invite Bids and Pre-qualification Instructions		Draft	January 25, 1978
Submitted Revised Draft			March 15, 1978
Submitted 130 copies		Final	June 1, 1978
9. Contract Documents River Diversion Works		Draft	February 23, 1978
Revised Bill of Quantities and Drawings			June 8, 1978
Revised Contract Documents as per PROSIDA-Advance Draft Copy			September 22, 1978

<u>Name of Report</u>	<u>Date Due</u>	<u>Status</u>	<u>Date Submitted</u>
Revised Contract Documents as per PROSIDA		Draft	October 19, 1978
Revised Drawings		Draft	October 3, 1978
10. Technical Specifications and Drawings Access Roads and Bridge		Draft	March 13, 1978
11. Drawings Irrigation and Power Tunnel and Powerhouse			June 14, 1978
12. Electrical Design Criteria and Specifications of Electrical Equipment		Draft	July 10, 1978
Technical Specifications and Drawings for Power Plant Electrical Equipment and Switchyard and 20 KV Transmission Line Contracts		Draft	October 13, 1978
13. Jragung Dam Project - Design Status Report			August 9, 1978
14. Jragung Dam Project - Upper Watershed Management Report		Draft	August 7, 1978

SECTION VI
PROBLEM AREAS

None.

SECTION VII

FINANCIAL

Dollar Accounts

Due to the reasons explained in monthly progress report No. 2, the Dollar accounts are being reported for the period up to the end of the month of September 1978. The expenditure to that date as well as the budget amounts are shown in Annexure IV. The percentage expenditure of the budget is 84.69.

Rupiah Accounts

Up to the end of the month under report, a total amount of Rp. 32,927,240.- was expended. This represents 46.52 percent of the total Rupiah reimbursable costs provided in the Contract. The corresponding percentage of the contract period elapsed is 77.08.

The summary of the Rupiah budget and costs is given in Annexure V.

Engineering Consultants, Inc.

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20

Period: Ending October 1978

Assignment of Resident and TDY Staff

<u>NAME</u>	<u>NATIONALITY</u>	<u>JOB TITLE</u>	<u>PROJECT ASSIGNMENT</u>		<u>MANMONTHS IN INDONESIA</u>	
			<u>ARRIVAL</u>	<u>DEPARTURE</u>	<u>SCHEDULED</u>	<u>ACTUAL</u>
1. Saeed A. Rana	Permanent Resident U.S.A.	Resident Manager	March 16, 1977		24	19.5
2. James E. Rollins	U.S.A.	Geologist	March 16, 1977	June 30, 1977	3.5	3.5
3. Robert McLaughlin	U.S.A.	Structural Design	April 5, 1977		23	18.9
4. Carlos Borinelli	Permanent Resident U.S.A.	Materials and Dam Design Engineer	June 4, 1977		18	16.9
5. James E. Pyno	U.S.A.	Resident Geologist	September 1, 1977	May 1, 1978	8.5	
			May 21, 1978	June 4, 1978		8.5
6. Jeffery P. Frey	U.S.A.	Specifications Engineer	December 18, 1978		12	10.45
7. Glen Trowbridge	U.S.A.	Design Engineer	February 7, 1978	July 20, 1978	18	5.40
8. James Hoge	U.S.A.	Design Engineer	March 23, 1978	June 20, 1978		3.00

Engineering Consultants, Inc.

JRAGUNG DAM PROJECTMonthly Progress Report No. 20
Period: Ending October 1978Assignment of Resident and TDY Staff

<u>NAME</u>	<u>NATIONALITY</u>	<u>JOB TITLE</u>	<u>PROJECT ASSIGNMENT</u>		<u>MANMONTHS IN INDONESIA</u>	
			<u>ARRIVAL</u>	<u>DEPARTURE</u>	<u>SCHEDULED</u>	<u>ACTUAL</u>
9. E.B. Bartel	U.S.A.	Design Engineer	November 12, 1977	December 20, 1977		
			May 4, 1978	May 13, 1978		
			July 8, 1978	July 14, 1978		1.83
10. Cecil M. Langford	U.S.A.	Project Sponsor	August 6, 1977	August 12, 1977	1.5	
			January 23, 1978	January 31, 1978		0.52
11. M.K. Kuehl	U.S.A.	Chief Engineer	June 27, 1977	July 2, 1977	1.5	
			February 4, 1978	February 12, 1978		
			July 25, 1978	August 16, 1978		1.25
12. Paul Otter	U.S.A.	Project Engineer	March 16, 1977	March 18, 1977	1.5	
			March 1, 1978	March 4, 1978		0.23

Engineering Consultants, Inc.

JRAGUNG DAM PROJECTMonthly Progress Report No. 20
Period: Ending October 1978Assignment of Resident and TDY Staff

<u>NAME</u>	<u>NATIONALITY</u>	<u>JOB TITLE</u>	<u>PROJECT ASSIGNMENT</u>		<u>MANMONTHS IN INDONESIA</u>	
			<u>ARRIVAL</u>	<u>DEPARTURE</u>	<u>SCHEDULED</u>	<u>ACTUAL</u>
13. Peter Strass	U.S.A.	Chief Geologist	March 16, 1977	March 18, 1977	4	
			June 13, 1977	July 1, 1977		
			February 4, 1978	February 7, 1978		
			May 21, 1978	June 4, 1978		
			September 25, 1978	September 28, 1978		
14. William Wenger	U.S.A.	Electrical Engineer	March 16, 1977	March 21, 1977	4	0.50
15. Ralph Goodrich	U.S.A.	Electrical Engineer	January 20, 1978	February 15, 1978		0.90
16. Lawrence Boval	U.S.A.	Electrical Engineer	June 15, 1978	June 25, 1978		0.37
17. M.A. Steven	Canada	River Regime Sedi- ment Specialist	March 20, 1977	March 23, 1977	3	
			October 21, 1977	December 15, 1977		
			March 20, 1978	May 20, 1978		

Engineering Consultants, Inc.

JRAGUNG DAM PROJECT

Annexure I
(Continued)

Monthly Progress Report No. 20
Period: Ending October 1978

Assignment of Resident and TDY Staff

<u>NAME</u>	<u>NATIONALITY</u>	<u>JOB TITLE</u>	<u>PROJECT ASSIGNMENT</u>		<u>MANMONTHS IN INDONESIA</u>	
			<u>ARRIVAL</u>	<u>DEPARTURE</u>	<u>SCHEDULED</u>	<u>ACTUAL</u>
18. W. Stevens	U.S.A.	Surveyor	April 4, 1977	May 31, 1977	7.5	
			August 1, 1977	January 15, 1978		7.25
19. S.F. Hillis	Canada	Chief Materials	June 26, 1977	July 18, 1977	3	
22			February 2, 1978	February 12, 1978		
			July 23, 1978	August 3, 1978		1.55
20. Robert Campbell	U.S.A.	Assistant Chief Engineer	November 7, 1977	November 10, 1977		
			November 28, 1977	December 12, 1977		0.63
21. John Ismert	U.S.A.	Chief Mechanical	January 27, 1978	February 12, 1978	4	0.77
22. Dr. H.W. Burke	U.S.A.	Geologist Consultant	February 4, 1978	February 12, 1978		
			September 25, 1978	September 28, 1978		0.43
23. Mr. H.C. Fletcher	U.S.A.	Watershed Manage- ment	March 31, 1978	June 1, 1978	3	2.1

Annexure I
(Continued)

Engineering Consultants, Inc.

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20
Period: Ending October 1978

Assignment of Resident and TDY Staff

NAME	NATIONALITY	JOB TITLE	PROJECT ASSIGNMENT		MANMONTHS IN INDONESIA	
			ARRIVAL	DEPARTURE	SCHEDULED	ACTUAL
24. Mr. R.L. Berger	U.S.A.	Economist	October 18, 1978	October 23, 1978		0.2

JRAGUNG DAM PROJECT

Engineering Consultants, Inc.

Monthly Progress Report No. 20
Period: Ending October 1978Assignment of Counterparts and Technical Personnel

<u>NAME</u>	<u>EXPERTISE</u>	<u>WORK ASSIGNMENT</u>	<u>PROJECT ASSIGNMENT DATES</u>		<u>MAN MONTHS WORKED</u>
			<u>STARTING</u>	<u>ENDING</u>	
<u>Counterparts</u>					
1. Ir. Martopo	1. Project Management 2. Project Planning	November 1, 1975	March 16, 1977		19.5
2. Ir. Bambang Soedjono	1. Project Management 2. Project Planning	November 1, 1975	March 16, 1977		19.5
3. Maryono Bony M.E.	1. Project Planning 2. Dam Design Engineer	November 1, 1975	March 16, 1977		19.5
4. Ir. Wisnu Suharto	Hydraulic Structures	November 1, 1975	March 16, 1977		19.5
5. Ir. Soedaryanto Hs.	Geologist	January 1, 1977	March 16, 1977		19.5
6. Drs. Redjiono	Hydrologist	January 1, 1977	March 16, 1977		19.5
7. Susanto B.Sc	Geologist	November 1, 1975	March 16, 1977	March 31, 1977	0.5
8. Ir. Sudarno	Civil Structures Engineer	March 16, 1977	March 16, 1977		19.5
9. Ir. Muhammad Ali	1. Dam Design Engineer 2. Soil Mechanics/Material	January 1, 1976	March 16, 1977		19.5

Engineering Consultants, Inc.

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20
Period: Ending October 1978

Assignment of Counterparts and Technical Personnel

<u>NAME</u>	<u>EXPERTISE</u>	<u>WORK ASSIGNMENT</u>	<u>PROJECT ASSIGNMENT DATES</u>		<u>MAN MONTHS WORKED</u>
			<u>STARTING</u>	<u>ENDING</u>	
10. Djasriansyah Aht	Electrical Engineer	March 16, 1977	March 16, 1977		19.5 (Part Time)
11. Ir. Hartopo	Hydro Power Engineer	March 16, 1977	March 16, 1977		19.5 (Part Time)
12. Harris BME	Mechanical Engineer	March 16, 1977	March 16, 1977		19.5 (Part Time)
13. Ir. Supriyo	Specification Engineer	September 16, 1977	September 16, 1977	October 18, 1978	13.0
<u>Assistant Counterpart</u>					
1. Triyono BE	Geologist	June 1, 1976	March 16, 1977		19.5
2. Sutardjo BE	Geologist	December 1, 1976	March 16, 1977		19.5
3. Bambang Gunadi B.Sc	Hydrologist	January 1, 1976	March 16, 1977	November 1, 1977	7.5

Engineering Consultants, Inc.

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20
Period: Ending October 1978

Assignment of Counterparts and Technical Personnel

<u>NAME</u>	<u>EXPERTISE</u>	<u>WORK ASSIGNMENT</u>	<u>PROJECT ASSIGNMENT DATES</u>		<u>MAN MONTHS</u>
			<u>STARTING</u>	<u>ENDING</u>	<u>WORKED</u>
4. Ir. Tri Hardono	Dam Design Engineer	March 16, 1977	March 16, 1977		19.5
5. Ir. Rustiyanti	Hydraulics Structures	March 16, 1977	March 16, 1977		19.5
6. Buang Sukardjono	Hydrologist	January 1, 1977	March 16, 1977		19.5
20 7. Edy Arifin Aht	Civil Structures	April 1, 1976	March 16, 1977		19.5
8. Ir. Diah Kusumawati	Hydro Power Engineer	December 1, 1976	June 30, 1978	September 30, 1978	3.0
<u>Draftsmen</u>					
1. Mukiyat	Draftsman	March 1, 1976	March 16, 1977		19.5
2. S.V. Barleyanto	Draftsman	November 1, 1975	March 16, 1977		19.5
3. Bambang Prayitno	Draftsman	February 1, 1976	March 16, 1977		19.5
4. Aris Mudjianto	Draftsman	December 16, 1977	December 16, 1977		10.5

Annexure III

JRAGUNG DAM PROJECT

Engineering Consultants, Inc.

Monthly Progress Report No. 20

Period: Ending October 1978

Direct-hire Indonesian Personnel

<u>NAME</u>	<u>POSITION</u>	<u>PERIOD OF SERVICE</u>		<u>MAN/WOMAN MONTHS</u>	
		<u>DATE STARTED</u>	<u>DATE ENDED</u>	<u>PROVIDED</u>	<u>SPENT</u>
1. Mrs. Tan Ik Goen	Interpreter/Translator I	March 16, 1977		24	19.5
2. Miss Dra. Djoa Sioe Lan	Interpreter/Translator II	May 16, 1977		24	17.5
3. Mrs. Ariati Haryono	Secretary I	March 16, 1977	July 31, 1977	24	4.5
4. Miss Dra. L. Murtianingsih	Clerk/Typist	March 16, 1977	April 30, 1977	24	1.5
	Secretary	May 1, 1977			18.0
5. Mrs. Sri Moenasih Soetikno	Clerk/Typist	March 16, 1977	July 31, 1977	24	4.5
	Secretary	August 1, 1977	September 20, 1978	19.5	14.0
6. Miss Sri Anon	Clerk/Typist	March 16, 1977		24	19.5
7. Mr. Suhandi	Messenger	March 16, 1977		24	19.5

Annexure IV

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20
 Period: Ending September 1978

Summary of U.S. Dollar Expenditures

<u>COST ITEMS</u>	<u>AMOUNT AVAILABLE</u> US \$	<u>EXPENDITURE</u>		<u>PERCENTAGE</u>	
		<u>PRIOR</u>	<u>DURING PERIOD</u>	<u>UP TO DATE</u>	<u>EXPENDITURE</u> <u>TIME</u> <u>ELAPSED</u>
1. Resident Staff Base Salaries	181,360.00	127,948.98	7,296	135,244.98	74.57 77.08
2. Overseas Differential	45,340.00	34,935.80	1,824	36,759.80	68.21
3. Overhead Resident Staff (75% base salaries)	136,020.00	96,070.13	5,472	101,542.13	74.65
4. TDY & Denver Staff Salaries Including Overseas Differential	215,250.00	222,609.88	5,589.37	228,199.25*	110.40
5. Overhead TDY & Denver (95% base salaries)	196,365.00	211,479.35	5,309.90	216,789.25*	110.40
6. Fixed Fee	138,000.00	96,025	5,175	101,200	73.33
7. Travel and Per Diem	73,120.00	43,010.20	909	43,919.20	60.06
8. Transportation (Relocation)	12,000.00	11,150	-	11,150	92.92
9. Other Direct Costs & Miscellaneous Expenses	53,800.00	59,573.82	3,599.66	63,173.50	117.42

Annexure IV

Continued

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20
 Period: Ending September 1978

<u>COST ITEMS</u>	<u>AMOUNT AVAILABLE</u> US \$	<u>EXPENDITURE</u>			<u>PERCENTAGE</u>	
		<u>PRIOR</u>	<u>DURING PERIOD</u> <u>REPORTED</u>	<u>UP TO DATE</u>	<u>EXPENDITURE</u>	<u>TIME</u> <u>ELAPSED</u>
10. Ministry Personnel	60,000.00	53,837.25	1,826	53,855.51	89.76	77.08
11. Special Purchases	190,000.00	143,314.49	-	143,314.49	75.43	
12. Contingencies	70,000.00	21,996.90	4,145.87	26,142.77	37.35	
Total Dollar Costs	1,371,255.00	1,121,951.82	39,339.06	1,161,290.88	84.69	77.08

* Parts of these amounts have to be adjusted
 against items 1, 2, 3 and 12.

JRAGUNG DAM PROJECT

Monthly progress Report No. 20

Period: Ending October 1978

Summary of Rupiah Expenses

<u>COST ITEMS</u>	<u>BUDGET ALLOCATION</u> (Rp.)	<u>EXPENDITURE</u>			<u>PERCENTAGE</u>	
		<u>PRIOR</u>	<u>PERIOD REPORTED</u>	<u>TO DATE</u>	<u>EXPENDITURE</u>	<u>TIME ELAPSED</u>
I. <u>PER DIEM</u>						
Jakarta	3,300,000.-	2,062,750	74,250	2,137,000	64.76	81.25
Bandung & Semarang	18,000,000.-	5,675,000	80,000	5,755,000	31.97	
Other	1,800,000.-	630,650	3,000	633,650	35.20	
Family	230,000.-	80,000	-	80,000	34.78	
Sub Total	23,330,000.-	8,448,400	157,250	8,605,650	36.89	
II. <u>OTHER DIRECT COSTS</u>						
Cable & Telephone	2,000,000.-	6,515* 1,176,883	67,215	1,250,613	62.53	
Postage	1,500,000.-	2,130* 476,530	36,870	515,530	34.37	
Reproduction & Printing	15,000,000.-	5,120,292	369,402	5,489,694	36.60	
In Country Transportation	2,700,000.-	6,500* 1,993,026	133,825	2,133,351	79.01	
Supplies & Materials	6,000,000.-	1,439,005	212,110	1,651,115	27.52	
Miscellaneous	6,800,000.-	5,224,450 - 5,219*	89,707	5,308,938	78.07	
Sub Total	34,000,000.-	15,440,112	909,129	16,349,241	48.09	81.25

JRAGUNG DAM PROJECT

Monthly Progress Report No. 20

Period: Ending October 1978

Summary of Rupiah Expenses

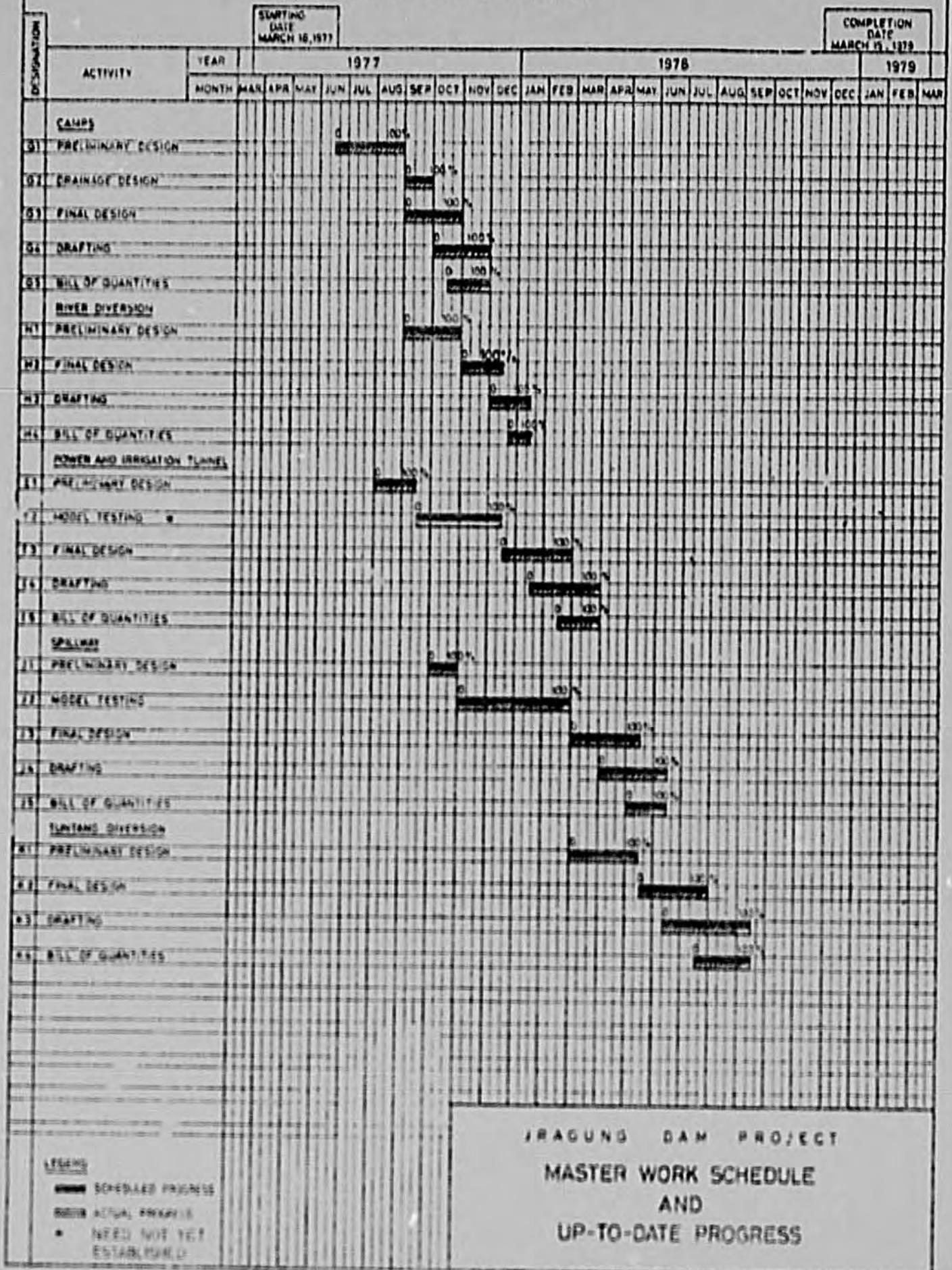
<u>COST ITEMS</u>	<u>BUDGET ALLOCATION</u> (Rp.)	<u>EXPENDITURE</u>			<u>PERCENTAGE</u>	
		<u>PRIOR</u>	<u>PERIOD REPORTED</u>	<u>TO DATE</u>	<u>EXPENDITURE</u>	<u>TIME ELAPSED</u>
<u>III. ADMINISTRATIVE PERSONNEL</u>						
Secretaries	3,610,500.-	2,479,164	107,887	2,587,051	71.65	81.25
Interpreters	6,017,500.-	3,271,712	209,128	3,480,840	57.85	
Clerks/Typists	2,402,000.-	1,551,519	82,060	1,633,579	68.01	
Messenger	373,500.-	214,752	16,053	230,805	61.80	
Severance Pay	1,037,500.-	50,000	-	50,000	4.82	
Sub Total	13,446,000.-	7,567,147	415,128	7,982,275	59.37	
Grand Total	70,776,000.-	31,455,659	1,481,507	32,937,166	46.54	81.25

SUMMARY OF REIMBURSEMENT

Rupiah Payments Received by Consultant from Ministry up to the end of Report Period	=	43,685,381.-
Rupiah Expenditure by Consultant Approved for Reimbursement	=	32,937,166.-
Balance	=	10,748,215.-

* Corrections made as per actual amounts approved for reimbursement.

JRAGUNG DAM PROJECT PROGRESS REPORT



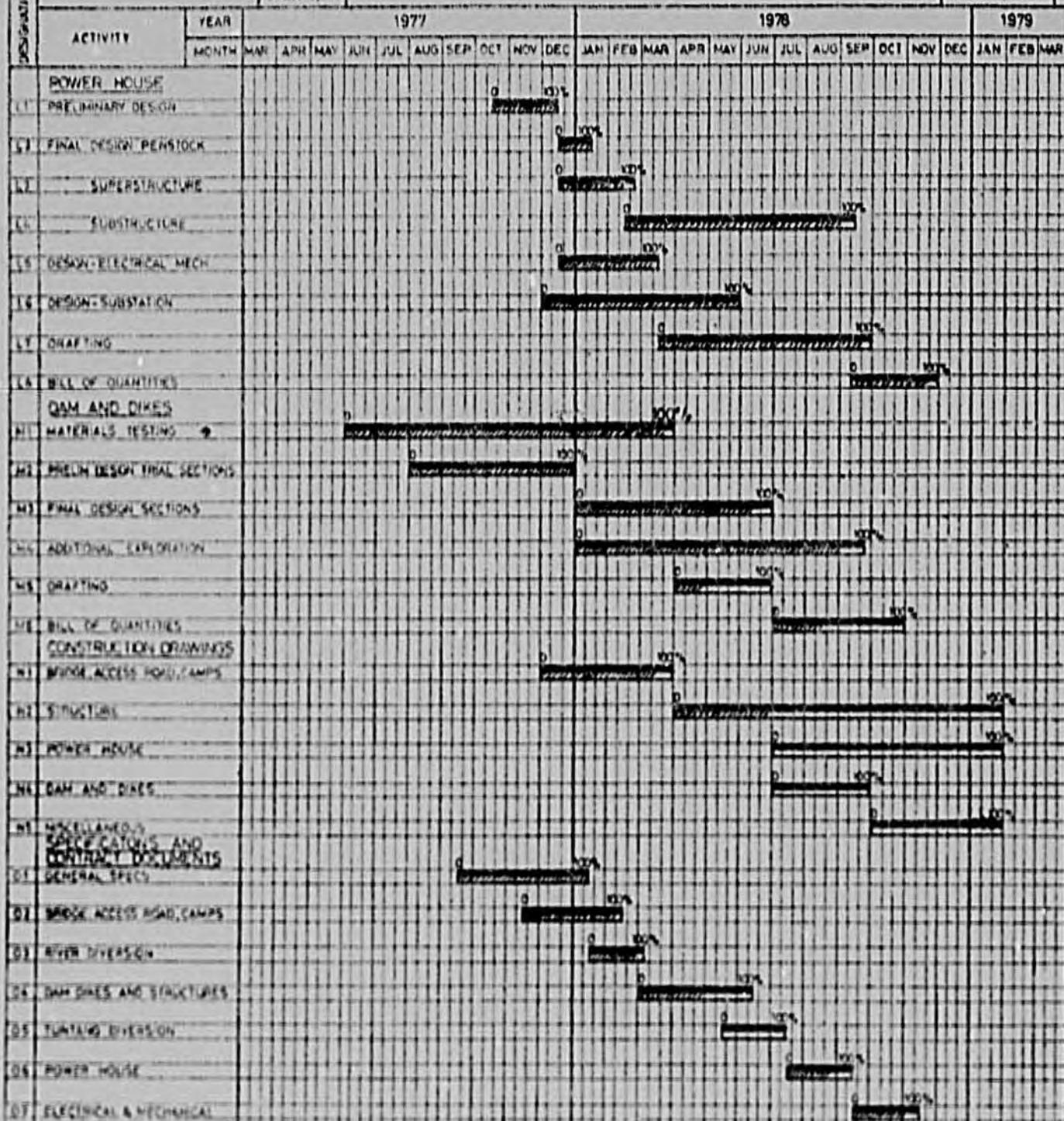
JRAGUNG DAM PROJECT
MASTER WORK SCHEDULE
AND
UP-TO-DATE PROGRESS

LEGEND
 SCHEDULED PROGRESS
 ACTUAL PROGRESS
 * NEED NOT YET ESTABLISHED

JRAGUNG DAM PROJECT PROGRESS REPORT

STARTING DATE
MARCH 10, 1977

COMPLETION DATE
MARCH 15, 1979



LEGEND
 ■■■■ SCHEDULED PROGRESS
 ■■■■ ACTUAL PROGRESS
 + TRIAXIAL TESTING NOT INCLUDED

JRAGUNG DAM PROJECT
 MASTER WORK SCHEDULE
 AND
 UP-TO-DATE PROGRESS

