

MILITARY ENGINEER SERVICES

NAME OF WORK : REPAIR /MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS
AND INCLUDING ALLIED WORKS AT GE DEHU ROAD

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Signature of Contractor

AGE Contract
For Accepting Officer

Date:

Tele 020-27673300

Garrison Engineer
Dehu Road - 412101

8142/11/E8

18 May 2026

M/s _____

NAME OF WORK : REPAIR / MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE DEHU ROAD

Dear Sir,

1. Tender documents in respect of above work are uploaded on the site **www.defproc.gov.in**. The tender is on single stage two cover /two stage two cover/three cover e-tendering system. The contents of Cover 1 & Cover II are specified in NOTICE OF TENDER.

2. Bids will be received online by ACCEPTING OFFICER upto the date and time mentioned in the **NOTICE INVITING TENDER (NIT)**. No tender/bid will be received in physical form and any tender/bid received in such manner will be treated as non bonafide tender/bid.

3. Bid will be opened on due date and time fixed for opening in the presence of tenderers/bidders or their authorized representatives, who have uploaded their quotation bid and who wish to be present at the time of opening the bids.

4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion on tender/ drawings and to clarify doubts, if any, on or before bid submission start date. You are requested not to write piece meal points and forward your points duly consolidated before due date viz bid submission start date.

5. Unenlisted contractors are required to submit the scanned copies (in pdf file) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents and Appendix 'A' to **NIT** alongwith EARNEST MONEY DEPOSIT (EMD) and tender fee on e-procurement portal and submit the physical documents in the office of GE Dehu Road within time limit specified in **NIT**. Inadequacy/deficiency of documents shall make the bid liable for rejection resulting in disqualification for opening of finance bid.

6. (a) Contractor having not executed standing security bond and standing security deposit in any MES formation shall upload scanned copy of EARNEST MONEY DEPOSIT (EMD) mentioned in Notice of Tender and shall ensure receipt of hard copy of EMD in the office of tender issuing authority before date & time fixed for this purpose. In case of failure to abide by any of these two requirements, the finance bid will not be opened.

(b) Contractor having not executed standing security bond and standing security deposit in any MES formation would be required to deposit individual security deposit on acceptance of tender which will be calculated with reference to the tendered cost as per scales laid down by MES for calculation of "EARNEST MONEY" enhanced by 25% subject to maximum of ₹. 1875000/- (Rupees Eighteen Lakhs seventy five thousand Only).

(c) **PERFORMANCE SECURITY** (See Condition 19 of IAFW-2249) In case the tender/bid submitted by the contractor is accepted, the contractor will be required to lodge with the Accepting Officer 'PERFORMANCE SECURITY DEPOSIT' CALCULATED @ 05% (Five percent) of the contract sum as notified by the Accepting Officer within 28 (twenty eight) days of the receipt by the contractor of notification of acceptance of Tender/ bid. The performance security can be submitted by the successful contractor in the form of Bank Guarantee Bond or Government securities, FDR or any other form of deposit approved in MES.

The failure of the contractor to submit the 'Performance Security Deposit' within the stipulated period of 28 days shall constitute sufficient grounds for cancellation of the award of the work and the following action will be taken by the department:-

(i) In case of Un-enlisted Contractors the 'Earnest Money' submitted by the Contractor shall be forfeited.

(ii) In case of MES enlisted contractor, amount equal to the earnest money stipulated in the 'Notice Inviting Tender' shall be deposited by the tender through MRO. Issue of tenders to such tenderers shall remain suspended till the aforesaid amount equal to 'earnest Money' is deposited in the Government Treasury and a proof of the same is submitted to the Accepting Officer for his reference and record by the contractor.

7. Enlisted contractors of MES shall submit the scanned copies (pdf file) of enlistment letter, tender fee and such other documents as mentioned, Appx A' to NIT on e-procurement portal & submit physical documents in the office GE Dehu Road before date & time fixed for this purpose

8. The contractor must ensure that the tender/bid on the proper form is uploaded in time as the Accepting Officer will take no cognizance of any quotations/offer received in any other electronic or physical form like email/fax/by hand through post from tenderer/bidder even if they are received in time. **Work order No 1 shall be placed only after submission of performance security of adequate value by the contractor in case a fixed deposit receipt of any bank is furnished by the contractor to the Government.**

9. In view of delays due to system failure or other communication related failures, it is suggested that the tender/bid be uploaded, if necessary, sufficiently in advance of the last due date and time fixed.

10. General Conditions of Contracts (IAFW-2249) (1989 Print) and errata and amendments thereto, Schedule of minimum fair wages and MES SSR (Part - I and Part -II) are not enclosed with these documents These are available for perusal in the Office of GE concerned and this office.

11. Any tenderer, which proposes alterations to any of the condition, specifications laid down in the tender documents or any new condition, whatsoever, is liable to be rejected.

12. **REFUND OF PERFORMANCE SECURITY**

The Performance Security Deposit mentioned on Srl No. 6 (c) above may be refunded to the contractor after the expiration of the defects liability period (vide condition 46) by the GE provided always that the contractor shall first have been paid the final bill and have rendered a ‘No-Demand certificate’ (IAFW-451) by the contractor through Engineer-in-Charge alongwith “No Claim Certificate” of Engineer-in-Charge with all details as per policy in vogue.

13. These instructions shall form part of the contract documents.

Yours faithfully,

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER**1. EARNEST MONEY DEPOSIT (EMD)**

Contractor(s) who are not enlisted with MES/who are enlisted but have not executed the Standing Security Bond shall submit Earnest Money Deposit as detailed in Notice of Tender in one of the following forms, along with their tender/bid: -

- (a) Deposit at Call Receipt from a Scheduled Bank in favour of Garrison Engineer Dehu Road.
- (b) Receipted Treasury Challan, the amount being credited to the Revenue Deposit of Garrison Engineer. It is advisable that Earnest Money is deposited in the form of deposit call receipt from an approved Schedule Bank for easy refund. In case the tenderer/bidder wants to lodge 'EARNEST MONEY DEPOSIT' in any other form allowed by MES, a confirmation about its acceptability will be obtained from the Accepting Officer well in advance of the bid submission end date and time. Earnest Money Deposit shall be submitted in the name of Garrison Engineer Dehu Road.

NOTES: Earnest Money Deposit (EMD) in the form of Cheque/Bank Guarantee etc. will not be accepted. NON-SUBMISSION OF EARNEST MONEY DEPOSIT (EMD) (scanned copy along with Technical Bid & hard copy before the date & time fixed for opening of BOQ) WILL RENDER THE BID DISQUALIFIED FOR OPENING OF COVER II (FINANCE BID).

2. GENERAL INSTRUCTIONS FOR COMPLIANCE

2.1. The bids received only in the electronic form will be considered. All bids shall be submitted on <http://defproc.gov.in> portal. Documents should be scanned and forwarded in 'pdf' form and 'xls' form as indicated.

2.2. Bids shall be uploaded on <http://defproc.gov.in> portal on or before the bid closing date mentioned in the tender. No tender/bid in any other electronic or physical form like email /fax/ by hand/through post will be considered.

2.3. Bid should be DIGITALLY signed using valid DSC. All pages of tender documents, corrections/ alterations shall be signed/initialed by the lowest bidder after acceptance.

2.4. Drawings, if issued in physical form, must be returned duly initialed by the tenderer/bidder in separate envelope indicating his name and address.

2.5. The tender shall be signed, dated and witnessed at all places provided for in the documents after acceptance. All corrections shall be initialed. The Contractor shall initial every page of tender and shall sign all drawings forming part of the tender. Any tender/bid, which proposes alterations to any of the conditions whatsoever, is liable to be rejected.

2.6. In the technical bid, a scanned copy of Power of Attorney in favour of the person uploading the bid using his/her DSC shall be uploaded. In case the digital signatory himself is the sole proprietor, scanned copy of an affidavit on stamp paper of appropriate value to this effect stating that he has authority to bind the firm in all matters pertaining to contract including the Arbitration Clause, shall be attached in 'pdf' form. In case of partnership concern or a limited company, digital signatory of the bid/tender shall ensure that he is competent to bind the contractor (through partnership deed, general power of attorney or Memorandum and Articles of Association of the Company) in all the matters pertaining to the contracts with Union of India including arbitration clause. A scanned copy of the documents confirming of such authority shall be attached with the tender/bid in 'pdf' form, if not submitted earlier. The person uploading the bid on behalf of another partner(s) or on behalf of a firm or company using his DSC shall upload with the tender/bid a scanned copy (in 'pdf' form) of Power of Attorney duly executed in his favour by such other or all of the Partner(s) or in accordance with constitution of the company in case of company, stating that he has authority to bind such other person of the firm or the Company, as the case may be, in all matters pertaining to the contract including the Arbitration Clause.

2.7. Even in case of Firms or Companies which have already given Power of Attorney to an individual authorizing him to sign tender in pursuance of which bids are being uploaded by such person as a routine,

fresh Power of Attorney duly executed in his favour stating specifically that the said person has authority to bind such partners of the Firm, or the Company as the case may be, including the condition relating to Arbitration Clause, should be uploaded in 'pdf' form with the tender/bid; unless such authority has already been given to him by the Firm or the Company. It shall be ensured that power of attorney shall be executed in accordance with the constitution of the company as laid down in its Memorandum & Article of Association.

2.8. Hard copies of all above documents should be sent by the contractor to the Tender issuing authority well in advance to be received before the date & time fixed for the same.

2.9. Bid (Cover 1 & 2) shall be uploaded online well in time.

2.10. The contractor shall employ Indian Nationals after verifying their antecedents and loyalty. Attention is also drawn to special condition 3 referred hereinafter and also conditions 24 & 25 of IAFW 2249 (General conditions of contract).

2.11. Tenderers/bidders who uploaded their priced tenders/bids and are desirous of being present at the time of opening of the tenders/bids, may do so at the appointed time.

2.12. The tenderer/bidder shall quote his rate on the BOQ file only. No alteration to the format will be accepted, else the bid will be disqualified and summarily rejected.

2.13. In case the tenderer/bidder has to revise/ modify the rates quoted in the BOQ (excel sheet) he can do so only in the BOQ, through <http://defproc.gov.in> only before the bid closing time and date.

3. REVOCATION/ REVISION OF OFFER UPWARD OFFERING VOLUNTARY REDUCTION, AFTER OPENING OF FINANCIAL BIDS BY LOWEST BIDDER

In the event of lowest tenderer/bidder revoking his offer or revising his rates upward, offering voluntary reduction, after closing of bid submission date & time, his offer will be treated as revoked and the Earnest Money deposited by him shall be forfeited. In case of MES enlisted Contractors, the amount equal to the Earnest Money stipulated in the Notice of tender, shall be notified to the tenderer/bidder for depositing the amount through MRO. Bids of such Contractors/bidders shall not be opened till the aforesaid amount equal to the earnest money is deposited by him in Govt Treasury. In addition, bids of such tenderer/bidder and his related firm shall not be opened in second call or subsequent calls. Reduction offered by the tenderer/bidder on the freak high rates referred for review shall not be treated as voluntary reduction.

4. CPM (Critical Path Method)

4.1. The project planning for work covered in the scope of tender is based on CPM.

4.2. The tenderer/bidder is expected to be fully conversant with the CPM technique and employ technical staff who can use the technique in sufficient details. Sufficient books and other literature on the subject are widely available in the market which the tenderer /bidder may make use of.

4.3. The tenderer's/bidder's attention is drawn to special condition of the tender regarding preparation of the detailed network analysis and time schedule for the work and his liability for employing sufficient resources to adhere to this schedule. Any inability on the part of the tenderer/bidder in using the technique will be taken as his technical inefficiency and will affect his class of enlistment and future prospect/invitation to tenders for future works.

4.4. Department may issue amendments/errata in form of CORRIGENDUM to tender /revised BOQ to the tender documents. The tenderer/bidder is requested to read the tender documents in conjunction with all the errata/ amendments/corrigendum, if any, issued by the department.

5. These instructions shall form part of the contract documents.

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

MILITARY ENGINEER SERVICES NOTICE INVITING TENDER /NIT)

1. A tender is invited for the work as mentioned in Appendix 'A' to this NOTICE INVITING TENDER (NIT)
2. The work is estimated to cost as indicated in aforesaid Appendix 'A'. This estimate, however, is not a guarantee and is merely given as a rough guide and if the work cost more or less, a tenderer/bidder will have no claim on that account. The tender shall be based on as mentioned in aforesaid Appendix 'A'
3. The work is to be completed within the period as indicated in aforesaid Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over site, which will be on or about two weeks after the date of Acceptance of tender.
4. Normally contractors whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, contractors of categories SS to E may tender/bid. In case, where the tender amount is in excess of the financial limit of the contractor and the Accepting officer decides to accept the tender/bid, in which event the tenderer/bidder would be required to lodge additional security deposit as notified by the Accepting Officer in term of conditions of contract. Contractors whose names are on the MES approved list of any MES Formation and who have deposited standing security and have executed standing security bond may also tender/bid without depositing Earnest money along with the tender/bid and if the tender/bid submitted by such a tenderer/bidder is accepted, the contractor will be required to lodge with the Controller of Defence Accounts concerned the amount of individual security deposit' within thirty days of the receipt by him of notification of acceptance of his tender/bid, failing which this sum will be recovered from 1st RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor. Not more than one tender/bid shall be submitted/uploaded by one contractor or one firm of contractors. Under no circumstances will a father and his sons) or other close relations who have business dealing with one another be allowed to tender/bid for the same contract as separate competitors. A breach of this condition will render the tenders/bids of both the parties liable for rejection.
5. The Office of GE Dehu Road will be the Accepting Officer here in after referred to as such for purpose of the contract.
6. The Technical Bid and Financial Bid (Cover-1 and Cover-2) shall be uploaded by the tenderer/bidder on or before the date & time mentioned in **NIT**. A scanned copy of DD with enlistment details/documents shall be uploaded as packet 1/cover-1 ('T' bid) of the tender/bid on e-tendering portal. DD is refundable in case T bid is not accepted resulting in non-opening of 'Q' bid. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD and shall not have any claim from Government whatsoever on this account.
 - 6.1. Tender form and conditions of contract and other necessary documents shall be available on <http://defproc.gov.in> site for download and shall form part of contract agreement in case the tender/bid is accepted.
 - 6.2 In Case of contractor who has not executed the Standing Security Bond, the Cover-I shall be accompanied with by Earnest Money of amount as mentioned in Appendix 'A' in the form of deposit at call receipt in favour of concerned CCE/ GE/ GE(I)/ AGE(I) (see Appendix 'A') by a scheduled Bank or in receipted treasury Challan the amount being credited to the revenue deposit of the concerned GE (see Appendix 'A').
 - 6.3 A contractor who is not enlisted for the area in which the work lies but whose name is in the MES approved list of any MES formation and who has deposited standing security and executed standing security Bond may bid without depositing earnest money alongwith the tender; but if the Accepting officer accepts the tender/bid, the contractor will be required to lodge with the Controller of Defence Accounts concerned the amount of individual security deposit' within thirty days of the receipt by him of notification of acceptance of his tender/bid, failing which this sum will be recovered from 1st RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor.
 - 6.4 A contractor who has executed standing security Bond but not corresponding to the appropriate class as mentioned above, shall lodge with the Accepting Officer, Additional Security Deposit as notified by the Accepting Officer within thirty days of the receipt of his notification of acceptance of his tender/bid, failing which this sum will be recovered from the first RAR payment or from the first final bill. In the case of term/running contracts, remaining sum shall be recovered from subsequent bills) of the contractor. However, in case where any payment is made to the contractor within thirty days of the receipt by him of notification of acceptance of tender/bid, the amount of additional security deposit shall be recovered from such payment.
 - 6.5 The GE will return the Earnest Money wherever applicable to all unsuccessful tenderers/bidders by endorsing an authority on the deposit-at-call receipt for its refund, on production by the tenderer

bidder a certificate of the Accepting Officer that a bonafide tender/bid was received and all documents were returned.

6.6 The GE will either return the Earnest Money to the successful tenderer/bidder by endorsing an authority on the deposit-at-call Receipt for its refund on receipt of an appropriate amount of Security Deposit or will retain the same in part or full on account of security deposit if such a transaction is feasible.

6.7 Copies of the drawings and other document pertaining to the work signed for the purpose of identification by the Accepting Officer or his accredited representative, sample of materials and stores to be supplied by the contractor will also be available for inspection by the tenderer/bidder at the office of Accepting Officer and concerned GE during working hours.

7. The tenderers/bidders are advised to visit the site of work by making prior appointment with GE who is also the Executing Agency of the work (see appendix 'A'). The tenderers/bidders are deemed to have full knowledge of all relevant documents, samples, site etc., whether they have inspected them or not.

8. Any tender/bid which proposes any alteration to any of the conditions laid down or which proposes any other condition or prescription whatsoever, is liable to be rejected.

9. The uploading of bid implies that bidder has read this notice and the Conditions of Contract and has made himself aware of the scope and specification of work to be done and of the conditions and rates at which stores, tools and plants etc will be issued to him and local conditions and other factors having bearing on the execution of the work.

10. Tenderers/bidders must be in possession of a copy of the MES Standard Schedule of Rates (see appendix 'A') including amendments and errata thereto.

11. Invitation for e- tender does not constitute any guarantee for validation of 'T' bid and subsequent opening of finance bid of any applicant/bidder, even of enlisted contractors of appropriate class, merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the 'T' bid and not open the finance bid of any applicant/bidder. 'T' bid validation shall be decided by the Accepting Officer based on, inter alia, capability of the firm as per criteria given in Appx 'A' to this NIT. The applicant contractor/bidder will be informed regarding non.. validation of his 'T' bid assigning reasons thereof through the procurements website. The applicant contractor/bidder if he so desires may appeal to the next higher Engineer authority viz CWE (A) Mumbai on email [id amumb3-mes@nic.in](mailto:amumb3-mes@nic.in) with copy to the Accepting Officer on email before the scheduled date of opening of Finance Bid. The decision of the next higher engineer authority (NHEA) shall be final & binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

12. The Accepting Officer reserves the right to accept a tender submitted by a Public Undertaking, giving a price preference over other Tender(s)/bids which may be lower, as are admissible under the Government Policy. No claim for any compensation or otherwise shall be admissible from such tenderer/bidder whose tender/bid is rejected.

13. Accepting Officer does not bind himself to accept the lowest or any tender/bid or to give any reason for not doing so.

14. This **Notice Inviting Tender (NIT)** including Appendix 'A' shall form part of the contract.

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

APPENDIX ‘A’ TO NOTICE INVITING TENDER (NIT)						
1	Name of Work	REPAIR /MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE DEHU ROAD				
2	Estimated cost of work	Rs. 40,00,000.00				
3	Period of Completion	180 days				
4	Cost of Tender documents	Rs. 500/- in the shape of DD/Bankers cheque from any schedule Bank in favour of GE Dehu Road and payable at Dehu Road. (Note:- In case of retendering, the contractor who had quoted in the previous call is not required to submit the cost of tender)				
5	Website/portal address	www.defproc.gov.in				
6	Type of contract	The tender shall be based drawing and specification on IAFW 1779A and GCC (IAFW-2249) with Schedule ‘A’ (list of Item work) to be priced by contractor. The contractor is required to quote rates against items of Schedule ‘A’.				
7	Information & Details					
	(a) Bid submission start date	Refer critical dates shown here-in-after.				
	(b) Last date of bid submission					
	(c) Date of bid opening					
8	Eligibility Criteria					
	(a) For MES enlisted contractors	Contractor shall be enlisted with MES in Class ‘D’ and above and category B (i) subject to satisfactory remarks wrt performance in respect of works in hand as reflected in Work Load Return (WLR) or any other report circulated by competent engineer authority.				
	(b) For contractors not enlisted with MES	(i) Contractor not enlisted with MES should meet the enlistment criteria of ‘D’ class & B (i) category contractor with regard to satisfactorily completion of requisite value works with Central / State Government/ Central / State PSU’s/AWHO/AFNHB/ CGEWHO/DGMAP/, annual turnover, bank Solvency, working capital, immovable property/fixed assets, T&P, Engineering establishment, no recovery outstanding in any Govt Department, Police verification/Passport etc. Enlistment criteria may be seen in Para 1.4 and 1.5 of section 1 of Part I of MES Manual on Contracts – 2020 as available in all MES formations as well as MES website (www.mes.gov.in)				
		(ii) Not carrying adverse remarks in Work Load Report (WLR) or any other similar report circulated by any competent authority, if already working in MES.				
		(iii) Not Suspended/ debarred/ blacklisted/ (either permanently or temporarily) from participating in any bid or for business dealings by any Central/ State Government Department or any Central/ State Government or any Local Body as on the Bid submission end date.				
		(iv) Details of works completed and under progress in MES be submitted in the following format :-				
		Srl No.	CA No. & Name of work	Value of CA	Date of commencement	Date of completion
		(v) Un-enlisted Contractor who have secured two works in MES should get themselves registered in the appropriate designated Class with any Registering Authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES				
9.	Tender issuing, Executing and Accepting Officer	Garrison Engineer Dehu Road, Military Engineer Services, Dehu Road, Pune - 412101 Phone No :- 022-27673300 Email ID- dehuengrs@gmail.com				
10	Executing Agency	Garrison Engineer Dehu Road, Pune				
11	Earnest Money Deposit	Rs. 80,000.00 in the form of Demand Draft from any Scheduled Bank in favour of GE Dehu Road, Pune.				

Notes:-

1. After opening of Cover-1, if the number of MES enlisted contractors of eligible class as well as un-enlisted contractors, If any, fulfilling the other eligibility criteria given in NIT are less than 7 (seven), applications in respect of contractors one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE Command/ ADG/) below the eligible class shall also be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore MES contractors one class below (two classes below in case of remote and difficult areas) may also bid for this tender. However contractors of one/ two classes below the eligible class shall not be considered in case their present residual work in hand is more than FIVE TIMES their present tendering limit. Such bidders shall uploaded in their Cover-1 bid details of works in hand showing names of work, names of Accepting Officers. Contract amounts, dates of commencement and completion (stipulated) and progress as on bid submission date. These details shall be verified by the Tender Issuing authority from concerned formations in case bids of such contractors are considered for evaluation.

2. In case after opening of Cover-1, the number of MES enlisted contractors of eligible class well as un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT are 7 (Seven) or more, applications of only those one class below the eligible class bidders shall be considered, who have previously completed similar works satisfactorily and are meeting the criteria of up gradation in respect of past experience of completed works (individual work experience and/ or average annual turn over as applicable) and financial soundness (solvency/ financial soundness and working capital) as per details given in Manual Contracts. Therefore such contractors shall upload the requisite information/ documents in the Cover-1.

3. Un enlisted contractor shall be considered provided he meets the criteria. Foreign firms shall not be eligible for this tender. However Indian firms having foreign national/ Indian nationals staying abroad/ Indian national having taken foreign citizenship, as director (s) shall be considered subject to security clearance from the concerned authorities.

4. Contractors enlisted with MES will upload following documents in Cover 1 for checking eligibility.

- (a) Application for tender on Firm's letterhead.
- (b) Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
- (c) Scanned copy of DD/Bankers Cheque toward cost of tender and EMD instrument in case SSD bond is not signed at the time of registration.
- (d) Certificates as mentioned in para 9 of instructions for filling and submission of tender.
- (e) Proof of Possession of Provident Fund Code Number.
- (f) Proof of possession of GST Registration Number.
- (g) Any other document required as described in this Appendix.

5. Contractors not enlisted with MES will be required to upload following documents in Cover 1 for checking eligibility.

- (a) Application for tender on Firm's letterhead.
- (b) Scanned copy of DD/ Bankers cheque toward cost of tender and Earnest Money Deposit (EMD) instrument.
- (c) Copy of Police verification Report/ Police Clearance Certificate/ Character Certificate from the Police Authority of the area where the registered office of the firm is located/notarized copy of valid passport of Proprietor /each partner/each Director.
- (d) All documents required for enlistment in MES for the class mentioned in Para 8 (b) above as per Para 1.5 of section 1 of MES Manual on Contracts 2020.
- (e) Details of works being executed in MES, if any.
- (f) Certificates as mentioned in para 9 of instructions for filling and submission of tender
- (g) Proof of Possession of Provident Fund Code Number.
- (h) Proof of possession of GST Registration Number.
- (j) Any other document required as described in this Appendix.

6. Tenders not accompanied by scanned copies of requisite DD/Bankers Cheque towards cost of tender and earnest money (as applicable) in Cover 1 shall not be considered for validation of 'T' bid and their Financial Bids will not be opened.

7. Contractors should ensure that their original physical DDs and Earnest Money Deposit (EMD) instruments (as applicable) reach the office of Accepting Officer within **05** days of bid submission end date, failing which following action shall be taken:-

(a) In case of tenders from an enlisted contractor of MES where scanned copies of requisite DD/Bankers Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will be opened. However non-submission of physical copies of cost of tender shall be considered as willful negligence of the tenderer with ulterior motives and such tenderer shall be banned from bidding for a period of six months commencing from the date of opening of Financial Bid (Cover 2).

(b) In case of tenders from unenlisted contractor, where scanned copies of requisite DD/Bankers cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will not be opened. Name of such contractors along with complete address shall be circulated for not opening of their bids for a period of six months commencing from the date of opening of Financial bid (Cover 2).

(c) In case of tenders from enlisted and unenlisted contractors. where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover I but the same are not received in physical form within stipulated period, such tenders shall not qualify for opening of financial bid (Cover 2).

8. Contractor will not be allowed to execute the work by subletting or through power of attorney to a third party/ another firm on his behalf. However a contractor can execute the work through power of attorney to sons/daughters/spouse of proprietor/ Partner/ Director and firms own employees, director, project manager **provided they are not having a separate enlisted firm in MES in their name as proprietor/ Partner/ Director.**

9. After opening of Cover I and during its technical evaluation. In case any deficiency is noticed in the documents required to be uploaded by the tenderer as per NIT. a communication in the form of e-mail/SMS/Speed post etc. shall be sent to the contractor to rectify the deficiency within period of seven

days from the date of communication failing which their financial bid (Cover 2) shall not be opened and contractor shall not have any claim on the same.

10. Invitation for e-tender does not constitute any guarantee for validation of Technical Bid and subsequent opening of financial bid of any applicant/bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the financial bid of any applicant/bidder. Technical bid validation shall be decided by the Accepting Officer based on eligibility of the firm as per criteria given in this Appendix. Tenderer/bidder will be informed regarding non-validation of his Technical Bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires. may appeal to the next higher Engineer Authority (NHEA) viz HQ CWE Army Mumbai on email id amumb3-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer/ bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

11. In case an unenlisted contractor is already executing works in MES, he shall not be considered eligible for the subject tender if the total value of such works is more than twice the tendering limit of the MES Class of contractor for which it is eligible. For this purpose, details of the works being executed by such contractor shall be uploaded in the Cover-1 of the bid and shall be checked/verified by the Accepting Officer.

12. In case of BOQ is revised through the corrigendum and the bidder has failed to quote on revised BOQ (ie he has quoted on pre revised BOQ). Such bid shall be treated as willful negligence by the bidder and his quotation shall be considered non bonafide. In such case the lowest tender shall be determined from amongst the valid/bonafide bids only. Accepting Officer may decide whether to re-tender or consider the lowest bonafide tender for acceptance.

13. Revoking the offer or revising the rates upward or offering voluntary reduction by the lowest tenderer after opening of Cover-2 shall be considered as a willful default. For this default a penalty of an amount equal to Earnest Money shall be levied. In case of an un enlisted tenderer. Earnest Money deposited by him shall be forfeited. In case of MES enlisted tenderer having deposited the Standing Security Bond, an amount equal to the earnest money stipulated In the NIT. shall be notified to the tenderer for depositing through MRO and consideration of such tenderer in tender evaluation for future works shall be remain suspended till the aforementioned amount is deposited in the Government Treasury. No other disciplinary/ administrative action shall be taken against such tenderers. In such a situation, the next lowest offer shall not be considered for acceptance. Instead, re-tendering shall be resorted to in a transparent and fair manner and the defaulting tenderer and his related firm if any, shall not be eligible for this tender in second call or subsequent calls.

13A Irrespective of whatever is mentioned in condition 19.3 of IAFW 2249 with regard to suspension of tenders account of non-submission of Performance Security, issue of tenders to such tenderers shall remain suspended for a period of six months from the date of cancellation of contract under condition 19.3 of IAFW 2249 in case of unenlisted Contractors. In case of MES enlisted contractor, issue of tenders shall remain suspended till deposit of EMD or six months from date of cancellation whichever is later.

14. Tender to related firms shall not be issued simultaneously. Firms shall be termed as related if Proprietor/ one or more Partners/ Directors are common. Decision of Accepting Officer on issue/ deny the tender to any one of the related firms shall be final and binding.

CRITICAL DATES & TIME

	Publishing of tender	18.05.2026
	Document Download/Sale Start	18.05.2026
	Clarification Start	NA
	Online Bid Submission Start	25.05.2025
	Document Download/Sale End	01.06.2026
	Bid Submission End	01.06.2026
	Clarification End	NA
	Bid Opening (Tech Bid/Cover-1)	02.06.2026

Signature of contractor

Case No: 8142/11/E8

Military Engineer Services
Garrison Engineer Dehu Road
Pune - 412101

Phone No :- 022-27673300

Email ID- dehuengrs@gmail.com

(Hridayakumar KV)
Maj
Accepting Officer

Dated : 18 May 2026

Distribution : -

1	Chief Engineer, Southern Command, Pune-01	13	GE (P) FY Kirkee, Pune-03
2	Chief Engineer, Pune Zone, Pune-01	14	GE (I) R & D Pashan
3	CWE (A) Pune-01	15	GE (North), Pune- 01
4	CWE (A) Mumbai-05	16	GE Khadakwasla, Pune-23

5	CWE (AF) Lohogaon, Pune-32	17	GE (AF) Lohogaon, Pune-32
6	CWE Kirkee, Pune-03	18	GE (South), Pune-40
7	GE (I) R & D Girinagar, Pune-25	19	GE (CME) Kirkee, Pune-31
8	CESC, Builder Association, Pune-01	20	AGE B/R (East), Dehu Road
9	MES Builders of India, Gen Bhagat Marg, Pune-40,	21	AGE B/R (West), Dehu Road
10	CIDC, 801 (8 TH FLOOR) Hemkunt Chambers, 89 Nehru Place, New Delhi-110019	22	AGE E/M, Dehu Road
11	Association of MES Contractors (Regd), 111/1/4 Gopi Nath Bazar, Delhi	23	BSO Dehu Road
12	GE (Central) Kirkee, Pune-03		

Para 1.4 of MES Manual on contracts – 2020

Criteria for Fresh Enlistment & Upgradation

(a) Criteria for Fresh Enlistment in various classes shall be as under:-

Class	Past Experience of completed Works in Last 5 years & Average Annual Turn Over (in Rs.)	Financial Soundness (in Rs.)
(1)	(2)	(3)
‘SS’	(a) Two works costing not less than 12.00 crore each. or One work costing not less than 20 crore. and (b) Average annual turn over for two consecutive years shall not be less than 20 crore	(a) Solvent upto 8.00 crore or Financially sound for engagement upto 40.00 crore. (b) Working capital not less than 75.00 lakh.
‘S’	(a) Two works costing not less than 7.50 crore each or One work costing not less than 12 crore. and (b) Average annual turn over for two consecutive years shall not be less than 12 crore.	(a) Solvent upto 4.00 crore or Financially sound for engagement upto 15.00 crore. (b) Working capital not less than 50.00 lakh.
‘A’	(a) Two works costing not less than 4.00 crore each or One work costing not less than 6.00 crore. and (b) Average annual turn over for two consecutive years shall not be less than 6.00 crore.	(a) Solvent upto 2.00 crore or Financially sound for engagement upto 7.50 crore. (b) Working capital not less than 30.00 lakh.
‘B’	(a) Two works costing not less than 1.50 crore each or One work costing not less than 2.50 crore. and (b) Average annual turn over for two consecutive years shall not be less than 300.00 lakh.	(a) Solvent upto 100.00 crore or Financially sound for engagement upto 3.00 crore. (b) Working capital not less than 12.00 lakh.
‘C’	(a) Two works costing not less than 50.00 lakh each or One work costing not less than 80.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 100.00 lakh.	(a) Solvent upto 40.00 lakh or Financially sound for engagement upto 100.00 lakh. (b) Working capital not less than 10.00 lakh.
‘D’	(a) Two works costing not less than 25.00 lak each or One work costing not less than 40.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 50.00 lakh.	(a) Solvent upto 20.00 lakh or Financially sound for engagement upto 50.00 lakh. (b) Working capital not less than 7.50 lakh.
‘E’	(a) Three works costing not less than Rs.7.50 lakh	(a) Solvent upto 10.00 lakh or

	or Two work costing not less than Rs. 10.00 lakh each. or One work costing not less than Rs. 20.00 lakh and (b) Average annual turn over for two consecutive years shall not be less than 25.00 lakh.	Financially sound for engagement upto 25.00 lakh. (b) Working capital Rs.5.00 lakh.
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(b) Criteria for Upgradation in various classes shall be as under:-

Class	Past Experience of completed Works in Last 5 years & Average Annual Turn Over (in Rs.)	Financial Soundness (in Rs.)	Limit of minimum reserves (See Note 5 above)
(1)	(2)	(3)	(4)
‘SS’	(a) Two works costing not less than 12.00 crore each. or One work costing not less than 20 crore. and (b) Average annual turn over for two consecutive years shall not be less than 20 crore	(a) Solvent upto 8.00 crore or Financially sound for engagement upto 40.00 crore. (b) Working capital not less than 75.00 lakh.	Rs. 120.00 lakh
‘S’	(a) Two works costing not less than 7.50 crore each or One work costing not less than 12 crore. and (b) Average annual turn over for two consecutive years shall not be less than Rs.12 crore.	(a) Solvent upto Rs.4.00 crore or Financially sound for engagement upto Rs.15.00 crore. (b) Working capital not less than Rs.50.00 lakh.	Rs. 80.00 lakh
‘A’	(a) Two works costing not less than 4.00 crore each or One work costing not less than Rs .6.00 crore. and (b) Average annual turn over for two consecutive years shall not be less than Rs. 6.00 crore.	(a) Solvent upto Rs.2.00 crore or Financially sound for engagement upto Rs. 7.50 crore. (b) Working capital not less than Rs.30.00 lakh.	Rs. 75.00 lakh
‘B’	(a) Two works costing not less than Rs. 1.50 crore each or One work costing not less than 2.50 crore. and (b) Average annual turn over for two consecutive years shall not be less than 300.00 lakh.	(a) Solvent upto Rs.100.00 crore or Financially sound for engagement upto Rs.3.00 crore. (b) Working capital not less than 12.00 lakh.	Rs. 60.00 lakh
‘C’	(a) Two works costing not less than 50.00 lakh each or One work costing not less than 80.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 100.00 lakh.	(a) Solvent upto Rs.40.00 lakh or Financially sound for engagement upto Rs.100.00 lakh. (b) Working capital not less than Rs. 10.00 lakh.	Rs. 25.00 lakh
‘D’	(a) Two works costing not less than 25.00 lak each or One work costing not less than 40.00 lakh. and (b) Average annual turn over for two consecutive years shall not be less than 50.00 lakh.	(a) Solvent upto 20.00 lakh or Financially sound for engagement upto Rs. 50.00 lakh. (b) Working capital not less than Rs.7.50 lakh.	Rs. 12.50 lakh

NOTES :

1. Authority competent to enlist shall be called Registering Authority.
2. The categories for enlistment shall be decided on the basis of the nature of works executed by Contractor. Contractors who have experience of executing of Prefab/Pre-Engineered structures and fulfil other criteria, shall also be eligible for enlistment in category a(i). At the time of renewal, contractors already enlisted in Cat (a) (i) Building & Roads, shall be enlisted in Cat a(i) Building Works & (a) (v) Roads. In case E class contractors, Registering Authority shall issue suitable amendments to enlistment letters in respect of separate categories for buildings works i.e a(i) and roads i.e. a(v) without any application from contractor.
3. For enlistment/upgradation/renewal/reclassification etc, in category (b) Electrical Engineering Works (i) to (iii), a declaration/undertaking shall be obtained from the applicant contractor in affidavit from whereby the contractor shall undertake to either obtain valid Electrical Licence of required class in its name or engage an agency having valid Electrical Licence of required class through MoU (Memorandum of Understanding) for execution of all electrical works as well as works under category (c) [including its sub categories (i) to (vii)] and the category (d) (v) to the extent Rule 29 under Part III of Central Electrical Authority (Measures Relating to safety and Electric Supply) Regulations, 2010 is applicable either in full or part of the scope of work of contract awarded to him and that all such electrical works shall be executed by him through such agency only (either self or other agency) having valid Electrical Licence of required class from State/ Union Territory Authorities where works are to be executed.
4. Working capital with the Contractor shall be judged from balance sheet/bank's certificate as per Appendix 1.3 / bank statement for last 6 month/overdraft of cash credit facility from bank/fixed deposit receipts with banks.
5. The requirements of minimum reserves are applicable for enlistment related process of existing contractors i.e. Change in constitution/Renewal/Reclassification(Revision in Monetary Limit) etc, if they have contracts in hand not having Performance Security provisions, till their contracts are completed and their Final Bills do not become MINUS. For this, these contractors will submit affidavit on non-judicial stamp paper of appropriate value (minimum value Rs. 100) declaring that all their contracts without Performance Security provisions are completed and Final Bills are not MINUS. Immovable/movable property (minimum reserve) shall be exclusively in the name of Contractor and not in the name of family members/relatives/others. In case of Limited companies, immovable/movable property (considered for minimum reserve) shall be exclusively in the name of Company and should be reflected in the Balance Sheet of the Company.
6. "Last two consecutive years" shall mean immediate last two consecutive financial years reckoned from the date of application for upgradation. Two consecutive years for the purpose of fresh enlistment shall mean any of the two consecutive financial years in last Five Financial Years preceding the date of application for enlistment. For documents in support of works experience, TDS certificate for IT/Sales Tax/VAT/GST shall also be asked from applicant firms. All documents related to works experience and turnover (except Form 26 AS and portal generated GST return) shall be got independently verified from the client/issuing authority. Registering Authority may seek clarification from the Chartered Accountant in case of any doubt. Annual turnover to be considered for enlistment purpose shall mean the turnover from all businesses carried out by the applicant firm in relation to construction work related to categories of works for which the enlistment is being sought. It may be total turnover as shown in the audited balance sheet or part thereof. Necessary clarification shall be obtained from the Chartered Accountant whose audited balance sheet is submitted by the applicant firm in case considered necessary by the Registering Authority.
7. Upgradation of enlisted contractor shall be done gradually in stages. Before a contractor is considered for upgradation, he should have worked at least for two years in the present tendering limit and should meet the criteria laid down. Normally upgradation will be done only to one next higher class at a time. However, if performance of any particular contractor is of very high order and Registering Authority considers upgradation of such contractor by more than one class justified, the same shall be done only with prior approval of E-in-C's Branch. Following considerations shall be applied to ascertain whether the performance of contractor is of very high order or otherwise.
 - (a) Contractor has completed works, value of which is more than 1.25 times the requirement in which the upgradation is being considered.
 - (b) Average Annual Turnover of the contractor is more than 1.25 times the requirement in which the upgradation is being considered.

Example : For a contractor enlisted in class 'C' having tendering limit of 100 lakh, proposed to be upgraded to class 'A' having tendering limit of 7.50 crore, minimum value of works completed and turn over shall be as under :

- (i) Two works completed costing not less than 5.00 crore each (1.25 x 4.00)
Or
One work costing not less than 7.50 crore (1.25 x 6.00)
- (ii) Average annual turnover 7.5 crore (1.25 x 6.00)

(c) Average marks secured in Performance Reports (Stage-II) for works completed in last five years shall not less than 70%. Where report for any work is not available, it will be deemed to contain only 60% average marks.

8. Contractor of 'A' class and above only shall be eligible for enlistment in categories (a) (iii) Runways and Pavements and (a) (iv) Marine and Harbour Works subject to prior approval of E-in-C.

9. The criteria laid down above for enlistment/upgradation may be relaxed in the case of contractors whose performance has been found to be of a very high order. Such relaxation may, however be given only with the prior approval of E-in-C's Branch.

Para 1.5 of MES Manual on contracts 2020

Document required to be submitted by the contractor for enlistment in MES.

(a) Application for enrolment as contractor on IAFW-2190 (Revised 2020). Coloured Photographs affixed on application shall be self-attested.

(b) Affidavit for constitution of firm.

(c) List of works executed during last five years (As per Appendix 1.2) including copies of works orders/work allotment letters. Copies of completion certificates and Form 16 A/TDS certificate for GST (GSTR-7A).

(d) Annual turnover certificate duly supported with audited balance sheet. The turn over certificate must bear the UDIN (Unique Document Identification Number). The turn over certificate and audited balance sheet should be from same Chartered Accountant. In case balance sheets are not audited, Form 26 AS and or Annual GST return shall be forwarded in support of turnover.

(e) Audited balance sheet of last five years in case of Limited companies.

(f) Solvency certificate from scheduled bank as per specimen given in **Appendix-1.3**

(g) Working Capital certificate from scheduled bank as per specimen given in **Appendix-1.3**.

(h) Affidavit from contractor that there is no Government dues/ recovery outstanding against him. If there is any Government due/recovery outstanding from the contractor, enlistment/upgradation shall not be carried out.

(j) Affidavit from contractor giving brief details of arbitration /Litigation cases he was involved in. Registering Authority will critically examine such details and if contractor is considered habitual litigant his enlistment upgradation shall not be carried out. Contractor shall be deemed to be a habitual litigant if he moves the court more than once ignoring arbitration clause and court does not uphold his view.

(k) Two self-attested photographs of Proprietor/Partners/Directors of firm for verification of character and antecedents from the police authorities. Places where online police verification process is available, the contractor will carry out police verification of the Proprietor/Partners/Directors and submit the verification reports for cross verification by the Department. Alternatively, the contractor may submit a copy of valid passport issued by Govt of India.

(l) Copy of partnership deed in case of partnership firm.

(m) Memorandum and Articles of Association in case of Limited Companies.

(n) Copy of Registering Certificate of firm with Registrar of Companies/Register of Firms.

(o) Affidavit that no near relative(s) of the contractor or his/their employees/agents is/are working as Gazetted/Commissioned Officer(s) in MES/Corps of Engineers/Ministry of Defence. If the near relative(s) is/are working in such capacity in any formation upto zonal CE/CCE, he/ they shall furnish details, the contractor shall not be entitled to tender for the works in entire area of CE Zone/CCE.

(p) Affidavit that no near relative(s) of the contractor or his/their employees/agents is/are working as Junior Engineer (s) in MES/Corps of Engineers. If his near relative(s) is/are working in such capacity in any formation upto CWE/GE(I) office, the contractor shall furnish details. The contractor shall not be entitled to tender for the works in entire area of that CWE/GE(I).

(q) Copy of power of attorney/Resolution of the Board in favour of any Partner/Director of the firm.

(r) Copy of immediate last Income Tax Return.

(s) A separate sheet containing specimen signatures (signed in black ink) and affixed with photographs of Proprietor/Partners/Directors (to be used as Appendix B of enlistment letter).

(t) Self-attested copy of PAN Card of Proprietor, Partners, Directors and the firm/ Company.

(u) Self-attested copies of GST registration, EPFO registration and ESIC registration certificates.

Notes:-

(i) All the documents submitted by the contractor shall be signed by Proprietor/all Partners/all Directors unless specifically authorized to a Partner/Director through POA or Resolution of the Board.

- (ii) Photocopies of documents shall be self-attested. Registering Authority shall ask production of original documents to verify the photocopies.
- (iii) All affidavits shall be given on non-judicial stamp paper of appropriate value duly signed by the contractor and attested by the Magistrate/Notary public.
- (iv) Registering Authority shall cross-verify the genuineness of financial documents at Para (d) & (e) above from issuing Chartered Accountant (CA) and documents at Para (f) & (g) from concerned Bank branch by referring in writing to them alongwith copy of above documents submitted by contractor. Registering Authority is also at liberty to verify the genuineness of all the documents from other reliable/authentic sources.
- (v) All documents related to work experience and turnover (except Form 26AS and portal-generated GST return) shall be got independently verified from the client/issuing Authority. For documents in support of works experience, TDS certificate for IT/Sales/Tax/VAT/GST shall also be asked from applicant firm. Registering Authorities may seek clarifications from the Chartered Accountant in case of any doubt.
- (vi) Documents mentioned at Para 1.5 (a) and 1.5 (s) shall not be applicable for the purpose of documents to be bidding purpose by unenlisted firms.

In lieu of IAFW-1779 (Revised)

(To be used in conjunction with General Conditions of Contracts IAFW-2249) (1989 Print)

MILITARY ENGINEER SERVICES

Tele 020-27673300

Garrison Engineer
Dehu Road - 412101

8142/11/E8

18 May 2026

**ITEM RATE TENDER AND CONTRACT FOR WORKS REQUIRED IN THE EXECUTION OF REPAIR
/MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE
DEHU ROAD**

A tender/ bidder who is qualified as per the eligibility criteria mentioned in the tender documents and has interalia sound past record is hereby authorised to tender for the above work. **The e-tender/ e-bid (both cover-1 & and cover-2)** shall be submitted/ uploaded on the MES website portal (www.eprocuremes.gov.in) by 1800 hours on 01 Jun 2026.

THE PRESIDENT OF INDIA DOES NOT BIND HIMSELF TO ACCEPT THE LOWEST OR ANY TENDER.

APPOINTMENT: For Accepting officer AGE (Contracts)
(Signature of Officer issuing the documents)

SCHEDULE ‘A’ NOTE

NAME OF WORK : REPAIR /MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE DEHU ROAD

NOTES: -

- 1. The tenderer shall fill his unit rate under column 6 in figures. The rate will automatically inserted under column 7 in words and the amount will automatically be extended under column 8. In case of any discrepancy, rate filled by the tenderer/ bidder in figure shall only prevail and all other entries (i.e. rates automatically inserted in words and amount automatically extended) shall accordingly be amended.
- 2. The total amount under column 7 is not firm but will be treated as ‘Contract Sum” referred to the General Condition of the Contract IAFW-2249.
- 3. The unit rates quoted by the tenderer in column 6 shall be inclusive of all taxes and levies prevailed including sales tax on works contract imposed by any Govt. and nothing extra shall be paid on this account.
- 4. The unit rates quoted shall be deemed to include supply of all new materials and labour as required to complete the work except where specifically mentioned otherwise in the description in item. The rates quoted against each item of the schedule shall include of the full and entire completion of work all as specified.
- 5. The quantities shown under column 3 Schedule ‘A’ are provisional (refer condition 6 of IAFW-2249).
- 6. The contractor are advised to visit the site prior to submission of their tender and on submission of tender he shall be deemed to have satisfied himself as to the nature of site, local facilities access and all matters affecting the execution and completion of work. No extra charges consequent on misunderstanding or otherwise shall be allowed.
- 7. The entire work under this contract shall be completed within a period of **180 days** form to date of handing over of site as mentioned in work order No 1 issued by the Garrison Engineer.
- 8. **Defects liability Period** :- The defects liability period as per amended condition 46 IAFW-2249 shall commence from certified date of completion of entire work.
- 9. Item rates quoted by the tenderer shall be deemed to include for any minor details construction which are obviously and fairly intended, which may not have been included in documents but which are essential for the execution and entire completion of works. The decision the Accepting Officer whether or not any minor details of construction are obviously and in intended to be included in the rates quoted for the items shall be final and binding.
- 10. If there is any error pertaining to unit in Sch A the same shall be corrected as per latest engineering practice or as mentioned in SSR Part II for which contractor will have no claim to this effect.
- 10. All the flats/ buildings wherein the subject work is to be carried out are under occupation. Accordingly, the subject work is to be carried out under the said condition. Contractor shall take all precautionary measures to avoid inconvenience to the users. The site shall be left clean and tidy after day’s work. No obstruction to passage shall be made by dumping materials.
- 11. The units of the building will be handed over to the contractor in a phased manner and a programmer of commencement and completion of the work in these quarter’s / units shall be arrived before commencement of the work and shall be strictly followed. Contractor shall commence and complete the work as per the programmer and the decision of GE for grouping of the quarters / units of buildings shall be final and binding on the contractor.
- 2. (a) The rate quoted by the tenderer shall be inclusive of all types of taxes, levies including GST, labour welfare tax etc. As prevailing on the date of submission of tender.
(b) Certain taxes such as central excise duty, service tax, additional custom duty, state level value added tax, octroi and other levies which were applicable on interstate transportation of goods are subsumed by GST, thus special condition as per 10 for reimbursement/refund on variation in prices in taxes directly related to contract value of tender shall be deemed to be amended incorporating GST in lieu of taxes mentioned in the condition by subsumed by GST.
- 13. (Refer Condition 63 of IAFW-2249). No escalation shall be paid. The contractor shall quote considering hike in wages during the contract period.

SIGNATURE OF CONTRACTOR
Dated :

AGE Contract
For Accepting Officer

SCHEDULE OF CREDIT

NAME OF WORK : REPAIR /MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE DEHU ROAD

1. The credit rate and value of old materials obtained from dismantling have been assed by the department and have been indicated in column 5 & 6 respectively. The assessed credit rates of materials shall be taken as firm and the contrac-tor shall not have any claim what so ever against the Govt if the actual rate of dismantled materials turns out to be differ-ent from the rates inserted by the department.
2. Quantities of dismantled materials given in column 5 are approximate and not firm and have been given as a rough guide only. Actual quantities obtained from dismantling at site of work shall be measured in measurement book and ab-stracted for arriving at the actual credit value.
3. The contractor shall be allowed to remove the dismantled materials only after realization of the full credit value of the materials by the department. The decision of the GE in this connection shall be final and binding.
4. Gross value of work done shall be considered for calculating water recovery without deducting schedule of credit.

S.No.	Items	A/U	Qty	Rate	Amount
1.	U/S suction case bearing for 30 HP VT Pump set of Capacity 30 HP	Each	2	3.00	6.00
2.	U/S suction case bearing for 60 HP VT Pump set of Capacity 30 HP.	Each	2	3.00	6.00
3.	U/S bowl bearing of Capacity 30 HP.	Each	4	8.00	32.00
4.	U/S Bowl Bearing of Capacity 60 HP.	Each	4	8.00	32.00
5.	U/S Bowl studs (SS) of Capacity 30 HP.	LS	1	12.00	12.00
6.	U/S Bowl studs (SS) of Capacity 60 HP.	LS	1	16.00	16.00
7.	U/S Line shaft coupling (SS) of Capacity 30 HP.	Each	4	30.00	120.00
8.	U/S Line shaft coupling (SS) of Capacity 60 HP.	Each	4	22.00	88.00
9.	U/S Bearing holder assembly of Capacity 30 HP.	Each	6	15.00	90.00
10.	U/S Bearing holder assembly of Capacity 60 HP.	Each	6	16.00	96.00
11.	U/S Line shaft Bearing (Throdan type) of Capacity 30 HP.	Each	6	8.00	48.00
12.	U/S Line shaft Bearing (Throdan type) of Capacity 60 HP.	Each	6	10.00	60.00
13.	U/S Column studs /nut bolts (50 Nos) of Capacity 30/60 HP.	LS	2	69.00	138.00
14.	U/S Stuffing box bush of Capacity 30 HP.	Each	2	8.00	16.00
15.	U/S Stuffing box bush of Capacity 60 HP.	Each	2	9.00	18.00
16.	U/S Latern Ring of Capacity 30/60 HP.	Each	2	11.00	22.00
17.	U/S Water deflector of Capacity 30/60 HP.	Each	1	12.00	12.00
18.	U/S Head shaft coupling of Capacity 30 HP.Make:Joyti	Each	2	16.00	32.00
19.	U/S Head shaft coupling of Capacity 60 HP.Make:Joyti	Each	1	12.00	12.00
20.	U/S Column pipe 150 mm of Capacity 30/60 HP.Make:Joyti	Each	4	12.00	48.00
21.	U/S Impeller adjusting nut with screw of Capacity 30/60 HP.Make:Joyti	Each	4	8.00	32.00
22.	U/S Impeller made out of MS with impeller key 30/60 HP complete all as directed	Each	5	9.00	45.00
23.	U/S Strainer Assembly of Capacity 30/60 HP.Make:Joyti	Each	2	3.00	6.00
24.	U/S Bowl of Capacity 30 HP.Make:Joyti	Each	2	3.00	6.00
25.	U/S Bowl of Capacity 60 HP.Make:Joyti	Each	2	4.00	8.00
26.	U/S Impeller shaft of Capacity 30 HP.Make:Joyti	Each	2	70.00	140.00
27.	U/S Impeller shaft of Capacity 60 HP.Make:Joyti	Each	2	55.00	110.00
28.	U/S Impeller collect assembly of Capacity 30/60 HP.Make:Joyti	Each	2	6.00	12.00
29.	U/S Line shaft up to 1.5 mtr and replacement of the Line shaft coupling complete all as directed	Each	2	7.00	14.00
30.	U/S NDE Bearing No 6307/C3 suitable for 30/60 HP Make SKF OR equivalent	Each Job	2	5.00	10.00
31.	U/S electric connection box of ebonite materials with Insulators, lugs , protection cover suitable for 30/60 HP.	Each	3	5.00	15.00
32.	U/S Coupling Key Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	2.00	4.00
33.	U/S Key for Impeller SSuitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	2.00	2.00
34.	U/S Key for Sleeve Nut Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	2.00	2.00
35.	U/S Bolt for upper and lower half casing Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	24	2.00	48.00
36.	U/S Taper pin with washers and nuts for lower and upper half casingCoupling Key suitable for DSM 150/46 ,Kirloskar	Each	2	2.00	4.00
37.	U/S Draing plug for casing suitablefor 15 HP pump . Suitable for DSM 150/46 ,Kirloskar	Each	2	2.00	4.00
38.	U/S O ring for shaft sleev Suitable for pump set suitable for Model no DSM 150/46 ,Kirloskar	Each	04	6.00	24.00
39.	U/S Wear Ring suitable for Pump set Suitable for pump set Model no DSM 150/46 ,Kirloskar	Set of two	1	6.00	6.00
40.	U/S Shoulder Ring in CI Suitable for pump set Model no DSM 150/46 150 HP	Set of two	1	4.00	4.00
41.	U/S Interstage Ring Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	5.00	5.00
42.	U/S Lantern Ring Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
43.	U/S DE ball bearing Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
44.	U/S DE Bearing Cover Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	9.00	9.00
45.	U/S Cartridge for bearing, DE Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	8.00	8.00
46.	U/S NDE Bearing Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	6.00	12.00
47.	U/S Cartridge for bearing, NDE Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	4.00	4.00
48.	U/S Bearing cover, NDE Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	5.00	5.00
49.	U/S Bearing Cap Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	6.00	12.00
50.	U/S Bearing nut,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	7.00	7.00
51.	U/S Shaft sleeve, DE/NDE,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	8.00	8.00
52.	U/S stuffing box bush,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
53.	U/S Water Deflector DE/NDE,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	8.00	8.00
54.	U/S Air vent,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
55.	U/S Hex screw for bearing cover,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	8	7.00	56.00
56.	U/S Cylindrical pin,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
57.	U/S Round Lock nut ,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Set of	1	9.00	9.00

		two			
58.	U/S Gland Packing,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Set of two	1	5.00	5.00
59.	U/S Vent Valve,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	4.00	4.00
60.	U/S Flexible ST Hose Pipe,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	6.00	6.00
61.	U/S Gland stuffing box suitable for nut and bolts Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	2	5.00	10.00
62.	U/S Coupling Key Suitable for pump set Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	5.00	10.00
63.	U/S Key for Impeller SSuitable for pump set Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	9.00	9.00
64.	U/S Key for Sleeve Nut Suitable for pump set Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	8.00	8.00
65.	U/S Bolt for upper and lower half casing sSuitable for pump set.Model no- RKB-100/23E35,Make-Kirloskar.	Each	24	7.00	90.00
66.	U/S Taper pin with washers and nuts for lower and upper half casingCoupling Key suitablefor Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	6.00	142.00
67.	U/S Draing plug for casing suitablefor 15 HP pump .Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	4.00	8.00
68.	U/S Paper packing between lower and upper casing Key Suitable for pump set-Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	5.00	10.00
69.	U/S O ring for shast sleev Suitable for pump set.Model no- RKB-100/23E35,Make-Kirloskar.	Each	04	11.00	44.00
70.	U/S Wear Ring suitable for Pump set Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Set of two	1	12.00	12.00
71.	U/S Shoulder Ring in CI Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Set of two	1	11.00	11.00
72.	U/S Interstage Ring Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	14.00	14.00
73.	U/S Lantern Ring Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	14.00	28.00
74.	U/S DE ball bearing Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	12.00	24.00
75.	U/S DE Bearing Cover Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	16.00	16.00
76.	U/S Cartridge for bearing, DE Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	16.00	16.00
77.	U/S NDE Bearing Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	9.00	18.00
78.	U/S Cartridge for bearing, NDE Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	8.00	8.00
79.	U/S Bearing cover, NDE Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	5.00	5.00
80.	U/S Bearing Cap Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	5.00	10.00
81.	U/S Bearing nut,Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	5.00	5.00
82.	U/S Shaft sleeve, DE/NDE,Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	5.00	5.00
83.	U/S stuffing box bush,Suitable for pump set. Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	5.00	10.00
84.	U/S Water Deflector DE/NDE,Suitable for pump set Model no DSM 150/46 ,Kirloskar	Each	1	3.00	3.00
85.	U/S Air vent,Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	3.00	6.00
86.	U/S Hex screw for bearing cover,Suitable for pump set.Model no- RKB-100/23E35,Make-Kirloskar.	Each	8	2.00	16.00
87.	U/S Cylindrical pin,Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	2.00	4.00
88.	U/S Round Lock nut ,Suitable for pump set .Model no- RKB-100/23E35,Make-Kirloskar.	Set of two	1	2.00	2.00
89.	U/S Vent Valve,Suitable for pump set Model no- RKB-100/23E35,Make-Kirloskar.	Each	1	5.00	5.00
90.	U/S Gland stuffing box suitable for nut and bolts Suitable for pump set Model no- RKB-100/23E35,Make-Kirloskar.	Each	2	22.00	44.00
91.	U/S Mechanical Seal.uitable for 75 HP centrifugal Pump,Make : Grand Force.	Each	2	5.00	10.00
92.	U/SBulk Impeller 99262569,uitable for 75 HP centrifugal Pump,Make : Grand Force.	Each	2	56.00	112.00
93.	U/S Shaft 99196563,uitable for 75 HP centrifugal Pump,Make : Grand Force.	Each	2	45.00	90.00
94.	U/S Kit wear part,uitable for 75 HP centrifugal Pump,Make : Grand Force.	Each	2	9.00	18.00
95.	U/S Kit Bearing,uitable for 75 HP centrifugal Pump,Make : Grand Force.	Each	2	11.00	22.00
96.	U/S AIR &AF Charges,uitable for 75 HP centrifugal Pump,Make : Grand Force.	Set	2	13.00	26.00
97.	U/S Wear Ring suitable for Pump set,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	14.00	42.00
98.	U/S Shoulder Ring in CI suitable for PUMP set,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	12.00	36.00
99.	U/S Interstage Ring suitable for Pump set,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	12.00	36.00
100.	U/S Lantern Ring suitable for Pump set,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	8.00	24.00
101.	U/S Gland suitable for Pump set,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	8.00	24.00
102.	U/S DE Bearing s,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	11.00	33.00
103.	U/S NDE Bearing ,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	12.00	36.00
104.	U/S Deep Groove Ball bearing suitable for 60 HP,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	8.00	24.00
105.	U/S ANG Contact Ball bearing,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	8.00	24.00
106.	U/S Bearing Cover,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	6.00	18.00
107.	U/S Cover NDE,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	9.00	27.00

108.	U/S Shaft Sleeve,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	6.00	18.00
109.	U/S Key for Impeller,,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	3	5.00	15.00
110.	U/S Key for Coupling,,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	3	5.00	15.00
111.	U/S Key for Sleeve Nut,,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	3	7.00	21.00
112.	U/S Shaft Sleeve Nut ,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	8.00	24.00
113.	U/S Round Lock nut ,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	11.00	33.00
114.	U/S Gland Packing,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	12.00	36.00
115.	U/S Vent Valve,,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	3	5.00	15.00
116.	U/S Set of O Ring ,,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	3	14.00	42.00
117.	U/S Flexible ST Hose Pipe,,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	3	5.00	15.00
118.	U/S Ms stud and including replacement of CI gland ,suitable for Model No DSM/80/36,Make: Kirloskar.	Each JOB	3	5.00	15.00
119.	U/S stuffing box suitable for nut and bolts,suitable for Model No DSM/80/36,Make: Kirloskar.	Set of two	6	5.00	30.00
120.	U/S Cooling PVC flexible of ,suitable for Model No DSM/80/36,Make: Kirloskar.	Each	2	5.00	10.00
121.	U/S Wear Ring suitable for Pump set,suitable for Model No K1225 Make : Kirloskar	Set of two	2	8.00	16.00
122.	U/S Shoulder Ring in CI suitable for PUMP set,suitable for Model No K1225 Make : Kirloskar	Set of two	2	9.00	18.00
123.	U/S Interstage Ring suitable for Pump set,suitable for Model No K1225 Make : Kirloskar	Set of two	2	11.00	22.00
124.	U/S Lantern Ring suitable for Pump set,suitable for Model No K1225 Make : Kirloskar	Set of two	2	12.00	24.00
125.	U/S Gland suitable for Pump set,suitable for Model No K1225 Make : Kirloskar	Set of two	1	4.00	4.00
126.	U/S DE Bearing suitable for Model No K1225 Make : Kirloskar	Set of two	1	6.00	6.00
127.	U/S NDE Bearing suitable for Model No K1225 Make : Kirloskar	Set of two	1	5.00	88.00
128.	U/S Deep Groove Ball bearing suitable for Model No K1225 Make : Kirloskar	Set of two	1	8.00	131.00
129.	U/S ANG Contact Ball bearing,suitable for Model No K1225 Make : Kirloskar	Set of two	1	5.00	183.00
130.	U/S Bearing Cover,suitable for Model No K1225 Make : Kirloskar	Set of two	1	11.00	1905.00
131.	U/S Bearing Cover NDE,suitable for Model No K1225 Make : Kirloskar	Set of two	1	5.00	1362.00
132.	U/S Shaft Sleeve suitable for Model No K1225 Make : Kirloskar	Set of two	1	5.00	2626.00
133.	U/S Key for Impeller,suitable for Model No K1225 Make : Kirloskar	Each	1	9.00	412.00
134.	U/S Key for Sleeve Nut,suitable for Model No K1225 Make : Kirloskar	Each	1	2.00	360.00
135.	U/S Shaft Sleeve Nut ,suitable for Model No K1225 Make : Kirloskar	Set of two	1	2.00	103.00
136.	U/S Round Lock nut,suitable for Model No K1225 Make : Kirloskar	Set of two	1	2.00	155.00
137.	U/S Vent Valve,suitable for Model No K1225 Make : Kirloskar	Each	1	5.00	4258.00
138.	U/S Set of O Ring ,suitable for Model No K1225 Make : Kirloskar	Set of two	1	5.00	2380.00
139.	U/S Gland stuffing box suitable for nut and bolts suitable for Model No K1225 Make : Kirloskar	Set of two	2	11.00	2432.00
140.	U/S Wear Ring suitable for Pump set,suitable for Pump 15/20 HP Make : Kirloskar OR Equivalent	Set of two	5	7.00	35.00
141.	U/S Shoulder Ring in CI suitable for PUMP set 15/20 HP,suitable for Make : Kirloskar OR Equivalent	Set of two	5	8.00	40.00
142.	U/S Interstage Ring suitable for Pump set 15/20 HP,suitable for Make : Kirloskar OR Equivalent	Set of two	5	8.00	40.00
143.	U/S Pump shaft Suitable for pump set 15/20 HP for Make : Kirloskar OR Equivalent	Each	5	60.00	300.00
144.	U/S DE/NDE Bearing No 6306 suitable for Make : Kirloskar OR Equivalent	Each Set	5	12.00	60.00
145.	U/S Shaft bush for 15/20 HP Pump including removal from the pumps,Make : Kirloskar OR Equivalent	Set of two	5	18.00	90.00
146.	U/S Shaft coupling flexible type KC 276 FOR 15/20 HP Cappacity in repair and removal from pumps Make : Kirloskar OR Equivalent	Each	5	30.00	150.00
147.	U/S Star Nuts for 15/20 HP Centrifugal pump Make : Kirloskar OR Equivalent	Each	2	2.00	4.00
148.	U/S Impeller for 15/20 HP Centrifugal pump Make : Kirloskar OR Equivalent	Each Set	2	35.00	70.00
149.	U/S Impeller wear ring Model no KDS 15/20 HPMake : Kirloskar OR Equivalent	Set of two	5	5.00	25.00
150.	U/S Bearing housing.Model no KDS 15/20 HP Make : Kirloskar OR Equivalent	Set of two	5	5.00	25.00
151.	U/S Pump shaft Suitable for pump set 10 HP.Make : Kirloskar	Each	4	5.00	20.00
152.	U/S DE/NDE Bearing of capacity 10 HP.Make : Kirloskar	Each Set	4	5.00	20.00
153.	U/SShaft bush for 10 HP Pump including removal from the pumps.Make : Kirloskar	Set of two	4	9.00	36.00
154.	U/S Shaft coupling flexible type 10 HP Cappacity in repair and removal from pumps.Make : Kirloskar	Each	4	30.00	120.00
155.	U/S Star Nuts for 10 HP Centrifugal pump Make : Kirloskar	Each	4	2.00	8.00
156.	U/S Impeller for 10 HP Centrifugal pump.Make : Kirloskar	Each Set	4	2.00	8.00
157.	U/S Mechanical Shaft seal for 10 HP Centrifugal pump .Make : Kirloskar	Each	4	60.00	240.00

		Set			
158.	U/S Burn copper cable	Kg	50	160.00	8000.00
159.	U/S Slip ring assy complete with studs made out of copper suitable for 150 HP Capacity Motor	Each	1	90.00	90.00
160.	U/S Slip ring assy complete with studs made out of copper suitable for 120 HP Capacity Motor	Each	1	70.00	70.00
161.	U/S Slip ring assy complete with studs made out of copper suitable for 60 HP Capacity Motor	Each	1	55.00	55.00
162.	U/S Carbon bush holder made of bronze suitable for 150 HP Capacity Motor	Each	1	75.00	75.00
163.	U/S Carbon brushes holder made of bronze suitable for 120 HP Capacity Motor	Each	1	60.00	60.00
164.	U/S Carbon brushes holder made of bronze suitable for 60 HP Capacity Motor	Each	1	5.00	5.00
165.	U/S Fan Blade upto 20 HP Motor	Each	4	5.00	20.00
166.	U/S Fan Blade upto 30 HP Motor.	Each	4	5.00	20.00
167.	U/S Fan Blade upto 60 HP Motor	Each	4	5.00	20.00
168.	U/S Fan Blade upto 100-150 HP Motor	Each	4	5.00	20.00
169.	U/S connection box of ebonite materials with Insulators, lugs.	Each	6	5.00	30.00
170.	U/S LT Panel any description	Each	1	2000.00	2000.00
171.	U/S Flexible Cables for Voltage Grade 1100 Volts of size 50 sqmm three	RM	90	5.00	450.00
172.	U/S Flexible Cables for Voltage Grade 1100 Volts of size 70 sqmm three	RM	80	5.00	400.00
173.	U/S Flexible Cables for Voltage Grade 1100 Volts of size 25 sqmm three	RM	30	5.00	150.00
174.	U/s MCCB 620 Amps TPN	Each	1	50.00	50.00
175.	U/S MCCB 400 Amps TPN.	Each	3	25.00	75.00
176.	U/S MCCB 250 Amps TPN.	Each	6	20.00	120.00
177.	U/S MCCB 200 Amps TPN.	Each	6	18.00	108.00
178.	U/S MCCB 160 Amps TPN.	Each	4	15.00	60.00
179.	U/S MCCB 63 Amps TPN.	Each	4	8.00	32.00
180.	U/S FASD For 15 HP	Each	3	25.00	75.00
181.	U/S FASD For 30 HP	Each	2	60.00	120.00
182.	U/S FASD For 60 HP	Each	2	200.00	400.00
183.	U/S FASD For 125 HP	Each	2	300.00	600.00
184.	U/S FASD For 10 HP	Each	2	20.00	40.00
185.	U/S DOL Starter for 3/ 5 HP Motor	Each	2	8.00	16.00
186.	U/S 4 Pole Power Contactors 16A contactor.	Each	3	8.00	24.00
187.	U/S 4 Pole Power Contactors 160A contactor.	Each	4	20.00	80.00
188.	U/S 4 Pole Power Contactors 100A contactor.	Each	4	15.00	60.00
189.	U/S Single phase preventor	Each	5	5.00	25.00
190.	U/S Intake Adapters suitable for fire Pump	Each	4	5.00	20.00
191.	U/S Intake and Discharge Fittings suitable for fire Pump	Each	4	5.00	20.00
192.	U/S Crossover and Discharge Manifold Assembly suitable for fire Pump	Each	4	5.00	20.00
193.	U/SPrimer Assembly Without PIV (Priming Isolation Valve) With PIV (Priming Isolation Valve) suitable for fire Pump	Each	4	5.00	20.00
194.	U/S Body and Impeller Shaft Assembly	Each	4	25.00	100.00
195.	U/S Impeller Shaft and Pedestal Assembly suitable for fire Pump	Each	4	5.00	20.00
196.	U/S Hex Hd Screw, M12-1.75 x 30 suitable for fire Pump	Each	4	5.00	20.00
197.	U/S Lock Washer, 12 mm suitable for fire Pump	Each	4	5.00	20.00
198.	U/S Wear Ring suitable for fire Pump	Each	4	5.00	20.00
199.	U/S Lock Washer, 8 mm suitable for fire Pump	Each	4	5.00	20.00
200.	U/S O-ring, 1-5/8 x 1-7/8 in.	Each	4	5.00	20.00
201.	U/S Intake Adapter Subassembly suitable for fire Pump	Each	4	5.00	20.00
202.	U/S Discharge Relief Valve Subassembly suitable for fire Pump	Each	4	5.00	20.00
203.	U/S Volute Body Subassembly suitable for fire Pump	Each	4	5.00	20.00
204.	U/S Bearing suitable 15 HP Blower.	Each	2	5.00	10.00
205.	U/S Gear Hub suitable 15 HP Blower.	Each	2	5.00	10.00
206.	U/S Gear Set suitable 15 HP Blower.	Each	2	5.00	10.00
207.	U/S Rotar Set suitable 15 HP Blower.	Each	2	5.00	10.00
208.	U/S Flexible Cables for Voltage Grade 1100 Volts of size 95 sqmm three	RM	40	10.00	400.00
Total amount of Sch of Credit will be deducted at the time of acceptance					35018.00

SIGNATURE OF CONTRACTOR

Dated:

AGE Contract
For Accepting Officer

SCHEDULE - `B`

(ISSUE OF MATERIAL TO CONTRACTOR)

(See condition 10 of IAFW-2249)

Sl No	Particulars	Unit	Rate at which material shall be issued to the Contractor	Place of issue of material	Remarks
1	2	3	4	5	6
NIL					

Signature of Contractor

AGE Contract
For Accepting Officer

SCHEDULE - `C`

{LIST OF TOOLS AND PLANT (OTHER THAN TRANSPORT) WHICH WILL BE HIRED TO THE CONTRACTOR}

(See conditions 15, 34 and 35 of IAFW 2249)

Sl no	Quantity	Particulars	Details of MES crew supplied	Hire charges per unit per working day	Standby charges per unit per off day	Place of issue (by name)	Remarks
1	2	3	4	5	6	7	8
----- Nil -----							

Signature of Contractor

AGE Contract
For Accepting Officer

SCHEDULE - `D`

(TRANSPORT TO BE HIRED TO THE CONTRACTOR)

(See conditions 16 and 35 of IAFW 2249)

Sl no	Quantity	Particulars	Rate per unit per working day	Place of issue (by name)	Remarks
1	2	3	4	7	8
NIL					

Signature of Contractor

AGE Contract
For Accepting Officer

T E N D E R

To,

The President of India,

Having examined and perused the following documents:-

- 1. Specifications signed by the Garrison Engineer Dehu Road
- 2. Particular specifications and list of drawings attached.
- 3. Schedule 'A', 'B', 'C', 'D' attached hereto.
- 4. MES Standard Schedule of Rates-2009 (Part-I specifications) and Standard Schedule of Rates 2020 Part-II (Rates) (hereinafter and in IAFW-2249 referred to as the MES schedule) together with errata/amendments as under:-

SSR-2009 (Part-I) : Errata: Nil & Amendment: 01 to 03

SSR-2020 (Part-II) : Errata: Nil & Amendment: 1 to 122 including Section 30

- 5. General conditions of contract IAFW-2249 (1989 Print) together with Errata Nos 01 to 20 and Amendments Nos 01 to 49 and schedule of Minimum wages.

- 6. **WATER: Water will not be supplied by the MES**

- 7. Should this tender be accepted I / We agree:-

- a) That a sum of **Rs. 80,000.00 (Rupees Eighty Thousand only)** forwarded as Earnest Money shall either be retained on account of Security Deposit or be refunded by the Government on receipt of an appropriate amount of Security Deposit within the time specified in Condition 22 of IAFW-2249.
- b) To execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as detailed in General Summary hereinafter and to carry out such deviations as may be ordered vide Condition 7 of IAFW-2249 upto a maximum of **10% (Ten PERCENT)** and further agree to refer all disputes as required by Condition 70 and 71 to the sole conciliator of a serving officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors (India) recognized by Govt of India, to be appointed by Chief Engineer Pune Zone Pune-01 or in his absence the officer officiating as Chief Engineer Pune Zone Pune-01.
- (c) Further agree to refer all disputes as required by Conditions 70 & 71 to the sole arbitration of a serving officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors (India) recognized by Govt of India, to be appointed by Chief Engineer Pune Zone Pune-01 or in his absence the officer officiating as Chief Engineer Pune Zone Pune-01, whose decision shall be final, conclusive and binding.

***TO BE DELETED WHERE NOT APPLICABLE.

Signature of Contractor

**AGE Contract
For Accepting Officer**

In lieu of IAFW-1779(A) (Revised 1947)

Signature_____in the capacity of _____ duly authorized to sign the ten-
der for and on behalf of M/s

(BLOCK CAPITALS)

Name of the Signatory: _____
(IN BLOCK CAPITALS)

Date: _____

Postal Address : _____

Witness _____

Telegraphic Address: _____

Address _____

Telephone: _____

ACCEPTANCE

Nil alterations have been made in these documents and as evidence that these altera-
tions were made before the execution of the Contract Agreement these have been initialed by
the contractor and **Shri Anupam Kumar, AEE (QS&C), AGE (Contracts)**. The said officer is
hereby authorized to sign and initial on my behalf the documents forming part of this contract.

The above tender was accepted by me on behalf of the President of India for the contract sum
of Rs _____ on the day
of _____ 2026.

Signature _____ dated this _____ day of _____ 2026.

Appointment:

GARRISON ENGINEER
DEHU ROAD 412 101
ACCEPTING OFFICER
(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)

GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 PRINT) FOR
ITEM RATE CONTRACTS- IAFW 1779 A (REVISED 1955)

- **LUMP SUM CONTRACTS- (IAFW-2159)**
- **TERM CONTRACTS & ARTIFICERS**
- **WORKS(IAFW-1821)**
- **MEASUREMENT CONTRACTS**
- **(IAFW-1779 & 1779-A)**

A copy of the GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 Print) with errata1 to 20 and amendment Nos 1 to 49 has been supplied to me/us and is in my/our possession, I/We have read and understood the provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We shall abide by the terms and conditions thereof, as modified if any, elsewhere in these tender documents.

It is hereby further agreed and declared by me/us, that the GENERAL CONDITIONS OF CONTRACTS, IAFW-2249 (1989 Print) including condition 70 & 71 thereof pertaining to settlement of disputes by arbitration, with errata 1 to 20 and amendment Nos. 1 to 49 form part of these tender documents.

NOTE: In case of difference in interpretation due to wordings of English and Hindi versions of the General Conditions of Contracts (IAFW-2249) (1989 Print), the English version will prevail.

Signature of Contractor
Dated:

AGE Contract
For Accepting Officer

SCHEDULE OF MINIMUM FAIR WAGES

1. It is hereby agreed by me/us that the schedule of Minimum Fair Wages' as published vide Government Of India Ministry of Labour order No 1 (2) 92 IS-II dated 10 Mar 1992 applicable to Area 'C' containing 08 (Eight) pages shall form Part of these tender documents state Govt / Union territory Notification forms part of these tender documents.
2. It is also agreed by me/us that although latest notification, as available with the Accepting Officer, has been formed part of the contract, in case the Government has further revised the wages, the latest revised wages of labours shall only be applicable.
3. My/our signature (s) hereunder is deemed to my/our having read and understood the provisions contained therein and having signed the aforesaid Schedule of Minimum Wages forming part of this tender and in agreement of provisions of para 2 above * I/we agree that *I/we shall abide by the same and that aforesaid documents form part of the tender.
4. **The latest revised wages of labour as fixed by State Govt/Govt of India/Union Territory as applicable to the work whichever is higher will only be applicable in the contract.**

NOTE: Schedule of Minimum fair wages is available for reference in the office of the Garrison Engineer Dehu Road, Pune-412101.

Signature of Contractor
Dated:

AGE Contract
For Accepting Officer

SPECIAL CONDITION**1. GENERAL**

1.1. The following Special conditions shall be read in conjunction with the General Conditions of Contracts IAFW-2249 including errata / amendments there to. If any provision in these special conditions is at variance with the aforesaid documents, these special conditions shall be deemed to take precedence there over.

1.2. The work under this Contract shall be carried out in accordance with Schedule 'A', Particular Specifications, drawings and other provisions made in MES Schedule.

1.3. The term 'General Specifications' referred to hereinbefore/ hereinafter as well as referred to in IAFW- 2249. (General Conditions of Contracts), shall mean the Specifications contained in MES Schedule.

1.4. General rules, specifications, special conditions and all preambles in MES Schedule shall be deemed to apply to the works under this Contract unless specified otherwise in these tender documents, in which case the provisions in these tender documents shall be deemed to take precedence over the provisions made in MES Schedule.

2. SECURITY OF CLASSIFIED DOCUMENTS: The Contractors special attention is drawn to Condition 2-A and 3 of IAFW-2249 (General Conditions of Contracts). The contractor shall not communicate any classified information regarding the works either to subcontractor or others, without the prior approval of the Engineer-in-Charge. The contractor shall also not make copies of the design/drawings and other documents furnished to him in respect of the work and he shall return all documents on completion of work or earlier on determination of the contract. The contractor shall along with the final bill attach a receipt from the Engineer-in-charge in respect of his having returned the classified documents as per Condition 3 of IAFW-2249 (General Conditions of Contracts).

3. PERIOD FOR KEEPING THE TENDER OPEN: The tender shall remain open for acceptance for a period of 60 (sixty) days from the date specified for its submission/ uploading on the MES website portal (www.eprocuremes.gov.in).

4. TIME AND PROGRESS CHART USING CRITICAL PATH METHOD

4.1. The time and progress chart to be prepared as per Condition 11 of IAFW-2249 (General Condition of Contracts) shall consist of detailed net work analysis and a time schedule. The critical path network will be drawn jointly by the GE and contractor soon after acceptance of tender. The time scheduling of the activities will be done by the contractor so as to finish the work within the stipulated time. On completion of the time schedule a firm calendar date schedule will be prepared and submitted by the contractor to the GE who will approve it after due scrutiny. The schedule will be submitted in four copies within two weeks from date of handing over the site.

4.2. During the currency of the work the contractor is expected to adhere to the time schedule and this adherence will be a part of the contractor's performance under the contract. During the execution of the work the contractor is expected to participate in the reviews and updating of the network undertaken by the GE. These reviews may be undertaken at the discretion of the GE either as a periodical appraisal measure or when the quantum of work ordered on the contractor is substantially changed through deviation orders or amendments. Any revision of the schedule as a result of the review will be submitted by the contractor to the GE within a week who will approve it after due scrutiny. The contractor shall adhere to the revised schedule thereafter. In case of contractor disagreeing with the revised schedule, the same will be referred to the Accepting Officer whose decision shall be final, conclusive and binding. GE's approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time. Extension of time shall be considered and decided by the appropriate authority mentioned in Condition 11 of IAFW-2249 and separately regulated.

4.3. The contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad framework of the accepted method of working and safety.

4.4. No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the department.

5. ELECTRIC SUPPLY: In case the contractor desires to buy electricity from the MES, he shall be charged for the electric energy consumed at the following rates:

- (i) At Rs 23.53 per unit for lighting purpose
- (ii) At Rs 23.53 per unit for power purpose

Electric supply required for works upto maximum of 10 KVA shall be made available by the MES at the incoming terminal of the main switch on the site plan/ decided by the GE. The

SPECIAL CONDITION

main switch and KWH meters to register to electric energy supplied shall be provided and installed by the MES. The contractor shall provide all necessary cables, fittings, etc. from the main switch in order to ensure a proper and suitable supply of electricity for the execution of work.

The MES does not guarantee for continuity of supply and no compensation what so ever shall be allowed for supply becoming intermittent or for breakdown in the system.

GE or his representative shall be free to inspect all the power consuming devices or any electric line provided by the contractor. Any device or electric line provided by the contractor, which is not to the satisfaction of the GE shall be discontinued from the supply if so desired by him.

6. FACILITIES TO CONTRACTORS:

6.1. QUARRIES ON DEFENCE LAND: Reference Condition 14 of IAFW-2249. No quarries on defence land are available.

6.2. SPECIAL CONDITION FOR ALLOTMENT OF LAND FOR STORAGE OF MATERIALS (INCLUDING TEMPORARY SHEDS): Reference condition 24 of IAFW-2249. The contractor shall be permitted to store his materials including erecting temporary sheds therefore at the areas of land marked on the site plan/ as decided by the GE and he shall pay a licence fee of Rs 1/- per year or part thereof in respect of each and every separate area of land allotted to him”.

6.3. SPECIAL CONDITION FOR ALLOTMENT OF LAND FOR ACCOMMODATION OF LABOUR, CANTEEN, FABRICATING WORKSHOP ETC.: Reference condition 24 of IAFW-2249. The contractor shall be permitted to erect his labour camp, temporary workshops, and the like at the area of land marked for this purpose on the site plan/ as decided by the GE and he shall pay a licence fee Rs 1/- per year of part thereof in respect of each and every separate area of land allotted to him.

7. FEMALE LABOUR: If the contractor desires to employ female labour on works be carried out inside the area of a Factory, Depot, Park etc, and a female searcher is not borne on the authorized strength of the Factory, Depot, Park etc, at the time of submission of the tender, he shall be deemed to have allowed in his tender for pay and allowances etc. for a Female Searcher (Class IV servant) calculated for the period female labour is employed by inside the area. If more than one contractor employs female labour during any month and female searcher(s) has/ have to be employed in addition to the authorised strength of Factory, Depot, Park etc, the salary and allowances paid to the additional female searcher(s) shall be distributed on an equitable basis between the contractors employing female labour taking into consideration the value and period of completion of their contracts. The GE's decision in regard to the amount recoverable on this account from contractor shall be final and binding.

8. WORKS INSIDE MILITARY FARMS: The contractor will not make use of bullock/ animal transport for the transport of building materials, etc. and shall employ solely mechanical transport for this purpose.

9. CONDITION 64 OF IAFW-2249-ADVANCE ON ACCOUNT: This clause is applicable if the contract sum is more than ` 50 lakhs.

9.1. Add the following in continuation of Para 8: -

“provided further, the contractor may be paid advance on account to the full value of the under mentioned materials only, brought on the site on his furnishing guarantee bond(s) from a scheduled bank for the amount of the retention money which should otherwise be recoverable from him under contract: -

- (a) Factory made paneled shutter
- (b) Steel windows/ ventilators
- (c) PVC soil/waste/ vent pipes, nahani traps/ gully traps
- (d) Builders hardware (iron mongery)
- (e) Cement tiles, terrazzo tiles, Shahabad stone tiles, Kota stone tiles, granitestone, marble stone, non skid ceramic tile and other floor tiles
- (f) Water supply pipes and fittings/fixtures
- (g) Electric tools/wire/fittings/fixtures
- (h) Pressed steel door frame
- (i) Sanitary fittings
- (j) Steel
- (k) Any other nonperishable materials as decided by GE.

9.2 The bank guarantee bond(s) shall be executed for a period and on a form as directed by the Accepting Officer. The contractor shall further arrange to extend the period of guarantee

9.2. bond(s) if and when necessary, as directed by the Accepting Officer or shall furnish fresh guarantee bond(s) of similar value in lieu.

SPECIAL CONDITION**10. RE-IMBURSEMENT /REFUND ON VARIATION IN TAXES DIRECTLY RELATED TO CONTRACT.**

10.1. The rates quoted by the contractor shall be deemed to be inclusive of all taxes (including GST, labour welfare cess/tax etc) duties, royalties, octroi & other levies payable under the respective statutes. No reimbursement/refund for variation in rates of taxes, duties, royalties, octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, royalties, octroi & other levies shall be made except as provided in sub Para here-in-below.

10.1.1. The taxes which are levied by Govt at certain percentage rates of contract sum/amount shall be termed as “taxes directly related to contract value” such as GST, labour welfare cess/tax and like but excluding income tax. The tendered rates shall be deemed to be inclusive of all “taxes directly related to Contract value” with existing percentage rates as prevailing on last due date of receipt of tenders. Any increase in percentage rates of “taxes directly related to contract value” with reference to prevailing rates on last due date of tenders shall be reimbursed to the contractor and any decrease in percentage rates of “taxes directly related to Contract value” with reference to prevailing rates on last due date for receipt of tenders shall be refunded by the contractor to the Govt/deducted by the Govt from any payments due to the contractor. Similarly imposition of any new “taxes directly related to Contract value” after the last due date for receipt of tenders shall be reimbursed to the contractor and abolition of any “taxes directly related to contract value” prevailing on last due date for submission/ uploading of tenders shall be refunded by the contractor to the Govt/deducted by the Govt from the payments due to the contractor.

10.1.2. The contractor shall, within a reasonable time of his becoming aware of variation in percentage rates and/or imposition of any further “taxes directly related to contract value”, give written notice thereof to the GE stating that the same is given pursuant to this special condition, together with all information relating thereto which he may be in a position to supply. The contractors shall also submit the other documentary proof/information as the GE may require.

10.1.3. The contractor shall, for the purpose of this condition keep such books of account and other documents as are necessary and shall allow inspection of the same by a duly authorized representative of Govt, and shall further, at the request of the GE furnish, verified in such a manner as the GE may require, any documents so kept and such other information as the GE may require.

10.1.4. Reimbursement for increase in percentage rates/imposition of “taxes directly related to contract value” shall be made only if the contractor necessarily & properly pays additional “taxes directly related to contract value” to the Govt, without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Govt Authority and submits documentary proof for the same as the GE may require.

11. EMPLOYMENT OF PERSONNEL

11.1. The contractor shall employ only Indian nationals as his representative, servants and workmen after verifying their antecedents and loyalty. He shall ensure that no person of doubtful antecedent and nationality is in any way, associated with the work. If for the reasons of technical collaboration or other considerations the employment of foreign national (s) is unavoidable, the contractor shall furnish full particulars to this effect to the Accepting Officer at the time of submission of the tender. As a proof that the contractor has employed only Indian nationals, he shall render a certificate to the GE within one month from the date of acceptance of the tender to this effect. In case the GE desires, the contractor will have the police verification done of personnel employed by him.

11.2. The GE shall have full powers and without giving any reason to order the contractor immediately to cease to employ, in connection with his contract, any agent, servant or employ to continue employment is, in his opinion, undesirable. The contractor shall not be allowed any compensation on this account.

11.3. The contractor’s attention is also drawn to condition 25 of IAFW-2249 in this connection.

12. SUPPLY OF WATER

Water will not be supplied by the MES

13. INSPECTION OF SITE BY THE TENDERER

13.1. The tenderer advised to contact the Garrison Engineer for the purpose of inspections of site (s) and examination of relevant document other than those sent herewith, who will extend reasonable facilities for the purpose. The tenderers shall also make themselves familiar with working conditions, accessibility of site (s), availability of materials and other cogent conditions, which may affect the entire completion of work under this contract.

13.2. The tenderer shall be deemed to have inspected the site (s) and made themselves familiar with the working conditions etc. whether they actually inspect the site(s) or not.

SPECIAL CONDITION

14. CONDITION FOR WORKING IN RESTRICTED AREA: all works under the contract lie in restricted area. The restrictions for entry to work site and conditions of working in restricted area shall be as under.

14.1. ENTRY /EXIT: The contractor, his agent(s), representatives, workmen etc and his materials, carts, truck or other means of transports etc will be allowed to enter through and leave from only such gate or gates and at such times as the GE or authorities in charge of the restricted area may at their sole discretion permit to be used. The contractor's authorized representative is required to be present at the place of entry and exit for purpose of identifying his workmen, carts, trucks etc to the personnel in charge of the security of the restricted area and shall stick to the specific route directed for them to follow.

14.2. IDENTITY OF WORKMEN

14.2.1. Every workman shall be in possession of an identity card. The identity card shall be issued after a thorough investigation of antecedents of the labourers by the contractor and attested by officer-in-charge of a unit concerned in accordance with the standing rules and regulations of the unit. The contractor shall be responsible for conduct of his workmen, agents or representatives.

14.2.2. IDENTITY CARD OR PASSES: The contractor, his agents and representatives are required individually to be in possession of an identity card or pass which will be examined by a security staff at the time of entry into or exit from the restricted area at any time or number of time inside restricted area.

14.3. SEARCH:Through search of all persons and transport shall be carried out at each gate and for as many times the gate is used for entry or exit and may also be carried out at any number of times at the site within the restricted area.

14.4. WORKING HOURS:The units controlling restricted area, usually work during six days in a week and remain closed on the seventh day. The working hours available to contractor's labour and staff are however, appreciably reduced because of the time of entry and exit during working hours. The exact working hours, working days and number of working days observed for the restricted area, where works are to be carried out, shall be deemed to have been ascertained by the contractor before submitting his tender. The tenderer attention is invited to the fact that number of working hours for a unit are prescribed in regulations and they cannot be increased by the Garrison Engineer of an author controlling the restricted area. The definition of "working days" as given under condition 1(t) of IAFW-2249 does not apply in case where the works area carried out in the restricted area.

14.5. WORKING ON HOLIDAYS:The contractor shall not carry out any work on gazetted holidays, weekly holidays and other non-working days except when he is specially authorised in writing to do so by the Garrison Engineer. The GE may at his sole discretion declare any day as holiday or non-working day without assigning any reason for such declaration.

14.6. FIRE PRECAUTIONS:

14.6.1. The contractor, his agents, representatives, workers etc. shall strictly observe the order pertaining to fire precautions prevailing within the restricted area.

14.6.2. Motor transport vehicles, if any allowed by authorities to enter the restricted area must be fitted with serviceable fire extinguishers.

14.7. FEMALE SERACHER: If the contractor desires to employ female labour on works be carried out inside the area of a Factory, Depot, Park etc, and a female searcher is not borne on the authorized strength of the Factory, Depot, Park etc, at the time of submission of the tender, he shall be deemed to have allowed in his tender for pay and allowances etc. for a Female Searcher (Class IV servant) calculated for the period female labour is employed by inside the area. If more than one contractor employs female labour during any month and female searcher(s) has/ have to be employed in addition to the authorised strength of Factory, Depot, Park etc, the salary and allowances paid to the additional female searcher(s) shall be distributed on an equitable basis between the contractors employing female labour taking into consideration the value and period of completion of their contracts. The GE's decision in regard to the amount recoverable on this account from contractor shall be final and binding.

15. DAMAGE TO EXISTING STRUCTURES: Any damage to any existing structures, any existing road etc. during the execution of works shall be made good by the contractor at his own expense. Rectification, replacement, making good, touching up, etc. shall be carried out conforming to the materials and workmanship originally provided and to the satisfaction of the Engineer-in-Charge. In case of any dispute on this account, the decision of the GE shall be final, binding and conclusive.

16. APPROACHES: The contractor shall make arrangements for and provide at his own cost all temporary approaches, if required to the site(s), after obtaining approval in writing of the GE to the layout of such approaches.

17. COORDINATION WITH OTHER AGENCIES: Refer Condition 24 of IAFW-2249. The contractor shall permit free access and afford normal facilities and usual convenience to other

SPECIAL CONDITION

agencies or departmental workmen to carry out connected works or services under separate arrangements. The contractor will not be allowed any extra payment on this account.

18. RECORD OF MATERIALS AND PURCHASE VOUCHERS:

18.1. The quantity of materials such as cement, steel, paint, water proofing compound, chemicals for anti-termite treatment, and the like (as applicable) and directed by the Engineer - in - charge , (the quantity of which cannot be checked after incorporation in the works), shall be recorded in the Measurement Book as “ NOT TO BE ABSTRACTED” and signed by the contractor and the Engineer-in-charge as a check to ensure that the required quantity had been brought to site for incorporation in the work.

18.2. The materials brought to site shall be stored as directed by the Engineer-in-charge and those already recorded in the Measurement Book shall be suitably marked for identification.

18.3. The contractor shall produce original receipted purchase vouchers/ invoices form the manufacturers and/or their authorised agents for the full quantity of the following materials, as applicable as a advances on account of the work done and/or materials collected in accordance with Condition 64 of General Conditions of Contracts – IAFW-2249bills along with Test Certificates wherever applicable in respect of supplies for the following items (as applicable) to the Engineer-in-charge in addition to any other items as directed by Engineer-in-charge before payment is made in RARs, against material lying as site:-

- (a) Water proofing compound
- (b) Chemicals for Anti-termite treatment
- (c) Paint, Distempers and cement base paints & like
- (d) Cast iron pipes and fitting
- (e) Sanitary fittings
- (f) All grades of bitumen
- (g) Steel windows / ventilators
- (h) Factory made door shutters
- (i) Floor/Wall tiles
- (j) Builders Hardware
- (k) Tarfelt/bituminous products
- (l) Salt glazed stone ware pipe
- (m) Electrical and water supply fittings/fixtures where names of manufacturers/brands are specified or approved
- (n) Cables
- (o) Steel reinforcing bars and structural steel which are not issued under Schedule 'B'
- (p) Cement
- (q) Steel
- (r) PVC pipes
- (s) Any other proprietary articles.

18.4. The contractor shall, on demand, produce to the GE, original receipted vouchers/invoices in respect of the materials other than as stated in sub-Para just hereinbefore. Vouchers/invoices so produced and verified shall be shall be stamped by Engineer-in-Charge indicating contract number. The contractor shall ensure that the materials are brought to site, in original sealed containers/packing, bearing manufacturer' marking except in the case of the requirement of materials (s) being less than smallest packing.

18.5. Bitumen shall be purchased directly from manufacturers' stockiest or their authorised dealers only. These vouchers/ invoices shall be defaced by the GE/Engineer-in-Charge, indicating reference to the contract number, under his dated signature, and CTC thereof shall be kept on record sp as to avoid their being used again.

18.6. The vouchers/ invoices will clearly indicate the contract No. and IS No., specific alternative to which the material conforms in case of various alternative in IS.

19. WATCH/ LIGHTING: The contractor shall at his own cost take possible precautions to ensure safety of life and property by providing necessary fencing, barrier, light, watchman, etc., during the progress of work and as directed by the Engineer-in-Charge.

20. CLEANING DOWN: Refer condition 49 of IAFW-2249. The contractor shall clean all floors, remove cement, lime or paint drops, clean joinery, glass panes, etc., touch up all paint works and carry out all necessary items of works in connection with therewith and have the whole premises clean and tidy to the entire satisfaction of the Engineer-in-Charge before handing over the items / works. No extra payment shall be admissible to the contractor for this operation.

21. MINIMUM WAGES PAYABLE

21.1. Refer Condition 58 of IAFW-2249. The contractor shall not pay wages lower than minimum wages for labour as fixed by the Govt. of India/ state Govt. / Union Territory/ local authority, whichever is higher.

SPECIAL CONDITION

21.2. The contractor’s attention is also drawn, amongst other things to the ‘exploitations’ to the schedule of minimum wages referred to above.

21.3. The fair wages referred to in Condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages referred to above as upto date from time to time.

21.4. Schedule of minimum wages are not enclosed along with tender documents. However the contractor shall be deemed to have verified the minimum fair wages payable as on the last due date of uploading/ submission of tender.

21.5. The contractor shall have no claim whatsoever, if on account of local factors and or regulations, he is required to pay the wages in excess of minimum wages as described above during the execution of work.

22. MATERIALS AND SAMPLES:

22.1. Refer Condition 10 of IAFW-2249.

22.2. The materials and articles, which have been specified from certain makers/manufacturers, shall be of make/manufactures as specified. If the manufacturers specified in the tender documents make both ISI marked and conforming to ISI, the materials/ articles shall be ISI marked.

22.3. The materials and articles , which have not been specified in the tender documents by makes/ manufacturers, shall be as under: -

- (i) If ISI marked materials are being manufactured the same shall be ISI marked. For list of ISI marked manufacturers refer website of BIS i.e. www.bis.org.in.
- (ii) If materials are not being manufactured with ISI marked, the same shall be conforming to IS specifications.

22.4. Materials of local origin shall be as specified and conforming to samples kept in GE’s office. The tenderer is advised to inspect sample of materials which are displayed in the office of GE, before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfied himself as to the nature and quality of materials, is required to incorporate in the work irrespective of whether he has actually inspected them or not.

22.5. The contractor shall not procure materials and articles unless the samples are first got approved by the GE.

HANDING OVER OF SITE: Site for the execution of the work will be available as soon as the work is awarded. In case it is not possible to make the entire site available on the award of the work, the contractor will have to arrange his working programme accordingly. No claim whatsoever, for not giving entire site on award of work and for giving site gradually, will be tenable.

(SIGNATURE OF CONTRACTOR)

**AGE Contract
For Accepting Officer**

PARTICULAR SPECIFICATIONS**1. 1. GENERAL**

1.1. Works under this contract shall be carried out as detailed in Schedule 'A' and in accordance with particular specifications, drawings, Special Conditions, other provisions given in General Summary and General Specifications/Provisions given in MES Schedule of rates 2009 Part I and MES Schedule 2010 of rates Part-II.

1.2. General rules, Specifications, Special conditions and all preambles in the MES Schedule shall be deemed to be applicable to the work under this contract, unless stated otherwise in these documents. In case of variance between provisions in these documents and those given in MES Schedule, the provisions in these documents shall take precedence over the aforesaid provisions in the MES Schedule.

2. MINOR DETAILS

2.1. Rates quoted by the tenderer shall be deemed to include for any minor details/items of work and/or constructions which are obviously and fairly intended and which may not have been included in these documents and but which are essential for the execution and entire completion of the work.

2.2. Decision of the Accepting Officer as to whether any minor detail of work and/or construction is obviously and fairly intended to be included or not in the contract shall be final, conclusive, and binding.

SCOPE OF WORK: The scope of work consists of "**REPAIR / MAINTENANCE OF PUMPS, MOTORS, PANELS, STARTERS AND INCLUDING ALLIED WORKS AT GE DEHU ROAD**" as described in Schedule 'A' and as specified in these particular specifications.

2.2.3 Pressure filter installation, commissioning and testing is part of contract, after final commissioning the treated water sample to be tested from Nabal accord laboratory of all parameters including bacteria and chemical analysis completed and final completion will be issued after water sample test report found correct as per the guideline.

2.2.4 The provide all technical parameter of filter plant and take approval before commissioning.

2.2.5 The filter media as per manufacturing design.

2.2.6 All solar light fitting five year manufacturer guarantee certificate to be provided

3. MATERIALS:

3.1. Materials supplied by the contractor for incorporation in the work shall unless otherwise specified in the particular specifications comply with the requirement of relevant Indian Standards (IS) latest edition including amendment there to. If not specifically mentioned in specifications hereunder, the Makes of various materials required to be incorporated in the work is attached as Appendix 'B' to particular specifications.

3.2. The contractor shall purchase materials directly from the manufacturer or their authorized dealers only. The materials shall be brought to the site in sealed containers only. The materials like, synthetic enamel paint, acrylic paint, cement base paint etc. brought at site for incorporation into work shall be recorded in MB for "NOT TO BE ABSTRACTED" after verifying the purchase vouchers by the Engineer-in-Charge. This shall be done before such materials are incorporated into work.

3.3. After approval of the samples the quantity of materials to be incorporated in the work shall be brought to the site by contractor along with the purchased vouchers indicating quality and quantity of materials in a single or more number of lots. The contractor shall inform Engineer-in-Charge in writing regarding the quality and quantity brought to site in each lot which will be inspected by the Engineer-in-Charge before incorporation into the work. The work shall commence only after verification and ascertaining correctness/genuineness of quality and quantity of materials brought in each lot.

3.4. The contractor shall take all precautionary measures during execution of work as specified in clause 15.10 of SSR Part-I. The contractor shall open the sealed containers in the presence of Engineer-in-Charge. On physical completion of work the contractor shall obtain all users signatures. The contractor shall produce all purchase vouchers (as applicable for work) for all the materials used in the work as and when demanded by GE/Engineer-in-Charge.

4. DISMANTLING/ DEMOLITION: Demolition/ dismantling/ taking down shall be done where directed by the Engineer-in-charge. Necessary precautions shall be taken as specified in clause 21.6 of MES Schedule Part I. Any damage done to the existing structure shall be made good by the contractor at his own cost & shall not have any claim whatsoever in this regard, failing which the work shall be carried out at the risk & cost of the contractor.

5. CONCRETE WORK**5.1. Material:**

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5.1.1. Cement: As per Appendix “A” to the particular specifications.

5.1.2. Fine aggregate

5.1.2.1. Fine aggregate for concrete works shall be natural sand/crushed stone sand/crushed gravel sand or combination thereof and shall be conforming to IS-383 and grading within the limits of Grading Zones II to III all as specified in clause 4.4.7.2 of SSR Part-I: 2009. Fine aggregate conforming to grading zone IV of IS-383 shall not be used for RCC works.

5.1.2.2. The sand shall be hard, dense, strong, durable, clear, free from veins and adherent coatings, and free from injurious amount of disintegrated pieces, alkali, vegetable matters and other deleterious substances. As far as possible, flaky and elongated pieces shall be avoided.

5.1.2.3. Natural river sand/crushed stone sand shall be obtained from the sources as approved by the GE.

5.1.3. Coarse aggregate:

5.1.3.1. Coarse aggregate for all cement concrete work shall be crushed gravel or stone as per IS 383: 1970. Single sized coarse aggregates shall be supplied in the nominal sizes given in Table 2 of IS 383: 1970. For any one of the nominal sizes, the proportion of other sizes, as determined by the method described in IS 2386 (Part I): 1963 shall also be in accordance with Table 2 of IS 383: 1970. Graded coarse aggregates may be supplied in the nominal sizes given in Table 2 of IS 383: 1970.

5.1.4. Water: Water shall conform to the requirement stipulated in IS 456: 2000 and as per clause 4.9 of MES Schedule.

5.2. Nominal mix concrete: Proportions of nominal mix concrete shall be as per Table 9 of IS 456: 2000.

5.3. Batching: Only weigh batching shall be done permitted for proportioning the nominal mix concrete.

5.4. Mixing: Concrete shall be mixed in a mechanical mixer. The mixer should comply with IS 1791 and IS 12119. The mixer shall be fitted with water measuring (metering) devices. The mixing shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and consistency. If there is segregation after unloading from the mixer, the concrete should be remixed.

5.5. Curing: Curing to concrete surfaces shall be carried out all as specified in clause 4.11.13 of SSR Part-I: 2009.

6. STEEL:

6.1. General: Steel required for the work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangement. Steel shall comply with the requirements mentioned in the drawings, SSR, IS Specifications as amended and particular specifications given hereinafter.

6.2. Grade and type of steel: -

6.2.1. Reinforcement steel: Steel bars for concrete reinforcement wherever shown/mentioned on drawings shall be high strength deformed steel bars produced by thermo mechanical process. The grade of steel bar shall be Fe 500/ Fe 500D/ Fe 550/ Fe 550D. If a reinforcement of any other type is mentioned elsewhere, the same shall be amended to read as high strength deformed steel bars produced by thermo mechanical process having grade equivalent to Fe 500/ Fe 500D/ Fe 550/ Fe 550D. The steel bar conforming to the requirements of IS 1786: 2008 for chemical and physical properties shall be acceptable except minimum elongation percent, which shall be minimum 18 for all grade of steel bar.

6.2.2. STRUCTURAL STEEL:

6.2.2.1. Structural steel (ordinary quality): Structural steel (ordinary quality) shall be as per IS 15911: 2010: The structural steel (ordinary quality) is intended for general purposes such as door and window frames, window bars, grills, steel gates, hand railing, building hardware, fencing post and tie bars and shall not be applicable for dynamic loading other than wind loads.

6.2.2.2. Hot rolled medium and high tensile structural steel: Hot rolled medium and high tensile structural steel shall be as per IS 2062: 2011.

6.2.2.3. Steel tube for structural purposes: Steel tube for structural purposes shall be as per IS 1161: 2014 and a grade of steel shall be as per IS 10748: 2004.

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6.2.2.4. **Structural steel (ordinary quality):** Structural steel (ordinary quality) shall be as per IS 15911: 2010. The structural steel (ordinary quality) is intended for general purposes such as door and window frames, window bars, grills, steel gates, hand railing, building hardware, fencing post and tie bars and shall not be applicable for dynamic loading other than wind loads.

6.2.3. **PROCUREMENT:** Steel shall be procured by the contractor from any of the sources mentioned here in after for entire completion of the work.

6.2.3.1. Reinforcement steel: Reinforcement steel shall be procured directly from the following manufacturers approved by E-in-C's Branch as primary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -

- (a) Steel Authority of India Limited, Central Marketing Organization, Northern Region, 17th Floor, scope Minar Laxmi Nagar Distt., Centre, Delhi – 110092
- (b) Tata Iron & Steel Company (TISCO, or Tata Steel), Bombay House, 2, 4 Homi Modi Street, Mumbai - 400001, India, Tel: (91-22) 2049131, Fax: (91-22) 2049522/2870840, Email: corpcomm@sr.tatasteel.com,
- (c) Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam Steel Plant, Visakhapatnam - 530031. India, Tel: (91-891)518226/518376, Fax: (91-891)518316, Email: cmdvsp@itpvis.ap.nic.in
- (d) M/s SRMB Srijan Ltd, Srmb House, 7, khetra das lane, Kolkata-700012, Tel : 033 - 6600 6600, Fax: 033 - 2211 0483
- (e) M/s Jindal Steels and Power Ltd., Plot No 2, Sector- 32, Gurgaon-122001, Haryana, Tel- +91 1662 222471-84, Fax- +91 1662 220476
- (f) M/s Steel Exchange India Ltd., My Home Laxminivas Apartments, Ameerpet, Hyderabad-500016, A.P., Tel-040-23403725, Fax-040-23413267, E-mail-info@seil.co.in
- (g) M/s Jai Balaji Industries Ltd, 1401-1402, Nirman Tower, 14th Floor, 26 Barakhamba Road, New Delhi-110001, Ph 033-22489808/22488173, Fax: 033-22430021/22426263, E-mail-info@jaibalajigroup.com
- (h) M/s SPS Steel Rolling Mills Ltd., 68, Ballygunge Circular Road, Kolkata-700019, Ph- 033- 2895160/67, Fax- 033-22894386, E-mail- spsdelhi@spsgroup.co.in
- (i) M/s Shyam Steel Industries Ltd, Shyam Towers EN-32, Sector-V, Salt Lake, Kolkata-700091, Tel-033-40074007, Fax-033-40074010, E-mail-marketing@shyamsteel.com
- (j) M/s Concast Steel & Power Ltd, Kolkata, 21 Hemant Basu Sarani, Suit Nos - 511 & 512, 5th floor, Kolkata - 700001, Tel — 91- 33 - 2213 0481- 87,
- (k) M/s Adhunik Metaliks Ltd, Orissa, Lansdowne Towers. 2/1A Sarat Bose Road,, Kolkata- 700020
- (l) M/s Shri Bajrang Power & Ispat Ltd,, Raipur, Chhatishgarh, Vill - Borjhara, Urla Industrial Area,, Raipur-493 221, Chhattisgarh., Tel I 0771 4288019 / 29 / 39
- (m) M/s JSW Steel Ltd, Karnataka, Jindal Mansion, 5A Dr G Deshmukh Marg, Mumbai-400026
- (n) M/s Electrosteel Steels Ltd, Bokaro, Jharkhand, G K Tower, 2nd& 3rd floor, 19 Camac Street,, Kolkata, WB — 700017, Board No: 91-33-2283-9990

6.2.3.2. Structural steel:

6.2.3.2.1. Structural steel shall be procured directly from the following manufacturers approved by E-in-C's Branch as primary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -

- (a) SAIL
- (b) TISCO
- (c) RINL
- (d) M/s Jindal Steels and Power Ltd., Plot No 2, Sector- 32, Gurgaon-122001, Haryana, Tel- 01246612000, Fax- 01246612125

6.2.3.2.2. In case of non-availability of structural steel with primary producers, the same can be procured directly from the following manufacturers approved by E-in-C's Branch as secondary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013): -

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- (a) M/s Kashi Vishwanath Steel Ltd., Kashipur, A-80, Vivek Vihar, Phase-I, Delhi – 110095
- (b) M/s Shri Badrinarain Alloys and Steel Ltd, 95 Stephen House, 4 BBD Bag, Kolkata-700001
- (c) M/s KL Steel Pvt Ltd, Post Box No. 61, LalKuan, Bulanshahar Road, Ghaziabad, UP-2867917
- (d) M/s Ambala Shakti Ispat Ltd, Plot No. 6, Phase-II, Industrial Area, Kala Amb, Sirmour-30
- (e) M/s Pushpak Steel Industries Pvt Ltd, Gate No.-119, Alandi, Markal Road, Dhanore, Tah, Khed, Pune

However, the price shall be adjusted by reducing the contract rate of structural steel (including all factors e.g. material, labour, etc.) associated with the items by 5% (five percent).

6.2.3.3. In case the desired section of structural steel is not rolled/ manufactured by the primary producers, the same can be procured directly from the above-mentioned manufacturers approved by E-in-C's Branch as secondary producers (as per ministry of steel notification No. 4(8)/2010-SD-I dated 12 Dec 2013) without any price adjustment.

6.2.3.4. Structural steel (ordinary quality) as per IS 15911: 2010 shall be procured from primary producers/ secondary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.

6.2.3.5. Pre painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 shall be procured from primary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.

6.2.3.6. Steel tube for structural purposes as per IS 1161: 2014 shall be procured from primary producers/ BIS marked manufacturers or their authorized dealers at the option of the contractor without any price adjustment.

6.2.3.7. Notwithstanding above, reinforcement steel, structural steel and galvanized steel sheets can be procured from the authorized dealers of primary producers as mentioned above if the total requirement of any of reinforcement steel, structural steel and galvanized steel sheets is less than 5 tonnes.

6.2.4. **Schedule of procurement:** The activity for schedule of supply shall be made distinctively/ specifically in the CPM chart. The procurement shall be ensured as per the activity and any hindrance/ lagging shall be brought to the knowledge of the GE.

6.3. Testing of steel:

6.3.1. **Manufacturer's test certificate:** The manufacturer is to carry out inspections and testing of steel in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer's test certificate in original along with the test sheet giving the results of each mechanical test and the chemical composition of the steel as applicable or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details for steel in Steel Acceptance Register, as given at Annexure-II to V as applicable after due verification and send a certified true copy of test sheet to GE for his records.

6.3.2. Independent testing:

6.3.2.1. **Steel procured from primary producers:** Independent testing of steel shall be optional at the discretion of GE in case of procurement of steel from primary producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

6.3.2.2. **Steel procured from secondary producers:** Independent testing of steel shall be mandatory under the scope of contract in case of procurement of steel from secondary producers or BIS marked manufacturers and testing charge shall be borne by the contractor irrespective of the outcome of test results. All facilities (material for sample, transportation of samples to the approved laboratory / test house, getting tests done etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the outcome of test results.

6.3.2.3. **Structural steel (ordinary quality) as per IS 15911: 2010 procured from any producers.** Independent testing of steel shall be optional at the discretion of GE in case of procurement of structural steel (ordinary quality) as per IS 15911: 2010 from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

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6.3.2.4. Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers. Independent testing of steel shall be optional at the discretion of GE in case of procurement of Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

6.3.2.5. Steel tube for structural purposes procured from any producers. Independent testing of steel shall be optional at the discretion of GE in case of procurement of Pre-painted hot-dip aluminium-zinc alloy metallic coated plain/ corrugated steel as per IS 15965: 2012 procured from any producers from any producers or his authorized agents and testing charge shall be borne in accordance with condition 10A of IAFW 2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

6.3.2.6. Frequency of testing: - Frequency of testing to be done by the manufacturer shall be as per the relevant Indian Standards.

6.3.2.7. Definition of consignment: The quantity of steel for any individual grade, type, size etc. received under the same paid voucher with the same manufacturing test certificate shall be treated as one and the same consignment. The quantity of steel for any individual grade, type, size etc. received with the same manufacturing test certificate but under the different paid voucher shall be treated as different consignment.

6.3.2.8. Rejection: A consignment of steel shall be rejected if it does not comply with any of the requirements of the relevant IS established through both the manufacturer's test certificate and the independent testing.

6.4. Storage: All steel shall be stacked above ground level by at least 150 mm. A coat of cement wash shall be given to prevent scaling and rusting. Steels of different classification, sizes and lengths shall be stacked/stored separately. For details IS 4082: 1996 shall be referred. If the GE has any uncertainty regarding the quality of steel to have been deteriorated in the storage to the extent below the acceptable limits as per the relevant IS, he may order for any test/ tests to determine the acceptability of the steel as per the relevant IS. The testing charges shall be borne in accordance with condition 10A of IAFW-2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

6.5. Documentation: The contractor shall submit original purchase vouchers from the manufacturer or authorized dealer as applicable for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by the GE and documents verified before acceptance. The original purchase vouchers and test certificates shall be defaced by the Engineer in Charge and kept on record in the office of the GE duly authenticated and with cross reference to the consignment number recorded in the steel acceptance register. The steel acceptance register will be signed by the JE, the Engineer in Charge, the GE and the contractor. The entire quantity of steel items shall also be suitably recorded in the measurement book for record purposes as "Not to be abstracted" before incorporation in the work and shall be signed by the Engineer in Charge and the contractor. The Accepting Officer may order a Board of Officers for random check of steel and verification of connected documents.

6.6. MEASUREMENTS OF STEEL AND PAYMENT OF ADVANCE ON ACCOUNT OF STEEL (REFER CONDITION 64 OF IAFW 2249)

6.6.1. The payment of advance on account of steel as per condition 64 of IAFW-2249 shall only be allowed after production of original purchase vouchers, certified copies of test certificates from the manufacturer for each consignment and reports of independent testing if applicable.

6.6.2. The mass of steel shall be calculated on the basis that steel weighs 7.85 g/cm³.

6.6.3. The nominal mass conversion factor for various steel sections/size of finished bars as given in the relevant IS codes shall be considered for measurement.

6.6.4. The sampling to check nominal dimension or nominal mass shall be as per the relevant IS.

7. PAINTING:

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7.1. Painting to wood / steel surface shall be carried out as indicated in the relevant items of Schedule 'A' generally conforming to the specifications laid down in section 17 of MES Schedule Part I.

7.2. All synthetic enamel paint, emulsion paint shall be 1st quality manufactured by the standard firms of make as per Appendix 'C' to particular specifications attached.

7.3. The contractor shall when so required by the GE, produce certificate from the manufacturer or their representative to establish that the brands of paints purchased by the contractor from them, satisfy the requirements of the relevant Indian Standards.

7.4. Paints for priming coat, under coat and finishing coat shall be of the same manufacturer.

7.5. Tint of paint will be approved by the GE.

7.6. WORKMANSHIP: -

7.7. All wood work required to be painted shall be smoothened, sized and knotted and then applied with priming coat. Stopping and filling (filler coat) shall be done after priming coat and surface rubbed down it to a level of smooth surface and thereafter under coat and finishing coat applied, all as specified in clause 17.6 of MES schedule.

7.8. Steel and iron work shall be painted in the manner as specified in Clause 17.8 of MES Schedule Part I.

8. EXTERNAL ELECTRIFICATION

8.1. GENERAL

8.1.1. The rates quoted by the Contractor shall be deemed to include for any minor details of construction which are obviously intended and which may not have been specifically included in these documents, but which are essential for the execution and entire completion of the work.

8.1.2. The contractor shall mark the route on the ground and shall get it approved by the GE before the actual commencement of the work.

8.1.3. The rates quoted for supplying and fixing of cables and other equipments shall be deemed to include for making chase in walls / floor etc and making them good to match with the existing finishes. Wherever road is broken for laying cable, the same shall be made good to match the existing surfaces.

8.1.4. Wherever reference to samples is made in these tender documents, the same shall be read as samples kept in sample room of the office of GE.

8.1.5. The Contractor should within one month from the date of acceptance of tender produce documentary proof of placing of orders on manufacturer's/supplier to the GE for all major items like electric poles, cables, pumps etc. indicating name of the manufacturer and the expected date of delivery of these items.

8.2. STANDARD AND QUALITY OF WORK

8.2.1. The entire electrical work under this contract shall be carried out in strict compliance with these specifications and in conformity with the provisions contained in the latest edition (including amendments) of Indian Electricity Act 2003, Indian electricity rule 1956, Indian Electricity Supply Act 1948 as amplified and enforced by the Maharashtra State Govt.

8.2.2. All electrical work shall be carried out by properly skilled electrician having valid electrical license as per Indian electricity rule 1956 under the supervision of suitably qualified electrical supervisors and the contractor on demand by Engineer-in-Charge shall produce such evidence either at the commencement of the work or at any time thereafter when called for.

8.2.3. All equipments and materials to be used in the work shall have ISI mark on them as are available in the market. However, if equipments and materials with ISI mark are not available, the equipments and materials supplied by the contractor shall comply with relevant ISS and if relevant IS has not been issued, these shall comply with current relevant BSS unless otherwise specified in these tender documents.

8.2.4. Approval of the GE as referred to in Clause 19.2.1 of MES Schedule Part I shall be in writing. Approved samples shall be labeled as such and signed by both the contractor and the GE. The sample shall be kept in the custody of the GE till the final completion of the work, except for high value items for which the required quantity is not more than five.

8.2.5. The materials shall be brought to the site by the contractor in the manufacturer's original packing with seal intact or with makers wrapper on and shall not be installed unless approved by Engineer-in-Charge / GE.

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8.2.6. The workmanship shall be of the highest grade and the entire construction shall be in accordance with the best modern engineering practice.

8.2.7. The contractor shall produce manufacturer's test certificate as per a relevant Indian Standards for the following items prior to installation: -

- (a) Steel tubular swaged pole
- (b) Insulator any type
- (c) ACSR conductors
- (d) LT panel board
- (e) LT feeder pillar box
- (f) LT cable any type
- (g) HT cable any type
- (h) Concrete cable cover any type
- (i) Cable end termination joint any type
- (j) Air break gang operated switch any type
- (k) Fuse any type
- (l) Arrester any type

8.3. **SCOPE OF WORK** Scope of work shall be as described in Schedule-'A'.

8.4. EXCAVATION AND EARTHWORK

8.4.1. Excavation and earthwork for laying cables, pipes etc shall be carried out as laid down in MES Schedule Clause 3.20 to 3.20.4 and 19.74 and 19.75 to a depth as ordered by the GE, and shall be measured separately unless stated to the contrary here in after.

8.4.2. The excavation for laying cables shall be measured under relevant items of Schedule 'A' except for those items where the cost is included in the items itself to authorised quantities or those actually excavated whichever is less.

8.4.3. Removal and disposal of surplus spoil after utilising approved earth within a distance specified in Schedule 'A' and depositing at places as directed by the Engineer-in-Charge.

8.5. CABLE TRENCH AND LAYING OF CABLES

8.5.1. The depth of trench for the purpose of excavation in trenches shall comply to the clause 19.74.1 of SSR Part I. The depth of the trench as specified there in may however be altered to suit site condition. The width of the trench shall be authorised width as specified in clause 3.2.3 of SSR Part I.

8.5.2. The method of laying cable shall be as specified in clause 19.75 of SSR Part I. The bricks shall be laid on the sand cushion.

8.6. SAND FILLING

8.6.1.1. Sand for filling in trenches where specified or indicated shall be free from foreign matter, and shall be natural river sand.

8.7. **GI PIPES:** GI pipes for cable guard shall be of light grade quality conforming to IS-1239 (Part I). The pipes shall be fixed to poles etc. with suitable MS clamps, bolts, nuts and washers.

8.8. POWER CABLES

8.8.1. The HT/ LT cables shall be as mentioned in Schedule A".

8.8.2. The rates quoted by the tenderer for supplying and fixing of cables of walls, poles / bastions and other similar positions shall be deemed to include clamps fabricated out of flat iron 30 x 6 mm including nuts, bolts, and washers fixed at an interval of 1.5 m apart. Excavation and earth work shall be measured and paid separately

8.8.3. The rates quoted by the tenderer for supplying, laying, jointing and testing of cable shall include the cost of straight through joints on long run of cable. No straight through joints shall be acceptable on a length less than standard cable drum length or otherwise as directed by the Engineer – in –Charge.

8.8.4. While transporting cable, cable drum shall be mounted on cable wheels sufficient to take the weight of drum with cable which are to be pulled by means of ropes or alternately the drum may be mounted on trailer or a vehicle with a low loading platform to the destination.

8.8.5. Underground cable shall be laid out by mounting the cable drum on jacks or cable wheels with a spindle of sufficient strength placed on the jacks horizontally so that the drum is free to rotate axially. Cable shall be pulled by means of ropes gently from the drum. In no case the drum shall be rolled for taking out cable.

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8.8.6. While laying the cable the same shall be fitted over rollers beginning from one end by helpers 10 yards apart and drawing straight and taken off the rollers by the helpers lifting the cable and then laid straight into the route provided. By the help of string line drawn into the trench. Kinks shall be avoided.

8.8.7. Cable glands shall be of brass with double compression type nuts and shall be as approved by GE.

8.8.8. TESTING AND ELECTRICAL MEASUREMENTS OF CABLE INSTALLATIONS: The following tests shall be done as per IS 1255: 1983

- (a) Insulation Resistance Test on Newly Installed Cables Before Jointing.
- (b) Test Result of Completed Cable Installation
 - (i) Insulation Resistance
 - (ii) Conductor Resistance (dc)
 - (iii) Capacitance
 - (iv) High Voltage Test

8.8.9. CABLE INSTALLATION PLAN: On completion of laying, terminating and jointing of the cables, a plan shall be prepared by the contractor, which shall contain the following details of the installation. The plan shall be submitted duly signed by the Contractor to the Engineer-in-Charge for his records.

- (a) Type of cables, cross-section area, rated voltage. Details of construction, cable number and drum number
- (b) Year and month of laying
- (c) Actual length between joint-to-joint or ends;
- (d) Location of cables and joints in relation to certain fixed reference points, for example, buildings, hydrant, boundary stones, etc;
- (e) Name of the: jointer who carried the jointing work:
- (f) Date of making joint; and
- (g) Results of original electrical measurements and testing on cable installation.

8.9. EARTHING

8.9.1. Earthing shall be all as per IS, regulations and Electrical plate No. 3 in MES Schedule Part I. The contractor shall obtain the approval of GE for layout of earthing before the commencement of work and it shall be executed in the presence of an appropriate MES representative.

8.9.2. All earth electrodes shall be tested for earth resistance by means of standard earth megger. The tests shall take place in dry months preferably after a protracted dry spell.

8.10. LT PANEL BOARD

8.10.1. GENERAL

8.10.1.1. All the Panels shall be manufactured as per IS 5029: 1983 with CRCA sheet, totally enclosed, rigid, floor mounting, air insulated, cubicle type suitable for operation on three phase / single phase, 415 V /230 V, 50 Hz. All the outdoor panel shall be double door type with IP43 protection class construction.

8.10.1.2. The following information shall be clearly and indelibly marked on all distribution pillars or on a label permanently attached to it:

- (a) A reference to the standard IS: 5039-1983;
- (b) Manufacturer's name or trade-mark;
- (c) Country of manufacture;
- (d) Rated voltage;
- (e) Total number of outgoing circuit;
- (f) Total number of incoming circuit;
- (g) Rated current of incoming circuit;
- (h) Rated current of outgoing circuit;
- (i) Use for AC
- (j) For TPN supply
- (k) Short-circuit strength; and
- (l) Degree of protection.

8.10.1.3. Test certificate for flowing tests shall be submitted by the contractor: -

8.10.1.3.1. Type Test: -

- (a) A reference to the standard IS: 5039-1983;
- (b) Verification of temperature-rise limits,
- (c) Verification of dielectric properties,
- (d) Verification of short-circuits strength,

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- (e) Verification of clearance and creepage distances, and
- (f) Verification of degree of protection.

8.10.1.3.2. Routine Test: The test for verification of dielectric properties.

9. INTERNAL ELECTRIFICATION

9.1. SCOPE OF WORK: The extent of work under this contract is as indicated in relevant Para/section of Schedule `A' and Particular Specifications. All references to Clauses in succeeding paragraphs pertain to MES Schedule. The layout of conductors/cable, route shall be directed by the Engineer-in-Charge.

9.2. GENERAL REQUIREMENTS

- (a) The requirement pertaining to materials, conformity with Indian Electricity Act and rules, workmanship, testing, record of installations, safety procedures and practices and fire safety shall be all as specified in MES Schedule Clause 19.2.
- (b) The contractor is deemed to have included in rates, cost of making holes/chases where required through masonry or concrete work for taking in cables/conduits and conductors, etc. and make good the same to match with existing work.

9.3. TYPE OF WIRING: The type of wiring shall be as given in relevant section of Schedule `A'. Particular specification and as directed by Engineer-in-Charge. Point wiring for light/ power /fan/ bell or buzzer/telephone point(s) includes all works comprising of: -

9.3.1. Supplying and fixing of cables for carrying out wiring.

9.3.2. Supplying and fixing PVC conduit/PVC casing capping /TW battens/store enameled rigid steel conduit as specified in schedule `A'.

9.3.3. Supply and fixing of suitable size sunk CI/pressed steel terminal box covered with white plastic laminated sheet to accommodate requisite switches, fan regulator(s), sockets or switch socket combination.

9.3.4. Supplying and fixing of earth wise.

9.4. COPPER CONDUCTOR CABLE: Size of cables and voltage grading shall be as per Schedule `A'.

9.5. PLUG, SCREWS AND FASTENERS: All as specified in Clause 19.30 and 19.31 of MES Schedule.

9.6. CEILING ROSE: These shall be as specified in Clause 19.32 of MES Schedule.

9.7. SWITCH, SOCKET OUTLETS: These shall be of Bakelite flush type 5 or 15 amps multipurpose non-shuttered type conforming to relevant IS.

9.8. MINIATURE CIRCUIT BREAKER: These shall conform to IS 8820 and shall be housed in suitable size standard sheet metal enclosure of 16 gauge MS sheet supplied by the manufacturer of MCB.

9.9. APPROVAL OF SAMPLES: Sample of all materials to be incorporated should be approved by GE before incorporation and shall conform to IS wherever applicable.

9.10. EARTHING AND TESTING: Earthing shall be carried out as described in IS 3043 and as per Schedule `A' and as shown in electric plate No 5. It shall be conforming to the Clause 19.137 of MES Schedule Part-I.

9.11. SITING ELECTRICAL EQUIPMENT: The sitting of cable conduit, controls, distribution boards, fittings and accessories, etc. shall be as laid down in IS 4648 "Guide for electrical layout in building" or as directed by EIC/GE.

9.12. SYSTEM OF WIRING: Wiring shall be carried out with PVC insulated cable and shall run as far as possible near walls, ceilings so as to be easily accessible and capable of being inspected. Power wiring shall be kept apart and shall be distinct from other wiring.

9.13. CONTROL AT POINT OF ENTRANCE OF SUPPLY: These shall be linked main switch gear with MCB on each live conductors of supply main at the point of entrance. No fuse shall be inserted in the neutral.

9.14. TYPE OF SWITCH BOARD: Hinged type metal board for mounting main switch/MCCB/MCB and electric meter shall be of 16 gauge MS sheets with provision of locking arrangement and all as specified.

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9.15. FAN REGULATORS AND CLAMPS: All ceiling fans and regulators shall be earthed effectively by means of suitable copper earth continuity conductors. Cost of earthing of fans and regulators/fittings (With copper earth continuity conductors) shall be deemed to be included in the unit rate for point wiring for fans/lights.

9.16. LED SOLAR STREET LIGHT: Technical specifications of LED solar street light shall be as given under: -

Sr. no.	Description	Specifications
(a)	Nominal power	15 Watt
(b)	Operational voltage	12 Volts DC supply
(c)	Battery	1 No 12 V- 65 AH
(d)	Efficiency	More than 85%
(e)	Solar panel	70 WP
(f)	Pole height	4 meter
(g)	LED type	High power, surface mounted device
(h)	LED wattage	Minimum 1 watt each and Maximum 3 watt each
(i)	Driving current	700 mA Maximum
(j)	LED make	Nichia, Osram, Philips,Lumileds/Rebels, Cree
(k)	LED street light fitting Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd M/s Halonix Technologies Ltd / M/s Bajaj
(l)	LED lumen/watt	130 minimum source output
(m)	PCB used	MCPCB of higher thermal conductivity
(n)	Junction temperature	Less than 85 ^o C
(o)	LED efficiency	More than 80% at Junction temperature of 85 ^o C
(p)	LED life	50,000 hrs
(q)	CRI	>65
(r)	Colour temperature	6000 – 6500K
(s)	Power Factor	> 0.90
(t)	THD	<15%
(u)	Efficacy of luminaries	>100 lm/w
(v)	Temperature at heat sink	65 ^o C at an ambient of 35 ^o C
(w)	Body of lantern	Pressure die Cast LM6 alloy
(x)	Ingress protection	IP65 for whole luminary
(y)	Charge control	Automatic dusk to down operation
(z)	Gasket	EPDM / Silicon loop gasket
(aa)	Lantern Cover	Toughened Glass/UV treated polycarbonate
(bb)	Driver efficiency	>85%
(cc)	Surge protection	Minimum 4 KV
(dd)	Electric system	Poly tetra Fluoro Ethylene (PTFE) wires
(ee)	Protective finish	a) All metal parts except aluminium to be galvanized. b) Body shell with suitable undercoat or powder coating. c)All hardware used shall be stainless steel.

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(ff)	Marking	a) Metal plate on the luminaries / other permanent marking
(gg)	Pole specifications	4 meter height above ground level plus 1 meter below ground level, 3 to 4 mm thick, diameter 76.2 mm with arm & battery box frame, material mild steel sheet
(hh)	Display indications	Low battery, battery charging
(ii)	Battery box	Mild steel sheet (anti rust treated with silver coating, IP-65)
(jj)	Factory Inspection	Shall have all manufacturing and testing facilities.
(kk)	Test Report	(a) LM 79 test report of the offered luminary from National Accredited Test Laboratory for photometry. (b) LM 80 test report from source LED manufacturer. (c) IP65 certificate from NABL Accredited laboratory.
(ll)	Proof for procurement of LED	The luminary’s manufacturer shall submit the proof of procurement with bin details of LED from(Nichia/Osram/Philips/ Lumileds/ Rebel/ Cree) OEM’s along with the consignment of street light luminaries.
(mm)	Warranty	The contractor shall give unconditionally replacement warranty for street light luminaries against any manufacturing failure for the total period not less than 3 years from the certified date of the completion”

9.17. LED tube light fitting with tube rod: Technical specifications ofLED tube light fitting shall be as under: -

Sl No.	Item	Requirement
(a)	Nominal power	20 Watt
(b)	LED fitting type	Four feet 20 watt LED tube light fitting
(c)	LED Make	Osram / Everlight / Philips / Nicha / Cree / Samsung
(d)	LED light Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd/ M/s Halonix Technologies Ltd/M/s Bajaj
(e)	LED wattage	Minimum 1 watt each and Maximum 3 watt each
(f)	Operational voltage	170 volts to 270 volts
(g)	Frequency	50 Hz
(h)	Lumen output	Minimum 1600 lumen
(i)	Efficacy	Minimum 80 lumen per watt
(j)	Lamp base	G 13 Bi pin
(k)	Surge protection	2 KV
(l)	Protection grade	IP 20
(m)	Driver	Inbuilt and constant current type
(n)	Bema angel (Degree)	120° clear
(o)	THD	Below/ less than 15%
(p)	CW available CCT	6000-6500K
(q)	Power factor	Minimum 0.9
(r)	CRI	Greater than 80%
(s)	Material	Aluminium with polycarbonate
(t)	Diffuser	Cool white with clear
(u)	Mounting	Surface mounting
(v)	Cable Entry	Gland type
(w)	Life Span	Minimum 50000 working hours
(x)	Test report	Party shall submit reports compliance by LM-79-2008/ related IS standard test report through NABL accredited photometric laboratory.
(y)	Proof for procurement of LED	The luminary’s manufacturer shall submit the proof of procurement with bin details of LED from (Osram / Everlight / Philips / Nicha / Cree / Samsung) OEM’s along with the consignment of LED tube light fitting with tube rod.
(z)	Warranty	The contractor shall give unconditionally replacement warranty for tube light fitting with tube rod against any manufacturing failure for the total period not less than 3 years from the certified date of the completion

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9.18. LED mirror light fitting with tube rod: Technical specifications ofLED tube light fitting shall be as under: -

Sl No.	Item	Requirement
(a)	Nominal power	9 Watt
(b)	LED fitting type	Two feet 9 watt LED tube light fitting
(c)	LED Make	Osram / Everlight / Philips / Nicha / Cree / Samsung
(d)	LED light Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd/ M/s Halonix Technologies Ltd/M/s Bajaj
(e)	LED wattage	Minimum 1 watt each and Maximum 3 watt each
(f)	Operational voltage	170 volts to 270 volts
(g)	Frequency	50 Hz
(h)	Lumen output	Minimum 720 lumen
(i)	Efficacy	Minimum 80 lumen per watt
(j)	Lamp base	G 13 Bi pin
(k)	Surge protection	2 KV
(l)	Protection grade	IP 20
(m)	Driver	Inbuilt and constant current type
(n)	Bema angel (Degree)	120° clear
(o)	THD	Below/ less than 15%
(p)	CW available CCT	6000-6500K
(q)	Power factor	Minimum 0.9
(r)	CRI	Greater than 80%
(s)	Material	Aluminium with polycarbonate
(t)	Diffuser	Cool white with clear
(u)	Mounting	Surface mounting
(v)	Cable Entry	Gland type
(w)	Life Span	Minimum 50000 working hours
(x)	Test report	Party shall submit reports compliance by LM-79-2008/ related IS standard test report through NABL accredited photometric laboratory.
(y)	Proof for procurement of LED	The luminary’s manufacturer shall submit the proof of procurement with bin details of LED from (Osram / Everlight / Philips / Nicha / Cree / Samsung) OEM’s along with the consignment of LED tube light fitting with tube rod.
(z)	Warranty	The contractor shall give unconditionally replacement warranty for tube light fitting with tube rod against any manufacturing failure for the total period not less than 3 years from the certified date of the completion

9.19. LED STREET LIGHT: Technical specifications of LED street light shall be as given under: -

Sr. no.	Description	Specifications
(a)	Nominal power	70 Watt
(b)	Operational voltage	170 volts to 270 volts
(c)	Operational frequency	50 Hz
(d)	LED type	High power, Surface mounted device
(e)	LED wattage	Minimum 1 watt each and Maximum 3 watt each
(f)	Driving current	700 mA Maximum
(g)	LED make	Nichia, Osram, Philips,Lumileds/Rebels, Cree
(h)	LED street light fitting Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd
(i)	LED lumen/watt	130 minimum source output
(j)	PCB used	MCPCB of higher thermal conductivity
(k)	Junction temperature	Less than 85° C
(l)	LED efficiency	More than 80% at Junction temperature of 85° C
(m)	LED life	50,000 hrs

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(n)	CRI	> 65
(o)	Colour temperature	6000 – 6500K
(p)	Power Factor	> 0.90
(q)	THD	<15%
(r)	Efficacy of luminaries	>80 lm/w
(s)	Temperature at heat sink	65 ^o C at an ambient of 35 ^o C
(t)	Body of lantern	Pressure die Cast LM6 alloy
(u)	Ingress protection	IP65 for whole luminary
(v)	Gasket	EPDM / Silicon loop gasket
(w)	Lantern Cover	Toughened Glass/UV treated polycarbonate
(x)	Control gear (Power driver)	Inbuilt electronic type (constant current rating) shall withstand over voltage of 440 volts for one minute and short circuit current of 500mAmps
(y)	Driver efficiency	>85%
(z)	Surge protection	Minimum 4 KV
(aa)	Electric system	Poly tetra Fluoro Ethylene (PTFE) wires
(bb)	Protective finish	a)All metal parts except aluminium to be galvanised. b)Body shell with suitable undercoat or powder coating. c)All hardware used shall be stainless steel.
(cc)	Marking	a)Metal plate on the luminaries / other permanent marking
(dd)	Factory Inspection	Shall have all manufacturing and testing facilities.
(ee)	Test Report	(a) LM 79 test report of the offered luminary from National Accredited Test Laboratory for photometry. (b) LM 80 test report from source LED manufacturer. (c) IP65 certificate from NABL Accredited laboratory.
(ff)	Proof for procurement of LED	The luminary’s manufacturer shall submit the proof of procurement with bin details of LED from (Nichia/Osram/Philips’/Lumileds/Rebel/Cree) OEM’s along with the tender offer and same shall be verified by department if necessary.
(gg)	Warranty	Whole luminary shall have unconditionally replacement warranty against any manufacturing failure for the total payback period not less than 3 years

9.20. LED recessed type ceiling mounted light fitting: Technical specifications of LED recessed type ceiling mounted light fitting shall be as under: -

Sl No.	Item	Requirement
(a)	LED fitting type	Recessed type ceiling mounted light fitting 36 watts
(b)	LED Make	Osram / Everlight / Philips / Nicha / Cree / Samsung
(c)	LED light Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd/ M/s Halonix Technologies Ltd/M/s Bajaj
(d)	Wattage	Minimum 1 watt each and Maximum 3 watt each
(e)	Size	600 mm X 600 mm
(f)	Operational voltage	170 volts to 270 volts
(g)	Frequency	50 Hz
(h)	Lumen output	Minimum 2880 lumen
(i)	Efficacy	Minimum 80 lumen per watt
(j)	Surge protection	2 KV
(k)	Protection grade	IP 20

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(l)	Driver	External and constant current type
(m)	Bema angel (Degree)	110° clear
(n)	CW available CCT	6000-6500K
(o)	Power factor	Minimum 0.9
(p)	CRI	Greater than 80%
(q)	Material	Aluminium with polycarbonate
(r)	Life Span	Minimum 50000 working hours
(s)	Test report	Party shall submit reports compliance by LM-79-2008/ related IS standard test report through NABL accredited photometric laboratory.
(t)	Proof for procurement of LED	The luminary's manufacturer shall submit the proof of procurement with bin details of LED from (Osram / Everlight / Philips / Nicha / Cree / Samsung) OEM's along with the consignment of LED tube light fitting with tube rod.
(u)	Warranty	The contractor shall give unconditionally replacement warranty for tube light fitting with tube rod against any manufacturing failure for the total period not less than 3 years from the certified date of the completion

20.20.01 LED recessed type ceiling mounted light fitting: Technical specifications of LED recessed type ceiling mounted light fitting shall be as under: -

Sl No.	Item	Requirement
(a)	LED fitting type	Recessed type ceiling mounted light fitting 9 watts
(b)	LED Make	Osram / Everlight / Philips / Nicha / Cree / Samsung
(c)	LED light Make	Phillips/Crompton Greaves/ Havells/M/s VIN semiconductors Pvt Ltd/ M/s Halonix Technologies Ltd/M/s Bajaj
(d)	Wattage	Minimum 1 watt each and Maximum 3 watt each
(e)	Size	150 mm X 150 mm
(f)	Operational voltage	170 volts to 270 volts
(g)	Frequency	50 Hz
(h)	Lumen output	Minimum 720 lumen
(i)	Efficacy	Minimum 80 lumen per watt
(j)	Surge protection	2 KV
(k)	Protection grade	IP 20
(l)	Driver	External and constant current type
(m)	Bema angel (Degree)	110° clear
(n)	CW available CCT	6000-6500K
(o)	Power factor	Minimum 0.9
(p)	CRI	Greater than 80%
(q)	Material	Aluminium with polycarbonate
(r)	Life Span	Minimum 50000 working hours
(s)	Test report	Party shall submit reports compliance by LM-79-2008/ related IS standard test report through NABL accredited photometric laboratory.
(t)	Proof for procurement of LED	The luminary's manufacturer shall submit the proof of procurement with bin details of LED from (Osram / Everlight / Philips / Nicha / Cree / Samsung) OEM's along with the consignment of LED tube light fitting with tube rod.
(u)	Warranty	The contractor shall give unconditionally replacement warranty for tube light fitting with tube rod against any manufacturing failure for the total period not less than 3 years from the certified date of the completion

9.21. TESTING

9.21.1. On completion of the work the entire electrical installation shall be tested by the Contractor for the following tests which shall be carried out in accordance with IEE Regulations in the presence of Engineer-in-Charge.

- (i) Continuity.
- (ii) Insulation Resistance.
- (iii) Earth Resistance.
- (iv) Any other test prescribed by Engineer-in-Charge.

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- 9.21.2. All testing equipment/apparatus materials, labour etc. required for above test shall be provided by the Contractor by his own expense through his sources. Works for which test results do not conform to standards will be redone by contractor at his own expenses.
- 9.21.3. The result of aforesaid test shall be recorded jointly and signed (in triplicate) by the contractor and the Engineer-in-Charge.

Signature of Contractor

AGE (Contracts)
for Accepting Officer

Appendix ‘A’ to Particular Specification

1. CEMENT

- 1.1. GENERAL: Cement required for the work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangement. Cement shall comply with the requirements mentioned in the drawings, SSR, IS Specifications as amended and particular specifications given hereinafter.
- 1.2. Type of cement for the subject work to be procured and incorporated in work shall be ordinary Portland cement grade 43 in accordance with IS 8112: 2013.
- 1.3. Procurement, Testing, Rejection, Storage, Documentation & Consumption
- 1.3.1. Procurement. Cement supplied by the contractor will be procured from the main producers of cement. However, where estimated requirements of cement is less than 300 bags and in all terms contracts, the contractor can procure cement from the authorized distributors/ dealers of the approved firms but the contractor will have to submit test certificate of the batch issued by the main producers. The particulars of the manufacturers of cement along with the date of manufacture shall be obtained from the Contractor for each lot of cement separately. The documents in support of the purchase of cement shall be recorded and verified by the Engineer-in-Charge and the GE.
- 1.3.2. Schedule of procurement: The activity for schedule of supply shall be made distinctively/ specifically in the CPM chart. The procurement shall be ensured as per the activity and any hindrance/ lagging shall be brought to the knowledge of the GE.
- 1.3.3. Manufacturers: The followings are the list of producers of cement for the type of cement as mentioned under column “remarks”. The cement shall be procured from the manufacturers if they are in the list for the type of cement as specified for the works.

Sl no.	Company	Address	Remarks
1.	M/s Cement Manufacturing Company Ltd	Mayur Garden, 2 nd Floor, Opp-Rajuv Bhawan, GS Road, Guwhati-781005, Ph: 0361-2462215/216/513 Fax: 0361-2462217, Email: cmclghy@cml.co.in	OPC 43, 53 Grade & PPC
2.	M/s Ultra Tech Cement Ltd	‘B’ Wing, 2nd Floor, Mahakali Caves Road, Andheri (East), Mumbai-400093, Ph: 022-66917800	PSC
3.	M/s OCL India Ltd	Rajgangpur, Dist-Sundargarh, Orissa, Pin- 770017 Ph: 0361 2668504, Fax: 0361-2662131 Website: www.calcom.co.in	OPC 43 Grade & PPC
4.	M/s Dalmia Cement (Bharat) Ltd	Dalmiapuram Dist-Tiruchirappalli, Tamil Nadu – 621 651	OPC 43 Grade & PPC
5.	M/s Chettinad Cement Corporation Ltd	4 th floor, Rani Seethai Hall Building, 603, Anna Salai Hall, Chennai – 600 006, Tel No. 044-42951800 Fax No. 044-28291558, Email: info@chettinadcement.com Web: www.chettinadcement.com	OPC 43 Grade, PPC & PSC
6.	M/s Heidelberg Cement India Ltd	9 th floor, Infinity Tower ‘C’, DLF Cyber City, Gurgaon, Haryana-122 002 Ph: 0124-4503700, Fax: 0124-4147698	PPC
7.	M/s My Home Industries Pvt Ltd	9th Floor, Block-3, My Home Hub Madhapur, Hyderabad-500081, Ph-04066929696, Fax: 040-66929797/98	OPC 43 Grade, PPC & PSC

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8.	M/s Parasakti Ce-ments Ltd	123/3RT, Plot #8-3-214/21, Srinivasa Nagar Colony (West), Hyderabad-500 038, Tel: 040- 44119100/200 Fax: 040-23747562	OPC-43 Grade& PPC
9.	. M/s Zuari Cement Ltd	No 6 MC Nichols Road, Chetpet Chennai- 600031 Ph: 044-28363958, 28365047	OPC 43 Grade& PPC
10.	M/s Toshali Cements Pvt Ltd	123/3RT, 2 nd floor Sanjeeva Reddy Nagar Hyderabad-500038, Ph : 040-2300675 CORPORATE OFFICE 9-14-13, CBM Compound, Near Mehar Apartment, Visakhapatnam – 530 003	OPC 43 Grade, PPC& PSC
11.	M/s Saifco Cement Pvt Ltd	Opposite post office Batwara, Srinagar-190 004 (J&K), Ph : 0194-2466061	OPC 43 Grade
12.	M/s Prism Cement Ltd	3/113 Vivek Khand Gomto Nagar Lucknow-226010, Ph : 0522-2396847, 2397589	OPC 43 Grade& PPC
13.	M/s Shree Guru Kri-pa Cement (Pvt) Ltd	4/4 Trikuta Nagar Jammu Ph : 0191-2472043	OPC 43 Grade& PPC
14.	M/s Barak Valley Cements Ltd	Debendra Nagar Badarpur Ghat Dist Karimganj As-sam-788803, Ph : 03845- 269258	OPC 43 Grade
15.	M/s Dhruv Industrial Company Ltd	49/27 Sinha Market General Ganj Kanpur-208001	OPC 43 Grade
16.	Ultra Tech Cement	‘B’ Wing, 2 nd floor Mahakali Caves Road, Andheri (East) Mumbai-400093	OPC 43 Grade& PPC
17.	Madras Cement	Auras Corporate Centre, 98-A, Dr Radhakrishnan Salai Mylapore, Chennai-600 004, Ph : 044-28478666	OPC & PPC
18.	Saurashtra Cement	Gala No A-1, Ground Floor Udhyog Sadan No 3 MIDC, Central Road Andheri (East) Mumbai- 400 093 Ph : 022-32955557/67, Mob : 9320290081	OPC & PPC
19.	Lafrage Cement (Lafarge India Pvt Ltd)	Crescenzo 1004, B-Wing 10th floor C-38/39 G Block Bandra Kurla Complex Bandra (East) Mumbai-400051	OPC & PPC
20.	The Associated Ce-ment Companies Ltd	414-421, Splendor Forum (4th Floor), 3, District Cen-tre, Jasola, New Delhi – 110044, Ph : 011 46583600	OPC & PPC
21.	Grasim Industries Ltd	Birlagram, Nagda, Madhya Pradesh, Pin-456331, Ph : 07366-246760/246766	OPC & PPC
22.	The India Cement	Dhun Building, 287, Anna Salai Chennai – 600002	OPC & PPC
23.	Andhra Cement Ltd	Durga Cement Works, Durgapuram, Dechepalli Guntur Andhrapradesh – 522414 Ph : 0863 257429	OPC & PPC
24.	Century Cements	Industry House, 159 Church Gate, Reclamation, Mum-bai- 400020 Ph : 022 22023936	OPC & PPC
25.	Binani Cement Ltd	Mercantile Chambers, 12, JN Heredia Marg, Ballard Estate, Mumbai-400001 Ph : 022 22690506/10	OPC & PPC
26.	Mangalam Cement Ltd	PO Adityanagar, Morak, Dist-Kota, Rajasthan- 326520 Ph : 9351468076	OPC & PPC
27.	Birla Corporation Ltd	Birla Building (3rd & 4th Floor) 9/1, RN Mukherjee Road, Kolkata – 700001 Ph 033-30573700	OPC & PPC
28.	Orient Cement	5-9-22/57/D, 2nd & 3rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad – 500063 Ph : 044-23688600	OPC & PPC
29.	Shree Cement	Bangur Nagar, Beawar, Dist-Ajmer, Rajasthan- 305901 Ph : 01462 228101-06	OPC & PPC
30.	JK Lakshmi Cement Ltd	Jaykaypuram, Dist-Sirohi, Rajasthan Ph : 02971244409/10	OPC & PPC
31.	Jaypee Rewa Cement		OPC & PPC

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32.	Ambuja Cement Ltd	Kodinar, PO-Ambujanagar, Taluka-Kodinar, Dist- Junagadh, Gujarat-362715 Ph : 02795-237000	OPC & PPC	
33.	M/s Cement Corpora- tion of India Ltd (For AP & Adjoining states only)	PO-CCI Tandur Dist-Ranga Reddy, Andhra Pradesh- 501158 Ph : 08411-247240	OPC Grade	43

1.3.4. **Testing of cement:** The manufacturer will carry out inspections and testing of cement in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer’s test certificate in original along with the test sheet giving the result of each physical test as applicable and chemical composition of cement or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in cement acceptance register, as given at Annexure-I after the verification. The GE shall also organize independent testing of random samples of cement drawn from the various consignments from NABL Laboratories as national test house, SEMT wing CME, regional research laboratories IITs, MES zonal laboratories, government engineering college and national institutes of technology as per relevant BIS and shall be recorded in the respective portion of Annexure-I. Independent testing shall be carried out for the characteristics as mentioned in Table 2 & 3 of IS 8112: 2013 and shall be done as per IS: 4031 (Parts 1 to 15) (Methods of physical tests for hydraulic cement) and IS 4032: 1985 (Methods of chemical analysis of hydraulic cement). The sampling of cement to be tested shall be done as per IS 3535: 1986.

1.3.5. **Definition of consignment:** The quantity of cement received under the same paid voucher with the same manufacturing test certificate shall be treated as one and the same consignment. The quantity of cement received with the same manufacturing test certificate but under the different paid voucher shall be treated as different consignment.

1.3.6. **Rejection:** A consignment of cement shall be rejected if it does not comply with any of the requirements of IS 8112: 2013 established through both the manufacturer’s test certificate and the independent testing.

1.3.7. **Testing Charges:** An independent testing of cement shall be mandatory under the scope of the contract and condition 10(A) of IAFW-2249 shall accordingly be applicable. All facilities (material for sample, transportation of samples to the approved laboratory / test house, getting tests done etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the outcome of test results.

1.3.8. **Storage:** Cement shall be stored over dry platform at least 20 cm high in such a manner as to prevent deterioration due to moisture or intrusion of foreign matters. In case of store rooms, the stack should be at least 20 cm away from floors and walls. The stacking of Cement shall not be more than 10 bags high. It shall be ensured that tested and untested cement are segregated and stored separately with distinct identification. Each cement consignment shall be stacked separately and removal shall be made on the basis of ‘First In First out’. For details IS 4082: 1996 shall be referred.If the GE has any uncertainty regarding the quality of cement to have been deteriorated in the storage to the extent below the acceptable limits as per the relevant IS, he may order for any test/ tests to determine the acceptability of the cement as per the relevant IS. The testing charges shall be borne in accordance with condition 10A of IAFW-2249 i.e. testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the contractor. All facilities (material for sample, transportation of samples to the approved laboratory / test house etc.) shall be provided by the contractor and the cost incurred thereon shall be borne by the contractor irrespective of the test results.

1.3.9. **Documentation:** The contractor shall submit original vouchers from the manufacturer for the total quantity of cement supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by GE and documents verified before acceptance. The original vouchers and the Test Certificates shall be defaced by the Engineer-in-Charge, signed by contractor and kept on record in the office of the GE duly authenticated and with cross reference to the control Number recorded in cement Acceptance Register. This register will be signed by the JE, the Engineer-in-Charge, the GE and the Contractor. The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of cement shall also be suitably recorded in the measurement book for record purpose as “Not to be abstracted” before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.

1.3.10. **Consumption:** Cement shall be removed from the store only according to daily requirement with the knowledge of both the parties and daily consumption of cement shall be recorded in cement consumption register which shall be signed by the Engineer-in-Charge and the contractor.

1.4. MEASUREMENTS OF CEMENT AND PAYMENT OF ADVANCE ON ACCOUNT OF CEMENT (REFER CONDITION 64 OF IAFW 2249)

1.4.1. The payment of advance on account of cement as per condition 64 of IAFW-2249 shall only be allowed after production of original purchase vouchers, certified copies of test certificates from the manufacturer for each consignment and reports of independent testing. 7 days test report for compressive strength may be considered only for payment of advance.

PARTICULAR SPECIFICATIONS

1.4.2. Cement shall be supplied in a bag and the net quantity of cement per bag shall be 50 kg subject to provisions and tolerance given in Annex B of IS 8112: 2013. The sampling shall be done as mentioned under the said Annex B.

SIGNATURE OF CONTRACTOR

**AGE Contract
For Accepting Officer**

Dated:

PARTICULAR SPECIFICATIONS

CEMENT SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work
2. Control No. (to be allotted serially by GE consignment wise)
3. Name of manufacturer/brand name/grade of cement (A) Manufacturer..... (B) Brand.....(C) Grade.....
4. Quantity of cement and lot No/ week No (in bags): (A) Quantity.....(B) Lot No/ week No.....
5. Manufacturer’s test certificate No
6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
7. Details of physical and chemical properties

	Physical requirements (As per IS 4031)									Chemical requirements (As per IS 4032)								
	Fineness (m ² / kg)	Soundness by Le Chatelier test method (mm)	Soundness by autoclave test method (percent)	Initial setting time (minutes)	Final setting time (minutes)	Compressive strength (Mpa)			Temperature during testing °C	Standard consistency (%)	Ratio of percentage of lime to percentages of silica, alumina and iron oxide, when calculated by the formula: $CaO - 0.75O_3$ $2.8SiO_2 + 1.2Al_2O_3 + 0.65Fe_2O_3$	Ratio of percentage of alumina to that of iron oxide	Insoluble residue, percent by mass	Magnesia, percent by mass	Total sulphur content calculated as sulphuric anhydride (SO ₃), percent by mass	Loss on ignition, percent by mass	Chloride content, percent by mass	Alkali content
						72 hours ± 1 hour	168 hours ± 2hours	672 hours ± 4 hours										
As per IS	Min 225	Max 10	Max 0.8	Min 30	Max 600	Min 23	Min 33	Min 43 Max 58			0.66-1.02	Min 0.66	Max 4.0	Max 6.0	Max 3.5	Max 5.0	Max 0.1	Max 0.6
As per manufacturer’s test certificate																		
As per independent test certificate																		

Remarks with signature

Accepted/ rejected

Contractor

Junior Engineer

Engineer-in Charge

Garrison Engineer

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work

2. Control No. (to be allotted serially by GE consignment wise)

3. Manufacturer's test certificate No

4. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand.....(C) Grade.....

5. Quantity of steel (in kg): (A) Quantity.....

6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)

7. Details of physical and chemical properties

Physical requirements (As per IS 15911)

Chemical requirements (As per IS 15911)

Tensile strength, Mpa

Yield stress, Mpa

Percentage elongation
A at gauge length $L_0 = 5.65 \sqrt{S_0}$, where S_0 is the cross sectional area of the test piece

Internal bend diameter

Carbon

Manganese

Sulphur

Phosphorous

As per IS 15911: 2010

As per manufacturer's test certificate

As per independent test certificate

Remarks with signature

Accepted/ rejected

Contractor

Junior Engineer

Engineer-in Charge

Garrison Engineer

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

1. CA No & Name of work
2. Control No. (to be allotted serially by GE consignment wise)
3. Manufacturer’s test certificate No
4. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand..... (C) Grade.....
5. Quantity of steel (in kg): (A) Quantity.....
6. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
7. Details of physical and chemical properties

Physical requirements (As per IS 1786)					Chemical requirements (As per IS 1786)				
0.2 percent proof stress/ yield stress,N/mm ²	Ratio of tensile strength and yield stress	Tensile strength N/mm ²	Elongation percenton gauge length 5.65 $\bar{A}$, where A is the cross sectional area of thetest piece	Total elongation at maxi- mum force, percenton gauge length 5.65 $\bar{A}$, where A is the cross sec- tional area of the test piece	Bend test	Rebend test	Carbon	Sulphur	Phosphorous
As per IS 1786: 2008									
As per manufacturer’s test certificate									
As per independent test cer- tificate									
Remarks with signature									
Contractor	Junior Engineer	Accepted/ rejected Engineer-in Charge		Garrison Engineer					

PARTICULAR SPECIFICATIONS

STEEL SUPPLY & ACCEPTANCE REGISTER

8. CA No & Name of work
9. Control No. (to be allotted serially by GE consignment wise)
10. Manufacturer’s test certificate No
11. Name of manufacturer/brand name/grade of steel (A) Manufacturer..... (B) Brand..... (C) Grade.....
12. Quantity of steel (in kg): (A) Quantity.....
13. Random test details (A) Physical test report from.....vide their letter No.....(Name of approved lab/ Engineering College) (B) Chemical test report from.....vide their letter No.....(Name of approved lab/ Engineering College)
14. Details of physical and chemical properties

Physical requirements (As per IS 2062)						Chemical requirements (As per IS 2062)					
Tensile strength, Mpa	Yield stress, Mpa	Percentage elongation A at gauge length $L_0 = 5.65 \sqrt{S_0}$, where S_0 is the cross sectional area of the test piece	Internal bend diameter	Tempera- ture	Charpy impact test Impact en- ergy on a notched test piece	Carbon	Manganese	Sulphur	Phosphorous	Silicon	Carbon equivalent Mode of deoxida- tion
As per IS 2062: 2011											
As per manufacturer’s test certificate											
As per independent test certificate											
Remarks with signature				Accepted/ rejected							
Contractor		Junior Engineer		Engineer-in Charge		Garrison Engineer					

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Appendix ‘B’ to Particular Specification

LIST OF MAKES:

List of Makes to be incorporated in the work is given as under.

Sl. No	Name of product	Make / Name of firm		
1	2	3		
1.	Factory made panelled/ gauzed shutters	(a)	M/s Joinery Manufacturing Co. Jaipur	
		(b)	M/s Goel Brothers, Raipur.	
		(c)	M/s. Sarab Enterprises, Pathankot (PB)	
		(d)	M/s Goyal Industrial Corporation New Delhi	
		(e)	M/s Geeta Enterprises, MIDC Waluj, Aurangabad	
		(f)	M/s MP Wood Products, Indore (MP), (M.No. 09827024211)	
		(g)	M/s Indian Timber Products (P) Ltd, Hyderabad	
		(h)	M/s Pioneer Timber Products, Chandigarh.	
		(i)	M/s A- 1 Teak Product (Mob No 9827030092)	
		(j)	M/s Jain Builders	
2.	Steel windows/ventilators (flash butt welded)/ Press steel frame (Remarks: Name of manufactures who do not manufacture steel windows with flash butt welding shall be treated as deleted.)	(a)	M/s Sen Harvic, Bombay	
		(b)	M/s Agew Steel Manufacturing Industries, Ahmedabad	
		(c)	M/s Godrej & Boyce Steel Manufacturing, Bombay	
		(d)	M/s Anant Industries, Ahmednagar	
		(e)	M/s Shiv Mular, Ahmedabad	
		(f)	M/s Steel Plast Machines, Ahmedabad	
3.	PVC doors/window	(a)	M/s Poly windows – Pune	
		(b)	M/s Rajshree Plastwood Ltd	
		(c)	M/s Sintex	
		(d)	Janik Devlopers Pvt Ltd for “Elegence FRP DOORS, FRAMES, WINDOWS & Ventilators”	
		(e)	M/s Ashish Plast	
4.	Flush Shutters	(a)	M/s Kalpataru	
		(b)	M/s Green Leaf	
		(c)	M/s A- 1 Teak Products (Mob No 9827030092)	
5.	FRP Doors/Windows	(a)	M/s Advance FRP, Mumbai	
		(b)	M/s Syntax Industries Ltd.	
		(c)	M/s Titan Enterpirses.	
		(d)	M/s Delux Poly FAB Pvt Ltd.	
6.	Stainless steel/GI Powder coated puff filled doors	(a)	M/s Diamond Steel flush doors	
		(b)	M/s Basic Arch Products Pvt Ltd, Pune	
7.	Steel Rolling Shut-ters/grills & collapsible gates.	(a)	M/s. Darshan Rolling Shutters Panchavati Nasik.	
		(b)	M/s. Swastik Rolling Shutters Bombay	
		(c)	M/s Prakash & Co New Delhi	
8.	Water proofing compound	(a)	Scott No. 1	
		(b)	Pidilite	
		(c)	ARGUS	
9.	Hydraulic door closer	(a)	Everite	(b) Dyana
		(c)	Hardwin	(d) Prabhat door King (Delhi)
		(e)	Universal	(f) Ranjan
		(g)	Kelin	(h) Perfect Hydraulic Pvt. Ltd
ROOF AND PARTITION				
10.	Plain or trapezoidal shaped galvalume sheet	(a)	M/s Roof India Ltd (CRIL) Khopoli Dist Raigadh (MH)	
		(b)	M/s Tracdek Colours, B- 30, Sector 57 Noida, Delhi	
		(c)	TATA	
		(d)	ISI marked	
11.	AC Plain Sheets/ Corru-gated Sheets	(a)	Charminar	
		(b)	Everest	
		(c)	UP Asbestos	
		(d)	Rohtas Industries	
		(e)	Swastik	
		(f)	Kangaroo	
12.	PGI Sheet/CGI Sheet	(a)	TATA	
		(b)	Jindal	
		(c)	M/s National Steel & Agro Industries Ltd. Indore(MP)	
13.	Laminated Sheets.	(a) Sungloss	(b) Formica	(c) Sunmica
14.	Plywood	(a) Kitply	(b) Tower	(c) Archid
		(d) Green ply	(e) Century	
15.	Aluminium sections	(a)	Jindal Aluminium Ltd	
		(b)	Indal	
		(c)	Hindalco	

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm				
1	2	3				
16.	Prelaminated Particle Boards / veneered Particle board.	(a) Novopan	(b) Kitlam	(c) Anchorlam		
		(d) Bhutan Board	(e) ASIS	(f) Eco Board		
17.	Building Board/ Gypsum Board	(a) Anchor Bombay		(b) Indian Plywood		
		(c) Mangalam Timber Products		(d) Gypsum Board		
18.	Block board	(a) Charminar		(b) Lotus	(c) Swastik	
19.	Putty	(a) Golden Mohar				
FLOOR/CEILING TILES						
20.	Ceramic Tiles (Group BIII and B II)	(a) Orient -Bell Limited		(b) Euro		
		(c) Nitco		(d) Somany Pilkington		
		(e) Asian Tiles		(f) H & R Johnson		
		(g) KAJARIA		(h) Naveen Tiles		
21.	Vitrified tiles / Porcelain tile (Group Bla and B Ib)	(a) Orient -Bell Limited		(b) Euro		
		(c) Nitco		(d) KAJARIA		
		(e) Asian Tiles		(f) H & R Johnson		
		(g) SOGO		(h) Naveen Tiles		
		(i) Somany Pilkington		(j) Western Marbo Mumbai		
22.	Mangalore tiles	(a) Charminar	(b) Raja Tiles	(c) Recho	(d) Prajapat	
23.	Cement / Terrazzo Tiles (Plain/chequered)	(a)	NITCO			
		(b)	Ceme Tile			
		(c)	Mehtab Tiles, Rani Shopping Cente, Bhanwar Kuan Main Road, Indore (MP)-452006			
		(d)	M/s SWAMI Tiles			
		(e)	M/s Ultra tiles			
		(f)	Topaz tiles			
		(g)	Renuka Tiles			
		(h)	M/s Shree Tiles, F-6, MIDC Nagar, Manmad Road , Ahmednagar (Maharastra)			
24.	Stainless steel sink / Kitchen Sink	(a) Blue Star of Anupam Industries		(b) Nirali	(c) Diamond	
25.	Inter locking concrete tiles	(a) M/s ULTRA Tiles Pvt Ltd				
		(b) Mehtab Tiles, Rani Shopping Cente, BhanwarKuan Main Road, Indore (MP)-452006				
		(c) M/s Topaz Tiles Pvt				
26.	Ceiling Tiles	(a) M/s. Anchor Bombay				
		(b) M/s. Jolly Board Bombay				
		(c) M/s. Indian Plywood				
		(d) Mangalam Timber Product				
		(e) Indian Gypsum Product				
		(f) Boral Gypsum India Pvt Ltd				
		(g) Aerolite Ceiling Sytem				
PAINT AND DISTEMPER						
27.	Synthetic Enamel Paints				Brand	
		(a)Jenson Nicholson			Borolac	
		(b) asian paints			Apcolite	
		(c) Bergar Paints Ltd			Luxol	
		(d) Shalimar Paints Ltd			Superlac	
		(e) Good Lass Nerolac			Nerolac	
		(f) JSW				
28.	Cement Base Paint	(a) Super Snowcem				
		(b) Duro Cem				
		(c) Aquacem				
		(d) M/s Nitco Paints Pvt Ltd, Mumbai				
		(e) JSW				
29.	Weather proof exterior emulsion	(a) Asian paints		(b) Berger paints		
		(d) Pidilite weatherproof paint		(c) JSW		
30.	Dry/Oil bound distemper and emulsion (1 st Quality).	(a) Asian		(b) Nerolac		
		(c) Berger		(d) Jenson & Nicholson		
		(e) JSW				
SANITARY FITTINGS						
31.	Sanitary Fittings.	(a)	Hindustan Sanitary Ware Industries (1 st quality) (Hindware only).			
		(b)	Parry Ware (Super fine)			
		(c)	Neycer (1 st quality)			
		(d)	Cera (1 st quality)			

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm			
1	2	3			
		(e)	Prayag		
		(f)	Shakti Enterprises		
32.	PVC Seat & Cover for EWC and flushing cisterns.	(a)	Commander		
		(b)	Simline (Parryware)		
		(c)	Speed flow from blue polymers		
33.	Mirrors/Glass	(a) Kohinoor	(b) Atul	(c) Swastik	(d) Modi Guard
INTERNAL AND EXTERNAL WATER SUPPLY					
34.	GI Pipes / GI Tubing	(a) Tata	(b) Swastik	(c) Jindal	
		(d) Surya Prakash	(e) Zenith	(f) BST	
		(g) Indian Tube Company.	(h) GST (Gujrat Steel Tube)	(i) Nidhi	
35.	CI Pipes (Spigot, socket end and flanged end)	(a) Tisco	(b) Electro Steel	(c) Kesoram	
		(d) Kalinga	(e) Kejriwal	(f) M/s Kapilansh dhatu Udyog (P) Ltd.	
36.	CI Pipes (Soil, waste and vent pipes) and Nahani trap	(a) NECO	(b) BECO	(c) M/s Kapilansh	
37.	DI Pipe	(a) Jindal	(b) SAW Pipes	(c) Electro Steel Castings	
		(d) LANCO	(e) M/s Tata Metaliks	(f) Kubota Pipes Ltd.	
38.	Sluice Valves	(a) VENUS	(b) L & T	(c) Audco	
		(d) Leader	(e) Mather & Platt	(f) Upadhaya	
39.	Gun Metal Gate valve	(a) BIR	(b) KARTAR	(c) VIP ISI Marked	
		(d) BALAJI			
40.	Reflux Valve	(a) Kirloskar	(b) Sant	(c) Bir	
		(d) Varun	(e) Venus		
41.	High Pressure SV/RV	(a) L&T	(b) Audco		
42.	Air release Valve	(a) BIR	(b) Venus	(c) Enus	
		(d) Leader	(e) Kirloskar	(f) Upadhaya	
43.	RCC Hume Pipe	(a)	Everest		
		(b)	Himalaya		
		(c)	Indian Hume Pipe		
		(d)	Dhere Concrete Product, Smruti 849, Budhwar Peth, Pune – 30		
		(e)	Vardhaman Concrete Product Pvt Ltd., 996 Abhinav Apartment , Navi Peth, Pune		
		(f)	Poona Concrete Product Co.		
44.	PVC/HDPE pipes and fittings (SWR Grade) and rain water pips & fittings / PVC pipes & fittings	(a)	Infra		
		(b)	Supreme		
		(c)	Amogh Plast Pvt Ltd (for fitting only)		
		(d)	Prince		
		(e)	Astron Plastic.		
		(f)	Gaurav Agro Pipes		
45.	CI SWR Grade pipe & fittings (centrifugally cast).	(a) UNECO	(b) BECO	(c) Kapilansh Dhatu Udyog Pvt.(P) Ltd.	
46.	AC rain water pipes	(a) Everest	(b) Charminar	(c) Asbestos Cement Ltd (ACL)	
47.	Foot Valve	(a) Sant	(b) BIR	(c) Varun	
		(d) Venus	(e) Leader	(f) Kartar	
		(g) Balaji			
48.	Stop valve (Gun Metal Gate/ Globe valves).	(a) Gem	(b) Leader	(c) Hindustan Metal Industries	
		(d) Zolota	(e) Jaypee	(f) Kingston	
		(g) Hansa	(h) GMP	(i) Elite Metal Indutries	
		(j) SEIKO	(k) Symet		
49.	Brass/PVC stop cocks & Bib taps/Ball (Float) valves.	(a) Jaypee	(b) GMP	(c) Neta	
		(d) Zolota	(e) Prayag Polymers	(f) GEM	
		(g) Hansa Kingston	(h) SEIKO	(i) Symet	
50.	Bib cock /Stop cock/Pillar tap/Ball valve PTMT	(a) Symet	(b) Prayag	(c) Polytuf	
51.	Fancy type bib tap, stop valves, shower rose and pillar taps (Chromium plated)	(a) Jaquar	(b) ESS-ESS	(c) Marc	
		(d) Dripless	(e) SOMA	(f) Parko	
		(g) Hansa	(h) Emsons		
52.	Pumps	(a) Jyoti	(b) Kirloskar	(c) Beacon	

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
		(d) Crompton	(e) Mather and Platt	(f) Calama
		(g) KSB/WASP		
53.	Water Meter	(a) Capital	(b) Anand	
		(c) Capston	(d) Dasmesh	
54.	Water treatment plant (a) Chlornomes (b) Filter plant	(a) Aquapura	(b) Patterson candy	
		(c) ION exchange	(d) Aquapura	
		(e) Maic-India Ds		
55.	HDPE Water Tanks / PVC water storage tank (ISI mark)	(a)	Sintex	
		(b)	Infra	
		(c)	M/s Ashish Plast	
		(d)	M/s Yash Engineering Works, Pune 09422007879	
55 A.	PPR pipes		KPT dehra dun	
INTERNAL ELECTRIFICATION				
56.	MCB/ISOLATORS(SPN/DP /TPN/ FOUR POLE), MCB DB	(a) MDS	(b) Havells	(c) Standard
		(d) ABB	(e) GE Controls	(f) Datar
		(g) Indo Asian (Indo Kopp)	(h) C&S	(i) HPL
		(j) Schinder	(k) L & T	(l) Plaza
57.	FTL, Fittings & fixtures, other light fittings (Street light fitting)	(a) Crompton	(b) WIPRO	(c) Bajaj
		(d) M/s Shakti fitting & fixtures	(e) C&S	(g) Philips
			(f) Benlo	(h) Halonix
58.	Capacitor	(a) Crompton	(b) Bajaj	(c) Asian
59.	Tubular Fluorescent lamp(TFL)	(a) Philips	(b) Crompton Greaves	(c) GE lighting
		(d) Wipro	(e) Osram	(f) Surya
		(g) Bajaj	(h) M/s Shakti Fixture Industries	
60.	Sodium vapour lamp	(a) Philips	(b) GE lighting	(c) Wipro
		(d) Osram	(e) Bajaj	
61.	Compact fluorescent lamps fittings	(a) Philips	(b) Osram	(c) Surya
		(d) Crompton Greaves	(e) Bajaj	(f) Indo Asian
		(g) Plaza	(h) GE lighting	(i) M/s Shakti Fixture Industries:
62.	House wiring (ISI Marked)	(a) Finolex	(b) ECKO	(c) RPG
		(d) Indo-Asian	(e) Anchor	(f) Paragaon
		(g) Plaza	(h) Havells	(i) Primecab
		(j) Polycab	(k) INDIANCAB	(l) Empire
		(m) Bentec		
63.	Thermostat	(a) Indofoss		(b) Annapurna
64.	Heating element	ISI Marked		
65.	PVC Conduits & Accessories.	(a) Avon	(b) Infra	
		(c) Garware	(d) Asian	
		(e) Precision	(f) Modi	
		(g) Supreme	(h) Finolex	
		(i) Amogh plast	(j) BEG	
		(k) Prince	(l) Plaza	
		(m) M/s. CAP Plastic & Tubes, Lucknow	(n) Prestoplast	
		PRESSFIT(M/s Menka Electrical) 590/B, Budhwar Peth, Pune – 411002		
66.	PVC casing/capping or PVC Conduit	(a) Modi	(b) Prestoplas	(c) Prince
		(d) Precision	(e) Pressfit	(f)
67.	Rigid Steel Conduits.	(a) Jindal	(b) Kalinga	(c) GB
		(d) Supreme	(e) Bharat	(f) Plaza
		(g) BEC Industries	(h) Marina	
68.	Bearing	(a) SKF		(b) NBC
69.	Piano type switches/flush type sockets/switch socket combi/bell push/ceiling rose/call bells/ buzzer/ ceiling rose and lamp holders	(a) Anchor (Delux)	(b) Standard	(c) Leader
		(d) SK-555	(e) Kay	(f) Vinay
		(g) Lisha	(h) Anlex	(i) Ellora
		(j) CPL	(k) Kinjal	(l) Elleys
		(m) Plaza	Benlo	
70.	Fan regulator electronic step up type	(a) Anchor (Delux)	(b) Vinay	(c) Armour
71.	PVC Flexible conduit	(a) Bharat		(b) UMC

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm			
1	2	3			
72.	Telephones/TV wiring	(a) Finolex	(b) RR cables	(c) ECKO	
		(d) Plaza	(e) RPG	(f) Indo-Asian	
		(g) Anchor	(h) L & T	(i) Rallison	
		(j) Paragaon	(k) Indian Cable Company	(l) Dalton cables	
73.	Monoblock Pump	(a) Crompton		(b) Kirloskar	(c) Tecmo
74.	SUCTION SWEEPER PUMP	(a) Modi/equivalent			
75.	Utility Light fittings.	(a) Jecmo	(b) Dayal	(c) Vikas	
		(d) Prakash			
76.	Bed side lamp	(a) Jecmo	(b) Dayal	(c) Vikas	
		(d) Prakash			
77.	Copper ballast /Capacitor/Ignitor	(a) Crompton	(b) WIPRO	(c) Bajaj	
		(d) Asian			
78.	Ceiling fan	(a) Polar	(b) Usha	(c) Crompton Greaves	
		(d) Almonard	(e) Bajaj	(f) Khaitan	
		(g) Orient	(h)		
79.	Exhaust fans.	(a) GEC	(b) Bajaj	(c) Crompton Greaves	
		(d) Khaitan	(e) Usha	(f) Orient	
		(g) Almonard			
80.	Geysers	(a) Pearl		(b) Racold	(c) Bajaj
81.	Energy meters	(a) Jaipuria	(b) Havells	(c) SMS meters	(d) Bentec (e) Benlo
EXTERNAL ELECTRIFICATION					
82.	HRC Fuse	(a) Havells	(b) L&T	(c) Standard	
		(d) C&S			
83.	Main switch iron clad	(a) Havells	(b) HPL	(c) Standard	
		(d) Indo Asian			
84.	LT (ACB, OCB)	(a) ABB	(b) L&T	(c) C&S	
		(d) Schneider	(e) Siemens		
85.	MCB single pole & neutral enclosure with a two pin and earth plug & socket complete	(a) MDS	(b) Havells	(c) Standard	
		(d) ABB	(e) GE Controls	(f) Datar (g) Benlo	
		(g) Indo Asian	(h) Schinder	(i) L & T	
		(j) C&S	(k) Plaza	(l) Bentec	
86.	MCCB, Change over switches	(a) Havells	(b) Standard	(c) C&S	
		(d) Schneider	(e) HPL	Benlo	
87.	Porcelain fuse	Anchor			
88.	Steel Tubular Poles.	(a) Kalinga Tubes	(b) Singh Profiles.	(c) KL Industries	
		(d) Jindal Tubes	(e) Metal coats, Chennai	(f) Bombay Tubes	
89.	LT Panel/Feeder pillar Box	(a) Maheshwari	(b) M/s SUJOY Mahati	(c) M/s Switch Build Engineer (India) Pvt Ltd	
		M/s Ganesh Electrical & Engineers/ Approve Make of MSEDCL			
90.	HT/LT Cables/ PVC LT XLPE CABLE	(a) CCI	(b) INCAB	(c) Universal	
		(d) Asian	(e) Gloster	(f) Prime Cab	
		(g) Polycab	(h) Bentec		
91.	LT underground cables	(a) Gloster	(b) INCAB	(c) CCI	
		(d) Asian	(e) Universal	(f) Prime Cab	
		(g) Polycab	(h) Indian cab	(i) Vishal	
		(j) Empire	(k) HPL		
92.	PCC Cable Covers (HT/LT) (Precast cable cover)	Mehtab Tiles, Rani Shopping Cente, Bhanwar Kuan Main Road, Indore (MP)-452006 (Mob No :09827014564)			(a) Topaz
93.	HPSV lamp	(a) Crompton Greaves		(b) Bajaj	(c) Osram
94.	LT/HT Heat shrinkable joints. Epoxy sealing compound	(a) Densons		(b) M Seal	(c) Raychem
		(d) Siemens		(e) Yamuna gases & Chemicals	(f) Mahindra & Mahindra
95.	Metal halide lamp (CFL)	(a) Crompton Greaves		(b) Philips	(c) Bajaj
		(d) Osram			
96.	Insulators.	(a) Bengal Potteries		(b) BHEL	(c) National
		(d) Jaysree Insulators		(e) WS Insulators	(f) Mysore Porcelain
		(g) Modern Insulators			
97.	Measuring Instru-	(a) English Electric		(b) Havells	(c) Automat-

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
	ments/Panel instruments, relays, Ammeter/Volt meter P/F meter/Frequency meter, selector switch etc			ic Electrical (Pvt.) Ltd.
		(d) BICCO Lawire	(e) AEI	(f) IMP
		(g) DIP	(h) GE Power Controls	(i) Crompton
		(j) HPL ECE	(k) The Control Group Siemens	(l) Alsthom
		(m) L&T	(n) Easaun	(o) Minilec
		(p) UE	(q) NIPPON	(r) MECO
98.	HT ISOLATOR(OSF)	(a) MEI	(b) Southern Switch Gears	(c) ANDREW YULE
		C G LUCY SWITCHGEAR LTD (Marketed by Crompton Greaves)		
99.	HT (VCB) switch Gear	(a) Crompton Greaves Ltd	(b) Alsthom	(c) BHEL
		(d) ABB	(e) Andrew Yule	(f) SIEMENS
		(g) Schneider		
100.	LT Switch gear	(a) English Electric	(b) L & T	(c) Crompton Greaves Ltd
		(d) Schinder	(e) Controls & system	(f) ABB
		(g) C&S		
101.	Single Phasing preventer	(a) L & T	(b) Crompton Greaves	(c) Havell's
102.	Capacitor Bank / Power capacitor	(a) Alstom	(b) Crompton greaves	(c) ABB
		(d) L&T	(e) Madhav	(f) Datar
		(g) Seimens	(h) Epcos	(i) Neptune
103.	Starters (Automatic oil immersed / Air break star Delta, DOL and manual type)	(a) L & T	(b) Jyoti	(c) Siemens
		(d) MEI	(e) Kiburn	(f) C&S
104.	Gang operated air break switches/Drop out fuse./GOD	(a) Pactil	(b) Southern Switchgear	(c) Universal
		(d) BHEL	(e) ELPRO	(f) Jaipuria Bros
105.	L.T. Voltage stabilizer	(a) AE	(b) Vinitec	(c) Brentford
		(d) APLAB	(e) Alstom	(f) Integ
106.	Lightning arrestors.	(a) BHEL	(b) Elpro	(c) Oblum
		(d) Alstom	(e) Rashtriya	(f) Crompton Greaves
107.	Compressor	(a) Emersion	(b) Tecumseh	(c) Whirlpool
		(d) Godrej		
108.	Batteries	(e) Exide	(f) Standard	(g) Amarraja
		(h) Prestolite		
109.	DG Sets (With Acoustic sEnclosure)	(a) Kirloskar green	(b) Greaves cotton	(c) Cummins
110.	Kilo Watt Hour Meter (Electronic, Electro Mechanical).	(a) Alsthom	(b) Jaipuria Bros	(c) Havells
				(d) Benlo
111.	Automatic street light timer switch	(a) L&T	(b) English Electric	(c) Havells
		(d) HPL	(e) Indo Asian	
112.	Power Contactor	(a) L&T	(b) Standard	(c) Havells
		(d) C&S		
113.	Contactor	(a) L&T	(b) Siemens	(c) BCH
		(d) C&S		
114.	Air Curtain	(a) Snehavardhana	(b) Filtrox	(c) Technocrat
115.	Fuse switches/change over switches LT	(a) GE Power Controls (GE)	(b) Havells	(c) Schneider
		(d) English Electric (Alstom)	(e) ECE	(f) Standard
		(g) Siemens	(h) L&T	(i) C&S
116.	Transformer oil	(a) Motor Oil – M/s Penzol Ltd.,	(b) Power Oil – M/s Apar Industries	(c) Savita Oil – M/s Savita Transformer Oil Industries Ltd.
117.	Transformers <u>33/11KV or 22/11KV</u>	(a) Alstom	(b) Crompton Greaves (greaves Cotton)	(c) SEEMENS (Bharat Bijlee)
		(d) NGEF	(e) Kirloskar,	(f) Voltas

LIST OF MAKES TO BE INCORPORATED IN THE WORK

Sl. No	Name of product	Make / Name of firm		
1	2	3		
			Power Equip-ment	
		(g) BHEL		
118.	Transformers 11/0.433KV, 22/0.433KV, 33/0.433KV Up to & including 400 KVA capacity: -	(a) URJA	(b) MAHATI	(c) PATSON
		(d) INDO TECH	(e) PACTIL	
119.	Transformer Above 400 KVA capacity: -	(a) AREVA	(b) CROMPTON GREAVES	(c) KIRLOSKAR POWER EQUIPMENT
		(d) VOLTAMP	(e) ITL	(f) SIEMENS
120.	SF 6 (RMU)	(a) ABB	(b) SCHNEIDER	(c) Kirloskar
		(d) C G LUCY SWITCHGEAR LTD(Marketed by Crompton Greaves)		
121.	ACSR Conductor	(a) Alind	(b) ICC	(c) Bharat Conductors
		(d) VK conductors	(e) NICCO	
122.	CT & PT (Current Transformer and Potential Transformer)	(a) Pragatil	(b) Prayag	(c) Kappa
		(d) Crompton	(e) C&S	(f) AE
		(g) L & T		
123.	Gaseous type gravity feed chlorinator	(a) Sathya Sai	Candy filter Bombay	
124.	Chlorine gas Cylinder	(a) JMC	(b) ASCO	(c) JAC
125.	Electronic Energy Meter (Temper proof)	(a) L & T	(b) HPL	(c) SECURA
126.	Pre stressed concrete poles.	(a)	M/s Beton Concrete Products Ltd, Auranagbad	
		(b)	Precto ind area, Chandigarh	
		(c)	Hindustan Prestressed Concrete, Faridabad	
		(d)	Cement Fabric Industry, Chandigarh	
127.	Flameproof and Explosion proof Electrical light Fitting and Switch Gears Equipments	(a)	Flexpro Electricals (Sales), Nasik.	
		(b)	M/s Sudhir	
		(c)	M/s Baliga	
		(d)	M/s Shyaam Switchgears Pvt Ltd, Mumbai	
128.	Solar water heaters	(a)	Bharat Heavy Electricals Ltd, 16 th floor, Hindustan Times House, 18-20 Kasturba Gandhi Marg, New Delhi-110001	
		(b)	Novel Energy (P) Ltd, 119 DSISCO SHEDS, Okhla Industries, Phase-I, New Delhi.	
		(c)	Solar Equipment Manufacturing Co, C-3, Sector 6 NOIDA, Gautam Budha Nagar (UP).	
		(d)	M/s Solchrome system India (Ltd), 61 Sector V, Parwanoo (HP).	
		(e)	M/s Surya Jyoti Devices India Ltd, Village Chanalon, PO Kurali, Distt Ropar.	
		(f)	M/s SU Solartech Systems (P) Ltd, Sec -7C, Chandigarh	
		(g)	M/s Surya Shakti, Chandigarh.	
		(h)	M/s Tata BP Solar Systems	
		(i)	M/s Best & Crompton, Solar Energy Division, 39, SIDCO Industrial Estate, Ambattur, Madras - 600098)	
		(j)	Inter Solar System, Chandigarh	

Note - Materials to be incorporated in the work shall be superior/1st quality of the makes given above.

(SIGNATURE OF CONTRACTOR)

AGE Contract
For Accepting Officer