(2) Basic Design Drawings

A-01 El Sheikh Fadl Pump station

A-02 Sahel El Hamam Pump Station

A-03 El Fosa El Baharia Pump Station

A-04 Sahel El Kobania Pump Station

A-05 Sahel Fares Pump Station

A-06(1) El Biadiea El Ollia Pump Station PLANE

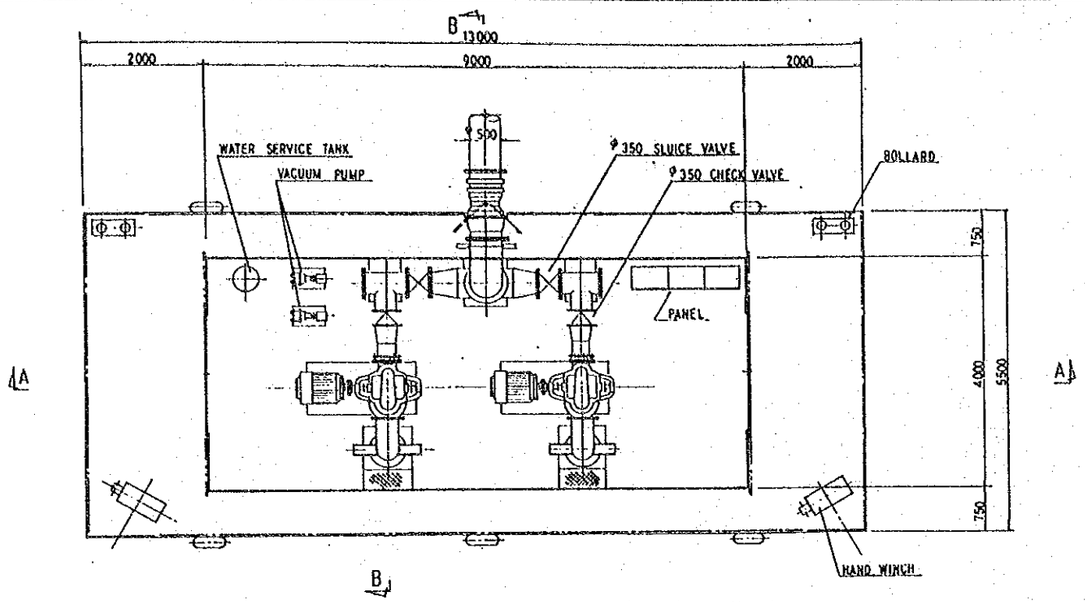
A-06(2) El Biadiea El Ollia Pump Station ELEVATION

A-07 El Twisa Pump Station

A-08 Gharb Aswan Baharia Pump Station

A-09 Gezirat Fares Pump Station

A-10 Gezirat Behrif Pump Station



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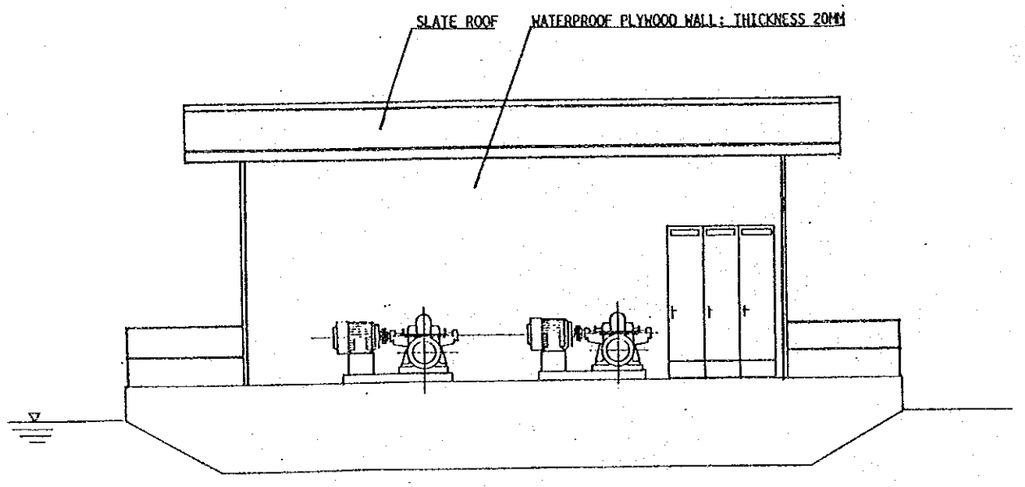
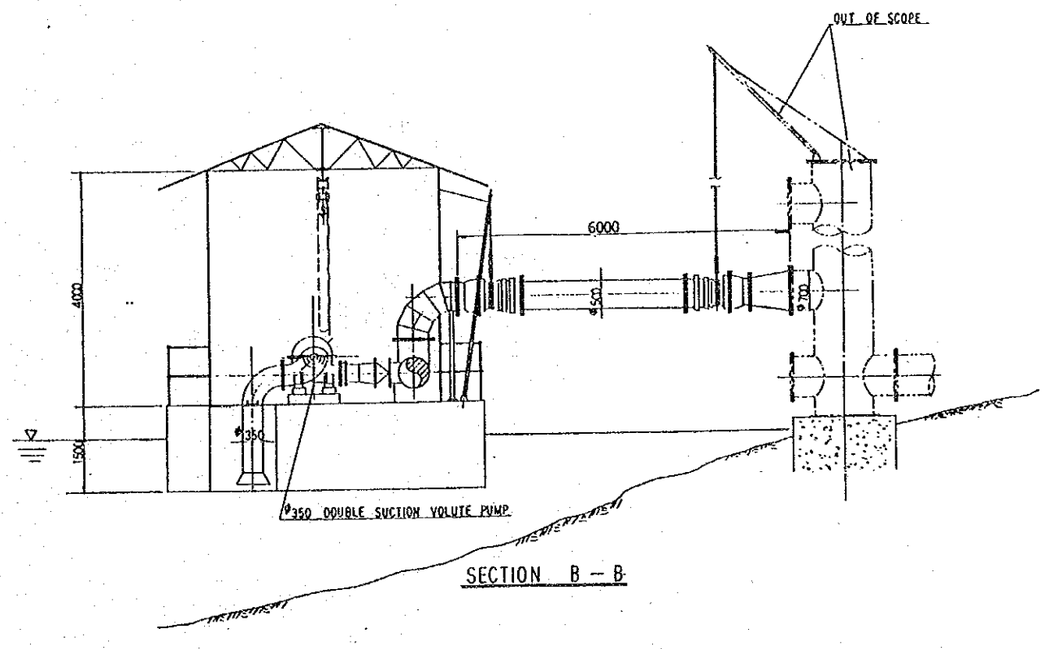
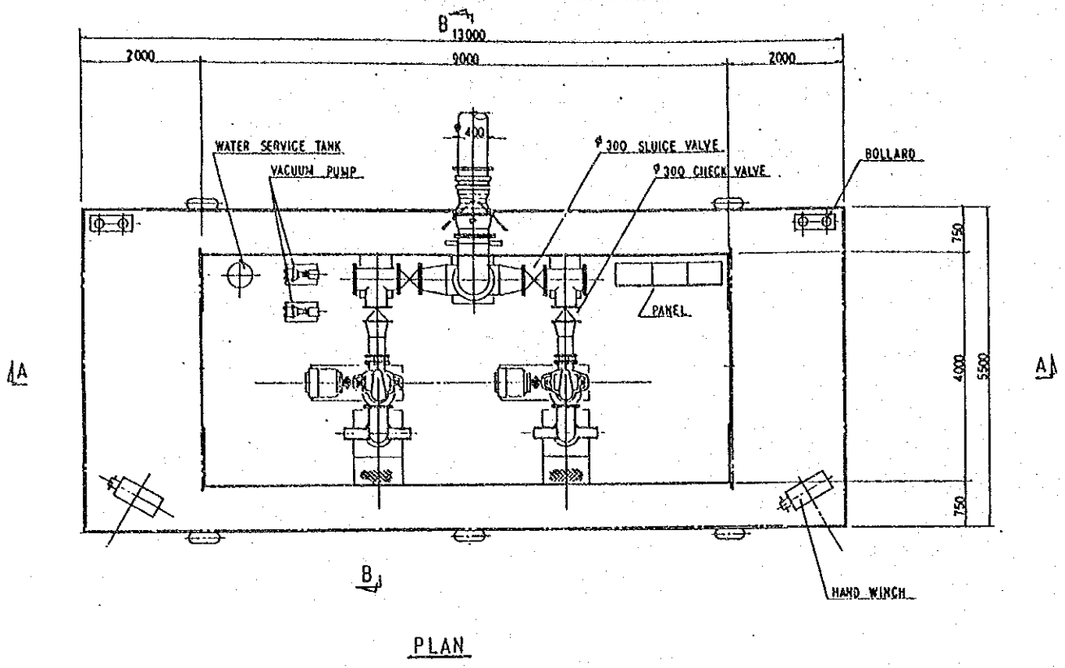


SECTION A - A



SECTION B - B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
1. El Seikh Fadle Pump Station	1/100	A - 0 1



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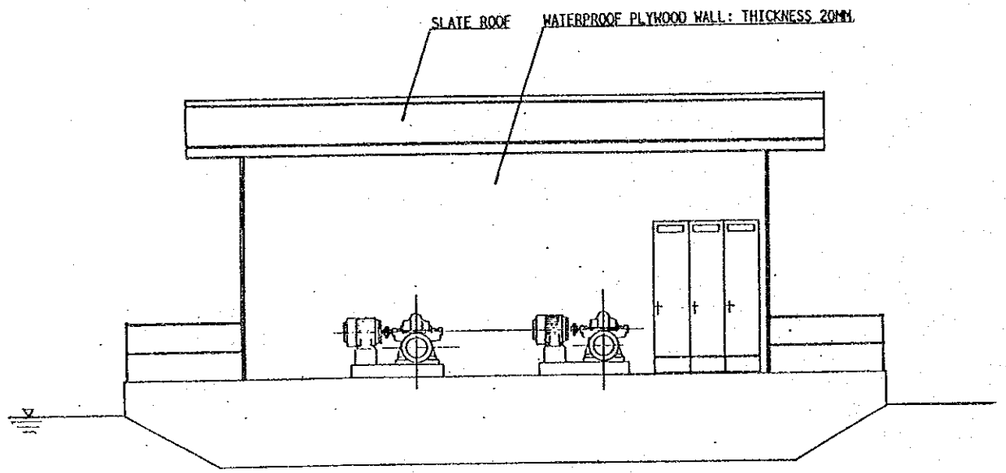
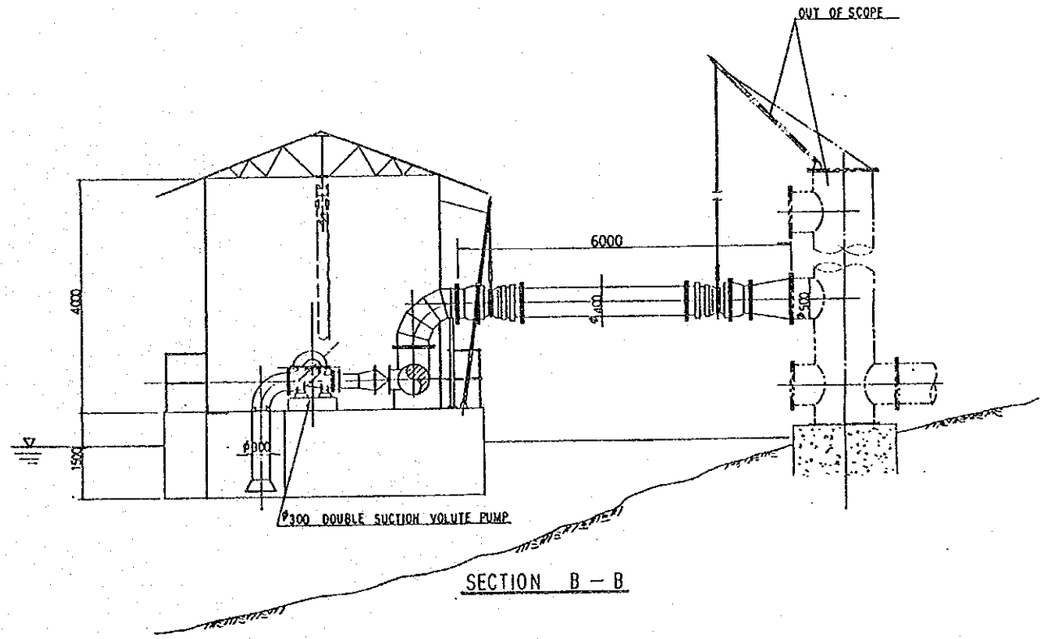
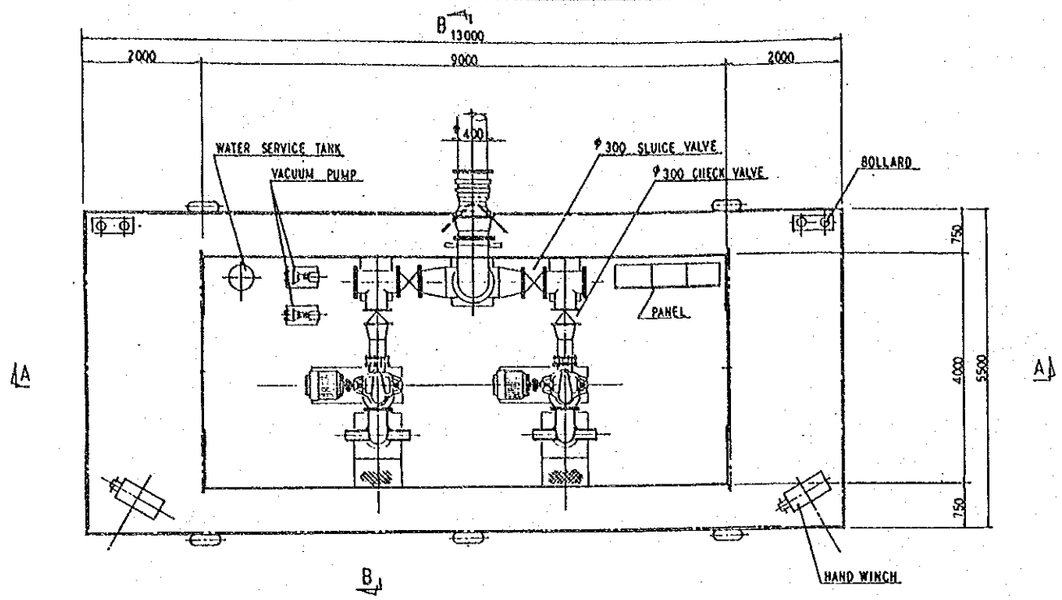


SECTION A-A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
2. Sahel El Hamam Pump Station	1/100	A-02



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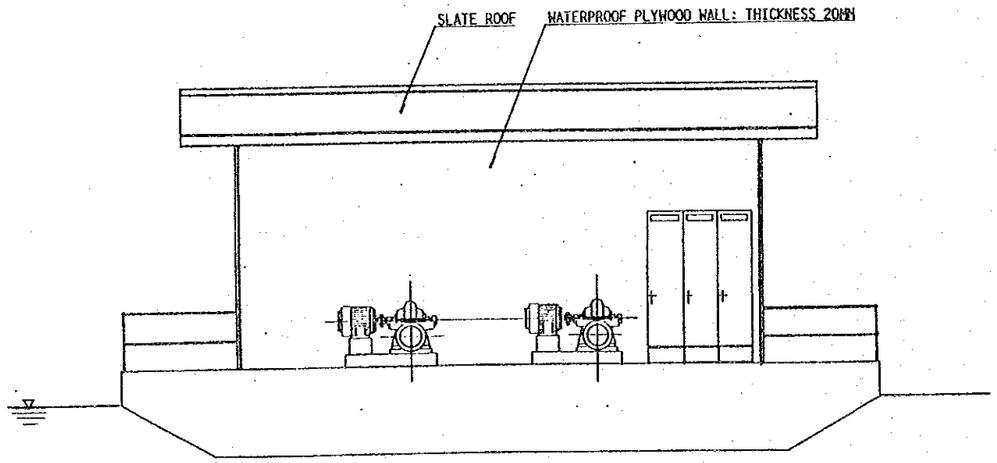
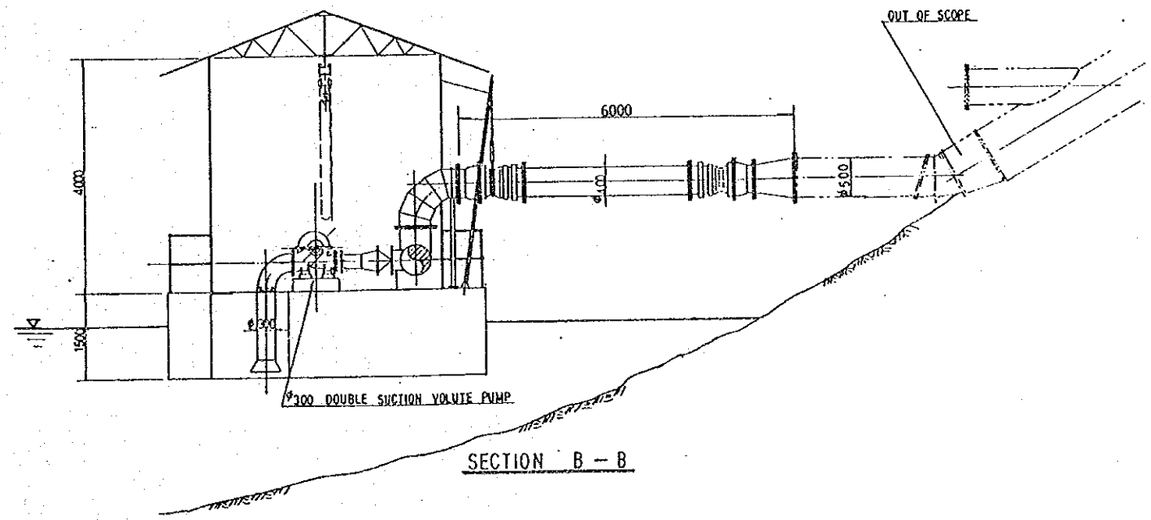
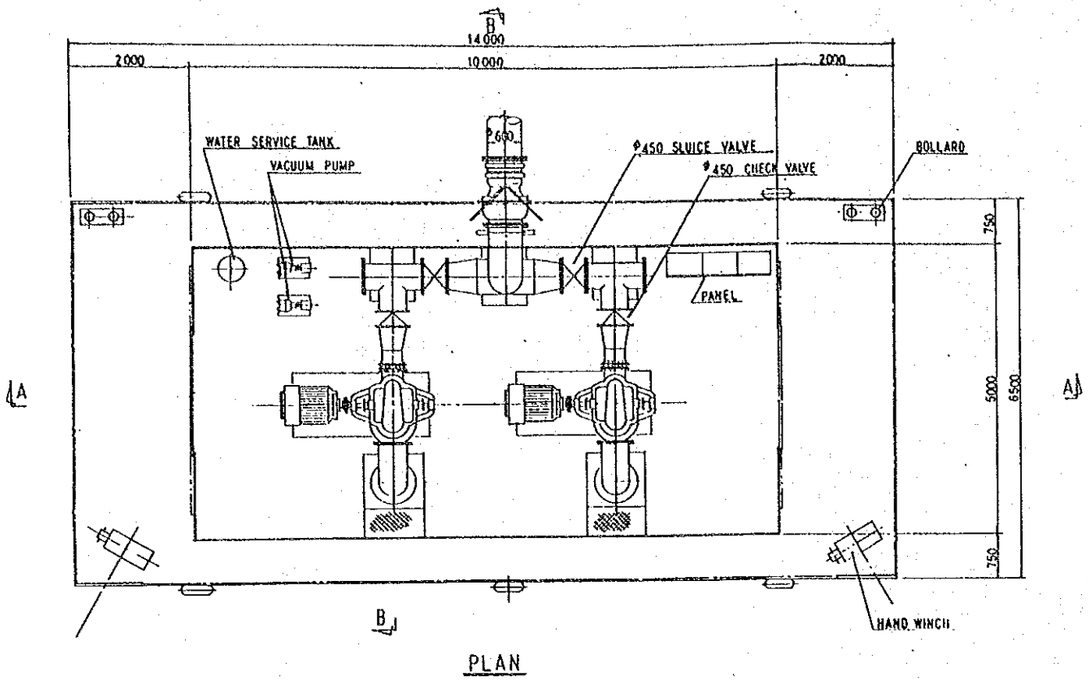


SECTION A-A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
3. El Fosa El Baharia Pump Station	1/100	A-03



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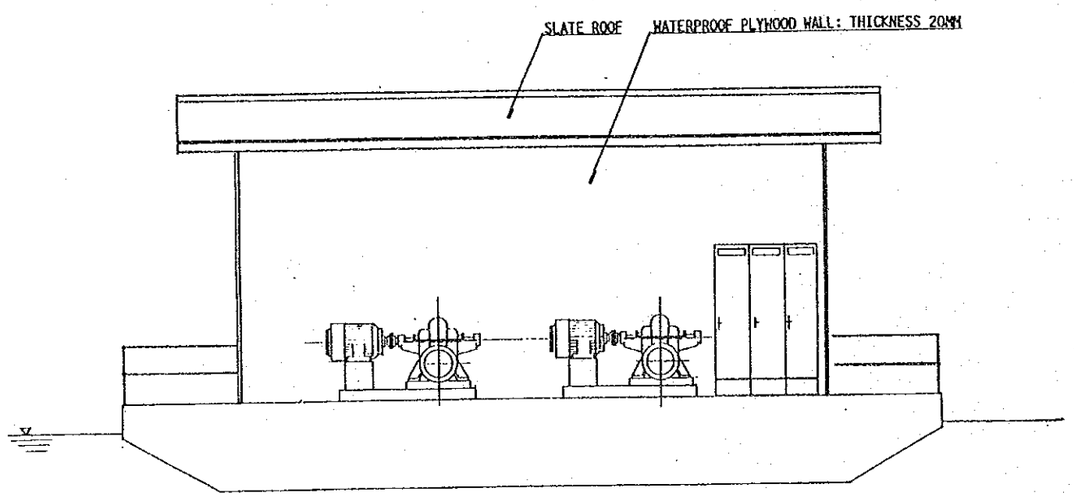
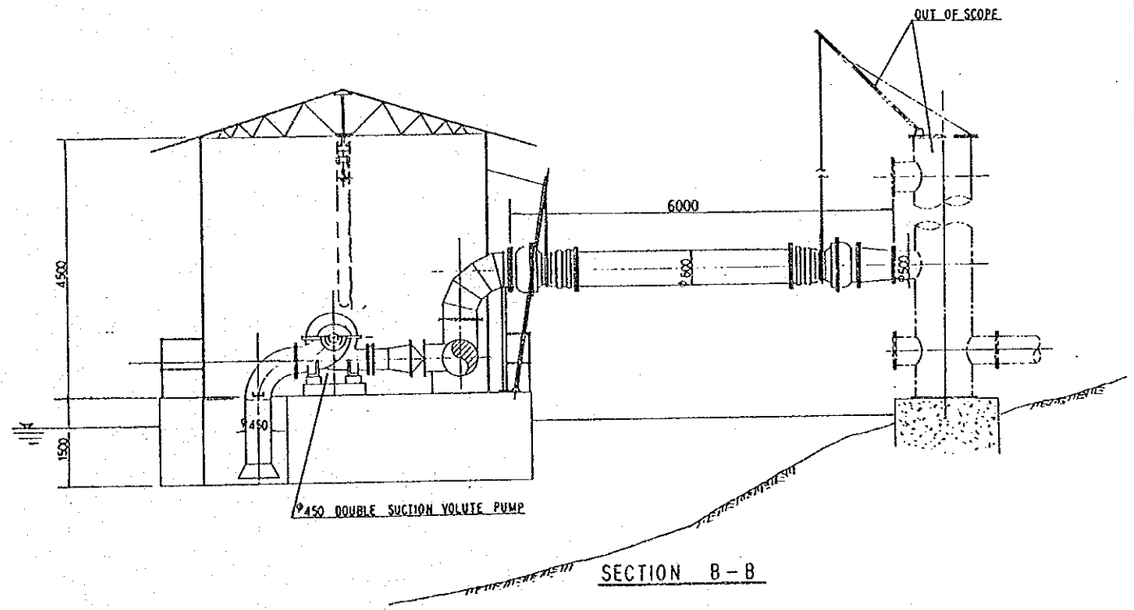
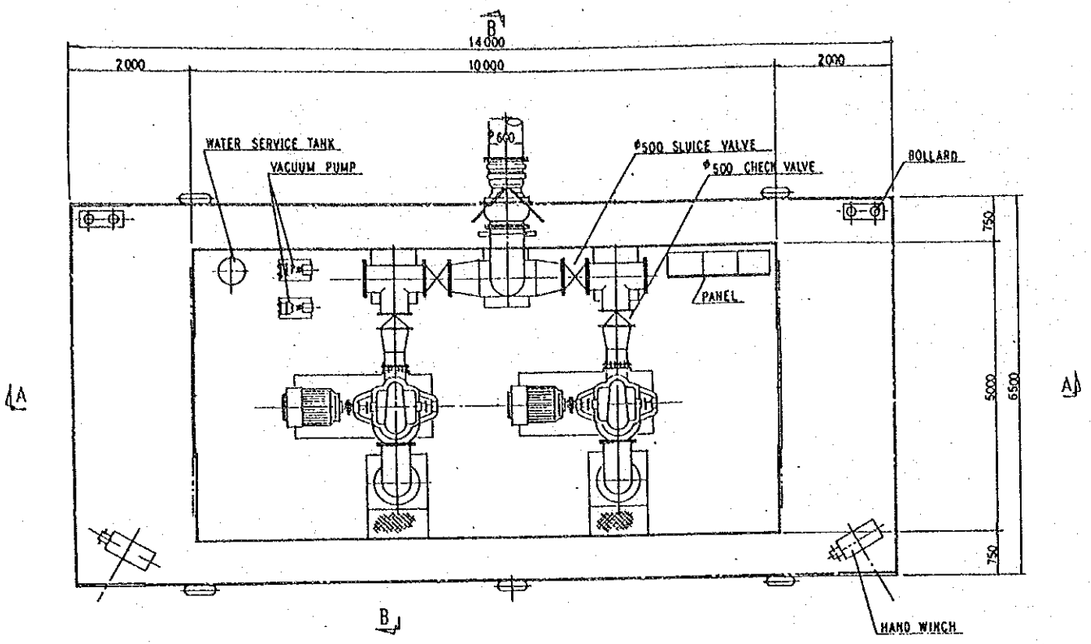


SECTION A – A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
4. Sahel El Kobania Pump Station	1/100	A – 04



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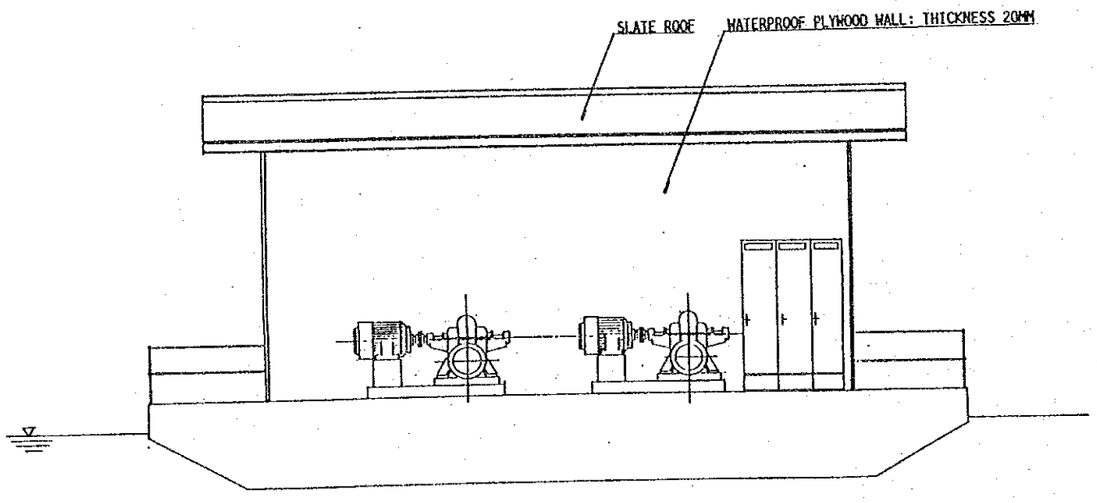
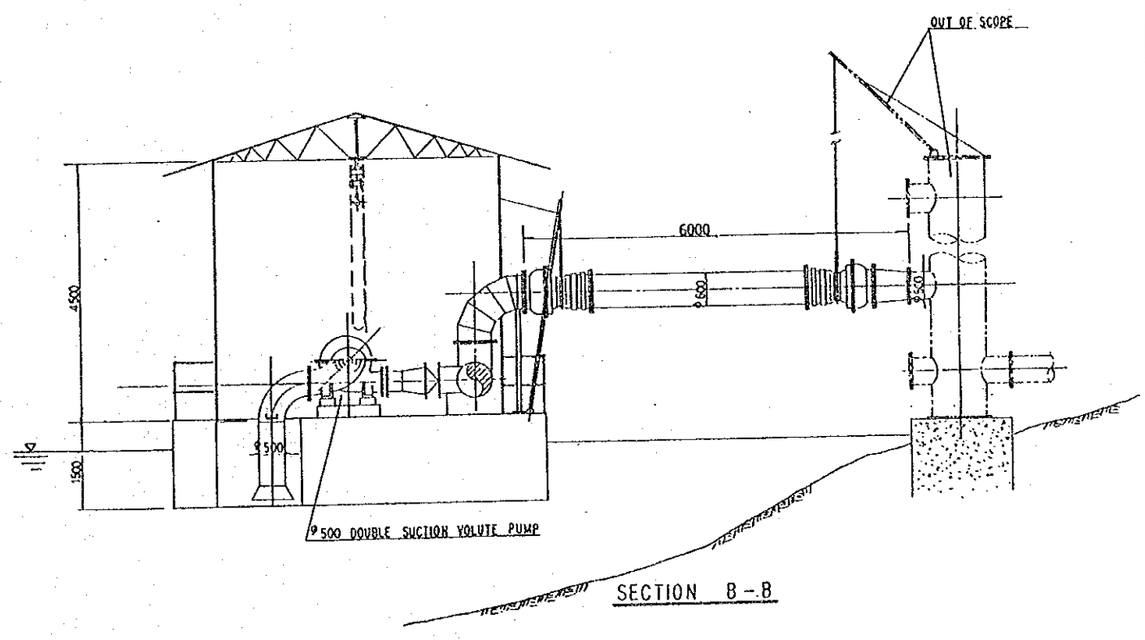
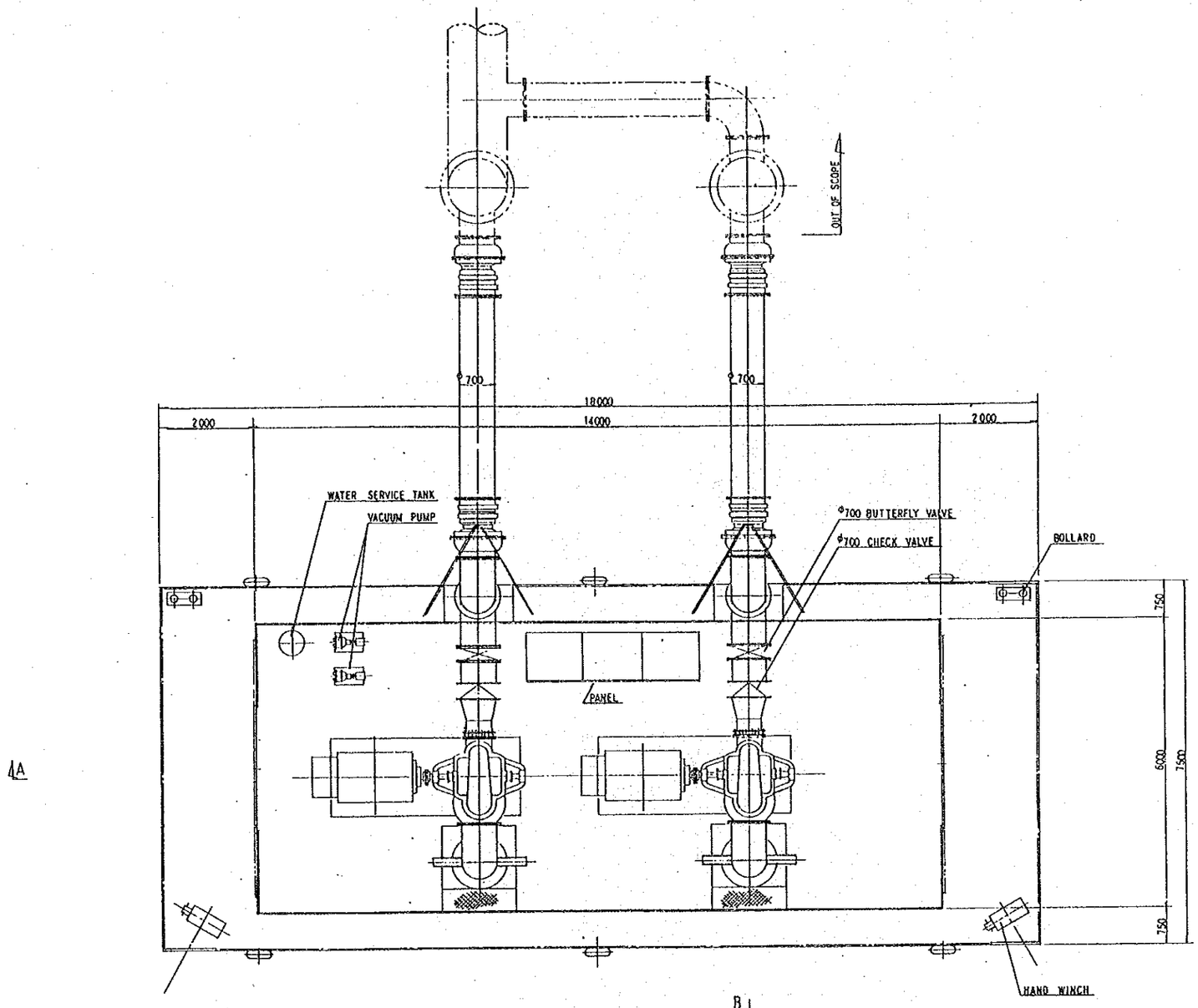


SECTION A—A



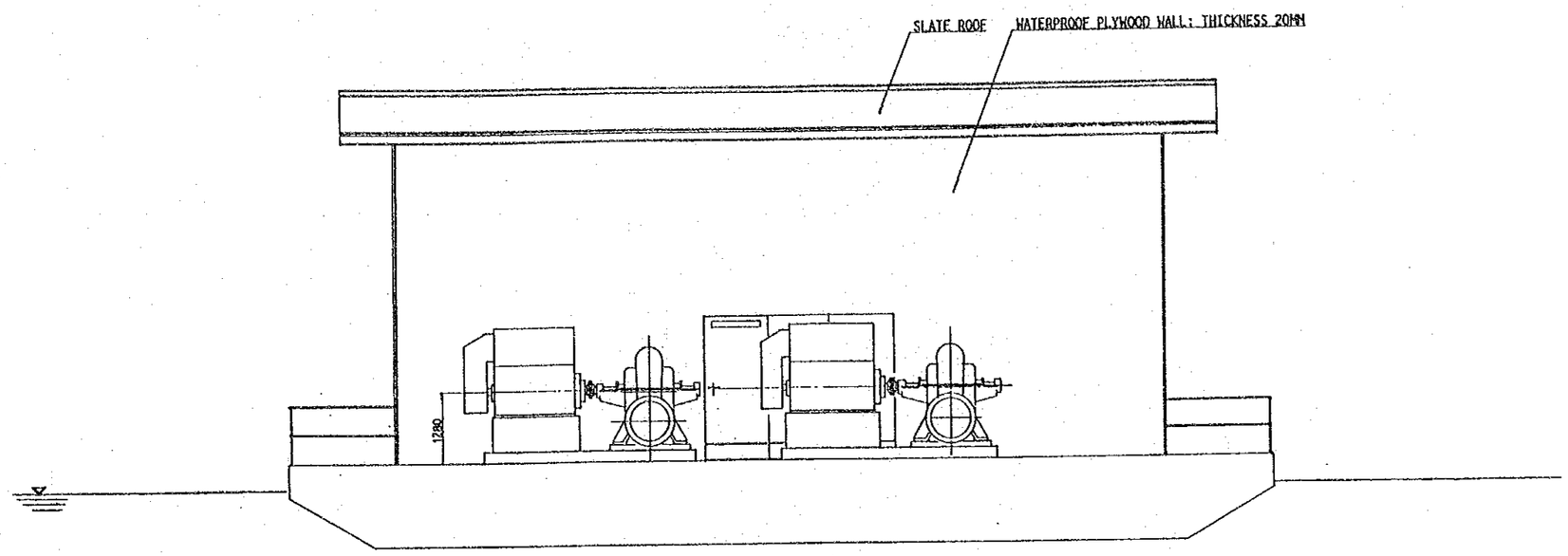
SECTION B-B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
5. Sahel Fares Pump Station	1/100	A—05

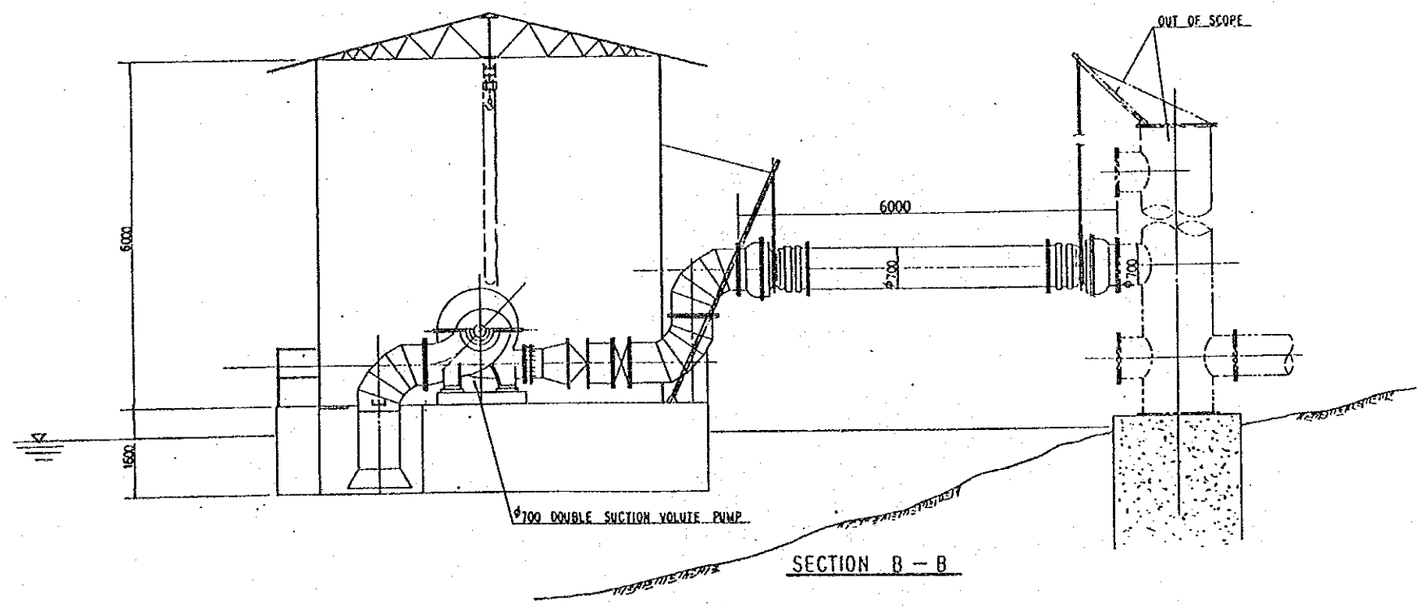


PLAN

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
6. El Biadiea El Ollia Pump Station	1/100	A-06(1)

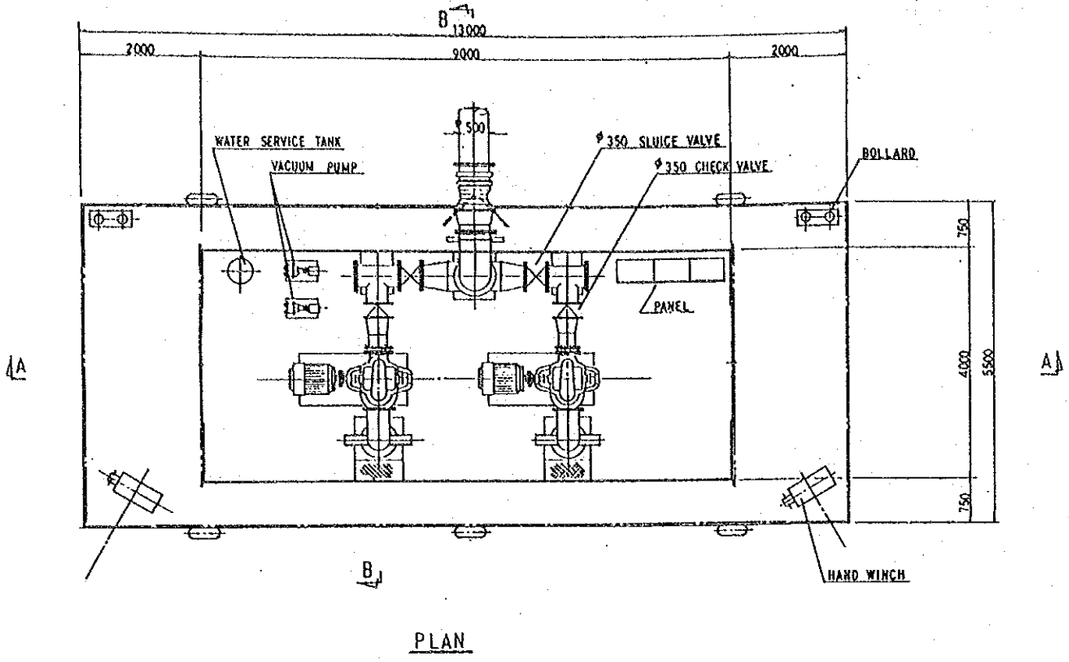


SECTION A – A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
6. El Biadiea El Ollia Pump Station	1/100	A-06(2)



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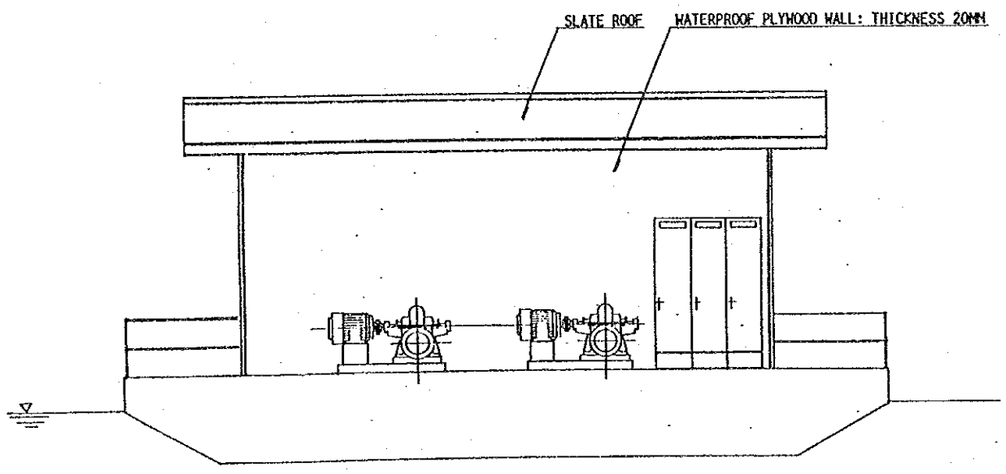
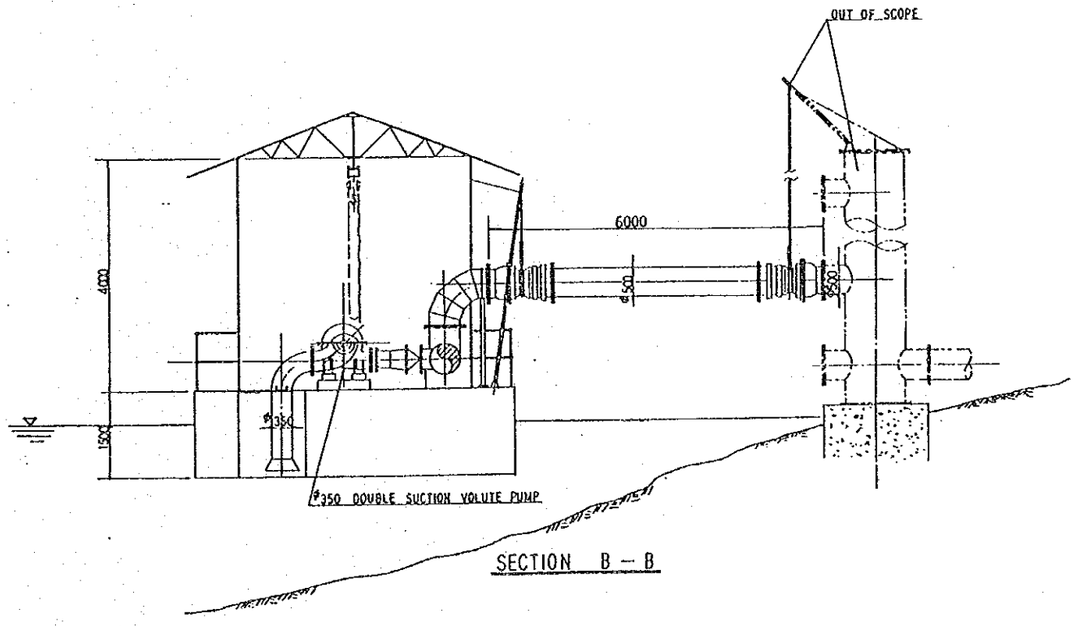
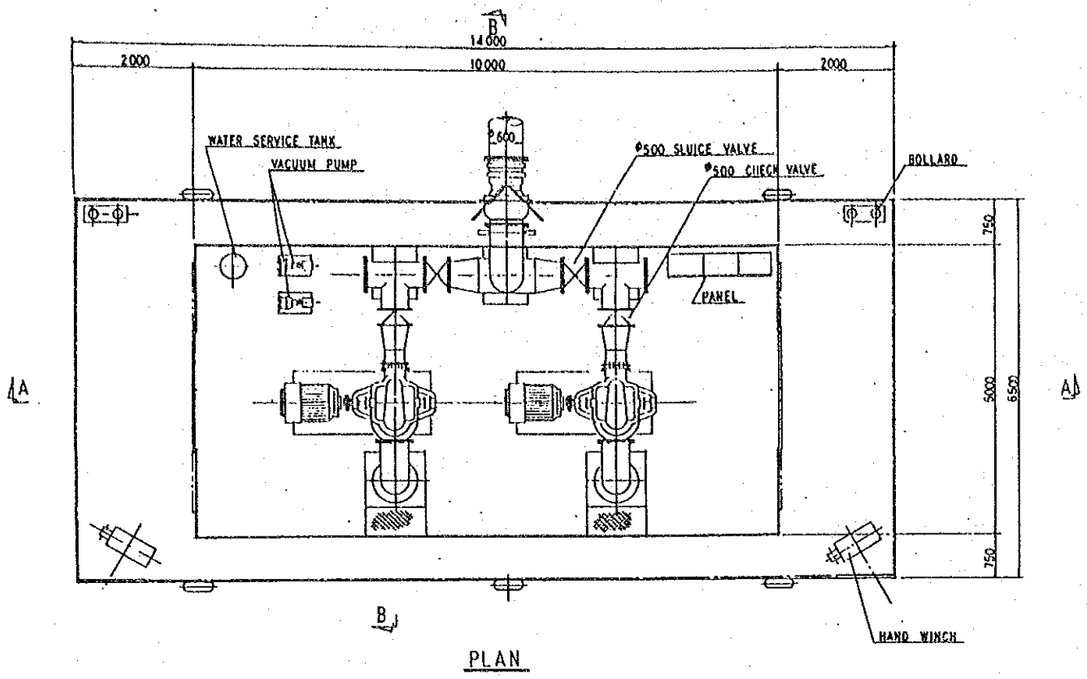


SECTION A-A

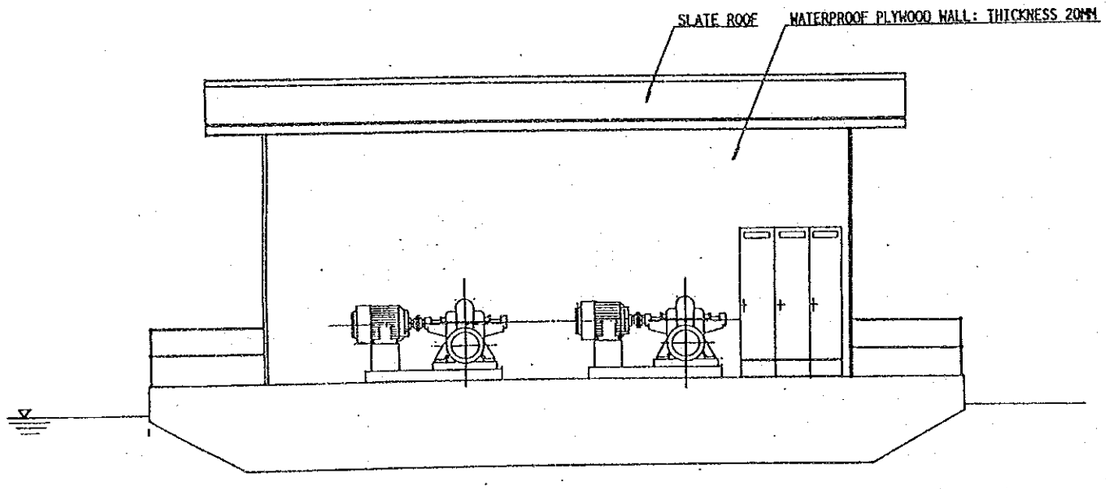


SECTION B-B

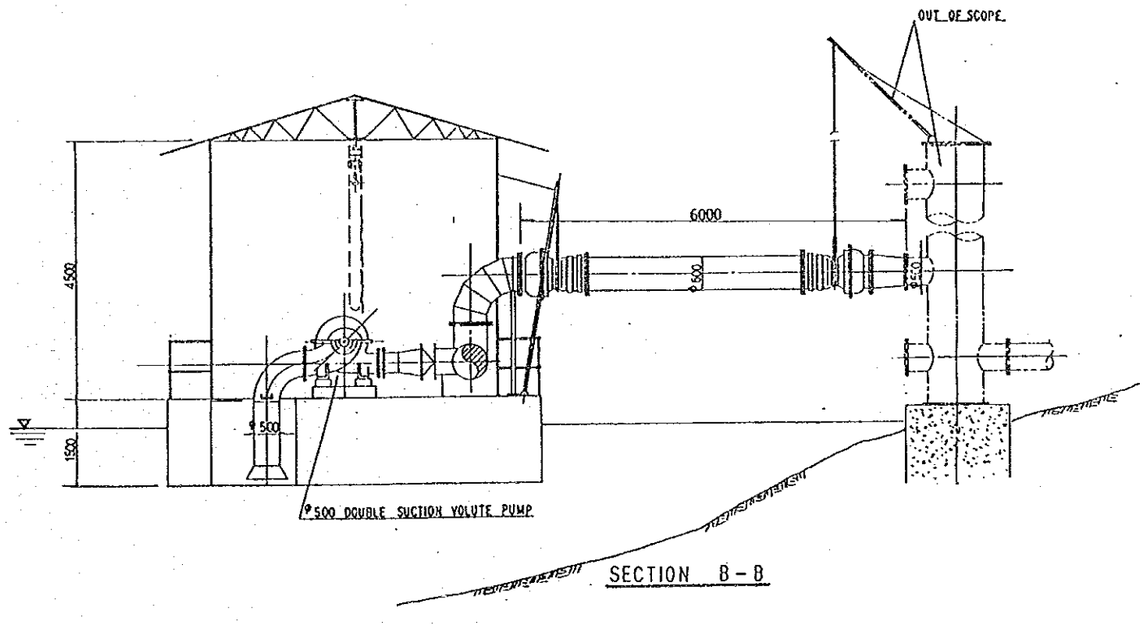
THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
7. El Twisa Pump Station	1/100	A-07



PLAN

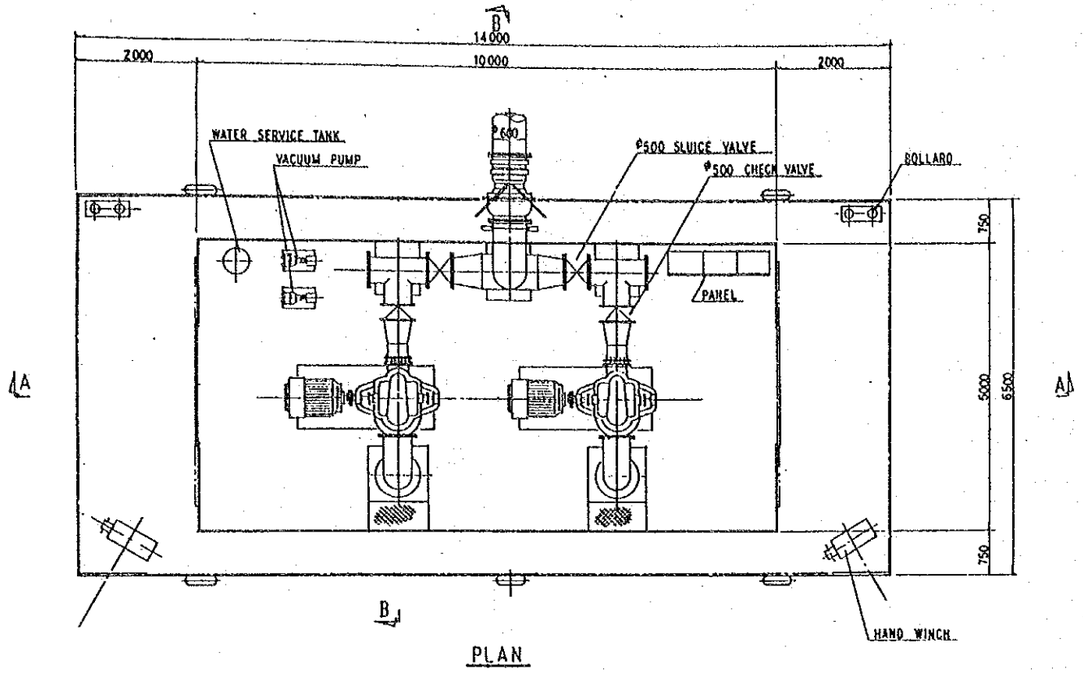


SECTION A – A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
8. Gharb Aswan Baharia Pump Station	1/100	A – 0 8



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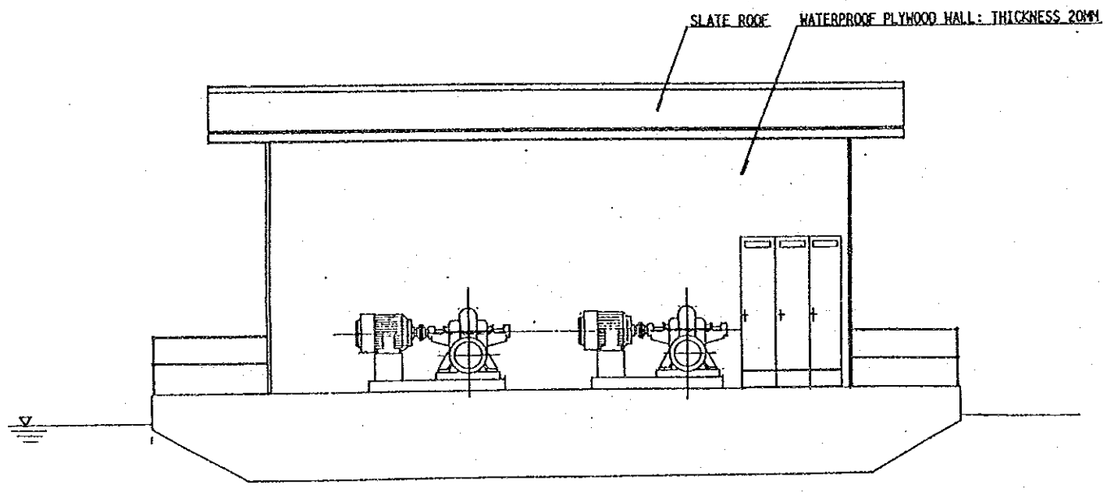

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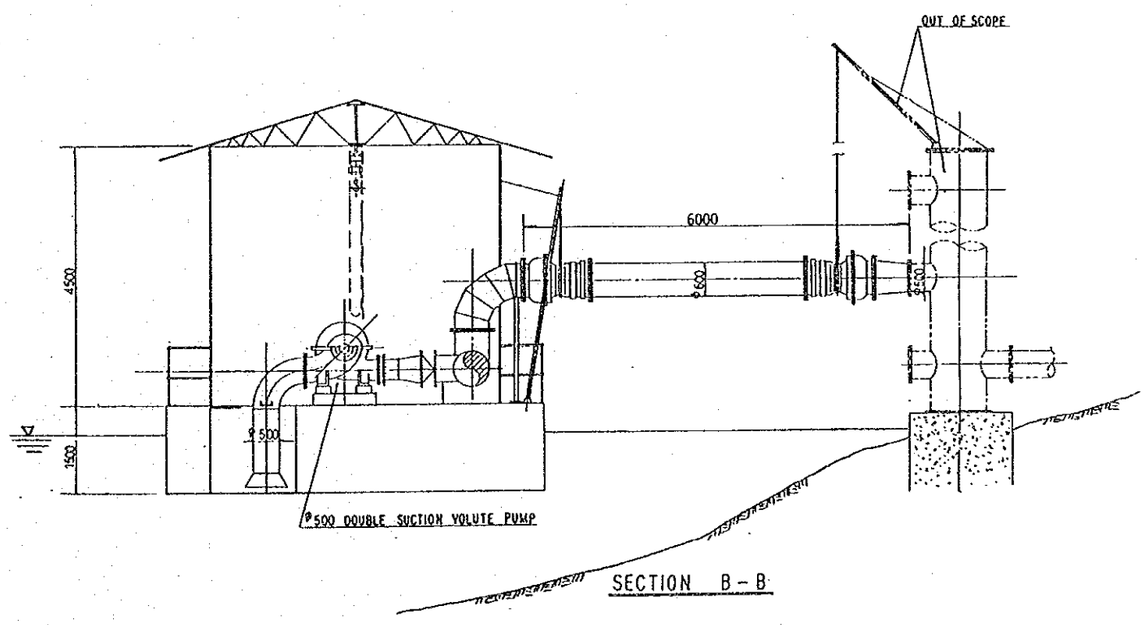
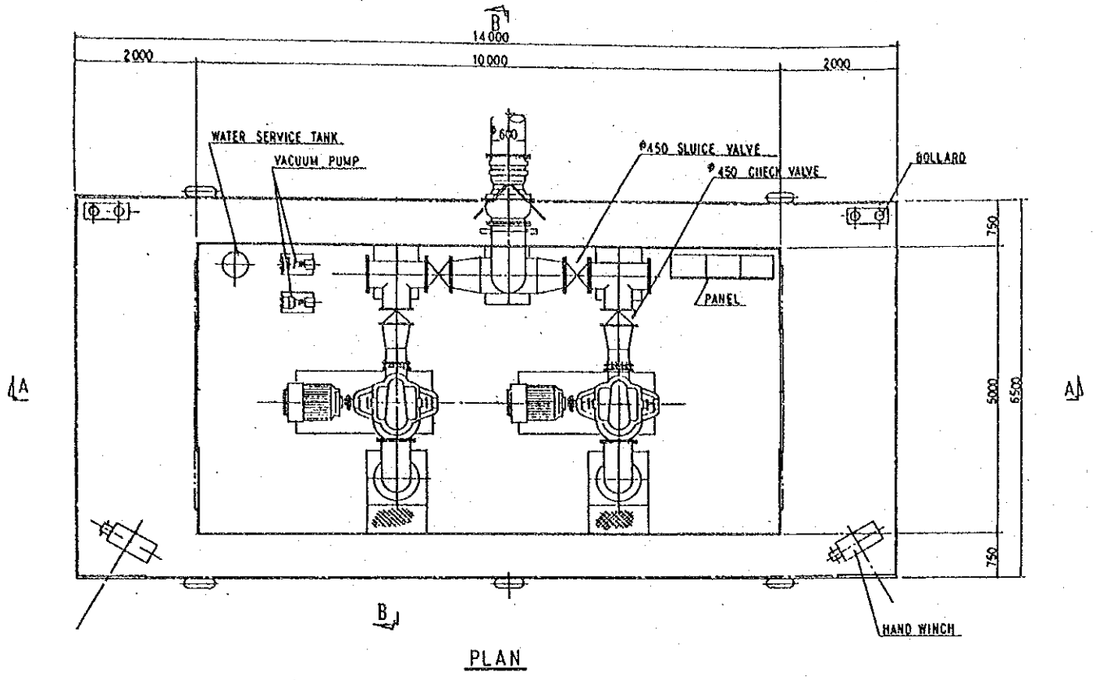


SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
9. Gezirat Fares Pump Station	1/100	A – 0 9



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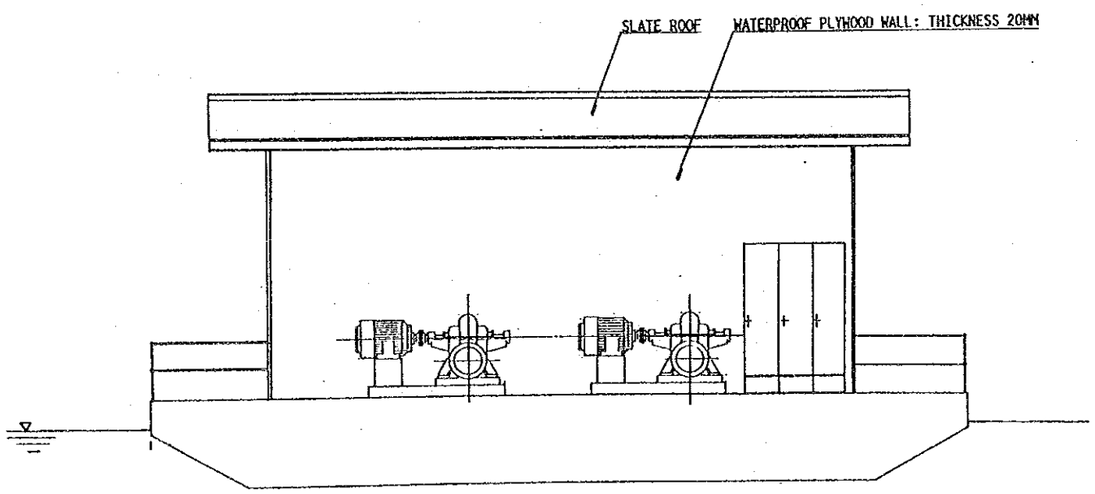
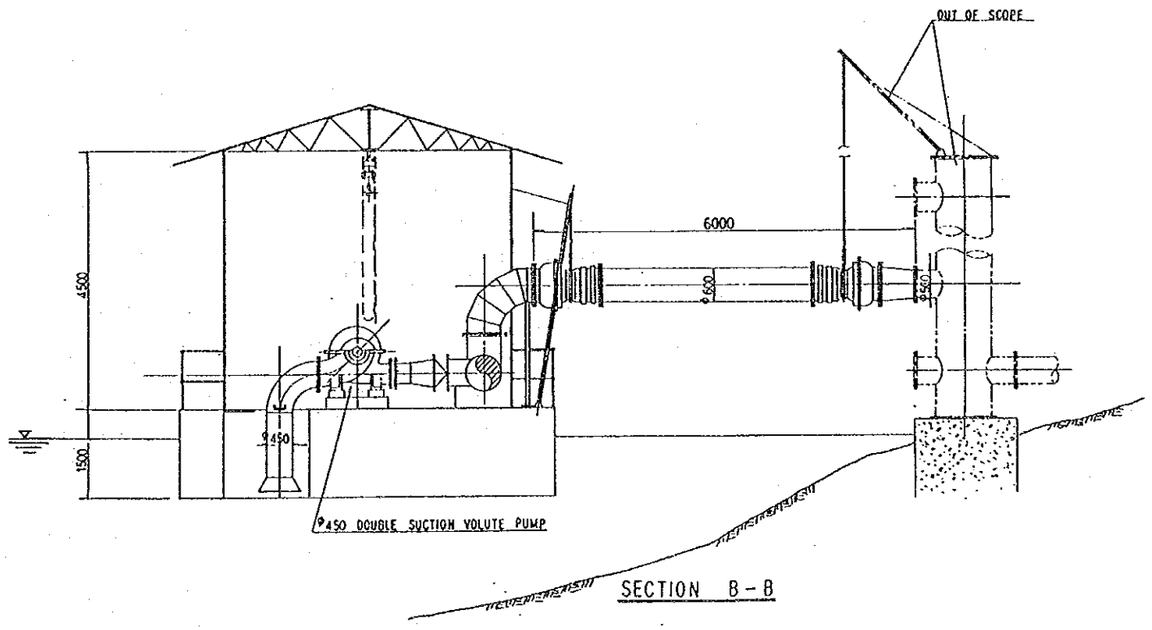


SECTION A – A



SECTION B – B

THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT	Scale	DRWG No.
10. Gezirat Behrif Pump Station	1/100	A – 1 0

5-4 Implementation Plan

In implementing this project through Japanese Grant-Aid, services of a consultant and contractor will be required, taking charge of the following responsibilities:

(1) Consultant

a) Preparation of detailed design and tender documents for the procurement of equipment and materials;

b) Carrying out the tender works on behalf of the Egyptian authorities concerned together with tender analysis and evaluation of the offered tenders;

c) Witnessing and advising on the negotiations between Egyptian government and the successful tenderer;

d) Supervision for the procurement of the equipment and materials.

(2) Contractor

a) Procurement, manufacturing and ocean transportation of the and equipment and materials;

b) One (1) year guarantee of deficit for the equipment and materials.

(3) Responsibilities of the Government of Egypt

a) Customs clearance and internal transportation of the equipment and materials in Egypt;

b) Installation and demonstration of the equipment and materials;

c) Operation and maintenance of the equipment and materials completed;

d) Payment commission to the Japanese Foreign Exchange Bank.

(4) Contents of Detailed Design

The following are contained in the detailed design stage:

1) Pump

a) To be reconfirmed
* Flow rate and total head of each pump
* Head at suction side
* Selection of material

* Selection of type of motor
* Choice of place and room for installation

b) To be decided and others
* Operation method (manual or automatic, synchronized operation of both pumps)
* Selection of fixtures
* Specifications of finished coat and its color

2) Control system

a) To be reconfirmed
* Type of control panel
* Choice of place and room for installation

b) To be decided and others
* Method of motor operation
* Capacity of lighting and type of fixtures
* Specifications of finished coat and its color

3) Barge

a) To be reconfirmed
* Choice of places for equipment and materials
* Natural conditions (water quality, velocity of water flow, difference of water level, wave etc.)
* Place and operation method of maintenance crane
* Selection of materials for roof and wall
* Structure of shed

b) To be decided and others
* Capacity of lighting and type of fixtures
* Structure of window and ventilation
* Specifications of finished coat and its color

(5) Procurement Plan of Equipment and Materials

Equipment and materials in this project will be basically procured in Japan, considering quality and the limited implementation schedule.

Preparation of detailed design and supervision of the procurement will be done by the Japanese consultant entrusted by the executing agency, MED, the Government of Egypt.

(6) Implementation Schedule

Phase I project will commence when the Exchange of Notes is mutually confirmed by the Governments of Japan and Egypt. Then the implementing agency, MED, the Government of Egypt should immediately conclude a contract with the Japanese consulting firm for the detailed designing and supervising stages of the Project.

After the contract is signed, the Consultant should then prepare the detailed design and the tender document for Japanese suppliers for the procurement and ocean transport of the equipment and materials.

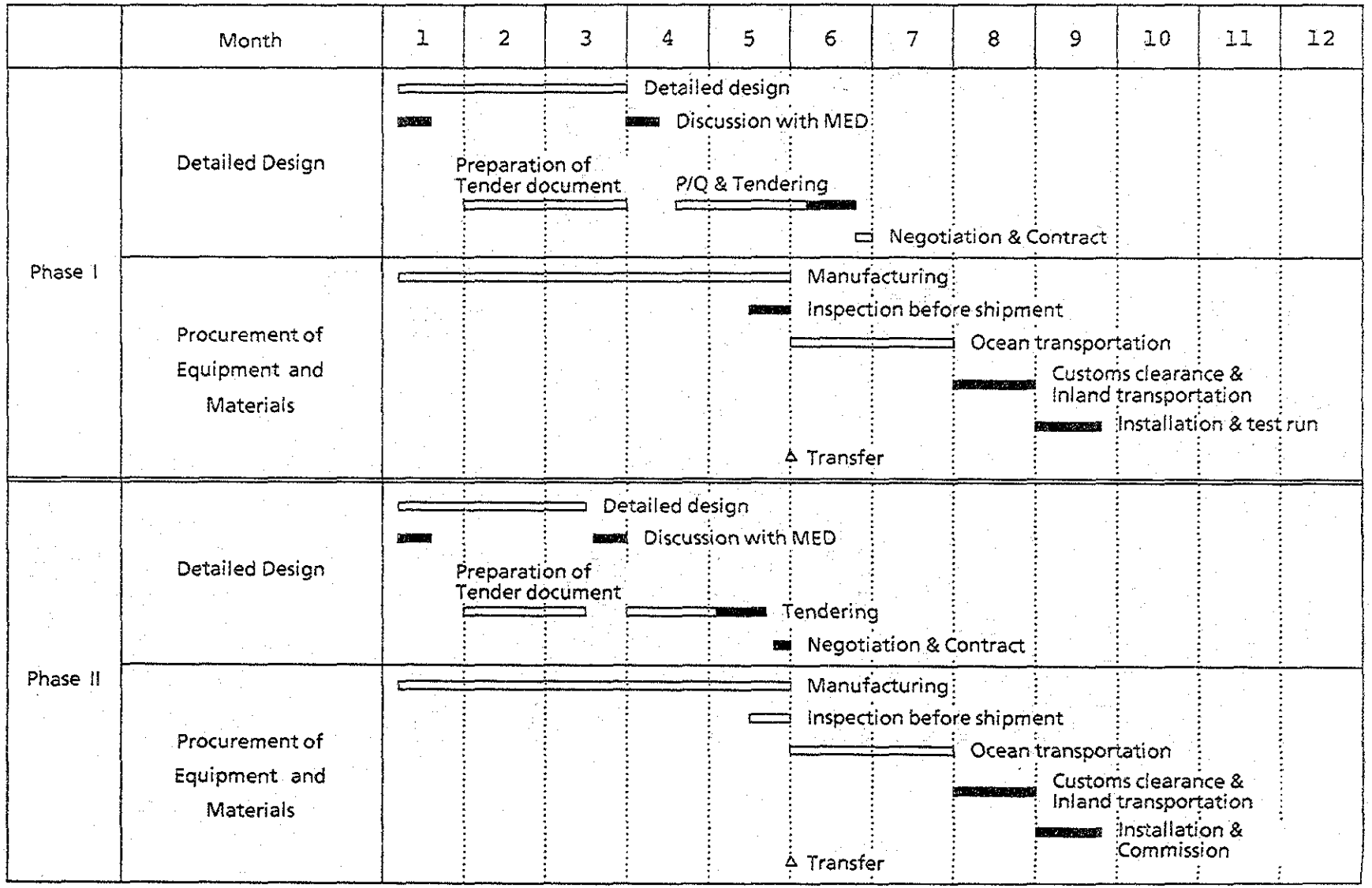
The Consultant, based on the mutual consent by both Governments, shall call for a tendering in Japan on behalf of the MED. After opening the tenders, the Consultant shall evaluate the tenders, recommend the successful tenderer to MED, and witness the negotiation and the contract between MED and the successful tenderer. It will take about six (6) months from the E/N to the supplier contract.

During the period of contract of preparation, the supplier, will immediately start to manufacture the equipment and materials. The manufacturing period is expected to be about five (5) months because almost all equipment and materials will be procured from Japan. In addition, it will take at least three (3) months for ocean transportation, customs clearance and internal transportation. Therefore, a total of eleven (11) months will be required from the dated E/N to loading on board of equipment and materials by the supplier.

Phase II project will be executed in the same method as Phase I project. It is expected that the Phase II project will be shorter by one month, if it will be done immediately after completion of Phase I project.

Implementation schedule is shown in the following Table 5-3.

Table 5-3 IMPLEMENTATION SCHEDULE



(7) Project Cost

1) Project Implementation Cost

The project implementation cost is estimated as follows:

a) Internal Transportation Cost	LE56,500.-
b) Remuneration and Labor Cost	LE 3,450.-
TOTAL:	LE59,950.- (¥2,473,000.-)

This above cost was made based on the facts explained below, and the detailed calculation is shown in Table 5-4.

2) Basis of the Cost Estimate

Internal transportation and installation works shall be carried out and borne by the Government of Egypt.

The basic cost for this cost estimate was obtained from MED as shown in Table 5-4. Applied foreign exchange rate was as follows, based on the six (6)-month average rate issued by a major bank in Egypt.

US$ 1.00 = LE 3.29
US$ 1.00 = ¥ 135.73
LE 1.00 = ¥ 41.255

General provisions for cost estimation are as follows:

- Internal Transportation

  Internal transportation will be provided from Alexandria to the nearest large port of the Nile River from each site.

- Installation

  Installation of equipment and materials for each pump station will be executed by one chief manager, one site manager, one senior skilled labors and six skilled labors for three days. Total period for installation of total ten pump stations will require thirty working days.

Table 5-4 Basis and Details of Cost Estimation

A. Calculation of Internal Transportation

Internal transportation will be provided from Alexandria to the nearest large port on the Nile river from each site.

No. & Name of Pump Station	Volume (m3)	Name of Destination	Unit Price (LE)	Amount (LE)
1. El Sheikh Fadl	465	Kom Ombo	9	4,185
2. Sahel El Hamam	465	Kom Ombo	9	4,185
3. El Fosa El Baharia	465	Kom Ombo	9	4,185
4. Sahel El Kobania	673	Aswan	10	6,370
5. Sahel Fares	673	Kom Ombo	9	5,733
6. El Biadiea El Ollia	1,148	Luxor	8	9,184
7. El Twisa	465	Kom Ombo	9	4,185
8. Gharb Aswan Baharia	637	Aswan	10	6,370
9. Gezirat Fares	637	Kom Ombo	9	5,733
10. Gezirat Beherif	637	Aswan	10	6,370
Total:	6,193			56,500

(Note: Unit prices were supplied by MED)

B. Calculation of Installation Cost

The remuneration of the Project Manager and Site Managers was not provided in the following table because they will serve concurrently with their own jobs as Chief Engineer and Site Engineer.

Profession	Persons	Term(day)	Unit cost(LE/day)	Amount(LE)
Project manager	(1)	(30)	-	-
Site manager	(10)	(3)	-	-
Labor (Senior skilled)	1	30	25	750
Labor (Skilled)	6	30	15	2,700
Total:	7(11)			3,450

(Source : MED)

CHAPTER 6 PROJECT EVALUATION, CONCLUSION AND RECOMMENDATION

(1) Project Evaluation

For the economic and social evaluation of the project, the impact of the project on both the rural people in the project area and the national economy including the environmental aspect was assessed. These evaluations show that the rural people in the project area would contribute to the achievement of national development objectives and that the related investments would generate satisfactory benefit for the project. About 43,300 farm household will be benefited from the project covering 7,535 feddan (3,164 ha). After renovation of pump equipment (2 pumps in each station) and materials, adequate water will be supplied throughout the year. Replacement cost and operation & maintenance costs will decrease.

The cropping intensity from present 169% to 200% was projected. Through this increase, an incremental benefit (direct benefit) of 5,200 tons/year (78,800 tons/year to 84,000 tons/year) is expected from the basic crops (wheat, maize, etc.) and cash crops (sugarcane, fruit trees and vegetables). It will also contribute to the promotion of regional agriculture as well as the country's food self-sufficiency. In respect of indirect benefits, the project will contribute to the upliftment of the standard of living of the rural people, modernization of rural areas as well as vitalization of regional industries by absorbing surplus labors in agricultural processing and treatment works for agricultural products.

When the Project is implemented, rich vegetation will be secured and hence improve the natural and social environment of the project area.

(2) Conclusion

The project, which is accorded high priority by the Government of Egypt, will be executed as one of the national programs under the Second Five-Year Plan. This plan was initiated for a horizontal and vertical expansions with the rehabilitation and renovation of irrigation facilities. Based on the study, the project is considered viable for Japanese grant-aid assistance taking into consideration the needs of the rural people and urgency of the project. In the implementation of the project, MED shall be the executing agency in view of their past experiences in the relative project.

(3) Recommendation

In the execution of the project, the following are recommended:

1) Replacement of the present pipelines at No.6 El Biadiea El Ollia as well as the route of pipelines by the Egyptian government in order to deliver the required water to the area without any difficulty or trouble.

2) The Egyptian government should be responsible for customs clearance, internal transportation and installation of pump equipment and materials for the smooth execution of the project.

3) Training of the following engineers to conduct smooth operation and maintenance of the Project:

- One engineer will be engaged in operation and maintenance. This engineer would study the method of operation including regular inspection of new pump facilities and equipment.

- One engineer, in charge of water management and facilities, should study water management technology, viz., the whole system of pump station, canal and field.

APPENDICES

APPENDIX 1 Member List of Study Team

Name	Designation	Position
Itaru MINAMI	Leader	Official, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Masashi FUJITA	Project Coordinator	First Design Study Division, Grant Aid Study and Design Department, Japan International Cooperation Agency (JICA)
Susumu TAKESHITA	Irrigation & Drainage Planner	Senior Officer, Design Division, Ministry of Agriculture, Forestry and Fisheries
Fumimichi OBU	Irrigation Facility Planner	Sanyu Consultants Inc.
Masayuki IMAI	Operation & Maintenance Planner	Sanyu Consultants Inc.
Toshinori KUDO	Equipment Planner	Sanyu Consultants Inc.
Masaru MATSUYAMA	Cost Estimater	Sanyu Consultants Inc.

APPENDIX 2 Survey Schedule

Date	Work Schedule	Stay
Nov.19(Tue)	Leave Tokyo for Amsterdam (KL862)	Amsterdam
20(Wed)	Leave Amsterdam for Cairo (KL561)	Cairo
21(Thu)	Courtesy call MOIC, MPWWR, EOJ, JICA Explanation of Inception Report	〃
22(Fri)	Leave Cairo for Aswan	Aswan
23(Sat)	Site Survey, Pump Station No.8,10,4,7	〃
24(Sun)	Site Survey, Pump Station No.1,9,5,2,3	Luxor
25(Mon)	Site Survey, visit Luxor ID Leave Cairo for Luxor	Cairo
26(Tue)	Discussion meeting with MED and MOIC	〃
27(Wed)	- do -	〃
28(Thu)	Signing of M/D at MOIC	〃
29(Fri)	Leave Cairo for Tokyo (SR347/168) (Mr. MINAMI and Mr. TAKESHITA)	〃
30(Sat)	Leave Cairo for Aswan Discussion with MED concerning detail site survey	Aswan
Dec. 1(Sun)	Data collection at MED Detail site survey	〃
2(Mon)	Detail site survey and data collection at Komombo MED	〃
3(Tue)	Detail site survey and data collection at Eduf MED	〃
4(Wed)	Detail site survey	〃
5(Thu)	Detail site survey	〃
6(Fri)	Detail site survey	〃
7(Sat)	Detail site survey	〃
8(Sun)	Detail site survey	〃
9(Mon)	Detail site survey	〃
10(Tue)	Leave Aswan for Luxor	〃
11(Wed)	Detail site survey	〃
12(Thu)	Leave Luxor for Cairo	Cairo
13(Fri)	Study result of site survey	〃
14(Sat)	Supplemental data collection at MED	〃
15(Sun)	- do -	〃
16(Mon)	- do -	〃
17(Tue)	Discussion with MED	〃
18(Wed)	Supplemental data collection at MED	〃
19(Thu)	Meeting with MED, Visit EOJ and JICA Cairo Office	〃
20(Fri)	Leave Cairo for Tokyo (SR/347/168)	〃

APPENDIX 3 List of Personnel related to the Study in Egypt

Ministry of Public Works and Water Resources

Mr. Ahmed Ali Mazen	First Under Secretary Chairman of Irrigation Department
Mr. Gamil El Sayeu Mahmoud	First Under Secretary Chairman of Planning Sector
Mr. Gamal Eldin M.Fadl	First Under Secretary Chairman of Mechanical and Electrical Department(MED)
Mr. Tawadros Gairguis	Head of Project Sector (MED)
Mr. Kamel Abo El Seoud	Director General, Specification and Studies Directorate (MED)
Mr. Mohamed Refaat El Dessonky	Director General, Financial and Administration Directorate
Mr. Mohamed Abanl Fottouh	Eng., Specification and Studies Directorate (MED)
Mr. Kamel Abd El Aziz Moustafa	Eng., Specification and Studies Directorate (MED)
Mrs. Anan Abdalla	Director General, Technical Office of the Chairman of Irrigation Department
Mr. Wahba Sahet	Director General, General Directorate Upper Egypt
Mr. Mohamed Abd El Rahaman	Director, Upper Egypt Aswan
Mr. Sabry Moghazy	Director, Upper Egypt Luxor
Mr. Abdalh Mohammed Hamed	Deputy Director, Irrigation Department, Aswan
Mr. Yoshitake Shimbo	Technical Advisor, Irrigation Deparment

Ministry of International Cooperation

Mr. Hamed Moustafa	Undersecretary, Ministry of International Cooperation
Mr. Mohsen Sadak	Director, Ministry of International Cooperation

MINUTES OF DISCUSSIONS

THE BASIC DESIGN STUDY ON THE REHABILITATION PROJECT FOR FLOATING IRRIGATION PUMP STATIONS IN UPPER EGYPT IN THE ARAB REPUBLIC OF EGYPT

In response to a request made by the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct a Basic Design Study on the Rehabilitation Project for Floating Irrigation Pump Stations in Upper Egypt (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).

The JICA sent to Egypt a study team, which is headed by Mr. Itaru Minami, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, and is scheduled to stay in the country from November 20 to December 20, 1991.

The team held discussions with the officials concerned of the Government of the Arab Republic of Egypt and conducted a field survey at the study area.

In the course of the discussions and field survey, both parties have agreed to recommend to their respective Governments the main items described on the attached sheets. The team will proceed further works and prepare the Basic Design Study Report.

Cairo, November 28, 1991

南 格

Mr. Itaru Minami
Leader
Basic Design Study Team
JICA

GAMAL FADL

Eng. Gamal Eldin M. Fadal
Head of
Mechanical and Electrical
Department, Ministry of
Public Works and Water
Resources

Witnessed by

Mr. Hamed Moustafa
Undersecretary,
Ministry of International Cooperation

ATTACHMENT

1. Objective

The objective of the Project is to secure reliable and firm water sources for farmland irrigation so as to contribute to stable agricultural production and thus to self-sufficiency of food through provision of equipment and materials for rehabilitating the floating pump stations.

2. Project Sites

The Project sites, of which the location map is shown in Annex I, are listed below.

1) El Sheikh Fadl
2) Sahel El Hamam
3) El Fosa El Baharia
4) Sahel El Kobania
5) Sahel Fares
6) El Biadiea El Ollia
7) El Twisa
8) Gharb Aswan Baharia
9) Gezirat Fares
10) Gezirat Behrif

3. Responsible and Executing Agency

The Ministry of Public Works and Water Resouces (MPWWR) bears overall responsiblities for the administration and execution of the Project. The Organization Chart of the Project is shown in Annex II.

4. The Items requested by the MPWWR

After discussions with the Team, the items which are listed below are finally requested by the Egyptian side. However, the final items will be decided after further studies.

1) Pumps
2) Motors
3) Priming Pumps and Motors
4) Valves
5) Pipes and Hoses for pumping suction and delivery up to discharge tower
6) Switchboards
7) Power and Control Cables between panel to motors
8) Barges
9) Spare Parts

GAMAL

5. Internal Transportation and Installation of the Equipment

Both parties have confirmed that the Egyptian side shall bear all expenses for internal transportation and installation of the equipment purchased under the Grant Aid, in case that the Grant Aid Assistance by the Government of Japan is extended to the Project.

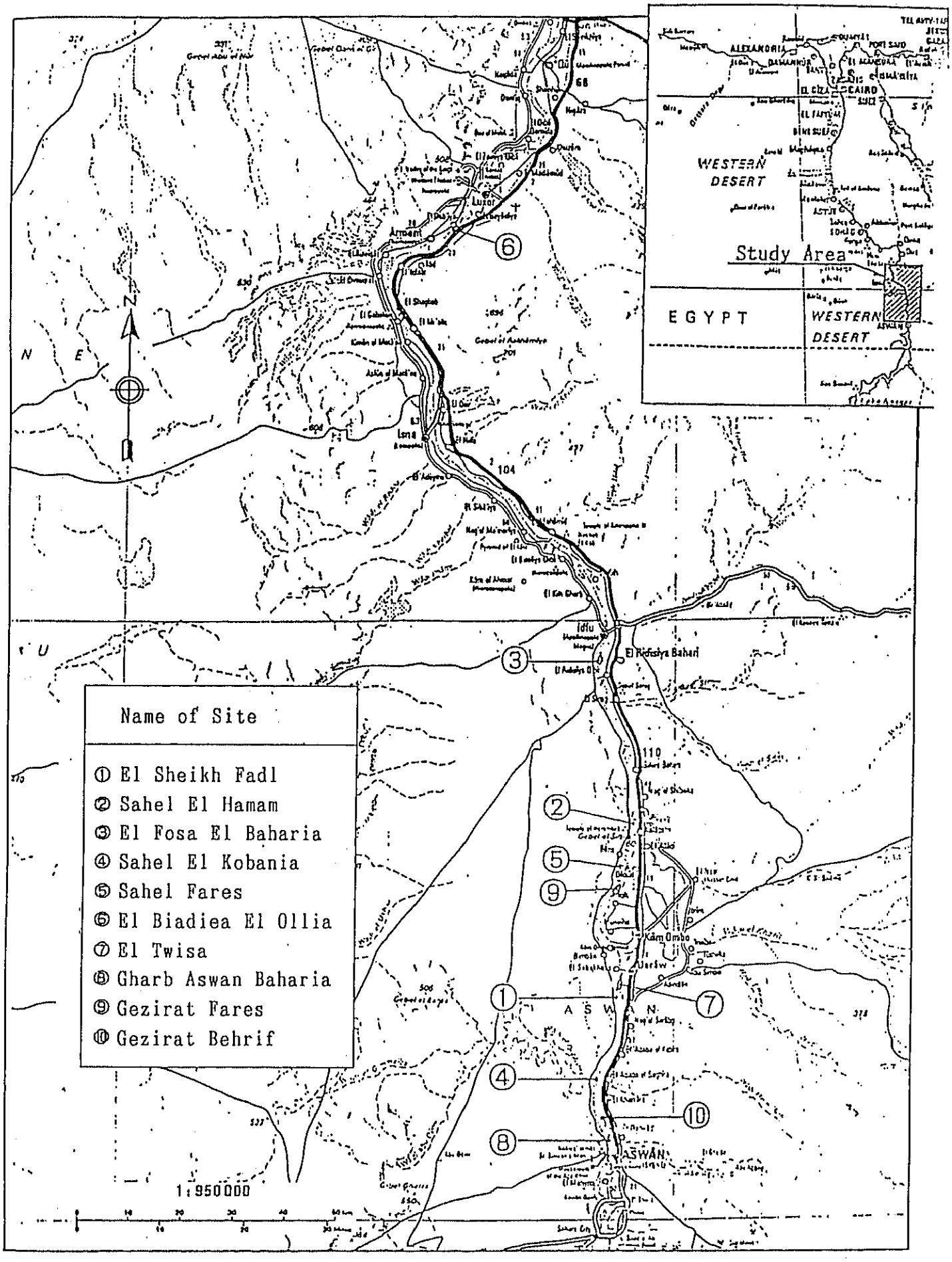
6. Japan's Grant Aid System

1) The MPWWR has acknowledged the system of Japanese Grant Aid explained by the Team.
2) The Government of the Arab Republic of Egypt will take the neccesary measures, described in Annex III for smooth implementation of the Project, in case that the Grant Aid Assistance by the Government of Japan is extended to the Project.

7. Schedule of the Study

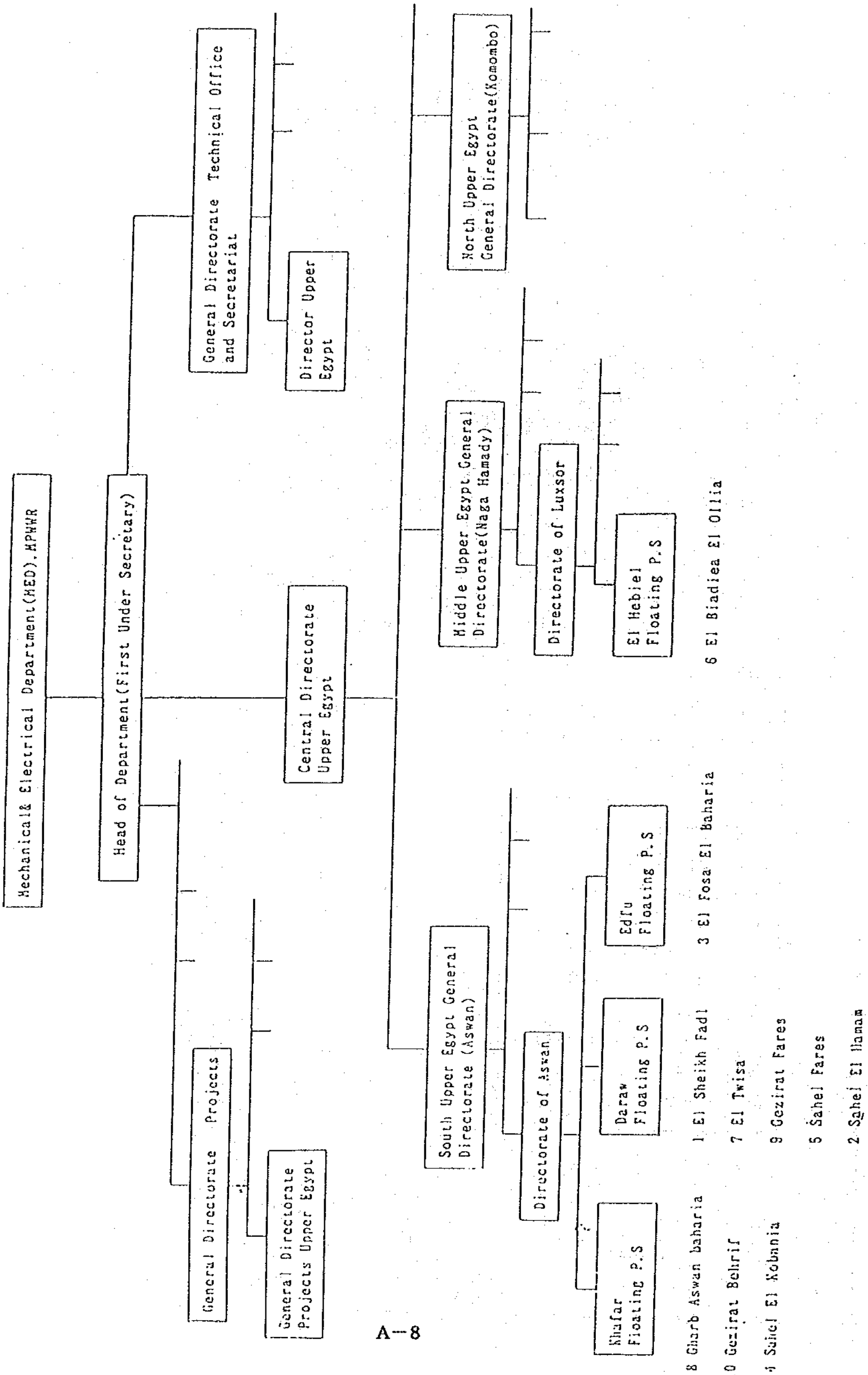
1) The Consultants will proceed further studies in Egypt until December 20, 1991.
2) Based upon the Minutes of Discussions and technical examination of the study results, JICA will complete the final report and send it to the Government of the Arab Republic of Egypt in April, 1992.

ANNEX I : LOCATION MAP OF THE PROJECT SITES



CAMAC

ANNEX II : ORGANIZATION CHART OF THE PROJECT



ANNEX III : Recommendation for Undertakings by the Government of the Arab Republic of Egypt in case Japan's Grant is executed

1. To secure the land for the Project and to clear the site as needed before arrival of the equipment and materials for rehabilitating the floating pump stations.

2. To provide facilities for distribution of electricity and other incidental facilities to the Project sites.

3. To ensure prompt unloading, customs clearance of the goods for the Project at the port of disembarkation in the Arab Republic of Egypt and prompt internal transportation therein of the products purchased under the Grant Aid.

4. To secure, with respect to the supply of the products and services under the verified contracts, that Japanese nationals shall not be subject to any customs duties, internal taxes and other fiscal levies which may be imposed in the Arab Republic of Egypt.

5. To accord Japanese nationals whose services may be required in connection with the supply of products and services under the verified contracts such facilities as may be necessary for their entry into the Arab Republic of Egypt and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Arab Republic of Egypt.

6. To maintain and use properly and effectively the equipment and materials purchased under the Grant Aid.

7. To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the execution of the Project.

GAHAL

APPENDIX 5 Supplemental Data

5.1 Climatic Conditions in Upper Egypt

Year : 1989

1) Temperature

Max. air temperature in shade	50°C
Min. air temperature	2°C
Average daily maximum of hotest month	42°C
Average daily minimum of coldest month	9°C

2) Rain

Rain is rather scarce and occurs during winter.

Maximum annual rainfall	8mm
Average annual rainfall	3mm

3) Snow and Sleet

Neither snow nor sleet are expected.

4) Barometric Pressure

Average in month of highest pressure	1,017mb
Average in month of lowest pressure	1,005mb
Mean for the year	1,011mb
Highest ever recorded	1,027mb
Lowest ever recorded	999mb

5) Relative humidity

Average humidity in dampest month	45%
Average humidity in driest month	25%
Average ytearly humidity	34%

The humidity fails frequently below 4 % and occasionally to zero.

6) Wind velocity and storms

The maximum wind velocity is about 120 km/h. The wind may blow from any direction. Sand storms occur about once per month. Nine thunder storms have been recorded in a period of 14 years.

5.2 Monthly Discharge and Water Level (1987)

Month	Max.Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)	Min. Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)
Jan.	120	83.09	81.60	80	82.20	81.00
Feb.	145	83.60	82.40	120	83.09	81.70
Mar.	135	83.40	82.20	120	83.09	81.81
Apr.	135	83.40	82.25	135	83.40	81.80
May	-	84.26	82.25	-	83.50	82.10
Jun.	-	-	-	-	-	-
Jul.	230	85.11	83.60	215	84.87	83.30
Aug.	215	84.87	83.50	170	84.08	82.60
Sep.	170	84.08	82.80	135	83.40	82.20
Oct.	135	83.40	82.20	110	82.89	81.30
Nov.	110	82.89	81.70	105	82.78	81.50
Dec.	115	83.00	81.70	95	82.55	81.40

Max. difference of water level (Aswan) 2.91M=85.11M-82.20M

Max. difference of water level (El Gaafra)2.60M=83.60M-81.00M

Remarks : 1. Aswan water level is observed at 6.5 km downstream of Aswan Dam.

2. El Gaafra water level is observed 34 km downstream of Aswan Dam.

3. Symbol-means no data.

Data source : Irrigation Department at Aswan, MPWWR

5.2 Monthly Discharge and Water Level (1988)

Month	Max.Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)	Min. Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)
Jan.	110	82.89	81.50	75	82.07	81.40
Feb.	120	83.10	81.95	115	83.00	81.50
Mar.	130	83.30	82.30	110	82.89	81.70
Apr.	135	83.40	82.20	130	83.30	81.95
May	190	84.26	82.80	140	83.50	82.20
Jun.	225	85.03	83.70	205	84.71	83.35
Jul.	225	85.03	83.70	210	84.79	83.40
Aug.	205	84.71	83.40	165	83.99	82.60
Sep.	165	83.99	82.70	125	83.20	82.10
Oct.	125	83.20	82.10	110	82.89	81.70
Nov.	110	82.89	81.85	100	82.67	81.60
Dec.	115	83.00	81.80	90	82.43	81.30

Max. difference of water level (Aswan) 2.96M=85.03M-82.07M

Max. difference of water level (El Gaafra)2.40M=83.70M-81.30M

Remarks : 1. Aswan water level is observed at 6.5 km downstream of Aswan Dam.

2. El Gaafra water level is observed 34 km downstream of Aswan Dam.

3. Symbol-means no data.

Data source : Irrigation Department at Aswan, MPWWR

5.2 Monthly Discharge and Water Level (1989)

Month	Max.Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)	Min. Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)
Jan.	115	83.00	81.80	75	82.07	81.35
Feb.	115	83.00	81.90	115	83.00	81.75
Mar.	130	83.30	82.15	120	83.10	81.85
Apr.	140	83.50	82.25	130	83.30	82.10
May	200	84.63	83.10	145	83.60	82.25
Jun.	245	85.39	84.00	210	84.87	83.20
Jul.	240	85.27	83.95	215	84.87	83.55
Aug.	210	84.79	83.60	170	84.08	82.65
Sep.	170	84.08	82.65	115	83.00	81.70
Oct.	115	83.00	81.75	105	82.78	81.40
Nov.	110	82.89	81.75	100	82.67	81.50
Dec.	110	82.89	81.75	90	82.43	81.30

Max. difference of water level (Aswan) 3.32M=85.39M-82.07M

Max. difference of water level (El Gaafra)2.70M=84.00M-81.30M

Remarks : 1. Aswan water level is observed at 6.5 km downstream of Aswan Dam.

2. El Gaafra water level is observed 34 km downstream of Aswan Dam.

3. Symbol-means no data.

Data source : Irrigation Department at Aswan, MPWWR

5.2 Monthly Discharge and Water Level (1990)

Month	Max.Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)	Min. Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)
Jan.	110	83.00	81.70	75	82.07	80.90
Feb.	145	83.60	82.15	115	83.00	81.70
Mar.	140	83.50	82.25	125	83.20	81.75
Apr.	140	83.50	82.35	140	83.50	82.25
May	230	85.11	83.70	145	83.60	82.30
Jun.	240	85.27	83.90	235	85.19	83.70
Jul.	235	85.19	83.80	210	84.79	83.40
Aug.	210	84.79	83.45	170	84.08	82.75
Sep.	170	84.08	82.85	105	82.78	81.80
Oct.	115	83.00	81.85	105	82.78	81.60
Nov.	115	83.00	81.85	95	82.55	81.35
Dec.	110	82.89	81.45	80	82.19	81.20

Max. difference of water level (Aswan) 3.20M=85.27M-82.07M

Max. difference of water level (El Gaafra)3.00M=83.90M-80.90M

Remarks : 1. Aswan water level is observed at 6.5 downstream of Aswan Dam.

2. El Gaafra water level is observed 34 km downstream of Aswan Dam.

3. Symbol-means no data.

Data source : Irrigation Department at Aswan, MPWWR

5.2 Monthly Discharge and Water Level (1991)

Month	Max.Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)	Min. Discharge (Million cu.m/d)	Aswan W.L(m)	El Gaafra W.L(m)
Jan.	115	83.00	81.45	65	81.84	80.60
Feb.	150	83.70	82.45	115	83.00	81.75
Mar.	140	83.50	82.45	120	83.10	82.00
Apr.	145	83.60	82.40	135	83.40	82.20
May	230	85.11	83.80	145	83.60	82.35
Jun.	245	82.35	84.00	235	85.19	83.85
Jul.	235	85.19	83.95	210	84.79	83.50
Aug.	215	84.87	83.55	170	84.08	82.70
Sep.	170	84.08	82.70	105	82.78	81.65
Oct.	135	83.40	81.90	105	82.78	81.30
Nov.	125	83.20	81.80	95	82.55	81.55
Dec.	-	-	-	-	-	-

Max. difference of water level (Aswan) 3.27M=85.11M-81.84M

Max. difference of water level (El Gaafra)3.40M=84.00M-80.60M

Remarks : 1. Aswan water level is observed at 6.5 km downstream of Aswan Dam.

2. El Gaafra water level is observed 34 km downstream of Aswan Dam.

3. Symbol-means no data.

Data source : Irrigation Department at Aswan, MPWWR

Maximum difference of water level for five years from 1987 to Nov. 1991

Max. difference of water level : 3.55m=85.39m-81.84m

Max. difference of water level : 3.40m=84.00m-80.60m

5.3 Unit Water Requirements in Upper Egypt

(Unit : cu.m/month/feddan)

Crop	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Wheat		453	453	430							249	520	2,105
Beans		367	528	92								618	1,605
Barley		418	320								468	493	1,699
Fodder (summer)					825	1,111	1,393	696					4,025
Fodder (Nile)								1,409	1,813	1,711			4,933
Fodder (winter)		891	880	981	282						155	332	3,521
Onion		551	568	515							373	426	2,433
Garlic		388	413	364						655	874	995	3,689
Vegetable (W)		726	108							358	390	493	3,689
Vegetable (S)		556	1,090	1,186	1,345	1,122	203						5,502
Vegetable (N)								1,429	1,836	1,720			4,985
Cone					686	904	1,154	565					3,309
Sugarcane		647	623	818	913	972	1,245	1,488	1,604	1,317	1,221	1,150	11,998
Maize						420	800	749	859	459			3,287
Fruits		220	225	308	376	497	484	469	440	425	308	303	4,055

January : Water closure

1 feddan = 0.42 ha.

5.3(2) Planted Areas at No.1 and No.9 Pump Stations

(1) Summer Crop

(Unit : Feddan)

Pump Station	Year \ Crop	Maize	Vegetables	Berseem	Others	Sugercane	Fruit Trees	Total
No.1 El Sheikh Fadl	1989	45	5	16	109	21	16	212
	1990	45	5	16	109	21	16	212
	1991	45	5	16	110	20	16	212
No.9 Gezirat Fares	1991	317	100	-	5	200	-	622

(1) Winter Crop

(Unit : Feddan)

Pump Station	Year \ Crop	Wheat	Beans	Vegetables	Others	Sugercane	Fruit Trees	Total
No.1 El Sheikh Fadl	1989	55	6	12	110	21	16	212
	1990	60	22	7	86	21	16	212
	1991	80	4	8	84	20	16	212
No.9 Gezirat Fares	1991	160	2	300	409	27	120	1,018

5.4 General Information of Each Existing Pump Station

GENERAL INFORMATION OF EXISTING PUMP STATION Dec. 04, 1991

PS No. : 1 PS Name : [One pump] 1/2

1. Commencing Year of the Pump Operation	1952
2. Manufacturers Name of the Pump	SULZER (Switzerland)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	7.75 (10) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	54.53 m
8. Acrage of the Irrigated Field at Present	by rest (800 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	YES
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	(Yugoslavia) 66 kw 220/380 V 4 poles 50 Hz 975 rpm X
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	Manufactured 1958 500 l/s 10 M 960 rpm 784 HP X
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	250 ~~350~~ KVA 11000 V 380 V △
14. The Reservoir (1) Dimensions Length ___m x width ___m x width (2) Effective Volume (3) Material (4) Present Workability	___m x width ___m ___m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 1 PS Name : _____ 2/2

15. The Discharge Tower (1) Nominal Bore (2) Material (3) Present Workability	1000 ~~500~~ mm dia Iron X
16. The Discharge Pipe Line (1) Nominal Bore (2) Material (3) Berried or not (4) Present Workability	700/500 mm dia Iron X
17. Water Level (1) Max (2) Min (3) Ave	 _____ m _____ m _____ m
18. Water Velocity (1) Max (2) Min (3) Ave	very slow _____ m/s _____ m/s _____ m/s
19. Wind (1) Spring a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (2) Summer a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (3) Fall a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (4) Winter a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity :	 _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s

Kamel

Km 38.250

STATION NAME: EL SHEIKH FADL

No. OF UNITS 1 طلمبات سولزر

DISCHARGE 500 lit/Sec H 10 mt

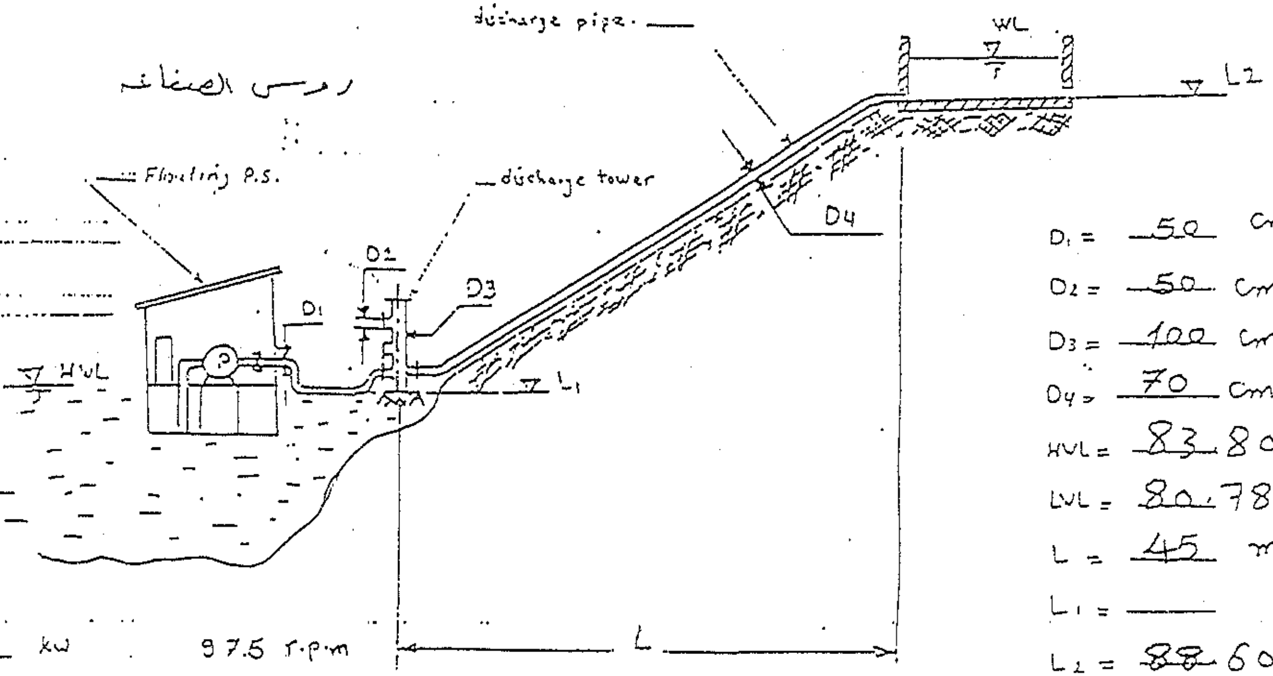
R.P.M 960

TRANSFORMER:

1000/400

250 K.V.A

13.15/361.2 A



	1989	1990	1991
H.W.L	83.83	83.73	83.83
L.W.L	81.18	80.73	80.43
	2.15	3.0	3.4

D1 = 50 cm
D2 = 50 cm
D3 = 100 cm
D4 = 70 cm
HVL = 83.80
LVL = 80.78
L = 45 mt
L1 = ——
L2 = 88.60
WL = 90.10

Electric Equipment:-

motor power : 66 kw 975 r.p.m

motor rated voltage: 380/220V 120/206 A

motor type: RADE KONČAR YOGOUSLAVIA

3/60

Dec. 04, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

ASWAN - IDRAN - BENBAN - EL. Sheikh Fadl

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 1 PS Name: _____

1. PUMP	Appearance of casing	Finished coat	○
		Rust	○
	Appearance of installation	Bolts tightness	△
		Vibration	△
	Bearing	Noise	× (From cavitation phenomena)
		Vibration	×
		Temperature	△
		Oil leak	○
	Coupling	Bolt tightness	△
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	△
		Water leak	△
		Wear	△

Kamal

PS No.: 1 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	X
		Vibration	X
		Temperature	X
		Oil leak	△
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	o
	Others	Rust	o
		Oil leak	o
		Wear	△
III. VALVE	Appearance	Water leak	o
		Rust	o
		Wear	o
	Operation	Smooth	o
IV. PIPE & HOSE	Appearance	Water leak	X
		Rust	X
		Wear	X
		Fitness	X
V. (1) SWITCH BORAD	appearance of outside	Rust	o
		Wear	o
		Noise	o
		Vibration	o
		Tightness	o
	Appearance of interior	Lighting	△
		Rust	o
	Meter	Zero setting	o
		Workability	o

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PS No.: 1 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure Rust Wear Covering	△ ○ ○ ○
VI. POWER CABLE	Appearance	Damage Wear Covering Connection Insulation	△ △ △ △ ○
VII. BARGE	Appearance of outside	Damage Rust Wear Vibration	△ △ △ △
	Appearance of interior	Damage Rust Wear	△ △ △
	Winch & Anchor	Tightness Rust Wear Operation smooth Lockability	△ △ △ △ △
VIII. DIS-CHARGE POND	Appearance	Damage Wear	△ △

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION Dec. of. 1991

EDFO - EL-HAMAM

PS No. : 2 PS Name : _____ (One Type) 1/2

1. Commencing Year of the Pump Operation	1932
2. Manufacturers Name of the Pump	Wonder (Made in Egypt)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %
5. The pump performance Curve obtained or not?	NO
6. Actual Head between the River Water Level and the Discharge Water Level	8,75 (8) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	80,51 m
8. Acrage of the Irrigated Field at Present	By-rest (800 Feedan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	YES
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	USSR 100 kw 380 V 735 rpm 4 poles 50 Hz 1969 manufacto, 1987 installed Δ
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	500 L/s 10 750 rpm Δ
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	300 KVA 11000 V 380 V o
14. The Reservoir (1) Dimensions Length ___mxwidth ___mxwidth (2) Effective Volume (3) Material (4) Present Workability	_____mxwidth _____m _____m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 2 PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	~~500~~ 1000 mm dia
(2) Material	Iron
(3) Present Workability	X
16. The Discharge Pipe Line	
(1) Nominal Bore	~~500~~ 700 mm dia
(2) Material	~~Rolled~~ iron
(3) Berried or not	Not berried
(4) Present Workability	X
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	_____ m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamel Alwale

STATION NAME:- SAHEL EL HAMMAM KM 80.00

NB OF UNITS : 1 طلمبات راتير ٢٠"/١٦"

DISCHARGE : 500 lit/sec H 10. mt

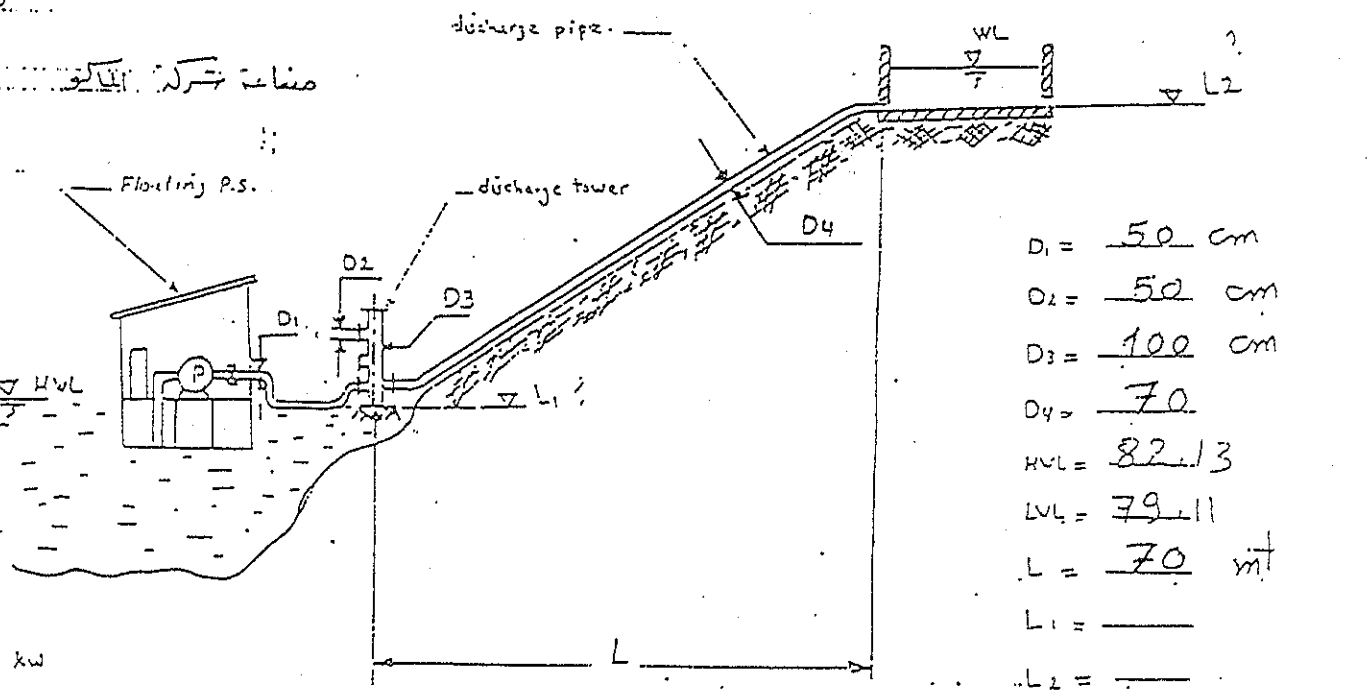
R.P.M 750

TRANSFORMER صناعة شركة اليكترو

11550/7400 V

300 K.V.A

15.75/433 A



	1989	1990	1991
H.W.L	82.16	82.06	82.16
L.W.L	79.51	79.06	78.76
Difference	2.65	3.0	2.4

D1 = 50 cm
D2 = 50 cm
D3 = 100 cm
D4 = 70
HWL = 82.13
LWL = 79.11
L = 70 mt
L1 = ——
L2 = ——
WL = 86.80

Electric Equipment:-

motor power : 100 kw

motor rated voltage : 380 v

motor type AO 102 - 8T C.C.C.P روسى

A-27

9/60

Dec. 05. 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 2 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	×
		Rust	△
	Appearance of installation	Bolts tightness	△
		Vibration	△
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	△ drip down on floor
	Coupling	Bolt tightness	△
		Eccentricity	○
		Wear	△
	Others	Rust	△
		Oil leak	△
		Water leak	△
		Wear	△ packing

Kamel Nicola

PS No.: 2 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	~~⊗~~ O
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	△
	Others	Rust	△
		Oil leak	O
		Wear	△ Inside is very dirty
III. VALVE	Appearance	Water leak	△ leakage by shaft and flange
		Rust	△
		Wear	△ Shaft
	Operation	Smooth	△
IV. PIPE & HOSE	Appearance	Water leak	△
		Rust	△
		Wear	△
		Fitness	△ Leaky from rubber and coupling
V. (1) SWITCH BORAD	appearance of outside	Rust	O
		Wear	O
		Noise	O
		Vibration	O
		Tightness	O There is no cover
	Appearance of interior	Lighting	No lighting
		Rust	△ lamp is good
	Meter	Zero setting	O
		Workability	O

Kamel Ali

PS No.: 2 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure	○
		Rust	○
		Wear	○
		Covering	× No cover
VI. POWER CABLE	Appearance	Damage	△ Connection portion damaged
		Wear	△
		Covering	△ Not enough cover
		Connection	△
		Insulation	△ Some parts are bare
VII. BARGE	Appearance of outside	Damage	△ Roof is damaged
		Rust	△
		Wear	○
		Vibration	△ Barge is lean
	Appearance of interior	Damage	△ floor
		Rust	△ Pump 2 North Base
		Wear	△
	Winch & Anchor	Tightness	△ front wind only
		Rust	△
		Wear	△
		Operation smooth	△
		Lockability	△ 4 edges touched Barge is lean
VIII. DIS-CHARGE POND	Appearance	Damage	No pond
		Wear	Direct to canal

Crane rail on ceiling is short. (Not extended to outside.)

Kamei

Dec. 03, 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

EDFO - EL-FOWZA

PS No. : 3 PS Name : [One pump] 1/2

1. Commencing Year of the Pump Operation	1952 1988
2. Manufacturers Name of the Pump	SULZER (Switzerland)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	7.43 (8) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	28.8 m
8. Acrage of the Irrigated Field at Present	By rest (300 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	No
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	 135 HP 380 V 4 poles 50 Hz 1988 installed O
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	1958-Manufactured 500 L/s 10 m (784HP) 960 rpm X
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	 200 KVA 11000 V 380 V ~~1956~~ 1985 O (OK)
14. The Reservoir (1) Dimensions Length ___m x width ___m x width (2) Effective Volume (3) Material (4) Present Workability	No reservoir Direct to canal concrete made ___m x width ___m ___m³

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 3 PS Name : _____ 2/2

15. The Discharge Tower	No tower
(1) Nominal Bore	_____ mm dia
(2) Material	
(3) Present Workability	
16. The Discharge Pipe Line	ϕ600
(1) Nominal Bore	500 mm dia
(2) Material	Iron
(3) Berried or not	Not berried
(4) Present Workability	Δ
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	_____ m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamel

STATION NAME:- EL FAWAZA EL BAHARIA. Km 113-00

NO OF UNITS 1 SULZER طلمبات سولزر

DISCHARGE 500 lit/Sec H 10 mt

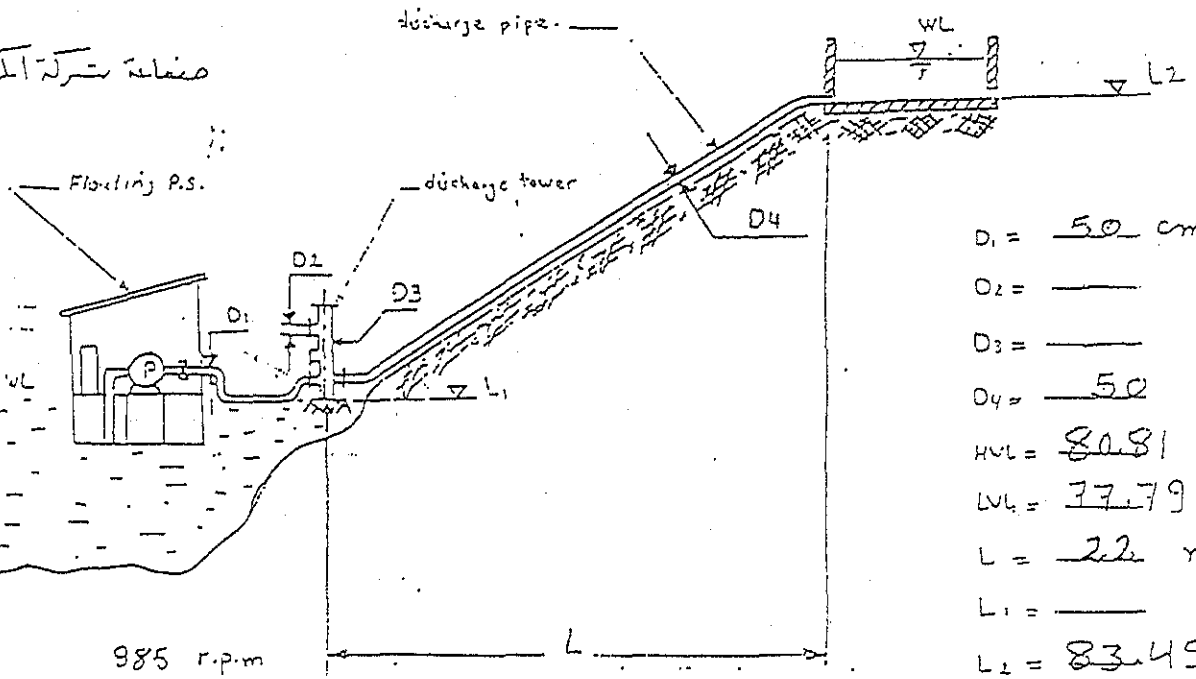
R.P.M 960

TRANSFORMER صناعة شركة الملك

11550/400 V

200 K.U.A

1135/303 A



1989	1990	1991	
80.84	80.74	80.84	H.W.L
78.19	77.74	77.44	L.W.L
2.65	3.0	3.4	

Electric Equipment:-

motor power : 100 kw 985 r.p.m

motor rated voltage : 380 v 185 A

motor type: RELIANCE U.S.A

D1 = 50 cm

D2 = ——

D3 = ——

D4 = 50

HWL = 80.81

LWL = 77.79

L = 22 mt

L1 = ——

L2 = 83.45

WL = 84.50

Dec. 03, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 3 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	△ It needs Coating
		Rust	△ not clean
	Appearance of installation	Bolts tightness	△ It needs instrument check
		Vibration	△ Comes from the shaft
	Bearing	Noise	△ It needs instrument check
		Vibration	△ ~ ~ ~ ~
		Temperature	△
		Oil leak	△
	Coupling	Bolt tightness	△
		Eccentricity	△
		Wear	△
	Others	Rust	○
		Oil leak	○
		Water leak	△
		Wear	

Kamil

PS No.: 3 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△ It needs Coating
		Rust	△ It needs cleaning
	Bearing	Noise	△ high
		Vibration	X very high
		Temperature	△ It rises during the day
		Oil leak	○
	Rotor & Fan	Noise	X
		Vibration	X
		Wind pressure	△
	Others	Rust	△
		Oil leak	○
		Wear	○
III. VALVE	Appearance	Water leak	○ No water Leak
		Rust	△ Not clean
		Wear	△ It needs gaskets between Flanges
	Operation	Smooth	△ It works in agood Conditions ~~but need Control for On / Off~~
IV. PIPE & HOSE	Appearance	Water leak	X It is very bad Condition
		Rust	X
		Wear	X
		Fitness	X
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	○ N.A
		Noise	○ No
		Vibration	○ No
		Tightness	△ It needs some bolts
	Appearance of interior	Lighting	△
		Rust	△
	Meter	Zero setting	X It is not working
		Workability	X It doesn't work

Kamal

PS No.: 3 PS Name: ______________ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure	o
		Rust	o
		Wear	o
		Covering	o
VI. POWER CABLE	Appearance	Damage	o
		Wear	o
		Covering	o
		Connection	o
		Insulation	o
VII. BARGE	Appearance of outside	Damage	Δ 1st floor need some repairs
		Rust	Δ " " cleaning
		Wear	Δ Some wear in parts in winch
		Vibration	Δ Some vibration happenies during operation
	Appearance of interior	Damage	Δ It needs some repairs
		Rust	Δ Not clean (The wall & roof)
		Wear	o
	Winch & Anchor	Tightness	The winch in one side only Not working In very bad condition
		Rust	
		Wear	
		Operation smooth	
		Lockability	
VIII. DIS-CHARGE POND	Appearance	Damage	~~Δ In a very bad condition~~
		Wear	X

It Reservoir

No Reservoir And (Covered Made by concrete)

Kamal   [illegible]

GENERAL INFORMATION OF EXISTING PUMP STATION

Dec. 04, 1991

ASWAN - SAHEL EL - KOBBANIA

PS No. : 4 PS Name : [One pump] 1/2

1. Commencing Year of the Pump Operation	1933
2. Manufacturers Name of the Pump	WONDER (Made In Egypt)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	7.86 (9) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	69.29 m
8. Acrage of the Irrigated Field at Present	By rest (800 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	YES
11. The Electric Motor	(USSR)
(1) Out put	100 kw
(2) Voltage	380 V
(3) No. of Poles	4 poles
(4) Frequency	50 Hz
(5) Year of Manufacturing	1969
(6) Present Workability	△
12. The Pump	
(1) Discharge Capacity	500 L/s
(2) Total Head	10
(3) Revolutional Speed	750 rpm
(4) Present Workability	△
13. The Transformer	
(1) Capacity	300 KVA
(2) Primary Voltage	11000 V
(3) Secondary Voltage	380 V
(4) Year of Manufacturing	
(5) Present Workability	o
14. The Reservoir	
(1) Dimensions Length ___mxwidth ___mxwidth	___mxwidth
	___m
(2) Effective Volume	___m³
(3) Material	
(4) Present Workability	

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 4 PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	~~500~~ 1000 mm dia
(2) Material	Iron
(3) Present Workability	X
16. The Discharge Pipe Line	
(1) Nominal Bore	~~500~~ 600 mm dia
(2) Material	Rubber
(3) Berried or not	Berried
(4) Present Workability	X (leakage of water)
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	0.27 m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamal

STATION NAME:- SAHEL EL KOBBANIA : KM 25.500

No OF UNITS ... طلمبات زالزر ١٦"/١٦"

DISCHARGE 500 lit/Sec H 10 mt

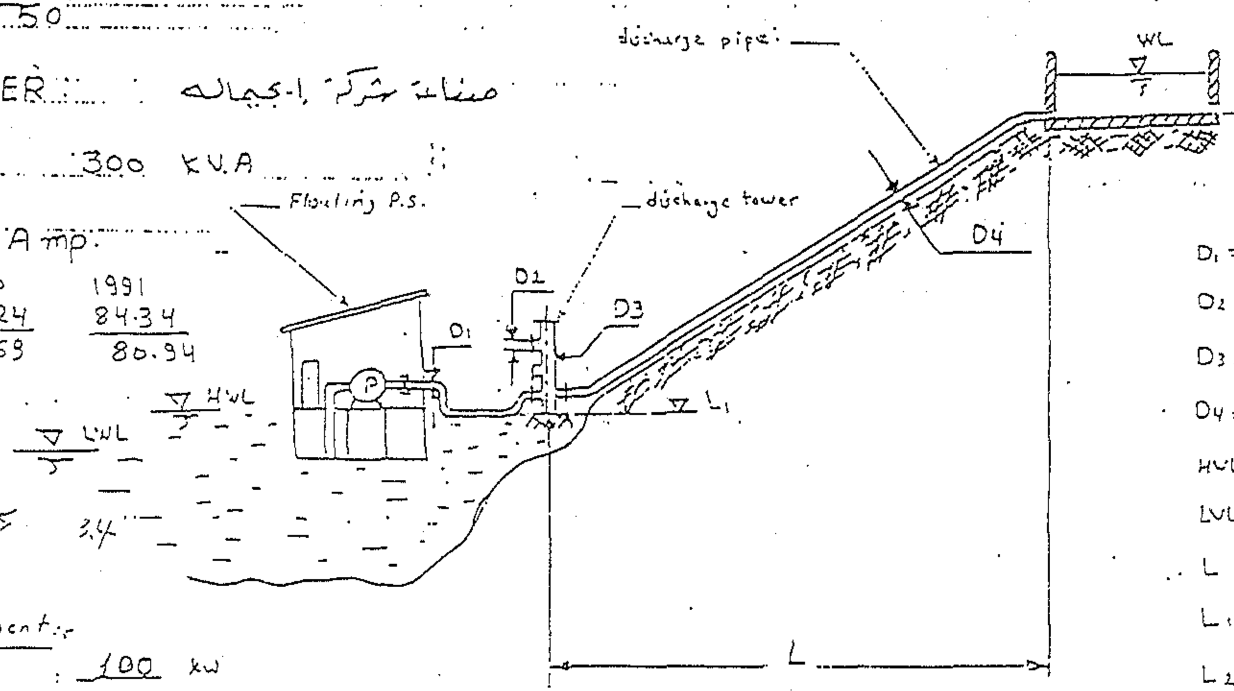
R.P.M 750

TRANSFORMER : صناعة شركة الجماله

11000/380 300 KVA

16/442 A mp.

	1989	1990	1991
H.W.L	84.34	84.24	84.34
L.W.L	81.69	81.69	80.94
Difference	2.69	2.55	3.4



D1 = 50 cm
D2 = 50 cm
D3 = 100 cm
D4 = 60 cmt
HWL = 84.31
LWL = 81.44
L = 28 mt
L1 = ——
L2 = 89.50
WL = 90.45

Electric Equipment:-

motor power : 100 kw

motor rated voltage : 380 v

motor type : AO 102 - 8T C.C.C.P

Dec. 04, 1991

CHECK LIST

Page 1/3

(Equipment & Facilities for each existing Pump Station)

ASWAN - EL KOBBANIA

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks:
- Noise : by a sense of hearing
- Vibration : by a sense of touch
- Temperature : by a sense of touch
- Oil leak : by a sense of sight
- Wear, Rust : by a sense of sight and touch
- Tightness : by a sense of sight and touch

PS No.: 4 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	△
		Rust	△
	Appearance of installation	Bolts tightness	△
		Vibration	△
	Bearing	Noise	△
		Vibration	△
		Temperature	○
		Oil leak	○
	Coupling	Bolt tightness	△
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	○
		Water leak	○
		Wear	△

Kamel

PS No.: 4 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	△
		Vibration	△
		Temperature	o
		Oil leak	o
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	o
	Others	Rust	△
		Oil leak	o
		Wear	o
III. VALVE	Appearance	Water leak	△
		Rust	△
		Wear	△
	Operation	Smooth	△
IV. PIPE & HOSE	Appearance	Water leak	△
		Rust	△
		Wear	X
		Fitness	△
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△
		Noise	○
		Vibration	▽
		Tightness	△
	Appearance of interior	Lighting	△
		Rust	△
	Meter	Zero setting	X
		Workability	X

PS No.: 4 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure Rust Wear Covering	△ △ △ ○
VI. POWER CABLE	Appearance	Damage Wear Covering Connection Insulation	△ △ X ○ △
VII. BARGE	Appearance of outside	Damage Rust Wear Vibration	△ △ △ ○
	Appearance of interior	Damage Rust Wear	△ △ X
	Winch & Anchor	Tightness Rust Wear Operation smooth Lockability	No winch & Anchor
VIII. DIS-CHARGE POND	Appearance	Damage Wear	△ △

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION Dec. 05. 1991

Kororbo - FARS

PS No. : 5 . PS Name : _____ [Two pumps] 1/2

1. Commencing Year of the Pump Operation	1952
2. Manufacturers Name of the Pump	Andreales (W.G)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	7.235 m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	55.35 m
8. Acrage of the Irrigated Field at Present	By rest (2000 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	YES
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	(France) 110 kw 380 V 4 poles 50 Hz 1980 installed Δ
12. The Pump (1) Discharge Capacity (625 l/s = 2250 m³/h) (2) Total Head (3) Revolutional Speed (4) Present Workability	750 L/s 10M (8 m) 600 rpm 120PS Δ
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	500 KVA 11000 V 380 V o
14. The Reservoir (1) Dimensions Length ____m x width ____m x width (2) Effective Volume (3) Material (4) Present Workability	 ____m x width ____m ____m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 5 PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	1000 ~~500~~ mm dia
(2) Material	Iron
(3) Present Workability	Δ (leakage of water)
16. The Discharge Pipe Line	
(1) Nominal Bore	700 ~~500~~ mm dia
(2) Material	~~rubber~~ iron
(3) Berried or not	Not berried
(4) Present Workability	X
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	_____ m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamal

STATION NAME:- SAHEL FARIS KM 71:05

NO OF UNITS : 2 ANDRITZ طلمبات اندريتز

DISCHARGE : 750 lit/Sec H = 10 mt

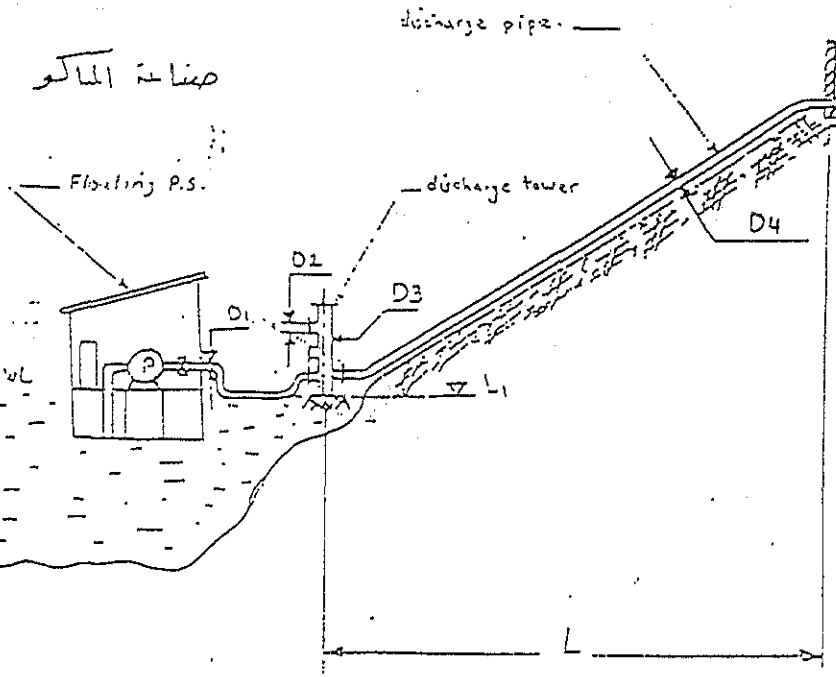
R.P.M : 600

TRANSFORMER: صناعة الماكو

11550 / 393 V

500 K.V.A

26.3 / 735 ....Amp



1989	1990	1991	
82.52	82.42	82.52	HWL
79.87	79.42	79.12	LWL
2.65	3.0	3.4	

D_1 = 50 cm
D_2 = 50 cm
D_3 = 100 cm
D_4 = 70 cm
HWL = 82.49
LWL = 79.47
L = 42 mt.
L_1 = ——
L_2 = ——
WL = 87.00

Electric Equipment:-

motor power : 110 kw

motor rated voltage : 380 V 234 A

motor type: LSP 355 MG LEROY SOMER – FRANCE

Dec. 05. 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 5 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	△
		Rust	△
	Appearance of installation	Bolts tightness	△
		Vibration	△
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	✗ leak from bearing
	Coupling	Bolt tightness	○
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	△
		Water leak	△
		Wear	△

Kamel

PS No.: 5 PS Name:_____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	X
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	O
	Others	Rust	△
		Oil leak	O
		Wear	△ Fan cover
III. VALVE	Appearance	Water leak	O
		Rust	△
		Wear	△ packing
	Operation	Smooth	△
IV. PIPE & HOSE	Appearance	Water leak	O
		Rust	△
		Wear	X Suffer hose
		Fitness	△ water leakage from Faucet mouth
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△ Bird Door mesh broken
		Noise	O
		Vibration	O.
		Tightness	△ Front door not fixed
	Appearance of interior	Lighting	No lighting
		Rust	~~Some wall broken~~ △
	Meter	Zero setting	△ One meter not working
		Workability	△

Kamel Mado

PS No.: 5 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure	O
		Rust	Δ
		Wear	O
		Covering	X No cover,
VI. POWER CABLE	Appearance	Damage	O
		Wear	O
		Covering	No cover
		Connection	O
		Insulation	Δ No over of points
VII. BARGE	Appearance of outside	Damage	Δ
		Rust	Δ
		Wear	Δ
		Vibration	Δ little leaving
	Appearance of interior	Damage	Δ ※ roof & wall of broken
		Rust	Δ floor
		Wear	Δ floor
	Winch & Anchor	Tightness	front portion only rest worked
		Rust	Δ
		Wear	Δ
		Operation smooth	— N.A.
		Lockability	N.A 4 edges — anchoring
VIII. DIS-CHARGE POND	Appearance	Damage	Δ Most of blocks
		Wear	Δ Surface broken.

Kamal

Dec. 11, 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

NAGA EL-WEHDA - LUXOR

PS No. : 6 PS Name : _____ 1/2

1. Commencing Year of the Pump Operation	1952	1952
2. Manufacturers Name of the Pump	SULZER	SULZER
3. Does it exist still now?	YES	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	50 %	50
5. The pump performance Curve obtained or not?	NOT	NOT
6. Actual Head between the River Water Level and the Discharge Water Level	21 ~~28~~ m	21
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	1000 m	1000
8. Acrage of the Irrigated Field at Present	~~NO~~ YES	YES
9. Acrage of the Irrigable Field at Initial Design Stage	N.A	N.A.
10. Acrage of the Irrigable Field to be Extended on This Project	YES	YES
11. The Electric Motor		
(1) Out put	440 kw	600 HP
(2) Voltage	~~6000~~ V	6000 V
(3) No. of Poles	12 ~~18~~ poles	12
(4) Frequency	50 Hz	50
(5) Year of Manufacturing	1989	1978
(6) Present Workability	O	Δ
12. The Pump		
(1) Discharge Capacity	1.3 m^3/s	1.3 m^3/s
(2) Total Head	28 m	28
(3) Revolutional Speed	600 rpm	500
(4) Present Workability	Δ	X
13. The Transformer		
(1) Capacity	2500 KVA	2500
(2) Primary Voltage	11000 V	11000
(3) Secondary Voltage	6000 V	6000
(4) Year of Manufacturing	1976	1976
(5) Present Workability	O	O
14. The Reservoir		
(1) Dimensions Length ____mxwidth ____mxwidth	____mxwidth ____m	
(2) Effective Volume	____m^3	
(3) Material		
(4) Present Workability		

Kamil

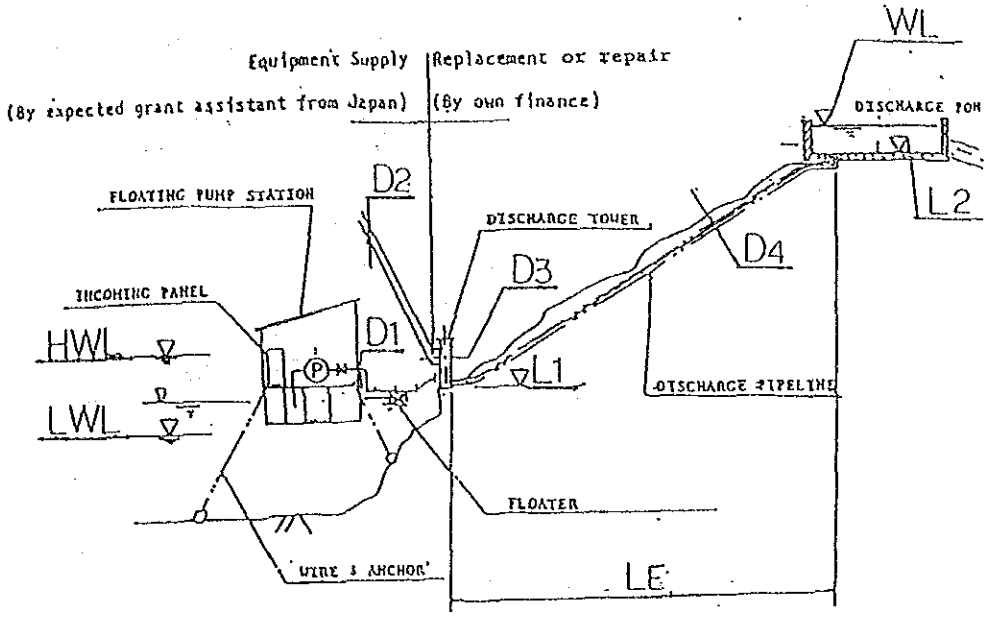
GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 6 PS Name : _____ 2/2

15. The Discharge Tower (1) Nominal Bore (2) Material (3) Present Workability	700 mm dia Iron △	700 Iron △
16. The Discharge Pipe Line (1) Nominal Bore (2) Material (3) Berried or not (4) Present Workability	1000<br~~1000~~ mm dia Iron Berried X	1000 Iron Berried X
17. Water Level (1) Max (2) Min (3) Ave	_____ m _____ m _____ m	
18. Water Velocity (1) Max (2) Min (3) Ave	_____ m/s _____ m/s _____ m/s	
19. Wind (1) Spring a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (2) Summer a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (3) Fall a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (4) Winter a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity :	 _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s	

PS No. 6 PS Name _____

GENERAL LAYOUT PLAN FOR EXISTING FLOATING PUMP STATION



D1 : 700 mm

D2 : 700 mm

D3 : 1000 mm

D4 : 700 mm

LE : 1000 M

L1 : 71.20 M

L2 : 90 M

HWL: _____ M

LWL: _____ M

WL : _____ M

D1 : Diameter of existing floating pump station output pipe

D2 : Diameter of existing land based tower's mouth of water income from floating pump station

D3 : Diameter of existing land based tower's horizontal section

D4 : Diameter of existing pipe line from tower to discharge pond

LE : Length of existing pipe line from tower to discharge pond

L1 : Land level of the base of tower

L2 : Land level of discharge pond

HWL: Water level of the highest

LWL: Water level of the lowest

WL : Discharge water level of discharge pond

Dec. 11, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 6 PS Name: _____

I. PUMP	Appearance of casing	Finished coat ○	×
		Rust ○	×
	Appearance of installation	Bolts tightness ○	○
		Vibration △	△
	Bearing	Noise ×	△
		Vibration △	△
		Temperature ×	△
		Oil leak ○	○
	Coupling	Bolt tightness ○	○
		Eccentricity ○	○
		Wear △	△
	Others	Rust ○	△
		Oil leak △	○
		Water leak ○	△
		Wear △	△

Kawel

PS No.: 6 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	○	○
		Rust	○	○
	Bearing	Noise	X	△
		Vibration	○	○
		Temperature	○	○
		Oil leak	○	○
	Rotor & Fan	Noise	X	○
		Vibration	△	○
		Wind pressure	○	○
	Others	Rust	○	○
		Oil leak	○	△
		Wear	○	△
III. VALVE	Appearance	Water leak	○	△
		Rust	△	△
		Wear	△	△
	Operation	Smooth	△	△
IV. PIPE & HOSE	Appearance	Water leak	X	X
		Rust	△	△
		Wear	△	X
		Fitness	△	△
V. (1) SWITCH BORAD	appearance of outside	Rust	△	△
		Wear	○	△
		Noise	○	○
		Vibration	○	○
		Tightness	○	△
	Appearance of interior	Lighting	○	△
		Rust	○	△
	Meter	Zero setting	○	○
		Workability	○	○

Kamel

PS No.: 6 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure ○ Rust ○ Wear ○ Covering ○	○ ○ ○ ○
VI. POWER CABLE	Appearance	Damage △ Wear △ Covering ○ Connection ○ Insulation ○	○ ○ ○ ○ ○
VII. BARGE	Appearance of outside	Damage △ Rust △ Wear △ Vibration △	✗ △ △ △
	Appearance of interior	Damage ○ Rust ○ Wear △	✗ △ △
	Winch & Anchor	Tightness △ Rust △ Wear △ Operation smooth △ Lockability △	✗ ✗ ✗ ✗ ✗
VIII. DIS-CHARGE POND	Appearance	Damage △ Wear △	△ △

- Water Quality { · Temperature 20°C
· 7.19 pH
· 2.6x100 µs/cm

37/60

Dec. 04, 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

KOMOMBO - GEZIERT EL-HARBIAB

PS No. : 7 PS Name : [Two pumps] 1/2

1. Commencing Year of the Pump Operation	1932
2. Manufacturers Name of the Pump	K.S.B (W.G)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	60 %
5. The pump performance Curve obtained or not?	NO
6. Actual Head between the River Water Level and the Discharge Water Level	853 (13) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	30,10 m
8. Acrage of the Irrigated Field at Present	By rest (800 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	No
11. The Electric Motor	(USSR)
(1) Out put	125/75A. 40 kW
(2) Voltage	220°/380 V
(3) No. of Poles	4 poles
(4) Frequency	50 Hz
(5) Year of Manufacturing	1965 / 1969
(6) Present Workability	X
12. The Pump	Manufactured 1951
(1) Discharge Capacity	250 L/s
(2) Total Head	13 m
(3) Revolutional Speed	800 rpm
(4) Present Workability	X
13. The Transformer	
(1) Capacity	100 KVA
(2) Primary Voltage	11000 V
(3) Secondary Voltage	380 V
(4) Year of Manufacturing	
(5) Present Workability	o
14. The Reservoir	
(1) Dimensions Length ___mxwidth ___mxwidth	___mxwidth
(2) Effective Volume	___m
(3) Material	___m³
(4) Present Workability	

Kamal

GENERAL INFORMATION OF EXISTING PUMP STATION

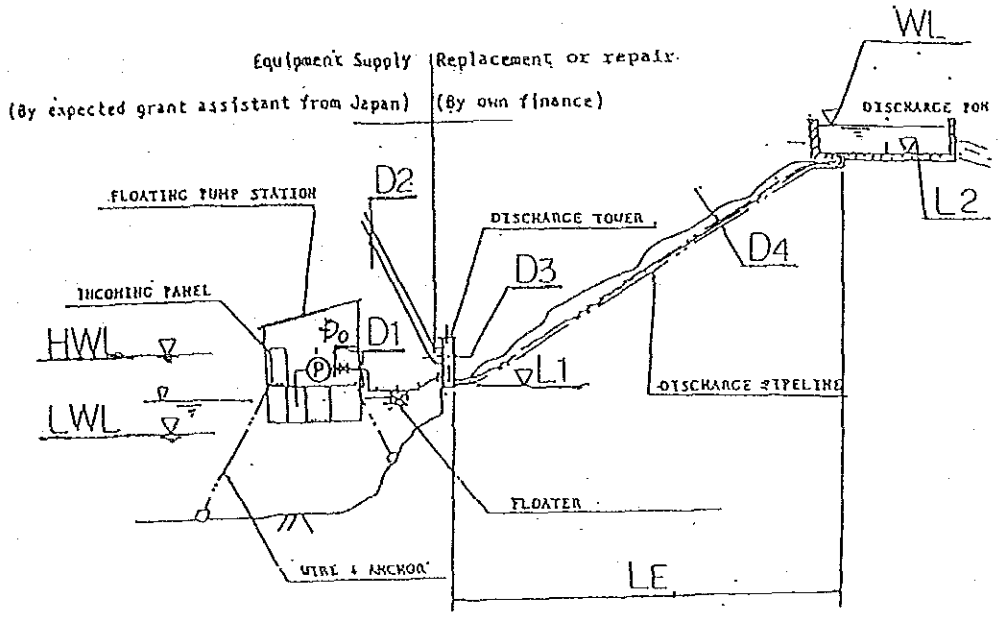
PS No. : 7 PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	~~1000~~ ~~500~~ mm dia
(2) Material	Iron
(3) Present Workability	X
16. The Discharge Pipe Line	
(1) Nominal Bore	500 mm dia
(2) Material	Iron
(3) Berried or not	
(4) Present Workability	△
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	_____ m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamel

PS No. 7 PS Name _____

GENERAL LAYOUT PLAN FOR EXISTING FLOATING PUMP STATION



Do 1260/3.14 = 401.3

D1 : _____ mm

D2 : 1670/3.14 = 531.8 mm

D3 : 1000 mm

D4 : 500 mm

LE : _____ M

L1 : _____ M

L2 : _____ M

HWL: _____ M

LWL: _____ M

WL : _____ M

D1 : Diameter of existing floating pump station output pipe

D2 : Diameter of existing land based tower's mouth of water income from floating pump station

D3 : Diameter of existing land based tower's horizontal section

D4 : Diameter of existing pipe line from tower to discharge pond

LE : Length of existing pipe line from tower to discharge pond

L1 : Land level of the base of tower

L2 : Land level of discharge pond

HWL: Water level of the highest

LWL: Water level of the lowest

WL : Discharge water level of discharge pond

 Kamel

Dec 04, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

DRAWN - EL-TOWISSA-GEEJERT EL-HARBIAB

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 7 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	△
		Rust	△
	Appearance of installation	Bolts tightness	△
		Vibration	△
	Bearing	Noise	△
		Vibration	△
		Temperature	○
		Oil leak	○
	Coupling	Bolt tightness	△
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	○
		Water leak	△
		Wear	△

Kamel

PS No.: 7 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	X
		Vibration	△
		Temperature	X
		Oil leak	○
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	○
	Others	Rust	△
		Oil leak	○
		Wear	△
III. VALVE	Appearance	Water leak	○
		Rust	○
		Wear	△
	Operation	Smooth	○
IV. PIPE & HOSE	Appearance	Water leak	○
		Rust	△
		Wear	X
		Fitness	△
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△
		Noise	○
		Vibration	○
		Tightness	△
	Appearance of interior	Lighting	X
		Rust	△
	Meter	Zero setting	X
		Workability	X

Kamei Takeuchi

PS No.: 7 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure Rust Wear Covering	△ △ △ X
VI. POWER CABLE	Appearance	Damage Wear Covering Connection Insulation	△ △ △ ◎ ○
VII. BARGE	Appearance of outside	Damage Rust Wear Vibration	X X X △
	Appearance of interior	Damage Rust Wear	△ △ △
	Winch & Anchor	Tightness Rust Wear Operation smooth Lockability	△ △ △ △ △
VIII. DIS-CHARGE POND	Appearance	Damage Wear	

Kanel Takata

Dec. 01. 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

GHARB ASWAN BAHARY

PS No. : 3 PS Name : GHARB ASWAN BAHARY [Two pumps] 1/2

1. Commencing Year of the Pump Operation	1933
2. Manufacturers Name of the Pump	Wonder
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	65 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	8.14 (10) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	61.16 (12) m
8. Acrage of the Irrigated Field at Present	by rest 600 Feddan Fadda
9. Acrage of the Irrigable Field at Initial Design Stage	N.C.
10. Acrage of the Irrigable Field to be Extended on This Project	N c
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	(France) 110 kw 380 V 6 poles 50 Hz 1983 △
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	500 L/s 10 m 600 rpm (82.8HP) △
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	500 KVA 11000 V 380 V 1984 O
14. The Reservoir (1) Dimensions Length (2) Effective Volume (3) Material (4) Present Workability	5.19 m x width — m x width Concrete O

NO (Direct to the canal).

Not Applicable

5.19 m x width
— m
— m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 8 PS Name : _____ 2/2

15. The Discharge Tower (1) Nominal Bore (2) Material (3) Present Workability	φ1000 L 3240 mm ~~dia~~ Cast Iron X Leakage water
16. The Discharge Pipe Line (1) Nominal Bore (2) Material (3) Berried or not (4) Present Workability	φ700 L 2250 mm ~~dia~~ φ=70cm Cast Iron NOT X Leakage water
17. Water Level (1) Max (2) Min (3) Ave	_____ m _____ m _____ m
18. Water Velocity (1) Max (2) Min (3) Ave	Very slow _____ m/s _____ m/s _____ m/s
19. Wind (1) Spring a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (2) Summer a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (3) Fall a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity : (4) Winter a) Direction : b) Ave velocity : c) Max velocity : d) Min velocity :	 _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s _____ m/s

Kamel

STATION NAME:- GHARB ASWAN EL BAHARIA KM 12.700

NO OF UNITS: 2 طلمبات راندر ٢٦/٢٦"

DISCHRGE 0.5 m^3/sec H = 10 mt

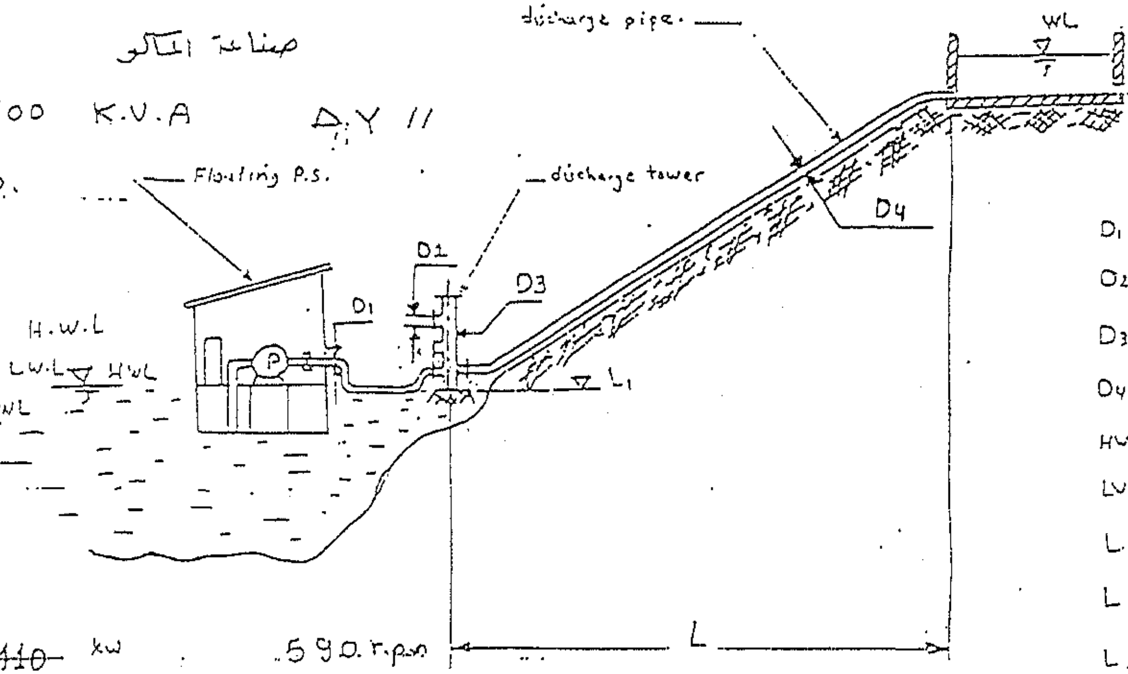
R.P.M 500

TRANSFORMER: صناعة التاكو

11000/380 500 K.V.A Δ Y 11

7.5/735 Amp.

1989	1990	1991	
85.14	85.02	85.10	H.W.L
81.82	81.82	81.59	LWL
Afferenca 3.32	3.20	3.51	



D1 = 50 cm

D2 = 50 cm

D3 = 100 cm

D4 = 70 cm

HWL = 85.09

LWL = 81.74

L = 20 mt.

L1 = ——

L2 = 90.50

WL = 91.40

Electric Equipment:-

motor power : 110 kw 590 r.p.m

motor rated voltage: 380 v 234 A

motor type LSP 355 MG LEROY SOMER FRANCE.

Dec. 01, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 8 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	△
		Rust	△
	Appearance of installation	Bolts tightness	○
		Vibration	
	Bearing	Noise	○
		Vibration	○
		Temperature	○
		Oil leak	○
	Coupling	Bolt tightness	○
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	○
		Water leak	○
		Wear	○

Kamal

PS No.: 8 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	△
		Rust	△
	Bearing	Noise	○
		Vibration	○
		Temperature	○
		Oil leak	○
	Rotor & Fan	Noise	△
		Vibration	○
		Wind pressure	△
	Others	Rust	△
		Oil leak	○
		Wear	△
III. VALVE	Appearance	Water leak	△ water leak
		Rust	△
		Wear	△
	Operation	Smooth	△
IV. PIPE & HOSE	Appearance	Water leak	X
		Rust	X
		Wear	△
		Fitness	
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△
		Noise	○
		Vibration	○
		Tightness	△
	Appearance of interior	Lighting	△
		Rust	△
	Meter	Zero setting	△
		Workability	△

Kimura Ishida

PS No.: 8 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure	Δ
		Rust	Δ
		Wear	○
		Covering	Δ
VI. POWER CABLE	Appearance	Damage	○
		Wear	○
		Covering	○
		Connection	○
		Insulation	○
VII. BARGE	Appearance of outside	Damage	X
		Rust	X
		Wear	X
		Vibration	Δ
	Appearance of interior	Damage	X
		Rust	X
		Wear	X
	Winch & Anchor	Tightness	Δ
		Rust	Δ
		Wear	Δ
		Operation smooth	Δ
		Lockability	Δ
VIII. DIS-CHARGE POND	Appearance	Damage	○
		Wear	○

Kamel

Dec. 03, 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

Kohorlbo - ~~FARS~~ EKLEET GEZIERT FARS

PS No. : 9 PS Name : [Two pumps] 1/2

1. Commencing Year of the Pump Operation	1952
2. Manufacturers Name of the Pump	PULSmeter (U.K)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	20 %
5. The pump performance Curve obtained or not?	No
6. Actual Head between the River Water Level and the Discharge Water Level	5,94 (8) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	44,0 m
8. Acrage of the Irrigated Field at Present	by rest (500 Feddan)
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	YES
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	 ~~440~~ kW 380 V 4 poles 50 Hz 1980 installed X
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	 500 L/s 8 m 630 rpm X
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	 300 KVA 11000 V 380 V 0
14. The Reservoir (1) Dimensions Length ___m x width ___m x width (2) Effective Volume (3) Material (4) Present Workability	 Direct to reservoir ___m x width ___m ___m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : ~~9~~ PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	~~500~~ 1000 mm dia
(2) Material	Iron
(3) Present Workability	△
16. The Discharge Pipe Line	
(1) Nominal Bore	500 mm dia
(2) Material	rubber ring
(3) Berried or not	~~Not~~ berried
(4) Present Workability	
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	0.58 m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamal

STATION NAME:- GAZIRAT FARIS Km 67-800

No OF UNITS 2 طلمبات بلوصيتر

DISCHARGE 350 / 500 lit / sec H 13 / 10 mt

R.P.M

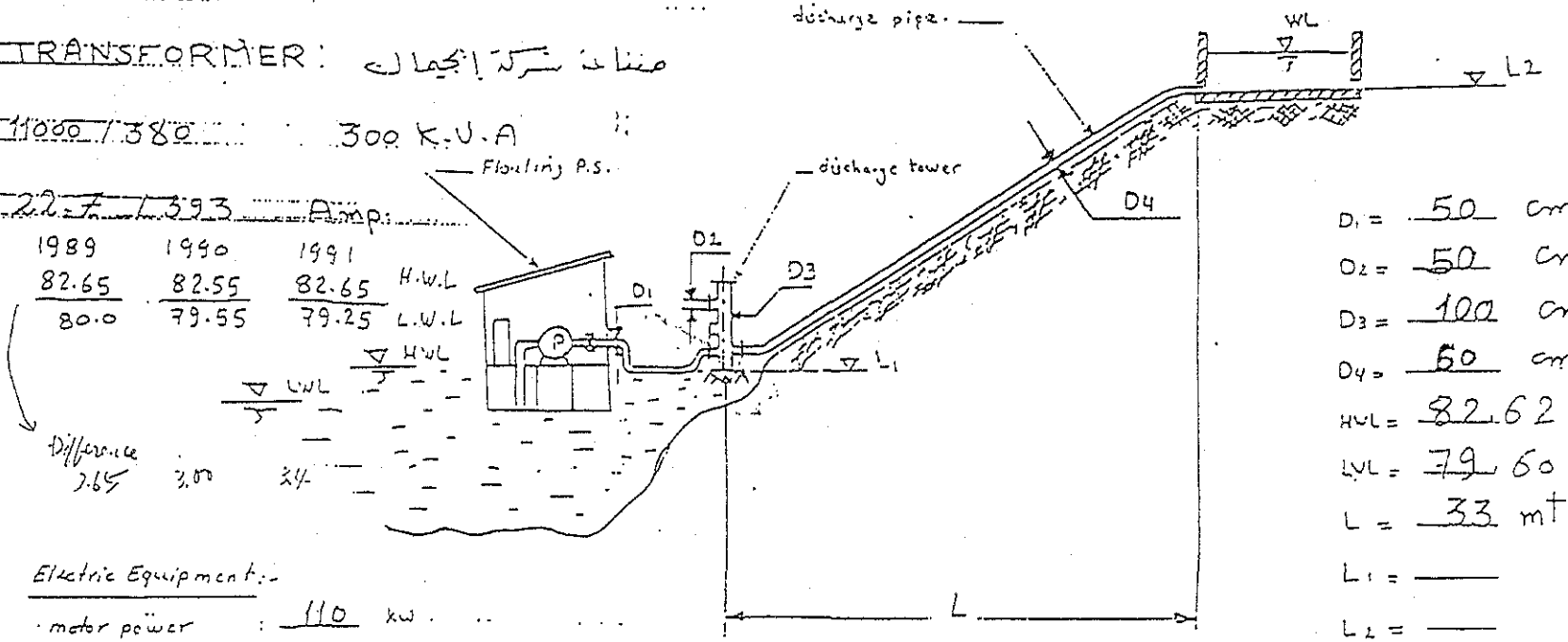
TRANSFORMER: صناعة شركة الجمالي

11000 / 380 300 K.V.A

22 F / 393 Amp:

1989	1990	1991	
82.65	82.55	82.65	H.W.L
80.0	79.55	79.25	L.W.L

Difference 2.65 3.00 34



Electric Equipment:-

motor power : 110 kw

motor rated voltage : 380 v 234 Amp

motor type LSP 355 MG LEROY SOMER FRANCE

A-69

51/60

Dec. 03, 1991

CHECK LIST Page 1/3

(Equipment & Facilities for each existing Pump Station)

KOLOMBO - EKLEET - GEIERT FARS

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 9 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	×
		Rust	△
	Appearance of installation	Bolts tightness	△
		Vibration	
	Bearing	Noise	△
		Vibration	△
		Temperature	○
		Oil leak	○
	Coupling	Bolt tightness	○
		Eccentricity	△
		Wear	△
	Others	Rust	△
		Oil leak	○
		Water leak	△
		Wear	△

Kamil

PS No.: 9 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	X
		Rust	△
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	o
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	o
	Others	Rust	△
		Oil leak	o
		Wear	△
III. VALVE	Appearance	Water leak	△
		Rust	△
		Wear	△
	Operation	Smooth	o
IV. PIPE & HOSE	Appearance	Water leak	X
		Rust	X
		Wear	△
		Fitness	△
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△
		Noise	X
		Vibration	X
		Tightness	X
	Appearance of interior	Lighting	X
		Rust	X
	Meter	Zero setting	X
		Workability	X

Kamei

PS No.: 9 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure	X
		Rust	X
		Wear	X
		Covering	△
VI. POWER CABLE	Appearance	Damage	o
		Wear	o
		Covering	o
		Connection	o
		Insulation	o
VII. BARGE	Appearance of outside	Damage	△
		Rust	△
		Wear	△
		Vibration	o
	Appearance of interior	Damage	△
		Rust	△
		Wear	△
	Winch & Anchor	Tightness	△
		Rust	△
		Wear	△
		Operation smooth	△
		Lockability	△
VIII. DIS-CHARGE POND	Appearance	Damage	△
		Wear	△

Kamel

Water Quality { • Temperature 21°C • 7.80 pH • 2.4 x 100 µS/cm 55/60

Dec. 04, 1991

GENERAL INFORMATION OF EXISTING PUMP STATION

ASWAN-GEZIERT BAHARIF

PS No. : 10 PS Name : _____ [Two pumps] 1/2

1. Commencing Year of the Pump Operation	1952
2. Manufacturers Name of the Pump	~~S~~ ANDRIDIES (N.G)
3. Does it exist still now?	YES
4. Presumable Percentage of the Pump Discharge Capacity Comparing with the Initial Design Capacity	60 %
5. The pump performance Curve obtained or not?	NO
6. Actual Head between the River Water Level and the Discharge Water Level	8,97 (9.5) m
7. Expectable Length of the Pump Discharge Pipe Line up to the Reservoir	64,38 m
8. Acrage of the Irrigated Field at Present	By rest 800 FEDDAN
9. Acrage of the Irrigable Field at Initial Design Stage	N.A
10. Acrage of the Irrigable Field to be Extended on This Project	No
11. The Electric Motor (1) Out put (2) Voltage (3) No. of Poles (4) Frequency (5) Year of Manufacturing (6) Present Workability	 110 kW 380 V 4 poles 50 Hz 1985 installed Δ
12. The Pump (1) Discharge Capacity (2) Total Head (3) Revolutional Speed (4) Present Workability	Manufactured 1957 750 L/S 10 m (60rpm) 800 rpm (120PH) Δ
13. The Transformer (1) Capacity (2) Primary Voltage (3) Secondary Voltage (4) Year of Manufacturing (5) Present Workability	 500 KVA 11000 V 380 V o
14. The Reservoir (1) Dimensions Length ___mxwidth ___mxwidth (2) Effective Volume (3) Material (4) Present Workability	 _____mxwidth _____m _____m³

Kamel

GENERAL INFORMATION OF EXISTING PUMP STATION

PS No. : 10 PS Name : _____ 2/2

15. The Discharge Tower	
(1) Nominal Bore	1000 ~~500~~ mm dia
(2) Material	Iron
(3) Present Workability	X
16. The Discharge Pipe Line	
(1) Nominal Bore	600 ~~500~~ mm dia
(2) Material	Iron
(3) Berried or not	Half berried
(4) Present Workability	Δ
17. Water Level	
(1) Max	_____ m
(2) Min	_____ m
(3) Ave	_____ m
18. Water Velocity	
(1) Max	_____ m/s
(2) Min	_____ m/s
(3) Ave	0.27 m/s
19. Wind	
(1) Spring	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(2) Summer	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(3) Fall	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s
(4) Winter	
a) Direction :	_____ m/s
b) Ave velocity :	_____ m/s
c) Max velocity :	_____ m/s
d) Min velocity :	_____ m/s

Kamel

STATION NAME:- GAZIRAT BAHAREIF

No OF UNITS 2 65/50 ANDRITZ طلمبات اندريتز KM 15.600

DISCHARGE 750 lit / sec H 10 mt.

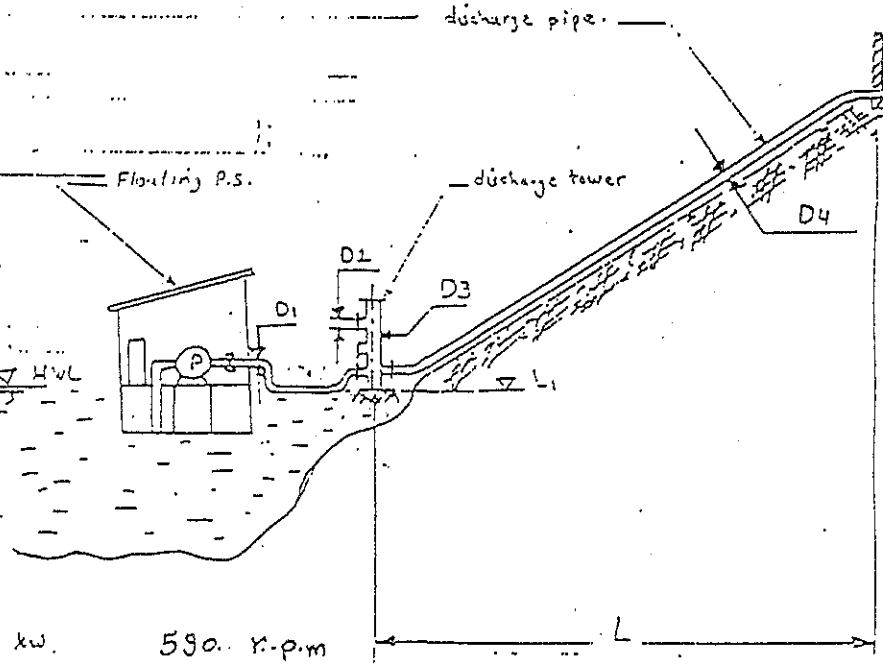
R.P.M 600

TRANSFORMER

11000 / 400

500 K.V.A

28.3 / 722 Amp



	1989	1990	1991
H.W.L	85.03	84.91	84.99
L.W.L	81.71	81.71	81.48
Difference	3.32	3.2	3.51

Electric Equipment:-

motor power : 110 kw. 590 r.p.m

motor rated voltage : 380 v 234A

motor type : LSP 355 MG LEROY SOMER - FRANCE

A-75

57/60

Dec. 04, 1991

CHECK LIST

(Equipment & Facilities for each existing Pump Station)

ASWAN - ABO EL RISH - GEZIERT BAHARIF

Legend

○ : There is no trouble nor problem. Equipment can be used normally.

△ : Equipment has a little problem. It is better to change some parts of equipment or to maintain properly.

× : Equipment has a heavy problem. It is necessary to replace it.

Remarks: Noise : by a sense of hearing
Vibration : by a sense of touch
Temperature : by a sense of touch
Oil leak : by a sense of sight
Wear, Rust : by a sense of sight and touch
Tightness : by a sense of sight and touch

PS No.: 10 PS Name: _____

I. PUMP	Appearance of casing	Finished coat	○
		Rust	○
	Appearance of installation	Bolts tightness	○
		Vibration	△
	Bearing	Noise	△
		Vibration	△
		Temperature	○
		Oil leak	○
	Coupling	Bolt tightness	○
		Eccentricity	○
		Wear	○
	Others	Rust	○
		Oil leak	○
		Water leak	○
		Wear	○

Kamel

PS No.: 10 PS Name: _____ Page 2/3

II. MOTOR	Appearance	Finished coat	o
		Rust	o
	Bearing	Noise	△
		Vibration	△
		Temperature	△
		Oil leak	o
	Rotor & Fan	Noise	△
		Vibration	△
		Wind pressure	o
	Others	Rust	o
		Oil leak	o
		Wear	o
III. VALVE	Appearance	Water leak	△
		Rust	o
		Wear	△
	Operation	Smooth	△
IV. PIPE & HOSE	Appearance	Water leak	X
		Rust	△
		Wear	X
		Fitness	X
V. (1) SWITCH BORAD	appearance of outside	Rust	△
		Wear	△
		Noise	o
		Vibration	o
		Tightness	△
	Appearance of interior	Lighting	△
		Rust	△
	Meter	Zero setting	△
		Workability	△

Kamei

PS No.: 15 PS Name: _____ Page 3/3

V. (2) SWTICH BOARD	Breaker	Point pressure △ Rust △ Wear ○ Covering △
VI. POWER CABLE	Appearance	Damage △ Wear △ Covering △ Connection ○ Insulation ○
VII. BARGE	Appearance of outside	Damage △ Rust △ Wear △ Vibration △
	Appearance of interior	Damage △ Rust ○ Wear △
	Winch & Anchor	Tightness △ Rust ○ Wear △ Operation smooth △ Lockability △
VIII. DIS-CHARGE POND	Appearance	Damage △ Wear △

Kamel

5.5 Annual Expenditure of 9 Floating Pump Station (Aswan) in 1987 to 1989, of 10 Stations (Aswan and Luxor) in 1990

1/4
(1987)

Site. No.	Station Name	No. of operating hours	Discharge in cu.m (year)	Cost of Maintenance (L.E)	Cost of consumption of electric power and fuel	Wages & sallary (L.E)	Cost of oils & grease (L.E.)	Inspection and Repairing cost	Total cost (L.E.)	Cost of irrigation per feddan (L.E.)	Area served
1	El Sheikh Fadl	2,397	4,314,600	55.00	6,800.830	9,148.500	44.880	11,667	27,716.210	86.61	320
2	Sahel El Hamam	2,185	3,988,800	34.900	4,600.002	7,263.852	264.440	7,292	19,455.194	97.28	200
3	El Fosa El Baharia	930	1,674,000	22.400	825.730	5,008.000	248.380	5,469	11,573.510	77.16	150
4	Sahel El Kobania	1,947	3,504,600	20.890	1,558.750	7,164.679	13.520	10,937	19,694.839	65.65	300
5	Sahel Fares	6,198	1,673,460	62.000	1,910.110	11,075.760	59.760	40,524	53,631.630	83.80	640
7	El Twise	3,011	2,210,605	30.000	5,303.353	8,715.252	52.320	10,573	24,673.925	85.08	290
8	Gharb Aswan Baharia	6,237	11,226,000	110.380	5,982.000	16,360.719	34.180	9,115	31,602.271	126.41	250
9	Gezirat Fares	2,477	4,458,600	73.000	6,301.000	6,022.260	37.440	7,292	19,725.700	98.63	200
10	Gezirat Behrif	4,821	8,781,000	83.120	8,419.000	18,508.054	28.560	10,938	37,976.734	126.59	300

Site. No.	Station Name	No. of operat-ing hours	Discharge in cu.m (year)	Cost of Mainte-nance (L.E)	Cost of consumption of electric power and fuel	Wages & sallary (L.E)	Cost of oils & grease (L.E.)	Inspection and Repairing cost	Total cost (L.E.)	Cost of irrigation per feddan (L.E.)	Area served
1	El Sheikh Fadl	2,718	4,910,400	71.00	1,700.000	9,380.000	44.880	16,960	28,155.88	87.99	320
2	Sahel El Hamam	2,506	4,510,800	36.640	6,300.200	11,129.000	44.880	10,600	28,110.720	140.55	200
3	El Fosa El Baharia	1,274	2,293,200	211.175	1,623.080	4,762.320	258.510	7,950	14,805.085	98.70	150
4	Sahel El Kobania	2,166	3,898,000	11.420	2,299.752	6,426.223	13.640	15,900	24,651.035	82.17	300
5	Sahel Fares	6,210	1,723,280	85.0	31,000.430	4,843.000	59.760	23,920	59,908.19	93.61	640
7	El Twise	2,816	1,798,925	12.610	6,000.000	11,805.000	52.320	15,370	33,237.581	114.62	290
8	Gharb Aswan Baharia	6,188	11,138,400	263.500	23,608.99	16,717.257	27.280	13,250	53,867.027	215.47	250
9	Gezirat Fares	2,570	4,626,000	46.00	8,500.898	14,004.000	37.440	10,600	33,188.338	165.94	200
10	Gezirat Behrif	4,462	8,924,000	97.420	13,999.152	20,783.292	17.980	15,900	50,797.844	169.33	300

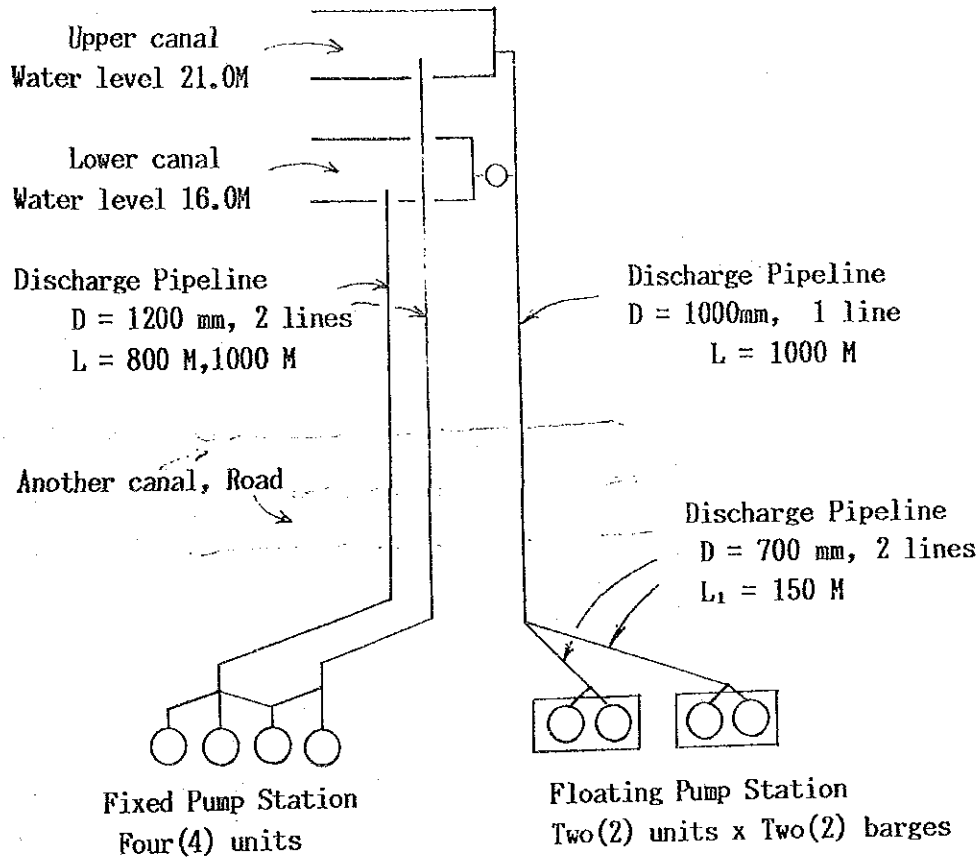
3/4
(1989)

Site. No.	Station Name	No. of operat-ing hours	Discharge in cu.m (year)	Cost of Mainte-nance (L.E)	Cost of consumption of electric power and fuel	Wages & sallary (L.E)	Cost of oils & grease (L.E.)	Inspection and Repairing cost	Total cost (L.E.)	Cost of irrigation per feddan (L.E.)	Area served
1	El Sheikh Fadl	2,812	5,066,600	722.00	14,000.52	9,180.00	20.54	13,705	37,628.06	117.59	320
2	Sahel El Hamam	2,297	4,134,600	327.00	8,000.37	10,500.00	39.92	8,568	27,435.29	137.18	200
3	El Fosa El Baharia	1,479	2,662,200	7.44	19.80	4,823.06	38.44	6,426	11,314.74	75.43	150
4	Sahel El Kobania	2,048	3,686,000	193.47	3,146.84	15,761.70	32.40	12,852	31,986.41	106.62	300
5	Sahel Fares	6,041	1,673,460	300.00	32,313.28	15,210.66	26.74	27,417	75,267.68	74.81	640
7	El Twise	2,902	2,535,250	340.00	8,000.07	12,120.00	41.78	12,423	32,924.85	113.53	290
8	Gharb Aswan Baharia	5,647	1,016,500	210.50	20,123.53	28,408.15	33.20	10,710	59,485.38	237.94	250
9	Gezirat Fares	2,435	4,383,900	527.160	11,000.70	82,170.24	43.54	8,568	102,309.84	511.55	200
10	Gezirat Behrif	3,250	8,700,000	205.64	16,165.56	31,368.54	36.12	12,852	60,627.86	202.09	300

Site No.	Station Name	No. of operating hours	Discharge in cu.m (year)	cost of Maintenance (L.E)	Cost of consumption of electric power and fule	Wages & sallary (L.E)	Cost of oils & grease (L.E.)	Inspection and Repairing cost	Total cost (L.E.)	Cost of irrigation per feddan (L.E.)	Area served
1	El Sheikh Fadl	3,210	5,778,000	110	19,533.46	9,863.16	34.96	18,816	48,357.58	151.12	320
2	Sahel El Hamam	2,487	4,476,600	200	13,504.651	9,767.76	36.82	11,760	35,269.231	176.35	200
3	El Fosa El Baharia	1,489	2,680,200	25.325	1,098.276	5,795.235	140.625	8,820	15,879.461	105.86	150
4	Sahel El Kobania	2,119	388,900	128.310	4,163.856	10,428.195	16.120	176,400	191,136.48	637.12	300
5	Sahel Fares	6,595	17,806,500	258	31,000.765	1,596.600	31.005	37,632	70,518.37	110.18	640
7	El Twise	2,984	2,232,450	120	12,220.818	12,497.88	38.680	17,052	41,929.378	144.58	290
8	Gharb Aswan Baharia	6,472	11,764,800	522.160	42,046.194	25,680.548	31.400	14,700	82,980.302	331.92	250
9	Gezirat Fares	2,670	4,806,900	68	13,060.235	8,424.480	34.34	11,760	33,287.055	166.74	200
10	Gezirat Behrif	4,844	9,515,600	254.560	22,414.292	24,095.661	32.240	17,640	64,436.753	214.79	300
6	El Biadiea El Ollia	10,395	68,085,000	4,439.0	489,657.0	104,674.0	2,766	10,566	612,102.0	161.08	3,800

5.6 Outline of Present or Newly Required Pipeline for No.6 (El Biadiea El Ollia) Pump Station

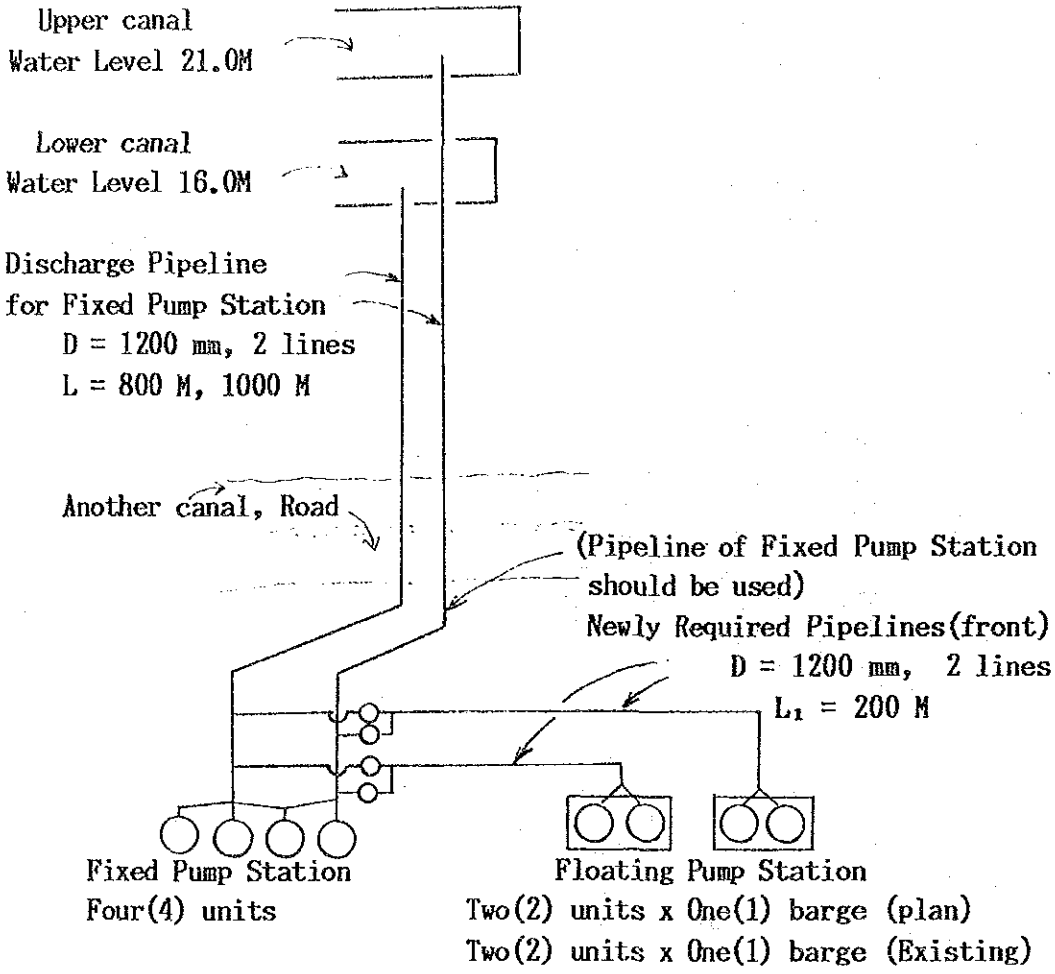
1) Outline of Present Pipeline



2) Present Total Head

(1) Actual Head	21.0 M
(2) Loss of head around pump	1.0 M
(3) Loss of head by tower	0.5 M
(4) Loss of head by pipeline (front) (Dia 700 mm x 150 M)	10.7 M
(5) Loss of head by pipeline (middle) (up to lower canal) (Dia 1000 mm x 800 M)	21.2 M
(6) Loss of head by pipeline (back) (up to upper canal) (Dia 1000 mm x 200 M)	1.5 M
(7) Loss of velocity head	0.32 M
Total head	56.22 M
(Required power	950 KW)

3) Outline of Newly Required Pipeline



4) Total Head of The Newly Required

(1) Actual head	21.0 M
(2) Loss of head around pump	1.0 M
(3) Loss of head by tower	0.5 M
(4) Loss of head by Pipeline (front) (Dia 1200 mm x 200 M, 2 lines)	0.87 M
(5) Loss of head by Pipeline (middle) (up to lower canal) (Dia 1200 mm x 800 M, 1 line)	3.47 M
(6) Loss of head by Pipeline (back) (up to upper canal) (Dia 1200 mm x 200 M, 1 line)	0.87 M
(7) Loss of velocity head	0.27 M
Total head	27.97 M
(Required power	460 KW)

5.7 Organization of Operation and Maintenance

Organization	Responsible Personnel	Staff
General Directorate Upper Egypt	Dir. Eng Wahbu Sabet Lauka	1 engineer 75 staff
A South Upper Egypt General Directorate	Dir. Mohamed Abd Al Rahaman	4 engineer 650 staff
1 : Directorate of Aswan		4 engineer 66 staff
a) Khafar Handasa		1 engineer 112 staff
b) Draw Handasa		2 engineer 173 staff
c) Edfu Handasa		2 engineer 159 staff
B Middle East General Directorate (Naga Hamady)	Dir. Abd Rawof Marhaly	8 engineer 1,100 staff
2 : Directorate of Luxsor	Eng. Sabry Maghazy	3 engineer 53 staff
a) El Hebeit Handasa		1 engineer 82 staff
b) GL Gherea Handasa		113 (engineer staff)
c) Shanhour Handasa		100 (engineer staff)

5.8 Estimated Cost of Operation and Maintenance of the Project

(1) Maintenance Cost . . . . . LE 7,000

Estimated from the actual expenditure, LE 6,124 in 1990.

(2) Electric Power

Consumption . . . . . LE 960,000

Electric and fuel cost per one cu.m of irrigation water is obtained at LE 0.0051/cu.m based on the actual expenditure in 1990.

Annual irrigation water to be deliveried is 188.375 million cu.m.

Electric power

consumption cost = 0.0051 LE/cu.m * 188,875 million cu.m

= 960,700 LE

(3) Wages and Salary . . . . . LE 264,000

Engineer = 6,000 LE/year * 1 person * 4 Handasa

= 24,000 LE

Staff = 2,400 LE/year * 10 persons * 10 places

= 240,000 LE

(4) Lubricating oil and Grease . . . . . LE 4,000

Estimated from the actual expenditure, 3,162 in 1990.

(5) Inspection and repairing cost . . . . . LE 100,000

Estimated from the actual expenditure in 1987,88,89.

10,000 LE/place * 10 places = 100,000 LE

Total LE 1,335,000