

No. 27

REPUBLIC OF HONDURAS  
TENDER DOCUMENT  
ON  
TRAINING FARM  
FOR  
AGRICULTURAL DEVELOPMENT  
TRAINING CENTER

APRIL, 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

A.D.T.  
J.R.  
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TENDER DOCUMENT

ON

TRAINING FARM

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**LIST OF TENDER AND  
CONTRACT DOCUMENTS**

**TRAINING FARM  
FOR  
AGRICULTURAL DEVELOPMENT TRAINING CENTER  
IN  
THE REPUBLIC OF HONDURAS**

<b>SECTION 1</b>	<b>INVITATION TO TENDERERS</b>
<b>SECTION 2</b>	<b>INSTRUCTION TO TENDERERS</b>
<b>SECTION 3</b>	<b>GENERAL CONDITIONS</b>
<b>SECTION 4</b>	<b>SPECIFICATIONS</b>
<b>SECTION 5</b>	<b>BILL OF QUANTITIES AND SCHEDULE OF PRICES</b>
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# SECTION - 1

INVITATION TO  
TENDERERS



**THE JAPAN INTERNATIONAL CORPORATION AGENCY**

**(JICA)**

**INVITATION TO TENDERERS**

The Japan International Cooperation Agency (hereinafter referred to as JICA), hereby invites sealed written Tender for construction work of the experimental farm belongs to the Agricultural Development Training Center in Comayagua to promote local agriculture in the Republic of Honduras.

The Government of Honduras has received the grant aid from the government of Japan toward the cost for the construction of experimental farm in Comayagua and it is intended that the proceed of this grant will be applied to payment under the contract for which this invitation to tenderer is issued.

The Contract will include:-

Supply the sprinkler and drip irrigation system, erect and commissioning such system including the land reclamation work (Approx. 6.0ha)

Each Tenderer will receive one (1) copy of the Tender Document upon payment (amount /currency) Purchase of Tender Document may be made from JICA and application for Purchase of Tender Document shall be addressed to:

Address:

**Bid Bond (2.5 %)**

Each Tender must be accompanied by an acceptable Bid Bond or guarantee of not less than two (2) percent of the total price of the Tender. Upon acceptance of the Tender by JICA the successful Tenderer shall submit a Performance Bond supported by a bank guarantee of the amount of ten (10) percent of the contract price within thirty (30) days after the receipt of the Letter of Intent and copy of the Contract for signature.

**Time and Place for Submission of Tenders**

Tenders will be received only up to 2 p.m. (local time) on \_\_\_\_\_ 1983 at the office of the undersigned. Telegraphic Tenders shall not be acceptable. In the event the last submission date happens to be a holiday, Tenders will be received on the following working day until 2 p.m.

**Opening of Tenders**

Tenders will be opened on the same day as the last submission date at 3 p.m.

## **SECTION - 2**

**INSTRUCTION TO  
TENDERERS**





## 1. INSTRUCTIONS TO TENDERERS

### 1.1 Definitions

Terms and Definitions in this document are given in Section 3.1.(1) and "Tender" means the bid or offer submitted to JICA in response to this tender enquiry.

"Tenders" means the person or persons, firm or company who submit tender or bid in response to this tender enquiry.

### 1.2 General

This Tender calls for the supply the equipments, materials herein described in Section 4, Specifications and commissioning the irrigation system installed on reclaimed land specified as per annexed drawing.

The Contract, which is made in accordance with these instructions, is a Lump Sum Contract and all Works performed under it shall be in conformity and accordance with and subject to the conditions of Contract as set out herein, Specifications and Schedules contained in this Tender Documents.

### 1.3 Tender Documents

The Tenderer shall be bound by the conditions in these Tender Documents which are composed of the following:

<u>Section</u>	<u>Title</u>
1	Invitation to Tenderers
2	Instruction to Tenders
3	General Conditions
4	Specification
5	Schedule of Price and Bill of Quantities
6	Forms
7	Drawings

### 1.4 Submission of Tender

Tenders shall be submitted in sealed envelopes marked Construction of experimental farm with closing date and Tenderer's name on the outside. One original and three copies shall be addressed to:

Address:

and be so delivered by hand or by registered mail as to arrive before 2 p.m. (local time) of the date as stated in the Tender Notice.

Tenders received after the due date and time shall be returned unopened. Tenderers shall be responsible for assuring that their Tenders are actually received on time at the place and office designated. Any Tender submitted after the date and time prescribed above for Opening of Tender shall not be considered even though it becomes late because of factors beyond the Tenderer's control such as delays in mail handling or customs clearance. Should there be any discrepancies between the original and other copies, the original shall be deemed to be correct.

The Tender shall be signed in the handwriting of the Tenderer. In the case of a Corporation, the Tender shall be signed in the handwriting of the proper officers with the Corporation seal affixed. In the case of a consortium, Tenders shall be signed by the proper officers of each member of the consortium.

1.5 Opening of Tenders

Tenders will be opened publicly at the office of ( ) on the same date as stated in the Invitation to Tenderers.

1.6 Completeness of Tender

The Tender must be prepared according to the Forms in Sections 5 and 6 of the Contract documents with all blanks therein and all the schedules duly filled in without any omissions and signed in ink. Any Tender which is incomplete or does not include the whole of the Works covered by the Specifications will not be considered. Tender written in pencil shall not be considered.

1.7 Prices

- 1) Prices in the Schedule of Prices in Section 5 of the Tender Document shall be quoted in Japanese Yen.
- 2) The price shall be divided and split as specified in Schedule of Prices of the Tender Documents and mention the following prices clearly.
  - a) FOB Price
  - b) CIF Price (Name of Port)
  - c) Custom Clearance & Transportation to Site
  - d) Erection Cost
  - e) Grand Total

1.8 Eligibility of Tenderer

Payments by the Government of Japan against the submission of the Authorization to Pay (A/P) issued by the Government of Honduras will be made in all respects subject to the provisions of the Exchange of Notes (E/N). The Contract shall meet the following eligibility requirements.

- A. The Contractor must be Honduras national or Honduras juridical person registered at Colegio de Ingenieros Civiles de Honduras (C.I.C.H).
- B. The Equipment supplied must be of Japanese origin.

1.9 Price Variation

The Tenderer's attention is drawn to the fact that no price variation will be accepted in this contract. All the prices inserted in the Contract shall be firm throughout the life of the Contract.

1.10 Bid Bond

The Tenderer shall submit, together with his Tender, giving special attention to Section 6, Form 2, a Bid Bond payable to the Employer in the form of a certified cheque, a bank draft or an irrevocable unconditional letter of guarantee issued by a first class bank or insurance company against the value of two (2) percent of the total Tender Price.

The Bid Bond shall be valid for one hundred and fifty (150) calendar days following the closing date for receipt of the Tenders.

In the event that the Tenderer, whose Tender has been accepted by the Employer, fails to enter into a formal agreement in accordance with the enclosed specimen (Section 6, Form 4) or fails to establish the Performance Bond, as required in articles of General Conditions (Section 2.5 (4)) within thirty (30) calendar days after the date of Signing the Contract, the Bid Bond will be forfeited in lieu of liquidated damages.

This period may be extended by the Employer in the event of any unforeseen delay in the preparation of the Contract Documents by him.

The Employer will return Bid Bonds accompanying unsuccessful Tenders .

1.11 Interpretation of Contract Documents

If the Tenderer has any doubt as to the meaning or interpretation of any portion of the Tender Documents, he shall apply in writing to the Employer. Any explanations of the Tender Documents will be given exclusively in the form of an addendum properly issued, which will simultaneously be forwarded to all Tenderers who have received the Tender Document.

The Employer shall not be responsible for any errors or misinterpretations of the Tender Documents resulting from a failure of the Tenderer to request such explanation or to inform himself.

Any questions which could not be settled by an addendum properly issued prior to submission of Tender shall be mentioned in the Tender, stating the basis on which the Tender was prepared, but it should be clearly understood that neither the Employer nor the Engineer is bound to agree with the assumptions of that Tender.

1.12 Validity of Tender

The Tender must be valid for acceptance within a period of 150 days from the date of opening of Tenders specified herein. During the period of validity of the Tender stated in the Form of Tender, the Tenderer shall be irrevocable and all rates, prices and amounts stated therein shall be firm.

1.13 Commitment on Signing Form of Tender

By signing the Form of Tender the Tenderer admits and agrees that he has completely examined and studied various terms and condition of Contract, Technical Specifications and take all matters into account that may in any way affect his rates, prices or risks and obligations under the Contract. Such signature shall be considered as an undertaking on the part of Tenderer to execute the works and hand them over exactly in the manner stipulated in terms, conditions and specification of Contract Documents.

1.14 Acceptance and Rejection of Tenders

The Employer does not bind himself to accept the lowest Tender or any Tender, nor to assign any reason for the rejection of any Tender. Furthermore, the Employer reserves the right to waive any informalities or irregularities in any of the Tenders submitted.

1.15 Withdrawal of Bids

The Tenderer is allowed to withdraw his Tender prior to the time fixed and set for the Opening of Tender, if he communicates his request to the office which address is stated in Section 1.4 of Instruction to Tenderers in writing. Withdrawn Tenders will be returned unopened to the Tenderer. Withdrawal of Tender shall not be allowed after the Opening of Tender. In the event of the Tenderer withdrawing his tender before the expiry of the period of validity the amount of the Bid Bond in respect of the Tender shall become forfeit to the Authority to defray its expenses incurred in soliciting these Tenders and as damages consequent upon delay in the commencement of works.

1.16 Language and Units System

All correspondence in connection with the Tender and Contract and all matters accompanying the Tender which are relevant to its examination are to be in the English language and expressed in units of the metric system.

1.17 Expenses in Preparation of Tender

The Employer will neither be responsible for, nor pay for any expenses or loss which may be incurred by any Tenderer in the preparation and submission of his Tender.

1.18 Information to be sent with Tender

The following shall be prepared by the Tenderers and shall be incorporated in the Tenders:

- a) Acknowledgement of receipt of Addenda
- b) The Schedule of Prices and Bill of Quantities
- c) All forms as indicated in Section 6 of these contract documents, namely:
  - i) Tender Form
  - ii) Bid Bond
  - iii) Contract Agreement
- d) A list of such parts of the Works as the Tenderer proposes to sub-contract together with the names, qualifications and addresses of intended sub-contractors
- e) Comments on or assent to the Technical Specifications
 

Where any Tenderer proposes to modify, substitute or change any part or parts of the Technical Specifications the following procedure will apply:

  - i) Any modification, substitution or change must result in an economic advantage to the Employer.
  - ii) Any modification, substitution or change must be backed-up by sufficient technical information, proven performance, drawings and other necessary details for proper evaluation by the Employer during the Tender evaluation period.
  - iii) The Employer's decision as to whether any modification, substitution or change in the Technical Specifications will be incorporated in the Contract shall be final.
- f) A drawing of the Site, showing the proposed general arrangement of the equipment called for in the Tender, dimensions, clearances and work areas needed by the Contractor
- g) Technical data complete as detailed in the Technical Specifications

#### 1.19 Standards

If the Tenderer offers Equipment which conforms to standards other than those stipulated in the Specification, full details including copies in the English language of such standards shall be submitted with the Tender. If approved by the Employer, the alternative standards shall be incorporated in the Contract, otherwise the specified standards shall be applied.

#### 1.20 Alterations in Tender

No alteration is to be made in the Forms of the Tender except in filling in the blanks as directed. If any such alterations are made or if these instructions are not fully complied with, the Tender may be rejected.

#### 1.21 Additions in Tender

The Tenderer, however, is at liberty to add further details that he may desire and in the event of his so doing, shall print or type such details and annex the said details to his Tender. Such additional details shall not be binding on the Employer if they conflict in any way with requirements of the Contract Documents unless they are subsequently incorporated in the Contract.

1.22 Alternative Tender

In addition to the main Tender, the Tenderer may submit alternative tenders for an alternative arrangement of the Equipment which differs from the base arrangement of the Equipment as set forth in the Specifications. Such alternative arrangement shall have the effect of reducing the total cost of the Equipment and shall not sacrifice operating convenience and serviceability of the Equipment. The alternative arrangement proposed by the Tenderer shall be complete in every respect and shall perform the same functions as the Equipment specified herein.

The Tender shall contain description of his proposed alternative arrangement with complete scale drawings, and shall prepare a separate and complete tender for the Equipment for this alternative arrangement.

1.23 Site Conditions

The Tenderer shall have personal knowledge of the location of the proposed work and access thereto and shall acquaint himself with the actual conditions and requirements thereof, including labor conditions and labor rates and shall not claim at any time after submission of the Tender or the subsequent execution of the Contract that there was any misunderstanding with regard to the conditions imposed by the Contract or prevailing at a Site or Sites.

1.24 Packing and Transportation

Refer to 2.7, (3) of General Conditions (Section-2)

1.25 Spare Parts

The Tenderer shall tender for the supply of essential spare parts listed in the Bill of Quantity. Where spare parts listed are not appropriate, the Tenderer may delete the item marking it "not appropriate".

The Tenderer shall add to the list such items as are not included but which are considered by the Tenderer to be appropriate to the Equipment being offered. Recommended spare parts added to the list of essential spare parts shall be quoted in a separate list and shall allow for maintenance of the Equipment for a period of five years. The recommended spare parts will not be considered in the evaluation of Tenderers.

1.26 Site Erection Force

All necessary technicians and skilled, semi-skilled and unskilled labor for the Contractor on the Works shall be provided and/or employed by the Contractor at his own cost.

1.27 Construction Equipment

All necessary construction equipment including lifting and handling equipment shall be provided and/or hired by the Contractor at his own cost.

### 1.28 Qualification of Tenderers

The Tenderer is requested to qualify himself by submitting the following documents in triplicate together with the tender.

- a) Annual financial statement of the firm for the last three (3) years.
- b) Banking reference issued by reputed bank.
- c) Supply record of generally similar equipment and materials to that called for in the Tender Document over the last five (5) years.
- d) Capacity of manufacturer giving the range of manufacturing facilities for supply of similar equipment and materials with (i) Location, (ii) Fabrication Capacity, and (iii) Performance Testing Capacity.
- e) Particulars of key mechanical and electrical engineers.
- f) Description of supply record of similar equipment and materials, if any.

### 1.29 Insurance

All insurance including Marine upto the stage of delivery at the Site and, storage thereat, upto delivery at Site, and upto Provisional Acceptance is the responsibility of the Contractor.

Furthermore, the Contractor must effect insurance against bodily, material and property damage or injury to third parties, for himself and the Employer. The Employer may request presentation of the insurance certificates and payment receipts for the premia, at any time.

If the Contractor fails to effect sufficiently the insurance mentioned or to maintain these the Employer is entitled to cover the necessary policies himself and to pay the corresponding premia and deduct these payments from payments due to the Contractor.

The Contractor shall insure the Works and sections thereof for their full Contract Value and the cost of materials received from the Employer against loss, damage or destructions by fire lighting, earthquake, theft, sea risks and all other insurable risks upto the Provisional Acceptance in his and the Employer's name. The cost of material received from the Employer's warehouse should be thirty (30) percent of the Contract Value. Non-insurable risks and insurable risks of exorbitant prices have to be indicated expressly and separately in the offer.

Upon request, the Contractor must submit to the Employer the insurance policies and payment receipts for the premium. All payments received under the insurance policies are to be used for replacing or repairing lost, damaged, and destroyed Equipment.

### 1.30 Further Information

Any further information may be obtained on application in writing to the Consultant with a copy to the Engineer. Such application shall be received not later than thirty (30) days prior to the date on which the Tender has to be submitted.



The Consultant's address is as follows:

Chuo Kaihatsu Corporation  
3-13-5, Nishi-Waseda  
Shinjuku-ku, Tokyo, Japan 160  
ATTN: International Project Department

### 1.31 Award of Contract

After evaluation of the Tenders by the Employer the successful Tenderer will be informed by means of a Letter of Intent dispatched prior to the date of validity of Tender stated in the Form of Tender or any agreed extensions set for thereto. The Successful Tenderer shall be, unless otherwise specified in the Tender Documents, considered as Contractor from fourteen (14) days after the despatchment of the Letter of Intent. The Contractor shall execute the Contract and his surety shall deposit the Performance Bond in form of a letter of guarantee amounting equal to ten (10) percent of the Contract Price. In the event, if the successful Tenderer fails to execute the formal Contract or shall not deposit the Performance Bond, the amount of the Bid Bond shall become forfeit to the Authority to defray its expenses incurred in soliciting these Tenderers and as damages consequent upon delivery in the commencement of Works. In this Letter of Intent the Tenderer will be requested to send to the Employer authorized representatives for negotiating and signing the Contract. At the same time the Tenderer will be asked to prepare immediately for commencement of the Works.

### 1.32 Evaluation of Tenders

The evaluation of the valid Tenders received will be carried out on the basis of JICA's procurement guidance. Comparison of Tender will be made on the basis of the total price for the Works to be performed by the Contractor. Important considerations in awarding the Contract will be the qualification of the Tenderer, his experience in the construction of projects comparable to those covered by the Technical Specifications, the guarantees offered by the Tenderer, and the plan and organization under his control.

The Employer reserves the right to accept the Tender which, in its judgement, is the best and most acceptable Tender in his interest, or to reject any or all Tenders and to waive irregularities and informalities in any Tender that is submitted, without assigning any reasons whatsoever.

Tenders will be rejected if:

- the Tender is incomplete
- any condition of the Tender, which is considered essential, is contradictory to the Tender Documents
- the Bid Bond is not enclosed or is not acceptable in form and/or substance
- if qualifications are unsatisfactory

The rejection of Tender does not entitle the Tenderer to any compensation or payment.

1.33 Commencement and Completion of Work

The Contractor shall commence the Works immediately after signing the Contract and complete the Works within ..... months from the date of said signing.

1.34 Right to Order Additional Supply

The Employer shall have the optional right to award additional supplies and services of the same type as requested by the Tender Documents at the periods, terms and conditions as valid for the Tender. However, this option shall be exercised within a period of six (6) months following the award of the Contract or approval of final quantities and price schedule, whichever is the latter.

## **SECTION - 3**

**GENERAL CONDITION**



## CONDITIONS OF CONTRACT

### 2. GENERAL CONDITIONS

#### 2.1 DEFINITION AND INTERPRETATION

##### 2.1 (1) Definition and Interpretation

In the Contract (as hereinafter defined) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

"Employer" means (Name of Project Owner) who has called for Tenders to provide and execute the Works and who will employ the Contractor and the legal successors in title to the Employer but not (except with the consent of the Contractor) any assignee of the Employer.

"Consultants" means the authority with the overall responsibility of assisting the Employer in Contract execution as appointed by the (Name of Agency).

"Contractor" means the person or persons, firm or company whose tender has been accepted by the Employer and includes the Contractor's personal representative, successors and permitted assigns.

"Sub-contractor" means any person (other than the Contractor) named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-let with the consent in writing of the Engineer, and the legal personal representatives, successors and assignees of such person.

"Engineer" means the Engineer appointed from time to time by the Employer and notified in writing to the Contractor to act as Engineer for the purpose of the Contract in place of Engineer so designated.

"Engineer's Representative" means any Resident Engineer or assistant of the Engineer appointed from time to time by the Engineer to perform the duties delegated and whose authority shall be notified in writing to the Contractor by the Engineer.

"Works" means all work to be carried out by the Contractor under the Contract.

"Equipment" means equipment, materials, apparatus, articles and things of all kinds to be supplied under the Contract other than the Contractor's equipment.

"Temporary Works" means all temporary works of whatever nature required for the furnishing, manufacture, testing, transportation, installation, commissioning and execution, completion and maintenance of the Works.

"Contract" means the Conditions of Contract, General Conditions, General and Technical Specifications, Bill of Quantities and Schedule of

Prices, Drawings and the Letter of Acceptance and the Contract Agreement (if completed).

"Contract Price" or amount of contract means the amount indicated in the Contract or its amendments in the Tender.

"Contract Value" means that part of the Contract price which is properly apportionable to the Works in question having regard to the state, condition, and topographical location of the Equipment, the amount of the Works completed, all other relevant circumstances, and disregarding any changes that may have occurred since the date of the Contract in the cost of executing the Works.

"Time for Completion" means the time for completion of the Works as stated in the General Specifications, and shall be calculated from the date of signing of the Contract.

"Contractor's Equipment" means all appliances or things of whatsoever nature required in or about the execution, completion or testing of the Works but does not include equipment, materials or other things intended to form or forming part of the permanent Works.

"Specifications" means Specifications, Technical Specifications, Schedules and Drawings making up part of and issued with these General Conditions and modifications thereof made under Clause \_\_\_\_ (Variation).

"Drawings" means the drawings referred to in the Specification and any modification of such drawings approved in writing by the Engineer and such other drawing as may from time to time be furnished or approved in writing by the Engineer.

"Shop Tests" means tests as laid down in the Technical Specifications on individual components of the Equipment and which are to be carried out in the presence of an authorised representative of the Employer before they are packed for shipping.

"Site" means the lands and other places on, under, in or through which the Works are to be executed or carried out, and any other lands or places provided by the Employer for the purpose of the Contract, together with such other places as may be specifically designated in the Contract as forming part of the Site.

"Site Test" means tests carried out at the Site as laid down in the Technical Specifications on individual Equipment prior to installation at the Site.

"Acceptance Tests and Operating Tests" means such tests to be made by the Contractor before the Works are taken over by the Employer as are provided for in the Contract.

"Gross Misconduct" means an act or omission on the part of the Contractor implying either a failure to pay due regard to serious consequences which a conscientious and reasonable contractor would normally foresee as likely to ensue, or a deliberate disregard of any consequences of such act or omission.

"Month" means calendar month.

"Writing" means any manuscript, type-written communication or statement under seal or signature.

"Approved" means approved in writing, including subsequent written confirmation of previous verbal approval and "approval" means approval in writing and its meaning is the same as "approved".

"Date of Commencement" means the date of signing of the Contract.

"Foreign Currency" means a currency of a country other than that in which the Works are to be executed.

"Shipping Documents" means the following:

- Bill of Lading;
- Shipping Invoice;
- Packing List;
- Insurance Policy;
- Certificate of the Country of Origin
- Test Certificate
- Any other information which may reasonably be requested by the Employer

- (2) Words implying persons shall include firms and corporations. Words implying the singular only also include the plural and vice versa where the context requires.

Headings in the Contract shall not be deemed to be part thereof or be taken into consideration in the interpretation or construance thereof or of the Contract.

## 2.2 ENGINEER AND ENGINEER'S REPRESENTATIVE

### 2.2 (1) Engineer's Instructions

After the Tender has been accepted by the Employer all instructions and orders to the Contractor shall, except as herein otherwise provided be given by the Engineer. The Engineer shall carry out such duties in issuing decisions, certificates and orders as are specified in the Contract.

### (2) Engineer's Representative

The Engineer may from time to time delegate to the Engineer's Representative any of the powers, discretions, functions and authorities vested in him and may at any time revoke any such delegation. Any such delegation or revocation shall be in writing signed by the Engineer and in the case of a delegation shall specify the power, discretion, functions and authorities thereby delegated and the person or persons to whom the same are delegated. No such delegation shall have effect until a copy thereof has been delivered to the Contractor. Any person to whom any such delegation is made shall be entitled to exercise the powers, discretions, functions and authorities so delegated to him as aforesaid.

(3) Resident Engineer

If a Resident Engineer be appointed in accordance with Section 2.2 (2) (Engineer's Representative) to watch the carrying out of the Contract, the Contractor shall afford him every reasonable assistance for so doing, but the Resident Engineer shall not be authorized to relieve the Contractor in any way of his duties or obligations under the Contract. Any written notice from the Resident Engineer condemning any Equipment or workmanship shall have the effect of a similar notice given by the Engineer under Section 2.8 (5) (Rejection) except that the Contractor may appeal to the Engineer for his decision in the matter.

(4) Setting Out

The Contractor shall be responsible for the true and proper setting out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing, and for the correctness (subject as above-mentioned) of the positions, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labor in connection therewith. If at any time during the progress of the Works, any error shall appear or arise in the positions, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer or the Engineer's Representative, shall at his own cost, rectify such error to the satisfaction of the Engineer or the Engineer's Representative, unless such error is based on incorrect data supplied in writing by the Engineer or the Engineer's Representative or as a result of default by another contractor, not being a sub-contractor, in which case the cost of rectifying the same shall be borne by the Employer. The checking of any setting out or of any line or level by the Engineer or the Engineer's Representative shall not in any way relieve the Contractor of his responsibility for the accuracy thereof. The Contractor shall carefully protect and preserve bench mark, sight rails, pegs and other things used in setting out the Works.

2.3 ASSIGNMENT AND SUB-LETTING

2.3 (1) Assignment

The Contractor shall not, without the consent in writing of the Employer which shall not be unreasonably withheld, assign or transfer the Contract or the benefits or obligations thereof or any part thereof to any person, provided that this shall not affect any right of the Contractor to assign, either absolutely or by way of charge, any money due or to become due to him or which may become payable to him under the Contract.

Any such consent shall be conditional on any agreement between Contractor and assignee complying with the obligations of the Contractor under the Contract.

(2) Sub-letting

1) The Contractor shall not, without consent in writing of the Engineer, which shall not be unreasonably withheld, sublet the Contract or any



part thereof, or make any subcontract with any person or persons for the execution of any portion of the Works but the restriction contained in this section shall not apply to subcontracts for equipment and materials, for minor details, or for any part of the Works of which the makers are named in the Contract. Any such consent shall not relieve the Contractor from his obligations under the Contract.

- 2) As soon as practicable after the placing of the Contract the Contractor shall obtain the Engineer's Approval to the subcontracts he proposes to enter into for the satisfactory completion of the Works. This Approval shall be obtained for the suppliers of all principal materials and components.
- 3) Any agreement entered into between Contractor and Sub-contractor which is at variance with any condition of these General Conditions shall not be binding on the part of the Employer.

## 2.4 CONTRACT DOCUMENT

### 2.4. (1) Language

The Language in which the Contract documents shall be drawn up shall be the English language. All correspondence, drawings, and operating and maintenance instructions shall be written in English.

### (2) Compliance with Laws and Governing Law

- 1) The Contractor shall in the manufacture of the Equipment and in the execution of the Works on Site observe and comply with and be bound by the laws of the country of manufacture of the equipment and the laws of the country where the equipment is to be erected so far as such laws concern the manufacture, erection and operation of the Works.
- 2) The law which is to apply to the Contract is the Law of the Republic of Honduras.

### (3) Documents Mutually Explanatory

- 1) Subject to the foregoing the several documents forming the Contract are to be taken as mutually explanatory of one another but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer, who shall thereupon issue to the Contractor instructions directing in what manner the work is to be carried out. Provided always that if, in the opinion of the Engineer compliance with any such instructions shall involve the Contractor in any expenses which, by reason of any such ambiguity or discrepancy, the Contractor did not and had reason not to anticipate, the Engineer shall certify and the Employer shall pay such additional sum as may be reasonable to cover such expense.
- 2) Anything not mentioned in the written part of the Specifications and shown on the drawings or anything mentioned in the written part of the Specifications but not shown on the drawings shall be of like effect

as if shown or mentioned in both. In case of any difference between scale dimensions and figures on the drawings, the figures shall prevail. In case of any difference between drawings and the written part of the Specifications, the latter shall prevail.

(4) Drawings

- 1) The Contractor shall submit for approval to the Employer with copies to the Engineer such drawings, as may be called for in the Specifications or as the Engineer may reasonably require. Within one month after receiving such drawings, the Engineer shall approve or otherwise. Copies of all drawings which require to be approved by the Engineer shall be provided in triplicate by the Contractor. The Contractor shall supply additional copies of approved drawings in accordance with the details set out in the Specifications.
- 2) Drawings approved as described above shall be called "working drawings" and shall not be deviated from except as provided in Section 2.12 (Variations).
- 3) The Engineer shall have the right at all reasonable times to inspect at the factory of the Contractor all or any portion of the Equipment.
- 4) Approval of the drawings does not relieve the Contractor from any responsibility for error or deviations from the Contract requirements.
- 5) Drawings provided by the Employer shall remain in the sole custody of the Engineer but one transparency thereof shall be furnished to the Contractor free of cost. The Contractor shall provide and make at his own expense any further copies required by him.
- 6) The Contractor shall give adequate notice in writing to the Engineer or the Engineer's Representative of any further drawing or Specifications of the Works or otherwise under the Contract.
- 7) Any manufacturing work done prior to the approval of drawings shall be at the Contractor's risk.

(5) Mistakes in Drawings

The Contractor shall be responsible for any discrepancies, errors, or omissions in the drawings and other particulars supplied by him, whether such drawings and particulars have been approved by the Engineer or not, provided that such discrepancies, errors, or omissions be not due to inaccurate information or particulars furnished in writing to the Contractor by the Employer or the Engineer. The Contractor shall at his own expense carry out any alterations or remedial Work necessitated by reason of such discrepancies, errors or omissions for which he is responsible and modify the drawings and information accordingly. The Employer shall be responsible for drawings and information supplied in writing by the Employer or the Engineer and for the details of special Work specified by either of them. The Employer shall pay any extra cost reasonably incurred by the Contractor due to any alterations of the Works

necessitated by reason of inaccurate information so supplied to the Contractor.

(6) Operation and Maintenance Instructions

The Contractor shall furnish to the Employer before the Works are taken over, operation and maintenance instructions together with drawings (other than shop drawings) of the Works as completed in sufficient detail to enable the Employer to maintain, dismantle, reassemble and adjust all parts of the Works. Unless otherwise agreed, the Works shall not be considered to be completed for the purpose of taking over until such instructions and drawings have been supplied to the Employer.

2.5 OBLIGATIONS OF THE CONTRACTOR

2.5 (1) Contractor's General Responsibilities

The Contractor shall, subject to the provision of the Contract, and with due care and diligence, execute and maintain the works and provide all labour, including the supervision thereof materials, construction plant and all other things, whether of a 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 reasonable to be inferred from the Contract.

(2) The Contractor shall take full responsibility for the adequate stability and safety of all site operations and method of construction, provided that the Contractor shall not be responsible, except as may be expressly provided in the Contract, for the design or specification of the Permanent Works, or for the design and specification of any temporary works prepared by the Engineer.

(3) The Contractor shall, when called upon so to do enter into and execute the Contract Agreement, to be prepared and completed at the cost of Employer, in the form making up part of the Contract with such modifications as may be necessary.

The Contract Agreement shall be signed within one (1) month after the issuing date of Letter of Intent.

(4) Performance Bond

The Contractor shall at his own expenses attain a bank guarantee as Performance Bond for the due performance of the Contract, amounting ten (10) percent of the Contract Price. The terms of the said bond shall be approved by the Employer. This Performance Bond must be presented within thirty (30) days from the date of signing this Contract. The validity of the Performance Bond shall be valid until twelve (12) months after the date of Completion of whole works contracted herein.

(5) Claims under bond

If the Employer shall consider himself entitled to any claim under the Bond he shall forthwith so inform the Contractor specifying the default of the Contractor.

Should the Contractor fail to remedy such default within forty (40) days after the receipt of such notice the Employer shall be entitled to require the Bond to be forfeit to the extent of the loss or damage incurred by reason of the default.

(6) Reduction of bond

If the Contract provides for Provisional Acceptance of the Works in sections, as each such section is taken over the Bond shall be reduced proportionately.

(7) Sufficiency of Tender

1) The Contractor shall be deemed to have satisfied himself before tendering as to all the conditions and circumstances affecting the Contract Price, as to the possibility of executing the Works as shown and described in the Contract, as to the general circumstances at the Site of the Works and as to the general labor position at the Sites and to have fixed his prices according to his own view for these as no additional allowance, except as otherwise expressly provided, will afterwards be made beyond the Contract Price. The Contractor shall be responsible for any misunderstanding or incorrect information however obtained except information given in writing by the Engineer.

2) If the Specifications do not contain particulars of the Equipment which are obviously necessary for the proper completion of the Works, and the intention to include which is nevertheless to be inferred, all such Equipment shall be supplied and executed by the Contractor without extra charge. If the Contractor requires additional information, he shall so request in writing to the Employer who will provide such detailed information as necessary within a reasonable time.

(8) Engineer's Decision

The Contractor shall proceed with the Works in accordance with decisions, instructions and orders given by the Engineer in accordance with these conditions, provided always that:

a) if the Contractor shall, without undue delay after being given any decision, instruction or order otherwise than in writing, require it to be confirmed in writing, such decision, instruction or order shall not be effective until written confirmation thereof has been received by the Contractor,

b) if the Contractor shall, by written notice to the Engineer within fourteen (14) days after receiving any decision, instruction or order of the Engineer in writing or written confirmation thereof, intimate that he disputes or questions the decision, instruction or order, giving his

reasons for so doing, either party to the Contract shall be at liberty to refer the matter to arbitration pursuant to Section 2.18 (1) (Settlement of Disputes and Arbitration) but such an intimation shall not relieve the Contractor of his obligation to proceed with the Works in accordance with the decision, instruction or order in respect which the intimation has been given. The Contractor shall be at liberty in any such arbitration to rely on reasons additional to the reasons stated in the said intimation, and

- c) in case of any decision or instruction involving financial implications the Contractor shall obtain written confirmation from the Engineer.

(9) Program to be Furnished

- 1) Within one (1) month after the acceptance of his Tender, the Contractor shall submit to his approval the Engineer a program showing in detail his proposed program of providing for the orderly completion of the Works by the date specified in the Contract. The submission to and approval by the Engineer of such program shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

Therefore, the Contractor shall, when required by the Engineer, furnish a revised program. The revised program shall be provided for the orderly completion of the Works within the times specified and in accordance with the requirements of the Contract.

- 2) After submission to and approval by the Engineer of such program the Contractor shall adhere to the order of procedure and method stated therein unless he obtains the written permission of the Engineer to vary such order or method.
- 3) Monthly progress reports shall be provided by the Contractor indicating the actual state of progress during the course of the Contract. Three (3) copies of such progress reports shall be submitted by the Contractor to the Engineer on or before the tenth (10) day of each calendar month.

(10) Contractor's Representative and Workmen

- 1) The Contractor shall employ one or more competent representatives, whose name or names shall have previously been communicated in writing to the Engineer by the Contractor, to superintend the carrying out of the Works on the Site. The said representative or if more than one shall be employed, then one of such representatives, shall be present on the Site during working hours, and any orders or instructions which the Engineer may give to the said representative of the Contractor shall be deemed to have been given to the Contractor.

The said representative shall not be removed without the written consent of the Engineer.

2) The Engineer shall be at liberty by notice in writing to the Contractor to object to any representative or person employed by the Contractor in the execution of or otherwise about the Works who shall, in the opinion of the Engineer, misconduct himself or be incompetent or negligent and the Contractor shall remove such person from the Works.

(11) Contractor's Equipment

Unless specific arrangement be made to the contrary the Contractor shall, at his own expense, provide all Contractor's Equipment, labor, haulage and power necessary to execute and complete the Works.

(12) Fencing, Lighting and Guarding

The Contractor shall be responsible for the proper lighting, guarding and watching of all the Works on the Site until taken over. The Employer shall be responsible for the proper fencing of all the Works, and temporary roadways and footways as far as the same may be rendered necessary by reason of the Works for the accommodation and protection of the Employer and occupiers of adjacent property, the public and others. No naked light shall be used by the Contractor on the Site without special permission in writing from the Engineer.

(13) Electricity, Water, etc.

The Contractor shall make provision for electricity, water supply and any other required facilities for the construction Works at Site at his own cost.

(14) Care of the Works

1) The Contractor shall take full responsibility for the care of the Works or any section or portion thereof until the date stated in the Certificate of Provisional Acceptance issued in respect thereof under Section 2.9 (1) (Acceptance Tests, and Provisional Acceptance) and in case any damage or loss shall happen to any portion of the Works not taken over as aforesaid from any cause whatsoever save and except the excepted risks as defined in paragraph 2) of this Section the same shall be made good by and at the sole cost of the Contractor and to the satisfaction of the Engineer. The Contractor shall also be liable subject to Section 2.5 (18) (Limitations on Contractor's Liability) for any loss of or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of completing any outstanding Work or complying with his obligations under Section 2.11 (3) (Defects).

(15) Force Majeure

Should the Contractor be delayed in the final completion of the Work by cause or causes outside of and beyond the control of the Contractor, such

as Act of God (including but not limited to flood, earthquake, typhoon, epidemic or other natural calamity), war or armed conflict or the serious threat of the same (including but not limited to hostile attack, blockade, embargo, riot or insurrection), government order or regulation, labor disputes (including but not limited to strike, slowdown, civil disturbances, lockout or sabotage) and other causes similar in kind to those enumerated not within the control of the Contractor, which makes the performance of the Contract not feasible and which by the exercise of due diligence the Contractor in performance of the Contract is unable to overcome, then an extension of time sufficient to compensate for the delay, as determined by the Engineer will be granted by the Employer provided, however, that the Contractor shall give the Employer and the Engineer notice in writing within fourteen (14) days or any further period as the Employer shall allow for the receipt of such notice, of the cause of delay in each case and shall demonstrate that he has used all reasonable means to minimize the delay.

Any delays claimed under force majeure must be properly documented to the Employer and the Engineer.

On receipt of any such notice of delay, the Employer and the Engineer will promptly ascertain the facts and extent of the delay and will extend the time of completion of the Work when, in the opinion of the Employer and the Engineer, the delay is caused by force majeure or the findings of fact justify an extension. The Employer's decision shall be binding on the Contractor, subject to the provisions of Section 2.18 (Settlement of Disputes and Arbitration).

(16) Injury to Third Parties

- 1) The Contractor shall, subject to Section 2.5 (18) (Limitations on Contractor's Liability) indemnify the Employer in respect of all damage or injury occurring before all the Works shall have been taken over to any person or to any property other than property forming part of the Works and against all actions, suits, claims, demands, costs, charges and expenses arising in connection therewith which shall be occasioned by the negligence of the Contractor or any Sub-contractor, or by defective design other than a design made, furnished or specified by the Employer and for which the Contractor has disclaimed responsibility in writing within a reasonable time after the receipt of the Employer's instructions, materials or workmanship but not otherwise.
- 2) If while the Contractor is on the Site for the purpose of making good a defect pursuant to Section 2.11 (3) (Defects) there shall occur any losses of or damage or injury to the Works or to any other property or to any person, the Contractor's liability in respect thereof shall be the same as if the said losses, damage or injury had occurred before any part of the Works had been taken over.
- 3) If there shall occur, after the commencement of the Warranty Period in respect of any section or portions of the Works, any loss of or damage or injury to the Works or any other property or person resulting from negligence of the Contractor or by his defective design, materials, or workmanship in respect to the said section or portion of

the Works and occurring prior to said commencement of the Warranty Period, the liability of the Contractor in respect thereof shall be the same as if the said losses, damage or injury had occurred before any part of the Works had been taken over.

(17) Damage to Works

- 1) Upto Provisional Acceptance, the Contractor must protect the Works duly against weather, loss or damage of any kind. Lost or damaged parts of the Works on the Site deriving from causes for which the Contractor is not responsible, must never the less, upon request by the Employer, be restored by the Contractor who will then be refunded for his expenses. All other losses and damages are to be settled by the Contractor at his own expense.
- 2) The Contractor must release the Employer and the Consultant from any responsibility for bodily, material or property damage to third parties which he, his supplies, or his personnel cause, and indemnify them fully.

(18) Limitations on Contractor's Liability

- 1) The Contractor is not liable for:
  - a) indirect damages incurred to the Employer by interruption of production, profit, loss or loss of orders, provided that he has done his utmost to prevent these damages and has obtained previous approval of the Employer,
  - b) all loss and damage occurred by force majeure, such as war, rebellion, mobilization, epidemics, strikes, riots, civil commotions, lock-out, natural catastrophes on a large scale, freight embargo and wastage of an essential working item as far as these risks are not insurable risks within the transport or assembling or erection insurance, or
  - c) damage to lands and cultivations, as far as it is the direct and inevitable consequence deriving from the Works execution together with the special approval of the Employer and the proprietor of these cultivations.
- 2) The whole liability of the Contractor towards the Employer is limited to the amount of the Contract Price and the cost of material received from the Employer's warehouse.
- 3) If claims are made on the Employer for which the Contractor is liable, the Contractor must immediately be informed of them. He must conduct all negotiations and legal disputes to settle the claims at his own expense. Otherwise the Employer shall be authorized to settle such claims and charge the Contractor for any cost which may arise out of the settlement.



- 4) The Contractor will be liable for all claims from accidents and disability to persons employed by the Contractor or his Sub-contractor on the Works, irrespective of the legal background of such claims unless such accidents are the fault of the the Employer. The Contractor has to effect insurance covering such liability.

(19) Accident or Injury to Workmen

The Contractor shall indemnify the Employer against all actions, suits, claims, demands, costs or expenses arising in connection with injuries (other than such as may be attributable to the Employer, his agents or servants) suffered by persons employed by the Contractor or his Sub-contractors on the Works, whether at Common Law or under any statutes in force at the date of the Contract dealing with the question of the liability of the Employer for injuries suffered by employees, and shall take out the necessary policy or policies of insurance to cover and idemnify.

(20) Insurance of Works

Unless the Employer shall have approved in writing other arrangements the Contractor shall, in the joint names of the Contractor and the Employer, insure so far as reasonably practicable the Works and keep each part thereof insured for the Contract Price or such other value as may be mutually agreed between the Employer and the Contractor against all loss or damage from whatever cause from the date of shipment or the date on which it becomes the property of the Employer, whichever is the earlier, until it is taken over by the Employer. The Contractor shall so far as reasonably practicable insure against the Contractor's liability in respect of any loss or damage occurring whilst the Contractor is on Site for the purpose of making good a defect or carrying out the Acceptance Tests and Operating Tests during the Warrantly Period or for the purpose of completing any outstanding Work and against any loss or damage arising during the Period from a cause occurring prior to Provisional Acceptance, for the sum of fifteen (15) percent of the cost named in the Schedules of Prices for the Site. Such insurances shall be effected with an insurer and in terms to be approved by the Employer and the Contractor shall from time to time, when so required by the Engineer, produce the policy and receipts for the premium or premiums or satisfactory evidence of insurance cover. All monies received under any such policy shall be applied in or towards the replacement and repair of the Works lost, damaged or destroyed but this provision shall not affect the Contractor's liabilities under the Contract.

(21) Third Party Insurance

Before commencing the execution of the Works the Contractor, but without limiting his obligations and responsibilities, shall insure against any damage, loss or injury which may occur to any property (including that of the Employer) or to any person (including any employee of the Employer and Engineer) by or arising out of the execution of the Works or in the carrying out of the Contract. Such insurance shall be effected with an insurer and in terms to be approved by the Employer, and the

Contractor shall from time to time when so required by the Engineer produce the policy and the receipts for the premiums or satisfactory evidence of insurance cover. The terms of the policy shall include a provision whereby, in the event of any claim being made against the Employer in respect of which the Contractor would be entitled to indemnity under the policy, the insurer will indemnify the Employer against such claims and any costs, charges and expenses in respect thereof.

(22) Insurance Against Accidents, etc., to Workmen

The Contractor shall insure and shall maintain insurance against his liability under Section 2.5 (19) (Accident or Injury to Workmen) and shall from time to time when so required by the Engineer produce the policy and the receipts for the premiums or satisfactory evidence of insurance cover. The terms of any such policy shall also include the provision to indemnify the Employer as mentioned in Section 2.5 (21) (Third Party Insurance).

(23) Remedy on Failure to Insure

If the Contractor shall fail to effect and keep in force the insurances referred to in this and the preceding Sections the Employer may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by the Employer from any money due or which may become due to the Contractor or recover the same as a debt from the Contractor.

(24) Obligation to Respect Law and Order

The Contractor shall be governed by the laws of the Republic of Honduras. The Contractor must respect in every regard the provisions of the laws, acts, orders or statutes of local authorities or other legally constituted authorities applicable to the Works and must indemnify the Employer for all penalties and obligations of any type which arise from the violation of such laws, acts, local orders or statutes.

Should the expenses incurred by the Contractor in executing the Contract be increased or decreased by laws, acts, orders or statutes being issued subsequent to conclusion of the Contract and affecting the Works the amount of such increase shall be added or the difference deducted from the Contract amount after due examination.

(25) Patent Rights, etc.

1) The Contractor shall fully indemnify the Employer against all actions, claims, demands, costs, charges and expenses arising from or incurred by reason of any infringement of letters, patent design or copyright protected in the Contractor's country or in the Country in which the Equipment is to be erected by the use of any Equipment supplied by the Contractor but such indemnity shall not cover any use of the

Works otherwise than for the purpose indicated by or reasonably to be inferred from the Specifications or any infringement which is due to the use of any equipment in association or combination with any other equipment not supplied by the Contractor.

- 2) In the event of any claim being made or action brought against the Employer arising out of the matters referred to in this Section the Contractor shall be promptly notified thereof and may at his own expense conduct all negotiations for the settlement of the same and any litigation that may arise therefrom. The Employer shall not, unless and until the Contractor shall have failed to take over the conduct of the negotiations or litigation, make any admission which might be prejudicial therein. The conduct by the Contractor of such negotiations or litigation shall be conditional upon the Contractor having first given to the Employer such reasonable security as shall from time to time be required by the Employer to cover the amount ascertained or agreed or estimated as the case may be of any compensation damages expenses and costs for which the Employer may become liable in respect of such infringement as aforesaid. The Employer shall, at the request of the Contractor, afford all available assistance for the purpose of contesting any such claim or action and shall be repaid any expenses incurred in so doing.
- 3) The Employer on his part warrants that any design or instructions furnished or given by him shall not be such as will cause the Contractor to infringe any letters, patent, registered design, trade mark or copyright in the performance of the Contract.

(26) Access to and Possession of the Site

- 1) Subject to Sub-section 4 of this Section access to and possession of the Site shall be afforded to the Contractor by the Employer in reasonable time for installation of Equipment and performance of the Works.
- 2) If a building, structure, foundation or approach is by the Contract to be provided by the Employer such building, structure, foundation or approach shall be in a condition suitable for the efficient transport, reception, installation and maintenance of the Works.
- 3) In the execution of the Works no persons other than the Contractor, Sub-contractors and his and their employees shall be allowed on the Site except by the written permission of the Employer.
- 4) The access to and possession of the Site referred to in Sub-section 1, hereof shall not be exclusive to the Contractor but only such as shall enable him to execute the Works.
- 5) The Employer shall notify in writing to the Contractor the date when the Site including building, structure, foundation or approach referred to in Sub-section 2 above will be ready for Work by the Contractor.
- 6) The Employer shall, before the time specified for delivery of any Equipment to the Site, obtain all consents, wayleaves and approvals

required in connection with the Regulations and By-laws of local or other authority which shall be applicable to the Works.

- 7) The Employer shall obtain all import permits or licences required for any part of the Equipment or Works in reasonable time having regard to the time for delivery of the Equipment for completion of the Works.

(27) Hours of Work

Unless otherwise provided in the Specifications the Employer shall give the Contractor facilities for carrying out the Works on the Site continuously during the normal working hours generally recognized in the district. The Engineer may, after consulting with the Contractor, direct that Work shall be done at other times if it shall be practicable in the circumstances for Work to be so done, and a reasonable sum for Work so done shall be included in the Contract Price unless such Work has, by the default of the Contractor, become necessary for the completion of the Works within the Time for Completion.

(28) No Night or Sunday Work

No work shall be carried out on Site during the night or on Sundays (if locally recognized as days of rest) or their locally recognized equivalent without the consent in writing of the Engineer or the Engineer's Representative except if the work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works in which case the Contractor shall immediately advise the Engineer or the Engineer's Representative. The Engineer or the Engineer's Representative shall not unreasonably withhold any such consent save in exceptional circumstances, nor do so if Work at night or on rest days is considered by the Contractor to be necessary to meet the Time for Completion.

(29) Rate of Progress

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any section is at any time, in the reasonable opinion of the Engineer, too slow to ensure completion by the Time of Completion, the Engineer shall so notify the Contractor in writing and the Contractor shall thereupon take such steps as are necessary and the Engineer may approve to expedite progress so as to complete the Works or such section by the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Section, the Contractor shall seek the Engineer's permission to do any work at night or on Sundays, if locally recognized as days of rest, or their locally recognized equivalent, such permission shall not be unreasonably refused.

(30) Clearance of Site

The Contractor shall at all times during the execution of the Works, keep the Site clean and free from all hazards, accumulations of waste

materials and rubbish and debris caused by his employees or the Works. If the Contractor fails to maintain or leave the Site in a clean and tidy condition within a reasonable time after receiving written notice from the Engineer, the Employer may remedy this default, or cause the same to be remedied, at the Contractor's expense.

Before the Works will be accepted and taken over by the Employer and the Certificate of Provisional Acceptance issued, the Contractor shall remove from the Site and dispose of all surplus materials, Contractor's equipment, rubbish and debris in, upon and about the Site and shall leave the Site and the Works clean, to the satisfaction of the Engineer.

(31) Management of Labor

- 1) The Contractor shall make his own arrangements for the engagement of all local labor or otherwise and, save in so far as the Contract otherwise provides, for the transport, housing, feeding and payment thereof.

The Contractor shall comply with the laws or regulations of Governmental bodies having jurisdiction over matters relating to employment, working conditions, compensation or insurance. He shall accept full and exclusive liability for payment of any and all contributions and for his employees as required under the laws of the above.

Any Contractor's employee for the Works, who shall be deemed by the Employer or the Engineer to be incompetent, disorderly, insubordinate, dangerous, or otherwise unsatisfactory, shall on the written request by the Employer, be removed from the Works by the Contractor at his own expense and shall not at any time thereafter be employed upon the same.

- 2) The Contractor shall not otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders of the the Republic of Honduras for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs or permit or suffer any such importation, sale, gift, barter or disposal by his Sub-contractors, agents or employees.
- 3) The Contractor shall, so far as is reasonably practicable, having regard to local conditions, provide on the Site, to the satisfaction of the Engineer or Engineer's Representative, an adequate supply of drinking and other water for the use of the Contractor's staff and work people.
- 4) The Contractor shall not give, barter or otherwise dispose of to any person or persons any arms or ammunition of any kind or permit or suffer the same as aforesaid.
- 5) The Contractor shall, in all dealings with labor in his employment have due regard to all recognized festival days of rest and religious or other customs.

- 6) In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.
- 7) The Contractor shall at all times take all reasonable precautions to prevent any unlawful riotous or disorderly conduct by or amongst his employees and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.
- 8) The Contractor shall be responsible for observance by his Sub-contractors of the foregoing provisions.

(32) Temporary Offices, etc.

The Contractor shall at his own cost provide office, warehouses and other temporary facilities necessary for the Work.

(33) Living Accommodation

The Contractor shall make necessary arrangements for boarding, lodging and medical care of his own personnel and those of his own Sub-contractors.

(34) Payment of Workmen

- 1) The Contractor shall ensure that all personnel employed by him or by any Sub-contractors on the Works are paid their wages in full at least every month and that such persons are paid on the Works if this is practicable.
- 2) The Contractor shall in respect of all persons employed by him for the execution of the Contract comply with the requirements of labor law of the Republic of Honduras regarding the employment of labor. The Contractor's attention is particularly drawn to the requirements concerning hours and conditions of labor, holidays, night work, rates of pay, sanitary and safety conditions, medical services, health and social insurance and accident insurance.
- 3) The Contractor shall pay local labor employed by him under this Contract not less than the minimum Government rate of wages, hours or conditions of labor so established; the Contractor shall pay rates of wages and observe hours and conditions of labor which are not less favourable than the general level of wages, hours and conditions observed by other employers whose general circumstances in trade or industry in which the Contract is engaged are similar.

(35) Foreign Nationals in the Employment of the Contractor

- 1) The Contractor or his Sub-contractors will be authorized to bring to the Republic of Honduras and to keep there for the length of the Contract any reasonable numbers of qualified personnel.

- 2) The Employer will furnish the Contractor with working permits and other documents required to facilitate entry, residence and departure of foreign personnel employed by the Contractor and Sub-contractor.

(36) Safety

The Contractor shall take all necessary precautions for the safety of his employees and to other persons on the Site appropriate to the nature of the work and conditions prevailing at the Site. The Contractor shall comply with all statutory requirements and with such directions as the Engineer may from time to time consider necessary or desirable.

(37) Manner of Execution

All Equipment to be supplied and all Work to be done under the Contract shall be manufactured and executed in the manner set out in the Specifications, or where not so set out, to the satisfaction of the Engineer and all the Works on Site shall be carried out in accordance with such reasonable directions as the Engineer may give.

(38) Adverse Physical Conditions and Artificial Obstructions

If during the execution of the Works the Contractor shall encounter physical conditions, other than climatic conditions, on the Site, or artificial obstructions, which conditions or obstructions could, in his opinion, not have been reasonably foreseen by an experienced contractor, the Contractor shall forthwith give written notice thereof to the Engineer's Representative and if, in the opinion of the Engineer, such conditions or artificial obstructions could not have been reasonably foreseen by an experienced contractor, then the Engineer shall certify and the Employer shall pay the additional cost to which the Contractor shall have been put by reason of such conditions, including the proper and reasonable cost:

- a) of complying with any instruction which the Engineer may issue to the Contractor in connection therewith, and
- b) of any proper and reasonable measures approved by the Engineer which the Contractor may take in the absence of specific instructions from the Engineer,

as a result of such conditions or obstructions being encountered.

## 2.6 MATERIAL AND WORKMANSHIP

### 2.6 (1) Quality of Materials and Workmanship and Tests

- 1) All materials and workmanship shall be of the respective kinds described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such test as the Engineer may direct at the place of manufacturer, or fabrication, or on the Site. The Contractor shall provide such assistance,

instruments, machines, labour and materials as are normally required for examining, measuring, and testing any work and the quality, weight or quantity of any materials used and shall supply samples of materials before incorporation in the works for testing as may be selected and required by the Engineer.

- 2) The cost of making any test or samples shall be borne by the Contractor.

(2) Inspection of Operations

- 1) The Engineer and any persons authorized by him shall at all times have access to the works and to all workshop and places where work is being prepared or manufactured being obtained for the Works and the Contractor shall offerd every facility for and every assistance in or in obtaining the right to access.
- 2) The Contractor shall agree with the Engineer the date or and place at which any section of Work or equipment will be ready for testing or inspection and unless the Engineer shall attend at the place as named on the date agreed the Contractor may proceed with the test, which shall be deemed to have been made in Engineer's presence, and shall forth with forward to the Engineer duly certified copies of the test reading. The Engineer shall give the Contractor 24' hours notice in writing of his intension to attend the test.
- 3) As and when a section of Work or equipment shall have passed the test referred to in this clause the Engineer shall furnish to the Contractor a certificate in writing to that effect.

(3) Suspension of Works

Upon written instructions from the Employer, the Contractor must interrupt the Works or part of them for the period and in the manner which the Employer deems necessary. During such interruptions, the Contractor must protect and secure the Works properly. Additional direct costs incurred by the Contractor as a consequence of the instruction to interrupt Works are to be added to the amount of the Contract unless the interruption of Works:

- a) is a consequence of the application of other Section(s) of the Contract,
- b) is necessary for the regular execution of the Works or has arisen through weather conditions affecting the safety or quality of the Works or is subject to any fault of the Contractor,
- c) is necessary for the safety of the Works or part thereof, and/or
- d) is caused by insurable risks of force majeure.

The Contractor must inform the Employer of his intensions in writing to claim the above direct cost within thirty (30) days after receiving instruction to interrupt. Failure to communicate this will be considered



as renouncement by the Contractor of his right under the Contract to claim said direct cost for that particular interruption of the execution of the Works.

(4) Rejection

If as a result of such inspection or test of a section of Works, materials and Equipments the Engineer shall decide that such section of work, materials and equipments is defective or not in accordance with the Contract he shall notify the Contractor accordingly stating in writing his objection and reasons therefor. The Contractor shall all speed make good the defect or ensure that the Equipments complies with the Contract or Contractor's account,

(5) All deficiencies revealed by testing and inspection shall be rectified by the Contractor at his own expense and to the approval of the Engineer. Rectified components shall be subject to re-testing and re-inspection.

(6) The Contractor shall provide the Engineer with three (3) copies of reports of all inspections and tests.

2.7 DELIVERY OF EQUIPMENTS

2.7 (1) Delivery

1) The Contractor shall be responsible for timely delivery CIF (Name of Port), delivery to the designated (Name of Place) and delivery to Site (optional) complete and in good condition, of the Equipment which is to be supplied under the Contract.

2) The Contractor is responsible for the Contract and proper procurement of Works in regard to original points, lines and heights notified in writing by the Employer and for the accuracy of positions, heights and dimensions, for adaptation of all parts of the Works and for the provision or all working stock, installations and equipment and labor associated therewith.

(2) Incomplete Delivery

The Contractor shall be responsible for any short supply when the contents of the cases delivered to Sites do not comply with the manifests, for which claim documents shall be prepared immediately by the Contractor for necessary action.

(3) Packing

Each item shall be packed properly or protected for shipment from the place of manufacture to the Site.

Each crate or package shall contain a packing list in a waterproof envelope. All items of Equipment shall be clearly marked for easy identification against the packing list.

All cases, packages, etc., shall be clearly marked on the outside to indicate the total weight, to show where the weight is bearing and the correct position of the slings and shall bear an identification mark relating them to the appropriate shipping documents.

The Employer shall reserve the right to inspect and approve the Equipment and the packing before the items are despatched. The Contractor shall be entirely responsible for ensuring that the packing is suitable for transit and such inspection will not relieve the Contractor from responsibility for any loss or damage due to faulty packing.

## 2.8 TIME FOR COMPLETION

### (1) Commencement Time and Delay

The Contractor shall commence the Work on site within 10 day after the receipt by him Notice to Proceed from Engineer to this effect, and shall proceed with the same with due expedition and without delay, except as may be expressly sanctioned or ordered by the Engineer, or be wholly beyond the Contractor's control.

### (2) Time for Completion

The whole of the Works shall be completed within \_\_\_\_\_ months calculated from the signing of this contract.

### (3) Extension of Time for Completion

- 1) If the Contractor delays the supply of Equipment to the Site or execution of his Works at the Site or the completion of the same due to circumstances for which the Employer is responsible the contractual period of execution will be extended accordingly and the amount of the Contract will, by agreement in writing, be increased by the appropriate direct costs incurred by the Contractor for storing the Equipment subjected to delay and for appropriate precautions to protect and maintain the same and for insuring them against loss, depreciation and damage during the period of such delay.
- 2) After removal of the causes for delay, or execution, or completion of the Works, the Contractor must examine the Works at Site affected by the delay and replace or repair all damage or losses. All costs thereby incurred by the Contractor which are not attributable to defective Work of the Contractor, use of bad material or omissions in fulfilling his contractual obligations, will be added to the amount of the Contract.

If the Contractor fails to complete his Works within the period of execution or any extension thereof as agreed to under the conditions of this Contract, the Employer is entitled, without evidence of damages, to demand the payment of liquidated damage (damages for delay which become effective and due without asking) for each day of delay from payments due to the Contractor. Computation of the liquidated damage for the delay will be as follows:

$$R = \frac{4.M.n^2}{N^2}$$

Where, R = amount of penalty becoming due for a delay of n days  
M = amount of Contract  
N = number of calendar days stipulated initially in the Contract for execution of the Works  
n = number of calendar days of delays (one month is equal to thirty 30 days)

However, the above amount of liquidated damages will be limited to a maximum of ten (10) percent of the Contract Price.

(4) Delivery Time Extension

If, for force majeure or other reasons which he could neither foresee nor avoid, the Contractor is prevented from observing the period of execution and he has given the Employer and Consultant immediate written notification of the existence of such events, he will be granted an extension to the period of execution appropriate to the circumstances. No further claims may be made by the Contractor for such reasons, unless the Contract expressly provides otherwise.

(5) Rejection

If at any time before the Works are taken over the Employer shall:

- a) decide that any Work done on the Equipment supplied or materials used by the Contractor or any Sub-contractor is or are defective or not in accordance with the Contract, or that the Works or any portion thereof are defective or do not fulfill the requirements of the Contract (all such matters being hereinafter in this Section called 'defects'), and
- b) as soon as reasonably practicable give to the Contractor notice in writing of the said decision specifying particulars of the defects alleged and of where the same are alleged to exist or to have occurred, and
- c) so far as may be necessary place the Equipment at the Contractor's disposal,

then the Contractor shall with all speed at his own expense, make good the defects so specified. In case the Contractor shall fail so to do the Employer may, provided he does so without undue delay, take at the cost of the Contractor such steps as may, given all the circumstances, be reasonable to make good such defects. All Equipment provided by the Employer to replace defective Equipment shall comply with the Contract and shall be obtained at reasonable prices and where reasonably practicable under competitive conditions. The Contractor shall be entitled to remove and retain all Equipment that the Employer may have replaced at the Contractor's cost.

2.9 TEST ON COMPLETION

2.9 (1) Acceptance Test and Provisional Acceptance

- 1) The Contractor must inform the Employer of the time and date on which the Works will be ready for operation and the acceptance tests can be carried out, provided such tests are foreseen in the Contract.

Unless otherwise agreed to the Employer must provide sufficient personnel and materials for the tests to be performed. If available, electric current will be provided at the Contractor's cost.

If the test result of any part of the Works is not satisfactory, the said part must be tested again, if required by the Employer, by the Contractor within a reasonable period of time under the same conditions. All costs arising from repeated tests will be born by the Contractor.

After the Works have been declared ready for operation and all acceptance tests have been performed, a completion report will be signed by the Contractor and the Employer.

- 2) After signing the completion report an operating test will be made of the whole Works under the responsibility, direction and at the expense and risk of the Contractor. For this purpose, the Employer will supply all operating materials and the necessary electrical energy, if not provided otherwise.

The duration of the operating test must be as specified. The daily operating time, method of driving and loading during test running will be determined by the Employer.

The operating test is to prove the workability of the Works. Should the Works prove unworkable due to certain defects, the defects must be remedied and thereafter an operating test must again be performed on the Works. Small scale repairs may be made during the test operation.

If the guaranteed figures in the Contract are not reached for the Works or parts thereof in the Contract and accepted by the Employer, the Contractor is obliged to pay the indemnifications indicated, without any further claims. The Contractor is primarily obliged to establish the status provided in the Contract.

During the operating test, the Contractor must instruct the Employer's personnel to the effect that, at the end of the operation test, the personnel are familiar with all questions pertaining to operation and maintenance of the Works.

- 3) If the completion report and thereafter the report on the operating test issued by the Contractor and the Employer certify the workability of the Equipment, "provisional acceptance" takes place, signifying the beginning of the Warranty Period and the transfer of ownership and risk to the Employer. Provisional acceptance will be recorded in a Certificate of Provisional Acceptance.

Exceptionally, the Certificate of Provisional Acceptance can also be issued when the existence of minor defects was noted in the report on the operating test, provided that such minor defects do not impede or endanger the operation of the whole Works and that they are remedied within a reasonable time to be determined by the Employer. The Employer will decide whether a defect is minor or not.

If, for reasons beyond the responsibility of the Contractor, an operating test can not be performed, Provisional Acceptance will take place and the Warranty Period will began six (6) months after the completion report is signed.

If, through a fault of the Employer, the Contractor is prevented from performing the completion and operating tests, the Works will be considered as provisionally accepted seven (7) months after having been reported ready for operation, provided the Works comply with the contractual requirements.

## 2.10 WARRANTY

### 2.10 (1) Warranty Period and Faults during Warranty Period

- 1) The Warranty Period shall be valid for one (1) year, starting from the Provisional Acceptance of Works.

The maximum extension of the warranty period shall be twenty four (24) months from the date of issue of the Certificate of Provisional Acceptance.

For components or parts of the Works exchanged or repaired during the Warranty Period, the original Warranty period will remain valid, subject to the condition that validity will be for a minimum period of six (6) months starting from the date of replacement or repair.

- 2) It is the responsibility of the Contractor to remedy as rapidly as possible all faults and defects of Works occurring during the Warranty Period and resulting from faulty construction, faulty or wrong raw materials, faulty execution or other violations of the Contractor's contractual obligations.

If such faulty and defective Works are not restored by the Contractor within a reasonable period, the Employer is entitled to execute the

necessary Works by himself or have them executed by third parties at the risk and expense of the Contractor, without the Contractor being released from his responsibility for the proper fulfillment of his warranty obligations under the Contract.

Should the replacement or renewal be of such nature as to affect the efficiency of the Equipment or of a part thereof, the Employer is entitled to require tests to be carried out within one (1) month dated from the replacement, according to the stipulations for the acceptance and operating tests. Costs thereby incurred are to be born fully by the Contractor.

2.11 FINAL ACCEPTANCE

2.11 (1) Final Acceptance

Upon expiration of the Warranty Period and fulfillment of all claims for remedying deficiencies, the Equipment is considered as finally accepted by the Employer, to which effect a report on final acceptance will be made.

(2) Use before Provisional Acceptance

If, by reason of any default on the part of the Contractor, a Certificate of Provisional Acceptance has not been issued in respect of every portion of the Works within one (1) month after the time for completion or extended time fixed for completion as the case may be, the Employer shall be at liberty to use the Works or any portion thereof in respect of which a Certificate of Provisional Acceptance has not been issued, provided that the Works or the portion so used as aforesaid shall be reasonably capable of being used and that the Contractor shall be afforded the earliest possible opportunity of taking such steps as may be necessary to permit the issue of a Certificate of Provisional Acceptance.

If by reason of extra or additional Work or any industrial dispute or any cause beyond the reasonable control of the Contractor, the Contractor shall have been delayed or impeded in the completion of the Works, whether such delay or impediment occur before or after the time or extended time fixed for completion, provided that the Contractor shall without delay have given to the Employer or the Engineer notice in writing of his claim for an extension of time, the Employer shall on receipt of such notice grant the Contractor from time to time in writing either prospectively or retrospectively such extension of the time fixed by the Contract for the completion of the Works as may be justified. The Contractor shall have no other claim against the Employer in respect of delay and disorganization of Work arising from the occurrences herein mentioned, except where such is elsewhere expressly provided for in the Contract.

No extension of time will be granted unless the Contractor makes the said written claim within fourteen (14) calendar days of the happening of the event which it is claimed resulted in the delay.

(3) Defects

- 1) If any defects be not remedied within a reasonable time the Employer may proceed to do the Work at the Contractor's risk and expense, but without prejudice to any other rights which the Employer may have against the Contractor in respect of the failure of the Contractor to remedy such defects.

If proper repair or replacement or renewal in place of faulty ones is not possible immediately the Contractor shall at his own expense carry out a provisional improvement with the agreement of the Employer and the Engineer and shall carry out the final improvement as soon as conditions shall permit.

- 2) If the replacements or renewals are of such a character as may affect the efficiency of the Works or any portion thereof the Employer may, within one (1) month of such replacement or renewal, give to the Contractor notice in writing requiring that acceptance and operating tests be made, in which case such tests shall be carried out as provided in Section 2.9 (1) (Acceptance Tests, and Provisional Acceptance).
- 3) These above conditions shall apply to all inspections, adjustments, replacements and renewals and to all tests occasioned thereby carried out by the Contractor pursuant to this Section.
- 4) Save as expressed in this Section the Contractor shall be under no liability in respect of the said defects after the Works have been provisionally accepted.
- 5) Until the final certificate shall have been issued by the Employer, the Contractor shall have the right of access, at all reasonable working hours at his own risk and expense, by himself or his duly authorized representatives, whose names shall have previously been communicated in writing to the Employer, to all parts of the Works for the purpose of inspecting the Works thereof and to the records of the Works and performance thereof for the purpose of inspecting the same and taking notes therefrom. Subject to the Employer's approval, which shall not be unreasonably withheld, the Contractor may at his own risk and expense make any tests which he considers desirable.

(4) Claims for Loss or Damage after Warranty Period

- 1) Subject to Section 2.5 (18) (Limitations on Contractors Liability) it is expressly agreed that the Employer shall have no claim in respect of damage to or loss of property not forming part of the Works arising after the expiration of the Warranty Period nor for loss of profit unless it is shown from the circumstances of the case that the Contractor has been guilty of gross misconduct and the circumstances giving rise to the claim occur within one (1) year after the date of Provisional Acceptance. The Contractor shall have no liability under this Section in respect of any claim unless notice thereof has been given by the Employer to the Contractor within thirty (30) days after the event giving rise to the claim.

- 2) Save as provided under the conditions of this Contract, the Contractor shall be under no liability in respect of defects in or damage to the Works or any section thereof developing or arising after the Works or any section thereof has been provisionally accepted.

2.12 VARIATION

2.12 (1) Variations

- 1) The Contractor shall not alter any of the Works except as directed in writing by the Employer or the Engineer; but the Employer shall have full power, subject to the provision hereinafter contained, from time to time during the execution of the Contract by notice in writing to direct the Contractor to alter, amend, omit, add to or otherwise vary any of the Works, and the Contractor shall carry out such variations and be bound by the same conditions, so far as applicable, as though the said variations were stated in the Specifications. Provided that no such variation shall, except with the consent in writing of the Contractor, be such as will, with any variations already directed to be made, involve a net increase or decrease in the Contract price of more than twenty (20) percent thereof.

In any case in which the Contractor has received any such direction from the Employer which either then or later will, in the opinion of the Contractor, involve an increase or decrease in the Contract Price, the Contractor shall as soon as reasonable and before proceeding therewith advise the Employer in writing to that effect. The difference in cost to the Employer, if any, occasioned by any such variations shall be added to or deducted from the Contract Price as the case may require. The amount of such difference shall be ascertained and determined in accordance with the rates specified in the Schedule of Prices; so far as the same may be applicable and where rates are not applicable such amount shall be agreed between the Employer and the Contractor. Due account shall be taken of any partial execution of the Works which is rendered useless by any such variation.

- 2) If the Employer shall make any such variation in any part of the Works such reasonable notice in writing shall be given to the Contractor as will enable him to make his arrangements accordingly, and in cases where the Equipment is already manufactured or in course of manufacture, or any matter done or drawings or patterns made that require to be altered, a reasonable sum in respect thereof shall be allowed by the Employer. If, in the opinion of the Contractor, any such variation is likely to prevent or prejudice the Contractor from or in fulfilling any of his obligation under the Contract, he shall notify the Employer hereof in writing and the Employer shall decide forthwith whether or not the same shall be carried out. If the Employer confirms his instructions in writing the said obligations shall be modified to such an extent as may be justified. Until the Employer so confirms his instructions they shall be deemed not to have been given.



- 3) On receipt of the Employer's confirmation of instructions in respect of any variation the Contractor shall immediately proceed to carry out such instructions unless the Contractor has notified the Engineer that in his opinion the variation will involve a net addition to or deduction from the Contract Price of more than twenty (20) percent. The Work shall not, without the consent of the Engineer, be delayed pending agreement on price.

(2) Claims

The Contractor shall send to the Employer, once in every month, an account giving particulars (as full and detailed as possible) of all claims for any additional expense to which the Contractor may consider himself entitled and of all extra or additional Work ordered by the Employer which he has executed during the preceding month; no claim for payment for any such Work will be considered which has not been included in such particulars. Provided always that the Employer shall be entitled to authorize payments to be made for any such Work, notwithstanding the Contractor's failure to comply with this condition if the Contractor has at the earliest practicable opportunity notified the Employer that he intends to make a claim for such Works.

(3) Variation Exceeding Twenty Percent

If, with the consent in writing of the Contractor, the total value of all variations ordered under the provisions of Section 2.12 (1) (Variations) exceeds twenty (20) percent of the Contract Price, the Contract Price shall be amended by such sum as shall be agreed upon between the Employer and the Contractor. In the event of disagreement the Engineer shall fix such sum as shall in his opinion be reasonable and proper, regard being had to all materials and relevant factors including the Contractor's on costs and overheads.

(4) Use of Contractor's Equipment

- 1) All Contractor's equipment brought upon the Site shall be used solely for the purpose of the Works, and shall not be taken away by the Contractor except for the purpose of moving it from one part of the Site to another, while it is required on the Site for the purpose of the Works without the permission in writing of the Engineer and the Contractor shall be liable for the loss or destruction thereof or damage thereto which may happen otherwise than through the fault of the Employer.
- 2) If there shall be due owing or accruing to the Employer from the Contractor any monies under or in respect of the Contract of which the Employer shall be unable to obtain payment the Employer shall be at liberty, at the cost of the Contractor, to sell and dispose of any of the Contractor's equipment as he shall think fit and to apply the proceeds towards the satisfaction of such monies as aforesaid. Subject to the foregoing the property in any Contractor's Equipment shall revert to the Contractor on being properly removed from the Site or

on the completion of the Works or on the termination of the Contract whichever may be the earliest.

- 3) The Contractor shall be liable for loss or damage to any of the Contractor's equipment which may happen otherwise than through the default of the Employer.

## 2.13 CERTIFICATE

### 2.13 (1) Delivery of Equipment at Loading Port

- 1) The Contractor shall present to the Employer all shipping documents and invoices as follows:

- Bill of lading
- Shipping invoice covering the Works shipped and their price upto CIF Site.
- Packing list
- Insurance policy
- Certificate of the Country of Origin
- Test Certificate
- Other documents or lists which may be required by the Employer

### (2) Arrival of Equipment to the Site

The Contractor shall present to Employer the list of Equipment arrived at Site designated and this list shall be certified by the Engineer as arrival certificate.

### (3) Additional Equipment and Works

Additional Equipment and Works which are not included in the Contract upon signing the Contract will be incorporated into the Contract by an amendment, if such Equipment and Works are required for the completion of the Contract.

The Contractor shall submit to the Employer the details of the Equipment and Works to be amended before executing the same.

### (4) Retentions

All costs, indemnities or expences which the Contractor owes the Employer according to the Contract, can be deducted by the Employer from all payments due to the Contractor, provided the payment thereof is not guaranteed otherwise by the Contractor. The Employer is allowed to withhold payments from the Contractor for certain reasons, e.g. defective Works not being remedied, guarantee not being met, claims having been filed against the Contractor and non-compliance with Contract, etc.

### (4) Price Variation on Certificates

- 1) Any sum payable under the Contract to the Contractor otherwise than for the Works executed or Equipment delivered shall be included

in the next payment issued by the Employer and if any sum shall become payable under the Contract by the Contractor to the Employer, prior to the issue of the final payment, whether by deduction from the Contract Price or otherwise, the amount thereof shall be deducted in the next payment.

- 2) The Employer may in any payment give effect to any correction or modification that should properly be made in respect of any previous payment.

(5) Invoices and Receipts

The Contractor shall, when required by the Engineer, produce all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of any costs claimed by the Contractor.

(6) Payment due from the Contractor

All costs for damages or expenses under the Contract for which the Contractor is liable to the Employer may be deducted by the Employer from any monies due to the Contractor under the Contract or may be remitted by the Contractor or may be recovered by act of law or otherwise from the Contractor.

2.14 PAYMENT CONDITION

2.14 (1) Terms of Payments

The payment under the Contract made only upon certification by the Engineer in accordance with the following installment schedule:

- 1) Thirty (30) percent of total Contract price shall be paid to the Contractor against presentation of Performance Bond stipulated in Section 2.5 (4) in accordance with Form of Performance Bond annexed in Section 6.
- 2) Thirty (30) percent of total Contract price shall be paid to the Contractor against presentation of the required Shipping Documents stipulated Section 2.13 (1).
- 3) Ten (10) percent of total Contract price shall be paid to the Contractor against presentation of the Arrival Certificate issued by the Engineer as stipulated in Section 2.13 (1).
- 4) Thirty (30) percent of total Contract price shall be paid to the Contractor against presentation of the Provisional Acceptance Certificate issued by the Engineer as stipulated in Section 2.9 (1).

## 2.15 REMEDIES AND POWER

### 2.15 (1) Contractor's Default

- 1) If the Contractor shall neglect to execute the Works with diligence and expedition, or shall refuse or neglect to comply with any reasonable orders given him in writing by the Employer in connection with the Works, or shall contravene the provisions of the Contract, the Employer may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with the notice within a reasonable time from the date of service thereof, then and in such case the Employer shall be at liberty to employ other workmen and forthwith execute such part of the Works as the Contractor may have neglected to do, or if the Employer shall deem fit it shall be lawful for him, without prejudice to any other rights he may have under the Contract, to take the Works wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the Works or any part hereof, and in that event the Employer shall have the free use of all equipment that may be at any time on the Site in connection with the Works, without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and the Employer shall be entitled to retain and apply any balance which may be otherwise due on the Contract by him to the Contractor, or such part thereof as may be necessary to the payment of the cost of executing the said part of the Works or of completing the Works or to satisfy all loss which the Employer suffers on account of the non-completion of the Works by the Contractor as the case may be. If the cost of completing the Works or executing a part thereof or all loss as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess.
- 2) The Engineer shall, as soon as may be practicable after any such entry and expulsion by the Employer, fix and determine by or after reference to the parties, or after such investigation or enquiries as he may deem fit to make or institute, and shall certify what amount, if any, had at the time of such entry and expulsion been reasonably earned by or would reasonably accrue to the Contractor in respect of the Works than actually done by him under the Contract and the value of any unused or partially used Equipment on the Site.
- 3) If the Employer shall enter and expel the Contractor under this Section, he shall not be liable to pay to the Contractor any money on account of the Contract until the costs of execution and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum or sums, if any, as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the Contractor on due completion by him, the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

(2) Bankruptcy

If the Contractor shall become bankrupt or insolvent, or have a receiving order made against him, or compound with his creditors, or being a corporation commence to be wound up, not being a member's voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefit of its creditors or any of them, the Employer shall be at liberty (i) to terminate the Contract forthwith by notice in writing to the Contractor or to the receiver or liquidator or to any person in whom the Contract may become vested, and to act in the manner provided in Section 2.15 (1) (Contractor's Default) as though the last mentioned notice had been the notice referred to in such section and the Works had been taken out of the Contractor's hands or (ii) to give such receiver, liquidator, or other person the option of carrying out the Contract subject to his providing a guarantee for the due and faithful performance of the Contract up to an amount to be agreed.

2.16 OUT BREAK OF WAR

2.16 (1) Outbreak of War

If during the currency of the Contract there shall be an outbreak of war (whether war is declared or not) in any part of the world which, whether financially or otherwise, materially affects the execution of the Works the Contractor shall, unless and until the Contract is terminated under the provisions in this Section contained, use his best endeavour to complete the execution of the Works provided always that the Employer shall be entitled, at any time after such outbreak of war, to terminate this Contract by giving notice in writing to the Contractor, and upon such notice being given this Contract shall, save as to the rights of the parties under this Section and to the operation of Section 2.18 (Settlement of Disputes and Arbitration) hereof, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

(2) Removal of Contractor's Equipment on Termination

If the Contract shall be terminated under the provisions of the last preceding Section the Contractor shall with all reasonable despatch remove from the Site all Contractor's equipment and shall give similar facilities to Sub-contractors to do so.

(3) Payment if Contract Terminated

If the Contract shall be terminated as aforesaid the Contractor shall be paid by the Employer (in so far as such amounts or items shall not have already been covered by payments on account made to the Contractor) for all Work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:

- a) The amounts payable in respect of any preliminary items, so far as the Works or service comprised therein has been carried out or performed, and a proper proportion as certified by the Employer of any such items the Work or service comprised in which has been partially carried out or performed.

- b) The cost of Equipment reasonably ordered for the Works or for use in connection with the Works which shall have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery (such materials or goods becoming the property of the Employer upon such payment being made by him).
- c) A sum, to be certified by the Employer, being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works, in so far as such expenditure shall not have been covered by the payments in the Sub-section before mentioned.
- d) The reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided always that, against any payments due from the Employer under this Sub-section, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Equipment, and any sum previously paid by the Employer to the Contractor in respect of the execution of the Works.

## 2.17 FRUSTRATION

### 2.17 (1) Frustration

- 1) In the event of the Contract being frustrated the sum payable by the Employer to the Contractor in respect of the Works executed shall be the same as that which would have been payable under Section 2.85 (Payment if Contract Terminated) hereof if the Contract had been terminated under the provisions of Section 2.16 (1) (Outbreak of War) hereof.
- 2) For the purpose of this Section the term 'frustrated' shall mean the prevention of the fulfillment of the Contract by reason of war or by any cause or causes agreed by both the Employer and the Contractor to be beyond the control of either of them.

### (2) Notices

Any notice to be given to the Contractor by the Employer or to the Employer by the Contractor under the terms of the Contract shall be served by sending the same by post, cable, or telex to or leaving the same at the other party's principal place of business (or in the event of the Contractor being a Company to or at its registered office).

## 2.18 DISPUTE AND ARBITRATION

### 2.18 (1) Settlement of Arbitration

Any controversy or dispute arising out of or relating to this Contract which cannot be resolved by mutual agreement shall be decided by JICA within fifteen (15) calendar days from receipt of a written notice from the Contractor, and who shall furnish the Contractor a written copy of his decision. Such decision shall be final and conclusive unless within thirty (30) calendar days from the date of receipt thereof, the Contractor shall deliver to JICA a written notice, addressed to the Administrator that he disagrees with the decision and desires that the dispute be submitted to arbitration. Pending decision from arbitration the Contractor shall proceed diligently with the performance of the Contract and in accordance with the decision of JICA.

When formal arbitration is requested, an Arbitration Board shall be formed in the following manner: JICA and the Contractor shall each appoint a third member who shall act as chairman. If either of the parties, i.e., JICA or the Contractor fails to appoint a member to this Arbitration Board within thirty (30) calendar days subsequent to the date on which the Contractor requested arbitration, the appointment shall be made by the Judge of the court in Tegucigalpa having jurisdiction. If the two first members of this board cannot agree upon a third member within fifteen (15) calendar days from the last date of their own appointment, the third member shall be appointed by the Judge of the court in Tegucigalpa having jurisdiction. No one with a financial interest in the subject under arbitration will be permitted to serve on this board. This board may engage experts to act in an advisory capacity without vote on decisions. Minutes shall be kept of all meetings and shall be signed by all members of this Board. All decisions by this board shall require simple majority. All interested parties shall be informed of the decisions of this board in writing over the signature of the chairman. Expenses of this board shall be paid in accordance with the decision of the Arbitration Board. The decision of the Arbitration Board shall be binding on both parties.

JICA and the Contractor shall have the right to institute suit against each other, as the case may be, in any court of competent jurisdiction, in the Philippines, to enforce any decision or award rendered in arbitration proceedings. JICA shall have same right as above to enforce a ruling of the Administrator in the event said ruling is final and conclusive as above described.

# SECTION - 4

## SPECIFICATION





## I. TEMPORARY WORKS, MOBILIZATION AND DEMOBILIZATION

### Scope

#### (a) Temporary works

The Contractor shall furnish all materials, labor, equipment, tools and shall install such temporary works as are necessary for the successful completion of the Contract Works.

The Contractor shall submit to the Engineer for approval the Contractor's plan of the temporary works.

The temporary works consist of the following works.

- (1) Access roads and temporary detours in any places required in the Site for construction of the works, if necessary.
- (2) Contractor's camps, offices, store houses, workshops, laborers' camps and other facilities in the site.
- (3) Temporary power and water supplies in the site for construction of the works.

#### (b) Mobilization of equipment

The Contractor shall mobilize and move into the project site (in accordance with the approved Construction program and Equipment moving-in and Utilization schedule) the required construction equipment needed for the successful completion of the Contract work immediately after receipt of the approved Construction program.

#### (c) Demobilization

The Contractor shall terminate all personnel, remove all temporary construction and Contractor owned tools, equipment, machinery and construction facilities from the site and clean up the area to the complete satisfaction of the Engineer.

## II. CLEARING AND LAND LEVELING

### Scope

- (a) The work under this section shall consist of the removal and disposal of all vegetation, trees, stumps, roots, brushes, rubbish and all objectionable matters from the borrow area, the work area and the intensive farm.
- (b) Wood and other debris which are produced by the clearing and the grubbing in the above-mentioned work areas shall be treated in accordance with the direction of the Engineer.
- (c) Prior to commencement of construction works, steps shall be taken to prevent the inflow into the site area of drainage from outside the site. At the same time, all necessary measures shall be taken to remove surface and ground-water present within the boundaries of the construction site.
- (d) Where underground spring water is encountered, said discharge shall be diverted to the nearest drainage ditch by means of blind ditch.

### Grubbing

- (a) The proposed intensive farm areas shall be cleared and grubbed sufficiently by directions of the Engineer.

### Land Leveling

- (a) During land preparation, thickness of the topsoil layer shall be checked to ensure that said layer extends a uniform 30cm in depth from the finished surface. In places where less than 30cm of topsoil layer thickness is not present, topsoil shall be removed, necessary foundation preparation carried out, and the topsoil replaced. In this manner, a topsoil layer thickness suitable for arable land of 30cm or more shall be obtained.
- (b) Soil excavated within the site area shall be utilized for leveling therein to the extent possible. However, where left-over soil is unavoidable, said soil shall be transported to the site for the perimeter road around the upland field plots, and shall be distributed in a configuration and manner as shown in the drawings or directed by the Engineer.
- (c) Where possible, trees present within the site area shall be left standing. However, in the event that a tree interferes with facility construction, said tree shall be removed (including roots) and either buried at a depth within the site area which would not hinder cultivation thereof, or disposed of outside the site area.
- (d) Land leveling of farmland shall be such that all dents shall be filled up and the surface made smooth. The tolerance of the land leveling of the farm land surface is +5.0cm.
- (e) Land plowing shall be done by suitable equipment until 15cm depth from the ground surface.

### III. ON FARM DITCHES AND DRAINS

#### Scope

The work to be performed under this section includes providing all labor, tools, equipment, materials and supplies and performing all excavation in all kinds of soil required for the work, placement of backfill at the structure site and foundation works for structure and pipes all as shown on the drawings or directed by the Engineer.

#### General

- (a) The work site shall be maintained well-drained and shall be kept free from inundation caused by rainfall during construction.
- (b) The materials taken from the borrow areas shall not be used for embankment until the Engineer approves the clearing and the grubbing works after the inspection of the works. The Contractor shall rearrange the land of the borrow areas according to the directions of the Engineer after the completion of the construction.

#### Excavation

- (a) Topsoil located close to the embankment site shall be utilized as embankment material for irrigation and drainage canals. Gravel and foreign materials which may cause seepage shall be removed from the soil prior to application. Soil shall be distributed in the prescribed configuration and carefully compacted.
- (b) Foundation shall be excavated according to the outline of the footings, floors or the foundation of the pipeline as shown on the Drawings or as directed by the Engineer, and shall be sufficient in marginal space for workers.
- (c) If at any point, materials are excavated beyond the lines and grades of any part of the structure, the over-excavation shall be filled back with selected materials approved by the Engineer at the Contractor's expense.
- (d) The excavated materials which are not suitable to the embankment shall be spoiled in the spoil bank.

#### Embankment and backfill

- (a) The thickness of the spreading of the embanking materials shall be less than 30cm. The embankment and backfill shall be compacted manually or mechanically as directed by the Engineer.
- (b) The embankment work shall be suspended without any delay if it rains while working. After the rainfall, the embankment work shall not be resumed until the embankment materials become dry to the appropriate moisture content.

- (c) The slope of the embankment shall be finished to the designed gradient by providing fixed ruler.
- (d) Embankment or backfill works for the parts contiguous to the structures shall be carried out in a manner not to bring undue stress to bear on the structure.
- (e) Backfill for the construction of the pipeline shall be carried out in parallel with the pipe laying work. The backfill until 60cm above the top of the pipe shall be made soon after the inspection for the joint works. The heavy equipment including truck shall not be used for the spreading and the rolling compaction of the above-mentioned backfill works. The backfill of succeeding layers can be carried out by the method and equipment approved by the Engineer.
- (f) The gravel foundation for the concrete structures shall be compacted in order to secure the uniform foundation.

#### IV. CONCRETE WORK

##### Scope

The work to be performed under this Section includes providing all labor, tools, equipment, materials, etc. for and mixing, transporting, placing, finishing and curing of concrete as shown on the drawings or as directed by the Engineer.

##### Cement

- (a) Cement used for concrete and mortar shall be Portland cement which conforms to the standard described in AASTM C-150 TYPE I.
- (b) The bagged cement shall be stored in a well damp-proofed warehouse of which the floor height is more than 30cm. The bagged cement which has been stored more than three month or which is suspected to be damp shall not be used unless otherwise approved by the Engineer.

##### Water

Water used for mixing concrete and mortar shall not contain harmful quantities of oil, acid, salt and so on which affect the quality of the concrete and shall be such that concrete obtains 90 percent compressive strength at the age of 28 days.

##### Fine aggregate

- (a) Fine aggregate which is to be used in concrete and mortar shall be clean, sound and durable. It shall not contain harmful quantities of organic impurities such as salt and others.
- (b) Fine aggregate shall be well graded from large to small particle size. Its grading shall conform to the standard shown in the following table unless otherwise approved by the Engineer.

<u>Sieve mesh</u>	<u>Percent by weight of material passed</u>
3/8"	100
No. 4	95 - 100
No. 8	65 - 95
No. 16	45 - 80
No. 40	25 - 85
No. 50	10 - 35
No. 100	2 - 10
No. 200	0 - 5

The fineness modulus shall be in the range from 2.3 to 3.00. The design mix shall be redesigned when the fineness modulus of the fine aggregate deviate

more than 0.2 from the one which was originally designated as design mix of the concrete.

### Coarse aggregate

- (a) The coarse aggregate which is to be used in concrete and mortar shall be clean, sound and durable. It shall not contain harmful quantities of thin or elongated shape gravel, or organic impurities such as salt and others. The coarse aggregate shall conform to ASTM C-33.
- (b) The coarse aggregate shall have the proper grading from large to small in particle sizes. Grading shall conform to the standard shown in the following table:

<u>Sieve mesh</u>	<u>Percent by weight of material passed</u>
1"	100
3/4"	90 - 100
3/8"	20 - 55
No. 4	0 - 10

### Design mix

All concrete shall be 1:3:6 concrete which consists of one part cement, three parts sand and six parts coarse aggregate by volume of dry ingredients. The concrete slump shall be 7.5cm  $\pm$  1.5cm unless otherwise directed by the Engineer.

### Mixing

- (a) Concrete shall be mixed in a mixer unless otherwise approved by the Engineer. The mixer shall produce homogeneous concrete and shall be subject to the approval of the Engineer.
- (b) The mixer shall be completely emptied before receiving the materials for the succeeding batch and shall be kept clean and washed out after stopping the works at the end of each shift.
- (c) On commencing the works, the first batch shall contain sufficient excess of cement, sand and water to coat the inside of the drum to avoid the reduction of the required mortar content of the mix.

### Hauling and placing

- (a) Concrete shall be hauled speedily to the placing site by a method which does not cause the segregation of the ingredient.
- (b) The Contractor shall prepare a plan for the method of hauling and placing of the concrete and shall submit such plan to the Engineer for approval before commencement of the concrete work.

- (c) Before placing the concrete, the inside of the forms shall be cleaned to prevent mingling of impurities.
- (d) The interval and the duration of vibration shall be subject to the direction of the Engineer.

Form

- (a) Forms shall have sufficient strength to withstand pressure resulting from placement and vibration of the concrete. In addition, the form is to conform to the shapes, lines and dimensions of the concrete shown on the drawings and shall be tight enough to prevent loss of mortar from the concrete.
- (b) Unless otherwise instructed, the form shall be with chamfering of 2cm x 2cm at the corner of the concrete.
- (c) Bolts or steel bars may be used to tighten the forms. These clamps shall not remain on the surface of the concrete after removal of the form.
- (d) The surface of the form shall be coated with shutter oil to prevent adherence of the concrete to the form.
- (e) The minimum time to elapse from concrete placing to removal of the form shall be as follows:

<u>Form</u>	<u>Minimum time required for removal of forms after concrete placing</u>
Vertical or near vertical faces of thick members	1 day
Vertical or near vertical faces of thin members	3 days
Slab	6 days

Finishing

Finishing shall be done by trowel. Protrusions on the surface of the concrete shall be removed and shall be levelled. Honeycomb or faults in the concrete shall be wetted with water and shall be patched up with concrete or mortar which are properly mixed after first removing the incompleteness in and around the honeycomb or fault.

Curing

The placed concrete shall be covered by mat and kept continuously damp for a minimum of three days after placing.



## V. PIPE WORKS

### Scope

The work to be performed under the provisions of this Section include supply of materials, transportation, fabrication and installation for the successful completion of the Contract work as per the requirements of the drawings and specifications.

### Earth works and foundations

For the earthworks required for piping, the specifications of Section III shall be applied. The foundation of pipe shall be 180° sand bed as is shown on the drawing. Borrow material may be utilized for the backfill after carefully ascertaining that such is free from gravels, cobbles or other harmful material.

### Polyvinyl chloride pipes and fittings

- (a) Polyvinyl chloride (PVC) pipes shall conform to JIS K-6741 or its equivalent for water services piping at five kilograms per square centimeter in nominal pressure.
- (b) The pipes shall feature flexible rubber ring sockets at the end of pipes in compliance with manufacturer's standard.
- (c) Internal and external surfaces of pipes should be smooth without harmful flaws, longitudinal streaks, cracks, distortions and other defects.
- (d) Fittings such as bends, reducers, sockets, caps and socket tees shall be made of PVC conforming to JIS K-6743 or its equivalent. Any said fittings shall be flexible rubber ring socket type in the required fixture.
- (e) The Contractor shall submit full details of the materials, dimensions, and test pressures of the fittings offered.
- (f) Precautions shall be given to avoid damage to the pipes and fittings. In handling and storing the pipes and fittings, every care shall be given to avoid distortion, flattening, scoring or other damages. The pipes and fittings shall not be allowed to drop or strike objects.
- (g) The Contractor shall consult with the engineer in regard to methods of transport and connection of pipes.
- (h) The sequence of laying and connecting pipes shall be, as a rule, made in the direction from low position to high position.
- (i) The connection of pipes shall be inspected in regard to the position of rubber rings for joints and the space of connecting parts by using a gauge on the whole circular of each pipe, and the results shall be submitted to the engineer.
- (j) In connecting pipes, attention shall be given to prevent entrance of foreign matter such as sand into the inside and connecting part of pipes.

## VI. VALVE

### Scope

The work to be performed under this Section includes providing all labor, tools, equipment, materials, etc. and mixing, transporting, placing, finishing and curing of concrete. As indicated in the drawings, valves shall include all appurtenant parts necessary for installation.

### Stop Valve

- a) Stop valves shall conform to JIS B2023 or its equivalent for interception of water services.
- b) The stop valves shall be suitable for water services piping at the maximum operating pressure of static head up to 50m.
- c) Care shall be taken to ensure that the mouth of the stop valve is aligned with the pipe center when valves are installed. Rubber, etc. shall not be inserted in joints between valve and pipe.

### Air Valve

- a) Air valves shall conform to JIS B2063 or its equivalent for exclusion of air from the pipeline.
- b) Other specifications are the same as for b) and c) in Stop Valve above.

### Angle Valve

- a) Angle valve shall conform to JIS B2022 or its equivalent for interception of water services.
- b) Installation method is same as in Stop Valve above.

## VII. SPRINKLER AND TRICKLE IRRIGATION SYSTEM

### Scope

The work to be performed under this Section includes providing all labour, tools, equipment, materials, etc. and transporting, placing and finishing. "Materials" shall be construed to include all fittings necessary for installation of the sprinkler and trickle irrigation system as indicated in the drawings.

### Pipe Work and Valves

Refer to V and VI.

### Arborecene Pipe (polyethylene pipe)

- a) Arborecene pipe (polyethylene pipe) for sprinkler and trickle irrigation system shall conform to JIS K 6761, 6762 or their equivalents for water service piping at 2.5 kilograms per square centimeter for sprinkler system and 1.0 kilograms per square centimeter for trickle system in nominal pressure.
- b) Arborecene pipe for sprinkler system utilization shall feature sockets which are easily disconnectable (for example, quick joints) and piping shall be able to withstand pressure of  $2.0\text{kg/cm}^2$ . Also, piping shall be equipped with suitable attachment fixtures for connection with sprinkler riser pipes.
- c) As indicating in the drawings, sprinkler facilities shall include sprinkler heads which are made of bronze and are of the revolving type. Sprinkler heads shall be equipped with fixed flow valves and heads shall conform to the following specifications:
  1. Nozzle size: 4.8 mm x 3.2 mm
  2. Required operating pressure:  $2.5\text{ kg/cm}^2$
  3. Sprinkler discharge: 31.1  $\ell/\text{min}$  + 10%
  4. Diameter coverage: 30m  $\pm 5\%$
- d) Drip nozzles shall be capable of pressure reduction, and shall feature a drip discharge rate of 0.82  $\ell/\text{hour}$ .

## SPARE PARTS

Supply of all materials hereinunder shall include 10% spare parts;

- (a) Polyvinyl chloride pipes and joint fittings for all diameters
- (b) Polyethylene pipes and joint fittings for all diameters
- (c) Regulating facilities and fittings, including stop valves, air valves etc.
- (d) Sprinkler and trickle system equipment

## **SECTION - 5**

**BILL OF QUANTITIES AND  
SCHEDULE OF PRICES**



Bill of Quantity

Land Leveling	6 ha
On Farm Ditch	718 m
On Farm Drain	621 m
Sprinkler Irrigation System	1 ha
Trickle Irrigation System	1 ha
Driving Pipe Line	719 m

Land Leveling (6 ha)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
<b>Mechanical Excavation</b>		
Block No. 1	m <sup>3</sup>	2,818
Block No. 2	m <sup>3</sup>	3,230
Block No. 3	m <sup>3</sup>	1,013
<u>Total</u>	<u>m<sup>3</sup></u>	<u>7,061</u>
<b>Mechanical Embankment</b>		
Block No. 1	m <sup>3</sup>	950
Block No. 2	m <sup>3</sup>	1,089
Block No. 3	m <sup>3</sup>	342
Road No. 1 (STA. NO. 8 + 9.5 - 24 + 10.5)	m <sup>3</sup>	2,211
Road No. 2 (STA. NO. 8 + 9.5 - 24 + 10.5)	m <sup>3</sup>	550
Road No. 5	m <sup>3</sup>	810
Road No. 6	m <sup>3</sup>	450
Road No. 7	m <sup>3</sup>	659
<u>Total</u>	<u>m<sup>3</sup></u>	<u>7,061</u>



On Farm Ditches (718m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
General Portion	m	691
Man-power embankment	m <sup>3</sup>	254
Slope disposal	m <sup>2</sup>	876
Road Under Pass	m	27
Man-power embankment	m <sup>3</sup>	26.9
Disposal work	m <sup>3</sup>	5.2
Refilling work	m <sup>3</sup>	21.7
Form work	m <sup>2</sup>	42.6
Concrete work	m <sup>3</sup>	5.1
PVC $\phi$ 150 (l=5m)	Nos.	6

On Farm Drains (621m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
General Portion	m	594
Man-power excavation	m <sup>3</sup>	107
Man-power embankment	m <sup>3</sup>	147
Slope disposal	m <sup>2</sup>	1,259
Road Under Pass	m	27
Man-power excavation	m <sup>3</sup>	43.1
Disposal work	m <sup>3</sup>	5.3
Refilling work	m <sup>3</sup>	37.8
Form work	m <sup>2</sup>	35.4
Concrete work	m <sup>3</sup>	1.11
PVC $\phi$ 150	m	27

### Sprinkler Irrigation System (1ha)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
<b>Sprinkler Pipe Line</b>		
Man-power embankment	m <sup>3</sup>	813
Disposal work	m <sup>3</sup>	54
Refilling work	m <sup>3</sup>	759
Sand-bed	m <sup>3</sup>	51
PVC $\phi$ 75	m	616
<b>Regulating Facilities</b>		
Stop valve *	Nos.	3
Drain valve *	Nos.	2
Air valve *	Nos.	3
<b>Sprinkler Facilities</b>		
Angle valve ( $\phi$ 50x90 $^{\circ}$ ) *	Nos.	8
Arborescence pipe line ( $\phi$ 50 Polyethylene)	m	136
Sprinkler	set	40
<b>Wet masonry</b>		
Masonry with concrete	m <sup>2</sup>	30

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\* including joint fitting and materials, for example concrete and form work etc.

Trickle Irrigation System (1ha)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
<b>Trickle Pipe Line</b>		
Man-power embankment	m <sup>3</sup>	135
Disposal work	m <sup>3</sup>	4
Refilling work	m <sup>3</sup>	131
Sand bed	m <sup>3</sup>	4.2
PVC $\phi$ 50	m	108
<b>Preliminary Regulating Facilities</b>		
Stop valve *	Nos.	1
Drain valve *	Nos.	1
Pressure reduction valve *	Nos.	1
Filter	Nos.	1
<b>Secondary Regulating Facilities</b>		
Connecting pipe, PVC $\phi$ 20	m	60
Stop valve *	Nos.	10
Filter Nos.	Nos.	10
<b>Trickle Facilities</b>		
Arborescence pipe line, $\phi$ 20	m	7,200
Arborescence pipe line, $\phi$ 13	m	84
Trickle nozzle	Nos.	7,200
<b>Wet Masonry</b>		
Masonry with concrete	m <sup>2</sup>	15

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\* including joint fitting and materials, for example concrete and form work etc.

Driving Pipe Line (719m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>
Earth Work		
Excavation	m <sup>3</sup>	1,456
Disposal	m <sup>3</sup>	99
Refilling	m <sup>3</sup>	1,357
Driving Pipe Line		
Driving pipe (PVC ø150)	m	719
Sand bed	m <sup>3</sup>	86.4
Regulating Facilities		
Stop valve	Nos.	1
Air valve	Nos.	2
Supporting Work		
Form work	m <sup>2</sup>	8.4
Concrete work	m <sup>3</sup>	3.9

### Schedule of Prices

Unit: Yen

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Amount</u>
Preparation Work		L.S.	1,550,000
Land Leveling	ha	6	4,528,000
On Farm Ditches	m	719	671,000
On Farm Drains	m	621	550,000
Sprinkler Irrigation System		L.S.	4,369,000
Trickle Irrigation System	ha	1	2,647,000
Driving Pipe Line	m	719	4,714,000
<u>Sub total</u>			<u>19,029,000</u>
Construction Sundry Expense			951,000
Contingency (10%)			1,903,000
Price Escalation (9%)			1,969,000
<u>Total</u>			<u>23,852,000</u>

Land Leveling (6ha)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
Mechanical Excavation	m <sup>3</sup>	7,061		1,765,000
Mechanical Embankment *	m <sup>3</sup>	7,061		3,164,000
<u>Total</u>				<u>4,929,000</u>

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\* including movement of disposal soil to road by truck

On Farm Ditches (719m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
General Portion	m	691		371,000
Road Under Pass	m	27		359,000
<u>Total</u>				<u>730,000</u>



On Farm Drains (621m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
General Portion	m	594		311,000
Road Under Pass	m	27		288,000
<u>Total</u>				<u>599,000</u>

Sprinkler Irrigation System

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
Sprinkler Pipe Line	m	616		1,690,000
Regulating Facilities		L.S.		936,000
Sprinkler Facilities	ha	1		1,815,000
Wet Masonry	Nos.	2		98,000
<u>Total</u>				<u>4,539,000</u>

Trickle Irrigation System (1ha)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
Trickle Pipe Line	m	108		194,000
Preliminary Regulating Facilities		L.S.		205,000
Secondary Regulating Facilities		L.S.		231,000
Trickle Facilities		L.S.		2,071,000
Wet Masonry	Nos.	1		49,000
<u>Total</u>				<u>2,750,000</u>

Driving Pipe Line (719m)

<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Cost</u>	<u>Amount</u>
Earth Work		L.S.		968,000
Driving Pipe Line	m	719		3,344,000
Regulating Facilities		L.S.		500,000
Supporting Work		L.S.		84,000
<u>Total</u>				<u>4,896,000</u>

## SECTION - 6

FORMS



**TENDER FORM**

To:

1. Having examined the Condition of Contract and Specification together with the Instruction to Tenderers, we, the undersigned, hereby offers and proposes to supply, construct and perform all of the Works in conformity with provisions described in the Tender Documents and said Conditions of Contract and specification for the sum of Japanese Yen \_\_\_\_\_.
2. If our Tender is accepted, we, the undersigned, guarantee to complete whole Works comprised in the contract within \_\_\_\_\_ months after signing the Contract.
3. If our Tender is accepted, we, the undersigned, will at our own expense obtain a guarantee as for the due performance of the Contract within the period stipulated in the Contract.
4. We agree to abide by this Tender for the period of one hundred fifty (150) days from the date fixed for receiving and opening of the Tender. Unless and until a formal Contract Agreement is prepared and executed, this Tender, together with your acceptance thereof, shall constitute a binding contract between us.
5. We enclose a bid bond amounting Japanese Yen \_\_\_\_\_ in the form of \_\_\_\_\_ which shall be forfeit to you if we should fail to comply with our undertaking as set out in Section \_\_ of the Instruction to Tenderers.

I, hereby, certify that all statement herein are made on behalf of (Name of Company) on this \_\_\_\_\_ day of \_\_\_\_\_ 1983.

\_\_\_\_\_  
(Name in print and signature)

Title: \_\_\_\_\_

Company's address:  
\_\_\_\_\_

**FORM OF BID BOND**

To:

Dear Sir:

With reference to the tender of construction work for experimental farm at Comayagua, the Republic of Honduras, we hereby undertakes to hold at the disposal of \_\_\_\_\_, free of interest and payable in cash on the \_\_\_\_\_'s first demand and notwithstanding any constitution by the tenderer sum of Japanese Yen \_\_\_\_\_.

This undertaking remains in force until a decision is taken on the Tender and until the Performance Bond is issued to excute a formal contract, but will in any case automatically expire on (the date when Tender validity expires).

Consequently any claim is respect should be made to us by the \_\_\_\_\_ (date) at the latest. Should we receive no claim from you by that date, our liability will cease (i pso facto) and the present Letter of Guarantee will definitely become nul and void. Please return to us this Letter of Guarantee on expiry date for cancellation.

\_\_\_\_\_  
Authorized Signature BANK



FORM OF PERFORMANCE BOND

To:

Dear Sir:

With reference to the Contract of Messers. \_\_\_\_\_

with \_\_\_\_\_ for the supply, erection, commissioning and construction work of the experimental farm at Comayagua, we, hereby, undertake to hold at the disposal of the \_\_\_\_\_ as guarantee deposit for due performance of said contract, free of interest and payable in cash on the \_\_\_\_\_'s first demand, and not withstanding any contestation by the Contractor, sum of \_\_\_\_\_ Japanese Yen.

This undertaking remains in force until the contract has completely carried out to the satisfaction of the said \_\_\_\_\_, and until one month after the end of maintenance period or after the date of completion or the whichever comes earlier.

Consequently, any claim in respect thereof should be made to us by \_\_\_\_\_ (date) at the latest should we receive no claim from you by the date, our liability will cease (ipso facto) and the present Letter of Guarantee will definitely become null and void.

Please return to us this Letter of Guarantee on expiry date for cancellation.

\_\_\_\_\_  
Authorized Signature BANK

# SECTION - 7

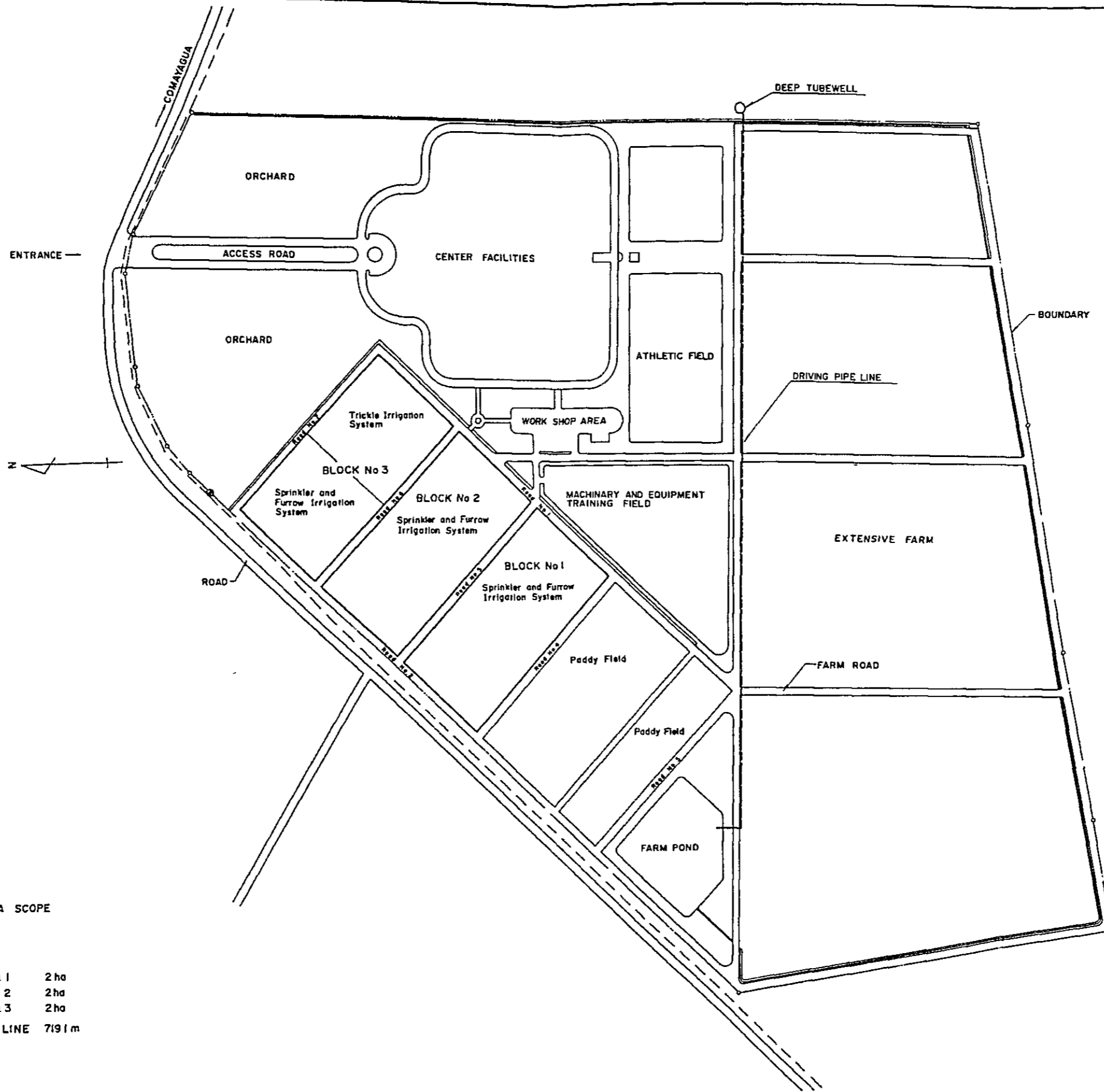
DRAWINGS

## LIST OF DRAWING

### DRAWING NUMBER

### TITLE

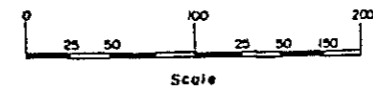
NO. 1	PROJECT GENERAL PLAN
NO. 2	CONTOUR MAP
NO. 3	PROFILE OF DRIVING PIPELINE
NO. 4	DETAIL OF OUTLET FOR DRIVING PIPELINE
NO. 5	PLAN OF THE EXPERIMENTAL FARM
NO. 6	CROSS SECTION OF THE UPLAND FIELD
NO. 7	CROSS SECTION OF THE UPLAND FIELD
NO. 8	CROSS SECTION OF THE ON FARM DITCH
NO. 9	PROFILE OF THE ROAD
NO. 10	PRDFILE OF THE ROAD
NO. 11	PROFILE OF THE ROAD
NO. 12	ON FARM DITCH AND DRAIN
NO. 13	SPRINKLER SYSTEM PLAN
NO. 14	TRICKLE SYSTEM PLAN
NO. 15	DETAIL OF FACILITIES FOR THE SPRINKLER AND TRICKLE SYSTEM



PROJECT AREA SCOPE

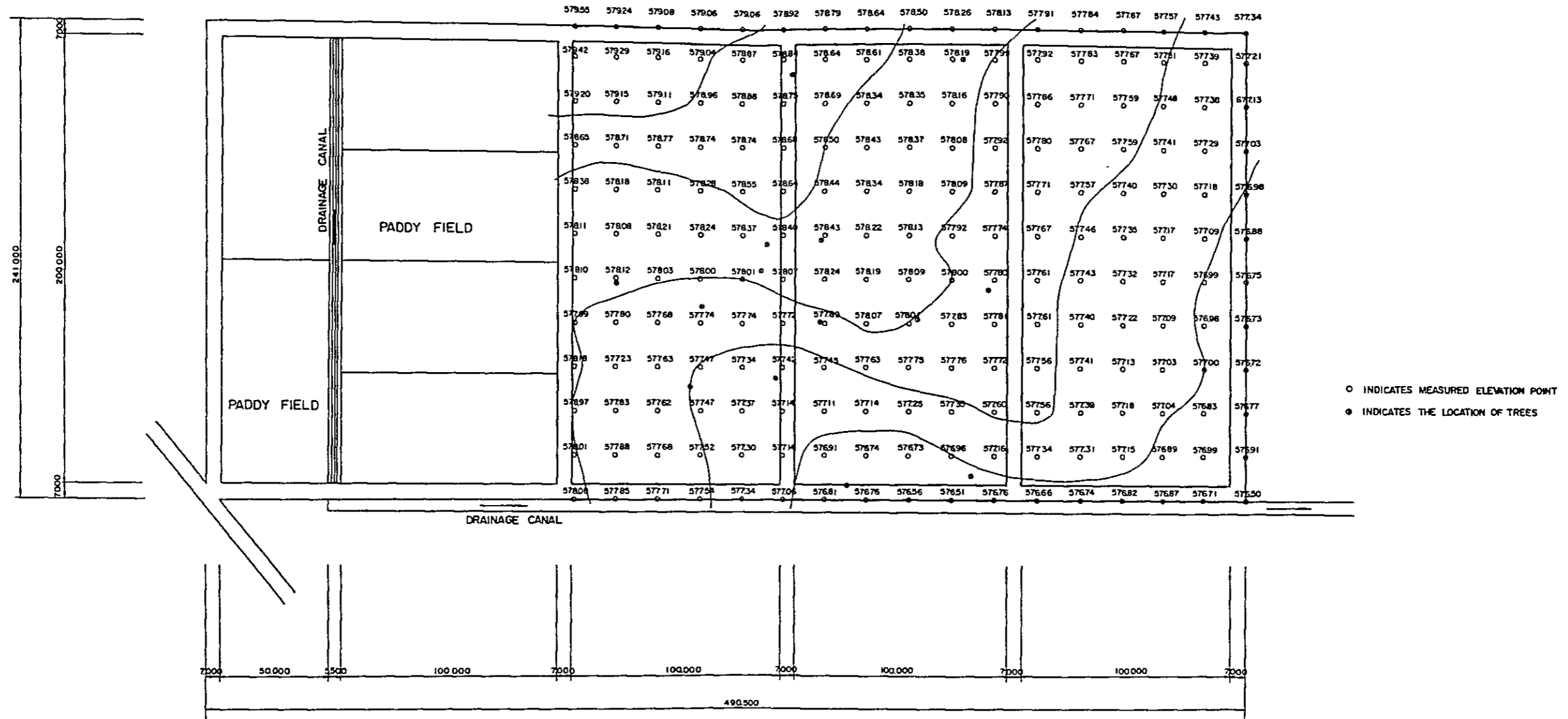
UPLAND FIELD

BLOCK NO 1	2 ha
BLOCK NO 2	2 ha
BLOCK NO 3	2 ha
DRIVING PIPE LINE	7191 m



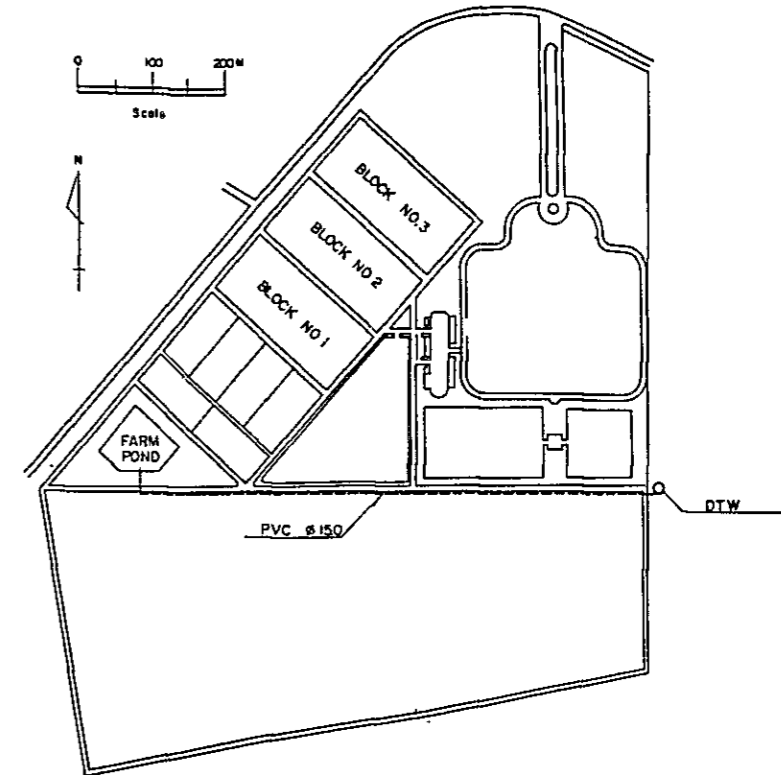
PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PROJECT GENERAL PLAN	
DRAWING NO 1	SCALE 1:2000
JAPAN INTERNATIONAL COOPERATION AGENCY	

# CONTOUR MAP

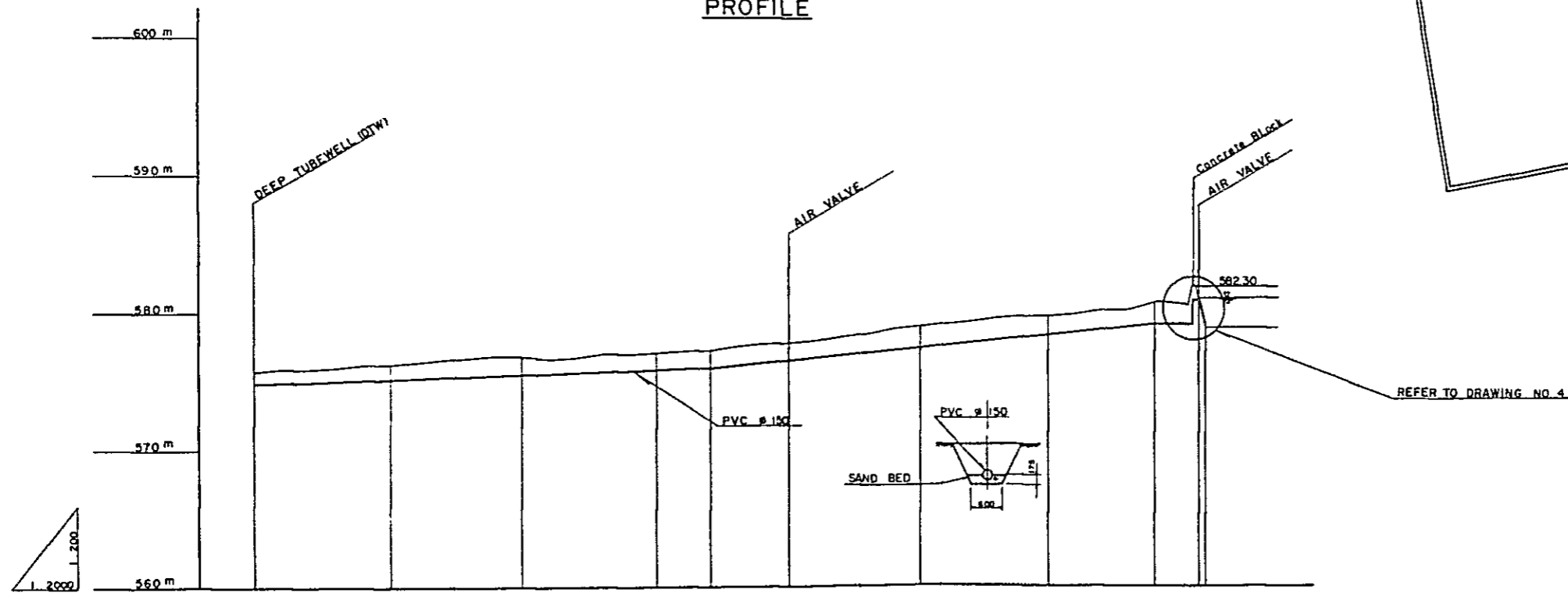


PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE CONTOUR MAP	
DRAWING NO 2	SCALE 1 : 1000
JAPAN INTERNATIONAL COOPERATION AGENCY.	

PLAN



PROFILE

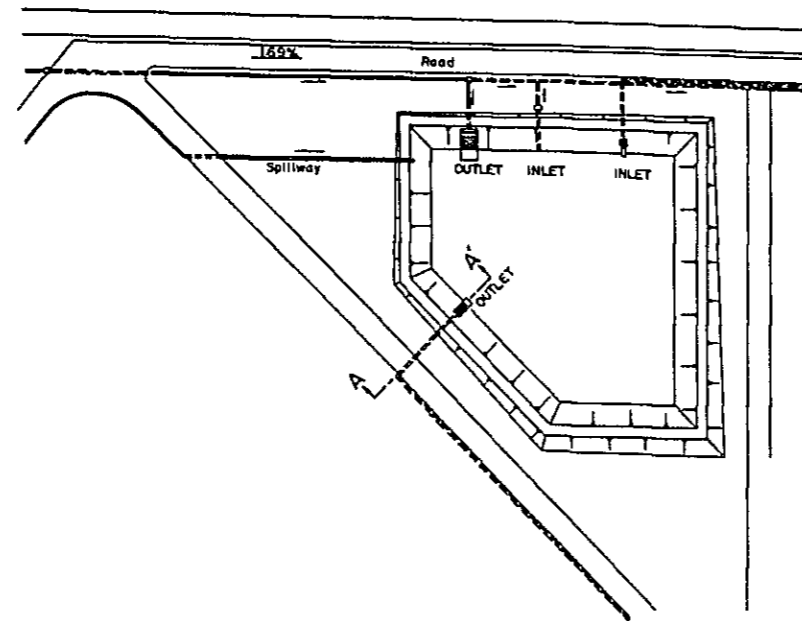


SLOPE	1:0.471 %		1:0.941 %			
DESIGN ELEVATION	575.40	576.87	577.81	578.75	579.69	580.63
GROUND ELEVATION	575.73	576.23	576.91	577.21	577.44	577.59
ACCUM DISTANCE	0	100.0	200.0	300.0	340.0	400.0
DISTANCE	0	100.0	100.0	100.0	40.0	60.0
STA	0	5	10	15	17	20

PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PROFILE OF DRIVING PIPE LINE	
DRAWING NO 3	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY	

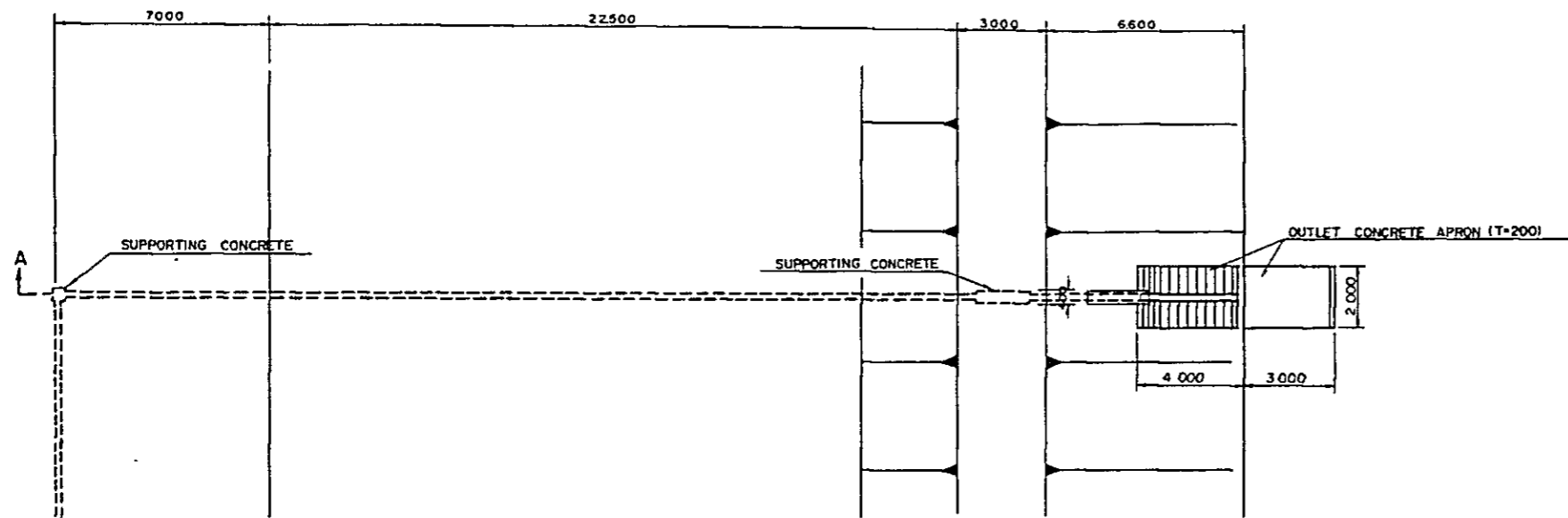
**PLAN**

SCALE 1:1000

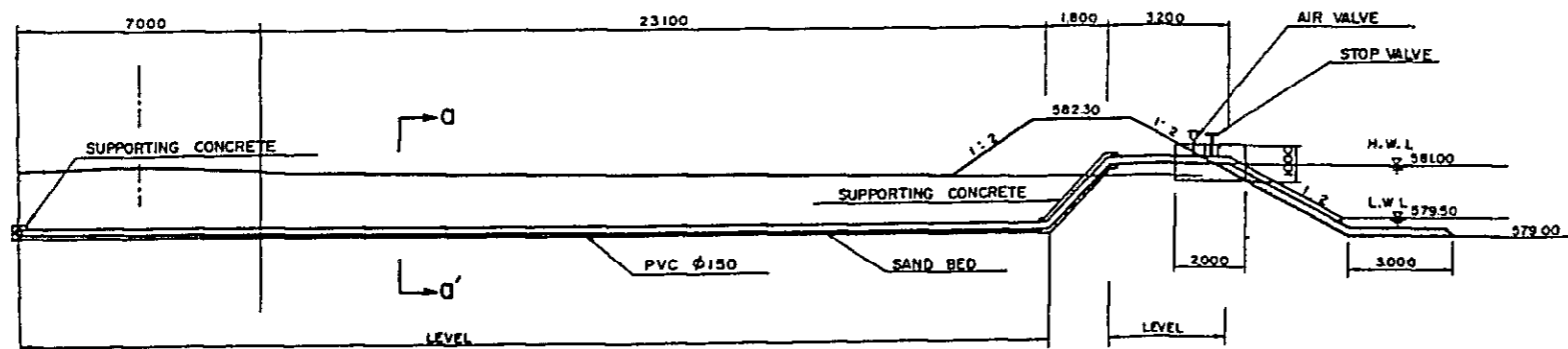


**DETAIL PLAN**

SCALE 1:100



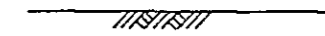
**Section A - A'**



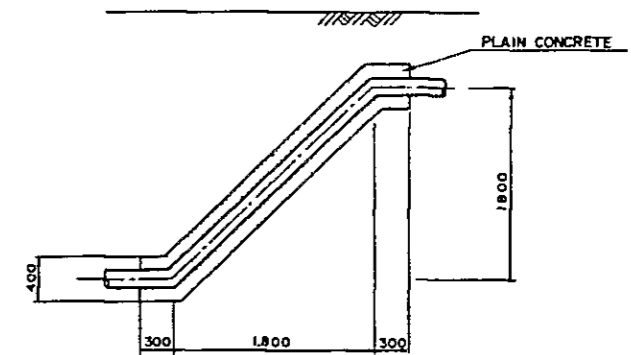
**SUPPORTING CONCRETE**

SCALE 1:30

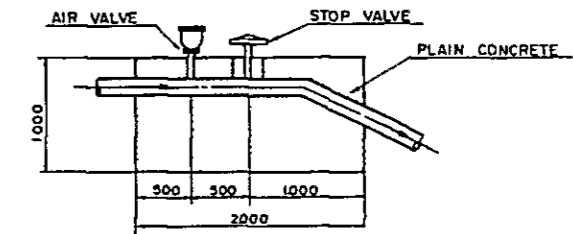
Cross Section



Profile Section



**DETAIL OF VALVE PORTION**



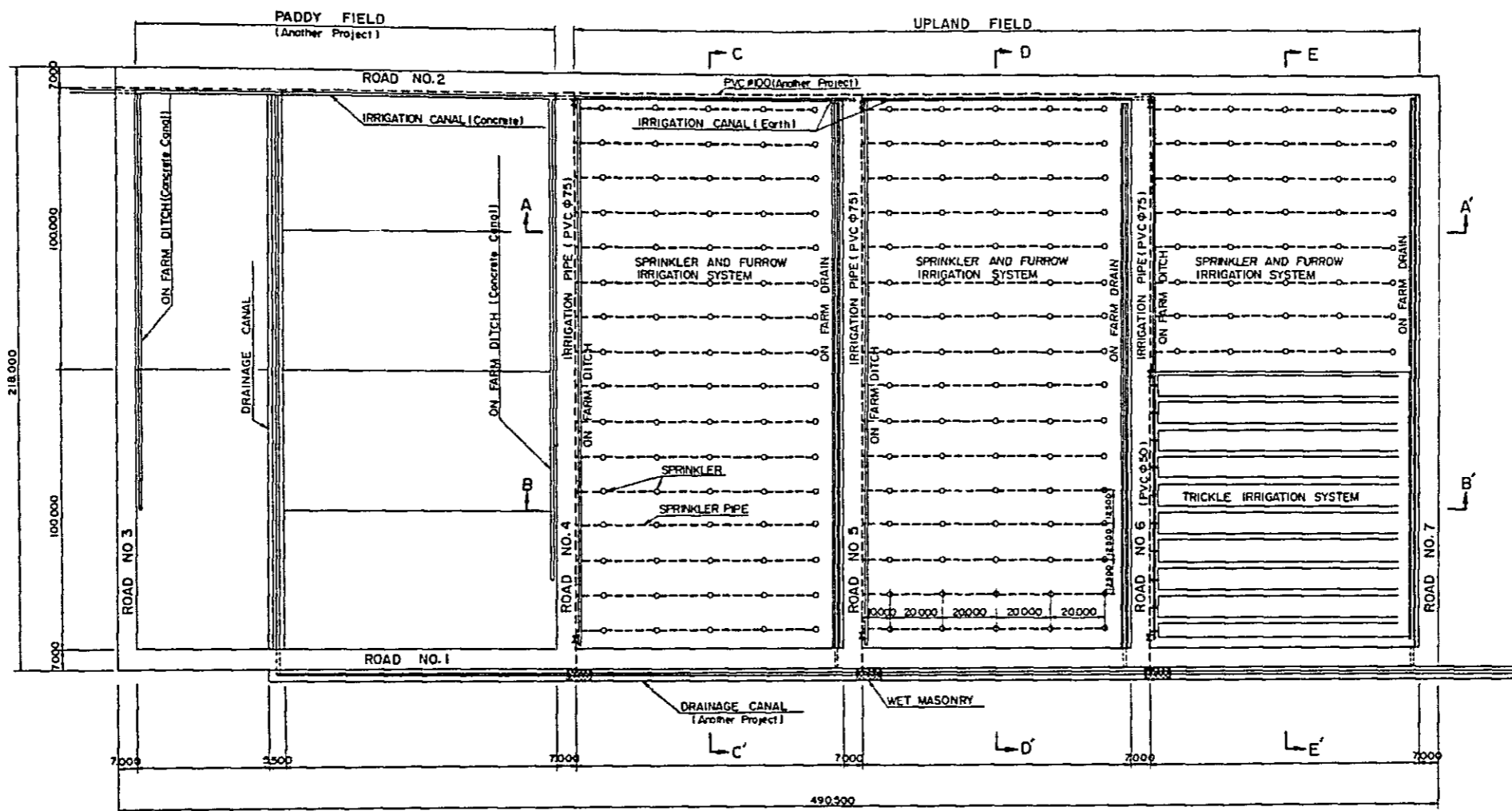
PROJECT TITLE  
AGRICULTURAL DEVELOPMENT TRAINING CENTER

DRAWING TITLE  
DETAIL OF OUTLET FOR DRIVING PIPELINE

DRAWING NO 4 SCALE

JAPAN INTERNATIONAL COOPERATION AGENCY

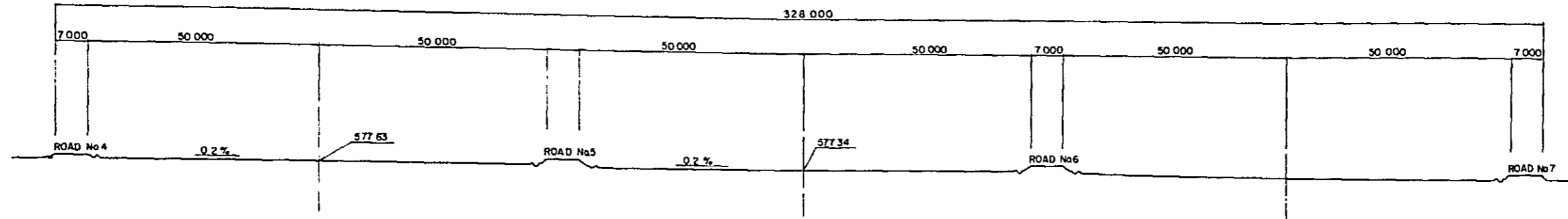
# PRAN



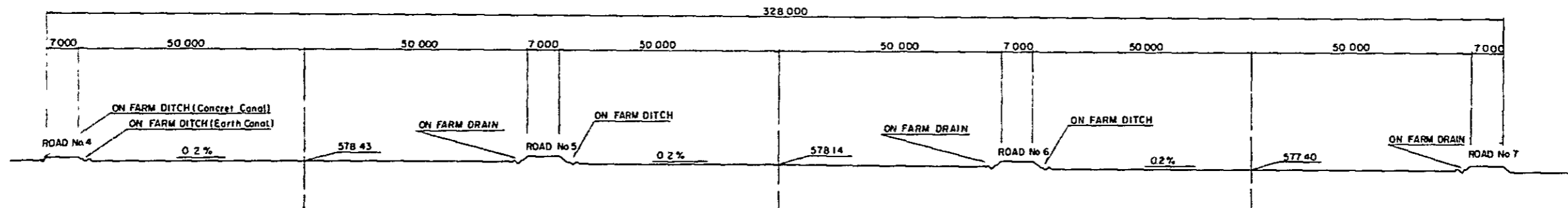
PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PLAN OF THE EXPERIMENTAL FARM	
DRAWING NO 5	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY	



SECTION B - B'

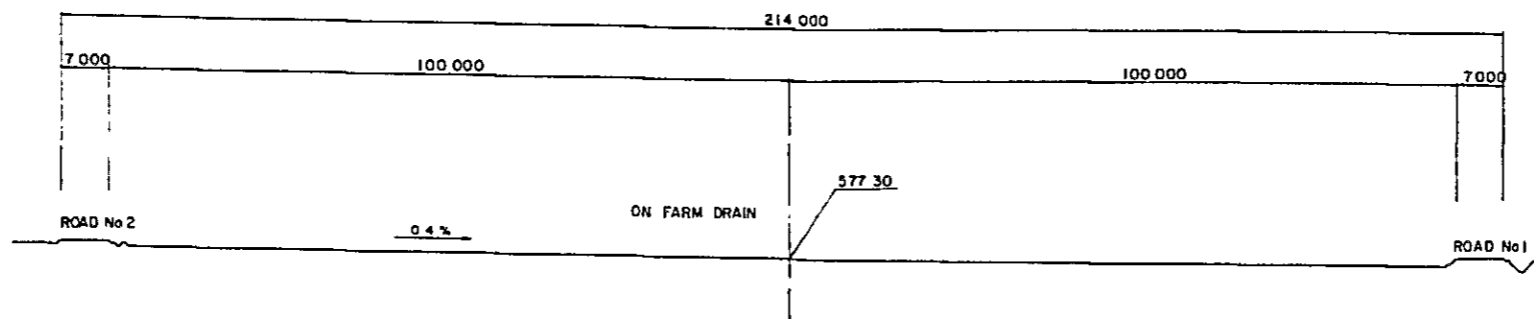


SECTION A - A'

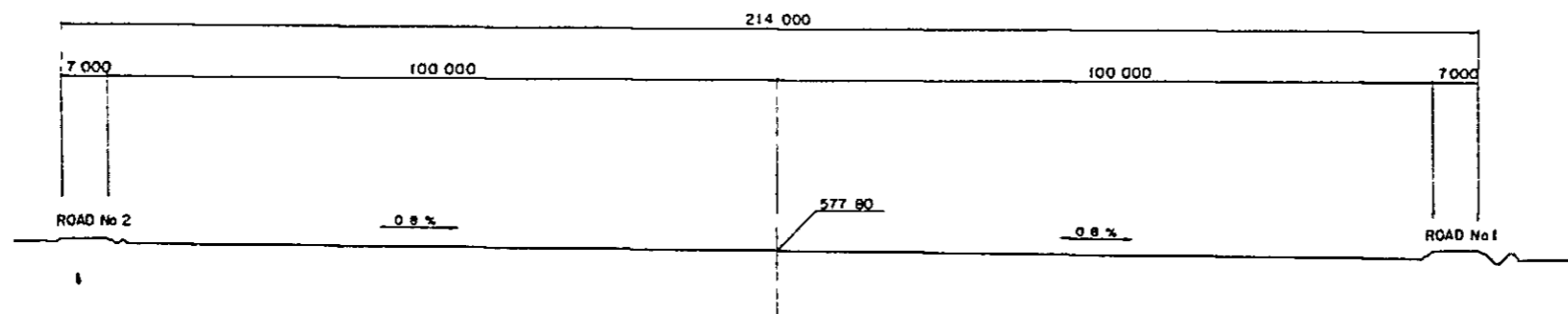


PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE CROSS SECTION OF THE UPLAND FIELD	
DRAWING NO. 6	SCALE 1:500
JAPAN INTERNATIONAL COOPERATION AGENCY	

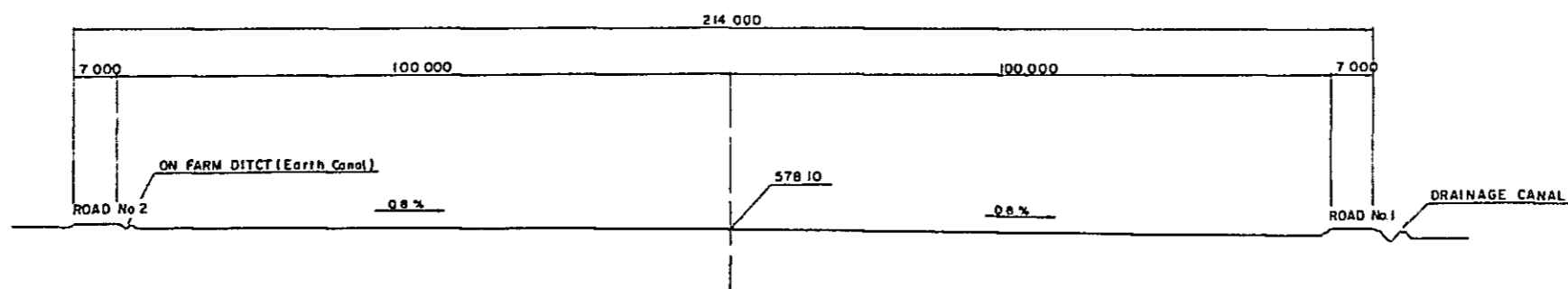
SECTION E - E'



SECTION D - D'



SECTION C - C'



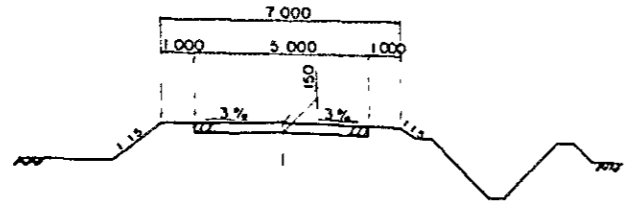
PROJECT TITLE  
AGRICULTURAL DEVELOPMENT TRAINING CENTER

DRAWING TITLE  
CROSS SECTION OF THE  
UPLANO FIELD

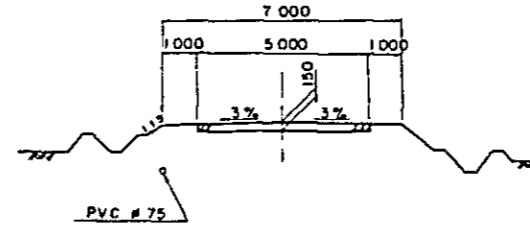
DRAWING NO 7      SCALE 1:500

JAPAN INTERNATIONAL COOPERATION AGENCY.

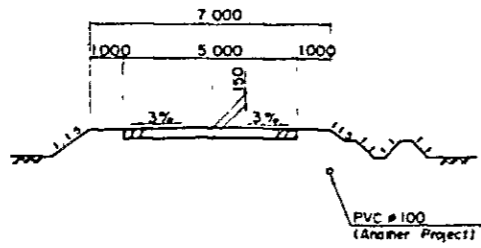
Road No 1



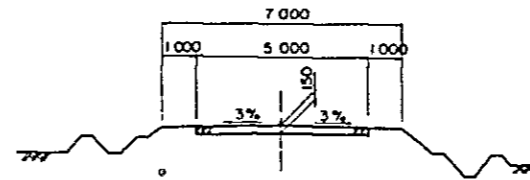
Road No. 4 & No. 5



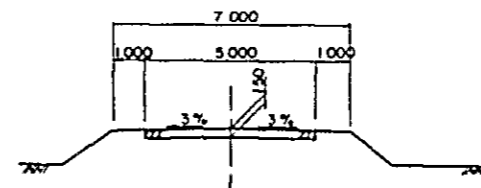
Road No. 2



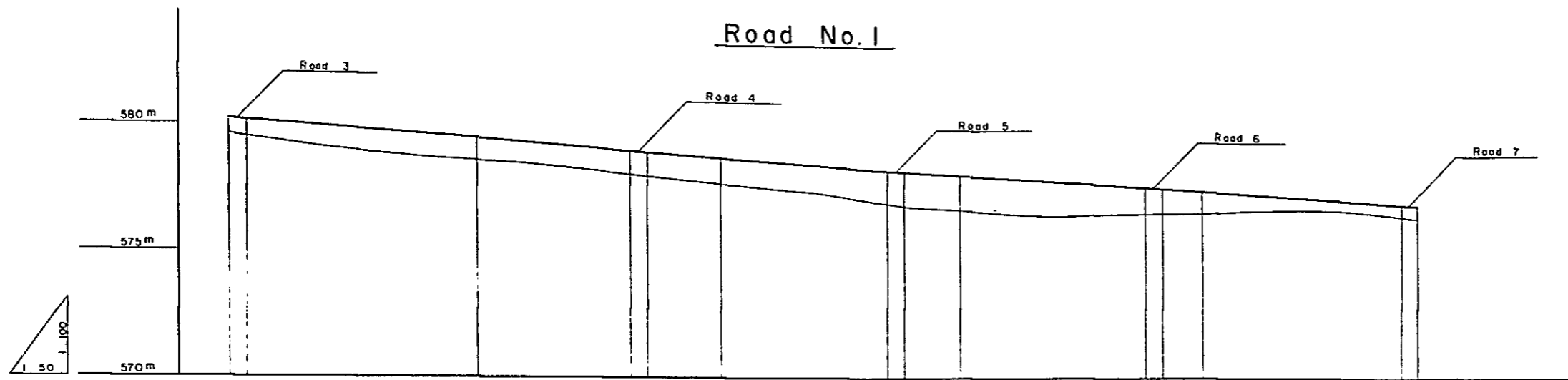
Road No. 6



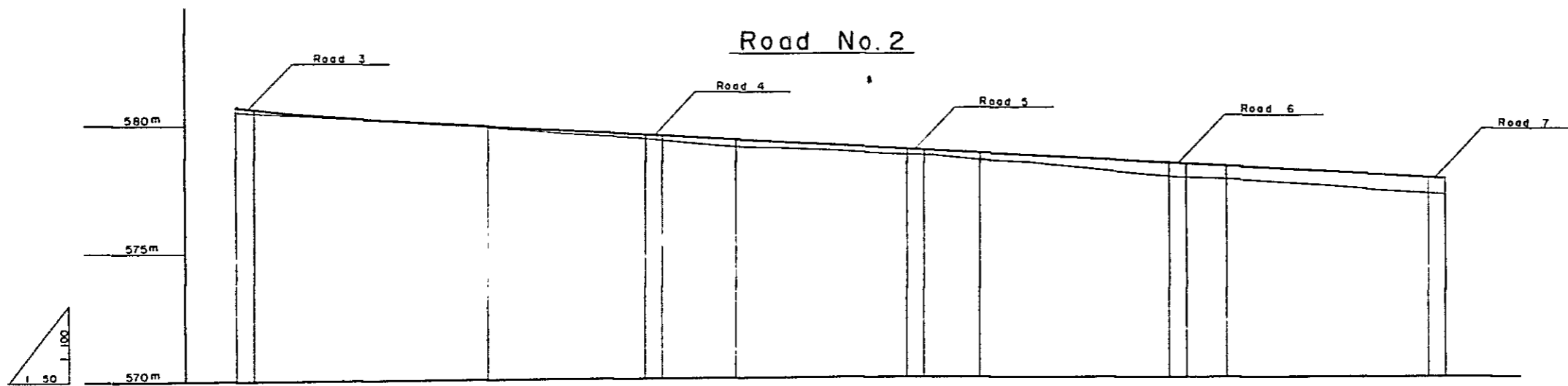
Road No. 7



PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE CROSS SECTION OF THE ON FARM DITCH	
DRAWING NO 8	SCALE 1:1000
JAPAN INTERNATIONAL COOPERATION AGENCY	



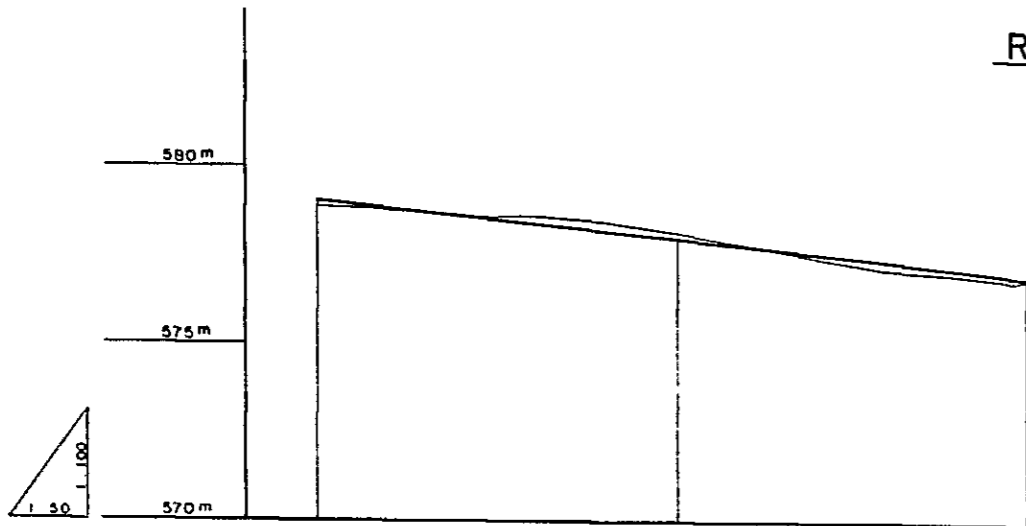
SLOPE			+0.708%				+0.623%			
DESIGN ELEVATION	579.07		578.13		578.06		577.70		577.54	
GROUND ELEVATION	579.07		578.13		578.06		577.70		577.54	
ACCUM DISTANCE	0		100.0		162.5		269.5		400.0	
DISTANCE	0		70		70		70		70	
STA	+70		84.25		84.95		10		24.35	



SLOPE			+0.527%							
DESIGN ELEVATION	580.00		579.98		579.86		579.86		579.82	
GROUND ELEVATION	580.00		579.98		579.86		579.86		579.82	
ACCUM DISTANCE	0		100.0		162.5		269.5		400.0	
DISTANCE	0		70		70		70		70	
STA	+70		84.25		84.95		10		24.35	

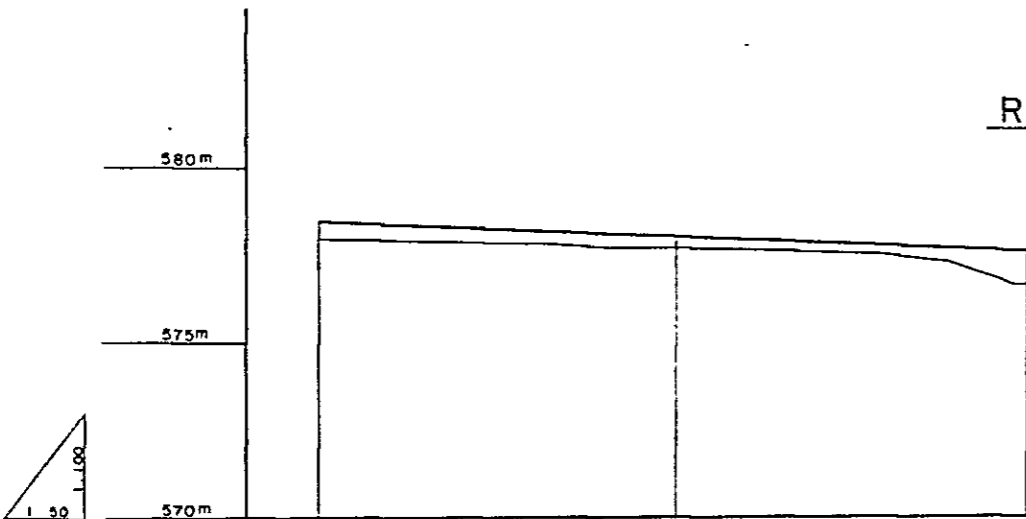
PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PROFILE OF THE ROAD	
DRAWING NO 9	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY	

Road No.5



SLOPE	+0.342%	
DESIGN ELEVATION	578.87	578.09
GROUND ELEVATION	578.88	578.04
ACCUM DISTANCE	0	100.0
DISTANCE	0	100.0
STA	0+35	10+15

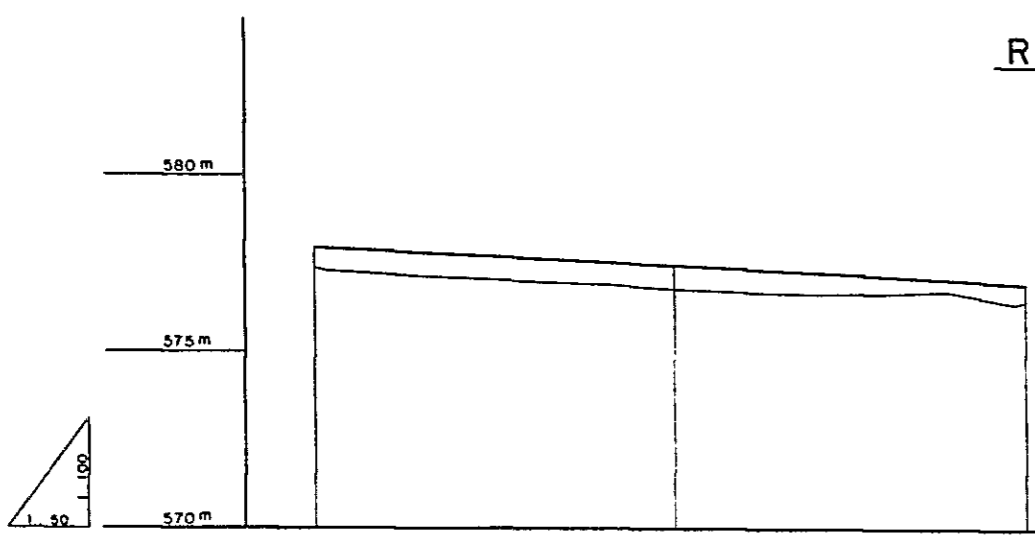
Road No.6



SLOPE	+0.391%	
DESIGN ELEVATION	577.96	577.03
GROUND ELEVATION	577.95	577.04
ACCUM DISTANCE	0	100.0
DISTANCE	0	100.0
STA	0+35	10+15

PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PROFILE OF THE ROAD	
DRAWING NO 10	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY	

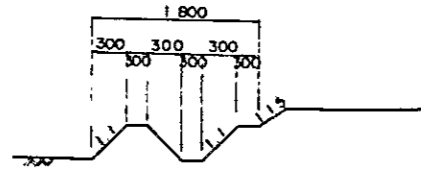
Road No.7



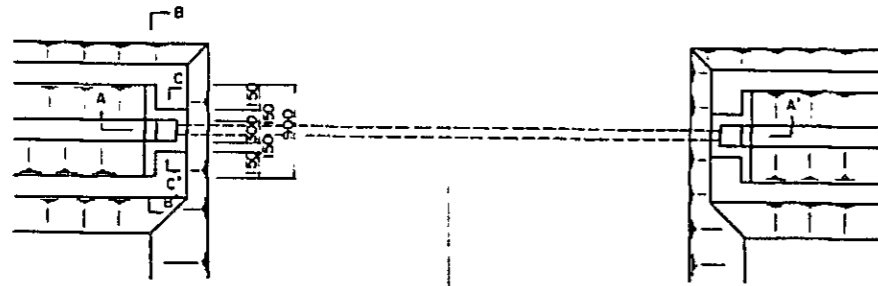
SLOPE	1:0.440%	
DESIGN ELEVATION	577.33 577.28	577.02 577.02
GROUND ELEVATION	577.33 577.28	576.52 576.54
ACCUM DISTANCE	0 35	100 135
DISTANCE	35 0	100 35
STA	0+35 0	10+35 10

PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE PROFILE OF THE ROAD	
DRAWING NO 11	SCALE
JAPAN INTERNATIONAL COOPERATION AGENCY	

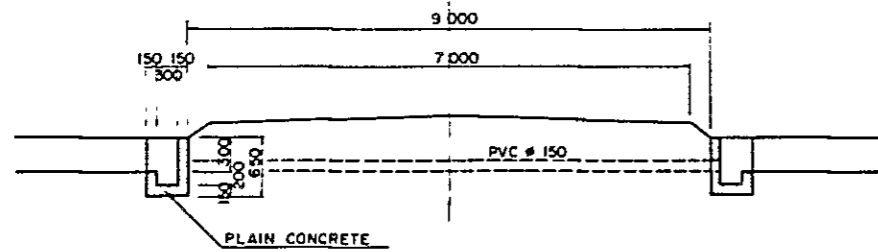
ON FARM DITCH ( Earth Canal )



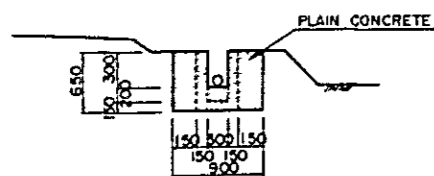
PLAN



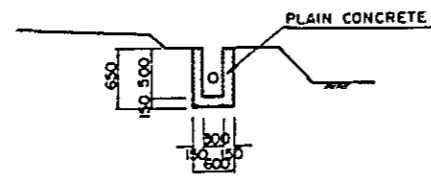
SECTION A-A'



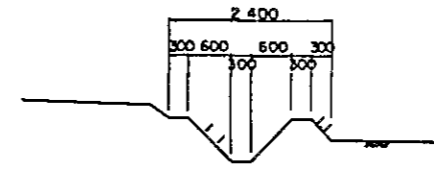
SECTION B-B'



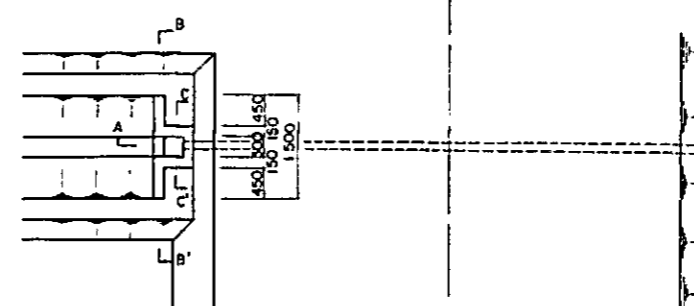
SECTION C-C'



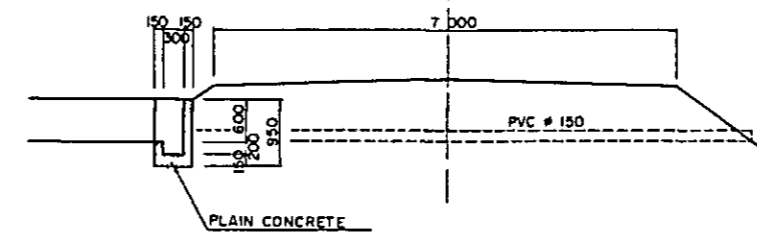
ON FARM DRAIN



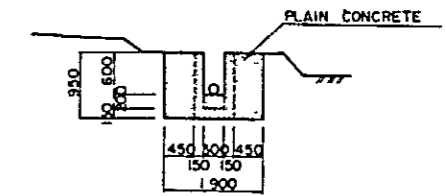
PLAN



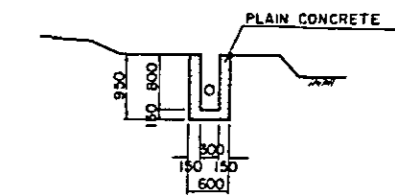
SECTION A-A'



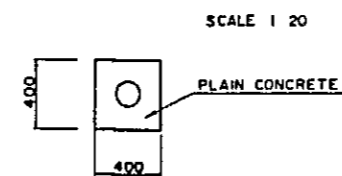
SECTION B-B'



SECTION C-C'



SUPPORTING CONCRETE



SCALE 1/20

PLAIN CONCRETE

PROJECT TITLE  
AGRICULTURAL DEVELOPMENT TRAINING CENTER

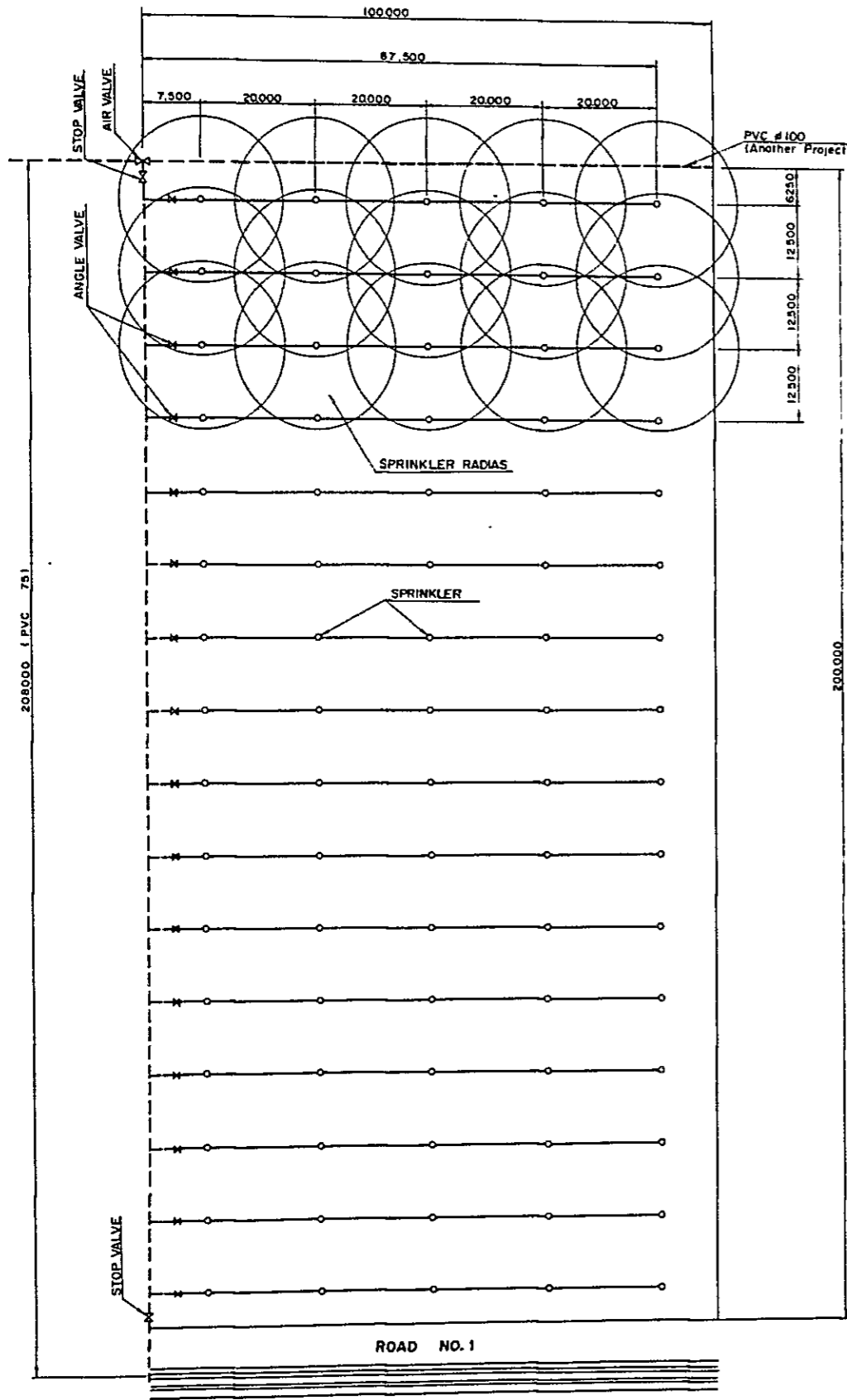
DRAWING TITLE  
ON FARM DITCH AND  
DRAIN

DRAWING NO 12

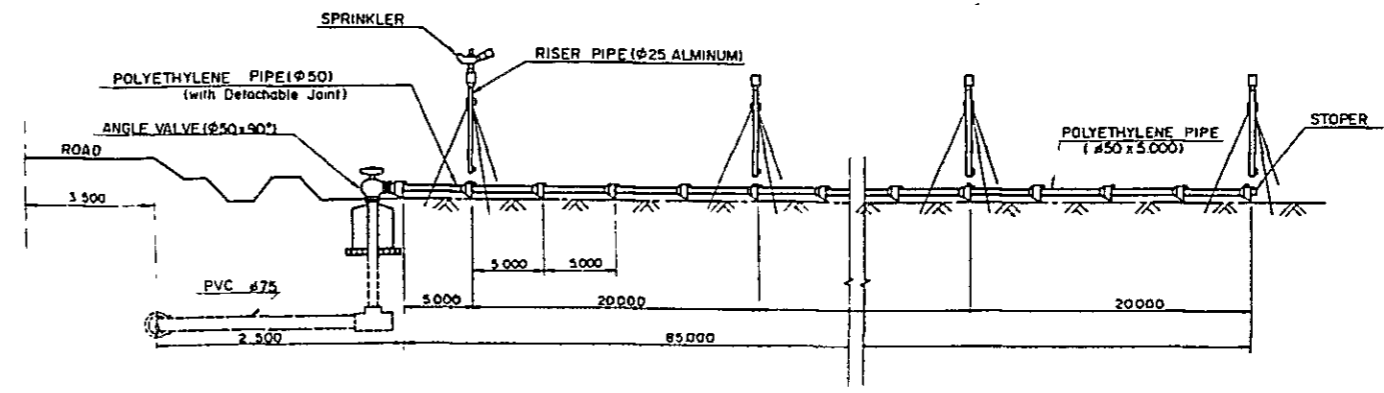
SCALE 1/500

JAPAN INTERNATIONAL COOPERATION AGENCY.

**PLAN**

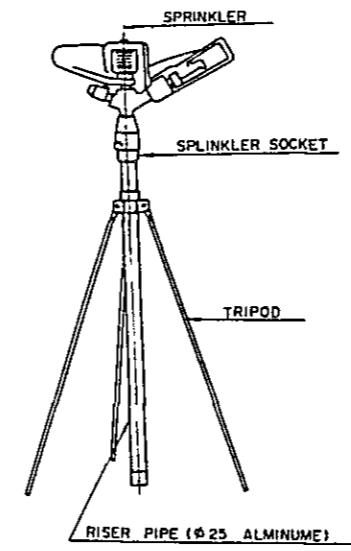


**SPLINKLER SIDE VIEW**



**COMPONENT FOR ONE SET SPRINKLER**

1	Angle valve (φ50 x 90°)	1
2	Polyethylene Pipe with Detachable Joint (φ50 x 5000)	17
3	STOPER	1
4	TRIPOD	5
5	RISER PIPE (φ20 x 1000) with SOCKET	5
6	SPRINKLER	5

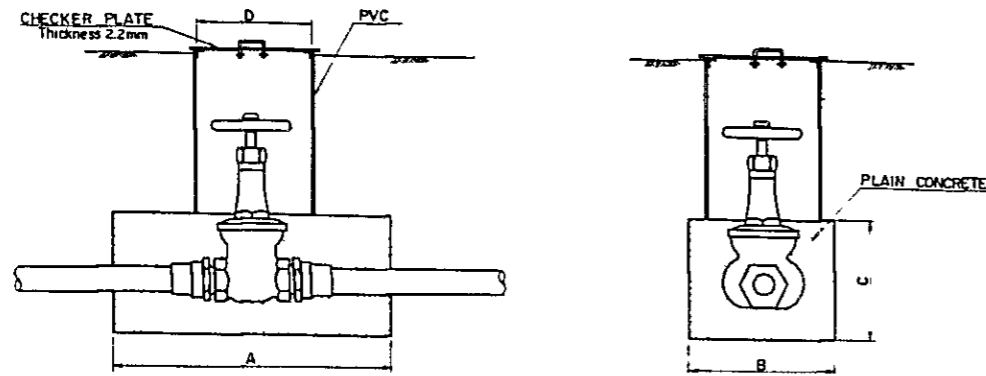


PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE SPRINKLER SYSTEM PLAN	
DRAWING NO 13	SCALE 1:1000
JAPAN INTERNATIONAL COOPERATION AGENCY	



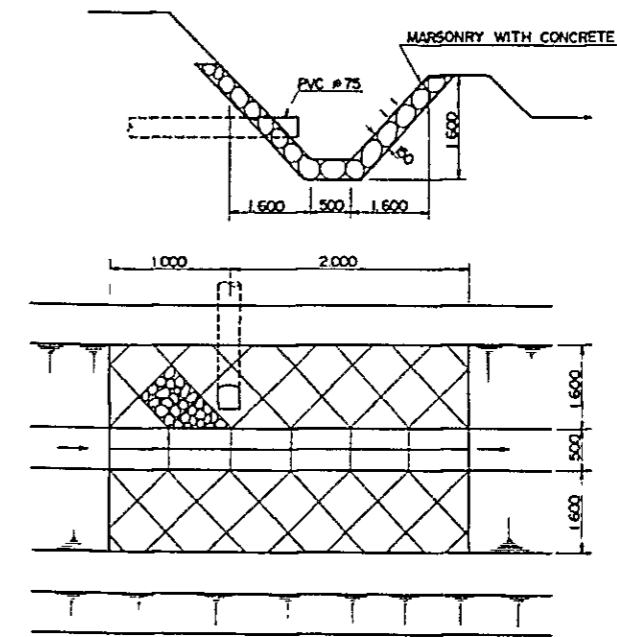


STOP VALVE (  $\phi$  50 &  $\phi$  20 )

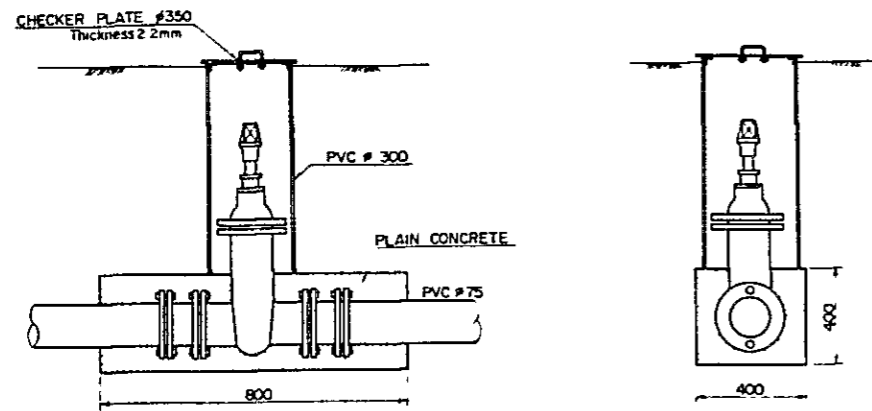


	A	B	C	D
PVC $\phi$ 50	600	400	400	$\phi$ 300
PVC $\phi$ 20	300	200	200	$\phi$ 150

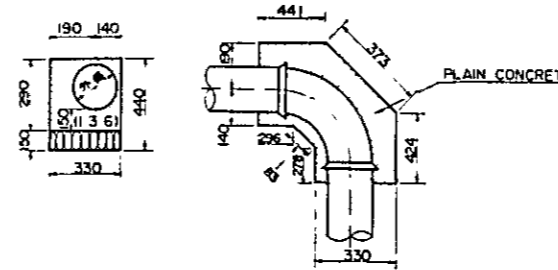
WET MARSONRY



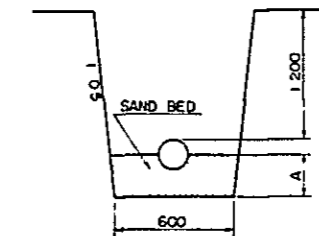
STOP VALVE (  $\phi$  75 )



SUPPORTING CONCRETE

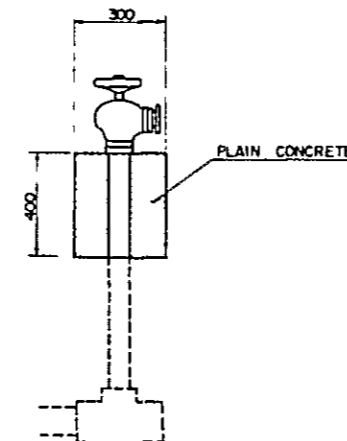


CROSS SECTION

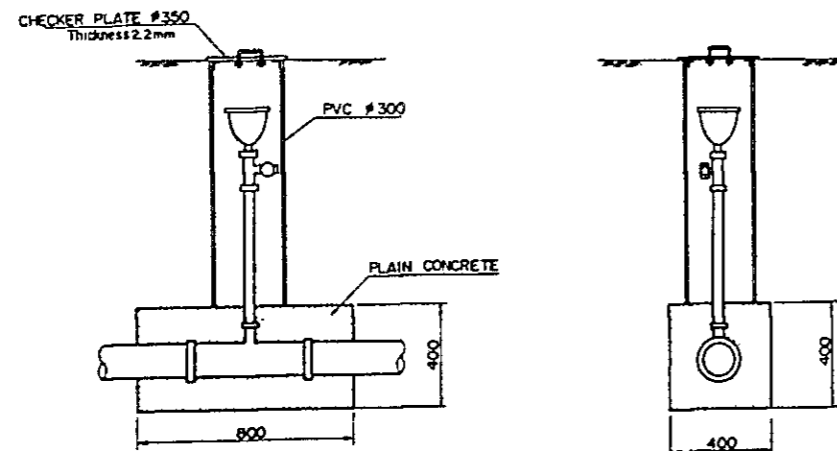


	SAND BED (A)
$\phi$ 75	137.5
$\phi$ 50	125
$\phi$ 20	none

ANGLE VALVE  
 $\phi$  50 x 90°



AIR VALVE



PROJECT TITLE AGRICULTURAL DEVELOPMENT TRAINING CENTER	
DRAWING TITLE DETAIL OF FACILITIES FOR THE SPRINKLER AND TRICKLE SYSTEM	
DRAWING No. 15	SCALE none-scale
JAPAN INTERNATIONAL COOPERATION AGENCY	



JICA