TENDER FOR

"ELECTRICAL WORK RELATED TO PHYSICS LAB. AT HARISH-CHANDRA RESEARCH INSTITUTE, CHHATNAG ROAD, JHUNSI, ALLAHABAD -211 019"

PART- 1 (TECHNICAL BID)

TENDER NOTICE NO. HRI/07/2017

Harish-Chandra Research Institute

Chhatnag Road, Jhunsi, Allahabad

INVITING TENDER FOR

"ELECTRICAL WORK RELATED TO PHYSICS LAB." AT HARISH-CHANDRA RESEARCH INSTITUTE, ALLAHABAD

Bid Reference No.	:	NIT – HRI/07/2017
Last date and time for submission of bids	:	22.09.2017 up-to 1500 Hrs.
Date and time of opening of Bid	:	22.09.2017 up-to 1600 Hrs.
Place of Opening of Bids	:	Harish-Chandra Research Institute Chhatnag Road, Jhunsi, Allahabad-211019

The dates for submission and opening of the tender mentioned above are final. In case some other dates for these are mentioned elsewhere in the tender document, the above shall prevail over them.

Address for any clarification/communication :

Mr. Ajay Srivastava SO-C,
0532-2274333,
ajay@hri.res.in),

Mr. Manish Sharma SO-D,
0532-227 4358,
manish@hri.res.in)

ENGINEERING SECTION,

HARISH-CHANDRA RESEARCH
INSTITUTE, ALLAHABAD

This document contains : 35 Pages

It will be the responsibility of the bidders to check website ***http:/www.hri.res.in*** for any amendment through corrigendum in the tender document. In case of any amendment, bidders will have to incorporate the amendments in their bid accordingly.

Sd/-

Seal & Signature of Registrar

Harish-Chandra Research Institute

Chhatnag Road, Jhunsi, Allahabad

Name of work: "Electrical work related to Physics Lab." at Harish-Chandra Research Institute, Allahabad

Tender Notice No.: HRI/07/2017

I N D E X

Harish-Chandra Research Institute

Chhatnag Road, Jhunsi, Allahabad

Check list

Sl. No.	***Description***	***Party has to specify whether they have submitted the relevant details with their technical bid in YES or NO***
1.	Proof of valid 'A' class Electrical license ….(Ref. point no. 5a of terms & conditions)	
2.	Latest solvency certificate ….(Ref. point no. 5b of terms & conditions)	
3.	Proof of average annual turnover ….(Ref. point no. 5c of terms & conditions)	
4.	Experience of having successfully completed works ….(Ref. point no. 5d of terms & conditions)	
5.	Attested copy of PAN, GST registration ….(Ref. point no. 5e & 7 of terms & conditions)	
6	Earnest Money Deposit of Rs. 16000/- ….(Ref. point no. 13 of terms & conditions)	

Signature of the tenderer
Address & Seal

SECTION - I

NOTICE INVITING TENDERS

HARISH-CHANDRA RESEARCH INSTITUTE

CHHATNAG, ROAD, JHUNSI, ALLAHABAD – 211 019

TENDER NOTICE NO. HRI/07/2017

On behalf of the Director, Harish-Chandra Research Institute, sealed tenders are invited **(in Two bids)** from eligible **'A' Class approved Electrical License** contractors up to **3.00 p.m.** on **22.09.2017** and only technical bid shall be opened at **4.00 p.m.** on the same day for the work of "**Electrical work related to Physics Lab." at Harish-Chandra Research Institute, Allahabad.**

Estimated Cost	EMD	Performance Security	Security Deposit	Time of Completion	Tender Cost
Rs 8.00 lakh	**Rs. 16,000/-**	**@ 5% of tendered amount**	**@ 5% of tendered amount**	**2 Months**	**Rs. 520/-**

Interested parties may collect the Tender documents from the Accounts Officer, HRI on recommendation of Engineer, HRI on payment of tender cost (non-Refundable) in cash from **23.08.2017** to **21.09.2017** during working days (11.00 a.m. to 4.00 p.m.).

The party may also download the tender document from HRI web-site address: www.hri.res.in In that case they have to submit a Demand draft of the tender cost alongwith the technical bid of the tender. Without tender cost, tender will not be considered.

Director, HRI reserves the right to accept or reject any or all the Tenders without assigning any reason.

Sd/-
Registrar
HRI, Allahabad.

SECTION - II

TERMS & CONDITIONS

TERMS & CONDITIONS

Following instructions should be strictly followed while submitting your tender.

1. Your offer should valid for a period of **120 days** from the date of opening of technical bid.
2. Please note that your tender will not be considered unless it is received in sealed envelope super scribed with tender number and due date. It should be put in the Tender Box kept at Reception of Institute building, Harish-Chandra Research Institute at Chhatnag Road, Jhunsi, Allahabad – 211 019. It should be noted that the delay of receiving of tender by Post will not be entertained.
3. Deadline for receipt of tenders (Part-1 & Part-2) is **3.00 p.m.** on or before **22.09.2017.** Late submission will not be entertained on any account. Part-1 (Technical bid) and part-2 (Price bid) will be in two separate envelop.
4. The Part–I of tender will be opened at the above office at **4.00 p.m.** on **22.09.2017** and your authorized representatives can be present at the time when the tenders are so opened and opening time of Part-2 (Price Bid) will be intimated later on to qualified bidder of Part-1 only. If on the day of opening of tender, holiday is declared in HRI then tender will be opened on next working day at same time.
5. Tenderer has to submit the following with the technical bid.
   a. Proof of valid 'A' class Electrical license.
   b. Latest solvency certificate of minimum Rs. 3.0 lakh from any scheduled bank.
   c. Proof of average annual turnover of not less than Rs. 8.0 lakh during last three years ending 31.03.2017
      (i) Year 2014-2015
      (ii) Year 2015-2016
      (iii) Year 2016-2017
   d. Experience of having successfully completed works during last seven years ending 21.09.2017. The party has to submit work order copy, Performance and completion certificate of the concerned work. Without required experience party will not be considered in this tender:
      - 3 similar works completed costing not less than Rs. 3.0 lakh each OR
      - 2 similar works completed costing not less than Rs. 5.0 lakh each OR
      - 1 similar works completed costing not less than Rs. 6.5 lakh

      Similar work shall mean: Electrical installation work which includes internal electrification works & other associated building works. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the date of completion to last date of receipt of application for tenders.

      and

      One completed similar work (either part of (c) or a separate one) costing not less than Rs. 3.0 lakh with some Central/State Government Organization/Central Autonomous Body/Central Public Sector undertaking during last seven years ending 21.09.2017.
   e. Full address of firm along with /Telephone no./Fax no./E-mail address :
   f. Attested copy of PAN of the Firm
6. Tender containing erasures or alterations will not be considered.
7. The party should be registered under GST. They have to submit a proof of Registration with their technical bid otherwise they will not be considered in this tender.

8. If bidder do not quote rate of any item under schedule of quantities or left the rate column blank then their bid will be treated as unresponsive & not be considered.

9. The tender must be signed by the authorized persons only (Proprietor/Power of attorney/By all partners etc. as applicable).

10. All labour regulation applicable by the central Labour Commissioner of Govt. of India shall be adhered to strictly.

11. The completion period of work is 02 months and will be considered from 7 days of issue of work order.

12. **In case the contractor leaves the work or shows unwillingness to do work within stipulated contract period then EMD, Performance security & Security money deposited by party will be forfeited to HRI.**

13. A deposit at call Receipt or Demand Draft/FDR of scheduled Bank guaranteed by the Reserve Bank of India for the **Earnest Money Deposit of Rs. 16,000/-** in favour of Registrar, HRI, Allahabad is to be enclosed with the Tender Document (part-1) at the time of submission. No exemption in earnest money shall be given. All tenders submitted without requisite amount of earnest money shall be rejected.

14. An amount equal to 5% of tendered value towards Security Deposit shall be recovered. This amount will be recovered @ 10% from your each bill till the amount deducted is equal to concerned security deposit amount. The security money will be returned after 12 months from the date of completion of work and submission of certificate by contractor that there is no statutory liability (taxes etc.) due on him for this work. In addition the contractor shall be required to deposit an amount equal to 5% of the tendered value of the contract as performance security within the period prescribed for commencement of the work in the letter of award issued to contractor and will be released alongwith the final bill.

15. The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor. The work shall throughout the stipulated period of the contract be proceeded with all due diligence. For delay in work, the contractor shall pay a compensation an amount equal to 0.25 percent of the order value per week from the end of stipulated period or (extended the period if any) of contract till the actual completion of work. The penalty so impose should not be more than 10% value of order. If it is found that party is not taking interest during delay period for completing the work then competent authority of Institute may also take decision for terminating the order/contract of concerned work. In this case, their Performance security and any other Security money may also be forfeited.

16. The schedule of quantity is indicative are tentative. Actual quantity will vary based on the actual requirement.

17. Contractor has to make their own arrangement for staying their labourers as Institute will not allow any labourers inside the campus after working period.

18. The financial bid will be opened only of the qualified bidder under technical bids. The selection criteria under financial bid will be based on lowest total quoted amount of the party. However Director, HRI may change this clause on special condition with justified reason.

19. **Payment terms:** Payment will be made as per following:

    a) 75% against the imperishable material received at site, valued at item rates given in 'Schedule of Quantities' attached.

b) Balance as per monthly running bills subject to proportionate adjustment of advance for materials as at (a) above and maximum limit of 95% of work order value.

c) Remaining 5% after completion of work duly certified by the competent authority on submission of final bill subject to deductions on account of taxes, security deposits etc.

20. As the Institute will deduct only TDS therefore the liability of depositing of the other taxes (if any) related to this work will be totally on contractor. However, other taxes may be reimbursed by HRI on the proof of depositing the tax for this work to concerned Department by contractor.

21. **In case any discrepancy between terms & conditions and General condition of tender then terms & condition of tender shall take precedence.**

22. Party has to ensure gate entry (at Security gate, HRI) for any material before bringing at site. In this connection, they have to submit challan copy of materials in Engineering office at HRI for records.

23. Don't detach any paper from the tender document and put the signature & seal at all the papers of the tender document.

24. For any information/clarification in this tender, you may contact Engineering Section, HARISH-CHANDRA RESEARCH INSTITUTE, during office hrs. (9.00 a.m. to 5.30 p.m.) on any working days.

25. Decision of the Director of the Institute will be final & binding for all concerned.

26. Director, Harish-Chandra Research Institute reserves the right to reject any or all tenders without assigning any reason whatsoever. Harish-Chandra Research Institute would not be under any obligation to give any clarifications to those contractors whose tenders are rejected.

27. All disputes will be subject to Allahabad jurisdiction.

Note: The contractor should acknowledge that he has satisfied himself as to the nature and location of the work before submitting the tender. They should also acknowledge that they are quoting their rate properly after knowing all terms & conditions of tender.

DECLARATION BY THE CONTRACTOR

It is hereby declared that I/We the undersigned, have read and examined all the terms and conditions etc. of the tender document for which I/We have signed and submitted the tender under proper lawful Power of Attorney. It is also certified that all the terms and conditions of the tender document are fully acceptable to me/us and I/We will abide by the conditions from serial no. 1 to 27. This is also certified that I/We/our principal manufacturing firms have no objection in signing the contract if the opportunity for the items against this tender is given to me/us.

Date: Signature:

Address: Name:
Designation:
On behalf of company Seal:

SECTION - III

GENERAL RULES AND DIRECTIONS

GENERAL RULES AND DIRECTIONS

1. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must signed on his behalf by a person holding a power-of attorney authorising him to do so, such power of attorney to be produced with the tender and it must disclose that the firm is duly registered under the Indian Partnership Act.

2. Receipts for payments made on account of work when executed by a firm must also be signed by the several partners except where the contractors are described in their tender as a firm in which case the receipts must be signed in the name of the partners or by some other person having authority to give effectual receipts for the firm.

3. Any person who submits a tender shall fill up the usual printed form, stating at what rate he is willing to undertaken each item of the work. Tenders, which proposes any alteration in the work specified in the said form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other condition of any sort including conditional rebates, will be summarily rejected. However, tenders with unconditional rebates(s) will be acceptable. Tenders shall have the name and of the works to which they refer, written on the envelopes.

4. The officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest tender.

5. If it is found that the tender is not submitted in proper manner or contains too much corrections and/or absurd rates or amount, it would be open for the officer inviting tenders to take suitable disciplinary action against the contractor. The tenderers shall sign a declaration under the official Secret Act for maintaining secrecy of the tender documents, drawings or any other records connected with the work given to them. The unsuccessful tenderers shall return all the drawings given to them.

CLAUSES OF CONTRACT

CLAUSE 1: PERFORMANCE GUARANTEE

i The contractor shall submit an irrevocable Performance Guarantee of 5% (Five percent of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within 15 days of issue of letter of intent and / or work order. This period can be further extended by the Engineer-in-charge upto a maximum period of 7 days on written request of the contractor stating the reason for delays in procuring the bank Guarantee, to the satisfaction of the Engineer-in-charge. This guarantee shall be in the form of Government Securities or fixed deposit receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the to HRI to make good the deficit.

ii A letter of intent shall be issued in the first instance informing the successful tenderer of the decision of the competent authority to accept his tender and the award letter shall be issued only after the performance Guarantee in any of the prescribed form is received. In case of failure by the contractor to furnish the performance guarantee within the specified period. Director, HRI shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money absolutely.

iii The performance Guarantee shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets enlarged, the contractor shall get the validity of performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest.

CLAUSE 1-A: RECOVERY OF SECURITY DEPOSIT

The person (s) whose tender(s) may be accepted (hereinafter called the contractor) shall permit HRI at the time of making any payment to him for work done under the contract to deduct a sum at the rate of 10% of the gross amount to each running bill till the sum alongwith the sum already deposited as earnest money, will amount to security deposit of 5% of the tendered value of the work. Such deductions will be made and held by HRI by way of Security Deposit unless he has / they have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed Deposit Receipts. In case a fixed deposit receipt of any bank is furnished by the contractor to the Government as part of the security deposit and the bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the to the HRI to make good the deficit.

All compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising there from or from any sums which may be due to or may become due to the contractor by HRI or any account whatsoever and in the events of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or flexed deposit receipt tendered by the state Bank of India or by scheduled banks or Government Securities (if deposited for more than 12 months) endorsed in favour the Accounts Officer, HRI any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills of the contractor at the rates mentioned above and the Earnest money if deposited in cash at the time of tenders will be treated a part of the Security Deposit.

CLAUSE 2: COMPENSATION FOR DELAY AND BUFFER PERIOD:

The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be deemed to be of the essence of the contract on the part of the contractor. The work shall through out the stipulated period of the contract be proceeded with all due diligence and the contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Engineer-in-charge (whose decision in writing shall be final) may decide on the amount of the estimated cost of the whole work as shown in the tender, for every day that the work remains uncommented or unfinished after the proper dates. And further to ensure good progress during the execution of the work, the contractor shall be bound in all cases in which the time allowed for any work exceeds, one month (say for special jobs) to complete one eighth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed; three eighths of the work, before one half of such time has elapsed, and three fourths of the work, before three fourths of such time has elapsed. However, for special jobs if a time schedule has been submitted by the contractor and the same has been accepted by the Engineer-in-charge , the contractor shall comply with the said time schedule, In the event of the contractor failing to comply with this condition, he shall be liable to pay as compensation an amount equal to one percent or such smaller amount as the Engineer-in-charge (whose decision in writing shall be final) may decide on the said estimated cost of the whole work for every day that the due quantity of work remains incomplete. Provided always that the entire amount of compensating to be paid under the provision of this clause shall not exceed ten percent on the estimated cost of the work as shown in the tender.

BUFFER PERIOD:

Compensation will be recovered from the contractor if the work is not completed within 10 days after due date of completion. The buffer period of 10 days relates to only to the final completion of the work as whole and does not apply to the interim schedule of progress. In the event of the work being completed beyond the period of 10 days after the date of completion specified in the tender, the entire period inclusive of the buffer period shall be taken into account for calculating the amount of compensation.

CLAUSE-3: DETERMINATION OF CONTRACT: POWERS OF ENGINEERS –IN-CHARGE.

Subject to other provisions contained in this clause, the Engineer-in-charge may, without prejudice to his any other right or remedy against the contractor in respect of any delay, inferior workmanship, otherwise or to any rights or remedies under any of the provisions of this contract or otherwise and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

i. If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or un-workman-like manner shall omit to comply with the requirements of such notice for a period of seven days thereafter or if the contractor shall delay or suspend the execution of the work so that either in the judgment of the Engineer-in-charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion or he has already failed to complete the work by that date.

ii. If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

iii. If the contractor commits breach of any of the terms and conditions of this contract.

iv. If the contractor commits any acts mentioned in Clause 2 hereof.

When the contractor has made himself liable for action under any of the cases aforesaid, the Engineer-in-Charge on behalf of the Director, HRI have powers:

a. To determine or rescind the contract as aforesaid (of which termination or rescission notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination or rescission, the Earnest Money Deposit, the Security Deposit already recovered and Performance Guarantee under the contract, shall be liable to be forfeited, and shall be absolutely at the disposal of the HRI.

b. To employee labour paid by the HRI and to supply materials to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-charge shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respect in the same manner and at the same rates as if it has been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in-Charge as to the value of the work done shall be final and conclusive against the contractor, provided always that action under the sub-clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the Department are less than the amount payable to the contractor at his agreement rates, the difference should not be paid to the contractor.

c. After giving notice to the contractor to measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hands and to give it to another contract to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Engineer-in-Charge shall be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by HRI under this contract or on any other account whatsoever or from his security deposit or the proceeds of sales thereof or a sufficient part thereof as the case may be.

In the event of any one or more of the above courses being adopted by the Engineer-in-charges the contractor shall have no claim to compensation for any loss sustained by him reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the

contract. And incase action is taken under any of the provisions aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereto for actually performed under this contract unless and until the Engineer-in-charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

CLAUSE 3A: In case the work cannot be started due to reasons not within the control of the contractor within $1/8^{th}$ of the stipulated time for completion of work, either party may close the contract. In such eventuality, the Earnest Money Deposit and the Performance Guarantee of the contractor shall be refunded, but no payment on account of interest, loss of profit or damages etc. shall be payable at all.

CLAUSE 4: Contractor liable to pay compensation even if action not taken under Clause 3:

In any case in which any of the powers conferred upon the Engineer-in-Charge by clause 3 thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of or (at sole discretion of the Engineer-in-Charge which shall be final) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge all or any tools, plant, materials and stores, in or upon the works, or the site thereof, belonging to the contractor, or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-charge whose certificate thereof shall be final, otherwise the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificates of the Engineer-in-Charge as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

CLAUSE 5: TIME EXTENSION AND FOR DELAY:

The time allowed for execution of the works as stipulated in the NIT / Tender documents, or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in letter of acceptance or from the date of handing over of the site whichever is later. If the contractor commits default in commencing the execution of the work as aforesaid, HRI shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money performance guarantee absolutely.

5.1 As soon as possible after the contract is concluded the Contractor shall submit a Time and Progress Chart for each mile stone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge an the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones mutually agreed as above.

5.2 If the works (s) be delayed by:

(i) Force majeure, or

(ii) Abnormally bad weather, or

(iii) Serious loss or damage by fire, or

(iv) Civil commotion, local commotion of workmen, strike or lock out, affecting any of the trades employed on the work, or

(v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract, or

(vi) Non availability or break down of tools and plant to be supplied or supplied by HRI or

(vii) Non-availability or break down of tools and plant to be supplied or supplied by HRI or

(viii) Any other cause which, in the absolute discretion of the Engineer-in-Charge is beyond the Contractor's control.

Then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

5.3 Request for rescheduling of Mile stones and extension of time, to be eligible for consideration, shall be made by the contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

In any such case the Engineer-in- Charge may give a fair and reasonable extension of time and reschedule the mile stones for completion of work. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 2 months of the date of receipt of such request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the engineer-in-Charge and this shall be binding on the contractor.

CLAUSE 6: COMPLETION CERTIFICATE & COMPLETION PLANS.

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge. On the receipt of such notice the Engineer-in-Charge shall inspect the work, and if there is no defect in the work shall furnish the contractor with a certificate of completion otherwise a provisional certificate of completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued but no certificate of completion, provisional or otherwise, shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed, all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements, required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows walls, floors or other parts of any building, in upon or about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof, and not until the work shall have been measured by the Engineer-in-charge. If the contractor shall fail to comply with the requirements of this clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of the work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish, etc, and dispose off the same as he thinks fit and clean off such dirt as aforesaid; and the contractor shall have no claim in respect of any such scaffolding or surplus material as aforesaid except for any sum actually realized by the sale thereof.

6. A: CONTRACTOR TO KEEP SITE CLEAN: When the work is carried out, the splashes and droppings from white washing, colour washing, painting etc. on wall, floors, doors, windows etc. shall be removed and the surface cleaned simultaneously with the completion of these item of work in the individual rooms, quarters or premises etc. where the work is done without waiting for the actual completion of all other items of work in contract. In case the contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this work done at the cost of the contractor either departmentally or through another agency. Before taking such action, the Engineer-in-Charge shall give two days notice in writing to the contractor.

CLAUSE 7: MEASURMENTS OF WORK & SUBMISSION OF BILLS:

A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-Charge for all works executed in the previous months, and the Engineer-in-Charge shall take or cause to be taken the requisite measurement for the purpose of having the same verified and the claim, as far as admissible, adjusted as far as possible, before the expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer-in-Charge may

depute within 7 days of the date fixed as aforesaid, a subordinate to measure up the said work in the presence of the contractor whose countersignature to the measurement list will be sufficient warrant; and the Engineer-in –Charge at his discretion on the basis of a certificate from the Engineer to the effect that the work has been completed upto the level in question.

CLAUSE 7A: MEASUREMENT IN ABSENCE OF THE CONTRACTOR:

Before taking any measurement of any work as has been referred in above clause thereof, the Engineer-in-Charge or a subordinate deputed by him shall give reasonable notice to the contractor. If the contractor fails to attend at the measurements after such notice or fails to countersign or to record the difference within a week from the date of measurement in the manner required by the Engineer-in-Charge then in any such event the measurements taken by the Engineer-in-Charge or by subordinate deputed by the him as the case may be shall be final and biding on the contractor and the contractor shall have no right to dispute the same.

CAUSE 8: EXCAVATED /DISMANTLED MATERIALS WILL BE GOVT. PROPERTY: The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work etc. as HRI property and such materials shall be disposed off to the best advantage of HRI according to the instructions in writing issued by the Engineer-in-Charge.

CLAUSE 9: WORK TO BE EXECUTED AS PER SPECIFICATIONS, DRAWINGS, ORDERS, ETC:

The contractor shall execute the whole and every part of the work in the most substantial and otherwise in every respect in strict accordance with the specifications.

Scope of Work

1.0 Earth Excavation

The excavation of trenches shall be made in all types of soil and soft rock and no extra cost shall be paid for cutting the trench in soft rock or hard soil. The soil is generally gravelly and rocks are not likely to be encountered to the depths in which cables will be laid. Backfilling and consolidating shall be done as directed by the Engineer-in-Charge.

The earth work shall consist of all works involved in site grading, excavation, shoring, filling around foundation, disposal of soil as directed by Engineer-in-Charge and other such relevant items. Excavation shall be done to lines and levels as directed by Engineer-in-Charge. The scope of excavation of trench shall also include cutting of bushes and trees in the route and protecting other existing properties if exposed.

All excavation work shall be inspected and approved by the Engineer-in-Charge before any further works in excavated areas are allowed to commence.

2.0 Supply, installation, testing and commissioning of cables

The contractor shall supply cables as specified. He will supply, install, lay, dress/clamp different sizes of all the 1100 Volts grade aluminium/copper conductor, PVC/XLPE insulated, power/control and jelly filled telephone armoured OFC cable. The cable supplied shall conform to the specifications mentioned in the tender.

Cable ends shall never be left open cable shall be sealed by accepted means. All the cables, cable glands, Crimping type aluminium lugs, GI clamps and all necessary tools and materials for completing the cable laying and termination work shall be supplied by the Contractor without any extra cost.

PVC bushes, cable identification tags and all other consumable items, tools, plants etc. required for the satisfactory completion of the job shall be provided by the Contractor without any extra cost.

2.1 Installation of cables in ground

The scope of work shall include transporting the cable from place of storage to the laying locations, laying the cable in the excavated trench, covering with river sand and table moulded chamber bricks including supply of river sand and bricks, testing and commissioning.

MV power cables/telephone cable shall be laid at a depth of 750/600 mm from ground level. The trench for MV/telephone cable shall have a depth of 825/675 mm respectively and sufficient width.

In the excavated cable trench, river sand shall be filled up for 75 mm height and the top levels of the river sand bed shall be 750 mm for MV cable and 600 mm for telephone cable. Before filling the river sand bed, the bottom of the trench should be carefully leveled and shall be free from stones, but if gradients and changes of depth are unavoidable, they should be gradual.

Cables shall be laid using suitable rollers and enough care shall be taken not to damage the cables. The cable shall be laid on the river sand bed, straightened and dressed neatly and covered on sides with standard table moulded brick. River sand will be filled up on sides and top of the cable (75 mm all around the cable). Then cable shall be covered with standard brick on all sides.

At bends and curves, bricks cut to shape will be used to avoid gap in the top cover. The cables shall be grouped and installed as per the drawing enclosed. Cable markers as approved by the Engineer-in-Charge shall be provided at location as directed by Engineer-in-Charge which will be measured separately. Each cable shall be laid separately and no cables to be combined in one compartment.

After the cables have been laid and before the trench is filled in, all joints and cable positions should be carefully plotted. The requisite protective covering will then be provided. The excavated soil shall be refilled and it is advisable to leave a crown of earth not les than 50 mm in the centre and tapering towards the sides of the trench. This allows for subsidence. The crown of earth should not exceed, however 0.1 Mtr. as it would then be hazardous to vehicular traffic.

2.2 Installation of cable in trenches, on walls, poles, etc.

The scope of work includes the cost of labour for transporting the cable from place of storage to the laying location, installing the cable in built up trench, on brick and RCC walls, on RCC poles, embedded pipes and supply of clamps and fixing materials.

In built up trenches cables shall be installed on cable supports/racks. The cable shall be properly dressed and clamped. Clamps and spacers shall be Hot Dipped Galvanized. Clamps shall be made out of 25 x 3 mm flats and spacers shall be 6 mm thick.

Wherever cable passes through Hume pipes, after pulling the cables the pipe ends shall be sealed. Where the cables pass through the floor of chambers and in such other situation, the contractor shall seal cable holes in a manner approved by Engineer-in-Charge. Wherever cables pass through roads, nallahs, etc. They must be protected by RCC Hume pipe which will be provided by other agencies.

2.3 Power and control Cabling

Arrangement shall be provided in the switchgear to receive, support clamp and terminate specified aluminum/copper conductor PVC/XLPE insulated armoured Power and control cables or / and conduits from bottom and top for all outgoing circuits.

Power terminals for connecting the cables shall be suitably extended to the rear of the switchgear assembly/to the cable chamber so that the cables do not have to pass over bus bars or other obstructions.

Removable gasketed gland plates of sheet steel shall be provided to receive the cables. The schematic diagrams indicate the bus/cable sizes. The clearance to the cable end terminal from the gland plate shall be adequate for the cable sizes indicated in the schematic diagrams but shall not be less than 300 mm.

2.4 End Termination

Tenderer has to make the end termination suitable for Copper/aluminium Cable. The Cable Gland should be of flameproof double compression, whether proof, nichel plated brass cable gland suitable for XLPE cables as mentioned in Schedule of Quantity of tender document. Cable lugs should be of crimping type heavy duty long barrel tinned copper/aluminium lugs suitable for all copper/aluminium cable as mentioned in Schedule of Quantity of tender document.

3. Supply and Installation of earthing conductor

The earthing conductor/flats/wire shall be installed in built up trenches/wall, etc or laid one meter below ground.

The scope of work includes excavation and back filling of soil, connections and providing GI spacers and clamps and the cost of supply, transportation and installation of materials like earth conductor/flats/wire, brass bolts, tinned copper crimping lugs for termination, etc.

The conductors/flats/wire will connect the various equipment bodies to the earth pits. They will also interconnect the earth pits. Straight jointing if required shall also be through crimping type tinned copper ferrules.

In case of flats all the joints shall be made using cad weld/bracing process. At equipment and earth pit end where disconnections of testing are frequently required, joint shall be provided with brass bolts and washers. Wherever bolted joints are adopted, the jointing surface shall be tinned after fabrication and drilling.

The earth conductor can be run along power cables wherever feasible.

4. Supply and installation of earth electrodes (Pit)

Instillation of earth pit shall be carried out in accordance with the IS: 3043 and as per the drawing. The earth pit shall be located at a distance of at least 2.5 m away from the pillar box/house. To facilitate watering the pit, a masonry compartment shall be made with funnel and RCC cover as per the drawing. After installation, the earthing resistance of each earth pit shall be measured after three days of the completion of earthing work and the value should confirm to regulations.

The rat quoted for supply, installation and testing of earth pit shall include earth excavation, erecting the electrode, soil treatment with betonies and charcoal, earth connections, testing and the cost of materials like electrode assembly, betonies, charcoal, concreting materials, brick, fasteners, funnel and mesh for watering (for plate electrode), RCC cover for earth pit, etc.

5. WIRING

5.1 Generally all conductors used in circuit shall be stranded and PVC insulated confirming to ISS make approved by the Engineer-in-charge. " Looping back " system of wiring should be executed without any joints in intermediate run. No bare or twisted joints shall be made at any location except through approved mechanical connectors in suitable junction boxes. End connection of wires connection switches sockets etc. Should be through crimping pins only.

5.2 Utmost care shall be taken to avoid scratches nicks to PVC which easily cause breakage, circular outs of the insulation shall be avoided. The insulation should be 'Skinne ' back with tools from the cut and means of earthing clamps efficiently fastened to conduit pipe for perfect continuity served from the conductor outwards. It should be removed by shaving it off like sharpening a pencil and not by cutting it square or ranging since nicking of wire may result in the end breaking off.

5.3 Suitable inhibiting grease should be applied on exposed conductor to avoid oxide film.

6. LED Light Fixture

LED light fixture supplied by vender should be as per specification given below in the tender document

a. **Detailed Specification of LED Panel light 24 watt (Square)**

Type	: LED
Input Power	: 24 watt
Operating voltage	: AC 90V – 300v, 50Hz
Shape	: Square
Power Factor	: More than 0.95
Light output	: 1800 lumens
Color rendering index	: More than 85
Color Temperature	: 6500K
Operating temperature	: -20 degree C -60 degree C
Size	: 1' x1'
Frame	: Extruded Aluminum Frame
Other features	: Eco-friendly, Energy Saving, Long life span

b. Detailed Specification of LED Surface down light 11 watt Cicular type

Type	: LED
Input Power	: 11 watt
Operating voltage	: AC 90V – 300v, 50Hz
Shape	: Round
Power Factor	: More than 0.90
Light output	: 530 lumens
Color rendering index	: More than 80
Color Temperature	: 6500K
Operating temperature	: -20 degree C -60 degree C
Size	: 117 (dia) x 39
Other features	: Eco-friendly, Energy Saving, Long life span

c. Detailed Specification of LED tube light 22 watt 1200mm T5

Type	: LED Tube Light
Rated Power	: 22 watt
Operating voltage	: AC 90V – 300v, 50Hz
Shape	: T5
Light output	: 1700-1900 lumens
Color rendering index	: More than 80
Color Temperature	: 6500K
Operating temperature	: -20 degree C -60 degree C
Size	: 26.5 x 1200mm (length)
Other features	: Lower consumption, Eco-friendly, Energy Saving, No uv radiation

7. MINIATURE CIRCUIT BREAKERS: (Tipping Type)

The MCB's to be used in the distribution board shall be of completely moulded design suitable for operation at 240/415 volts 50 Hz system. The capacity shall be 9 KA and where required, these shall be backed by H.R.C. Fuse links of adequate capacity. The MCB's shall have overload and short circuit protection. Type test certificates from independent authorities shall be submitted with the tender. The MCB time current characteristic shall co-ordinate with H.R.C. Fuse/PVC cable characteristics unit shall comply with latest edition of IS 8828, BS 3871, VDE 0641 etc., and latest test reports from CPRI etc. shall be submitted along with the tender.

8. FLAT DISTRIBUTION BOARDS:

Distribution boards shall be double door & flush mounting, totally enclosed dust and vermin proof and shall comprise of miniature circuit breakers, Neutral link & Earth link as per detailed in the schedule of quantities.

All outgoing M.C.B.'s shall be connected to the bus bar on the live side. The bus-bar shall be of electrical grade copper having a minimum current density of 800 A/sq. inch and with PVC sleeves. The MCB arrangement shall be mounted on a frame work.

9. CUBICLE TYPE EXTENSION BOARDS:

All type panels shall have rigid supporting frame adequately braced, over which sheet metal shall be neatly secured. All switches, distribution boards etc., shall be neatly arranged on the panels and all connections made from the back of the switches. The panels shall be rendered dust and permit proof. The interior of the panels shall not be accessible to unauthorized persons.

Panel shall be made from heavy gauge sheet enclosed board of 2 mm thick highly galvanized and treated to prevent damage due to moisture, corrosion etc. GI sheets need only for outdoor panels.

10. Conduits and Conduit Accessories:

Electric resistance and / or gas welded heavy gauge rigid steel conduits as specified in drawing and schedule of quantities conforming to IS 1653-1964 (with latest amendment) only should be used endless specified. All conduit pipes shall be finished with stove enameled or galvanized as per requirements in drawings/schedule of quantities.

The inside of conduit should be clean and smooth without any burrs which may damage the insulation of wires.

The minimum size of conduit to be used for installation shall be 19 mm dia. For concealed conduit installation where conduits are not embedded by Civil contractor, the minimum size of conduit used shall be 25 mm dia unless otherwise specified.

The conduit accessories and fitting shall be made of heavy gauge steel or cast iron, screwed type with smooth finish conforming to relevant ISS. Deep Junction boxes should be used in case of concealed conduit installation. In case junction box having more number of ways than required at a particular place the blank way should be plugged with MS screwed plugs. The threaded hub of conduit junction boxes should not be less than 15 mm.

Flexible conduits, wherever specified shall be of approved quality water tight and suitable for indoor and outdoor duty.

11. Data networking

This document defines the networking system and sub system component to include Cable termination hardware, supporting hardware and miscellany required to furnish & to installed a complete cabling infrastructure supporting data. It is responsibility of the vender to propose any and all the item required for a complete system whether or not it is identified in the specification and bill of materials attached to this specification. All the items must be used from an ISO certified manufacturer. The compliance statement for all the technical specification listed in the document must be provided on the OEM's letter head.

12. DEVIATIONS

Deviations contemplated by the Tenderer, if any, from the specification shall be spelt out clause wise clearly in the offer. Wherever deviations are not clearly mentioned it will be deemed that the offered equipment will fully comply with the equipment specifications irrespective of whether the literature enclosed with the offer agrees or not.

LIST OF APPROVED MATERIALS & BRANDS TO BE USED FOR WORKS

Sl. No.	Materials	Makes
1	MS black enameled/galvanized Steel conduits	AKG/BEC/Tarun
2	Modular switches, socket outlets and wiring accessories with moulded cover plate (Colour approval shall be done by project Manager/Architect)	MK (Wraparound Plus)
3	Data Outlets	D-Link/Tyco/Avaya
4	A/C Outlets	MDS-Legrand/Crabtree/MK
5	MCB/ELCB/RCCB/DB's	MDS-Legrand/Hager/Schneider (Multiq)
6	MCCB	L&T-U Power/GE/ABB (E-max)/Schneider (Masterpact NW)/Schneider (3WL)
7	Data & Telephone wires	Avaya/Delton/D-link
8	Data Outlets	D-Link/Siemen/Avaya
9	Patch Cord	Avaya/Clipsal/Siemen/AMP/Croning/Aamberned
10	MV Cables	Havells/FGI/HCL
11	MV cable Termination/Glands	Comet/Stripwell/Baliga
12	Wire & cable (Multi-strand & fire proof)	Finolex/RR/KEI/Havells
13	Control cable Termination	Elemex/Wega/Phonex
14	Light Fixtures	Syska /Philips/Osram
15	Ceiling/Wall Fans	Usha/Crompton/Khaitan/Greaves/Orient

The contractor shall have to use the mentioned materials and brands only for all the items to be executed in the NIT. Nothing extra shall be paid to the contractor for using these materials & brands, the contractor should quote his rates keeping these items in mind. No variation in these shall be allowed.

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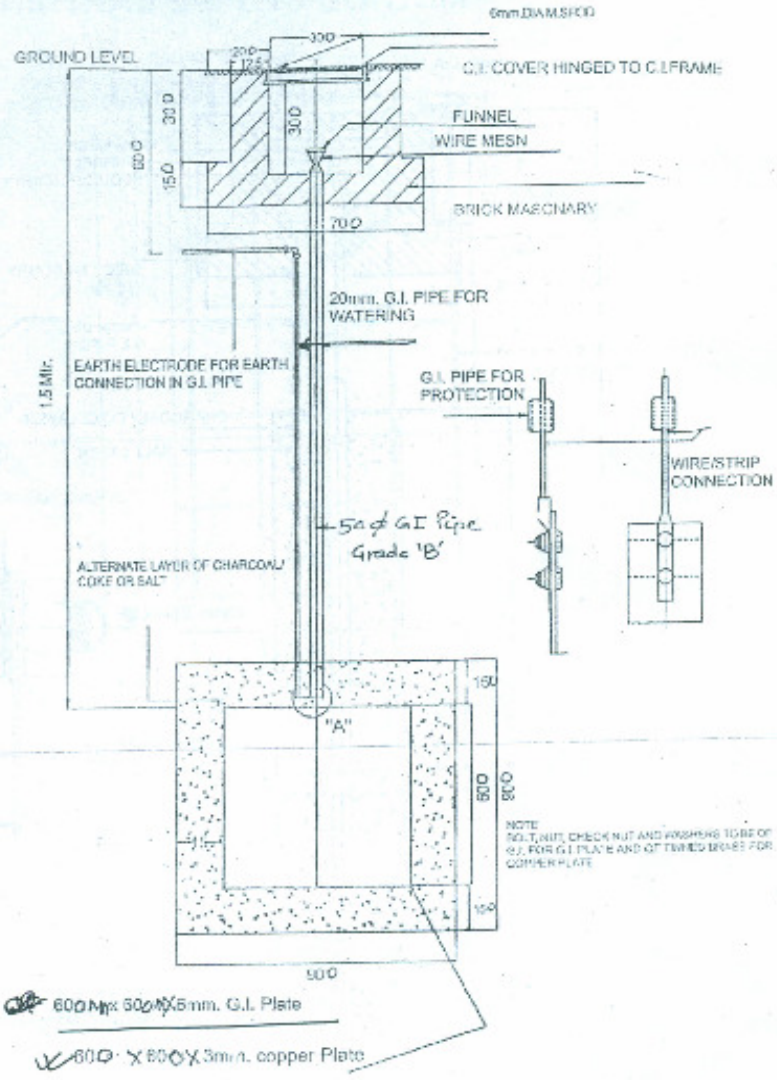
LIST OF DRAWINGS

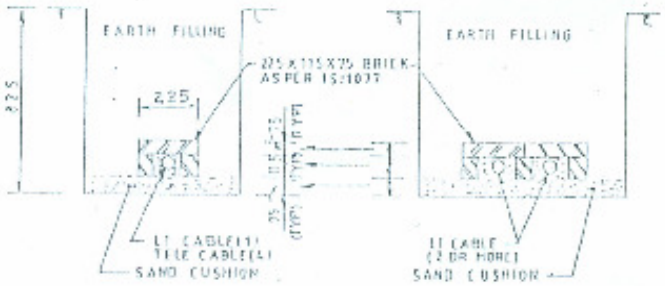
Sl. No.	Drawing No.	Details
1	HRI/Elect./E/1/2017	Copper Plate Earthing details
2	HRI/Elect./E/2/2017	Cable Marker details
3	HRI/Elect./E/3/2017	Extension board details

METHOD OF PLATE EARTHING



ALL DIMENSION ARE IN MM (OTHER DIMENSION SHOWN)

HRI/Elect/E(1)/2017

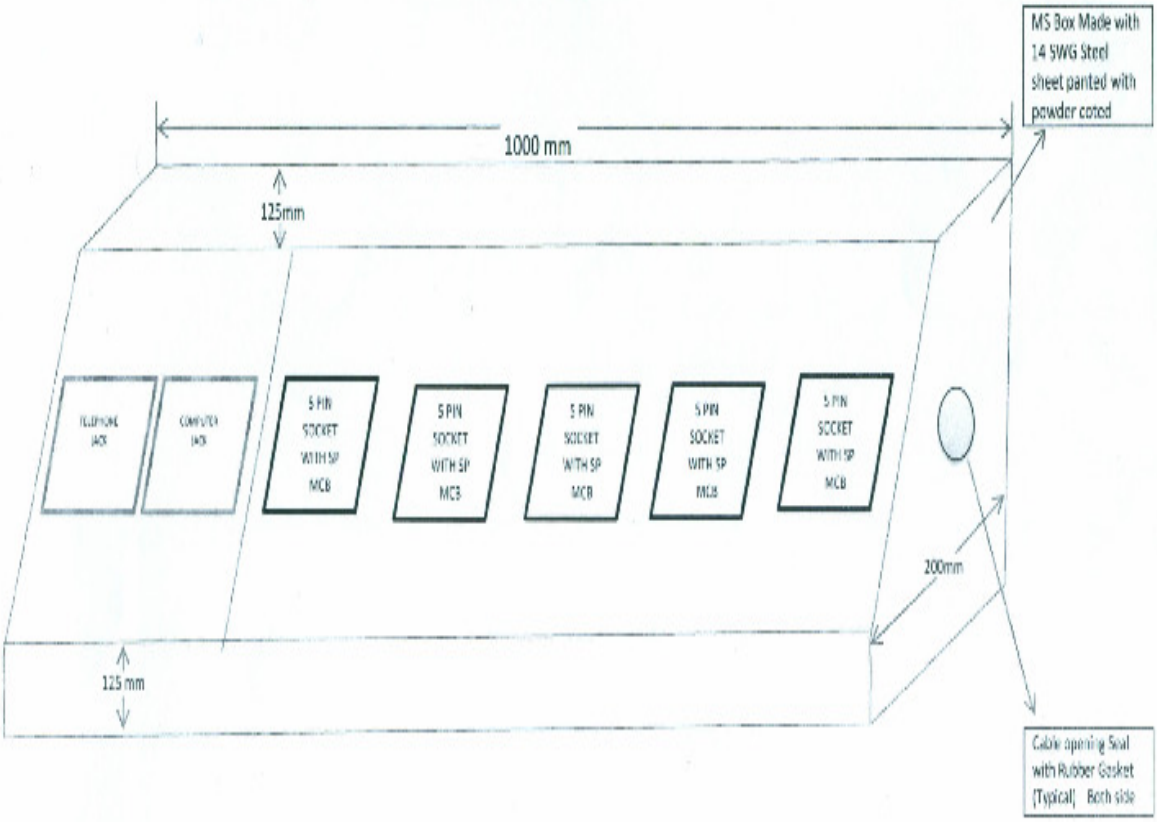


REACTOR RESEARCH CENTRE KALPAKKAM

DESD. DATE	TITLE MR - ALLAHABAD HOUSING		SHEET 1 OF 1
DRN. DATE 2.5.96	TYPICAL DETAILS OF CABLE LAYING		
CHD. DATE			
APPD. DATE	GENERAL INF.	ALP.	REVNo.
SCALE N.T.S.		DRG. No.	
PROJECTION			

HRI/Elect./E/02/2017

EXTENSION BOARD



S.N.	Item description	Qty	Preferred Make
1.	5Pin socket with 10 A SP MCB 'C' Curve	05	MK/Schneider
2.	Computer Jack	01	MK
3.	Telephone Jack	01	MK
4.	MS Box SS	01	14 SWG ISI

DRG/HRI/Elect./E/03/2017

TENDER FOR

"ELECTRICAL WORK RELATED TO PHYSICS LAB." AT HARISH-CHANDRA RESEARCH INSTITUTE, CHHATNAG ROAD, JHUNSI, ALLAHABAD -211 019

PART- 2 (FINANCIAL BID)

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
1.0	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of size not exceeding 35 sq.mm direct in ground including excavation sand, cushioning, protective covering with bricks and refilling the trench etc. as required.	140	Mtr.		
2.0	Laying & fixing of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 kV grade of size not exceeding 35 sq.mm on wall surface as required.(clamped with 1 mm thick saddle)	25	Mtr.		
3.0	Supply, testing and commissioning of 1100 V grade PVC insulated PVC sheathed/XLPE and armoured aluminium conductor power cable to IS 1554.				
3.1	In excavated trench (750mm below ground level) including supply of materials.	140	Mtr.		
	4.0Cx 25 sq.mm. Aluminium conductor cable XLPE (installation included item no.-1)				
3.2	In built up trenches, on walls, poles and through embedded pipes. Including supply materials.	25	Mtr.		
	4.0Cx 25 sq.mm. Aluminium conductor cable XLPE (installation included item no.-2)				
4.0	End termination of cables with brass compression glands and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 kV grade as required. 4.0 Cx 25 sq.mm. Copper conductor cable	2	Nos.		

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
5.0	Extension of existing panel for provision of 02 nos. 63 Amp MCCB. The extension will be reorganized by contractor in the existing power panel as required	1	Set		
6.0	SITC of 02 nos. 63 Amp MCCB	2	Nos.		
7.0	Supplying and fixing following way, surface/recessed mounting, vertical type,415 volts, TPN MCB distribution board of sheet steel, dust protected, duly power painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's (but without MCB/RCCB/Isolator) as required. 12 way (4 + 36 way), Double door	1	No.		
8.0	Supply and fixing 5A to 32A rating 240/415 volts "C" curve MCB suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	6 A to 32 A single pole	36	Nos.		
b	Blanking plate	8	Nos.		
9.0	Supplying and fixing of, four pole, 125 Amp 415 volts, MCB in the existing DB complete with connections, testing and commissioning etc. as required. 125 Amp	1	No.		

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
10.0	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps "C" curve, SP, MCB, in sheet steel enclosure, on surface or recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	5	Nos.		
11.0	Wiring for circuit/ sub main wiring alongwith earth wire with the following sizes of PVC insulated copper conductor, single core cable in surface/recessed PVC conduit as required.				
a.	2x1.5 sq. mm +1x1.5 sq.mm earth wire	250	Mtr.		
b.	2x4.0 sq. mm +1x4.0 sq.mm earth wire	400	Mtr.		
12.0	Supplying and drawing of UTP 4 pair CAT 6 LAN cable in the existing surface/ recessed steel/ PVC conduit as required.	300	Mtr.		
13.0	Supplying and drawing of 2 pair .0.5 Sq.mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/recessed steel/ PVC conduit as required.	100	Mtr.		
14.0	Extension board (as per drawing enclosed) with provision for installation of 05 nos. 10 Amp 5 pin modular socket with 10 amp 'C' series SP MCB, 01 no. Telephone Jack & 01 no. Computer Jack with base and cover plate as required	4	Nos.		

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
15.0	Supply & fixing accessories related to extension board				
a	10 Amp socket 2 M	20	Nos.		
b	Twin RJ-11 telephone jack -1 M	4	Nos.		
c	CAT-6 RJ-45 computer jack - 1 M	4	Nos.		
d	RJ-45 frame -1 M	4	Nos.		
e	3 modular cover plate	4	Nos.		
f	10 Amp 'C' series SP MCB	4	Nos.		
16.0	Supply, Installation, Testing & Commissioning of following type of LED light fixture on wall surface /recess in fall ceiling as required				
a	24 W 1' x1' SL LED Surface light, Make : Syska	6	Nos.		
b	22 Watt 1200mm T5 tube light (Aluminium body), Make : Syska	16	Nos.		
c	11 Watt LED light, Make : Syska	14	Nos.		
17.0	Supply & fixing of wall fan size : 300 mm, Make : Usha/Crompton /Khaitan/ Greaves/Orient	9	Nos.		
18.0	Supply and fixing of 25mm conduit along with accessories in surface/ recess including cutting the wall and making good the same case of recessed conduit as required ISI make. (Make: AKG) 25mm steel conduit	300	Mtr.		

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
19.0	Supply, fabrication, painting & installation of Frame/support made of section like channels, angles and flats (as required) including supply of fasteners.	150	Kg.		
20.0	Supply & installation of 100mm x 50mm x 2mm Galvanized perforated cable tray with cover	50	Mtr.		
21.0	Earthing with copper earth plate 600x600x3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/coke and salt as required as per enclosed drawing.	2	Nos.		
22.0	Providing and fixing 4mm dia. copper wire on surface or in recess for loop earthing as required.	50	Mtr.		
23.0	LAN connectivity as following:	1	Job		
	Supply, Installation (crimping etc.), testing & commissioning of "CAT 6 Networking cable UTP OUTDOOR ARMOURED". from the switch installed near a residential quarter to the central place in the physics lab where a new switch 48 ports (all 1 Gbps) is to be installed with the shortest route (advisable length <80 metre). At concerned residential quarters and at Physics Lab end, the Armoured OUTDOOR UTP CAT 6 cable should be terminated on CAT 6 Wall Mount I/O. From I/O the connectivity to both the switches will be by CAT 6 Patch cord.				

Sl. No.	Specification	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
A	B	C	D	E	F = (C x E)
	Supply, Installation, testing & commissioning of 48 ports with rack (all 1 GBPS), layer 2 switch (the switch should have dhcp snooping feature).				
	CAT 6 Cabling and termination of CAT 6 Cable to switch/patch panel and the second end of each cable from switch/patch panel to the equipment location be made with CAT 6 wall mount I/O. (a) No of Network points (I/O) at different table location as shown in the drawing is around 24 nos. The CAT 6 cable length and the casing-capping PVC length assessment be made by the Vendor based on the drawing. (b) Payment of cable PVC casing-capping, laying and digging will be based on actuals and be paid under relevant item.				
24.0	Supplying & fixing suitable size Copper busbar etc. (as required) Approx. 50 meter	1	Job		
				Total	

(Total amount in words Rupees …….)

Note: The party should quote their rate without taxes. The Institute will deduct only TDS from due payment and for which certificate will be issued by HRI. The liability of depositing of other applicable taxes in this work will be totally on contractor. However, other taxes may be reimbursed by HRI on the proof of depositing taxes for this work to concerned Department by contractor.

Signature of the tenderer
Address & Seal