

HSCC (India) Limited

Plot No. – 6(A), Block – E, Sector 1, NOIDA – 201301 Uttar Pradesh
No. HSCC/PG-III/MCC/BSL-4 HT/2009 8.12.09

Short Term Tender Notice

HSCC (India) Limited, for and on behalf of “**National Institute of Virology (NIV),MCC, Sus Road Pashan Pune (under ICMR ,New Delhi)**” invites the tenders for the Supply, installation, testing commissioning of 11 KV HT Electrification Works (including construction of One HT Room & up gradation of existing Room for HT Room) for the upcoming Bio Safety Laboratory Level 4 at MCC Complex,130/1, Sus Road Pashan, Pune

Sale of tenders from 9.12.09 to 29.12.09 at HSCC corporate Office at Noida & HSCC Site Office at MCC, 130/1, Sus Road, Pashan, Pune. Last date of submission of tenders 30.12.09 up to 3.00PM at HSCC(I) Ltd. Noida.

For details of the work & tender, please visit website <http://www.hsccltd.co.in>. & <http://www.niv.co.in>.

Prospective bidders are advised to regularly scan through HSCC website as corrigendum /amendments etc, if any, will be notified on the company’s website and separate advertisement will not be made for this.

General Manager (PG-III)

**NATIONAL INSTITUTE OF VIROLOGY(NIV)
MCC, SUS ROAD, PASHAN, PUNE**

(INDIAN COUNCIL OF MEDICAL RESEARCH, NEW DELHI)

TENDER FOR

Supply, Installation, Testing Commissioning of 11 KV HT Electrification Works (including construction of one HT Room and up-gradation of existing HT Room) for the upcoming Bio Safety Laboratory Level - 4 at MCC Complex, Sus Road Pashan, Pune

Volume I

- **Instruction to Bidders**
- **General Conditions of Contract**
- **Special Conditions of Contract**
- **Technical Specification**
- **Tender Drawings**

DECEMBER 2009

HSCC (INDIA) LTD.

**(Consultants & Engineers for Mega Hospitals & Laboratories)
Plot No.6(A), Block-E, Sector- I, Noida-201301**

Phone No: 91-120 -2542436-38
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Tender No. HSCC/MCC/PG-III/2009/

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HSCC (India) Limited.

(Consultants & Engineers for Mega Hospitals & Laboratories)

Plot No.6(A), Block-E, Sector-1, NOIDA - 201301 (U.P.)

Ph.Nos.: 0120-2542436-38,2542440,2542443, Fax:0120-2542447

No. HSCC/MCC/PG-III/2009

Dated : 7/12/2009

Notice Inviting Tender (NIT)

On behalf of "Microbial Containment Complex, Indian Council of Medical Research (ICMR) Pune, HSCC (INDIA) Ltd. invites sealed tenders in two bid system from the experienced contractors / firms for the following works:

Sl. No.	Name of Work	Estimated Cost (Rs.)	Bid Security (Rs.)	Cost of document (Rs.)	Period of Completion	Tenders shall be available for sale from	Last date of submission of tenders	Date of opening of tender
1	Supply, installation, testing commissioning of 11 KV/ 433 Volts HT Electrification Works (including construction of one HT Room and up- gradation of existing HT Room) for the upcoming Bio safety laboratory level 4 at MCC Complex, 130/1Sus Road Pashan, Pune	Rs.66.0 Lacs	Rs.1.32 Lacs	Rs. 3000/-	Three Months	7.12.09 to 21.12.09 up to 4.00 PM at HSCC Corporate Office at Noida & HSCC Site Office at MCC, Sus Road, Pashan, Pune	22.12.09 up to 3.00 PM at HSCC(I) Ltd., Corporate office at E-6(A), Sector-1, Noida	22.12.09 at 3.30 PM at HSCC(I) Ltd., Corporate office at E-6(A), Sector-1, Noida

Eligibility Criteria:

- (a) Average annual turnover during the last three years [2006-2007, 2007-2008, 2008-2009] shall be at least Rs 19.80 lakhs.
- (b) The contractor should possess experience of having successfully completed similar works meaning supply, installation, commissioning of 11 KV / 433 volts sub station work, during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following: -
- 1 Three similar completed works each costing not less than the amount equal to 40% of estimated cost.
 - 2 Two similar completed works each costing not less than the amount equal to 50% of estimated cost.
 - 3 One similar completed work costing not less than the amount equal to 80% of estimated cost.

Applicants may obtain the tender documents on any working day on written request from HSCC at the above mentioned address and dates, against a non refundable fee of Rs. 3000/- payable in the form of DD/Banker's Cheque in favor of HSCC (INDIA) Ltd, from any Nationalized / Scheduled Bank payable at Noida (UP). The applicant may collect the documents in person with authorization letter or on request. HSCC will promptly dispatch the documents by courier on payment of an extra amount of Rs. 500/- over and above the said document fee of Rs. 3000/- (Rs. Three Thousand Only), but under no circumstances will be held responsible for postal delay and late delivery or loss of the documents so mailed. The applicants may see the tender documents during the sale period as referred above at HSCC corporate office, Noida.

The tender documents completed in all respects must be submitted in sealed envelope, either delivered by hand or by registered mail to HSCC(I) Ltd. E-6(A), Sector-1, Noida on or before due date and time as mentioned above. HSCC reserves the right to accept or reject any application without assigning any reason or incurring any liability whatsoever. The prospective participants are advised to regularly visit the HSCC web site www.hsccltd.co.in for notice / addendum / corrigendum/ amendments etc if any .No separate advertisement/ press notification will be made in this regard.

General Manager (PG-III)

INSTRUCTION TO BIDDERS

General

1.0 Scope of work :

- 1.1 HSCC for and on behalf of Microbial Containment Complex, [Indian Council of Medical Research (ICMR)]- the Principal Employer invites bids for the “**Supply, Installation, Testing Commissioning of 11 KV HT Electrification Works (including construction of one HT room and up gradation of existing HT room) for the upcoming Bio Safety Laboratory Level 4 at MCC Complex, Sus Road Pashan, Pune** defined in these documents as the site of works. **The scope of work shall also include coordination with other work Executing agency for BSL-4 Lab regarding Coordination and liaison for additional load sanctioning required from concerned local authority MSEDCL. etc**

1.2 The Principal Employer :

The Microbial Containment Complex, Pune, under Indian Council Of Medical Research (ICMR) shall be Principal employer / owner for the subject work.

- 1.3 The successful bidder will be expected to complete the works within 90 days from the date of Engineer's order to commence the work.

2.0 Cost of Bidding :

- 2.1 The bidder shall bear all costs associated with the preparation and submission of his bid, and the Employer will in no case be responsible or liable for those costs.

3.0 Site Visit :

The bidder is advised to visit and examine the site of works and its surroundings and obtain for himself on his own responsibility and at his own risk all information that may be necessary for preparing the bid and entering into a contract for the above works. The costs of visiting the Site shall be at the bidder's own expense.

Bidding documents

4.0 Content of bidding documents :

4.1 The set of bidding document comprises of the following as given below and amendment issued in accordance with Clause 6.

- Volume-I - Instruction to Bidders,
- General Conditions of contract,
 - Special Conditions of Contract
 - Technical Specifications&
 - Tender Drawings

Volume-II- Bill of Quantities

5.0 Clarification of bidding documents :

5.1 A prospective bidder requiring any clarification of the bidding documents may notify HSCC in writing or by Fax. HSCC will respond to any request for clarification, which he receives earlier than 5 days prior to the deadline for submission of bids. Copies of such response/clarification will be forwarded to all purchasers of the bidding documents, including a description of the enquiry but without identifying its source.

6.0 Amendment of bidding Document :

6.1 Before the deadline for submission of bids, HSCC may modify the bidding documents by issuing amendment.

6.2 Any amendment thus issued shall be part of the bidding documents and shall be communicated in writing or by Fax to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each amendment by Fax to HSCC.

6.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, HSCC shall extend as in their opinion be necessary, the deadline for submission of bids, in accordance with Sub-Clause 14.2.

Preparation of Bids

7.0 Language of bid :

7.1 All documents relating to the bid shall be in the English Language

8.0 Documents comprising the bid :

8.1 The bid submitted by the bidder shall comprise the following :

- a) Bid Form
- b) Bid Security
- c) Priced Bill of Quantities

and any other materials required to be completed and submitted by bidders in accordance with these instructions.

9.0 Bid Prices :

- 9.1 Unless stated otherwise in the bidding documents, the Contract shall be for the whole works as described in Sub-Clause 1.1 based on the priced Bill of Quantities submitted by the bidder.
- 9.2 The bidder shall fill in rates and prices for all items of the works described in the bill of quantities. Items for which no rate or price is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities.
- 9.3 All duties, taxes and other levies payable by the Contractor under the Contract or for any other cause, shall be included in the rates, prices, and total Bid Price submitted by the bidder.
- 9.4.1 The rates and prices quoted by the bidder shall be firm for the duration of the contract/till completion of work which ever is later and shall not be subject to adjustment on any account.
- 9.4.2 The rates shall be inclusive of supply, transportation, installation, commissioning & no price escalation/variation shall be allowed. Further no statutory variation in taxes & duties or for any other reasons whatsoever shall be payable & shall be considered as included in the rates quoted by the bidder.
- 9.4.3 Service Line and any other charges of Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL) / source etc for getting additional load shall be borne by the Client."

10.0 Currencies of bid and payment :

- 10.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees.

11.0 Bid Validity :

- 11.1 Bids shall remain valid for a period of 90 days after the deadline for bid submission specified in Clause 14.
- 11.2 In exceptional circumstances, the bidders may be required to extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by cable. A bidder agreeing to the request will be required to extend the validity of his bid security for the period of the extension, and in compliance with Clause 12 in all respects.

12.0 Bid Security :

- 12.1 The bidder shall furnish, as part of his bid, a security of Rs. 132000/- (Rupees One Lac Thirty Two Thousand only.)
- 12.2 The bid security shall be in the form of a pay order/Demand Draft in favour of HSCC (India) Limited, Plot No. E-6(A), Sector -I, NOIDA (U.P) - 201 301 payable at Noida from any nationalised bank/Schedule bank or by bank guarantee for an equal amount from

any nationalised bank valid for 30 (thirty) days after bid validity i.e. for minimum 120 days.

- 12.3 Any bid not accompanied by an acceptable bid security shall be rejected by the Engineer.
- 12.4 The bid security of unsuccessful bidders will be returned within 15 days of the end of the bid validity period specified in Sub-Clause 11.1.
- 12.5 The bid security of the successful bidder will be discharged when the bidder has signed the agreement and furnished the required performance security.
- 12.6 The bid security will be forfeited
 - a) If the bidder withdraws his bid during the period of bid validity;
 - b) If the bidder does not accept the correction of his bid price, pursuant of Clause 21; or
 - c) In the case of a successful bidder, if he fails within the specified time limit to
 - i) sign the Agreement; or
 - ii) Furnish the required performance security.

13.0 Sealing, marking and submission of bid :

- 13.1 The bid shall be submitted in accordance with the procedure detailed herein. Specified documents shall be enclosed in envelope of appropriate size each of which shall be sealed.
 - i) Envelope No. 1 : Shall contain the bid security as indicated in clause 12 of these instruction to bidders.
 - ii) Envelope No. 2 : Shall contain the covering letter and the other bid documents duly signed including the following :
 - a) Power of attorney of person authorised to sign the bid.
 - b) Original bid documents Vol I & Tender drawings duly signed,
 - iii) Envelope No. 3 : Shall contain the Bill of Quantities (Vol II) the price bid duly filled in and signed.

The contractor must fill up prices in the Bill of Quantities both in words and figures. Please note that the price should not be indicated in any of the documents enclosed in envelope 1 and 2. No conditions shall be put in the price bid. If so, the same shall be rejected.

- 13.2 The bidder shall seal the bid.
- 13.3 All the three envelopes shall be sealed and enclosed in an envelope and addressed to the General Manager (PG-III), HSCC (India) Limited Plot No. E-6(A), Sector - I, NOIDA (U.P)- 201 301.

13.4 All the above envelope shall bear the following identification:

Name of work: : Supply, installation, testing commissioning of 11 KV HT Electrification Works (including construction of one HT Room and up- gradation of existing HT Room) for the upcoming Bio safety laboratory level 4 at MCC Complex, Sus Road Pashan, Pune

13.5 All the envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened, if required.

13.6 All recipients for the purpose of submitting a bid shall treat the contents of the documents as private and confidential.

14.0 Deadline for submission of bids :

14.1 Bids must be received by HSCC (India) Ltd., at the address specified above not later than **15:00 hrs** of the designated date.

14.2 HSCC (India) Ltd may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 6 in which case all rights and obligations of HSCC (India) Ltd and the bidders previously subject to the original deadline will then be subject to the new deadline.

15.0 Late bids :

15.1 Any bid received by HSCC (India) Ltd after the prescribed deadline for submission will be returned unopened to the bidder.

16.0 Modification and withdrawal of bids :

16.1 The bidder may modify or withdraw his bid by giving notice in writing before the deadline prescribed in Clause - 14.

16.2 The bidder's modification or withdrawal notice shall be prepared, sealed marked, and delivered in accordance with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate.

16.3 No bid may be modified after the deadline for submission of bids.

16.4 Withdrawal of bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in the form of bid may result in the forfeiture of the bid security pursuant to Clause 12.

Tender Opening and Evaluation

17.0 Bid Opening :

17.1 Bid shall be opened in the office of HSCC (India) Ltd at E-6(A), Sector-I, NOIDA (U.P) - 201 301 /half an hour after the prescribed time for tender submission in presence of the bidder's representatives who may wish to be present.

Envelope No. 1: Shall be opened first. If the bid security is not found as prescribed the bid shall be summarily rejected.

Envelope No. 2: Shall then be opened. Bids of parties who do not accept the conditions laid above in the bid documents are also liable to be rejected.

- 17.2 The Tender Scrutiny Committee will examine the original bids to determine whether they are complete, whether the requisite bid securities have been furnished, whether the bids have been properly signed and whether the bids are generally in order.
- 17.3 Telephonic/Fax offer will be treated as defective, invalid and rejected. Only detailed complete bids received prior to the closing time and date of the bids will be taken as valid.
- 17.4 The bidder's names, general technical details, the presence of the requisite bid security and such other details as HSCC (India) Ltd , at their discretion may consider appropriate will be announced at the bid opening.

Envelope No. 3: Contain the sealed price bid of parties whose bid is found to be generally in order and substantially responsive shall be opened either at the bid opening or at a subsequent date to be intimated in advance to such eligible bidders.

- 17.5 Only summary of prices quoted by the bidders will be read out.
- 17.6 The bid of any bidder who has not complied with any of the instructions contained herein may not be considered.

18.0 Process to be confidential :

- 18.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence HSCC (India) Ltd in processing of bids or award decisions may result in the rejection of his bid.

19.0 Clarification of bids :

- 19.1 To assist in the examination, evaluation, and comparison of bids, HSCC may at their discretion, ask any bidder for clarification of his bid including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by HSCC in the evaluation of the bids in accordance with Clause 21.

20.0 Examination of bids and determination of responsiveness :

- 20.1 Prior to the detailed evaluation of bids, HSCC will determine whether each bid (a) meets the eligibility criteria (b) has been properly signed; (c) is accompanied by the required securities; (d) is substantially responsive to the requirement of the bidding documents; and (e) provides any clarification and/or substantiation that HSCC may require.
- 20.2 A substantially responsive bid is one, which conforms to all the terms, conditions, and

specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which effects in any substantial way the scope, quality, or performance way, inconsistent with the bidding documents, the Employer's right or the bidder's obligations under the affect contract or (b) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

20.3 If a bid is not substantially responsive, it may be rejected by HSCC , and may not subsequently be made responsive by correction or withdrawal of non conforming deviation or reservation.

21.0 Correction of errors :

21.1 Bids determined to be substantially responsive will be checked by HSCC for any arithmetic error. Errors will be corrected by HSCC as follows:

- a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern ; and
- b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

21.2 The amount stated in Form of Bid will be adjusted by HSCC in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, his bid will be rejected, and the bid security may be forfeited in accordance with sub-clause 12.6(b).

22.0 Currency for bid evaluation :

22.1 Bids shall be evaluated as quoted in Indian Rupees in accordance with sub-clause 10.1.

23.0 Evaluation and comparison of bids :

23.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with clause 20.

23.2 In evaluating the bids, the Employer will determine for each bid the Evaluated Bid Price by adjusting the Bid Price as follow :

- a) making any correction for errors pursuant to clause 21.
- b) excluding Provisional Sums and the provision, if any, for Contingencies in the Summary of Bill of Quantities.

23.3 HSCC reserves the right to accept or reject any variation, deviation, or alternative offer, and other factors which are in excess of the requirements of the bidding documents or otherwise result in unsolicited benefits for the Employer shall not be taken into account in bid evaluation.

Award of Contract

24.0 Award Criteria :

24.1 Subject to Clause 25, HSCC shall award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated bid price, provided that such bidder has been determined to be qualified in accordance with the provisions of clause and he is found capable of supplying and installing the required laboratory furniture etc. as per the technical specification issued to the bidder.

25.0 Employers right to accept any bid and to reject any or all bids :

25.1 Notwithstanding clause 24, HSCC reserves the right to accept or reject any bid, and to cancel the bidding process and reject all bids, at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder/ bidders of the ground for the HSCC action.

26.0 Notification of award :

- 26.1 Prior to expiration of the original period of bid validity prescribed by the Engineer, he will notify the successful bidder by Fax confirmed by registered letter/courier that his bid has been accepted. This letter (hereinafter and in the conditions of Contract called the Letter of Acceptance) shall indicate the sum which HSCC will pay to the Contractor in consideration of the execution, completion and maintenance of the works by the Contractor as prescribed by the Contract (hereinafter called the "Contract Price").
- 26.2 The notification of award will constitute the formation of the contract, subject only to the furnishing of a performance security in accordance with the provision of Clause 27.
- 26.3 Upon furnishing the performance security by the successful bidder, the Engineer will promptly notify the other bidders that their bids have been unsuccessful.

27.0 Performance Security:

- 27.1 Within 10 days of receipt of the notification of award from the Engineer, the successful bidder shall furnish to the Engineer a performance security in the form of a DD or bank guarantee as per enclosed format of an amount equivalent to 5% of the contract price. The validity of the performance security shall be upto the end of the defect liability period which shall be 6 months from the date of completion.
- 27.2 Failure of the successful bidder to comply with the requirements of sub-clause 27.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the bid security.

General Conditions of Contract

1.0 Definitions:

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of contract but keep their defined meanings. Capital initials are used to identify defined terms.

Acceptance is the date when the contract came into existence upon receipt by the contractor of the Letter of Acceptance issued by the Engineer.

The **Activity Schedule** is a schedule of the activities comprising the Supplying, installation, testing and commissioning of the works.

The **Completion Date** is the date when the Engineer notified that the works can be used by the Engineer.

The **Principal employer/Owner** is The Director, Microbial Containment Complex, Sus Road, Pashan, Pune under Indian Council Of Medical Research (ICMR). HSCC (India) Ltd as consultant to employer shall represent them for tendering, award of work & execution of work.

The **Consultant** is M/s HSCC (I) Ltd. (HSCC), E-6A, sector 1 Noida.

The **Contract** is the contract between the consultant on behalf of the Employer of the one part and the Contractor of the other.

The **Contract Data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body whose bid to carry out the works has been accepted by the Employer.

The **Contractor's Bid** is the completed bidding documents submitted by the contractor to the Engineer.

The **Contract Price** is the price stated in the Letter for Acceptance and thereafter as adjusted in accordance with the provisions of the contract.

Days are calendar days: **Months** are calendar months.

A **Defect** is any part of the works not completed in accordance with the contract.

The **Engineer** is the person appointed by consultant who is responsible for supervising the Contractor administering the Contract, certifying payments due to the Contractor, issuing and valuing variations to the Contract, awarding extensions of time etc.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the works.

The **Initial Contract Price** is the Contract Price at the date of the Employer's written acceptance of the bid.

The **Intended Completion Date** is the date on which it is intended that the contractor shall complete the works. The intended completion date is specified in the contract data. The intended completion date may be revised only by the Engineer by issuing an extension of time.

Plant is any integral part of the works which is to have a mechanical, electrical, electronic or chemical function.

The **Site** is the area defined as such in the contract data.

Site Investigation Reports are those which were included in the bid documents and are factual and interpretative reports about the ground and ground water conditions at the site.

The **Start Date** is given in the contract data. It is the date when the contractor can commence work on the contract. It does not necessarily coincide with any of the site Possession Dates.

A **Sub-contractor** is person or corporate body who has a contract with the contractor to carry out a part of the work in the contract, which includes work on the site.

Temporary works are works designed, constructed, installed and removed by the contractor which are needed for construction or installation of the works.

A **Variation** is an instruction given by the Engineer which varies the works.

The **Works** are what the contract requires the contractor to construct, install and hand over to the Employer.

2.0 Interpretation :

2.1 In interpreting these conditions of contract, singular also means plural, male also means female and vice versa. Headings and cross-reference between clauses have no significance. Words have their normal meaning under the language of the contract unless specifically defined.

2.2 If sectional completion is specified in the contract data, references in the conditions of contract to the works, the completion date, and the Intended Completion Date apply to any Section of the Works. (other than references to the completion date and intended completion date for the whole of the works)

3.0 Language and law :

3.1 The language of the contract and the law-governing contract are stated in the contract data.

4.0 Engineer's decisions:

4.1 The Engineer is to decide contractual matters between the Employer and the Contractor fairly and impartially.

5.0 Delegation:

5.1 The Engineer may delegate any of his duties and responsibilities to other people after notifying the contractor and may cancel any delegation after notifying the contractor.

6.0 Communication:

6.1 Communications between parties which are referred to in the conditions are effective only when in writing.

7.0 Sub-Contracting:

7.1 The contractor shall not subcontract the whole works. Except where otherwise provided by the contract, the contractor shall not subcontract any part of the works without the prior consent of the engineer.

8.0 Other Contractors:

8.1 The contractor is to cooperate and share the site with other contractors, Public authorities, utilities, and the Employer as per requirements of the Employer. He is also to provide facilities and services for them as per Engineer's directives.

9.0 Personnel :

9.1 The contractor is to employ the key personnel to carry out the functions stated in the Scope of works or other personnel approved by the Engineer. The person so appointed shall be duly authorised to receive instructions from the Engineer and carry out the instructions issued.

10.0 If the Engineer asks the contractor to remove a person who is a member of his staff or his work force and states his reasons the contractor is to ensure that the person leaves the site immediately and has no further connection with the work in the contract.

11.0 Contractor's risks :

11.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the contract are the responsibility of the contractor.

12. ESCALATION:

Escalation is not payable.

13.0 Indemnities :

13.1 The contractor indemnifies the Employer against claims for damage caused by the movement of his equipment or temporary works outside the site.

14.0 Site Investigation report : Deleted

15.0 Queries about the Contract data :

The Engineer is to give instructions clarifying queries about the Contract data.

16.0 Contractor to construct the works :

16.1 The contractor is to construct the works in accordance with the specification and drawings.

17.0 The works to be completed by the intended completion date :

17.1 The contractor may begin the works on the start date and is to carry out the works in accordance with the program submitted by him, as updated with the approval of the Engineer, and complete them by the intended completion date.

18.0 Approval of the contractor's temporary works :

18.1 The contractor is to submit drawings and specifications showing his proposed temporary works to the Engineer, who shall to approve them if they comply with the contract data.

18.2 The contractor is responsible for design of temporary works.

18.3 The Engineer's approval does not alter the contractor's responsibility for his design of the temporary works.

18.4 The contractor is to obtain approval of third parties to his design of the temporary works where required.

19.0 Safety :

19.1 The contractor is responsible for the safety of all activities on the site.

20.0 Special Applications

Deleted.

21.0 Possession of the site :

21.1 The Employer is to give possession of all parts of the site to the contractor. Possession of site may be given in parts and the contractor is required to take such delay, if any, in his account.

22.0 Access to the site :

22.1 The contractor is to allow the Engineer and any person authorised by the Engineer access to the site and to any place where work in connection with the contract is being carried out or is intended to be carried out.

23.0 Instructions :

23.1 The contractor shall carry out all instructions of the Engineer, which comply with the law of the country in which the site is located.

24.0 Procedure for disputes :

24.1 If any dispute or difference of any kind what so ever shall arise between the Employer and the contractor or the Engineer and the contractor in connection with or arising out of

the contract, or the execution of the works, whether during the progress of the works or after their completion and whether before or after the termination, abandonment or breach of the contract, it shall in the first place, be referred to and settled by the engineer who shall, within a period of ninety days after being requested by either party to do so, give written notice of his decision to the Employer and the contractor subject to arbitration, as hereinafter provided, such decision in respect of every matter so referred shall be final and binding upon by the Employer and by the contractor and shall forthwith be given effect to by the Employer and by the contractor, who shall proceed with the execution of the works with all due diligence whether he or the Employer requires arbitration, as hereinafter provided, or not. If the engineer has given written notice of his decision to the Employer or the contractor within a period of ninety days from receipt of such notice, the said decision shall remain final and binding upon the Employer and the contractor. If the engineer shall fail to give notice of his decision, as aforesaid within a period of ninety days after being requested as aforesaid, or if either the Employer or the contractor be dissatisfied with any such decision, then and in any such case either the employer or the contractor may within ninety days after receiving notice of such decision within ninety days after the expiration of the first named period of ninety days as the case may be require that the matter or matters in dispute be referred to arbitration as hereinafter provided all disputes or differences in respect of which the decision if any of the Engineer has not become final and binding as aforesaid shall be finally settled under the Indian Arbitration Act 1996 or any statutory modification or enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. Such arbitration shall be settled by two arbitrators, one to be appointed by each party to the dispute and the arbitrators shall before taking upon themselves the burden of reference appoint an umpire. If, the arbitrators can not agree on the appointment of the umpire, the umpire shall be appointed by Chairman-cum-Managing Director, HSCC. The arbitration shall take place at Noida unless both parties agree otherwise neither party shall be limited in the proceedings. Before such arbitrator/s to the evidence or arguments put before the Engineer for the purpose of obtaining his said decision no decision given by the Engineer in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator/s on any matter whatsoever relevant the dispute or difference referred to the arbitrator/s as aforesaid. The reference to arbitration may proceed notwithstanding that the works shall not then be or be alleged to be complete provided always that the obligations of the Employer the Engineer and the contractor shall not be altered by reason of the arbitration being conducted during the progress of the works.

Time Control

25.0 Program :

The bidder shall submit the detailed program of work with in 7days from the receipt of Notification of Award in MS Project (both soft and hard copy) indicating important activities of the project for timely completion.

26.0 Extension of the intended completion date :

26.1 Extension of completion time shall be considered & may be granted by the Engineer based on merit of the case which is required to be submitted by the Contractor along with full justifications & supporting documents for the reasons of delay not attributable to the Contractor. However the rates shall be firm & binding during the extended period of completion. No extra payment/compensation for extended stay shall be permissible.

27.0 Acceleration : Deleted

28.0 Delays ordered by the Engineer :

28.1 The Engineer may instruct the Contractor to delay the start of progress or any activity within the works. However no compensation on any account for such delay shall be payable to the Contractor.

29.0 Management Meetings :

Deleted.

30.0 Early warning : Deleted

31.0 Identifying defects :

31.1 The Engineer is to check the Contractor's work and to notify the Contractor of any defects, which he finds. Such checking does not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover at test any work, which he considers may have a Defect.

32.2 Tests :

32.1 If the Engineer instructs the Contractor to carry out test not specified in the specification to check whether any work has a Defect and the test shows the it does, the Contractor is to pay for the test and its samples. If there is no defect the test is compensation event.

33.0 Correction of defects :

33.1 The Engineer is to give notice to the Contractor of Defects of which he is aware before the end of the Defects Notice Period, which begins at Completion.

33.2 Every time notice of a Defect is given, a Defect Correction Period for the notified defect beings. The Contractor is to correct the notified defect within the Defects Correction Period. The length of the Defects Correction Period is stated in the Contract Data.

33.3 The Contractor is to correct defects which he notice himself before the end of the Defects Notice Period.

33.4 The Engineer is to certify that all Defects have been corrected when all known Defects have been corrected. If the Engineer considers that correction of a Defect is not essential he can request the Contractor to submit a quotation for the corresponding reduction to the Contract Price or an earlier Intended Completion Date or both. If the Engineer accepts the quotation the corresponding change in the contract Data is Variation.

34.0 Uncorrected defects after completion date :

34.1 After Completion the Engineer may arrange for a third party to correct a Defect if the contractor has not corrected it within the Defects Correction Period.

34.2 The Engineer is to give the Contractor at least 28 days notice of his intention to use a third party to correct a Defect. If the Contractor does not correct the Defects himself within this notice period, the Engineer may have the Defect corrected by the third party. The cost of the correction will be deducted from the Contract Price.

35.0 Bill of Quantities:

35.1 The Bill of Quantities is to contain items for the Supply, installation, testing commissioning of 11 KV HT Electrification Works (including construction of one HT Room and up- gradation of existing HT Room) for the upcoming Bio safety laboratory level 4 at MCC Complex, Sus Road Pashan, Pune to be done by the Contractor.

35.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

36.0 Changes in the quantities :

36.1 The quoted rates for all the items shall be firm, fixed and binding on the contractor irrespective of any variation of quantities stated in the contract.

37.0 Variations:-

All variations are to be included in updated programs produced by the Contractor.

38.0 Payments for variations :

38.1 The Contractor is to forecast the cost effect of a proposed variation on the Contract Price and provide the Engineer with a quotation for carrying out the variation when requested to do so by the Engineer before the variation is ordered by him.

38.2 If the Contractor's quotation is unreasonable, the Engineer orders the variation and make a change to the contractor's price which is based on his own, forecast of the effects of the variation on the Contractor's costs and which shall be binding on the contractor.

39.0 Cash flow forecasts:

39.1 The Contractor shall provide cash flow forecast at the start of work to the engineer.

40.0 Payment certificates:

- 40.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.
- 40.2 The Engineer shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 40.3 The value of work completed is determined by the Engineer.
- 40.4 The value of work completed comprises the value of the quantities of the items in the Bill of Quantities completed and brought to the site of work.
- 40.5 The value to work completed includes the valuation of Variation and deductions for retention.
- 40.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

41.0 Payments :

- a) The Contractor shall be paid on the certification of the Engineer, the amount due to him.
- b) Retention Money at the rate of 10%(ten percent) shall be deducted from each interim certificate subject to a maximum of 5%(five percent) of the contract price.
- c) Payment upon each of the Engineer's certificates shall be made by the HSCC (India) Ltd. acting for and on behalf of Employer within 30 days after such certificate has been issued by the Engineer.

However, 75% of the estimated amount as determined by the Engineer of the payment due against the monthly running bill shall be paid within 10 (Ten) working days after submission of the bill by the contractor in the approved format and complete in all respects.

- d) The Engineer may at any time make any corrections or modifications to any certificate, which shall have been issued by him and shall have power to withhold any certificate if the Works or any part thereof are not being carried out to his satisfaction.
- e) The responsibility for making the payments or meeting other obligations to the Contractor in respect of all Works as certified by the Engineer shall be that of the Employer and not of the Engineer.
- f) After completion of work and prior to final payment, the contractor shall furnish to the engineer, a release of claim against the Employer arising out of contract, other than claims specifically identified, evaluated and excepted from the operation of the release by the contractor.

42.0 Taxation

The contractor and his staff shall pay all taxes (including building cess etc.), duties, levies, etc. of the Government provisions of the Income-Tax Act or as per the advice of the Income Tax Authority. Deduction of Income-Tax, VAT / other taxes shall be made from each certificate of payment as per the relevant provisions of the Income Tax Act or as per the advice of the Income Tax authority/ other competent authority.

43.0 Subsequent Legislation Deleted

44.0 Retention:

44.1 The Employer is to retain from each payment due to the contractor the proportion stated in the Contract Data until completion of the whole of the works.

44.2 On completion of the whole of the works half the total amount retained is repaid to the contractor and half when the Defects Notice Period has passed and the Engineer has certified that all Defects notified by him to the Contractor before the end of this period have been corrected.

45.0 Liquidated damages :

45.1 The Contractor is to pay liquidated damages to the Employer at the rate per calendar day stated in the Contract Data from each day that the completion date is later than the Intended Completion date. The Employer may deduct liquidated damaged from payments due to the contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

45.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer is to correct any overpayment of liquidated damages by the contractor by adjusting the next payment certificate. The Contractor is to be paid interest on the overpayment, calculated from the date of payment to the date of repayment.

46.0 Advance payment :

46.1 Advance is not payable.

47.0 Securities :

47.1 The performance securities are to be provided to the Employer by the start date and are to be issued in a form and by a bank or bondsman acceptable to the Employer, and denominated in the types and proportions of the currencies in which the Contract Price is payable.

47.2 If there is no reason to call the performance security, the performance security is to be returned by the Employer within 14 days of the last defects correction period.

47.3 The Employer is to notify the contractor of any claim made against the institution issuing the security.

- 47.4 The Employer may claim against the surety if any of the following occurs for 42 days or more ;
- a) the contractor is in breach of the Contract and the Employer has notified him that he is; and
 - b) the Contractor has not paid an amount due to the Employer.

48.0 Dayworks :

- 48.1 The days works rates in the Contractor's bid are to be used for small additional amounts of work and only when the Engineer has given written instructions in advance for additional work to be paid for in that way.
- 48.2 All work to be paid for as Day works is to be recorded by the Contractor on forms approved by the Engineer. Each completed forms to be verified and signed by the Engineer within two calendar days of the work being done.
- 48.3 The contractor is paid for day works only when he has obtained signed day works forms.

49.0 Cost of repairs :

- 49.1 Loss or damage to the works or materials to be incorporated in the works between the start date and the end of the Defects Correction is to be amended by the contractor at the contractor's cost if the loss of damage arises from the contractor's acts of omissions.

Finishing the Contract

50.0 Completion :

- 50.1 The Engineer is to issue a certificate certifying completion to the contractor and the Employer when he decides that the work is completed.

51.0 Taking over :

- 51.1 The Employer takes over the site and the works within a month of the Engineer issuing a certificate of completion.

52.0 Final account :

- 52.1 The contractor is to supply to the Engineer a detailed account of the total amount which he considers is payable to him under the contract before the end of the defects notice period. The Engineer is to certify any final payment which is due to the contractor within 30 days of receiving the contractor's account if it is correct and complete. If it is not, the Engineer is to issue a schedule which states the scope of the corrections or additions which are necessary. If the final account is still unsatisfactory after it has been resubmitted, the Engineer is to decide on the amount payable to the contractor.

53.0 DELETED

54.0 Termination :

54.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract which substantially deprives him of the principal benefits of the contract.

54.2 Fundamental breaches of contract include, but are not limited to :

- a) the contractor stops work for 28 days when no stoppage of work is shown on the current program and the stoppage has not been authorised by the Engineer.
- b) the Engineer instructs the Contractor to delay the progress of the works and the instruction is not withdrawn within 28 days;
- c) the employer or the contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- d) a payment certified by the Engineer is not paid by the Employer to the Contractor within 84 days of the date of the Engineer 's certificate;
- e) the Engineer gives Notice that failure to correct a particular defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer; and
- f) the contractor does not provide a security which is required.

54.3 When either party to the Contract gives notice of a breach of contract to the Engineer, the Engineer is to decide whether the breach is fundamental or not.

54.4 Notwithstanding the above, the Employer may terminate the Contract at his convenience.

54.5 If the contract is terminated the contractor is to stop work immediately, make the site safe and secure and leave the site as soon as reasonably possible.

55.0 Payment upon termination:

55.1 If the contract is terminated because of a fundamental breach of contract by the contractor, the Engineer is to issue a certificate for the value of the work done and materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage of the value of the work not completed indicated in the contract data. Liquidated damages to not apply and the Employer has right to damages in respect of any delay incurred arising from the breach. If the total amount due to the Employer exceeds any payment due to the contractor the difference shall be a debt payable to the Employer.

55.2 If the contract is terminated at the Employer's convenience because of a fundamental breach of contract by the Employer, the Engineer is to issue a certificate for the value of

the work done, materials ordered, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the works, and the Contractor's costs of protecting and securing the works and less advance payments received up to the date of certificate.

56.0 Property:

56.1 All materials on the site, plant, and equipment owned by the contractor, temporary works and works are deemed to be the property of Employer and are at his disposal if the contract is terminated because of a fundamental breach of contract by the Contractor.

57.0 Frustration :

57.1 If the contract is frustrated by the out break of war or by any other event entirely outside the control of either the employer or the Contractor the Engineer is to certify that the Contract has been frustrated. The contractor is to make the site safe and stop work as quickly as possible after receiving this certificate and is to be paid for all work carried out before receiving it and for any work carried out afterwards to which he was committed.

The following documents are also part of the contract :

- * The Bid and letter of Acceptance
- * The conditions of Contract
- * The Technical Specifications
- * The Drawings
- * The Priced Bill of Quantities

The Contractor is to submit the program for the works within 7 days of being notified of the acceptance of his bid.

The law which applies to the Contract is the law of the Union of India, that of Delhi High Court.

Arbitration procedure to be as per Arbitration and Reconciliation Act 1996. Court Jurisdiction New Delhi

Place where arbitration will take place: Noida, UP.

SPECIAL CONDITIONS OF CONTRACT

1. The quoted rates are deemed to include for all leads & lifts etc, and no claim on this account shall be entertained. When required by the engineer the work shall be carried out beyond office hours and at night and in such a case the contractor shall at his own cost make suitable arrangement for providing lighting etc. The quoted rates are deemed to include for all expenditures associated with overtime/night work.
2. The dimension given in the drawings are to be treated as approximate and indicative only. The contractor has to carry out the work as per actual site measurements.
3. Water & electricity shall be arranged by the Contractor at their cost or shall be supplied by Principal Employer if available, subject to recovery.
4. The BOQ, specification and other contract documents are jointly descriptive and supplementary to each other of the work involved. The items have been briefly described in the BOQ. However, the work shall be carried out as per detailed specifications and standards norms and practices followed for such type of works. The scope includes matters not specifically mentioned but required for proper completion of the work and no claim whatsoever shall be entertained on this account.
5. The contractor shall submit samples of the materials he proposes to use in the works for approval of the Engineer. Only approved material shall be used in the works. The approved samples shall be signed by the contractor and the engineer and retained in the office of the engineer for comparison.
6. The quantities indicated in the BOQ are tentative and may vary as per approved shop drawing. The contractor shall calculate the quantities of each item in accordance with approved shop drawing and get Engineer's approval for the same. The quantities of each item shall be as per this approved list. Payment shall be made as per quoted rates in BOQ.
7. The scope of work under this contract shall include the liaison with the turnkey agency for the BSL-4 lab for obtaining Electrical Load for the project & submission of the application to MSEB/designated authority for additional load sanction. The bidder shall be responsible for all arrangements for interface between work of Turnkey agency & HT contractor for obtaining power connection from the source. The responsibility for obtaining additional load sanction will be with the bidder.

FORM OF AGREEMENT

(On a stamp paper of appropriate value)

AGREEMENT

This Agreement made the _____ day of _____ 20_____ between The Director, Microbial Containment Complex, Sus Road Pune, under Indian Council of Medical Research (ICMR) (hereinafter called "The Employer") represented by M/s HSCC (India) Ltd. who enters into this Agreement of the one part and M/s
..... (hereinafter called "The Contractor") of the other part.

Whereas The Employer is desirous that certain Works should be executed by the Contractor, viz _____ ("the works") and has accepted a Bid amounting to Rs. _____ by the Contractor for the execution and completion of the Works and the remedying of any defects therein.

Now this Agreement witnesseth as follows :

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz :
 - (a) The Letter of Award
 - (b) The said Bid;
 - (c) The General Conditions of Contract;
 - (d) Instructions to tenderers
 - (e) Specific Conditions of Contract;
 - (e) The Technical Specification;
 - (f) The Drawings;
 - (g) The Priced Bill of Quantities;
 - (h) Any other relevant documents referred to in this Agreement or in the aforementioned documents;

3. In consideration of the payments to be made by the HSCC (I) Ltd. (HSCC) acting on behalf of the Employer to the contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor through HSCC in consideration of the execution and completion of the Works and the remedying of defects therein the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

In Witness whereof the parties hereto have caused this Agreement to be executed the day and year first before written.

Signed, Sealed, and Delivered by the Said _____

Binding Signature of [HSCC] for and on behalf Microbial Containment Complex, Pune, under Indian Council of Medical Research (ICMR).

Binding Signature of Contractor _____

In the presence of

Witness (1) :

Witness (2) :

ANNEXURE - B**APPENDIX TO TENDER**

Important Clause	Clause No.	Remarks
Amount of performance security	27.1(Instruction to bidders)	5% of contract price.
Period of commencement from Engineer's order to commence		1 week.
Amount of Liquidated damages	45.1	0.5% (point five percent) of contract price per week of delay.
Limit of liquidated damages	45.0	10% of contract price
Defect Liability Period	27.1(Instruction to bidders)	6 months
Percentage of retention	44	10%
Limit of retention money	44	5% of the contract price.
Programme of work and progress reports	25.1	Programme updated monthly, progress reported weekly.
Time of completion of work	1.3 (Instruction to bidders)	90 (Ninety) calendar days for entire works.

PROFORMA FOR PERFORMANCE BANK GUARANTEE

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To,

M/s HSCC (India) Ltd.,
Plot No. 6(A), Block E, Sector 1,
NOIDA - 201 301.

Dear Sir,

In consideration of the Microbial Containment Complex, Pune, under Indian Council of Medical Research (ICMR) (hereinafter called Employer) which expression shall include his successor and assigns represented by his Consultant M/s. HSCC (I) Ltd., Plot - 6 (A), Block - E, Sector - I, Noida, Uttar Pradesh - 201 301 (hereinafter called HSCC) having awarded to M/s _____ (hereinafter referred to as the said Contractor or 'Contractor' which expression shall wherever the subject or context so permits include its successors and assigns) a contract No _____ in terms inter alia, of the HSCC Letter No. _____ dated _____ and the General Conditions of Contract and upon the condition of the contractor's furnishing security for the performance of the contractor's obligations and discharge of the contractor's liability under and in connection with the said contract upto a sum of Rs. _____ (Rupees _____ only) amounting to _____ percent of the total contract value.

1. We, _____ (hereinafter called 'The Bank' which expression shall include its successors and assigns) having our branch office at _____ and registered /Head office at _____ a company registered under the Companies Act, 1956) hereby jointly and severally undertake to guarantee the payment to the Employer in rupees forthwith on demand in writing and without protest or demur or any and all moneys anyway payable by the contractor to the Employer under in respect of or in connection with the said contract inclusive of all the Employer's losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys anyway payable in respect of the above as specified in any notice of demand made by the Employer to the Bank with reference to this guarantee upto an aggregate limit of Rs. _____ (Rupees _____

- _____ only).
2. We _____ Bank Ltd. further agree that The Employer shall be sole judge of and as to whether the said contractor has committed any breach or breaches of any of the terms and conditions of the said contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by The Employer on account thereof and the decision of The Employer that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by The Employer from time to time shall be final and binding on us.
 3. The Employer shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other security in respect of the Contractor's obligations and liabilities hereunder or to vary the contract or the work to be done thereunder vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total contract value or to release or to forbear from enforcement of all or any of the security and/or any other security(ies) now or hereafter held by The Employer and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to The Employer hereunder or prejudice the rights of The Employer against the bank.
 4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to The Employer in terms thereof.
 5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anywise affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to The Employer in terms hereof.
 6. The amount stated in any notice of demand addressed by The Employer to the Bank as liable to be paid to The Employer by the Contractor or as suffered or incurred by The Employer on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to The Employer or suffered or incurred by The Employer as the case may be and shall be payable by the Bank to The Employer in terms hereof.
 7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of The Employer and liabilities of the contractor arising upto and until

midnight of _____.

8. This guarantee shall be in addition to any other guarantee or security whatsoever that The Employer may now or at any time anywise may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said contract, and The Employer shall have full authority to have recourse to or enforce this security in preference to any other guarantee or security which The Employer may have or obtain and no forbearance on the part of The Employer in enforcing or requiring enforcement of any other security shall have the effect of releasing the Bank from its full liability hereunder.
9. It shall not be necessary for The Employer to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any security which The Employer may have obtained or obtain from the contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.
10. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of The Employer in writing and agree that any change in the constitution of the said contractor or the said bank shall not discharge our liability hereunder.
11. We _____ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
12. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs. _____ (Rupees _____) and this guarantee shall remain in force till _____ and unless a claim is made on us within 3 months from that date, that is before _____ all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities thereunder.

Dated _____ day of _____ 20

For and on behalf of Bank.

Issued
under
seal :

Technical Specifications

(Sub-station works)

BSL-4 LAB MCC PUNE

CONDITIONS OF CONTRACTS FOR SUBSTATION WORKS FOR BSL-4 LAB AT MCC PUNE

1.0 SCOPE OF WORK

The scope of work under this contract shall cover the supply, installation, testing, and commissioning of the complete H.T works. The items/activities covered under this contract include the following.

Shifting of Existing H.T panel to new room and connecting the new VCB panel to existing H.T panel including connection of and termination of H.T cable.

H.T cables from existing substation to proposed BSL-4 lab H.T panel to transformer including cable termination.

H.T panel at BSL-4 Lab consist of 1(one)N0 of VCB.

Distribution Transformer OLTC type.

Enhancement /Sanctioning Electrical Load from State Electricity Board.

Submission of GA drawings of electrical equipments and getting approvals from HSCC before manufacturing/fabrications.

Obtaining approvals from Chief Electrical inspector, Local Electricity Supply Authority, and any other statutory authorities for the complete scope.

Any other works required for complete of electrical works.

1.1 REGULATIONS AND STANDARDS

The installations shall confirm in all respect to Indian Standards code of practice for H.T panel, H.T cables, Transformers, Earthing etc.It shall also be in conformity with the currents Indian Electricity Rules and regulations and requirements in so far as these become applicable to the installations. Wherever this specifications calls for a higher standards of material and/or workman ship than those required by any of the above regulations then this specifications shall take precedence over said regulations and standards.

1.2 SPECIFICATIONS

The work shall be executed in accordance with the specifications enclosed, the bill of quantities and instructions issued from time to time Wherever these specifications are found wanting in any way, the I.S codes shall apply.

1.3 VERIFICATION AT SITE

The contractor shall verify at the site information regarding existing services, levels dimensions etc and submit the drawing accordingly and taking approval from the client/Consultants.

1.4 PROGRAMME OF WORKS AND METHOD OF CONSTRUCTION

The contractor shall submit to the consultant prior to the commencement of work, for his approval, a detailed programmed in the format as approved by the consultant. The detailed programmed shall necessarily contain but not limited to all activity in different phases and in different locations, separately specifying there in the start and end of such activity.

1.5 NOTICE OF OPERATION

In spite of submission and approval of the work programme the contractor shall not carry out major operation without consent of the consultant.

1.6 RATES

The work shall be treated as on works contract basis and the rates tendered shall be for complete items of work inclusive of all taxes (including work contract tax if any), duties, and levies etc and all other charges for items contingent to the work, such as packing, forwarding, insurance, freight and delivery at site for the materials to be supplied by the contractor, watch and ward of all the materials for the above work at site. Price quoted shall be firm.

1.7 FEES PERMITS & TESTS

The contractor shall obtain and pay for any fee and permits required for the installations & commissioning of the work. On completion of the work, the contractor shall obtain and deliver to the consultant/client certificates of final inspection and approval by the local Electric supply authority & Electrical Inspector safety. The consultant shall have full powers to order the materials or work to be tested by an independent agency at an the Electrical contractor's expense in order to prove its soundness & adequacy.

1.8 COMPLETENESS OF TENDER

All such fittings , accessories , hardware items, foundations bolts, terminations lugs for connections as required, and all other sundry items which are useful and necessary for proper assembly and efficient working of the various components of the work shall be deemed to have been included in the tender, whether such items are specifically mentioned in the tender document or not.

1.9 WORKS TO BE DONE BY CONTRACTOR

Unless and other wise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost:-

- i) Cutting and making good all damages caused during installation and restoring the same to their original finish.
- ii) Seal of all floor openings provided by the contractor for the pipes and cables from fire safety point of view, after laying the same
- iii) Temporary shed if required over the storage space and locking arrangement thereof, and watch of the materials and completed installations till completion of the work.
- iv) All civil work related to H.T work including equipment foundations shall be done by the contractor.

1.10 TOOLS FOR HANDLING AND ERECTION

All tools and tackles required for handling of equipments and materials at site of work as well as for their erection and also necessary test instruments shall be the responsibility of the contractor.

1.11 APPROVALS OF THE SHOP DRAWINGS

The contractor shall submit all 6 sets of following shop drawings to the consultants for their approval.

- i) Layout of all equipments in H.T rooms, Transformer room etc. With physical dimension and installations details.
- ii) Route of H.T cables
- iii) Earthing details of all the equipment in substation and location of earth pits, size of earth conductor.

1.12 BROCHURE AND DATA

The contractor shall submit all broacher's manufacturer's description data and similar literature.

1.13 PERMIT AND LICENSES

The contractor shall obtain all permits and /or licenses if requires for any part of the work from the local authority and pay for any and all fees required for the same.

1.14 MAINTENANCE

During the guarantee and defects liability period the contractor shall provide at no extra cost, necessary materials and personals to carry out repairs as required. The contractor shall attend to all the problems experienced in the operations of the system under this contract within a reasonable time but not more than 24 hours of receiving the complaints and take corrective actions.

1.15 EXTRA ITEMS

If the altered/additional or substituted work or any additional work required to be executed as consultant/clients requirement for which there are no established rates in schedule of items the same shall be payable as per in CPWD

2.0 1kV VACUUM CIRCUIT BREAKER PANEL BOARD

2.1 GENERAL:

Vacuum Circuit Breaker shall be incorporated in H.T. Panel wherever specified. VCB's shall conform to IEC 298 and 694 IS 3427, BS 5227 and VDE 0670, part 6 as well as the regulations mentioned therein. VCB's shall be suitable for operation on 11kV, 3 phase, 50Hz, AC supply.

2.2 TYPE AND CONSTRUCTION:

2.2.1 The metal clad panel shall be fully extensible and compartmentalized to give.

- a. Circuit Breaker Compartment
- b. Busbar Compartment
- c. CT and Cable Compartment

2.2.2 The compartments shall be safe to touch and compartments thus formed shall be dust proof & vermin proof. A separate metering chamber for fixing the necessary instrumentation metering and protective equipment shall be mounted on the top and bottom of the panel at the front.

2.2.3 The VCB shall consist of three air insulated poles incorporating mechanism of interrupters. The body of interrupters shall be made of nickel chromium steel supported on insulators made out of metalised aluminum oxide. The contacts shall be of chromium copper and butt shaped.

2.2.4 Vacuum circuit breaker shall be mounted on truck or a carriage mechanism. In case of truck mechanism, the breaker shall be on a trolley while in a carriage mechanism, shall be separate door and it shall be possible to perform all operations with front door closed. The draw out carriage shall have two position for the circuit breaker viz isolated/test & service position. Busbars shall be insulated type made of high conductivity copper supported on cast epoxy monobloc designed to withstand full short circuit currents and shall be provided all along the length of the H.T. board.

- 2.2.5 It shall be horizontal isolation, horizontal draw out type, fully interlocked, with dust and vermin proof construction, suitable for indoor installation. The panel shall be supplied with the manufacturer's test certificates.
- 2.2.6 Certificates with date of manufacture and shall be complete in all respects as per details in the schedule of quantities. The steel work should have undergone a rigorous rust proofing process comprising alkaline degreasing, descaling in dilute sulphuric acid and recognized phosphate process and shall then be given power coating (Electrostatic) paint of manufacturer's standard shade.
- 2.2.7 The switchgear constructions shall be such that breaker operation and internal explosions do not endanger the operating personnel, and the front of the panel shall be specially designed to withstand these. Pressure relief flaps shall be provided for safely venting out gases produced inside the high voltage compartment, busbar compartment and termination compartment. These flaps shall be vented upwards and cannot be opened from outside. These relief flaps shall be of such construction as not to permit ingress of dust/water in harmful quantities under normal working conditions. Enclosure shall be constructed with sheet steel of at least 2.0mm thickness. It shall have a rigid, smooth, leveled, flawless finish.
- 2.2.8 On the incoming breaker panel, a 50VA burden and Class I accuracy potential transformer $11\text{kV}/\sqrt{3} / 110\text{V}/\sqrt{3}$ with LT fuses shall be provided. These shall be three single-phase PTs cast resin insulated type. Adequate space at the rear of the panel shall be provided for termination of power & control cables. The panel shall be provided with suitable terminating arrangement for termination of cables.
- 2.2.9 The making contact arms (upper & lower) of the circuit breaker shall be encased in polypropylene tubes. Penetration type bushings shall be provided in the busbars & cable compartment for the fixed contacts.
- 2.2.10 Safety shutters shall be provided to cover up the fixed high voltage contacts on busbar and cable sides when the carriage is moved to Isolated/Disconnected position. The shutters shall move automatically with the movement of the draw out carriage. It shall, however, be possible to open the shutters of busbars side and cable side individually.
- 2.2.11 mechanically operated circuit breaker auxiliary switches of minimum 5 NO + 5 NC ways, shall be provided for control and indication purposes. Control wiring shall be done by 1.5 sq. mm; 1.1kV grade stranded copper PVC insulated cable. All control fuses shall be HRC link type.
- 2.2.12 Terminal blocks shall be clamp type suitable for connection of only 2 wires per terminal and shall be 650 V grade. The L.T. control circuit shall be routinely tested to withstand 1.5kV for one minute.
- 2.2.13 Busbar compartment shall be provided at the rear. Electrolytic copper busbars shall be of rectangular cross section and insulated. Busbars shall be supported properly by cast epoxy resin

insulators so as to withstand thermal and dynamic stresses during system short circuits. Busbars shall be provided with necessary color coding for phases indication. The busbars shall be designed to withstand a temperature rise of 60 deg. C above and ambient temperature of 45 deg. C.

2.3 BUSBAR AND REGULATORS

- 2.3.1 All busbars and jumper connections shall be of electrolytic copper conforming to relevant IS standards. They shall be adequately supported on epoxy insulators to withstand electrical and mechanical stresses due to specified short circuit currents. Busbar cross section shall be uniform throughout the length of switch board.
- 2.3.2 Contact surface at all joints shall be properly cleaned and No-oxide grease applied to ensure an efficient and trouble free connections. All bolted joints shall have necessary washers for maintaining adequate contact pressure. All connection hardware shall have high corrosion resistance.
- 2.3.3 Busbar insulators shall be of track-resistance, high strength, and non-hygroscopic, non-combustible type & shall be suitable to withstand stresses due to over voltages and short circuit current. Busbar shall be supported on the insulator such that the conductor expansion and contraction are allowed without straining the insulators. The temperatures of the busbars and all other equipments, when carrying the rated of relevant Indian Standards, duly considering the specified ambient temperature.

2.4 EARTHING AND PROTECTIVE EARTHING

- 2.4.1 Copper earthing bus shall be provided. It shall be bolted/ welded to the framework of each panel. The earth bus shall have sufficient cross time fault currents to earth without exceeding the allowable temperature rise. Suitable arrangement shall be provided at each end of the earth for bolting. Earthing conductors and earth bus shall run inside at the back of the panel for entire length. Facilities shall be provided for integral earthing of busbars & feeder circuit. Earthing rod consisting of 16 Sq.mm. stranded/flexible copper cable 15 Mtr. long and connectors shall be supplied. Cost of this earthing rod is deemed to be included in the cost of VCB Panel.

2.5 METERING AND PROTECTION

- 2.5.1 The VCB Panel Board shall be provided with epoxy resin current transformers for metering and protection. The CT's shall conform in all respects to IS 2705. These shall have accuracy class of 1.0 for metering of 5P10 for protection. Potential transformers shall conform to specifications of IS: 3156. Ammeter and voltmeter to be installed on panel shall be of moving iron type. All meters shall be tested for 2000V for 1 minute and shall be 96mm square pattern, flush mounting type with necessary selector switches. Necessary indicating lamps of low voltage type with built in resistors shall be provided (maximum wattage 2.5W).

2.6 OPERATING MECHANISM

2.6.1 Vacuum Circuit Breaker shall be equipped with motorized spring charge. These operating mechanisms shall be of the stored energy type. In the closed state of the breaker, the energy stored in the springs shall be suitable for O-C-O duty.

2.6.2 Interlocking and Safety Arrangement

2.6.2.1 Vacuum Circuit Breaker shall be provided with the following safety and interlocking arrangements:

- i. The draw out carriage cannot be moved from either test/disconnected to service position or vice versa, when the circuit breaker is 'On'.
- ii. The circuit breaker cannot be switched 'ON' when the carriage is in any position between test & service position.
- iii. The front door of the panel cannot be opened when the breaker is in service position or in an intermediated position.
- iv. The low voltage plug & socket cannot be disconnected in any position except test/isolated position.
- v. The door cannot be closed unless the LV plug has been fitted.
- vi. It shall be possible to mechanically close and trip the circuit breaker through push buttons with the circuit breaker in service position and the door closed.
- vii. Individual explosion vents shall be provided for breaker, busbar, cable chambers on the top of the panel to let out the gases under pressure generated during an unlikely event of a fault inside the panel.
- viii. Circuit Breaker & sheet metal enclosure shall be fully earthed.
- ix. Self locking shutters shall be provided which close automatically and shall be interlocked with the movement of the draw out carriage mechanism.

2.6.3 Rating:

2.6.3.1 The rating of the vacuum circuit breaker shall be as per the drawings and schedule of quantities. The rated/breaking capacity of the breaker shall be 350 MVA (18.37 KA RMS) at 11 kV. The rated making capacity shall be as per the relevant standards.

2.6.4 Accessories:

2.6.4.1 Circuit Breakers shall be provided with the following accessories.

- i. Auxiliary Switch with minimum 5 NO+ 5 NC auxiliary contacts.
- ii. Tripping Coil
- iii. Mechanical Operation Counter
- iv. Spring Charging Handle

2.6.5 Additional Accessories

2.6.5.1 The loose items to be supplied with the 11kV VCB Panel Board shall comprise of the following:

- a. Instruction Book.
- b. Maintenance Manual.
- c. Reaching in/out handle.
- d. Handle for spring charging mechanism.
- e. Foundation bolts.
- f. Busbar Earthing & Circuit Earthing Trolley.

2.6.6 Mounting

2.6.6.1 Vacuum Circuit Breakers shall be mounted as per manufacturer's standard practice.

2.6.7 Auxiliary Supply

- a. The tripping shall be at 24 Volt D.C. through a power pack unit.

- b. Space heater indication & other auxiliary supply requirement shall be at 230 V AC. Necessary termination arrangements complete with isolating switch, control fuse & link shall be provided at one place in the panel for receiving the purchaser's cable.

2.7 TESTS

2.7.1 Factory Tests

The circuit breakers panel shall be subjected to routine tests at manufacturer's works in accordance with the details specified in the relevant IS specifications. These shall however necessarily comprise of the following.

- a. Power frequency voltage test on the main power circuit.
- b. Verification of the correct wiring/Functional Test.
- c. Dielectric test at 1.5kV on the control circuit. Apart from above, the vendor shall submit the routine test certificates for the following equipment.
 - i. Circuit Breakers
 - ii. Current Transformers
 - iii. Voltage Transformers

The vendor shall submit the type test certificate for following along with the offer.

- a. Temperature rise test.
- b. Impulse & power frequency voltage test
- c. Short time current test on circuit breaker.

2.7.2 Site Test

2.7.2.1 General

1. Verification for completion of equipment, physical damage/deformities.
2. Alignment of panel, interconnection of busbars & tightness of bolts & connection etc.
3. Interconnection of panel earth busbar with plant earthing grid.
4. Inter panel wiring between transport sections.
5. Cleanliness of insulators and general Cleanliness of panel to remove traces of dust, water etc.

2.7.2.2 Circuit Breaker & Panel

1. Check for free movement of circuit breaker, lubrication of moving part & other parts as per manufacturers manual.

2. Manual/Electrical operations of the breaker and Functional test as per drawings.
 3. Meggar before the Hi Pot test.
 4. H.T. Test - Hi Pot test (Power frequency withstand test for one minute at 28kV RMS). At site Hi Pot test is carried out at 80% of 28kV RMS value.
 5. Meggar after the Hi Pot test.
 6. CT/PT ratio/polarity primary injection test.
7. Secondary injection test on relays to practical characteristics.

3.0 CABLES

3.1 Construction

All H.T cables shall be of 11kv grade XLPE earthed insulated & PVC sheathed flat steel wires (strips) armored electrical purity aluminum conductor cables shall be manufactured & tested in accordance with IS Specification.

3.2 TERMINATION JOINTS

Terminal joints shall be carried out as per IS specifications. Heat shrink cable termination kit shall be used for terminations.

3.3 INSTALLATION OF CABLES

Cable laying shall be carried out as per CPWD specifications.

4.0 11 KV DISTRIBUTION TRANSFORMERS (OLTC TYPE)

GENERAL

The transformer shall be double wound core type, oil naturally cooled suitable for indoor installation. The transformer shall be designed and manufactured as per IS specification and having no load voltage ratio as 11000/433v.

SPECIFICATION STANDARD

Unless otherwise stated below, transformer & transformer oil shall conform to IS 2026 & 335 respectively.

SYSTEM OF SUPPLY

KV 3 phase, 50 Hz system

NO LOAD RATIO

11000/433 volts

KVA RATING

Transformer shall be suitable for continuous rating as stated in BOQ and on drawing.

TYPE

Indoor

WINDING

The transformer shall be copper wound.

CORE

The magnetic core shall be made up of cold rolled grain oriented low loss steel stampings.

COOLING

Natural oil cooling by means of pressed/round tubes around transformer tank (ONAN)

FREQUENCY

50Hz plus minus 3%

RATED VOLTAGE

Transformer shall operate at its rated KVA at any voltage plus minus 10% of rated voltage of that particular tap.

VECTOR GROUP

Corresponding to the vector symbol Dyn-11

CONNECTIONS

H.V side of transformer shall be provided with suitable size cable box for 3 core XLPE cable. Indoor heat shrinkable termination kit shall be used for termination of HV Cable. MV side of transformer shall be suitable for bus duct connection arrangement.

TAPPING

ON load tap changing arrangement on 11kv side. The range for circuit taps, which shall be provided on H.V side, shall be plus 5% & minus 10% in steps of 1.25%

TEMPERATURE RISE

The transformer shall conform to the requirements of temperature rise specified in IS: 2026(PartII) 1977. Continuously rated for full load, temp. rise not to exceed 50 degree C by thermometer in oil (55degree C by resistance)

INSULATION LEVELS

The insulation levels shall be in accordance with IS 2076(Part III) 1977.

TERMINAL MARKINGS, TAPPING & CONNECTIONS

The terminal marking, tapings & connections shall be in accordance with IS 2026(PartIV) 1977.

REQUIREMENTS WITH REGARDS TO ABILITY TO WITHSTAND SHORT CIRCUIT.

As per IS 2026 (part I) 1977

IMPEDANCE VOLTAGE

As per table 3 of IS 2026 (part I) 1977

ON LOAD TAP CHANGING SWITCH

On load tap changer with RTCC panel and AVR

PARALLEL OPERATION

Transformer shall be suitable for parallel operation with similar unit of same rates.

FITTINGS

The following accessories and fittings shall be provided with the transformer

- i. **LIFTING LUGS:** The arrangement of lifting the active part of the transformer along with the cover of the tank by means of lifting lugs without disturbing the connections. Also complete transformer lifting lugs shall be provided.
- ii. **ROLLERS:** The transformer to be provided with 4 Nos. rollers fitted on cross channels to facilitate the movement of transformer.
- iii. **OIL CONSERVATOR:** The transformer to be provided with a conservator with welded end plates. It is to be bolted to the cover and can be dismantled for purposes of transport. It has to be provided with oil gauge with marking for minimum level and an oil filling hole with a cap which can be used for filtering of oil. For draining purposes a plug is to provide. A connection pipe between the conservator and tank is to be provided, which projects inside the conservator.
- iv. **AIR RELEASE VALVE:** An air release valve shall be provided on top of the tank cover to facilitate of the entrapped air while filling of oil.

- v. BREATHER: The transformer shall be provided with an indicating dehydrating silica gel breather of sufficient capacity.
- vi. DRAIN VALVE WITH PLUG: The transformer to be provided with drain valve with plug at the bottom of the tank.
- vii. DIAGRM WITH RATING PLATE: One diagram and rating plate indicating the details of transformer connection diagram vector group tap changing diagram etc.
- viii. THERMOMETER: Dial type thermometer (150mm dia) with maximum set pointer 75 degree C electrical contacts for electrical contacts for electrical alarm at high temp.
- ix. EXPLOSION VENT: Explosion vent or pressure relief device shall be provided of sufficient size of rapid release of any pressure that may be generated within the tank and which might result in damage in the equipment. The device shall operate at a static pressure less than the hydraulic test pressure for transformer tank.
- x. FILTER VALVE: Filter valve on the top of the tank.
- xi. BUCHOLTZ: Oil actuated relay equipment shall conform to IS 3637-1966(amended up to date) and shall be double float type having contacts which close following oil surge or under incipient fault condition. Bucholtz relay shall have contacts for alarm / trip.
- xii. WINDING TEMPERATURE INDICATOR :
- xiii. Winding temperature indicator with electrical contact for alarm/ trip
- xiv. OIL TEMPERATURE INDICETOR: Oil temp. Indicator with alarm & trip contacts.
- xv. MARSHALLING BOX: the transformer shall be provided with suitable size marshalling box to terminate the control cables of thermometer and bucholtz relay.
- xvi. CONTROL CABLING: all control cables required from Marshalling box to H.T panel board for Trip/alarm of winding temp. Indicator, oil temp indicator, Bouchilz relay etc. shall be provided and deemed to be included in the rate of transformer equipments.
- xvii. TRANSFORMER OIL: First filling of oil.
- xviii. EARTHING: Two separate earthing terminals are to be provided at the sides of the tank on both the sides for earthing.
- xix. ON LOAD TAP CHANGER; High speed resister type OLTC shall be provided along with RTCC and AVR.

SOAK PIT

Soak pit for oil filled transformer shall be made are per IS 10028 (Part II) 1981 with up to dated amendments. Sump shall be formed in the transformer room and shall be connected to soak pit outside the transformer room with a pipe. All the civil works required for the soak pit shall be done by the contractor and the cost shall deemed to be included in quoted rates of the transformer item.

INSTRUMENTATION MANUL

The successful bidder shall submit three copies of manual of complete instructions for the installations, operations, maintenance and repair, circuit diagrams, foundations and trenching details shall be provided with the transformer.

SHOP DRAWINGS

The selected supplier shall prepare and furnish shop drawings for the approval by the consultant/client before commencing fabrications/ manufacture of the equipment. Shop drawing shall be based on the requirement laid down in the specifications. The manufacture of the equipment shall be commence only after the shop drawings shall be have been approved in writing by the consultant. Transformer shall be manufactured conforming to specification of Local supply authority.

INSPECTION

- i) The transformer shall be inspected on arrival as per the inspection manual of the supplier
- ii) Shall be examined of any sign of damage and special attention shall be given to the following parts.
 - Oil tank and cooling tubes
 - Bushes cracks or broken
 - Oil sight glass

INSTALLATIONS

- i) The transformer shall be installed as per transformer manual of the transformer supplier and conforming to Indian standards.
- ii) The transformer is to be erected on suitable size M.S channels embedded in the cement concrete flooring including providing & fixing the channel. The transformer supplied shall be lifted by all lifting lugs for the purpose of avoiding imbalance in transit.
- iii) The transformer wheels shall be locked by suitable locking arrangement to avoid accidental movement of the transformer.
- iv) The transformer cable end boxes shall be sealed to prevent absorption of moisture.
- v) The transformer natural earthing and body earthing shall conform to Indian Standard.

FACTORY TEST

The transformer shall be subjected to test as laid down in IS 2026 (Part I) 1977 at factory/manufacturing unit prior to dispatch of the transformer to the site. All original test certificates shall be furnished.

TESTING AT SITE

- Prior to commissioning of the transformer the following tests shall be performed
- i) Insulation resistance of the winding between phases and earth of H.V and M.V side.
 - ii) Winding resistance of all the winding on all tap positions shall be taken.
 - iii) Di-electric strength of the transformer oil shall be checked in accordance with INDIAN STANDARD. In case the test is not satisfactory, the oil shall be filtered till proper dielectric strength of oil is obtained.

- iv) The supplier gives sufficient advance information about the test schedule to enable the owner to appoint his representative.

HIGH SPEED RESISTOR ON LOAD TAP CHANGER

GENERAL

High speed resistor on load tap changer shall be provided with the transformer wherever specified. The high speed resistor OLTC shall be for rated voltage up to 11KV rating current of 100 Amp, 3phase, 17step conforming to Indian standard with AVR & RTCC panel.

TYPE AND CONSTRUCTION

OLTC shall be a compact unit for use with three phase distribution transformer. It shall be completely self contained and designed to bolt directly to a part flange on the transformer.

The assembly comprise of

1. Tank
2. Selector Switch
3. Driving Mechanism
4. Barrier Board
5. Local control Gear
6. Control cable Terminations
7. AVR & RTCC panel

TANK

The complete tap changer shall be housed in a single tank of welded sheet steel construction. The tank shall be divided into two separate compartments to house the selector switch, driving mechanism and Local control gear. Access to the compartments shall be made easy by means of removable covers and a weather proof door. Anti-condensation heater shall be provided in the compartment which houses driving mechanism and control gear.

SELECTOR SWITCH

The three phase of the tap changer shall be adequately spaced for full interphase insulation but mounted as a common assembly using vertical synthetic resin bonded insulating boards, each carrying a circle of fixed contacts. Insulating rods and tubes shall be used for the horizontal spacing of the phases and the fixed contacts shall be connected via the barrier board to appropriate trappings in the transformer winding. Each phase shall have a single rotary contacts support ring with sliding contact take off connection. This ring carries separately insulated spring loaded snap connected by a non inductive

resistance unit accommodated on the contact carrier. One main moving contact shall be connected directly to the center boss take off point, the second; transition moving contact shall be connected to the resistor. The three contact support rings shall be attached to the central insulating drive shaft, which rotates in self aligning ball bearings in the two outer phase boards. This center shaft shall be of glass reinforced synthetic resin construction .access to the selector switch shall be via removable cover on the top of the tank.

DRIVE MECHANISM

Operation of the selector switch shall be by means of a stored energy spring device having appositive snap- action for rotating the moving contacts quickly through the angle required for each tap change. The driving mechanism compartment shall be external to the oil filled switch tank. The rotary drive from the driving mechanism to the selector switch shall passes through a frictionless positive oil tight gland. The angular movement of selector switch shaft shall be controlled by an indexing wheel which shall positively locked by the periphery of the operating cam except during the actual time of tap – change operation. The operating cam shall be freely mounted on its shafts, rotation being imparted to it by means of tension springs attached radially between the operating cam hub and the periphery of a concentric spring carrying gear wheel. The spring carrying gear wheel shall be rotated by a driving motor through cam. When the drive pin on the operating cam enters the slot in the indexing wheel the lock shall disengaged but rotation shall be prevented by the locking arm pawl engaging in other slot of indexing wheels. The spring carrying gear wheel continuous to rotate thus charging the springs. When sufficient energy has been stored a trip pin on the gear wheel shall lift the rocking arm restraining the indexing wheel and the spring energy shall be released to move the tap selector switch one position the cam locking coming in operation accurately controlling the angular movement.

The operation of the selector switch shall be thus the positively assured and shall be dependent only upon the quick release of the spring energy. It shall be thus independent of the motor drive. The tap changing sequence shall now complete and the driving motor shall brought to rest by the resetting of auxiliary switches and mechanical friction device. For protective purpose automatic declutching by shear pins shall be incorporated in the drive. The mechanism shall be provided with the auxiliary switches necessary for its operation. A step by step switch for position indication shall also be fitted and additional paralleling & out of step switches provided. A tap change mechanical counter, mechanical tap position indicator, mechanical end stops and electrical limit switch shall be provided. A detachable handle for hand operation shall be provided. The fittings of this handle shall automatically disconnects the motor drive shaft by the operation of a simply spring loaded dog clutch and at the same time isolates the electrical control supply.

BARRIER BOARD

The connections from the transformer winding shall be taken through an insulating terminal barrier board, which shall be supplied loose for the clamping to the transformer

port flange .Thus the transformer shall be treated and filled with oil before the tap changer is fitted. This arrangement allows the tap selector switch contacts to be inspected or the complete tap changer to be handled separately without disturbing the oil level in the transformer.

LOCAL CONTROL GEAR

The motor reversing contactors and associated local control gear shall be housed in the same compartment as the driving mechanism with a common hinged weather proof door. Weather proof local control switches when required shall be mounted in an accessible position below the door.

OPERATION MECHANISM

An impulse is received either from a remote control panel or from a local manual operation switch, which energizes the appropriate raise/lower contactor to initiate a tap changer in the required direction. The contactor when energized seals itself via its own contact and the driving motor commences to run. At a predetermined point a directional sequence switch closes, taking over the handling duties of the contactor whose original hold circuit shall be isolated. At the completion of the tap changer the directional sequence switch opens and de-energizes the driving motor. The arrangement ensures that a short period initiating pulse shall be accepted by the control gear.

CONTROL CABLE TERMINATION

A detachable undrilled gland plate and the terminal station for all the external connections shall be provided in the driving mechanism compartment of the tap changer.

AUTOMATIC VOLTAGE REGULATOR

Solid state automatic voltage regulator shall be provided for the regulation of the secondary voltage of the power transformer with on load tap changer (OLTC). The band width control shall allow the dead band to be set in the terms of upper (LOWER VOLTS) and lower (RAISE VOLTS) voltage limit around a particular nominal value with a specified sensitivity. AVR shall be provided with time delay control to allow the regulator to respond only to voltage fluctuations lasting for period greater than a selected time delay. Where the voltage correction requires more than one tap change, the time delay shall be reinitiated before further tap changes. Regulations shall reset automatically after voltage correction. Solid state lamps (LED) shall be provided to indicate voltage outside the preset limit & control relay operation.

RTCC PANEL

RTCC panel shall be provided to operate OLTC from control room located in substation. RTCC shall be provided with main switch, a sequence selector switch. RTCC shall be provided with lower push button & raise push button, tap change in progress & complete. A.C supply ON/OFF lamp indicator & AVR relay operated operation indication. Cubical

panel shall be totally enclosed, floor mounting and fabricated with a framed structure with rolled/folded sheet steel channel section of minimum 2mm thickness. All the sheet steel work forming the exterior of RTCC panel shall be smoothly finished and all steel work used in construction of RTCC panel shall undergo a rigorous metal treatment process consisting of effective cleaning by hot alkaline degreasing solution followed by the cold water rinsing, pickling in dilute sulphuric acid to remove scales and rust formation, a recognized phosphating process, passivating in deoxidize to retain & augment the effects of phosphating, drying with compressed air and dust free atmosphere, primer coating with two coats of highly corrosion resistant primer applied under strictly controlled conditions and finished coat of stoving synthetic enameled paint of grey color.

5.0 CABLE TRAY

Cable tray is manufactured as per Indian Standard Specification. Laying is done as per IS & CPWD specification.

6.0 EARTHING

Earthing specified in BOQ is done as per IS & CPWD specification.

TECHNICAL SPECIFICATIONS

1.0 CIVIL WORKS

- 1.01 The specifications and mode of measurements for Civil and Plumbing works shall be in accordance with C.P.W.D. specifications 1996 Volumes I to VI.

Unless otherwise specified in the nomenclature of individual item or in the specifications, the entire work shall be carried out as per the C.P.W.D. specifications with upto date correction slips upto the date of opening of tender.

- 1.02 For the item not covered under CPWD Specifications mentioned above, the work shall be executed as per latest relevant standards/codes published by B.I.S. (formerly ISI) inclusive of all amendments issued thereto or revision thereof, if any, upto the date of opening of tenders.

- 1.03 In case of B.I.S. (formerly I.S.I) codes/specifications are not available, the decision of the Engineer based on acceptable sound engineering practice and local usage shall be final and binding on the contractor.

- 1.04 However, in the event of any discrepancy in the description of any item as given in the schedule of quantities or specifications appended with the tender and the specifications relating to the relevant item as per CPWD specifications mentioned above, or in drawings the former shall prevail.

- 1.05 The work shall be carried out in accordance with the architectural, structural, plumbing and electrical drawings etc. The drawings shall have to be properly co-related before executing the work. In case of any difference noticed between the drawings, final decision, in writing of the Engineer shall be obtained by the contractor. For items, where so required, samples shall be prepared before starting the particular items of work for prior approval of the Engineer and nothing extra shall be payable on this account.

- 1.06 All materials to be used on works shall bear I.S. certification mark unless specifically permitted otherwise in writing. In case I.S. marked materials are not available (not produced), the materials used shall conform to I.S. code or CPWD specifications as applicable in this contract.

In such cases the Engineer shall satisfy himself about the quality of such materials and give his approval in writing. Only articles classified as "First Quality" by the manufacturers shall be used unless otherwise specified. All materials shall be tested as per provisions of the Mandatory Tests in CPWD specifications and the relevant IS specifications. The Engineer may relax the condition regarding testing if the quantity of materials required for the work is small. Proper proof of procurement of materials from authentic manufacturers shall be provided by the contractor to the satisfaction of Engineer. Grade of cement used shall be 43 /53 unless otherwise specified explicitly. The contractor shall get the Design Mix for RCC done by the labs approved by HSCC only. Reinforcement Steel used shall be of FE-415 unless otherwise specified.

- 1.07 In respect of the work of the sub-agencies deployed for doing work of electrification, air-conditioning, external services, other building work, horticulture work, etc. for this project and any other agencies simultaneously executing other works, the contractor shall

afford necessary coordination and facilities for the same. The contractor shall leave such necessary holes, openings, etc. for laying / burrying in the work pipes, cables, conduits, clamps, boxes and hooks for fan clamps, etc. as may be required for the electric, sanitary air-conditioning, fire fighting, PA system, telephone system, C.C.T.V. system, etc. and nothing extra over the agreement rates shall be paid for the same.

- 1.08 Unless otherwise specified in the bill of quantities, the rates for all items of work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water encountered from any source such as rains, floods, subsoil water table being high or due to any other cause whatsoever.
- 1.09 Any cement slurry added over base surface (or) for continuation of concreting for bond is added its cost is deemed to have in built in the item unless otherwise / explicitly stated and nothing extra shall be payable or extra cement considered with consumption on this account.
- 1.10 The rate for all items in which the use of cement is involved is inclusive of charges for curing.
- 1.11 The contractor shall clear the site thoroughly of all scaffolding materials and rubbish etc. left out of his work and dress the site around the building to the satisfaction of the Engineer before the work is considered as complete.
- 1.12 Rates for plastering work (excluding washed grit finish on external wall surfaces) shall include for making grooves, bands etc. wherever required and nothing extra shall be paid for the same.
- 1.13 The rates quoted for all brick/concrete work shall be deemed to include making openings and making good these with the same specifications as shown in drawings and/or as directed. No extra payment shall be made to the contractor on this account.
- 1.14 Rates for all concrete/plaster work shall include for making drip course moulding, grooves etc. wherever required and nothing extra shall be paid for the same.
- 1.15 Rates for flooring work shall include for laying the flooring in strips / simple designs wherever required and nothing extra shall be paid for the same.
- 1.16 The quoted rate shall be for finished items and shall be complete in all respects including the cost of all materials, labour, tools & plants, machinery etc., all taxes, duties, levies, octroi, royalty charges, statutory levies etc. applicable from time to time and any other item required but not mentioned here involved in the operations described above. The client/HSCC/Employer shall not be supplying any material, labour, plant etc. unless explicitly mentioned so.

2.0 **ELECTRICAL WORKS**

2.1 The electrical Installation work shall be carried out in accordance with Indian Standard Code of Practice for Electrical Wiring Installation IS: 732-1989 and IS: 2274-1963. It shall also be in conformity with the current Indian Electricity rules and regulations and requirements of the Local Electricity Supply Authority and Fire Insurance regulations, so far as these become applicable to the installation. Electrical work in general shall be carried out as per following CPWD Specifications with upto date amendment.

- Specifications for Electrical Works Part-I (Internal) by CPWD – 1994 or latest revision
- Specifications for Electrical Works Part-II (External) by CPWD – 1994 or latest revision
- Specifications for Electrical Works Part-III (Lift & escalators) by CPWD - 2003 or latest revision
- Specifications for Electrical Works Part-IV (Substation) by CPWD – 1994 or latest revision

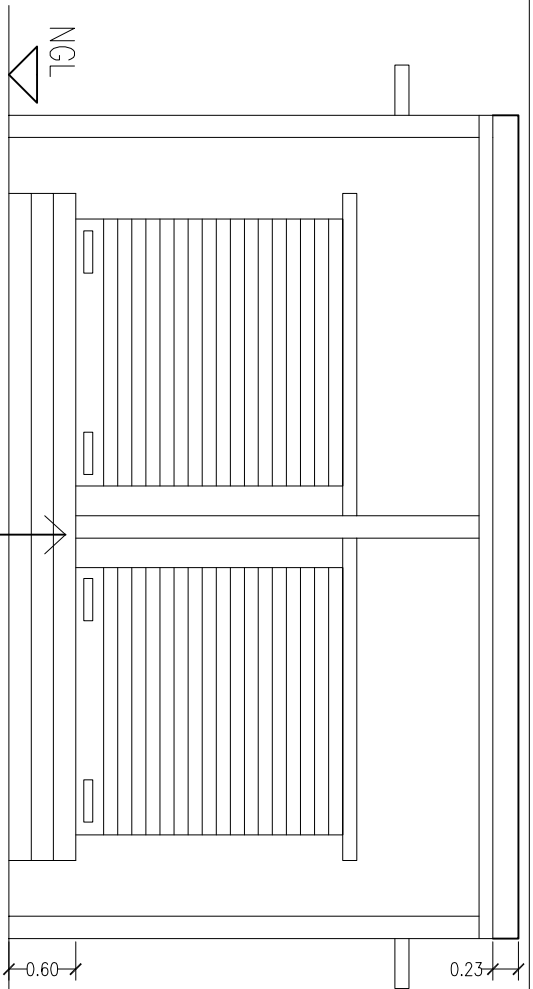
Wherever these specifications calls for a higher standard of material and or workmanship than those required by any of the above mentions regulations and specification then the specification here under shall take precedence over the said regulations and standards.

2.2 The scope of work includes testing & commissioning of all electrical installations, obtaining approvals from Chief Electrical Inspectors, Local Electricity Supply Authority, Pollution Control Board and any other statutory authorities required for the completion of electrical works.

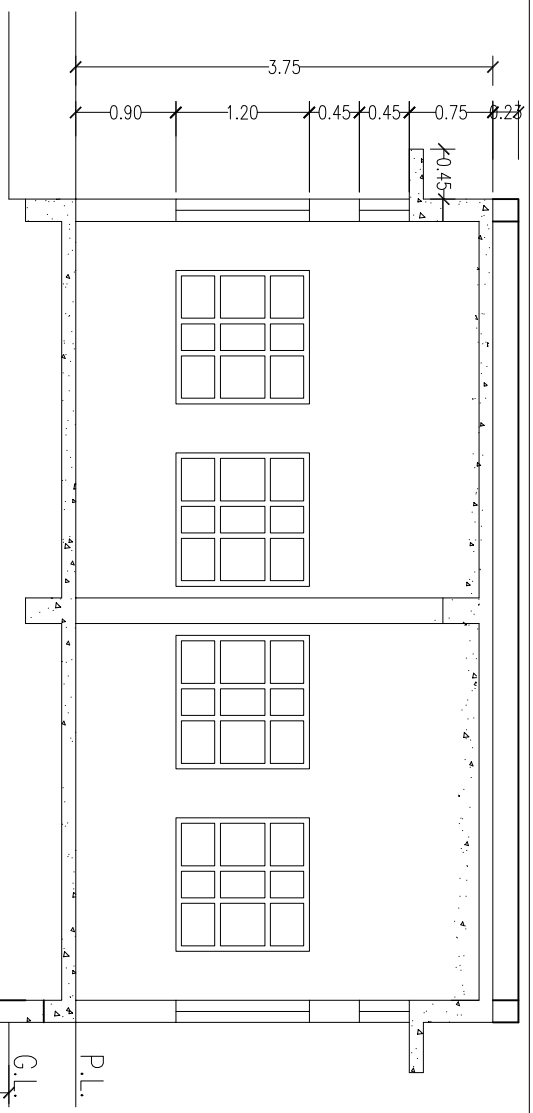
Tender Drawings

(Sub-station works)

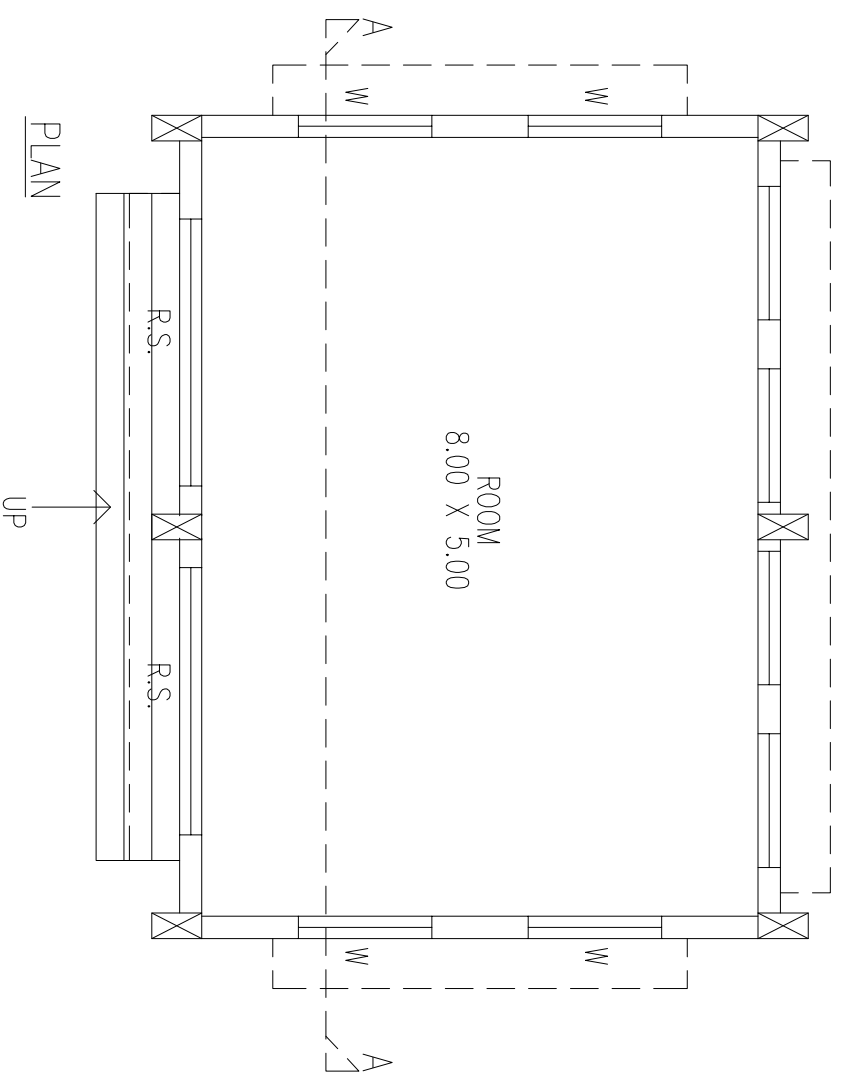
BSL-4 LAB MCC PUNE



FRONT ELEVATION



SECTION AT A-A

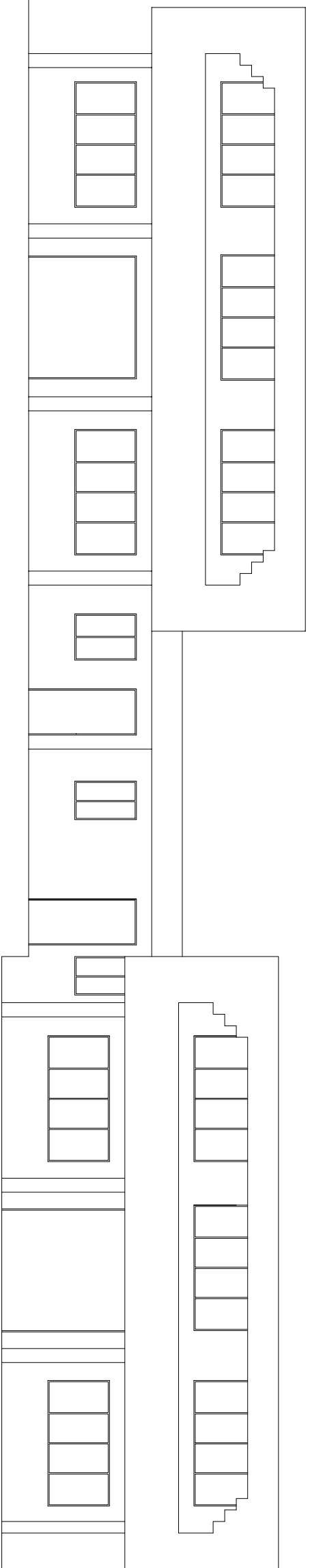


PLAN

MAIN FEATURES:-

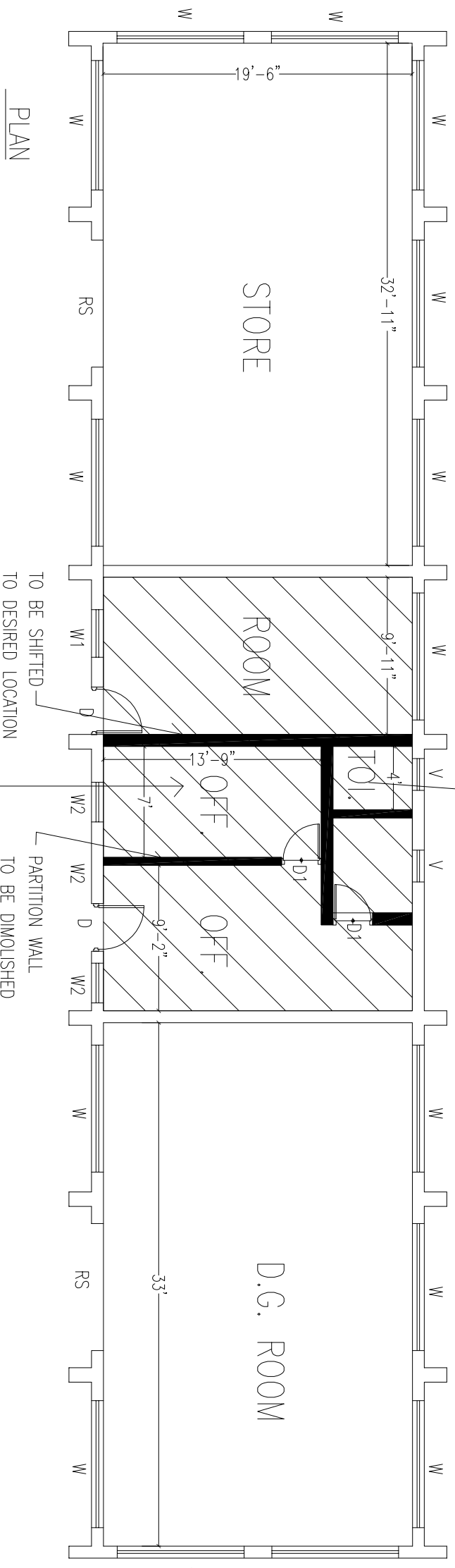
- 1.1 RCC Frame Structure, Stone Masonry with Cement Mortar 1:5 below plinth, 200 th. Solid concrete walls with C:Mortar 1:4 of class designation 50, IPS Flooring & Trenches, Internal cement plastering in ceiling and walls, External cement plastering uPVC Rain Water Pipes.
- 1.2 MS Windows and Ventilators with 5mm th. glass panes & 10mm dia grill and Rolling shutter(2.4m*3.0m) with 6mm laths.
- 1.3 Pointing work: Internal walls= Oil Bound Distemper, External walls= Water proofing paint (Snowcem)
- 1.4 Brick Bot Coba water-proofing at Terrace.
- 1.5 Plinth Protection..

TITLE :-PROPOSED NEW H.T. ROOM



FRONT ELEVATION

SIDE ELEVATION



PLAN

TOILET MAY BE RETAINED IF POSSIBLE

PARTITION WALL TO BE DIMOLISHED

EXISTING IPS FLOORING TO BE DEMOLISHED

NEW LEVEL OF FLOORING TO MATCH WITH ADJOINING STORE ROOM FLOORING

NAME OF CLIENT
MICROBIAL CONTAINMENT COMPLEX
 H.S.C.C. (INDIA) LTD.
 INDIAN COUNCIL OF MEDICAL RESEARCH
 SUS ROAD, PASHAN, PUNE - 411 021. (MAHARASHTRA)

CONTRACTOR
H.S.C.C. (INDIA) LTD.
 E-6(A) SECTOR - 1, MEDDA, ANDHRA (G.P.)

CONTENT OF DRAWING

H.T & TRANSFORMER ROOM
 IN EXISTING BUILDING

Amendment -1

HSCC (India) Limited.

(Consultants & Engineers for Mega Hospitals & Laboratories)

Plot No.6(A), Block-E, Sector-1, NOIDA - 201301 (U.P.)

Ph.Nos.: 0120-2542436-38,2542440,2542443, Fax:0120-2542447

No. HSCC/MCC/PG-III/2009

Dated 08 /12/2009

Notice Inviting Tender (NIT)

On behalf of "Microbial Containment Complex, Indian Council of Medical Research (ICMR) Pune, HSCC (INDIA) Ltd. invites sealed tenders in two bid system from the experienced contractors / firms for the following works:

Sl. No	Name of Work	Estimated Cost (Rs.)	Bid Security (Rs.)	Cost of document (Rs.)	Period of Completion	Tenders shall be available for sale from	Last date of submission of tenders	Date of opening of tender
1	Supply, installation, testing commissioning of 11 KV/ 433 Volts HT Electrification Works (including construction of one HT Room and up- gradation of existing HT Room) for the upcoming Bio safety laboratory level 4 at MCC Complex, 130/1Sus Road Pashan, Pune	Rs.66.0 Lacs	Rs.1.32 Lacs	Rs. 3000/-	Three Months	9.12.09 to 29.12.09 up to 4.00 PM at HSCC Corporate Office at Noida & HSCC Site Office at MCC, 130/1,Sus Road, Pashan, Pune	30.12.09 up to 3.00 PM at HSCC(I) Ltd., Corporate office at E-6(A), Sector-1, Noida	30.12.09 at 3.30 PM at HSCC(I) Ltd., Corporate office at E-6(A), Sector-1, Noida

Eligibility Criteria:

- (a) Average annual turnover during the last three years [2006-2007, 2007-2008, 2008-2009] shall be at least Rs 19.80 lakhs.
- (b) The contractor should possess experience of having successfully completed similar works meaning supply, installation, commissioning of 11 KV / 433 volts sub station work, during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following: -
 - 1 Three similar completed works each costing not less than the amount equal to 40% of estimated cost.
 - 2 Two similar completed works each costing not less than the amount equal to 50% of estimated cost.
 - 3 One similar completed work costing not less than the amount equal to 80% of estimated cost.

Applicants may obtain the tender documents on any working day on written request from HSCC at the above mentioned address and dates, against a non refundable fee of Rs. 3000/- payable in the form of DD/Banker's Cheque in favor of HSCC (INDIA) Ltd, from any Nationalized / Scheduled Bank payable at Noida (UP). The applicant may collect the documents in person with authorization letter or on request. HSCC will promptly dispatch the documents by courier on payment of an extra amount of Rs. 500/- over and above the said document fee of Rs. 3000/- (Rs. Three Thousand Only), but under no circumstances will be held responsible for postal delay and late delivery or loss of the documents so mailed. The applicants may see the tender documents during the sale period as referred above at HSCC corporate office, Noida.

The tender documents completed in all respects must be submitted in sealed envelope, either delivered by hand or by registered mail to HSCC(I) Ltd. E-6(A), Sector-1, Noida on or before due date and time as mentioned above. HSCC reserves the right to accept or reject any application without assigning any reason or incurring any liability whatsoever. The prospective participants are advised to regularly visit the HSCC web site www.hsccltd.co.in for notice / addendum / corrigendum/ amendments etc if any .No separate advertisement/ press notification will be made in this regard.

General Manager (PG-III)