

3-9 DRAWINGS

<u>DWG. No.</u>	<u>TITLE</u>
I. Gaimmeza	
I-1	GENERAL PLAN OF GAIMMEZA SATELLITE FARM
I-2	TYPICAL CROSS SECTION (No.1)
I-3	" " " (No.2)
	& ROAD CROSSING CULVERT
I-4	FARM ENTRANCE TYPE A & B
I-5	FARM INLET
II. Messer	
II-1	GENERAL PLAN OF MESSER SATELLITE FARM
II-2	TYPICAL CROSS SECTION (No.1)
II-3	" " " (No.2)
II-4	FARM ENTRANCE TYPE C
II-5	" " " D
II-6	ROAD CROSSING CULVERT
III. Saft khaled	
III-1	GENERAL PLAN OF SAFT KHALED SATELLITE FARM
III-2	TYPICAL CROSS SECTION (No.1)
III-3	" " " (No.2)
III-4	REHABILITATION OF PUMPING SITE
IV. Serrw	
IV-1	GENERAL PLAN OF SERRW SATELLITE FARM
IV-2	TYPICAL CROSS SECTION (No.1)
IV-3	" " " (No.2)
V. Edfina	
V-1	GENERAL PLAN OF EDFINA SATELLITE FARM
V-2	TYPICAL CROSS SECTION (No.1)
V-3	" " " (No.2)

REFERENCE DRAWINGS (PLAN OF EXISTING FACILITIES)

1.	GAIMMEZA SATELLITE FARM
2.	MESSER " "
3.	SAFT KHALED " "
4.	SERRW " "
5.	EDFINA " "

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

DRAWINGS

JAPAN INTERNATIONAL CO-OPERATION AGENCY

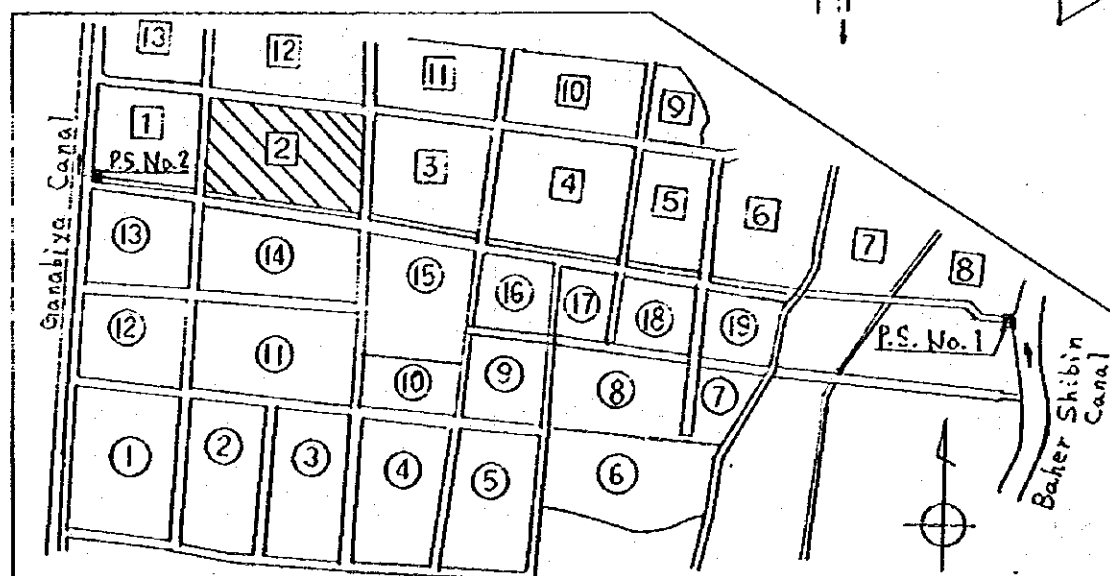
<u>Road</u>	Farm Road
<u>— Irrig</u>	Irrigation Canal
<u>— Drain</u>	Drain Canal

Existing Gate

Existing Culvert

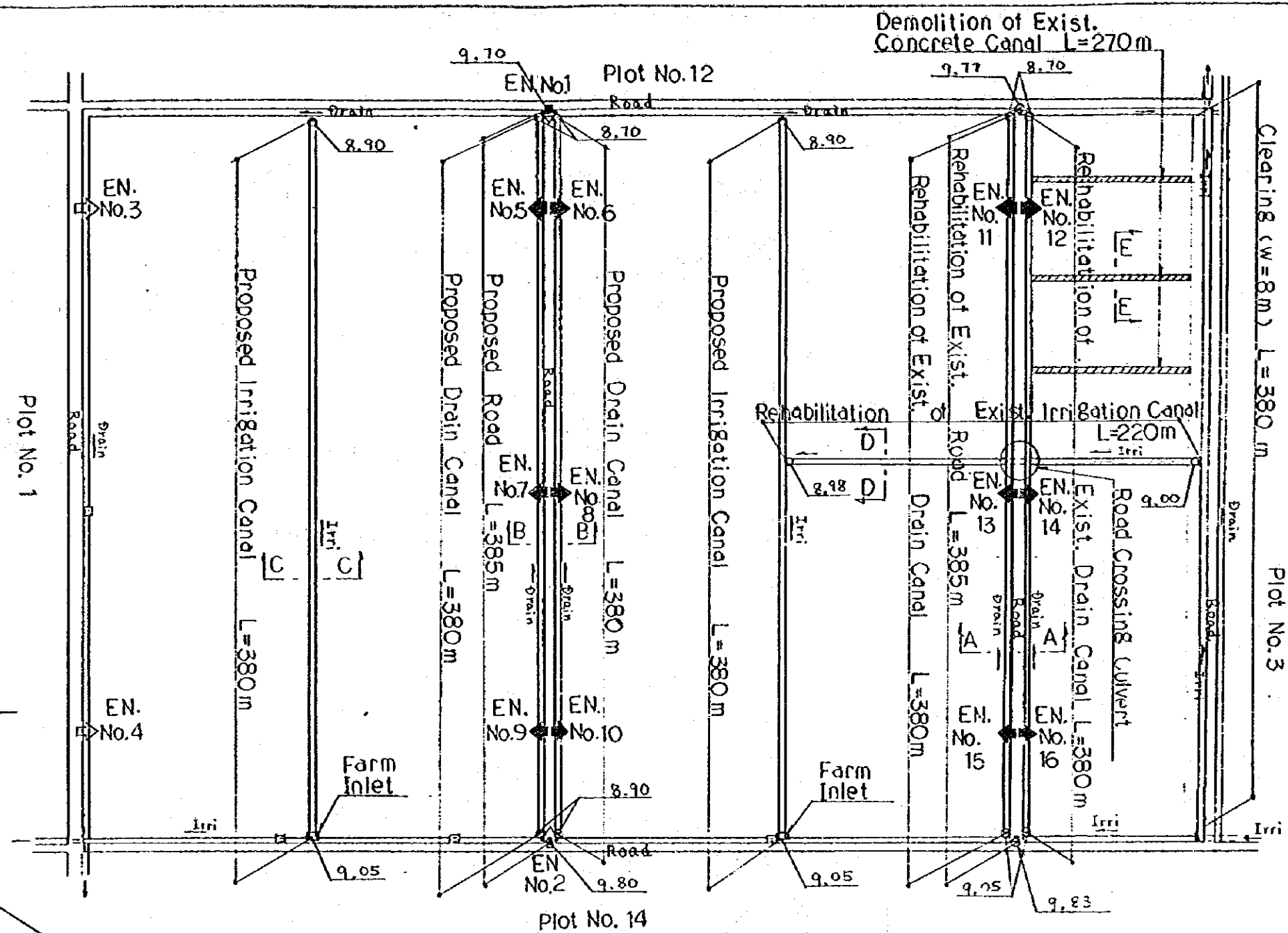
EN " " " " D

(BANDARA PLOT NO.2) S=1:2500

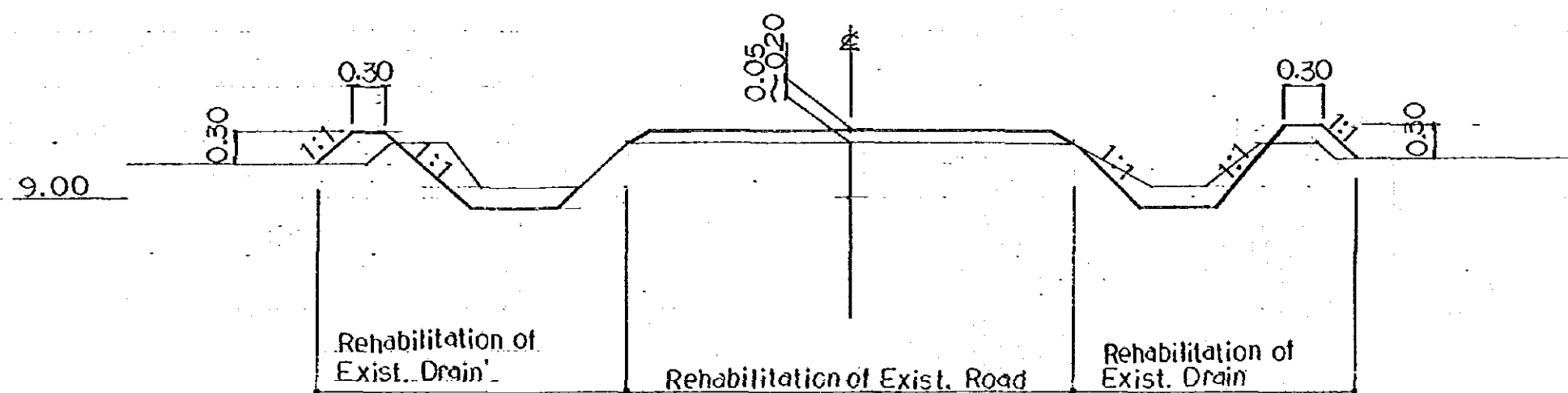


O: Gaimeza Area.

KEY MAP S=1:25,000

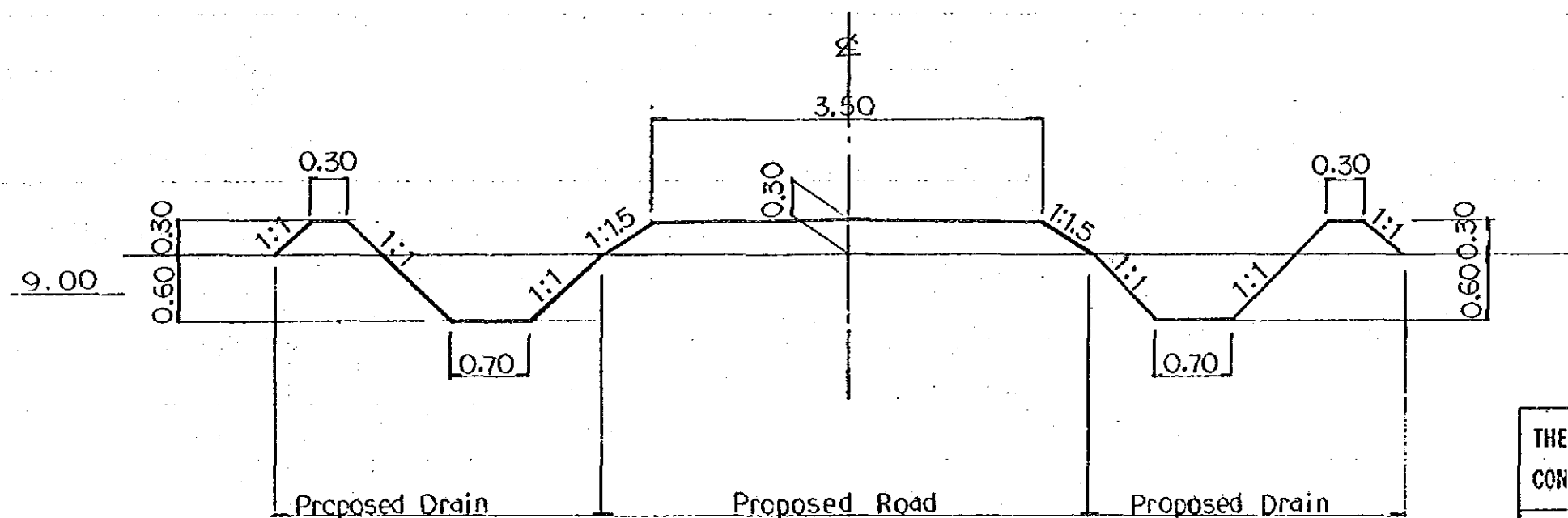


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SECTION A - A

S=1:50



SECTION B - B

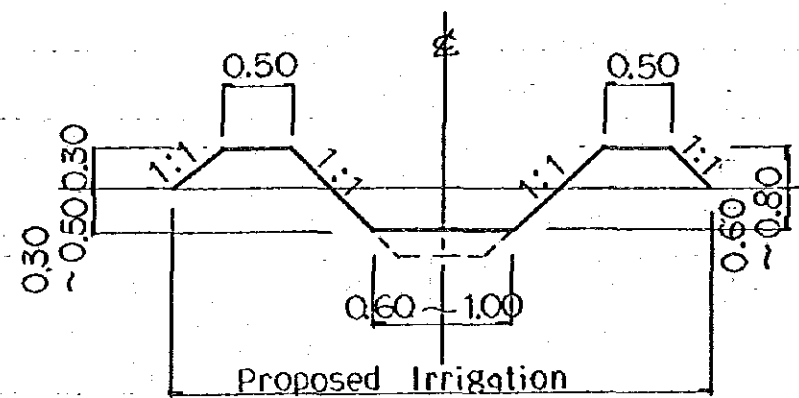
S=1:50

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

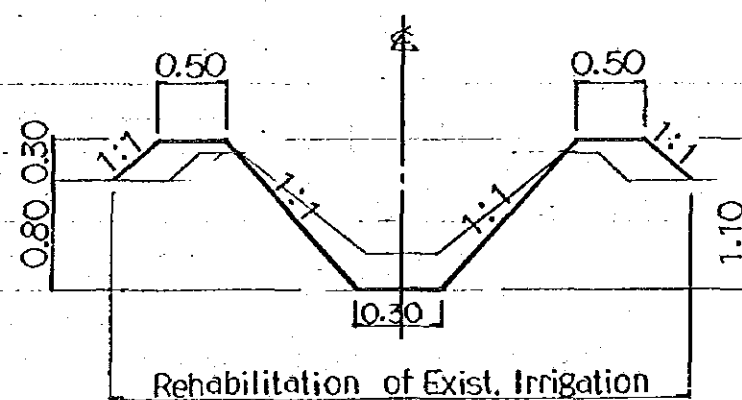
TYPICAL CROSS SECTION (NO 1)

DWG NO. I - 2 SCALE 1:50

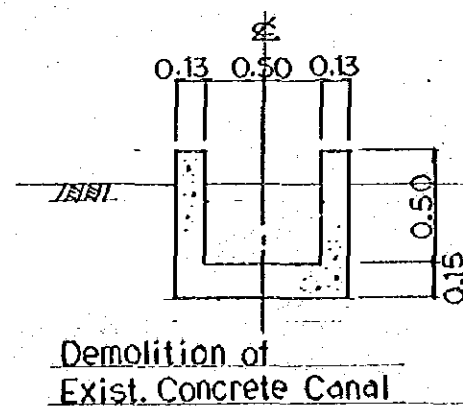
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SECTION C - C S=1:50

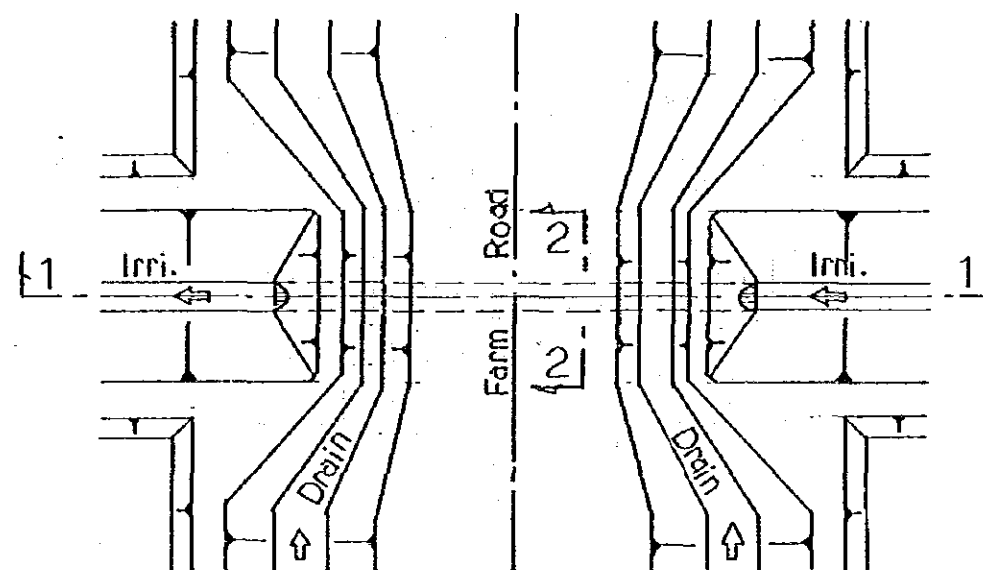


SECTION D - D S=1:50

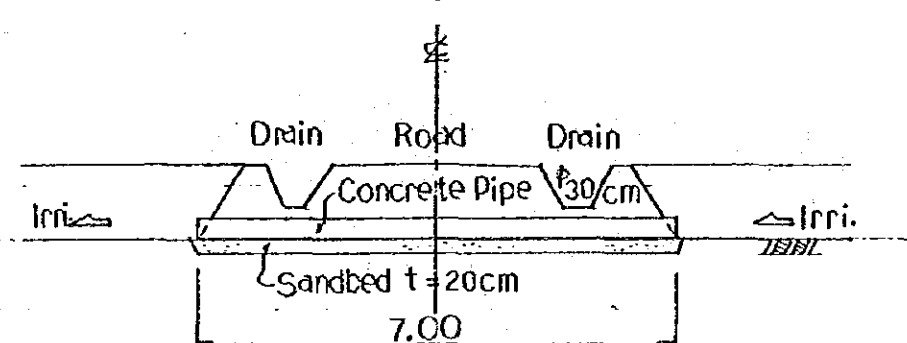


SECTION E - E S=1:30

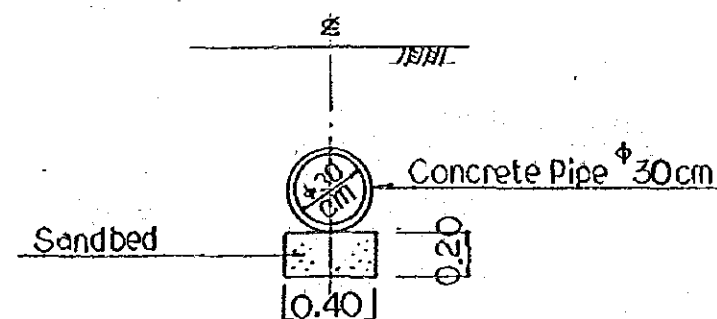
ROAD CROSSING CULVERT



PLAN S=1:100



SECTION 1 - 1 S=1:100



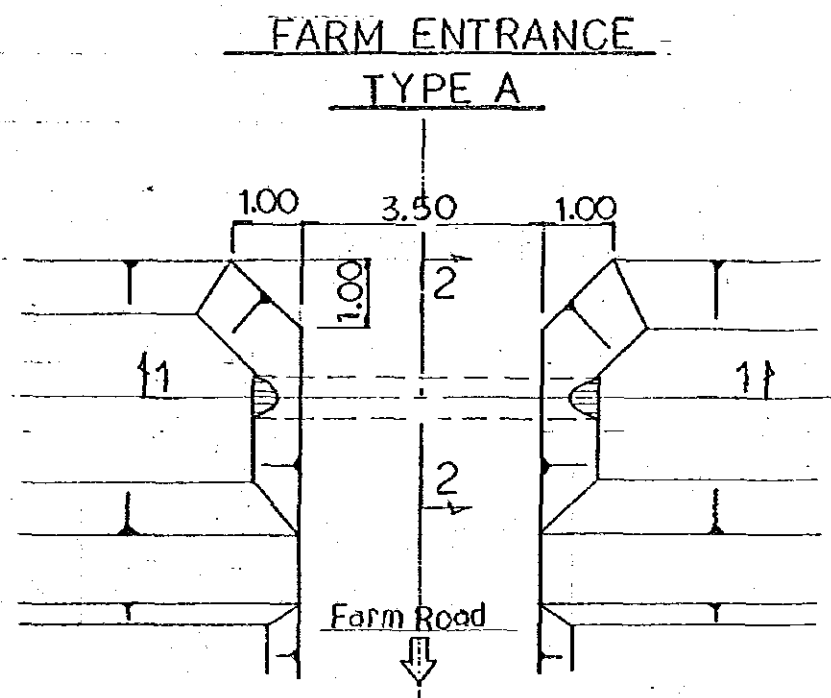
SECTION 2 - 2 S=1:30

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

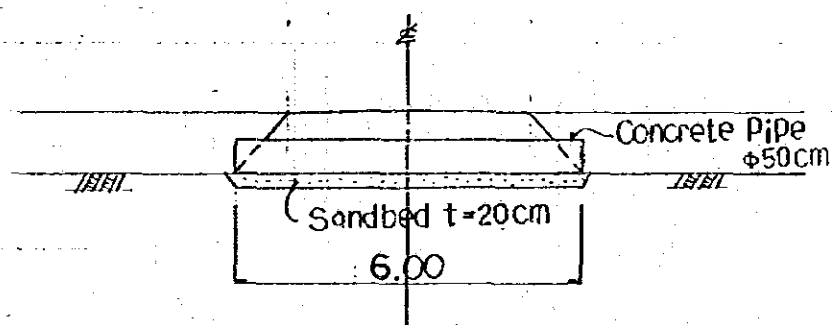
TYPICAL CROSS SECTION (NO 2)
& ROAD CROSSING CULVERT

DWG NO. I - 3 SCALE

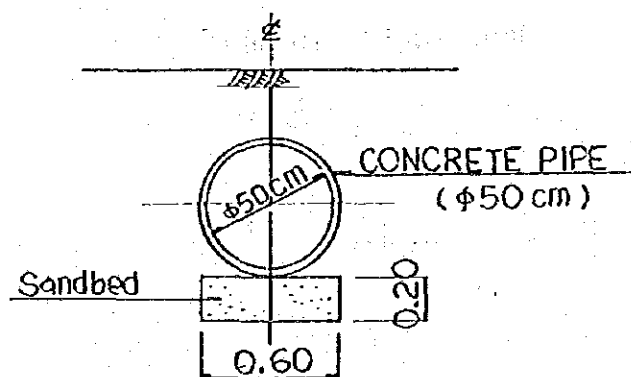
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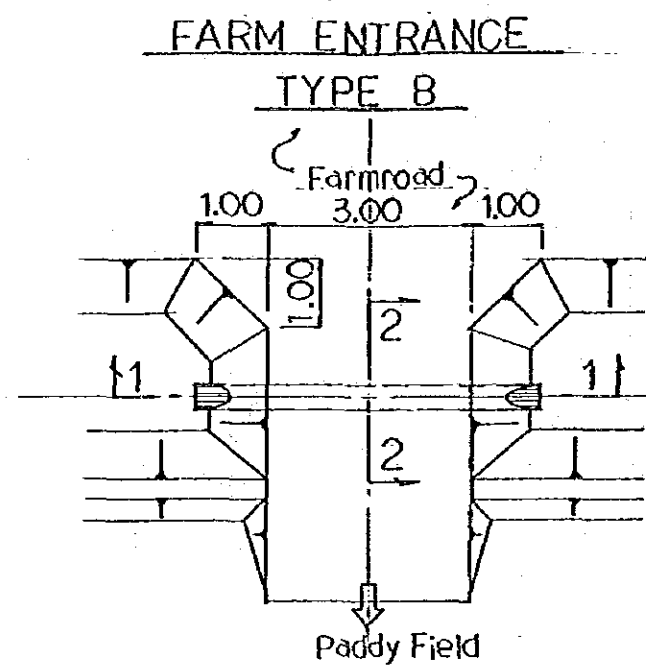
PLAN S=1:100



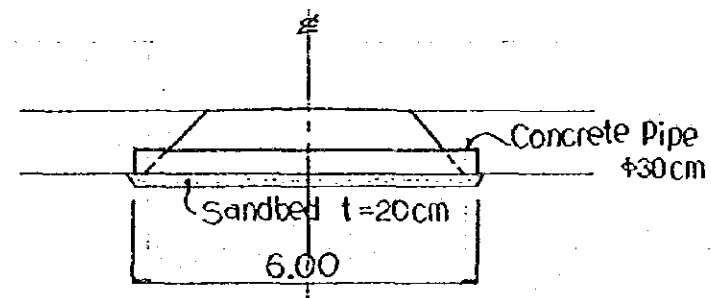
SECTION 1 - 1 S=1:100



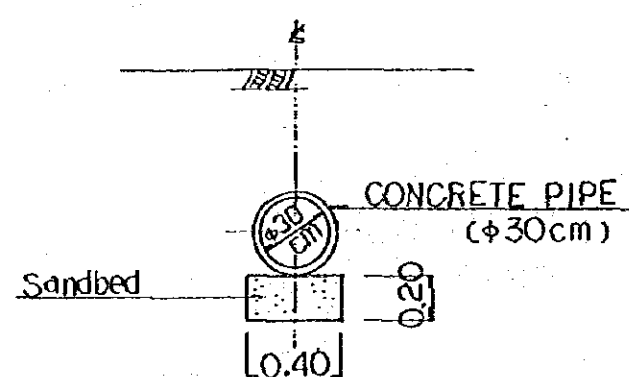
SECTION 2 - 2 S=1:30



PLAN S=1:100



SECTION 1 - 1 S=1:100



SECTION 2 - 2 S=1:30

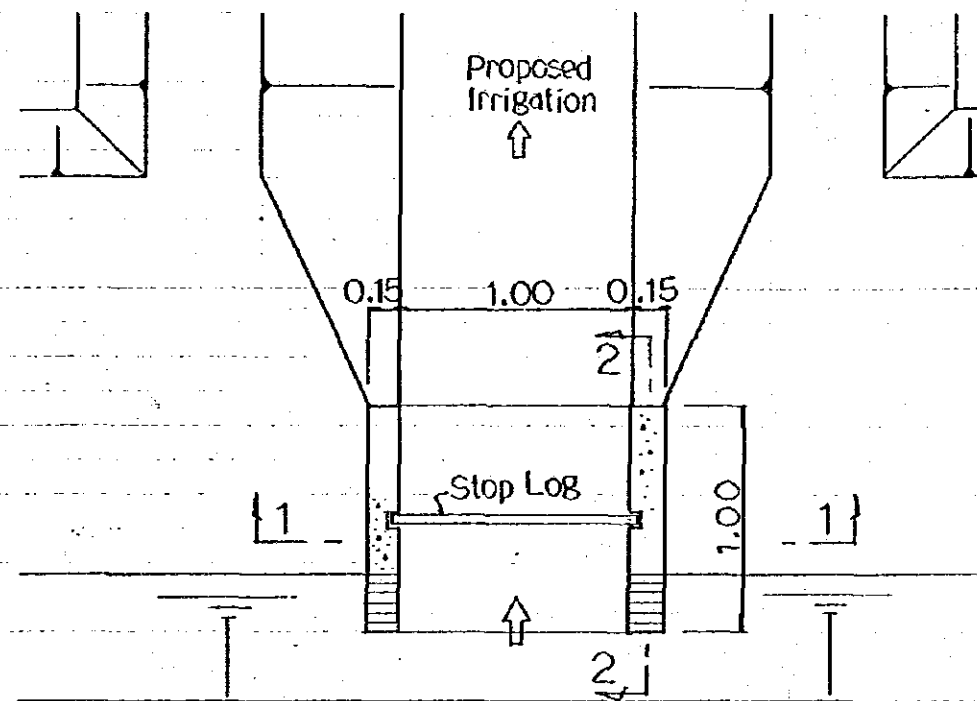
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

FARM ENTRANCE TYPE A & B

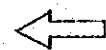
DWG NO. I - 4 SCALE

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FARM INLET

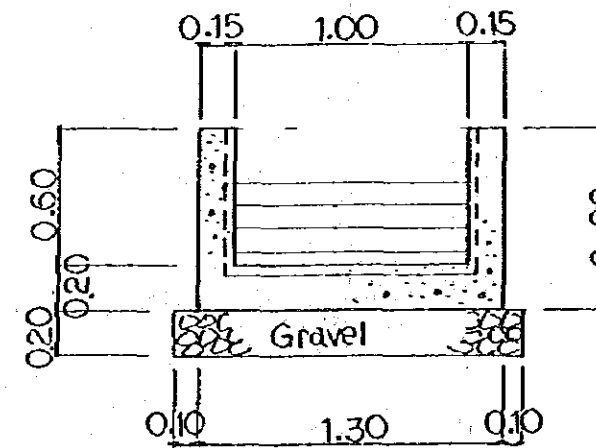


Main Irrigation Canal



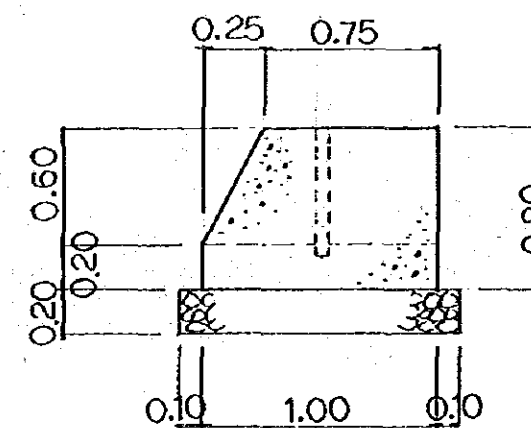
PLAN

S=1:30



SECTION 1-1

S=1:30



SECTION 2-2

S=1:30

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

FARM INLET

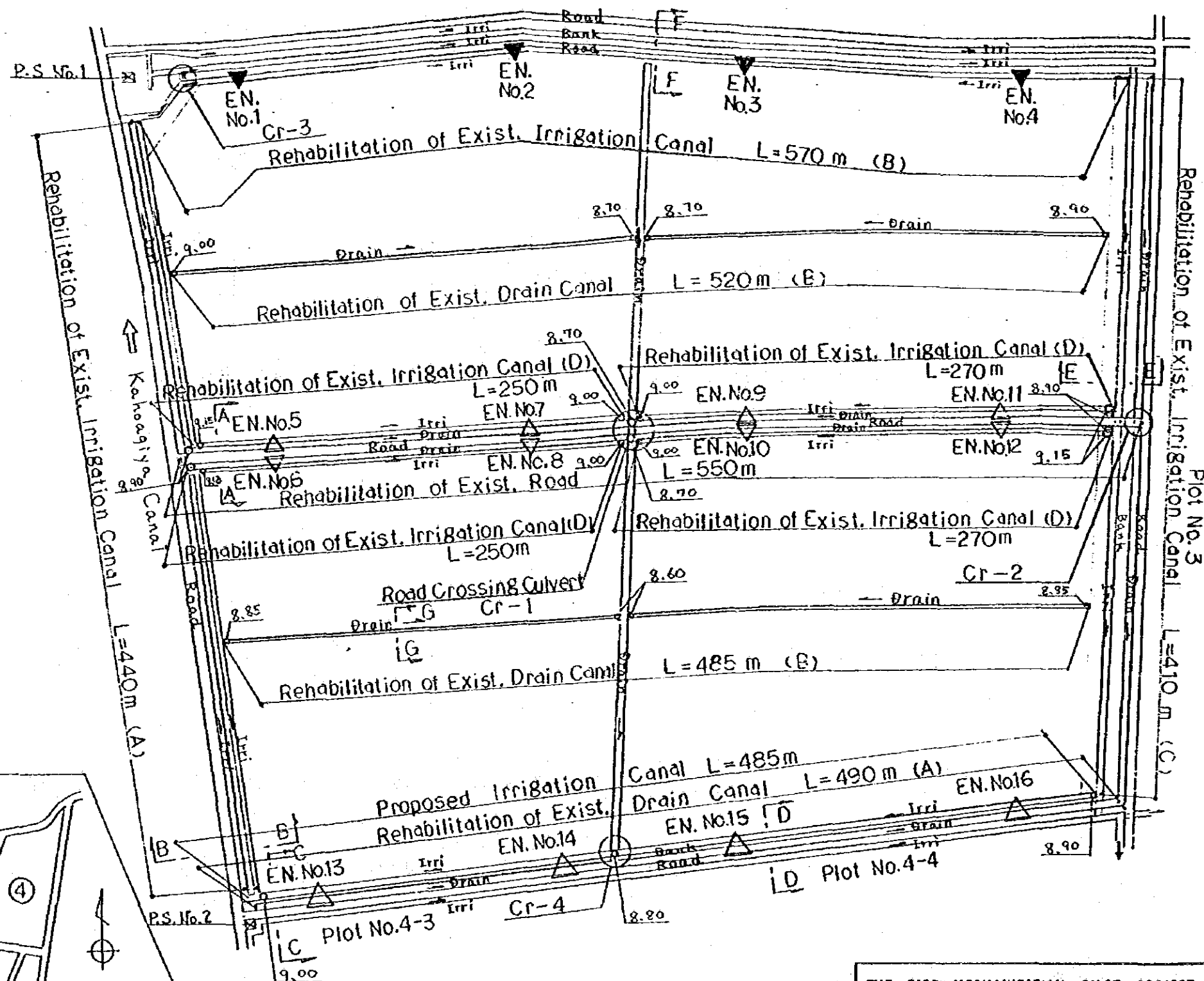
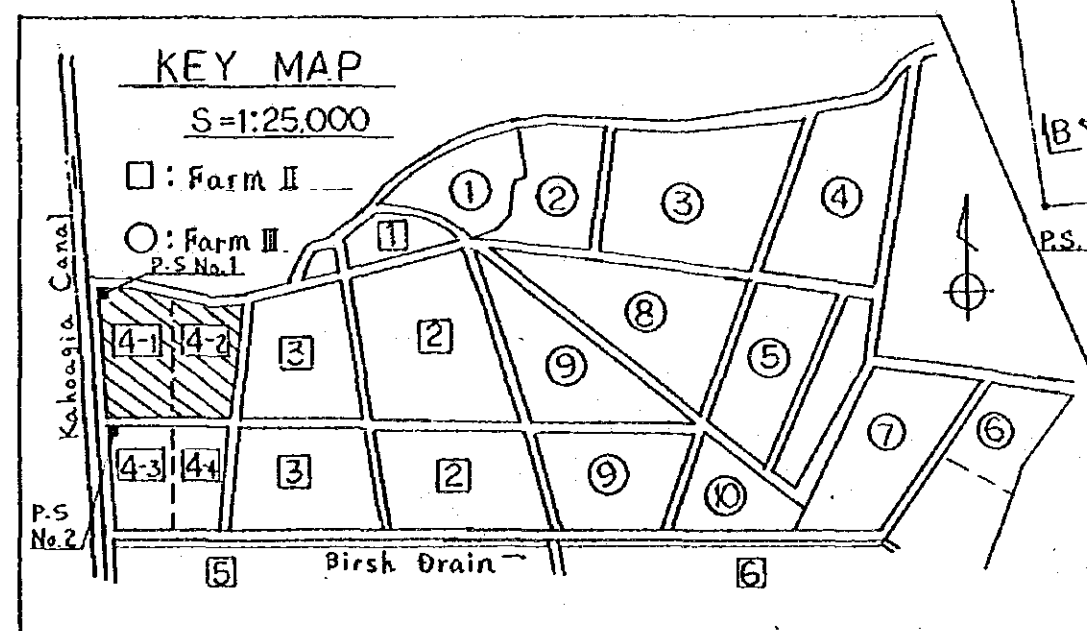
DWG NO. I - 5 SCALE 1:30

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LEGEND

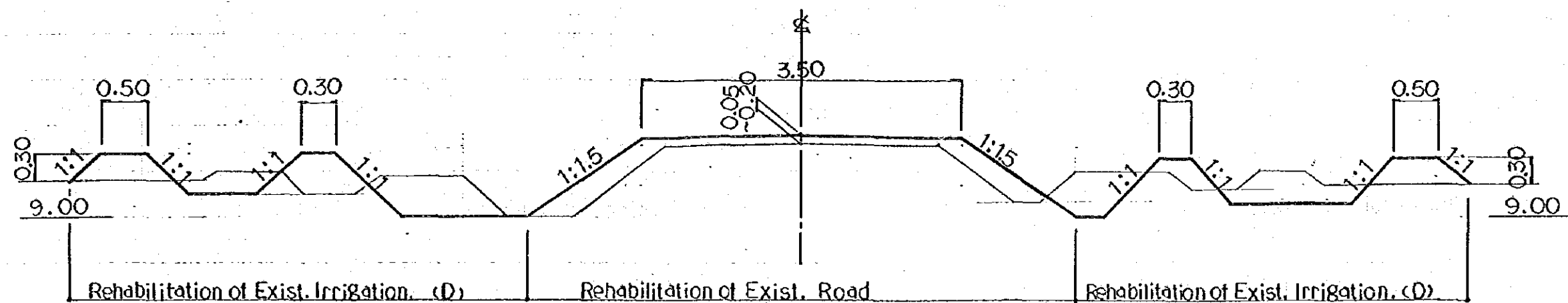
Road
 Farm Road
 Irrig
 Irrigation Canal
 Drain
 Drain Canal

Existing Farm Entrance
 Existing Gate
 Existing Culvert
 EN Planning Farm Entrance Type A
 EN " " " " B
 EN " " " " C
 EN " " " " D

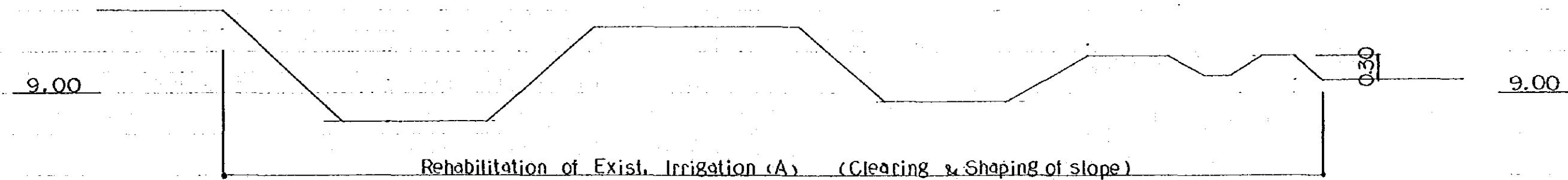


GENERAL PLAN of
 MESSER SATELLITE FARM
 (PLOT NO.4-1, 4-2) S=1:2500

THE RICE MECHANIZATION PILOT PROJECT
 CONSTRUCTION OF PILOT INFRASTRUCTURE
 GENERAL PLAN OF
 MESSER SATELLITE FARM
 DWG. NO. II - 1 SCALE 1:2500
 JAPAN INTERNATIONAL COOPERATION AGENCY
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SECTION A-A S=1:50



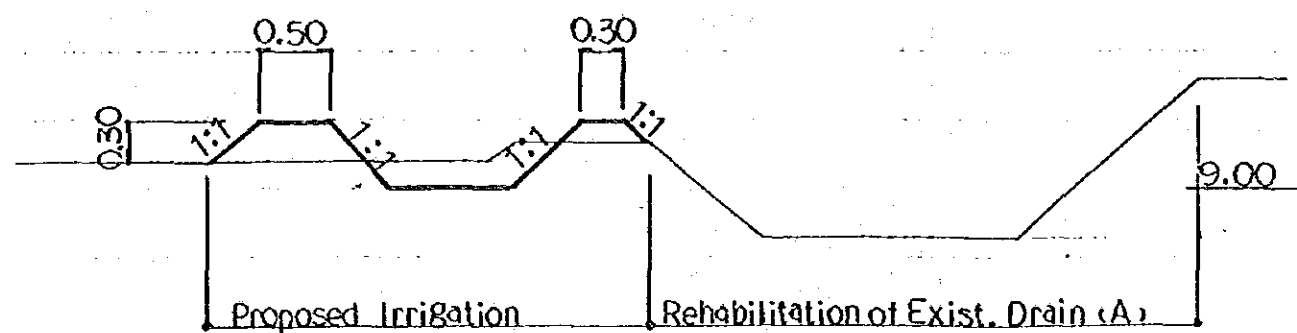
SECTION B-B S=1:50

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

TYPICAL CROSS SECTION (NO 1)

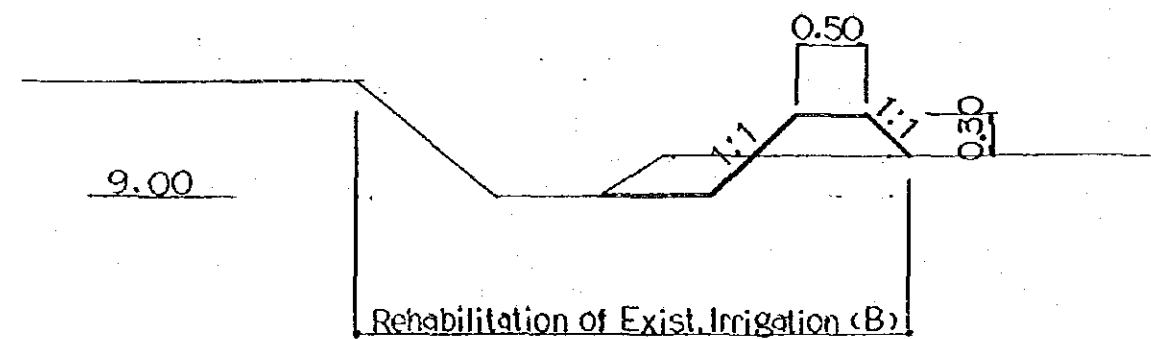
DWG NO. II - 2 SCALE 1:50

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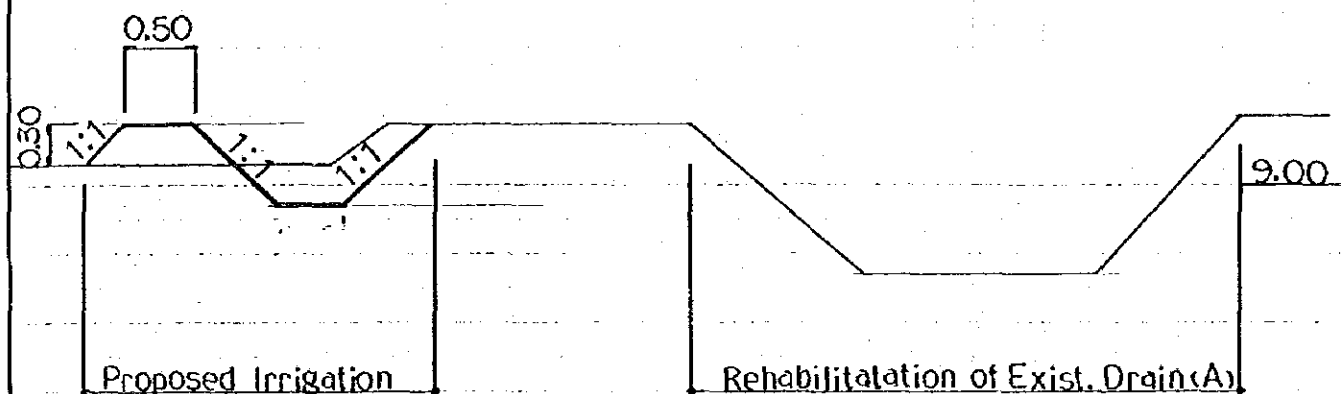
SECTION C-C

S=1:50



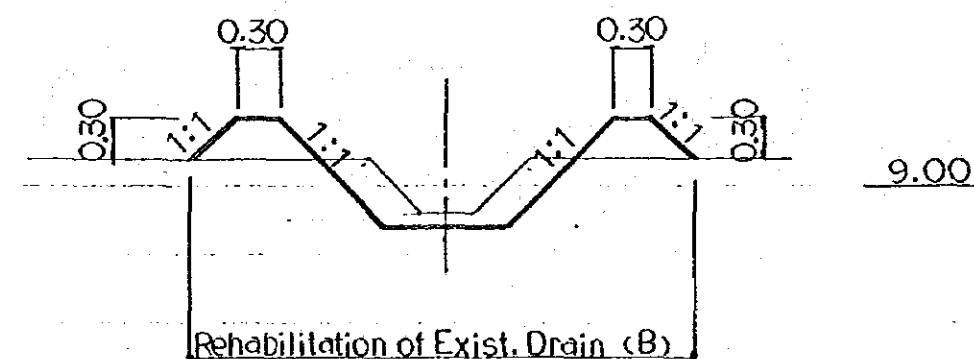
SECTION F-F

S=1:50



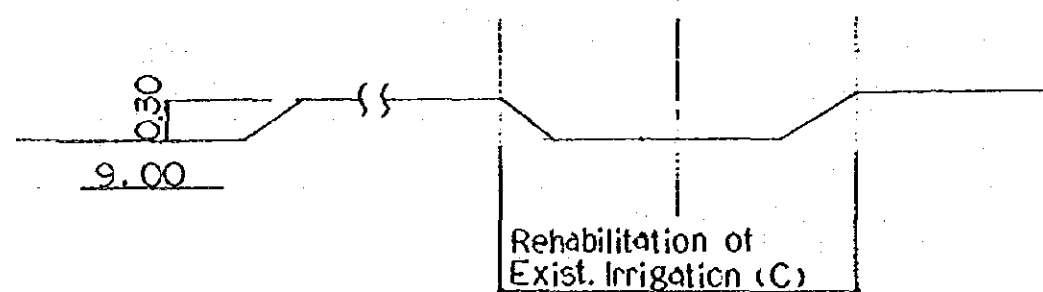
SECTION D-D

S=1:50



SECTION G-G

S=1:50



SECTION E-E

S=1:50

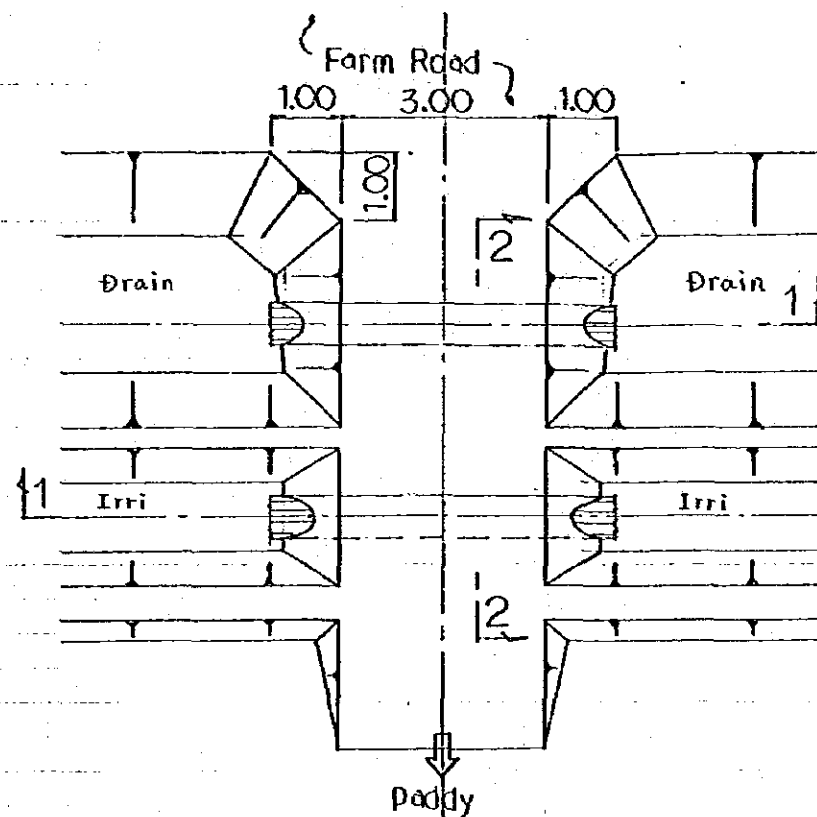
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

TYPICAL CROSS SECTION (NO 2)

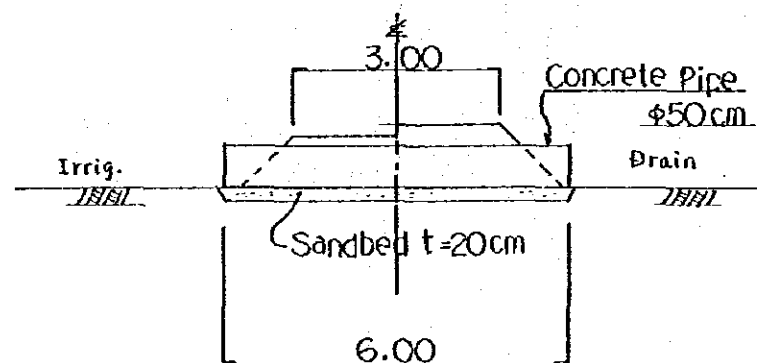
DWG NO. II-3 SCALE 1:50

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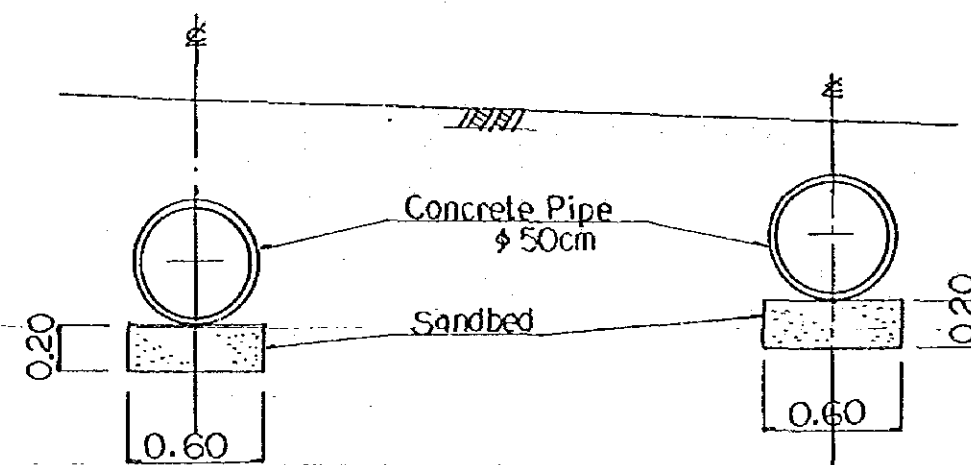
FARM ENTRANCE TYPE C



PLAN S=1:100



SECTION 1-1 S=1:100



SECTION 2-2 S=1:30

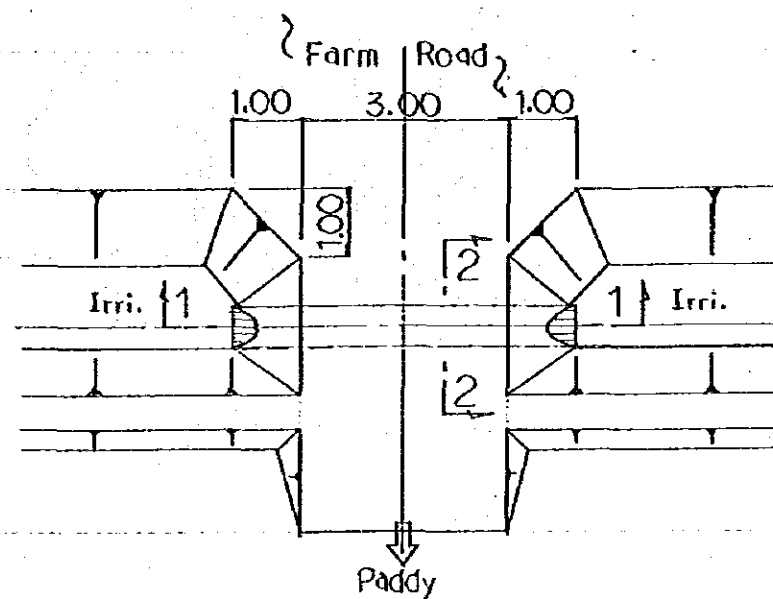
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

FARM ENTRANCE TYPE C

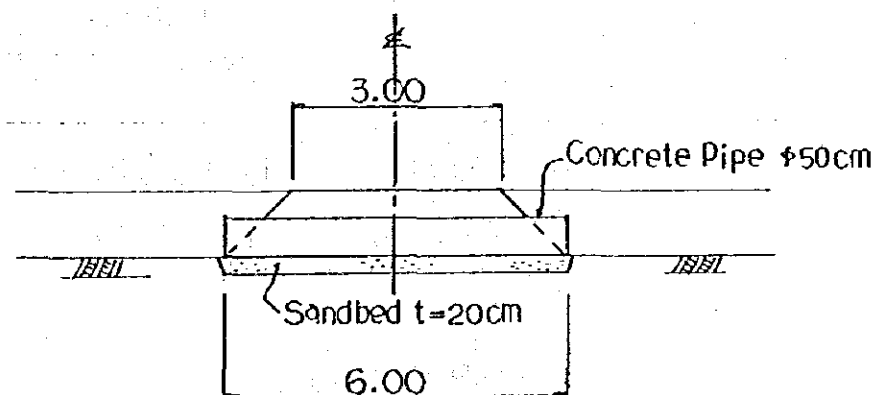
DWG NO. II - 4 SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY
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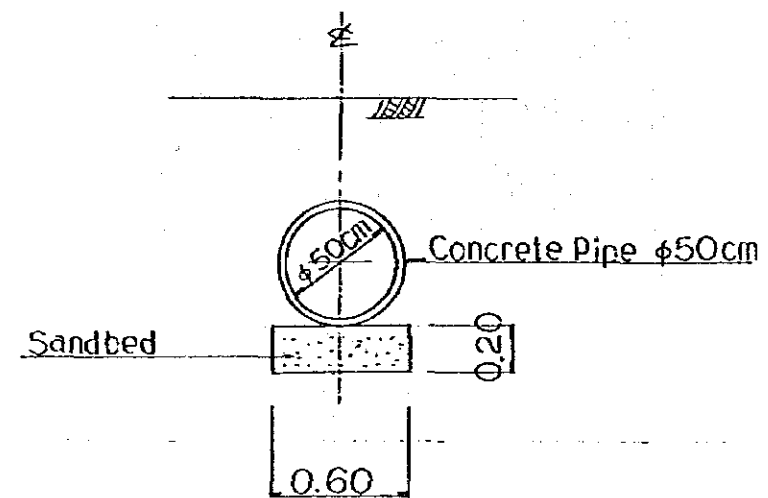
FARM ENTRANCE TYPE D



P L A N S=1:100



SECTION 1-1 S=1:100



SECTION 2-2 S=1:30

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

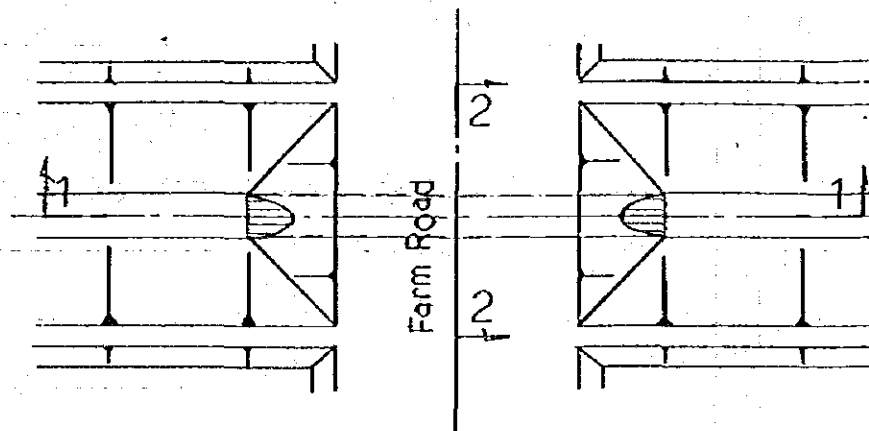
FARM ENTRANCE TYPE D

DWG NO. II - 5 SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

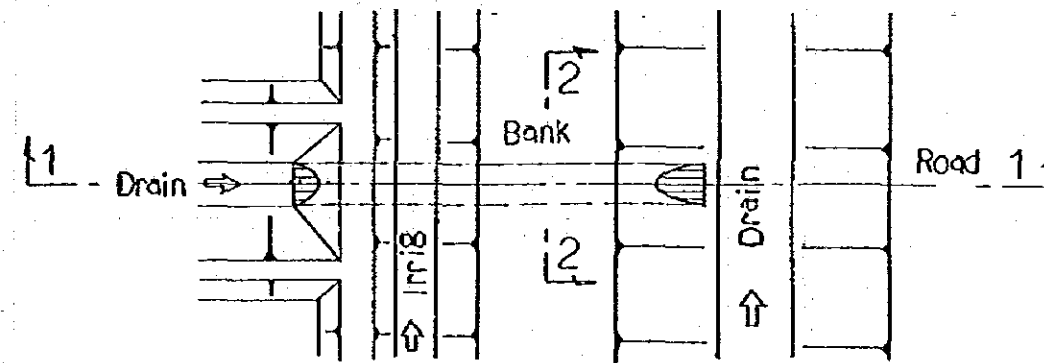
ROAD CROSSING CULVERT

Cr-1, Cr-2, Cr-3

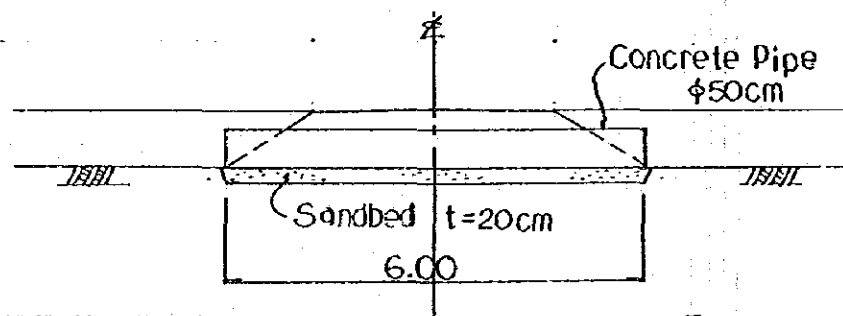


PLAN S=1:100

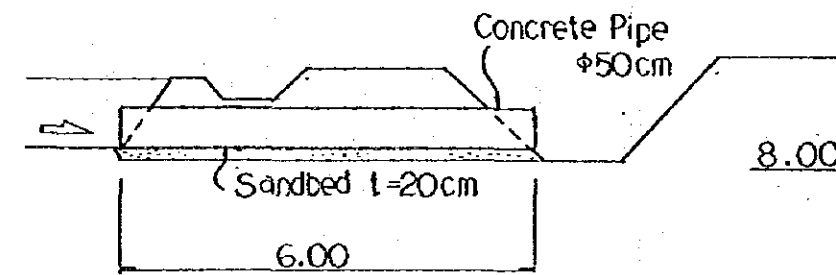
Cr - 4



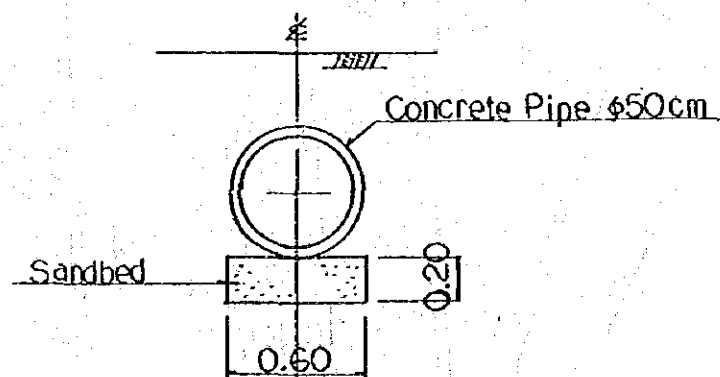
PLAN S=1:100



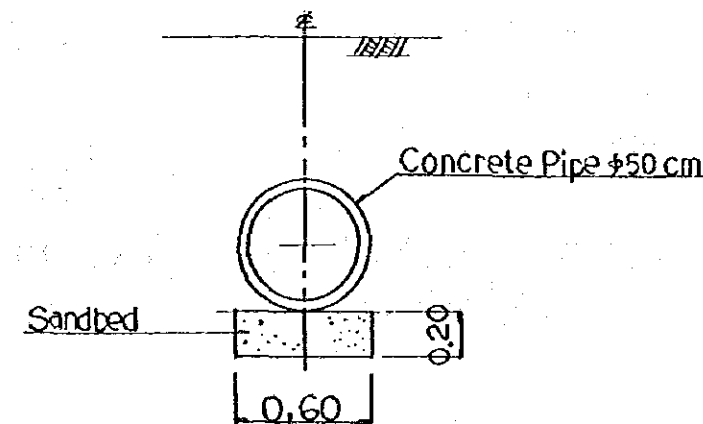
SECTION 1-1 S=1:100



SECTION 1-1 S=1:100



SECTION 2-2 S=1:30



SECTION 2-2 S=1:30

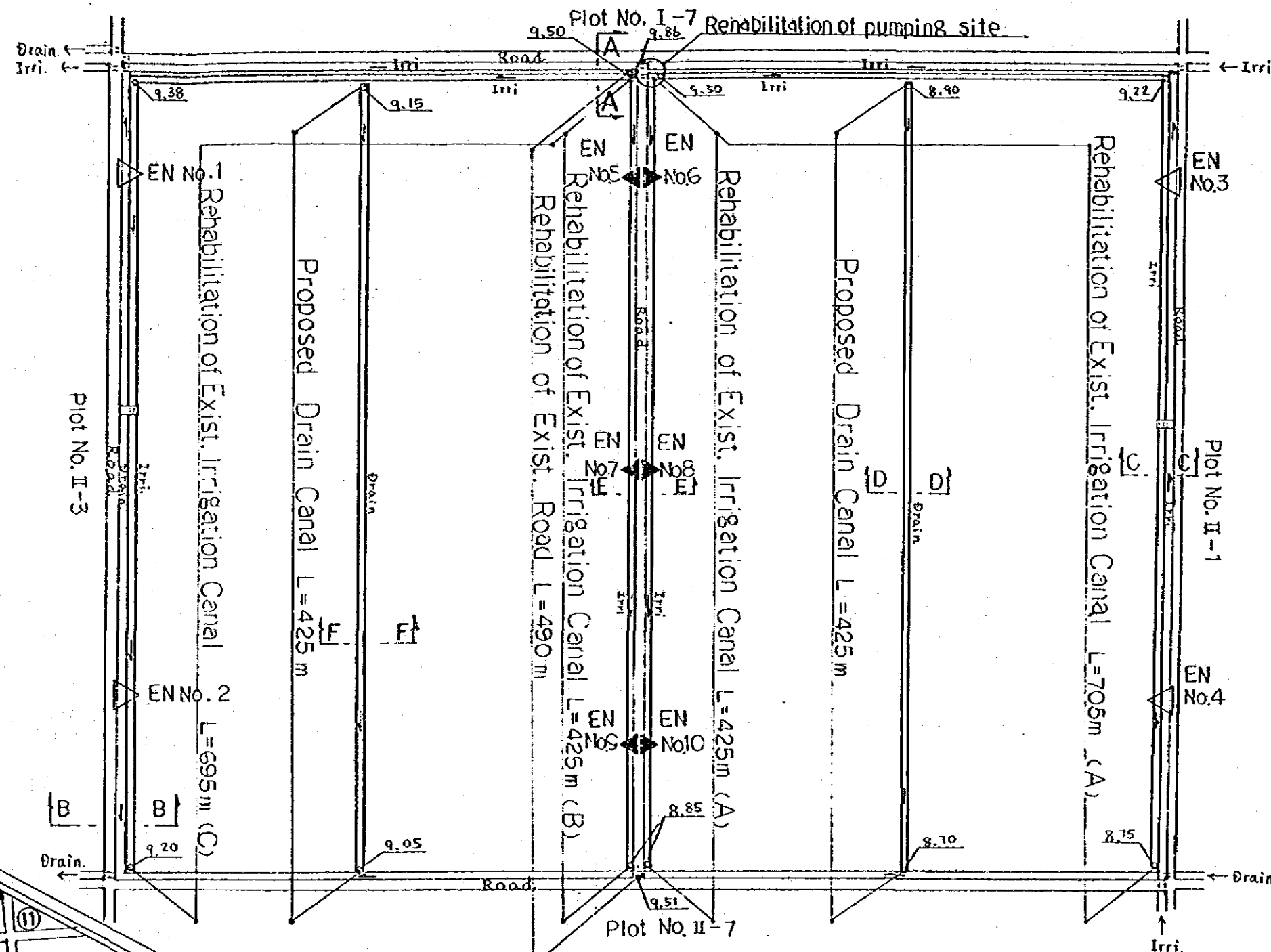
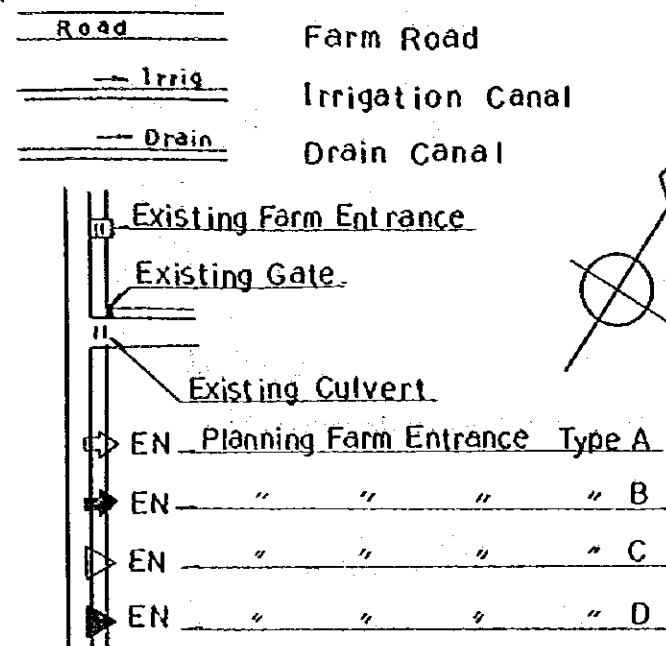
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

ROAD CROSSING CULVERT

DWG NO. II - 6 SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY
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LEGEND



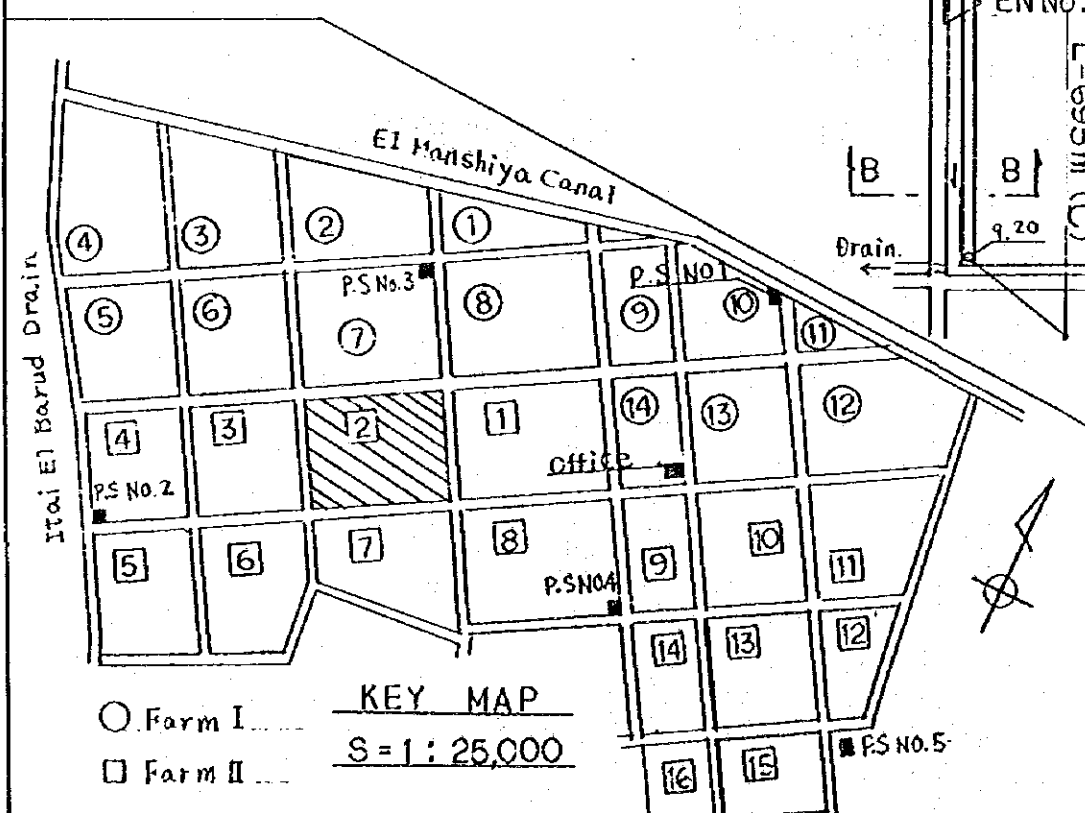
GENERAL PLAN of
 SAFT KHALED SATELLITE FARM (PLOT NO. I-2)
 S=1:2500

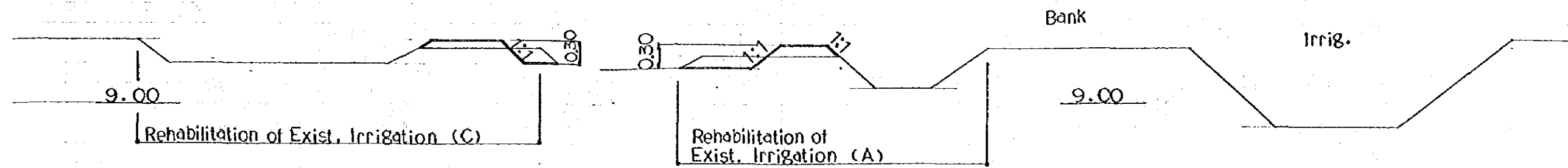
THE RICE MECHANIZATION PILOT PROJECT
 CONSTRUCTION OF PILOT INFRASTRUCTURE

GENERAL PLAN OF SAFT KHALED
 SATELLITE FARM

DWG NO. III - 1 SCALE 1:2500

JAPAN INTERNATIONAL COOPERATION AGENCY
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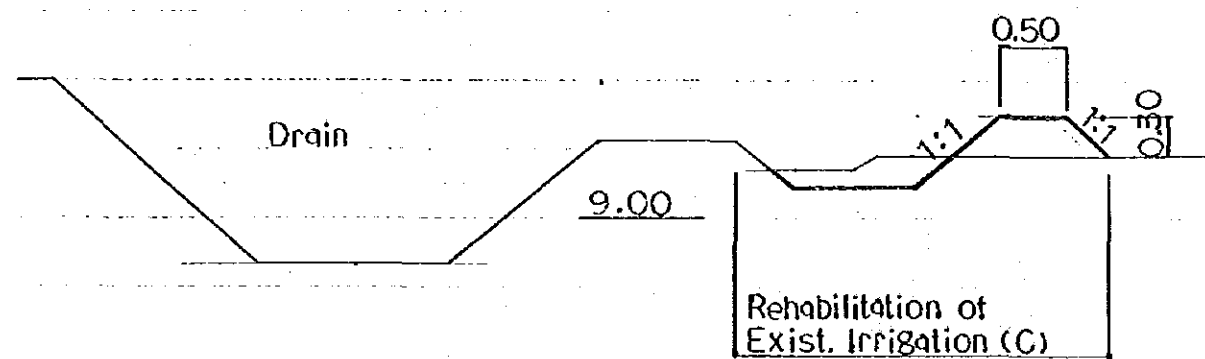


SECTION A-A

S=1:50

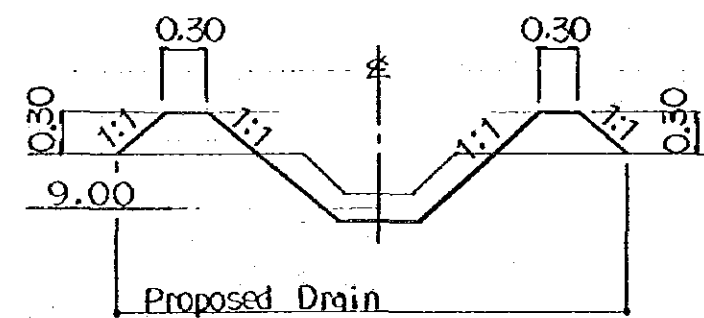
SECTION C-C

S=1:50



SECTION B-B

S=1:50



SECTION D-D

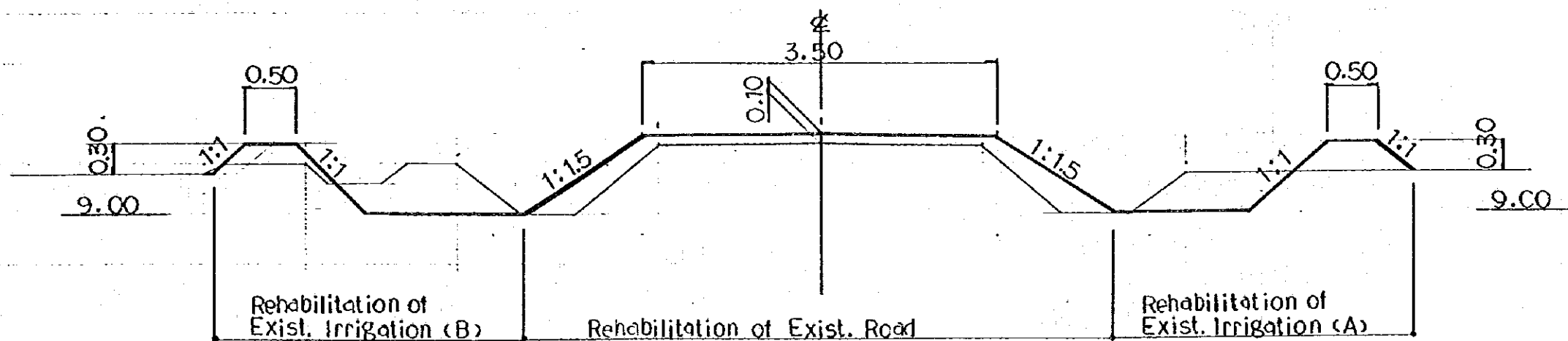
S=1:50

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

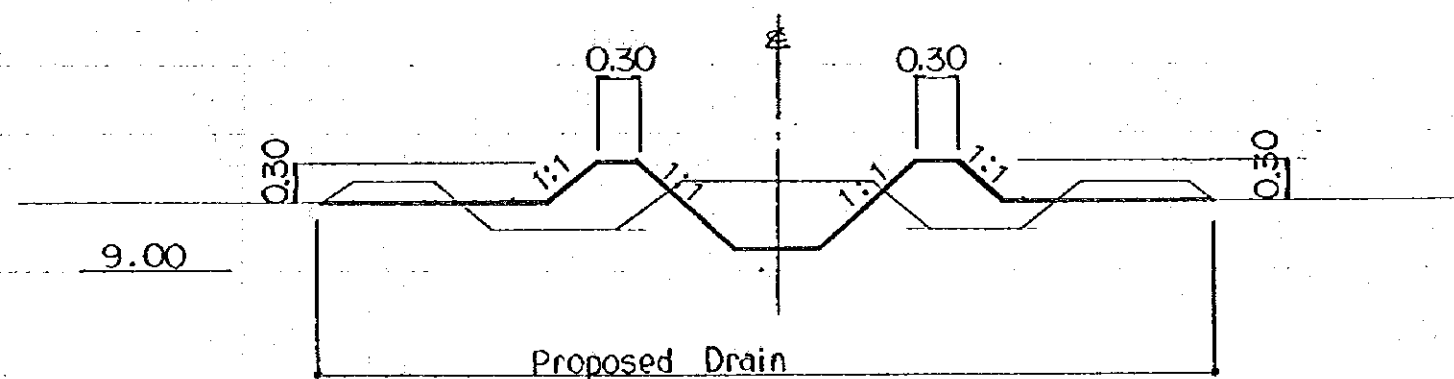
TYPICAL CROSS SECTION (NO 1)

DWG NO. III - 2 SCALE 1:50

JAPAN INTERNATIONAL COOPERATION AGENCY
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SECTION E - E S=1:50



SECTION F - F S=1:50

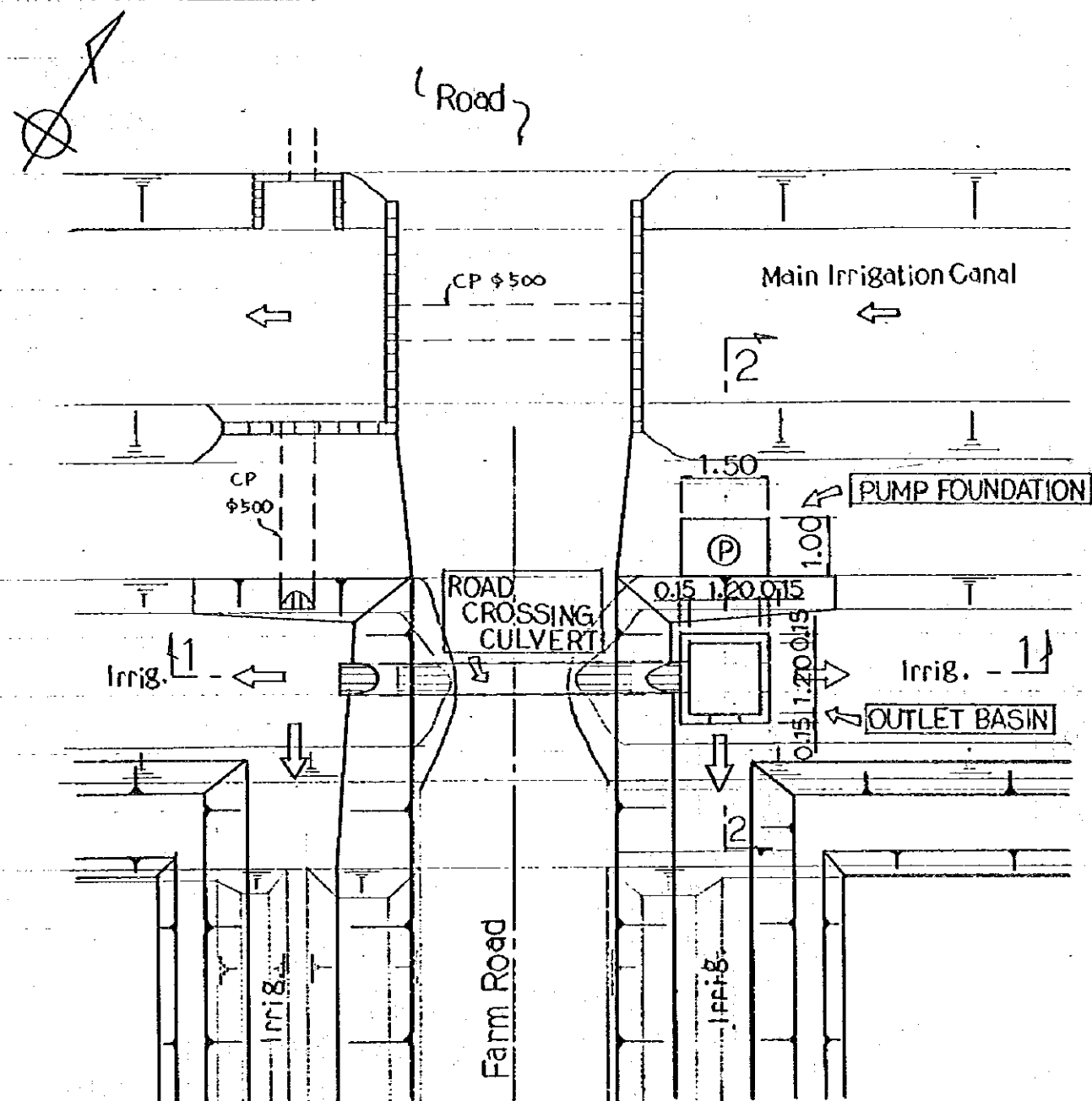
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

TYPICAL CROSS SECTION (NO 2)

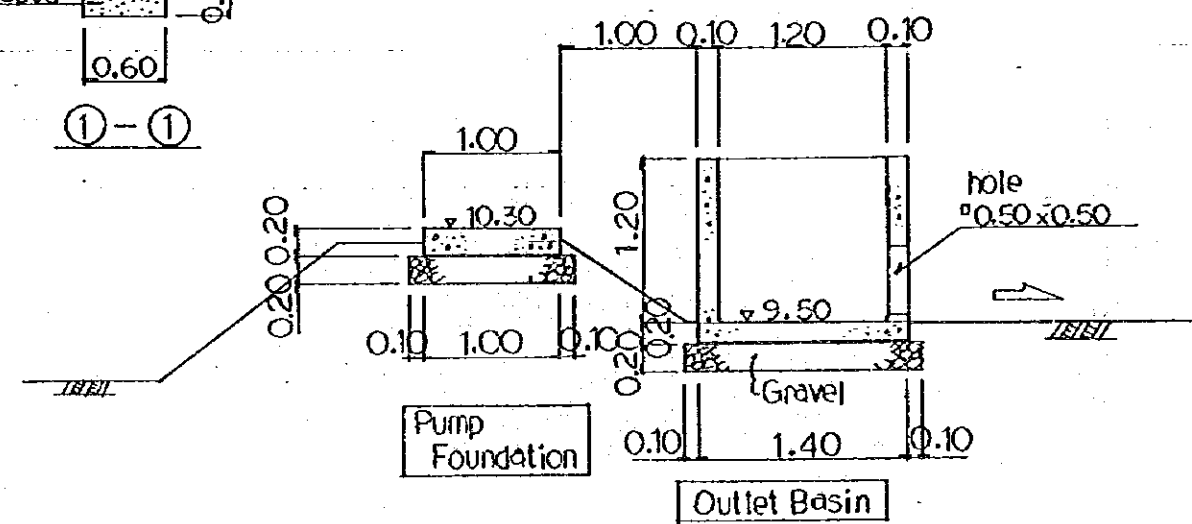
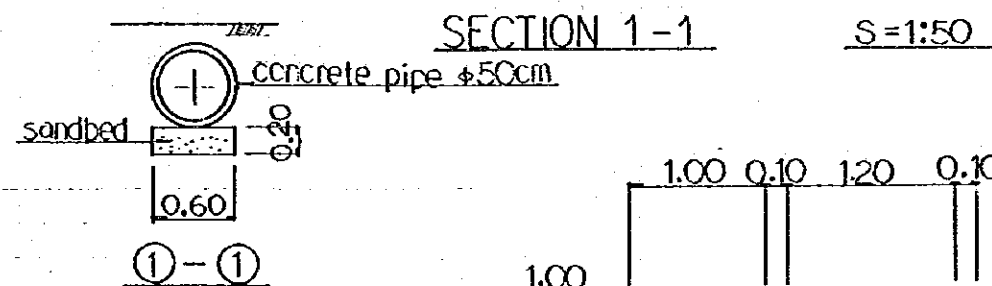
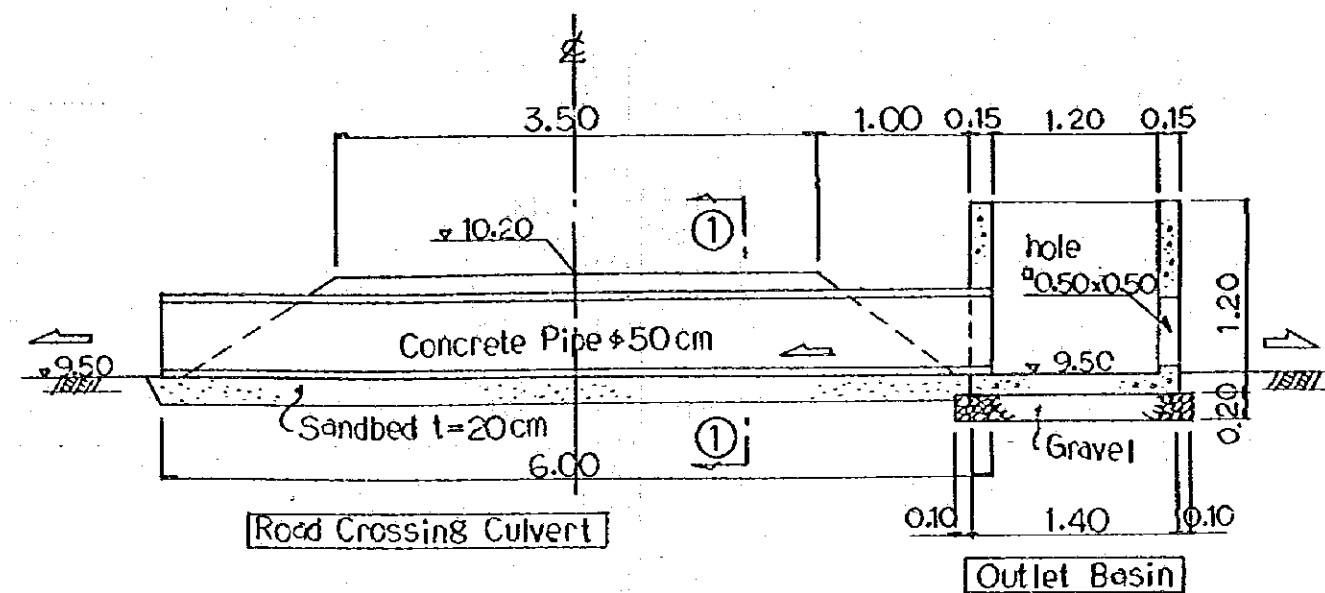
DWG NO. III - 3 SCALE 1:50

JAPAN INTERNATIONAL COOPERATION AGENCY
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REHABILITATION of PUMPING SITE



PLAN S=1:100



SECTION 2-2 S=1:50

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

REHABILITATION
OF PUMPING SITE

DWG NO. III - 4 SCALE

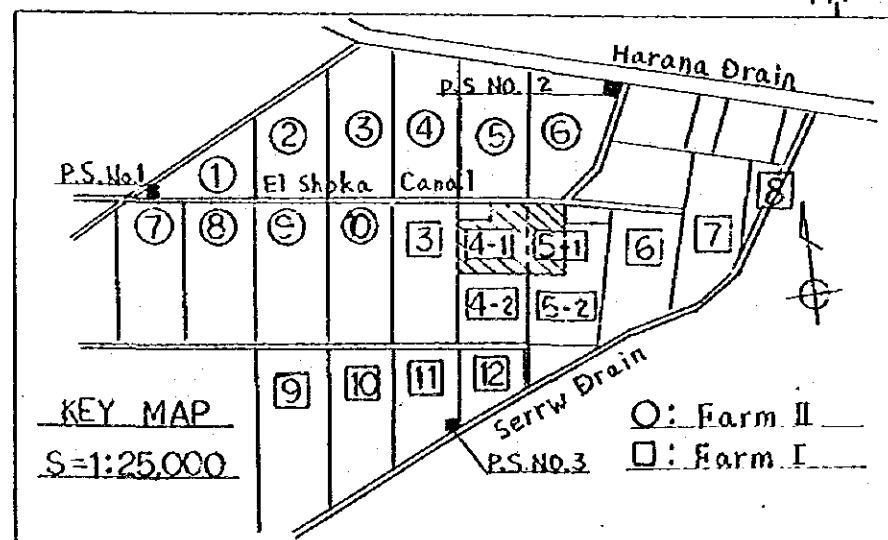
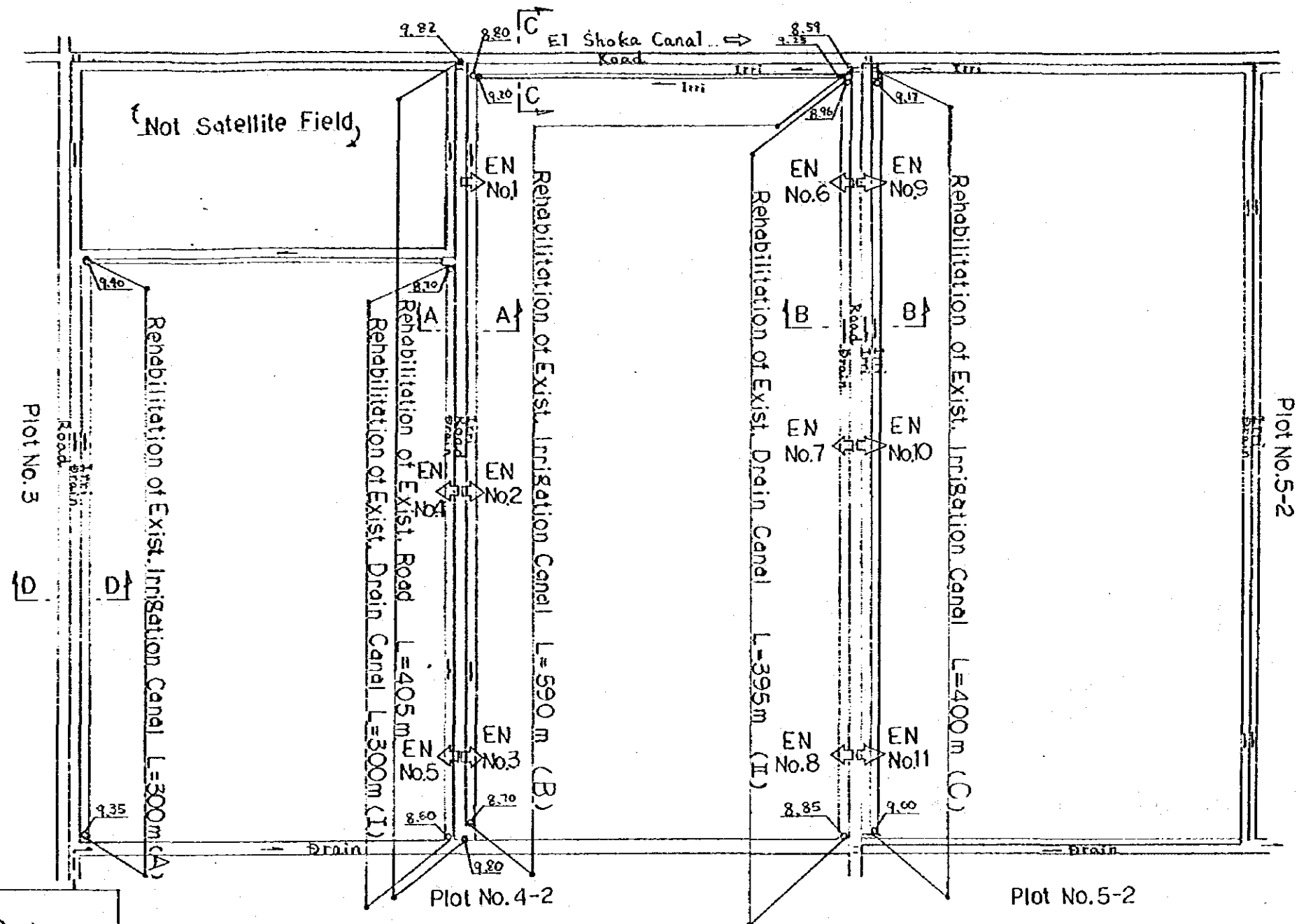
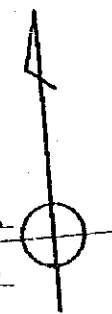
JAPAN INTERNATIONAL COOPERATION AGENCY
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LEGEND

Road
 Farm Road
 Irrig
 Irrigation Canal
 Drain
 Drain Canal

Existing Farm Entrance
 Existing Gate
 Existing Culvert

EN Planning Farm Entrance Type A
 EN " " " " B
 EN " " " " C
 EN " " " " D



GENERAL PLAN of SERRW SATELLITE FARM (PLOT NO. 4-1, 5-1)

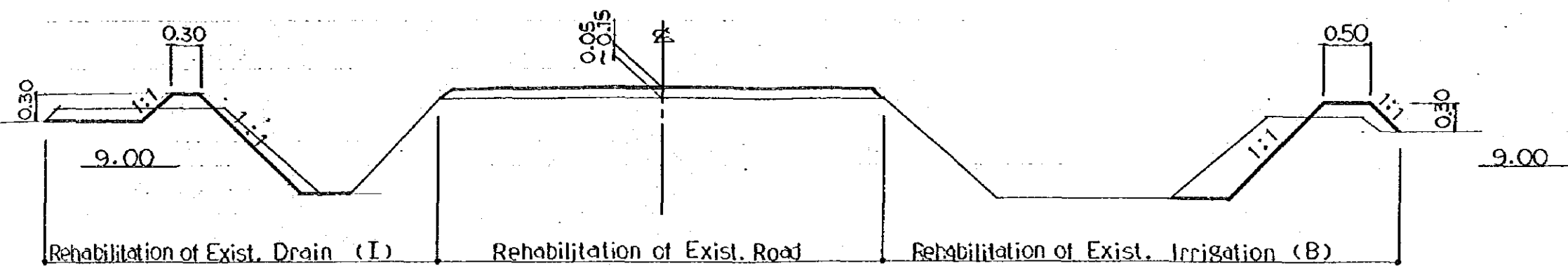
S = 1:2,500

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

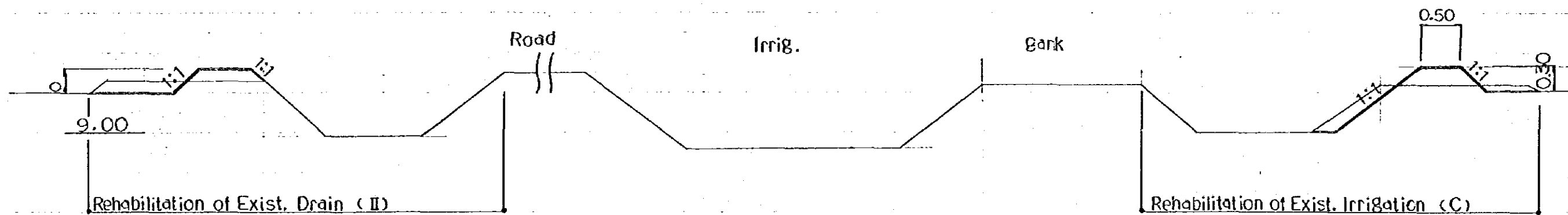
GENERAL PLAN OF
SERRW SATELLITE FARM

DWG NO. IV - 1 SCALE 1:2500

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

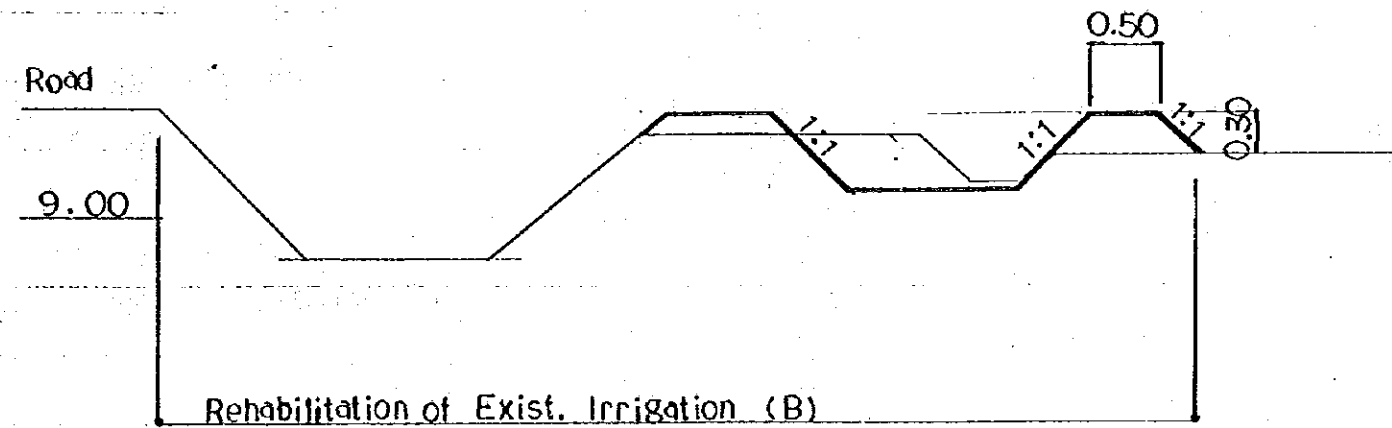


SECTION A-A S=1:50

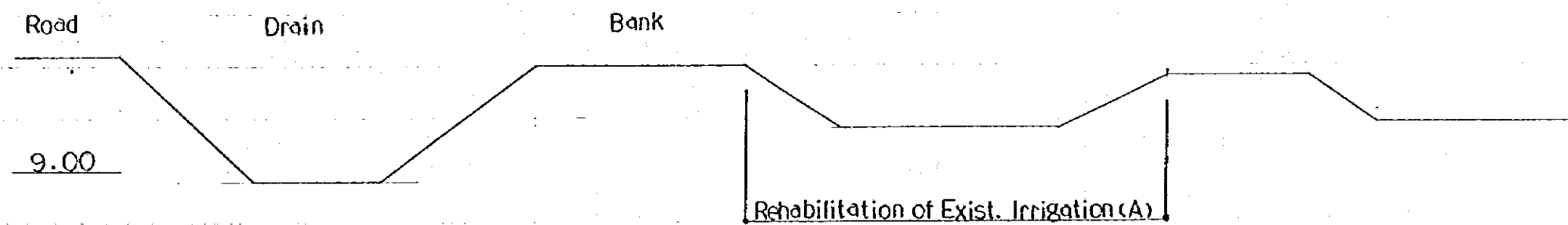


SECTION B-B S=1:50

THE RICE MECHANIZATION PILOT PROJECT			
CONSTRUCTION OF PILOT INFRASTRUCTURE			
TYPICAL CROSS SECTION (NO 1)			
DWG NO.	IV - 2	SCALE	1 : 50
JAPAN INTERNATIONAL COOPERATION AGENCY			
(JICA)			



SECTION C-C S=1:50



SECTION D-D S=1:50

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

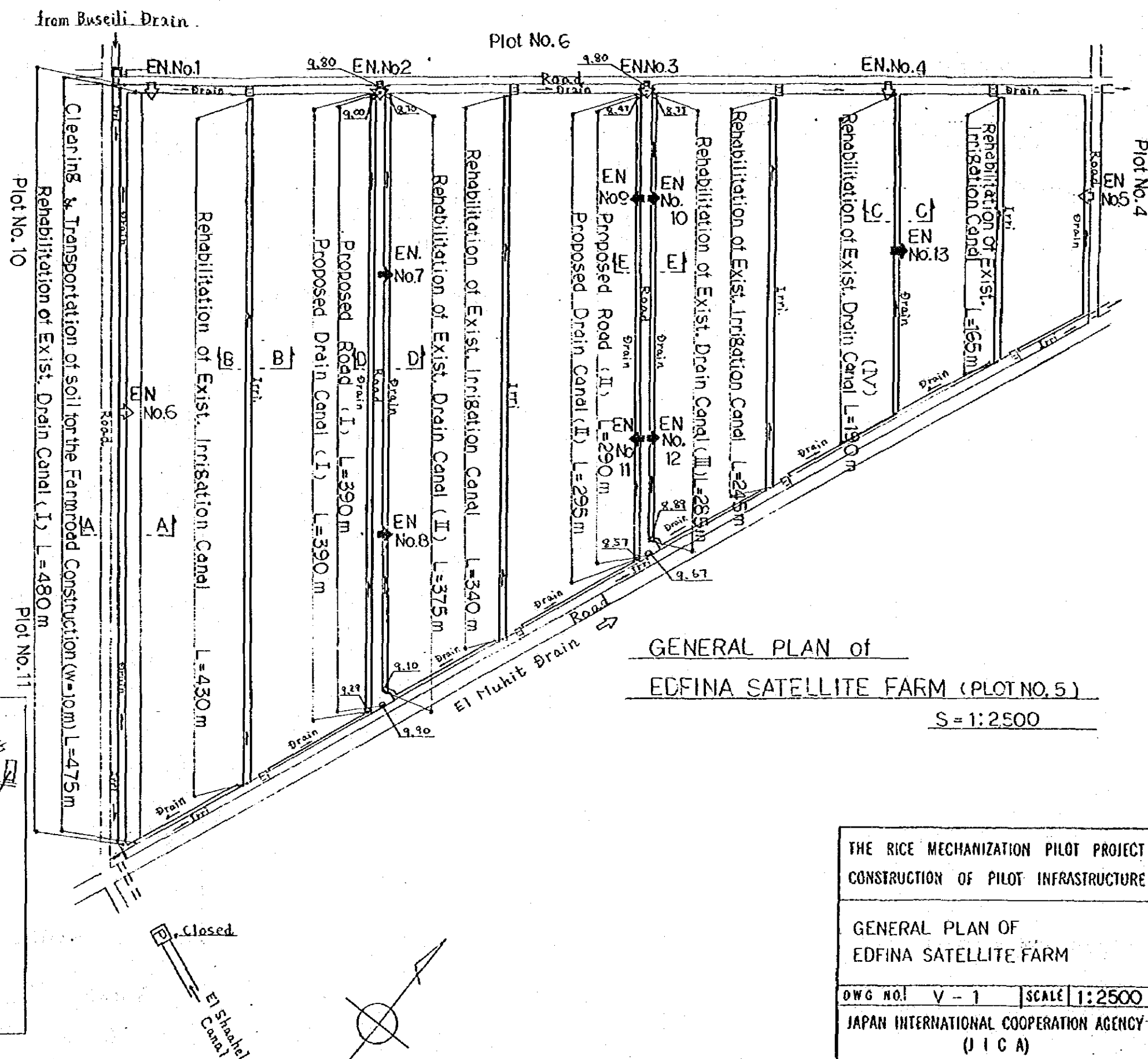
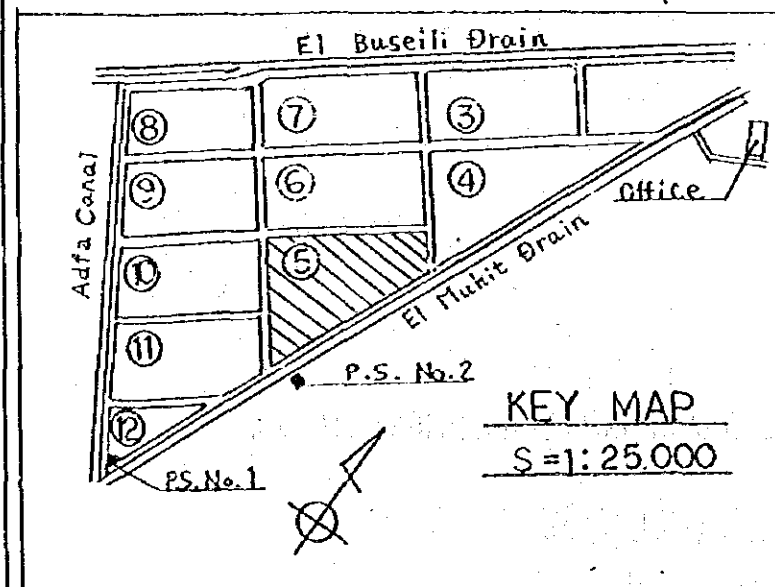
TYPICAL CROSS SECTION (NO 2)

DWG NO. IV-3 SCALE 1:50

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Diagram illustrating the layout of a farm entrance and canal system. The diagram shows a vertical line representing a canal or road, with various structures and entrances marked. Labels include:

- Road
- Farm Road
- Irrig
- Irrigation Canal
- Drain
- Drain Canal
- Existing Farm Entrance
- Existing Gate
- Existing Culvert
- EN Planning Farm Entrance Type A
- EN " " " " B
- EN " " " " C
- EN " " " " D



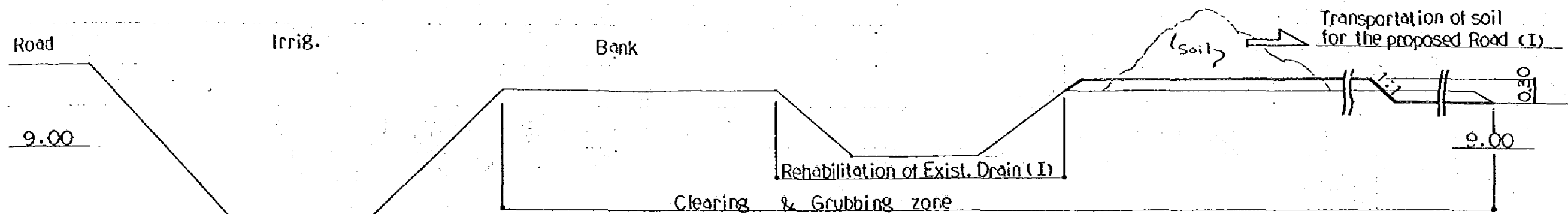
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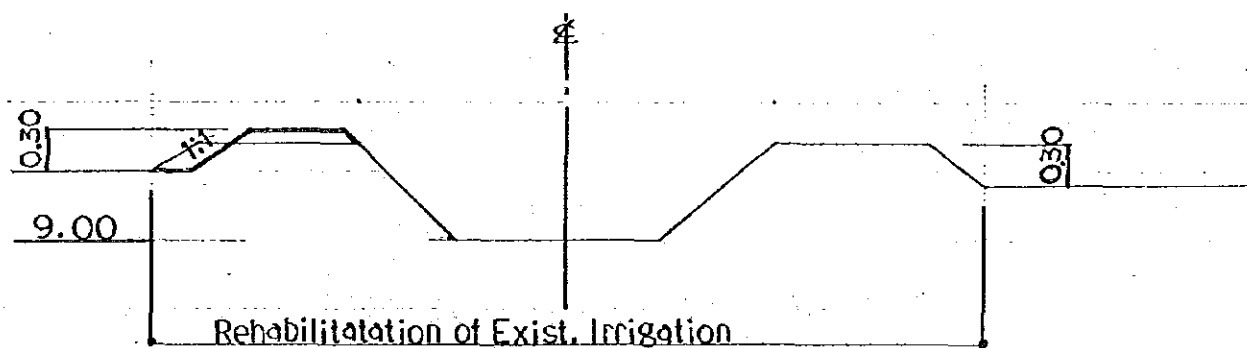
THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

GENERAL PLAN OF
EDFINA SATELLITE FARM

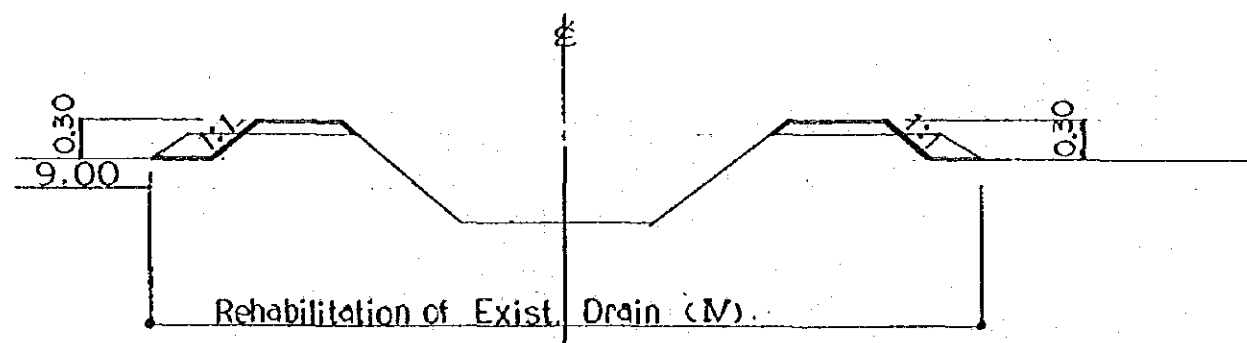
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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)			



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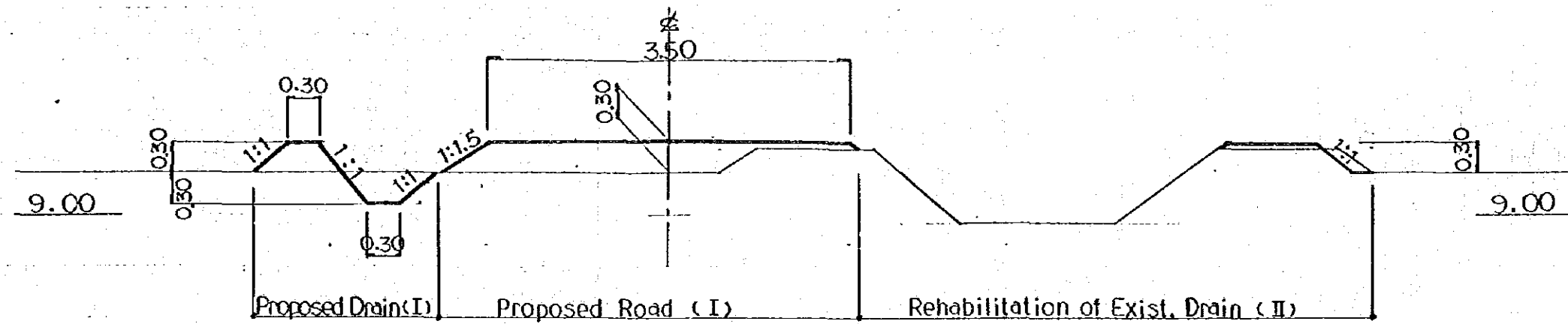
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THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

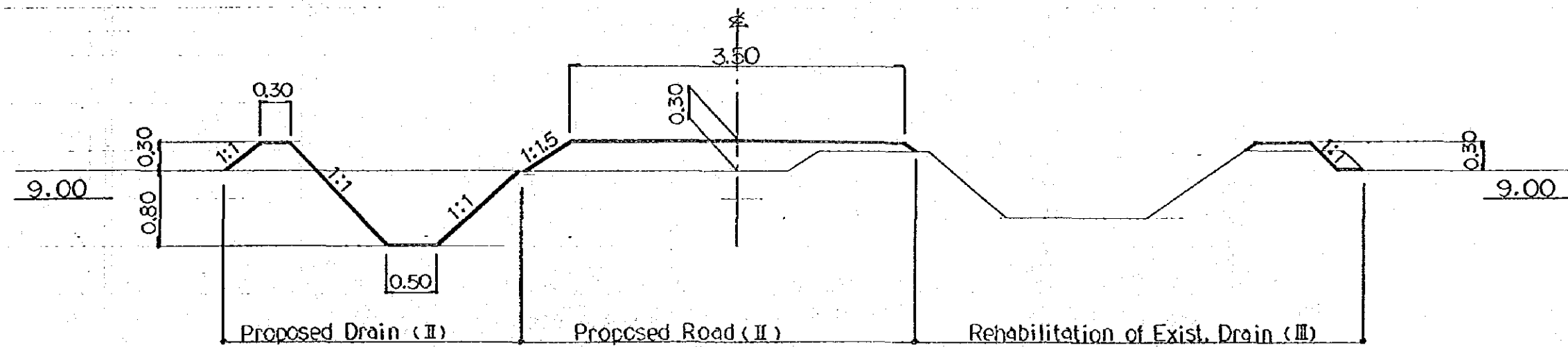
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JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)



SECTION D-D S=1:50



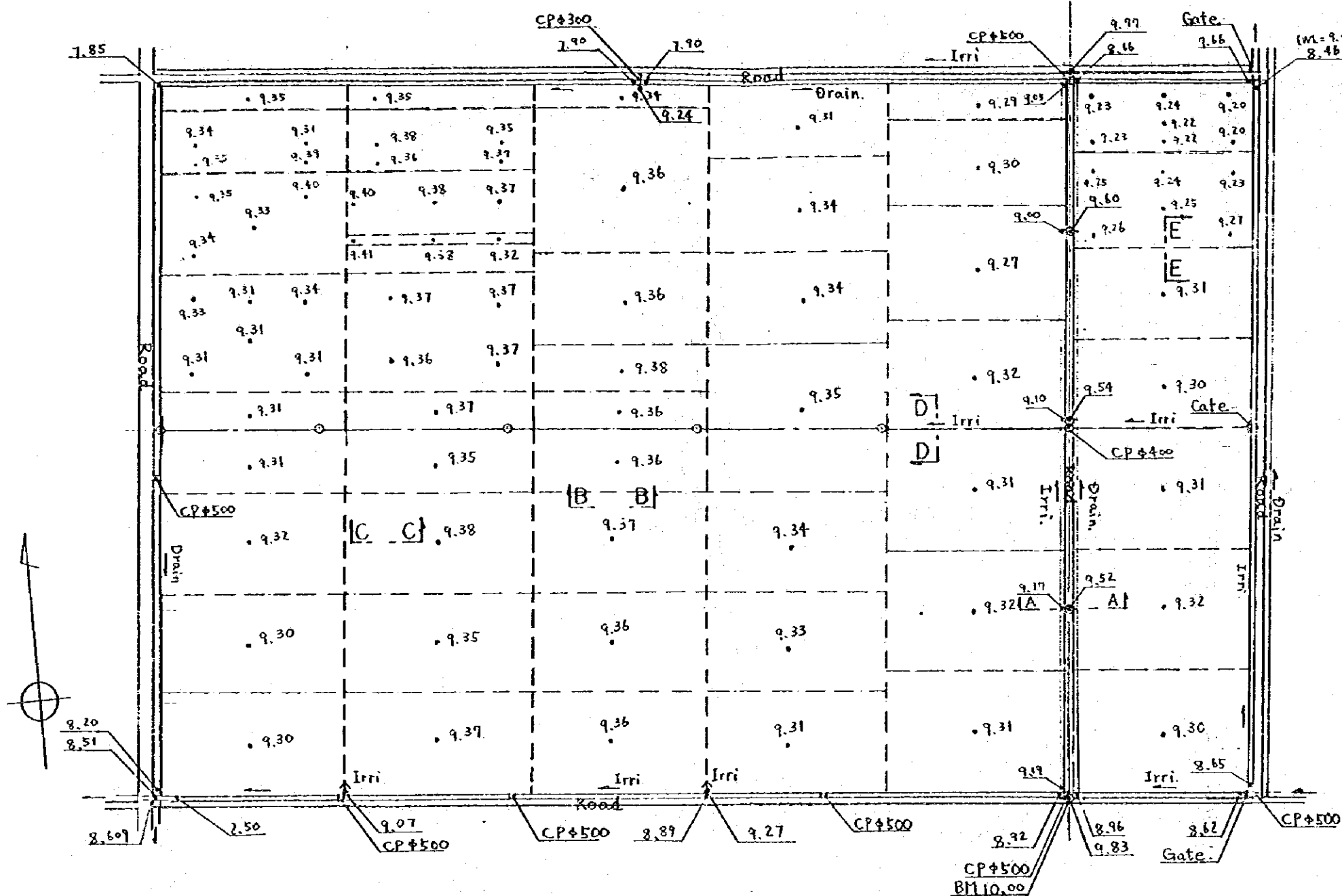
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THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

TYPICAL CROSS SECTION (NO 2)

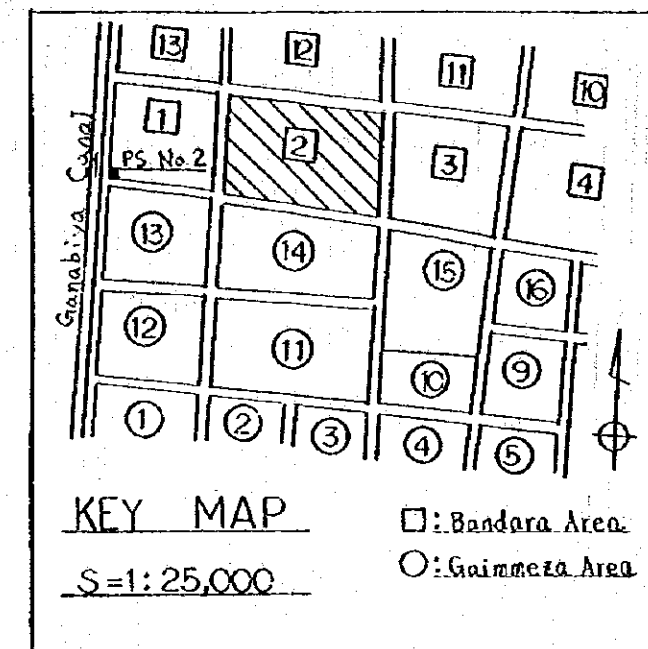
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JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)



PLAN of EXISTING FACILITIES
GAIMMEZA SATELLITE FARM (BANDARA PLOT NO.2)

S = 1:2,500

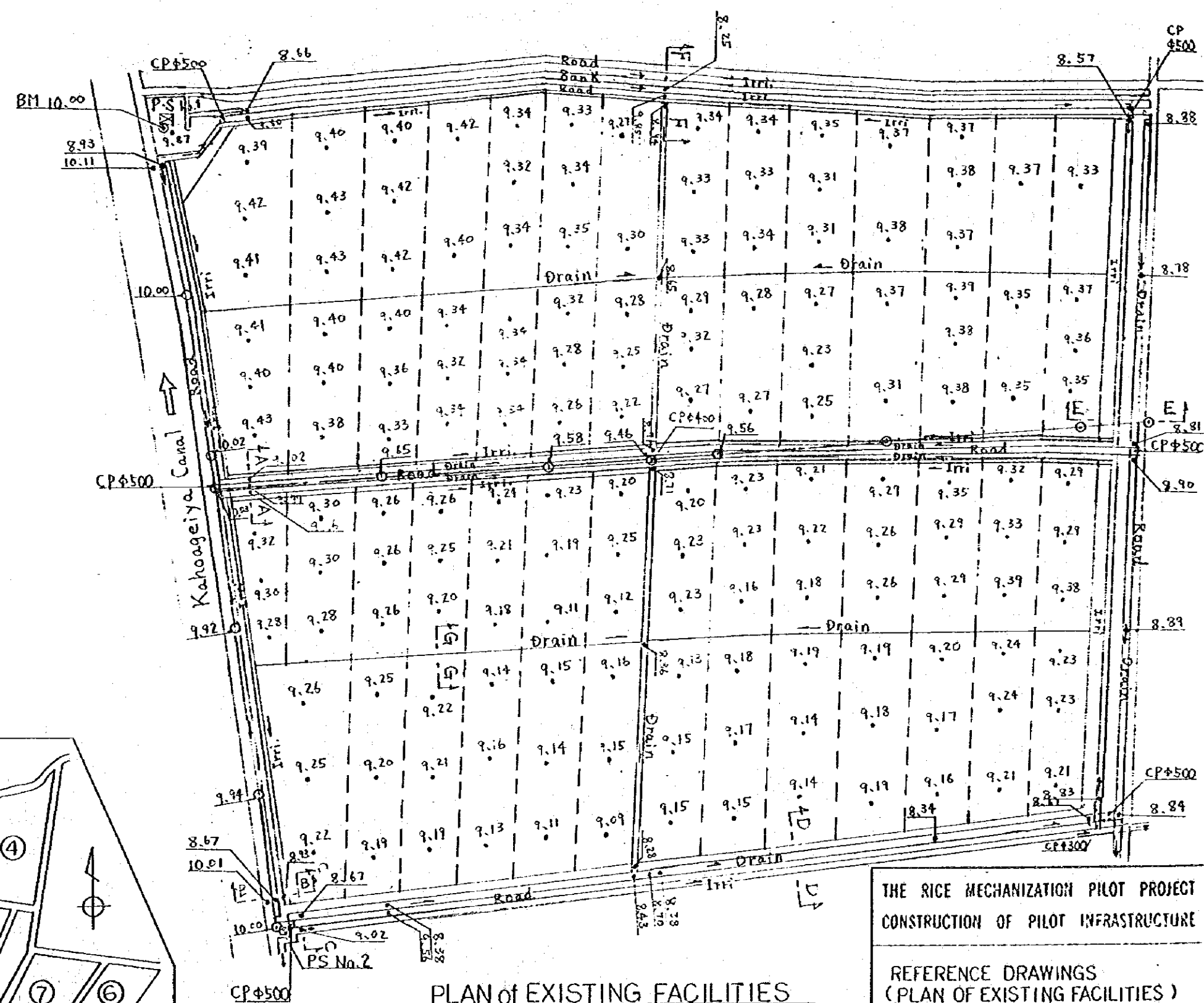
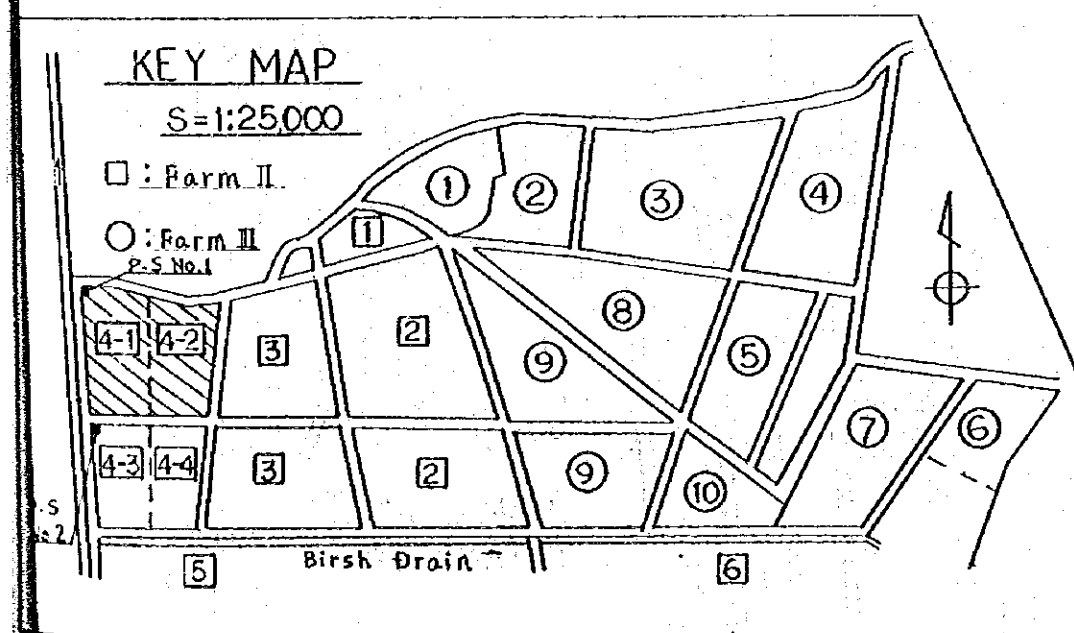


THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

REFERENCE DRAWINGS
(PLAN OF EXISTING FACILITIES)
GAIMMEZA SATELLITE FARM

DWG. NO. 1 Scale: 1:2500

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)



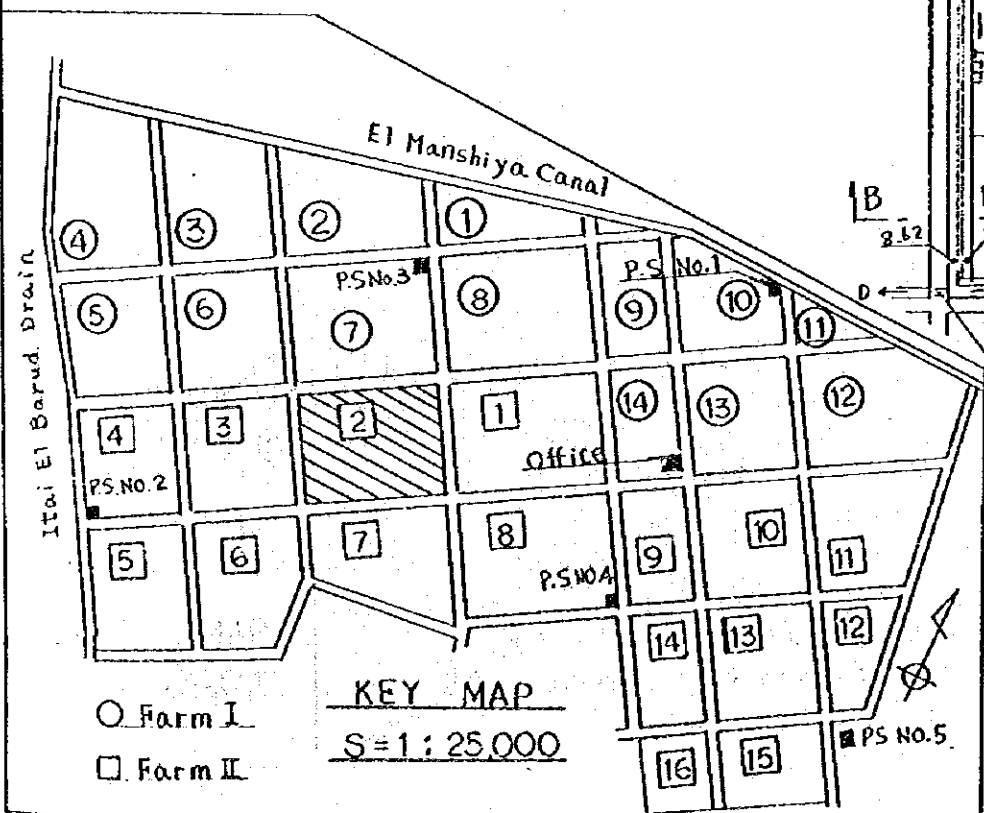
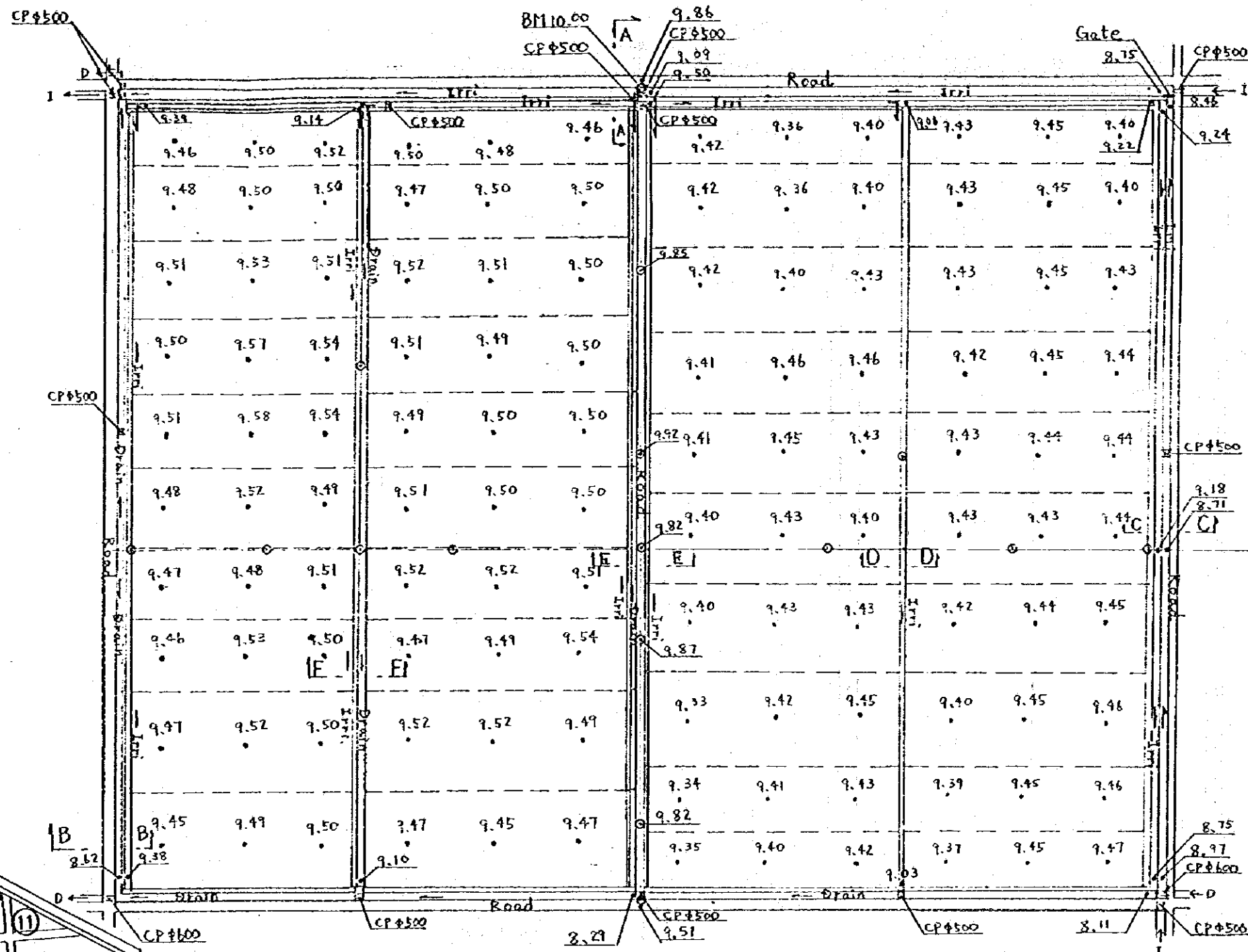
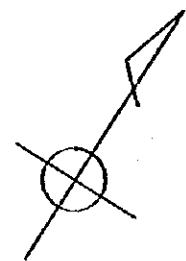
PLAN of EXISTING FACILITIES
MESSER SATELLITE FARM
(PLOT NO. 4-1, 4-2) S=1:2,500

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

REFERENCE DRAWINGS
(PLAN OF EXISTING FACILITIES)
MESSER SATELLITE FARM

DWG. NO. 2 SCALE 1:2500

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)



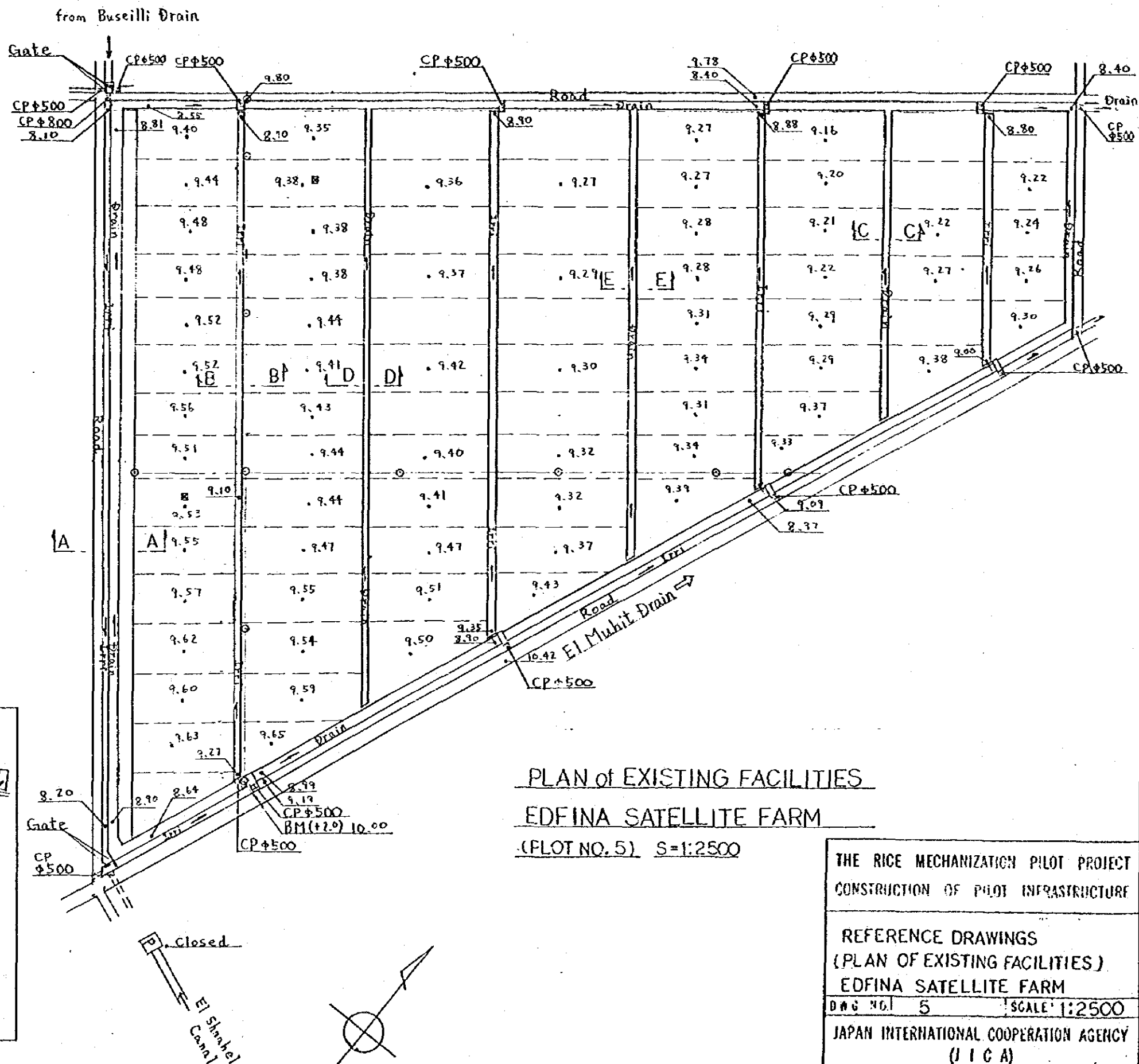
PLAN of EXISTING FACILITIES
SAFT KHALED SATELLITE FARM
(PLOT NO. II -2) S = 1:2500

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

REFERENCE DRAWINGS
(PLAN OF EXISTING FACILITIES)
SAFT KHALED SATELLITE FARM

DWG. NO. 3 SCALE 1:2500

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)



PLAN of EXISTING FACILITIES
EDFINA SATELLITE FARM
(PLOT NO. 5) S=1:2500

THE RICE MECHANIZATION PILOT PROJECT
CONSTRUCTION OF PILOT INFRASTRUCTURE

REFERENCE DRAWINGS
(PLAN OF EXISTING FACILITIES)
EDFINA SATELLITE FARM

DWG NO.	5	SCALE	1:2500
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JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

CHAPTER 4 CONTRACT DOCUMENT

4 - 1 . Contract Document

THE ARAB REPUBLIC OF EGYPT

CONTRACT DOCUMENT
OF
THE CONSTRUCTION OF PILOT INFRASTRUCTURE
AT
FIVE SATELLITE FARMS
FOR
THE RICE MECHANIZATION PILOT PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

PART I

CONTRACT

For construction of pilot infrastructure at five satellite farms for The Rice Mechanization Pilot Project.

This CONTRACT is made at Cairo office of Japan International Cooperation Agency, on
between the Japan International Cooperation Agency (JICA) and Public Construction Company of Cairo.

JICA, Cairo office with Mr. Re-
sident Representative as its authorized representative, hereinafter referred to as "the JICA" of the one part, and Public Construction Company represented by Mr.
authorized to act on behalf of Public Construction Company according to the Power of Attorney No.
dated which is attached to
this Contract, hereinafter to as "the Contractor" of the other part.

Both parties mutually agreed under the terms of this Contract as follows;

Article 1.

Purpose of Agreement and Contract Price

The JICA agrees to employ the Contractor and the Contractor agrees to perform the Works for Construction of pilot infrastructure at five satellite farms as stipulated in this Contract, Terms

and Conditions of the Contract, Bill of Quantity and all the documents hereto attached covering one hundred and ninety four (194) items at the total of Egyptian pounds only (L. E.) (hereinafter referred to as "the Contract price"). The unit price shall govern the Contract Price. The Contract Price shall be adjusted in case of the modification of quantity in the Bill of Quantity, accordingly.

The following documents shall form integral part of this Contract.

- PART I. CONTRACT
- PART II. GENERAL INFORMATION
- PART III. TECHNICAL SPECIFICATIONS
- PART IV. BILL OF QUANTITY
- PART V. DRAWINGS

Article 2.

Contractor's General Responsibility

The Contractor shall, subject to the provisions of the Contract and with due care and diligence, execute and maintain the Works. Also at any time the Contractor shall follow the Supervisor's instructions compliantly.

The Contractor shall provide all labour including the supervision thereof, materials and all other things, whethere of temporary or permanent nature, required in and for such execution and maintenance, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.

The Contractor shall take full responsibility

for the adequacy, stability and safety of all sites operation and methods of construction. The Contractor shall not be responsible, except as may be expressly provided the Contract, for the design or specifications of the Works prepared by the Supervisor.

Article 3. Payment

The JICA agrees to effect payment for the Works in check to the Contractor in the following manner;

The payment shall be deduced by ten (10) percent of the Works executed as Retention money on each payments.

a) Advance Payment, to be effected not later than five days after the Supervisor appointed by the JICA (hereinafter referred to as "the Supervisor") estimates that the value of equipment and materials which the Contractor shall bring into site and store properly at the job site within ten days after concluding the Contract is worthy not less than forty (40) Percent of the Contract Price. The Advance payment amount shall be thirty (30) percent of the Contract Price.

b) Subsequent Payment, to be effected according to the progress of the Works satisfactorily executed by the Contractor and accepted by the Supervisor upon the requests of the Contractor during the course of construction according to Article 15. Payment shall be deducted by ten (10) percent of the Works executed as Retention money on each payment.

- c) Final Payment, to be effected upon the satisfactory completion of the Works by the Contractor and accepted by the Supervisor, of the remaining amount of the Contract Price plus Retention money deducted under (b) above.

The payments under (b) and (c) shall be effected within twenty (20) days after the respective acceptance of the Works by the Supervisor.

It is expressly understood that the payments by the JICA do not mean acceptance of the Works by the Supervisor nor relief of the Contractor from its responsibilities under the Contract.

Article 4. Completion Time

The Contractor agrees to satisfactorily complete the Work within (completion time) from the date specified hereof which will become due on (completion date) and he agrees to commence the Works at the site on or before (commencement date) which will be within seven (7) days after the date specified hereof.

If the Contractor fails to commence the Works by the commencement date, or should in the course of the Construction any event occurs which may reasonably cause the JICA to believe that the contractor will not be able to complete the Works on the completion date, or should the Contractor fail to meet any of the Contract requirements, the JICA shall have the right to terminate this Contract by giving written notice to the Contractor.

However in case that the Contractor fails to complete the Works by the completion date, or to meet any of the completion date, or to meet any of the Contract requirements, if the Supervisor thinks that the Contractor has the ability for completion of the Works within reasonably extended period, the Contractor may be permitted by the JICA to continue the Works beyond the completion date but within the extended time.

Article 5. Penalty

If the Contractor fails to complete the Works within the time prescribed in Article 4, Contractor shall pay liquidated damages for such default for every day or part of day which shall elapse between the time prescribed in Article 4 hereof and the date of certified completion of the Works.

The amount of Liquidated Damages for Delay will be as follows;

1% of the Contract value for the first week or any part of week.

2% of the Contract value for each week of the 2nd, 3rd and 4th, 5th week or any part of the week.

4% of the Contract value for each month afterwards or any part of the month.

The total amount of the Liquidated Damages for Delay must not exceed 25% of the Contract value. The Liquidated Damages for Delay shall be calculated according to the above percentages of

the value of uncompleted works, but in the opinion of the JICA, these uncompleted works prevent the use of the whole works, then the Liquidated Damages for Delay will be calculated based on the final Contract value.

The Liquidated Damages for Delay will become due on the Contractor as soon as this delay shall occur and without necessity of a warning or any legal procedure and without the necessity of proving the damages, which are supposed in any case, to be happened.

The period for which the Liquidated Damages for Delay is calculated, must not include the time when the works were stopped due to a force majeure or according to the instruction of the Supervisor.

The Supervisor may relieve the Contractor for the Liquidated Damages for Delay (or part of them) if the Contractor submits in writing a request, backed with relevant document, proving that the total delay (or part of it) has occurred due to circumstances beyond his responsibilities.

Article 6. Compensation

if the JICA or a third party sustains any losses either direct or indirect by the Contractor's failure, the Contractor shall compensate the JICA or the third party for such losses. The both parties of this contract agree that time factor is essential for the completion of the Works.

Article 7.

The JICA's Right for Default

The JICA has the sole and absolute right to decide whether to terminate the Contract, to extend only the construction period as stated in Article 4 or to claim the compensation for the damage as stated in Article 6. The money due to the JICA exercising its right under this Article shall be retained and deducted from any money due to the Contractor but yet unpaid, including the Retention money. If the total amount of the loss is larger than the money mentioned above, the Contractor agrees that the JICA has the right to retain the Construction equipment, materials and supplies, etc. and demand the payment for the balance from such equipment, etc. or proceeds of sale thereof.

Article 8.

Contractor's Responsibility on Termination of this Contract

After the Contract has been terminated in accordance with the foregoing Article 4, the JICA reserves the right to employ another Contractor (hereinafter referred to as "New Contractor") to carry on the remaining part of the Works, and the payment for the Works that Contractor fails to complete shall be made out of the necessary Contract price for the remaining Works. Should the remaining amount after payment of the advance and subsequent payments from the Contract price, to the original Contractor be insufficient to effect payment to the new Contractor, shall be deemed as direct loss sustained by the JICA, and the Contractor shall pay such difference to the JICA within seven (7) days from the date of request by the JICA,

failing which interest at the rate of fifteen (15) percent per annum shall be charged thereon.

Article 9. Supervisor

The Supervisor, authorized to act on behalf of the JICA will be appointed by the JICA and the Supervisor is entitled to do all things that the JICA may do so. The Supervisor shall control and supervise the Works all the times whether it is the preparation or implementation of the Works, and the Contractor shall promptly furnish all necessary facilities for proper inspections of the Works in accordance with the Supervisor's request.

The JICA has the sole right to authorize and appoint the proper quality and number of the Supervisor(s) in writing from time to time during the period of supervision, if necessary. At any moment the Supervisor can request the Contractor to stop the Works, if necessary, and the Contractor shall have no claim on the JICA for extension of the construction period or any damages whatsoever due to such suspension of the Works under this Article.

The inspection will not be deemed as the acceptance of the Works, and the Contractor shall not be relieved from his responsibility to meet the Contract requirements by the fact that the Supervisor exercises their duties. Should it be found that the Works have not been satisfactorily performed in the faithful manner, the Contractor shall correct any part of the Works indicated by the Supervisor within the period specified by the Supervisor.

Article 10.

Prohibition for the Equipment Removal

Should the Contractor fail to complete the Works during the proposed construction period or the Supervisor considers it reasonable that the Contractor will not be able to satisfactorily complete the Works, any equipment and materials brought to the site for use on the Works shall not be removed without the prior approval of the Supervisor in writing.

Article 11.

Rectification of the Defective Construction

For a further period of twelve (12) month after satisfactory completion and final acceptance of the Works by the JICA, whether completed by the Contractor or by the new Contractor in case of termination of the Contract under Article 4, any damage to the Works which is caused by the Contractor's fault, either because of defective workmanship or the use of inferior materials or any other causes, shall be made good as necessary by the Contractor to the satisfaction of the JICA at the Contractor's own cost.

In case of the termination of the Contract, the JICA may decide which part of the Works should come under the Contractor's responsibility, and requests the Contractor to make good of the damaged works. Should the Contractor fail to do so within the period specified after receipt of

written request to do so from the JICA, the JICA shall have the right to employ another person to carry out such works, and the Contractor agrees to bear all expenses incurred.

Article 12. Discrepancies among the Contract Documents

If, prior to or during the course of construction, any discrepancies are found in the drawings and/or the Technical Specifications, etc., attached to the Contract, the Contractor shall follow the ruling given by the Supervisor at no additional cost to the JICA.

Article 13. Temporary Facilities and Method of Construction

The Contractor may decide the temporary facilities, office, warehouse, etc., and the methods of construction by itself without the approval by the Supervisor. However, the Supervisor reserve the right to suggest the Contractor more suitable facilities and/or methods. If the Supervisor suggests them to the Contractor, the Contractor shall negotiate with the Supervisor but without being required to follow such suggestion. Any expense for the furnishing of such temporary facilities shall be included in the unit prices of the permanent works offered and given in the Bill of Quantity by the Contractor.

Article 14. Modification of Plan

If the Supervisor finds it necessary to make modification of construction design and/or materials, etc., during the course of construction, the JICA has the right to order the modification of the Works to the Contractor, and such order shall be made in writing from the Supervisor to the Contractor.

The JICA agrees to adjust upwards or downwards the necessary expense for such modification to be made by the Contractor, which will be estimated by unit price in the Bill of Quantity in case of modification of quantities of construction works, in the case of additional works which are not quoted by unit price in the Bill of Quantity, the Supervisor will make estimate thereof and the JICA will pay to the Contractor for such additional works accordingly. However, if the Contractor does not agree to such estimate, the Contractor is then entitled to negotiate with the JICA. Also the extension of the construction period due to any modification in the course shall be approved only by the JICA who holds the sole right to decide the number of the days of such extension.

Article 15. Acceptance of the Works

When the entire Works or a part of the Works have been completed, the Contractor shall submit to the Supervisor the invoice in written form specifying the Works actually completed. If full compliance of the Works with the drawings or Technical Specification is confirmed or no defects in the completed Works are found, the Supervisor shall accept the Works as the final acceptance of satisfactory completion Works within ten (10) days after the receipt of the written form and it is deemed reasonable that the final acceptance is made on such date of the receipt of the written form.

On the other hand, should non-compliance of the Works with the drawings or Technical Specifications or defects be found in the Works executed by the Contractor, the Supervisor shall have the right to reject the Works and to order the rectification of the Works. If the required period for the rectification of the Works is beyond the proposed date of the total completion, the Contractor shall not be relieved from its responsibility to pay the penalty as stipulated

in Article 5, and after the completion of rectification of the Works, then the final acceptance will be made in the same manner as described in the first paragraph of this Article.

During the course of construction, whether in the construction period or extension period specified in the last paragraph of Article 4, the JICA shall hold the right to accept part of the Works already completed in the written form which shall be considered as part of the final acceptance. However, both parties should negotiate with each other for the maintenance and usage of the accepted part of the Works, and the Contractor shall not be entitled to request the extension of the construction period due to any interruption caused by the use of such accepted Works for the Rice Mechanization Project.

Article 16. Construction Engineer

The Contractor shall appoint a construction engineer at his own expense for the supervision of the Work performance, who shall be authorized to act on behalf of the Contractor, such construction engineer shall be accepted by the Supervisor, shall stay at the job site all the time and shall not leave without prior approval of the Supervisor. If the Contractor replaces the construction engineer, the Contractor shall obtain the prior approval from the Supervisor in writing.

Article 17. Replacement of Engineer and Foreman

The Supervisor may request the Contractor to remove any of the Contractor's foremen or engineers if it appears to the Supervisor that any of such foremen or engineers is insincere for his job or is not suitable or is not capable of handling his workmen or staff, and the Contractor shall promptly replace any of such foremen or engineers with the well-qualified alternatives. No extra cost or claim for

extension of construction period shall be allowed for such replacement.

Article 18. Sub-Contractor

The Contractor shall not sub-contract or assign any portion of the Works under this Contract without prior approval of the JICA who is the only and sole decision maker for such sub-contractor further assignment of the Works. However, the Contractor shall be fully responsible for the Works done by the Sub-Contractor, even when the JICA allows the Contractor to sub-contract or assign the total or any part of the Works.

Article 19. Notice

All notices required by this Contract shall be effective only at the time of being delivered or transmitted to the parties concerned only at the following addresses:

The JICA : Mr. _____
Resident Representative
Japan International Cooperation Agency
P.O. Box 2667, Cairo, A.R.Egypt

The Contractor : Mr. _____

All notices required by the terms of this Contract shall be made in writing, and delivered by registered mail of hand delivery. In case of notice in Arabic language, the English translation shall be attached to the notice.

Article 20. Dispute

In the event of any dispute arising from the interpretation and the performance of the terms of this Contract, both parties agree to make the best attempt with sincerity and in good faith to negotiate and amicably settle such dispute.

In case of failure in settlement of dispute, the Arbitration tribunal shall meet in Cairo, Egypt. The arbitration award, which shall be final and subject to no appeal, shall bind the parties and shall deal with the question of costs of arbitration and all matters related thereto.

Article 21. Force Majeure

In case where serious damages occur to the completed part of the Works, or the materials, tools, etc., that are already carried into the site of construction, the Contractor shall promptly inform the JICA of the circumstances. If such damages are caused by force majeure such as natural calamity, a civil war, a war, an epidemic, or a general trade strikes, rioting or other unavoidable reason, the occurrences of which no responsibility can be attributed to either the JICA and the Contractor.

The Conclusion of the Contract

This Contract is executed in duplicate of the same tenor, one of the original copies to be kept by the JICA and the other to be kept by the Contractor. Both the JICA and the Contractor have set their signatures and affixed the seals thereto

Mr.

Resident Representative, Cairo Office,
Japan International Cooperation Agency
(JICA)

Mr.

4 - 2 . Specification

PART II

GENERAL INFORMATION

GI-1. Objective of Construction

In accordance with the extended Record of discussions signed in August 1986, implementation of the rice mechanization has been made at five satellite farms in the Nile delta area, Gaimmeza, Messer, Saft Khaled, Serrw and Edfina.

These farms, however, posed serious obstacles to the implementation. They are inappropriate farm roads and farm entrances, decaying canals and so forth.

Since this crop season is the final opportunity to demonstrate a successful result of the Project, it is requested to provide appropriate facilities and construct additional infrastructures.

This construction work is to be undertaken to achieve the said objectives.

The construction needs to be completed prior to transplanting of paddy seedling scheduled at the end of May 1989.

GI-2. Location of the Construction Site

The construction sites are located at five satellite farms as follows;

GAIMMEZA FARM	located in Gharbiya Governorate,
MESSER FARM	located in Kafr El Sheikh Governorate,

SALT KHALED FARM located in Beheira
Governorate,
SERRW FARM located in Damietta
Governorate
and
EDFINA FARM located in Beheira
Governorate.

GI-3. Special Care during the Construction

a) Prevention against the delay of
completion of the Works

As mentioned in GI-1, the first transplanting is scheduled at the end of May 1989. Any delay of completion will cause a great influence on the schedule of the Rice Mechanization Project. Therefore, the Contractor shall pay ample attentions to the progress of the Works to prevent a delay of the completion time stipulated in Article 4 of the Contract.

b) Prevention of the farm field from the
injurious materials

In the course of the Works, the injurious materials should not be allowed to come into the farm field. The Contractor shall remove those materials such as oil, gravels, and foreign soils, etc., at his own expense by the date appointed by the Supervisor.

c) Prevention against the damage to crops

The five farms are covered presently by crops such as clover and wheat. The Contractor shall not cause the damage on the said crops beyond the allowable minimum damage instructed in writing by the Supervisor. The Contractor shall be liable to compensate excess damage at his own expense by the date appointed by the Supervisor.

d) Inhibition of traffic by heavy equipment in the farm field

The Construction equipment except those accepted by the Supervisor shall be inhibited to pass or enter in the farm field to prevent the farm soils from being stirred. The Contractor shall recover the farm field at his own expense by the date appointed by the Supervisor, if such soil disturbance takes place therein.

GI-4. Provision of Materials and Facilities

The Contractor shall have to prepare the necessary materials and facilities which are pointed by the Supervisor.

GI-5. Work Schedule

The Contractor shall submit the Work Schedule for prior approval of the Supervisor in the following items to the commencement of the Works at job site. If the Contractor intends to change the Work Schedule, the approval of the Supervisor shall be obtained prior to modification of the Schedule.

1. Preparation
2. Farm Road
3. Irrigation Canal
4. Drainage Canal
5. Farm Entrance
6. Structures
7. Miscellaneous

GI-6. Notices

The JICA and the Contractor shall exchange the notices each other, when deemed necessary, in accordance with Article 19 in the Contract within reasonable time except that special articles are provided in the Contract and Documents attached hereto.

PART III

TECHNICAL SPECIFICATIONS

Chapter 1. General Conditions for Measurement and Payment

TC 1-1. Scope

This chapter deals with the measurement and payment for the completed works.

TC 1-2. Measurement

The measurement shall be made by the Contractor with the Supervisor's approval and also must be attended by the Supervisor at any time.

TC 1-3. Payment

The payment shall be made for the Works completed in compliance with all the documents in this Contract. The Works shall be accepted on the approval by the Supervisor.

Chapter 2. Temporary Facilities

TC 2-1. Scope

This chapter covers the construction of facilities such as the Contractor's camp and the dewatering systems necessary for parts of the Construction Works in this Project.

TC 2-2. Installation

If the temporary facilities are required in the Forms, the Contractor shall get the prior approval from the Supervisor.

TC 2-3. Disposition

After the completion of the Work, the installed temporary facilities shall be removed by the Contractor after the Supervisor's approval.

Chapter 3. Dewatering

TC 3-1. Dewatering

The Contractor shall be responsible for dewatering the foundation areas so that the work may be carried on in a suitably dry condition, draining and/or pumping of water during the construction works.

The works for dewatering shall be included in the items of the relevant permanent works in Bill of Quantity.

Chapter 4. Clearing

TC 4-1. Scope

The construction area shall be cleared prior to starting the Works for filling of the farm roads, canals, foot-paths of structures, etc. and the similar way of clearing shall be made for the existing canals.

TC 4-2. Clearing

The clearing works shall consist of the removal and disposal of all vegetation, roots, brush and all objectionable matters in accordance with instructions described on the Drawings or the direction of the Supervisor.

Chapter 5. Excavation and Foundation Works

TC 5-1. Scope

This item covers the excavation and foundation works as shown in the drawings. The Contractor shall perform all required excavation and foundation works along with the construction of irrigation canal, drainage canal and other construction works where excavation are to be made.

TC 5-2. Excavation

a) General

The excavation indicated in the Specifications shall cover the excavating works for the irrigation and drainage canals, and other related structures. And the excavated materials shall be hauled to those sites of irrigation canal and other embankment works. The excavation shall be conducted in conformity with the lines and the grades indicated in the drawings or the instruction by the Supervisor.

b) **Foundation Treatment**

When the foundation works are carried out at those sites for the concrete works, rubble masonry or earth embankment, the loose materials contained therein shall be removed or replaced with suitable materials that shall be compacted to meet the specific indications given by the Supervisor.

TC 5-3. Disposition of Excavated Materials

The Contractor shall submit to the Supervisor the necessary drawings and other specific information of the proposed spoil dump areas for obtaining the approval from the Supervisor. The prior consent by the Supervisor is quite essential for carrying out spoil dumping at any place excavated materials deemed unsuitable as fill materials shall be wasted to the approved spoil dump areas.

TC 5-4. Demolition, Removal and Dismantling

When indicated in the drawing or directed by the Supervisor, existing concrete and/or brick structures, such as culverts, brick wall, etc., shall be demolished and disposed accordingly.

Chapter 6. Fill and Backfill

TC 6-1. Scope

This item covers the specifications for fill and backfill works and as shown in the drawings or otherwise direction given by the Supervisor, the Contractor shall furnish and place the earth materials for irrigation canal embankment and related structures.

Any work of fill and backfill shall not be commenced without prior approval of the Supervisor. The slope of the embankment shall be made as the shaping of slope indicated on the drawings approved by the Supervisor.

TC 6-2. Backfill

Backfill, as referred to herein, is defined as refill works. The materials for backfill works shall be made free from roots, stones of more than five (5) centimeters in diameter, and other objectionable materials and subject to the approval of the Supervisor. The backfill materials shall be placed in layers, each layer being not more than twenty (20) centimeters thick before compaction, thoroughly compacted by using power tampers or by other method approved by the Supervisor.

TC 6-3. Fill

a) Shaping and Grades

The fill works shall be carried out in conformity with the lines, grades and dimensions indicated on the drawings, unless otherwise directed by the Supervisor. The Supervisor may instruct to change a slope of the fill works in respect of soil conditions at the site. Such a change will be made according to the quantities of materials available. The changes prescribed by the Supervisor should not cause any claims for increase in unit prices.

b) Conduct of the Work

Any fill material, which are rendered unsuitable after being placed at the site, shall be replaced by the Contractor without any payment thereto. The Contractor shall re-excavate and remove from the filled materials which the Supervisor considers objectionable and shall also dispose of such material to the spoil area directed by the Supervisor, and refill the excavated area as directed without any additional cost.

TC 6-4. Materials

a) Sources

The Contractor shall submit to the Supervisor for his prior approval the data/information and necessary drawings for the proposed borrow areas of the fill materials. Since borrow areas can have no guarantee for supplying suitable fill materials as a whole, the Contractor shall move or shift the borrow areas so as to secure the suitable materials. The operations in borrow areas shall be carried out without any danger on the roads, buildings, or structures.

b) Suitability

The fill materials containing brush, roots, sod or other perishable material will not be considered suitable for fill works. The suitability of the materials shall be subject to the approval by the Supervisor.

TC 6-5. Placement

a) General

No fill materials shall be placed on any part of the foundation before the Supervisor makes inspection and gives approval, and the clearing works are completed as indications specified in Chapter 4.

b) Earth Fill

The fill materials shall be dumped and spread in horizontal with the equipment approved by the Supervisor, having uncompacted thickness less than 20 cm. When materials are spread, lumps larger than 10 cm in size shall be broken down by approved means or removed.

TC 6-6. Compaction

a) General

After fill materials have been dumped on a layer and spread, they shall be compacted by the hand-tampers or by the other mechanical compactor approved by the Supervisor.

b) Fill on Culverts and Concrete Structures

No back fill materials shall be placed on concrete structures before a period of fourteen days has elapsed after placing the concrete. Before passage of hauling equipment over the culverts or other structures will be permitted by the Supervisor, the fill thickness over the concrete structures shall be made sufficient to permit such travelling without any harmful stresses to the structure. Earth fills placed around culverts or other structures shall be compacted by mechanical tampers or by manpower.

TC 6-7. Additional Compaction

If, in the opinion of the Supervisor, the constructed fill works is not secured partly for the compaction, the additional compaction shall be carried out at the surface area of such designated portion until the desired compaction has been obtained without additional cost.

Chapter 7. Concrete Work

TC 7-1. Scope

The Specifications for the Concrete Works contained herein and as shown on the drawings or otherwise directed by the Supervisor, the Contractor shall execute the following works:

- (a) Furnish all materials, and mix, transport, place, finish, protect, and cure concrete;
- (b) Furnish, construct, erect, and remove forms;
- (c) Construct expansion and contract joints, and furnish and place for waterstops, joint fillers, and sealing compound;
- (d) Prepare, clean, cut, bend, and place steel reinforcement.

TC 7-2. Cement

a) General

The cement for mortar and concrete works shall be of quality which conforms to the requirements of the Standard Specifications for Portland Cement.

b) Storage

The cement, in sealed bags unbreakable, shall be stored in weathertight and properly ventilated warehouse with adequate provisions for the prevention of absorption of moisture. All storage facilities shall be subject to approval and shall be such as to permit easy access for inspection and identification. The cement which has been stored for more than one month or which is suspected to be damped shall not be used unless otherwise approved by the Supervisor.

TC 7-3. Fine Aggregate

a) Composition

The fine aggregate shall be natural sand excluding organic materials and other foreign substances.

b) Quality

Fine aggregate shall consist of hard, tough, and durable particles. The shape of the particles shall be generally rounded or cubical and reasonably free from flat or elongated pieces. The quality of fine aggregate shall be subject to approval by the Supervisor.

TC 7-4. Coarse Aggregate

a) Composition

Coarse aggregate shall consist of gravel or crushed gravel, or a combination of gravel and crushed gravel.

b) Quality

1. Quality - coarse aggregate shall consist of hard, tough, durable, and clean particles. All foreign materials and dust shall be removed by adequate processing. The particle shape of the smallest size of crushed coarse aggregate shall be generally rounded or cubical, and the coarse aggregate shall be reasonably free from flat and elongated particles in all sizes. The quality of coarse aggregate shall be also subject to approval of the Supervisor.
2. Size - unless otherwise directed by the Supervisor, the maximum size of coarse aggregate to be used in the various parts of the work shall be 3/4 inch.

TC 7-5. Water

Water used in mixing concrete shall be fresh, clean and free from injurious amounts of oil, acid, alkali, salt, or organic matter.

TC 7-6. Proportioning of Concrete

- a) The Contractor shall design the mix proportion for every class of concrete placing for the approval by the Supervisor.

- b) The designed mix proportion of concrete is indicated as follows:

<u>Class</u>	<u>Mixing proportion by volume</u>		
	<u>cement:</u>	<u>fine aggregates:</u>	<u>coarse aggregates</u>
a (Reinforced concrete)	1:	2:	4
b (Plain concrete)	1:	2:	4
c (Level concrete)	1:	4:	6

Other proportions for mixed design may be directed by the Supervisor at the site.

IC 7-7. Mixing

- a) Equipment

Concrete shall be mixed in a power driven batch type machine approved by the Supervisor.

- b) Mixing Time and Method

The mixing time of concrete shall be more than two minutes but and less than five minutes. Overmixing, requiring the introduction of additional water to preserve the required consistency, will not be permitted. The mixer shall be completely emptied before receiving the materials for the succeeding batch and shall be kept clean and washed out after stopping work at the end of each shift.

On commencing work, cement paste the first batch shall contain sufficient cement mortar to coat the inside of the drum to avoid the reduction of the required mortar content of the mix.

TC 7-8. Conveying

Concrete shall be conveyed from mixer to forms, as rapidly as practicable by methods which will prevent segregation or loss of ingredients.

TC 7-9. Placing

a) Approval

Approval of the Supervisor shall be obtained before starting any concrete placing.

b) General

Concrete shall be worked into the corners and angles of the forms and around all reinforcement and embedded without permitting the material to segregate.

c) Moisture of Aggregates

The aggregate shall be moistured by watering if it is drier than the condition known as saturated surface dry.

d) Concrete on Earth Foundation

All concrete shall be placed upon clean, damp surfaces free from standing or running water. Prior to placing concrete, the earth foundation shall be satisfactorily compacted in accordance with approved methods.

e) Concrete on Other Concrete

Surface upon or against which concrete is to be placed, shall be clean, free from oil, standing or running water, mud, objectionable coatings, debris, and loose, semi-detached or unsound fragments. To insure a firm and tight bond between fresh concrete and other concrete, concrete surfaces, where necessary, shall be chipped or roughened as directed by the Supervisor. All surfaces shall be wetted thoroughly to keep them in a completely moist condition before placing concrete. All approximately horizontal surfaces shall be covered with a layer of mortar of the same cement-sand ratio as used in the concrete mix before the concrete is placed.

f) Consolidation of Concrete

Concrete shall be placed and consolidated with the aid of mechanical vibrating equipment or of hand-spading and tamping.

TC 7-10. Forms

a) General

Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in correct position. Forms shall be sufficiently tight to prevent loss of mortar from the concrete.

b) Cleaning and Oiling of Forms

At the time concrete is placed in the forms, the surfaces of the forms shall be free from any objectionable materials and shall be oiled to prevent sticking.

c) Removal of Forms

Forms shall be removed as soon as possible after the time instructed by the Supervisor.

TC 7-11. Curing and Protection

a) General

All concrete shall be moist cured for a period of not less than seven (7) consecutive days by an approved method or combination of methods applicable to local conditions.

b) Water Curing

Concrete shall be kept wet by covering with water-saturated material or by other means approved by the Supervisor.

TC 7-12. Steel Reinforcement

a) General

The Contractor shall furnish all steel reinforcement materials for concrete works as indicated on the drawings. The Contractor shall prepare, clean, cut, bend and place all reinforcements, as shown on the detailed drawings or directed by the Supervisor. The Contractor shall furnish all chains, supports and ties. The reinforcement shall be reasonably free from loose, flaky rust and scale, and free from oil, grease and other coating which might destroy or reduce its bond with concrete.

b) Relationship of Reinforcement to Concrete Surfaces

The distance from the edge of the main reinforcement to the concrete surface shall be 5 cm except such portions as shown in the drawings. The concrete covering the stirrups, spacer bars, and similar secondary reinforcement may be reduced by the diameter of such bars, unless otherwise indicated by the Supervisor.

c) Lapping

Lapping length at joints of the reinforcing bar shall be at least thirty times of the diameter of the bar and shall be bound by steel wire.

d) Supports

The reinforcements shall be secured in place by use of metal or concrete supports, spacers or ties. Such supports shall be of sufficient strength to maintain the reinforcement in place throughout the concreting operation. The supports shall be used in such manner that they will not be exposed or contribute in any way to the discoloration or deterioration of the concrete.

Chapter 8. Pipe Work

TC 8-1. Scope

The work to be done shall include hauling, laying installing, jointing and all other necessary works. The Contractor shall furnish and install the pipe as shown on the drawings or directed by the Supervisor.

For earth work required for pipe work, the specifications shall be made by the Supervisor's instructions.

TC 8-2. Installation

The pipe shall be installed on a sand bed unless otherwise specifically indicated on the Drawings. The backfill around the pipe shall be conducted in the same manner as specified in TC 6-2.

Chapter 9. supply of pumps

10 sets of brand new pumps shall be supplied by the Contractor and they shall be delivered and stocked in the storage indicated by the Supervisor. The technical data of pump shall be as follows;

Pump : Volute pump
Suction : 6 inch in diameter
Discharge : 6 inch in diameter
Engine Type : Diesel engine
Horse power : 7.5 HP
No. of cylinder : Single
cylinder bore : 87.5 mm
cylinder stroke : 110 mm.

The Contractor shall submit to the Supervisor for his prior approval the specifications of pump and necessary drawings.

4 - 3 . Bill of Quantity

Part IV

Constraction cost

<u>Description</u>	<u>Amount (L.E.)</u>
I PREPARATION WORK	_____
II GAIMBEZA FARM	_____
III NESSER FARM	_____
IV SAFT KHALED FARM	_____
V SERRV FARM	_____
VI EDFINA FARM	_____
<u>Total</u>	_____

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t P r i c e</u>	<u>Amount</u>	<u>Remarks</u>
I PREPARATION WORK						
1	Survey for canal & related structures	LS	1			
2	Contractor's camp & temporary work	LS	1			
Total 1						
I GAIMMEZA						
1) Rehabilitation of farm road L=385m W=4.0m						
3	Spreading & compaction by bulldozer	m ²	1,540-			
Sub-total						
2) Proposed new road L=385m W=3.5m						
4	Excavation	m ²	458-			
5	Spreading & compaction	m ²	1,347-			
6	Shaping of slope	"	416-			
Sub-total						
3) Rehabilitation of irrigation canal L=220m						
7	Clearing & grubbing	m ²	187-			
8	Excavation by machine	m ²	121-			
9	Excavation by manpower	"	81-			
10	Compaction by manpower	"	202-			
11	Shaping of slope	m ²	187-			
Sub-total						
4) Proposed irrigation canal L=380X2=760m						
12	Excavation by machine	m ²	237-			
13	Excavation by manpower	"	59-			
14	Compaction by manpower	"	296-			
15	Shaping of slope	m ²	1,292-			
Sub-total						
5) Rehabilitation of drain canal L=380X2=760m						
16	Excavation by machine	m ²	92-			
17	Excavation by manpower	"	62-			
18	Shaping of slope	m ²	646-			
Sub-total						

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t P r i c e</u>	<u>A m o u n t</u>	<u>R e m a r k s</u>
6)	Proposed drain canal L=380x2=760m					
19	Excavation by manpower	m ³	136-			
20	Compaction by manpower	"	136-			
21	Shaping of slope	m ²	646-			
	Sub-total					
7)	Intake facility (stop log) 2units					
22	Excavation	m ³	5-			
23	Backfill	"	2-			
24	Gravel foundation max ϕ 40m	"	0.7			
25	Concrete 1:2:4	"	0.9			
26	Form work	m ²	6.4			
	Sub-total					
8)	Demolition & transp. of concrete					
27	Demolition & collection	m ³	67.5			
28	Transportation L=1.5m	"	67.5			
29	Spreading & compaction	m ²	540-			
	Sub-total					
9)	Road crossing ϕ 300 concrete pipe					
30	Excavation	m ³	8.4			
31	Backfill	"	7.8			
32	Sand foundation	"	0.6			
33	Concrete pipe ϕ 300	m	7-			
34	Pipe joint	each	2-			
	Sub-total					
10)	Clearing, grubbing & levelling					
35	By machine	m ²	3,040-			
36	By manpower	"	456-			
	Sub-total					
11)	Farm entrance No1~No4 (Type A) 4units					
37	Excavation	m ³	2.8			
38	Sand foundation	"	3.6			
39	Backfill	"	62.8			
40	Tranceportation of soil	"	62.8			
	L=180m					

Bill of Quantity

No.	I t e m	Unit	Quantity	U n i t Price	Amount	Remarks
41	Dewatering	LS	1			
42	Concrete pipe ϕ 500	m	24-			
43	Compaction & spreading	m ²	76.8			
44	Pipe joint	each	4-			
	Sub-total					
12)	Farm entrance No5~No16(Type B)	12Units				
45	Excavation	m ²	5.8			
46	Sand foundation	"	7.0			
47	Backfill	"	54-			
48	Transportation of soil L=180m	"	54-			
49	Concrete pipe ϕ 300	m	72-			
50	Compaction & spreading	m ²	86.4			
51	Pipe joint	each	12-			
	Sub-total					
	Total I					

■ MESSER

1) Rehabilitation of farm road L=550m W=3.5m

52	Spreading & compaction by bulldozer	m ²	1,925-			
53	Excavation by machine	m ²	247-			
54	Excavation by manpower	"	165-			
	Sub-total					

2) Rehabilitation of irrig. canal A L=440m

55	Clearing & grubbing	m ²	660-			
56	Shaping of slope	"	281-			
	Sub-total					

3) Rehabilitation of irrig. canal B L=570m

57	Excavation by machine	m ²	82-			
58	Excavation by manpower	"	54-			
59	Compaction	"	136-			
60	Shaping of slope	m ²	882-			
	Sub-total					

4) Rehabilitation of irrig. canal C L=410m

61	Shaping of slope	m ²	574-			
	Sub-total					

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t</u> <u>Price</u>	<u>Amount</u>	<u>Remarks</u>
5)	Rehabilitation of irrig canal. D L=1.040n					
62	Excavation by machine	m ³	262-			
63	Excavation by manpower	"	174.8			
64	Compaction	"	436.8			
65	Shaping of slope	m ²	1,768-			
	Sub-total					
6)	Irrigation canal L=485n					
66	Excavation by machine	m ³	69-			
67	Excavation by manpower	"	47-			
68	Compaction	"	116-			
69	Shaping of slope	m ²	411-			
	Sub-total					
7)	Rehabilitation of drain canal A L=490n					
70	Shaping of slope	m ²	980-			
71	Clearing & grubbing	"	490-			
	Sub-total					
8)	Rehabilitation of drain canal B L=1.005n					
72	Excavation by machine	m ³	216-			
73	Excavation by manpower	"	145-			
74	Compaction	"	361-			
75	Shaping of slope	m ²	1,708-			
	Sub-total					
9)	Road crossing 4units					
76	Excavation by machine	m ³	22-			
77	Excavation by manpower	"	2.8			
78	Backfill	"	22-			
79	Sand foundation	"	3.2			
80	Concrete pipe ϕ 500	m	24-			
81	Pipe joint	each	4-			
82	Spreading & compaction	m ²				
	Sub-total					
10)	Farm entrance No1~No4(Type C) 4units					
83	Excavation by manpower	m ³	2.8			
84	Sand foundation	"	3.2			

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t P r i c e</u>	<u>Amount</u>	<u>Remarks</u>
85	Backfill	m ³	45.2			
86	Concrete pipe ϕ 500	m	24-			
87	Pipe joint	each	4-			
88	Transportation of soil L=180m	m ³	45.2			
89	Spreading & compaction	m ²	105.6			
	Sub-total					
11) Farm entrance No5~No16(Type D) 12units						
90	Excavation by manpower	m ³	16.8			
91	Sand foundation	"	20.4			
92	Backfill	"	259.2			
93	Concrete pipe ϕ 500	m	144-			
94	Pipe joint	each	24-			
95	Dewatering	"	12-			
96	Transportation of soil L=180m	m ³	259.2			
97	Spreading & compaction	m ²	576-			
	Sub-total					
	Total					

SAFI KHALED

1) Rehabilitation of farm road L=480m W=3.5m

98	Excavation by machine	m ³	173-			
99	Excavation by manpower	"	116-			
100	Spreading & compaction	m ²	1,715-			
101	Shaping of slope	"	1,411-			
	Sub-total					

2) Rehabilitation of irrigation canal A L=1,130m

102	Excavation by machine	m ³	162-			
103	Excavation by manpower	"	109-			
104	Compaction	"	271-			
105	Shaping of slope	"	958-			
	Sub-total					

3) Rehabilitation of irrigation canal B L=425m

106	Excavation by manpower	m ³	38-			
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Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t</u> <u>Price</u>	<u>Amount</u>	<u>Remarks</u>
107	Compaction	m ²	38-			
108	Shaping of slope	m ²	361-			
	Sub-total					
4)	Rehabilitation of irrigation canal C		L=695m			
109	Excavation by machine	m ²	100-			
110	Excavation by manpower	"	66-			
111	Compaction	"	166-			
112	Shaping of slope	m ²	868-			
	Sub-total					
5)	Proposed drain canal		L=850m			
113	Excavation by machine	m ²	244-			
114	Excavation by manpower	"	62-			
115	Compaction	"	306-			
116	Shaping of slope	m ²	1,445-			
	Sub-total					
6)	Discharge basin					
117	Excavation	m ²	2.4			
118	Backfill	"	1-			
119	Gravel foundation	"	1-			
120	Concrete 1:2:4	"	1.6			
121	Form work	m ²	12.4			
	Sub-total					
7)	Farm road crossing					
122	Excavation	m ²	2.4			
123	Backfill	"	0.9			
124	Sand foundation	"	0.7			
125	Transportation of soil	"	4-			
			L=180m			
126	Concrete pipe ϕ 500	m	6-			
127	Pipe joint	each	1-			
	Sub-total					
8)	Farm entrance					
128	Farm entrance	each	4-			
	No.1~No.4(type D)					

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t</u> <u>Price</u>	<u>Amount</u>	<u>Remarks</u>
129	Farm entrance	each	6-			
	No.5~No.10(type C)					
	Sub-total				_____	
	Total #				_____	
Y SERRV						
	1) Rehabilitation of farm road L=405m W=4.5m					
130	Spreading & compaction by bulldozer	m ²	1,823-			
131	Excavation by machine	m ²	109-			
132	Excavation by manpower	"	73-			
	Sub-total				_____	
	2) Rehabilitation of irrig. canal A L=300m					
133	Shaping of slope	m ²	300-			
	Sub-total				_____	
	3) Rehabilitation of irrig. canal B L=590m					
134	Excavation by manpower	m ²	136-			
135	Compaction by manpower	"	136-			
136	Shaping of slope	m ²	1,101-			
	Sub-total				_____	
	4) Rehabilitation of irrig. canal C L=400m					
137	Excavation by manpower	m ²	88-			
138	Compaction by manpower	"	88-			
139	Shaping of slope	m ²	514-			
	Sub-total				_____	
	5) Rehabilitation of drain canal I L=300m					
140	Excavation by manpower	m ²	72-			
141	Compaction by manpower	"	72-			
142	Shaping of slope	m ²	366-			
	Sub-total				_____	
	6) Rehabilitation of drain canal I L=395m					
143	Excavation by manpower	m ²	31-			
144	Compaction by manpower	"	31-			
145	Shaping of slope	m ²	388-			
	Sub-total				_____	

Bill of Quantity

No.	I t e m	Unit	Quantity	U n i t Price	Amount	Remarks
7)	Farm entrance (type A) 14units					
146	Excavation by manpower	m ²	9.8			
147	Sand foundation	"	12.6			
148	Backfill	"	219.8			
149	Concrete pipe ϕ 500	m	84-			
150	Pipe joint	each	14-			
151	Transportation of soil L=180m	m ²	219.8			
152	Spreading & compaction	m ²	268.8			
153	Dewatering	LS	1			
	Sub-total					
	Total Y					

II EDFINA

1) Proposed new road L=390m V=3.5m

154	Transportation of soil L=180m	m ²	556-			
155	Spreading & compaction	m ²	1,365-			
156	Shaping of slope	"	421-			
	Sub-total					

2) Proposed new road L=290m V=3.5m

157	Excavation by machine	m ²	276-			
158	Excavation by manpower	"	69-			
159	Spreading & compaction	m ²	1,015-			
160	Shaping of slope	"	313-			
	Sub-total					

3) Rehabilitation of irrig. canal L=1,180m

161	Excavation by manpower	m ²	118-			
162	Compaction by manpower	"	118-			
163	Shaping of slope	m ²	900-			
	Sub-total					

4) Rehabilitation of drain canal I L=480m

164	Clearing & grubbing	m ²	345-			
165	Shaping of slope	"	576-			
	Sub-total					

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>	<u>Remarks</u>
5)	Rehabilitation of drain canal ■	L=375m				
166	Shaping of slope	m ²	281-			
	Sub-total					
6)	Rehabilitation of drain canal ■	L=285m				
167	Shaping of slope	m ²	213-			
	Sub-total					
7)	Rehabilitation of drain canal ■	L=190m				
168	Excavation by manpower	m ²	19-			
169	Compaction by manpower	"	19-			
170	Shaping of slope	m ²	167-			
	Sub-total					
8)	Proposed new drain canal 1	L=390m				
171	Excavation by machine	m ²	56-			
172	Excavation by manpower	"	14-			
173	Compaction by manpower	"	70-			
174	Shaping of slope	m ²	331-			
	Sub-total					
9)	Proposed new drain canal 2	L=295m				
175	Excavation by manpower	m ²	53-			
176	Compaction by manpower	"	53-			
177	Shaping of slope	m ²	250-			
	Sub-total					
10)	Clearing & grubbing					
178	Clearing & grubbing	m ²	4,750-			
179	Clearing by manpower	m ²	475-			
	Sub-total					
11)	Farm entrance (type A)	6units				
180	Excavation	m ²	4.2			
181	Sand foundation	"	5.4			
182	Backfill	"	94.2			
183	Transportation of soil	"	94.2			
	L=180m					
184	Dewatering	LS	1			
185	Concrete pipe φ 500	m	36-			

Bill of Quantity

<u>No.</u>	<u>I t e m</u>	<u>Unit</u>	<u>Quantity</u>	<u>U n i t P r i c e</u>	<u>A m o u n t</u>	<u>R e m a r k s</u>
186	Pipe joint	each	6-			
187	Compaction & spreading	m ²	115.2			
	Sub-total					
12)	Farm entrance (type B) 7units					
188	Excavation	m ³	3.4			
189	Sand foundation	"	4.1			
190	Backfill	"	31.5			
191	Transportation of soil	"	31.5			
	l=180m					
192	Concrete pipe ϕ 300	m	42-			
193	Pipe joint	each	7-			
194	Compaction & spreading	m ²	50.4			
	Sub-total					
	Total W					
	Grand total (I~W)					

APPENDIX

- I. Letter to the Director of the Project from the Team Leader**
- II. Members of the Team**
- III. Survey Period and Schedule**
- IV. List of People Interviewed**

I. Letter to the Director of the Project from the Team Leader

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
DETAIL DESIGN SURVEY TEAM
FOR
THE RICE MECHANIZATION PILOT PROJECT

19th October 1988

Dr. Ahmed Farid El Sahrighi
Director,
Agricultural Mechanization
Research Institute,
Ministry of Agriculture

Re: The Pilot Infrastructure Improvement Works
for the Rice Mechanization Pilot Project

Dear Sir,

We, the Detailed Design Survey Team (herein after referred to as "The Team") has been organized by Japan International Cooperation Agency (herein after referred to as "JICA") for the purpose of formulating detailed Plan on the Pilot Infrastructure Improvement Works for the Rice Mechanization Pilot Project (herein after referred to as "The Project").

The Team has, so far, made a series of site reconnaissances and discussions with your staff concerned as well as Japanese Expert Team. As a result of exchange of views and field surveys, we have a great honour of submitting to you the Summary Report attached hereto.

This Report presents the outline of the design of the Satellite Fields consolidation.

In accordance with the report above, two team members, Mr. Yamada and Mr. Sekio, will proceed with your staff to conduct further field surveys and investigations at the site and make the detail design on the basis of the result of those surveys. After the completion of detail design and assessment of its cost estimated by JICA, you will be informed its result through the JICA Egypt office.

Further, for the timely commencement of the construction we would like to request you to take the necessary formalities in due consultation with the JICA Egypt office.

Finally, We would like to appreciate for kind cooperation of your staff during our stay.

Sincerely Yours,

古賀英祐

Eisuke KOCA
Team Leader

Detail Design Survey Team
for the Rice Mechanization
Pilot Project

cc: Embassy of JAPAN
cc: JICA Egypt office

SUMMARY REPORT

I. INTRODUCTION

The purpose of this Pilot Infrastructure Improvement Works is to realize smooth demonstration and verifying experiment of the mechanized rice farming at the five Satellite Fields in Gaimmoza, Saft Khaled, Edfina, Serrw and Messer State Farms.

The Team has decided the basic plan as follows based on the field reconnaissances. However, some of the items below may be changed after detail design survey and subsequent study in Japan.

II. MAIN FACILITIES TO BE PROPOSED

In order to raise the working efficiency of the farming machinery, following facilities should be proposed in the five Satellite Fields.

Farm roads and farm entrances are to be proposed for all Satellite Fields in order that the farming machinery could access directly to every plot. The proposed roads are to be unpaved considering the surrounding existing road condition. The length of the road is as listed below.

Messer	: improvement of the existing road; approx.	1,600m
Serrw	: improvement of the existing road; approx.	400m
Gaimmoza	: new road to be proposed ; approx.	400m
	improvement of the existing road; approx.	400m
Saft Khaled	: improvement of the existing road; approx.	450m
Edfina	: new road to be proposed ; approx.	1,000m
	improvement of the existing road; approx.	500m

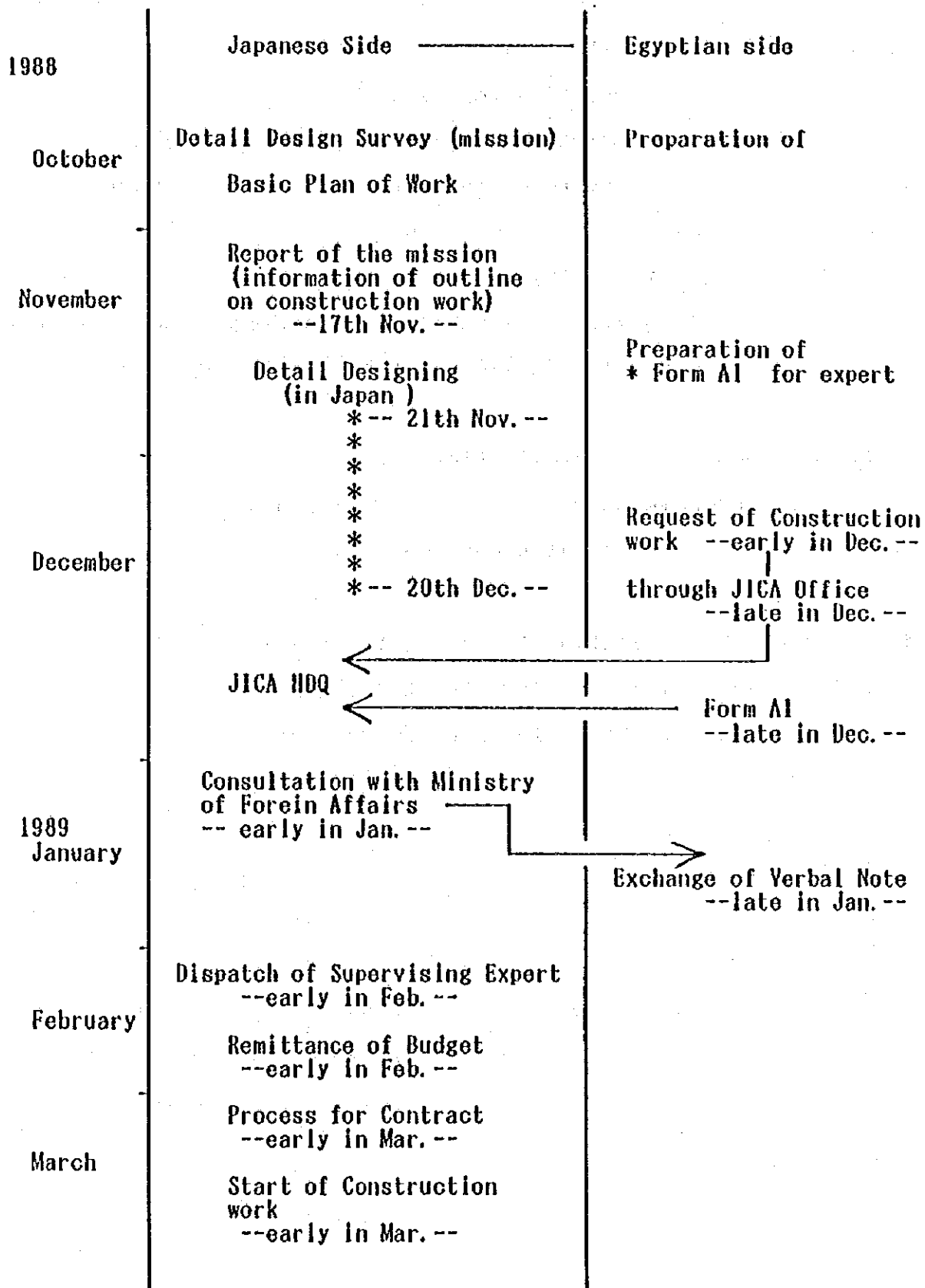
Irrigation and drainage canals will be rearranged for the efficient water management. But further site investigation is necessary for the design.

III. OUTLINE OF THE SCHEDULE ON PILOT INFRASTRUCTURE IMPROVEMENT WORK

The outline of the schedule on pilot infrastructure improvement work is shown in Table 1.

OUTLINE OF THE SCHEDULE ON PROJECT
INFRASTRUCTURE IMPROVEMENT WORK

Table 1.



II. Members of the Team

1. Yusuke Koga (Leader)

Deputy Director

**Construction Department, Kanto Regional
Agricultural Administration Office, MAPF**

2. Naoki Ando (Coordinator)

**Agricultural Development Division, Agricultural
Development Cooperation Department, JICA**

3. Asao Yamada (Land Consolidation)

Taiheiyo Consultant Co., LTD

Technical Department

4. Kenji Sekio (Irrigation & Drainage)

Taiheiyo Consultant Co., LTD

Technical Department

III. Survey Period and Schedule

- 1988 Oct. 12 - 13 Tokyo ---> Cairo (JAL 473)
- 13 Courtesy call on MOA, JICA office and Japanese Embassy
 - 14 Collection and arrangement of information and data
 - 15 Cairo --> RMC --> the Messer satellite farm --> Tanta, Meeting with experts at RMC, Site inspection at the Messer Farm
 - 16 Site inspection at the Serrw and The Gaimmeza farms
 - 17 Site inspection at the Saft Khaled and the Edfina farms, Tanta --> Alexandria
 - 18 Alexandria --> Cairo, Report to JICA, Meeting with experts
 - 19 Submission of Summary Report to MOA and JICA
 - 20 Decision of the fundamental idea of the design, Visit to JICA office, MOA and Japanese embassy
 - 21 Collection and arrangement of information and data
 - 22 Ditto
 - 23 - 24 Cairo --> Tokyo

(Yamada and Sekio continued field survey of five satellite farms and returned to Japan on November 20th.)

IV. List of People Interviewed

Ministry of Agriculture

Dr. A. Sahrigi	Project Director at IAM
Mr. K. Osama	Manager of RMC
Mr. M. Abbas	Deputy Manager of RMC
Mr. H. A. Allah	Deputy Director, Administration Department of RMC
Mr. A. Khtiar	Supervisor of Gaimmeza
Mr. A. Aid	Supervisor of Messer
Mr. A. Amar	Supervisor of Saft Khaled
Mr. A. Fadel	Supervisor of Serrw
Mr. A. G. Faramawy	Supervisor of Edfina
Mr. S. Kaly	Manager of Gaimmeza
Mr. A. Kolli	Manager of Messer
Mr. W. Tara	Manager of Saft Khaled
Mr. M. Balad	Manager of Serrw
Mr. A. Taba	Manager of Edfina
Mr. M. Hative	State Farm Main Office (Kaf el Sheik)

Ministry of Irrigation

Mr. A. Ramzey	Survey Engineer of Survey Office (Kaf el Sheik)
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