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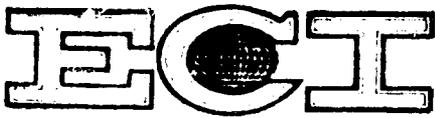
REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS AND ELECTRIC POWER
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT

30p

THE CITANDUY RIVER BASIN
DEVELOPMENT PROJECT

MONTHLY REPORT FOR THE PERIOD
Ending : 30 April 1974

SUBMITTED BY :
ENGINEERING CONSULTANTS, INC.
DENVER, COLORADO USA BANJAR, INDONESIA



ENGINEERING CONSULTANTS, INC.

CABLE ADDRESS :
ECIBANJAR
WEST JAVA
INDONESIA

PROYEK CITANDUY
PATARUMAN
BANJAR, WEST JAVA
INDONESIA

May 3, 1974

Director General of
Water Resources Development
Ministry of Public Works
and Electric Power
Jalan Pattimura 7/20
Kebayoran Baru. Jakarta
Republic of Indonesia

Attn : Director of River and
Swampy Area Development

Our file : 1138/54
Mr. 4/74
Subject : Monthly Report
Citanduy River
Basin Development
Project.

Dear Sir :

The submission of this ninth report for the calender month of April 1974 marks the half way point in our eighteen month contract.

In some respects the hardest part remains but on the other hand the difficult first half of getting established is now behind us. We have stayed on schedule and feel with some minor adjustments we can remain on schedule. It is hoped that this report will enable the client to evaluate our current progress.

Yours truly,

Encl: Thirty (30) copies
of Progress Report No. 9

Engineering Consultants, Inc.

A handwritten signature in cursive script that reads "Gifford E. Rogers".

Gifford E. Rogers
Resident Manager

CC:

1. USAID/Jakarta, American Embassy
Jakarta, Republic of Indonesia
Attn : Mr. M^CAleer, Engineering Section
Six (6) enclosures.
2. Directorate of River and Swamps. Banjar Office.
Attn : Ir. Soebandi Wirosoemarto, Project Manager
Citanduy Project. Five (5) enclosures.
3. P.T. Indah Karya. Bandung
Attn : Ir. Sahat T.P. Siagian, Counterpart Team Leader.
Five (5) enclosures.
4. ECI/Denver.
Attn : Mr. C.M.Langford, Project Sponsor.
Three (3) enclosures.
5. ECI/Staff. Banjar
Five (5) enclosures.

WJS/n

MONTHLY REPORT NO. 9

Period ending 30-4-74

I. GENERAL

At the end of this reporting period, the consultants will have passed an important milestone i.e. one-half of the total contract time will have been expended. As this date coincided with the regular scheduled meeting date of the Steering Committee - the Consultants was asked to prepare a special progress report listing briefly and concisely the progress of work to date. The report was a joint effort of all the Consultants and Counterparts and was thus divided into the following categories of expertise and/or activity :

- | | |
|-----------------------------------|---------------------------|
| 1. Mapping and Aerial Photography | 7. Irrigation & Drainage |
| 2. Geology and Soils Mechanics | 8. Agriculture |
| 3. Hydrography | 9. Engineering |
| 4. River Management | 10. Economics |
| 5. Land Use and Management | 11. Environmental Impacts |
| 6. Soils and Land Classification | 12. Plan formulation |

The report contained twenty-five pages and was produced in sufficient numbers of copies to provide distribution to the Steering Committee members, Consultants and their Counterparts.

On the 24th, a joint meeting between the staff members of the Ministry, Consultants and their Counterparts was held to discuss the special progress report. These meetings are scheduled whenever it is mutually advantageous to discuss operational and administrative matters in a joint session. It also provides the Counterpart Team an opportunity to keep abreast of the Consultants joint effort rather

than one individual's category. Minutes of this meeting are included in the appendix to this report.

Our departure schedule exceeded the arrivals this month and this caused an overall reduction in Consultant Staff members. Our Resident Geologist, Mr. Scott, completed his seven month assignment and returned to the USA on 17-4-74.

Mr. Kuehl scheduled his second TDY tour to overlap Mr. Scott and thus departed on 21-4-74. Mr. Kuehl reviewed the damsite selections to date and made specific recommendations in regard to further investigations (surveys, geologic and soil mechanics) he also reviewed the Segara Anakan Project with regard to the location of the cutoff dikes and tide gate installations.

Mr. Lu-Yeung completed his second TDY tour by orienting Mr. Saunders and establishing some definite Hydrologic Data in regard to expected stream discharge hydrographs, etc. He departed the country on 12-4-74.

Our Environmental Specialist Mr. Churchill, completed his two month assignment and departed on 3-4-74.

Mr. Fletcher, Land Use Specialist is completing his assignment and is scheduled to depart next month. He is presently writing his final report and discussing his findings individually with several of our staff members.

II. PERSONNEL

A. Present at last report :

- | | |
|---------------------------|------------------------------|
| 1. Gifford E. Rogers | - Resident Manager |
| 2. Wallace J. Schoenleber | - Civil Engineer |
| 3. David E. Bogan | - Irrig. and Drain. Engineer |
| 4. Robert E. Struthers | - Economist |
| 5. Roydon T. Edwards | - Agriculturist |
| 6. Donald P. Scott | - Geologist |
| 7. Robert A. Gardner | - Soil Scientist |
| 8. Herbert C. Fletcher | - Land Management Specialist |
| 9. Ethan D. Churchill | - Environmentalist |
| 10. Kuehl, Max | - Chief Engineer |
| 11. Au-Yeung, Yin | - Hydrologist |
| 12. Saunders, M.P. | - Planner |

B. Arrivals subsequent to last report :

N o n e

C. Departures subsequent to last report :

1. Yin Au-Yeung, Hydrologist
Departed Indonesia on 12-4-74 after completing his second TDY assignment on hydrologic work on Citanduy watershed.

2. Max K. Kuehl, Chief Engineer

Departed Indonesia on 21-4-74 after completing his second TDY assignment on major structure location and design.

3. E.D. Churchill, Environmentalist

Departed Indonesia on 3-4-74 after completion of his initial TDY assignment on environmental work.

4. D.P. Scott, Geologist

Departed Indonesia on 17-4-74 after completion of his seven month resident tour of duty.

D. Scheduled to arrive next month :

1. Eric Will - Chief Planner - May 1974

E. Scheduled to arrive at a later date :

1. Stevens, M.A. - Flood Control - June/July 1974

III. IMPORTANT EVENTS

A. Meetings

| <u>No.</u> | <u>Day of Month</u> | <u>Location</u> | <u>Purpose</u> | <u>Personnel</u> |
|------------|---------------------|--|----------------------------------|-------------------------------|
| 1. | 10-13 | Govt. Offices LPMA. Bandung | Land Use Reg. Data Collection | Fletcher and Krebet |
| 2. | 13 | LPMB. Bandung | Publication Data for reports | W.J. Senoenleber |
| 3. | 23-26 | PLN. Offices Tasikmalaya | Economic Data Collection | Struthers and Wildan |
| 4. | 23 | AES Offices Cilacap and Purwokerto | Ag. Data Collection | Tossin and Rachmat |
| 5. | 25 | Forestry Offices Ciamis | Land Use Data Collection | Fletcher and Krebet |
| 6. | 27 | Indah Karya Bandung | Irrig. Data Information | Bogan and Radhi |
| 7. | 30 | Jakarta | Steering Committee Meeting | Rogers, Saunders and Sahat |

III. IMPORTANT EVENTS - Continued

B. Field Trips

| <u>No.</u> | <u>Day of Month</u> | <u>Location</u> | <u>Purpose</u> | <u>Personnel</u> |
|------------|---------------------|---------------------------------|--------------------------------------|---|
| 1. | 1 | Ciawi | AES Demonstration of Lowland Rice | Edwards, Tossin and Rachmat |
| 2. | 3 | Matenggeng Damsite | Geologic Invest. | Kuehl, Scott and Iing |
| 3. | 3 | Citanduy River | Levee Surveys | Schoenleber and Sahat |
| 4. | 9 | Forestry Tasikmalaya | Land Class Data Collection | Fletcher and Krevet |
| 5. | 10 | Segara Anakan | West Outlet Cutoff Dike Location | Kuehl, Scott, Saunders, Iing, Radhi and Arwadi |
| 6. | 11 | Banjar Damsite | Geologic Invest. | Kuehl, Scott and Iing |
| 7. | 10-13 | LPMA & Govt. Offices Bandung | Land Use Research | Fletcher and Krevet |
| 8. | 16 | Matenggeng Damsite | Topo Surveys | Schoenleber, Sahat, Napitupulu and Sitanggang |
| 9. | 16 | Dodo Plantation Tasikmalaya | Land Use Data Collection | Fletcher and Krevet |
| 10. | 18 | Segara Anakan | East Outlet Cutoff Dike Location | Kuehl, Gardner, Subagio and Sumardi |
| 11. | 23-25 | Matenggeng Damsite | Topo Surveys | Schoenleber, Sahat and Sutisna |
| 12. | 27 | Forestry Division Rancah | Land Use Data Collection | Fletcher and Pauline S. |
| 13. | 29 | Forestry Division Kalipucang | Land Use Data Collection | Fletcher |

IV. MAJOR PROBLEM AREAS

A. Customs clearance

The progress of our work is in serious jeopardy because of failure of customs to clear the items which are badly needed for our work. All of these equipment items are on the list approved for purchase by E.C.I. for the Ministry. Many of the items have been in customs since February and are in danger of deterioration and/or loss. The Director of Customs has cleared these items, but now there appears to be some sort of $17\frac{1}{2}\%$ sales tax. Our contract exonerates E.C.I. from all taxes. Items critical for for the continuation of our work are :

1. All soil sampling and testing equipment
2. Air Photo Sketchmaster
3. Sediment samples
4. Reproduction equipment
5. Surveying equipment

B. Vehicles and Transportation.

Vehicle dispatch and maintenance have not caused any serious inconveniences to project field trips during this period. The Consultants had to purchase gasoline on several occasions to permit early dispatch on long distant field trips.

C. Housing facilities.

The permanent water storage facility for the Office Housing complex appears to be constructed, but there has been no pump installation and therefore the system remains inoperative.

D. Other.

Mr. & Mrs. Saunders were informed by the Ministry that their entry visa was improper and that it would be necessary to exit the country and reenter on a new visa. It should be pointed out that all the previous incoming residents and wives entered Indonesia on a tourist visa which was subsequently changed to a resident visa without having to exit the country. This results in an unnecessary expense, but more serious - it represents a serious delay in Mr. Saunder's work program.

V. PROGRESS

A. Technical

The concurrent visit of Messrs. Kuehl and Au-Yeung has resulted in requests for additional surveys and geological investigations. They are listed as follows :

Matenggeng Damsite

The existing 1:5,000 topo surveys appear to be error in the vicinity of the proposed dams site "D" and thus a new topo map has been requested utilizing a system of triangulation to ensure that adequate horizontal control is achieved. Additional geologic investigations and soil mechanics analysis was also requested especially to determine the type and availability of dam building materials. The topo survey work was underway at the start of this reporting period and is hoped to be finished within this next month. The geologic investigations will be started whenever drill rigs are available from either the Binangun No. 2 or Banjar Damsites.

Segara Anakan

Echo soundings and borings have been requested on various alternate locations for the East & West cutoff dike locations. This information is necessary to make a final selection for the cutoff dikes and tide gate locations before quantities and costs can be calculated for the feasibility report.

Citanduy River Dikes

The "as built" conditions of the Citanduy River dikes are necessary to determine the existing carrying capacity of the river at various points downstream of railroad bridge No. 1452. Additional surveys were requested and completed by Project survey crews to update their information and coordinate (tie in) the different bench marks used by subsequent survey crews.

Ciseel River Cross Sections

Cross sections were requested at about one kilometer intervals along the Ciseel river. This additional survey work will be used by Hydrography section to make stream flood routings.

B. Administrative.

The following tables show the standings of both the Rupiah and the US Dollar accounts. We have completed 50% of our contract. For the total period, we have expended Rp. 11,500,000 or about 47% of the total budgeted funds.

We have also spent or obligated US \$ 300,000 or about 44% of the total budgeted funds.

Budget Status - Rupiah Account

| I T E M | AMOUNT (Rp.) | | |
|----------------------|----------------|------------|------------|
| | Authorized | Spent | Remaining |
| Per Diem | 12,040,000 | 5,700,000 | 6,340,000 |
| Cables | 1,100,000 | 325,000 | 775,000 |
| Postage | 1,100,000 | 200,000 | 900,000 |
| Reproduction | 2,000,000 | 1,300,000 | 700,000 |
| Supplies & Materials | 1,100,000 | 850,000 | 250,000 |
| Other Minor items | 700,000 | 325,000 | 375,000 |
| Administrative Staff | 6,300,000 | 2,800,000 | 3,500,000 |
| T o t a l | 24,540,000 | 11,500,000 | 12,840,000 |

Budget Status - US \$ Account
(Reimbursable Costs Only)

| I T E M | AMOUNT (US \$) | | |
|---|------------------|---------|-----------|
| | Authorized | Spent | Remaining |
| Overseas Salary | 153,680 | 83,600 | 70,080 |
| Overseas Differential | 39,920 | 20,000 | 19,920 |
| Overhead (Overseas) | 95,278 | 51,000 | 44,278 |
| Denver Office Salaries | 82,050 | 25,000 | 57,050 |
| Denver Office Overhead | 57,435 | 28,000 | 29,435 |
| Special Consultants | 10,000 | - | 10,000 |
| Per Diem | 2,838 | 1,300 | 1,538 |
| Transportation (Inter.) | 59,400 | 30,000 | 29,400 |
| Transportation, Baggage, Household Effects | 20,800 | 9,500 | 11,300 |
| Other Direct Costs | 28,500 | 12,000 | 16,500 |
| T o t a l | 549,901 | 260,400 | 289,501 |

VI. PROGRAM

A. Technical

Our proposed schedule change i.e. delaying the date of the 1st feasibility study draft report from 30 May to 15 August 1974 was approved by the Steering Committee on 30 April 1974. This time extension in no way affects the final completion time or budgeted funds, but is necessitated for the following reasons :

1. Late starting date of the contract prevented field work due to the advent of the rainy season.
2. Hydrographic data collection proved to be more time consuming than originally anticipated.
3. First Priority feasibility study requires additional geologic and soil mechanics investigations.

The Consultants are thus altering their report schedules accordingly. The special progress report prepared for the Steering Committee meeting indicates that all categories are reasonably well on schedule although not in the same state of preparedness at this point in time.

B. Financial

Our fourth rupiah payment in the amount of Rp 4,000,000 becomes payable as of 1 May 1974. It is hoped that this payment will be made promptly as the Consultant has no alternate financial sources to meet current operating obligations.

VII. APPENDICES

- Fig. 1 - Manpower Strength (for end of period)
- Fig. 2 - Actual vs. Scheduled Progress
- Table 1 - Manpower Schedule - cumulative totals U.S.
- Table 2 - Manpower Schedule - cumulative totals
Indonesian (Counterpart)
- Table 2A - Manpower Schedule - cumulative totals
Indonesian (Direct Hire)
- Table 3 - Arrivals and Departures U.S. Nationals
- Table 4 - Arrivals and Departures Indonesian
- Table 5 - Schedule of Submissions

LEGEND

- U.S. NATIONALS
- 3rd. COUNTRY NATIONALS
- x- INDONESIAN COUNTERPART
- INDONESIAN DIRECT. HIRE

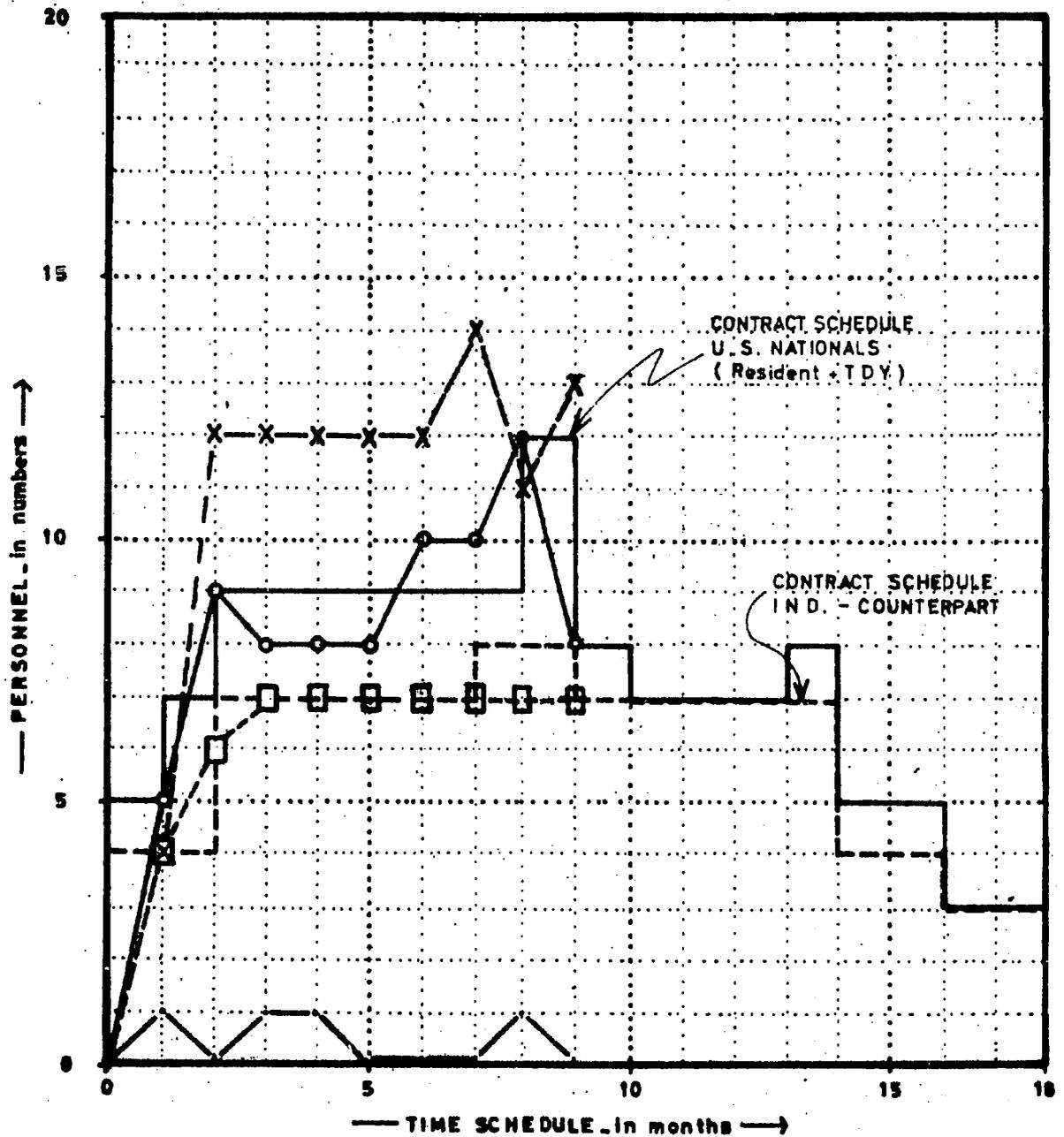


figure No.1. MANPOWER STRENGTH (for end of period)

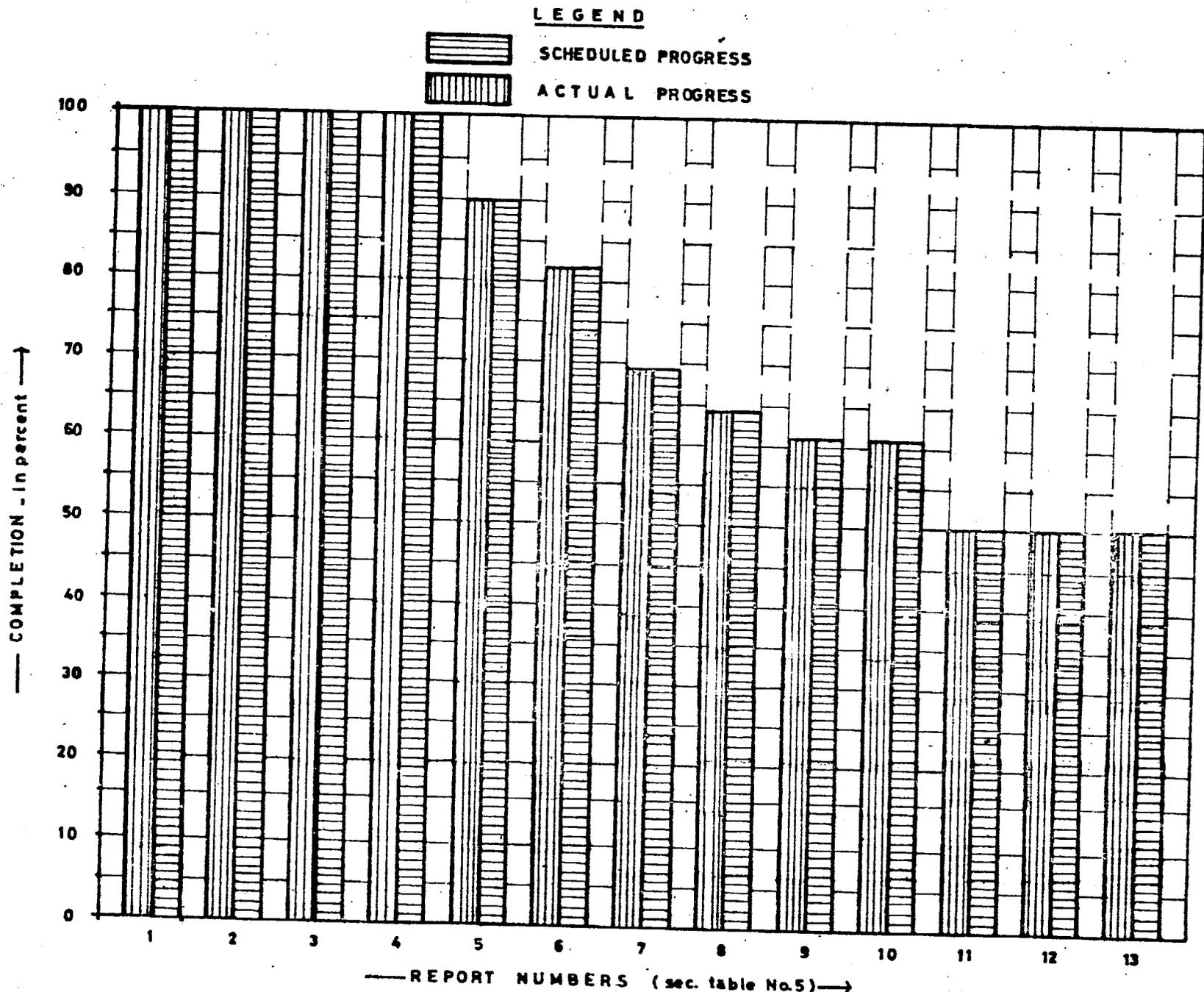


figure No. 2 - ACTUAL VS. SCHEDULED PROGRESS (End of Report Period)

Table No.1 - MANPOWER SCHEDULE - cumulative totals in man months

| U.S. NATIONALS | 1973 | | | | | 1974 | | | | | | | | | | | | 1975 | | TOTALS | |
|-----------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|-------|------|------|------|------|--------|----------|--------|
| | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | FEB. | MAR. | APR. | MAY. | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | ACTUAL | CONTRACT | |
| RESIDENT STAFF | | | | | | | | | | | | | | | | | | | | | |
| 1. ROGERS - RES.MGR | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | | | | | | | | | | | | 18.00 |
| 2. SCHOENLEBER - C. E. | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | | | | | | | | | | | | 16.00 |
| 3. BOGAN - IRRIG. | 0.61 | 1.61 | 2.61 | 3.61 | 4.61 | 5.61 | 6.61 | 7.61 | 8.61 | | | | | | | | | | | | 14.00 |
| 4. EDWARDS - AGRI. | - | 0.50 | 1.50 | 2.50 | 3.50 | 4.50 | 5.50 | 6.50 | 7.50 | | | | | | | | | | | | 12.00 |
| 5. SCOTT - GEOL. | - | 0.53 | 1.53 | 2.53 | 3.53 | 4.53 | 5.53 | 6.53 | 7.53 | | | | | | | | | | | | 7.00 |
| 6. GARDNER - SOILS. | - | 0.53 | 1.53 | 2.53 | 3.53 | 4.53 | 5.53 | 6.53 | 7.53 | | | | | | | | | | | | 12.00 |
| 7. STRUTHERS - ECON. | - | 0.53 | 1.53 | 2.53 | 3.53 | 4.53 | 5.53 | 6.53 | 7.53 | | | | | | | | | | | | 16.00 |
| 8. SAUNDERS - PLAN. | - | - | - | - | - | - | - | 0.26 | 1.26 | | | | | | | | | | | | 11.00 |
| 9. | | | | | | | | | | | | | | | | | | | | | |
| SUB TOTALS | 2.61 | 7.70 | 14.70 | 21.70 | 28.70 | 35.70 | 42.70 | 49.86 | 57.53 | | | | | | | | | | | | 106.00 |
| HOME OFF. & TDY. | | | | | | | | | | | | | | | | | | | | | |
| 1. LANGFORD - SPON. | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.29 | 0.58 | 0.58 | 0.58 | | | | | | | | | | | | 2.00 |
| 2. WILL - PLAN. | - | 0.53 | 0.98 | 0.98 | 0.98 | 0.98 | 0.53 | 0.98 | 0.98 | | | | | | | | | | | | 5.00 |
| 3. AU-YEUNG - HYD. | 0.23 | 1.23 | 1.43 | 1.43 | 1.43 | 1.43 | 1.43 | 2.14 | 2.54 | | | | | | | | | | | | 4.00 |
| 4. | | | | | | | | | | | | | | | | | | | | | |
| 5. BURKE - ROCK. | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | 2.00 |
| 6. CHURCHILL - ENVIR. | - | - | - | - | - | - | 0.79 | 1.79 | 1.89 | | | | | | | | | | | | 1.50 |
| 7. FLETCHER - LANDUSE | - | - | - | - | - | 0.61 | 1.61 | 2.61 | 3.61 | | | | | | | | | | | | 4.00 |
| 8. SPECIALISTS AS REQ'D. | - | - | - | - | - | - | - | - | - | | | | | | | | | | | | 9.00 |
| 9. | | | | | | | | | | | | | | | | | | | | | |
| SUB TOTALS | 0.36 | 1.89 | 2.54 | 2.54 | 2.54 | 3.31 | 5.39 | 8.10 | 9.60 | | | | | | | | | | | | 28.50 |
| THIRD COUNTRY NAT. | | | | | | | | | | | | | | | | | | | | | |
| 1. KUEHL - C. E. | 0.19 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.89 | 1.59 | | | | | | | | | | | | 2.50 |
| 2. STEVENS - FLOODCON. | - | - | 0.13 | 1.13 | 1.16 | 1.16 | 1.16 | 1.16 | 1.16 | | | | | | | | | | | | 4.00 |
| SUB TOTALS | 0.19 | 0.79 | 0.92 | 1.92 | 1.95 | 1.95 | 1.95 | 2.05 | 2.75 | | | | | | | | | | | | 6.50 |
| TOTALS | 3.16 | 10.38 | 18.16 | 26.16 | 33.19 | 40.96 | 50.04 | 60.11 | 69.88 | | | | | | | | | | | | 141.00 |

A-4

Table No.2_ MANPOWER SCHEDULE - cumulative totals in manmonths

| INDONESIAN COUNTERPART | 1974 | | | | | 1975 | | | | | | | | | | | | 1975 | | TOTALS | |
|----------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|------|------|-------|------|-------|------|------|------|------|--------|----------|--------|
| | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | FEB. | MAR. | APR. | MAY. | JUNE | JULY. | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | ACTUAL | CONTRACT | |
| 1. MR.SAHAT -TEAM LEADER | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | | | | | | | | | | | | 18.00 |
| 2. IR.PARIJAN - C. E. | - | - | - | - | - | - | 0.50 | 1.90 | 2.90 | | | | | | | | | | | | 18.00 |
| 3. IR. RADHI - DRAIN. | - | - | - | - | - | - | 0.11 | 1.11 | 2.11 | | | | | | | | | | | | 14.00 |
| 4. IR. TOSSIN - AGRI. | - | 0.50 | 1.50 | 2.50 | 3.50 | 4.50 | 5.50 | 6.50 | 7.50 | | | | | | | | | | | | 12.00 |
| 5. HING SUGANDHY - GEOL. | - | - | - | 0.84 | 1.34 | 2.84 | 3.84 | 4.84 | 5.84 | | | | | | | | | | | | 18.00 |
| 6. IR. ARWADI - ENVIP | - | - | - | - | - | - | 0.40 | 1.40 | 2.40 | | | | | | | | | | | | 4.00 |
| 7. IR. SAMPUDJO - HYDROL. | - | - | - | - | - | - | - | 0.69 | 1.69 | | | | | | | | | | | | |
| 8. IR. IMAM - ECON. | - | 0.50 | 1.50 | 2.50 | 3.50 | 4.50 | 5.50 | ** | ** | | | | | | | | | | | | |
| 9. DRS. SUBAGIO - SOILS. | - | - | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | ** | ** | | | | | | | | | | | | |
| 10. KREBET - PLAN. | - | - | - | - | - | - | - | 1.00 | 2.00 | | | | | | | | | | | | |
| 11. | | | | | | | | | | | | | | | | | | | | | |
| 12. OTHERS - * | 1.78 | 4.75 | 7.18 | 10.68 | 12.90 | 14.90 | 16.90 | 18.90 | 16.90 | | | | | | | | | | | | |
| SUB TOTALS | 2.78 | 7.78 | 14.18 | 22.52 | 29.74 | 36.74 | 45.15 | 52.83 | 68.93 | | | | | | | | | | | | 97.00 |
| ASST. COUNTERPART | | | | | | | | | | | | | | | | | | | | | |
| 1. KREBET - PLAN. | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | 9.00 | | | | | | | | | | | | |
| 2. NAPITUPULU - TEAM | 0.06 | 1.06 | 2.06 | 3.06 | 4.06 | 5.06 | 6.06 | 7.06 | 8.06 | | | | | | | | | | | | 14.00 |
| 3. NADADAP - HYDROL. | 0.06 | 1.06 | 2.06 | 3.06 | 4.06 | 5.06 | 6.06 | 7.06 | 8.06 | | | | | | | | | | | | 18.00 |
| 4. SUMARDI - SOILS | - | 0.23 | 1.23 | 2.23 | 3.23 | 4.23 | 5.23 | 6.23 | 7.23 | | | | | | | | | | | | 4.00 |
| 5. ADIWIDJAJA - AGRI | - | 0.23 | 1.23 | 2.23 | 3.23 | 4.23 | 5.23 | 6.23 | 7.23 | | | | | | | | | | | | 18.00 |
| 6. DRS. WILDAN - ECON. | - | - | 0.75 | 1.75 | 2.75 | 3.75 | 4.75 | 5.75 | 6.75 | | | | | | | | | | | | 18.00 |
| 7. DRS. SITANGGANG - C. E. | - | - | - | 1.00 | 2.00 | 3.00 | 4.00 | ** | 5.00 | | | | | | | | | | | | 12.00 |
| 8. | | | | | | | | | | | | | | | | | | | | | |
| 9. | | | | | | | | | | | | | | | | | | | | | |
| 10. OTHERS - * | - | 0.60 | 1.60 | 1.60 | 1.60 | 1.60 | 1.60 | 1.60 | 1.60 | | | | | | | | | | | | |
| SUB TOTALS | 1.12 | 5.18 | 11.93 | 18.93 | 25.93 | 32.93 | 39.93 | 44.63 | 53.93 | | | | | | | | | | | | |
| TOTALS | 3.90 | 12.96 | 26.11 | 41.45 | 55.67 | 69.67 | 85.08 | 97.76 | 111.76 | | | | | | | | | | | | 90.00 |
| | | | | | | | | | | | | | | | | | | | | | 170.00 |

* OTHERS - CUMULATIVE TOTALS OF INDIVIDUALS WHO HAVE LEFT THE PROJECT.
 ** NOT SHOWN DUE TO LIMITED TIME ASSISTING CONSULTANTS.

table No.2A - MANPOWER SCHEDULE - cumulative totals in man months

| INDONESIAN DIRECT HIRE | 1973 | | | | | 1974 | | | | | | | | | | | | 1975 | TOTALS | | |
|---------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-----|------|------|------|-------|------|------|------|------|--------|----------|--------|
| | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | FEB. | MAR. | APR. | MAY | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. | JAN. | ACTUAL | CONTRACT | |
| 1 MUNGKI S.W. - SECR. | 0.62 | 1.62 | 2.62 | 3.62 | 4.62 | 5.62 | 6.62 | 7.62 | 8.62 | | | | | | | | | | | 18.00 | |
| 2 SRI Z. OEMAR - CLERK | 0.62 | 1.62 | 2.62 | 3.62 | 4.62 | 5.62 | 6.62 | 7.62 | 8.62 | | | | | | | | | | | 18.00 | |
| 3 SUPIARTI - CLERK | 0.29 | 1.29 | 2.29 | 3.29 | 4.29 | 5.29 | 6.29 | 7.29 | 8.29 | | | | | | | | | | | 18.00 | |
| 4 ETJIH SUHAR - TYPIST | 0.13 | 1.13 | 2.13 | 3.13 | 4.13 | 5.13 | 6.13 | 7.13 | 8.13 | | | | | | | | | | | 18.00 | |
| 5 DJOELIANDI - INTER. | - | 0.94 | 1.94 | 2.94 | 3.94 | 4.94 | 5.94 | 6.94 | 7.94 | | | | | | | | | | | 18.00 | |
| 6 SULIANTI - INTER. | - | 0.10 | 1.10 | 2.10 | 3.10 | 4.10 | 5.10 | 6.10 | 7.10 | | | | | | | | | | | 18.00 | |
| 7 DASIRAN - MESS. | - | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 | 8.00 | | | | | | | | | | | 18.00 | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTALS | 1.66 | 7.60 | 14.70 | 21.70 | 28.70 | 35.70 | 42.70 | 49.70 | 56.70 | | | | | | | | | | | 126.00 | |
| MISC. SUPPORT | | | | | | | | | | | | | | | | | | | | | |
| 1 DRAFTSMEN | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 14.00 | 16.00 | 18.00 | 20.00 | | | | | | | | | | | * | |
| 2 MESSENGER | 2.00 | 2.00 | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 14.00 | 16.00 | | | | | | | | | | | * | |
| 3 DRIVERS | 4.00 | 15.00 | 26.00 | 32.00 | 38.00 | 44.00 | 50.00 | 56.00 | 62.00 | | | | | | | | | | | * | |
| 4 CUSTODIANS | 4.00 | 2.00 | 4.00 | 6.00 | 8.00 | 10.00 | 12.00 | 14.00 | 16.00 | | | | | | | | | | | * | |
| 5 | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTALS | 14.00 | 25.00 | 42.00 | 54.00 | 66.00 | 78.00 | 90.00 | 102.00 | 114.00 | | | | | | | | | | | * | |
| TOTALS | 15.66 | 32.60 | 56.70 | 75.70 | 94.70 | 113.70 | 132.70 | 151.70 | 170.70 | | | | | | | | | | | | 126.00 |

* Not specified in contract

TABLE NO. 3 - ARRIVAL AND DEPARTURES

A. U.S. NATIONALS

| <u>NAME</u> | <u>POSITION</u> | <u>ARRIVED</u> | <u>DEPARTED</u> |
|----------------------|-----------------------|----------------|-----------------|
| 1. LANGFORD, C.M. | Project Sponsor | 23-7-73 | 4- 8-73 |
| LANGFORD, C.M. | Project Sponsor | 27-1-73 | 8- 2-74 |
| 2. ROGERS, G.E. | Resident Manager | 30-7-73 | - |
| 3. SCHOENLEBER, W.J. | Civil Engineer | 1-8-73 | - |
| 4. BOGAN, D.E. | Irrig. Engineer | 12-8-73 | - |
| 5. AU-YEUNG, YIN | Hydrologist | 25-8-73 | 13-10-73 |
| AU-YEUNG, YIN | Hydrologist | 9-3-74 | 12- 4-74 |
| 6. WILL, ERIC | Chief Planner | 15-9-73 | 15-10-73 |
| 7. EDWARDS, R.T. | Agriculturist | 16-9-73 | - |
| 8. STRUTHERS, R.E. | Ag. Economics | 15-9-73 | - |
| 9. GARDNER, R.A. | Soil Scientist | 15-9-73 | - |
| 10. SCOTT, D.P. | Geologist | 15-9-73 | 17- 4-74 |
| 11. FLETCHER, H.C. | Land Use & Management | 13-1-74 | - |
| 12. CHURCHILL, DICK | Environmentalist | 17-2-74 | 3- 4-74 |
| 13. SAUNDERS, M.P. | Planner | 17-3-74 | - |

B. THIRD COUNTRY NATIONALS

| <u>NAME</u> | <u>POSITION</u> | <u>ARRIVED</u> | <u>DEPARTED</u> |
|------------------|-----------------|----------------|-----------------|
| 1. KUEHL, M.K. | Chief Engineer | 26-8-73 | 18- 9-73 |
| KUEHL, M.K. | Chief Engineer | 29-3-74 | 21- 4-74 |
| 2. STEVENS, M.A. | Flood Control | 27-10-73 | 1-12-73 |

TABLE NO. 4 - ARRIVALS AND DEPARTURES

A. INDONESIAN - COUNTERPART

| <u>N A M E</u> | <u>POSITION</u> | <u>ARRIVED</u> | <u>DEPARTED</u> |
|-------------------------|-----------------|----------------|-----------------|
| 1. Sahat T.P. Siagian | Team Leader | 25- 7-73 | - |
| 2. Yasin Umar K. | Civil Engineer | 1- 8-73 | 7-12-73 |
| 3. Amirudin | Plan. Engineer | 15- 8-73 | 1- 3-74 |
| 4. Tossin A. | Agriculturist | 17- 9-73 | - |
| *5. Imam Hidayat | Economist | 19- 9-73 | - |
| 6. Yusron Lubis | Hydrologist | 25- 8-73 | 13-10-73 |
| 7. Achmad Djojoadinoto | Irr. & Drain. | 12- 9-73 | 1- 3-74 |
| *8. Soebagiyo | Soils | 2-10-73 | - |
| 9. Iing Sugandhy | Geology | 6-11-73 | 30- 4-74 |
| 10. Sriyono | River Regime | 1-11-73 | 1-12-73 |
| 11. Parijan | Civil Engineer | 4- 2-74 | - |
| 12. Arwadi Nataniel | Environ. | 18- 2-74 | - |
| 13. Radhi Sinaro | Irr. & Drain. | 25- 2-74 | - |
| 14. Sampudjo | Hydrology | 11- 3-74 | 12- 4-74 |
| 15. Krebet Suryondadari | Planner | 1- 8-73 | - |

B. INDONESIAN - COUNTERPART ASSISTANTS

| | | | |
|-----------------------|----------------|----------|---|
| 1. T. Maruly Nadapdap | Hydrology | 29- 8-73 | - |
| 2. Wildan Arifin | Economist | 8-10-73 | - |
| 3. E. Sumardi A.S. | Soil & Rec. | 24- 9-73 | - |
| 4. Rahmat Adiwidjaja | Agriculture | 24- 9-73 | - |
| 5. P. Napitupulu | Team Leader | 29- 8-73 | - |
| *6. Drs. Sitanggang | Civil Engineer | 1- 9-73 | - |

C. INDONESIAN - DIRECT HIRE

| | | | |
|---------------------|-------------|----------|---|
| 1. Nungki S.W. | Secretary | 13- 8-73 | - |
| 2. Sri Z. Oemar | Clerk | 13- 8-73 | - |
| 3. Supiarti | Clerk | 23- 8-73 | - |
| 4. Etjih Suhari | Clerk | 29- 8-73 | - |
| 5. Sylvia D. | Interpreter | 3- 9-73 | - |
| 6. Pauline Sulianti | Interpreter | 28- 9-73 | - |
| 7. Dasiran Tapawira | Messenger | 1- 9-73 | - |

* Part time only - Project Furnished counterparts

TABLE NO. 5 - SCHEDULE OF SUBMISSIONS

| <u>REPORT NO.</u> | <u>CONTRACT PARAGRAPH</u> | <u>SUBJECT</u> | <u>DATE DUE</u> | <u>DATE SUBMITTED</u> | <u>MONTHS</u> |
|-------------------|---------------------------|--|------------------------|-----------------------|---------------|
| 1. | 2. 3. 1. | Mapping requirement | 30- 9-73 | 30- 9-73 | 2 |
| 2. | 2. 3. 2. | Basic data collection | 30- 9-73 | 30- 9-73 | 2 |
| 2a. | 2. 3. 2. | Addendum No. 1 | - | 15-11-73 | 3.5 |
| 3. | 2. 5. 1. | 1 st Priority Project Evaluation | 30-11-73 | 30-11-73 | 4 |
| 4. | 2. 5. 1. | 2 nd Priority Project Evaluation | 30--12-73 | 30- 1-74* | 5 |
| 4a. | | Special Report | - | 15- 2-74** | - |
| 4b. | | Special Progress Report | - | 30- 4-74*** | - |
| 5. | 2. 5. 1. | 1 st Feasibility Study (Draft Form) | 15- 8-74 ^{1/} | | 12.5 |
| 6. | 2. 5. 1. | 2 nd Feasibility Study (Draft) | 30- 6-74 | | 11 |
| 7. | 2. 5. 1. | 1 st Feasibility Study (Final) | 15-11-74 ^{1/} | | 15.5 |
| 8. | 2. 5. 1. | 2 nd Feasibility Study (Final) | 30- 9-74 | | 14 |
| 9. | 2. 3. | Comprehensive Study (Draft) | 15-10-74 | | 14.5 |
| 10. | 2. 4. | Master Plan (Draft) | 15-10-74 | | 14.5 |
| 11. | 2. 3. | Comprehensive Study (Final) | 31- 1-75 | | 18 |
| 12. | 2. 4. | Master Plan (Final) | 31- 1-75 | | 18 |
| 13. | 2. 6. 4. | Completion Report | 31- 1-75 | | 18 |

* 30 day extension recommended by Steering Committee in order to await soils analysis results.

** Special Report - "Technical and Socio-Economic Factors As They Affect Damsite Selection".

*** Special Progress Report to Steering Committee.

^{1/} Time extension approved by Steering Committee on 30-4-74.

MINUTES OF SECOND GENERAL MEETING
PROJECT OFFICIALS -- CONSULTANT -- COUNTERPART
SPECIAL PROGRESS REPORT

Date : April 24, 1974
Time : 09:00 hours
Place : Project Office Banjar

I. ATTENDANCE :

Project Officials : 1. Ir. Soebandi Wirosoemarto - Project Manager
2. Ir. Sriyono - Assistant I
3. Ir. Darmadi - Assistant II
4. Ottom Sibarani B.I.E. - Assistant III
5. Drs. Soepardiono - Assistant IV
6. Drs. Sugijarto - Assistant V

Consultants : 1. Mr. G.E. Rogers - Resident Manager
2. Mr. W.J. Schoenleber - Civil Engineer
3. Mr. D.E. Bogan - Irrig. & Drain. Engineer
4. Mr. R.T. Edwards - Agriculturist
5. Mr. R.E. Struthers - Economist
6. Mr. R.A. Gardner - Chief Soil Scientist
7. Mr. H.C. Fletcher - Land Mgmt. Specialist
8. Mr. M.P. Saunders - Planner

Counterparts : 1. Ir. Sahat T.P. Siagian - Team Leader
2. Ir. Imam Hidajat - Economist
3. Drs. Subagyo - Soil & Rec.
4. Iing Sugandhi - Geologist
5. Krobet Suryo'ndadari - Planner
6. Drs. Wildan Arifin - Economist
7. Ir. Radhi Sinaro - Civil Engineer
8. Edi Sumardi - Asst. Soil & Rec.
9. Ir. Parijan - Civil Engineer

II. PROGRAM :

Mr. Soebandi opened the meeting by saying he was pleased at having this meeting and invited Mr. Rogers to open his remarks.

Mr. Rogers explained that this "Special Progress Report" was prepared as requested to be discussed at the Steering Committee Meeting on 30 April 1974, in Jakarta. He mentioned that on 30 April 1974, ECI is half way through its contract. He planned to request the Client for extension of 1st. feasibility study, from 30 May to 15 August, 1974. The reasons are:

1. Late start contract wet/dry seasons.
2. Hydrological data collection will profit by time extension.

Client will most probably approve time extension.

Information given here includes work on 1st. and 2nd. feasibility study plus Master Plan.

He outlined briefly the following subjects and named each team member responsible for each category.

1. Mapping and Aerial Photography/Schoenleber.

Mr. Soebandi had been asked to place project survey crews and they have started work at the end of April. Additional surveys for Matenggeng, Citanduy River and Ciseel River cross sections have been initiated. Additional aerial photos should be initiated during this current dry season to have them for the design stages of this project.

2. Geology and Soil Mechanics/Scott.

Mr. Scott has left the project, but has completed a written report on six damsites under consideration. Mr. Kuehl was not satisfied and requested additional exploration work at site "D" at Matenggeng plus exploration work in the Segara Anakan.

3. Hydrography/Saunders.

Data collection is taking more time than originally anticipated. Mr. Saunders has arrived and will do the hydrological work required.

4. River Management/Stevens.

Mr. Stevens will return for two months and continue work on River Management together with Mr. Saunders.

5. Land Use and Management/Fletcher.

Mr. Fletcher will prepare a management plan for land use, sedimentation, forestry, conservation practices.

6. Soils and Land Classification/Dr. Gardner.

Dr. Gardner completed Segara Anakan soil checking work and is now preparing further field checking in other parts outside the Segara Anakan. He has collected all published reports and received soils analysis results from Bogor.

7. Irrigation and Drainage/Bogan.

Mr. Bogan has collected field survey data on existing irrigation systems of the lower Citanduy/Ciseel. He will then move to the upper Citanduy/Ciseel basin irrigation systems for a similiar field check.

8. Agriculture/Edwards.

His work is on schedule, data collection continues. He has prepared a number of charts and tables for the forthcoming reports.

9. Engineering/Schoenleber.

Mr. Kuehl just visited the project and made additional requests for geological investigations plus topographic mapping. He made field trips to Segara Anakan to determine locations of cutoff dikes and tide gates. Echo soundings are being conducted by the Project Manager to determine exact location of cutoff dikes. Preliminary estimates have been made of the time schedule for the Segara Anakan salt water conversion to fresh water status.

10. Economics/Struthers.

For purposes of the preparation of the studies, the assembly of the basic economic data is virtually complete. Analysis of benefits "with and without" project facilities is in various stages of completion, but is roughly 25% complete at this time.

11. Environmental Considerations/Dr. Churchill.

In the brief time scheduled he has prepared a report to determine what impacts the proposed project will have on the environment. His work is complete for the study.

12. Plan Formulation/Rogers.

Plan formulation is a dynamic process which begins when work is first undertaken and culminates with the publication of the report.

III. QUESTIONS AND ANSWERS :

- Mr. Rogers : In the last meeting there was a request for a joint meeting about Hydrology - Mr. Saunders will prepare two papers for a seminar at the LPMA in August. Perhaps these papers can be used for the subject of a forthcoming meeting.
- Mr. Soebandi : I have received the Memo 66 - what are the most critical parts of the soil mechanic tests? Which part is the most critical investigation in Matenggeng?
- Mr. Rogers : The most critical tests for Matenggeng Damsite are the triaxial shear tests.
- Mr. Soebandi : What about Segara Anakan ?
- Mr. Rogers : We need permission to get a Geologist on the Nusa Kambangan Island to determine location of materials available. We intend to have a Geologist here in June or July to work with the Hydrologic Institute in this matter.
- Mr. Sahat : What economic analysis is done for: Flood control Segara Anakan Project - Power Benefits - Irrigation & Drainage Benefits.
- Mr. Struthers : Flood Control Benefits.
We use the damages of past floods and make projections of future damages or future protection by project structures. These would be done for different return periods i.e. 20, 50 or 100 year floods.

Segara Anakan Possible Benefits.

1. Reclaimed lands.
2. Desalinized lands.
3. Man-made islands construction.
4. Fisheries aspects.
5. Improved transportation.
6. Irrigation & Drainage.
7. Domestic, municipal, and industrial water supply.
8. Malaria control.

Hydro-electric Power Benefits.

Analysis of alternate sources of power - i.e.
Thermal electric - or oil-fired gas turbine costs.

Irrigation & Drainage Benefits.

Increases in net income of the farmers.

- Dr. Gardner : Clarification Statement - Segara Anakan.
The question in Mr. Struthers statement possible problems of iron pyrite or sulfide accumulations. These do occur in some places of tidal swamp areas. However, all indications are that bed materials of the Segara Anakan would not contain significant concentrations of sulfides, and therefore would present no problems in creating man-made islands.
- Mr. Kriebel : Are you going to determine the water requirement for crop rotations in the program?
- Mr. Edwards : Yes! As you know rice is the major crop to be considered but there will be alternate crop suggestions such as soybeans, etc.

- Mr. Rogers : All will participate in it, Dr. Gardner, Mr. Saunders, Mr. Bogan and Mr. Edwards.
- Mr. Fletcher : The shift to non-erosive crops may be desirable especially in the upper watershed areas.
- Mr. Soebandi : The idea of changing mangrove forest into a freshwater lake in the Segara Anakan will influence the livelihood of fishermen in these surroundings. - What are the considerations?
- Dr. Gardner : The change of the Segara Anakan into a freshwater lake won't lessen fish, maybe more. The construction of some man-made islands in the Segara Anakan would be of great benefit. Desalinization will change the entire ecological system - there will be different species of fish, etc. Mangrove forests would change - eliminating this vegetation. According to the concept anticipated - island building, etc. The shallower areas will be affected, not the deeper channels.
- Mr. Soebandi : Time is required to change fishermen into farmers.
- Mr. Rogers : Possibly an increase in fishery aspects and therefore an increase in their standards of living. The Segara Anakan will be a managed fishery area.
- Dr. Gardner : As a guess - we could anticipate that the general nutrient level would be enhanced rather than reduced.

- Mr. Radhi : What is meant by "Calculation of special values ?"
- Dr. Gardner : These include special ratios such as sulfate to chloride or magnesium to chloride, to give a clue as to possible changes due to oxidation of pyrite. Also, SAR ratios are used to get some idea of the sodium exchange status of a soil.
- Mr. Krevet : During the Japanese occupation, I understand that many rocks were placed in the Citanduy estuary (Segara Anakan) to prevent the entrance of boats which now obstructs the river flow. What effect does this have on sedimentation ?
- Mr. Rogers : I don't know about this aspect, but sedimentation studies are being conducted to determine structural life expectancies, etc.
- Mr. Soebandi : What considerations are there for the Citanduy Basin swamps rehabilitation in Majenang ?
- Mr. Bogan : We intend to convert the swamps into irrigation areas - but studies will determine the extent that these retention areas can be converted.
- Mr. Imam : Calculations on evapotranspiration - first on Cirebon then to Cilacap data - why? It has to be Cilacap data first and Cirebon data as a check on the Cilacap data.
- Mr. Saunders : The first data used was based on Cirebon - now the Cilacap data will be used - not as a check, but as the best available information.
- Mr. Soebandi : Expressed his thanks for the participants and declared the meeting adjourned at 10:15 hours.