



TENDER FOR

**“UPGRADATION OF POWER CABLE & OTHER MISCELLANEOUS
ELECTRICAL WORKS AT HARISH-CHANDRA RESEARCH
INSTITUTE, CHHATNAG ROAD, JHUNSI,
ALLAHABAD -211 019”**

PART- 1 (TECHNICAL BID)

TENDER NOTICE NO. HRI/16/2018

Harish-Chandra Research Institute

Chhatnag Road, Jhansi, Allahabad

INVITING TENDER FOR

"UPGRADATION OF POWER CABLE & OTHER MISCELLANEOUS ELECTRICAL WORKS" AT HARISH-CHANDRA RESEARCH INSTITUTE, ALLAHABAD

Bid Reference No. : NIT – HRI/16/2018

Last date and time for submission of bids : 26.10.2018 up-to 1500 Hrs.

Date and time of opening of Bid : 26.10.2018 up-to 1530 Hrs.

Place of Opening of Bids : Harish-Chandra Research Institute
Chhatnag Road, Jhansi, 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-E,
0532-227 4358,
manish@hri.res.in)

ENGINEERING SECTION,
HARISH-CHANDRA RESEARCH
INSTITUTE, ALLAHABAD

This document contains : 31 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, Jhansi, Allahabad

**Name of work: “Upgradation of power cable & other miscellaneous electrical works” at
Harish-Chandra Research Institute, Allahabad**

Tender Notice No.: HRI/16/2018

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Harish-Chandra Research Institute

Chhatnag Road, Jhunsi, Allahabad

Check list

<i>Sl. No.</i>	<i>Description</i>	<i>Party has to specify whether they have submitted the relevant details with their technical bid in YES or NO</i>
1.	Proof of Electrical license(Ref. point no. 5a of terms & conditions)	
3.	Proof of average annual turnover(Ref. point no. 5b of terms & conditions)	
4.	Experience of having successfully completed works(Ref. point no. 5c of terms & conditions)	
5.	Attested copy of PAN & GST(Ref. point no. 5e & 7 of terms & conditions)	
6.	Earnest Money Deposit of Rs. 73,200 /-(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/16/2018

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 **26.10.2018** and only technical bid shall be opened at **3.30 p.m.** on the same day for the work of **“Upgradation of power cable & other miscellaneous electrical works”** at **Harish-Chandra Research Institute, Allahabad.**

Estimated Cost	EMD	Performance Security	Security Deposit	Time of Completion	Tender Cost
Rs. 36.6 lakh	Rs. 73,200/-	@ 5% of tendered amount	@ 5% of tendered amount	3 Months	Rs. 590/-

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 **26.09.2018** to **25.10.2018** 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: <http://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.

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 **26.10.2018**. 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 **3.30 p.m.** on **26.10.2018** 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. Proof of average annual turnover of not less than Rs. 37.00 lakh during last three years ending 31.03.2018
 - (i) Year 2015-2016
 - (ii) Year 2016-2017
 - (iii) Year 2017-2018
 - c. Experience of having successfully completed works during last seven years ending 17.10.2018. 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. 15.0 lakh each OR
 - 2 similar works completed costing not less than Rs. 22.0 lakh each OR
 - 1 similar works completed costing not less than Rs. 29.0 lakhSimilar work shall mean: Electrical work. 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 (d) or a separate one) costing not less than Rs. 15.0 lakh with some Central/State Government Organization/Central Autonomous Body/Central Public Sector undertaking during last seven years ending 17.10.2018.
 - d. Full address of firm along with /Telephone no./Fax no./E-mail address :
 - e. Attested copy of PAN
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 time of completion of work is **03 months** and shall be reckoned from the date 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. 73,200/- 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. 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 defect liability period of work (except LED light fixture & fitting) would be one year (12 months) from the date of completion certified by the Engineer, HRI. The warranty of the LED lights fixtures & fitting will be 24 months from the date of completion certified by the Engineer, HRI. 50% security money will be returned after 12 months and balance 50% will be released after 24 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.
16. During the defect liability and warranty period contractor will attend any problem related to work within 48 hours after the written complaint (Through Letter, E-mail etc.) otherwise 0.25 % of the tender value per week (or on pro-rata basis per day) will be recovered from their security money for each failure if problem is not attended in scheduled time.
17. 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 with or without penalty) 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.
18. If power of Institute is taken by contractor then an electricity meter will be installed and charges for electricity consumed will be recovered as per UPPCL tariff for Institute will be deducted from their bill. If it is found that contractor is using power without permission of the competent authority then immediately connection will be discounted and 1% of the work order value will be recovered as penalty from them.
19. The schedule of quantity is indicative are tentative. Actual quantity will vary based on the actual requirement.
20. The financial bid will be opened only of the qualified bidder under technical bids.

21. The lowest bidder will be finalized based on overall quoted amount in this tender. However, total amount will be considered based on sum of individual items.
22. Procedure for dealing with ambiguities in rates: That if on check there are differences between the rates given by the contractor in words and in figures or in amount worked out by him, the following procedure shall be followed:
 - (a) When there is a difference between the rates in figures and in words, the rates which correspond to the amounts worked out by the contractor shall be taken as correct.
 - (b) When the amount of an item is not worked out by the contractor, or if it does not correspond with the rates written either in figures or in words, then the rate quoted by the contractor in words shall be taken as correct.
 - (c) When the rate quoted by the contractor in figures and in words tallies, but the amount is not worked out correctly, the rates quoted by the contractor shall be taken as correct and not the amount.
23. Contractor has to make their own arrangement for staying their labourers as Institute will not allow any labourers inside the campus after working period.
24. 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.
25. **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.
26. The liability of depositing tax (GST) against their bill to concerned Department will be totally on the contractor.
27. **In case any discrepancy between terms & conditions and General condition of tender then terms & condition of tender shall take precedence.**
28. The Contractor shall agree and undertake to totally indemnify HRI against all expenses, claims, payments, dues, fines, penalties, compensations, liabilities, and losses whatsoever which the HRI may suffer due to the default, violations, omissions thefts, or non-compliance of the statutory and/or contractual obligations committed by the Contractor or its employed. The HRI shall also have the right to deduct and recover all such losses and expenses etc. from any payments due to the Contractor besides seeking appropriate legal remedies for the balance amount or relief, if any.
29. Party has to ensure gate entry (at Security gate, HRI) for any material before bringing at site. In this connection, they have to submit copy of challan of materials in engineering office at HRI for records.
30. Party has to take required approval of individual items (make and model) before bulk supply.
31. Don't detach any paper from the tender document and put the signature & seal at all the papers of the tender document.
32. 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.
33. Decision of the Director of the Institute will be final & binding for all concerned.

34. 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.
35. 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 35. 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 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. 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 with or without penalty) 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.

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 1/8th 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 and 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) 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 3 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: MEASUREMENTS 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 binding 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.

General scope and specification of work:

1. Standards and Specifications

All materials and equipment should confirm to the latest IS specifications. Where specification is doing not exist, the relevant BS/IEC specifications shall be applicable. Wherever supply is envisaged by the contractor, only material of approved make shall be purchased. A sample shall be submitted for approval by the Engineer-in-charge before effecting the bulk supply/taking up the bulk fabrication. Whenever necessary, detailed drawing shall be prepared and submitted for approval. Before purchase/execution of work the drawing are to be approved.

Equipment and products shall be from latest ISO accredited manufacturers, wherever available. All similar equipment and components of different rating shall be from same source. Technical particulars of equipment offered shall be submitted along with the offer in the specified format.

2. Storing, Handling and Transport Facilities at Site.

The contractor shall be responsible for storing, handling and transporting of all parts of equipment and material (unless otherwise specified) covered in the contract including loading and unloading of material as required and specified in subsequent section. Contractor shall make his own arrangement for storage of these materials and equipment before and during execution.

3. Testing

All item will be inspected/tested at the manufacturer's works (if necessary) in presence of Department Engineer. Sufficiently well in advance intimation shall be given by the contractor for this purpose.

The contractor shall carry out tests on different equipment as specified in the subsequent section to enable Engineer-in-Charge to determine whether the work complies with the specifications.

Result of site test and checks shall be furnished in the approved format. The contractor shall arrange his own testing equipment required for the test to be carried out at site as per test schedules.

The tenderer shall submit along with the offer a list of testing equipment/instrument/tools that he will deploy for testing at site.

The following tests shall be conducted in addition to/as part of routine tests at the works. 3 copies of test report shall be submitted for the Purchaser's approval; and record.

- a. Dimensional checks.
- b. Physical verification of components.
- c. Insulation resistance of power and control circuits.
- d. High voltage test on power wiring – 2.5 KV for 1 minute with all meters, relays and instrument transformer in circuit.
- e. Ratio test on Current transformers.

4. Description of some works

4.1 Cables

a. General:

The contractor shall supply all the cables. He will install, lay, dress and clamp different sizes of all the 1.1 kv grade aluminium/Copper, PVC/XLPE insulated, power, control armored cables. The cable supplied shall confirm to the specification detailed in this section.

Cable ends shall never be left open. 1.1 KV cables shall be sealed with heat shrinkable end caps and other cables by other accepted means. All the cables, GI clamps and all necessary tools, and materials for completing the cable laying work shall be supplied by the Contractor.

PVC bushes, cable identification tags and all other consumable items, tools, plants etc. required for the satisfactory completion of job shall be provided by the Contractor.

b. Laying of LT cable

- i. Before the commencement of cable laying, it shall be ensured by the Engineer-In-Charge that only ISI marked cables are used. It shall be the responsibility of the contractor to check the soundness and correctness of the size of the cable while delivering cables to HRI.
- ii. The material such as bricks, sand, cable route markers of best quality as approved by the Engineer-In-Charge only shall be used for cable laying works.
- iii. The contractor shall provide all the necessary labour, tools, plants and other requisites at his own cost for carrying out pumping of water and removing of water from trenches if anywhere required.
- iv. Installation shall be carried out in a neat, workman like manner by skilled, experienced and competent workman in accordance with standard practices.
- v. While laying the cable care shall be taken to avoid formation of kinks and also damage to the cable. In the case of cable bends, the minimum bending radius should be 12D (D- Outer Diameter of the cable).
- vi. A cable loop of about five meters length and as directed by the Engineer-In Charge shall be provided at the following locations.
 - a. Near the termination points
 - b. Near to the straight through joint.
- vii. The method of cable laying and routing of cables, shall in every case be as directed by the Engineer-In-Charge.
- viii. Whenever cable passes through hume pipes/GI embeded across the wall in a building both the ends of the pipe shall be suitable sealed.
- ix. Identification tags indicating locations of straight through joints (if any), necessary joint-markers shall be provided.
- x. When cable runs vertically, it shall be clamped on mild steel flats or angle iron fixed on walls is spaced at such intervals as to prevent buckling of the cables. All steel work shall be painted with a cost of red oxide and thereafter finished with suitable anti-corrosive paints.
- xi. As per site conditions, minimum 650 meter of single run is required, hence it is compulsory to supply and lay 650mtr of single run without any joint. However, tenderer shall visit the site and can get actual measurement before executing the work. As per site conditions, if any straight through joints are required, it should be approved by Engineer-in-charge.

c. Cables lay in ground

- (i) **The excavation of trenches** shall be made in all type of soil and rock and no extra cost shall be paid for cutting the trench in rock and hard soil. The soil is generally clay mixed alluvial soil, back filling and consolidated 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 the 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.

The scope of work shall include transporting the cable from place of storage to laying location, laying the cable in the excavated trench, covering with Ganga river sand and table moulded bricks including supply of Ganga river sand and bricks, back filling of soil and leveling up to ground level, testing and commissioning.

All the 1.1 KV cables shall be laid at a depth of 750 mm from ground level. In the excavated cable trench Ganga river sand filled up for 75 mm height.

The cable shall be grouped and installed as per the drawing enclosed. Cable marker as approved by the engineer shall be provided at location as directed by Engineer-in-charge. Each cable shall be laid separately and no cable to be combined in one compartment. Adjacent cable of same class can share a common side brick. After the cables have been laid, the excavated soil shall be refilled and it is advisable to leave a crown of earth not less than 50 mm in the centre and crown of earth should not be exceed 0.1 meter in the centre and tapering towards the sides of the trench.

- (ii) The bottom layer cables shall be laid at a minimum depth of 750 mm (refer drawing no. HRI---/2018- LT cable laying) when laid in ground. When cable pass through roads, nallahs etc., they must be protected by either hume pipe or GI pipe of suitable dimensions.
- (iii) Excavations of trenches shall be carried out as indicated in the drawing of HRI. The width of the trench at the bottom shall be 0.5 meter for one cable. In case the total number of cables laid in the trenches is more than one, then the width shall be such that the spacing between the cables is maintained as per standard electrical norms. Before the cable is laid in the trench the bottom of the trench shall be cleared from stones and other sharp materials and filled with sand layers of 75mm, as shown in the drawing.
- (iv) While removing the cable from the drum, it shall be ensured that the cable drum is supported on suitable jacks and the drum is rotated to unwind the cable from the drum. The cable should never be pulled while unwinding from the drum. It shall be ensured that the cables are run over the wooden rollers placed in the trench at intervals not exceeding 2 M.
- (v) After placing the cables in the trench, the sides and top of the cable shall be covered with bricks as indicated in the drawing. After placing brick, the trench shall be filled in layers ensuring that each layer is well jammed by spraying water and consolidated. The extra earth shall be removed from the place of trench and deposited at a place as directed by the Engineer-In-Charge.

d. Cables lay in build-up trench:

- (i) **In built up trench, on RCC poles etc.:** The scope of work shall include transporting the cable from place of storage to laying location, installing the cable in built up trenches, on brick and RCC walls, on RCC poles, embedded pipes and supply of clamps and fixing materials.

Inbuilt trenches, cable shall be installed on cable support/racks. The cable shall be properly dressed and clamps and spacers shall be of hot Dipped Galvanized of suitable sizes as approved by Engineer-in-Charge.

Wherever cable passes through hume pipes, after pulling the cables the pipe ends shall be sealed. Where the cable 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.

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

- (ii) Before the commencement of cable laying the cable trench shall be cleaned properly. Cable shall be laid as explained in item.
- (iii) Cable shall be properly clamped to the cable supports which are provided in the cable trench. The method of clamping shall suit the size of the cable and the cable supports, as directed by the Engineer-In-Charge. Care shall be taken while removing and replacing the trench cover slab. It is the responsibility of the contractor.
- (iv) Provision shall be made to ensure that the cores of the cable are efficiently sealed to prevent moisture penetrating along the strands or the cable conductors.
- (v) The sealing box shall be provided with compound filling orifices with suitable covers of plugs of size that will permit easy pouring of the compound. In all case where screwed plugs are used, one or more air vents shall be provided to ensure complete expulsion of air and total filling of the box with compound.
- (vi) The box shall be of sufficient length to allow the manipulation of the insulated cover without damage to them or to the insulation.
- (vii) A sealing box intended to be attached directly to the apparatus shall be designed such that the box together with the connected cable may be detached from the apparatus without disturbing the sealing compound.
- (viii) Cable sealing and dividing boxes intended for use in the flame proof areas shall comply additionally with the relevant requirements of IS 2148-1968.

e. Testing:

Once cable is laid, following test shall be conducted in the presence of Engineer In-Charge, before energizing the cable:

- i) Insulation resistance test
- ii) Continuity and conductor resistance test.
- iii) Earth test
- iv) High voltage test Tests conducted shall be as per Indian Standards and National Electrical Code.

f. End Terminations:

The MV cables shall be terminated using tinned brass single compression glands and crimping type lugs. Supply of glands and lugs is includes in the scope of termination work. Aluminum lugs for Aluminum cables and copper lugs for copper cables shall only be used. Glands shall be earthed with 14 SWG tinned copper earth wire and earth clips of adequate size and thickness as approved by Engineer-in-charge. The bidder will quote the rate including all required materials above mentioned items as stated above.

5. Electrical Pole

a. Mtr. Long Octagonal Poles:

The scope of works includes Supply, transport, erection and commissioning of 5.0 Meter GI Octagonal poles with 12 mm base plate, foundation bolts, bracket (suitable for four light fitting) as per drawing enclosed, providing and laying plain cement concrete 1:2:4 foundation, embedment of suitable pipe for cable entry, wiring with 2.5 sq.mm., 3 core copper conductor cable, PVC insulated flexible cable from junction box to lighting fixture, ear thing, painting etc. including excavation/refilling and supply of all materials excluding light fixture. The above pole should be bolted type and bolted with the base frame which will be mount separately before commissioning of pole and light fixtures.

Sufficient way shall be provided for taking the cable from ground to the junction box, by means of suitable form work. All the poles shall be identified with numbers starting from feeding end. The identification numbers shall be as suggested by the Engineer-in-charge. The cable will be glanded in the street light junction box

Junction Box: Junction box will be comprises of 1 no. of suitable rating SP MCB, 4 way connector, suitable lugs and glands and proper water and weather proof cover possibly with hinged etc. for its proper security from unwanted things.

All material for completion of work like ERW conduit, cast aluminum or any other suitable box, GI poles/MS poles etc. is included in the scope.

b. 3.8 M GI Street Light Poles:

The scope of works includes Supply, transport, erection and commissioning of 3.8 Meter GI poles with 12 mm base plate, foundation bolts, bracket (suitable for One/Two light fitting) as per drawing enclosed, providing and laying plain cement concrete 1:2:4 foundation, embedment of suitable pipe for cable entry, wiring with 2.5 sq.mm., 3 core copper conductor cable, PVC insulated flexible cable from junction box to lighting fixture, ear thing, painting etc. including excavation/refilling and supply of all materials excluding light fixture. The above pole should be bolted type and bolted with the base frame which will be mount separately before commissioning of pole and light fixtures.

Sufficient way shall be provided for taking the cable from ground to the junction box, by means of suitable form work. All the poles shall be identified with numbers starting from feeding end. The identification numbers shall be as suggested by the Engineer-in-charge. The cable will be glanded in the street light junction box

Junction Box: Junction box will be comprises of 1 no. of suitable rating SP MCB, 4 way connector, suitable lugs and glands and proper water and weather proof cover possibly with hinged etc. for its proper security from unwanted things.

All material for completion of work like ERW conduit, cast aluminum or any other suitable box, GI poles/MS poles etc. is included in the scope.

6. LED Light Fittings:

This item scope includes supply of LED fitting 25 watt and 45 watt with the following technical specifications **supply voltage:** 180-240V, condition for voltage fluctuations should be considered and the system should be robust enough to withstand such variation in supply source, **Beam angle:** 120 to 170 degree, **PF:** 0.9, **Luminaire efficiency:** more than 85%, **CRI:** more than 70, **surge:** up to 3 KV or above, **Photometric Distribution:** Suitable for street/path light, **Housing:** Die-cast, **Luminaire efficacy:** The luminaries should have a system efficacy of greater than 60 lm/w, **correlated color temperature (CCT):** High power LED with correlated color temperature of 6500 K (+_)500K, **operating temp:** -10 to +50

Degree centigrade, **ingress protection:** IP65 or above , **THD:** Less than 20%, **Average Life span of LED :** more than 50000 hours.

The contractor shall supply, transport, install light on poles, test and commission the light fittings with lamps/LED's etc. as per the specification.

Before mounting the fitting on the pole, the fittings shall be meggered and checked for proper performance. The fitting shall be fixed properly by providing GI Bolts, nuts and check nuts.

The lights shall be wired with 3 cores 1.5 sq.mm flexible copper cables for LED lights and 3 core 2.5 sq mm flexible copper cable for any other lights shall be terminated with suitable copper crimping lugs.

The cable shall be continuous and there shall not be any intermediate joints. The cable drawn through the pipe shall have sufficient slackness along the pipe and sufficient extra length shall be provided at the junction box. Suitable PVC conduit bushes shall be provided at the junction box end for avoiding the damages of insulation while pilling the cable. The third core Green wires shall only be used as earth wire and connection to the earth terminal at both ends.

This item covers all the required accessories like nut, bolts, screws, gasket, cover, etc. and the entire fitting will be guaranteed for 24 months from the date of commissioning verified by the HRI Engineers.

7. Earthing:

Installation 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 meter 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 ear thing resistance of each earth pit shall be measured after three days of the completion of ear thing work and the value should confirm to regulations.

The rate quoted for supply, installation and testing of earth pit shall include earth excavation, erecting the electrode, soil treatment with bentonite or other means, charcoal, concreting materials, bricks, fastener, funnel and mess for watering, RCC/Cast iron cover for earth pit.

8. M.S. Work :

MS frame and supports shall be fabricated, painted and installed wherever required. Suitable approved MS sections like channels, angles, flats etc. shall be supplied by the contractor as approved by the Engineer-in-charge. All the materials shall be of good quality. Rerolled MS items should not be used.

The weight of the fabricated parts will be calculated from the dimensions and the standard weights of the sections. Weights of bolts, nuts and other fasteners to be provided by the contractor will not be considered.

All fabricated parts shall be given one coat of red oxide paint and two coats of enamel paints as approved color as approved by the Engineer-in-charge at site. Installation includes welding to the EP's available, chipping, chasing and grouting and fixing with anchor fasteners on RCC and brick surface including floor for frame embedment's, depending on the site condition.

9. Point Wiring:

Point wiring includes wiring for lighting points/power points/fan point and buzzer points. For point wiring, wherever concealed wiring is envisaged, conduits, switch/socket outlet boxes, junction boxes and pull boxes etc are already embedded .

10. Recommend makes of materials for Electrical works :

Sr.no	Material/Items	Make
1	LT cable	Havells/
2	Gland / Lugs	Dowells/Polycab
3	Heavy duty Lugs	Dowells/Polycab
4	LED	Syska/Phillips
5	GI Post	Tata/Jindal

TENDER FOR
UPGRADATION OF POWER CABLE & OTHER MISCELLANEOUS
ELECTRICAL WORKS AT HARISH-CHANDRA RESEARCH
INSTITUTE, CHHATNAG ROAD, JHUNSI,
ALLAHABAD -211 019”

PART- 2 (FINANCIAL BID)

Sl. No.	Item	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
1.0	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of following size direct in ground (750mm below ground level), including excavation sand, cushioning, protective covering with bricks and refilling the trench etc. as required.				
a	Upto 35 Sq.mm	3000	Mtr.		
b	Above 185 Sqmm and upto 400 Sqmm	420	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)				
a	Upto 35 Sqmm	200	Mtr.		
b	Above 185 Sqmm and upto 400 Sqmm	30	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 (instalation included item no.-1)				
a	4C x 10 Sqmm Aluminium conductor cable (XLPE)	1200	Mtr.		
b	4C x 35 Sqmm Aluminium conductor cable (XLPE)	2000	Mtr.		
c	3.5C x 240 Sqmm Aluminium conductor cable (XLPE)	450	Mtr.		
4.0	Supplying and making indoor end termination 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.				
a	4C x 10 Sqmm Aluminium conductor cable (XLPE)	40	Nos.		
b	4C x 35 Sqmm Aluminium conductor cable (XLPE)	36	Nos.		

Sl. No.	Item	Qty.	Unit	Rate in figures & words		Total Amount	
				Rs.	Ps.	Rs.	Ps.
c	3.5C x 240 Sqmm Aluminium conductor cable (XLPE)	2	Nos.				
5.0	Wiring for Circuit/Sub circuit alongwith earth wire with 2 x 2.5 Sqmm+1 x 2.5 Sqmm size of PVC insulated copper conductor, single core cable in to the pole as required	400	Mtr.				
6.0	Steel work welded in built up section /framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In gratings, frames, guard bar, railings, brackets, gates a similar works.	150	Kg.				
7.0	Dismantling of pole/ street light standard/ strut embedded in cement concrete foundation etc. (02 nos. of 3.8 meter long & 01 no. of 5 meter long) as required.	3	Nos.				
8.0	Erection of Metallic pole (02 nos. of 3.8 meter long & 01 no. of 5 meter long) in cement 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 concrete mm nominal size) foundation including excavation and refilling etc. as required.	3	Nos.				
9.0	Supplying and fixing of 1/1.5 meter long Galvanized one/two arm bracket for mounting on pole for fixing of light fixture with tightening bolts/welding as approved by Engineer-in-Charge (2 nos. bracket suitable for 02 light & 23 nos. bracket suitable for 1 light fitting)	25	Nos.				
10.0	Supplying and fixing of 1 meter long Galvanized one arm bracket for mounting on wall/surface for fixing of light fixture with tightening bolts/welding/bracket as approved by Engineer -in-Charge.	5	Nos.				

Sl. No.	Item	Qty.	Unit	Rate in figures & words		Total Amount	
				Rs.	Ps.	Rs.	Ps.
11.0	Supply, transport, erection and commissioning with painting (two coats enamel panting after primer) of 3.8 meter long, 2.5" dia with 3 mm thick GI tubular poles including supplying and fixing of 1 meter long Galvanized one/two arm bracket for mounting on pole for fixing of light fixture with tightning bolts/welding as approved by Engineer-in-Charge (2 nos pole suitable for one light & 3 nos. pole suitable for two light fitting) with 12 mm base plate , providing and laying plane cement concret1:2:4 foundation of size 400mm x 400mm x 1000mm deep, embedment of ERW conduit for cable entry, wiring with 2.5 sqmm, 3 core copper conductor, PVC insulated flexible cable from junction bos to lighting fixture and junction box, earthin, painting etc including excavation/refiillingt and supply of all materials excluding light fixture. Junction box will be comprises os 1/2 no. of suitable rating SP MCB, 8 way connector, suitable lugs and glands.	5	Nos.				
12.0	Supply, transport, erection and commissioning with painting (two coats enamel panting after primer) of 5.0 meter long GI octagonal poles including supplying and fixing of 1 meter long Galvanized four arm bracket for mounting on pole for fixing of light fixture with tightening bolts/welding as approved by Engineer-in-Charge (suitable for four light fitting). The pole made from 3 mm thick HT Steel plate, having top dia-70 mm & bottom dia of 130 mm complete with window with flash cover at a height of 500 mm from the base for cable termination block etc and galvanized base plate of 250 x 250 x 12 mm thick on cement concert pedestal, foundation bolt as required, providing and laying plane cement concret1:2:4 foundation of size 400mm x 400mm x 1000mm deep including excavation work, embedment of ERW conduit for cable entry, wiring with 2.5 sqmm, 3 core copper conductor, PVC insulated flexible cable from junction bos to lighting fixture and junction box, earthing, painting etc including excavation/refiilling and supply of all materials excluding light fixture. Junction box will be comprises of 4 nos. of suitable rating SP MCB, 8 way connector, suitable lugs and glands. Pole should be bolted type and bolted with the base frame which will be mount separately before commissioning of the pole and light fixture.	1	Nos.				

Sl. No.	Item	Qty.	Unit	Rate in figures & words		Total Amount	
				Rs.	Ps.	Rs.	Ps.
13.0	SITC of LED fixtures as per the specification mentioned below:						
14.0	LED fitting 24-25 watt, supply voltage: 180-240V,condition for voltage fluctuation should be considered and the system should be robust enough to withstand such variation in supply source, Beam angle: 120 to 170 degree, PF: 0.9, Luminaire efficiency: more than 85%, CRI: more than 70, surge: upto 3 KV or above, Housing: Diecast, Luminaire efficiency: the luminaire should have a system efficiency of greater than 60lm/w, Correlated color temperature(CCT): High power LED with correlated color temperature of 6500K(+500K), operating temperature: -10 to +50 degree centigrade, Ingress protection: IP 65 or above,THD: Less than 20%, Average life span of LED: more than 50000 hours.	51	Nos.				
15.0	LED fitting 40 watt, supply voltage: 180-240V,condition for voltage fluctuation should be considered and the system should be robust enough to withstand such variation in supply source, Beam angle: 120 to 170 degree, PF: 0.9, Luminaire efficiency: more than 85%, CRI: more than 70, surge: upto 3 KV or above, Photometric Distribution: Suitable for street/patlight, Housing: Diecast, Luminaire efficiency: the luminaire should have a system efficiency of greater than 60 lm/w, Correlated color temperature(CCT): High power LED with correlated color temperature of 6500K(+500K), operating temperature: -10 to +50 degree centigrade, Ingress protection: IP 65 or above,THD: Less than 20%, Average life span of LED: more than 50000 hours.	4	Nos.				
16.0	SITC of 22 Watt LED Tube light	12	Nos.				
17.0	Pipe Earthing as per drawing and tender specification under scope of work. The earth station shall be as shown on the drawing and shall be used for equipment earth grid and the earth electrode shall be 3 M long 75 mm dia. class "B" galvanized steel pipe. The earth resistance shall be maintained with a suitable soil treatment as shown in the drawing. The earth resistance of each earth station should not exceed 1 ohm. The earth lead shall be fixed to the pipe with a nut and safety end screws. The clamp shall be permanently accessible size as shown in the drawing. G.I. pipe with funnel of approved quality shall be used for watering the earth electrode / station. The block masonry chamber with cast iron hinged cover shall be provided for housing the above referred funnel and pipe.	50	Nos.				

Sl. No.	Item	Qty.	Unit	Rate in figures & words Rs. Ps.	Total Amount Rs. Ps.
18.0	Supplying and fixing DP sheet steel enclosure on surface/recess along with 25/32 A, 240 V “C” curve DP MCB complete with connections, testing and commissioning etc. as required.	4	Each		
19.0	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.in	100	Mtr.		
20.0	Supplying and laying 6 SWG G.I. wire at 0.50 meter below ground level for conductor earth electrode, including connection/termination with G.I. thimble as required.	400	Mtr.		
21.0	Painting of pole of following sizes including thorough surface preparation, thorough removal of rust from pole at all height, priming with red oxide primer of good brand approved by Engineer-in-Charge and painting of the same with one or more coats to give an even shade by synthetic enamel paint (as per surface requirement and direction of Engineer-in-Charge) of 1st quality and approved by Engineer-in-Charge.				
a	5 mtr to 8 mtr long (Single structure)	20	Nos.		
b	5 mtr to 8 mtr long (Double structure)	4	Nos.		
Total					

(Total amount in words Rupees)

Note: 1. The contractor should quote their rate including all charges **except GST**. The bids will be evaluated accordingly.

2. In case of applicability of GST in this work, party may claim GST with their bill and Institute will consider the payment for GST in this regard.

Signature of the tenderer
Address & Seal