

(E-TENDER)**MILITARY ENGINEER SERVICES****NAME OF WORK: PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA**

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Total Pages

Total number of drawings: NIL

SIGNATURE OF CONTRACTOR

Dated:

AGE (CONTRACTS)

FOR ACCEPTING OFFICER

Tele: 080- 28478533
E mail: afyelah4-mes@nic.in

Garrison Engineer (AF),
Military Engineer Services,
Yelahanka, Bangalore-63.

8287/ / E8

Oct 2024

M/s _____

NAME OF WORK: PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA

Dear Sir(s),

1. Tender documents in respect of above work are uploaded on the site www.defproc.gov.in The tender is based on single stage two cover e-tendering system. The contents of Cover I & 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 authorised 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 through e-mail and/or depute your technical representative for discussion on tender/drawings and to clarify doubts, if any, **at least three days before the bid submission start date**. You are requested not to write piece meal points and forward your points duly consolidated in one go. You may also attend the pre bid meeting on the date given in the tender.
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 procurement portal mentioned above and submit the physical documents in the office of **Garrison Engineer (AF), Yelahanka** 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. 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.

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7. Enlisted contractors of MES shall submit the scanned copies of enlistment letter (pdf file) tender fee and such other documents as mentioned in Appx "A" to **NIT** on

e-procurement portal and submit physical documents in the office of **GARRISON ENGINEER (AF), YELAHANKA** 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.

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, 2009 and Part –II, 2020) are not enclosed with these documents. These are available for perusal in the Office of **GARRISON ENGINEER (AF), YELAHANKA**.

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.

Yours faithfully,

SIGNATURE OF CONTRACTOR

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

Dated:

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, alongwith their tender/bid: -

(a) Deposit at Call Receipt from a Scheduled Bank in favour of **GARRISON ENGINEER (AF), YELAHANKA.**

(b) Receipted Treasury Challan, the amount being credited to the Revenue Deposit of **GARRISON ENGINEER (AF), YELAHANKA.**

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 (AF), YELAHANKA.

NOTE: 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 alongwith 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).

- 1.1** All bidders shall be required to sign the Bid Securing Declaration as below and upload alongwith cover I documents: -

BID SECURING DECLARATION

I / We here by understand and accept that if I/We withdraw or modify my / our bids during the period or validity, or if I / We are awarded the contracts and on being called upon to submit the Performance Security / Security Deposit, fail to submit the Performance Security Deposit before the deadline defined in the request for bid documents / Notice Inviting Tender, I/We shall be debarred from exemption of submitting Bid Security / Earnest Money Deposit for a period of 06 (Six) months, from the date I / We are declared disqualified from exemption from submission of Earnest Money Deposit / Security Deposit, for all tender issued by MES during this period.

Date:

Signature of Contractor

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INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD/-)**2 PERFORMANCE SECURITY**

- 2.1 Within 28 days of receipt of the letter of Acceptance, the successful contractor shall deliver to the Accepting Officer a performance Security in any of the forms given below for an amount equivalent to 5% of the contract sum. (a) A Bank Guarantee in the prescribed form. (b) Government Securities, FDR or any other Government instruments stipulated by the Accepting Officer.
- 2.2 The Performance Security shall be in favour of Accepting Officer and shall be in any of the forms mentioned above. 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 as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.
- 2.3 The period of validity of the Bank Guarantee Bond against Performance Security shall be initially valid upto the stipulated date of expiry of Defects Liability Period plus minimum 60 days beyond that. In case final bill is not paid during this period, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time required for payment of final bill.
- 2.4 If the performance Security is provided by the successful contractor in the form of a Bank Guarantee, it shall be issued by Nationalized/Scheduled Indian Bank but its confirmation shall be done only from the Head Office of the Bank.
- 2.5 Failure of the successful contractor to comply with the requirements of sub-clause 2.1 here-in-before shall constitute sufficient grounds for cancellation of the award of work and forfeiture of the Earnest Money. In case of MES enlisted contractor, amount equal to the Earnest Money stipulated in the Notice Inviting Tender, shall be notified to the tenderer for depositing the amount through MRO. Issue of tender to such tenderers shall remain suspended till the aforesaid amount equal to the Earnest Money is deposited in Government Treasury.
- 2.6 (i) All compensation or other sums of money payable by the contractor to the Government under the terms of this contract or under any other contract with Government may be deducted from, or paid by the sale of a sufficient part of the Performance Security or from the interest arising therefrom or from any sums which may be due or become due to the contractor by the Government on any account whatsoever and in the event of his Performance Security being reduced by reason of any such deduction, or sale as aforesaid, the contractor shall within ten days thereafter make good in cash or securities, endorsed as aforesaid, any sum or sums which may have been deducted from or realized by the sale of his Performance Security or any part thereof.
- (ii) Government shall not be responsible for any loss of securities or any depreciation in the value of securities while in their charge nor for loss of interest thereon.

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INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD/-)

- 2.7 In the event of contract being cancelled, under condition 52, 53 & 54 of General Conditions of contract, the Performance Security shall be forfeited in full and shall be credited into Consolidated Fund of India.

3. **GENERAL INSTRUCTIONS FOR COMPLIANCE**

- 3.1 The bids received only in the electronic form will be considered. All bids shall be submitted on www.defproc.gov.in portal. Documents should be scanned and forwarded in “pdf” form and “xls” form as indicated.
- 3.2 Bids shall be uploaded on www.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.
- 3.3 Bid should be DIGITALLY signed using authorized DSC. All pages of tender documents, drawings, corrections/ alterations shall be signed/initialed by the lowest bidder after acceptance of tender for making original and CTC of the contract.
- 3.4 Drawings, if issued in physical form, must be returned duly initialed by the tenderer/bidder in separate envelope indicating his name and address.
- 3.5 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 tender. Any tender/bid, which proposes alterations to any of the conditions whatsoever, is liable to be rejected.
- 3.6 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.

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INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD/-)

- 3.7 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.
- 3.8 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.
- 3.9 Bid (cover 1 & 2) shall be uploaded online well in time.
- 3.10 The tenderer/bidder shall quote his rate on the BOQ EXCEL FILE only as per guidelines of e-procure web portal. No alteration to the format will be accepted else the bid will be disqualified and summarily rejected.
- 3.11 In case any tenderer/ bidder wishes to revise / modify the rates quoted in the BOQ file (excel sheet), he can do so only in the BOQ files before uploading the tender through www.defproc.gov.in site only before the bid closing time and date.
- 3.12 After the uploading of tender, Department may upload the errata/ amendment through corrigendum. The tenderer/bidder should submit their offer considering the errata/amendment carried out through corrigendum issued from time to time.
- 3.13 While uploading the bid, the tenderers/bidders should specifically check whether any revised BOQ has been uploaded by department through corrigendum prior to Bid submission start date. Tenderers/bidders attention is specifically drawn to the fact that they should submit their offer on revised BOQ only. In case any tenderer/bidder submits offer on pre-revised BOQ in lieu of Revised BOQ, it will be considered as a willful negligence by the tenderer/bidder and quotation shall be considered non-bonafide.
- 3.14 Tenders/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.
- 3.15 The contractor shall employ Indian Nationals after verifying their antecedents and loyalty. Attention is also drawn to **Special Condition** referred hereinafter and also conditions 24 & 25 of IAFW 2249 (General conditions of contract).

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INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD/-)**4. C P M (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 time allowed for the completion of the work shall be worked out through CPM after dividing the work in broad stages.
- 4.4 The tenderers/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.
- 4.5 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 the errata/ amendments/ corrigendum, if any, issued by the department.
- 4.6 These instructions shall form part of the contract documents.

SIGNATURE OF CONTRACTOR

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

Dated:

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 phasing, if any, indicated in the tender from the date of handing over the site, which will be on or about two weeks after the date of Acceptance of tender.
4. Contractors whose names are on the MES approved list and within whose financial category the estimated amount would fall and unenlisted contractors may submit tender/bid subject to other criteria mentioned in Appendix 'A'. However, in case of term contracts, enlisted contractors of Class SS to E may submit tender. 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 son(s) 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 **Garrison Engineer (AF), Yelahanka** 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 contractor on or before the date & time mentioned in NIT. A scanned copy of DD with enlistment details and other documents as specified in Appendix 'A' shall be uploaded as Cover-1 (Technical bid) of the tender on e-tendering portal. DD is refundable in case the contractor is not considered eligible in technical evaluation of Cover-1 resulting in non-opening of Cover-2. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD including revalidation of DDs 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 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 **Garrison Engineer (AF), Yelahanka** (see appendix 'A') by a scheduled Bank or in receipted treasury Challan the amount being credited to the revenue deposit of the **Garrison Engineer (AF), Yelahanka** (see appendix 'A').

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MILITARY ENGINEER SERVICES
NOTICE INVITING TENDER (NIT)

6.3 The **Garrison Engineer (AF), Yelahanka** 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 document were returned.

6.4 The **Garrison Engineer (AF), Yelahanka** 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 Performance Security if such a transaction is feasible.

6.5 In case of successful contractor i.e the lowest contractor having submitted EMD, he shall have the option of converting the EMD instrument into part of the Performance Security to be deposited by him within 28 days from the receipt of intimation of acceptance of tender from Accepting Officer.

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 **Garrison Engineer (AF), Yelahanka** during working hours. The bidder shall be deemed to have full knowledge of all relevant documents, samples, site etc. whether he has inspected them or not.

8. The tenderers/bidders are advised to visit 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.

9. 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.

10. 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.

11. Tenderers/bidders must be in possession of a copy of the MES Standard Schedule of Rates (SSR) (Part-I & Part-II of latest edition) including amendments and errata thereto.

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MILITARY ENGINEER SERVICES
NOTICE INVITING TENDER (NIT)

12. 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 give in Appendix 'A' to this NIT. The applicant contractor/ bidder will be informed regarding Non-validation of his "T" bid assigning reasons thereof through the defproc website. The applicant contractor/ bidder if he so desires may appeal to the next higher Engineer authority viz. CWE (AF) South, Bangalore on email id safbang3-mes@nic.in with copy to the Accepting Officer on email id afyelah4-mes@nic.in before the scheduled date of opening of Finance Bid. The decision of Next Higher Engineer Authority (NHEA) shall be final and binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his tender/bid.

13. The Accepting Officer reserves the right to accept a tender submitted by a Public Undertaking, giving a price preference over other Tender(s)/bid(s) 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.

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

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

SIGNATURE OF CONTRACTOR

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

Dated:

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

1.	Name of work	PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA
2.	Estimated Cost	Rs. 20.85 Lakhs (At par market)
3.	Period of completion	180 Days
4.	Cost of tender documents	Rs. 500/- in the form of DD/ Bankers cheque from any Scheduled Bank in favour of GE (AF) Yelahanka and payable at Bangalore . (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	https://defproc.gov.in
6.	Type of contract	The tender shall be based on Item Rate Contracts (IAFW 1779A) and General Condition of Contracts (IAFW 2249) with Schedule 'A' list of items of works to be Priced by the Tenderer.
7.	<u>Timeline details:</u> (a) Bid submission start date (b) Bid submission end date (c) Date of bid opening	Refer to critical dates on the website https://defproc.gov.in
8.	<u>Eligibility Criteria:</u> (a) For MES enlisted contractors.	All contractors enlisted with MES in Class 'E' and above and category 'a (i)' subject to satisfactory remarks with respect to 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 'E' Class & 'a (i)' category contractor with regard to satisfactorily completion of requisite value works with Central/ State Government/ Central/ State PSUs/ AWHO/ AFNHB/ CGEWHO/ DGMA, annual turnover, bank solvency, working capital and other requirements given in Para 1.4 & 1.5 of Section-1 of MES Manual of 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 PSU (or) any Autonomous Body under Central/ State Government or any Local Body as on the bid submission end date.

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APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

8 (b) Contd..	(iv) Details of works completed and under progress in MES be submitted in the following format: -					
	Sl No.	CA No. & Name of Work	Value of CA	Date of Commencement	Date of completion	Extended Date of Completion
	(v) Un-enlisted Contractors 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.					
	(C) Technical PQC criteria	-NA-				
9.	Tender issuing and Accepting Officer	Garrison Engineer (AF), Military Engineer Services, Yelahanks-560 063 (KA). Phone no.: 080-28478533 E-mail: afyelah4-mes@nic.in				
10.	Executing Agency	GE (AF) Yelahanka				
11.	Earnest Money	Rs. 41,700/- in the shape of Call Deposit Receipt in favour of GE (AF) Yelahanka, from any Nationalized Bank/ Scheduled Bank. <i>Note: MES contractors who have furnished SSD bond is exempted from submission of EMD. FDR/ BGB not acceptable.</i>				

Notes: -

1. In case after opening of Cover 1, the number of MES enlisted contractors of eligible class as well as eligible un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT is less than 7 (Seven), applications in respect of MES contractors of 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 fulfilment of other eligibility criteria given in the NIT. Therefore MES contractor's one class below (two classes below in case of remote and difficult areas) may also bid for this tender. Such contractors (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. However, in case such contractors fulfil the criteria of upgradation to the stipulated eligible class based on past experience of completed works (individual work experience and/or average annual turnover, as applicable) and financial soundness (solvency/financial soundness and working capital), the ceiling of present residual work will not apply and they will be considered for issue of tender. Such bidders shall upload in their Cover-1 bid details related to residual work in hand like 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. Such contractors, if claim to fulfil the criteria of upgradation shall also upload the requisite information/documents in support of upgradation. These details shall be verified by the Tender Issuing Authority from concerned formations in case bids of such contractors are considered for evaluation.

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APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

2. In case after the opening of Cover-1, 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 07 (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 upgradation in respect of past experience of completed works (individual work experience and/ or average annual turnover as applicable) and financial soundness (solvency/ financial soundness and working capital) as per details given in Manual on 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 the 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 the cost of tender and EMD instrument in case SSD bond is not signed at the time of registration.
- (d) Scanned copy of GST Registration number.
- (e) Scanned copy of Provident Fund Code Number form EPFO.
- (f) Any other document required as described in this Appendix.

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

- (a) Application for tender on Firm's letterhead.
- (b) Scanned copy of DD/ Bankers cheque toward the 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 the 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 and as per Para 1.4 & 1.5 of Section-1 of MES Manual on Contracts 2020.
- (e) Details of works being executed in MES, if any
- (f) Scanned copy of GST Registration number.
- (g) Scanned copy of Provident Fund Code Number form EPFO.
- (h) Any other document required as described in this Appendix.

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APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

6. Tenders not accompanied by scanned copies of requisite DD/ Bankers Cheque towards the 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 the cost of the 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 the 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 un-enlisted contractor, where scanned copies of requisite DD/ Bankers Cheque towards the cost of the 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 un-enlisted contractors, where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover-1 but the same is not received in physical form within the stipulated period, such tenders shall not qualify for the opening of the 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 firm's 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 the opening of Cover-1 and during its technical evaluation, in case any deficiency is noticed in the documents required to be uploaded by the tenderers 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 a period of seven days from 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 the 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 the 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.

Contd...

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

Such tenderer, if desires, may appeal to the next higher Engineer Authority (NHEA) viz CWE (AF) South, Bangalore on email id safbang3-mes@nic.in with a copy to the Accepting Officer on email id afyelah4-mes@nic.in 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 an appeal. The decision of the NHEA shall be final and binding. The tenderer/ bidder shall not be entitled to any compensation whatsoever for rejection of his bid.

11. Un-enlisted Contractors 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.

12. In case the 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 cases, 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 the opening of Cover-2 shall be considered as a wilful 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 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, retendering 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.

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. The decision of the Accepting Officer on issue/ deny the tender to any one of the related firms shall be final and binding.

15. Court of the place from where tender has been issued shall alone have jurisdiction to decide any dispute out of or in respect of this tender. After acceptance of tender, Condition 72 – Jurisdiction of Courts of IAFW-2249 shall be applicable.

Signature of Contractor
File No. 8287/ /E8
Garrison Engineer (AF)
Yelahanka – 560 063 (KA)
Telephone: 080-28478533
Email: afyelah4-mes@nic.in

AGE (Contracts)
for Accepting Officer
Dated:

{In lieu of IAFW-1779-A (Revised 1955)}
(To be used in conjunction with General Conditions of Contracts IAFW - 2249 - 1989 Print)

MILITARY ENGINEER SERVICES

Tele: 080-28478533

Through e-procurement
GARRISON ENGINEER (AF)
Military Engineer Services
Yelahanka-560063 (KA)

8287/ /E8

Oct 2024

(E-TENDER)**TENDER AND ITEM RATE CONTRACT FOR WORKS REQUIRED BY MEASUREMENT IN THE EXECUTION OF "PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA"**

1. Shri/S'Shri/M/S_____ of _____ is/are here by authorized to tender for the above work. The tender is to be submitted online through e-procurement portal "<https://defproc.gov.in>" website.
2. All correspondence concerning this tender should be addressed quoting the reference as to Garrison Engineers (AF), Yelahanka (KA) – 560063 and marked on the outside CA NO: GE(AF)/ YEL/ OF 2024 – 2025 and tender ID

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

SIGNATURE OF OFFICER ISSUING THE
TENDER DOCUMENTS
APPOINTMENT: AGE (CONTRACTS)
For Accepting Officer

SIGNATURE OF CONTRACTOR

Dated:

Dated:

SCHEDULE 'A'**PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS
YELAHANKA****Notes:-**

1. (a) The entire work covered under this contract i.e. Schedule 'A' shall be completed within a period of **180 Days** from the date of handing over site

(b) Site for execution of work will be available as soon as the GE places the Work Order No 01. In case, it is not possible for the Deptt to make the entire site available immediately after Work Order No 01 is placed, the contractor will have to arrange his working program accordingly. No claim, whatsoever for not giving the entire site on placement of Work Order No 01 and for giving the site gradually will be tenable. No dispute on this account shall be entertained.
2. **SCOPE OF WORK:** This contract covers for all items of works described in BOQ and shall be executed at location as directed by GE / Engineer -in- Charge and as specified here in after.
3. The description of items of work in schedule "A" are in brief. These shall be read together with drawings, particular specifications, special conditions, method of measurement specification for material and workmanship, preambles etc., contained in MES standards schedule of Rates 2009 (Part-I) "Specification", MES Standard schedule of rates 2020 (Part-II) "Rates" for and General conditions of contracts (IAFW-2249).
4. For schedule of items refer BOQ sheet in Excel format. The quantities shown in schedule (BOQ sheet) in column 3 of Schedule 'A' are approximate and are inserted as a guide only. They do not constitute any guarantee of the ultimate quantities which will be ordered on the contractor. However, they shall not be varied beyond the limits laid down in condition 7 of IAFW-2249. (General Conditions of contracts).
5. The tenderer shall quote the unit rate in column 5 of BOQ. The unit rates in figures only shall be entered by the bidder.
6. Total amount in Column 6 is not firm but will be treated as the "Contract Sum" referred to in IAFW-2249. (General Conditions of contracts).
7. Unless otherwise mentioned in description of the items, the unit rates quoted by the contractor shall be deemed to include for "materials and labour" or "supply and fix" complete required for executing the respective items of works.
8. (a) Unit Rates quoted by the Tenderer shall be deemed to also include for any minor details of work and/or construction which are obviously and fairly intended and which may not have been included in these documents but which are essential for the execution and entire completion of the work.

(b) Decision of ACCEPTING OFFICER as to whether any minor details of work and/or constructions is obviously and fairly intended to be included or not in the contract shall be final, conclusive and binding.
9. Pricing of deviation if any shall be done as per relevant part of condition 62 of IAFW-2249 including applicable amendments/errata thereto.

Contd...

SCHEDULE "A" NOTES (Contd...)

10. The unit rates quoted by the tenderer shall be deemed to include all type of taxes and including **Goods and Service Tax (GST)** as applicable for this contract as stipulated in statutory rules of Government.
11. **Work lies in Restricted Area**, therefore carrying camera enabled mobile phone by contractors or their agents/ labours are strictly prohibited. Also, all vehicles brought by contractors in connection with execution of work shall possess valid papers and license and shall be produced for security check. The contractor, his agents, work people etc., shall adhere to the security instructions as laid down in the contract conditions strictly. No claim whatsoever for observance of restrictions imposed at site shall be admissible at any stage of work.
12. All the materials to be incorporated in the work shall be tested as per the latest and relevant IS codes if not otherwise specified elsewhere in tender documents. The cost of the same shall be deemed to be included in the unit rates quoted
13. A tenderer is supposed to check if any revised BOQ has been uploaded and quote in revised BOQ only. Uploading quotation in pre-revised BOQ shall be considered as a willful negligence by the bidder and his quotation shall be considered non-bonafide.
14. If any similar item is repeated in the BOQ, the lowest rate shall be considered for that item at all places.
15. **PERFORMANCE SECURITY:** Refer Clause 2 of Instructions for Filling and Submission of Tender on Page No 5 & 6
16. Defects liability period for this work shall be **24 (Twenty Four)** months from the certified date of completion issued by GE.
17. Work Order will be placed only after submission of Performance Security of adequate value by the contractor.
18. **REMOVAL OF DEBRIS:** The contractor is responsible for removal of all the debris and other foreign materials (generated during excavation of work/demolition work/dismantling) to outside of AF Station Yelahanka premises (if not specifically mentioned otherwise in the description of Schedule 'A'). Unit rates quoted by the contractor shall be deemed to be inclusive of this provision.
18. The following works are included in the subject work:

(a)	YEL/MR-04/2024-25	Provision of POL store and ladies toilet at AFS Yelahanka
(b)	YEL/MIN/08/2024-25	Additional/alteration of room of ASV section building at AFS Yelahanka
(c)	YEL/MIN/09/2024-25	Construction of RCC POL store at AFNET site-I at AFS Yelahanka
(d)	YEL/MIN/10/2024-25	Construction of ground equipment POL at Dornier DSS at AFS Yelahanka

SIGNATURE OF CONTRACTOR
DATED :

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

SCHEDULE OF CREDIT**NAME OF WORK: PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA****NOTE:-**

1. The tenderers shall note that old dismantled materials listed in this schedule obtained from schedule 'A' shall become his property (unless otherwise specifically stated in the Schedule 'A') for which credit shall be recovered at the rates given in Col 5.
2. Serviceable dismantle materials which are not included in the Schedule of credit shall become Govt property and shall be removed to MES Store Yard.
3. All dismantled materials, which are included in the Schedule of credit, are provisional and shall be measured as per actual at site.
4. Old dismantled materials (items shown under Schedule of credit) becoming contractors property shall not be re-used in the work.
5. The contractor shall remove the dismantled materials, which become his property only after the credit amount is recovered from the interim /final bill.
6. The qty shown under Col 4 are provisional. The above qty shall be measured and entered in MB and abstracted at the rates shown in Col 5 for affecting recovery of credit.
7. The total amount of schedule of credit shown below Col 6 will be deducted from the amount quoted against schedule 'A' BOQ while deriving at the contract sum for acceptance.

Ser No	Description of items	Unit	Qty	Rate	Amount
1	2	3	4	5	6
1	Old door with chowkats n exc 1.50 sqm each alongwith iron mongery	Each	1.00	200.00	200.00
2	Old door with chowkats exc 1.50 sqm but n exc 4.00 sqm each alongwith iron mongery	Each	2.00	250.00	500.00
Total					700.00

(SIGNATURE OF CONTRACTOR)

FOR ACCEPTING OFFICER

SCHEDULE 'B'

(Issue of stores, etc, to contractor)
(see conditions 10,13 and 33 of IAFW 2249)

SL No	PARTICULARS	RATE AT WHICH MATERIAL WILL BE ISSUED TO CONTRACTOR		PLACE OF ISSUE OF MATERIAL	REMARKS
		UNIT	RATE IN Rs. Ps.		
1	2	3	4	5	6
-----Nil-----					

SIGNATURE OF CONTRACTOR

FOR ACCEPTING OFFICER

DATED

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	QTY	PARTICULARS	DETAILS OF MES CREW SUPPLIED	HIRE CHARGES PER UNIT PER WORKING DAY Rs. Ps.	STANDBY CHARGES PER UNIT PER OFF DAY Rs. Ps.	PLACE OF ISSUE (BY NAME)	REMARKS
1	2	3	4	5	6	7	8
-----Nil-----							

SIGNATURE OF CONTRACTOR

FOR ACCEPTING OFFICER

DATED

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 Rs. Ps.	PLACE OF ISSUE (BY NAME)	REMARKS
1	2	3	4	5	6
-----Nil-----					

SIGNATURE OF CONTRACTOR

FOR ACCEPTING OFFICER

DATED

In lieu of IAFW-1779A (Revised 1955)

TENDER

To,

THE PRESIDENT OF INDIA,

Having examined and perused the following documents: -

1. Specifications signed by AGE (Contracts)
2. Drawings detailed in the specifications.
3. Schedule 'A', 'B', 'C', and 'D', attached hereto.
4. MES Standard Schedule of Rates 2009 (Part I specifications) with and Part - II 2020 Rates (hereinafter and in IAFW-2249 referred to as the "MES SCHEDULE") together with amendments 1 to 3 for SSR 2009 Part-I and amendments bearing serial number 1 to 122 for SSR 2020 Part II as applicable.
5. General Conditions of Contracts IAFW-2249 [1989 Print] together with Errata 1 to 20 and Amendments 1 to 49 and Schedule of Minimum Wages.
6. **WATER CONDITIONS 31-IAFW-2249 GENERAL CONDITIONS OF CONTRACTS: -**
Water will be not supplied by the MES.

7. SHOULD THIS TENDER BE ACCEPTED

*(a) That the sum **Rs. 41,700/-** (Rupees Forty One Thousand Seven Hundred only) forwarded as earnest money shall either be retained as a part on account of the Performance Security (**5% of Contract Sum**) or shall be repaid by the Government on receipt of the full amount of Performance Security within the time specified in Condition 19 of IAFW-2249.

(b) To execute all the work referred to in the said documents upon terms and conditions contained or referred to therein at the items rates contained in the aforesaid Sch 'A' or at such other rates as may be fixed under the provision of conditions 62 and to carryout such deviation 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 the condition 70 of IAFW-2249 to the sole Arbitration of a serving officer having degree in Engineering or Equivalent of having passed final/Direct final examination of sub division II of Institution of Surveyor's (India) Recognized by the Govt of India to be appointed by Chief Engineer (AF) Bangalore or in the absence of the officer officiating as Chief Engineer (AF) whose decision shall be final, conclusive and binding.

*Delete whichever is not applicable

Contd...

TENDER (CONTD.....)

Signature _____ Name (In block capital) _____

_____ in the capacity of _____

duly authorised to sign the tender for and on behalf of _____

Dated _____

Postal Address : _____

Witness _____

Telegraphic Address: _____

Address _____

Telephone : _____

ACCEPTANCE

_____ alterations have been made in these documents and as evidence that these alterations were made before the execution of the Contract Agreement these have been initialled by the contractor and _____. 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 at the item rates contained in the Schedule 'A' for the Contract Sum of Rs. _____ (Rupees _____)

_____ only) on the _____ day of _____ 2024.

Signature _____ Dated this _____ day of _____ 2024.

FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)
ACCEPTING OFFICER
GARRISON ENGINEER (AF), YELAHANKA, BANGALORE-63.

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

A copy of the GENERAL CONDITIONS OF CONTRACTS (IAFW-2249-1989 Print) with errata 1 to 20 and **amendments No. 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* agree that 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 thereof pertaining to settlement of disputes by Arbitration containing 33 pages (Serial page Nos. 40 to 72 with errata 1 to 20 and **amendments Nos. 1 to 49** (Serial page Nos 73 to 82) form part of these tender documents.

* Delete is not applicable

@ As applicable.

NOTE :- It is clarified that in case of difference in interpretation due to wording of English and Hindi versions, the English version will prevail as per Article 348 of the Constitution of India as clarified vide GS/MT-17 letter No.9601/GS/MT-17 dated 13 Oct 1988.

**AGE (CONTRACTS)
FOR ACCEPTING OFFICER**

**SIGNATURE OF CONTRACTOR
DATE**

SCHEDULE OF MINIMUM FAIR WAGES

1. It is hereby agreed that the 'Schedule of Minimum Fair Wages' as published vide Government of India Notification dated 10 Mar '92 forms part of these tender documents.
2. Schedule of minimum wages is not enclosed along with tender but the contractor is deemed to have full Knowledge regarding the minimum wages payable to labourers effective on the date of submission of tender and his tendered rates shall be deemed to have been based on this, irrespective of the fact that Gazette Notification may not have been published or that he was unaware of the increase in minimum wages. For the purpose of reimbursement of (PV) clause for wage escalation of labour the minimum wages legally effective on the date of receipt of tender shall be the basis. The minimum wages legally effective referred above are the minimum wages notified in Gazette/Government by any local regulations whichever is higher.
3. * My/Our signature here under amounts to *my/our having signed the aforesaid documents forming part of this tender.

NOTE: "Schedule of Minimum Fair Wages" referred to above is available for reference in the Office of Garrison Engineer (Air Force), Yelahanka, Bangalore- 560 063.

Note: * Delete whichever is not applicable.

**AGE (CONTRACTS)
FOR ACCEPTING OFFICER**

**SIGNATURE OF CONTRACTOR
DATE**

SPECIAL CONDITIONS**1.0 GENERAL**

The following Special Conditions shall be read in conjunction with the general condition of contract IAFW-2249 and IAFW – 1779A including Errata/ Amendments thereto. If any provision in these special conditions is at variance with that of the aforesaid documents, the former shall be deemed to take precedence thereover.

2.0 ADMISSION TO SITE BY CONTRACTOR AND RESPONSIBILITY TO ASCERTAIN HIS OWN INFORMATION.

(a) The tenderers shall contact the **GE (AF) Yelahanka, Bangalore** for the purpose of inspection of site(s) and relevant documents other than those sent herewith, who will give reasonable facilities for this purpose. The tenderers shall also make themselves familiar with working conditions, accessibility of site(s), availability of materials/ labour and other cogent condition of work under this contract.

(b) The tenderers shall be deemed to have visited the site(s) and made themselves acquainted with working conditions, whether they actually inspected the site(s) or not.

3.0 SECURITY PASSES

3.1 Refer condition 25 of IAFW – 2249. The Contractor shall employ only Indian Nationals as his representatives, servants and workmen and verify their antecedents and loyalty before employing them for the works. He shall ensure that no person of doubtful antecedents and nationality is in any way, associated with the work. If for reason of technical collaboration or other consideration the employment of foreign national is unavoidable, the contractor shall furnish full particulars to this effect to the Accepting officer at the time of submission of his tender. GE shall order the contractor to cease to employ in connection with this contract any representative, agents, servant and workmen or employee, whose continued employment in his opinion is undesirable. The contractor shall not be allowed any compensation on this account.

3.2 The contractor shall, on demand by the Engineer-in-Charge submit list of his agents, employees and work people concerned and shall satisfy the Engineer-in-Charge as to the bonafide of such people.

3.3 Verification of antecedents of Contractor's representatives/labour deployed at site in connection with execution of work under the contract, as per security requirement of User unit/ installation shall be the responsibility of the contractor and all expenses in connection with verification of antecedents by Police/Security agency shall be borne by the contractor.

4.0 CONDITIONS FOR WORKING IN RESTRICTED AREA

The work under this contract lies in RESTRICTED AREA.

4.1 VISIT TO SITE WITHIN THE RESTRICTED AREA

Permission to enter the restricted area before submission of tenders can be obtained through the GE. Tenderers are advised to send prior intimation of their agents, representatives etc., if any, dates and time of their proposed visit so that necessary arrangements may be made by GE to secure admission. Whether a tenderer visits the site or not, he shall be deemed to have full knowledge of the conditions viz., restrictions of entering into/exit from and working within the restricted area.

Contd...

SPECIAL CONDITIONS (CONTD...)**4.2 ENTRY / EXIT**

The contractor/his agents/representatives/workmen etc. and his materials, carts, trucks or other means of transport etc will be allowed to enter through and leave from only such gate or gates and at such times as the GE/ AGE or authorities in charge of the Restricted Area may at their sole discretion permit to be used. Contractor's authorised representative is required to be present at the places of entry and exit for the purpose of identifying his carts, trucks etc to the person in charge of the security of the Restricted Area.

4.3 IDENTITY CARDS OR PASSES: The contractor, his agent and representative are required individually to be in possession of an identity card or pass duly verified by the Asst. Garrison Engineer. The identity card or pass will be examined by the security staff at the time of entry into or exit from the restricted area and also at any time or number of time inside the restricted area.

4.4 IDENTITY OF WORKMEN: 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 the unit concerned in accordance with the standing rules and regulations of the unit. Contractor shall be responsible for the conduct of his workmen, agents or representatives.

4.5 SEARCH

Through search of all persons and transport shall be carried out at each gate and for as many as a gate is used for entry or exit and may be carried out at any time or any number of times at the work site within the Restricted area.

4.6 FEMALE SEARCHER

If the contractor desires to employ female labour on works to be carried out inside the area of a factory, Depot, park etc, and a female searcher is not borne on the authorised 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 allowance etc., for a female searcher (Class – IV Servant/Gp 'D' Servant) calculated for the period female labour is employed by him inside that area. If more than one contractor has/have to be employed female searcher in addition to the authorised strength of the factory, Depot, park etc., the salary and allowances paid to the 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 any contractor shall be final and binding.

4.7 WORKING HOURS

4.7.1 The units controlling restricted area, usually work during six days in the week and remain closed on the 7th day. The working hours available to contractor's labour and staff however, appreciably reduced because of the time taken in security, checks observed at the time of entry, exit and during working hours.

Contd...

SPECIAL CONDITIONS (CONTD...)

4.7.2 The exact working hours, days and non-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 tenderers attention is invited to the fact that the total number of working hours for a unit are prescribed in regulations and they cannot be increased by the **GE (AF), Yelahanka, Bangalore** (or) authorities controlling the restricted area. The definition of "working days" as given under Condition 1(t) of IAFW-2249 does not apply in cases where the works are carried out in restricted areas.

4.7.3 Contractor's materials, transport etc., shall normally be permitted to come in /go out of the area between 9 A.M. to 5 P.M. only.

4.7.4 Contractor may also be allowed to carryout the work beyond 5 PM and upto 9AM (day and night) with prior approval of GE but no movements of materials and transports out of site of works shall be permitted during night unless special permission is obtained from the factory/unit authorities.

4.8 WORK ON HOLIDAYS.

The contractor shall not carryout any work on Gazetted Holidays/Weekly holidays and other non-working days except when he is specially authorized in writing to do so by the GE. The GE may at his sole discretion, declare any day as holiday or non-working day without assigning any reasons for such declaration.

4.9 ACCESS TO RESTRICTED AREA AFTER COMPLETION OF WORKS.

After the works are completed and surplus stores etc., removed the contractor, his agent, representative or workman etc., may not be allowed to have access to the restricted area except for attending any rectification of defects pointed out to him by the GE.

4.10 **FIRE PRECAUTIONS.** The contractor, his agents, representatives, workmen etc shall strictly observe the order pertaining to fire precautions prevailing within the restricted area. Motor transport vehicles, if allowed by the authorities to enter the restricted area, must be fitted with a fire extinguisher in working condition.

5.0 MINIMUM WAGES PAYABLE: -

5.1 Refer Condition 58 of IAFW-2249. The contractor shall not pay wages lower than minimum wages for labour as fixed by the Government of India/State Govt/Union territory, whichever is higher.

5.2 Contractor's attention is also drawn, amongst other things, to the 'explanations' to the schedule of minimum wages referred to above.

5.3 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 updated from time to time.

5.4 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 bid submission end date.

Contd...

SPECIAL CONDITIONS (CONTD...)

5.5 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.

6.0 ROYALTIES:

6.1 Reference condition 14 of General Conditions of Contracts (IAFW-2249). No quarries on defence land are available.

7.0 LAND FOR TEMPORARY WORKSHOP STORES ETC

7.1 Delete the following from lines 5 to 9 of Sub para 1 of condition 24 of IAFW-2249 "In the event of area of land land allotted to him" and insert as under:-

7.2 "Separate land will be allotted to the contractor for the storage of materials, temporary workshop and offices for which he shall pay the nominal rent of **Rs. 1/- per year or part of the year** as mentioned in Condition 24 of IAFW-2249. The land / open space available within vicinity of site of work as directed by GE may also be used by the contractor for this purpose but free of charge".

8.0 WATER

8.1 Refer Condition 31 of General Conditions of contracts IAFW – 2249 and clause 1.13 of MES Schedule.

8.2 **Water will not be supplied by the MES.** The tenderers are advised to visit the site of works to ascertain availability of water from civil sources or from nearby natural sources outside MoD land. The contractor shall be allowed, if he so desires, to install hand pumps, tube wells at site of work at places as approved by Engineer-in-Charge and nothing shall be charged from the contractor. The contractor shall remove the hand pumps, tube wells as and when asked to do so by Engineer-in-Charge/GE and in any case on completion of the work and before issue of completion certificate, unless GE desires that these hand pumps, tube wells be left in position and the contractor agrees to do so without claiming cost thereof from department. No compensation whatsoever shall be admissible to the contractor, if he is required to remove the pumps(s), tubewells before completion of work. Use of water from such sources shall be permitted only if found potable after testing and fit for use in the work. The water from such sources shall be got tested by the contractor from a laboratory approved by the GE, who shall, after satisfying himself, permit the contractor to use the water from such sources. Testing charges shall be borne by the contractor. GE shall also carry out the independent testing of water.

SPECIAL CONDITIONS (CONTD...)**9.0 CO-OPERATION WITH OTHER AGENCIES.**

9.1 The contractor shall permit free access and afford normal facilities and usual convenience to other 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 and no compensation shall be admissible to the contractor on this account.

10.0 ELECTRIC SUPPLY:

Electricity will be supplied by MES upto a maximum of 10KW, three phase and 230 volts. The contractor shall be charged for the electric energy consumed at the following rates: -

- (i) At **Rs 21.65** per unit for lighting purposes.
- (ii) At **Rs 21.65** per unit for power purposes.

Electric supply required for the works shall be made available by MES at the incoming terminal of the main switch marked on the site plan. The exact location of the electrical point(s) will be shown by the AGE. The main switch and KWH meter to register the electric energy supplied shall be provided and installed by MES. The contractor shall provide all necessary connections, cables, fittings, etc., from the main switch in order to ensure proper and suitable supply of electricity. The MES do not guarantee for continuity of supply and no compensation whatsoever shall be allowed for supply becoming intermittent or for breakdown in the system by any reason whatsoever. AGE or his representatives shall be free to inspect all the power consuming devices or any electric lines provided by contractor, which is not to the satisfaction of the AGE shall be disconnected from the supply, if so directed by him.

11. NET WORK ANALYSIS:

11.1 The Time and Progress Chart to be prepared as per condition 11 of General Conditions of Contracts (IAFW-2249) shall consist of detailed network analysis and a time schedule. The critical path network will be drawn jointly by the GE and the contractor soon after acceptance of the 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, a firm calendar date schedule will be prepared and submitted by the contractor to the GE who will approve it after due scrutiny. Four copies of the schedule will be submitted within two weeks from the date of handing over the site.

11.2 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 periodic 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.

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SPECIAL CONDITIONS (CONTD...)

11.3 The contractor will adhere to the revised schedule thereafter. In case of a contractor disagreeing with the revised schedule, the same will be referred to the Accepting Officer whose decision will 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.

11.4 The contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad framework of the accepted methods of working and safety. (d) 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.

12.0 SAMPLE OF MATERIALS

12.1 Refer condition 10 of IAFW-2249 and clause 1.6 & 1.7 of MES SSR Part I-Specification.

12.1 Material provided by the contractor for incorporation in the works shall, unless otherwise specified in the Particular specification be IS marked. IS means Indian Standards as issued by the Bureau of Indian Standards. Wherever in the specifications "IS" is referred to, it means the edition with all amendments, current on the due date of receipt of the tender documents.

12.2 The tenderer is advised to inspect other 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, he is required to incorporate in the work irrespective of whether he has actually inspected them or not. The materials to be incorporated in the work by the contractor shall be IS marked or shall be equal or superior in quality to samples displayed and shall comply with the specifications given hereinafter.

12.3 The contractor shall produce samples of all materials, articles, fittings, accessories etc, that he proposes to use and get these approved in writing by the Garrison Engineer within reasonable time from the date of commencement of work as per work order. The materials, article, etc as approved shall be labeled as such and shall be signed by the GE and contractor's representative. These samples shall be kept in the custody of the Garrison Engineer / Engineer-in-Charge.

12.4. The contractor shall not procure materials unless the samples are first got approved by the Garrison Engineer.

12.5. The brand of all materials, articles, fittings, etc approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded.

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SPECIAL CONDITIONS (CONTD...)

12.5 (Contd...)

(a) A list of items / articles which are having IS certification mark and readily available are given in Appendix "B"/List of Manufacturer. It is mandatory that ISI certified marked items/articles as listed in Appendix "B"/ List of Manufacturer shall be incorporated in the work. In case of any, discrepancy between list as per Appendix "B"/ List of Manufacturer and downloaded list of BIS marked items from BIS site, the downloaded list from BIS website shall prevail subject to verification from BIS.

(b) The Govt reserves the right to get the items/articles as listed in Appendix "B"/ List of Manufacturer tested in approved laboratories. The cost of sample for testing shall be borne by the contractor and the remaining expenses such as cost of transportation of sample to laboratory and testing fee shall be borne by the Govt, if the test result is found to be satisfactory. However, in the event of the test result being found unsatisfactory, the entire cost of testing including cost of samples shall be borne by the contractor. Government may get more than one sample of the same materials tested and the cost of such testing shall be borne by the Government.

13. PROPRIETARY/ BRANDED MATERIAL

13.1 Proprietary/branded material such as paint, chemicals for anti-termite treatment, bitumen, water proofing compound etc., quantity of which cannot be checked after incorporation in the work, shall when collected at site, be recorded in measurement book and signed both by the Engineer-in-Charge and the contractor as a check to ensure that the required quantity has been brought at site for incorporation in the work.

13.2 Materials brought to site shall be stored as directed by the Engineer-in-Charge and those already recorded in measurement book shall be suitably marked for identification.

13.3 The contractor shall obtain proprietary/branded materials from manufacturers or from manufacturer's authorized stockiest where such authorized stockiest have been appointed. The contractor shall, on demand, produce original receipted vouchers/invoices of supplies to the Garrison Engineer / EIC, to ensure that the contractor has actually brought the required quantity of the materials from the authorized dealers/manufacturers and also to be find out the rates thereof. The original vouchers/invoices shall be defaced and stamped by Engineer-in-Charge, indicating contract number, name of work, under his dated signature. The contractor shall ensure that the materials are brought to site, in original sealed containers packing bearing manufacturers marking except in the case of the requirement of material(s) being less than the smallest packing.

14. PERIOD FOR KEEPING THE TENDER OPEN

14.1 The tender shall remain open for acceptance for a period of **60 days** from the next day subsequent to the bid submission end date.

15. ADVANCE ON ACCOUNT OF MATERIALS WHICH DOES NOT LOSE IDENTITY

15.1 The contractor may be paid advance on account of the full value of the under mentioned materials only, brought on the site on his furnishing guarantee bonds from scheduled bank for the amount of retention money which should otherwise be recoverable from him under this contract.

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SPECIAL CONDITIONS (CONTD...)

- (a) Factory made steel windows / ventilators.
- (b) Electrical fittings / fixtures / cables / wires.
- (c) Steel for reinforcement.
- (d) Any other non-perishable materials as decided by GE

15.2 The Bank Guarantee Bonds 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 Bond, if and when necessary, as directed by Accepting officer or shall furnish fresh Guarantee Bond of similar value in lieu.

15.3 It will be noted that advance on account to the full value of materials brought on the site is permissible only in respect of fittings and fixtures and other manufactured items which do not lose their identity. Materials like bricks, aggregate pre-cast concrete and similar items shall not be taken in the list.

16 **SECURITY OF CLASSIFIED DOCUMENTS**

16.1 Contractor's special attention is drawn to conditions 2A and 3 of IAFW-2249 (General conditions of Contracts). The contractor shall not communicate any classified information regarding work either to subcontractors 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 shall return all documents on completion of the work or on earlier 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 Contract).

17 **OFFICIAL SECRETS ACT**

17.1 The contractor shall be bound by the official secrets Act – 1923.

18. **RECORD OF MATERIALS AND PURCHASE VOUCHERS**

18.1 The quantity of materials such as cement, steel, paints, water proofing compound, chemicals for anti-termite treatment and the like, as directed by the Engineer-in-Charge (the quantity of which cannot be checked after incorporation in works) shall be recorded in measurement books and signed by the contractor and the Engineer-in-Charge as a check to ensure that the required quantity has been brought to site for incorporation in the work.

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

18.3 Refer Condition 10 OF IAFW-2249, The contractor shall, on demand, produce to the GE, original receipted paid vouchers in respect of the supplies. The paid vouchers so produced shall be verified, defaced and stamped by Engineer-in-Charge indicating contract number name of work under his dated signature. The contractor shall ensure that the materials are brought to site, in original sealed containers/ packing, bearing manufacturer's marking except in the case of the requirement of material (s) being less than smallest packing.

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SPECIAL CONDITIONS (CONTD...)

18.4 Contractor shall produce paid vouchers /original receipted voucher as stipulated in Condition 10 OF IAFW-2249. Contractor shall produce paid vouchers /original receipted voucher from the manufacturers and / or their authorized agents for the full quantity of the following materials mandatorily, as applicable as a prerequisite before submitting claims for payment for advance on account of the work done and / or materials collected in accordance with condition 64 of General Conditions of contracts IAFW-2249. Contractor shall submit original receipted voucher of other materials also if demanded by the Engineer in charge / GE: -

- (a) Cement
- (b) Steel
- (c) Gate valves/Ball valves/flameproof LED light fittings/LED light fitting
- (d) Exhaust fans/Wall mounted Fans/WPT Chemicals/Pipes and fittings
- (e) Any other materials as decided by Engineer-in- Charge.

19 **ACCEPTANCE QUALITY OF WORK AND FINISHES**

(i) To determine the acceptable standard of materials and workmanship / final finishes and layout of fittings etc., the contractor shall execute stages of work viz., excavation, foundation concrete, walling upto plinth / lintel / roof levels, roofing, flooring, joinery, built-in-items, finishes and the like and services i.e., internal electrification etc under the close supervision of Engineer-in-charge and shall be labeled as sample room. The workmanship of various trades and finishes of the sample room shall serve as guiding sample for the remaining portion.

(ii) Approval of the stages and workmanship of sample room shall be separately entered and approved in stage passing register giving reference to sample room for easy identification even at a later date.

20. **CONTRACTOR'S PLANT / EQUIPMENT AT SITE**

20.1 The contractor shall furnish to the Engineer-in-Charge every morning distribution return of his plants / equipment's on the site of work stating the following particulars: -

- (i) Particulars of plants / equipments, their make, manufacturer's model No. if any, Registration No., if any, capacity, year of manufacture and year of purchase.
- (ii) Total No. (Quantity) on site of work.
- (iii) Location indicating No. (Quantity) at each location on the site of work.
- (iv) For the purpose of this condition, purchase value on the date of purchase for plant/ equipment and vehicle No. of trucks and lorries shall be furnished. However, neither the workman's tools nor manually operated tools / equipment shall be given. The Engineer-in-Charge shall record the particulars supplied by the contractor in the works dairy and send the return to the GE/ AGE (I) for record in his office.

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SPECIAL CONDITIONS (CONTD...)**21 CLEANING DOWN**

21.1 Refer condition 49 of IAFW-2249 General Conditions of contracts.

22.2 The contractor shall clean all floors, walls, remove cement/ lime / paint marks / drops etc., clean the joinery, glass panes etc., touch up all other necessary items of work in connection therewith and leave the whole premises clean and tidy before handing over the buildings.

22 DAMAGE TO EXISTING STRUCTURES

22.1 Any damage to the existing structures, any existing road etc., during the execution of work shall be made good by the contractor at his own expense. Rectification, replacement, making good and 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.

23 RECORD OF CONSUMPTION OF CEMENT

23.1 For the purpose of keeping the record of cement consumed in the works. The contractor shall maintain a pucca bound register with serially numbered pages initialed by the Engineer-in-Charge, showing quantity of cement received used in the work and balance at the end of each day. The register shall be signed daily by representative of MES and the contractor in token of verification of its correctness and will be checked by Engineer-in- Charge, at-least once a week and on the days cement is brought to site by the Contractor.

23.2 The aforesaid provision will not, however absolve the contractor of his responsibility to justify the consumption of cement at the time of finalization of his account.

23.3 The register shall be kept at site in the safe custody of the contractors representative during the progress of the work and shall on demand, be produced for verification to the Inspecting Officer(s).

23.4 On completion of the work, the contractor shall deposit the cement register with the Engineer in charge for record with MES.

24. CONCILIATION

24.1 **SCOPE OF CONCILIATION.** The scope of conciliation shall be restricted to the following types of disputes with financial limits as indicated therein: -

- (a) Disputes relating to levy of compensation for delay in completion-actual amount of compensation.
- (b) Disputes relating to technical examination of works.
- (c) Disputes relating to interpretation of the provisions of the contract with reference to their application to parties.
- (d) Disputes relating to non-return of Schedule 'B' stores over-issued to the contractor.
- (e) Any other dispute having fair chances of being resolved by conciliation and considered fit to be referred to conciliation by the parties.

SPECIAL CONDITIONS (CONTD...)

For item (b), (c), (d) and (e) as stated above, the financial limit shall be rupees two Lakhs or one percent of the contract amount whichever is less for each item.

24.2 COMMENCEMENT OF CONCILIATION PROCEEDINGS.

(a) The party initiating conciliation shall send to the other party a written invitation to conciliate, briefly identifying the subject of the dispute.

(b) Conciliation proceedings shall commence when the other party accepts in writing the invitation to conciliate.

(c) If the other party rejects the invitation, there will be no conciliation proceedings. If the party initiating conciliation does not receive a reply within 30 days from the date on which he sends or within such other periods of time as specified in the invitation, he may elect to treat this as a rejection of the invitation to conciliate and if he so elects, he shall inform in writing the other party accordingly.

24.3 NUMBER OF CONCILIATORS.

24.3.1 There shall be a Sole Conciliator.

24.4 **APPOINTMENT OF CONCILIATOR:** All disputes brought out in Para 1 (a) to (e) above shall be referred to the Sole Conciliator viz. Serving officer not below the rank of Superintending Engineer/ Superintending Engineer (QS&C) having degree in engineering or equivalent or having passed final/direct final examination of Sub Division II of Institution of Surveyors (India) to be appointed by the Engineer-in-Chief, Army Headquarters, New Delhi or in his absence the officer officiating as Engineer-in-Chief or Director General of Works if specifically delegated by the Engineer-in-Chief in writing.

24.5 **STATUS OF EFFECT OF SETTLEMENT AGREEMENT:** The settlement agreement signed by the parties as a result of conciliation proceedings shall have the same status and effect as an arbitral award on agreed terms.

25 CONSTRUCTION LABOUR WELFARE TAX

25.1 Consequent upon promulgation of ordinance by the President of India, Contractors shall be liable to pay this element for construction labour welfare tax if any and quoted rates shall be deemed to be inclusive of this element, and no extra payment shall be admissible to the contractor on this account.

26. RE-IMBURSEMENT/ REFUND ON VARIATION IN "TAXES DIRECTLY RELATED TO CONTRACT VALUE"

(a) The rates quoted by the Contractor shall be deemed to be inclusive of all taxes (including GST on materials, GST on Works Contracts, 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 (b) here-in-below.

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SPECIAL CONDITIONS (CONTD...)

(b) (i) The taxes which are levied by Government at certain percentage rates of Contract Sum/Amount shall be termed as "taxes directly related to Contract value" such as GST on materials, GST on Works Contracts, Labour welfare cess/tax and the 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 prevailing on the bid submission end date. Any increase in percentage rates of "taxes directly related to Contract value" with reference to prevailing rates on the bid submission end date 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 the bid submission end date shall be refunded by the Contractor to the Govt/deducted by the Government from any payments due to the Contractor. Similarly, imposition of any new "taxes directly related to Contract value" after the bid submission end date shall be reimbursed to the contractor and abolition of any "taxes directly related to Contract value" prevailing on the bid submission end date shall be refunded by the Contractor to the Govt/deducted by the Government from the payments due to the Contractor.

(ii) 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 documentary proof/information as the GE may require.

(iii) 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 Government, 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.

(iv) Reimbursement for increase in percentage rates/imposition of "taxes directly related to Contract value" shall be made only if Contractor necessarily and properly pays additional "taxes directly related to contract value" to the Government, without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Government Authority and submits documentary proof for the same as the GE may require.

(c) Any tender which proposes any alteration to the above condition and/or which proposes the element of GST separately over and above the quoted lump sum/unit price will be treated as conditional tender and is liable for rejection.

SIGNATURE OF CONTRACTOR
Dated:

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

PARTICULAR SPECIFICATIONS**NAME OF WORK: PROVISION OF POL STORE, LADIES TOILET AND CERTAIN MINOR WORKS AT AFS YELAHANKA****1.0 GENERAL**

- 1.1 The following specifications shall be read in conjunction with MES Schedule Part-I including errata/ amendment there to. If these specifications are at variance with that of the aforesaid document the specification given in tender document shall take precedence there over.
- 1.2 Work under this contract shall be carried out in accordance with Schedule 'A' particular specifications, drawings and General Specifications and other provisions in MES Standard Schedule of Rates (here in after called MES Schedule Part-I 2009 Specifications and Part-II 2020 read in conjunctions with each other.
- 1.3 Term "General Specifications" referred to here-in-before as well as referred to in IAFW-2249 (General conditions of Contracts) shall mean the specifications contained in the MES Schedule Part-I.
- 1.4 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 specifically stated otherwise in those documents in which case the provisions in these documents shall take precedence over the aforesaid provision in the MES Schedule. The term as specified "wherever appears in tender documents and drawings relates to relevant particular specifications and in its absence general specifications. All references to MES Schedule (Standard Schedule of Rates) in these specifications relates to Part-I of MES Schedule unless otherwise mentioned. Reference to only some paragraphs of MES Schedule has been made in these particular specifications but other paragraphs and provision as applicable are also to be followed for all parts of Schedule 'A' even though not particularly mentioned here in after.
- 1.5 Where specifications for any item of work are not given in MES Schedule or in these particular specifications, specification as given in relevant Indian Standard or code of practice shall be followed.
- 1.6 The unit rate quoted for a particular item and/or lumpsum 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 but which are essential for the execution and entire completion of the work. Decision of the Accepting Officer as to whether any minor details of work and/or constructions is obviously and fairly intended to be included in the contract or not shall be final, conclusive and binding.

PARTICULAR SPECIFICATIONS (CONTD...)

- 1.7 Any item which is essential for the construction and completion of the entire work in a workman like manner conforming to normal engineering practices and BIS code can be treated as minor details at the absolute discretion of the Accepting Officer.
- 1.8 In all cases the details indicated elsewhere in the drawings which are similar or near similar to the missed out items of work shall be followed. In the absence of any other similar or near similar details, minimum essential requirement for completion of the work from structural and utility point of view shall be deemed to be included in the rate quoted. In the event of any dispute, decision of the Accepting Officer shall be final, conclusive and binding.

2.0 DEMOLITION / DISMANTLING / TAKING DOWN

- 2.1 The term 'Dismantling/ Demolition' shall be all as specified vide clause 21.1 & 21.2 of MES Schedule Part I.
- 2.2 The contractor shall be responsible for the safe custody of all serviceable material until the work is handed over to MES.
- 2.3 Contractor shall ensure that demolition operations do not at any stage endanger the safety of the structure or the workman carrying out the demolition.
- 2.4 Prior order of Engineer – in – charge shall be obtained before demolition/ dismantling/ taking down etc. The contractor's particular attention is drawn to section 21 of MES Schedule Part I and condition 47 of IAFW – 2249.
- 2.5 In case non compliance of safety precaution as notified by the Engineer-in-Charge from time to time and in the event of any casualty, the contractor shall be responsible for all the consequences and shall have to settle all damages and compensation at his own expense and risk.
- 2.6 Necessary safety appliances shall be issued to the workers before or prior to starting of the work by the contractor.
- 2.7 Any damage caused to the existing or adjacent structure due to contractors workman or due to contractor's negligence, the same shall be made good at his own expenses. GE's decision as to whether the damage caused due to contractors negligence shall be final and binding.
- 2.8 All materials other than items mentioned in the schedule of credit having salvage value shall be handed over to department at MES store yard i.e. place of issue of Schedule 'B' stores. However the demolished materials which have no salvage value as decided by the Engineer – in – charge and rubbish shall be filled in low lying areas or disposed off at the site as directed by the Engineer – in – charge.

PARTICULAR SPECIFICATIONS (CONTD...)

- 2.9 All dismantled materials as listed in schedule of credit shall become the property of the contractor. The materials will be removed from the site only after the recovery has been made from the contractor and after obtaining written instructions from Engineer – in – charge.

3.0 EXCAVATION AND EARTH WORK**3.1 EXCAVATION GENERAL**

- 3.1.1 Unit rate for all items in Schedule 'A' unless specified otherwise shall include for excavation and earth work in hard/dense soil. In case during execution, any other type of strata is met with, the same shall be regularised through deviation order.
- 3.1.2 Boulders and stones obtained from excavation, if any, shall be sorted out and neatly stacked as directed by Engineer-in-Charge, without any extra cost to the Govt. These boulders and stones, in stacks shall be handed over to MES storeyard which shall become the property of the GOVERNMENT. No extra payment shall be allowed on this account.
- 3.1.3 Earth work and excavation shall be carried out all as described in Schedule „A“ and as directed by Engineer-in Charge. If rock/boulder is met at site, contractor shall immediately notify the fact to the GE in writing, who will after due verification, regularize the charge through proper deviation order. The rock/boulder so obtained shall be sorted out and neatly stacked as directed by the Engineerin- Charge, without any extra cost to Government. These rock/ boulders should be neatly stacked at site and shall be entered in the measurement book duly signed by the contractor and Engineer-in- Charge. This rock/boulder shall become the property of the contractor for which necessary recovery will be effected at the rate of Rs 450.00 per cubic metre under Abstract of Credit.
- 3.1.4 In case timbering to excavation is required and specifically ordered by the GE in writing, it shall be paid as deviation.
- 3.1.5 Bailing / pumping of water where required shall be carried out as described in clause 3.17 of MES Schedule Part I. The cost of bailing/pumping out water as catered in para 3.7(c) of section 3 of SSR Part II shall be deemed to be included in the contractor's quoted rates.

3.2 FILLING IN TRENCHES/UNDER FLOORS

- 3.2.1 The approved earth from excavation in foundations shall be used for filling in trenches, under floors and any other situation after removing big stones, grass, roots and vegetables and other organic matter. Earth mixed with small stones / pebbles (if approved by GE) is permitted for use in filling under floors and foundations. The filling around pipes after the pipes are laid and tested shall, however, be with earth free from pebbles/stones. Any additional earth required for the purpose of filling shall be arranged by contractor at no extra cost to the Department from outside the defence land.

PARTICULAR SPECIFICATIONS (CONTD...)

3.2.2 Filling under floors/sides of trenches shall be in layers not exceeding 250mm and each layer shall be watered, compacted and rammed as approved by Engineer-in-Charge.

3.2.3 Surplus soil shall be removed and spread and leveled at places as directed by the Engineer-in-Charge at a distance as indicated in Sch "A".

3.3 TRENCHES FOR FOUNDATION AND PIPES

3.3.1 The beds of the trenches, shall be watered and well rammed and any depressions thus formed shall be filled with approved earth as required to the level and slope as directed by Engineer-in-Charge.

3.3.2 Measurement of excavation shall be as per authorised width as given in Section 3 clause 3.2.3 para a, b & c on page 17 & 18 SSR 1996 Part II. However to lay GI pipes for external water supply the width shall be as per clause 18.50.1 of MES Schedule Part-I.

3.4 HARD CORE

3.4.1 The material for hardcore shall be locally available best quality and as per sample kept in GE's office.

3.4.2 Hard Core shall be of stones/boulders (broken of gauge) not exceeding 63mm. Hard core shall be deposited spread and leveled in layers not exceeding 15 cm thick and well watered, rammed to a true surface and compacted. The thickness of the hard core specified or as indicated in the drawings, is the thickness after consolidation.

4.0 CEMENT**4.1 GENERAL:**

4.1.1 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 be of tested quality and shall comply with the requirements mentioned in the drawings, SSR, IS Specifications as amended and particular specifications given hereinafter.

4.1.2 Type of cement for the subject work shall be ordinary Portland cement grade 43 (forty three) in accordance with IS 8112-1989 unless otherwise mentioned in structural drawings forming part of the tender documents.

PARTICULAR SPECIFICATIONS (CONTD...)**4.2 SOURCES OF PROCUREMENT**

4.2.1 Cement shall be procured by the contractor from any of main producers/manufactures of cement listed here-in-after.

Sl No	Company Name	Address	Cement Grades	Approval Letter	Valid Upto
1.	The Associated Cement Companies Ltd. Brand: "ACC"	414-421, Splendor Forum (4 th Floor), 3, District Centre, Jasola, New Delhi - 110044, Ph- 011 46583600	All	HQ E-in-C Policy letter No 04/2009 issued vide HQ letter No A/90154/438/E2 Des-3 dated 25 May 2009	-
2.	Ultra Tech Cement Ltd. Brand: "ULTRATECH"	'B' Wing, 2 nd Floor, Mahakali Caves Road, Andheri (East), Mumbai - 400093, Ph- 022-6917800	All	-do-	-
3.	The India Cement	Dhun Building, 827, Anna Salai, Chennai – 600002	All	-do-	-
4.	Dalmia Cement (Bharat) Ltd. Brand: "DALMIA INFRA PRO"	Dalmiapuram Distt-Truchirappalli, Tamil Nadu-621651	All	-do-	-
5.	Century Cements. Brand: "CENTURY"	Industry House, 159 Church gate Reclamation, Mumbai - 400020, Ph - 022 22023936	All	-do-	-
6.	Saurashtra Cement Brand: "SAURASHTRA"	Gala No A-1, Ground Floor, Udhyog Sadan No 3 MIDC, Central Road, Andheri (East), Mumbai – 400093 Ph- 022 32955557/67, Mo- 9320290081	All	-do-	-
7.	The Ramco Cements Ltd. (Formerly Madras Cement) Brand: "RAMCO"	Auras Corporate Centre, 98-A, Dr. Radhakrishnan Salai, Mylapore, Chennai – 600004, Ph- 044 28478666	All	-do-	-

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PARTICULAR SPECIFICATIONS (CONTD...)

Sl No	Company Name	Address	Cement Grades	Approval Letter	Valid Upto
8.	Mangalam Cement Ltd. Brand: "MANGALAM"	PO Adityanagar, Morak, Dist- Kota, Rajasthan – 326520, Ph- 9351468076	All	-do-	-
9.	Birla Corporation Ltd Brand: "BIRLA"	Birla Building (3 rd & 4 th Floor) 9/1, R.N Mukherjee Road, Kolkata - 700001, Ph- 033 30573700	All	-do-	-
10.	Orient Cement Brand: "ORIENT"	5-9-22/57/D, 2 nd & 3 rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad- 500063, Ph- 044 23688600	All	-do-	-
11.	Nuvoco Vistas Corporation Ltd (Formerly Lafarge Cement) Brand: "NUVOCO"	Equinox Business Park Tower-3, East Wing, 4 th Floor LBS Marg, Kurla (West), Kurla Mumbai, Maharashtra-400070.	All	-do-	-
12.	Shree Cement Brand: "SHREE"	Bangur Nagar, Beawar, Dist- Ajmer, Rajasthan- 305901, Ph – 01462 228101-06	All	-do-	-
13.	J K Cement Brand: "J K"	Kamla Tower Kanpur-208001	All	-do-	-
14.	J K Lakshmi Cement Ltd Brand: "J K LAKSHMI"	Jaykaypuram, Dist- Sirohi, Rajasthan- 307019, Ph - 02971 244409/10	All	-do-	-
15.	Jaypee Rewa Cement Brand: "JAYPEE"	Jaypee Nagar, P.O.- Jaypee Nagar, Rewa - 486450 M.P.	All	-do-	-
16.	Ambuja Cement Ltd Brand: "AMBUJA"	Kodinar, PO- Ambujanagar, Taluka- Kodinar, Dist- Junagadh, Gujarat- 362715, Ph- 02795 237000	All	-do-	-

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PARTICULAR SPECIFICATIONS (CONTD...)

Sl No	Company Name	Address	Cement Grades	Approval Letter	Valid Upto
17.	M/s JSW Cement Ltd, A.P Brand: "JSW PSC (Portland Slag Cement)"	JSW Centre Opp MIMRDA Ground Bandra Kurla Complex, Bandra (East) Mumbai – 400051 Tele: +91-22-4286-5047 Fax: +91-22-2650-2001 Website : www.jswcement.in	PSC	HQ E-in-C letter No A/90154/449/E2 Des-3 dated 09 Jul 2021	01 Apr 2024
18.	M/s Kesoram Industries Ltd Brand: "BIRLA SHAKTI"	Unit 12 th 1201 of T 19 towers, Indira Nagar Ginwala Compound, M.G. Road, Secunderabad, Hyderabad, Telangana- 500003 Tele: +91-40-4334-4555 Fax : +91-40-4334-4534 Website: www.kesocorp.co	OPC 53 OPC 43 PPC	HQ E-in-C letter No A/90154/498/E2 Des-3 dated 28 dec 2021	27 Dec 2024
19.	M/s Sagar Cements Limited, Hyderabad Brand: "SAGAR"	Plot No 111, Road No 10 Jubilee Hills, Hyderabad – 500 033 Tele: +91-40-23351571, 2335672 FAX +91-402335673 Email: info@sagarcements.in Website : www.sagarcements.in	OPC 43 OPC 53 PPC & PSC	HQ E-in-C letter No A/90154/498/E2 Des-3 dated 16 May 2023	24 Aug 2025

- (i) **GE/AGE shall ensure validity of approval of firm and brand at the time of execution of work.**
- (ii) **Any other makes approved by E-in-C's branch upto end date of submission of bids shall also be deemed to be included in the above list.**

4.2.2 The contractor shall furnish the particulars of the manufacturer of cement alongwith the date of manufacturing of cement to the Garrison Engineer for every lot of cement separately.

4.2.3 For each lot of cement brought by the contractor, before acceptance of the cement the following actions will be taken by the GE and Engineer-in-Charge:-

- Inspect the lot and verify the general conditions of the cement.
- Obtain the vouchers (IN ORIGINAL) of the manufacture of cement for each lot containing the date of manufacturing, from the contractor.
- Obtain from the contractor for each lot of cement the manufacturer's Test Certificate (IN ORIGINAL) alongwith Test Sheets giving the result of each physical test and chemical composition of cement or authenticated copy thereof duly signed by manufacturer. The Test Sheet should include the results of the following mandatory test: -

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PARTICULAR SPECIFICATIONS (CONTD...)

- (i) Specific surface by Blains air Permeability method.
 - (ii) Soundness Test by Le" Chatlier method.
 - (iii) Initial setting time.
 - (iv) Final Setting time.
 - (v) Compressive strength test at 3, 7 & 28 days as specified in the relevant IS code.
 - (vi) The test report should also show the chemical properties of the cement as per relevant IS Codes.
- (d) Verify the documents listed at Clause Nos 4.2.3(b) & (c) above given by the contractor from the manufacturer.

4.2.4 The cement so brought shall be fresh and in no case older than 60 days from the date of manufacture. The GE accordingly in consultation with the contractor will work out the Schedule of procurement and ensure that the same is adhered to. This Schedule should be vetted by GE from time to time. The document in support of the purchases of cement shall be verified by the Engineer-in-Charge. Before placing the order for supply of cement by the contractor, he shall obtain written approval from the GE regarding name of manufacturer, quantity of cement etc. Cement shall be procured for minimum requirement of one month and not procured for minimum requirement of more than two months at a time and should match with the physical progress of the work. The cement shall be consumed in the work within three months after receipt. Cement shall conform to the requirement of Indian Standard Specification and each bag of cement shall bear relevant ISI mark. The weight of each consignment shall be verified by the GE and recorded. The content of cement shall be checked at random to verify the actual weight of cement per bag. However, the content of cement per bag shall be 50 Kg only subject to tolerance given in relevant IS code.

4.3 **SOURCE OF PROCUREMENT LESS THAN 1200 BAGS**

4.3.1 For all contracts, where estimated requirements of cement is less than 1200 bags, contractor can procure cement from the authorised distributors / dealer of the approved firms. However, contractor will have to submit test certificate for the batch issued by the firm

4.4 **TESTING OF CEMENT**

4.4.1 The contractor shall submit the manufacturer's test certificate in original or attested true copy alongwith test sheets giving the results of each physical test as applicable in accordance with relevant IS provision and the chemical composition of cement or authenticated copy thereof duly signed by the manufacture with each consignment, as per the following IS provision: -

- (a) Method of sampling hydraulic cement as per IS-3535.
- (b) Method of physical test for hydraulic cements as per IS-4031.
- (c) Methods of chemical analysis of hydraulic cement as per IS-4032.

PARTICULAR SPECIFICATIONS (CONTD...)

4.4.2 The test certificate and test sheet shall be furnished with each batch of manufacture. The Engineer-in-Charge shall record these details in cement acceptance register to be maintained by him which will be signed by Junior Engineer (Civil), Engineer-in-Charge, Garrison Engineer and the contractor as given in the format hereinafter for verification.

4.4.3 The contractor shall however organise, setting time and a compressive strength test of cement through designated approved laboratory on samples collected from the lot brought at site before incorporation in work. The contractor will be allowed to use the cement only after satisfactory compressive strength test results of three days & seven days. To meet this requirement contractor is required to keep minimum 10 days stock before any new lot brought at site which can be used in the work. The contractor shall be required to remove the cement not meeting the requirement from site within 24 hours. Seven days strength test will be relied upon to accept the lot of cement to commence the work. 28 days compressive strength test will be the final criteria to accept/reject the lot.

4.5 INDEPENDENT TESTING OF CEMENT BY GE

4.5.1 The GE shall carry out independent testing as per the tests mentioned in the "CEMENT SUPPLY/ACCEPTANCE FORM" (Physical and Chemical requirement) of random samples of cement drawn from various lots. The testing shall be carried out through National test house, SEMT, CME, Regional Research Laboratories, Govt approved Laboratories, Zonal Laboratories as per IS-3535 (method of sampling hydraulic cement), IS-4031 (method of physical test for hydraulic cement) and IS-4032 (Method of chemical analysis of hydraulic cement) referred to above. The decision as to where the testing of cement is to be done shall be taken by GE. In case the cement is not of requisite standard despite manufacturer's test certificate, the contractor shall remove the total consignment from the site within 24 hours at his own cost after written rejection order of the consignment by the GE. The cost of testing, transportation and of material used in testing etc. shall be borne by the contractor irrespective of the results of testing and no extra claim whatsoever shall be admissible.

4.6 SAMPLING FOR INDEPENDENT AND ADDITIONAL TESTS

4.6.1 Sample of cement from each lot should be collected by the Engineer-in-Charge and GE in accordance with IS 3535-1986, for independent or additional tests. The cement shall be tested within 1-3 weeks on supply but before incorporation of the same in works. The cost of testing, transportation and of material used in testing etc. shall be borne by the contractor irrespective of the results of testing and no extra claim whatsoever shall be admissible. The record of such samples selected by the GE for testing shall be properly maintained in the "Cement Testing Register" giving cross reference to relevant consignment of cement and quantity received etc.

4.6.2 Cost of transportation of samples to the approved laboratory/test house and all testing charges including cost of sample shall be borne by the contractor.

PARTICULAR SPECIFICATIONS (CONTD...)**4.7 DOCUMENTATION**

4.7.1 The following documents will be maintained by the Engineer-in-Charge/GE for cement supplied by the contractor in addition to the documents specified herein-before: -

- (a) Original vouchers of cement shall be kept in the concerned file of the contract in GE's office, serially numbered on each page.
- (b) Original Test Certificate and Test Sheet should also be kept in the concerned file of the contract in the GE's office duly numbered.
- (c) Cement Acceptance Register as per **Appendix "A"**.
- (d) In/Out Register for Cement as per **Appendix "B"**.
- (e) Register containing results of independent and additional testing by GE.
- (f) Register containing records of surprise checks and BOO.
- (g) Inspection Register.

4.7.2 The contractor shall submit original purchase vouchers 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 the GE alongwith the relevant documents to ensure the requirements as mentioned hereinbefore, before acceptance. The original purchase vouchers and the test certificates shall be verified for subject contract and defaced by the Engineer-in-Charge and kept on record in the office of the Garrison Engineer duly authenticated and with cross reference to the consignment/control number recorded in the Cement Acceptance Register. The cement acceptance register shall be signed by the Junior Engineer (Civil), Engineer-in-Charge, GE and the contractor. The GE will personally check the documents concerned with cement periodically at least once in a month and record of these checks will be kept in the cement Acceptance Registers. The contractor shall maintain schedule of supply of cement for each consignment.

4.8 Blank

4.9 STORAGE/ACCOUNTING/PRESERVATION OF CEMENT

4.9.1 Cement shall be stored in covered godown over dry platform at least 20cm high in such a manner as to prevent deterioration due to moisture or intrusion of foreign matter. In case of store room, the stack should be at least 60cm away from floors and walls. Different lots of cement received will be stacked separately displaying the control number and date of receipt of cement. It will be ensured that the tested and untested cement are segregated and stored with distinct identification. For proper accounting and control of cement brought by contractor a double lock system in the contractor's cement godown will be followed. The stacking of cement shall be done as specified in relevant IS. The storage accounting and preservation of cement supplied by the contractor shall be done as per standard engineer practice till the same is incorporated in the work and the cost of the same shall be deemed to be included in the unit rate/amount quoted by the tenderer. The Engineer-in-Charge shall inspect once a day to verify that cement lying at site is stored, accounted, preserved and maintained as per the norms. The cement shall be stored so as to differentiate each tested and

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PARTICULAR SPECIFICATIONS (CONTD...)

untested consignment separately with distinct identification. If the GE is not satisfied with the storage/preservation of cement, he may order for any test(s) of cement as applicable for that consignment to ensure its conformity to the quality mentioned in the manufacturer's test certificate. The contractor shall bear the cost of necessary testing(s) in this regard and no claim whatsoever shall be entertained.

- 4.9.2 Stacking of cement shall be done as per relevant IS and as under: -
- (a) Each cement consignment shall be stacked separately and shall be issued to work on the basis of "First come First go".
 - (b) Adequate top cover will be provided.
 - (c) Stacks in no case shall be higher than 12 bags. The maximum width of each stack shall be 3.00 m. If the stack is to be more than 7 or 8 bags high, the bags shall be arranged in header and stretcher fashion, i.e., alternatively lengthwise and crosswise so as to tie the piles together and avoid danger of toppling over.
 - (d) Adequate space shall be kept between two stacks.
- 4.9.3 Cement godown shall be provided with two locks on each door. The key of one lock at each door shall remain with the Engineer-in-Charge or his representative and that of the other lock with the contractor's authorised agent at site of works so that cement is removed from the godown only according to daily requirement with the knowledge of both the parties. During the period of storage, if any cement bag(s) found to be in damaged condition due to whatsoever reasons, the same shall be removed from the cement godown on written orders of the GE and suitable replacement for the cement bag(s) so removed shall be made and no claims whatsoever shall be admissible on this account.

PARTICULAR SPECIFICATIONS (CONTD...)

4.9.4 Cement shall be removed from the store only according to daily requirement with the knowledge of both 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. Cement constants given in **Appendix "C"** which shall form the basis of consumption of cement for various items of works (except for design mix concrete) unless specifically indicated otherwise which is enclosed herewith. For design mix concrete the cement constant shall be as mentioned here-in-after. For item not covered under **Appendix "C"** the cement consumption for the same shall be worked out based on actual requirement at site through a Board convened for the purpose including a representative from the contractor. The design mix approved shall not be changed unless a fresh design mix is made due to change of source and quality of material.

4.9.5 In case the consumption of cement as per cement consumption register is found to be more than the estimated quantity of cement due to whatsoever reason, the contractor shall not have any claim, whatsoever, for such excess consumption of cement.

4.10 SCHEDULE OF SUPPLY

4.10.1 The contractor shall procure the cement timely as required in accordance with CPM chart agreed between GE and the contractor. The contractor will forfeit his right to demand extension of time if the supply of cement got delayed due to his failure in placing order in time to the manufacturer.

4.11 MEASUREMENTS AND PAYMENT OF CEMENT

4.11.1 The entire quantity of cement 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.

4.12 RELEASE OF PAYMENT

4.12.1 The payment shall only be allowed after production of original purchase vouchers, certified copies of test certificates from manufacturer for each consignment and results of testing carried out in laboratory on receipt of cement (7 days compressive test) are found satisfactory after testing as specified hereinbefore and taking action on points enumerated in **Para 4.4** here-in-before and completing the documents in this regard as mentioned in **Para 4.7** Cement shall be paid as material lying at site as per Condition 64 of IAFW-2249.

4.13 ACCEPTANCE/REJECTION OF CEMENT

4.13.1 The contractor will keep a separate stack of cement brought at site for inspection, away from the accepted lot of cement. In case the new lot is rejected by the GE it will be removed from the site within 24 hours, at the cost of the contractor. The cement may be rejected if it does not comply with any of the requirement as per relevant IS codes. The cement should be weighed and each bag shall be of nominal average net mass of 50 kgs. The tolerance on weight of the cement shall be as per the relevant IS Codes.

PARTICULAR SPECIFICATIONS (CONTD...)**5.0 CONCRETE****5.1 CEMENT**

5.1.1 Cement shall be all as specified under **Clause 4.0 to 4.13.1** here-in-before

5.2 FINE AGGREGATE

5.2.1 Fine aggregate for concrete work shall conform to materials specifications and grading within the limits of grading zones II to III all as specified in clause 4.4 to 4.4.7.3 of MES Schedule.

5.2.2 Contractor may use crushed stone sand produced from hard stone having cubical shaped particles with grounded edges of ground gradation for concrete and masonry work without any price adjustment in lieu of natural sand/river sand.

5.2.3 Crushed stone sand for concrete work shall conform to materials specifications and grading within the limits of grading zones II to III all as specified in Clause 4.4 to 4.4.7.3 of MES Schedule Part - I.

5.2.4 Crushed stone sand can be used for plastering with river sand in the ratio of 1:1 without any price adjustment and conforming to IS 1542-1992 and SSR clause of plastering.

5.3 COARSE AGGREGATE

5.3.1 Coarse aggregate for all cement concrete work shall be graded crushed/broken hard granite/ trap/ basalt stone obtained from approved quarries all as specified in Clause 4.4 to 4.4.7.3 of MES Schedule Part - I. Mixture of two types shall however, not be used.

5.4 GRADING OF COARSE AGGREGATE

5.4.1 Graded aggregate of nominal sizes given here under, shall be used, unless specified otherwise, in the specifications here in after: -

All reinforced cement concrete: - Unless otherwise shown on drawing, the size of aggregate shall be as per IS-456, but in no case more than 20mm graded aggregate.

Plain cement concrete in foundation of brick/stone walls pillars, floors and sub base to floors: -

- (i) Upto and including 30 mm thicknesses: 12.5 mm.
- (ii) Over 30 and upto and including 75mm thickness: 20 mm.
- (iii) Exceeding 75mm thickness: 40 mm.

5.4.2 Water: Water shall conform to the requirement stipulated in IS 456 and as per Clause 4.9 to 4.9.2 of MES Schedule Part - I.

5.5 IMPORTANT REQUIREMENT OF REINFORCED CEMENT CONCRETE/PLAIN CEMENT CONCRETE.

5.5.1 All the materials, workmanship inspection and testing for the cement concrete shall be as per requirements given in IS-456-2000.

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5.5.2 The contractor shall provide all facilities for casting, curing and conveyance of test cubes of cement concrete to authorised laboratory as approved by the GE for testing as laid down in IS-456-2000 at no extra cost to Government.

5.5.3 Engineer-in-Charge shall maintain a record of actual consumption of cement in proper register (other than the cement register mentioned in special condition) for all design mix and initial the entry for every change in quality of cement bag.

5.5.4 All cement concrete, both plain and reinforced shall be mixed in mechanical mixer of Hopper type. However, in case of small quantity (i.e) the quantity of concrete required being less than one batch of mix, the contractor may, after obtaining written permission of the Engineer-in-charge, be allowed hand mixing without any price adjustment. Where hand mixing is permitted, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the concrete is uniform in colour and consistency. However, all design mix concrete shall be weigh batched and volumetric conversion will not be permitted.

5.6 **COMPACTION**

5.6.1 Concrete should be thoroughly compacted and fully worked around the reinforcement, embedded fixtures and into corner of the form work. Internal vibrators (needle vibrator) shall be used for compaction of RCC beams, columns and the slabs of thickness more than 150mm. For slab of thickness upto 150mm, screed vibrator (surface vibrator) shall be used for effective compaction.

5.7 **BATCHING AND MIXING OF CONCRETE**

5.7.1 **BATCHING**

5.7.1.1 Mixing of cement and aggregate for all grades of reinforced cement concrete and plain cement concrete in all situations except at locations as specified in clause 3.15(d) herein before shall be carried out by weigh batching plant manufactured by any reputed company of suitable capacity with both auto feeding and manual ejection system. Weigh batching shall be carried out all as specified in clause 10.2 of IS 456-2000 and as specified in clauses 4.11.3, 4.11.3.2 to 4.11.3.5 of MES Schedule Part-I.

5.8 **REINFORCED CEMENT CONCRETE (DESIGN MIX CONCRETE M-25)**

5.8.1 Wherever design mix concrete is specified/shown on drawing, the same shall be provided as per the following: -

(a) Design mix concrete shall have requisite workability and 28 days characteristic compressive strength not less than 25 N/mm² and the acceptance criteria shall be all as per IS 456-2000. The mix shall be designed as per recommended guide lines for concrete design mix as per IS. Adequate number of trial mixes shall be carried out at the commencement of the work to decide the proportion for the grade of the concrete and yield. Otherwise the concrete mix shall be got designed from any NABL accredited approved lab/ Govt Engineering Colleges/ Institution so as to produce the grade of concrete having

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the required workability and characteristic strength not less than that specified. The initial mix design particulars along with all the connected documents shall be submitted to the GE for approval. The work on ground shall not be progressed until approval of design mix by the GE. However, work may be commenced if the results of 7 days test are satisfactory and the contractor undertake to redo the work at "No extra cost to Government" in the event of unsatisfactory results after 28 days test. Subsequent design mix due to change in aggregate or for any other reasons shall however be approved by the GE.

- 5.8.2 Minimum quantity of cement shall be as per provision of IS:456-2000 meeting the requirements from durability point of view. However, if extra quantity of cement is used for whatever reasons, the same shall be at no extra cost basis to Government.

6.0 **WATER SUPPLY SYSTEM FOR CONCRETE MIXER**

- 6.1 Mixing of water to prepare PCC/RCC shall be done by the contractor by following the method described here-in-after: -
- (a) The water shall be stored in a transparent storage tank as shown on drg. The water supply system shall be designed all as shown on drg No. AFB/TD/233/05 sheet 1/1. Contractor shall take every precaution for the safety of workers working with this system considering the fact that system is on steel legs and on steel platform.
 - (b) Depending upon the volume of concrete work involved, contractor shall provide above arrangements in adequate numbers, so that the work at different places simultaneously to be carried out does not hamper.
 - (c) The above provision shall be for all types of concrete work including those catered in provisional schedules. The lumpsum quoted for bldg / structure of Schedule 'A' Part I are deemed to include for the above provision.

Note: - (i) Mixing of water / addition of water shall not be permitted manually through buckets and / or un-graduated containers. (ii) However, where hand mixing is allowed by Engineer-in-Charge, the method of mixing of water shall be all as directed by Engineer-in-Charge.

- 6.2 All concrete for RCC work shall be consolidated/compacted by mechanical vibrators of approved type (plate type for slabs and needle type in other locations). Plain cement concrete may however, be rammed and consolidated by tamping and rodding as specified in MES Schedule Part-I.

PARTICULAR SPECIFICATIONS**APPENDIX- "A"****CEMENT SUPPLY AND ACCEPTANCE REGISTER**

1. CA No. & Name of work :
2. Control No.* :
3. Name of Manufacturer's/ Brand Name/Grade of cement (A) Manufacture - _____ (B) Brand _____ (C) Grade _____
4. Quantity of cement & Lot No/Week No (in Bags) : (Qty _____ (b) Lot No/Week No _____ :
5. Manufacture's test Certificates No _____
6. Random Test Details (a) Physical test report from _____ vide their letter No. _____
(Name of approval Lab / Engg College)
- (b) Chemical test report from _____ vide their letter No. _____
(Name of approval Lab / Engg College)

7. Details of Physical and Chemical properties:

	Physical Requirements (As per IS 4031)									Chemical Requirements (As per IS 4032)								
	Specific Surface Area (M ² /Kg)	Soundness by Le Chatellar	Soundness by Auto Clave	Initial Setting Time (Minutes)	Final Setting Time (Minutes)	Compressive Strength (Mpa)			Temp during testing °C	Standard Consistency (%)	Lime Saturation Factor (Ratio)	Aclumina iron Ratio (Ratio)o	Insoluble Residue (%)	Magnesium (%)	Sulphuric Anhydride (%)	Loss on ignition (%)	Alkailes (%)	Chlorides (%)
						03 Days	07 Days	28 Days										
As per relevant IS																		
As per manufacture's test certificate																		
As per random test certificate																		

Remarks with signature

Accepted / Rejected

Contractor Junior Engineer

Engineer-in-Charge

Garrison Engineer

Remarks of BOO / Inspecting Officer / CWE

* To be allotted serially by GE consignment wise.

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PARTICULAR SPECIFICATIONS (CONTD...)**APPENDIX – “B”****IN/OUT CEMENT REGISTER**

	DATE	CEMENT IN		CEMENT OUT			QTY BALANC E (IN BAGS)	SIGNATURE		REMARKS
		QTY (IN BAGS)	CONTRO L NO	QTY (IN BAGS)	REASO NS*	AGE OF CEMENT		CONTAC TOR	GE	
1	2	3	4	5	6	7	8	9	10	11

NOTE: The following reasons may be mentioned for taking out cement from store.

- (a) For testing purpose
- (b) For use in work
- (c) Rejected cement taken out of site.

All the transaction in the register shall be signed by Contractor/his representative and Engineer-in-Charge/JE.

PARTICULAR SPECIFICATIONS (CONTD...)**7.0 FORM WORK**

7.1 Form work shall comply with requirements of clause No 4.11.6 (4.11.6.1 to 4.11.6.5) and 7.15 (7.15.1 to 7.15.10) of MES Schedule Part-I except that the form works to be provided under this contract shall be of steel/plywood only as specified here-in-after in lieu of timber formwork. Props shall be of only steel and bottom plates and side shuttering shall be of either steel or plywood without any price adjustment. For supporting small heights, wooden support may be used in lieu of steel support at the discretion of GE.

7.2 Deformed steel sheet shall not be permitted for use as form work. In case of any deviation involving form work to surfaces exposed to view, the pricing shall be done at the rates of timber form work for rough finish and in case of unexposed concrete surfaces; the pricing shall be done at the rates of timber work, clean sawn subject to contractor's percentage. The contractor shall have no extra claim on account of this.

7.3 EXPOSED SURFACE OF CONCRETE

7.3.1 The soffit of slabs, sides and soffits of beams, soffit of staircase slab, RCC parapet and RCC drop and soffits of chajjas etc. which are not covered under schedule of finishes shall be plastered with cement mortar (1:3) 5mm thick finished fair and even. However, no plastering to soffit of slabs, sides and soffits of beams shall be carried out where false ceiling shown on drawings.

7.3.2 However, exposed surfaces of lintels, beams, columns etc which are continuous with plastered surfaces of walls shall be plastered, in the manner specified for the walls.

7.3.3 All other exposed surfaces not covered above shall be finished such as to present a fair and even surface and shall not be plastered. The surfaces shall be presentable without any further treatment. Any irregularity and protruding formwork marks shall be removed and minor honey combing made well with cement and sand mortar (1:3). Lines along formwork joint may however show.

8.0 WATER PROOFING LIQUID

8.1 Irrespective of what is mentioned anywhere in the tender documents only liquid water proofing shall be used. Water proofing liquid to be used shall be 0.40% by weight of cement or as per manufacturer's instructions. It should be ensured that with the use of water proofing liquid, the overall chloride content when determined in accordance with IS-6925 shall not exceed 2%.

PARTICULAR SPECIFICATIONS (CONTD...)**9. BRICK WORK****9.1 BRICKS**

9.1.1 Bricks shall be kiln burnt clay sub-class "B"/ "Cement flyash bricks" best quality locally available conforming to the samples kept in AGE (I)'s office. Irrespective or whatever is specified in Schedule 'A'/Notes on drawings, bricks shall have average compressive strength of not less than 50Kg/Sqcm. In the event of deviation, brick work shall be priced at the rates given in SSR Part – II for subclass 'B' old size bricks enhanced by quoted percentage without any adjustment for variation in compressive strength of bricks. Water absorption of bricks shall not exceed 20% when tested in accordance to IS-3495. Sampling and testing of bricks shall be carried out as per IS-5454 and IS-3495. The size of the brick shall be 230mm x 115mm x 75mm. The tolerance in size of bricks shall be + 8%.

9.2 **CEMENT** Refer Clause 4.0 to 4.13.1 here-in before.

9.3 SAND

9.3.1 Sand for mortar shall be as specified in Clause 5.4 to 5.4.2 of MES Schedule Part-I. Also refer special note for alternative to natural sand/ river sand given below.

9.3.2 SPECIAL NOTE (For alternative to natural sand/river sand)

9.3.2.1 Contractor may use crushed stone sand produced from hard stone having cubical shaped particles with grounded edges of ground gradation for concrete and masonry work without any price adjustment in lieu of natural sand/river sand.

9.3.2.2 Crushed stone sand for concrete work shall conform to to materials specifications and grading within the limits of grading zones II to III all as specified in Clause 4.4 to 4.4.7.3 of MES Schedule Part - I.

9.3.2.3 Crushed stone sand can be used for plastering with river sand in the ratio of 1:1 without any price adjustment and conforming to IS 1542-1992 and SSR clause of plastering.

9.3.2.4 Contractor may use manufactured sand [crushed stone sand] produced from hard granite/basalt/black trap stone, having cubical shaped particles with grounded edges of ground gradation as per IS as applicable in lieu of river sand. In the market it is known as M-sand/Robo sand/I-sand etc.

9.3.2.5 While using manufactured sand, the following provision of IS codes shall be borne in mind: -

- (a) IS 383:2016: Salient provisions to be followed are as under:
 - (i) Table 1 [clause 4.2.1): Utilization in lean, plain and reinforced concrete to the extent as a percent of total mass of fine aggregates.
 - (ii) Clause 5.7: Additional requirement for all manufactured aggregates as per table 3 to 6.
 - (iii) Clause 6.3 & Table 9: Gradation requirement of manufactured sand.
- (b) IS 2430: Method of sampling of fine aggregates

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PARTICULAR SPECIFICATIONS (CONTD...)

- (c) IS 2383 [Part I to Part 8]: Testing of aggregates
- (d) IS 4032 & IS 14959: Chemical tests for aggregates.

9.3.2.6 Where manufactured sand is used instead of Natural sand, BIS certification will be insisted from the supplier and following information shall be obtained from the manufacturer / supplier and kept on record by Eng-in-charge:-

- a) Source of parent material and brief manufacturing process.
- b) Special characteristics having bearing on concrete properties such as presence of adhered coating in case of Recycled Concrete Aggregates.
- c) Service history if any especially name of projects where used and performance.

9.4 **BRICK WORK**

9.4.1 Brick work in various situations shall be built in cement mortar as specified in Schedule "A".

9.5 **CURING**

9.5.1 Masonry work shall be kept constantly moist on all the faces for a minimum period of 7 days.

9.6 **PCC COPING**

9.6.1 Provide PCC coping with plain cement concrete as specified in Schedule "A". Projection of coping beyond width of wall, if any shall be provided as directed. The top surfaces of the coping shall be finished fair using extra cement.

10. **STONE MASONRY**

10.1 Stone for masonry work shall be granite stone conforming to approved samples maintained in the office of the GE.

10.2 The stone masonry shall be as specified in BOQ and clause 6.10 of MES Schedule Part-I.

10.3 Unless otherwise specified, all stone masonry work in foundation, plinth, shall be built in CM (1:6). Sand for mortar shall be as stated in Clause 9.3 here-in-before.

10.4 **BOND OR THROUGH STONES**

10.4.1 When bond stones of required size are not available the contractor may provide pre-cast PCC 1:3:6 type C-1 bond stone of size 20cm x 20cm x thickness of wall in lieu of stone bond stone without price adjustment. For wall less than 60 cm PCC bond stone shall be provided in full width of stone wall in single piece. Where the thickness of wall exceeds 60 cm stone bond stones can be provided in more than one piece with a minimum overlap of 15cm between the bond stone and each stone shall not be less than 45cm length. Bond stones shall be provided all as specified in clause 6.10.1.5 of MES Schedule.

10.5 **DRESSING**

10.5.1 All surfaces of stone masonry other than the portion hidden by earth filling shall be hammer dressed as specified in clause 6.9 of MES Schedule Part I. Maximum depression on surfaces shall not exceed 20 mm and 40 mm for masonry surface to be plastered and pointed respectively.

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10.5.2 Holes in PCC block masonry /stone masonry /concrete shall be left or made for water supply, plumbing, sanitation, electrification etc., where shown on drawings or as ordered by the Engineer-in-Charge. These holes on completion be made in PCC 1:3:6 type C1 match with the adjoining surfaces as specified in MES Schedule. The cost of making leaving the holes and making good shall be deemed to be included in the quoted rates.

10.6 CURING

10.6.1 Masonry work shall be kept constantly moist on all the faces for a minimum period of 7 days.

10.7 PRECAST CEMENT CONCRETE BLOCKS

10.7.1 The solid PCC blocks shall be of nominal size 400 x 200 x 200mm (for 200mm thick walls) or 400 x 100 x 200mm (for 100mm thick walls). Half blocks, if required, shall be manufactured in half lengths of 200mm. The tolerance on length of individual block shall be + 5 mm, and tolerance on height and width of block shall be + 3mm. The faces of the blocks shall be flat and rectangular, opposite faces shall be parallel and all arises shall be square. The bedding surface shall be at right angles to the faces of blocks. All blocks shall be sound and free of cracks or other defects which interfere with the proper placing of blocks.10.

10.7.2 Solid concrete block shall have solid material not less than 75% of the total volume of the block calculated from the overall dimensions. PCC block masonry of 200mm or more thickness shall be in cement sand mortar 1:6. PCC block masonry of 100mm thickness shall be in cement sand mortar 1:4. Cement and sand shall be as specified here-in-before.

10.7.3 CLASS, GRADE AND DENSITY

Type of wall	Type of block	Minimum average compressive strength after 28 days	Classification as per IS : 2185 (Part – I)	Block density	
Non load bearing/ (External / Internal panel walls)	Solid	40 Kgs/ cm 2	Grade 'C'	Not less than 1800 Kgs/cum	
Load bearing	Solid	50 Kgs/ cm 2	Grade 'C'	Not less than 1800 Kgs/cum	

11 WOOD WORK AND JOINERY**11.1 TIMBER**

11.1.1 Timber for all joinery and wood work unless otherwise specified here-in-after shall be second class hard wood conforming to specifications given in Clause 7.3

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to 7.3.1.1 of the MES Schedule Part- I and shall be within the permissible limits of defects defined in Clauses 7.4 to 7.5.2 of MES Schedule Part – I.

11.2 MOISTURE CONTENT

11.2.1 Attention is drawn to IS-287 and the map in the Indian Standard. The site of work lies under Zone II and the maximum percentage of moisture content permissible in timber to be used in the work for various purposes will be as given for this zone. It shall be ensured by the tenderer that the moisture content in timber to be used (before incorporation in the work) is within the maximum permissible limit as specified in MES Schedule. Adequate number of test shall be carried out by the Engineer-in-Charge to determine the moisture content in the timber to be used in the work and the contractor shall provide necessary facilities for test as required by Engineer-in-Charge without any extra cost to Government. Testing charges shall also be deemed to be included in rate quoted by the contractor against respective items of Schedule “A”.

11.3 PRESERVATION OF TIMBER

11.3.1 Preservation treatment shall be carried out to all wood work and joinery fabricated by the contractor at site. Factory made shutters and ply boards are deemed to be provided with preservative treatment.

11.3.2 Chemical used for preservative treatment to wood work and joinery shall be organic solvent type 2 as specified IS-401 applied in any one of the manners specified in IS.

11.3.3 The species of timber for joinery item shall be as specified here under: -

(i)	Fully/ Partly paneled/ Wire gauzed.	:	Factory made panelled shutters shall be of second class hard wood of species as per IS:1003(Part-I) BIJASAL (HONNE), BENTEAK (NANDI), LAUREL (MATTI)
(ii)	Wooden runner cleats/ stoppers, beading and fillets for shutters and frames.	:	Second class hard wood of species LAUREL/ BIJASAL/ BENTEAK/ VENTEAK/ SAL
(iii)	All other wood work and joinery not otherwise specified.	:	Second class hard wood of species LAUREL/ BIJASAL/ BENTEAK/ VENTEAK/ SAL

11.4 FACTORY MADE FLUSH DOOR SHUTTERS

- (a) Flush door shutters shall be provided at locations as indicated in drawings with the dimensions/details as shown in the drawings.
- (b) Flush door shutters shall be of solid core type with block board core with commercial veneer facing on both sides. The thickness of door shutters shall be as shown on drawings and if not shown on drawings, the same shall be 35mm. The flush door shutters shall conform to Clause No. 8.25 to 8.25.9 of SSR Part – I.
- (c) The fixing of shutters shall be carried out all as specified in Clause No. 8.26 to 8.26.7 of SSR Part – I.

11.5 Factory made flush shutters shall be obtained from any one of the manufacturers specified here-in-after. Samples of shutters alongwith test certificates shall be produced to the GE for inspection and approval. Sample shutters shall be got approved from GE before placing bulk order.

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11.5.1 Factory made shutters shall be brought to site before applying the primer and the shutters shall be got passed by the Engineer-in-Charge before application of primer.

11.6 FACTORY MADE GLAZED AND SKELETON SHUTTERS

11.6.1 Factory made glazed and skeleton shutters shall be conforming to IS: 1003 (Part-I) with second class hard wood styles and rails of species specified here-in-before. The dimension and overall sizes shall however be as per BOQ item. Unless otherwise specified, the dimensions of shutters shall be as specified in Clause No. 8.24 of MES Schedule Part-I. Tolerances of factory made shutters is permissible as specified in Clause No. 8.20.8 of MES Schedule Part – I.

11.6.2 Timber shall be of kiln seasoned and chemically treated by pressure process as specified in para 5.5 of IS: 401.

11.6.3 Other treatments to timber surfaces such as tarring, painting etc., shall be carried out in addition.

11.7 WORKMANSHIP

11.7.1 Joinery shall be wrought all over. Timber surface exposed to view shall be wrought and surface not exposed to view shall be clean sawn. The workmanship and fixing of joinery shall be as specified in MES Schedule.

11.7.2 The dimensions of various components of joinery shown on drawings, wherever at variance, shall supersede the standard dimensions mentioned in the MES Schedule. In case of any deviations the rates in SSR are applicable adjusted with contractors quoted percentage and without any price adjustments.

11.7.3 Unless otherwise specified, all work both carpenter's and joinery shall have full dimensions as shown on drawings except that an allowance of 1.00mm shall be allowed for each wrought face. No tolerance is permitted in boarding, the finished thickness of which is less than 12mm. Wooden beads and fillets shall however have the full dimensions as shown on drawings. The contractor shall also maintain the over all sizes of the doors and windows etc., as shown on drawings. If dimensions are not specified dimensions as specified in Clause No. 8.24 of MES Schedule Part – I shall be followed.

11.7.4 Timber members upto 3 metre length shall be in one piece.

11.7.5 Plugging to walls shall be done with wooden plugs as per Clause 7.29 of MES Schedule Part – I and specified here in before. The spacing of plugs shall be as indicated in the drawing and where not shown, the same shall not be exceeding 30 cms centre to centre.

PARTICULAR SPECIFICATIONS (CONTD...)**11.8 PARTICLE BOARD**

- 11.8.1 Particle board shall be commercial veneered on both sides bonded with BWR grade synthetic resin adhesive and shall conform to interior grade conforming to IS: 3097.

11.9 PLYWOOD

- 11.9.1 Plywood shall be of grade BWP as detailed in drawings and shall conform to IS:303.

12.0 Blank**13 Blank****14 POWDER COATED ALUMINIUM GLAZED DOORS/ WINDOWS/ VENTILATORS**

- 14.1 Provide powder coated aluminium doors, windows and ventilators all as specified in BOQ and as specified here in below.
- 14.2 The shutters shall be made out of specially extruded tubular sections with provision for weather stripping made in the vertical jambs. The cleats for mechanical horizontal/vertical joints of the fixed frame and shutters shall be specially extruded aluminium sections so as to avoid any play between jointed members.
- 14.3 The aluminium door shutters shall be fixed with brass floor spring single action type provided with floor springs.
- 14.4 The active leaf shall have unity lock. The active leaf shall also have one concealed sheet bolt which can be operated from inside.
- 14.5 For fixing glazing, the glass shall be encased in EPDM gaskets so as to avoid direct contact between metal and glass.
- 14.6 The aluminium sections shall be coated with epoxy polyester powder coating. Thickness of coating shall be 45 microns (+ or- 5). Colour of coating shall be as approved by GE. Chemical and mechanical properties of sections shall comply with requirements given in IS 733-1983 and as specified in Clause No. 10.37(a) to 10.37 (g) of MES Schedule Part-I.
- 14.7 Glazing shall be provided all as specified in BOQ, wherever thickness of glazing not indicated shall be 5mm thick.
- 14.8 All aluminium doors shall have hydraulic door closer and all aluminium doors shall have EPDM gaskets.
- 15.0 **Blank**

PARTICULAR SPECIFICATIONS (CONTD...)**17.0 STEEL AND IRON WORK****17.1 GENERAL**

17.1.1 All steel required for the work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangements. The reinforcement steel as well as the structural steel like angles, I sections, channels etc., shall be of tested quality and shall comply with the requirement mentioned in the drawings, SSR and particular specifications here-in-after. The specifications mentioned in the tender documents shall be read in conjunction with the provisions laid down in MES Schedule Part-I, Section 10 – Steel and Iron work. The contractor shall submit test certificate from the manufacturers.

17.2 TYPES OF STEEL

17.2.1 Steel supplied by the contractor shall conform to the following grades and quality: -

(a) STEEL FOR CONCRETE REINFORCEMENT

(i) Reinforcement steel bars shall be high strength deformed steel bars produced by TMT of Fe-500D grade conforming to IS : 1786 – 2008. Reinforcement bars shall have ISI Mark. Minimum elongation shall be 18%. Steel reinforcement bars shall comply with all of the following stipulations mentioned in IS 13920-2016 (Amendment No. 2 of Nov 2020): -

(aa) Ratio of ultimate stress to 0.2% proof stress shall not exceed 1.25.

(ab) Ratio of ultimate stress to 0.2% proof stress be at least 1.15.

(ac) Steel shall be only of strength grades with minimum 0.2% proof stress of 500 Mpa in addition to other requirements of IS: 1786.

(ad) The actual 0.2 percent proof stress of steel bars based on tensile test must not exceed their characteristic 0.2 percent proof strength by more than 20 percent.

(ii) Mild steel bars shall conform to IS-432 (Part I) and grade I.

(iii) Fabric Reinforcement for concrete shall conform to IS: 1566.

(b) STRUCTURAL STEEL

(i) Definition of structural steel as given in clause 10.4 of SSR Part-I shall be applicable. Standard quality steel of grade E-250 (Fe-410 W quality A) conforming to IS-2062 for all types of steel structures including those subject to dynamic loading shall be used.

(ii) Ordinary quality structural steel wherever mentioned shall be conforming to IS-1977 of grade E-165(Fe-290) and shall be used for doors, windows, guard bars, grills, steel gates, hand railing, fencing posts etc.

(iii) Steel tubes for structural purposes shall conform to IS-1161 and shall be of Grade YST-240.

(iii) Galvanised steel sheets (Plain and corrugated) shall conform to IS-277. Grade of zinc coating to be used shall be as per Clause 10.29.1 of MES Schedule Part-I

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depending on thickness of sheet. Minimum thickness of coating shall however be 450 gm/ sqm.

17.2.2 SOURCE OF PROCUREMENT

(a) **TMT STEEL**. TMT steel bars of all sizes supplied by the contractor shall be procured directly from the approved by E-in-C's Branch listed here-in-after.

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LIST OF APPROVED STEEL MANUFACTURERS

Sl No	Company Name & Brand	Address	Steel Grade/ Sizes	Approval letter	Valid Upto
1.	Rashtriya Ispat Nigam Limited (RINL) Brand: "RINL"	Visakhapatnam Steel Plant Visakhapatnam - 530 031, India Tel: (91 891) 518226, 518376 Fax: (91 891) 518316 Email: cmdvsp@itpvis.ap.nic.in	All	HQ E-in-C Policy letter No 01/2006 issued vide letter No 83044/Steel/43 9/E2 Des-3 dated 28 Feb 2006	-
2.	Tata Iron & Steel Company (TISCO, or Tata Steel) Brand: "TATA"	Bombay House, 2, 4 Homi Modi Street Mumbai - 400 001, India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522, 287 0840 Email: corpcomm@jsr.tatasteel.com (Br office for North: Jeevan Tara Bldg, Patel Chowk New Delhi)	All	-do-	-
3.	Steel Authority of India Limited (SAIL) Brand: "SAIL"	Central Marketing Organization, Northern Region 17 th Floor, scope Minar, Laxmi Nagar Distt. Centre, Delhi – 110092	All	HQ E-in-C Policy letter No 01/2006 issued vide letter No 83044/Steel/439 /E2 Des-3 dated 28 Feb 2006	-
4.	M/s Kamachi Industries Ltd. Brand: "KAMACHI"	ABC Trade Centre, 3 rd Floor (Inside Devi Theatre Complex) Old No. 50, New No. 39, Anna Salai, Chennai- 600002, India Tel: +91-044-42961100 Fax: +91-044-42961122 Custmor care : 7700067000 E-mail: sales@kamachitmt.com Website: www.kamachitmt.com	TMT Bars of Gde Fe 500, Fe 500D, Fe 550, Fe 550D & HCRM (Size 8- 40mm)	HQ E-in-C issued vide letter No 83044/Steel/767 /E2 Des-3 dated 26 Jul 2021	29 May 2024
5.	M/s Shyam Metalics & Energy Ltd. Brand: "SEL"	Viswakarma, 1 st Floor, 86 C, Topsia Road, Kolkata-700 046 Tel- +9133 4011 3000 Fax- +9133-2285 2212 Website- www.shyammetalics.com	TMT Bars of Gde Fe 500D (Size 8- 32mm)	HQ E-in-C issued vide letter No 83044/Steel/796 /E2 Des-3 dated 01 Sep 2021	31 Aug 2024

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Sl No	Company Name & Brand	Address	Steel Grade/ Sizes	Approval letter	Valid Upto
6.	M/S Electrotherm (India) Ltd Brand "ET TMT"	Survey No. 72, Palodia, (Via-Thaltej, Ahmedabad) Gujarat- 382115 Tel- +91-2717-234553/660550 Fax- +91-2717-234866 Website- www.electrotherm.com	TMT Bars of Gde Fe 500, Fe 5000 &CRS (Size 8- 36mm)	This HQ letter No83044/Steel/ 818/E2 Des-3 dated 06 Oct 2021.	05 Oct 2024
7.	M/s Tulsyan NEC Limited Brand "TULSYAN TMT"	APEX Plaza, 1st Floor Old No.3, New No. 77 Nungambakkam High Road Chennai-600 034 (TN) Website-www.tulsyanec.in Tele - 044-61991060/61991045 Mob - 9840354010, 9677088334	TMT Bars of Gde Fe 500, Fe 5000 & Fe 550 (Size 8- 32mm)	This HQ letter No 83044/ Steel/901 /E2 Des-3 dated 30 May 2022.	29 May 2024
8.	M/s Incredible Industries Limited (Formerly M/s Adhunik Industries Limited). Brand "ADHUNIK Fe 500 SD"	Landowne Towers 2/1A, Sarat Bose Road 6 th Floor, Kolkata-700020 Tele-033-66384700 Fax-+91-33-2289 0285 Website- www.adhunikindustries.com	TMT Bars of Gde Fe 500D (Size 8- 32mm)	This HQ letter No 83044/ Steel/916 /E2 Des-3 dated 20 Jul 2022.	19 Jul 2024
9.	M/s Gallantt Metal Ltd Brand: "GALLANTT TMX"	Ward 10BC, Plot No. 123, Ground Floor, Gandhi Dham Kutch, Gujarat-370201 Tel: +91- 2836-228164 Fax: +91-2836-235787 E-mail: gml@gallantt.com Website: www.gallantt.com	TMT Bars of Gde Fe 500, Fe 500D & CRS (Size 8- 32mm)	HQ E-in-C issued vide letter No 83044/ Steel/923/E2 Des-3 dated 29 Jul 2022	05 Jul 2025
10.	M/s Rashmi Metaliks Ltd Brand: "RASHMI TMT"	Premlata Building, 39, Shakespeare Sarani, 6th Floor, Kolkata-700017 Tel: 033-22894255/56 Fax: 033-22894254 E-mail: mkt.domesticdip@rashmigrou p.com Website: www.rashmigroup.com	TMT Bars of Gde Fe 500 (Size 8- 32mm) Fe 500D, Fe 550D (Size 8- 25mm)	HQ E-in-C issued vide letter No 83044/ Steel/974/E2 Des-3 dated 07 Nov 2022	23 Aug 2025
11.	M/s Real Ispat & Power Limited, Chhattishgarh Brand: "G K TMT"	Vrindavan, Near IDBI Bank Civil Lines Rajpur – 492 001, Chhattishgrah Tele – 0771-4224000 Fax – 0771-4224010 Email - real@realisoat.com www.realisoat.com	TMT Bars of Gde Fe 500D	HQ E-in-C issued vide letter No 83044/ Steel/1069/E2 Des-3 dated 16 May 2023	09 Mar 2026

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Sl No	Company Name & Brand	Address	Steel Grade/Sizes	Approval letter	Valid Upto
12.	M/s Steel Exchange India Ltd (AP) Brand: "SIMHADRI TMT"	D No : 1-65/K/60, Plot No 60 Abhis Hiranya, 1 st Floor Kavuri Hills, Hyderabad Telangana-500 081 Tel: 040-23403725/23413267 Email id : info@seil.co.in	TMT bars of Gde Fe 500D & Fe 500D HSCRM	HQ E-in-C issued vide letter No 83044/Steel/1067/E2 Des-3 dated 12 May 2023 and 83044/Steel/1103/E2 Des-3 dated 11 Jun 2023	
13.	M/s Super Smelters Limited Brand: "SUPER SHAKTI"	Premlata 39, Shakespeare Sarani 2nd Floor Kolkata - 700 017 Tele/Fax : 91-33-2289-2734/36 Email : info@supershakti.in Website : www.suoershakti.in	TMT Bars of Gde Fe 500D & Fe 550 (Size 8-32mm)	HQ E-in-C issued vide letter No 83044/Steel/1121/E2 Des-3 dated 27 Jul 2023	13 Feb 2026
14	M/s Shyam Steel Industries Ltd. (WB) Brand: "SHYAM"	Shyam Towers EN-32, Sector – V Salt Lake Kolkata - 700 091 (WB) Tel - 033-40074007, Fax - 033-40074010 E mail - marketingc@sh~amsteel.com Web - www.shvamsteel.com	TMT Bars of Gde Fe 500D & CRS	HQ E-in-C issued vide letter No 83044/Steel/1135/E2 Des-3 dated 14 Aug 2023	30 Jan 2026
15	M/s Jai Balaji Industries Ltd. (WB) Brand: 'BALAJI SHAKTI'	5 Bentinck Street 1 st Floor, Kolkata - 700 001 Tel - 033-22489808/22488173 Fax - 033-22430021/22107893/22426263 E mail - info@jaibalajigroup.com	TMT Bars of Gde Fe 500D & Fe-500D CRS (Size 8-32mm)	HQ E-in-C issued vide letter No 83044/Steel/1137/E2 Des-3 dated 14 Aug 2023	09 Feb 2026
16	M/s MSP Steel & Power Limited, Chhattisgarh Brand: 'MSP TMT 5000'	16/S, Block-A, New Alipore Kolkata 700 053 Tele - 033 4005 7777/2398 2239 Mob - 7381028976 Email - contactus(@msQsteel.com Website - www.mspsteel.com	TMT Bars of Gde Fe 500D (Size 8-32mm)	HQ E-in-C issued vide letter No 83044/Steel/30/E2 Des-3 dated 11 Mar 2024	10 Mar 2026

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(b) **STRUCTURAL STEEL:** The contractor shall procure structural steel section directly from SAIL/TISCO/RINL/JINDAL.

LIST OF APPROVED STRUCTURAL STEEL MANUFACTURERS

Sl No	Company Name & Brand	Address	Steel Grade/ Sizes
1.	Rashtriya (spat Nigam Limited (RINL) Brand: "RINL"	Visakhapatnam Steel Plant Visakhapatnam - 530 031, India Tel: (91 891) 518226, 518376 Fax: (91 891) 518316 Email: cmdvspitpvis.ap.nic.in	Structural Steel (Angle, Beam, Column, Channel, Plate etc.,)
2.	Tata Iron & Steel Company (TISCO, or Tata Steel) Brand: "TATA"	Bombay House, 2, 4 Homi Modi Street Mumbai - 400 001, India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522, 287 0840 Email: corpcomm@jsr.tatasteel.com (Br office for North : Jeevan Tara Bldg, Patel Chowk , New Delhi)	-do-
3.	Steel Authority of India Limited (SAIL) Brand: "SAIL"	Central Marketing Organization, Northern Region 17 th Floor, scope Minar, Laxmi Nagar Distt. Centre, Delhi — 110092	-do-
4.	M/S Jindal Steels and Power Ltd. Brand: "JINDAL"	Jindal Centre, Plot No 2, Sector- 32, Gurgaon-122001, Haryana Tele - 0124 661 2000 Fax - 0124 661 2125 Website: www.jindalsteelpower.com	-do-

NOTE: - Validity period of the manufacturer shall be verified and ensured by GE before approval of any make.

(c) **GALVANISED IRON SHEETS AND FABRIC REINFORCEMENT FOR CONCRETE:** These shall be ISI marked and shall be procured from SAIL / RINL /TISCO or BIS marked manufacturers at the option of the contractor without any minus price adjustment.

17.2.3 Steel section for railing, gates, fencing, guard bars, grills, steel chowkats, hold fasts etc, which do not constitute structural members, can be procured from main producers / secondary producers / BIS marked manufacturers or their authorized dealers at the option of Contractor without any minus price adjustment. Tests for such steel sections shall not be insisted by GE.

17.2.4 The steel will be procured from the storage depots of the main producers/ approved secondary producers (as applicable) and not from their authorized agents/ dealers as the authorized agents deal with the steel manufactured by

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more than one manufacturer. The GE will ensure that contractors place their demand/ requisition of steel with adequate lead time.

17.2.5 All finished steel shall be well and clearly rolled to the dimensions, sections and weights specified. The finished material shall be reasonable free from cracks, surface flaws, laminations, rough jagged and imperfect edges and any other harmful defects and shall be finished in a proper manner. Tolerance on size and weight of reinforcement bars shall not be more than as specified in clause 10.17.4 and 10.17.5 of MES Schedule Part-I and as specified in IS-1786-1985 and IS-2026 and as per relevant IS codes.

17.2.6 Contractor will give to GE manufacturer's test certificate (IN ORIGINAL) alongwith the test sheet giving result of each mechanical test and the chemical composition of steel (as per IS 1786-1985) for reinforcement steel or authenticated copy thereof duly signed by manufacturer with each consignment. The documents such as original purchase vouchers and test certificates in support of the purchase of steel shall be produced by the contractor to the site staff and GE for verification and record.

17.3 APPROVAL OF STEEL BROUGHT BY THE CONTRACTOR

17.3.1 The following action shall be taken by GE before incorporating steel procured by the contractor for the work: -

- (a) Physical verification of steel received to confirm the actual quantity of steel as well as to verify aspects brought out in para 17.2.5 above.
- (b) GE will obtain original machine numbered purchase vouchers of manufacturer from the contractor.
- (c) Verify the documents listed in Sl No.(b) and foregoing above given by the contractor from the manufacturer.
- (d) No consignment or part thereof will be allowed to be incorporated in the work until and unless the test results of independent testing are obtained and the consignment is passed by GE. Schedule or procurement will be prepared keeping in view the time lost for testing etc.
- (e) Three samples of pieces (3m long) of each section of consignment will be retained at the project site till completion of the work. These samples will be suitably marked and properly preserved.

17.4 TESTING OF STEEL

17.4.1 The manufacturers of steel are to carry out inspection and testing of steel in accordance with relevant BIS provisions. The contractor shall submit the manufacturer's test certificate in original or authenticated attested true copy by the manufacturers only along with the test sheet giving the result of each mechanical test as applicable in accordance with relevant IS provision and the chemical composition of steel or authenticated copy with each consignment. The Engineer-In-Charge shall record these details in a steel acceptance register which will be signed by JE(Civil), Engineer-In-Charge, GE and contractor as given in the format (Appendix 'D') hereinafter after due verification and Engineer-in-Charge shall send a certified true copy of test sheet to GE for his

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records. Independent testing of steel / structural steel / GI sheets and fabric reinforcement for concrete by the GE shall be optional at the discretion of the GE in case of procurement of steel from main producers and testing charges shall be borne by the department if the test results are found in order otherwise these shall be borne by the Contractor.

17.4.2 For independent testing, random samples of steel shall be drawn from various lots and shall be got tested from a National Test House, SEMT Wing CME, Regional Research Labs or NABL etc., as per minimum frequency given below. Samples from each lot shall also be tested for quality and elongation. The elongation shall not be less than 18%.

17.4.3 Ultimate tensile strength, elongation, bend and re-bend test for reinforcement steel bars shall be carried out as per Clause 20.5 and test specimen shall be as per clause 11 of IS-1786-1985 and delivery inspection shall be as per clause 12 of IS-1786. Bend tests and tensile tests for structural steel shall be carried out as per IS-2062.

17.4.4 In all cases mentioned above contractor at his cost shall provide all facilities required for the testing. Cost of materials consumed in tests shall also be borne by contractor. The records of such checks shall be maintained in steel test register.

17.5 FREQUENCY OF SAMPLING FOR INDEPENDENT TESTING BY GE

17.5.1 Frequency of nominal mass, tensile strength, bend and re-bend tests of steel for checking nominal mass, tensile strength, bend and re-bend tests, test specimen at random shall be selected by GE at the following frequency: -

(a) STEEL FOR CONCRETE REINFORCEMENT

- | | | | |
|-------|--------------------------|---|---|
| (i) | Bars size less than 10mm | : | One sample (3 specimen for each test for every 25 tonnes or part thereof) |
| (ii) | Bars size 10mm to 16mm | : | One sample (3 specimen for each test for every 35 tonnes or part thereof) |
| (iii) | Bars size over 16mm | : | One sample (3 specimen for each test for every 45 tonnes or part thereof) |

(b) STRUCTURAL STEEL

- | | | | |
|------|--------------|---|--|
| (i) | Tensile test | : | 1 test for every 25 tonnes of steel or part thereof. |
| (ii) | Bend test | : | 1 test for every 25 tonnes of steel or part thereof. |

Note: - For various tests, acceptance criteria, tolerance etc., refer to Appendix "D" and relevant IS Codes.

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- 17.5.2 The testing of GE as per above frequency is mandatory before payment is released to the contractor or steel is incorporated in the work. The frequency of number of samples/tests shall however be increased by the GE for his satisfaction. The cost of these additional tests shall be governed as per Condition 10(A) of IAFW-2249. However, the cost of samples, transportation and other overheads shall be borne by the contractor irrespective of test results.
- 17.5.3 Test shall not be insisted upon for the ordinary quality structural steel required for guard bars, hand fast, grill, hand railing/fencing posts, steel doors and windows, gates and such other allied items.
- 17.5.4 In case test results of testing pursuant to clause 17.4.3 are not within the acceptable limits, then that consignment of steel shall stand rejected and contractor shall remove the same from site at his own cost. The rejected material shall not be incorporated in the work. The contractor shall have no claim on this account.
- 17.5.5 Cost of test samples as per frequency given in clause 17.5.1 above shall be borne by the contractor irrespective of test results.

17.6 DOCUMENTATION

- 17.6.1 Original purchase vouchers from the manufacturer and original or authenticated test certificates of the manufacturers for the total quantity of steel supplied under each consignment to be incorporated in the work shall be produced to the Engineer-In-Charge of the work by the contractor. All consignments received at the work site shall be inspected by the GE along with the relevant documents before acceptance. The original vouchers and the test certificates shall be defaced and signed by the Engineer-In-Charge and kept on record in the office of the GE duly authenticated and with cross reference to the control number recorded in the steel acceptance register. The steel acceptance register shall be signed by JE, Engineer-in-Charge, GE and contractor. The entire quantity of all consignments 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 contractor. The following provisions shall also be complied.
- (a) All original vouchers will be kept in a file serially numbered and to be kept in GE office.
 - (b) Test certificates of each steel consignment will be kept in a file, serially numbered and to be kept in GE office.
 - (c) Steel acceptance register as per Appendix "D" will be maintained by the GE.
 - (d) In / Out register for details of receipt, acceptance/ rejection and consumption of steel will be maintained as per Appendix "E" above.
 - (e) Register containing results of independent and additional testing by GE.

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PARTICULAR SPECIFICATIONS (CONTD...)

- (f) Inspection register.

GE will check the documents personally, connected with the steel, at least once a month and record of these check will be kept in the Inspection Register (Para 17.6.1(f) above).

17.7 STORAGE, ACCEPTANCE / REJECTION OF STEEL

17.7.1 The steel procured by the contractor shall be stored in the site of work as directed by Engineer-In-Charge/ GE neatly in separate stack for various sizes/consignments with distinct paint marks at least 15 cm above GL for identification. The steel as stacked shall be removed for incorporation in the work only in the presence of departmental representative. The quantity of steel of various sizes received at site and recommended for incorporation in the work shall be entered in the separate register and signed by the contractor and the Engineer-in-Charge daily.

17.7.2 Steel will be stored in a manner so as to prevent distortion and corrosion till it is consumed in the work. Any section that has deteriorated and corroded or if considered defective for any other reason, the same shall be removed from site by the contractor at his own cost.

17.7.3 The contractor will keep a separate stack of steel brought at site for inspection, away from the accepted stack of steel. In case, the consignment does not meet any of the requirements of the relevant IS codes, the steel will be rejected by the GE and it will be removed from the site within 24 hours at the cost of the contractor.

17.8 CONVERSION WEIGHT OF STEEL

17.8.1 The weight of steel shall be calculated as per the conversion factors specified in the SSR. For sections not listed on SSR, the ISI conversion table shall be followed or manufacturers certificate if the weights are not available in SSR/ISI tables.

17.8.2 Normal waste and off cuts shall be stacked neatly which shall be the property of the contractor. Contractor shall be allowed to remove such cut pieces after inspection and certification of the Engineer-in-Charge.

17.8.3 Advance on accounts of payments made towards these cut pieces shall be recovered from advance on account of payments immediately falling due and before removal of such cut pieces from site.

17.9 PAYMENT IN RAR

17.9.1 Payment of the steel brought by the contractor should only be released by the GE after taking action points enumerated in para 20.8 above and after completing the documents hereinbefore in the regard.

PARTICULAR SPECIFICATIONS (CONTD...)

17.9.2 Before payment of steel, contract shall be read thoroughly and various grades/types of steel to be incorporated in the work shall be identified by the contractor and got approved by GE. No overpayment shall be made on this account in the RAR. Steel shall be procured sufficiently in advance as mentioned hereinafter under clause 20.11.

17.10 SAFETY OF STEEL

17.10.1 It will be the responsibility of contractor to make sure that all possible arrangement are made for safe custody of the steel. In case of any loss of steel, only contractor will be responsible and the loss will be made good without any delay or claim whatsoever.

17.11 SCHEDULE OF SUPPLY

17.11.1 Contractor shall work out complete requirement of steel size wise and phase the same as per activities planned to be executed in terms of CPM networking. The contractor shall procure all the steel sections in accordance with this CPM chart. Schedule of supply of steel will be finalised by GE in consultation with contractor and the same will be incorporated in CPM chart so that supply of steel is monitored in a way to avoid any delay in completion of the work. The schedule of supply of steel will be vetted by GE from time to time.

17.12 WELDING

17.12.1 Welding wherever shown on drawing shall be by metal arc process in accordance with IS 816 and IS 822 unless specifically indicated otherwise on drawings. Electric welding shall be metal arc welding as specified in Para 10.15 of MES Schedule Part-I.

17.12.2 Welding electrodes shall be ISI marked and of quality suitable for welding of structural steel and shall comply with requirement of IS-814 for covered electrodes for metal arc welding of mild steel.

17.12.3 Unless otherwise specified, the fillet welds shall be of 6mm size. All butt welds shall be full penetration welds.

17.13 BINDING WIRE

17.13.1 Binding wire for reinforcement shall be mild steel wire annealed not less than 0.9mm dia.

17.14 HOLD FASTS/LUGS

17.14.1 Flat iron hold fasts/lugs shall be provided by welding. Hold fasts/lugs shall be embedded in RCC while being cast with suitable anchor length. Hold fasts/lugs shall be hot tarred and sanded before fixing in position.

17.15 MILD STEEL FOR GENERAL PURPOSE

17.15.1 Ordinary quality structural steel wherever mentioned shall be conforming to IS-2062 of grade E-165 (Fe-290) and shall be used for doors, windows, guard bars, grills, steel gates, hand railing, fencing posts, ladders etc.

PARTICULAR SPECIFICATIONS (CONTD...)**17.16 RAIN WATER PIPE**

17.16.1 Rain water pipe shall be of UPVC pipe and fixed all as directed by Engineer-in-Charge. Rain water pipe shall be provided with a bend at ground level.

18.0 FLOORING**18.1 GENERAL**

18.1.1 Floors shall be laid to levels or to falls as directed by the Engineer-in-Charge. Floor finish shall be extended over dwarf walls, doors and other openings.

18.1.2 The dividing line between the floors of different types wherever they so meet between adjoining rooms, shall be determined on the basis of the finish visible when the doors are closed and applicable finish shall accordingly be provided.

18.1.3 Sub floor/ sub base shall be laid all as specified in SSR Part – I.

18.1.4 Dividing strips shall be of glass 3mm nominal thickness and to the thickness of wearing course in case of PCC. Top of dividing strips shall be finished smooth with top surface of floor. However, the bays shall be laid alternately.

18.2 PCC FLOOR

18.2.1 PCC floor finishes shall be provided as indicated in BOQ and shall be of PCC M-20 unless otherwise specified. The under layers shall be PCC Sub-base M-7.5, over hardcore over rammed earth filling of thickness as specified in Schedule of finishes drawings.

18.2.2 The concrete floor surfaces shall be finished even and smooth without using extra cement as specified in MES Schedule Part-I.

18.2.3 Chequered finishes wherever indicated shall be finished with the impressions of expanded metal while the concrete is green as specified in MES Schedule Part-I.

18.3 CERAMIC TILES IN FLOORING

18.3.1 Ceramic tiles shall be of non – skid superior finish/ matt finished variety, light coloured, 1st quality as specified in clause 13.14.2 of MES SSR Part – I. Tiles shall conform to Group B-II of IS 15622. Size of tiles shall be as mentioned in BOQ. The tiles shall be procured from any one of the firms mentioned in Annexure enclosed here-in-after. Colour of tiles shall be as approved by GE. Contractor shall submit necessary test certificate at his own cost and cost of same shall be deemed to be included in the lump sum. The tiles shall be laid over screed as indicated in BOQ.

18.4 POLISHED GRANITE SLAB

18.4.1 18 to 20mm thick polished granite slab (one side polished) of black colour as approved by GE. The under layers shall be as specified in BOQ.

18.5 CERAMIC TILES IN DADO/SKIRTING

18.5.1 Glazed Ceramic Coloured tiles wherever mentioned shall be of glossy finish, light coloured, 1st quality as specified in clause 13.14.1 of MES SSR Part – I. Tiles

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PARTICULAR SPECIFICATIONS (CONTD...)

shall conform to Group B-III of IS 15622. The skirting/dado tiles should match with the flooring tiles. The tiles shall be procured from any one of the firms mentioned in list of manufacturers listed in Annexure here-in-after. Texture, tint and colour of tiles shall be as approved by GE. The tiles in skirting shall match with the adjacent flooring. Contractor shall submit necessary test certificate at his own cost. The tiles shall be fixed over backing coat as specified in BOQ. 13.5.2 Laying, jointing and finishing shall be done all as specified in clause 13.40.1 to 13.40.2 of MES Schedule 'A' Part-I.

19.0 WATER PROOFING TREATMENT TO ROOF SLAB LAID TO SLOPE / SUNKEN PORTIONS

- 19.1 Water proofing treatment to roof slab / sunken portions shall be carried out as detailed in BOQ in locations as directed at site. Water proofing treatment shall be carried out by the authorized applicators of manufacturer only. GE shall verify the authenticity before permitting to carryout the treatment.
- 19.2 Over the primed surface APP modified water proofing polymeric membrane shall be reinforced with non woven polyester mat weighing not less than 160 gms per sqm having softening point not less than 140 degree centigrade, longitudinal tensile strength not less than 800 N per 5 cm , tearing strength of 180 N with minimum of 10 cm side laps and 15 cm end laps shall be laid by application of torch all as per manufacturer's instructions complete.
- 19.3 Proper care shall be taken to provide similar treatment near junction of roof and parapet to avoid any leakage through junction.
- 19.3.1 **Test Certificate:** Contractor shall submit attested copy of manufacturers test certificate and cash memo bill / invoice in original for water proofing membrane before claiming payment and incorporating the same in the work.
- 19.3.2 The work of water proofing treatment shall be carried out under the guidance of manufacturer of water proofing membrane and a certificate to this effect shall be taken by the contractor from the manufacturer and shall be submitted to GE before completion of work.
- 19.3.3 **FLOOD TEST OF ROOF:** On completion of water proofing treatment as described hereinbefore, the contractor shall carryout flooding test by forming earthen bunds over the roof at suitable intervals as desired by GE. Water will impounded for three days and leakage / seepage noticed shall be rectified by the contractor to the satisfaction of GE at no extra cost to Government. The cost on this account shall be included in relevant items in Sch "A" quoted for the work.
- 19.3.4 At the junction of parapet and RCC roof, PCC benching in 1:2:4 type B1 shall be provided to drain off rain water before laying water proofing treatment over the roof slab. Proper care shall be taken to provide similar treatment near junction of roof and parapet to avoid any leakage through junction. The water proofing treatment shall be extended upto a height of 30 cms on wall.

PARTICULAR SPECIFICATIONS (CONTD...)**19.4 GUARANTEE FOR WPT**

19.4.1 The contractor shall give a written guarantee for effectiveness of roofing treatment for 10(TEN) years from certified date of completion of entire work. For this particular contract a guarantee amount calculated at 2.5% based on rates quoted for connected items of BOQ and shall be retained from payment due to the contractor for the entire guarantee period. The amount shall be released after successful expiry of the guarantee period. The amount so with held shall not carry any interest. The contractor may however, furnish a fixed deposit receipt in lieu, from a Scheduled Bank pledged in favour of Garrison Engineer for the period of guarantee. However, the guarantee amount will be released to the contractor if a fixed deposit receipt in favor of GE for 10 years is submitted by the contractor. The fixed deposit receipt amount shall be released to the contractor after expiry of guarantee period satisfactorily.

19.4.2 Should the GE at any time during the construction or prior to the expiry of the said guarantee period of 10 years find that the buildings have been found leaking, the contractor, on demand in writing from the GE, notwithstanding the same may have been inadvertently passed / certified and paid for, will forthwith undertake to carry out such treatment which may be necessary to render the buildings free from leakage at his own expense till the expiry of the guarantee period. In the event of contractor's failure to comply with the GE's direction within the stipulated period to be specified by the GE, in the aforesaid demand, the GE may undertake such treatment at the risk and expense in all respects of the contractor. The liability of the contractor under this condition shall not extend beyond the period of 10 years from the certified date of completion, unless the GE had previously given notice to the contractor to rectify the defects. The defects liability period mentioned under condition 46 of IAFW-2249 General Conditions of Contracts shall be amended accordingly for the purpose of this condition.

19.4.3 The contractor shall provide a plaster plate of size 300mm x 300mm x 10mm in location as decided by the Engineer-in-Charge on the wall of the building in cement mortar 1:4, 10mm thick indicating the following details under the head "DETAILS OF WATER PROOFING TREATMENT" by engraving and painting in black. The cost of the plaster plate is deemed to be included in the rate quoted.

- (a) CA No.:
- (b) Name of Contractor:
- (c) Date of Expiry of guarantee of water proofing treatment:

19.4.4 The Performance Security Deposit referred to Condition 19 of General Conditions of Contract (IAFW-2249) is independent of the guarantee amount referred hereinbefore. Conditions 40 and 68 of General Conditions of Contracts (IAFW-2249) is deemed to be amended to the extent mentioned above.

20.0 PLASTERING/POINTING**20.1 GENERAL**

20.1.1 Plaster and/or skirting/dado shall be returned in jambs, soffits or lintels and windows cills etc.

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PARTICULAR SPECIFICATIONS (CONTD...)

- 20.1.2 Where plaster on concrete surface is shown to match the adjacent wall surfaces, the mix of plaster shall be as for the brick surfaces.
- 20.1.3 All plastered surfaces shall be troweled to smooth and even surfaces without using extra cement and external plastered surfaces shall be finished even and fair.
- 20.1.4 All external plastering shall be carried out upto 15 cm below the top level of plinth protection.
- 20.1.5 All corners, angle, junctions, and edges shall be truly vertical or horizontal as the case may be and shall be carefully finished. Corners around jambs of openings and junction of walls shall be rounded to minimum radius of 5 mm.
- 20.1.6 Contractor shall take note of local practices and local availability of materials like bricks, stones, form work etc., for any extra quantity of mortar required for rendering smooth, extra dubbing required, touching up properly and achieving smooth and even surfaces.
- 20.1.7 Where dados/skirting are provided, the internal plaster shall commence from the top of the dado/skirting.
- 20.1.8 Cement mortar in all situations shall be machine mixed at the discretion of the contractor. In case of deviation, the rate as given in MES Schedule Part – II shall however apply subject to contractor's percentage.
- 20.1.9 Thickness of cement plaster mentioned here-in-after is the net thickness above the proudest part on masonry walls. Nothing extra shall be paid for dubbing.

20.2 MATERIALS

- 20.2.1 **CEMENT AND SAND.** Refer MES Schedule Part –I Clause 4.3 for cement and clause 14.5 to 14.5.2 for sand and PS Clause 5.2.2 to 5.2.4 here-in-before.

21.0 FINISHES**21.1 WHITE WASHING**

- 21.1.1 Three coats of white wash (lime) shall be provided where indicated in drawings as shown in schedule of finishes and all as specified in MES Schedule. White wash shall be prepared and applied all as specified in clause 15.12.1 to 15.12.3, and 15.12.5 of MES Schedule Part – I. For white washing on ceiling, adequate quantity of zinc oxide shall be added to lime wash for achieving egg white shade. Skirting and dado are not to be white washed. Lime shall be ready mixed type and shall be procured from any one of the firms mentioned in the list of manufacturers attached here-in-after.

PARTICULAR SPECIFICATIONS (CONTD...)**21.2 OIL BOUND DISTEMPER**

21.2.1 Two coats of oil bound distemper over a coat of alkali resistant primer with wall care putty shall be provided as per BOQ. The tint of the paint shall be as directed by GE. Preparation of surfaces and application of distemper shall be done as specified in clause 15.14.1, 15.14.3 to 15.14.5.3 of MES Schedule Part-I.

21.3 EXTERIOR EMULSION PAINTING

21.3.1 Weather proof exterior emulsion painting shall be provided at locations as indicated in Schedule of finishes. Weather proof paint shall be of (first quality) exterior paint of approved paint manufacturers.

21.3.2 Paint for under coat and finishing coat shall be of same manufacturer and applied as per manufacturer's instructions. Colour and Tint shall be as approved by GE.

21.4 CEMENT BASE PAINT

21.4.1 Where cement based paint shall be provided as per BOQ, apply two coats of water proofing cement based paint as per manufacturer's instruction all as specified in clause 15.15 to 15.15.12 of MES Schedule Part I. The tint of the paint shall be as directed by the GE. The paint shall be of first quality and shall conform to relevant IS. Silicon based water repellent compound need not be used separately while preparing of cement based paint, in case, the same has been added by the manufacturer while manufacturing of cement based paint shall be as per manufacturer's literature.

22.0 PAINTING

22.1 All synthetic enamel paint shall be of superior quality manufactured by the standard firms listed here-in-after. This shall be of first quality.

22.2 The contractor shall inform the GE, within four weeks of the acceptance of the tender, the brand names of manufacturers of paint proposed to be used in the works and submit samples thereof well in time and obtain prior written approval of the GE before their use in work.

22.3 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 relevant Indian Standard.

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

22.5 Tint of paint, if not mentioned in drawings/Schedule of finishes will be approved by the GE.

22.6 Prepare surfaces and apply two coats of synthetic enamel paint over a coat of primer to all exposed faces of wood work in joinery etc., other than covered with laminated sheets or surfaces for which other treatment is specifically indicated.

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PARTICULAR SPECIFICATIONS (CONTD...)**22.7 WORKMANSHIP**

22.7.1 All wood work surfaces required to be painted shall be smoothened, sized and knotted and then applied with pink priming coat. Stopping and filling (filler coat) shall be done after priming coat and surface rubbed down to a level of smooth surface and thereafter under coat and finishing coat applied, all as specified in Clause 17.6 to 17.6.5 of MES Schedule Part – I. Steel and iron work shall be painted in the manner as specified in Clause 17.8, 17.8.1, 17.8.3 to 17.8.6 of MES Schedule Part – I.

22.7.2 No treatment shall be given to reinforcement.

22.7.3 All steel surfaces (except GI pipes) exposed to view but not covered in Schedule of finishes or their finishing is not specifically indicated in any other drawings or specified elsewhere, shall be given two coats of synthetic enamel paint over a coat of zinc chrome primer of tint as directed by GE.

22.7.4 Bottom of door shutters shall be given one coat of primer only.

22.7.5 Irrespective of what is indicated on drawings and specified elsewhere, finishing coat and under coat shall be with synthetic enamel paint.

22.8 TARRING

22.8.1 The back of steel members / wooden members in contact with brick work/plaster etc. and also steel surfaces embedded in walls shall be given two coats of tar.

22.9 CREOSOTING

22.9.1 Creosoting shall be done for hidden wooden surfaces all as specified in clauses No. 17.11 to 17.11.2 of MES Schedule Part – I.

23.0 GLAZING

23.1 Sheet glass shall be of ordinary glazing quality confirming to IS-2835. Figured glass shall be of “Pin-head” pattern.

23.2 Glazing to steel windows and ventilators shall be of ordinary quality plain sheet glass all as shown on drawings. In case thickness is not mentioned in the drawings the same shall be of 4mm. However, in case of toilets/ WCs, 4mm thick figured glass shall be provided. Sheet glass shall be of ordinary glazing quality confirming to IS-2835. Figured glass shall be of “Pin-head” pattern.

23.3 Glazing shall be all as specified in MES Schedule. The glass to be fixed to steel frames where shown on drawings shall be fixed with special spring glazing clips with oil putty as specified in MES Schedule Part-I.

24.0 MISCELLANEOUS ITEMS.

24.1 All items as given in this clause shall be provided as directed and specifications given below.

PARTICULAR SPECIFICATIONS (CONTD...)**24.2 NICHE SWITCH BOARD**

24.2.1 All surfaces of the niche shall be plastered to match the surrounding surfaces. Size of niche shall be to suit the size of steel boxes to be provided.

24.3 PVC WATER TANK

24.3.1 Provide PVC water tanks of capacity as per Sch "A". The tanks shall be of triple layered and shall be procured from approved manufacturers listed in Annexure here-in-after. Water tank shall be placed on PCC platform in cement concrete 1:2:4, type B1 100mm thick with PCC curb in PCC 1:2:4, type B1 as shown on drawing PVC water spouts 4 Nos of 50 mm dia and 100mm long shall also be provided as shown on drawing.

24.3 MIRROR

24.3.1 Polished sheet glass mirror shall be 5.50mm thick of Ist quality with 6mm thick AC sheet backing. The mirror shall be 600mm x 450mm with bevelled edges and square corners polished including backing and fixed to wall with brass screws in gutties. Soap niche shall be provided below each mirror.

25.0 EXTERNAL WATER SUPPLY**25.01 SCOPE**

The works of external water supply shall be executed as ordered under Sch'A' and as specified in MES Schedule Part I as applicable.

25.02 MATERIALS

All water tubing shall be mild steel galvanized, and grade all as described in Schedule 'A and shall be procured from approved manufacturers listed hereinafter. The fittings shall also be of same material as that of pipe and to be procured by the contractor. The pipes for supply of water to all fittings shall run on the walls except where otherwise specified/shown on drawings. Where pipe crosses the wall, sleeve piece of suitable dia/length shall be provided to accommodate the pipe to allow freedom to expansion and contraction and other movements and the cost of same shall be deemed to be included in the lumpsum cost of buildings. The holes in the walls and in floors shall be made good to match with the adjoining surfaces all as specified in clause 18.51.4 of MES Schedule Part - I. The contractor shall use proper bends, elbows, tee etc at turning corners. Contractor shall provide screwed plugs to all open ends of pipe or completion of days work. Mild steel galvanized tubes and fittings shall comply with the specifications given in clause 18.4 to 18.4.5 of SSR Part-I.

25.03 PROTECTION OF EXISTING WORK

25.03.1 All pipes water mains etc met during the course of excavation shall be carefully protected and supported without any extra cost to the Government. 23.3.2 The lumpsum quoted by the tenderer against various items of Schedule 'A' shall be deemed to be included in their quoted rates for all the contingencies including testing system and nothing extra will be paid by the department on this account.

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PARTICULAR SPECIFICATIONS (CONTD...)**25.4 LAYING AND JOINTING OF GI PIPES (EXTERNAL WORKS)**

(a) The width and depth of trenches shall be as indicated in clause 18.50.1 of SSR Part-I for GI pipes. Laying and jointing of GI pipes shall be as per clause No 18.50 of MES Schedule Part-I.

(b) Cutting and threading shall be carried out as indicated in clause 18.50.2 of MES Schedule Part-I for GI pipes.

(c) Jointing shall be carried out as specified in clause 18.50.3 of MES Schedule Part-I for GI pipes.

25.5 VALVE CHAMBER

25.5.1 Valve chamber shall be constructed to the size and description as given in Schedule 'A' item and as per details shown on drawing. If there are any variations between Schedule 'A' item description and drawing, contractor shall provide all as per description of Schedule 'A'.

25.6 SLUICE VALVE

25.6.1 The sluice valves shall comply with the requirement of IS – 14856 and shall be of PN 1.6 as specified in Schedule and bearing ISI marking. The sluice valve Shall be fixed in position as specified in clause No 18.57 of MES Schedule part-I.

25.7 RUN LEAD JOINTS

25.7.1 Run lead joint shall be carried out as per Schedule 'A' item. The method of joint shall be followed as stated in MES Schedule Part I in clause No. 18.48.2 and 18.48.2.1 to 18.48.2.3. The quantity of lead and spun yarn shall be as given in Clause No.18.48.2.4 of SSR Part-I.

25.8 TESTING OF PIPE LINE AFTER LAYING

25.8.1 Testing shall be carried out by the contractor all as specified in clause No 18.54 and 18.55 of MES Schedule Part-I in the presence of Engineer-in-Charge. If any fittings, specials, joints leak during testing, the same shall be rectified by the contractor without any extra cost to the Government. The lumpsum amount quoted by the tenderers against the Schedule 'A' is deemed to include for the above provision and no extra claim will be entertained on this account.

25.9 MAKING GOOD

25.9.1 Roads, footpath including side drains if any cut through for trenches shall be made good by the contractor to match the original specification as directed by the Engineer-in-Charge. When roads shave to be crossed, half the width of the road shall be dug at a time and proper warning notices, signs and lights shall be displayed and watchman posted by the contractor at his own cost.

PARTICULAR SPECIFICATIONS (CONTD...)**25.10 GATE VALVE / GLOBE VALVE**

25.10.1 Gate valve/Globe valve shall be of gun metal with wheel head, screwed both ends for GI pipes. The weight of gun metal gate valve shall be as specified in Clause No. 18.102.1 of SSR Part – I and conform to the provisions of IS 778 specifications bearing ISI mark. The valves shall be procured from any one of the manufacturers listed here-in-after. Fixing of valves shall be carried out all as specified in Clause No. 18.62 62 & 18.102.2 of MES Schedule Part – I.

25.11 GUN METAL GATE VALVE

25.11.1 Gun metal gate valve shall conform to relevant ISS and shall be procured from approved manufacturer.

25.12 BALL VALVES

25.12.1 Ball valves shall be of brass, high pressure type and shall conform to IS 1703-1977. The float shall be of polythene all as specified in Clause No. 18.19 of SSR Part I - 2009.

25.12.2 The finished mass of ball valve shall be not less than 0.45 Kg for 20 mm dia exclusive of float. The wall thickness of float shall be 2 mm for 20 mm dia ball valve.

25.13 STOP VALVE

These shall be confirm to IS 781-1984 and shall be procured from approved manufacture.

25.14 FLOAT VALVE

These shall be of high pressure type with polyethene float, brass rod all as per IS 1703 and clause No 18.19 of SSR – 2009 (Part-I)

25.15 CI PIPES AND FITTINGS

25.15.1 CI pipes shall be of grade as indicated in schedule 'A' and shall be conforming to latest IS-1536 and all as specified in clause 18.2 of MES schedule Part-I. CI fittings shall be all as specified in clause 18.2.3 of MES schedule part-I laying and jointing of CI pipes shall be all as specified in clause 18.46 and 18.48 of MES schedule part-I. The testing of CI pipes shall be carried out in accordance with clause 18.54 of MES schedule part-I.

25.15.2 Rubber gasket for jointing shall comply with IS-5382-1985 specification for rubber sealing rings for gas mains, water mains and sewers. Rubber rings shall be free from extractable substance, which impart taste, smell or toxicity to water.

PARTICULAR SPECIFICATIONS (CONTD...)

25.15.3 Pig lead required for run lead joints shall comply with IS-782-1978. It shall be of uniform quality clean and free from foreign materials and shall be of uniform softness and capacity of being easily caulked and driven.

26.0 EXTERNAL ELECTRIC SUPPLY**26.1 CONFORMITY WITH INDIAN ELECTRICITY ACT, RULES ETC**

26.2 All electrical work shall be carried out in conformity with the requirements of the Indian Electricity Act 1910 and Indian Electricity rules 1956 framed there under and fire insurance act as applicable and also the relevant regulations of electric supply authorities concerned as amended from time to time.

26.3 EXECUTION OF WORK

26.3.1 The work of electrical installations shall be carried out under the supervision of a person holding a certificate of competency issued by the recognized authority.

26.4 TESTING GENERAL

26.4.1 All electrical work shall be systematically tested by the contractor in presence of GE to ensure compliance with the specifications laid down. Test results shall be recorded and signed by the contractor and Engineer-in-Charge. If the results are not acceptable, all repairs and replacements and extra work of removal and relaying or re-fixing shall be carried out by the contractor at his expense and installation re-tested, until test results indicate compliance with the prescribed requirements. The contractor shall supply all the necessary apparatus; labour and instruments or equipment's required for testing.

26.5 ACSR CONDUCTORS

26.5.1 Aluminium conductor galvanized steel reinforced (ACSR) conductors shall be made of seven or more aluminium and galvanized steel wires built up in concentric layers. The centre wire or wires are of galvanized steel and outer layer or layers of aluminium. Stranding and size of conductor shall be as specified in Schedule 'A'. Natural grease shall be applied between the layers of the wire. Conductor for over head power transmission shall conform to IS 398-1976 and as specified in Clause No. 19.10 of MES Schedule Part I.

26.5.2 The ACSR conductors shall be and laid as specified in Clause No. 19.56 to 19.66 of SSR Part – I.

26.6 PIN, DISC & SHACKLE TYPE INSULATORS

26.6.1 Pin, disc and shackle type insulators shall conform to relevant IS and as specified in Clause No. 19.6 & 19.54 of MES Schedule Part – I.

PARTICULAR SPECIFICATIONS (CONTD...)**26.7 GI PIPE LIGHT GRADE**

26.7.1 GI pipe of grade as specified in Schedule 'A' and shall conform to IS and fittings shall be galvanised and conforming to IS-1239 (Part-II). Pipes for drawing cables shall be all as described in Sch 'A'.

26.8 ANTI CLIMBING DEVICES

26.8.1 Anti climbing devices shall be provided to prevent unauthorized climbing of HT lines supports as per IE Rules 91. Barbed wire fencing conforming to IS 278 of 1969 shall be provided all as specified in Schedule 'A' commencing from a height of 3.5 m and upto a height of 5 to 6 m as directed by Engineer-in-Charge.

26.9 DANGER NOTICE BOARD / PLATES

26.9.1 Danger notice board/plates shall be provided at locations as directed by Engineer-in-Charge. The size and thickness of board/plate shall be all as specified in Schedule 'A'. Danger notice board shall comply with IS 2551 – 1982. Rear side of plate shall be finished with enamelled paint.

26.10 EXPULSION TYPE LIGHTENING ARRESTERS

26.10.1 Expulsion type lightening arrestors shall be of capacity as specified in Schedule 'A' and comply with specifications contained in IS : 3070 (Part 2) – 1989. These shall conform to specifications given in Clause No. 19.13 & 19.13.1 and provided all as specified in Caluse No. 19.67 of SSR Part – I.

26.11 DISTRIBUTION BOARD AND MCBs

26.11.1 Provide distribution board and MCBs as indicated in BOQ. Miniature circuit breaker shall comply to the requirement of IS-8828-1996. The MCBs shall have rupturing capacity of 10 KA. The terminals of MCBs should be brought out sufficiently to connect cable lugs directly. No adapter should be used for terminating the cables. The MCBs should have quick-break-tip free mechanism to ensure that contact cannot be closed against persistent fault. Bus bars shall be electroplating copper tin plated and rated 200 Amps. Exposed faces of sheet steel enclosures shall be painted with epoxy polyester powder coating at factory. Neutral has same number of outgoing holds as the number of MCBs. Unit rate in Schedule 'A' shall also be deemed to include for all internal connections in the distribution board and bus bar system is completely insulated and fitted in PVC channel to avoid accidental toner, bus bar available in single phase and 3 phase shall be colour coated suitable for both flush and surface mounting.

26.11A LED LIGHT FITTINGS

26.11A.1 LED light fittings along with lamp shall be as specified in Sch „A“.

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26.11A.2 The quoted rates of contractor shall include the cost of wiring, pipes, earth wires, clamps, nuts, bolts, testing, etc., unless otherwise specifically measured elsewhere.

26.11A.3 The LED fittings shall also comply with the following requirements.

(a) The LED lights / luminaires supplied should comply with the provisions laid down in IS-16101, IS-16102 Part-I & Part-II, IS-15885 Part-II, Sec 13, IS-16104, IS-16105, IS-16106, IS-16108-2012 and LM 70.

(b) All LED light products must have replacement warranty of 50000 hours from the date of completion of the contract.

(c) The product shall be replaced free of cost in the following cases:-

- (i) Manufacturing defects.
- (ii) Failure due to mechanical and electrical defect.
- (iii) Drop in lumen (or lux at 1m) below 90% of claimed values (or lux at 1m) of the LED /luminaires.

(d) The firm must have All India foot print, its own R&D and should be a leading manufacturer of LED lights or luminaires.

(e) The contractor shall submit the following certificates from the manufacturer for LED light fittings (both light and driver).

- (i) Surge protection certificate.
- (ii) Type test certificate LM-79, LM-80 for all luminaires alongwith detailed technical catalogue duly signed and sealed by the manufacturer.

(f) Owing to continuous innovation and improvements in LED light fittings by manufacturers, the contractor shall provide latest version of the LED fittings with high lumens output and system efficacy which are available in the market during the execution of works.

(g) For any change in product or change in catalogue number etc due to technological upgradation, letter has to be obtained from the lighting company on their letter head signed by an official of National level only.

(h) All the LED fittings shall be identified by printing or fixing stickers duly mentioning the CA number and date of completion.

(j) Sample approval must be obtained for any type of LED light fittings before incorporating in the works.

26.12 EARTHING

26.12.1 The earthing shall be in accordance with section 19 clause 19.137 of MES Schedule Part – I and as per electrical plate No 3 of SSR Part-I. Earthing as

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described in BOQ shall be executed in the presence of MES representative. Excavation for earth pit may be in any type of soil, excavation shall be passed by Engineer-in-Charge before filling in. Surplus soil if any shall be removed to a distance not exceeding 50 meters and the site left clean and tidy. Concrete in earth pit shall be 1:3:6 type C1 using 20 mm graded stone aggregate.

26.12.2 The maximum continuity resistance from any point of the installation including the earth continuity conductor and earth lead to the earth pit shall not exceed 1 ohm.

26.12.3 All metal works associated with wiring system other than current carrying parts including the cable sheathed and armoured conduit, ducts and box shall be connected to the earth continuity conductor as required under Indian Electricity Rules 1965 and IEE wiring regulations. The earth terminal of socket outlet etc. shall be connected to the earth continuity conductor. The sizes of all the earth continuity shall be as specified in respective Schedule 'A' items. Testing of earthing shall be carried out as per clause No 19.146 of MES Schedule Part – I.

26.13 CABLE JOINTS

26.13.1 Jointing work shall be carried out only by a licensed/experienced cable jointer. Sufficient surplus cable approximately 3 meter shall be left on each end of the cable and on each side of underground joints at the time of original installation. A caution board indicating “ CAUTION CABLE JOINTING WORK IN PROGRESS” shall be displayed to public and traffic where necessary.

26.14 CABLE TERMINATION AND JOINTING KITS

26.14.1 Cable termination and jointing kits shall be of grade and type as specified in Schedule 'A'. The contractor shall supply technical literature and test certificates and jointing instructions issued by manufacturer. Jointing kits shall bear name of manufacturer, date of manufacture and expiry date on the kit with size, type and or cable for which it is suitable. Cable jointing shall be carried out all as specified in Clause No. 19.85 of SSR Part – I.

26.14.2 Cable termination and jointing for HT cables shall be as specified in Schedule 'A' and as specified in Clause No 19.85.2 of SSR Part – I.

26.15 GANG OPERATED AIR BREAK SWITCHES

26.15.1 These shall be of out door type and all as specified in Schedule 'A'. These shall provide all as specified in Clause No. 19.69 of SSR Part – I.

26.16 TUBULAR STEEL POLES SWAGED

26.16.1 Swaged tubular poles shall comply with the requirements of IS-2713 (Parts 1 to 3) of 1980 and as specified in Clause No. 19.3 of SSR Part – I. The designation, length and size of poles to be provided shall be as specified in Schedule 'A'. Irrespective of what is shown on drawings a pad of cement concrete 150mm thick shall be provided at the bottom of the pit before the pole is erected. The pole shall

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be encased in cement concrete, the foundation being continued upto 20 cm above the ground level and tapered to form a collar and as specified in Clause No. 19.51 pf SSR Part – I. The mix and size of concrete foundation shall be as specified in Schedule 'A'. The excavated earth shall be refilled around concrete foundation and consolidated

26.17 CROSS ARMS

26.17.1 Steel for arms shall be of single iron or channel sections as decided by Engineer-in-Charge. Steel used for cross arms shall be ordinary quality structural steel conforming to IS-226-1975 and grade FE-410-0 Cross arms to be provided shall be in one piece, sound and free from defects, Cross arms shall be given a coat of primer and two coats of synthetic enamel paint as described in Sch 'A'

26.17.2 Cross arms shall be fabricated all as directed by Engineer-in-Charge and all as specified in clause 19.9 on srl page No.42-5 of MES Schedule part-I (2009).

26.17.3 Cross arms shall be fixed to poles by means of suitable clamps made to shape MS flats of not less than 50x60mm.

26.18 XLPE CABLES

26.18.1 XLPE cable shall conform to IS-7098 (Part – I) for LT and IS : 7098 (Part – 2) for HT cables. Testing shall be carried out as per Appendix 'F' to IS – 1255-1983 for test voltages and for other parameters as per clause 19.93 of SSR Part – I (Specifications).

26.18.2 Cable shall be laid in trenches all as specified in clause 19.74 to 19.76 of SSR Part-I.

26.19 CABLE, LAYING AND RECORDS

26.19.1 The following essential data shall be furnished by the contractor as cable record of all buried cable installations:-

26.19.2 Factory certificates of each cable drawn shall be furnished by the contractor.

(a) Size and make of cable.

(b) Cross sections showing where cables are laid in pipes or trenches giving their size, type and depth.

(c) Position and depth of all pipes, ducts, etc; which are met and obstructions to the cable route.

(d) Record of accurate lengths from joint to joint and phase sequence between joint of each of cable run.

PARTICULAR SPECIFICATIONS (CONTD...)**26.20 TESTING OF CABLES :-**

(a) Testing during laying : XLPE cables shall be megger tested by HV 2500/5000 V Maggar before joining. After jointing is completed pressure test shall be carried out. The cable shall be tested for :-

- (i) Continuity
- (ii) Absence of cross phasing
- (iii) Insulation resistance between conductors.
- (iv) Insulation resistance to earth

(b) Testing after laying : XLPE cables shall be megger tested by HV 2500/5000 V Maggar before joining. After jointing is completed the cable shall be tested for :-

- (i) Insulation resistance test sectional & over all
- (ii) Continuity test sectional & over all
- (iii) Load test.
- (iv) Earth test

26.20.1 Cables shall not be bent to small radius while laying in trenches/ ducts. The minimum safe bending radius shall be taken 12 times the dia of cable. Before laying LT cable, the trenches shall be provided with a layer of sand to the thickness as directed by **GE** for the purpose of cushioning. Cables with exposed ends shall be provided with cable sockets to prevent ingress of moisture into cable.

26.20.2 All jointing of cable in joint boxes etc; shall be done strictly as per manufacturer's instructions. The joint shall conform to relevant IS. Each jointing shall be inspected and passed by **GE**. Random checks shall be exercised by **GE** also and the finding recorded. The PVC cable shall be terminated through a gland, made of steel of suitable size. Before making joints in cables, sufficient loops shall be provided for further maintenance.

26.20.3 Before and after laying and connecting the cable, the insulation resistance of every circuits shall be measured with 1000 VDC megger from phase to phase and from phase to earth in presence of **GE** or in his absence the authorised representative. All test results recorded shall be prepared in quadruplicate and shall be submitted to **GE** duly signed by **GE** and contractor for record.

26.21 CABLE CUSHIONING

26.21.1 Cushioning for cables shall be all as described in Sch 'A' (BOQ) and as directed & Approved.

26.22 BRICK CABLE PROTECTION

26.22.1 Cable covers shall be of sub class 'B' bricks as specified in Schedule 'A'. Bricks shall be laid widthwise as directed by Engineer-in-Charge for protection of cables.

PARTICULAR SPECIFICATIONS (CONTD...)**26.23 PRECAST CONCRETE CABLE COVERS**

26.23.1 Precast concrete cable covers shall comply with IS : 5820-1970 and as specified in schedule of works and clause No. 19.20 of SSR Part-I(2009).Laying of covers shall be as specified in clause No. 19.88 of SSR Part-I (2009).

26.24 SAFETY PROCEDURES AND PRATICES

26.24.1 The contractor shall ensure to provide workmen the safety devices and appliances and safety procedures for working on low, medium and high voltage and apparatus and safety practices listed in IS-5216-1982 shall be followed to the extent applicable by the contractor and his workmen.

26.25 FIRE SAFETY

26.25.1 All electrical equipment's installed by the contractor shall satisfy the requirements laid down in IS-1646-1982 and IS-3034-1981.

27.0 BLANK**28.0 CEILING FAN/ EXHAUST FAN/ WATER COOLER/ ELECTRIC WATER HEATER/ VOLTAGE STABILIZER**

28.1 These electrical appliances / items shall be reputed make and shall have capacity & type as described in Schedule A. Necessary test as per IS shall be conducted for conforming the performance of appliances.

28.2 All the appliances shall be guaranteed minimum 24 months from the certified date of completion of contract. Any repairs/ replacement required shall be carried out by the contractor at his own cost in case of defects developed/ noticed during guarantee periods. All the guarantee certificates obtained from manufacturers shall be handed over to Engineer in charge along with technical literature. Necessary test record will be jointly signed by the contractor and Engineer-in-Charge will be kept on record.

28.3 Electricity for testing shall not be charged.

PARTICULAR SPECIFICATIONS (CONTD...)**30.0 LIST OF MANUFACTURERS**

- 30.1 The make of various items of materials are listed below. The contractor shall ensure that the items of makes (any one) as listed in Annexure only are incorporated in work, which conforms to the relevant specification/ requirements/ stipulation in the contract. However, validity period of the manufacturer shall be verified by GE before approval of any make. The make of items which are not covered in the list of manufacturers/ Sch'A'/ Annexure shall be as approved by GE in terms of Special Condition.
- 30.2 The lists of Manufacturers/approved brands have been grouped in two categories. i.e category I & category II based on requirements given as under: -
- 30.3 Project/Prestigious Buildings:- Category I to be used for CE works costing more than 5 crore and any other work which is prestigious in nature as such specifically stated in the tender documents about prestigious nature of building.
- 30.4 Other Buildings:- Category II to be used in contracts below 5 crore and maintenance works in addition to Category I brand.

Ser No	Description of Item	Name of Manufacturer
1	UGLT XLPE PVC Insulated cables	M/s CCI/ M/s Finolex/ M/s Polycab/ M/s Gloster/ M/s Universal/ M/s RR Kabel/ M/s RPG/ M/s Havells/ M/s KEI/ M/s Plaza/ M/s Paragon/ M/s HPL/ M/s V Guard/ M/s Asian galaxy/ M/s Pymen Cable/ M/s Vishal/ M/s Ultra cab
2	GI PIPES & FITTINGS	M/s Tata, M/s Jindal, M/s BST, M/s Surya, M/s KS Engineering Works, M/s Zenith, M/s Swastik M/s Prakash
3	Synthetic Enamel paint/ Aluminium Paint	M/s Asian Paints/ M/s Nerolac Paints/ M/s Berger Paints/ M/s Shalimar Paints/ M/s Dulux/ M/s Jenson & Nicholson Paints/ M/s ICI Paint/ M/s Jotun/M/s Nippon Paint India Pvt Ltd.
4	Cement Base paint	M/s Super Snowcem, M/s Duracem, M/s Aquacem, M/s Shalimar Paint, M/s Berger Paint, M/s Asian Paints, M/s Accrocem, M/s NITCO, Mumbai M/s Jenson & Nicolson
5	Distemper oil-emulsion (OBD)/ Acrylic Distemper	M/s Asian Paints, M/s Nerolac, M/s Berger Paints, M/s Akzo nobel, M/s Shalimar Paints, M/s Jenson & Nicholson, M/s Jotun, M/s Garware/M/s Nippon Paint India Pvt Ltd
6	Non Skid Ceramic Tiles	M/s Kajaria/M/s Somany/M/s Johnson Tiles/M/s Orient Bell Ltd/M/s Spartek/M/s Regency/M/s Asian/M/s Ambani Vittrified Pvt Ltd/M/s Naveen Tiles
7	Glazed Ceramic wall / Flooring tiles	M/s Kajaria/M/s Somany/M/s Asian Granite Ind Ltd M/s Johnson Tiles/M/s RAK Cements Ltd/M/s Spartek/M/s Regency/M/s Murudeshwar Ceramaic/M/s Orient Bell Ltd/M/s OASIS Vetrified Pvt Ltd/M/s Sunshine Tiles Co Pvt Ltd/M/s Qutone Ceramic Pvt Ltd/M/s VARMORA Granite Pvt Ltd/M/s Aparna Enterprises

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8	DBs/MCB(Miniature Circuit Breakers & MCCB (Moulded Case Circuit Breakers)	M/s Larsen & Tubro / M/s Legrand / M/s ABB / M/s Siemens / M/s Schneider/ M/s Havells/ M/s Standard/ M/s HPL Electric & Power Ltd (HPL) / M/s C&S Electric Ltd (C&S Electric) /Indo-Asian
9	PVC - Soil, waste, rainwater (SWR) & Drainage pipes	M/s Supreme/M/s Prince (Ultra Fit)/M/s Kisan/M/s Finolex/M/s Dinesh/M/s Amogh Plast/M/s Astron Plastic
10	Light Fitting (LED)	M/s Polycab Pvt Ltd, M/s Bajaj, M/s Phillips, M/s Wipro, M/s Crompton, M/s GE, M/s Havells India Ltd, M/s Luker, M/s Halonix, M/s Jaguar, M/s Surya Roshni
11	RCC pipes, drain pipes	M/s Indian Hume Pipes/M/s Everest Asbestos, Hyderabad/M/s Himalaya /M/s Thuluvananikal pipes/M/s Poona Concrete product/M/s Aswathy Spun Pipes/M/s Vardhaman Concrete Product, Pune/M/s Dhere Concrete product, Pune
12	Gun metal Gate Valve	M/s Leader/ M/s Zoloto/ M/s Gem/ M/s SEIKO/ M/s Sant/ M/s Hindustan Metal Industries/ M/s Jaypee/ M/s Kingston/ M/s Hansa
13	Cable Jointing Kit for 11KV / 22 KV	M/s Raychems, M/s Desons, M/s M Seal, M/s Birla-3M, M/s Yamuna Gases& Chemicals
14	Thermoplastic Polycarbonate Cable junction box DB, LT Panel, Feeder Pillar, MCC Panel	M/s Hensel Electric India Pvt Ltd, M/s Sintex, M/s Indo Asian
15	Exhaust Fan/Air Circulator	M/s Crompton, M/s Khaitan, M/s Usha, M/s Bajaj M/s Havells India Ltd, M/s Polycab, M/s Orient, M/s Anchor
16	Water proofing company	M/s Pidilite Indus Ltd/M/s FOSROC/M/s Dr Fixit/M/s EXCOT/M/s IMERMO/M/s SICO/M/s Superaquacem (I) Ltd
17	APP Membrane	M/s STP Ltd/M/s Texsa India Ltd/M/s IWL Ltd/M/s Tiki Tech
18	PVC insulated copper/Aluminium cable 1100 Volts of all types	M/s Jaquar & Co Pvt Ltd/M/s Plaza Cable/M/s Finolex Cable/M/s Anchor Electricals/M/s Havells India Ltd/M/s NICCO/M/s Polycab Wires/M/s RPG Cables/M/s Gloster/M/s RR Kabel /M/s KEI Ind/M/s HPL Electric & Power Ltd/M/s Paragon Cable India M/s Para Flex/M/s GM Modular Pvt ltd/M/s Dneo Cables Pvt Ltd/M/s Grandlay Electricals India/M/s V Guard Industries Ltd/M/s Asian Galaxy Pvt ltd/M/s Fortune Arts Wires & Cables Pvt Ltd/M/s Kalinga/M/s CRI Pumps Pvt Ltd/M/s VK Industries/M/s Cosmo Electric Ind Pvt Ltd/M/s Pressfit/M/s Tamra Dhatu Udyog/M/s Bonton Cable India Pvt Ltd

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19	Modular Switches/Sockets	M/s Anchor Electricals/M/s Legarnd/M/s Crabtree/M/s Havells/M/s Indo Asian/M/s Polycab India Ltd/M/s Larsen & Toubro/M/s Panasonic Life Solutions/M/s Elleys Industries/M/s HPL Electrical Power Ltd/M/s Goldmedal Electricals/M/s C&S Electric/M/s Finolex Cables Ltd/M/s Bentec India Ltd/M/s Honeywell Electricals/M/s VK Industries/M/s Cosmo Electric Ind Pvt Ltd/M/s Hagger Electric Pvt Ltd/M/s Adhunik Switchgear/M/s PM Cona Industries Ltd/M/s Pressfit
20	Precast Concrete Cable Cover	M/s Mehtab Tiles/M/s Patel Furniture Mart/M/s Lucky Cement Block Works/M/s Sukhi Enterprises/M/s Bharat Tiles & Engineering Co.
21	PVC Tank/Polythelene Water	M/s Sintex Indus/M/s Polycon Jaipur/M/s Rotex/M/s Plasto Nagpur/M/s Polywell/M/s Carris Pipes Tubes Pvt Ltd/M/s Okey Polymers Pvt Ltd/M/s JS Polyplast/M/s Ergr Plastic Indus Jodhpur/M/s Vectus Industries Ltd/M/s Ashish Plast/M/s Piyush Plasto Chems Pvt Ltd/M/s Simplex Plast/M/s Kaveri Plasto/M/s Rotamatic Containers Pvt Ltd/M/s Infra
22	Flame Proof Light Fitting (LED/FAN/WELL GLASS/BULK HEAD including accessories)	M/s Sudhir/M/s Flexipro Electricals Nasik/M/s Shyam Switchgear Mumbai/M/s Bajaj/M/s Crompton/M/s Batiga
23	Aluminium Tower Bolt/Aldrops/door handle/Butt Hinges	M/s Argent Industries/M/s Aluminium Udyog/M/s Classic
24	UPVC Doors, Windows and Ventilators	M/s Poly Windows, Pune/ M/s Aparna Profiles Pvt Ltd/ M/s Rajshri Plastiwood, Indore/ Madhu Industries/ M/s Yamuna Interior Pvt Ltd/ M/s Astrapia UPVC Tech Pvt Ltd/ M/s Accura Polytech Pvt Ltd
25	WPC Boards/WPC doors	M/s Rajshri Plastiwood/M/s Yamuna Interior Pvt Ltd/M/s Kumar Arch Tech Pvt Ltd/M/s Navratna Speciality chemicals
26	Factory made Wooden Shutter/Flush Doors/Frames	M/s Goel Brothers, Raipur/ M/s Pioneer Timber, Chandigarh/ M/s Goyal Industries, New Delhi/ M/s Jain Doors Pvt Ltd, Haryana/ M/s India Wood & Wood Pdts, Mangalore/ M/s A1 Teak Products, Indore
27	Sheet Glass Plain/Mirrors	M/s Saint Gobin/M/s Asahi Works/M/s Atul Glass Indus/M/s Gold Fish/M/s Trupti/M/s Modi Guard/M/s Modi Float/M/s Hindustan Pilligton Glass
28	Brass Ball Valve	M/s Leader/M/s NETA/M/s Zoloto/M/s Dhawan Sanitary Udyog /M/s ARKO Pipe Gram Udyog M/s Prayag Polymers (P) Ltd

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29	Cement interlocking block/tiles	Concrete paver	M/s Mehtab Tiles, Indore/M/s NITCO/M/S Ultra Tiles/M/s Navya Tiles, Jodhpur/M/s Patel Fur Mart/M/s SAP Paver, Jodhpur/M/s Sagar Tiles, Saharanpur/ CEME/M/s Topaz Tiles/M/s Swami Tiles/M/s Sukhi Enterprises/M/s Supreme Tiles M/s Lucky Cement Block Works/M/s Vaishnavi Developers
30	Steel Rolling Shutters/ Grills & Collapsible Gates		M/s Shree Laxmi Engg Works, Bengaluru/M/s Prakash & Co, New Delhi/M/s Senthil Rolling Shutters & Engg Co, Chennai/M/s Swastik Rolling Shutters, Nashik/M/s Jayraj Industries, Chennai/M/s Darshan Rolling Shutters, Nashik/Shalimar Rolling Shutters, Hyderabad/M/s Ganesh Rolling shutters, Hyderabad/M/s Shapana Dock & Steel
31	Steel Windows, Ventilators, Door Frames, Shutters		M/s Madhu Industries/M/s Jagnid Engg, Jaipur/M/s Deccan Structural Pvt Ltd, B'lore/M/s Chandni Industries/M/s Ashwani & Sons/M/s Anoop Industries/M/s Trisul Industries/M/s Ashish Industries
32	Copper/ Brass Alloy Bib Tap, Pillar Tap, Angle Valve & Stop Valves and accessories		M/s Soma/M/s Leader/M/s Zoloto/M/s Jaquar Vo Pvt Ltd/M/s Shree Balaji Industries/M/s Plastocraft Sanitary (I) Pvt Ltd/M/s Vardhman Enterprises/M/s KS Engineering Works/M/s Aluminium Udyog/M/s Shakti Enterprises/M/s Dhawan Sanitary Udyog/M/s Goel Sinks Inida Pvt Ltd/M/s Prayag Polymers
33	Flushing Cistern PVC Low Level Incl Flush Valves and fitting for WC and Urinal		M/s Parryware/M/s Cera Sanitary Ware/M/s Johnson Peddar/M/s RAK Ceramics India Pvt Ltd/M/s Neycer/M/s Jaquar & Co Pvt Ltd/M/s Prayag Polymers/M/s Speed flo/M/s RS Industries/ /M/s Precision Products/M/s Goel Sinks India Pvt Ltd/M/s Commander
34	Wash Basin Vitreous		M/s Kajaria Sanitaryware Ltd/M/s CERA/M/s RAK Ceramics India Pvt Ltd/M/s Parryware/M/s Hindware/M/s Neyveli Ceramics/M/s Jaquar & Co Pvt Ltd/M/s Shakti Enterprises/M/s Prayag Polymers/M/s Johnson/M/s Simpolo Vitrified Pvt Ltd/M/s Somany Ceramics Ltd/M/s Ambani Vitrified Pvt Ltd/M/s Glint Faucets Inc
35	Electric Accessories Paino Suitables Ceiling Rose, Call Bells Buzzers, Lamp Holders/Socket Outlet etc Plug & Socket Boards		M/s Panasonic Life Solutions/M/s Crabtree/M/s Leader/M/s Legrand India Ltd/M/s Havells/M/s C&S Electric Ltd/M/s Cona/M/s HPL Electric & Power Ltd/M/s Honeywell Electrical Device/M/s Goldmedal Electricals/M/s GM Modular Pvt Ltd//M/s Standard

NOTE: - Any other makes approved by E-in-C's branch/HQ CEs Command/ADGs upto end date of submission of bids shall also be deemed to be included in the above list. Validity period of the manufacturer shall be verified by GE/AGE before approval of any make.

SIGNATURE OF THE CONTRACTOR

FOR ACCEPTING OFFICE

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