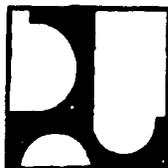


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REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL CIPTA KARYA
DIRECTORATE OF SANITARY ENGINEERING

41p.

CONTRACT FOR CONSULTANT SERVICES
FOR
SURAKARTA WATER SYSTEM
NO. 01/WS-S/1/AID/78
AID LOAN 497-U-044

MONTHLY PROGRESS

**REPORT NO. 5
FEBRUARY 1979**

BURNS & McDONNELL ENGINEERING COMPANY, INC.
AND
TRANS-ASIA ENGINEERING ASSOCIATES, INC.
A JOINT VENTURE

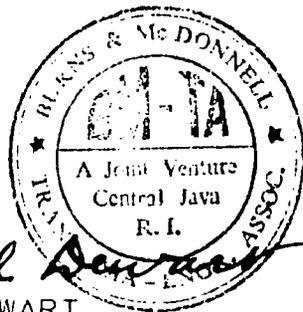
BEST AVAILABLE DOCUMENT

REPORT NO. 5

SURAKARTA WATER SYSTEM
CONSULTING ENGINEERING SERVICES

PROGRESS REPORT
FOR THE MONTH OF FEBRUARY
1979

SUBMITTED BY :



Donald Dewart

DONALD DEWART

Chief Engineer

PREPARED BY :

BURNS & MCDONNELL ENGINEERING CO., INC
TRANS-ASIA ENGINEERING ASSOCIATES, INC
A Joint Venture
KOTAK POS 105
SURAKARTA, INDONESIA

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SECTION I NARRATIVE SUMMARY

IA GENERAL

Engineering activities continue preliminary to letting contracts for construction of the transmission pipeline, including discussions of pipeline location in the highway right-of-way, the Brambang River crossing, transportation of materials being manufactured off-shore from Semarang Port to storage in Solo, and location of materials storage areas in Solo.

Accumulation and organizing of data for the groundwater exploration report continued. Analysis of well drilling contractors' facilities continued.

The Management Specialist and the Operation and Maintenance Specialist continued involvement in the activities of the Surakarta Water Enterprise.

A proposal is being prepared by the Consultant to provide additional engineering services to Cipta Karya for design and supervision of construction of additions to the Surakarta Water Distribution system.

IB MAJOR PROBLEMS

A permit has not yet been issued by Bina Marga to Cipta Karya to locate the proposed transmission pipeline in the right-of-way of the Yogyakarta-Kartasura-Surakarta highway, from the Wonosobo River to the Surakarta City boundary.

Detailed plans of the proposed pipeline have been forwarded to Bina Marga for consideration.

The inflation rate of costs continues to be a major problem in maintaining the Consultant's expenditures within the Contract budget.

The Management and O & M Advisors to the Surakarta Water Enterprise have difficulty in communicating with the Water Enterprise staff. There are no bi-lingual personnel in the Water Enterprise, and local bi-lingual interpreters

retained by the Consultant lack the technical vocabulary and higher education prerequisite to good administrative and technical interpreting.

Heavy rains for two or three hours per day continue to hamper field activities in groundwater exploration.

SECTION 2
ADMINISTRATION

2A SUBMISSIONS / APPROVALS

Consultant's invoice No.4 for January U.S. Dollar reimbursible expenses was submitted to Cipta Karya in Jakarta on 3 February.

The second rupiah payment to the Consultant, in accordance with Schedule B of APPENDIX II of the Contract, was received in Surakarta on 20 February.

2B CONFERENCES

2B1 Meeting with Directorate of Public Works Highway Division

A meeting was held in Surakarta on 1 February 1979 attended by the following :

Mr. Suyitno,	Highway Division, Surakarta Regional Office of Central Java Public Works
Mr. Harsono,	Central Java Potable Water Project, Surakarta
Mr. Widodo,	do.
Mr. Sudarto,	Surakarta Water Enterprise
Mr. Sularno,	do.
Mr. Dewart,	Burns & McDonnell/Trans-Asia
Mr. Fodor,	do.
Mr. Khalil,	do.

Staff of Central Java Potable Water Project, Surakarta Office.

After assembling at the office of Directorate of Public Works in Surakarta, the participants moved to the highway bridge crossing the Wonosobo River (at Station 73 + 50 on proposed water transmission pipeline) to examine the proposed location of the pipeline along the right-of-way of the Yogyakarta-Kartasura highway.

The survey party set several stakes 6.5 meters off the highway centerline, in the village of Tegalgondo at Station 74 + 00.

It became evident that to locate the transmission pipeline 6.5 meters from the road centerline would require removal of many houses that are located only five meters from road centerline.

BM/TAE then indicated the location of the pipeline along the north edge of pavement as shown on the proposed construction contract drawings. Mr. Suyitno agreed that this location was more feasible, but requested the Central Java Potable Water project to locate the pipe 6.5 meters off of centerline of road where possible to do so.

The site of the Brambang River crossing was examined, at proposed pipeline Station 77 + 40. It is proposed to support the 450 mm. water pipe parallel to the existing supply pipe on existing beams between the bridge columns. BM/TAE confirmed that an alternate underwater pipeline crossing should be considered if plans for widening the road include replacement of the existing bridge.

BM/TAE confirmed that a report will be prepared and presented to Mr. Harsono discussing the alternatives, and including a cost comparison and recommendations, for the Brambang River crossing. The report is included in the APPENDIX.

2B2 Meeting in Surakarta on 13 February

A meeting was held at the Surakarta office of Central Java Potable Water Project with the following present :

Ir. Azis,	Directorate of Sanitary Engineer. Jakarta
Mr. Hutagalung,	do.
Ir. Harsono,	Central Java Potable Water Project, Solo
Ir. Fred Midgett,	Burns & McDonnell/Trans-Asia, Consultant
Ir. Donald Dewart,	do.
Ir. A.F. Dengah,	do.
Mr. Dradjat Atmardjo,	do.

Meeting opened at 10:30 a.m.

Consultant reported that the City of Surakarta has not approved storing of

transmission pipeline materials at Manahan Stadium. Three small parcels nearby have been offered instead. Consultant has examined them. The sum of the three areas is a fraction of the 3.5 hectares recommended for materials storage. Mr. Azis suggested further searching for suitable storage areas. Consultant agreed to look for other areas and report his findings.

Mr. Azis commented that drainage of pipe storage area is more important than security measures. He noted that where pipe storage areas on other water projects in Indonesia have not been fenced that has not been a security problem.

Mr. Midgett reported that Mr. Darmawan is preparing a revision of the Engineering Contract to include engineering design and supervision of construction of additions to the Surakarta Secondary Water Distribution System. A statement of Terms of Reference for this is expected Saturday.

Consultant reported that locations of sites for drilling water wells are under consideration. Mr. Azis commented that the Construction Division has experienced the results of mistakes in well field location, and invited the Consultant to confer with his organization before making decisions on recommended locations for well sites.

The Operation and Maintenance training program at the Surakarta Water Enterprise was discussed. Consultant suggested that young men with technical education and good working knowledge of English language be added to Water Enterprise organization to serve as interpreters and local counterparts to the O & M Specialist during the O & M training period.

The O & M Specialist is using an interpreter (on the consultant staff) at present. This interpreter has little understanding or interest in what he is interpreting and undoubtedly will have no further interest in Water Enterprise affairs after the O & M training period. In contrast a bilingual, technical, permanent member of the Water Enterprise organization would have a sustained interest in continuing the O & M program after the departure of the O & M Specialist.

The amount of the service charge for installing a meter and house connection to

the water main was discussed. Mr. Azis observed that one method under consideration is to allow installment payments to avoid the burden of a single initial payment.

The transmission pipeline crossing of the Brambang River (at pipeline Station 77 + 40) was discussed. It has been planned by Bina Marga to widen the Yogyakarta to Kartasura highway, including replacement of the existing highway bridge across Brambang River by a new structure. This would require a temporary support structure - or rerouting - for any water pipelines (such as the existing one) supported on the existing bridge columns. It has been suggested by Bina Marga that routing the proposed transmission pipeline around the bridge - via an underwater pipeline crossing - would avoid the necessity of relocating this new pipeline later around the bridge when replacing the bridge. The Consultant is preparing a brief appraisal with cost comparison and recommendations, to be submitted to the Central Java Potable Water Project office in Surakarta on 17 February 1979.

Mr. Hutagalung estimated that pipe and fittings purchased off-shore (for the transmission pipeline) may arrive at Semarang Port in late April, so that allowing 10 days port customs clearance, unloading may be started early in May.

It was noted that to conform to Semarang Port regulations pipeline materials will be off-loaded from the boat through Customs into the dock storage area by an authorized local transportation contractor; and, trucking to Surakarta and unloading into storage there may be done by another, different contractor.

Meeting adjourned at mid-day.

2B3 Meeting at City Planning Office in Surakarta

On 19 February, representatives of Central Java Potable Water Project and the Consultant met with City Planning officials in their office near the Mayor's Office.

The Consultant explained the need to correlate the location for drilling new wells for additional potable water supply with the City Master Plan.

City Planning officials responded with a planning report and maps showing city planning to the year 2000 A.D. These were borrowed by the Consultant for use in selecting locations for water well sites adjacent to the City.

2B4 Project Monthly Conference at Surakarta

The project monthly conference was held in the office of the Central Java Potable Water Project on 20 February 1979 attended by :

Mr. Suwandi,	Central Java Pot. Water Project, Dir. San. Eng.
Mr. Harsono,	do.
Mr. Soedirman,	Directorate of Sanitary Engineering, Jakarta.
Mr. Sudarto,	Surakarta Water Enterprise (SWE).
Mr. Sularno	do.
Mr. Fred Midgett,	Consultant (BM/TAE).
Mr. Donald Dewart,	do.
Mr. Thomas Fodor,	do.
Mr. James Beirn,	do.
Mr. A.F. Dengah,	do.
Mr. Suyatno Yuwono,	do.

The meeting was opened by Mr. Suwandi at 10.a.m.

Areas available in Surakarta for storage of pipeline purchased off-shore were discussed. Mr. Suwandi said 5,000.000 rupiah is in the budget for cost of the pipe storage areas. Six sites were considered :

Athletic field east of Jebres Water reservoir, on south side of Jl. Kol. Sudiarto.

Three small sites in the vicinity of Manahan Stadium.

Area north of Jl. Pajang at river crossing.

Athletic field west of Yogyakarta - Kartasura highway just north of Wonosobo River crossing, in Tegalgondo village.

DSE will investigate the availability of these sites. Mr. Soedarto suggested investigating the Delanggu factory as a possible site.

BM/TAE read a cable message (from the Kansas City office) that American Cast Iron Pipe Company will be loading pipe into a ship to depart US port on 17 March estimated to arrive at Semarang on 30 April.

BM/TAE read a second cable (from the Kansas City office) as follows :

"20 February 1979

1. American Cast Iron Pipe Company

Shipping Schedule

First quarter leave US Seventeen March ETA Semarang 30 April.

Second quarter leave US Twenty six March ETA 15 May.

Balance leave US early May ETA mid June.

2. Clow shipping schedule.

Single shipment ETA one June.

3. Rohan shipping schedule.

Ship May ten ETA June 21, list O, C and I.

Ship August ten ETA September 20, list M, J and K.

4. What is the status of re-bid on list H brass fittings ?"

Based on the shipping information in the two cables, BM/TAE suggested transmission pipeline construction starting date should be rescheduled from 1 June to 1 August 1979.

BM/TAE will send cable request for detailed description of material in each shipment of pipe from American C.I. Pipe Co. for use in scheduling start of transmission pipeline contracts.

A discussion followed about the on-shore transportation contract for moving the materials from Semarang Port to Solo.

BM/TAE reported that the list of trucking contractors eligible to receive bid tenders has not been received from DSE Jakarta office. Mr. Sudirman agreed to investigate, and expedite if possible.

BM/TAE will send letter to DSE logistics division quoting the cabled delivery schedules, and noting that by 1 April bid should be issued for the on-shore transportation contracts.

A discussion followed concerning the provision for indoor storage of tools, test equipment, meters and repair equipment included in the off-shore purchase. These can be stored at first at the Cipta Karya warehouse in Solo until installed or delivered to the Surakarta Water Enterprise. BM/TAE showed a sketch of a proposed new structure to house the equipment, to be built at the Water Enterprise headquarters.

BM/TAE gave a brief report on the result to date of the groundwater exploration investigation.

DSE confirmed that well drilling is under their jurisdiction and there will be no possibility of delays in obtaining a permit to drill wells.

The proposed transmission pipeline crossing of the Brambang River was discussed. DSE have telephoned to Bina Marga Jakarta office for information about the proposed widening of the existing highway and bridge.

DSE asked BM/TAE to respond to a request from Bina Marga to furnish details of the trouble areas in the proposed transmission pipeline route. BM/TAE agreed to furnish reprints of the construction contract drawings of the section of the pipeline in the right-of-way of the highway between the Wonosobo River bridge and the Solo City boundary, which is within the jurisdiction of Bina Marga.

The plans will be delivered to DSE as soon as photocopies can be made, in Solo.

A training program for Water Enterprise Operations and Maintenance personnel was discussed. BM/TAE proposed that at least two young people be recruited by the Water Enterprise to act as local counterparts to the expatriate O & M and Management advisors. Knowledge of English language would be essential.

BM/TAE reported that their study of details of the proposed transmission pipeline construction is continuing. Using the Bina Marga 20 ton per axle vehicle loading

criterion, the pipeline should be deeper than one meter under highway pavements. A report will be submitted to DSE showing computations of pipe loadings under highway pavements.

Meeting closed at 12.40 p.m.

2B5 Conferences with Surakarta Water Enterprise

Date : February 7, 1979

Present : B. Bayongan

Bp. Moh. Ihsan, Chief Finance and Administrative Division,
Sdr. Sumardi, Chief Meter Reader
Sdr. Harno, Chief Billing Section.
Sdr. Marsudi, Chief Collection Section.

Agenda : Meter Reading, Billing, and Collection.

1. The service area shall be divided into five district with collection due dates on the 6th, 12th, 18th, and 30th day respectively of the month following the month of reading.
2. Computation of water consumption shall be done by the meter reader on the Water Consumption Card which he carries while reading meter. A Water Consumption Card shall be maintained in each customer's residence to record meter reading.
3. Additional copy of Water Bill shall be prepared and distributed to each customer to serve as notice of amount of bill for the month.

Date : February 8, 1979

Present : B. Bayongan

Ny. Sudartinah, Chief Administration and Customer Services Section.
Ny. Suyanti, Chief Finance Section.
Sdr. Sumardi

Agenda : Meter Reading

1. The service area is composed of eleven districts which are grouped into five districts for assigning deadlines for meter reading as follows :

<u>Districts</u>	<u>Composition</u>	<u>Deadline for Meter Reading</u>
I	Outside city limit Districts I, IA	6th day of the month
II	Districts II, IIA	12th day
III	Districts III, IIIA	18th day
IV	Districts IV, IVA	24th day
V	Districts V, VA	30th day

2. Each district (Dist. I, II, III, IV, V,) shall be divided into sub-districts composed of as many customers as can be read by a meter reader in one day. Each meter reader shall be assigned a specific area to read in a day. Meter readers shall be rotated in their work assignment.
3. Complete address of the customer should be indicated in the Water Consumption Card to facilitate location of customer's residence by meter readers.

Date : February 15, 1979

Present : B. Bayongan
Bp. Moh. Ihsan
Sdr. Sumardi
Sdr. Harno
Sdr. Marsudi

Agenda : Filing System

1. An envelope shall be maintained to keep each customer's unpaid bills. Customer's name and connection number shall be indicated on each envelope.
2. Customers' envelopes shall be arranged numerically according to district in a special rack prepared for this purpose.
3. The district number of each customer should be indicated by the Billing Clerk in each bill prepared to facilitate filing and retrieval of unpaid bills.

Date : February 22, 1979.

Present : B. Bayongan
Bp. Moh. Ihsan
Ny. Suyanti
Ny. Sudartina
Ny. Endang Rejeki, Bookkeeper

Agenda : Reports Preparation

1. Monthly financial reports should be finished and distributed before the 20th day of the following month starting with the February 1979 reports. Thereafter, an earlier deadline shall be established which shall be not later than the 15th day of the following month.
2. If necessary, staff concerned shall be required to work over-time to finish the monthly reports.
3. Various accounting policies and procedures were also discussed.

Date : February 24, 1979

Present : B. Bayongan
Bp. Soedarto, Director
Bp. Moh. Ihsan
Ny. Suyanti
Sdr. Sumardi
Sdr. Harno

Agenda : Meter Reading, Billing and Collection, and other items

1. B. Bayongan explained to the Director the proposed procedures on cycle billing. On February 22, Bp. Soedarto and other staff concerned were given copies of detailed procedures on meter reading, billing, and collection.
2. The start of implementation of the proposed procedures on cycle billing is set on June 1, 1979.
3. The following activities should be accomplished prior to the implementation of cycle billing :
 - get complete address of customers.
 - print or prepare necessary forms and equipment.
 - distribution of Water Consumption Card to customers.

4. The Director requested B. Bayongan to assist them in preparing a new schedule of water rates.

Date : February 26, 1979

Present : B. Bayongan

Sdr. Sumardi

Sdr. Sugiman

Agenda : Assignment of meter readers.

1. All meter readers shall be utilized in reading water meters of customers in each district in order to finish the reading of a district within the prescribed deadline.
2. Sdr. Sumadi, Chief Meter Reader shall prepare a schedule of assignment of meter readers.
3. Meter readers may be required to work overtime to study customers' locations.
4. Various problems that are possible to arise upon the implementation of the new procedures on meter reading were discussed. Alternative solutions to these problems were also discussed.

SECTION 3
SCHEDULES

3A PROGRESS

3A1 Procurement of Off-Shore Material.

Pipe, fittings, appurtenances, and equipment are being produced by factories in the U.S.A. Estimated delivery dates are noted on page 8, in SECTION 2. Coordination work is 99% complete.

3A2 On-Shore Transportation of Off-Shore Purchased Material.

Investigation of facilities and capacities of prospective transportation contractors is nearly complete. Advisory work is 50% complete and is on schedule.

3A3 Construction of Transmission Pipeline.

Investigation of prospective construction contractors is under way and will be completed during March. Advisory work is 20% complete. Pipeline construction is tentatively rescheduled to start 1 August, as indicated in APPENDIX V PERT Diagram.

3A4 Groundwater Investigation and Development.

Hydrogeological data taking and analysis is on schedule and is 55% complete.

Prequalifying, tendering, and awarding drilling contract. Advisory work is 95% complete and is 2 weeks behind schedule.

Prequalifying of prospective drilling contractors is complete. A report will be submitted to Central Java Potable Water Project on 9 March. Drilling contract is being drafted. Work is 40% complete.

3A5 Management Assistance to Surakarta Water Enterprise.

Work is on schedule and is 25% complete.

3A6 Operation and Maintenance Technical Assistance to Surakarta Water Enterprise.

Visual examination of existing system is complete and is on schedule.
Advisory work is on schedule and is 10% complete.

3A7 Meter Maintenance Assistance.

Work scheduled to start 1 June 1979.

3B WORK SCHEDULED FOR NEXT MONTH

Continue coordination of procurement of off-shore purchased material.

Complete investigation of prospective contractors for on-shore transportation contract. Prepare report and recommendations and assist Cipta Karya in issuing bid invitations.

Complete investigation of prospective contractors for construction of transmission pipeline, and assist in bid tender preparation.

Continue groundwater data taking. Continue writing report. Submit report on investigation of prospective well drilling contractors. Complete preparation of drilling contract.

Revise engineering contract between BM/TAE and Cipta Karya to include well drilling contract responsibility.

Issue invitations to bid on drilling contract.

Continue management advisory services to the Water Enterprise :

Assistance in the preparation of financial and operating reports.

Assistance in the preparation of revised schedule of water rates.

Assistance in the preparation of necessary forms and equipment, and formulating procedures for billing and collection.

Review purchasing and inventory control procedures.

Continue O & M assistance to the Water Enterprise.

Continue preparing O and M Manual.

Continue preparing a program of O & M training.

SECTION 4 ENGINEERING AND MANAGEMENT

4A CONSTRUCTION OF TRANSMISSION PIPELINE

Off-shore Purchase of Pipeline Materials.

Materials purchased in the U.S.A. are in production by U.S. manufacturers. Earliest scheduled shipping date from U.S. port is 17 March with estimated arrival at Semarang Port on 30 April.

On-shore Transportation of Materials Purchased Off-shore.

Inspection of the facilities of transportation contractors listed by the Directorate of Sanitary Engineering will be done in early March. Inspection of Semarang Port facilities and eligible transportation contractors has been completed. Prospective storage areas are noted in APPENDIX XI.

Transmission Pipeline.

Brambang River crossing. A comparison between a bridge-supported and an underwater crossing was submitted to Central Java Potable Water Project, Surakarta on 19 February 1979; and is included, in APPENDIX XII.

Pipeline Location.

Photocopies of the construction contract plans showing the proposed location of the pipeline in the highway right-of-way between Wonosobo River bridge and Surakarta City boundary are being submitted to Bina Marga for study and approval, so that a construction permit can be issued to Cipta Karya.

4B GROUNDWATER INVESTIGATION AND DEVELOPMENT

Completed drilling contractor evaluation and prepared report.
Continued existing water well inventory in Area I, northeast of Solo.
Layout of Hydrogeological data on 1 : 25,000 scale topographic maps.

4C MANAGEMENT ASSISTANCE TO SURAKARTA WATER ENTERPRISE

4C1 Work Done

A. General Accounting

Assistance to and supervision of the Accounting Staff in the recording of transactions, and discussion of the problems they encounter in their daily operations such as proper accounting treatment of transactions, computation and recording of depreciation, interpretation of the new chart of accounts, preparation of journal entries, and others.

B. Financial and Operating Reports

Assistance in the preparation of financial reports for the month of January 1979 (Financial and Operating Highlights, Balance Sheet, Profit and Loss Statement, Cash Flow Statement). As of February 28, 1979 the financial and other reports are already with the Director for review and signature. These reports shall be distributed to various recipients during the first week of March 1979.

The Water Enterprise started preparation of the monthly financial statements only in January 1979. No monthly financial statements were prepared in 1979 and various years.

Starting February 1979, monthly reports should be finished and distributed not later than the 20th day of the following month.

Thereafter, the bookkeeping Section shall try to finish the monthly financial reports on an earlier date which shall be not later than the 15th day of the following month.

C. Billing and Collection

The billing and collection system adopted is designed to improve customer services, simplify work procedures, and strengthen internal control. The proposed procedures were already discussed with and approved by the Director, Chief, Finance and Administrative Division, Chief Meter Reader, Chief of the Billing Section and the Chief of the

Collection Section.

The basic features of the proposed system are as follows :

1. The service area shall be divided into five districts and assigned different collection due dates as follows :

<u>District</u>	<u>Collection Due Date</u>
I	6th day of the following month after month of reading.
II	12th day
III	18th day
IV	24th day
V	30th day

A ten percent penalty charge shall be imposed on customers who pay after the prescribed deadline. At present the deadline for payment of water bills for all customers without penalty charge is on the 25th day of the following month after the month of reading.

2. Reading of water meters shall be done according to district. Reading of water meters of customers in District I shall be finished first before moving to District II, and so on. Meter readers shall be rotated in their work assignment.

A deadline to finish meter reading for each district is also established as follows : District I, 6th day of the month; District II, 12th day; District III, 18th day; District IV, 24th day; District V, 30th day. Based on this schedule each customer has approximately 25 days from the receipt of bill to settle his account without penalty charges. (Note : Approximate time interval between meter reading and distribution of bill is 5 days).

At present one meter reader is permanently assigned to each district. Meter reading is started from the first day of the month and is usually completed on the 20th day of the month. The distribution of Notice of Bill (Kartu Merah) starts from the first week of the month and is usually completed on the 10th day of the

following month. Under the present set-up customers who receive the Kartu Merah on the 10th day of the following month after the month of reading have only 15 days to settle their account, the deadline being the 25th day of the month. Other customers - those who receive the Kartu Merah on the first week of the month of meter reading - have as much as 45 days to settle their account.

3. The Meter Reader shall compute the customer's current water consumption directly on the Water Consumption Card (Kartu Pemakaian Air) which he carries while reading water meters. A Water Consumption Card shall be maintained in each customer's residence to record each month's reading and consumption.
4. Additional copy of bill shall be prepared and distributed to the customers to serve as notice of amount of bills for the month. Preparation of the Kartu Merah shall be discontinued.

At present a notice of bill (Kartu Merah) is being prepared and distributed monthly to each customer. Data on the Kartu Merah come from the bill prepared by the Billing Section.

5. Easy retrieval of bills by improving the Filing system of unpaid water bills. Under this system an envelope shall be provided for each customer where all unpaid bills shall be kept. The name, district number, and connection number of each customer shall be indicated on the envelope. The envelope shall then be filed numerically by district in a special rack prepared for this purpose.

The following activities should be accomplished before the implementation of the procedures which is scheduled to start on June 1, 1979 :

<u>Activity</u>	<u>Remark</u>
1. Division of service area into districts and assignment of collection due date	Completed

<u>Activity</u>	<u>Remark</u>
2. Get complete address of all customers to facilitate location of customers residence by meter readers when they are rotated in their assignment	Deadline : March 31, 1979
3. Printing of necessary forms and preparation of equipment needed	Deadline : April 30, 1979
4. Distribution of Water Consumption Card to Customers	Deadline : May 31, 1979
5. Study by the meter readers of customers' location; preparation by the chief meter reader of the schedule of assignment of meter reader	March, April, May 1979
6. Announcement to customers of new collection due date	April, May 1979

4D OPERATION AND MAINTENANCE ASSISTANCE TO SURAKARTA WATER ENTERPRISE

Continued preparation of O & M Manual.

4E ADDITIONS TO WATER DISTRIBUTION SYSTEM

4E1 Current Construction Contracts.

P.T. Antar Pribumi. Not working this month.

P.T. Lepen Kencana. Not working this month. Awaiting permit to build from City Public Works Dept., and awaiting delivery of pipe fittings -- expected at end of March.

4E2 Water Enterprise Additions.

No work at present. No requests received for new service connections.

SECTION 5
PERSONNEL

The Surakarta office personnel in February were as follows :

Fred Midgett, Liaison Officer

5-8 February; 12-16 February; 19-20 February.

Donald Dewart, Chief Engineer

arrived 20 September 1978

Bernardo Bayongan, Management Specialist

arrived 5 November 1978

James T. Beirn, Hydrogeologist

arrived 5 November 1978

Thomas G. Fodor, O & M Specialist

arrived 25 December 1978 with spouse

A.F. Dengah, Counterpart Chief Engineer

arrived 8 November 1978

Suyatno Yuwono, Counterpart Hydrogeologist

arrived 5 January 1979

Dradjat Atmardjo, Office Manager

arrived 2 October 1978

Mohammad Khalil, Materials Coordinator

arrived 2 October 1978

Danardio, Draftman

arrived 22 January 1979

Djumhan Hardy, Expeditor/Labourer

hired 2 January 1979

Ambar Istiningsih, Secretary
hired 1 January 1979

Yonathan Djowi, Accountant
hired 2 December 1978

Aryani Karnasih, Administrative Clerk
hired 8 January 1979

Dewi Yuliaty, Administrative Clerk
hired 7 February 1979

Hariyanto Santosa, Interpreter/Labourer
hired 7 February 1979

Rubiyo, Clerk
hired 1 November 1978

Pamudji Rahardjo, Driver
hired 2 October 1978

Mulyatmono, Watchman/Labourer
hired 9 October 1978

Soewarno, Office Boy
hired 1 November 1978

Budi Dwi Putranto, Driver
hired 4 January 1979

Bambang Sugiyanto, Driver
hired 20 February 1979

Soeparmanto Soekiman, Technical translator
hired 14 February 1979

LETTERS SENT DURING FEBRUARY 1979

NUMBER & DATE	TO	FROM	SUBJECT
27/BM/TAE/SKA/79 26 January 1979	Central Java Public Works, Surakarta.	BM/TAE, Surakarta.	Result of the meeting on 26 January 1979.
28/BM/TAE/SKA/79 1 February 1979	To whom it may concern.	BM/TAE, Surakarta.	Termination of Mr. Wahyudi.
29/BM/TAE/SKA/79 5 February 1979	Burns & McDonnell, Kansas City, MO.	BM/TAE, Surakarta.	Acknowledging letter of 26 January 1979.
30/BM/TAE/SKA/79 5 February 1979	USAID, Jakarta.	BM/TAE, Surakarta.	Sending 8 copies of monthly progress report for January 1979.
31/BM/TAE/SKA/79 6 February 1979	Central Java Potable Water Project, Surakarta.	BM/TAE, Surakarta.	Sending 25 copies of monthly progress report for January 1979.
32/BM/TAE/SKA/79 9 February 1979	Dr. Romdam, Bandung.	BM/TAE, Surakarta.	Information on the revision & electrical power upgrading in Jl. Gumuk House, Solo.
33/BM/TAE/SKA/79 10 February 1979	Central Java Potable Water Project, Surakarta.	BM/TAE, Surakarta.	Location of Proposed Wells.
34/BM/TAE/SKA/79 13 February 1979	Trans-Asia Engineering, Manila, Phillipines.	BM/TAE, Surakarta.	Personal letter by T.G. Fodor.
35/BM/TAE/SKA/79 13 February 1979	Surakarta Water Enterprise, Surakarta.	BM/TAE, Surakarta.	Cycles of Billing.
36/BM/TAE/SKA/79 15 February 1979	Directorate Geology, Bandung.	BM/TAE, Surakarta.	Requesting topographic maps.

LETTERS SENT DURING FEBRUARY 1979 (cont'd)

NUMBER & DATE	TO	FROM	SUBJECT
37/BM/TAE/SKA/79 17 February 1979	Cipta Karya, Surakarta. Cipta Karya, Semarang. Surakarta Public Works. Cipta Karya, Jakarta. Bina Marga, Jakarta. USAID Jakarta. BM/TAE, Jakarta. Surakarta Water Enterprise.	BM/TAE, Surakarta	Memorandum of meeting on 1 February.
38/BM/TAE/SKA/79 19 February 1979	Cipta Karya, Surakarta	BM/TAE, Surakarta	Analysis of pipeline crossing Brambang River
39/BM/TAE/SKA/79 21 February 1979	Surakarta Water Enterprise	BM/TAE, Surakarta	Meter reading, Billing & Bill Collection.
40/BM/TAE/SKA/79 23 February 1979	Technical Health Labora- tory, Yogyakarta.	BM/TAE, Surakarta	Requesting prices of the water tests.
41/BM/TAE/SKA/79 23 February 1979	Technical Health Laboratory, Semarang.	BM/TAE, Surakarta	Requesting prices for chemical analysis of water samples.
42/BM/TAE/SKA/79 28 February 1979	BM/TAE, Jakarta	BM/TAE, Surakarta	Monthly Financial Report for the month of February 1979.

LETTERS RECEIVED DURING FEBRUARY 1979

NUMBER & DATE	TO	FROM	SUBJECT
KU.04.01 24 January	USAID, Jakarta. (copy to BM/TAE, Surakarta).	Directorate of Sanitary Engineering, Jakarta.	Request for extension of Letters of Credit to 20 July 1979.
067/Pens.P.L.N./ 1/79 24 January	do.	Biro Teknik Listrik Pens. PLN SALA, Surakarta.	Revision of bid for electrical work.
30 January	BM/TAE, Surakarta.	UD. Cahaya Rukma, Semarang.	Price quotation for Telephone System.
1 February	BM/TAE Surakarta.	P.T. EMKL Semarang Veem, Semarang.	Contractor Evaluation Check List.
12/S.P./11/79 27 January	BM/TAE, Surakarta.	P.T. Varuna Tirta Prakasya, Semarang.	do.
26 January 1979	BM/TAE, Surakarta.	Burns & McDonnell, Kansas City, MO.	Information about transmission pipeline equipment.
2 February	do.	do.	do.
KU.03.04.02.01 5 February	USAID, Jakarta (copy to BM/TAE, Surakarta).	Directorate of Sanitary Engineering, Jakarta.	Contract for supply pipes for Surakarta Water Supply Project.
5 February	BM/TAE, Surakarta.	Dr. Romdam, Bandung.	Approval on improving Jl. Gumuk House.
6 February	BM/TAE, Surakarta.	American Cast Iron Pipe Company, Birmingham, AL.	Information about transmission pipeline equipment.
710/PAM/JT/11/79 8 February	BM/TAE, Surakarta.	Central Java Potable Water Project, Semarang.	Notice of the meeting on 20 February 1979.
171/PAM/1/11/79 10 February	Dir. Public Works, Surakarta (copy to BM/TAE, Surakarta).	Central Java Potable Water Project, Surakarta.	Request for data/ conditions for setting transmission pipeline from Cokrotulung to Jebres, Surakarta.

LETTERS RECEIVED DURING FEBRUARY 1979 (cont'd)

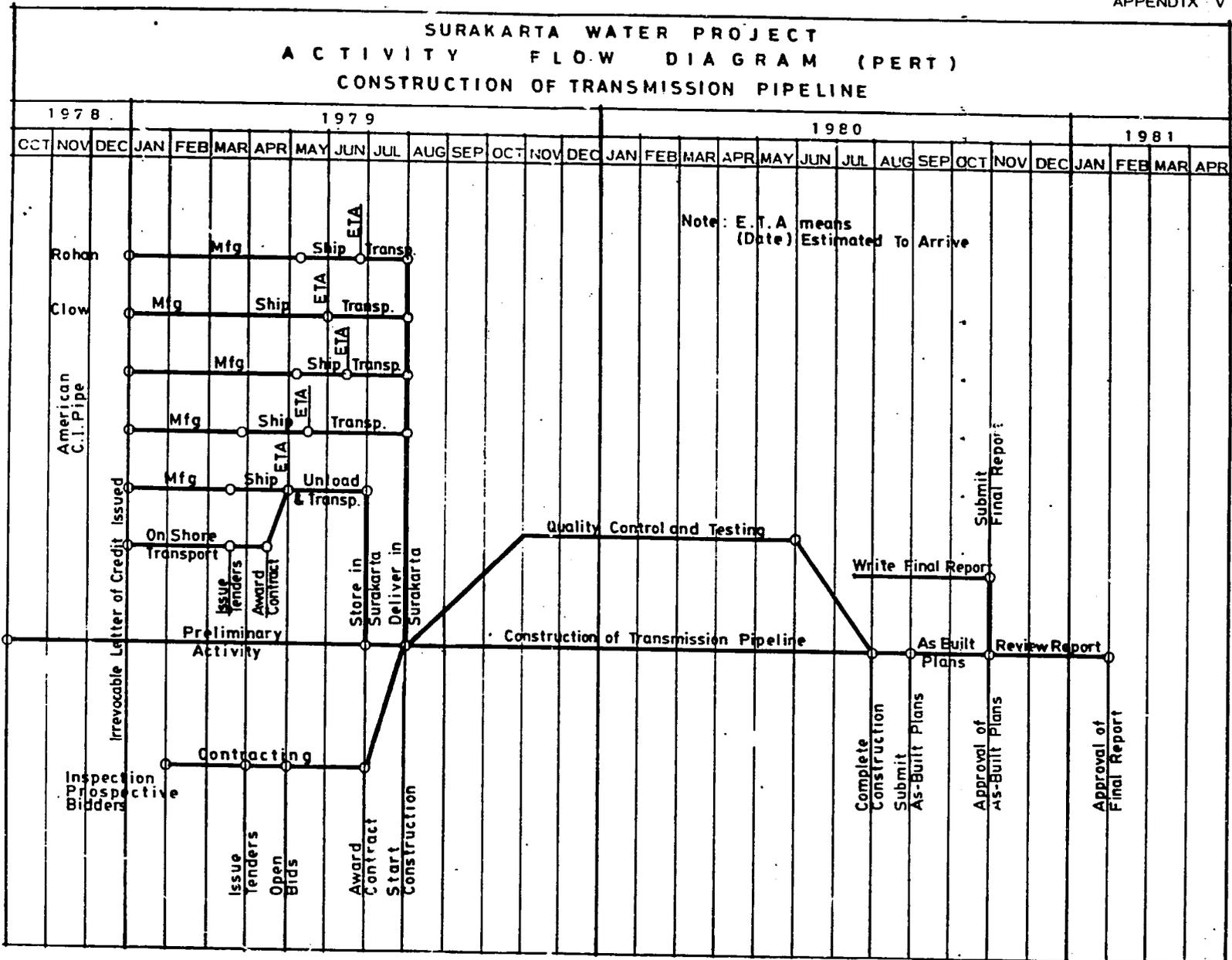
NUMBER & DATE	TO	FROM	SUBJECT
146/PAM/B.19/79 16 February	Sub Directorate Construction, Surakarta. Dir. Public Works, Surakarta. Cipta Karya, Surakarta. BM/TAE, Surakarta.	Surakarta Water Enterprise .	Invitation to meeting on 19 Feb. 1979.
737/PAM/JT/11/79 19 February 1979	Central Java Immigration, Semarang. (copy to BM/TAE, Surakarta).	Central Java Potable Water Project, Semarang	Requesting re- entry permit for Mrs. Samol Fodor.
HL 01 02 11 19 February 1979	BM/TAE, Jakarta. (copy to BM/TAE, Surakarta).	Directorate of Sanitary Engineering, Jakarta.	Terms of reference for design of water distribution addi- tions.
175/PAM/I/11/79 20 February 1979.	The Mayor of Surakarta.	Central Java Potable Water Project, Surakarta.	Request for land for pipe storage.
21 February	BM/TAE, Surakarta	P.T. Asuransi Jasa Indonesia, Semarang.	Accident Insurance.
165/PAM/BV/79 21 February	To whom it may concern.	Surakarta Water Enterprise.	Indentification letter for Beirn and Yuwono.
19 February	BM/TAE, Surakarta.	U. D. Cahaya Rukma, Semarang.	Price quotation for a tracing printer
22 February	do.	do.	Expenses of Sharpfax repair mechanic.
Inpa.018/79 22 February,	BM/TAE, Surakarta.	P.T. Guna Elektro, Jakarta.	Transmitting pump catalogue.

SURAKARTA WATER PROJECT
 REPORT OF MAN-MONTHS EXPENDED BY CONSULTANT
 BURNS & MCDONNELL/TRANS-ASIA ENGINEERING ASSOCIATES

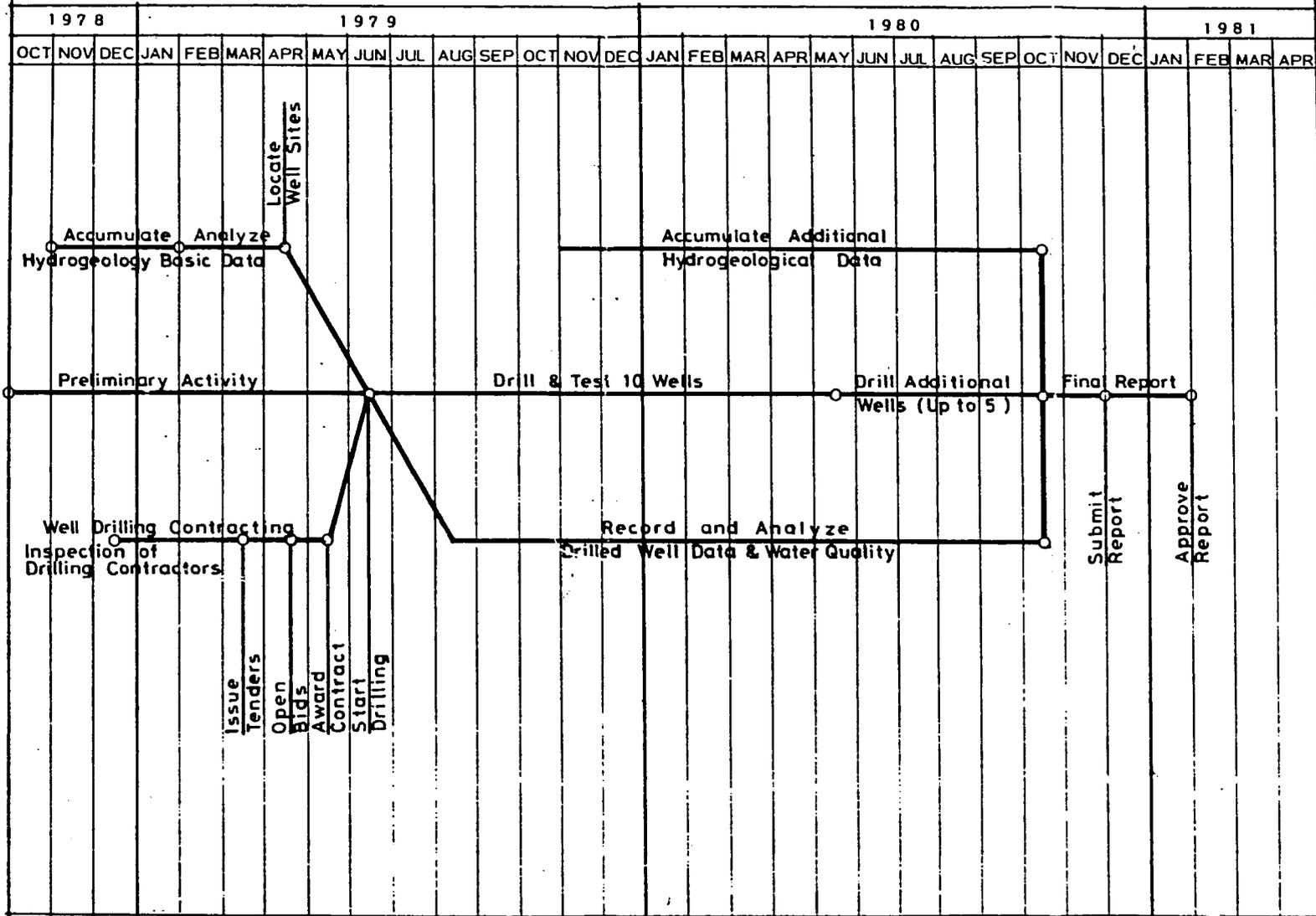
CONTRACT NUMBER 01/WS-S/AID/78 AID LOAN 497-U-044	MAN - MONTHS			
	FOR FEBRUARY 1979	CUMULATIVE THROUGH 28 FEBRUARY	% OF TOTAL SCHEDULE	TOTAL IN CONTRACT SCHEDULE
PERSONNEL				
EXPATRIATES				
Principal Liaison Engineer	0	0.3	15%	2
Procurement Engineer	0.03	0.42	16.8	3
Chief Engineer	0	6.5	100	6.5
Pipeline Engineer	1	5.0	25	20
Hydrogeologist	0	0	0	16
Drilling Specialist	1	3.6	30	12
Management Specialist	0	0	0	12
O & M Specialist	1	3.6	22.5	16
Meter Specialist	1	2.4	11.4	21
EXPATRIATE TOTAL	0	0	0	8
	4.03	21.82	18.7%	116.5
INDONESIAN PROFESSIONAL & TECHNICAL				
Counterpart Chief Engineer	1	3.6	18%	20
Construction Supervisor	0	0	0	14
Hydrogeologist	1	1.8	12	15
Materials Coordinator	1	5	35.7	14
Inspectors	0	0	0	48
Draftsman	0.4	0.6	3.7	16
Translator	0.4	0.8	6.6	12
Accountant	1	3	13.6	22
INDON.PROF. & TECH	4.8	14.8	9.2%	161
INDONESIAN ADMINISTRATIVE				
Office Manager	1	5	25%	20
Secretary	1	5	25	20
Typist	0.6	0.6	2.8	22
Clerks	2	5.7	12.9	44
Drivers	2.2	7	8.7	80
Laborers	3.6	12.2	7.6	160
ADMINISTRATIVE TOTAL	10.4	35.5	10.2%	346

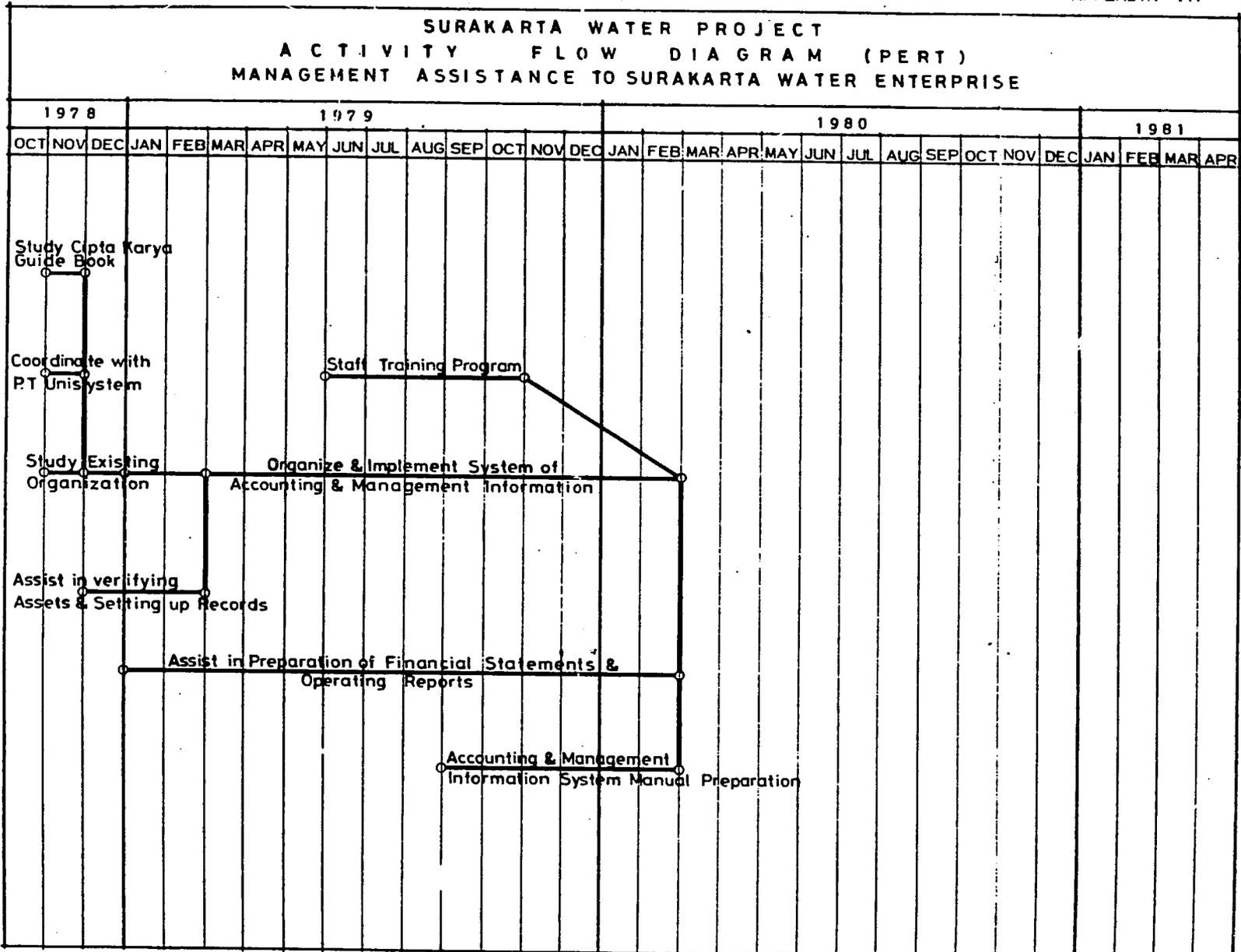
SURAKARTA WATER PROJECT
 REPORT OF ENGINEERING COSTS
 BURNS & MCDONNELL/TRANS-ASIA ENGINEERING ASSOC.

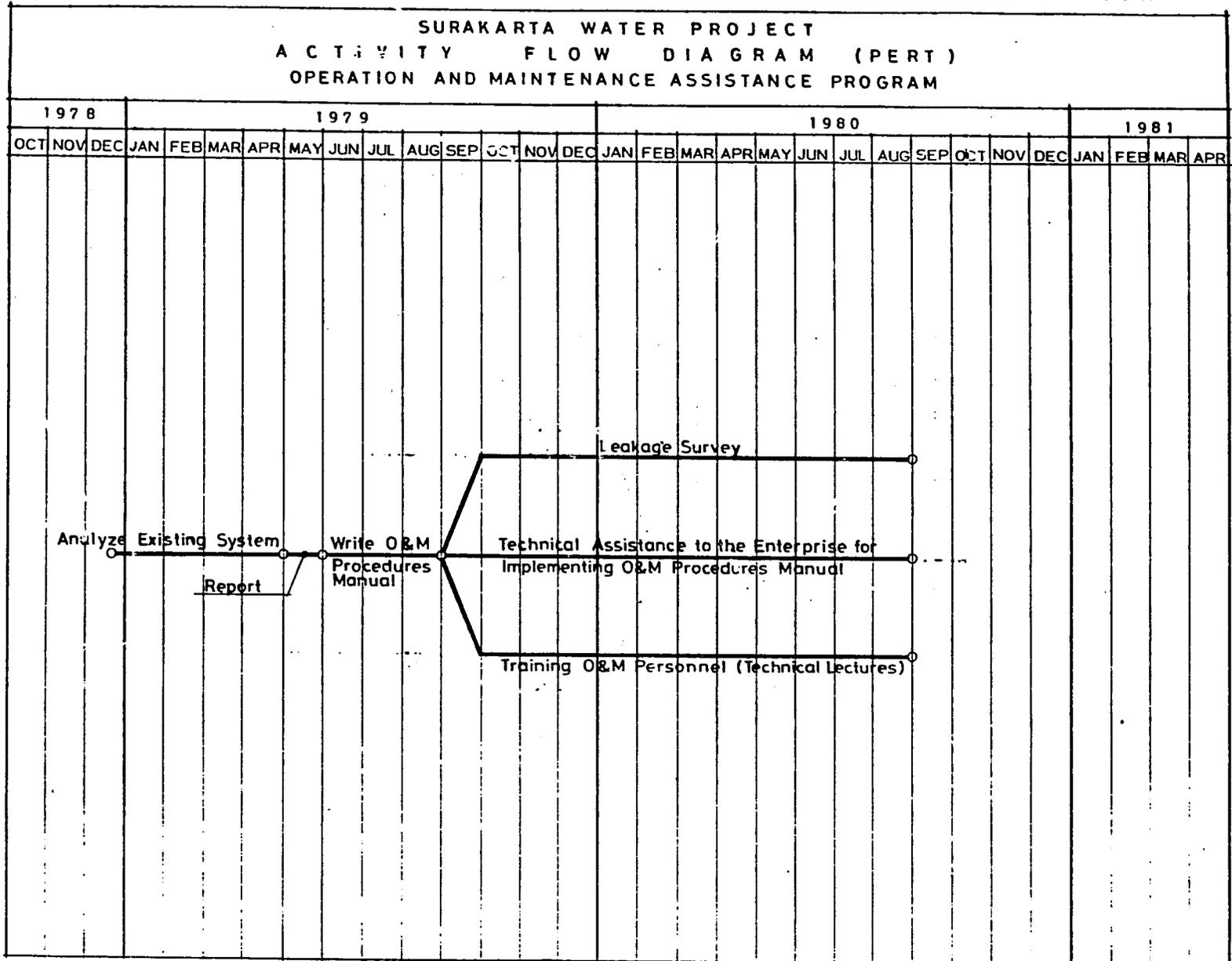
CONTRACT NO. 01/WS-S/AID/78 SIGNED 26 OCT. 1978 START 1 JAN. 1978 END 31 JAN. 1981 REIMBURSIBLE- EXPENDITURES	COSTS FOR FEBRUARY 1979	CUMULATIVE COSTS THROUGH 28 FEBRUARY 1979		TOTAL BUDGET ESTIMATE FOR CONTRACT
		AMOUNT	% OF TOTAL BUDGET ESTIMATE	
US DOLLAR COSTS				
Salaries and Related Costs	21,891.06	137,160.53	22.3%	\$612,922
Transportation	0	9,787.54	16.1	60,638
Equipment	0	8,045.05	22.3	36,000
Miscellaneous	0	25,481	76.8	33,181
Training	0	0	0	14,544
Contingencies	0	0	0	75,729
TOTAL DOLLARS	21,891.06	180,474.12	21.6%	\$833,014
INDONESIAN RUPIAH COSTS				
Salaries	3,140,000	8,184,999	11.5%	71,150,000
Transportation	1,101,032	7,710,283	27.3	28,196,000
Housing	0	23,200,000	72.6	31,950,000
Vehicle Costs	5,527,343	16,796,820	67.0	25,050,000
Equipment Costs	300,000	5,043,110	38.3	13,153,000
Miscellaneous	650,000	7,135,430	28.9	24,670,000
Contingencies	336,000	785,800	4.0	19,416,960
TOTAL RUPIAH	11,054,375	68,856,442	32.2%	213,586,560



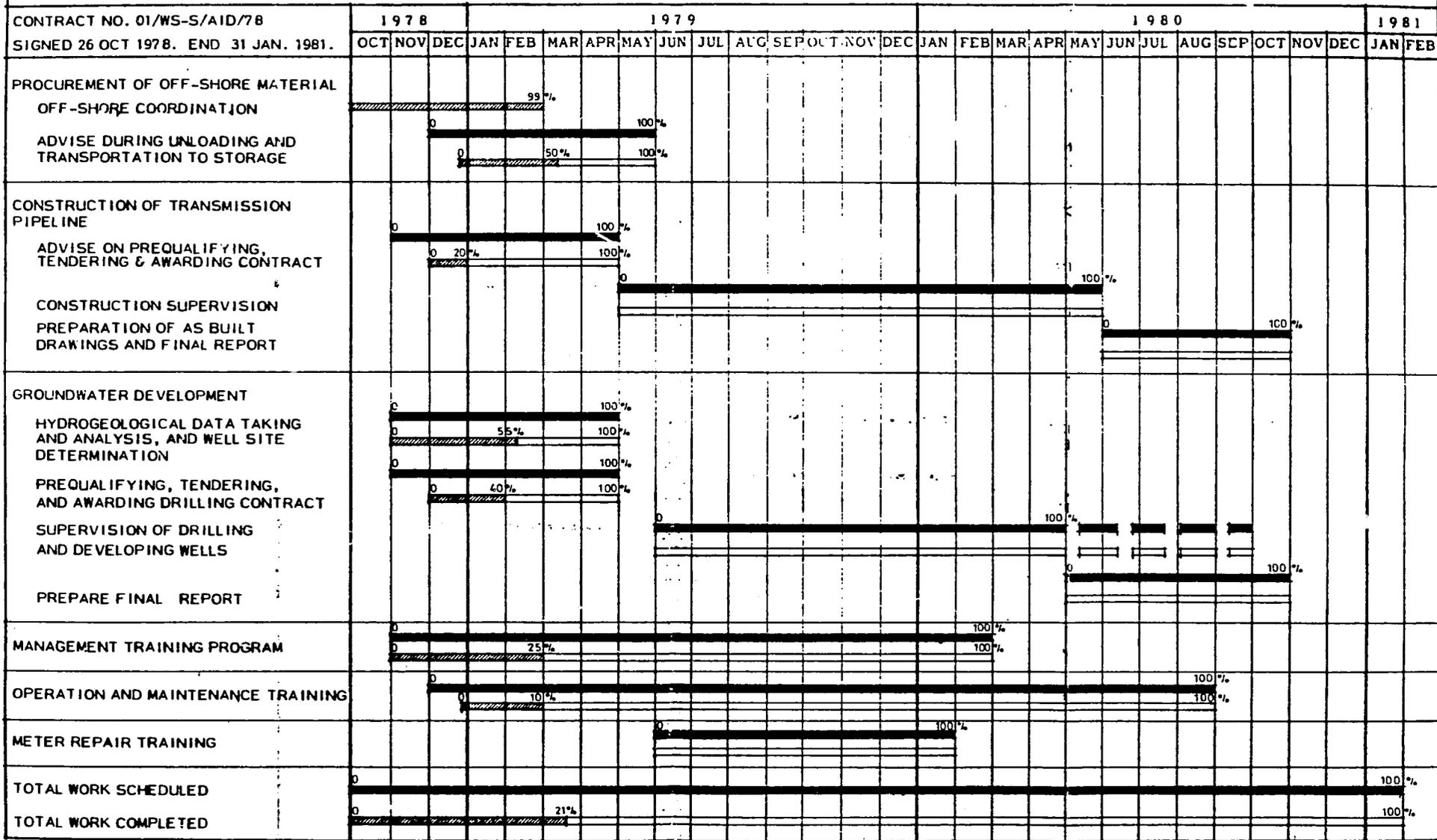
SURAKARTA WATER PROJECT
ACTIVITY FLOW DIAGRAM (PERT)
GROUND WATER EXPLORATION AND DEVELOPMENT

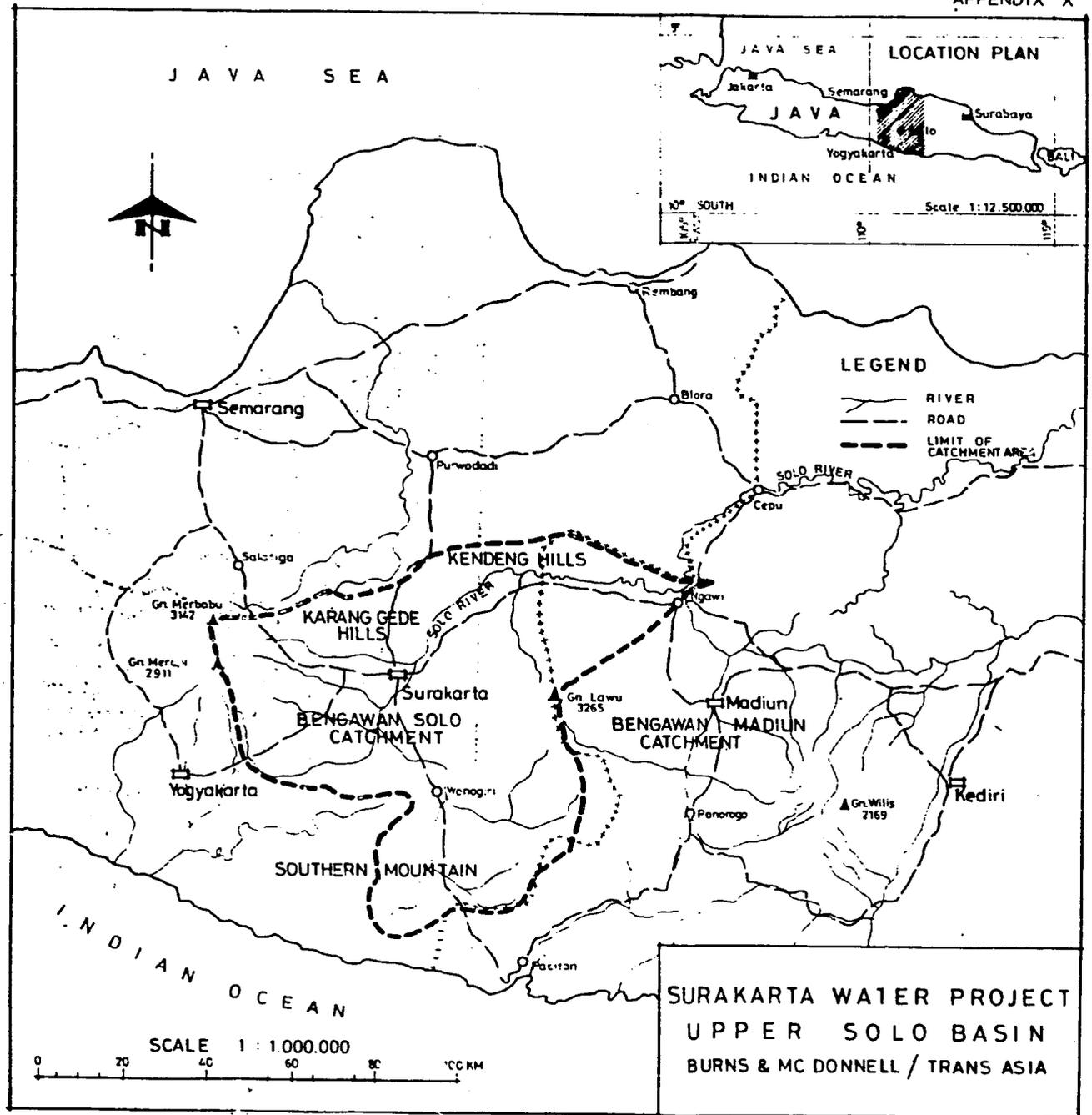




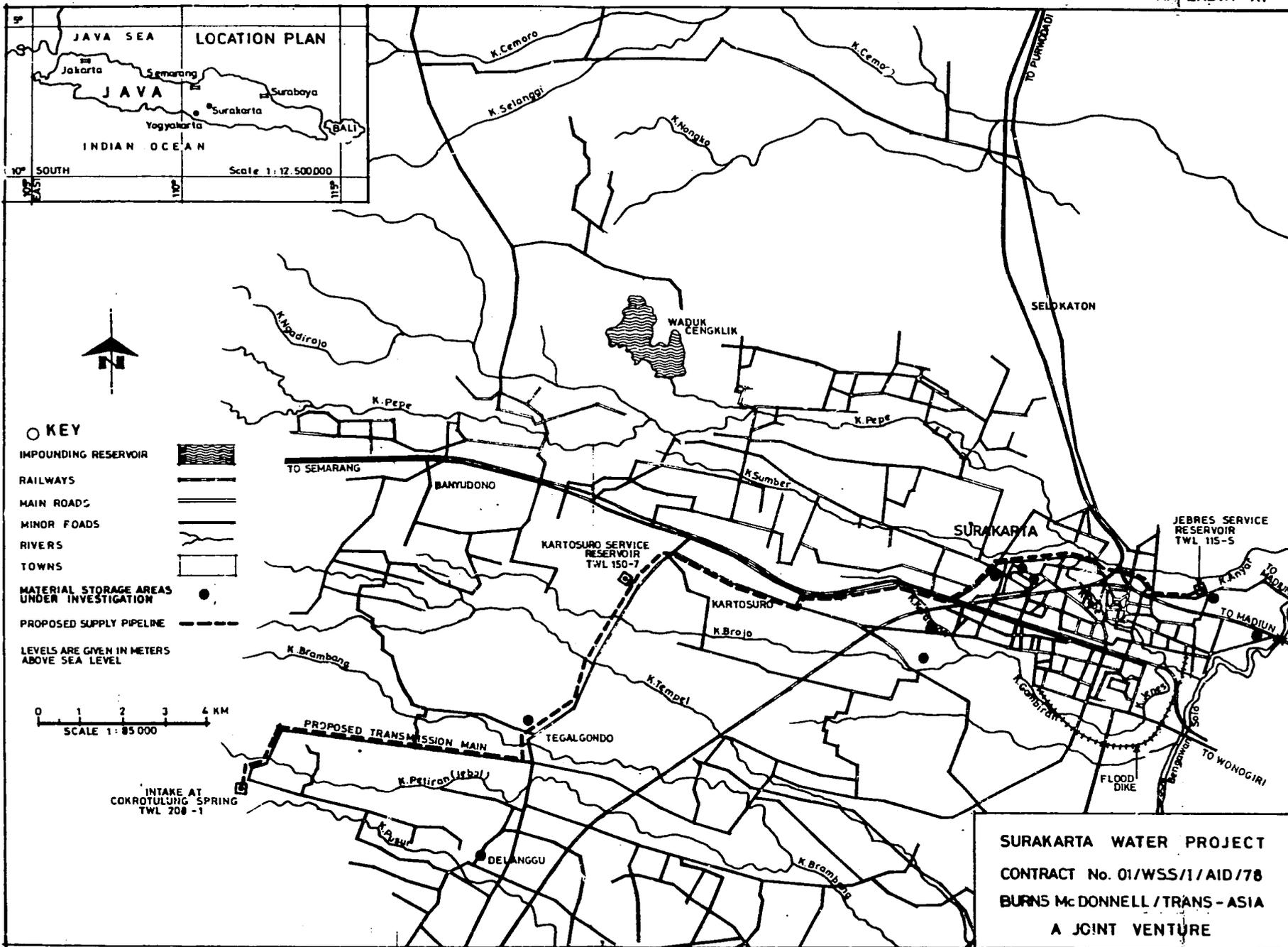


**SURAKARTA WATER PROJECT
SCHEDULE OF ENGINEERING ACTIVITIES
PERCENT COMPLETED AT END OF FEBRUARY 1979**





**SURAKARTA WATER PROJECT
UPPER SOLO BASIN
BURNS & MC DONNELL / TRANS ASIA**



PROPOSED TRANSMISSION PIPELINE CROSSING OF BRAMBANG RIVER
ANALYSIS OF ALTERNATE LOCATIONS

As requested during the meeting on 1 February 1979 at the Brambang River crossing, an analysis has been prepared by BM/TAE of the proposed transmission pipeline crossing of the Brambang River as detailed below :

1. Included in the original cost estimate (in 1975) for the pipeline was an item of 1,000,000 Rupiah for the cost of constructing the proposed pipeline beside the existing supply pipeline on existing beams supported by the columns in the existing highway bridge crossing the river.
2. To construct the new pipeline under the river bottom (instead of on the bridge) would have cost approximately 2,600,000 Rupiah (in 1975).
3. In 1975, the under-water crossing would have cost 1,600,000 Rupiah more than the bridge crossing.
4. Plans to widen the Yogyakarta-Kartosuro highway may include replacement of the existing bridge in the future. This would involve relocation of any pipes supported on the bridge.
5. To ensure uninterrupted supply of water to the City, the higher cost of the under-water crossing would be justified.
6. The difference in pipeline hydraulics is insignificant, between the two types of river crossing.
7. Adequate pipe and fittings for either crossing have been included in the procurement of materials for the project.
8. A plan of the widened highway and bridge would be required (from Bina Marga) in order to revise the pipeline construction contract drawings so that the pipeline crossing under the river will be located now to avoid interference with construction of the new bridge in the future.

The analysis above is based on the premise that the existing bridge will be removed and replaced. If plans for future widening of the highway were to include keeping existing bridge in service (with an additional new bridge beside it) then the proposed transmission pipeline crossing should be located beside the existing pipe on the existing bridge as noted in Item 1 above (and as shown on the proposed construction contract drawings).