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

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

MONTHLY PROGRESS

REPORT NO. 15  
DECEMBER 1979

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

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

# BURNS & McDONNELL Engineering Co.

Architect - Engineers

A JOINT VENTURE

Consultants - Planners

## TRANS - ASIA Engineering Associates, Inc.

Please Reply to: Kotak Pos 105  
Surakarta

No. 09/BM/TAE/SKA/80  
5 January 1980

Mr. Soesanto Mertodiningrat  
Director of Sanitary Engineering  
Directorate General Cipta Karya  
Jl. Pattimura No: 20  
Jakarta Selatan

Subject : Contract for the Consultant Services for  
Surakarta Water System, No. 01/WS-S/I/AID/78  
dated 26 October 1978

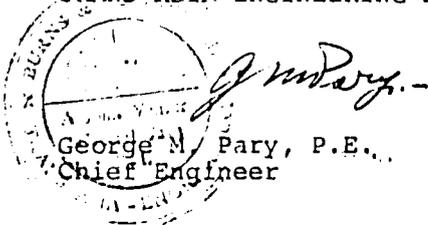
Dear Sir,

In accordance with Section 4.12 and Appendix I of the  
subject Contract, we are pleased to submit fifteen  
copies of Monthly Report No. 15 for the month of  
December 1979.

We hope, that this report will meet with your approval.

Very truly yours,

BURNS & McDONNELL ENGINEERING CO.  
TRANS-ASIA ENGINEERING ASSOC. INC.



c/c :	CJWSP	Semarang	( 10 copies )
	USAID	Jakarta	( 8 " )
	BM/TAE	Jakarta	( 2 " )
	Burns & McDonnell	Kansas City	( 1 copy )
	CJWSP	Surakarta	( 1 " )
	SWE	Surakarta	( 1 " )
	Mayor of Surakarta	Surakarta	( 1 " )
	File		

GMP/sh

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LIST OF ABBREVIATIONS

a.m.	Before noon
App	Appendix
AWWA	American Water Works Association
BM/TAE	Burns & McDonnell/Trans-Asia Engineering Associates
°C	Degrees Celcius (Centigrade)
CIF	Cost-insurance-freight
CJWS	Central Java Water Supply (Management)
CK	Cipta Karya
FOB	Free-on-board
kg	Kilogram (s)
L/C	Letter of Credit
lpcd	Liters per capita day
lps	Liters per second
m	Meters (lineal)
m <sup>3</sup>	Cubic meters (Note: due to negligible difference in case of water M <sup>3</sup> and MT are used interchangeably)
Mfg	Manufacturer
M/M	Man/month (s)
msl	mean sea level
MT	Metric tons
MTD	Metric tons per day
mm	Millimeter
No.	Number
O & M	Operation and Maintenance
p.m.	After noon (afternoon)
Rp	Rupiah
SWE	Surakarta Water Enterprise
SWS	Surakarta Water System Project
TAE	Trans-Asia Engineering Associates, Inc.
US	United States (Government)
USA	United States of America
USAID	United States Agency for International Developmnet

SECTION 1  
NARRATIVE SUMMARY

1A GENERAL

The general planning on the project has progressed somewhat. Cipta Karya has proposed to start the construction Phase II of the main transmission pipeline ahead of schedule, in parallel with the ongoing construction of Phase I. The Consultant is basically in agreement with this proposal, however stated that in order to administer and supervise the additional workload, more personnel (Indonesia only), office space and equipment will be required. This need was recognized by Cipta Karya and approved. At the present time, the only problem appears to be the funding of the program. As soon as the funding can be arranged, the Consultant is ready to proceed with the work.

Construction of the pipeline is progressing satisfactorily within the limitations of the need for sleeve couplings, 18" gaskets and brass goods. Since the construction of bare pipe has been more than 50% completed, the fittings will be required very soon. Sleeve couplings arrived at the beginning of November and the gaskets were airlifted to Jakarta, arriving on December 4th 1979. Neither of the shipments have cleared the customs as yet. Since the bid for brass goods from the Ford Meter Box Company has only been approved in November, there is little chance of their arriving on time and temporary measures will have to be taken. However no temporary measures can be taken for sleeve couplings and gaskets and therefore it is essential that they be delivered to the site within January 1980.

Survey of the locations of water wells has been completed and the final form of specifications for drilling has been distributed for comments. The Consultant is ready to proceed with the work.

Management Assistance Program to SWE is proceeding on schedule. Management Operating and Accounting Procedures Manual in two volumes, written in Bahasa Indonesia has been completed and distributed during the month.

The O & M Specialist has submitted a revised syllabus and time schedule. The present plan suggested by Cipta Karya is to have three two-weeks training sessions, with a one month's break in between the sessions, when the trainees could go back to their respective units and put in practice whatever they have learned to date. The Consultant is very much favor of this proposal.

Meter Repair Specialist has submitted detailed syllabus and time schedule for the Meter Repair Course. The new Meter Repair Shop at SWE is being outfitted and is expected to be completed early in January 1980. As soon as the equipment is installed the training will start.

The Liaison Officer has submitted a revised proposal for the extension of Consultant's services as well as the design of the water distribution system on December 15, 1979. A meeting for the discussion of the proposal is expected early in January 1980. The present Contract expires in April 1980.

## B MAJOR PROBLEMS

The single major problem at present is timely delivery of sleeve couplings and gaskets. These items have arrived two months and one month ago respectively, how-

ever to date they have not been cleared through the customs. Unless they can be delivered within January 1980, the work on Phase I may come to a standstill.

SECTION 2  
ADMINISTRATION

2A SUBMISSIONS/APPROVALS

Consultant's Invoice No. 14 for November 1979 U.S. Dollar reimbursible expenses was submitted to Cipta Karya on December 18, 1979 and was approved by CK on December 22, 1979. Consultant's Rupiah Invoice No. 7 was submitted to Cipta Karya on November 9, 1979 but has not been approved as yet. These submissions are in accordance with the Contract, Appendix II, page 11 - 15.

2B PERSONNEL

The Surakarta office personnel in December were as follows :

E x p a t r i a t e s

- George M. Pary, P.E. Chief Engineer  
arrived 17 August 1979
- Thomas G. Fodor, O & M Specialist  
arrived 25 December 1978, with spouse
- James F. Baucom, Pipeline Engineer  
arrived 26 September 1979
- Bernardo B. Bayongan, Management Specialist  
arrived 5 November 1978
- George R. Pike, Meter Specialist  
arrived 26 September 1979

I n d o n e s i a n

Professional and Technical :

- A.F. Dengah, Counterpart Chief Engineer  
arrived 8 November 1978
- Djoko Imbarno, Construction Supervisor  
arrived 3 September 1979
- Suyatno Yuwono, Counterpart Hydrogeologist  
arrived 5 January 1979
- Mohamad Khalil, Material Coordinator  
arrived 2 October 1978
- Abdul Kadir, Senior Inspector  
arrived 9 October 1979
- Bambang Agus Salam, Inspector  
arrived 1 May 1979
- Mohamad Syarief Lembah, Inspector  
arrived 1 May 1979
- Gatot Bramono, Inspector  
arrived 19 November 1979
- Akhmad Aries, Draftsman  
arrived 13 April 1979
- Hendradi, Translator  
arrived 3 September 1979
- Yonathan Jowie, Accountant  
arrived 2 December 1978

Administrative :

- Dradjat Atmardjo, Office Manager  
arrived 2 October 1978
  
- Sri Hartati, Secretary  
hired 1 June 1979
  
- Dewi Yuliati, Typist  
hired 7 February 1979
  
- Rubiyo, Clerk  
hired 1 November 1978
  
- Chaiz Hidayati, Administrative Clerk  
hired 8 October 1979
  
  
  
  
  
  
  
  
  
  
- Pamudji Rahardjo, Driver  
hired 2 October 1978
  
  
- Soedarno, Driver  
hired 1 December 1979
  
  
- Djoni Santosa, Driver  
hired 1 May 1979
  
  
- Sutrisno, Driver  
hired 2 April 1979
  
  
- Ermita Taher, Supply Clerk/Labor  
hired 19 March 1979

- Arum Munawar, Copy Machine Operator/Labor  
hired 8 March 1979
- Djumhan Hardi, Expeditor/Labor  
hired 2 January 1979
- Endang Tri Siwi D.M., Receptionist/Labor  
hired 1 October 1979
- Suwarno Hadi, Office Boy/Labor  
hired 1 November 1978
- Mulyatmono, Watchman/Labor  
hired 9 October 1978
- Sri Sadono, Office Assistant/Labor  
hired 20 November 1979
- E.M. Suprpto, Field Assistant/Labor  
hired 23 November 1979

2C CONTRACT STATUS

Appendix I shows the contract status in man/months expended versus man/months authorized for the project. As can be seen the Materials Coordinator's time has already been expended, although his work is necessary for the duration of the Construction. The Consultant requested Cipta Karya at the December monthly meeting for the permission to extend his time. Verbal approval has been granted, however no formal written approval has been received yet.

Appendix II shows billings and balances of approved expenditures on the contract to date. As can be

seen, the vehicle/gasoline/maintenance costs have run over the allotted amount. The reason for this overexpenditure is, that soon after the allotments on the contract were made, the devaluation of Rupiah has been announced. Therefore the original costs of the vehicles was much higher than expected. There was no adjustment made to compensate for the additional costs. The Consultant requested Cipta Karya at the December monthly meeting to increase the allowance for local transportation from contingency allowance. No formal written approval has been received to date.

SECTION 3  
SCHEDULES

3A PROGRESS

3A1 TRANSPORTING OFF-SHORE PURCHASED MATERIALS

AMERICAN CAST IRON PIPE COMPANY :

The missing 16" Ø gaskets have been delivered to Jakarta on December 1979. To this date however, they had not been cleared through the customs. It is essential, that the gaskets be delivered to the site within the month of January 1980, otherwise the construction work may have to be halted.

THE ROHAN COMPANY :

The following shipment has arrived from the U.S. to port of Semarang on August 7, 1979

Flush Model Hydrants

Self Closing Hydrants

Ford Meter Box Test Bench

Misc. tools and portable pump equipment

However, due to the fact, that several informalities were discovered in the shipping papers, the materials cannot be processed through the customs, until the errors have been corrected.

The Consultant is awaiting the underlined equipment which is urgently required for the SWE's Meter Repair Shop.

CLOW CORPORATION :

47.141 of misc. size valves have arrived to port of Semarang on August 6, 1979.

The contract for transportation has been awarded to P.T. V.T.P. All these materials have been transported from Semarang to the Surakarta storage area.

COLCORINDO RAYA :

36.32 kg of materials consisting of 4 annubar and flow meter were arrived to port of Semarang on June 20, 1979 and have been delivered by P.T. VTP to Surakarta on 1st December, 1979.

3A2 CONSTRUCTION OF THE TRANSMISSION PIPELINE, PHASE I, SECTIONS A & B

P.T. Tukad Mas responsible for Section A of the pipeline and P.T. Lepen Kencana responsible for Section B, continue their work on the pipeline. The overall progress 3.5% behind schedule, however both contractors are attempting to bring the work up to date. As of December 31, 1979 the Phase I construction is 35.12% complete.

3A3 GROUNDWATER EXPLORATION PROGRAM

Hydrogeological data taking and resistivity survey work is 100% complete. The Consultant has submitted the final Groundwater and Well Development Report for the Ministry's and USAID's approval.

3A4 WELL DRILLING PROGRAM

The Consultant has submitted the final draft of Bidding Documents including the list of Contractors Prequalification Questionnaire for the Ministry's and USAID's review and approval. Both Agencies must expedite their comments to forestall further delays.

Ten locations for prospective wells have been staked out by the Consultant. At the present time the Consultant is preparing location surveys in order to tie down the wells to the national grid.

3A5 MANAGEMENT ASSISTANCE PROGRAM

Work is on schedule and is 87% complete.

3A6 O & M ASSISTANCE PROGRAM

Preparatory work for Classroom Training Program is continuing, and is on schedule. As per the Ministry's request the Training Program starting date has been postponed to January 14, 1980.

3A7 METER REPAIR PROGRAM

Advisory work is on schedule and is 37% complete. Assistance and supervision for the proper purchase and installation of various equipment is continuing. The work is progressing satisfactorily.

B WORK SCHEDULED FOR NEXT MONTH

Continue supervise the Transmission Pipeline Construction Sections A & B.

Continue working on the drilling program and all related documentation.

Continue Management Advisory services to the Surakarta Water Enterprise, supervise General Accounting and assist implementing the Organization Manual.

Commencing with the Classroom and On-site Training Program.

Continue Meter Repair Advisory services to Surakarta Water Enterprise.

Continue coordination of loading, transporting and unloading the last shipment of the off-shore purchased materials including the 3 utility vehicles furnished by Rohan Company.

SECTION 4  
ENGINEERING AND MANAGEMENT

A TRANSPORTING OFF-SHORE PURCHASED MATERIALS

Transportation of off-shore purchased materials is nearly complete. The construction contractors have, at the present time, all the needed materials. The problem remains with the Rohan Company's informal documentation. Their shipment contains pressure testing equipment for the pipeline and meter test bench for the SWE Meter Repair Shop. Both equipment is urgently required on the jobsite otherwise the progress will be delayed.

B CONSTRUCTION OF THE TRANSMISSION PIPELINE

Appendix III shows the PERT diagram of the pipeline construction. Appendix III-A gives a full report on construction status, quality and any problems encountered or expected. In general, the Consultant is satisfied with the progress.

C GROUNDWATER EXPLORATION AND WELL DEVELOPMENT PROGRAM

Appendix IV shows the planned program which is up to date. Narrative report of the activities during the month and plans for January is attached in Appendix IV-A.

D MANAGEMENT ASSISTANCE PROGRAM

Management Assistance Program is shown on chart Appendix V. Appendix V-A provides narrative report and plans for January 1980.

4E O & M ASSISTANCE PROGRAM

Appendix VI shows the revised pert diagram . of the O & M Program. Appendix VI-A gives a full report for classroom studies commencing on January 7, 1980 in Surakarta.

4F METER REPAIR TRAINING PROGRAM

Meter repair training program has been delayed due to the lack of equipment. In the meantime the Meter Repair Specialist has prepared the Meter Repair Training schedule for training the SWE personnel.

See Appendix VI-B

4G STATUS OF WORK ON THE PROJECT

Bar chart shown in Appendix VII shows the status of work up to date. Due to the fact that several work items extend beyond theoretical end of the Consultant's contract, it is expected, that a time extension will be granted by Cipta Karya.

4H CONFERENCES

Six conferences were held in December for discussions on project matters. Reports on the conferences with list of attendees are attached in Appendices VIII through XIII.

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

CONTRACT NUMBER 01/MS-S/AID/78 AID LOAN 497-U-044	MAN - MONTHS			
	F - O R	CUMULATIVE	% OF TOTAL	TOTAL IN
	December 1979	THROUGH 31 December	SCHEDULE	CONTRACT SCHEDULE
EXPATRIATES				
Principal	0.15	0.45	22.5	2
Liaison Engineer	0.09	2.16	72	3
Procurement Engineer	0	6.5	100	6.5
Chief Engineer	1	11.5	57.5	20
Pipeline Engineer	1	3.1	19.3	16
Hydrogeologist	0	5.7	47.5	12
Drilling Specialist	0	2.8	23.3	12
Management Specialist	1	13.6	85	16
O & M Specialist	1	12.4	59	21
Meter Specialist	1	3.1	38.7	8
EXPATRIATE TOTAL	5.24	61.31	52.6	116.5
INDONESIAN PROFESSIONAL & TECHNICAL				
Counterpart Chief Engineer	1	13.6	68	20
Construction Supervisor	1	3.9	27.8	14
Hydrogeologist	1	11.8	78.6	15
Materials Coordinator	1	15	107.1	14
Inspectors	4	19.8	41.2	48
Draftsman	1	10	62.5	16
Translator	1	10.7	89.1	12
Accountant	1	13	59.0	22
INDON. PROF. & TECH.	11.0	96.9	60.1	161
INDONESIAN ADMINISTRATIVE				
Office Manager	1	15	75	20
Secretary	1	14	70	20
Typist	1	10.6	48.1	22
Clerks	3	42	95.4	44
Drivers	4	46	57.5	60
Laborers	7	57.9	36.1	160
ADMINISTRATIVE TOTAL	17	185.5	53.6	346

APPENDIX I

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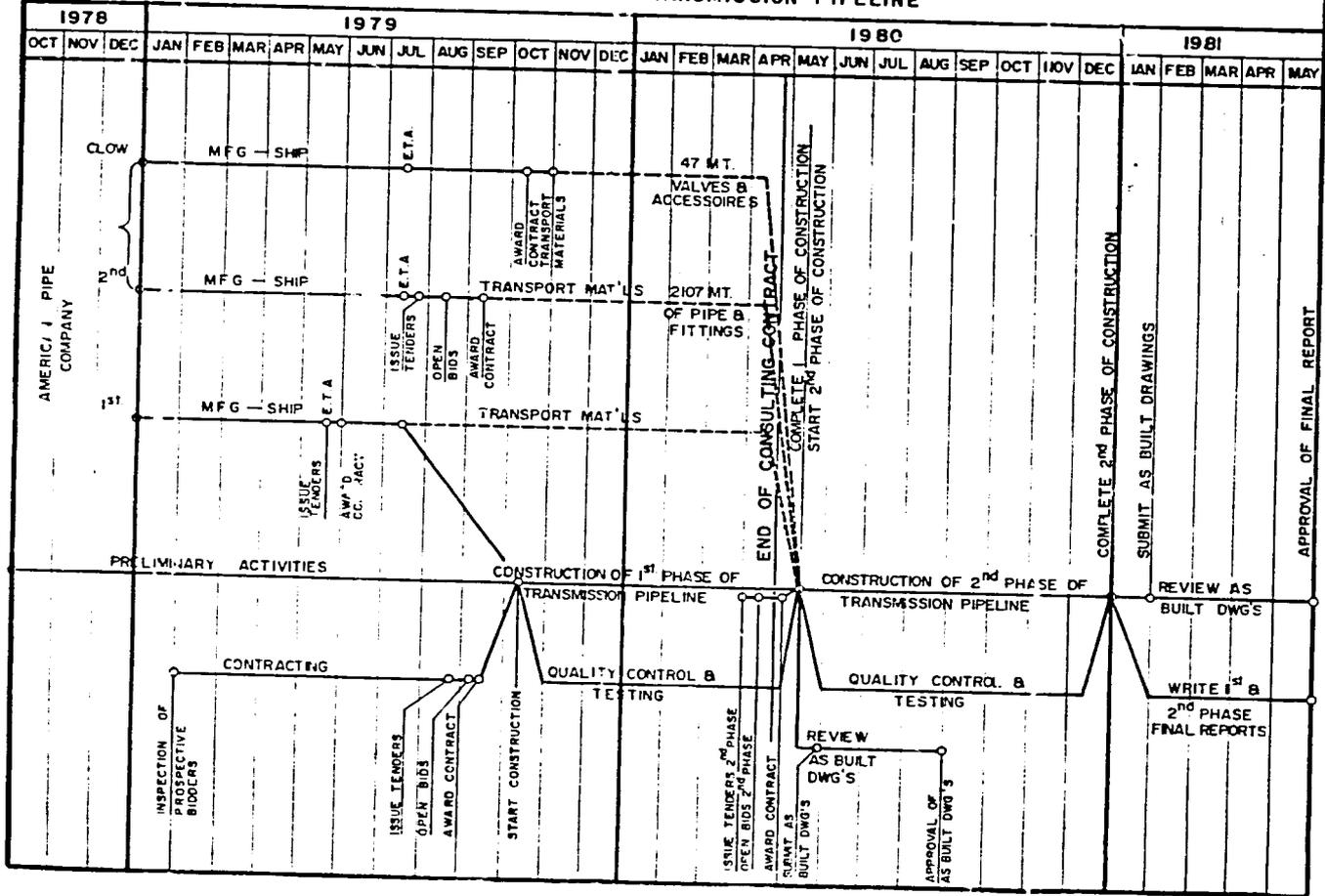
SURAKARTA WATER PROJECT  
REPORT OF ENGINEERING COSTS  
BURNS & MCDONNELL/TRANS-ASIA ENGINEERING ASSOC.

CONTRACT NO. 01/WS-S/AID/78 STARTED 26 OCT. 1978 START 1 JAN. 1978 END 31 JAN. 1981 REIMBURSABLE EXPENDITURES	COSTS FOR  December 1979	CUMULATIVE COSTS THROUGH		CUMULATIVE PAYMENTS THROUGH			TOTAL BUDGET ESTIMATE FOR CONTRACT
		AMOUNT	% OF TOTAL BUDGET ESTIMATE	AMOUNT RECEIVED IN December	TOTAL AMOUNT RECEIVED THROUGH December	% OF TOTAL BUDGET ESTIMATE	
U S DOLLARS							
Salaries and Related Costs	27,455.14	348,134.84	56.7	31,706.28	320,679.70	52.3	5612,922
Transportation	563,26	17,479.43	28.8	1,220	16,916.17	27.8	60,638
Equipment	-	-	-	-	-	-	36,000
Miscellaneous	-	30,678.32	92.4	-	30,678.32	92.4	33,181
Training	-	-	-	-	-	-	14,544
Contingencies	-	-	-	-	-	-	75,729
TOTAL DOLLARS	28,018.40	396,292.59	47.5	32,926.28	368,274.19	44.2	5 833,014
INDONESIAN RUPIAH							
Salaries	8,294,500	36,846,166	51,	7,230,000	28,551,666	40,1	71,150,000
Transportation	2,889,014	16,801,047	59,5	1,591,914	13,912,033	49,3	29,195,000
Housing	1,400,000	24,600,000	76,9	-	23,200,000	72,6	31,950,000
Vehicle Costs	812,276	25,909,770	103,4	670,000	25,827,494	103,1	25,050,000
Equipment Costs	3,863,800	9,672,010	73,5	59,900	5,808,210	44,1	13,153,000
Miscellaneous	2,860,105	15,117,235	61,2	1,819,725	12,257,130	49,6	24,670,000
Contingencies	2,166,750	8,805,825	45,3	-	6,639,075	34,1	19,416,960
TOTAL RUPIAH	22,286,445	137,752,053	64,4	11,371,539	116,195,608	54,4	213,586,560

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11

SURAKARTA WATER PROJECT  
 ACTIVITY FLOW DIAGRAM (PERT)  
 CONSTRUCTION OF TRANSMISSION PIPELINE



BURN & McDONNELL ENGINEERING CO  
 TRANS ASIA ENGINEERING ASSOCIATES INC

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SURAKARTA WATER PROJECT  
TRANSMISSION MAIN  
PROGRESS REPORT NO. 3  
02 JANUARY 1980

I. GENERAL :

As of this writing, all shipments from Rohan are still in the Port of Semarang awaiting (i) approval from the Ministry of Industry and (ii) assignment of transportation Contract to deliver the materiel to Surakarta. The shortage of Ø 150 mechanical joint gaskets and bolts mentioned in the preceding report were air freighted to Indonesia by American Case Iron Pipe Co. and arrived at Jakarta the first week of December 1979. As of this writing said gaskets and bolts have not been cleared through customs and delivered to the job site.

At a meeting 18 December 1979 in the office of the Project Manager, CJWSP-Semarang, it was agreed to start preparation of Tender Documents on 02 January 1980 then after review and required approvals, put them out for bids no later than 21 January 1980. Doing so would allow bids to be received and opened on 20 February and review then award Contracts by the 26th of February 1980. Construction of Phase II could be started 04 March and with a similar time frame to Phase I, be completed by 30 September 1980. On the afternoon of 27 December, 1979, the Consultant was advised of a change in the Phase II time schedule previously agreed upon by CJWSP-Semarang. It was stated the Tender Documents must be ready to put out for bids by 02 January 1980. The Consultant worked personnel overtime and completed plans and Specifications the afternoon of 30 December and two complete sets were delivered to Cipta Karya in Jakarta and one complete set was delivered to CJWSP-Semarang on 31 December 1979.

The 25th of December was observed as a holiday by the Consultant and the Contractor on Section B. The Section A Contractor worked that day and the Consultant had an inspector on that job supervising the pipe installation.

## II. WORK IN PROGRESS :

- A. Contractor Tukad Mas has installed Wonosobo and Tempel River stream crossings from bank to bank of each and is approximately half way across the Brambang River. He is preparing for test on the installed main between Sta. 50 + 00 and 73 + 15. Where there is no problem with easement along the Yogyakarta - Surakarta Highway, the Contractor is beginning to install the transmission main and has delivered gallery pipe and fittings in preparation of starting that work. Other work has included transporting materials, submittal of shop drawings for approval and on going activity in relation to field office construction and settlement of easement locations. As of the end of the twelfth week Tukad Mas has attained 42.45% completion of his total contract including the addition of CO-Al which is approximately 73.8% of his planned schedule.
- B: Contractor Lepen Kencana Utama has almost completed the Pusur River stream crossing and has installed pipe up to the rice paddy at Sta. 3 + 90 where final settlement for the easement is pending. He is working two crews between Sta. 26 + 00 and 34 + 50. Testing has been delayed due to lack of drilling and tapping equipment which is in the Rohan shipments. The Contractor has delivered all of the required pipe along the route and is continuing with on going activity in relation to field office construction and submittal of shop drawings and samples for approval.

As of the end of the twelfth week Lepen Kencana Utama has attained 29.209% completion of his total contract which is approximately 59.4% of his planned schedule.

### III. PROBLEMS

- A. With reference to the previous report, Item III.A., it has been decided to revert to the original design drawings except keep the main six and one-half meters from the centerline of the highway due to the excessive cost to obtain land from the private sector and length of time to acquire same. The main will be approximately sixty centimeters lower than originally planned and will be under the irrigation canals at Sta. 83 + 20 as required.
- B. Lack of items included in Rohan shipments and the lack of Ø 450 mechanical joint gaskets will very shortly cause both Contractors to experience serious delay if not in fact cease further construction effort.
- C. Hydrostatic testing is being delayed for the same reason as stated in the preceding Paragraph "B".
- D. CJWSP has not completed land acquisition pending agreement on a date to have all interested parties assemble for formal payment and recording of the transfer of land title to GOI which will include all of the transmission main south of the Brambang River. After completion of that, two other regions north of the Brambang River must be settled accordingly. In the meantime, the Contractors are unable to proceed where private property is involved.

IV. FUTURE PLANNING :

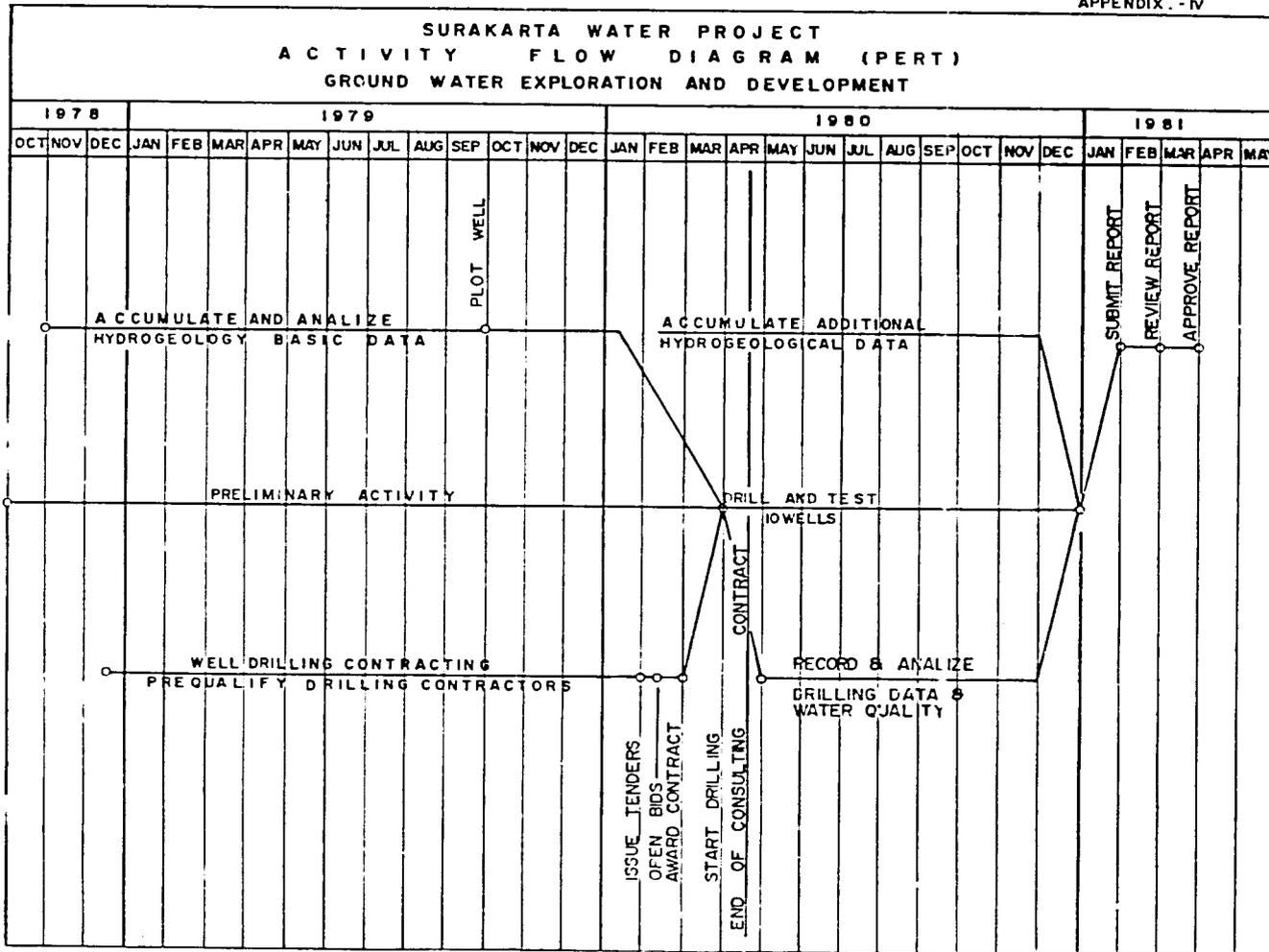
Present construction contracts will proceed where possible to do so and toward the end of January 1980 a schedule will be established with SWE regarding shut down of the existing system in order to make cross ties and do modification work in the existing structures. Delivery of the Rohan shipments will be the key towards accomplishing such work. Very shortly Contracts C,D and E will be awarded and activity will commence on them accordingly.

V. PIPELINE CONSTRUCTION SPECIALIST COMMENTS :

Despite frustrations brought about by lack of component parts of the transmission main and structure modifications plus delay in providing easements, the Contractors have a joint completion of 35.12%.

This completion is about 3.75% below the straight line of contract period. The spread at the end of last month was approximately 5.0% therefore, the anticipated increase of effort is beginning to prove out.

Revisions have been made to update Phase I and Phase II drawings by the end of 1979. The Phase I drawings have been transmitted to the Contractors for construction. The Phase II drawings are to be issued to previously approved contractors for bid after review of Tender Documents by Cipta Karya. It is still anticipated to increase the inspection staff as the work load increases. - - - - - END OF REPORT - - - . . . - .



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GROUNDWATER INVESTIGATION AND  
WELL DRILLING DEVELOPMENT

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Monthly Narrative Report

This report covered the work performed during the month of December 1979.

I. TASKS ACCOMPLISHED

1. Assisting in the completion of Drilling Specifications.
2. Attending conferences.
3. Locating and Surveying drilling sites.
4. Writing reports.

II. COMMENTS AND DISCUSSION

A. DRILLING SPECIFICATION

The final draft of the Drilling Specification the proposed advertisement and prequalification questionnaire for the contractors have been completed and submitted to the Ministry and USAID for their review and approval on December 21, 1979.

Reference to the President's Decree ( Keppres 14) required for the legal tendering, was stated in the Letter of Declaration.

The Tentative Schedule for Tender and Drilling Program is presented below :

- |                                |                     |
|--------------------------------|---------------------|
| 1. Advertisement               | - January 3, 1980   |
| 2. Prequalification acceptance | - January 15, 1980  |
| 3. Invitation to Bid           | - January 29, 1980  |
| 4. Pre-Bid Conference          | - February 5, 1980  |
| 5. Open Bid                    | - February 12, 1980 |
| 6. Start of Drilling           | - April 1, 1980     |

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Exhibit I is presented herein to show the tentative schedule for Local Hydrogeologist requirement.

If the situation permitted, Local Hydrogeologist can follow the short training in U.S.A. that will be conducted by American Ground Water Consultants, Inc., for fulfilling the invitation of Dr. William M. Turner. The possible time for that training is the month of February and March, 1980.

#### B. DRILLING SITES

Surveying of the well site elevation has been completed and the result are shown on table (Exhibit II). Land easement of the well drilling sites can be acquired immediately, it is estimated based upon the Rp. 6,000.- (Six Thousand Rupiahs) per square meter of the land price recently, the total amount of land easement for 7 drilling sites is :  $7 \times 12 \times 12 \times \text{Rp. } 6,000.-$  = Rp. 6,048,000.- (Six Million Forty Eight Thousand Rupiahs), while another 3 drilling sites are proposed to be located in the Perumnas area and will not require land easement.

#### III. RECOMMENDATION

1. Execute the land easement for 7 drilling sites.
2. The possible time for hydrogeological training in U.S.A. is the month of February and March, 1980 before well drilling starts.

#### IV. PROGRAM FOR NEXT MONTH

1. Prequalification
2. Preparing for drilling tender

PROPOSED TENTATIVE SCHEDULE  
FOR LOCAL HYDROGEOLOGIST

Time Work Item	1980												1981			
	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	
Preparing drilling tender	—————															
Drilling 4 wells				—————												
Drilling 4 wells							—————									
Drilling 2 wells										—————						
Preparing final report													—————			
Possible time for training in U.S.A.		—————														

Note :

1. Prequalification of Contractors : January 15
2. Invitation to bid : January 29
3. Prebid Meeting : February 5
4. Openbid Meeting : February 12

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EXHIBIT II

DRILLING SITES LOCATION AND ELEVATION

WELL CODE	ELEVATION METER	LATITUDE	LONGITUDE	REMARK
TW 1	+ 120.62	7° .32' 13.70"	110° .50' 36.68"	Perumnas land *
TW 2	+ 129.60	7° .32' 18.59"	110° .50' 36.68"	- " -
TW 3	+ 124.68	7° .32' 7.17"	110° .50' 16.30"	- " -
TW 4	+ 119.44	7° .32' 37.83"	110° .50'	Private Land **
TW 5	+ 129.03	7° .34' 15.80"	110° .42' 57.29"	- " -
TW 6	- 130.46	7° .34' 39.62"	110° .42' 42.29"	- " -
TW 7	- 134.36	7° .35' 1.30"	110° .42' 34.89"	- " -
TW 8	- 142.13	7° .34' 53.80"	110° .42' 8.80"	- " -
TW 9	+ 141.25	7° .34' 24.95"	110° .42' 7.99"	- " -
TW 10	- 135.59	7° .34' 2.12"	110° .42' 21.95"	- " -

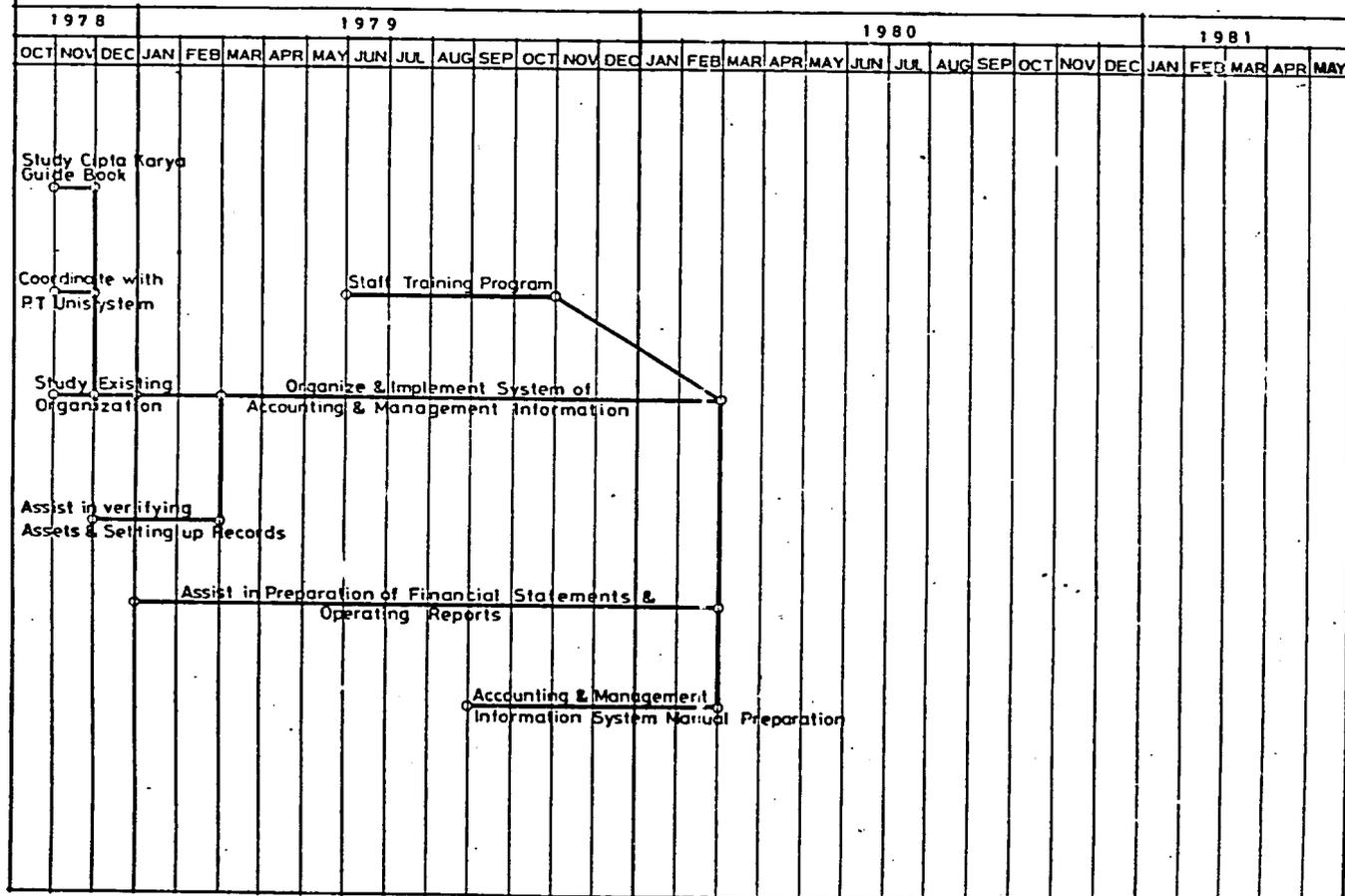
\* Land easement is not required

\*\* Land easement is required

Note :

The longitudes and latitudes were calculated by using a topographic map in 1 : 50,000 scale. Elevations were measured by using a theodolite.

**SURAKARTA WATER PROJECT  
ACTIVITY FLOW DIAGRAM (PERT)  
MANAGEMENT ASSISTANCE TO SURAKARTA WATER ENTERPRISE**



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SURAKARTA WATER ENTERPRISE  
MANAGEMENT ASSISTANCE PROGRAM  
PROGRESS REPORT NO. 15

I. PERIOD COVERED

This report covers the period from December 1 to 31, 1979.

II. WORK DONE

A. General Accounting and Management Information System

Continued the monitoring and giving advice in the proper recording of the daily transactions in the books of accounts, and in the preparation of the monthly financial and other operating reports. The financial and other operating reports for the month of November 1979 were distributed to the various recipients on December 17, 1979.

In connection with the preparation of the 1979 annual financial statements namely, Balance Sheet, Profit and Loss Statement and Cash Flow Statement the Consultant sent a letter to the Director of the Surakarta Water Enterprise on December 19, 1979 specifying some of the schedules to be prepared to support these financial statements.

They are as follows :

1. Schedule of fixed assets and depreciation.
2. Schedule of accounts receivable showing breakdown by years and by kind of account.

3. Schedule of materials and supplies inventory based on the result of physical count.
4. Schedule of water sales during the year by type of customer showing total volume of water sold, amount of sales and average rate per cubic meter.

The format and content of the above schedules were discussed with the Chief of the Finance and Administration Division, and the Chief of the Finance Department.

B. Budget Preparation

Assisted and advised the officials and employees concerned in the preparation of the budget of the Water Enterprise for the calendar year 1980. The Projected Profit and Loss Statement and the Projected Cash Flow Statement were sent to the Supervisory Board of the Surakarta Water Enterprise on December 24, 1979 for review and approval.

C. Accounts Receivable Billed in 1976 and Prior Years

In its Progress Report No. 13, October 1979 the Consultants recommended that the accounts receivable pertaining to 1976 and prior years, which are already doubtful of being collected, be written off from the books of the Water Enterprise. The Director of the Water Enterprise, in a letter to the Supervisory Board dated December 24, 1979 requested its approval to write off the said accounts receivable, amounting to Rp.21,233,669 as of November 30, 1979.

#### D. Financial Projection

Made some revisions in the eight year financial projections of the Surakarta Water Enterprise based on the discussion of the Management Consultant with Mr. Oemarsidik of the Directorate of Sanitary Engineering, Directorate General Cipta Karya on December 10, 1979. These revisions are the following :

1. Increase in average water rate per cubic meter to meet the desired rate of return of 1% in 1980 to 6% in 1983 (start of the loan payment) and every year thereafter.
2. Recomputation of the loan amortization. Based on the schedule of loan payment as contained in the draft of the loan agreement between the Bank of Indonesia and the Surakarta Water Enterprise. The total amount of the loan to be paid by the Water Enterprise remains to be \$ 6,281,000.
3. Revised presentation of the Projected Income Statement to show water production, total volume sold and average water rate per cubic meter.
4. Revised presentation of the Projected Cash Flow Statement to show beginning and ending cash balances and the minimum cash operating requirements.

A copy of the draft of the revised financial projection was sent to Mr. Oemarsidik of the Directorate of Sanitary Engineering on December 13, 1979.

## E. Operating and Administrative Policies

Completed the preparation of the Operating and Administrative Policies Manual for guide and reference of the officials and staff of the Water Enterprise. This Manual is a compilation of the general policies already being adopted and those that are recommended for implementation by the Surakarta Water Enterprise. They are as follows :

1. Operating policies with regards to :
  - o Customers Application for Connection
  - o Water Rate, Other Charges and Customer Classifications
  - o Preparation and Distribution of Bills
  - o Collection of Water Bills
  - o Discontinuance and Reconnection of Service
  - o Customer Complaints
  - o Funds Management and Internal Control Over Cash
  - o Equipment and Inventory
  - o Recordkeeping and Reporting
  
2. Administrative and Personnel Policies with regards to :
  - o Office hours, Tardiness and Absences
  - o Vacation Leave
  - o Sick Leave
  - o Emergency Leave
  - o Maternity Leave
  - o Holidays
  - o Overtime Work

- o Hiring of Personnel
- o Salary, Salary Increases, and promotion
- o Personal Advances
- o Fringe Benefits

The above policies were discussed with the Chief of the Finance and Administration Division on December 18, 19, and 20, 1979.

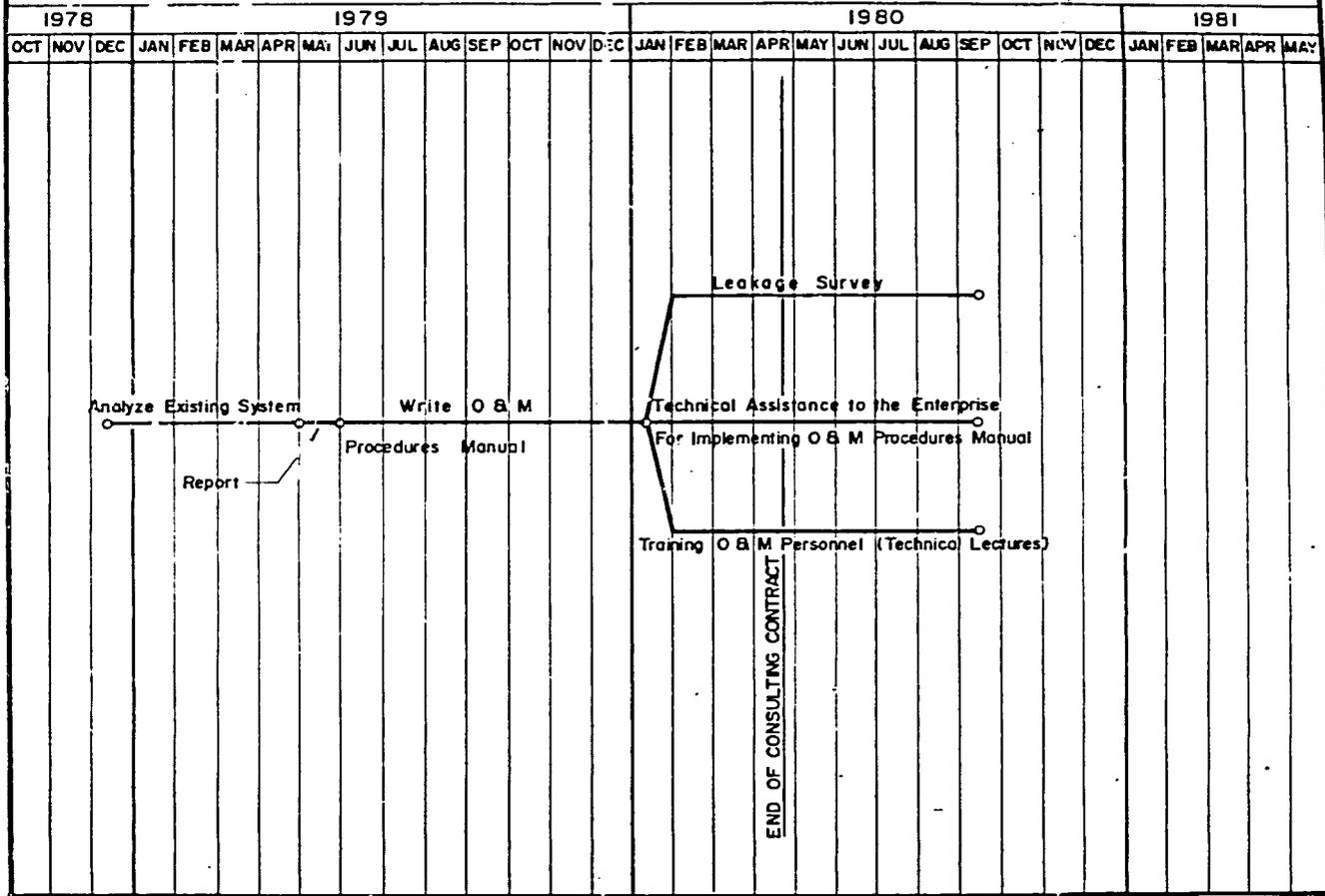
F. Physical Count of Equipment and Materials and Supplies Inventory

Supervised and assisted the staff of the Water Enterprise in the physical counting of the equipment and materials and supplies inventory. Physical count is done at least once every year to determine the existence and condition of the equipment and materials and supplies inventory. As of December 31, 1979, the reconciliation of the result of the physical count and the recorded balance in the stock cards was underway.

III. PROGRAM FOR NEXT MONTH

1. Continue assistance in the preparation of the monthly financial and other operating reports.
2. Assist in the preparation of the 1979 annual operating reports.

SURAKARTA WATER PROJECT  
ACTIVITY FLOW DIAGRAM (PERT)  
OPERATION AND MAINTENANCE ASSISTANCE PROGRAM



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.SCHEDULE FOR TECHNICAL O & M AND METER REPAIR  
PROGRAM FOR THE SURAKARTA WATER ENTERPRISE  
( CLASSROOM STUDIES )

REVISION : 2

DATE	FROM	TO	S U B J E C T S
1/7/80	8 am	9 am	INTRODUCTION
Monday	9 <sup>15</sup> am	12 noon	SOURCES OF WATER & THEIR CHARACTERISTICS
	1 pm	3 <sup>30</sup> pm	WATER PRODUCTION, WATER TREATMENT
1/8/80	8 am	12 noon	WATER STORAGE AND DISTRIBUTION
Tuesday	1 pm	3 <sup>30</sup> pm	RESERVOIRES
1/9/80	8 am	12 noon	HYDRAULICS & OPERATIONAL MATH.
Wednesday	1 pm	3 <sup>30</sup> pm	HYDRAULICS & OPERATIONAL MATH.
1/10/80	8 am	12 noon	HYDRAULICS & OPERATIONAL MATH.
Thursday	1 pm	3 <sup>30</sup> pm	APPLIED HYDRAULICS
1/11/80	8 am	12 noon	APPLIED HYDRAULICS
Friday			
1/12/80	8 am	12 noon	PIPE, TYPES, USES AND PROTECTION
Saturday			
1/14/80	8 am	12 noon	PIPE, TYPES, USES AND PROTECTION
Monday	1 pm	3 <sup>30</sup> pm	PIPE, TYPES, USES AND PROTECTION
1/15/80	8 am	12 noon	PIPELINE INSTALLATION & MAINTENANCE
Tuesday	1 pm	3 <sup>30</sup> pm	PIPELINE INSTALLATION & MAINTENANCE
1/16/80	8 am	12 noon	PIPELINE INSTALLATION & MAINTENANCE
Wednesday	1 pm	3 <sup>30</sup> pm	PIPELINE INSTALLATION & MAINTENANCE
1/17/80	8 am	12 noon	PIPELINE APPURTENANCES
Thursday	1 pm	3 <sup>30</sup> pm	PIPELINE APPURTENANCES
1/18/80	8 am	12 noon	(METERING) TYPES OF MEASUREMENTS
Friday			

DATE	FROM	TO	S U B J E C T S
1/19/80 Saturday	8 am	12 noon	(METERING) TYPES OF MEASUREMENTS
2/25/80 Monday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	METER REPAIRMEN AND DUTIES
2/26/80 Tuesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	INTRODUCTION QUESTIONS - ANSWERS WATER METER REPAIR
2/27/80 Wednesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	WATER METER REPAIR WATER METER REPAIR
2/28/80 Thursday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	WATER METER REPAIR WATER METER REPAIR
2/29/80 Friday	8 am	12 noon	WATER METER SHOP
3/1/80 Saturday	8 am	12 noon	TESTING OF WATER METERS
3/3/80 Monday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	WHY METER REPAIR IS NECESSARY WHY METER REPAIR IS NECESSARY
3/4/80 Tuesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	WATER METER HISTORY CARD QUESTIONS - ANSWERS
3/5/80 Wednesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	PUMPS, MOTORS AND ITS OPERATION INSTRUMENTATION AND CONTROL
3/6/80 Thursday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	LEAK SURVEY LEAK SURVEY
3/7/80 Friday	8 am	12 noon	LEAK SURVEY CONTINUES
3/8/80 Saturday	8 am	12 noon	QUESTIONS - ANSWERS CLOSING SESSION

DATE	FROM	TO	S U B J E C T S
4/7/80 Monday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	PUBLIC HEALTH CHLORINATION
4/8/80 Tuesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	CHLORINE HANDLING AND SAFETY QUESTIONS - ANSWERS
4/9/80 Wednesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	MAPS, DRAWINGS, RECORDS MAPS, DRAWINGS, RECORDS
4/10/80 Thursday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	MAPS, DRAWINGS, RECORDS QUESTIONS - ANSWERS
4/11/80 Friday	8 am	12 noon	SITE VISIT PIPELINE CONSTRUCTION
4/12/80 Saturday	8 am	12 noon	SITE VISIT SURAKARTA WATER ENTERPRISE
4/14/80 Monday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	SITE VISIT WELL DRILLING SITE SITE VISIT KARTASURA AND JEBRES RESERVOIRS
4/15/80 Tuesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	SITE VISIT COKROTULUNG SPRING DISCUSSION QUESTIONS ANSWERS
4/16/80 Wednesday	8 am 1 pm	12 noon 3 <sup>30</sup> pm	CERTIFICATE QUESTIONS CLOSING SESSION - CERTIFICATE AWARD

SCHEDULE FOR WATER METER REPAIR AND OPERATION OF METER SHOP

TRAINING FOR THE SURAKARTA WATER ENTERPRISE

<u>D A T E</u>	<u>F R O M</u>	<u>T O</u>	<u>S U B J E C T S</u>
2-4-80	9:00	10:30	Introduction
Monday	10:45	12:00	Why we are here
	1:00	3:00	How to use Tools
2-5-80	9:00	10:30	Meter Shop
Tuesday	10:45	12:00	Meter Shop
	1:00	3:00	Questions and Answers
2-6-80	9:00	10:30	Types of Measurements
Wednesday	10:45	12:00	Types of Measurements
	1:00	3:00	Types of Measurements
2-7-80	9:00	10:30	Questions & Answers to date (Slides)
Thursday	10:45	12:00	New Percision Model PMX-75 5/8 x 3/4
	1:00	3:00	New Percision Model PMX-75 5/8 x 3/4
2-8-80	9:00	10:00	Water Meters in General
Friday	10:00	11:00	Water Meters in General
2-9-80	9:00	10:30	(Discussion) all Personnel
Saturday	10:45	12:00	Questions & Answers for the Week
2-11-80	9:00	10:30	Cleaning Incoming Water Meters
Monday	10:45	12:00	Cleaning Incoming Water Meters
	1:00	3:00	Cleaning Incoming Water Meters
2-12-80	9:00	10:30	Reading Water Meters
Tuesday	10:45	12:00	Reading Water Meters
	1:00	3:00	Questions & Answers

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D A T E	F R O M	T O	S U B J E C T S
2-13-80	9:00	10:30	Breakdown Bench
Wednesday	10:45	12:00	Breakdown Bench
	1:00	3:00	Breakdown Bench & Questions
2-14-80	9:00	10:30	Meter Repair Bench
Thursday	10:45	12:00	Meter Repair Bench
	1:00	3:00	Meter Repair Bench & Questions
2-15-80	9:00	10:00	Test Bench
Friday	10:00	11:00	Test Bench & Questions
2-16-80	9:00	10:30	Test Bench
Saturday	10:45	12:00	Questions & Answers for the Week
2-13-80	9:00	10:30	Meter Repair Instruction (Slides)
Monday	10:45	12:00	Meter Repair Instruction (Slides)
	1:00	3:00	Meter Repair & Questions (Slides)
2-19-80	9:00	10:30	Meter Repair Instruction (Slides)
Tuesday	10:45	12:00	Meter Repair Instruction (Slides)
	1:00	3:00	Meter Repair & Questions (Slides)
2-20-80	9:00	10:30	Cleaning Bench & Information
Wednesday	10:45	12:00	Cleaning Bench & Information
	1:00	3:00	Necessary Information & Questions
2-21-80	9:00	10:30	Breakdown Bench and Why
Thursday	10:45	12:00	Breakdown Bench and Why
	1:00	3:00	Breakdown Bench & Questions
2-22-80	9:00	10:00	Process on Meter Repair
Friday	10:00	11:00	Process on Meter Repair
2-23-80	9:00	10:30	Process on Meter Repair
Saturday	10:45	12:00	Questions & Answers for the Week

D A T E	F R O M	T O	S U B J E C T S
3-6-80	9:00	10:30	(Individual) Meter Record Information
Thursday	10:45	12:00	(Individual) Cleaning Bench
	1:00	3:00	Cleaning Bench
3-7-80	9:00	10:00	(Individual) Breakdown Bench
Friday	10:00	12:00	(Individual) Breakdown Bench
3-8-80	9:00	10:30	(Individual) Test Bench
Saturday	10:45	12:00	(Individual) Test Bench
3-10-80	9:00	10:30	History Record Cards
Monday	10:45	12:00	History Record Cards (Why)
	1:00	3:00	Meter Racks and Storage
3-11-80	9:00	10:30	Meters Versus Cash Register
Tuesday	10:45	12:00	Cleaning of Meter Shop
	1:00	3:00	Keep Clean + (Why)
3-12-80	9:00	10:30	Review + Questions
Wednesday	10:45	12:00	Review + Questions
	1:00	3:00	Review + Questions
3-12 thru 4-12-80			Observation and Progress of Water Meter Shop



## SURAKARTA WATER PROJECT MEETING

Day : Tuesday  
Date : December 4, 1979  
Time : 09:40 a.m. - 1:20 p.m.  
Place : Consultant's Office  
Jl. Brig. Jend. Sudiarto 534, Surakarta

### Participants :

1. Mr. Aziz - DSE, CK Jakarta
2. Mr. Suwandi - DSE, CK Jakarta
3. Mr. Sihono - DSE, CK Jakarta
4. Mr. Krisno Darusman - CJWSP Semarang
5. Mr. Harsono - CJWSP Surakarta
6. Mr. Soedarto - SWE
7. Mr. Soelarno - SWE
8. Mr. Haryanto S. - SWE
9. Mr. Johan - Health Dept., Surakarta
10. Mr. Gatoet W. - Buildings Dept. Surakarta
11. Mr. Riswiripno - Buildings Dept. Surakarta
12. Mr. Machfoel Ch. - KIP Program
13. Mr. Abimanyu - KIP Program
14. Mr. A. Grayson - USAID
15. Mr. P. Thorn - USAID
16. Mr. Eddie S. Kristiawan - USAID
17. Mr. F.M. Midgett - BM/TAE Jakarta
18. Mr. G.M. Pary - BM/TAE Surakarta
19. Mr. T.G. Fodor - BM/TAE Surakarta
20. Mr. J.F. Baucom - BM/TAE Surakarta
21. Mr. G.R. Pike - BM/TAE Surakarta
22. Mr. B.B. Bayongan - BM/TAE Surakarta
23. Mr. A.F. Dengah - BM/TAE Surakarta
24. Mr. Y. Suyatno Y. - BM/TAE Surakarta

The meeting was opened by Mr. Aziz as the Head of the Meeting.

Mr. Aziz forwarded six topics for the meeting, they are :

1. Problems in transporting off-shore purchased materials
2. Problems in installing transmission pipeline
3. Problems in Well Drilling Program
4. Problems in Management Advisory Program
5. Problems in Meter Repair Program
6. Discussion of Monthly Report

. Transporting off-shore purchased materials

Equipment for Meter Repair Shop is not yet available. Mr. Pary informed that the documents needed to clear the equipment are expected to arrive this week. Mr. Baucom reported that there are 21 pcs of pipe slightly damaged. Mr. Dengah stated that some materials from Colcorindo Raya have been found to be damaged. Mr. Aziz promised that the problems will be cleared up next week.

Installation of Transmission Pipeline

Mr. Baucom reported that the progress of the transmission pipeline is behind schedule due to materials needed not available and the lack of work force. He also said that the construction of transmission pipeline Phase II planned to start February 1980 will be more expensive. Also having difficulties on the distance from the pipeline to the centerline of the highway in connection with irrigation. Mr. Aziz suggested to divide the work into 4 lots. He also suggested to revise the assessed bill in the Contract Documents.

- . The Consultant proposed 10 Test-Production Wells, where the location survey will be completed this week. Mr. Aziz stated that CK proposed additional budget for this project of 200 million and he suggested to pay the Contractor directly as per Invoice. This contract will also be performed with USAID's loan, but is still awaiting the approval from BAPPENAS for additional allocation.

Mr. Suyatno requested using at least four dilling rigs to save time. Mr. Aziz stated that one of the problems is the lack of pumping test equipment. Mr. Gatoet from KIP program informed that there is no plan to drill wells in the city of Surakarta. Mr. Suyatno also explained that the proposed test-production wells are located northeast of Surakarta city near Perumnas and west of the city (two se-  
rate areas).

. Management Advisory Program

Mr. Bayongan explained some corrections of the previous draft of the Financial Projections of the Surakarta Water Enterprise.

. Meter Repair Program

Mr. Aziz asked whether there are any complaints regarding problems in meter repair program. Mr. Pike said up to the present there is no complaint and he has been preparing brochures for Meter Repair Training Program in English and in Bahasa Indonesia.

. Discussion of Reports

Mr. Aziz said some time ago the Consultant had problems with pipe leakage. Mr. Fodor stated that the problem has been reported in January and February Reports. But, to the present the repairs have not been conducted due to the limited budget.

Mr. Aziz promised that the Directorate allocation will provide some rupiahs to finance the work.

Mr. Machfoel from KIP explained that the main purpose of this program is to improve facilities of Kampung environment such as :

- foot-paths
- public bathhouses

- providing public fire hydrants
- " " dustbins
- etc.

For fire hydrants KIP only plan the locations but the equipment, the Directorate will be requested to provide.

Mr. Johan from the Health Dept. stated that there are four Puskesmas located in the area of KIP program , those are in :

1. Lawiyon
2. Serengan
3. Pasar Kliwon
- 4, Purwodiningratan

The KIP Program is including these areas :

1979 - 1980 - Sudiroprajan, Gandekan and Sangkrah

1980 - 1981 - Joyosuran, Kemlayan, Stabelan, and  
Purwidiningratan

1981 - 1982 - Kepatihan Wetan, Kestalan, Kratonar.,  
Kepatihan Kulon, Tegalharjo and Ketelan

Those area are about 55 Ha, which will be the first priority for installing water pipe (mapped in yellow color).

At last Mr. Aziz suggested the Consultant to assist the KIP Program and he closed the meeting at 01:20 p.m.

Afterwards the participants went to pay a visit to the area of KIP Program and to the pipe storage area.

Memorandum on discussions about Water Supply for Perumnas Project at Surakarta

Place : BM/TAE Office, Surakarta

Date : December 5, 1979

Hour : 11.40 a.m. - 12.40 p.m.

Participants : 1. Mr. Lobeek, Consultant on Perumnas Project ( DHV ), Jakarta  
2. Mr. Duddy Soegoto, Head of Design Division Perumnas, Jkt.  
3. Mr. Harsono, Surakarta Water Project  
4. Mr. Dengah, BM/TAE  
5. Mr. Soeyatno, BM/TAE

Results :

BM/TAE informed Perumnas that :

- The transmission main will be ready within the year 1980.
- The intention of the loan is to supply potable water to the poorer population of Surakarta, south of the Anyar River.
- Perumnas Area at Mojosongo is situated North of the Anyar River, so will not be supplied by water coming from the Cokrotulung Spring in 1980.
- Within the scope of work of the Consultant (BM/TAE) is also : groundwater investigation and drilling of test wells

- It is agreed by the Directorate of Sanitary Engineering (Cipta Karya) and USAID, that instead of drilling test wells, the Consultant will supervise the drilling of wells ready to be used as production wells.

It is also agreed that some of the wells to be drilled will be within the Perumnas Project Area at Mojosoongo, so Perumnas will be able, in coordination with the Surakarta Water Enterprise, to utilize it to supply water to the Perumnas Community.

- Staking out of boreholes has been executed, including four (4) at Mojosoongo area.
- Drilling is scheduled to start early in 1980.

Perumnas informed BM/TAE, that :

- The General Design received by BM/TAE will probably be revised.
- Perumnas is still negotiating with the Public Works to move the by-pass proposed to go through the Perumnas Area.
- In case of change in design of site plan, Perumnas will inform BM/TAE at the latest in February 1980.
- If the construction of wells starts before BM/TAE has been informed by Perumnas about any change in design, BM/TAE can go ahead with drilling at proposed staked out sites.
- If Perumnas informed BM/TAE before the drilling starts, BM/TAE will set the sites of boreholes in accordance with Perumnas Design.

Memorandum on discussions with Public Works of Surakarta Region

Place : Surakarta Region Public Works,  
Jl. Hasanudin, Solo

Date : December 6, 1979

Hour : 10.00 - 10.40

Participants :

1. Mr. Soetikno, Head of Road and Bridges Section
2. Mr. Harsono, Surakarta Water Project
3. Mr. Dengah , BM/TAE

Results :

1. Ditch South of the highway between Kartasura and Surakarta is not under the jurisdiction of the Irrigation Section.
2. Main purpose of this ditch is for stormwater drainage.
3. To comply with the Bina Marga regulations, placing the transmission main 6,50 meters from the center-line of the slow traffic road, it is agreed to place the pipe between the ditch and the newly erected electric poles/fences and building a low retaining wall with its top not higher than 1,00 m. @ 1,20 m. above the pipe and normalize the ditch banks, by keeping the bottom of the ditch not less than 1,00 m.
4. To secure the water in the main from contaminations by possible flooding in the ditch, it would be better to keep the valves boxes as far as possible from the ditch on the higher side of the bank.

5. Valve box of the cross tie can be placed on the grassmedian between the paralel roads.
6. The border of the highway under jurisdiction of the Surakarta Region Public Works is at KM.6.150 (West of the bridge)
7. The bridge is under jurisdiction of the Municipal Public Works.
8. The Consultant/Project to submit drawings of proposed design at the discussed part ( plans and sections ) to the Surakarta Region Public Work for approval.

## MEMORANDUM OF MEETING

Place : Central Java Water Supply Project  
Office, Semarang

Date : Tuesday, December 18, 1979

Time : 2.30 - 4.15 p.m.

Attended by : 1. Mr. Krisno Darusman CJWSP, Smg.  
2. Mrs. Sumaryati CJWSP, Smg.  
3. Mr. Iing Parvanaraya CJWSP, Smg.  
4. Mr. J.F. Baucom BM/TAE  
5. Mr. A.F. Dengah BM/TAE

## Results :

## 1. Change Orders to Contractors :

- All proposed Change Orders prior to issuance to the Contractor, to be discussed with Mr. Harsono, SWSP.
- Notice to proceed for every Change Order to be issued by the Consultant, after counter-signed by Mr. Harsono.
- The total of all Change Orders ( increase or decrease ) should not exceed 10% of the Contract Sum.
- The Project (CJWSP) shall issue a Contract Addendum consisting of all Change Orders to the Contractor before completion time of the contract.
- Payment of the Change Order will be before the last payment of the contract.
- Mr. J.F. Baucom proposed that all above items to be decided on a separate meeting with Consultant's Chief Engineer.

## 2. Involvement of the Project :

- On every Monday : representatives from the Project's local office are attending the Project meeting.

- On every FIRST Monday of the month, also representatives from the Project's Central Office will attend the meeting, starting January 7, 1980.

3. Phase II of Installation of Transmission Main :

- Project will send to the Consultant all tracings/specia of the design of Transmission Main, for reproduction and partly redesign it.
- Consultant and Local Project Officials to complete survey and all needed informations to smoothen the installation of phase II.
- Consultant to submit to the Project for review : draft of tender documents on early January 1980.
- Date of Invitation to Bid (advertisement) not later than January 21, 1980.
- Completion time not more than 210 calendar days.
- Phase II to be divided in three (3) sections with approximately the same value in costs
- Contractors to bid for each section and as an alternative : for two combined sections.
- Estimated cost is within the budget of ABT 79/80 (additional budget FY 79/80).

4. Other results in connection with the installation of the Transmission Main :

- The Project agrees with the Consultant's proposal to award to the Contractor of Section A: the extension of installation of transmission main from Sta. 103 + 85 up to the Kartosura Reservoir Sta. 121 + 58 cross tie with conditions : a. the cost will be according to

unit prices of the existing contract

b. the payment will be from the additional budget FY 79/80 (ABT)

- To prevent a too low discharge capacity from the Division Chamber, within phase I to be executed : additional  $\emptyset$  450 mm. intake connection starting from BV 13

#### 5. Proposal of Budget 1980/81 (DUP 80/81)

- The Project has to prepare 1980/1981 Budget Proposal and has to compile all needs in budget also for Surakarta Water Project to be sure the Project will run well.
- Phase I Distribution Network :
  - 3000 yard hydrants installations
  - 100 public hydrants installations
  - 5 public bathhouses installations
  - 147 public latrines installations
  - 20 Km. installation of  $\emptyset$  2" -  $\emptyset$  4" PVC pipe.
  - 16 Km. purchase + install  $\emptyset$  3/4" -  $\emptyset$  1" service lines
- Items to be cleared with the Directorate :
  - a. Additional Consultant's services
  - b. Well drilling program
  - c. Transmission of well-water
  - d. Rehabilitation of existing distribution network

#### 6. Others :

- Due to the letter from SWE about decrease of pressure head in the intake caused by the excavation work around the spring :

- a. The Consultant has ordered the Contractor to speed up the work of Pusur River Syphon to enable to finish pipe laying to the Division Chamber
- b. The Consultant to investigate the cause of decrease of pressure head.

## MEMORANDUM OF MEETING

Subject : EXTENSION OF INSTALLATION  
from Sta. 103 + 85 to Sta. 121 + 60

Place : BM/TAE Surakarta Office

Date : Thursday, December 20, 1979

Time : 08.20 a.m. - 09.10 a.m.

Attended by : Mr. Iing Parvanaraya , CJWSP , Smg.  
Mr. Harsono , DIV. I CJWSP, Ska.  
Mr. J.F. Baucom , BM/TAE , Ska.  
Mr. A.F. Dengah , BM/TAE , Ska.  
Mr. S. Johannis , P.T.Tukad Mas , Ska.

## Results :

1. Contractor agrees :
  - to install the transmission main from Sta.103+85 up to Sta. 121 + 60
  - to submit an cost estimate, after receiving the drawings from the Consultant based on the unit prices of on going contract ( Section A )
  - to receive the payment for it as a part of pay - ments of Phase II contract.
2. BM/TAE will issue the design drawings of mentioned part on Dec. 20, 1979 to :
  - CJWSP , Smg.
  - Div. I CJWSP , Ska.
  - Contractor
3. CJWSP Semarang will issue the Notice to proceed to the Contractor after approval of the costs.
4. If needed, completion time of Phase I including extension of mentioned part can be extended with one (1) month.

## MEMORANDUM OF MEETING

Subject : O & M Training Program

I. Place : BM/TAE Consultant Office, Surakarta

Date : December 27, 1979

Time : 10.20 a.m. - 11.40 a.m.

Attended by :

1. Mrs. Kusniati	- DSE, Jkt.
2. Mr. Harsono	- Div. I CJWSP, Ska.
3. Mr. George M. Pary	- BM/TAE, Ska.
4. Mr. T.G. Fodor	- BM/TAE, Ska.
5. Mr. G. Pike	- BM/TAE, Ska.
6. Mr. A.F. Dengah	- BM/TAE, Ska.
7. Mr. Robinson	- C.K./Impact Study, Jkt.
8. Mr. Sihono	- C.K./Impact Study, Jkt.
9. Mr. Indra	- C.K./Impact Study, Jkt.

Results :

1. Submitted schedule (for the first two weeks ) proposed by BM/TAE approved, with 1 (one) correction :
  - Opening date : January 9, 1980 instead of January 7, 1980.
2. Preparations of Training Program :
  - All furnishing/equipment will be provided by Central Java Water Supply Project in coordination with Directorate of Sanitary Engineering and Surakarta Water Supply Project.

- Further discussions at Semarang on December 28, 1979.
- Lodging will be provided by Directorate of Sanitary Engineering
- Refreshments during class training will be provided by Central Java Water Supply Project.

II. Place : CJWSP Office, Semarang

Date : December 28, 1979

Time : 11.40 - 14.10

Attended by: 1. Mrs. Kusniati - DSE, Jkt.  
 2. Mr. Krisno Darusman - CJWSP, Smg.  
 3. Mr. Harsono - Div. I CJWSP, Ska.  
 4. Mr. A.F. Dengah - BM/TAE, Ska.

Results :

1. DSE to lend : - overhead projector (negative projector)  
 - samples
2. BM/TAE to transport DSE equipment and samples , safely from Jakarta to Surakarta early January and return it soon after the training program is finished.
3. Central Java Water Supply Project to provide all other furnishing and equipment in coordination with Division I, Surakarta.
4. Participants will be called from Jakarta for confirmation of attendance. If the number of thirty (30) exceeds, DSE will notify BM/TAE and CJWSP in time.
5. Opportunity is given to additional local personnel, only as observers.