

**CENTRAL RESEARCH INSTITUTE FOR
DRYLAND AGRICULTURE**
(Indian Council of Agricultural Research)
National Initiative on Climate Resilient Agriculture
(NICRA PROJECT)

TENDER DOCUMENT

Santoshnagar: Hyderabad-500 059

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GOVERNMENT OF INDIA



CENTRAL RESEARCH INSTITUTE FOR DRYLAND AGRICULTURE

Santoshnagar: Hyderabad-500 059

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F.No.9-1/(101)/ST-NICRA/11

Date:: 07-12-2011

INVITATION FOR BIDS (IFB)

Under the National Initiative on Climate Resilient Agriculture (NICRA Project), sanctioned by the Govt. of India, sealed bids / tenders are invited from eligible bidders/ Tenderers viz., manufacturers/authorized dealers/sto+ckist, in two envelope system i.e., Technical Bid and Financial Bid as listed below.

S.No.	Particulars	Qty
1	Supply, installation and commissioning of SCADA (Supervisory Control and Data Acquisition) based Rainfall Simulator Facility for studying Resource losses and conservation under simulated rainfall events	1 No.
2.	Free Air Temperature Enrichment (FATE) Facility	1 No.
3.	CO ₂ Temperature Gradient Chamber Facility (CTGC)	1 No.

Security Deposit	5% of the tendered value
Performance guarantee	5% of the tendered value
Cost of tender document for each item	Rs.1000/- (1100/- by post) (Rupees one thousand only) for each item (Non-refundable) through Demand Draft in favor of "ICAR Unit CRIDA A/c." payable at Hyderabad.
Sale of tender document	07-12-2011
Last date of submission of tender requisition	05-01-2012 upto 1100 hrs
Date, Time and place of submission of tender document	05-01-2012 upto 1400 hrs Room No.109, Stores Section, CRIDA
Date, time and place of opening of tender	Technical bid opening on 05-01-2012 at 1500 hrs Commercial bid opening shall be announced later

Pre-Bid Meeting / Presentation : 28.12.2011 at 1400 hrs (for 1 to 3 items)

The Bid documents can be downloaded from **Website # <http://www.crida.ernet.in> or www.nicra-icar.in** and submitted with tender fee of **Rs. 1000 /- in the form of DD for each item of work** from any nationalized bank/ international bank confirmed by a scheduled commercial bank in India along with bid / tender documents and EMD for each item of work may be enclosed as cost of tender document.

The Bidder shall have to enclose the certificate of proof of having successfully completed similar / related works of reasonable amount, solvency certificate one and half time of the cost put to tender, VAT registration certificate, PAN Number, Firm Registration certificate, list of work orders currently being executed work completion certificates, list of infrastructure and full postal addresses along with contact numbers. Apart, if the partners of a firm joined together has a consortium, a proof of documentary evidence legally acceptable document shall have to be enclosed to the tender document. The equipment shall be finalized based on technical qualification and price competitiveness. CRIDA will not be responsible for any loss of time during postal transit. EMD at 5% on the quoted value in Indian Rupees on the quoted price should be enclosed with the Bid/Tender document in separate cover, otherwise, the bids will not be considered.

Director

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CHAPTER -I

INSTRUCTIONS TO BIDDERS (ITB)

A. INTRODUCTION

1. Source of funds

1.1 The expenditure to be incurred for this intended purchase will be met from the funds available with the purchaser named in the **Schedule of Requirements**, hereinafter referred to as Director, Central Research Institute for Dryland Agriculture, ICAR, Santoshnagar, Hyderabad – 500 059.

2 Eligible bidders

2.1 This invitation for bid is open to all suppliers, who fulfill the eligibility criteria as well as the qualification criteria, incorporated in this document

2.2 If the bidder is a **Joint Venture, Consortium, or Association**, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition shall not be altered without the prior consent of the Purchaser.

2.3 A bidder shall not have a conflict of interest. All bidders found to have conflict of interest shall be disqualified. Bidders are or who have been associated, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under these Bidding Documents; or Submit more than one bid in this bidding process, except for alternative offer permitted under ITB clause, if any. However, this does not limit the participation of subcontractors

2.4. The Bidder shall have to enclose the certificate of proof of having successfully completed similar / related works of reasonable amount, solvency certificate one and half time of the cost put to tender, VAT registration certificate, PAN Number, Firm Registration certificate, list of work orders currently being executed work completion certificates, list of infrastructure and full postal addresses along with contact numbers. Apart, if the partners of a firm joined together has a consortium, a proof of documentary evidence legally acceptable document shall have to be enclosed to the tender document.

3 Cost of bidding

3.1 The bidder shall bear all costs associated with the preparation and submission of its bid including, drawings, literatures etc., if any. The purchaser will in no case be responsible or liable for any such cost, regardless of the conduct or outcome of the bidding process.

4. Fraud and corruption.

The bidders, suppliers, and contractors and their sub contractors observe the highest standard of ethics during the procurement and execution of the contracts. Trying to bribe, misrepresentation, attempts to mislead, collusive practices, coercive practices, obstructive practices will amount to corruptive and fraudulent practices. CRIDA will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent engaged in corrupt and fraudulent practices.

B.THE BIDDING DOCUMENTS

5 Contents of bidding documents

5.1 The goods and Services required, bidding procedures and contract terms are prescribed in the bidding documents In addition to the Invitation for Bids, the bidding' documents include:

- a) Instruction to Bidders (ITB)
- b) General Conditions of Contract (GCC)
- c) Schedule of Requirements
- d) Technical Specification and Quality Control Requirements
- e) Questionnaire
- f) Bid Form and Price Schedules
- g) Bank Guarantee Form for Bid Security
- h) Manufacturer's Authorization Form
- i) Bank Guarantee Form for Performance Security
- j) Contract Form

5.2 In case of any contradiction between the stipulations made in ITB and GCC and Schedule of Requirements, the stipulations incorporated in the Schedule of Requirements will prevail over the corresponding stipulations contained in the ITB and I or GCC.

5.3 The bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the bidder's risk and may result in rejection of its bid.

C.PREPARATION OF BIDS

6 Language of Bid

6.1 The bid submitted by the bidder and all correspondences and documents relating to the bid exchanged by the bidder and the purchaser; shall be written in English language only.

7. Bid form

7.1 The bidder shall complete the bid form and the appropriate price schedule furnished in the bidding documents, indicating, inter alia, for the goods to be supplied, a brief description of the goods, their country of origin, quantity and prices.

8. Bid prices

8.1 The Bidder shall indicate in the Price Schedule the Unit price and total prices of the goods it proposes to supply under the Contract. To this end, the bidders are allowed the option to submit the bids for any one or more schedule specified in the Schedule of Requirement' and to offer discounts for combined schedules. **However, Bidders shall quote for the complete requirement of goods and services specified under each schedule on a single responsibility basis, failing which such bids (for the schedule in question) will not be taken into account for evaluation and will not be considered for award,**

8.2 Prices indicated in the price schedule shall be entered separately in the following manner:

I. For goods offered from within India -

- a) The price of the goods, quoted as ex-factory, ex-showroom, ex warehouse or off-the-shelf, as applicable, including customs, excise and any other duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the goods quoted ex-factory or on the previously imported goods of foreign origin, quoted ex-showroom, ex-warehouse or off-the-shelf.
- b) Any sales or other taxes / duties including excise duty, which will be payable on the goods in India if the contract is awarded.
- c) Charges for inland transportation, insurance and other local costs incidental to delivery of goods to the final destination. The final destination is specified in the Schedule of requirements
- d) The price of incidental services as and if listed in **Schedule of Requirements.**
- e) Any element of cost, taxes, duties, levies etc. not specifically indicated in the bid, shall not be paid by the purchaser.

II. For goods offered from abroad

- a) The price of goods shall be quoted CIF port of entry in India or CIP named place of destination in India as and if specified in the **Schedule of Requirements.** In quoting the prices, the bidder shall use ocean transportation through Indian flag

vessels of Indian origin or through vessels of Shipping Conference Lines in which India is a member country. Similarly, the bidder may obtain insurance services from any nationalized insurance company in India.

- b) The price of goods shall be quoted FOB port of shipment, as and if specified in the Schedule of Requirements.
- c) Charges for inland transportation, insurance and other local costs incidental to delivery of the goods from the port of entry in India to their final destination, which is specified in the Schedule of Requirements.
- d) The price of incidental services as and if listed in the Schedule of Requirements.
- e) Any element of cost, taxes, duties, levies etc. not specifically indicated in the bid, shall not be paid by the purchaser.

8.3 In case of dispute or differences arising between the purchaser and the supplier relating to any matter arising out of or connected with the contract, such disputes or differences shall be settled in accordance with the Arbitration and Conciliation Act 1996.

8.4 The bidders separation of the price components in accordance with ITB clause 8.2 above will be solely for the purpose of facilitating the comparison of bids by the purchaser and will not in any way limit the purchaser's right to contract on any of the terms offered.

8.5 Prices quoted by the bidder shall remain firm and fixed during the currency of the contract and not subject to variation on any account, unless otherwise specified in the **Schedule of Requirements**. If the requirement is for a fixed price bid, a bid submitted with an adjustable price quotation will be treated as non-responsive and rejected

8.6. Prices quoted as “inclusive of all duties / taxes etc” will not be considered and summarily rejected.

9. Bid currencies

9.1 For domestic, goods prices shall be quoted in Indian rupees only. Commission for Indian Agent, if payable shall, also be quoted in Indian Rupees only in a manner as specified in ITB Clause No.11.2. For imported goods prices shall be quoted either in Indian rupees. Bids, where prices are quoted in any other way shall be treated as non-responsive and rejected.

10. Indian Agent

10.1 If a foreign bidder has engaged an agent in India in connection with its bid, it will be required to give the following information in the bid:

- a) The name and address of the Indian agent with their permanent income tax number.
- b) The details of the services the agent will render
- c) The amount of remuneration for the agent, included in the FOB component of the bid price.
- d) One Indian Agent cannot represent two suppliers or quote on their behalf in a particular tender (Central Vigilance commission order No: 12-02-6-CTE/SPI (I)-2, New Delhi).

10.2 The agency commission shall be indicated in the space provided for in the price schedule and will be paid to the bidder's agent in Indian rupees using the telegraphic transfer buying rate of exchange ruling on the date of award of contract and shall not be subject to any further exchange variation.

11 Documents establishing bidder's eligibility and qualifications

11.1 The bidder shall furnish, as part of its bid, documents establishing the bidder's eligibility to bid and his qualifications to perform the contract if his bid is accepted.

11.2 The documentary evidence of the bidder's qualifications to perform the contract if its bid is accepted, shall establish to the purchaser's satisfaction

a) that, in the case of a bidder offering to supply goods under the contract, which the bidder did not manufacture or otherwise produce, the bidder has been duly authorized (as per page number) by the good's manufacturer or producer to supply the goods in India

b) that the bidder has financial, technical and production capability necessary to perform the contract and, also, it meets the criteria indicted in the **Schedule of Requirements** and as given below :

A) Manufacturer Bidders:

- (a) Financial Capability- The bidder shall furnish documentary evidence that he meets the following financial requirement:
The bidders who are manufacturers should have generated significant annual sales turnover.
- (b) Technical Capability-The bidder shall furnish documentary evidence that he meets the following experience requirements:
 - 1) The bidder must have supplied and provided after sales services satisfactorily TO THE END USERS the specific goods in any one of the last 5 calendar years
 - 2) They should furnish the information on past supplies and satisfactory performance reports from the previous buyers.
 - 3) The legal status, place of registration and principle place of business of the company or firm or partnership, etc;
 - 4) Reports on financial standing of the bidder such as profit and loss statements, balance sheets and auditor's report for the past three years, banker's certificates etc.
- (c) That, in the case of a bidder not doing business in India, the bidder is or will be (if successful) represented by an agent in India equipped and able to carry out the suppliers maintenance, repair and spare parts stocking obligations prescribed by the conditions of contract and/or technical Specifications
- (d) That such an agent (w.r.t sub- para c above) is enlisted with Directorate General of Supplies & Disposals, Jeevan Tara Building, Sansad Marg, New Delhi-110 001, under the scheme of Ministry of Finance, Govt. of India for compulsory enlistment of Indian Agents.

12. Good's eligibility and conforming to bidding document.

12.1 The bidder shall furnish, as part of his bid, documents establishing the eligibility and conformity to the bidding documents of all goods and services which the bidder proposes to supply under the contract.

12.2 The documentary evidence for eligibility of the goods and services shall consist of a statement in the price schedule, about the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

12.3 The documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings, data etc. and shall consists of:

- a) a detailed description of the good's essential technical and performance characteristics,
- b) a list giving full particulars, including available sources and current prices, of all spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two years (or more, if specified in the schedule) following commencement of the use of the goods by the purchaser; and
- c) a clause-by-clause commentary on the purchasers 'Technical Specifications' demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the 'Technical Specifications'.

12.4 For purposes of the commentary to be furnished to ITB clause 12.3 c above, the bidder shall note that the standards of workmanship, material and equipment and references to brand names or catalogue numbers, if any designated by the purchaser in its 'Technical Specifications' are intended to be descriptive only and not restrictive. The bidder may substitute alternative standards, brand names and/or catalogue numbers in its bid, provided that it demonstrates to the purchaser's satisfaction that the substitutions are substantially equivalent or superior to those mentioned in the 'Technical Specification.

13 Bid Security

13.1 The bidder shall furnish as part of its bid, a bid security of an amount specified in the **Schedule of Requirements.**

13.2 The bid security is required to protect the purchaser against risk of bidder's conduct, which would warrant the security's forfeiture, pursuant to ITB clause 13.7

13.3 The bid security shall be denominated in Indian Rupees and shall be in one of the following forms:

- a) Demand draft on a scheduled commercial bank in India, drawn in favor of the designated officer of the purchase organization and payable at a place as indicated by the purchaser in the Schedule of Requirements.
- b) A bank guarantee, issued by a scheduled commercial bank In India or a bank abroad, duly confirmed by a scheduled commercial bank in India in the form provided in the bidding documents under section VII/2 and valid for 45 days beyond the validity of the bid,

13.4 Any bid from a bidder not secured in accordance with ITB clauses 13.1 and 13.3 will be summarily rejected by the purchaser, as non-responsive, pursuant to ITB clause 22.

13.5 Unsuccessful bidder's bid security will be discharged/returned as promptly as possible after the expiration of the period of bid validity prescribed by the purchaser, pursuant to ITB clause 14, but, barring an unforeseen circumstances, not later than 45 days of the award of contract.

13.6 The successful bidder's bid security will be discharged/returned upon the bidder, signing and accepting the contract pursuant to ITB clause 30 and furnishing the performance security, pursuant to ITB clause 31.

13.7 The bid security may be forfeited:

- a) If a bidder:
 - i. Withdraws its bid or impairs or derogates from the bid in any respect during the period of bid validity specified by the bidder on the bid form; or
 - ii. Does not accept the correction of errors pursuant to ITB clause 21.2
- b) In the case of successful bidder, if the bidder fails
 - i. to accept and sign the contract in accordance with ITB clause 29; or
 - ii. to furnish performance security in accordance with ITB clause 30.

14. Period of validity of bids

14.1 Bids shall remain valid for acceptance for 90 (ninety) days after the bid submission **deadline** prescribed by the purchaser, pursuant to ITB clause 17. A bid valid for a shorter period shall be rejected by the purchaser as non-responsive.

14.2 In exceptional circumstances, the purchaser may solicit the bidder's consent to an extension of the period of bid validity up to a specified period. The request and the response thereto shall be made in writing. The bid security provided under ITB clause 12 shall also be suitably extended. A bidder may refuse the request without forfeiting its bid security. However, a bidder agreeing to the request will not be required nor permitted to modify his bid.

14.3 If the date up to which the bid is to remain valid happens to be a closed holiday for the purchaser, the bid shall automatically remain valid up to the next working day of that organization.

15. Format and signing of bid

15.1 The bidder shall prepare two copies of the bid, clearly making them Original Bids and "Duplicate copy of Bid" respectively. In the event of any discrepancy between them, the original shall govern.

15.2 The original and the copy of the bid shall be typed or written in indelible ink and shall be signed by the bidder or a person or persons duly authorized to bind the bidder to the contract. **Power of attorney should be signed in favor of the "person who is authorized to sign the bid" by the Head of the Organization and the signature of the authorized person should be attested by a NOTARY.** All pages of the bid, except for un amended printed literature, shall be initialed by the person or persons signing the bid.

15.3 Any interlineations, erasures or overwriting in the bid shall be valid only if they are initialed by the person or persons signing the bid.

15.4 The front page of the bidding documents, containing the signature with date of the official (of the purchase organization) selling/dispatching the **documents with the seal of** that office must be returned in original by the bidder along with the original copy of the bid, **failing which the bid is liable to be ignored.**

D. SUBMISSION OF BIDS

16. Sealing and marking of bids

16.1 The bidder shall seal the original and the duplicate copy of the bid in separate envelopes, duly marking the envelopes as 'Original' and 'Duplicate' respectively. These envelopes shall then be sealed in an outer envelope. (In case more than two copies are required as per specific stipulation in the Schedule of Requirements, the copies of the bids shall be marked accordingly, like "Original", "Duplicate", "Triplicate" and so on. Each copy of the bid shall be sealed in a separate envelope and these envelopes shall then be sealed in an outer envelope.

16.2 The inner and outer envelopes shall :

- a) Be addressed to the purchaser at the address given in the **Schedule of Requirements**.
- b) Bear the invitation for bids (IFB) number and the words **"DO NOT OPEN BEFORE 05-01-2012 at 1500hrs** (The time and date of bid opening, as specified in the IFB).

16.3 Each inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared late" or if the invitation of bids (IFB) is cancelled.

16.4 If the outer envelope is not sealed and marked as required by ITB clause 15.2, the purchaser will not assume any responsibility for the bid's misplacement or premature opening.

16.5 Bids sent by Telegram, Telex, cable or facsimile are not acceptable and will be rejected.

17. Deadline for submission of bids

17.1 Bids must be received by the purchaser at the address specified under ITB clause 16.2 not later than the time and date specified in the **Schedule of Requirements** and the purchaser will provide a receipt (inter alia containing time and date of receipt) for the same. If that specified date happens to be a closed holiday for the purchaser, the bids will be received up to the appointed time on the next working day. If the **Schedule of Requirements** provides for receipt of bids through "tender box", the bids shall be submitted accordingly as per the instruction given in the **Schedule of Requirements**.

17.2 The purchaser may, at his discretion, extend this deadline for the submission of bids by amending the bidding documents, in which case all rights and obligations of the purchaser and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

18. Late bids

18.1 Any bid received by the purchaser after the deadline for submission of bids prescribed by the purchaser, pursuant to ITB clause 16, will be rejected and/or returned unopened to the bidder:

19. Modification and withdrawal of bids

19.1 The bidder may modify or withdraw its bid after submitting the same, provided that a written notice of the modification or withdrawal is received by the purchaser prior to the deadline prescribed for submission of bids.

19.2 The bidder's modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions of ITB clause 16, A withdrawal notice may also be sent by telex or cable or facsimile, but the same must be followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids.

19.3 No bid may be modified subsequent to the deadline for submission of bids.

19.4 No bid may be withdrawn during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the bidder in the bid form. Withdrawal of a bid during this interval may result in forfeiture of the Bidder's bid security pursuant to ITB clause 13.7.

19.5 The Director, CRIDA reserves the right to accept any Bid/Tender or reject all Bids/Tenders without assigning any reason, and to annul the bidding process at any time prior to contract award, without thereby incurring any liability to bidder.

E. BID OPENING AND BID EVALUATION

Opening of bids

20.1 The purchaser will open the bids in the presence of bidder's representatives, who choose to attend, at the time, date and the place specified in the Schedule of Requirements.

If the specified date of bid opening is a declared holiday for the purchaser, the bids shall be opened at the appointed time and location on the next working day.

20.2 The representative of a bidder, who intends to attend the bid opening, shall bring with him/her a letter of authorization from the bidder on the bidder's letter head, duly authorizing him/her to attend the bid opening. In the absence of such a letter of authorization, the representative(s) will not be allowed to enter and attend the bid opening. The bidder's representatives, who attend the bid opening, shall sign a register (which will be provided by the purchaser) evidencing their attendance.

20.3 The bidder's name, technical specifications of the goods offered, bid prices, discounts, the presence or absence of the requisite bid security and such other details as the purchaser, at his discretion, may consider appropriate will be announced at the time of bid opening.

20.4 The purchaser will prepare appropriate minutes of the bid opening for its official record and circulate to all the prospective bidders who purchased the bidding document

21 Clarification of bids

21.1 During scrutiny and evaluation of bids, the purchaser may, at its -discretion, ask bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the price or substance of the bid shall be sought, offered or permitted.

22. Preliminary examination of bids

22.1 A preliminary examination of all received bids will be carried out to find out the substantially responsiveness or unresponsiveness.

22.2 The purchaser will examine the bids to determine whether they are complete, whether the required bid validity **period is given**, whether any computational errors have been made, whether required bid security has been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

22.3 Arithmetical errors, if any, in a bid will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected accordingly. If there is a discrepancy between the words and figures, the amount in words shall prevail if the **bidder** does not accept the correction of such errors its bid will be rejected.

22.4 Prior to the detailed evaluation pursuant to ITB clause 22, the purchaser will determine the substantial responsiveness of each bid to the bidding document requirements. A substantially responsive bid is one which conforms to all the requirements and terms **and** conditions of the bidding documents, including the specification and technical parameters of the goods as **given** in the bidding document, without material deviations. Deviations from or objections or reservations to the bidding document's critical provisions, such as those concerning bid validity, technical specifications payment terms, performance security, warranty obligations, Force Majeure, taxes **and** duties and applicable law (governing the contract) will be deemed to be material deviations. Bids from an agent / distributor without proper authorization from the manufacturer as per ITB clause 12.2 (a), shall be treated as non-responsive.

The purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

22.5 The purchaser may waive any minor infirmity, non-conformity or irregularity in a bid, which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any **other** bidders.

22.6 The conclusion drawn by the purchaser as to the substantial responsiveness or otherwise of a bid or consideration of a minor infirmity or non-conformity or irregularity in a bid is final.

22.7 If a bid is determined as not substantially responsive, it will be rejected by the purchaser and may not subsequently be made responsive by the bidder by correction of the non-conformity.

23 Evaluation and comparison of bids

23.1 The purchaser will evaluate and compare the bids, which have been determined to be substantially responsive, pursuant to ITB clause 22 for each **schedule separately**. The bid for a schedule will not be considered if the complete requirements covered in the schedule is not included in the bid. However, as stated in ITB clause 7, bidders are allowed the option to bid for any one or more schedule and offer discounts for combined schedules. These discounts will be taken into account in the evaluation of the bids so as to determine the bid or combination of bids offering the lowest evaluated cost for the purchaser in deciding award(s) for each schedule.

23.2 The comparison shall be on CIP destination basis, duly delivered, installed and commissioned (as the case may be) at the destination.

23.3 The purchaser's evaluation of a bid will include and take into account, in addition to bid price and price of the incidental services:

- a) in the case of goods manufactured in India or goods of foreign origin already located in India, sales tax & other similar taxes and excise duty & other similar duties, which will be payable on the goods if a contract is awarded to the bidder; and
- b) in the case of goods of foreign origin offered from abroad, customs duties and other similar import duties/taxes, which will be payable on the goods if the contract is awarded to the bidder
- c) **Comprehensive Maintenance Contract for three years, after expiry period of warranty.**

23.4 The purchaser's evaluation of bid will also take into account the following factors in the manner and to the extent specified in the **Schedule of Requirements** and amplified in ITB clause 23.5:

- a) cost of inland transportation, insurance and other costs within India incidental to delivery of the goods to their final destination as stipulated in the Schedule of Requirements.
- b) delivery schedule offered in the bid,
- c) the cost of components, spare parts and service,
- d) the availability of spare parts and after-sale service in India for the goods offered in the bid.
- e) the projected operating and maintenance cost during the life of the equipment.
- f) specific additional criteria.

23.5 Pursuant to clause 23.4, following evaluation methods will be followed:

- a) Inland transportation, insurance and incidentals:
Bidder shall quote separately for inland transportation, insurance and other incidentals for delivery of goods to the required destination as already indicated in the **Schedule of Requirements**. These costs, incurred in India, shall be quoted in Indian currency. Such costs will be added by the purchaser to the EXW/CIF/CIP bid price
- b) Delivery schedule:
The purchaser requires that the goods mentioned in the 'Schedule of Requirements' shall be delivered at the destination within the time schedule specified therein. As and if necessary, the estimated time of arrival of goods from ex-works/port of entry to the destination will be calculated by the purchaser for each bid after allowing for reasonable transportation time based on the published tariff of Railways, appropriate Road Transport Agencies etc. Bids offering deliveries (as worked out on above lines), which are later than the specified delivery but within the allowable range (as specified in the '**Schedule of Requirements**') will be adjusted during the

evaluation by adding a factor equal to the percentage specified 'in the **Schedule of Requirements**, to the EXW/CIF/CIP price per week of variation from the specified delivery schedule.

c) Cost of components and spare parts:

i) the list of items and quantities of major assemblies, components and selected spare parts, likely to be required during the initial period of operation as specified in the **Schedule of Requirements**, is annexed to the Technical Specification. The total cost of these items, at the unit prices quoted in each bid, will be added to the bid price.

or

ii) the purchaser will draw up a list of high usage and high value items of components and spare parts, along with the estimated quantities of usage in the initial period of operation as indicated in the **Schedule of Requirements**. The total cost of these items and quantities will be computed from the corresponding unit prices quoted by the bidder and added to the bid price

or

iii) the purchaser will estimate the cost of spare parts usage in the initial period of operation specified in the **Schedule of Requirements**, based on the information furnished by each bidder, as well as on the past experience of the purchaser or other purchasers in similar situations. Such costs shall be added in the bid price for evaluation.

d) Availability of spare parts and after sales service facilities in India:

The cost to the purchaser of establishing the required service facilities and parts inventories, as outlined in the **Schedule of Requirements** or elsewhere in the bidding documents, if quoted separately, shall be added to the bid price.

e) The projected operating and maintenance cost during the life of the equipment:

These costs, which form a major portion of the life cycle cost of the equipment, will be evaluated in accordance with the criteria specified in the **Schedule of Requirements** and/or in the Technical Specifications.

f) Specific additional criteria:

Other specific additional criteria to be considered in the bid evaluation and the corresponding evaluation method shall be incorporated in the **Schedule of Requirements** and/or in the Technical Specifications.

24. Bidder's capability to perform the contract

24.1 The purchaser will determine to its satisfaction whether the bidder, which is selected as having submitted the lowest evaluated responsive bid, is qualified and prima facie capable to perform the contract satisfactorily.

24.2 The determination will take into account the bidder's financial, technical, and production capabilities for fulfilling all the requirements of the purchaser as specified in the bidding documents. This exercise will be based upon the examination of the documentary evidence of the bidder's qualifications submitted by the bidder, pursuant to ITB clauses 3 and 11, as well as such other allied information as the purchaser deems necessary and appropriate.

24.3 An affirmative determination will be a prerequisite for award of the contract to the bidder. A negative determination will result in rejection of the bidder's bid, in which event the purchaser will proceed to the next lowest evaluated bid to make a similar determination of the bidder's capabilities to perform satisfactorily.

24.4 The Bidder shall have to enclose the certificate of proof of having successfully completed similar / related works of reasonable amount, solvency certificate one and half time of the cost put to tender, VAT registration certificate, PAN Number, Firm Registration certificate, list of work orders currently being executed work completion certificates, list of infrastructure and full postal addresses along with contact numbers. Apart, if the partners of a firm joined together have a consortium, a proof of documentary evidence legally acceptable document shall have to be enclosed to the tender document.

24.5 The bidder/ tender shall have to enclose the turnover statements of the firm for the last five years along with financial / audited statements. The financial turnover should be adequate so that the bidder can complete the project successfully.

25. Purchaser's right to vary quantities at the time of award

25.1 The purchaser reserves the right at the time of awarding the contract to increase or decrease by up to 25%, the quantity of goods and services specified in the schedule of requirements without any change in the unit price or other terms and conditions.

26. Contacting the purchaser

26.1 From the time of the bid opening to the time of awarding the contract, if a bidder wishes to contact the purchaser on any matter related to the bid, **he** should do so in writing.

26.2 Any effort by a bidder to influence the purchaser in the purchaser's decision on bid evaluation, bid comparison or **contract award shall result in the rejection of the bidder's bid**, besides other suitable administrative actions against the bidder, as deemed fit by the purchaser.

F. AWARD OF CONTRACT

27. Award criteria

27.1 Subject to ITB clause 23, the purchaser will award the contract to the successful bidder whose bid has been determined as the lowest evaluated bid, provided further that the bidder is determined to be qualified and prima facie capable to perform the contract satisfactorily.

28. Purchaser's right to accept / reject bids

28.1 The purchaser reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without thereby **incurring** any liability, whatsoever, to the affected bidder or bidders.

29. Notification of award

29.1 Before the expiry of **bid validity period**, the purchaser will notify the successful bidder in writing, by registered letter or by cable / fax / telegram / telex, to be confirmed **subsequently** in writing by registered letter, that its bid has been accepted. The schedule(s) of requirement and the corresponding quantity of the item(s) ordered, which have been accepted, will, inter-alia, be mentioned in the notification.

29.2 The notification of award will constitute the formation of the contract.

29.3 Upon the successful bidders furnishing the performance security, pursuant to ITB clause 31, the purchaser will promptly notify each unsuccessful bidder and will discharge its bid security, pursuant to ITB clause 13.

30. Signing of contract

30.1 At the same time as purchaser **notifies** the successful bidder that its bid has been accepted, the purchaser will send to the bidder by registered post or speed post, the contract form provided in the bidding documents, incorporating all agreements between the parties.

30.2 Within twenty-one (21) days of issue of the contract form by the purchaser, the successful bidder shall sign and date the contract and return it to the purchaser by registered post or speed post.

31. Performance security

31.1 Within twenty-one (21) days of the issue of notification of award by the purchaser, the successful bidder shall, along with the signed contract, furnish the performance security in accordance with and as per the instructions incorporated in the general conditions of contract with regard to performance security.

31.2 Failure of the successful bidder to comply with the requirement of clause 30 or clause 31 shall constitute sufficient grounds for annulment of the award and forfeiture of the bid security, in which event, the purchaser may make the award to the next lowest evaluated bidder or call for new bids.

CHAPTER – II

GENERAL CONDITIONS OF CONTRACT (GCC)

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GENERAL CONDITIONS OF CONTRACT (GCC)

1 Definitions

1.1 In this contract the following terms shall be interpreted as indicated:

- a) “IFB” means Invitation for Bids.
- b) “ITB” means Instruction to Bidders.
- c) “GCC” means General Conditions of Contract.
- d) “RC” means Rate Contract.
- e) “Contract” means a legal agreement entered into between the purchaser and the supplier, as recorded in the agreement signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein..
- f) “Contract Price” means the price payable to the supplier under a contract for the full **and proper** performance of its contractual obligations.
- g) “Goods” means all the items, materials, equipment and/or machinery, which the supplier is required to supply to the **purchaser** in terms of the contract.
- h) “Services” means the services ancillary to the supply of the goods, such as transportation and insurance and any other incidental services, such as installation, commissioning, provision of technical assistance, training, comprehensive **maintenance contract** and other such obligations of the supplier covered under **the** contract.
- i) **Purchaser means the buyer named in a bidding document and in the corresponding contract, purchasing the goods ordered and includes his successors and/or assignees.**
- j) “Consignee” means the individual or body to whom the contracted goods are required to be delivered as per the terms and the conditions\incorporated in **the** contract.
- k) “Supplier” means the individual or firm supplying the goods under **the** contract and includes its successor and/assignees.
- l) “Day” means calendar day of the Gregorian calendar.
- m) “Month” means calendar month of the Gregorian calendar.

2. Application

2.1 These general conditions of contract (as contained in this section) shall apply to the extent they are not superseded by provisions in other parts of the contract:

3. Country of origin

3.1 All goods and services supplied under the contract shall have their origin in India or in the Countries, with which the Government of India has trade relations,

3.2 For purposes of this clause, "origin" means the place where the goods are mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing processing and substantial or major assembling of components, commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

3.3 The origin of goods and services is distinct from the nationality of the supplier.

4. Standards

4.1 The goods supplied under this contract shall conform to the standards mentioned in the 'Technical Specifications' and when no applicable standard is mentioned, to the latest authoritative standards, as applicable to the **good's** country of origin.

5. Use of contract documents and information

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract or any provision thereof or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the purchaser in connection therewith, **prior to, during or following completion or termination of the contract**, by the supplier in the performance of the contract. Also, disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for the purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information enumerated. In GCC sub-clause 5.1 except for the purposes of performing the contract.

5.3 Every document other than the contract itself, mentioned in GCC sub clause 5.1, shall remain the property of the purchaser and shall be returned **(all copies)** to the purchaser on completion of the supplier's performance under the contract, if so required by the purchaser.

6. Patent rights

6.1 The supplier shall at all times indemnify the purchaser, free of cost, against all third-party claims of infringement of patent, trade mark or industrial design rights arising from use, of the goods or any part thereof in India.

7. Performance security

7.1 **Within 21 (twenty one) days** after the issue of notification of award by the purchaser, the supplier, shall furnish performance security to the purchaser for an amount **equal to 10% (Ten per cent)** of the contract value, **valid up to 60 (sixty) days beyond** the date of completion of all contractual obligations by the supplier, including the warranty obligations.

7.2 In the event of any correction of defects or a replacement of defective material during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of twelve months from the date of the correction/replacement and the Performance Security for the proportionate value (which will be determined by the purchaser in consultation with the supplier) shall be extended by 60 (sixty) days over and above the extended warranty period.

7.3 In the event of any contract amendment, the supplier shall, within 21 (twenty-one) days of issue of such amendment, furnish the necessary amendment to the Performance Security, rendering the same valid in all respects in terms of the contract, as amended.

7.4 The proceeds of the Performance Security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete its obligations under the contract.

7.5 The Performance security shall be denominated in Indian Rupees or in the currency of the contract and shall be in one of the following forms:

- a) **Demand Draft on any scheduled commercial bank in India, to be drawn in favor of the purchaser as indicated in the Schedule of Requirements.**
- b) **Bank Guarantee issued by a scheduled commercial bank in India, in the prescribed form, as provided in section VII/4 of this bidding document.**

7.6 Subject to GCC sub-clause 7.4 above, the performance security will be discharged by the purchaser and returned to the supplier on completion of the supplier's contractual obligations, including the warranty **period plus 60 days**, under the contract.

8. Inspection and tests

8.1 The purchaser and/or **his** nominated representative(s) shall have the right to inspect and/or to test the goods to confirm their conformity to the contract specification and other technical details incorporated in the contract at no extra cost to the purchaser. The **Schedule of Requirements** and the Technical Specification incorporated in the bidding document shall specify what inspections and tests, the purchaser requires and where and how they are to be **carried out**. The purchaser shall notify, in advance, the **supplier, in writing**, of the identity of any representative(s) for this purpose.

8.2 The inspections and tests may be conducted on the premises of the supplier or **his** subcontractor(s), at the point of delivery and/or at the **good's** final destination. If conducted on the premises of the supplier, or **his** subcontractor(s), all reasonable facilities and assistance,

including access to relevant drawings, design details and production data, shall be furnished by the supplier to the inspectors at no **cost** to the purchaser.

8.3 Should any inspected or tested goods fail to conform to the required specifications, and standards, the purchaser may reject them and the supplier shall either replace the rejected goods or make all alterations necessary to meet the specifications and standards, as required, free of cost to the purchaser and resubmit the same to the purchaser for conducting the inspections and tests again.

8.4 Where the contract stipulates pre-dispatch inspection by the purchaser's nominated inspecting agency, the supplier shall put up the goods for inspection to the inspecting agency well ahead of time so that the inspecting agency is able to complete the inspection within the stipulated delivery period. If the goods are tendered for inspection at the last moment without providing reasonable time to the inspection agency for completing the inspection, the inspecting agency may carry out the inspection and complete the formality beyond the contractual delivery period at the risk and expense of the supplier. The fact that the items have been inspected after the contractual delivery period will not have the effect of keeping the contract alive and this will be without any prejudice to the legal rights and remedies available to the purchaser under the terms **and** conditions of the contract.

8.5 The **purchaser's** right to inspect, test and, where necessary, reject the goods after the goods' arrival at the final destination shall in no way be limited or waived by reason of the goods having previously been inspected, tested and passed by purchaser or **his** representatives prior to the dispatch of the goods from the country of origin or from the supplier's premises.

8.6 Nothing in GCC clause 8 shall, in any way, release the supplier from any warranty or other obligations under the contract.

9. Packing

9.1 The supplier shall provide such packing of the goods as is required to prevent **the** damage or deterioration during **the** transit to their final destination as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, humid weather and precipitation during transit and open storage. The sizes and weights of the packing cases shall also take into consideration, where applicable, the available inland mode(s) of transport in India, the remoteness of the **good's** final destination and the absence of **heavy handling facilities at all points in transit. Further, limitations and or mandatory instructions, if any, in the weights, volumes and sizes of the packages shall also be taken care of, by the supplier.**

9.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements if any, as shall be expressly provided for in the contract, including additional requirements, if any, specified in the **Schedule of Requirements** and any subsequent instructions given by the purchaser.

9.3 Packing instructions:

The supplier will be required to make separate packages for each consignee named in the contract. Each package will be marked by the supplier at **his** own expense, on three sides with indelible ink/paint, with the following details:

- a) **Contract no.** and date
- b) **Name** and address of the consignee
- c) **Name** and address of the supplier
- d) **Brief** description of goods
- e) **Gross** weight and outer dimension of the package
- f) **Country** of origin of goods
- g) **Packing** list reference no. and.
- h) **Any** other requirement, relevant to the contract

10. Delivery of goods

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified by the purchaser in the notification of award and in the contract.

10.2 For the purposes of the contract, “FOB”, “CIF”, “CIP” and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them in the current edition of “Incoterms” which are international commercial shipping terms, published by International Chamber of Commerce, Paris, France.

11. Transportation

11.1 Where the supplier is required under the contract to deliver the goods on F.O.B terms. Transportation of the goods, up to and including the point of putting the goods on board of the vessel at the specified port of loading, shall be arranged and paid for by the supplier.

11.2 Where the supplier is required under the contract to deliver the goods C.I.F. or C.I.P., transportation of the goods to the port of destination or such other specified place of destination in India, as shall be mentioned in the contract, shall be arranged and paid for by the supplier

11.3 Where the supplier is required under the contract to deliver the goods CIF or CIP within India, the supplier shall arrange the shipment by Indian flag vessels or vessels belonging to Conference Lines in which India is a member **country**. Where the supplier required under the contract to deliver the goods F.O.B. and also to arrange **for ocean transportation** on Indian flag vessels or vessels of Conference Lines in which India is a member country, the supplier may arrange for such transportation on alternative carriers also, if the Indian flag vessels or Conference Line vessels are not available to transport the goods within the time frame specified in the contract. However, before arranging such alternative transportation, the supplier shall obtain prior concurrence of the purchaser for the same.

11.4 The supplier shall not **make** part-shipments and/or transshipment **without prior** written consent of the purchaser

11.5 In case the supplier violates any of the aforementioned instructions, the supplier shall be liable for all consequences (including financial loss) that the purchaser may face due to such violations.

12. Insurance

12.1 The goods supplied under the contract, shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery as indicated **below in GCC clause 12.**

12.2 Where delivery of the goods is required by the purchaser on C.I.F. or C.I.P. basis, the supplier shall arrange and pay for the cargo insurance, naming the purchaser as the beneficiary. Where delivery is on F.O.B. basis, the insurance shall be the responsibility of the purchaser.

12.3 In the case of a contract on. CIF. or C.I.P. basis, the insurance shall be for an amount equal to 110% (one hundred and ten percent) of the CIF or CIP value of the goods from "warehouse to warehouse" (final destination) on "all risks" basis including war risks and strikes.

13. Distribution of dispatch documents

13.1 The shipping and other documents as well as dispatch details to be furnished by the supplier to the purchaser and/or to the purchaser's nominated authorities to enable the purchaser and/or **his nominated** authorities to clear and/or accept the goods will depend on the mode of dispatch of the goods and the terms of delivery, as specified, in the **Schedule of Requirements** and in the contract and, **subject to the instructions in this regard, as indicated below:-**

a) For goods supplied from abroad:

Within 24 hours of shipment, the supplier shall notify the purchaser and **his** nominated authorities (as specified in the contract) and the insurance company by cable or telex or fax, the full details of the shipment including contract number, description of goods, quantity, the vessel, the **bill of lading / AWB number and date**, port of loading, date of shipment, port of discharge, expected date of arrival at the port of entry etc. Further, the supplier shall also immediately dispatch by registered post / air-mail the specified number of copies of the following documents to the above authorities

- i. Supplier's invoice showing contract number, description of goods, quantity, unit price and total amount
- ii. Original and copies, of the negotiable, clean, on-board bill of lading marked freight to pay and copies of non-negotiable bill of lading / AWB
- iii. Copies of packing list identifying the contents of each package;
- iv. Insurance certificate;
- v. Manufacturer's/supplier's warranty certificate;

- vi. Pre-dispatch inspection certificate issued by the purchaser's nominated inspection agency (if so specified) and the supplier's factory inspection report and
- vii. Certificate of origin.

The above documents shall be received by the purchaser and other authorities mentioned above at least one week before the arrival of goods at the port or place of arrival and, if not received, the supplier **shall** be responsible for any consequent expenses **incurred by the purchaser**.

b) For goods supplied from within India:

Within 24 hours of dispatch of the goods, the supplier shall notify the complete dispatch details to the, purchaser and/or the purchaser's nominated authorities (as specified in the contract) and the insurance company. The supplier shall also mail the specified number of copies of the following documents to them:

- i. The supplier's invoice showing contract number, description of goods, quantity, unit price and the total amount;
- ii. Railway receipt or Delivery note;
- iii. Packing list identifying contents of each package;
- iv. Insurance certificate;
- v. Manufacturer's / Supplier's warranty certificate;
- vi. Pre-dispatch inspection certificate issued by the purchaser's nominated inspection agency (is so specified) and the supplier's factory inspection report; and
- vii. Certificate of origin.

The purchaser shall receive the documents at least one week before the arrival of the goods (except where it is handed over to the consignee with all the documents) and if not received, the supplier will be responsible for any consequent expenses.

The documents to be provided by the supplier for claiming payment are specified in GCC clause 17 ("Payment").

14. Incidental services

14.1 The purchaser may include in the contract any or all of the following services and/or some additional services, If specified in the **Schedule of Requirements** and the supplier is required to provide the same:

- a) **Performance or supervision of on-site assembly and/or start-up of the supplied goods,**
- b) **Furnishing of tools required for assembly and/or maintenance of the supplied goods**
- c) **Supply of a detailed operations and maintenance manual for each appropriate unit of the supplied goods,**

- d) Performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed to by the parties, provided that this service shall not relieve the supplier of any warranty obligations under the contract and
- e) Training the purchaser's personnel, at the supplier's plant and /or on-site, in assembly, start-up, operation, maintenance and/or repair of the supplied goods.

14.2 Prices charged by the supplier for the above-mentioned incidental services, **if** not included in the quoted price for the goods, shall be quoted separately in the bid itself and shall not exceed the prevailing rates, charged to other parties by the supplier for similar services.

15. Spare parts

15.1 As specified in the **Schedule of Requirements**, the supplier **is** required to provide any or all of the following materials, notifications and information pertaining to spare parts manufactured and/or distributed by the supplier:

- a) Such spare parts as the purchaser may elect to purchase from the supplier, provided that this will not relieve the supplier of any warranty obligations under the contract; and
- b) In the event of termination of production of the spare parts
- c) Advance notice to the purchaser, **of the production termination of spares, with sufficient time to permit the purchaser to procure the needed requirements**; and
- d) Immediately following such termination, furnishing at no cost to the purchaser, the blueprints, drawings and specifications **and other alternative sources of the spare parts, required.**

15.2 **Supplier shall carry sufficient inventories of consumable spares to assure ex-stock supply of same for the equipments/ machineries supplied. Other spare parts and components shall be supplied, as promptly as possible, but in any case, within three months of placement of order and opening the letter of credit.**

16. Warranty

16.1 The supplier warrants that the goods supplied under the contract is new, unused, of the most **recent / current** models and incorporate all recent improvements in design and materials, unless provided otherwise in the contract. The supplier further warrants that the goods supplied under the contract shall have no defect arising from design, materials (except when the design adopted and / or the material used are as per the purchaser's specifications) or workmanship or from any act **of** omission of the supplier, that may develop under normal use of the supplied goods under the conditions prevailing in India,

16.2 This warranty shall remain valid for 12 (twelve) months after the goods or any portion thereof, as the case may be, have been delivered to the final destination and installed and commissioned at the final destination and accepted by the purchaser in terms of the contract **or** for 18 (eighteen) months from the date of dispatch from the supplier's works for domestic goods **or** for 21 (twenty-one) months after the date of shipment from the port or place of loading in the

source country for imported goods, whichever is earlier, unless specified otherwise in the **Schedule of Requirements**.

16.3 The purchaser shall promptly notify the supplier in writing of any claim arising under this warranty.

16.4 Upon receipt, **during the warranty period**, of such notice, the supplier shall, with all reasonable speed (or within the period, if specified in the **Schedule of Requirements** and the contract), repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the purchaser for the replaced parts/goods thereafter

16.5 In the event of any correction of a defect or replacement of any defective material **needed** , during the warranty period, the warranty for the corrected/replaced material shall be extended to a further period of 12 (twelve) months from the date, such corrected / replaced material starts functioning to the satisfaction of the purchaser.

16.6 If the supplier, having been notified, fails to **rectify** the defect(s) within a reasonable period (or within the period, if specified in the **Schedule of Requirements** and the contract), the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and **cost** and without prejudice to any other rights, which the purchaser may have against the supplier, under the contract.

17. PAYMENT

17.1 The payment shall be made in the currency / currencies specified in the contract. The supplier shall send **his** claim (with relevant documents, as required) to the appropriate paying authority as specified in the Schedule of Requirements and the contract. Before claiming any payment, the supplier shall ensure that all the contractual obligations for claiming that payment have been duly fulfilled.

17.2 The payment shall be made after installation/commissioning of the equipment in the Institute.

17.3 Operation of the Letter of Credit:

- a. The payments effected through letter of credit, shall be subject to the latest Uniform Customs and Practice for Documentary Credit, of the International Chamber of Commerce; Paris
- b. If requested specifically by the supplier, the letter of credit will be confirmed, but the cost **for the confirmation charges** shall be charged to the supplier's account
- c. If the letter of credit is required to be extended / reinstated for reasons not attributable to the purchaser, the charges thereof shall be to the supplier's account.

18. Prices

18.1 Prices charged by the supplier for the goods supplied and the services performed under the contract shall not vary from the prices quoted by the supplier in its bid, with the exception of any price adjustment authorized in the **Schedule of Requirements**.

19. Modification of contract

19.1 The purchaser may at any time, by a **written instruction** given to the supplier, pursuant to GCC clause 31, make changes and modifications within the general scope of contract in any one or more of the following:

- a) drawings, designs or specifications, where goods to be supplied under the contract are to be specifically manufactured for the purchaser
- b) the mode of packing
- c) the mode of dispatch
- d) the place of delivery
- e) the services to be provided by the supplier, and / or
- f) any other area(s) of the contract, depending on the merits of the case.

19.2 If any such change causes an increase or decrease in the cost of, or in the time required for the supplier's performance of any provision under the contract, an equitable adjustment shall be made in the contract price or contract delivery schedule or both, and the contract shall be amended accordingly. Any claim by the supplier for adjustment under this clause must be asserted within 21 (twenty-one) days from the date of the supplier's receipt of the purchaser's amendment / modification of the contract.

19.3 Subject to GCC sub-clauses 19.1 and 19.2, no variation in or modification of the terms of the contract shall be made except by written amendment signed by both the parties.

20. Assignment

20.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

21. Sub Contracts

21.1 The supplier shall notify the purchaser in writing of all sub-contracts awarded under the contract, if not already specified in its bid. Such notifications, in its original bid or later, shall not relieve the supplier from any liability or obligation, whatsoever, under the contract.

21.2 Subcontract shall be only for bought-out items and sub-assemblies.

22.3 Subcontracts must comply with the provisions of GCC clause 3.

22. Delays in the supplier's performance

22.1 Delivery of the goods and performance of the services shall be made by the supplier in accordance with the time schedule specified by the purchaser in the "Schedule of Requirements".

22.2 Except as provided under GCC clause 25, any unexcused delay by the supplier in maintaining its contractual delivery obligations shall render the supplier liable to any or **all of the following:**

- a. imposition of liquidated damages,
- b. forfeiture of its performance security and / or
- c. termination of the contract for default

22.3 If at any time during the performance of the contract, the supplier or **his** subcontractor(s) should encounter conditions hindering timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). After the receipt of the supplier's notice, the purchaser, as soon as practicable, shall evaluate the situation **and may at his discretion extend the supplier's time for performance, in which case, the extension of the delivery period shall be ratified by issuing an amendment to the contract.**

22.4 The supplier shall not dispatch the goods after expiry of the delivery period. The supplier is required to apply to the purchaser for extension of delivery period and obtain the same before dispatch. In case the supplier dispatches the goods without obtaining an extension, **he would be doing so at his own risk and no claim for payment for such supply and / or any other expense related to such supply shall lie against the purchaser.**

23. Liquidated damages

23.1 Subject to GCC clause 25, if the supplier fails to deliver any or all of the goods or perform the services within the time period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as liquidated damages, a sum equivalent to 0.5 % (half percent) of the delivered price of the delayed goods or unperformed services for each week of delay or part thereof until actual delivery or performance, up to a maximum deduction of 10 % (ten percent) of the delayed goods or services contract price. Once the maximum is reached, the purchaser may consider termination of the contract, if the same have not been terminated already.

Further, during the above mentioned delayed period of supply and / or performance, the supplier, notwithstanding any stipulation in the contract for increase in price for any ground, shall not be entitled to any increase in price and cost, whatsoever, which take place during the period of delay. But nevertheless, the purchaser shall be entitled to the benefit any decrease in price and cost on any ground during that period of delay.

24. Termination for default

24.1 The purchaser, without prejudice to any other remedy for breach of contract, may, by a written notice of default sent to the supplier, terminate the contract in whole or in part, if the supplier fails to deliver any or all of the goods or fails to perform any other contractual obligation(s) within the time period specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC clause 22.

24.2 In the event the purchaser terminates the contract in whole or in part, pursuant to GCC sub-clause 24.1, the purchaser may procure, upon such terms and conditions and in such manner as it deems appropriate, goods and/or services similar to those undelivered and the supplier shall be liable to the purchaser for any excess cost for such similar goods and / or services. However, the supplier shall continue to perform the contract to the extent not terminated

25. Force Majeure

25.1 Notwithstanding the provisions of GCC clauses 22, 23 and 24, the supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.

25.2 For purposes of this clause; “Force Majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but are not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes

25.3 If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

26. Termination for insolvency / convenience

26.1 The purchaser, by written notice sent to the supplier, may terminate the contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that the termination is for the purchaser’s convenience, the extent to which performance of the supplier under the contract is terminated, and the date with effect from which such termination becomes effective

26.2 If the supplier becomes bankrupt or otherwise insolvent, the purchaser may terminate the contract by giving written notice to the supplier without any compensation to the supplier, provided, that such termination will not prejudice or affect any right of action or remedy which has accrued and / or will accrue thereafter to the purchaser

27. Resolution of disputes

27.1 If any dispute or difference of any kind shall arise between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve the same amicably by mutual consultations.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.

27.3 Any dispute or difference, in respect of which a notice of intention to commence arbitration has been given in accordance with GCC sub-clause 28.2, shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the goods under the contract.

27.4 The dispute resolution mechanism to be applied pursuant to GCC sub clause 27.3, shall be as follows

a) Contracts with Foreign Supplier.

Any dispute, controversy, or claim arising out of relating to this Contract, or breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNICITRAL Arbitration Rules as at present in use.

b) Contracts with Indian Supplier.

- i. In the case of a dispute or difference arising between the purchaser and the supplier relating to any matter arising out of or connected with the contract, such disputes or difference shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The arbitral tribunal shall consist of three arbitrators, one each to be appointed by the purchaser and the supplier. The third arbitrator shall be chosen by the two arbitrators so appointed by the parties and shall act as presiding arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensus within a period of thirty days from the appointment of the arbitrator appointed subsequently, the presiding arbitrator shall be appointed by the Indian Council of Arbitration or President of the Institution of Engineers (India).
- ii. The decision of majority of arbitrators shall be final and binding upon both the parties.
- iii. The cost and expenses of the arbitration proceedings will be paid as determined by the arbitral tribunal. However, the expenses incurred by each party in connection with the preparation, presentation, etc., of its proceedings as also fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself.

27.5 However, where the value of the contract is Rs.15 lakhs (Rupees one and a half million) and below, the disputes or differences arising in it shall be referred to a sole arbitrator. The sole arbitrator shall be appointed by mutual agreement between the parties. If the parties fail to agree on the arbitrator within 30 (thirty) days from the receipt of a request by one party from the other party to so agree, the **appointment shall be made upon request of a party, by the Indian Council of Arbitration or the President of the Institution of Engineers (India).**

27.6 The venue, of arbitration shall be the place from where the contract is issued.

28. Governing Language

28.1 The contract shall be written in English Language. All correspondence and other documents pertaining to the contract, which the parties exchange, shall also be written in English.

29. Applicable Law

29.1 The contract shall be interpreted in accordance with the laws of India.

30. Notices

30.1 Any notice given by one party to the other pursuant to the contract shall be confirmed in writing to the addresses specified in the **Schedule Requirements**.

30.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

31. Taxes and duties

31.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees and other such levies imposed outside India.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc. incurred until delivery of the contracted goods **and** services to the purchaser.

Further instruction if, any, shall be as provided in the **Schedule of Requirements**.

CHAPTER - III

CONTRACT FORM

CENTRAL RESEARCH INSTITUTE FOR DRYLAND AGRICULTURE

SANTOSH NAGAR, HYDERABAD-500 059

Office issuing the contract

Contract No. _____

Date _____

This is in continuation to this Office Notification of Award No. Dated:.....

1. .Name & address of the Supplier

2. Purchaser's bidding document No. Dated(followed by further communication No. and date, if any from the purchaser to the supplier)

3. Supplier's bid No..... dated..... (followed by further communication No. and date, if any, from the supplier to purchaser).

4. The documents which are deemed to form and be read and construed as part of this contract are:
 1. The Bid form and the price Schedule submitted by the bidder
 2. The Schedule of Requirements;
 3. The Technical Specification and Quality Control Requirements
 4. The General Conditions of Contract; and
 5. The Purchaser's Notification of Award

Certain stipulations out of the above documents are reproduced below for ready reference. However, the words and expressions used in this contract agreement shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to:

5. Details of Performance Security

6. Brief particulars of the goods and services which shall be supplied / provided by the supplier are as under:

Schedule No.	Brief description of goods / services	Accounting Unit	Quantity to be supplied	Unit Price	Total Price	Delivery terms (FOB/CIF/Free Del. At site / CIP etc.)

7 Total value (in figure)_____ (In words) _____

8 Delivery schedule

9 Details of Inspection, test and quality assurance

1. Designation and address of inspection agency

2. Mode(s) and place(s) of conducting inspections and tests.

10 Transit Insurance

11 Dispatch Instructions

12 Details of consignee (including port consignee, if any)

13 Payment terms

14 Paying Authority

15 Warranty

16 Comprehensives (Annual) Maintenance Contract.

(Signature, name and address

Of the purchaser's authorized functionary

Signing the contract)

For and on behalf of

Received and accepted this contract

Agreement

.....

(Signature, name and address of the supplier's authorized executive)

For and on behalf of)

(Name and Address of the supplier)

.....

(Seal of the supplier)

Date:

Place:

CHAPTER - IV

OTHER STANDARD FORMS

QUESTIONNAIRE

BIDDERS SHOULD FURNISH SPECIFIC ANSWERS TO ALL THE QUESTIONS GIVEN BELOW. IN CASE A QUESTION DOES NOT APPLY TO A BIDDER, THE SAME SHOULD BE ANSWERED WITH THE REMARK "NOT APPLICABLE". BIDDERS MAY PLEASE NOTE THAT IF THE ANSWERS SO FURNISHED ARE NOT CLEAR AND/OR ARE EVASIVE, THE BID WILL BE LIABLE TO BE IGNORED.

- . Bid No.....Date for bid opening on.....
 - . Offer is open for acceptance
 - . Brand of goods offered :
 - . Name & address of manufacturer :
 - . Station of Manufacture :
 - . What is your permanent Income Tax A/C no.
 - . Confirm whether you have attached your :
latest/current ITCC or certified photocopy thereof. :
 - . Status
- (a) Are you currently registered with the Directorate General of Supplies & Disposals (DGS&D) for the item(s) quoted? If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration.
 - (b) Are you small scale unit currently registered with the National Small Industries Corporation (NSIC) under Single Point Registration Scheme for the item(s) quoted?. If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration.
 - (c) If you are not registered either with NSIC or DGS&D, please state whether you are currently registered with Directorate of Industries of the State Government concerned, If so, indicate the date up to which you are registered and whether there is any monetary limit on your registration.
 - (d) Are you registered under the Indian Companies Act, 1956 or any other Act?

Please attach certified copy (copies) of the relevant registration certificate(s) in confirmation to your above answer(s).

- . Please indicate Name & full address of your Banker(s)

- . Whether you are:
 - (i) Manufacturer of the goods quoted; or
 - (ii) Manufacturer's authorized agent for those goods.

- . State whether business dealings with you have been currently banned by any Ministry Dept. of Central Govt. or any State Govt.

Signature of Witness

Signature of Bidder

Name & address of Witness Full name, designation & address of the person signing above

For and on behalf of M/s.

.....

(Name and address of the bidding firm)

BANK GUARANTEE FORM FOR BID SECURITY

Whereas.....[name of bidder] (hereinafter called "the bidders") has submitted his bid dated.....[date] for the supply of.....(brief description of the relevant goods and services) (hereinafter called 'the bid').

KNOW ALL PEOPLE by these presents that WE..... (Name of the bank) having registered office at(full address) (hereinafter called "the bank") are bound unto.....(name of the purchaser) (hereinafter called "the purchaser") in **the** sum of..... (Amount in figures and in words) for which payment well and truly to be, made to the said purchaser, the bank binds itself, its successors and assigns by these presents.

Sealed With the Common Seal of the said bank this..... Day of2011....

THE CONDITIONS of this obligations are :

. If the bidder

- (i) Withdraws its bid during the period of bid validity specified by the bidder on the bid form; or
- (ii) Does not accept the correction, of errors in accordance with the instruction to Bidders

OR

. If the bidder, having been notified of the acceptance of its bid by the purchaser during the period of bid validity:

- (i) Fails or refuses to execute the contract form, if required; or
- (ii) Fails or refuses to furnish the performance security, in accordance with the Instructions to Bidders;

We undertake to pay to the purchaser up to the above amount upon receipt of its first written demand, without the purchaser having to substantiate its demand, provided that in its demand the purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the above mentioned two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 60 (sixty) days after the period of bid validity and any demand in respect thereof should reach the bank not later than the above date.

.....

Signature of the Bank

SEAL of the Bank

Date:

Place:.....

MANUFACTURER'S AUTHORIZATION FORM

To

.....

.....

(Name and address of the purchaser)

Dear Sirs,

Ref. Your Bidding Documents No.....

We..... who are established and reputable manufacturers of.....(name and description of the goods offered in the bid) having factories at.....hereby authorize Messrs(name and address of the agent) to submit a bid, negotiate (as and if necessary) and conclude the contract with you against your above mentioned Bidding Documents for the above goods manufactured by us.

No company or firm or individual other than Messrs..... (name and address of the above agent) is authorized to bid, negotiate and conclude the contract against this specific Bidding Documents for the above mentioned goods manufactured by us.

We hereby extend our full guarantee and warranty as per clause 15 of the General Conditions of Contract, read with modification, if any, in the Special Conditions of Contract for the goods and services offered for supply against this Bidding Document by the above firm.

Yours faithfully,

.....

.....

(signature, name and designation)

for and on behalf of Messrs.....

(Name & address of the manufacturer)

Note: This **letter** of authorization should be on the letterhead of the manufacturing firm and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

BANK GUARANTEE FORM FOR PERFORMANCE: SECURITY

To.....

.....

(Name and address of the purchaser)

WHEREAS.....(name and address of the supplier) (hereinafter called "the supplier") has taken, in pursuance of contract No..... dated to supply (Description of goods and services) (Hereinafter called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a recognized bank acceptable to you, for the sum specified therein as security for compliance with its (supplier's) obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of [amount of the guarantee in words and figures], such sum being payable in the types and proportions of currencies in which the contract price is payable, and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of [amount of guarantee] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We further undertake to pay you the sum so demanded notwithstanding any dispute or disputes raised by the supplier in any suit or proceedings pending before any court or tribunal relating thereto liability under this present being absolute and univocal.

We also hereby waive the necessity of your demanding the said amount from the supplier before presenting us with the demand.

We further agree that you shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the contract or to extend the time of performance by the supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by you against the supplier and to forbear or enforce any of the terms and conditions relating to the contract and we shall not be relieved from our liability under this guarantee.

This guarantee shall be valid and shall remain in force until.....day of , 20..... Dated the..... day of.....2011

for

(Name of the Bank)

Signature.....

Name of the officer.....

(in Block letters)

Designation of the officer Code No.....

Name of the Bank and full address.

CHAPTER - V

SCHEDULE OF REQUIREMENTS

There are three parts under Schedule of Requirements.

Part -1

S.No.	Particulars	Qty
1	Supply, installation and commissioning of SCADA (Supervisory Control and Data Acquisition) based Rainfall Simulator Facility for studying Resource losses and conservation under simulated rainfall events	1 No.
2.	Free Air Temperature Enrichment (FATE) Facility	1 No.
3.	CO ₂ Temperature Gradient Chamber Facility (CTGCF)	1 No.

Technical Specifications of the Equipment

1) Supply, Installation and Commissioning of SCADA (Supervisory Control and Data Acquisition) Based Rain Fall Simulator Facility for Studying Resource Losses and Conservation under Simulated Rainfall Events

Supervisory Control and Data Acquisition (SCADA) is HMI software for achieving full automation of operation, on line data recording and graphical presentation of measuring parameters and controls for rainfall simulator facility. The system should have manual option also to operate the rainfall simulator in case of failures of automation equipment. SCADA should have the features of creating animated rainfall simulator layouts with data display units on screen, control switches, creation of reports, data analysis, and trend graphs for various parameters, alarm summary, on screen alarm display in case of faults in the sensors etc. SCADA should have dynamic linkage with MS Excel for presenting the acquired data in graphical form, logging the data and for further analysis. The basic units of the system include:

- 1) Fabrication of rainfall simulator with ISI make tubular GI(25 mm, class B, ISI certified) pipes along with rolling wheels at the bottom of the simulator. The rainfall simulator will move on the track over the three soil bins for replicating the operation of the rainfall simulator. It should have moving mechanism from one soil bin to other from the SCADA. The rainfall simulator will have water connection at the centre of the pipe having nozzles for simulating rainfall. It should be preceded by the pressure transmitter for measuring operating pressure (0-6 kg/cm²) and controlled by SCADA for change in the operating pressure and to achieve the desired rainfall intensities upto maximum of 150 mm/hr. It should have the nozzles of V jet 80-150 for simulating the natural rainfall. The simulator should also have oscillating mechanism installed on top of the simulator pipe with nozzles with swinging width of 3 m. SCADA will have controls for all the above mechanisms through PLC (Programmable logic controller) with sufficient data input and output cards. An underground sump of capacity 100 m³ is to be constructed for storing water and a 3hp submersible monoblock pumpset with high head and low discharge pump preferable from reputed makes of Texmo, CRI, Kirloskar and it has to be operated from SCADA. Regulation of flow through auto valve is required to maintain the desired intensities in the system and this must be maintained for various durations of 15, 30, 45, 60, 75, 90 min of time at a given event.
- 2) Fabrication of soil bin (6 x 3 x 1 m) with standard and strong MS steel with interior fixed with acrylic sheets for corrosion free conditions in the soil bin. The total weight of soil bin when filled with soil is about 25 tonnes with water. This should be supported by the hydraulic lifts with maximum stability of soil bin without any bending and should be operated by SCADA for raising the soil bin to achieve 1-10% slope. The maximum lift of the bin is about 60 cm at the end point of the

soil bin. The lift will be proportionately less at the mid portion of the bin. All these mechanisms have to be controlled through PLC and operated from SCADA.

- 3) Instrumentation for the measurement of rainfall intensity , soil moisture, soil temperature , infiltration, runoff and soil loss in the soil bin with sensors with standard signal of 4-20 mA and temperature compensate and with reliable accuracy of $\pm 1\%$ and must be connected to SCADA for logging the data in the MS Excell sheet.
- 4) Entire system should have the power back up for one hour and voltage stabilizer for 3 phase power supply.

Detailed specifications:

Sl .no.	Item description and specifications	Quantity, nos
1	Supervisory Control and Data Acquisition software of recent version with necessary accessories for data communication from PLC to SCADA and programming of SCADA/PLC operation. The no. of tags is to a maximum of 150 or as per the requirement of the above functionalities in the rainfall simulator. It should be a licensed software.	1
2	Programming Logic Controller for performing the movement of rainfall simulator with cutoff relay controls for stop and on for movement of simulator on track at defined positions/distances. PLC should have sufficient (8) Digital and Analog Input and output cards for receiving standard signal of 4-20mA or 0-10 v for data recording from the runoff plots. A logic programme must be written in ladder programming to do all the controls and operations in the rainfall simulator.	1
3	Absolute pressure smart type transmitter with display unit for clear visibility of reading on LCD. It should work with standard signal of 4-20 mA or 0-10v, have temperature compensation, reliable and accuracy level of $\pm 1\%$. The measurement range is 0-6 kg/cm ²	1
4	Variable frequency drive for flow adjustment in the delivery of the pumpset and must be operated by SCADA with the standard signal of 4-20 mA.	1
5	Fabrication of rainfall simulator and rainfall shelter for the simulation facility as per Fig 1 and 3. Rainfall shelter should have tubular structure frame with semi circular top. The tubes spacing is 1 m apart upto a vertical height of 3 m and semicircular structure on top with height of 1m. The frame structure should be covered with 100 micron UV stabilized transparent polyethylene sheet grouted at the bottom of structure for its stability against the wind and natural rain (Fig 1 &4). The top of shelter must be auto close and open type with respect to rainfall event happening or not happening. Design of proper hinge system to sustain the loads of wind and self weight of the top frame.	1
6	Fabrication of soil bins (6 x 3 x 1 m) as per the Fig 2 with rugged structure of MS sheet of high quality with redoxide painting outside and corrosion free lining inside the bin. It should have the hydraulic lift system for soil bin of 25 tonnes load to a height of 0.6 m for maintaining slopes varying from 1-10% and a support mechanism for holding the soil bin after lifting by the hydraulic pumps in a particular slope. (Fig 2)	3

7	Real time Instrumentation with necessary access tubes for mounting sensors and soil augers. (Fig 2 & 5)	
	i) FDR sensors for soil moisture measurement in soil bins at 15, 30, 45, 60 and 90 cm depths (one portable)	4
	ii) Infiltrometer sensors (Portable)	1
	iii) Soil temperature sensors at 15 and 30 cm depths	3
	iv) Recording type rain gauge as per IMD specifications (portable)	1
	v) Electronic tipping buckets for runoff measurement (1-2 lit/s tipping capacity)	6
	vi) Sediment load sensor for measuring the silt load in runoff	6
	Note: All the above sensors of standard and reputed make with reliability and high accuracy of $\pm 1\%$ and temperature compensation and should work on standard signal of 4-20 mA and connected to SCADA for continuous recording of the data.	
8	Standard signal cable for connecting sensors to the PLC/SCADA system in control room. It should be standard make and ISI certified. There should not be any signal loss in the wires while connecting from source to the SCADA. It should have ferrules and identifiers for easy identification in the field and maintenance.	250 m
9	Data management system for SCADA and PLC Monitor 18.5" TFT with red eye protection; windows 7 professional with licensed key and original CD, Intel core™ i7 processor with suitable chipset and high processor speed, 8GB DDR3 ram, 64 bit, 4 DIMM sockets for memory slots, 4 nos bays (2 nos 5.25" for optical media drives and 2 nos, 3.5" for hard disk drives), 500 GB SATA hard disk drive (7200 rpm), Super multi SATA DVD writer, MS office 2007, 6 USB ports of highest version and compatible to all connecting devices, audio ports, head phones and microphone ports in front, standard key board with all provisions, optical two button scroller mouse, network interface integrated 10/100/1000 baseT network interface, 3 year on site warranty, anti virus: kaspersky with original CD. Multimedia graphic card.	1
10	Laser color printer of standard make with proper software: print speed 8ppm on A4, 600 x 600 dpi, in line color laser printing, direct to page printing, duty cycle 35,000 pages, standard memory 16 MB, processor speed 264 MHz, host based standard languages, 2 standard paper trays, 250 sheets, 125 sheets output bin, manual duplex print options, media sizes A4, A5 and B5, sheet fed finished output handling, standard connectivity with USB and Ethernet, compatible to windows 7 professional	1
11	Flexible LDPE/PVC pipe of dia 40 mm inner dia, 6 kg/cm ² rating of Standard make and ISI certified for connecting water supply to distribution box on top of the rainfall simulator from sump. Water supply from the distribution box to individual nozzles through LDPE flexible pipe of 16 mm dia or suitable to the dia of nozzle top nipple (Fig 6)	25 m
12	Electric console (1 x 1 x 0.8 m) S type with standard gauge for electrical application, housing of signal cables, PLC, Data management system with SCADA, keyboard slider with mouse and printer. It should be corrosion free MS steel with 6mm thick, smart look painted outside with lock and key provision with support legs at both ends. It should be installed in a control room on raised CC platform of size 2 x 1.5 x 0.3 m. A printer table along with standard and ergonomic computer chair, revolving type suiting to the height of console.	1 no.

Terms and conditions:

1. The supplier should give one year warranty on free of cost and offer for the next three year AMC on cost basis. He should attend the trouble shooting problems in the system on site as and when required.
2. The supplier will provide the design manual with all circuit and flow diagrams for the clear understanding of the system with all specifications and construction details.
3. The supplier should provide the operating manual indicating maintenance schedule for entire system and the sensors of measurement.
4. Calibration certificates should be provided for all the above instruments by the supplier/manufacture
5. Construction of the sump and control room for the SCADA/ PLC for the rainfall simulator will be taken up by the CRIDA separately.
6. All the cable work should be in enclosed channels either overground or underground.
7. Pre bid conference should be delivered by the supplier/manufacture on Dec 28,2011
8. Both technical bid and financial bids must be submitted by the supplier separately

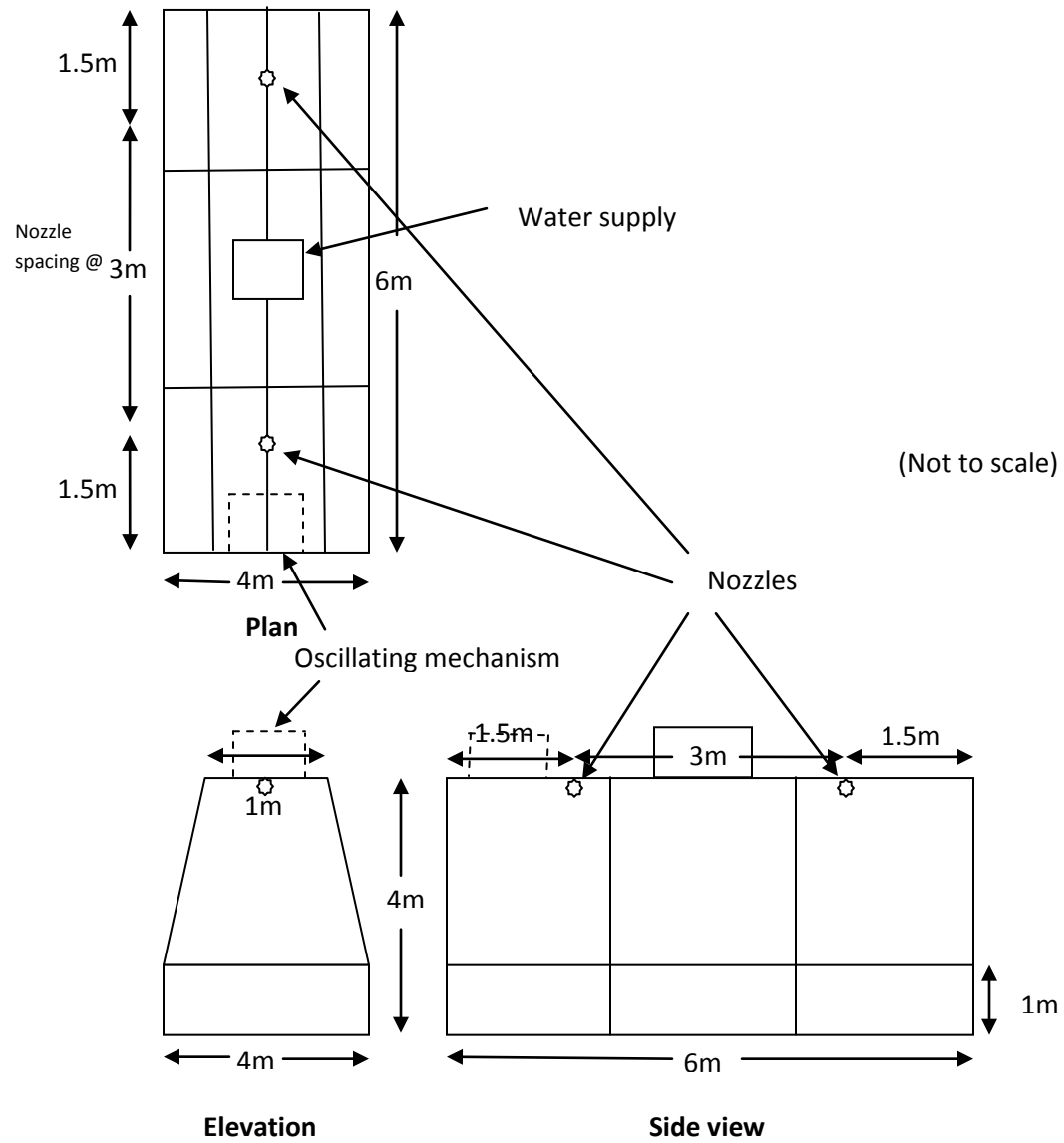


Fig1. Drawing of rainfall simulator (Modified figure)

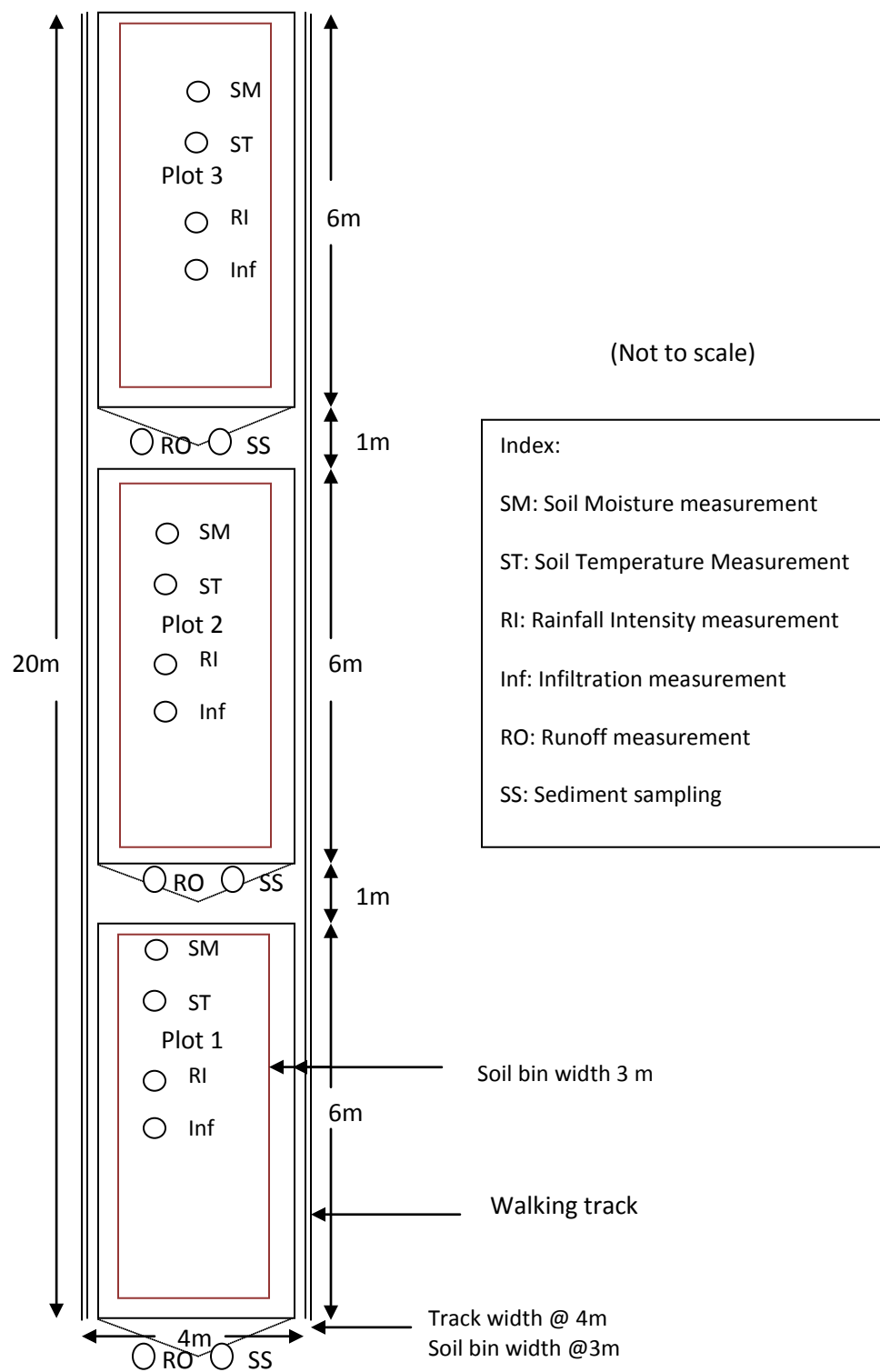
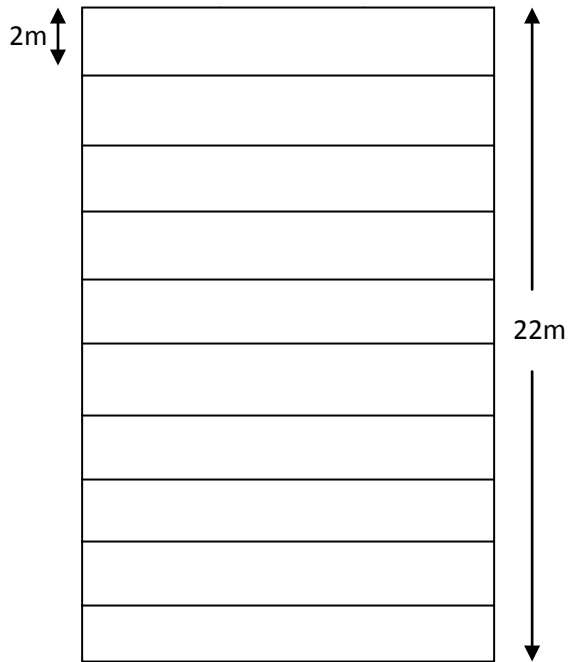


Fig 2. Experimental Lay out of the Rainfall simulator (Modified figure)

**Plan**

(Not to scale)

All pipes with 40mm dia

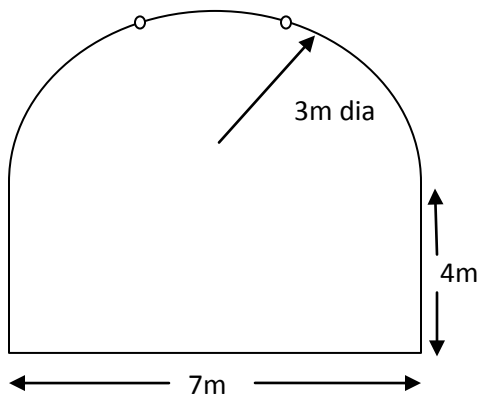
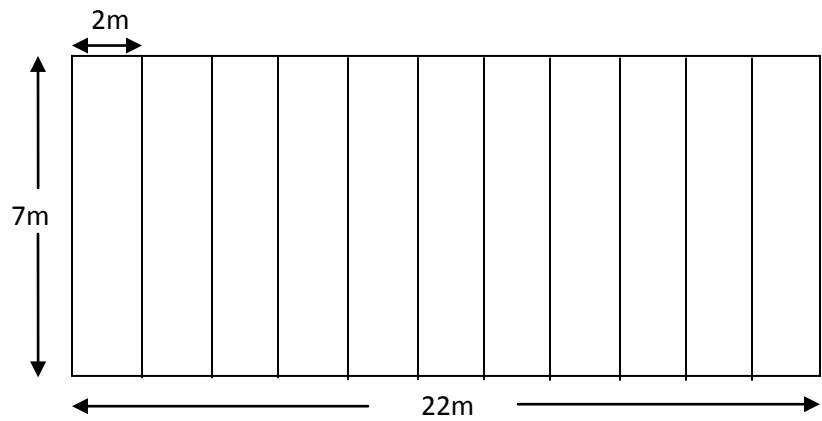
**Elevation****Side view**

Fig. 3: Rain shelter for simulation facility (Modified figure)

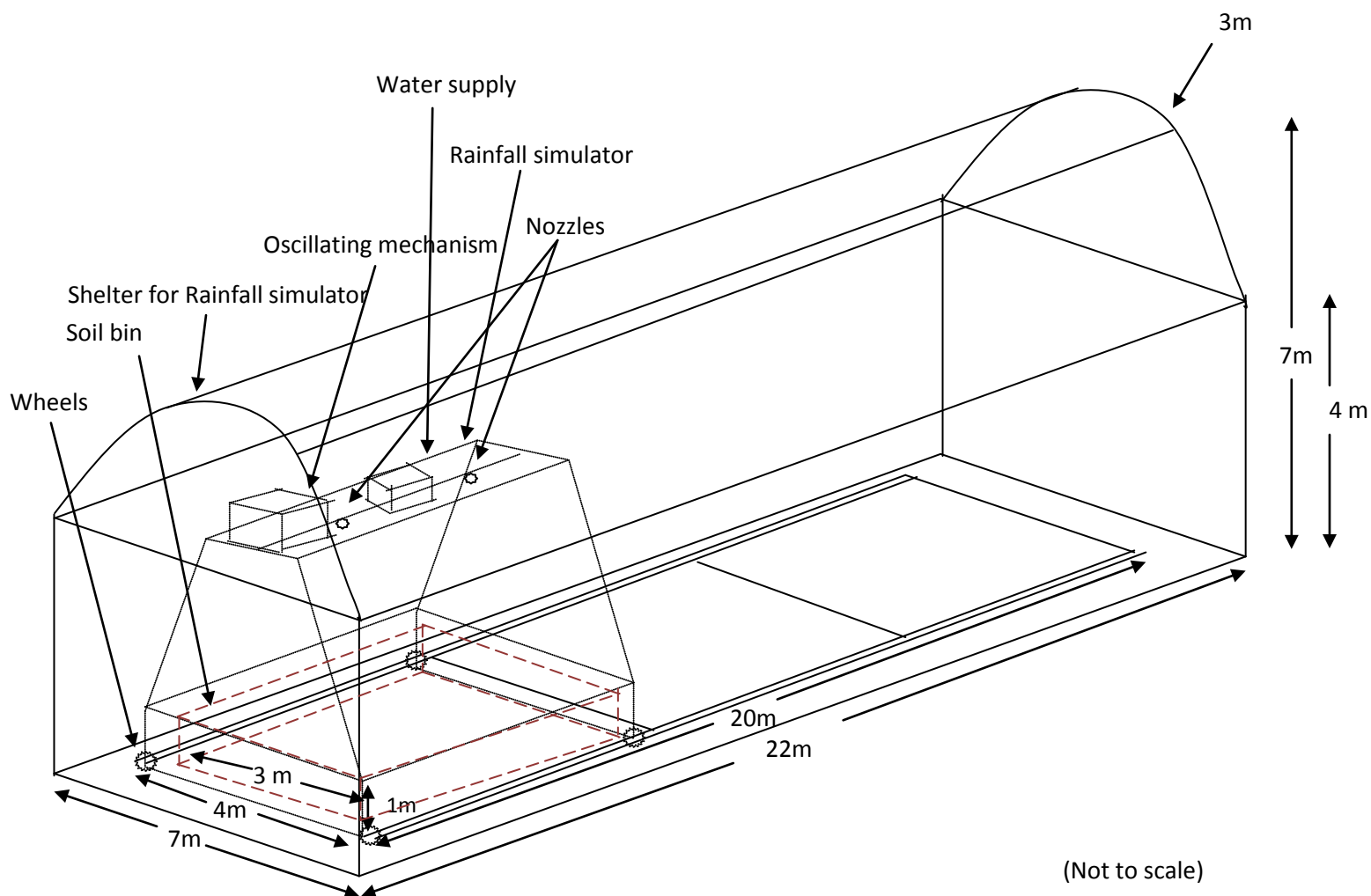
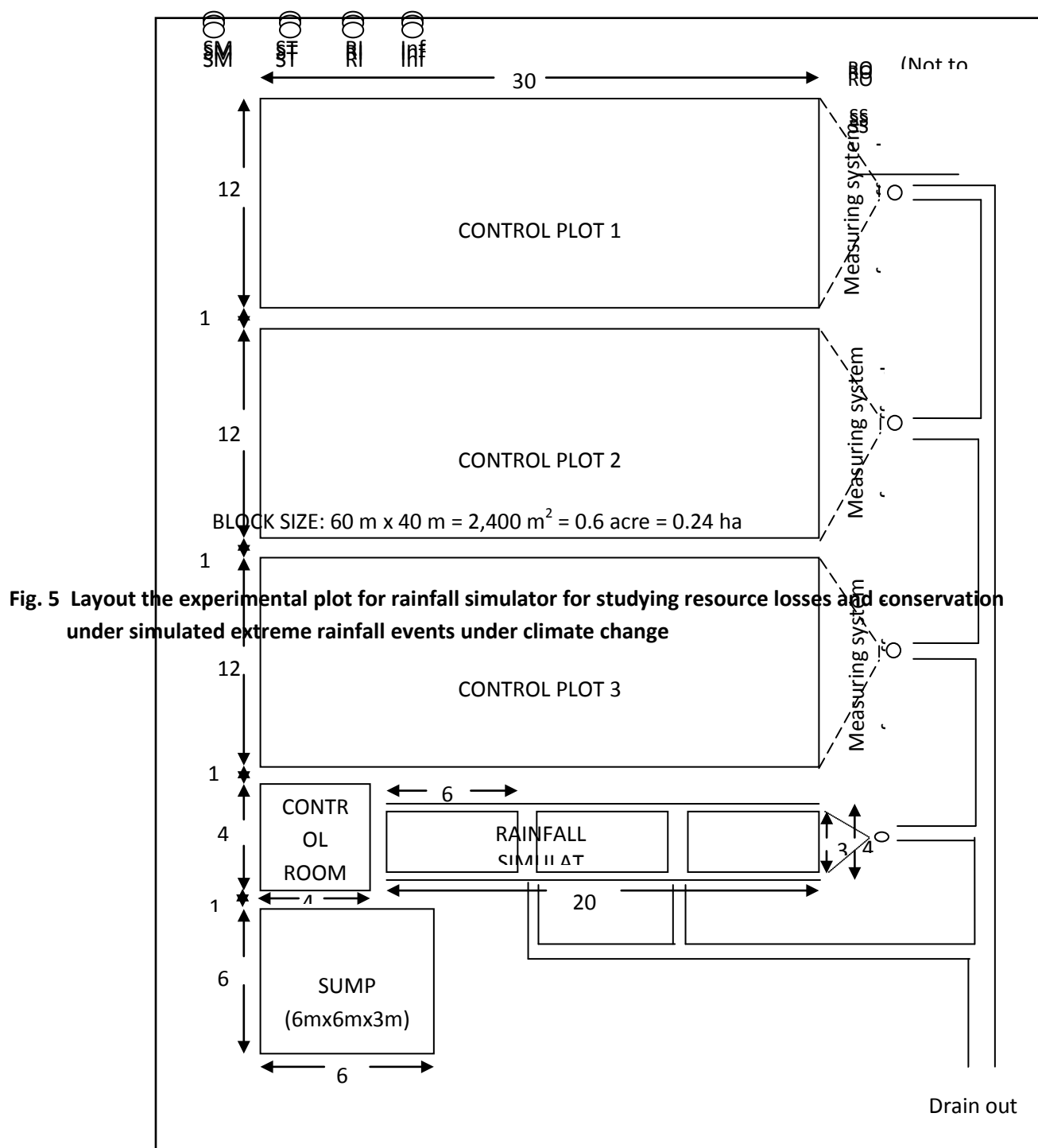


Fig 4. Isometric view of the rainfall simulator with rain shelter (Modified figure)



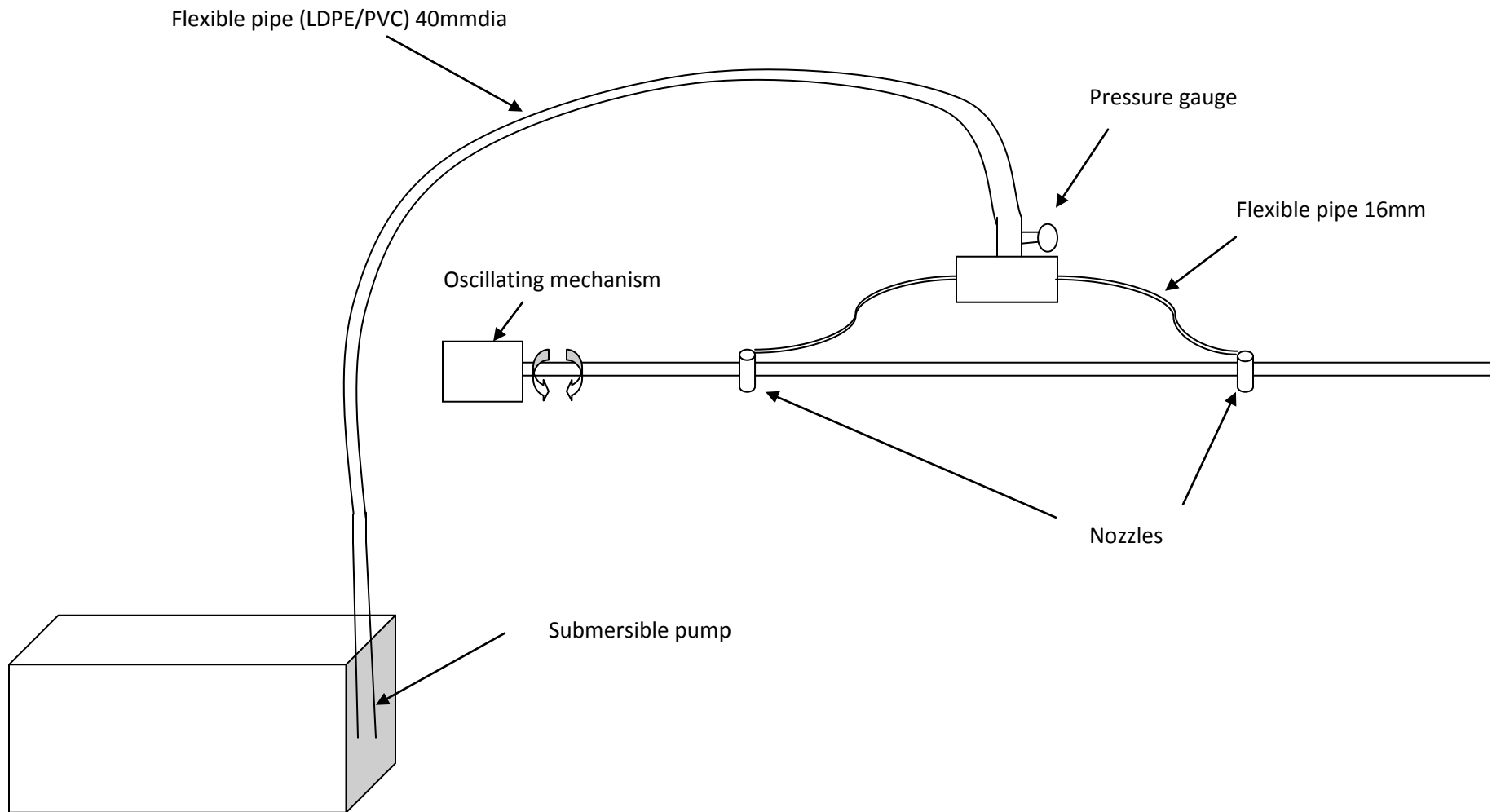


Fig. 6 Water distribution system from sump to nozzles of rainfall simulator

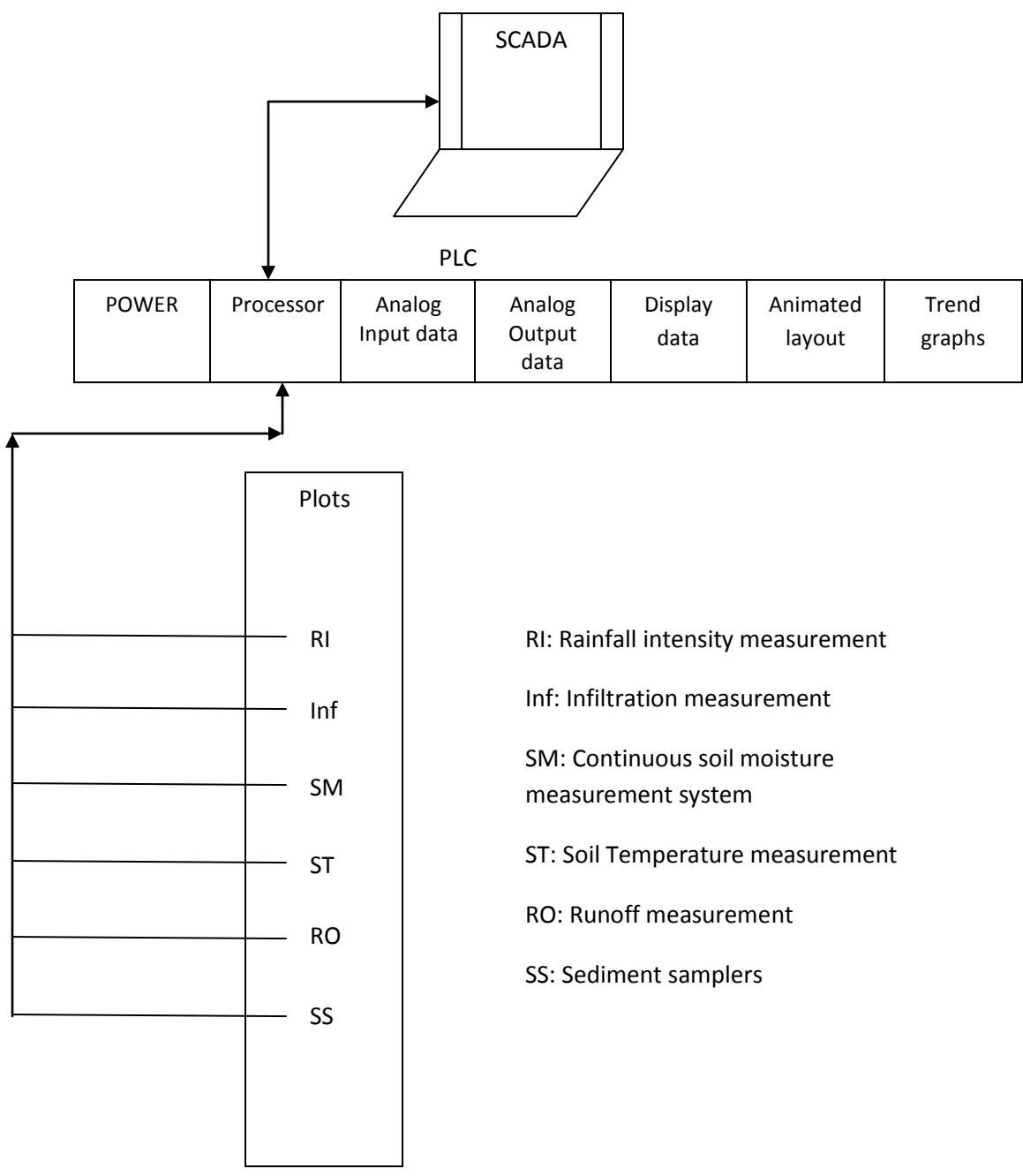


Fig.7 Flow chart of process for Automated Rainfall Simulator

2) FATE Facility at CRIDA, Hyderabad.

Establishment of Free air temperature and CO₂ elevation (FATE) facility consisting of nine rings with 8m dia at elevated surface (vegetation and/or soil) temperature (ambient + 3°C) and CO₂ (550ppm) level.

1.	<p>Fabrication of nine FATE rings of 8 m diameter with detachable arrangement along with height adjustment (up to 2 metres) with respect to crop height.</p> <p>Three rings each for maintaining the conditions of</p> <ul style="list-style-type: none"> i) ambient crop canopy temperature + 3°C \pm0.5°C ii) ambient crop canopy temperature + 3°C \pm0.5°C and 550ppm \pm50ppm CO₂ <p>ambient control with all structural fittings for temperature and CO₂ elevation</p>
2.	<p>Heating system for maintaining elevated crop canopy temperature of ambient + 3°C \pm0.5°C with infrared heaters of 230V at one metre above canopy with easy height adjustment. The supportive structures should be of high quality material to with stand rugged open field weather conditions.</p> <p>Canopy height will vary from 0 m at the beginning of a growing season to 3 m at mid-season. The capacity and number of heaters should be adequate to maintain the set elevated temperature in 8m dia. plots under open-field conditions at least 90% of the time.</p> <p>The coefficient of the spatial variation of the infrared radiation impinging on the vegetation across the 8-m-diameter plot must be less than 10%.</p> <p>To assure that the heating system provides warming only with no photo-morphogenic effects, there must be no significant radiation emitted at wave lengths shorter than 850 nm.</p>
3.	<p>CO₂ supply system consisting CO₂ tank of minimum 20 Kilo litres capacity with all necessary accessories to maintain the pressure and with safety certificates from authorized agencies.</p> <p>CO₂ supply lines from CO₂ tank to rings (Approximate distance from the supply to ring ~ 75mts) and sampling lines. The details of CO₂ supply lines (PU Tubing) and its pressure bearing limit needs to be included.</p>
4	<p>Temperature and CO₂ controlling and monitoring system along with data storage and accessible unit.</p> <p>CO₂ monitoring by microprocessor based CO₂ analyzer with non-dispersive infrared absorption (NDIR) measuring method. The repeatability of the CO₂ analyzer within \pm 0.5% of full scale and response time of 1-3 seconds; Within \pm 1% of linearity; \pm 0.5% of noise of full scale; With in-built temperature and relative humidity measurement facility; With Auto calibration and Barometric pressure compensation and must have sampler selector.</p> <p>Before air sample enters the analyzer it should pass from the moisture removal device to safe guard the analyzer from excess humidity.</p> <p>The heating system must sense canopy temperatures (with corrections for reflected infrared radiation from the heaters if appropriate) and use a proportional-integral-derivative (PID) feedback system to maintain the heating treatment. The program should enable to enhance the canopy temperature from +1.0 to +3.0°C \pm0.5°C for different durations.</p> <p>The program should enable to shut the heating system and CO₂ supply where ever it is applicable if wind velocity is very high or in storm conditions.</p> <p>An in-built alarm system for different trouble shooting events.</p>

5	<p>Weather station including solar radiation, air temperature, relative humidity, solar radiation, rainfall, wind direction and wind speed. The specifications include</p> <p>Air Temperature (Range : -40°C to +60°C; Accuracy ; ± 0.3 °C or better (with radiation shield); Resolution : + 0.1 °C; Sensor Type ; Resistance / Thermistor; Response Time : 10 sec)</p> <p>Relative Humidity (Range: 0 to 100% RH; Accuracy: $\pm 2\%$; Resolution: 1%; Sensor Type: Capacitive / Solid-state; Response Time: 10 sec.)</p> <p>Solar Radiation (Range : 0 to ~ 1750 W/m²; Operating Temperature : -10°C to +60°C; Resolution: 1 W/m²; Accuracy: 1 W/m²)</p> <p>Rainfall (Range : 0 to 500 mm per hour; Accuracy : $\pm 2\%$; Resolution : 0.2 mm; Sensor Type : Tipping bucket rain gauge or other suitable sensor)</p> <p>Wind Speed (Range (operation) : 0 to 50 m/sec or 0 to 180 km/hr; Accuracy : ± 0.5 m/s; Resolution : 0.1 m/s or 0.36 km/hr; Threshold : 0.2 m/sec)</p> <p>Wind Direction (Range: 0 to 359°; Accuracy: $\pm 5^\circ$; Resolution: 1)</p>
6	<p>Soil moisture and soil temperature monitoring at depths of 15cm, 30cm, 45cm and 60cm in each ring with data logging at one hour interval.</p> <p>The probe or sensor should measure soil moisture and temperature simultaneously.</p> <p>The probe should measures the soil moisture as volume percentage by applying the frequency/time domain technique based on the dielectric constant of soil or any media.</p> <p>The soil temperature sensor should have</p> <ul style="list-style-type: none"> • measuring range of -40°C till +60°C • Accuracy 0.2°C. <p>The measuring range for soil moisture probe should be</p> <ul style="list-style-type: none"> • very dry (1-2% soil moisture) to wet conditions (100% moisture) • Operating temperature 0-60°C. • Accuracy: $\pm 3\%$ or better.
7	UPS system to support all control and monitoring units with 2hr backups (but not the heaters or the vaporizer for the CO ₂ tank).
8	Maintenance charges of the facility for a period of two years after the warranty period.
9	The details of technical expertise and man power to set up and maintain the facility. The brochures with technical details of proposed components need to be attached.
10	Proof of experience in establishing the facility or similar facilities if any with satisfactory working report or certificate from the PI/Institute of not less than six months prior to this advertisement.
11	A pre-bid meeting will be there for effective interaction regarding clarification of technical details
12	At the time of technical bid opening, a presentation is sought from each interested participating firm on the technical details before technical committee for not more than 10 minutes.

3) Carbon dioxide and Temperature Gradient Chamber (CTGC) facility

Establishment of Carbon dioxide and Temperature Gradient Chamber (CTGC) facility consisting of eight 30x6x4m chambers with

1. Two chambers with temperature gradient of 5°C above ambient
2. Two chambers with temperature gradient of 5°C above ambient + uniform concentration of 550ppm CO₂
3. Two chambers with uniform concentration of 550ppm CO₂
4. Two chambers with ambient temperature and CO₂ with all structural fittings of S.No.2

Specifications:

S.No.	Item
1	Each chamber should be of 30 meters length, 6 meters width and 4 meters height at the centre. The chambers must be provided with sufficient strength to maintain 30x6x4 meter chamber size. All the chambers should be covered with high quality, light weight, rigid, corrugated polycarbonate sheet of Lexan or its equivalent quality, with excellent impact resistance, superior clarity, versatility, and weather resistance with >90% light diffusion with > 85% PAR transmission. The thickness of the sheet must be at least 4mm.
2	All the chambers must be provided with probes/ sensors for temperature and relative humidity of Rotronic or equivalent quality. Temperature sensors should have measuring range 0-100°C, with an accuracy of $\pm 0.2^\circ\text{C}$ and a resolution of 0.02%. The RH must be 0-100% with accuracy of 0.5% and a resolution of 0.02%. The details of infrared heaters/ Air handling unit in elevated temperature chambers should be given to maintain the set temperature gradient.
3	The chambers with elevated CO ₂ must be provided proper monitoring system and controls to maintain uniform CO ₂ concentration vertically and horizontally even in combination with gradient temperature condition. The details of CO ₂ supply lines (PU Tubing) and its pressure bearing limit needs to be included for CO ₂ supply.
4	Control panel consisting of temperature, humidity and CO ₂ controller with software PLC and SCADA control system
5	Air circulating unit must be provided for maintaining set humidity and temperature with at least 90% efficiency and aerosol disinfectant humidifier.
6	IRGA along with pump pack considering as a set CO₂ monitoring by microprocessor based CO₂ analyzer with non-dispersive infrared absorption (NDIR) measuring method. The repeatability of the CO₂ analyzer within $\pm 0.5\%$ of full scale and response time of 1-3 seconds; Within $\pm 1\%$ of linearity; $\pm 0.5\%$ of noise of full scale; With in-built temperature and relative humidity measurement facility; With Auto calibration and Barometric pressure compensation and must have sampler selector. Before air sample enters the analyzer, it should pass from the moisture removal device to safe guard the analyzer from excess humidity.
7	Heating system for four chambers (2 only temperature; 2 with both temperature and CO ₂): The gradient of $5 \pm 0.5^\circ\text{C}$ above ambient increase in temperature within each chamber with $1 \pm 0.5^\circ\text{C}$ increase at regular interval need to be set with proper control and regulation. The temperature settings should have a cut off for above $50 \pm 0.5^\circ\text{C}$ under any circumstances. The provision to program variable temperatures for different durations also needs to be

	provided. Need to provide an in-built alarm system for different trouble shooting events.
8	Data storage and accessible unit with supportive furniture and cables
9	UPS (5 KVA) with one hour back up
10	Maintenance: A service engineer may be provided for addressing day-to-day issues relating to maintenance. The whole establishment must be maintained trouble-free with monthly preventive maintenance for the first year and there after quarterly preventive maintenance for subsequent 2 years.
11	The details of technical expertise and man power to set up and maintain the facility. The brochures with technical details of proposed components need to be attached.
12	Proof of experience in establishing the facility or similar facilities if any with satisfactory working report or certificate from the PI/Institute of not less than six months prior to this advertisement.
13	A pre-bid meeting will be there for effective interaction regarding clarification of technical details
14	At the time of technical bid opening, a presentation is sought from each interested participating firm on the technical details before technical committee for not more than 10 minutes.

CHAPTER-VI

QUALITY CONTROL REQUIREMENTS

General specifications for all the listed equipments:

Quotes are requested from only reputed companies with proven track record of effective and timely technical service with dedicated service engineers. Preferably warranty for a period of at least three years should be provided beyond which there should be scope for AMC. Complete information regarding the technical specifications of the equipments must be provided in the form of printed technical brochures along with information of relevant internet webpage so that the claimed specifications could be verified. **Companies are required to provide information regarding the technical support people who could be contacted in case of any doubts regarding the functioning of the equipment and if possible could arrange for demonstration of the equipment's capabilities.** List of end users with contact details like phone numbers and email addresses should be provided. All the equipments should be capable of functioning under tropical conditions that is prevalent in Hyderabad. It is the responsibility of the company to ensure proper demonstration of all the capabilities of the equipments to the satisfaction of the end user. If there are parts of the equipment which have shorter life, then spares of such parts should be quoted so that one could be in readiness to allow smooth and continued functioning of the equipment.

Part -2 of Schedule of Requirements (Chapter -4)

The following specific data and conditions for the goods to be purchased shall complement, supplement or modify the corresponding provisions in the Instruction to Bidders (ITB). In case of any conflict, the stipulations incorporated here will prevail over the stipulations contained in the ITB.

A. Introduction

ITB clause 1.1. Name of the purchaser: Director, CRIDA, Santoshnagar, Hyderabad

B. The bidding documents

Purchaser's mailing address: Director, CRIDA, Santoshnagar, Hyderabad-500059.

C. Preparation of bids

Part 1 schedule of Requirements.

D. Award of Contract

ITB clause 27.1. The purchaser may at its discretion vary quantity of the goods/equipment at time of award of contract to the tune of plus/minus 25%.

ITB Clause 8.2. The price quoted shall be as per ITB clause 8.2.I for goods offered from within India and 8.2.II (b) for goods offered from abroad.

ITB clause 8.2.1(d) The incidental services to be provided are specified in the Part-1 of Schedule of Requirements.

ITB clause 11.2(b) “The bidder should have successfully manufactured and supplied at least 50% (fifty percent) of the required quantity of goods under this invitation for bids during the last two years counted from the date of bid opening. The bidder shall also furnish certified documentary evidence to this effect including all relevant details”.

ITB clause 13.1. The amount of bid security shall be as indicated in the IFB Invitation For Bids.

C. Submission of Bids

ITB clause 15.1. Number of copies required is one (1) in addition to original copy of the bid.

ITB clause 16.2(b) Time and date of Technical bid opening are 15.00 Hrs on _____. The financial bid opening on _____ at 15.00 Hrs., subject to confirmation over Phone/Fax/Letter from this Institute.

ITB clause 17.1. Deadline for submission of bids is 14.00Hrs. on _____.

Receipt of bids through tender box only no separate acknowledgment will be issued.

In the event of the above specified date being declared a holiday for the purchaser, the bids will be received up to the appointed time on the next working day.

D. Bid opening and bid evaluation

ITB clause 23.5. The bid evaluation will take into account the bid price quoted in accordance with ITB clause 11 and clause 27.

ITB clause 23.5(b) The delivery schedule is as indicated in the

Part -3 of Schedule of Requirements (Section-IV)

Table of Clauses

Part-3 of Schedule of Requirements (Section –IV)

The following special conditions shall supplement the General Conditions of Contract provided under section III. In case of any contradiction or conflict, the conditions provided herein shall supersede the corresponding conditions in the GCC.

1. Inspection and Tests

Goods will be inspected at purchaser's premises/destination before acceptance.

2. Insurance (GCC Clause 12.2)

Where as delivery is on FOB basis the insurance shall be responsibility of the purchaser.

3. Distribution of dispatch Documents (GCC Clause 13)

The suppliers should produce documents as listed in GC clause 13.b (I) to (V) & (VII) for goods supplied from within India and documents required for goods supplied from abroad as per GCC Clause 13 a (i), 13 a (ii) original copies of negotiable Bill of Lading / House Air Way Bill (HAWB) issued by the authorized shipping agent at abroad as nominated by the purchaser through their cargo consolidation agent as the delivery is on FOB basis.

4. Warranty (GCC Clause 16)

The period for repairing/replacing the defective goods in terms of GCC sub-clause 16.4 and 16.6, shall be 4 (four) weeks.

5. Resolution of disputes (GC Clause 28)

As per provision made in GCC clause 28, the value of the contract itself will decide whether it will attract sole arbitration or arbitration by three arbitrators.

6. Packing: (GCC 9.3.h)

Wooden Packages: With packing material any kind of material of plant origin used for packing, which includes hay, straw, wood shavings, wood chips, saw dusts, wood waste, wooden pallets, **dunn age** mats, coir pith, peat or sphagnum moss etc. and import into India by Air, Sea require PHYTOSANITARY CERTIFICATE from the Country of Origin. THIS IS MANDATORY. The supplier should strictly follow the provisions of "The Plant Quarantine (Regulation of Import into India) order 2003, this can be obtained by visiting www.plantquarantineindia.org.

7. Prices (GCC Clause 18)

This office is exempted from payment of the customs duty/central excise vide DSIR Regn. No: TU/V/RG-CDE/(372)/2011 date.30.08.2011 valid up to 31.08.2016, in terms of Government of India notification nos:51/96-customs dt. 23.07.1996 and 10/97-central excise date 1.3.1997 for availing exemptions for customs duty/central excise.

No form "C" and "D" will be issued.

CHAPTER -VII

BID FORM AND PRICE SCHEDULES

Date.....

To

.....

.....

(Designation and address of the purchaser)

Ref. Your bidding documents No..... dated

Having examined the above mentioned bidding documents, including' addenda Nos (if any), the receipt of which is hereby duly acknowledged, we the undersigned, offer to supply and deliver.....(description of goods and services) in conformity with the said bidding documents for the sum as shown in the price schedules, attached herewith and made part of this bid.

We undertake, if our bid is accepted, to deliver the goods and complete the services in accordance with the delivery schedule specified in the Schedule of Requirements after fulfilling all the applicable requirements incorporated in the above referred bidding documents.

If our bid is accepted, we will provide you with performance security as per the instructions specified in GCC clause 7 and in a form acceptable to you in terms of GCC clause 7.5 for a sum equivalent to 10 %(ten percent) of the contract price for the due performance of the contract.

We agree to abide by this bid for the bid validity period specified in the ITB cause 15.(**read with modification, if any**) or for the subsequently extended period, if any, agreed to by us and it shall remain binding up on us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this bid together with your written acceptance thereof and your notification of award, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Dated this..... day of....., **20.....**

Signature

(in the capacity of)

Duly authorized to sign bid for and on behalf of

PRICE SCHEDULE FOR DOMESTIC GOODS OR

GOODS OF FOREIGN ORIGIN LOCATED WITHIN INDIA

	2		3	4	5					6	7	8
					price per unit							
Schedule No.	Item description	country of origin	accounting unit & quantity	ex-fact Qty/ex-warehouse / ex-showroom off-the shelf	Excise duty if any	Packing and forwarding	In land transportation	Insurance, other duties and taxes, if any (other than sales tax) and incidental costs	Incidental services (including supervision)	Overall unit price	Total price	Sales tax payable, if contract awarded
				(a)	(b)	(c)	(d)	(e)	(f)	(a+b+c+d+e+f)	3 x 6	

Total bid price in Rupees : (in figures).....

(in words).....

Signature of bidder

Name

Business address

Place :

Date :

Note :

- i. In case of discrepancy between unit price and total price, the unit price shall prevail
- ii. If nothing to the contrary to this effect is mentioned under Section V (Technical Specification and Quality Control Requirements), the bidder shall give list of spare parts for two years operation separately indicating description, quantity, unit price and total price in the above format for those items whose scope of supply includes spare parts as per 'Technical Specifications' give in Section V.

CHECK LIST

(All the pages of the bid should be Serial Numbered and Signed / Initialed)

Sl. No.		Activity	Yes/No/NA	Page no. in the bid
1	(a)	Bid security for required amount		
	(b)	Bid security in the form of		
	(i)	Bank Guaranty as per format in bidding document		
	(ii)	Draft or Banker's cheque issued by Nationalized Bank		
	(c)	Validity date of bid security (valid for 45 days beyond days as per ITB clause)		
	(d)	Amendment in Bid security (if any)		
2		Contact details of the issuing bank for the purpose of verifying the authenticity of the bid security		
3	(a)	Bid form duly signed		
	(b)	Power of attorney in favor of the signatory		
4	(a)	Certificate of incorporation of Manufacturer		
	(b)	Documentary proof that bidder is in continuous business of manufacturing / Supplying of equipments during the last 5 years prior to bid opening		
	(c)	Performance statement		
	(d)	Documents to support that bidder has an established quality program me		
	(e)	Documents to support that bidder has requisite inspection facilities		
	(f)	Certificate by auditor of average turnover for last 5 fiscal years		
	(g)	Copies of balance sheet and profit/loss statement and other financial documents (please specify) certified by the auditor for specified fiscal years		
5		Documents defining the constitution or legal status place of registration, and principal place of business; written power of attorney of the signatory of the bid to commit the bidder		
6		Disclosure about any adverse past performance instance of debarment/blacklisting etc.		

		A write up on your production capabilities		
8		Legally valid joint venture agreement for joint venture company, if applicable		
9		No deviation statement on technical specification		
10		Checklist of technical specification		
	(a)	Agreement with al terms and condition of the bid document		
	(b)	If no, have you indicated deviations		
12	(a)	Mentioned price in the appropriate proforma		
	(b)	Details of EXW prices (if applicable)		
	(c)	Conditional or unconditional discount mentioned in the bid (if any)		
13		Undertaking that proprietor/director/employee etc of the bidder has not been convicted by a court of a law and firm does not employ a government servant dismissed/removed on account of corruption		