



**NOTICE INVITING E-TENDER FOR DESIGN,  
MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION,  
TESTING AND COMMISSINING OF 04 NOS. HIGH MAST  
WITH 60 NOS. FLOOD LIGHTS FOR CRICKET GROUND AT  
IIM, LUCKNOW.**



INDIAN INSTITUTE OF MANAGEMENT LUCKNOW

To,

M/S. \_\_\_\_

**SUB.: NOTICE INVITING E-TENDER FOR DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS FOR CRICKET GROUND AT IIM, LUCKNOW.**

Dear Sir, \_\_\_\_\_

Tenders are invited, on behalf of the Director, Indian Institute of Management, Lucknow for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHT FITTING FOR CRICKET GROUND AT IIM LUCKNOW, Prabandh Nagar, Lucknow as per BOQ attached. The Institute invites you to participate and to send your offers as per the attached **NOTICE** inviting **E-TENDER**.

E-Tenders are invited under two bid system (both Technical and Financial) from reputed Companies. The complete Tender document containing General term and Conditions, pre-qualification requirements etc. are available on <https://eprocure.gov.in/eprocure/app> and our website <http://www.iiml.ac.in> for reference only.

Reputed Companies may submit their bids in the prescribed format with all the necessary documents online at <https://eprocure.gov.in/eprocure/app> on or before bid submission closing Date

& Time

Sd/-

Chief Administrative Office

For Indian Institute of Management



INDIAN INSTITUTE OF MANAGEMENT LUCKNOW



INDIAN INSTITUTE OF MANAGEMENT LUCKNOW

Prabandh Nagar, Off Sitapur Road Lucknow 226013

**E-TENDER NOTICE INVITING TENDER IIML/PROJ/TENDER/2019-20/4298 Date: 07/04/2021**

**NOTICE INVITING E-TENDER FOR DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD LIGHTS FOR CRICKET GROUND AT IIM, LUCKNOW**

Dear Sir,

Tenders are invited from reputed companies for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING of 04 nos. high mast with 60 nos. flood lights. To submit their tender, quote your minimum rates on enclosed bill of quantity on behalf of Director, IIM Lucknow. The General terms & conditions of service contract are also enclosed which are bidding to both IIML and the Bidder.

Name of work	:	DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING OF 04 NOS HIGH MAST WITH 60 NOS. FLOOD LIGHTS.
Earnest Money	:	Rs. 36,000/- (Rupees Thirty Six Thousand Only)
Total Estimated Cost	:	Rs. 17,84,000/- (Inclusive of GST)
Period of Contract	:	90 days
Date of issue of tender document	:	08-06-2021
Date Pre-Bid Meeting	:	14-06-2021 @ 11:00AM Project Division Office Samadhan Bldg.
Late Date for submission tender document	:	29.06.2021 upto 3:30PM
Date of opening of Technical Bid Opening	:	30.06.2021 at 03:35 PM
Date of opening of Financial Bid Opening	:	Will be informed to the Bidders Qualifying the Technical
starting of work	:	Within 7 days of the Date of LOI

Tenderer are advised to visit the site and see and understand the work before submitting the tender. **The Technical and Financial bids should be uploaded through E-tendering process only before the due date & time.**

Sd/ -

Chief Administrative Officer

For Indian Institute of Management Lucknow

# INSTRUCTION TO TENDERER

- (i) The Tenderer shall read the document carefully before filling it.
- (ii) Bidders are required to deposit an amount of Rs. 36,000/- (Rupees Thirty Six Thousand only) towards Earnest Money Deposit (EMD) to below mentioned bank account of Institute on or before the last date & time mentioned above. EMD through any other form will not be accepted. UTR number / Transaction ID and date of Deposit/Transfer of EMD shall be mentioned in Technical Bid at appropriate place. **Those who are exempted from deposit of EMD shall upload the valid certificate in this regard.** Bank Details for NEFT are stipulated below:

Account No.	07231450000294
IFSC Code	HDFC0000723
Name of Bank & Type of Account	HDFC BANK/Saving

- (iii) Financial bid must be filled and submitted in the prescribed formats given on the CPP portal separately. A sample format of the Financial bid has been attached with the Technical bid just for the understanding of the bidders. This is required to be kept blank and just signed and stamped along with the other documents of this Tender. If filled in financial bid is found along with the e-Technical bid of this Tender, then the Tender shall be straight away rejected.
- (iv) Tender must be valid for a minimum period of 120 days from the date of opening.
- (v) Technical offers shall be opened first, if the tenderer fails to submit the EMD/ copy of certificate against which the exemption is claimed then their technical offer will not be Opened/Evaluated. The technical offers will be evaluated by the selection committee based on technical evaluation criteria of this document. The Financial offers from technically unqualified tenderers as per evaluation criteria will not be opened.
- (vi) Financial offer shall be opened only for those tenders who are technically qualified as per evaluation criteria of this tender document.
- (vii) The dates for opening financial offer will be communicated to the tenderers and tenderers are requested to be present at the time of opening the tenders. Authority letter is must if any person other than who has signed the tender document attends such event.
- (viii) Each page of the tender document must have signed by the authorized signatory of the tenderer.
- (ix) Original tender document duly signed and filled up should be uploaded.
- (x) The tender not accompanied by complete document or duly filled in all respect shall be rejected.
- (xi) All erasures, cuttings and alterations made must be attested by the authorized person while filling the tender document. Over-writing of figures is not permitted.
- (xii) Interested tenderers may visit the site and see the means of access to the site and specifications and acquaint themselves fully about the works to be carried out and all other factors governing the works before quoting his rate.
- (xiii) Successful Tenderer has to submit Performance Security deposit 05% of total contract value within 7 days after issue of LOI with minimum validity of 60 days beyond the stipulated completion date in form of DD/FDR from nationalized Bank. EMD of unsuccessful tenderer shall be returned after finalization of contract. EMD of successful tenderer shall be returned only after deposit of Performance Security deposit. Performance Security deposit will be release 60 days after successful completion of work. No interest shall be paid on amount.
- (xiv) Performance Security deposit shall be in the form of FDR Drawn on any nationalized bank in favour of Indian Institute of Management, Lucknow payable at Lucknow.
- (xv) This is an item rate Tender. The rate quoted by the tenderer shall be the total sum of material & labour at the IIM Lucknow campus, Lucknow Excluding of GST, **GST will be paid extra as applicable.**
- (xvi) If any discrepancy / misprint is noticed / specification or BOQ, it should be clarified from the Institute before quoting the rate.

(xvii) Following procedures shall be adopted in case of difference in quoted rates in figures and words and extensions:

a. Where there is difference between rates in figures and the rates, quoted in words shall be considered as correct.

b. Where the amount of an item is not worked out or it does not correspond to the rate either in figure or in words, the rates quoted in words shall be considered as correct and necessary extension made.

c. Where the rate quoted by the tenderer in figures and in words tally, but the amount is not worked out correctly, the rates quoted by the tenderer shall be considered as correct and amount shall be corrected accordingly.

(xviii) The Indian Institute of Management, Lucknow do not bind themselves to accept the lowest or any other tender and reserve the right to accept or reject any or all the tenders either in full or in part without assigning any reason.

(xix) The tender shall be opened & evaluated by the tender committee and the successful tenderer shall be informed.

(xx) If any of the document submitted by the tenderer is found fake, even after the acceptance of tender, the contract will be terminated for which the concerned tenderer will itself be responsible and no compensation, etc., will be paid by the IIM, Lucknow.

(xxi) The Director, Indian Institute of Management, Lucknow reserves the right to reject one or all the tenders without assigning any reason. No claim, whatsoever, shall be entertained on this account.

(xxii) 5% of the payable bill value will be retained from each bill as defect liability period & shall be released after the warranty of lights. No interest shall be paid on amount.

(xxiii) Tenderer are required to execute the agreement in accordance with the approved Proforma on non-judicial Rs. 100 stamp paper of appropriate value within 10 days from the date of receipt of this Letter of Intent. The cost of non-judicial stamp paper is to be borne by tenderer.

(xxiv) Tenderer can avail relaxation given as per Govt. norms for NSIC/MSME registered firm. (xxv) Successful tenderer uploaded document will be verified with the original at the time of LOI / Agreement.

(xxvi) The LED light provided should have its service provider in Lucknow.

(xxvii) Minimum warranty of the lights must be 2 years. Preference will be given to the tenderer in technical evaluation give more warranty years.

(xxviii) Tender term & condition also includes GCC which is uploaded on IIML website and shall be the part of this contract and its terms and conditions shall be binding to both IML and the successful Tenderer. So please read it properly.

(xxix) Successful tenderer has to submit the design of foundation to Engineer-in-Charge before start of work.

(xxx) Successful tenderer has to provide details time line of activities and completion schedule of work within given completion date.

#### **TECHNICAL EVALUATION CRITERIA**

The bidder should fulfill the following pre-qualification parameters / requirements:

1. Financial: Average Annual Financial Turnover during the last 3 consecutive financial years should be at least Rs. 5.5 Lacs. The net worth of the bidder shall be positive during the last financial year. The Bidder shall submit Last 3 consecutive Financial Years Audited P&L Account and Balance Sheet certified by Chartered Accountant. Net worth should be positive.
2. The Tenderer must have his **Office/ Branch office at Lucknow.**
3. The Tenderer must have valid Authorization from the OEM of High Mast to execute such type of works.
4. He must have past experience of Supply and Installation along with their Repair and maintenance of minimum 02 (Two) nos. of High Mast Lighting System in last three years.

OR

The bidder must have substantial past experience of working in following areas:

Sports/ street Lighting system including LT cable laying termination and earthing and Supply and erection of Rail Pole / Tubular Pole including specialized Repairing & maintenance of electrical pole sports/street Lights etc. and their accessories such as LT motors, MCC's, PDB's, Flood lights etc.

5. Having Successfully completed:

One similar completed work costing not less than the amount equal to 14.50 lakhs.

OR

Two similar completed work costing not less than the amount equal to 9 lakhs.

OR

Three similar Completed work costing not less than the amount equal to 7.5 lakhs.

**Note :** Similar work means the job specially mentioned above at S.no. 4.

# **PART A**

(TECHNICAL BID)

## TENDER Declaration

I/We have read and examined the Notice Inviting tender, G.C.C., S.C.C., Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate & other documents and rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for IIM Lucknow within the time specified, viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing.

I/ We agree to keep the tendered rates valid till 120 days from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of Rs. 36,000/- is hereby forwarded in Cash/Receipt Treasury Challan/Deposit at call Receipt of a Scheduled Bank/Fixed deposit receipt of scheduled bank/demand draft of a scheduled bank/bank guarantee issued by scheduled bank as earnest money.

OR

I/We had submitted a self-attested copy of valid certificate as a proof of exemption from submission of Earnest money deposit.

If I/we, fail to furnish the prescribed performance guarantee or fail to commence the work within prescribed period I/we agree that the IIM Lucknow or its successors in office shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely. Further, if I/we fail of commence work as specified, I/we agree that I, Lucknow or his successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said earnest money and the performance guarantee absolutely, otherwise the said earnest money shall be retained by him towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations/ additional/ extra items as may be ordered as per the provisions in the Contract.

Further, I/We agree that in case of forfeiture of earnest money or both Earnest Money & Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/ have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in IIM, Lucknow in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/we shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information derived therefrom to any person other than a person to whom I/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated \_\_\_\_ \*\* \_\_\_\_

Signature of contractor

Postal Address \*\*



**Details of the Tenderer:**

<b>S.No.</b>	<b>Particulars</b>	<b>Credential Criteria of Firm</b>
1	Name of the firm & Address	
2	Contact No. and Email-ID	
3	GST Registration No. of the	
4	Income Tax Permanent Account No.	
5	Experience of the firm in similar field during the last three years, ending last date of submission of tender. ( Copy of Eligible Work orders to be enclosed).	
6	Average Annual Turnover during last 03 years ending 31 <sup>st</sup> march of the previous financial year 2020 ( i.e FY 2017-18, 2018-19, 2019-20) should be at least 30% of the estimated cost. (Copy of Annual Audited Accounts Statement for each year or the certificate for the average Turnover if the Tenderer issued by registered Chartered Accountant) .	
7	OEM of the High mast Pole and Brand and Warranty of lights to be supplied. ( Valid Authorization certificate of the OEM/ High Mast manufacturers from whom they would source the Mast for this tender and shall also provide a certificate from the Manufacturer that the manufacturer would provide all the technical assistance, to the tenderer, for assembling & erection of the mast supplied by them to be enclosed)	
8	Details of EMD uploaded or MSME	
9.	Address of the office at Lucknow for future communication and handling the Complaints during the defect liability period.	
10.	High mast pole and foundation will be duly vetted by the licensed Structural Engineer and OEM. ( Answer in Yes/ No)	

## DECLARATION

1. All the information furnished by me / us here above is correct to the best of my knowledge and belief.
2. I / we have no objection if enquiries are made about the work listed by me / us in the accompanying sheets / Annexures.
3. I / We agree that the decision of Indian Institute of Management Lucknow in selection of contractor will be final and binding to me / us.
4. I / We have read the instructions and I / we understand that if any false information is detected at a later date the tender shall be cancelled at the discretion of the Company and liable for any action, as deem fit by the Indian Institute of Management Lucknow.
5. I / We hereby confirm that my/ our company has never been blacklisted by any State/ Central Government organization.

Signature of the Contractor (or) His authorized signatory

With seal of the agency/ firm

The Technical Bid should contain the followings documents for technical qualification: -

- a) Photocopy of GST Number
- b) Photocopy of PAN Card
- c) Prospective vendors shall have well experienced in similar type of works with Central/State/PSU/Govt. Photocopy of Experience Certificate of similar field of the firm of during the last three years, ending 31<sup>st</sup> March of the previous financial year.
- d) Experience of having successfully completed works during the last three years, ending 31<sup>st</sup> March of the previous financial year.  
One similar completed work costing not less than the amount equal to 14.50 lakhs.  
OR  
Two similar completed work costing not less than the amount equal to 9 lakhs.  
OR  
Three similar Completed work costing not less than the amount equal to 7.5 lakhs.
- e) Photocopy of certificate issued by CA for Average Annual Turnover during last 03 years ending 31<sup>st</sup> march of the previous financial years should be at least 30% of the estimated cost.
- f) An EMD amounting to Rs. 36,000/- (Rupees Thirty Six Thousand only) drawn in favor of Indian Institute of Management, Lucknow or MSME Certificate.

g) Undertaking .....

SIGNATURE .....

SEAL OF ORGANISATION

# DEFINITIONS

In this Contract, the following words and expressions shall have the meanings as stated below:

- i) **'IIM'** shall mean Indian Institute of Management, IIM Road, Lucknow and shall include their successors and assigns, as well as their authorized representatives.
- (ii) **'ENGINEER-IN-CHARGE'** shall mean the engineer appointed by the IIM to supervise all activities of the project.
- (iii) **'TENDERER'** shall mean the company / agency who quote against the tender enquiry for undertaking the work.
- (iv) **'CONTRACTOR'** shall mean the successful tenderer whose tender has been accepted by the IIM and to whom the order is placed by the IIM and shall include his heirs, legal representatives, successors etc.
- (v) **'PERMANENT WORKS'** shall mean all the works included in the schedule of quantities and shall also include additions, alterations etc. communicated in writing.
- (vi) **'SITE'**, shall mean the all place i.e. IIM, Lucknow where the project is to be executed.
- (vii) **'PROJECT'** shall mean entire work specified in the contract documents inclusive of extra items/extra quantities (if any) executed during the contract period.
- (viii) **'ACCEPTANCE LETTER'**, shall mean written consent by a letter of IIM to the tenderer intimating him that his tender has been accepted.
- (ix) **'CONTRACT'** shall mean the articles of Contract Agreement. The conditions of contract, schedule of quantities, specifications, attached and duly signed by the IIM and the Contractor.
- (x) **'DATE OF CONTRACT'** shall mean the date on which the IIM has issued acceptance letter.
- (xi) **'CONTRACT PERIOD'** shall mean the period (including rainy season) specified in the tender documents during which the contract shall be executed.
- (xii) **'COMPLETION CERTIFICATE'** shall mean the certificate issued by the IIM to the contractor after successful completion of the project. This certificate will be issued on the basis of consultant's/ User's certificate to IIM about the completion of the job.
- (xiii) **'EXTRA ITEMS'** are those items, which are not appearing in the BOQ but are required to be executed during the project period and for which rates are to be derived as per the formula given in the conditions of the contract.
- (xiv) **'EMD'** shall mean Earnest Money Deposit. The Owner takes this amount to check the earnestness/seriousness of the tenderers in case they are selected as winners.

# SCOPE OF WORK

The scope of this work covers the:

- Designing of 4 nos. of Uni pole polygon type mast lighting pole having continuously tapered, polygonal cross section, at least 8 sided, presenting a pleasing appearance and shall be based on proven In- Tension design conforming to standards, to give an assured performance and reliable service of 16-meter height pole structure and its Foundation as per the conditions at Cricket stadium of IIM, Lucknow. The pedestal of the foundation shall be minimum 750 mm above the finished ground level. All the required inputs such as wind velocity, bearing capacity of the soil etc. needed for design has to be arranged by the Tenderer only. These designs must be vetted by the OEM and Licensed Structural Engineer.
- The pole should have either winch or lantern carriage arrangement or should have safety cage ladder for the maintenance and replacement of the lights.
- Fabrication of the Mast as per the design and Specifications given below and relevant standard code.
- Supply of the Mast pole, its lighting arms, Foundation bolts, Templates etc., lights with the required nut bolts , and cable etc. to the Cricket Stadium at Indian Institute of Management Lucknow, Lucknow campus.
- Construction of foundation as per the requirements of IS 456, CPWD Specifications and other relevant IS codes complete to the Satisfaction of User department/ Engineer In charge.
- Erection of the Mast along with the Arms etc. for fixing of the Lights etc. Fixing of the lights, their connection with the specified cables.
- Providing and Laying of the connection cables of the required rating up to the specified location of Flood light control panel.
- Providing and fixing of Flood light control panel along with the Timer switch at the specified location of control panel.
- Testing and commissioning of 4 nos. of 16-meter height Flood light poles each having 60 nos. of LED lights.
  - (i) All materials to be used in execution of project shall be of first class quality; I.S.I marked and shall be approved by IIM before its application.
  - (ii) The work should be carried out in truly professional manner, neatly finished with proper line, level and plumb. Cleanliness and finishing of the job is of utmost importance. Hence the job should be done most carefully with best workmanship. For all finishing jobs samples should be approved from the Engineer-Incharge before completely executing the work.
  - (iii) The IIM should be immediately informed for any discrepancy in specifications and instructions in the execution of job at site before actual execution of particular item having discrepancy.
  - (iv) Any item found to be having been executed with poor workmanship or materials of inferior quality then the contractor shall have to rectify / reconstruct the work as specified by IIM. No extra charge will be admissible in such case. If contractors fail to do so, the IIM reserved the right to rectify / reconstruct the work through some other agency at the expenses of contractor.
  - (v) The schedule of activities as submitted by the contractor shall have to be strictly adhered to. Regular progress reports shall have to be submitted by the contractor giving all details for monitoring of the schedule.
  - (vi) The contractor shall take charge of site and if site clearance is involved, he shall attend to it (If such type of unforeseen and unavoidable situation occurs, in that case actual

labour employed for such job shall be paid including overheads and profit).

(vii) Special care is to be taken for cleanliness of the site. After the end of day's work the site should be cleaned immediately.

(viii) The contractor shall have to co-operate with the agencies in execution of other works in the same area.

(ix) While executing the work, the contractor shall ensure safety and security of the property of the IIM so as to avoid theft etc.

(x) Certain specialized items of works may be carried out directly by the specialized agencies which are directly appointed by the company, the contractor has to coordinate and cooperate such agencies by providing them clear way of working, correct size of opening, levelled floors or any such requirements which the contractor has to perform on his part.

(xi) Absolute cleanliness is must while working.

(xii) All care to be taken not to damage existing structure and related things. All dismantled debris to be carted away immediately from the site.

(xiii) For any kind of discrepancy or unforeseen happenings, inform the IIM immediately.

## **GENERAL CONDITIONS OF THE CONTRACT**

General conditions of the Contract are available at the IIM Lucknow web site and at Project Division Office. These conditions shall be the part of this contract. The successful Bidder shall be required to submit the signed hard copy of these General Terms and Conditions after issue of LOI and before starting of the work.

## **SPECIAL CONDITIONS OF CNTRACT.**

### **1.1 Directive to Contractor**

#### **1.1.1 Interpretation of Contract Documents:**

(i) All the documents (such as NIT, ITT, TENDERER DECLARATION, DEFINITIONS & SCOPE OF WORK, TECHNICAL SPECIFICATIONS, General Conditions of Contract, Special Conditions of Contract which are available on IIML Web site and FINANCIAL BID) forming part of the contract are to be taken as mutually explanatory, supplementary and complementary to each other. If there is any error, omission or discrepancy in any of them, it shall be brought to the notice of the IIM. The decision of the IIM shall be final and binding. The contractor shall execute the work accordingly.

(ii) The contractor shall examine all the contract documents thoroughly including the scope, nature and magnitude of works he has to execute in accordance with the contract documents.

(iii) The contractor shall visit the project site so as to study the site conditions, means of access to the site and other factors governing the works.

#### **1.1.2 Period of Contract:**

The time period for completion of job for DESIGN, MANUFACTURE & CONSTRUCT, SUPPLY, ERECTION, TESTING AND COMMISSINING of 04 nos. high mast with 60 nos. Work shall be completed 90 days from the date of issue of LOI (Letter of Intent).

### **1.1.3 Delay in work execution due to reasons beyond contractor control: Force Majeure:**

If the execution of work is delayed due to force majeure, or due to the circumstance which were not in the control of the Tenderer then IIM as per the affected period may extend the time period as per the discretion of the Director of the Institute.

### **1.1.4 Dispute & Arbitration:**

(i) All disputes or differences whatsoever arising between the parties out of or relating to this contract or the specifications, designs and quality of work, quality of materials used for the work, construction, meaning and operation or effect of the work or the breach thereof that cannot be settled by good faith and negotiations between the parties within 60 days of the commencement of the negotiation shall be settle by mutually referring the dispute to a sole Arbitrator and the award passed by him shall be final and binding on the parties. Selection of arbitrator shall be made by mutual consent. The cost of arbitration shall be divided equally. The proceedings will be governed by the provisions of the arbitration & Conciliation Act, 1996. The place of arbitral proceedings will be Lucknow. The language of the arbitral proceedings shall be English

(ii) By consent of Parties the jurisdiction of all other courts are excluded and the courts at Lucknow alone shall have jurisdiction.

(iii) "Abandonment/incomplete work", wherein it should be mentioned that apart from the forfeiture of security the incomplete work shall be got completed from some other agency and the costs thereof be recovered from the contractor.

(iv) The service of notice will be given by e-mail, fax, courier, speed post or registered post be added and the address for service of notice be specified both for IIM and contractor.

### **1.1.5 Escalation:**

The rates quoted by the contractor in the contract documents shall be final and firm and shall not be subjected to any change due to the increase in labor wages or inflation wages or inflation in the cost of materials or any other price variations due to any reason during the stipulated time period of the contract or during the extended time period of completion.

## **1.2 Execution of Work**

### **1.2.1 General:**

All the works shall be executed in accordance with the specifications and instructions approved by the IIM as mentioned in the contract document.

### **1.2.2 Inspection of works:**

(i) The IIM shall have the full authority to inspect the works at any time, at any stage.

The contractor shall provide adequate facilities to carry the inspection work. The contractor should present himself or his authorized representative during the inspection so that the IIM can convey the instruction regarding the works.

(ii) The contractor shall give information to the IIM before covering up the works so that the same can be inspected and measured jointly & correctly to true dimensions.

(iii) If the contractor fails to get the work inspected before covering it up, then the IIM has full authority to get the work uncovered at the expense of the contractor and if any fault is found then the contractor should rectify the same without claiming any extra payment.

### **1.2.3 Inadequate / substandard works and materials:**

- (i) Material used should be make mention in **BOQ**
- (ii) If any work executed by the contractor is found to be of bad workmanship, then the same is to be dismantled and re-executed by the contractor without claiming any extra payment or extension in time period.

### **1.2.4 Default of Contractor in compliance:**

If the contractor or his authorized representative fails to follow the instructions given by the IIM regarding any of the works, then the same shall be got executed by engaging other contractor/ persons by IIM at the risk and cost of the contractor.

### **1.2.5 Discrepancies between instructions:**

The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.

In the case of discrepancy between the schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed: -

- i. Description of Schedule of Quantities.
- ii. Particular Specification and Special Condition, if any.
- iii. Drawings.
- iv. IIM LUCKNOW Specifications.
- v. Indian Standard Specifications of B.I.S.

If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor. Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

If any discrepancy occurs between the various instructions conveyed to contractor or his authorized representative or if any misunderstanding arises between the contractor's staff and IIM's staff, the contractor shall report the matter immediately to the IIM. The decisions of IIM shall be final and binding. Moreover, no claims for losses due to discrepancies between instructions, doubts or misunderstandings shall be admissible.

### **1.2.6 Liabilities for defects and rectifications:**

If it shall appear to the IIM that any work has been executed with imperfect or unskilled workman or with materials of any inferior description, or of quality inferior to that contracted for, or otherwise not in accordance with the contract, the contractor shall on demand in writing from the IIM or his representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for forthwith rectify or remove and reconstruct that work so specified and

provide other proper and suitable materials or articles at his own charges and cost, and in the event of failure to do so within a period to be specified by the IIM or his demand aforesaid, the Incharge may on expiry of notice period rectify or remove, re-execute the work at the risk of Contractor and the cost shall be recovered from the Contractor. The decision of the IIM as to any question arising under this clause shall be final and conclusive.

#### **1.2.7 Period of warranty:**

The warranty period of the work shall be equivalent to warranty of LED Flood light (minimum 2 years) from the date of completion of the work as certified by the IIM. If LED Flood light get defective occurs during the period of liability the same will be changed by the contractor at his own expense.

#### **1.2.8 Suspension of work:**

The contractor shall suspend the progress of work on receipt of the written order from the IIM for any of the following reasons:

- (i) On account of any default on the part of the contractor. In this case the contractor shall be entitled for the extension of time, but the contractor shall have no claim for payment of compensation for re-execution of faulty works.
- (ii) For execution of the works for reasons other than the default of the contractor.
- (iii) For safety of the works.

#### **In case of suspension of work:**

- a. The contractor shall during such suspension, properly protect and secure the works and carry out the instructions of the IIM.
- b. If the suspension is ordered for the reasons 1.2.8 (ii) as stated above, the contractor shall be entitled for extension of time equal to the period of every such suspension but no compensation for damages etc. shall be admissible on account of suspension of work.

#### **1.2.9 Possession Prior to completion:**

The IIM shall have authority to take possession of any completed or partially completed works. Such possession shall not be deemed to be acceptance of any work completed in accordance with the contract. If such prior possession delays the progress of works then the adjustment in the time of completion shall be done accordingly. The decision of the Engineer-Incharge regarding the extent of delay shall be final and binding.

#### **1.2.10 Care of Works:**

From the commencement to the completion of works, the contractor shall take full responsibility for the care of all works and in case any damage or loss occurs then the contractor shall repair and make good the same at his own cost so that on completion of the work, the same shall be in good order in every respect in accordance with the contract and to the satisfaction of the IIM.

### **1.3 Certificate and Payment**

#### **1.3.1 Schedule of Rates:**

- (i) The payments to be made to the contractor shall be as per the finalized rates in tender documents and the rates of extra items finalized from time to time.



(ii) The rates finalized in the tender document shall remain firm till the completion of work including extension of time, if any.

*Mode of Payment:*

All measurements shall be in the metric system and in accordance with Indian Standard Specifications and in accordance with standard engineering practice. If the contractor has any objection regarding the measurements, then the contractor shall inform the IIM immediately. The decision given by the IIM shall be final and binding on the contractor.

**1.3.2 Mobilization Advance:**

No mobilization advance shall be paid.

**1.3.3 Billing:**

The contractor shall submit final bill only after complete successful completion of work (complete in all respect).

**1.3.4 Terms of Payment:**

(i) The payment due to the contractor shall be made only in Indian Currency by Crossed Account Payee Cheque or RTGS. In no case, will the IIM be responsible if the cheque is misled or miss-appropriated by the contractor or his representatives. The cheque shall be released only against submission of duly signed and revenue stamped receipt.

(ii) The IIM reserves the right to carry out post payment audit and technical examination of the bills and work executed including all supporting vouchers etc. the IIM further reserves the right to enforce recovery of over-payment when detected. Similarly, if any under payment is discovered, the amount shall be paid to the contractor.

(iii) Wherever any claim for the payment against the contractor arises as per the contract, the same may be deducted from the bill of the contractor or from his security deposit.

(iv) 5% of the payable bill value will be retained from each bill as security deposit & shall be released on the satisfactory completion of the job after the defect liability period equivalent to warranty of light. No interest shall be paid on security deposit amount.

(v) **Tax Deduction:** All statutory deduction like Income Tax, Works Contract Tax, E.S.I., P.F or any other government-imposed liability shall be borne by the contractor (as applicable at the time of execution of job) and shall be deducted from each bill submitted by the contractor.

**1.3.5 Provisional Completion Certificate:**

When the contractor successfully completes the works as per the contract, he shall be eligible to apply for provisional completion certificate in respect of the works. The IIM shall issue to the contractor the provisional completion certificate after verifying from the completion documents submitted by the Engineer-Incharge and satisfying him/ user Department that the work has been completed in accordance with the contract document. The contractor, after obtaining the provisional completion certificate, is eligible to present the final bill for the work executed by him under the terms of the contract.

The work will not be considered as complete and taken over by the IIM until all the temporary works, labour hutments etc. are removed and the work site cleared to the

satisfaction of the IIM.

If the contractor fails to comply with the requirements of the above on or before the date for the completion of the works, the IIM may, at the expense of the contractor, remove the tools and plants and surplus materials and dispose-off the same and the contractor shall pay the amount of all expenses incurred.

#### **1.4 Labour Laws and Safety Regulations**

##### **1.4.1 Labour Laws:**

- (i) Labour below the age of 18 years shall not be employed on the work.
- (ii) The contractor shall not pay less than what is specified by the law to labours engaged by him on the work.
- (iii) The contractor shall, at his own expenses, comply with all labour laws and the IIM Lucknow shall not be responsible for any recovery/penalty imposed by the respective authorities for violating the labour laws.
- (iv) If the contractor is covered under the Contract Labour (Regulation & Abolition) Act, he shall obtain a license if required from the licensing authority (i.e. the office of labour Commissioner), by payment of the necessary prescribed fee and deposit, if any, before starting the work.
- (v) The contractor shall furnish to the IIM, the details of the workers employed on the works.
- (vi) The contractor shall comply with the provisions of the existing rules and regulations relating to labour laws.
- (vii) The IIM shall on a report having been made by an inspecting officer as defined in Contract Labour (Regulation and Abolition) Act, 1980, have the power to deduct from the amount due to the contractor any sum required or estimated to be required for making good the losses suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, or if deductions made from his or their wages which are not justified by the terms of contract or non-observance of the said regulations.

##### **1.4.2 Minor/Fatal Accident on Duty:**

For cases of minor/Fatal accident on duty not covered under compensation by IIM, the contractor shall have to compensate the affected person/family. The absence from duty, if takes place, due to such accident shall be considered as special leave and full payment shall have to be made for duration of such absence.

#### **1.5 Safety Code**

##### **1.5.1 Safety and Protection:**

The contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions. While carrying out the work, the contractor should provide for;

- (i) Safety of personnel engaged in the construction.
- (ii) Protection and safety of works and materials during their progress.
- (iii) Sanitary and hygienic conditions of working and living for his workers, as required by

the IIM.

### **1.5.2 Use of Safety Gadgets:**

The contractor shall have to ensure availability and use of all desired safety gadgets like safety belts, helmets, goggles, hand gloves, gumboots etc.

### **1.5.3 First Aid:**

The contractor shall provide first aid facilities for his employees and those of his sub-contractors. The requisite first aid box and medicines should always be available at work site.

### **1.5.4 Preservation of Peace:**

The contractor shall take precautions to prevent any riotous or unlawful behavior by his workers, for the preservation of peace and protection of inhabitants and the security of property in the neighborhood of the work.

## **1.6 Details of Work Execution**

- (i) The work shall be done in such a manner so as to clear work force availability for other agencies working at site.
- (ii) Finish of work shall be as per details given by IIM.
- (iii) In general the complete work is to be done as per Indian Standard and esthetical norms as specified and detailed in Tender.

## **1.7 Site**

The site is located at IIM Lucknow, IIM Road, Lucknow. The contractor shall be responsible for accommodation of the manpower, the movement of his men, material and equipment at his own cost.

## **1.8 Electricity**

Electrical power at one point to be provided by the IIM. The Contractor will be responsible for getting electrical connectivity including supplying of cables, connections, and other required items.

## **1.9 Contractor's Scope of Supply**

All materials required for executing the jobs specified in the Bill of Quantities, inclusive of all tools, tackles, scaffolding, consumables and testing equipment's shall be procured and supplied by the contractor at his own cost except for any items specified as IIM supplied.

## **1.11 Liquidated damage charges**

0.05% per day of contract value for delay up to 15 days. 0.10% per day of contract value for delay from 15-30 days and for delay beyond 30 days it will be 0.25 % of the contract Value per day. However, total levy of this Liquidated damage shall not exceed more than 10% of the contract value. In case the delay continues beyond 3 Months than the stipulated date of completion, the tender/ Contract will be automatically cancelled by the Institute.

### **1.12 Recovery from the Contractor**

(i) If the contractor or his employees damage or destroy the property of the IIM, then the same shall be replaced / refunded by the contractor, otherwise the expenses may be recovered from his bill or security deposit.

(ii) All compensation and recoveries to be made as per terms of the contract shall be deducted from the contractor's bill or security deposit.

(iii) Forfeiture of Security Deposit: Whenever any claim against the contractor is to be recovered then the same may be made from the security deposit. If the contractor abandons the work or leaves the work incomplete, then the IIM has the right to forfeit the security deposit.

(iv) The contractor will make fence around the area given for labour hutment to avoid unauthorized entry.

### **1.13 Service of Notice**

All notices, consents, approval or other communication required to be given or served hereunder by either party hereto to the other party shall be in writing, and in English and shall be personally delivered to, left at, sent by registered post, email, courier, speed post or facsimile by either party to the other at the addresses mentioned here in below. Both parties agree that the facsimile transmission will not be used as a sole method for the communication of important notices such as any modification or termination.

**( i )**

**THE DIRECTOR**

**INDIAN INSTITUTE OF MANAMEMENT**

**PRABANDH NAGAR, IIM ROAD LUCKNOW-226013**

(ii) Notice to the Tenderer at the Address mentioned in the Tender Document.

## **TECHNICAL SPECIFICATION – HIGH MAST STADIUM LIGHT**

### **TECHNICAL SPECIFICATION AND DATA SHEET FOR 16 M HIGHMAST POLE FOR CRICKET STADIUM FLOOD LIGHTS.**

This specification covers the design, manufacture, transportation, installation, testing and commissioning of the complete Signage, using fixed type of High Mast Towers, including the Civil Foundation Works.

#### **Structure**

The High mast shall be of continuously tapered, polygonal cross section, minimum 8 sided, presenting a good and pleasing appearance, assured performance, and reliable service. The top height of mast excluding head frame for Flood light shall be at 16 m, with minimum across Flat dimensions of 200mm at the top.

The plate thickness shall be 5 mm for bottom and 4 mm for top section. The structure shall be suitable for wind loading as per IS-875, pt-3, 1987. The Ht. of Mast pole shall be 16 m excluding the Height of the Head Frame.

The Head frame shall be so designed that these 15 lights can be fixed in the designed pattern and position on each pole so that Average illumination from these 4 Mast lighting on the complete field area shall be minimum 450 lux (Site plan of the cricket field is enclosed). In case the Lantern carriage is not provided by the contractor then Safety Ladder and safety platform with railing must be provided for Pole and head frame respectively.

#### **Construction**

The contractor is required to properly design the placement of these 4 masts so that the illumination requirements given in SP 72 : 2010/ stipulated below are fulfilled. The mast shall be capable of safely withstanding the strong winds prevailing at site. The deflection at the top during heavy storm periods shall therefore be considered in the design and the mast designed in such way that the above deflection during worst periods is kept to a minimum value. The mast shall be fabricated from steel plates conforming to BS EN 10025 or equivalent having minimum yield strength of 355 N/Sq. mm and silicon content in steel shall be less than 0.06%, cut and folded to form minimum 8 sided polygonal sections and welded with automatic sub merged arc welding machine. The welding shall be in accordance with BS:5135.

The 16 meter mast pole height shall be delivered either in Two or maximum three two sections, and shall be joined together by slip stressed-fit method at site. With a suitably designed head frame fixing arrangement on the pole. No site welding or bolted joint shall be done on the mast. The High mast shaft shall have only one longitudinal weld without any circumference weld. The minimum overlap distance shall be 1.5 times the diameter at penetration.

The mast shall be provided with full-penetrated flange, which shall be free from any laminations or inclusions. The welded connection of the base flange shall be fully

developed to the strength of the entire section. The base flange shall be provided with supplementary gussets between the bolt holes to ensure elimination of helical stress concentration. For the environmental protection of the mast, the entire fabricated mast shall be hot dip galvanized, internally and externally as per BS EN ISO 1461. having a uniform thickness of 65 microns

The deflection of the mast is to be limited to  $1/40$  of the height at  $2/3$  of the design wind speed.

#### Door Opening

An adequate door opening shall be provided at the base of the mast and the opening shall be such that it permits clear access to equipment like winches, cables, plug and socket, etc. and also facilitate easy removal of the winch. The door opening shall be complete with a close fitting, vandal resistant, weather proof door, provided with a heavy duty double internal lock with special paddle key. The door opening shall be carefully designed and reinforced with welded steel section, so that the mast section at the base shall be unaffected and undue buckling of the cut portion is prevented.

#### d. Dynamic Loading for the Mast

The mast structure shall be suitable to sustain an assumed maximum reaction arising from a wind speed as per IS 875 (three second gust), and shall be measured at a height of 10 meters above ground level. The design life of the mast shall be a minimum of 35 years.

Wind excited oscillations shall be damped by the method of construction and adequate allowance shall be made for the related stresses.

#### Junction Box

Weather proof junction box with IP55 enclosure, made of Cast Aluminum shall be provided on the Carriage Assembly as required, from which the inter- connections to the designed number of the flood light luminaries and associated control gear fixed on the carriage shall be made.

#### Head Frame

The head frame which is to be designed as a capping unit of the mast, shall be of welded steel construction, galvanized both internally and externally after assembly.

#### **Foundations & Foundation Bolts**

Foundation bolts set comprising minimum 12 nos. Min. 28 mm diameter 850 mm long having minimum 6.8 grade bolts, anchor plate 8mm thick and template as per the PCD of the base plate of the High mast and C/c distance of its bolts. The exposed portion of the bolts and nuts washers shall be hot dip galvanized. Foundation shall be designed for the reaction arising out of the dynamic loading of the high mast for the actual safe soil bearing at site. RCC foundation shall **be with M 20 grade concrete and Fe 500D TMT reinforcement bars.**

Stirrups must be bent at 135° at the end.

#### **Lightening Finial, Earthling and Earthling Terminals**

Suitable earthling terminals using 12 mm diameter galvanized bolts shall be provided at a convenient location on the base of the Mast. One earth pit pipe type as per IS 3043 shall be provided for each mast for lightening protection. One lightning finial is to be provided on top of mast. Suitable Aviation obstruction light shall be provided as per the Law of the Land.

#### **In Case – IF**

#### **LANTERN CARRIAGE is being provided by the High Mast Manufacturer.**

##### a. Fabrication

A fabricated Lantern Carriage shall be provided for fixing and holding the flood light fitting and control gear boxes. The Lantern Carriage shall be of special design and shall be of steel tube construction, the tubes acting as conduits for wires, with holes fully protected by grommets. The Lantern Carriage shall be so designed and fabricated to hold the required number of flood light fittings and the control gear boxes, and also to have a perfect self- balance.

The Lantern Carriage shall be fabricated in two halves and joined by bolted flanges with stainless steel bolts and plastic lock type stainless steel nuts to enable easy installation or removal from the erected mast. The inner lining of the carriage shall be provided with protective PVC arrangement, so that no damage is caused to the surface of the mast during the raising and lowering operation of the carriage. The entire Lantern Carriage shall be hot dip galvanized after fabrication.

##### c. Raising and Lowering Mechanism

For the installation and maintenance of the luminaries and lamps, it will be necessary to lower and raise the Lantern Carriage Assembly. To enable this, a suitable Winch Arrangement shall be provided, with winch fixed at the base of the mast and the specially designed head frame assembly the top.

##### d. Winch

The winch shall be of completely self-sustaining type, without the need for brake shoe, springs or clutches. Each driving spindle of the winch shall be positively locked when not in use, gravity activated PAWLS. Individual drum also should be operated for fine adjustment of lantern carriage. The capacity, operating speed, safe working load of the recommended lubrication and serial number of the winch shall be clearly marked on each winch.

The gear ratio may be according to manufacturer's standard. However, the minimum working load shall be not less than 400Kg. The Winch shall be self-lubricating type by means of an oil bath and the oil shall be readily available grades of

reputed producers.

The winch drums shall be grooved to ensure perfect seat for stable and tidy rope lay, with no chances of rope slippage. The rope termination in the winch shall be such that distortion or twisting is eliminated and at least 5 to 6 runs of rope remains on the drum even when lantern carriage is fully lowered and rested on the rest pads.

It should be possible to operate the winch manually by a suitable handle and / or by an external power tool. It shall be possible to remove the double drum after dismantling, through the door opening provided at the base of mast. Also a winch gear box for simultaneous and reversible operation of the double drum winch shall be provided as part of the contract.

The top pulley shall be appropriate diameter, large enough to accommodate the stainless steel wire ropes and the multi-core electric cable. The pulley block shall be made of non-corrosive material, and shall be of die cast aluminum alloy (LM-6). Pulley made of synthetic material such as plastic or PVC are not acceptable. Self-lubricating bearings and stainless steel shaft shall be provided to facilitate smooth and maintenance free operation for a long period. The pulley assembly shall be fully protected by a canopy galvanized externally and internally.

Close fittings guides and sleeves shall be provided to ensure that the ropes and cables do not dislodge from their respective positions in the grooves. The head frame shall be provided with guides and stops with PVC buffer for docking the lantern carriage.

Stainless Steel Wire Ropes

The suspension system shall be essentially be without intermediate joint and shall consist of any non-corrosive stainless steel of AISI 316 or better grade.

The stainless steel wire ropes shall be of 7/19 construction, the central core being of the same material. The overall diameter of the rope shall not be less than 6 mm. The breaking load of each rope shall not be less than 2350kg individually, giving factor of safety or over 5 for system at full load, the minimum recommended value as per the TR-7 referred to in the beginning of the specification. The end construction of rope to winch drum shall be fitted with talurit wire rope and splicing.

The thimbles shall be secured on ropes by compression splices. Two continuous lengths of stainless steel wire ropes shall be used in the system and no intermediate joints are acceptable in view of the required safety. No intermediate joints, either bolted or else is provided on the wire ropes between winch and lantern carriage.

**OR**

**In Case If**

**Safety Cage Ladders are being provided by the High Mast**

**Manufacturer:**



The fabrication and design of the safety Cage Ladder shall comply with OHSA, Regulations for Industrial Establishments, Section 18 and IS 3696 and IS 8172. And Standing platform with railing to be provided at the head frame for the maintenance of the lights.

### **Illumination :**

The Design for illumination should be in accordance with the provisions given for illumination of class II Cricket stadium in SP 72 : 2010. Brief of the illuminatin requirement is as Follows :

Minimum Vertical illumination

At edges/ boundary = 300 Lux.

At Circket pitch = 1000 lux.

Minimum horizontal illuminance = 500 lux.

Average illumination around the cricket ground = 450 lux.

Although 12 nos. flood light of 200 w each and 3 nos. focus lights of 200 Watt each i.e 15 lights on each pole have been considered but the proportioning of these lights per pole can be varied by the contractor as per the design requirement. So in order to avoid any discrepancy between the rates and Qty. of Flood/ focus light used later, both the flood and focus lights have been stipulate under 1 item in the BOQ of Financial bid.

**Table 1- Minimum coefficient of retro-reflectance (Cd/lux/sq.mtr.)**

**Table for Minimum Coefficient of Retroreflection-(Candelas / foot candle / square foot)**

Observation Angle	Entrance Angle	White	Yellow	Green	Red	Blue
0.1°	- 4°	1000	750	100	150	60
0.1°	+30°	460	345	46	69	28
0.2°	- 4°	700	525	70	105	42
0.2°	+30°	325	245	33	49	20
0.5°	- 4°	250	190	25	38	15
0.5°	+30°	115	86	12	17	7

For overlay areas, the coefficient of retro reflection shall be minimum 50% of the performance values mentioned in Table 1 for the respective color.

### **TECHNICAL DATA SHEET (16 M HIGH MAST STADIUM FLOOD LIGHTING.)**

Sr. No.	Description	Applicable Data
<b>1.</b>	<b>HIGH MAST STRUCTURE</b>	
a.	Height of the polygonal Mast pole .	16 Meters ( Excluding Head Frame) in Two or thre Sections.
b.	MAKE	Any make of HMS pole fulfilling the specification
c.	Material Construction	High Tensile Steel. As per BS-EN 10025 Grade S 355
d.	Material Construction of base plate and other stiffners	IS 2062
e.	Minimum plate thickness	Top : 4 mm Bottom : 5 mm
f.	Cross section of mast in polygon (No. of sides)	Minimum 8 sides
g.	Length of Individual sections (approx.)	Top section : 6620 mm, Bottom section : 10980 mm
h.	Minimum base dia and top diameter	Top diameter : 200 mm Bottom diameter : 540 mm
i.	Type of Joints	Telescopic Slip Joint
j.	Metal protection treatment for mast section	Hot dipped galvanized (single dip)
k.	Thickness of galvanization	As per BS EN ISO 1461
l.	Base Flange diameter/thickness/PCD	740mm/30 mm/650mm
m.	Lightening protection finial	As per IS 2309
<b>2.</b>	<b>DYNAMIC LOADING AS PREVAILING AT SITE</b>	
a.	Max. wind speed (as per (IS 875-Part III 1987)	50 m/sec
b.	Max. gust speed time	3 seconds
c.	Height above ground level at which these two factors	10 mtrs

d.	Factor of safety for wind load	1.25
e.	Factor of safety for other load	1.15
<b>3.</b>	<b>FOUNDATION DETAILS</b>	
a.	Type of foundation	RCC RAFT footing (M-20)
b.	Size of foundation	As per design and Site Condition
c.	Design Safety factor	AS PER IS 456
d.	Considered wind pressure	AS PER IS 875
e.	Considered wind speed	50 M/ SEC
f.	No. of foundation bolts	12 Nos.
g.	PCD of foundation bolts	650 mm
h.	Type of foundation bolts	6.8 Grade Steel
i.	Bolt diameter and length	Dia 30 mm and length 850 mm exposed portion hot dip
j.	Nuts and Washers	Exposed hot dip galvanized
k.	Anchor Plate (Within the Foundation pedestal) -	8mm/650mm/Red Oxide Primer Coated
l.	Cement ( OPC/ PPC as per the Design)	ACC/Ultratech/ Birla/ J.K. or equivalent reputed make.
j.	Reinforcement steel ( Fe 500 D) TMT	SAIL, RINL( VIZAG), Tata, Jindal.

Following table gives Guaranteed Parameters of lighting fixtures:

Sr.No.	Item Description	
1.	Input supply voltage and frequency	240V AC, 50Hz, 1- $\Phi$
2.	Variation in AC supply voltage and frequency	$\pm 10\%$ and $\pm 3\%$
3.	Ambient temperature	50°C
4.	Fixture terminal suitable for	4.0mm <sup>2</sup> single core FRLS cable
5.	Voltage grade of FRLS wire/cable	1100V
6.	Conductor material	Copper
7.	Earthing terminal suitable for Conductor	14SWG GI ( 1 no inside & 2 Nos. outside of luminaire )
8.	Overall power factor	Not less than 0.90 lag at full load
9.	THD with test certificate	<5%

10.	L70 life	Min 50,000 hours at 35°C
11.	System efficacy	>110 lumen/Watt
12.	View angle/ Beam Angle	Min 120° -160°
13.	Correlated ColourTemperature	5000-6500K for outdoor
14.	ColourRendering Index with test certificate	>70% -80% for outdoor fixtures
15.	Minimum ingress protection with test certificate	IP-66 for outdoor fixtures, weather proof/ dustproof fixtures with test certificate
16.	No. of hours usage	6 to 8 hrs per day
17.	Rated watt of lamp	As per tender mentioned elsewhere
18.	LED type	High Power LED (1 watt)
19.	Lamp starting time	Not more than 5 second
20.	Pole entry/ Retro fitting	: Suitable for fixing in existing lighting pole (30 mm to 55 mm dia with bracket and locking bolt & nut.
21.	Working Humidity	10% to 90%
22.	Circuit Protection	
23.	High Voltage Protection	HV cut off @330VAC+/- 20VAC
24.	Short Circuit Protection	Shall be provided
25.	Open Load Protection	Shall be provided
26.	Reverse Polarity Protection	Shall be provided
27.	Driver Isolation	Shall be provided
28.	Luminaire shall be marked with	as per IS 16107
29.	Starting	Flicker free & Instant start
30.	For photo biological safety requirements the luminaries shall comply	with IS 16108.
31.	Input Surge Protection	≥10 KV
32.	Type of Driver	Constant Current
33.	Luminaire Efficacy	As per Schedule of quantities
34.	Correlated Current Temperature (CCT)	As per Schedule of quantities
35.	Colour Rendering Index (CRI)	≥70
36.	LED Chip	Shall be LM 80 Certified
37.	LED Chip Efficacy	≥160 lumen/watts
38.	Diffuser	Shall be UV resistant
39.	Frame/Housing	Pressure die-cast Aluminium
40.	Heat Sink	Highly efficient extruded aluminium heat sink
41.	Short Time voltage	440 V , 30 second

42.	Colour of LED	Cool white , No ultraviolet light
43.	Surface Finish	Epoxy grade , Light Gray as per IS-5
44.	LED make	Philips, Bajaj, Havels, Osram, Syska, Hallonix, Oreva or equivalent.
45.	LED Fasteners/Screws	SS304
46.	Guarantee Warrantee	Two Years from the date of Final Acceptance of the material at site.

NOTE: Supplier shall submit required test report approved form NABL accredited labs as specified /indicated in Sr. No. 10,15&, 16 above along with their offer.

**Following certificates shall be submitted before the start of the work:**

1. The O.E.M Test Certificates for the bought out items and the material at the time of inspection of the mast.
2. Structural Stability Certificate duly certified by an independent licensed Structural consultant preferably from reputed Engineering Institution such as IIT/ NIT.
3. In case, the tenderer is not a manufacturer of the High Mast, they shall indicate in their bid the names of the High Mast manufacturers from whom they would source the Mast for this tender and shall also provide a certificate from the Manufacturer that the manufacturer would provide all the technical assistance, to the tenderer, for assembling & erection of the mast supplied by them. Any change in the source of the supply of high mast, during the execution of the contract, shall be with the prior approval of IIML.

**APPLICABLE STANDARDS**

The following shall be the Reference Standards for the loading of the high mast:

BS Code of Practice, CP-3, Gradient of wind related to height Chapter-V, BS 4360  
Grades of MS Plates

BS 5135 Welding

BD 729 Galvanizing

Technical Report (TR) No.7 – 1996 Specification for Mast and Foundation.

IS 875 (Pt-III) 1987 Code of Practice for Design Loads for structure

# **PART B**

## **FINANCIAL BID**



## BILL OF QUANTITY

### BOQ FOR SUPPLY INSTALLATION AND FIXING OF 04 NOS. HIGH MAST WITH 60 NOS. FLOOD AND

#### FOCUSED LIGHTS

S.N	Description of Items	Unit	Qty
	<b>16 Mtr. High Mast Stadium Flood Lighting system.</b>		
	<b>(A) SUPPLY</b>		
1	Design, fabricate and Supply at site 16 Mtr. High Mast pole (excluding the Ht. of head frame) with head frame of suitable size as per the design with either Lantern Carriage or caged ladder and platform with railing for maintenance of the Flood lights along with all its Accessories, nut bolts etc. conforming to the Specifications of the contract. High mast shall be of continuously tapered, polygonal cross section, minimum 8 sided, presenting a good and pleasing appearance, assured performance, and reliable service. The height of mast pole shall be at 16 m, with minimum across Flat dimensions of 200mm at the top. The plate thickness shall be 5 mm for bottom and 4 mm for top section and suitable for wind velocity as per IS 875 part 3. The 16 meter high mast shall be delivered either in Two or maximum three two sections, and shall be joined together by slip stressed-fit method at site. The minimum overlap distance shall be 1.5 times the diameter at penetration entire fabricated mast shall be hot dip galvanized, internally and externally as per BS EN ISO 1461 having a uniform thickness of 65 microns. It shall also include accessories for high mast including head frame arrangement suitable for mounting 15 luminaries LED FLOOD LIGHT symmetrically. Suitable head frame as per the design for the required illumination across the designed illumination beam to be designed, fabricated and fixed over the pole. The tilt angle and curvature of the head frame to be designed so as to get the class II illumination of cricket ground as per SP 72 9 Refer ( Page 35 of the Tender document "Illumination requirements") Including supply of foundation bolts manufactured from special steel min. 6.8 grade along with nuts, washers, anchor plate and templates (1 fitting per mast is necessary) as per specification and direction of the Engineer - In-Charge. Bidders are requested to Quote for the Foundation bolts, Templates etc. separately in the specified row below.	Nos.	4
2.	Providing Mild Steel Templates suitable and matching with the PCD of the high mast pole fabricated with minimum 50 x 5 mm plate with Red oxide/ zinc chromate antirust coating. Holes for the Bolts to be drilled/ punched and grinded properly so that even surface may be obtained for proper leveling of the Bolts.	Nos.	4
3.	Providing and fixing of Aviation obstruction light	Nos.	4

4.	Providing and fixing minimum 28 mm diameter minimum 850 mm long having minimum 6.8 grade bolts having anchor plate 8mm thick along with minimum 2 nos. galvanized nuts per bolt. The exposed portion of the bolts and nuts washers shall be hot dip galvanized and the embedded portion can be coated with anti-rust coating such as Zinc Chromate/ red oxide.	Nos.	50
6	Providing and Fixing Timer switch for these four Mast Lights.	Set	1
7	Supply and fixing to the given slot on headframe of the high mast minimum 200 W 230V AC LED <b>Flood Light/ Focus Lights</b> conforming to I.S. 16107. With suitable driver plate and encasing min. IP 66 with toughened glass curvature of the covering glass to be as per the design requirement. Min. Power: 200W Operating voltage :180V to 365 V A.C. 32 10500 SMD minimum Efficiency: 160 lumen/W; Colour: Cool White; Colour Temperature: 6500K. Nos. and placement of the flood and focus lights to be decided by the designer for the required illumination in accordance with SP 72.	Nos.	60
8	Supply & Laying of 4C x 25 sq. mm PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade from panel to TP & N on cable tray. Termination of cable at both the end with appropriate lug and all the accessories required for termination.	Mtrs	300
9	Wiring for circuit/ sub main wiring along with earth wire with the 3 X 10 sq. mm + 1 X 6 sq. mm earth wire of FRLS PVC insulated copper conductor, single core cable termination of cable with appropriate lug at both the ends (complete in all sense) .	Mtrs	100
10	Supplying and fixing 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required. (for DB box)		
a	FP 63A, 440V	Nos.	4
	<b>(B) FOUNDATIONS</b>		
11	Construction of suitable shallow foundations with M-20 Concrete and fe500d reinforcement steel for the High Mast considering the safe soil bearing capacity at site as 8 T/Sq. Mtr. At 2 Meter depth below ground level with all materials and labours. Pedestal size should be suitably designed as per the G.A. drawing of the Pole given by the pole Manufacturer. The work includes provision of packing plates ( If required) and grouting the gap in between the pedestal top and Base plate of the pole.	Nos.	4
	<b>(C) ERECTIONS</b>		
12	Erections of the High Mast with the help of suitable equipment's with maximum safety of the erection worker and wiring of Luminaries with all wiring materials with all materials & labours.	Nos.	4



13	Cable trenching /laying of underground cable in pipe and PVC conduit in all type of soil below and concrete surface respectively. Underground Cable to be laid minimum 600 mm below the earth in the Approved PVC pipes overlain by caution tape. Suitable route markers with PVC blocks fixed directly in earth @ 50 m C/c shall be provided over the underground cable route.	Mtrs	300
<b>(D) EARTHING</b>			
14	Earthing with GI earth electrode 50mm dia x 3 mtr length including earth enhancing compound (Jam Fill quality product) and PIT cover for earthing pit etc as reqd. (193GI JMV)	Nos.	4
15	Providing & fixing 25mm x 5mm GI strip on surface or in recessed for connection etc. as reqd.	Mtrs	80
16	Providing suitable Earth pit to be as per the design adjacent to each pole.	Nos.	4
<b>Total</b>			
GST as Applicable			

**Note:** The contractor is advice to survey the actual site for assessment of critical application if any & accordingly quote the rates.

Signature with seal of the Contractor