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WORK IN ZONE A, B, C & D AREA AND CALEB VIHAR UNDER AGE E/M AT GE JHANSI**

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Total No of pages :

Total No of Drawings :

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

Headquarters
Commander Works Engineer
Military Engineer Services
Jhansi Cantt - 284001

81921/04/E8

29 Oct 2024

M/s _____

**REPAIR/MAINT OF ALUMINUM ELECT WIRING & CERTAIN INTERNAL ELECTRIFICATION
WORK IN ZONE A, B, C & D AREA AND CALEB VIHAR UNDER AGE E/M AT GE JHANSI**

Dear Sir (s),

1. Tender documents in respect of above works are uploaded on the website www.defproc.gov.in. The tender is on single stage to cover e-tendering system. The contents of Cover-I and Cover-II are specified in Notice of Tender.
2. Bids will be received online by ACCEPTING OFFICER upto date and time mentioned on the NOTICE INVITING TENDER (NIT). No tender/bid will be received in physical form and any tender/bid received in such manner will be treated as non bonafide tender/bid.
3. Bid will be opened on due date and time fixed for opening in the presence of tenderers/bidders or their authorized representatives, who have uploaded their quotation / bid and who wish to be present at the time of opening the bids.
4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion on tender/ drawings and to clarify doubts, if any, on or before last date of submission of clarification. You are requested not to write piece meal points and forward your points duly consolidated before due date fixed for this purpose.
5. Enlisted contractors of MES shall upload the scanned copies (pdf form) of enlistment letter, tender fee, documents in support of bid capacity & PQC (as applicable) on e-procurement portal and submit physical documents in the office of tender issuing authority by the date & time stipulated . Inadequacy/deficiency of documents shall make the bid liable for rejection and in such event the financial bid shall not be opened.
6. Unenlisted contractors are required to submit the scanned copies (in pdf form) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents alongwith EMD, tender fee, documents in support of bid capacity & PQC (as applicable) on e-procurement portal and submit the physical documents in the office of HQ CWE Jhansi within time limit specified in NOTICE INVITING TENDER (NIT). Inadequacy/deficiency of documents shall make the bid liable for rejection and in such event the financial bid shall not be opened.
7. 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 opening of BOQ(financial bid). In case of failure to abide by any of these two requirements, the bid will be treated as non-bonafide and shall be liable for their financial bid being rejected.

The GE JHANSI will return the Earnest Money, wherever applicable, to all unsuccessful tenderers by endorsing an authority on the deposit receipt of its refund on production by tenderer a certificate of the Accepting Officer that a bonafide tender (vide condition here-in-after) was received and all documents were returned. The GE JHANSI will return the Earnest Money to the successful tenderer by endorsing the authority on the deposit receipt for its refund on receipt of an appropriate amount of mandatory Performance Security amount.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

8. The contractor must ensure that the tender 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 etc. from tenderer 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 bids be uploaded, sufficiently in advance of the last due date and time fixed.
10. General Conditions of Contracts (IAFW-2249) (1989 Print) and errata and amendments thereto, Schedule of minimum fair wages and MES SSR (Part-I and Part-II) are not enclosed with these documents. These are available for perusal in the Office of GE JHANSI concerned and this office.
11. The rates quoted shall be deemed to include for **Goods and Services Tax (GST)** as applicable for the subject work. Bidders are advised to ascertain the same from tax authorities before submission of bid.
12. 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.
13. Tenderer is advised to cross check his quotation in the BOQ after uploading and before the Bid closing time & date. Items and their quantities for which no rates or prices have been quoted shall be deemed to have been covered by the rates and prices quoted for the other items of Schedule 'A' or bill of quantities. No representation on this account shall be entertained.
14. Any grievance concerning this contract agreement on which contractor is not satisfied with decision of Accepting Officer shall be referred by him only to the Next Higher Engineer Authority (NHEA). The contractor shall under no circumstance communicate with any authority other than NHEA, unless he has exhausted the case options to represent to all Engineer authorities upto NHEA. While representing his case to authorities above NHEA, copies of correspondence exchanged with all authorities shall be enclosed clearly bringing out his grievance on them. Any breach of this stipulation shall be treated as default on the part of the contractor and his grievance will not be entertained. In addition he shall be liable for disciplinary action as deemed fit by Registering Authority.
15. Any complaint against the contractor received from third party like suppliers of contractor, other contractors, his engineer, labour etc shall be referred to him by the GE JHANSI. The contractor will be required to obtain settlement of the complaints from the originator and/or concerned authority and submit settlement letter to GE JHANSI within 15 days of receipt of referral from GE JHANSI. Any failure in this regard will invite disciplinary action against the contractor by the Registering Authority.
16. **Performance Security (Refer Amendment 47 of Condition 19 of IAFW-2249)** The performance security for an amount equivalent to 5% (five percent) of the Accepted contract sum shall be delivered by the successful bidder within 28 days from the date of intimation letter of acceptance and all other conditions shall be applicable as per condition 19 and other conditions of IAFW 2249. However, Work Order No 01 shall be issued by GE JHANSI after submitting FDR/ Bank Guarantee Bond by contractor against performance security.

Thanking you

Yours faithfully

Encls : Tender document

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

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

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

- (a) Deposit at Call Receipt from a Scheduled Bank in favour of Garrison Engineer Jhansi
- (b) Receipted Treasury Challan, the amount being credited to the Revenue Deposit of Garrison Engineer Jhansi.

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 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 date and time of receipt of the tender. Earnest Money Deposit shall be submitted in the name of concerned GE JHANSI.

NOTES : Earnest Money Deposit (EMD) in the form of cheque/Bank Guarantee etc will not be accepted. NON-SUBMISSION OF EARNEST MONEY DEPOSIT (EMD) (scanned copy alongwith Technical Bid & hard copy before the date & time fixed for opening of BOQ) WILL RENDER THE BID AS NON-BONAFIDE AND CONSEQUENTLY LIABLE TO BE IGNORED.

2. PERFORMANCE SECURITY.

2.1 In case the tender / bid is accepted the amount of Performance Security calculated with reference to contract amount to be lodged **within 28 days** from the date of intimation letter of Acceptance, the successful contractor shall deliver to the Acceptance 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 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 only.

2.3 After acceptance of the tender, the contractor will be required to lodge with the accepting officer **PERFORMANCE SECURITY DEPOSIT** within 28 (twenty eight) days of the receipt by the contractor of notification of acceptance of tender/bid, failing which action as stipulated in Condition 19 of GCC(IAFW-2249) shall be taken.

3 GENERAL INSTRUCTIONS FOR COMPLIANCE

3.1 The tender will only be accepted in the electronic form. 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 Tender shall be uploaded on www.defproc.gov.in portal on or before the bid closing date mentioned in the tender. No tender in any other electronic or physical form like email / fax / by hand/ through post will be considered.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD..)

3.3. Tender should be DIGITALLY signed using valid DSC at the time of uploading in the portal by the tenderer.

3.4 After acceptance, the tender shall be signed, dated and witnessed at all places provided for in the documents. All corrections shall be initialed. The Contractor shall initial every page of tender. Contractor shall sign all drawings forming part of the tender.

3.5 Any tender 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 signatory to the tender documents shall be uploaded. In case the 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, 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 signing the tender on behalf of another partner(s) or on behalf of a firm or company shall attach 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 by 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.

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 tenders are being signed 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 submitted 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 (covers 1 & 2) shall be submitted online well in time.

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

3.11 Bids will be opened in the presence of tenderers on the due date and time fixed for opening. Tenderers who upload their bids and are desirous of being present at the time of opening of the bids, may do so at the appointed time.

3.12 The tenderer shall quote his rate on the BOQ file only. No alteration to the format will be accepted else the bid will be disqualified.

3.13 In case the tenderer has to revise / modify the rates quoted in the BOQ (excel sheet) he can do so only in the BOQ, through eprocuremes.gov.in site before the bid closing date & time.

3.14 Tenderer is advised to cross check his quotation in the BOQ after uploading and before the Bid closing time & date. If, he fails to quote his rate for any item, his bid shall be considered non-bonafide. No representation on this account shall be entertained.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

INSTRUCTIONS ON FILLING AND SUBMISSION OF TENDER (CONTD..)

3.15. Any tender/bid which proposes any alteration to any of the conditions laid down or which proposes any other condition or prescription whatsoever in the tender will be treated as Conditional tender and the tender thus uploaded by the firm shall be treated as invalid and stands rejected

3.16. In case the BOQ is revised by the Department and the bidder has failed to quote in revised BOQ ie bidder has quoted in previous (un revised) BOQ such bid shall be treated as willful negligence by the bidder and such bid shall be considered as non-bonafide. In such cases, the lowest tender shall be determined by the lowest amount amongst the valid/ bonafide bids only.

4 CPM (Critical Path Method)

4.1 The tenderer 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 may make use of.

4.2 The tenderer'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 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.

4.3 The General conditions of contract IAFW-2249 in the printed form including amendments/errata thereto form part of the tender documents but have not been sent alongwith the tender. These documents can be gone through by the tenderer at any MES office during office hours. The tenderer will be deemed to have full knowledge thereof and no claim will be admitted on account of any misunderstanding in complying with this contractual requirement.

4.4 Department may issue amendments/errata in form of **CORRIGENDUM** to Tender Documents / BOQ before due date & time of submission of tender. The tenderer is requested to read the tender documents in conjunction with the errata/ amendments/corrigendum, if any, issued by the department.

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

6. If Contractor does not quote his rate against any item or 'NQ' appears in rate/amount column, then it shall be deemed that rate quoted is Rupees Zero i.e. the contractor intends to execute the particular item at no cost basis (free of cost) to the Govt. Items and their quantities for which no rates or prices have been quoted shall be deemed to have been covered by the rates and prices quoted for the other items of bills of quantities. Hence contractors are requested to thoroughly check their quoted rates before submitting bid online. No representation by the contractor on this matter shall be entertained by the department.

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

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES
NOTICE OF TENDER (NOT)

1. A tender is invited for the work as mentioned in Appendix 'A'.
2. The work is estimated to cost as indicated in 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 as mentioned in Appendix 'A'.
3. The work is to be completed within the period as indicated in Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over of site, which will be on or after two weeks after (see Appx.'A')
4. Normally contractor whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, contractors of categories SS to E may tender/bid. Contractors whose names are on the MES approved list of any MES formation and who have deposited standing security and have executed standing security bond may also tender/bid without depositing Earnest money along with the tender/bid and if the tender/bid submitted by such a tenderer/bidder is accepted, the contractor will be required to submit to the accepting officer the amount of Performance Security for an amount equivalent to 5% of the contract sum in any of the forms prescribed in condition 19.1 of IAFW 2249 within 28 days of receipt of the letter of Acceptance. Work order No.1 will be issued by GE after receipt of performance security. Failure of the successful contractor to comply with the requirements of condition 19.1 of IAFW-2249 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.
5. 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 circumstances with a father and his son(s) or other close relation 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.
6. The Office of HQ Commander Works Engineer Jhansi will be the Accepting Officer here in after referred to as such for purpose of the contract.
7. The Technical Bid and Financial Bid (Cover-1 and Cover-2) shall be uploaded on the '<https://defproc.gov.in>' site in two packets i.e. the technical bid & financial bid upto the last date of submission of bid indicated. Bid shall be opened at the time & date mentioned on '<https://defproc.gov.in>'.
8. A scanned copy of DD with enlistment details / documents as mentioned in Appx 'A' shall be uploaded as Packet 1 (T bid) of the tender on '<https://defproc.gov.in>' portal. DD is refundable in case T bid is not accepted resulting in non-opening of 'Q' bid. The applicant contractor shall bear the cost of bank charges for procuring and en-cashing the DD and shall not have any claim from Government whatsoever on this account. The applicant / contractor if he so desire may appeal to the next higher engineering authority through e mail with copy to the Accepting Officer. The decision of the next higher engineer authority shall be final. No applicant / contractor shall be entitled for any compensation whatsoever for rejection of his application.
9. Tender form and conditions of contract and other necessary documents shall be available on '<https://defproc.gov.in>' site for download and shall form part of contract agreement in case the tender/bid is accepted.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

NOTICE INVITING TENDER (NIT) (CONTD/-)

9.1 In Case of contractor who has not executed the Standing Security Bond, the Cover-I shall be accompanied with by Earnest Money of amount as mentioned in Appendix 'A' in the form of deposit at call receipt in favour of concerned GE (see Appendix 'A') by a scheduled Bank or in receipted treasury Challan the amount being credited to the revenue deposit of the concerned GE (see Appendix 'A')

9.2 The GE will return the Earnest Money wherever applicable to all unsuccessful tenderers/bidders by endorsing an authority on the deposit receipt for its refund, on production by the tenderer/bidder a certificate of the Accepting Officer that a bonafide tender/bid was received and the lowest bid for the tender has been accepted.

9.3 The GE will either return the Earnest Money to the successful tenderer/ bidder by endorsing an authority on the deposit receipt for its refund on receipt of an appropriate amount of Performance security or utilize the same for recovery of penalty for non-submission of Performance security.

10. 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 concerned GE during working hours.

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

12. 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.

13. The uploading of bid implies that bidder has read this notice and all 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.

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

15. 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 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, remarks in WLR, capability of the firm as per criteria given in Appx 'A' to this NIT. For un-enlisted contractor the final selection shall be based on these factors, as well as the documents mentioned in Notes of Appx 'A'. The applicant contractor/bidder will be informed regarding non-validation of his 'T' bid assigning reasons thereof through the '<https://defproc.gov.in>' website. The applicant contractor/bidder if he so desires may appeal to the next higher Engineer authority viz. Chief Engineer Bhopal Zone on email id on email id cezbhp2-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Finance Bid. The decision of the Next Higher Engineer Authority (NHEA) shall be final and binding. No appeal / representation shall be entertained in respect of applications received offline. The decision of the NHEA shall be final & binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his application.

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

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

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

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

APPENDIX 'A' TO NOTICE OF E TENDER INVITING APPLICATION (NIT)

1	Name of Work	REPAIR/MAINT OF ALUMINUM ELECT WIRING & CERTAIN INTERNAL ELECTRIFICATION WORK IN ZONE A, B, C & D AREA AND CALEB VIHAR UNDER AGE E/M AT GE JHANSI
2	Estimated cost	Rs 130.00 Lakh
3	Period of Completion	180 days
4	Cost of tender documents	Rs 1000/- in the form of DD/Banker's cheque from any scheduled /nationalized bank in favour of GE JHANSI payable at Jhansi.
5	Website/ portal address	www.defproc.gov.in
6.	Type of Contract	The contract shall be item rate contract based on IAFW-1779A to be quoted by the tenderer and GCC (IAFW-2249) BOQ format attached. The tender shall be based on BOQ and specification (IAFW-1779A) and General Conditions of Contracts (IAFW-2249) with BOQ (list of items of work) to be priced by the tenderer. The tenderers are required to quote their item wise rates of BOQ items.
7.	Information & Details :	Refer critical dates
	(a) Bid submission start date	
	(b) Last date of bid submission	
	(c) Date of bid opening	
8.	Eligibility Criteria	
	(a) For MES enlisted Contractor	Contractor shall be enlisted with MES in Class 'B' and above and Category 'b (i)' subject to satisfactory remarks w.r.t. performance in respect of works hand as reflected in Work Load return (WLR) or any other report circulated by competent engineer authority.
	(b) For Contractors not enlisted with MES	<p>(i) Contractor not enlisted with MES should meet the enlistment criteria of 'B' class and category 'b (i)' contractor with regards to satisfactorily completion of requisite value works with Central/State Government/ Central/State PSUs/ AWHO/ AFNHB/ CGEWHO/ DGMAP, annual turnover, Bank solvency, working capital and other requirements given in Para 1.4 & 1.5 of Section 1 of MES Manual on Contracts - 2020 in E-in-C's Branch letter No 66546/Manual/29/E8 dated 19 May 2021 (Seven Pages) as available in all MES formations as well as MES website (www.mes.gov.in).</p> <p>(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.</p> <p>(iii) Not suspended/debarred/black listed (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.</p> <p>(iv) Details of works completed and under progress in MES be submitted in the following format:-</p>

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES: NOTICE OF TENDER
APPENDIX 'A' TO NOTICE OF E TENDER INVITING APPLICATION (CONTD...)

		Srl No.	CA No. & Name of Work	Value of CA	Date of Commencement	Date of Completion	Extended date of Completion
		(v) Un-enlisted Contractor who have secured two works in MES should get themselves registered in the appropriate designated Class with any Registering Authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES.					
9	Tender issuing and Accepting officer	Commander Works Engineer Jhansi, Contact Person: Lt Col Rakesh Ghare, DCWE (Contracts), Tele- 0510-2470723, Fax No.0510-2471020,					
10.	Executing agency	GE JHANSI					
11.	Earnest Money	Rs 2,05,000/- in favour of GE JHANSI in the form of deposit at call receipt, FDR not acceptable.					

NOTES:

- After opening of Cover 1, if the number of MES enlisted contractors of eligible class as well as un-enlisted Contractors, if any, fulfilling the other eligibility criteria given in NIT are less than 07 (Seven), applications in respect of contractors one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE command /ADG) below the eligible class shall also be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore, MES contractors one class below (two classes below in case of remote and difficult areas) may also bid for this tender. However, contractors one/two classes below the eligible class shall not be Considered in case their present residual work in hand is more than twice their present tendering limit. Such bidders shall upload in their Cover-I bid details of works in hand showing names of work, names of Accepting Officers, contract amounts, dates of commencement and completion (stipulated) and progress as on bid submission date. These details shall be verified by the tender issuing authority from concerned formations in case bids of such contractors are considered for evaluation.
- In case after 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 up gradation 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.
- 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.
- Contractors enlisted with MES will upload following documents in Cover 1 for checking eligibility: -
 - Application for tender on Firm's letterhead.
 - Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
 - Scanned copy of ITD /Bankers Cheque toward cost of" tender and EMS instrument in case SSD bond is not signed at the time of registration.
 - Any other document required as described in this Appendix.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES: NOTICE OF TENDER
APPENDIX 'A' TO NOTICE OF E TENDER INVITING APPLICATION (CONTD...)

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

- (a) Application for tender on Firm's letterhead.
- (b) Scanned copy of DD/ Bankers cheque toward cost of tender and Earnest Money Deposit (EMD) instrument.
- (c) Copy of Police Verification Report/Police Clearance Certificate/ Character Certificate from the Police Authority of the area where the registered office of the firm is located/notarized copy of valid passport of Proprietor/each Partner/each Director.
- (d) All documents required for enlistment in MES for the class mentioned in Para 8(b) above as per Para 1.5 of Section 1 of MES Manual on Contracts 2020.
- (e) Details of works being executed in MES, if any.
- (f) Any other document required as described in this Appendix.

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

7. Contractors should ensure that their original physical DDs and Earnest Money Deposit (EMD) instruments (as applicable) reach the office of Accepting Officer within 07 days of bid submission end date failing which following action shall be taken:-

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

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

(c) In case of tenders from enlisted and un-enlisted contractors, where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover 1 but the same are not received in physical form within stipulated period, such tenders shall not qualify for opening of financial bid (Cover 2).

8. Contractor will not be allowed to execute the work by subletting or through power of attorney to a third party/another firm on his behalf. However a contractor can execute the work through power of attorney to sons/daughters/spouse of Proprietor/Partner/Director and 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 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 work.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES: NOTICE OF TENDER
APPENDIX 'A' TO NOTICE OF E TENDER INVITING APPLICATION (CONTD...)

10. Invitation for e-tender does not constitute any guarantee for validation of Technical bid and subsequent opening of Financial bid of any applicant/bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the Financial bid of any applicant/bidder. Technical bid validation shall be decided by the Accepting Officer based on eligibility of the firm as per criteria given in this Appendix. Tenderer/bidder will be informed regarding non-validation of his Technical bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires, may appeal to next higher Engineer Authority (NHEA) viz. Chief Engineer Bhopal Zone on email id cezbhp2-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

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

12. In case the BOQ is revised through the corrigendum and the bidder has failed to quote on revised BOQ (i.e. 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 opening of Cover 2 shall be considered as a willful default. For this default a penalty of an amount equal to Earnest Money shall be levied. In case of an un-enlisted tenderer, earnest money deposited by him shall be forfeited. In Case of MES enlisted tenderer having deposited the Standing Security Bond, an amount equal to the earnest money stipulated in the NIT, shall be notified to the tenderer for depositing through MRO and consideration of such tenderer in tender evaluation for future works shall 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. Decision of Accepting Officer on issue /deny the tender to any one of the related firms shall be final and binding.

15. **Important Instructions:**

15.1 Applications/bids not accompanied by scanned copies of requisite DD/Bankers Cheque towards cost of tender and earnest money deposit (as applicable) shall not be considered for validation of 'T' bid and their finance bids will not be opened.

15.2 Tenderers/bidders to note that they should ensure that their original DDs and earnest money deposit (as applicable) are received within 07 (Seven) days of bid submission end date. Non-submission of physical copies of cost of tender and earnest money deposit (as applicable) shall be considered as willful negligence of the bidder with ulterior motives and such bids are liable to be rejected and bidder shall be banned from bidding in MES for a period of six months commencing from the date of opening of finance bid.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES: NOTICE OF TENDER
APPENDIX 'A' TO NOTICE OF E TENDER INVITING APPLICATION (CONTD...)

16. SITE VISIT AND VERIFICATION OF INFORMATION

16.1 Bidders are encouraged to submit their respective bids after visiting the Project site and ascertaining for themselves the site conditions, soil condition, location, surroundings, climate, availability of power, water & other utilities for construction, access to site, handling and storage of materials, weather data, applicable laws and regulations, and any other matter considered relevant by them by carrying out necessary survey/investigation. Bidders are advised to visit the site and familiarise themselves with the Project within the stipulated time of submission of the Bid. No extension of time shall to be considered for submission of Bids on this account.

17. The tenderer attention is invited to ensure compliance of the "EPF & MP Act 1952" before commencement of work, the contractor should produce the provident fund code number to the GE, if applicable.

18. Any change/ modification in the tender enquiry will be intimated through above mentioned website only. Bidders are therefore requested to visit our website regularly to keep themselves updated.

19. **Jurisdiction of court** : - Bhopal 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: 81921/04/E8

Headquarter
Commander Works Engineer
Military Engineer Services
Rani Laxmi Bai Marg
Jhansi Cantt- 284001

(Rakesh Ghare)
Lt Col
DCWE (Contracts)
For Accepting Officer

Dated: 29 Oct 2024

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

IN LIEU OF IAFW-1779 A (REVISED 1955)

**TENDER AND ITEM RATE CONTRACT FOR WORKS BY MEASUREMENT CONTRACT TO BE
USED IN CONJUNCTION WITH GENERAL CONDITION OF
CONTRACTS IAFW-2249 (1989 PRINT)**

MILITARY ENGINEER SERVICES

Tele Mily : 6044

Headquarters
Commander Works Engineer
Military Engineer Services
Jhansi cantt-284001

81921/04/E8

19 Oct 2024

**TENDER FOR : REPAIR/MAINT OF ALUMINUM ELECT WIRING & CERTAIN INTERNAL
ELECTRIFICATION WORK IN ZONE A, B, C & D AREA AND CALEB VIHAR
UNDER AGE E/M AT GE JHANSI**

Dear Sir,

1. M/s _____ of _____
hereby authorized to tender for the above work.

2. The tender is to be uploaded on MES website www.defproc.gov.in by **1800 hrs on
25 Nov 2024.**

3. All correspondence concerning this tender shall be addressed as indicated at the top of this
sheet quoting the reference as given.

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

(Signature of Contractor)

SIGNATURE OF OFFICER
ISSUEING DOCUMENTS
APPOINTMENTS : DCWE (Contracts)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

SCHEDULE 'A'**LIST OF WORK AND PRICES**

NAME OF WORK : REPAIR/MAINT OF ALUMINUM ELECT WIRING & CERTAIN INTERNAL ELECTRIFICATION WORK IN ZONE A, B, C & D AREA AND CALEB VIHAR UNDER AGE E/M AT GE JHANSI

NOTES

1. **SCOPE OF WORK** : This work comprises the under mentioned Job :-
 - (i) **Maint Pgme : 2024-25**
2. The quantity shown in column 3 (three) are approximate and are inserted as a guide line only. These shall however not to be varied beyond the limit laid down in conditions 7 of IAFW-2249 General conditions of contracts.
3. Rates in column 5 of BOQ is to be filled in by the tenderer.
4. Total amount in column 6 of BOQ is not firm but will be treated as the contract sum referred to in IAFW-2249, General Conditions of contracts.
5. Unless otherwise specified rates quoted in column 13 shall be included cost of supply of all materials, labour tools and plants required for fixing, installing, commissioning and testing of the item of work and all other taxes including GST as applicable as per notification issued by Govt of India which is non refundable as per express condition of Govt of India insurance freight packing unpacking and transportation are unless mentioned otherwise in description of any particular items (s)
6. **Period of Completion** : The entire work under the contract as per schedule 'A' shall be completed within a period of 180 days as per work order No.1
7. Description of items of work given in Schedule 'A' are in brief. These are deemed to be amplified and read in conjunction with the special conditions particulars specification for material and workmanship and condition in relevant trade sections of MES standard Schedule of Rate (Part I) 2009 and SSR (Part II) 2020 in drawings, including notes thereon.
8. Any drawing reference of where has been made in drawings listed in the tender documents, but inadvertently not included in list of drawings, shall be deemed to form part of the contract agreement.
9. Layout/alignment shown on drawings are only tentative. No claim whatsoever shall be entertained on account of change in alignment layout finally approved.
10. (a) The rate quoted by the tenderer against each item of BOQ sheet (Excel format) shall be deemed to allow for all minor extra and constructional details which are not specifically shown on drawings and specification in particulars specifications and which required for completion of work as like manner and sound Engineering practice.

(b) In case of difference of opinion as to whether or not certain items of work constitutes minor extras/constructional details the decision of the Accepting Officer in this regard shall be final inclusive and binding.
11. Any damage caused to the buildings under which work is carrying out by the contractors and or and custody of the contractor shall be made good by the contractor to match with the existing as directed by the GE JHANSI without any extra cost to the Govt.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

SCHEDULE 'A' (CONTD)

12. Old materials obtained from taking down /demolition and dismantling such old materials (other than serviceable material which are to be re-used in the work or listed in Schedule of credit) become Govt property shall be removed to MES stores yard and all rubbish/waste/un-serviceable items obtained from demolition and dismantling shall be removed disposed off to a distance not exceeding 50 M as directed by Engineer-in-Charge and cost thereof shall deemed to be included in the unit rate quoted by the contractor.

13. Unless specifically mentioned otherwise the unit rate of each item of shall be deemed inclusive of provisions given in correspondence item of MES SSR Part-II (2020). If any provision in description of items of Schedule 'A' and/or in particulars specification is at variance with the provision in MES Schedule, The provision given in Schedule 'A' and particulars specification shall take precedent there over.

14. The contract amount shall be arrived at after deduction of amount of schedule of credit from the total quoted amount in BOQ. The same net contract amount shall be inserted by this office on General Summary page based on quoted amount by the tenderer in BOQ after deduction of sch of credit. The pages of General Summary and sch of credit are enclosed with tender documents

15. As per the latest clarification issued by the MoD and Ministry of Finance, Goods and Services Tax (GST) is liable on the subject tender as applicable. The liability of paying Goods and Service Tax (GST) is on Contractor only. Accordingly rate/amount quoted in the tender by the contractor shall deemed to include Goods and Service Tax (GST) as per Govt instructions on GST and no reimbursement shall be made on this account. The rate of Goods and Service Tax (GST) shall be as per notification issued by the Govt from time to time. The contractor shall take note of this point and any condition to this effect inserted by him in the tender will be treated as CONDITIONAL TENDER and the tender thus uploaded by the firm shall be treated as invalid and stands rejected. The rate quoted by the contractor shall be deemed to include all taxes and also include for applicability of GST on works Contracts as per Govt instructions and no reimbursement shall be made on this account at later stage.

16. **Payment of RAR:** The payment to labour employed by the contractor shall preferably be made through AADHAAR linked bank account. Being Principal Employer, the GE JHANSI shall ensure that the contractor fully comply with above provisions. The documents held by the contractor shall be subject to scrutiny by law enforcement agencies. Proof of crediting wages in the bank account / made to employee by the contractor shall be pre-requisite to enable the GE JHANSI to release the RAR. The contractor shall also provide payment details under EPF & ESI with account numbers alongwith RAR which shall be verified by GE JHANSI. In case the RARs are not claimed on monthly basis, the contractor shall bound to submit monthly accounts of payments to employees under above regulations.

17. In absence of any specification either in these tender documents or in the drawings, the minimum specifications as given in SSR for relevant items and as per Standard Engineering practice shall be considered by the tenderer while quoting the tender.

18. Wherever the word schedule 'A' appears in the tender documents same shall be read as Schedule 'A' / BOQ.

19. **Performance Security (Refer Condition 19 of IAFW 2249).** The performance security for an amount equivalent to 5% (five percent) of the Accepted contract sum shall be delivered by the successful bidder within 28 days from the date of intimation letter of acceptance and all other conditions shall be applicable as per condition 19 and other conditions of IAFW 2249. However, Work Order No 01 shall be issued by GE JHANSI after submitting FDR/ Bank Guarantee Bond by contractor against performance security.

20. The **DEFECT LIABILITY PERIOD** for executed work under the work shall be **TWELVE CALENDAR MONTHS** from the actual date of completion of work and in case of execution of work considered in Phases in tender, in that case the defect liability period shall be considered **TWELVE CALENDAR MONTHS** from the actual date of completion of work each phase wise.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

**SCHEDULE OF CREDIT FOR ALL MATERIALS OBTAINED
FROM DEMOLITION/TAKING DOWN**

Note :-

1. The materials obtained from demolition/taking down listed in this schedule shall become the contractor's property
2. Tenderers are advised to physically verify the materials listed in this schedule with regard to their quality and serviceability etc before quoting the tender. Contractor shall be deemed to have inspected the material whether or not they actually inspect. No claim what so ever shall be entertained on account of condition, quality and serviceability of materials. However the quantities and amount mentioned under Column-4 & 6 respectively of this schedule is tentative and as a guide only and will vary as per actual work. The quantities actually obtained at site shall be recorded in MB duly signed by the Contractor and Engineer-in-Charge
3. The materials shall be removed from site only after written permission of the Engineer-in-Charge
4. Demolished material which are not covered under this Sch of Credit shall be returned to the department or thrown in the site as directed by Engr-in-Charge.
5. It shall be the responsibility of the contractor to remove the articles from site at his own expense after obtaining written permission of Engr-in-Charge and after deducting the credit amount from the 1st RAR / Final Bill whichever is earlier. The site shall be clean and tidy after removal of all materials obtained from demolition
6. Demolished/ dismantled materials shall not be reused in the work, unless otherwise specified in the Sch 'A'
7. Credit on account of old retrieved materials listed in this schedule shall be recovered from advance payments to the contractor as and when dismantling/demolition/taking down is carried out irrespective of whether or not the contractor has actually removed those from site of work.

Ser No	Description of old materials	Qty	Unit	Rate	Amount
(a)	Old unserviceable sub main wiring of any description	RM	8350	15.00	125250.00
(b)	Old unserviceable copper/aluminium point wiring (light, fan, socket or power) including fitting nand fixture like switch / socket / fan regulator / ceiling rose / lamp holder / bell push/call bell of any rating 6A/ 16A and any description complete	Point	4231	16.00	67696.00
(c)	Old unserviceable VTPN/TPN DBs of any description along with MCCBs/MCBs	Each	52	80.00	4160.00
(d)	Old unserviceable SPN DBs of any description along with MCCBs/MCBs	Each	145	50.00	7250.00
(e)	Old unserviceable light fittings tube lights, ceiling lights, bulk head lights, bldg security lights, decorative lights etc of any description	Each	3760	20.00	75200.00
(f)	Old unserviceable earthing set	Each	34	50.00	1700.00
(g)	Old unserviceable MCB plug and socket board with MCB of any description	Each	180	15.00	2700.00
(h)	Old unserviceable service cable 4 core/2 core of any description	RM	1500	30.00	45000.00
	Total amount of Credit C/O to Summary Rs				3,28,956.00

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

SCHEDULE 'B'**ISSUE OF MATERIAL TO THE CONTRACTOR**
(SEE CONDITION 10 OF IAFW-2249)

S N	Particulars	Rate at which material will be issued to the contractor		Place of issue by name	Remarks
		Unit	Rate (Rs.)		
1	2	3	4	5	6
Nil					

SCHEDULE 'C'**LIST OF TOOLS AND PLANTS OTHER THAN TRANSPORT**
WHICH WILL BE ISSUED TO THE CONTRACTOR
(SEE CONDITION 15, 34 AND 35 OF IAFW-2249)

SN	Qty	Particular of T&P	Details of MES crew supplied	Hire charges per unit per working days	Stand by charges per unit per off day	Place of issue by name
1	2	3	4	5	6	7
Nil						

SCHEDULE 'D'**TRANSPORT TO BE HIRED TO THE CONTRACTOR**
(SEE CONDITION OF 16 AND 35 OF IAFW-2249)

SN	Qty	Particular	Rate per unit per working day	Place of issue by name	Remarks
1	2	3	4	5	6
Nil					

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

SUMMARY OF SCH "A"

- | | | |
|----|---|-----------------------------|
| 1. | Total amount B/F from BOQ against Sch "A" | Rs..... |
| 2. | Deduct Sch of Credit | (-) Rs 3,28,956.00 |
| 3. | Net contract sum | <hr/> <u>Rs.....</u> |

(In words.....)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

TENDER

To ,

The President of India

Having examined and perused the following documents :-

1. Specifications signed by DCWE (Contracts)
2. Drawings detailed in the specification list of drawings.
3. Schedule 'A', 'B', 'C' & 'D' attached hereto.
4. MES standard schedule of Rates Part-I (Specifications) (2020) including amendment No 1 to 3 and Part-II (Rates) (2020) including amendments 1 to 122 (hereinafter and in IAFW-2249 referred to as MES Schedule).
5. General Condition of Contract IAFW-2249 (1989 print) with amendments **1 to 49** and Errata 1 to 20.
6. **WATER (REFER CONDITION 31 OF IAFW-2249) GENERAL CONDITION OF CONTRACTS** : Water will be supplied by MES to the contractor and shall paid for by contractor @ 3.75 per Rs. 1000/- worth of work done priced at the contract rates.
7. Should this tender be accepted I/We agree :-

(a) The sum of Rs. _____ (Rupees _____)

_____) forwarded as earnest money shall either be retained as part of security deposit or be refunded by Government on receipt of the appropriate amount of security deposit within the item specified in condition 22 of IAFW-2249.

(b) To execute all works referred to in the said documents upon the terms and conditions contained or referred to therein at the item rates contained with aforesaid schedule 'A' or at such other rates as may be fixed under the provisions of condition 62 of IAFW-2249 and to carry out such deviations as may be ordered, vide Condition 7 of IAFW-2249 up to a maximum of **10 % (TEN PERCENT)** and further agree to refer all disputes, as required by Condition 70 to the sole arbitration of an serving Officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors (INDIA) recognized by the Government of India to be **appointed from the list of Panel of Arbitrators of HQ CE Southern Command Pune (Available at MES Website) by Chief Engineer Southern Command Pune or in his absence the officer officiating as Chief Engineer Southern Command Pune**, whose decision shall be final, conclusive and binding.

Note :- To be deleted where not applicable.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

TENDER (CONTD)

Signature _____ in the capacity of _____

duly authorized to sign the tender for and on behalf of _____
(IN BLOCK LETTERS)

DATED _____ POSTAL ADDRESS _____

Witness _____ Telegraphic address _____

Address _____ Telephone No _____ (Office)
_____ (Residence)**ACCEPTANCE**

_____ Alterations have been made in these documents and as evidence that these alterations were made before the execution of the Contract Agreement, they have been initialed 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' on _____ 2024.

Signature _____ dated this _____ day of _____ 2024.

APPOINTMENT : COMMANDER WORKS ENGINEER
FOR AND ON BEHALF OF THE PRESIDENT OF INDIA
(ACCEPTING OFFICER)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

GENERAL CONDITIONS OF CONTRACTS**(IAFW-2249-1989 PRINT)**

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

It is hereby further agreed and declared by me/us that the GENERAL CONDITIONS OF CONTRACTS (IAFW-2249-1989 PRINT) including condition 70 thereof pertaining to settlement of disputes by Arbitration, containing 33 pages and Errata 1 to 20 and amendment Nos 1 to 49 form part of these tender documents.

DCWE (Contracts)
for Accepting Officer

(Signature of Contractor)

*Delete whichever is not applicable.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

SCHEDULE OF MINIMUM FAIR WAGES

It is hereby agreed that "Schedule of minimum Fair Wages" (SMFW) as published vide Government of India Notification dated 10.3.92 comprising 10 pages or the latest notification of Central or State Government whichever is higher) upto the date of submission of tender forms part of these tender documents.

My/our signature hereunder amounts to my/our having signed the aforesaid documents forming part of this tender.

DCWE (Contracts)
for Accepting Officer

(Signature of Contractor)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATIONS : PART-I
(SPECIAL CONDITIONS)

1. **GENERAL**

The following special conditions shall be read in conjunction with the general conditions of contract IAFW-2249 and IAFW-1779-A including errata and amendments thereto, if any provision(s) in those special conditions is/are at variance with that of the aforesaid documents, the former shall be deemed to take precedence there over.

2. **CONDITIONS FOR WORKING IN UNRESTRICTED AREA**

(a) The work lies in UNRESTRICTED AREA (with working hours 0800 to 1700 hours) However, the contractor, his agents, servants, work people and vehicles may pass through the unit lines in which case the Engineer-in-Charge shall at his discretion has the right to issue passes, control their admission to the site of work or any part thereof. The contractor shall on demand by the Engineer-in-Charge submit a list of personnel, etc concerned and shall satisfy the Engineer-in-Charge as to bonafide of such people. Passes shall be returned at any time on demand by the Engineer-in-Charge and in any case on completion of work.

(b) The contractor and his work people shall observe all the rules promulgated from time to time by the authority controlling the area in which the work is to be carried out e.g. prohibition of smoking, lighting and fire precautions, restricted hour of working etc. Any person found violating the security rules laid down by the authority shall be immediately expelled from the area without assigning any reasons whatsoever and the contractor shall have no claim on this account. Nothing shall be admissible for any man hours lost on this account.

3. **SECURITY OF CLASSIFIED DOCUMENTS:**

- 3.1 Contractor's special attention is drawn to condition 2-A and 3 of General Conditions of Contracts IAFW-2249. The contractor shall not communicate any classified information regarding the works either to subcontractor or others without prior approval of the Engineering-in-Charge. The contractor shall not make copies of the design/drawings and other documents furnished to him in respect of works and he shall return all documents on the completion of work or earlier on termination of the contract. The contractor shall alongwith final bill attach a receipt from the Engineer-in-Charge-in-respect of his having returned the classified documents as per condition 3 of General Conditions of Contracts IAFW-2249.

4 **APPROVAL OF SAMPLE OF WORKMANSHIP IN BUILDING**

- 4.1 To determine the acceptable standard of workmanship, one quarter/block preferably with sanitary annexe (to be decided by the GE) shall be completed by the contractor well in advance as directed by GE under close supervision of the Engineer-in-Charge and shall be approved by the GE. The workmanship of various trades and finishes of this quarter/block shall serve as guiding samples for work in the remaining quarters/blocks/buildings.
- 4.2 The sample quarter/block/building shall be completed in all respects as per time of completion specified for the same in Schedule 'A'.

5. **MATERIALS AND SAMPLES :**

- 5.1 All the materials required to be incorporated in this work shall conform to relevant IS No/Bureau of IS and ISI marked. Materials which are not being manufactured with ISI marking shall conform to IS provisions. Material for which makes/brands have been specifically given in the tender document shall be provided.
- 5.2 The contractor shall produce samples of all materials, articles, fittings, accessories etc that he proposes to use and get them approved in writing by the Engineer-in-Charge. The materials, articles, etc as approved shall be signed by the Engineer-in-Charge and the contractor's representative. These samples shall be kept in the custody of the Engineer-in-Charge.
- 5.3 The brands 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 in the materials passing register.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATIONS : PART-I (SPECIAL CONDITIONS) (CONTD..)

- 5.4 The materials for which ISS do not exist or which are specified in these particular specifications to conform to the samples kept in the GE's office, shall comply with the requirement of these samples. The contractors are advised to inspect the samples, which shall remain open for inspection with GE during working hours. The contractor shall be deemed to have full knowledge of the samples whether he inspects them or not.
- 5.5 (i) Material shall be tested as per frequency given in IS and number of test shall be done as per frequency given in IS. Rate of recovery required to be charged from the contractor for various testing of building materials shall be as per Appendix 'A' enclosed.
- (ii) If facility for testing of building materials for any particular test is not available in the site/zonal laboratory, the same will be got tested in National Test House/SEMT WING/Engineering College at discretion of Garrison Engineer. All expenses for testing shall be borne by the contractor.
- (iii) All equipments and T&P, for 'A' level tests i.e. tests carried over at site lab, shall be arranged by GE and tests shall be carried out by executive staff. Recovery of these tests shall be affected as per rates given in Appendix 'A'. The contractor shall not be permitted to establish his own site lab.
6. **ADMISSION TO SITE :**
- 6.1 Delete the following words 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 :-
"The contractor shall be allotted free of charge the area as approved by the GE for the purpose of execution of temporary workshops, stores etc".
- 6.2 The areas occupied shall be vacated by the certified date of completion and site of work shall be cleared as stipulated in condition 49 of IAFW-2249.
- 6.3 The persons who are directly employed by the contractor for the purpose of execution of work shall only be allowed to stay and work in this area. The contractor shall ensure that outsiders who are not directly connected with the work do not stay in this area. The GE shall exercise proper check for the same.
- 6.4 The contractor shall ensure proper sanitation of the area to the satisfaction of the Engineer-in-Charge.
7. **WORKING HOURS :**
- 7.1 Normal hours of work for departmental staff are from 0800 hours to 1700 hours on all days except on Sundays and other Gazetted Holidays. However, the contractor may observe unrestricted hours of work for all the work to be executed in the contractor's workshop. No work at site other than the work to be executed in contractor's workshop shall be permitted to be executed out of the aforementioned normal working hours except with prior written permission of the GE. If such permission is given no liability in respect of any excess cost arising therefrom shall be accepted by the Department.
8. **MINIMUM WAGES PAYABLE TO LABOUR :**
- 8.1 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.
- 8.2 Contractor's attention is also drawn, amongst other things, to the 'explanations' to the schedule of minimum wages referred to above.
- 8.3 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.

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8.4 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.

8.5 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.

(Note : "The minimum wage payable to labours as listed in the schedule of minimum wage shall be deemed to have been amended to conform with the latest applicable minimum wages notified by the Govt of India under the Minimum Wages Act, 1948 or the minimum wages as applicable (if any) fixed by the local State Govt (whichever is higher), which may have come into force on or before the date of receipt of the tender).

9. **EMPLOYMENT OF PERSONNEL :**

9.1 The contractor shall employ only Indian Nationals as his representative, servants and workmen and verify their antecedents and loyalty before employing them for the work. He shall ensure that no person of doubtful antecedents and nationality is in any way associated with the works. If for reasons of technical collaboration or other consideration the employment of foreign national is unavoidable, the contractor shall furnish the particulars to this effect to the Accepting Officer at the time of submission of the tender. As proof that the contractor has employed only Indian Nationals he shall render a certificate to the GE within one month from the date of acceptance of the tender to this effect. In case the GE desires, contractor will have the police verification done of the personnel employed by him. Contractor's attention is also drawn to condition 25 of IAFW-2249 in this connection.

9.2 The GE shall have full powers and without giving any reason, to require the contractor immediately to cease to employ in connection with this contract, any Agent, Servant or Employee whose continued employment is, in his opinion, undesirable. The contractor shall not be allowed any compensation on this account.

10. **VALIDITY OF BID :**

10.1 Validity of period of the bid shall commence from the next day subsequent to bid submission end date. Validity period shall be 60 days for single stage two cover system. Validity period of bid, in case of two stage three cover system shall be 90 days from the next day subsequent to bid submission end date of stage 2 containing financial bid.

11. **SIGNING ON CONTRACT DOCUMENTS :**

11.1 The person signing the tender on behalf of another or on behalf of a firm shall attach with the tender a proper power of attorney duly executed in his favour by such other persons or by all the parties stating that he has authority to bind such other persons or the firm as the case may be in all matters pertaining to the contract including the arbitration clause.

12. **OUT OF POCKET EXPENSES :**

12.1 No out of pocket expenses incurred by the tenderer in submitting his tender shall be reimbursed whether his tender is accepted or not.

13. **TIME AND PROGRESS CHART (CRITICAL PATH METHOD/NETWORK ANALYSIS AND TIME SCHEDULE) :**

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

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- 13.2 During the currency of the work contractor is expected to adhere to the time schedule and this adherence will be part of the contractor's performance under the contract. During execution of the work, contractor is expected to participate in the reviews and updating of the network undertaken by the GE. These reviews may be under taken at the discretion of the GE either as a periodical appraisal measure or when the quantum of work on the contract is substantially changed through deviation orders or amendments. Any revision of the schedule as a result of the reviews will be submitted by the contractor to the GE within a week, who will approve it after due scrutiny. The contractor will adhere to the revised schedule there after. In case of contractor not agreeing to 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.
- 13.3 Contractor is expected to mobilize and employ sufficient resources to achieve the detailed schedule within the broad frame work of the accepted methods of working and safety.
- 13.4 No additional payment shall be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even through the time schedule is approved by the Department.
14. **CO-OPERATION WITH OTHER AGENCIES :**
- 14.1 The contractor is required to work, in close co-operation and he shall permit free access and generally afford reasonable facilities to other agencies or departmental workmen, etc working in the same area which may operate hereinafter and during currency of the contract.
15. **CLEANING DOWN :**
- 15.1 Refer condition 39 of IAFW-2249. The contractor shall clean all floors, remove cement/lime/paint drops, clean joinery, glass panes etc, touch up all painter's work and carryout all other necessary items of work to make the premises clean and tidy before handing over the buildings.
16. **WATER SUPPLY :**
- 16.1 **Condition 31 of IAFW-2249** Water will be supplied by MES to the contractor at points shown on site plan from piped system and shall be paid by the contractor @ Rs. 3.75 per Rs 1000/- worth of work done priced at contract rates in case of unmetered supply (where it is not possible to meter the supply of water viz works of repairs, addition/alteration etc involving number of locations) and at All-in-Cost rate of preceding year (to be decided by CE Zone/CCE) in case of metered supply. The contractor shall arrange at his own expense for storage of water and lifting, pumping, carrying or conveying water to the site of work as required. In case water points are not marked on the site plan, the water shall be supplied at one point as decided by GE.
- 16.2 The supply of water may not be continuous. The contractor shall be deemed to have ascertained the hours of availability of water before submitting his tender. MES does not guarantee continuity of water supply and no compensation shall be allowed for intermittent or inadequate water supply and break down in the system. If the supply is not sufficient the contractor shall make his own arrangement to supplement the water supply at his own cost. For this purpose the contractor shall be allowed to install hand pumps, tubewells at the site of work at places as directed by the Engineer-in-Charge without any charges from the contractor on this account. The contractor shall remove the hand pumps, tubewells as and when asked to do so by Engineer-in-Charge or GE and in any case on completion of work 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 the Department. No compensation whatsoever shall be admissible to the contractor if the GE requires him to remove the pumps 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.

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- 16.3 **Condition 31 of IAFW-2249.** 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.

17. **ELECTRIC SUPPLY :**

- 17.1 In case the contractor desires to buy electricity from MES it will be supplied at point(s) shown on site plan.
- 17.2 Electric supply shall be 415/230 volts, 50 cycles, three phase, AC supply.
- 17.3 The contractor shall be charged for the electric energy consumed at the following rates :-
(a) At rupees ten and paise ten only (10.10) per unit (KWH) for lighting and power.
- 17.4 The above rates are all India flat rates. Duties and/or taxes if any, levied by State Government and/or Electricity undertaking and the like on the electricity charges will be borne by the Department.
- 17.5 Electricity shall be supplied from main switches. Main switches and KWH meter to register the power supplied shall be provided and installed by MES. All other fittings, cable, switch, connections etc for distribution and supply of electricity from main switch to work site shall be arranged by the contractor at his own according to Indian Electricity Rules and along with routes approved by the GE. The GE shall have free access to inspect all installations, connections devices for consuming the electricity and if these are not found satisfactory, the GE shall have the power to get these disconnected.
- 17.6 Supply of electricity shall be during the hours as decided by GE. However, MES do not guarantee the continuity of supply, and no compensation shall accrue to the contractor for the supply becoming intermittent or if there is any breakdown for any reason.

18. **ROYALTIES :**

- 18.1 Delete existing description of condition 14 of IAFW-2249 and insert the following :-
"No quarries on defence land are available"

19. **DAMAGE TO EXISTING STRUCTURES.**

- 19.1 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.

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PARTICULAR SPECIFICATIONS : PART-I (SPECIAL CONDITIONS) (CONTD..)**20. UNIT RATES IN SCHEDULE 'A' :**

20.1 Quoted Item rates shall be deemed to include for any minor details of construction which are obviously and fairly intended and which may not have been referred to in these documents but are essential to the work/Items.

20.2 In case of difference of opinion as to whether or not a certain item of work constitutes minor details of construction included in the contractor's price the decision of the Accepting Officer shall be final and binding.

21. PROPRIETARY MATERIALS/ARTICLES

Proprietary materials or articles such as bitumen, paint and cement etc, quantity of which can not be checked after incorporation in the work, shall when collected at site be recorded in measurement book with reference to Vr No, make, brand and rate charged by manufacturer/supplier, and signed both by the MES representative and the contractor. However, the contractor will be required to submit purchase vouchers only in respect of items for which payment is claimed in RAR as "Material lying at site". Purchase vouchers for bitumen shall not be insisted when contractor is purchasing the macadam from hot mix plant approved by the GE.

22. MATERIALS IN METRIC SIZES :

22.1 If the materials (other than those issued under schedule 'B') are not available in metric sizes, the contractor shall provide materials in equivalent inch sizes which should not be less than the metric size dimensions under any circumstances, at no extra cost to the Govt.

23. STANDARD OF WORKMANSHIP :

23.1 To determine the acceptable standard of workmanship, the GE shall order the contractor to construct some portions of work in advance with in the time specified here in below. The portions so constructed shall be treated as "Sample Work".

24. STORAGE OF MATERIALS :

24.1 The contractor shall not be provided with storage accommodation at the site. The tenderer shall make his own arrangement as per condition 10 of IAFW-2249 and as directed by the Engineer-in-Charge.

25.1 Contractor shall be responsible for the conduct and action of his workmen, agents or representatives.

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

26. ROAD ROLLER

26.1 Applicable only where road work and the like is included in scope of work.

26.2 Where road rollers are hired by the Department to the contractor, a log book for each road roller shall be maintained by the Department for recording hours of working of the road roller. In case, however when the contractor procures road roller from source other than Department a log book for each road roller shall be maintained by him for recording hours of working of the road roller. Entries in the log book shall be signed by the contractor or his authorised representative and by the Engineer in Charge.

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- 26.3 To ensure proper consolidation, roller must work for at least the number of days assessed on the basis of output given here under. If the roller has not worked for the number of days so assessed, recovery shall be affected from the contractor for the number of days failing short of the days assessed, on the basis of output stipulated. The recovery shall be affected as under :-
- (a) Where road roller hired out only by the Department to contractor, at rates given in Schedule 'C'.
- (b) Where road roller is hired by the contractor only from sources other than Deptt at Rs 960/- per working day of 8 hours.
- (c) Where road roller is hired by the contractor from Department and also from sources other than the Department at higher of two rates given in Schedule 'C' of contract and para 25.3(b) above.
- 26.4 The above provision shall not however absolve the contractor of his responsibility of properly consolidating surfaces as required under the provisions of the contract :-

Ser No	Item	Output per day of 8 hrs work in Sqm
(a)	Consolidation of formation surfaces/sub grade	1850 Sqm
(b)	Consolidation of stone soling 20 cm thick (spread thickness) with 8 to 10 tonne roller	590 Sqm
(c)	-do- but 15 cm thick -do-	800 Sqm
(d)	Consolidation of water bound macadam (stone metal) 10 cm compacted thickness including spreading and consolidation with blinding material.	186 Sqm
(e)	-do- but 7.5 cm compacted thickness -do-	248 Sqm
(f)	Consolidation of single coat surface dressing	774 Sqm
(g)	-do- two coat surfaces dressing	558 Sqm
(h)	Consolidation of 2.5 cm thick semi dense asphaltic concrete	600 Sqm
(j)	Consolidation of 2 cm thick premixed carpet incl seal coat.	744 Sqm
(k)	Consolidation of bituminous mixture 2 part of broken stone metal and one part of sand and bitumen (consolidated thickness 4 Cms).	372 Sqm

27. **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/ cesses viz GST, 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/ cesses, duties, Royalties, Octroi & other levies shall be made except as provided in sub para (b) here-in-below:-

(b) (i) The taxes/ cesses which are levied by Govt at certain percentage rates of contract sum/ amount shall be termed as **"taxes directly related to Contract value"** such as GST, Labour Welfare cess/ tax and like but excluding Income Tax. The tendered rates shall be deemed to be inclusive of all **"taxes directly related to Contract value"** with existing percentage rates as prevailing on last due date for receipt of tenders. Any increase in percentage rates of **"taxes directly related to Contract value"** with reference to prevailing rates on last due date for receipt of tenders shall be reimbursed to the contractor and any decrease in percentage rates of **"taxes directly related to contract value"** with reference to prevailing rates on last due date for receipt of tenders shall be refunded by the contractor to the Govt/ deducted by the Govt from any payments due to the contractor. Similarly imposition of any new **"taxes directly related to Contract value"** after the last due date for receipt of tenders shall be reimbursed to the contractor and abolition of any **'taxes directly related to Contract value'** prevailing on last due date for receipt of tenders shall be refunded by the Contractor to the Govt/ deducted by the Govt from the payments due to the contractor.

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(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 submit the other 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 authorised representative of Govt, and shall further, at the request of the GE furnish, verified in such a manner as the GE may require, any documents so kept and such other information as the GE may require.

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

28 **MINIMUM WAGES PAYABLE TO LABOUR & CONTRACT LABOUR REGULATIONS** In terms of Minimum Fair Wages Act 1948 & Fair Wages Act, the contractor shall not pay wages lower than minimum wages for labour as fixed by the Govt. of India / State Govt. whichever is higher. The fair wage referred to in condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages as referred to above. Condition 26 of IAFW 2249 shall be binding on contractor to the full extent the regulations mentioned therein and Appendix C to IAFW 2249. Statutory Labour Laws contained under, Contract Labour (Regulation & Abolition) Act 1970, EPF & MP Act 1952, Payment of Wages Act 1936 shall be in force and binding as per law. The payment to labour engaged by the contractor shall preferably be made through AADHAAR linked bank account. Being Principal Employer, the GE JHANSI shall ensure that the contractor fully comply with above provisions. The documents held by the contractor shall be subject to scrutiny by law enforcement agencies. Proof of crediting wages in the bank account / made to employee by the contractor shall be pre-requisite to enable the GE JHANSI to release the RAR. The contractor shall also provide payment details under EPF & ESI with account numbers alongwith RAR which shall be verified by GE JHANSI. In case the RARs are not claimed on monthly basis, the contractor shall bound to submit monthly accounts of payments to employees under above regulations.

29. **TESTING OF MATERIALS.**

29.1 **'A' LEVEL TESTS FOR WORKS COSTING 100 LAKHS AND ABOVE** . The contractor shall set up a site laboratory for testing of materials (except Schedule 'B' materials) for 'A' level tests as listed in Annexure-I hereto. The contractor shall arrange all equipment/machines for the tests specified in Annexure-I as 'A' level tests at his own cost with prior approval of GE. This cost shall be included in the lump-sum cost quoted by the contractor. The contractor shall employ a competent technical representative as approved by the GE for the purpose of testing and all such tests shall be carried out in the presence of Engineer-in-Charge. The successful tests results thereof shall be recorded and signed jointly by the contractor and the Engineer-in-Charge. The charges for these tests ie 'A' level tests carried out in the site laboratory of the contractor shall not be recovered. In case, the contractor has not set up the site laboratory and the tests are carried out in Zonal lab or any other laboratory setup/approved by GE, the recovery shall be made at rates applicable ie as given in Annexure I.

29.2 **'A' LEVEL TESTS FOR WORKS COSTING UPTO 100 LAKHS**. The contractor may set up a site laboratory at his option for works costing upto 100 lakhs. Other stipulations will be the same as specified in preceding para (a). However in case the contractor has not set up the site laboratory and tests are carried out in Zonal or any other laboratory approved/setup by GE, the recovery shall be made at rates applicable ie as given in Annexure –I.

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29.3 **'B' & 'C' LEVEL TESTS**. For tests of 'B' and 'C' level as indicated in Annexure-I, the contractor shall provide all facilities for testing of materials at Zonal laboratory/NABL Accredited laboratories /IITs at his own cost. The lump sum/rates quoted by the contractor shall be deemed to be inclusive of these tests. The rates of various tests conducted in the laboratory of MES are indicated in Annexure –I. The contractor shall bear the actual charges of 'C' level tests (to be done in labs other than MES labs) irrespective of rates indicated in Annexure-I. Wherever it is convenient to get 'B' level tests done at NABL Accredited laboratory, the same can be done at the cost of the contractor and no separate recoveries will be made by the Department for the same.

29.4 The recoveries on account of testing charges wherever applicable shall be effected from the Running Account payments due to the contractor payable after completion of the respective tests or whenever the test is due whichever is earlier.

30. **INSPECTION OF SITE BY THE TENDERER.**

30.1 The tenderer is advised to contact the Garrison Engineer for the purpose of inspection of site(s) and relevant documents other than those sent herewith, who will give reasonable facilities for the purpose. The tenderer shall also make himself familiar with the working conditions, accessibility of site(s), availability of materials and other cogent conditions which may affect the entire completion of work under this contract.

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

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

32. **LOCATION OF BUILDINGS AND WORKS**. There may be some changes in location/siting of buildings shown in the site (layout) plan(s) to suit local conditions and/or departmental requirements. The contractor shall have no claim what-so-ever consequent to such changes in the location/siting of works.

33. **COORDINATION WITH OTHER AGENCIES**. 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..

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

34.1 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.

34.2 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.

34.3 **MATERIALS TO BE PROCURED BY CONTRACTORS:-**

(i) Vouchers in respect of cement, steel, major E/M equipment like transformers, DG Sets, pumps, motors, AC and lift equipment will be submitted invariably. For all original works, keeping in view specific provisions and circumstances for each contract, it may be necessary that certain additional items require verification of vouchers. GE shall list out all such items after issue of tender and submit the same in his comments on the tender documents. The list of such items shall be put up by E8 section (through E4 if required) to the Accepting Officer for his approval. The list should be work specific and not general in nature.

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(ii) Original purchase vouchers shall be defaced by the Engineer-in-Charge and photocopies shall be kept in record. Genuineness of purchase voucher shall be verified by the Engineer in Charge before considering the same for making payment. Initially JE may verify the vouchers after taking confirmation on phone or through e mail. The contractor shall ensure that the materials are brought to site in original sealed containers/ packing, bearing manufacturer's marking except in the cases of the requirement of materials being less than smallest packing.

(iii) These instructions shall also be applicable in case of contracts based on IAFW - 1815Z.

34.4 Bitumen shall be purchased directly from main manufacturers only. In case of small quantity, the Accepting Officer may allow procurement of Bitumen from authorised dealers of main manufacturers. Purchase vouchers for the same shall be defaced by the Engineer-in-Charge, indicating reference to the Contract number under his dated signature and photocopies thereof shall be kept on record so as to avoid their being used again.

34.5 The vouchers will clearly indicate the Contract number and the IS No and specific alternative to which the material conforms in case of various alternatives in IS. In case the contractor procures the Bitumen mix from Hot Mix Plant, the copy of voucher of Bitumen provided by the main manufacturer to the Hot Mix Plant shall be submitted by the contractor.

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

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

37. **MATERIALS AND SAMPLES:-**

37.1 Refer to Condition of 10 of IAFW-2249.

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

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

(i) If ISI marked materials are being manufactured, the same shall be ISI marked. For a list of ISI marked manufacturers refer to the website of BIS ie www.bis.org.in.

(ii) If ISI marked materials are not being manufactured, the same shall be conforming to IS Specifications.

37.4 Materials of local origin shall be as specified and conforming to samples kept in GE's office. The tenderer is advised to inspect samples of materials which are displayed in the office of GE before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfy 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.

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

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38. **HANDING OVER OF SITE.** Site for execution of work will be available as soon as the work is awarded. In case it is not possible to make the entire site available on the award of work, the contractor will have to arrange his working programme accordingly. No claim whatsoever, for not giving the entire site on award of work and for giving site gradually, will be tenable. However Work Order No 1 shall specifically indicate phased handing over of site as proposed in consultation with users.

39. **PERFORMANCE SECURITY AMOUNT.** On acceptance of tender, the Govt may accept a **Bank Guarantee Bond, Government Securities, FDR (or any other Government Instruments stipulated by Accepting Officer)** from State Bank of India or any Nationalized Bank / Or Scheduled Banks against Performance Security Deposit Money. The Bank Guarantee is to be in prescribed form which is available and may be seen by the tenderers in the office of GE JHANSI.

40. **REFUND FUND OF PERFORMANCE SECURITY**

40.1 The Performance Security Deposit in any form submitted by the contractor equivalent to 5% of contract sum may be refunded to contractor after the expiration of the defects liability period of **01 (One Year)** after the date of issue of completion certificate by the GE JHANSI provided always that the contractor shall first have been paid the final bill and have rendered a No Demand Certificate (IAFW-451).

40.2 The period of defect liability period shall be **TWELVE CALENDAR MONTH** from the the works have been handed over to the Government.

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PARTICULAR SPECIFICATION: SECTION-II : B/R WORKS

1.1 The work under this contract shall be carried out in accordance with schedule 'A' particular specifications, drawings, general specifications and other provisions in the MES standard Schedule of rates 2020 Part I & 2020 Part-II.

1.2 The terms general specifications referred to in para 1.1 herein before as well as referred in IAFW 2249 (General condition of contracts) shall mean the specifications contained in MES standard schedule of rates, ISS and any other standard Engineering books.

1.3 Particular specifications given in hereinafter are brief and only particularize, amend and emphasizes the specifications given in MES Schedule of rates, which are not repeated hereinafter.

1.4 Specification of materials and workmanship shall be all as described in MES schedule except where specifically mentioned otherwise in this documents. General rules preambles to various section/rates special conditions, method of measurement etc given in the MES Sch shall also apply to this contract unless otherwise mentioned in the tender documents.

1.5. All the material required to be incorporated in this work shall confirm to relevant IS No and Shall be ISI marked. Material which are being manufactured without IS certification and ISI Embossing shall confirm to IS provisions.

2. MATERIAL WHICH LOOSE IDENTITY AFTER INCORPORATION

2.1 Proprietary materials or articles such as bitumen, paint and cement etc, quantity of which cannot be checked after incorporation in the work, shall when collected at site be recorded in measurement book with reference to Vr No, make, brand and rate charged by manufacturer/supplier, and signed both by the MES representative and the contractor. However, the contractor will be required to submit purchase vouchers only in respect of all the items for which payment is claimed in RAR as "Material lying at site". Vouchers in respect of balance items will not be required to be submitted. However, vouchers in respect of cement, steel, major E/M equipments like transformers, DG sets, pumps, motors, AC & lift equipments will be submitted invariably and any other additional items specifically listed in the tender document. Purchase of cement & steel of approved manufacturers from their local dealers is permitted in all maintenance & special repair works with no structural work in scope. Purchase vouchers for bitumen shall not be insisted when contractor is purchasing the macadam from hot mix plant approved by GE.

2.2 The contractor shall produce receipted vouchers of applicable items showing quantity and quality of the materials to satisfy the Engineer-in-Charge that materials comply with the specifications. These voucher shall be endorsed, dated and initialed by the Engineer-in-Charge giving the contract number and name of work and a certified copy of each such voucher signed both by Engineer-in-Charge and contractor shall be kept in MES record.

2.3 Each and every material shall be entered in the MB before allowing advance payment as "material at site" as RAR. The contractor shall procure the materials from manufacturer authorized dealer/Stockiest where such authorized stockiest have been appointed.

2.4 Materials brought at site shall be stored as directed by the Engineer-in-Charge and those already recorded in measurement book shall be suitably marked for identification. The contractor shall ensure that the materials are brought to the site in original sealed container or packing, bearing manufacturer's markings.

3. PRODUCTION OF RECEIPTED BILLS/CASH MEMO FOR MATERIALS PROCURED

3.1 The tenderer shall produce receipted bills cash memo from the manufacturer and/or their authorized agents for the full quantity of the all materials as applicable as per pre-requisite before submitting the claims for payment of advance on account of materials collected in accordance with condition 64 of General conditions of Contracts IAFW-2249.

4. DISMANTLING / TAKING DOWN / DEMOLITION

4.1 The dismantling / taking down / demolition work as described in various items of Sch 'A' shall be done with due care without damaging the existing structure. All the materials obtained from demolition / taking down and dismantling are the property of the contractor for which the tenderer shall offer credit to the rate shown in Schedule of Credit further in case any of the dismantled / taken down items not catered for in Schedule of Credit in that case contractor shall deposit the entire quantity of dismantled / taken down / demolished articles to MES store without any extra cost to Govt and the debris to be removed and deposited to a distance n.exc 50 mtrs and depositing where directed. If due to fault of contractor's work people any part of the structure / fitting is / are damaged for whatsoever reason the same to be made good to its original specification without any extra cost to Govt. Further in no case the demolished / taken down materials to be thrown down from top / first floor. The same to be carried from top/ first floor to ground floor to avoid any damage of existing chajja, facia, plinth protection etc. Quoted rate is deemed to be inclusive of carrying debris to ground floor.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION: SECTION-II (Contd...)**5.0 EXCAVATION AND EARTHWORK****5.1 GENERAL**

5.1.1 Item rate quoted in Schedule 'A' shall include for excavation and earthwork in soil as described in relevant items of Schedule 'A'.

5.1.2 If rock (soft/disintegrated and hard) is met at site, contractor shall immediately notify the fact to the GE in writing. The rock so obtained shall be neatly stacked as directed by the Engineer-in-charge, without any extra cost to Govt. The hard rock obtained from excavation shall become the property of the contractor. Necessary credit for the same shall be deducted from contractor's advance on account payment at the rate of Rs.646.24 per Cubic Metre (Solid contents). The recovery rate for hard rock specified above is firm and the contractor shall have no claim whatsoever on this account. The contractor shall remove the hard rock only after the credit amount is recovered from the interim payments (RARs). The hard rock boulders may be used in the work after breaking them into specified size as approved by Engineer-in-charge or alternatively disposed off from the site for further disposal as deemed appropriate by the contractor. The soft rock obtained from excavation shall be disposed off as directed by the Engineer-in-Charge.

5.2 FILLING IN TRENCHES

5.2.1 The approved earth from excavation in foundations shall be used for filling in trenches, and any other situation after removing big stones, grass, roots and vegetable and other organic matter. Earth mixed with small stones/pebbles (if approved by Engineer –in- Charge) is permitted for use in filling under foundation.

5.3.1 Filling under 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.

5.3.2 Surplus spoil shall be removed and spread at places as directed by the Engineer-in-Charge, to a distance n. exc. 50M as mentioned in Schedule 'A' Part I.

5.4 TRENCHES FOR FOUNDATION

5.4.1 The excavation shall be restricted to dimensions as directed by Engineer in-Charge at site and specified in MES Schedule. Excavation made, if any, in excess of required depth/width shall be made good by the contractor with cement concrete 1:7:12, type F2 without extra cost to the Govt.

5.4.2 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.

5.4.3 Measurement of Excavation shall be as per authorised width as given in section III, clause 3.2.3 para (a),(b) & (c) on Serial page No. 21 of MES Schedule (Part II).

6. CEMENT**TYPE OF CEMENT**

6.1.1 Cement shall be Ordinary Portland Cement (OPC) Grade 43 confirming to IS-8112-1989 (Latest revision) or Portland Pozzolana Cement(PPC) confirming to IS-1489-1991. The following checks and procedures shall be followed before the cement supplied by the contractor is accepted and approved for incorporation in the works.

PROCUREMENT Cement shall be procured from the following manufacturers/main producers:-

i) The Associated Cement Companies Ltd	xiii) Sartaj Cement
ii) Shree Cement	xiv) Nuvoco Cement
iii) Orient Cement	xv) Ambuja Cement
iv) Century Cement	xvi) Mangalam Cement
v) Dalmiya Cement	xvii) Sagar Cement
vi) JK Lakshmi Cement	xviii) Ramco Cement
vii) Chettinad Cement	xix) JK Cement
viii) Ultra Tech Cement	xx) JSW Cement
ix) The India Cement	xxi) Jaypee Rewa Cement
x) Parasakti Cement Ltd	xxii) Birla Corporation Ltd
xi) Shanghi Cement	xxiii) Maha Cement
xii) Wonder Cement	

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION: SECTION-II (Contd...)

The contractor shall furnish particulars of the manufacturer of cement along with date of manufacture to GE for every lot of cement separately. The documents in support of the purchase of cement shall be verified by the site staff and GE. The cement so brought shall be fresh and in no case older than 60 days from the date of manufacture. Before placing order for cement by the contractor, he shall obtain written approval from the GE regarding name of manufacture, quantity of cement etc. Cement shall be procured for requirement of not more than at a time. The cement shall be consumed in the work within three months after receipt. Cement shall conform to the requirements of IS specification and each bag of each 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.

6.1.2 **USE OF PPC** For using PPC, the following requirements should be met:-

- (a) PPC should meet the strength criteria of 43 Grade OPC as laid down in IS-8112-1989
- (b) The minimum period for curing and striking off form work shall be as under in lieu of that specified in clause 4.11.6.3 of MES Schedule Pt-I :-
 - (i) Curing:- Structural RCC work, PCC work, plastering etc - 14 days
 - (ii) Striking off form work from walls, columns and vertical sides of beams- 3 to 4 days
 - (iii) Slabs (props left under) - 8 days
 - (iv) Beams soffits (Props left under) - 9 days
 - (v) Removal of props to slab/beam
 - (aa) Spanning up to 6 M span - 16 days
 - (ab) Spanning beyond 6 M span - 22 days
 - (vi) For cantilever portion of slab form work with support shall be retained until the completion of the casting of the entire frame work of the building.

6.1.3 In cold climate regions, where temperature is lower than 15 C, only OPC shall be used.

6.1.4 Mixing of OPC & PPC shall not be allowed in a work, However with strict control of the ground executives, different buildings can have different types of cement.

6.1.5 While procuring PPC, the following requirements are to be ensured and certificate to the effect is to be obtained by the contractor for each batch from the manufacturer and the same shall be submitted to the GE for approval to procure PPC.

- (i) The quality of fly ash is strictly as per IS-1489 (Part-I) - 2002.
- (ii) Fly ash is inter-ground with clinker not mixed with clinker.
- (iii) Dry fly ash is transported in closed containers and stored in silos. Only pneumatic pumping should be used.
- (iv) The fly ash has been received from thermal power plants using high temperature combustion above 1000 C.

6.1.6 For using PPC non availability of OPC shall not be insisted upon. Also no price adjustment shall be made for use of PPC.

6.1.7 **Testing of Cement** (a) The manufacturer is required to carry out inspections and testing of cement in accordance with the relevant BIS provisions. The contractor shall submit the Manufacturer's Test Certificate in original along with the Test Sheet giving the Result of each physical test as applicable and the chemical composition of the cement or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer -in-Charge shall record these details in the Cement Acceptance / Rejection Register, as appended herein below after due verification.

CEMENT SUPPLY/ACCEPTANCE FORM

Contract No. :

Name of Work :

Control No :

Dated:

Details of Purchase :

i) Particulars of Manufacturer :

ii) Details of the supplier (if any) :

Details of Test Certificate:

i) No and date:

ii) Particulars of the Issuing authority:

SL No	Nomenclature of Cement	IS Ref	Qty	Specific Surface by Blaine permeability Method	Soundness by Le Chateliers Method	Setting Time		Average Compressive Strength of three cubes as defined in relevant IS Code				Remarks
						Initial	Final	24h+ 30min	72h+ 1h	168h + 2h	672h +4h	
1	2	3	4	5	6	7	8	9	10	11	12	13

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd...)

Remarks with Signature :

JE (Civil) :
 Engr-in- Charge :
 Contractor

Accepted /Rejected :
 Garrison Engineer :

Remarks of BOO/Inspecting Officer/CWE :

(b) The GE will organise independent testing of random samples of cement drawn from various lots from the National Test House, SEMT Wing, CME, Regional Research Laboratories, IIT Kanpur, Govt Engineering Colleges or IS approved labs as per following codes

- (i) IS-3535-1986 : Method of sampling hydraulic cement.
- (ii) IS-4031- : Method of physical test for hydraulic cement.
- (iii) IS-4032-1985 : Method of chemical analysis of hydraulic cement.

(c) The contractor shall make available required cement and other facilities for testing of cement by GE as specified herein before and shall bear the cost of testing of irrespective of whether sample passes or fails. The GE shall make payment to the testing house / lab and direct the contractor to deposit the amount in Govt treasury in favour of GE within 10 days of the letter issued by the GE for payment of cost of testing of cement. If contractor fails to do so, the testing charges shall be recovered from the dues of the contractor.

(d) The required quantity of samples of the cement shall be taken in two polythene bags and sealed by the Engineer-in-Charge in the presence of representative of the contractor. The seal shall be authenticated both by the Engineer-in-Charge and representative of the contractor. Out of two samples, one sample shall be sent for testing and other retained by GE in his office. Record of these samples shall be kept by Engineer-in-Charge in the register and copy of the same shall be sent to GE /CWE by him for record in concerned contract files.

(e) Cement brought by the contractor shall be allowed to be incorporated in the work after satisfactory test results of sample sent for testing. GE shall inform the contractor, about the test result and permission to incorporate in the work, in writing. GE shall ensure that word "Pass" is embossed on both sides of the cement bags of lot which has been found as per specifications as per test results.

(f) In case the sample got tested by the GE from the Institutions / Labs mentioned hereinbefore, fails, the concerned lot of cement shall stand rejected. A mark "X" shall be embossed by the GE on both sides of each bag of the rejected lot. The GE shall inform the contractor in writing about the test result and direct him to remove the rejected cement. Contractor shall remove the rejected cement from the site of works within two days of the order by the GE . Contractor shall have no claim whatsoever on account of rejection and removal of cement.

(g) It shall be the responsibility of the contractor to arrange cement well in advance to facilitate the testing, before use in the work. The contractor shall submit the program of procurement of cement to the GE before the date of commencement of the works indicating the dates of procurement and quantity.

(h) If the requirement of cement under this contract is less than 1200 bags, contractor may procure cement from the authorised distributors/dealer of approved manufacturer as mentioned herein above. Contractor shall submit test certificate for each lot issued by the manufacturer. However the independent testing shall be carried out as specified in tender document. It will be ensure that cement used for incorporation in the work will not be more than two month old. The week/date of manufacture of cement (which is normally printed at the bottom end of the cement bag) will be verified by the Engineer-in-Charge from the purchase voucher and the cement bags brought by the contractor at site before incorporation in the work.

6.1.8 STORAGE

a) The contractor shall store the cement at site in a covered leak proof godown with locking arrangement over a tonnage at least 20cm high, in such a manner as to prevent deterioration due to moisture or intrusion of foreign matter. The stock of cement stored shall be at least 60 cm away from walls. The cement so stored shall be inspected by the J E civil and the rep of the contractor once in a day to ensure the cement is not affected by moisture or by any other means. Engineer in Charge shall make such inspection once in a month. In addition to the inspection Engineer-in-Charge shall attach a certificate with every RAR that cement is stored as per the above provisions and is safe. The tested and untested cement shall be segregated and stored separately with distinct identification. The cement godown shall be provided with two locks on each door. One lock shall be provided by the GE and other by the contractor. The keys of the lock provided by the GE at each door shall remain with the Engineer-in-Charge or his representative and that of the other lock with the contractor's authorized agent at site of works so that cement is removed from the godown only according to the daily requirement with the knowledge of both the parties.

b) Procurement of cement shall be made in phased manner to avoid storage for long duration

(Signature of Contractor)

DCWE (Contracts)
 For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd...)

DOCUMENTATION The contractor shall submit original vouchers, test certificates and test sheets from the manufacturer / producers 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 before sample is taken for the testing. The original vouchers and the test Certificates (original/ authenticated) shall be defaced by the Engineer-in- Charge and kept on record in the Office of GE duly authenticated and with cross reference to the Control Number recorded in the Cement Acceptance / Rejection Register. The Cement Acceptance Register will be signed by JE B/R, Engineer-in-Charge, GE and the Contractor. The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of all cement shall also be suitably recorded in the Measurement Book (not to be abstracted) for record purposes before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.

6.2 CONCRETE

6.2.1 FINE AGGREGATE (SAND): Fine aggregate for all concrete work shall be Sindh River sand conforming to samples, complying with the requirement as specified in para 4.4.7.2 for grading zone I of SSR (part I). Sand in the zone II grading may also be permitted provided mix design is done and the requisite strength of the concrete is achieved. All mixes of concrete and mortar mentioned in this tender document shall be by volume except design mix concrete conforming to IS-456 of 2000 for which all the ingredients are proportioned and mixed by weight.

6.2.2 COURSE AGGREGATE: Course aggregate shall be crushed stone aggregate and shall conform to specifications given in para 4.4 of SSR (Part I). However in case of controlled quality concrete the provisions made in IS-456-2000 shall be applicable. Where due to less thickness of concrete the use of 20mm graded is not possible, the aggregate shall be of 12.5 mm grading as specified in para 4.4.7.1 of MES Sch (Part-I) without any price adjustment.

6.3 MIX OF CEMENT CONCRETE: Cement concrete shall be of the mix as specified in Sch 'A'. Minimum cement content and max water cement ratio for PCC nominal mix of various grades shall be as per Table 5 and 6 of IS-456-2000.

6.0 FORM WORK

6.1 Formwork shall comply with the requirement specified in para 11 of IS-456:2000 & IS 14687 used, deformed and dented steel sheets shall not be permitted for use as form work.

6A.2 All formwork incl plates and props shall be of Steel of adequate strength. Props shall be adjustable type, to avoid slant props. However, the form work to be used for surfaces specified in these specifications to be plastered shall be such that after application of the specified thickness, fair finished surface is achieved as specified herein. Wall thickness shall not be made use of as formwork. Wall shall be built after the columns are cast. In the event of deviation, rates in MES Schedule for clean sawn formwork will be applicable. In this connection also refer to para 7.15 of SSR Part I. In case of bad weather stripping time for form work as specified may be increased as directed by Engineer-in-charge without additional payment to contractor

6A.3 The Contractor shall excavate for the RCC footing, walls to their exact size after accounting for formwork to sides. If the excavation is more than required size extra excavation shall be made good as mentioned in clause 3.13.4 and 3.15.5 of SSR Part I. However, form work shall be provided to vertical sides of column pedestals as necessary and as directed by Garrison Engineer.

7. BRICK WORK

7.1 CEMENT Cement shall be as specified in Clause No.4 here-in-before.

7.2 SAND FOR MORTAR Refer clause 4.1 of MES SSR Part-I 2020.

7.3 BRICKS Brick work shall be carried out with fly ash lime bricks conforming to IS-12894, size of bricks shall be 230x110x75mm, strength of brick shall be M-10 minimum.

7.4. WATER Refer clause 5.18 of MES SSR Part-I.

7.5 WORKMANSHIP

Unless otherwise specified in these particular specification the cement mortar to be used in the brick work for the different location shall be as specified in Schedule 'A' and shall be prepared as specified in clause 5.19.2 of MES SSR Part-I.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd...)**8 PLASTERING**

- 8.1 Plastering shall be prepared as specified in Schedule 'A'.
- 8.2 Thickness of plaster mentioned is exclusive of necessary dubbing out. Rendering and dubbing may be applied in one operation.
- 8.3 Plastered surface shall be finished even and fair.
- 8.4 RCC column coming in contact along with brick wall shall also be plastered in continuation of plastered surfaces of masonry.
- 8.5 Sand for plastering shall be as specified in clause 14.5 of MES SSR Part-I 2020.
- 8.6 Cement mortar shall be prepared as per clause no 5.19.2 of MES SSR Part-I Mortar prepared as required and applied within 30 minute of mixing.
- 8.7 Surface shall be prepared as specified in MES SSR Part-I before plastering to be carried out.

9. STEEL AND IRON WORK

- 9.1 Quality of steel to be incorporated in the work shall be as follows:-

a) High strength deformed steel bars produced by Thermo Mechanical treatment process (In short called as TMT bars) for reinforcement	Of Grade Fe 415/500/550 and meeting all requirement of IS 1786-1985 (Reaffirmed) 1990.
b) Mild steel for miscellaneous works	Shall conform to IS-432(Part-I) Grade wherever not shown/indicated otherwise shall be of Grade I.
c) Structural steel	Steel for general Structural purpose shall be Grade FE-410WA ISI marked (IS-2062-1999) for all type of steel Structures including those subject to dynamic loading. Structural steel ordinary quality shall confirm to IS-1977
d) Galvanised steel sheets (Plain & corrugated)	Conforming to IS-277.
e) Fabric reinforcement for concrete	Conforming to IS--1566

9.2 Welding

- 9.2.1 Welding of steel and iron work shall be done in an approved manner with electric are welding.
- 9.2.2 Electric welding shall be metal are welding as specified in Para 10.15 of MES Schedule Part-I.
- 9.2.3 Welding electrodes shall be quality suitable for welding of structural steel and shall comply with requirement of IS-814 for covered electrodes for metal are welding of mild steel.
- 9.2.4 All butt welds shall be full penetration welds.

9.3 REINFORCEMENT

- 9.3.1 Reinforcement shall be bent to shape and provided as per requirement.
- 9.3.2 All laps and crossings shall be tied with mild steel wire (annealed) of size not less than 0.9mm dia.

9.3.3 **SOURCE OF PROCUREMENT** TMT steel bars of size upto 16mm dia can be procured directly from main producers at the option of the contractor without any price adjustment. TMT steel bars of 18mm dia and above shall be procured from the main producers only. TMT steel can also be procured from authorized conversion agents of main producers provided the main producers have given such directions in a specific sale/purchase order to the authorized conversion agent and the conversion agents are producing TMT steel using Thermex/Tempcore/EVCON Turbo technology. In such case, the purchase/cash memo shall have to be from main producer only. TMT bars less than 2 tonnes in each section may be procured by the contractor from local authorized dealer provided such steel should meet all the requirement laid down in this contract.

- 9.3.4 The main producers for TMT bars as stated above are SAIL/ RASHTRIYA ISPAT NIGAM / VSP / IISCO / TISCO.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd...)**9.3.5 TESTING OF STEEL**

9.3.5.1 The manufacturer is to carry out inspection and testing of steel in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer's test certificate in original alongwith the Test Sheet giving the result of each technical test as applicable and the chemical composition of the steel or authenticated copy thereof duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in steel acceptance register (as per proforma given herein-before) after due verification and send a certificate true copy of test sheet to GE for his records. Any particular size of bar/steel section of any consignment, not meeting the requirement shall be rejected and the same shall be removed from the site by the contractor at his own cost and the contractor shall have no claim on this account.

9.3.5.2 **INDEPENDENT TESTING.** The GE/CWE shall also organize independent testing of random samples of steel drawn from various lots from National Test House, SEMT Wing CME Pune, Regional Research Laboratories, Govt approved laboratories, Zonal laboratories as per the recommended minimum frequency as in Para 6.6.4. In addition samples from each lot shall be tested for quality and elongation as per the parameters given in STEEL SUPPLY & ACCEPTANCE FORM. The elongation shall not be less than 14.50%.

9.3.5.3 REINFORCEMENT STEEL.

(a) Independent testing of steel 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 in accordance with Condition 10 A of IAFW-2249 i.e testing charges shall be borne by the Deptt if the test results are found in order, otherwise these shall be borne by the Contractor.

(b) Independent testing of steel by the GE shall be mandatory in case of procurement of steel from secondary producers/authorized conversion agents of main producers and testing charges shall be borne by the contractor irrespective of the outcome of test results.

(c) In both the cases at (i) & (ii) above, the contractor at his cost shall provide all facilities required for the testing and cost of materials consumed in tests, samples, conveyance etc shall also be borne by the contractor.

9.3.5.4 FREQUENCY FOR TESTS ON STEEL**REINFORCEMENT STEEL**

1. Bars size less than 10mm dia	(One) 1 Sample (three specimens) for each test for every 25 tonnes or part thereof.
2. Bars size 10 mm to 16 mm dia	(One) 1 Sample (three specimens) for each test for every 35 tonnes or part thereof.
3. Bars size over 16 mm dia	(One) 1 sample (three specimen) for each test for every 45 tonnes or part thereof.

9.3.5.5 **DOCUMENTATION** The contractor shall submit original purchase vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by the GE along with the relevant documents before acceptance. The original purchase vouchers and the test certificates shall be 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 number recorded in the steel Acceptance Register. The steel Acceptance Register shall be signed by the JE, Engineer-in-Charge, GE and the Contractor. The entire quantity of all steel items shall be suitably recorded in the measurement book as not to be abstracted, before incorporation in the work and shall be signed by Engineer-in-Charge and the contractor.

9.3.5.6 **STORAGE ACCOUNTING, PRESERVATION AND MAINTENANCE OF STEEL** The storage, accounting, preservation and maintenance of steel supplied by the contractor shall be done as per standard engineering 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 GE shall inspect at regular interval to verify that steel lying at site is stored, accounted, preserved and maintained as per the norms. The steel shall be stored so as to differentiate each consignment separately. If the GE is not satisfied with the storage/preservation of any size of bar/section of steel, he may order for any test(s) of steel as applicable for that size of bar/section of steel and as specified in tender documents/relevant IS code to recheck the acceptability criteria for the same. The contractor shall bear the cost of necessary testing(s) in this regard and no claim whatsoever shall be entertained.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd...)

9.3.5.7 Movement of steel shall be recorded in In/Out steel register as per following proforma. Each entry in the register shall be signed by the contractor and Engineer-in-Charge.

IN/OUT STEEL REGISTER

Sl	Date	Steel IN			Steel OUT			Qty Balance
		(Tons)	Section	Control No	Qty (Tons)	Section	Reasons*	
1	2	3 Qty	4	5	6	7	8	9

- *Note :** (i) The following reasons may be mentioned for taking out steel from storage:-
 (a) For testing purpose
 (b) For use in Work Rejected steel taken out of site
 (c) Rejected steel taken out of site
 (ii) All the transaction in the register shall be signed by Contractor/ his representative and Engineer-in-Charge/JE.

10.0 FLOOR FINISH AND PAVING**10.1 GENERALLY**

- (a) Floor shall be provided as mentioned in respective item of schedule 'A' and as per direction of Engineer-in-Charge/GE.
 (b) Expose edges of floor shall be finished to match the top surfaces finish of floor.
 (c) Floor except sub base shall be carried out through all opening of wall.
 (d) Refer relevant clauses of Part-I (2020) .

10.2 PCC FLOOR

10.2.1 PCC floor shall be provided as specified in respective item of schedule 'A'. The surfaces of floor shall be finished as mentioned under respective, items of schedule 'A' and as directed by Engineer-in-Charge.

10.3 GLAZED CERAMIC TILE DADO/FLOORING

Glazed ceramic tiles shall be of size and type as mentioned in schedule 'A' and shall be of premium/ 1st quality conforming to (B-III) for wall tiles & Group (B-II a) for Non Skid ceramic floor tile as per IS-13712-2006 and shall be provided in manner as specified in SSR Part-I (2020) and in schedule 'A'.

11 PLINTH PROTECTION

- 11.1 The plinth protection shall be of thickness as specified in Sch 'A'.
 11.2 Plinth protection shall be laid to slope 1 in 30 in alternative bays not exceeding 3 metres in length. Exposed surfaces shall be finished even and fair without using extra cement.

12 GLAZING

- 12.1 Glass shall be free from all defects viz bubbles etc and shall be homogenous thickness.
 12.2 Glazing shall be done with the glass of thickness mentioned in respective item of Sch 'A'.
 12.3 Putty for glazing shall be as given in clause 16.5 of MES Part-I (2020). The glass in wooden joinery shall be secured with wooden beads as specified in clause of MES Part-I (2020) .
 12.4 The glass to steel frame/wooden frame shall be fixed as specified in clause 16.7.4 and 16.10 of MES Part-I (2020) and as specified in schedule 'A'.

13. PAINTING

- 13.1 All paints shall be of quality not inferior to that required by the relevant specifications. Paints shall be ready mixed.
 13.2 The paint shall be of tint and quality as approved by GE. The paint and primer shall be obtained from approved manufacturers by GE and shall be brought to site in sealed drums.
 13.3 The brand of paint shall be got approved by GE in writing before incorporation in the work.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATION : SECTION-II (Contd)

- 13.4 All wooden and steel surfaces except reinforcement and galvanized steel shall be painted with two coats of synthetic enamel paint over one coat of primer. Surface of steel & wooden shall be prepared as per direction of Engineer-in-Charge before applying primer.
- 13.5 Use of all scaffolding, trestles, ladders, cradles, etc. necessary for execution of work and protective measures.
- 13.6 Removing of nails, making good holes, cracks, etc.
- 13.7 Work in patches, and in narrow widths. bands, cornices, pilasters, etc. and cutting in edges to line, where necessary.
- 13.8 Spreading and removing coverings to doors, windows, floors, fittings, etc., to protect them from splashes.
- 13.9 Removing and replacing furniture, movable cupboard, chicks, blinds, etc.
- 13.10 Washing floors, cleaning glass, joinery, electric fittings, wiring, etc. of drops and splashes and leaving premise, clean and tidy.
14. **WHITE WASH /COLOUR WASH**
- 14.1 White wash and color wash to the surfaces shall be carried out as mentioned in schedule 'A'. Surfaces of wall or ceiling shall be prepared as per direction of Engineer-in-Charge before applying white wash.
15. **OIL EMULSION DISTEMPRING**
- 15.1 Oil emulsion distemper shall be applied as mentioned in schedule 'A'. Surface of wall shall be prepared as per direction of Engineer-in-Charge before applying distemper.
16. **GI WATER TUBING AND FITTINGS**
- 16.1 GI water tubing shall be galvanised medium grade as mentioned in Schedule 'A' ordered and shall be IS-1239 Part-I. The fittings shall be as IS 1239 Part-II. The fittings not curved under IS-1239 Part-I shall comply with the requirement of IS-1879 part-I to X.
- 16.2 Laying and jointing of pipes shall be done (External and Internal works) all as specified in clause respective of MES Schedule Part I (2020).
17. **TESTING**
- 17.1 After the pipes are laid jointed the test shall be carried out as specified in clause 18.4.5 of MES Schedule Part-I (2020) as applicable. Testing shall be done in presence of GE/his representative. Materials, labour and equipment required for testing shall be provided by the contractor at his own cost.
- 17.2. If any pipe bursts during testing, the same shall be replaced by the contractor without any extra cost.
18. **SANITARY APPLIANCES**
- 18.1 All sanitary appliances shall confirm to IS-2556 for General requirements and the specific requirements as mentioned in relevant clause of MES schedule and as described in Sch 'A'.
- 18.2 **FLUSHING CISTERN** : Flushing cistern shall be all as specified in clause 18.34 of Part-I (2020)
- 18.3 **WATER CLOSETS** : Water closet squatting pattern 'Orissa pattern shall be as described in Sch 'A' and all as specified in Part-I (2020)
- 18.4 **WASH HAND BASIN** : Shall be all as specified in clause of Part-I (2020) and fixing waste pipe shall be all as specified in clause 18.32.5 of MES Schedule Part-I (2020).
- 18.5 **PVC LOW LEVEL CISTERN**
- PVC low level cistern shall be of the capacity mentioned in Sch 'A'. The brand of the PVC cistern shall got approved by the GE before procurement of material in writing.
- 19 **BIB TAPS AND STOP VALVES:**
- 19.1 Brass bib tap and stop valve shall confirm to IS-781 high pressure quality. The crutch handle, spindles, glands etc of stop valve and bib tap shall be cast brass (rolled or forged) in lieu of brass rod as specified in IS-781 without any price adjustment. Fancy bib tap and stop valve shall be approved make and shall be Nickel chromium plated and confirm to IS-8931-1978.
- 19.2 Fancy Pillar taps shall be of cast copper alloy chromium plated confirm to IS-1795-1982. The minimum finished mass of pillar taps shall be is specified in clause 18.16.1 of MES Sch Part-I-(2020).
- 19.3 **BALL VALVES** Ball valve shall be of PTMT and all specified in Part-I(2020) & as described in Sch 'A'.
- 19.4 **FLUSH PIPE** : Flush pipe shall be as specified in para of MES Schedule Part-I (2020) .
20. **NAHANI TRAP** C I nahani trap shall be as per clause 18.25 MES SSR part-I (2020)

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PARTICULAR SPECIFICATION : SECTION-II (Contd)**21. FIXING OF CHOWKHAT**

Hold fasts of wooden and door frame Chowkhat shall be embedded in PCC 1:2:4 type B-1 using 20mm graded stone aggregate in PCC block of size 150mmx150mm x 230 mm in full brick thick wall and of size 150mm x 150x115mm in half brick thick wall. No additional payment for cutting holes, fixing hold fast and making good shall be given on this account and same is deemed to be included in rate quoted by tenderer for item of Chowkhat given in respective item of schedule 'A'.

22. HARD CORE

- 22.1 Hard core shall be of hard stone not exceeding 63 mm gauge and shall be provided all as per specifications laid down in clause 3.27 MES schedule Part-I 2020. Thickness of hard core as given in sch'A'. Hard core shall be blended with finer material of broken stone aggregate. It shall be well watered and consolidated by ramming.

23 PVC SOLID DOOR SHUTTER

- 23.1 Factory made solid panel PVC door shutter 30mm thick (style) consisting of frame made out of MS tubes for top and bottom rails, MS frame shall be covered with heat moulded plain colour PVC 'C' channel having a PVC sheet strip of 20mm width stuck inside with solvent cement for stiles and plain colour PVC sheets for top rail, lock rail and bottom rail on either side and as gap insert for top rail and bottom rail, Paneling of plain colour PVC sheet to be fitted on the MS frame welded/sealed to the stiles and rails with suitable PVC sheet beading and jointed together with solvent cement, supplying and fixing in the frame at site as per specifications and drawings.

24. PVC SOLID FRAME FOR DOOR SHUTTER

PVC solid door frame of size 50mm x 47mm made out of 5mm plain colour PVC sheet reinforced with MS square tube, supplying and fixing in opening as per specification and drawing .

25 FLOOR FINISH AND PAVING**25.1 GENERALLY**

- (a) Floor shall be provided as mentioned in respective item of schedule 'A' and as per direction of Engineer-in-Charge/GE.
(b) Expose edges of floor shall be finished to match the top surfaces finish of floor.
(c) Floor except sub base shall be carried out through all opening of wall.
(d) Refer relevant clauses of Part-I (2020) .

26. WHITE WASH /COLOUR WASH

- 26.1 White wash and color wash to the surfaces shall be carried out as mentioned in schedule 'A'. Surfaces of wall or ceiling shall be prepared as per direction of Engineer-in-Charge before applying white wash.

27 CAST IRON SOIL, WASTE AND VENTILATING PIPES

- 27.1 They shall comply either with IS 1729-2002 specifications for sand cast spigot and socket, soil, waste and ventilating pipes, fittings and accessories or with IS 3989-1984 specifications for centrifugally cast (spun) iron spigot and socket soil, waste and ventilating pipes, fittings and accessories as indicated in Sch A. Fittings as indicated and accessories shall conform to the particular standard. Fittings shall be without ears.

28 UNPLASTICISED PVC PIPES

- 28.1 UPVC pipes shall conform to IS-4985-2000. Specifications for Unplasticised PVC pipes for potable water supply. The pipes shall be reasonably round. Internal and external surfaces of the pipes shall be smooth and clean, reasonably free from grooving and other defects. The ends shall be cleanly cut square with the axis of the pipes, UPVC pipes shall be of pressure rating (working pressure) 10 Kg/Sqcm as indicated.
- 28.2 Fittings for Unplasticised PVC pipes shall be made of PVC or shall be as recommended by the manufacturers of the pipes used.

29 WATER PROOFING TREATMENT OVER ROOF SLAB

- 29.1.1 Water proofing treatment shall be carried out to roof slab/terraces & sunken floor as under :-

- 29.1.2 Roof Slab The treatment to the roof slab will be carried out with APP modified membrane with non-woven polyester reinforcement of suitable weight/thickness. TI-5/2003 on General concepts & guidelines on the use of chemicals and admixtures in MES to be referred for selection of suitable water proofing compounds. The material shall have the characteristic/properties as per the details given below.

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PARTICULAR SPECIFICATION : SECTION-II (Contd)

29.2 Technical specifications of membrane.

NON ACCESSIBLE ROOF

- (a) Characteristics of Polymeric Compound
- (i) Softening point - > 150°C
 - (ii) Penetration at 25°C
100g 5 sec - > 20 – 35 dmm
- (b) Characteristics of APP modified membrane
- (i) Weight of Single non-woven polyester reinforcement (center core) - >= 160 gms/Sqm
 - (ii) Heat resistance
120°C for 2 hour - Does not trip
 - (iii) Cold resistance at (-) 5°C - Does not break/crack
 - (iv) Tensile strength
 - (aa) Longitudinal - > 650 N/Sqcm
 - (ab) Transverse - > 350 N/Sqcm
 - (v) Elongation
 - (aa) Length wise - > 20%
 - (ab) Cross wise - > 20%
 - (vi) Weight of the membrane - Not less than 3 Kg/Sqm
 - (vii) Water absorption of not more than 1%
on mass within 24 Hrs -
 - (viii) Water tightness/
impermeable at 2 Kg/cm²
 - (ix) Thickness of membrane - Not less than 3 mm

29.3. **WATER PROOFING TREATMENT TO RCC SLAB:-** The water proofing treatment shall be carried out as per described in sch 'A'

29.3.1 The water proofing treatment to RCC roof slabs shall be carried out by providing 10mm thick rendering in CM (1:4) mixed with water proofing compound as per manufacturer's instructions while the concrete is still green (WPC shall be taken as 3% by weight of cement) and subsequent treatment as specified in clause 11.43 of SSR Part-I. However brief the subsequent courses is as follows: -

- (a) First coat of bitumen primer conforming to IS-3384 @ 0.4 Kg/Sqm
- (b) Second layer of APP based polymeric membrane minimum weighing 3kg/sqm and minimum 3mm thick reinforced with polyester non woven fabric (wt. not less than 150 gms/sqm) laid on primed surface by torch application complete all as specified.
- (c) Third layer as specified in BOQ.

29.3.2 The surface of roof, parapet and gutters, drain mouths, etc over which waterproofing treatment is to be applied shall be cleaned of all foreign matter such as, fungus, moss, dust etc by wire brushing and dusting. For cast iron drain out lets a groove shall be cut around to tuck in the treatment. Concrete angle-fillets shall be provided at junctions between roofs and vertical faces of walls (parapet and other walls), around obstacles such as pipes, chimneystacks, etc and other similar situation to ease up about corners.

29.3.3 After the application of approved bituminous primer the water proofing membrane shall be laid on the primed surface by torch application method as per manufacturer's instruction. The overlap while torching ie thermofused with the help of LPG flames shall be 100mm in longitudinal direction and 100mm in transverse direction. All overlap joints shall be sealed thoroughly by thermofusing both the membrane layer and sealing it with the help of hot trowel. The overlap joints shall be made as a monolithic layer.

29.3.4 All joints and changes in direction should be curved with cement mortar 1:3 mixed with SBR latex @ 200 ml per bag of cement and cured well before laying the membrane.

29.3.5 A fillet of PCC (1:2:4) of 100 x 100mm shall be provided at all junctions of vertical and horizontal surfaces and wherever there is a change of direction. The membrane should not be taken over at any steep turns and hence all corners/junctions should be rounded.

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PARTICULAR SPECIFICATION : SECTION-II (Contd)

- 29.3.6 Treatment over inaccessible roof will be carried out by having thermal insulation with white mineral/gravel finish of upper side of membrane uniformly embedded during manufacturing process.

29.4 **TREATMENT AROUND RAIN/DRAIN PIPES**

The work will be executed in the following steps :-

(a) Cut a strip of membrane 25 cm in width and length equal to the perimeter of the drain, adding 10 cm for the overlapping. Flame bonds the part of the strip to be inserted into the drain i.e. approx. 15 cm.

(b) Cut the protruding end of the drain strip vertically upwards, with the aid of a heated trowel, into as many slits as are necessary to then be able to press it downwards and flame bond it to the surrounding roof deck. Then, with the help of the trowel and torch, go over the exterior of the drain to obtain an even spread of the asphalt and fill in all the pores.

(c) Cut a square piece of membrane about 15 cm larger than the diameter of the drain. Flame bonds this square over the drain opening, as centered as possible.

(d) Then, using the heated trowel cut the part that covers the opening of the drain in to the shape of a star with 8 peaks. Fold the peaks outwards and heat them one by one with the torch and then insert them into the drain. Pressing them down with your fingers to ensure perfect adherence.

29.5 **WATER PROOFING TREATMENT TO PARAPETS**

In vertical finished with membrane shall be cut in suitable length and width and should be adhered to the parapets and taking up and over the top of the parapet wall. The lower portion of membrane shall be taken over wall/RCC slab joint and taken up to a length 150mm horizontally and bonded effectively with membrane as explained above. The membrane shall be protected with 15mm thick cement mortar 1:4 plaster and PCC coping at top of the parapet.

29.6 **LAYING TECHNIQUE OF MEMBRANE**

(a) The membrane shall normally be laid in length at right angles to direction of the run-off gradient, commencing at the lowest level and working up to the crest. The membrane shall be first cut to required lengths, brushed clean of dusting material and laid out flat on the roof. Each length of membrane prepared for laying shall be laid in position and rolled up for a distance of half of its length.

(b) The minimum overlaps of 100mm shall be allowed at the ends and sides of strips polymeric membrane. All overlaps shall be firmly bonded by heating and fusing the layer of asphalt and melting the protective plastic film, but taking care not to over heat this, as too much heat can harm the central polyethylene core, which is essential for water proofing function.

(c) Keeping the overlap open with the help of trowel and then direct the flame uniformly inside and towards both membranes. Working the flame in opposite direction to the advance of the applicator.

(d) When the asphalt starts to flow, the applicator should press both membranes with his foot, on the opposite side to the hand holding the torch until a thin string of fluid asphalt appears, indicating correct fusing and bonding. During this phase, the trowel should be worked with a back and forth, lengthwise motion, to homogenize the bonded area.

29.7 **WORKMANSHIP**

The work of water proofing treatment will be got executed by the contractor from the authorised applicator of the company from which the contractor sources the material.

29.8 **MATERIAL**

All the material required for water proofing treatment will be procured by the contractor from same firm to ensure the quality of material however bitumen & bitumen primer can also be procured from manufactures STP Ltd & Lyods.

29.9 **TESTING**

Frequency of test – At least one test consist of three sample specimen at random from each lot. The APP modified membrane with non-woven polyester reinforcement shall be got tested from the test house as mentioned here under :-

(a) Chemical & Metallurgical Services, T.S No.63, SIDCO Industrial Estate, Ekkaduthangal, Chennai – 600097

(b) CENTRAL INSTITUTE OF PLASTIC ENGINEERING & TECHNOLOGY Gundy, Chennai – 600032
Fax No.91 – 44 – 2344673

(c) National Test House Alipore, Calcutta

(d) ShreeRam Test House, New Delhi

(e) National Test House Andheri, Mumbai

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PARTICULAR SPECIFICATION : SECTION-II (Contd)

- 29.10 **WATER PROOFING PLATE** Contractor shall provide a plate of appropriate size in 15mm thick cement mortar 1:4 for each building in which roof treatment has been carried out showing details as under:-

CA NO.

Name of contractor

Date of treatment completed

Date of expiry of Guarantee

Date of completion of work

30. **GUARANTEE.** The work of roof treatment shall be got executed through the manufacturer/its authorised applicator. **The contractor shall furnish a written guarantee of 10 (Ten) years for the water proofing treatment in favor of Garrison Engineer.** If during guarantee period any leakage/seepage is observed it shall be made good by the contractor. No payment shall be made to the contractor for rectification of defects noticed during guarantee period of **10 years** for water proofing treatment. The amount of security deposit for water proofing treatment be carried out for the building work included in Sch "A" against guarantee period for water proofing treatment shall be 2.5% on the amount of water proofing treatment at contract rates subject to a minimum of Rs 2500.00 shall be retained by from the contractor's dues. This amount shall be released after successful expiry of the guarantee period. The contractor may however, furnish a fixed deposit receipt in lieu from a schedule bank, pledged in favour of Garrison Engineer for the period of guarantee in which case the amount if any deducted from the dues/final bill shall be refunded. In the event of defects noticed in the guarantee period ie, any leakage/seepage is observed, GE shall issue a notice to contractor to rectify the same at his own cost and if contractor fails to rectify the defects within 15 days of issue of notice same shall be rectified at the risk and cost of contractor and the retention money so retained shall be utilized against the expenditure incurred. If the retention money falls short to meet the expenditure the recovery to this effect shall be made from the contractor's dues with the department.
31. **FLOODING TEST TO RCC ROOF SLAB**
- 31.1 On completion of water proofing treatment the contractor shall carryout flooding test to each roof of each slab. Flooding test shall be carried out by forming earth bunds water shall be ponded for minimum depth of 50mm and shall be allowed to remain over slab for a period of 72 hours. During this period, if any defect such a leakage/seepage is noticed, it shall be rectified by the contractor to the satisfaction of GE. After rectification of defects more test shall be carried out at the description and to the entire satisfaction of GE. Test shall be kept in record duly signed by Engineer-in-Charge and contractor and test shall be carried out all as specified at the cost of contractor.
32. **WOODEN SHUTTERS FOR DOORS**
- 32.1 (a) Shutters shall be factory made second class hard wood (Non coniferous) Bonsum (phoebe species) Chaplash (Artocarpus chaplash) / Hollock (Terminalia myrio capra) Kiln seasoned and chemically treated.
- 32.2 **FACTORY MADE PANELLED DOORS**
Factory made paneled door shutters shall be made of kiln seasoned as per IS 1141 and chemically treated as per IS-401 second-class hard wood (Non coniferous)Bonsum (phoebe species) Chaplash (Artocarpus chaplash)/ Hollock (Terminalia myrio capra) Kiln seasoned and chemically treated. Panels for external doors directly exposed to weather shall be 9mm thick EWP marine grade ply wood bonded with high quality liquid phenol formaldehyde conforming to IS-710 (ISI marked)
- 32.3 **FACTORY MADE FLYPROOF DOORS**
Factory made flyproof door shutters shall be made of kiln seasoned and chemically treated as per IS-401 second-class hard wood (Non coniferous) Bonsum (phoebe species) Chaplash (Artocarpus chaplash) / Hollock (Terminalia myrio capra) and fixed with GI wire cloth of as specified in Sch 'A'
- 33 **ELECTRIFICATION**
- 33.1 **STANDARD OF QUALITY AND WORKMANSHIP**
- 33.1.1 The supply and installation of all electrical equipment and accessories shall strictly comply with provisions contained in the latest edition of Indian electricity Act and Rules framed there under and as applicable, except where regulations and rules are modified by these specifications and relevant code of practice for internal electrification (IS-732). Relevant clause of SSR Part I (2020) will be referred to for general requirements.
- 33.1.2 Item of works in this schedule shall be deemed to cover interalia all allied minor detail/work so as to make the Electrical Installations in each building or part thereof complete and fit for switching on electric supply and taking into use the installation.

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PARTICULAR SPECIFICATIONS (SECTION-II) (CONTD....)

- 33.1.3 Refer conditions 25 of General Conditions of Contract (IAFW-2249). All electrical works shall be carried out by properly skilled and licensed electrician under the supervision of qualified electrical supervisors. The contractors shall on demand by Engineer-in-Charge produce such evidence of qualifications of his workmen and supervisor either at commencement of work or at any time there after during the progress of contract. Record of license of electrician and supervisor shall be endorsed in works diary by Engineer-in-Charge in token of check made by him. The entire work shall be high class with best workmanship and to the entire satisfaction of Engineer-in-Charge.
- 33.1.4 Samples of all electrical fittings shall be first got approved by the GE in writing before incorporation in the work. Utility light fittings shall be of the best quality available and conform to the samples kept in GE's office duly approved by him.
- 33.1.5 The terminal points for light and power, switch socket combination, switches, fan regulators, fittings, outlet etc shall terminate in recessed mild steel boxes fixed flush to the walls and covered with plastic laminated sheet 3 mm uniform thickness to match the colour of the wall finish as specified by GE.
- 33.1.6 Cutting and forming chases in brick work/concrete where directed shall be done while the building work is in progress prior to the commencement of plastering to brick work. Gaps/voids of all cut/formed chases including recesses formed for terminal boxes for housing power plugs, switches, sockets etc shall be filled flush with cement concrete (1:3:6) type C-1 or in cement mortar (1:3) mix after fixation of pipes/boxes etc prior to the plastering of walls at no extra cost.
- 33.1.7 Relevant clauses of SSR Part-I (2020) will be referred to for workmanship and special attention is drawn to clause of SSR Part I for method of passing conductors through walls and floors.

33.2 EQUIPMENT AND MATERIALS

- 33.2.1 Other than that is specified/mentioned in Schedule 'A', the equipments/materials shall be anyone of the makes given in Appendix 'D' (list of approved manufacturers and brand names of various products of E/M Services.)

34. TAKING DOWN WIRING

- 34.1 Taking down electric wiring mentioned in Schedule 'A' shall equally be applicable for the points where CI sunk box with Hylam sheet cover is existing. The old wiring, wooden blocks, Hylam sheet cover and old electrical ceiling rose, holders brackets etc after reuse shall the property of the contractor as specified in the schedule of credit. However all the demolished material shall be recorded in MB with the details of measurements.

35. TAKING DOWN FAN FITTINGS

- 35.1 Where cleaning, overhauling etc is mentioned in Sch 'A' for electrical items, these shall be carried out in close supervision of executives. Any part other than mentioned in Sch 'A', if found unserviceable (as directed by GE) shall be provided by Engineer-in-charge free for without any extra cost.

36. POINT WIRING

- 36.1 Point wiring on PVC conduit mentioned in Sch 'A' shall be carried out as specified in SSR Part I. The PVC conduit shall be ISI marked.

37. WOODEN ROUND BLOCKS

- 38.1 Round TW blocks shall be closed recessed and as specified in clause relevant clause in SSR Part I. Round blocks where ever required shall be as per clause relevant clause in SSR Part I.
- 38.2 Round block shall be of teak wood, and varnished minimum size of block shall be 40 to 50 mm thick and 80 to 100 mm in diameter.

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PARTICULAR SPECIFICATIONS (SECTION-II) (CONTD....)**39. ACCESSORIES**

- 39.1 All the accessories required for point wiring shall be as specified in relevant clause in SSR Part I of SSR Part I.

40. SWITCHES

- 40.1 Switches shall be as specified in Sch 'A' confirming to IS 3854 of 1966 and shall be fixed as described in relevant clause in SSR Part I

41 SOCKET OUTLETS

- 41.1 Socket outlets shall be as specified in Sch 'A' and shall be fixed in accordance to relevant clause in SSR Part I

42. CEILING ROSE

- 43.1 Ceiling rose shall comply with IS-371-1979 and shall be fixed all as directed by Engineer-in-charge.

44. LINK CLIPS

- 44.1 Joint link clips shall be of aluminium confirming to IS -2412-1975.

45. MATERIALS FOR ELECTRIFICATIONS WORK

- 45.1 All materials required for electrifications work shall be of standard quality and of approved make. All the fittings shall be approved by GE in wiring before incorporation in the work. All electric point wiring where lamps (bulbs) are to be fitted shall be completed by contractor in a workman like manner and with sound Engineering practice. Lamps (bulbs) however shall be issued to the contractor by Engineer-in-charge and shall be fixed in position by contractor.

46. MCB/MCB/DB

- 47.1 MCBs to be incorporated in this work should be as per IS-8828/1978 with amendments No 1 & 2 and the mounting rails should be as per IS-11039/1983 cables will be commented with appropriate size lugs to MCBs.

48. SUNK TYPE BOXES

- 49.1 Boxes for housing electrical accessories and recessed into wall or ceiling shall be of sheet metal or cast iron and shall confirm to IS-5133 (Part-I)1969 and shall be as specified in relevant clause in SSR Part I

50. **WIRING IN CONDUITS** : Cable shall be copper conductor, 1100 volts grade, single core PVC insulated core conforming to IS-696-1977.

51. TEAK WOOD BATTENS BLOCK AND BOARDS

- 52.1 Wooden batten shall be well seasoned second class hard wood, Battens shall be wrought on all exposed surfaces and coated five time all over with shellac varnish before erection and another coat after fixing in position. The shellac varnish shall comply with IS-347-1975. The finish thickness of batten shall be not less than 10 mm and width of the batten shall be such as to the total width of cables to be laid thereon.

- 53.2 Wooden boards shall be seasoned teak wood and shall be of substantial design, the exposed edges shall be rounded of chamfered as directed. They shall be dovetail joints. The thickness of face and back to boards shall be not less than 6 mm and side less than 20 mm. The holes for screws shall be drilled and prepared for countersinking of screws. The board shall be finished with 2 coats of shellac varnish. The boards shall be recessed type.

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PARTICULAR SPECIFICATIONS (SECTION-II) (CONTD....)**54. WOODEN PLUGS (GUTTIES)**

54.1 All wooden plugs shall be seasoned hard wood not less than 5 centimetre long 2.5 cm square on inner face and 2 cms square on the outer exposed face.

55. SCREWS

All screws shall be of cadmium-plated steel for internal wiring work. The contractor may also use plastic screws of suitable size in lieu of wooden gutties for fixing of batten without any price adjustment.

56. PLASTIC LAMINATED SHEET TO COVER CAST IRON BOXES FOR POINT WIRING

'Hylam' brand with the make embossed on the sheet.

57. MATERIALS The materials shall be as follows :-

SI No	Materials	Reference to para of SSR (Part -I)
1	2	3
(a)	Cable cords and earthing leads	19.24
(b)	Cable for internal wiring for light power	19.25
(c)	Wooden battens, blocks and boards	19.28
(d)	Conduit and conduit fittings and accessories	19.29
(e)	Plug/Gutties	19.30
(f)	Screws and fastenings, link clips	10.31
(g)	Ceiling rose	19.32
(h)	Shades	19.33
(j)	Bulkhead fittings	19.34
(k)	Socket outlets	19.40
(l)	Lamp holders	19.41
(m)	Main switch	19.45
(n)	Switch boards	19.105
(o)	Distribution fuse board	19.44
(p)	Miniature circuit breaker	19.46

58. LIGHT FITTING

The light fittings shall be of make as mentioned in list of make here-in-after.

59. **POSITION OF SWITCH SOCKET COMBINATIONS.** All switch socket combinations will be placed 1.20 metres above finished floor level.

60. FLEXIBLE CORDS

Flexible cords shall be all as specified in clause 19.27 of the MES Schedule Part -I.

61. IRON CLAD DISTRIBUTION BOARD

Distribution board shall be cast iron steel clad. It shall be of make as mentioned in Appx 'C'. Sufficient length of cable should be left behind the boards and ample room allowed to have a neat arrangement. The contractor shall furnish complete details, specifications and descriptive literature of various size of the Distribution Boards that he proposes to incorporate in the work to the Engineer-in-Charge for his approval.

62. CONDUIT

The conduit shall be ISI marked conforming to relevant IS.

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PARTICULAR SPECIFICATIONS (SECTION-II) (CONTD....)**63. LAYOUT PLAN**

- 64.1 Locations of various light fittings/fans/socket outlet, main switches and DBS are tentatively shown on drawings.
- 64.2 The layout of equipment, fittings etc and alignment of cables shown on drawings are tentative. The exact position of these shall however, be approved by the GE in wiring before the contractor shall take the work in hand without any price adjustment.

64.3 TYPE OF ELECTRIC SUPPLY

- 64.4 Type of electric supply will be 4 wire, 50 cycles, 415/230 volts, AC.

64.5 ELECTRIC METER / SWITCH BOXES

- 64.6 Electric meter boxes/Switch Boxes shall be provided as per drawing No TD / 595 sheet 1/1.

64.7 TESTS

- 64.7.1 The following test shall be carried out to the entire satisfaction of the Engineer-in-Charge before the work is finally handed over by the contractor and completion certificate is issued :-
- (a) Polarity Test - Test result shall not be lower than the minimum specified in IE rules.
 - (b) Insulation resistance test
 - (c) Continuity test sectional and over all
 - (d) Earth resistance test This is not to exceed 5 ohms

- 64.7.2 Clause 19.146 of SSR 2020 (Part I) is applicable.

65. EARTHING

- 65.1 Earthing shall generally conform to the requirements of IS-3043-1966 (code of practice for earthing) or latest edition and IE Rules.
- 65.2 The contractor shall obtain approval of Engineer-in-Charge for layout of earthing before commencement and shall be executed in the presence of his representative. Excavation shall be passed by Engineer-in-Charge before filling.
- 65.3 The dimensions of plate earth electrode shall be 600mm x 600mm x 6mm and shall be placed vertically, the plate electrode shall be surrounded with charcoal dust and common salt filled upto a packed thickness of 300mm around plate i.e. below above and outward on all sides. The earthing shall be executed as shown in applicable electrical plate of MES standard schedule of Rates 2020 specification except modifications mentioned in these particular specified and schedule 'A'.
- 65.4 The charcoal dust and common salt mixture and return filling shall be done in layers not exceeding 15 Cms and shall be properly watered and rammed. Surplus spoil shall be disposed off and site left cleared on completion.
- 65.5 The ultimate depth of earth electrode will depend on the nature of soil and contractor is required to take it to a depth where sufficient moisture exists and natural conditions are suitable for resistance's as specified below.
- 65.6 The test link shall be provided in the circuit of each pit, at a suitable point to be approved by the Engineer-in-Charge for carrying out resistance's measuring test. The earth resistance of the whole system shall be as near as possible to zero but shall not in any case exceed one ohm.
- 65.7 No joints in the GI earthing wire shall be provided.

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For Accepting Officer

PARTICULAR SPECIFICATIONS (SECTION-II) (CONTD....)

- 65.8 Concrete chamber shall be of PCC 1:2:4 mix using 20 mm graded aggregate coping concrete shall be of PCC 1:3:6 mix using 20mm graded aggregate. All internal surfaces of concrete chamber shall be given 15mm thick plaster in CM (1:4) finished fair without using extra cement. Funnel in the chamber shall be with wire gauge (22 gauge, 8 meshes per liner inch). The cover slab shall be 50mm thick RCC 1:2:4 type B-1 using 20mm graded stone aggregate reinforced with 8mm for bar at 80mm C/C and shall be painted all over with black bituminous as specified for clause.
- 65.9 Common salt and charcoal dust as available in the market shall be used for earthing.
- 65.10 One earth set shall consist of two separate and distinct earth as specified above.

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

Appendix 'A'**LIST OF MAKES/BRANDS/MANUFACTURERS****NOTES:-**

- (a) The list of makes/brands/manufacturers (except for S.No.1, 2 & 2A which are applicable for all works) have been grouped into two categories category-I and category-II.
- (b) (In case no make is specified under Category-II, contractor shall provide the make specified in Category-I without any financial implications). Contractor at his discretion may also provide the make of Category — I without any price adjustment.
- (c) In case no make specified in Category-I and II the contractor shall provide any ISI marked material as approved by GE.
- (d) All Products/ items shall be ISI marked only. In case certain items in the scope of work / BOQ are not having corresponding makes in the this list of approved makes/products, Makes so selected for incorporation in work shall be ISI marked only and as approved by GE. In case if there is no BIS certification system / Indian standard for such materials/ products, these shall be certified by accredited (NABL) Laboratories to conform to other standards of repute, like British standard / EU standards/ American Standard. This list of approved product will supersede, if makes of any product at other location of tender documents is mentioned. Makes shall be selected only from this list irrespective of given at other locations, if any .
- (f) In case there are less than 3 makes in the approved list for any material / item/product then only generic description/specification of the material /item/product as specified in tender and relevant codal provision shall be followed.
- (g) Any other make approved by E-in C's Branch (CMPT-I), CESC Pune (CMPT-II) and HQ CE BHOPAL ZONE (CMPT-III) upto end date of submission of the bid shall also be deemed included in the list of makes / brands / manufacturers here in-after.

S. NO	Description of item	DETAILS (Applicable for all works)			
1	2	3			
		SI	Company Name & Brand	Address	Steel Grades/Sizes
		1	2	3	4
		1	RASHTRIYA ISPAT NIGAM LTD (RINL) Brand : RINL	Visakhapatnam Steel Plant, Visakhapatnam – 530031 (India). Tel:- 0891 518226 , 518376, Fax:-0891518316 Email :-cmdvsp@itpvis.ap.nic.in	All
		2	TATA IRON & STEEL COMPANY (TISCO, OR TATA STEEL) Brand : TATA	Bombay House 2, 4 Homi Modi Street, Mumbai -400001, India, Tele :- 91 22-2049131. Fax :- (91 22) 204 9522, 287 0840. Email :- corpcomm@jsr.tatasteel.com	All
		3	STEEL AUTHORITY OF INDIA LTD (SAIL) Brand : SAIL	Central Marketing Organization, Northern Region, 17 th Floor, Scope Minar, Laxmi Nagar Distt centre Delhi 110092	All
		4	JAI BALAJI INDUSTRIES LTD Brand : BALAJI SHAKTI	5 BenteK Street, Kolkata-700001 Delhi Office :- 510, Block-B, Navraung House,21 Kasturba Gandhi Marg, New Delhi-110001Tel:-011 43620219 , 43620220 M:- 7838272772 Email :-info@jaibalajigroup.com	Fe 500, Fe 500D
		5	SHYAM STEEL INDUSTRIES LTD Brand : SHYAM	Shyam Towers EN-32, Sector-V, Salt lake, Kolkata – 700091. Tele :- 033-40074007,Fax - 033-40074010,Email :- marketing@shyamsteel.com	Fe 500, Fe 500D CRS
		6	SPS STEEL ROLLING MILLS LTD Brand : ELEGANT TMT	Elegant Towers, 68A, Ballygunge Circular Road, Kolkata-700019 Ph No – 033-2895160/67, Fax :- 033-22894386 Email :- spsdelhi@spsgroup.co.in	Fe 500, Fe 500D, Fe 550

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3
APPROVED TMT STEEL MANUFACTURERS (Contd/-)	7	STEEL EXCHANGE INDIA LTD. Brand : SIMHADRI TMT My Home Laxminivas Apartments Ameerpet, Hyderabad -500016 (AP)Tele :- 040-23403725, Fax :- 040-23413267 Email :- info@seil.co.in Fe 500, Fe500D HSCRM
	8	JINDAL STEELS & POWER LTD Brand : JINDAL PANTHER OP Jindal Road, Hissar, Haryana - 125005 Tele :- +91 1662 222471-84, Fax :- +91 1662 220476 Fe 500/ Fe 500D Fe 550/ Fe 550D CRS (8-10mm)
	9	SRMB SRIJAN PVT LTD Brand : SRMB SRMB House, 7, Khetra das lane, Kolkata - 700012. Tele :- 033-6600 6600 Fax :- 033-2211 0483 Fe 500/ Fe 500D Fe 550/ Fe 550D (size 8-12mm)
	10	JSW STEEL LTD Brand : NEOSTEEL Jindal Mansion, 5A Dr G Deshmukh Marg, Mumbai - 400026 Tele :- 022-2351-3000, 022-2352-6400 Fe 500/ Fe 500D CRS (size 8-40mm)
	11	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. Ph No: +91 044 42961100, Fax : +91 044 42961122 Email :- sales@kamachitmt.com, TMT Bars of Gde Fe 500, Fe 500D Fe 550, Fe 550D HCRM (size 8-0mm)
	12	M/s Shri Bajrang Power & Ispat Ltd. Brand "GOEL TMT" Vill – Borjhara, Urla Industrial Area, Raipur – 493 221, Chhattisgarh. Tel : 0771 4288019 / 29 / 39 Fe 500 & Fe 500D (Size 8-32mm)
	13	M/s Real Ispat & Power Ltd Brand: "G K TMT" Vrindavan, Near IDBI Bank Civil Lines Raipur-492001, C.G. Tel: +91-771-4224000 Fax: +91-771-4224010 E-mail: real@realispat.com Website: www.realispat.com Fe 500, Fe 500D (Size 8-36mm)
	14	M/s Super Smelters Ltd, Kolkata. Brand: "SUPER SHAKTI" Premlata, 39, Shakespeare Sarani 3rd Floor, Kolkata-700017 Tele/Fax: +91-33-2289-2734/36 E-mail: nfo@supershakti.in Website: www.supershakti.in Fe 500, Fe 500D & Fe 550 (Size 8-32mm)
	15	M/S Electrotherm (India) Ltd Brand "ET TMT" Survey No. 72, Palodia, Via-Thaltej, Ahmedabad Gujarat- 382115 Tel- +91-2717-660649/660550 Fax- +91-2717-234866 Website- www.electrotherm.com Fe 500, Fe 500D & CRS, (Size 8-32mm)
	16	M/s Adhunik Industries Ltd Brand "ADHUNIK Fe 500 SD" 'Lansdowne Towers' 2/1A, Sarat Bose Road 6th Floor, Kolkata-700020 Tel- 033-30517100 Fax- +91-33-2289 0285 Website- www.adhunikindustries.com Fe 5000 with sizes 8mm to 32 mm dia
	17	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 Fe 500, Fe 500D & CRS (Size 8-32mm)
	18	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@rashmigroup.com Website: www.rashmigroup.com Fe 500 (Size 8-32mm) Fe 500D, Fe550D (Size 8-25mm)
	19	M/s Shyam Sel and Power Ltd. Brand: "SEL" SS Chambers, 5 C.R, Avenue, Kolkata-700 072 Tel- +9133 4011 1000 Fax- +9133-4011 1031 Website- www.shyamgroup.com Fe 500D (Size 8-32mm)
	20	M/s Shree Nakoda Ispat Ltd. Brand "NAKODA TMT" Near Railway Crossing Mowa, P.O Shankar Nagar Raipur-492007 (C.G) Tele-91-771-2282130 Mob No – 78989741 Website- ww.nakodagroup.com Fe 500, Fe 500D (Size 8mm-32mm)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

2	APPROVED STRUCTURAL STEEL MANUFACTUR ERS	S. No	DESCRIPTION OF ITEM		DETAILS		Steel Grades/ Sizes
		1	2		3		
		1	RASHTRIYA ISPAT NIGAM LTD (RINL) Brand : RINL		Visakhapatnam steel plant Visakhapatnam - 530031 (India) Tel:-(91 891) 518226, 518376, Fax :- (91 891) 518316Email :-cmdvsp@itpvis.ap.nic.in		Structural steel (Angle, Beam, Column, Channel, Plate)
		2	TATA IRON & STEEL COMPANY (TISCO, OR TATA STEEL) Brand : TATA		Bombay House 2, 4 Homi Modi Street Mumbai -400001, India, Tele :- 91 22- 2049131, Fax :- (91 22) 204 9522, 287 0840 Email :-corpcomm@jsr.tatasteel.com		
		3	STEEL AUTHORITY OF INDIA LTD (SAIL) Brand : SAIL		Central Marketing Organization, Northern Region, 17 th Floor, Scope Minar, Laxmi Nagar Distt centre Delhi 110092		
4	M/S JINDAL STEELS AND POWER LTD Brand : JINDAL		Jindal Centre Plot No.2, Sector-32, Gurgaon, Haryana – 122001, Tele :- 0124 6612000, Fax :- 0124 6612125, Website:www.jindalsteelpower.com				
2A	APPROVED CEMENT MANUFACTUR ERS	Sl. N o	Company Name	Brand name	Address		Grade
		1	2	3	4		5
		1.	Ultra Tech Cement Ltd	ULTRATECH	'B' Wing, 2 nd Floor, Mahakali Caves Road, Andheri (East) Mumbai – 400093, Ph : 022-66917800		All
		2.	Dalmia Cement (Bharat) Ltd	DALMIA INFRA PRO	Dalmiapuram Dist-Tiruchirappalli, Tamil Nadu – 621651		All
		3.	Chettinad Cement Corporation Ltd	CHETTINAD	4 th Floor, Rani Seethal Hall Building, 603, Anna Salai Hall, Chennai – 600006 Tel No.044-42951800 Fax No.044-28291558Email : info@chettinadcement.com Website : www.chettinadcement.com		All
		4.	My Home Industries Ltd	MAHA CEMENT	9 th Floor, Block-3, My Home Hub, Madhapur, Hyderabad – 500081 Ph : 040-66929696 Fax : 040- 66929797/98		OPC 43 , PPC & PSC
		5.	M/s Parasakti Cements Ltd	PARASAKTI	123/3RT, Plot # 8-3-214/21, Srinivasa Nagar Colony (West) Hyderabad – 500038 Tel : 040- 44119100/200 Fax : 040-23747562		OPC 43 & PPC
		6.	Shree Guru Kripa Cement (P) Ltd	SARTAJ	4/4 Trikuta Nagar Jammu Ph : 0191-2472043		OPC 43 & PPC
		7	The Ramco Cements Ltd (Formerly Madras Cement)	RAMCO	Auras Corporate Centre, 98-A, Dr. Radhakrishnan Salai Mylapore, Chennai – 600004, Ph : 044-28478666		All
		8	Saurashtra Cement	SAURASHTRA	Gala No.A-1, Ground Floor, Udhog Sadan No.3 MIDC, Central Road, Andheri (East), Mumbai – 400093, Ph : 022-32955557/67 Mob : 9320290081		All
		9	Nuvoco Vistas Corporation Ltd (Formerly Lafarge Cement)	NUVOCO	Equinox Business Park Tower-3, East Wing, 4th Floor LBS Marg, Kurla (West), Kurla Mumbai, Maharashtra- 400070		All
		10	The Associated Cement Companies Ltd	ACC	414-421, Splendor Forum (4 th Floor), 3, District Centre, Jasloa, New Delhi- 110044. Ph -011 46583600		All

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3			4
2A	APPROVED CEMENT MANUFACTURERS (Contd/-)	1	2	3	4
		11	The India Cement		Dhun Building, 827, Anna Salai, Chennai-600002
		12	Mangalam Cement Ltd	MANGALA M	PO Adiyannagar, Morak, Dist-Kota, Rajasthan - 326520 Ph No.9351468076
		13	Birla Corporation Ltd	BIRLA	Birla Building (3 rd & 4 th floor) 9/1, RN Mukherjee Road, Kolkata- 700001, Ph No. 033 30573700
		14	Orient Cement	ORIENT	5-9-22/57/D, 2nd & 3rd floor, GP Birla Centre, Adarsh Nagar, Hyderabad- 500063 Ph No.-044 23688600
		15	Shree Cement	SHREE	Bangur Nagar, Beawar, Dist-Ajmr, Rajasthan-305901, Ph No. 01462 228101-06
		16	JK Cement	JK	Kamla Tower Kanpur-208001
		17	JK Lakshmi Cement Ltd	JK LAKSHMI	Jaykaypuram, Dist-Sirohi, Rajasthan Ph No.02971 244409/10
		18	Jaypee Rewa Cement	JAYPEE	Jaypee Nagar Jaypee Nagar, Rewa-486450 M.P.
		19	Ambuja Cement Ltd	AMBUJA	Kodinar, PO-Ambujanagar, Taluka-Kodinar, Dist- Junagarh, Gujrat- 362715, P No.02795 237000
		20	Sanghi Industries Ltd	SHANGHI	10 th floor, Kataria Arcade, Off SG highway, PO- Makarba. Dist Ahmedabad - 380051 Ph No 09825803690, 079-26838000
		21	Century Cements	CENTURY	Industry House, 159 Church Gate Reclamation, Mumbai - 400020.
		22	JSW Cement Ltd	JSW PSC, JSW OPC 53, JSW OPC 43	JSW Centre, Opp MIMRDA Ground, Bandra Kurla Complex, Bandra (East), Mumbai- 400051. Tele-02242865047, Fax-02226502001, www.jswcement.in
		23	Sagar Cements Ltd	SAGAR	Plot No.111, Road No.10, Jubilee Hills, Hyderabad - 500 033 Tele-04023351571,0402335672
		24	Wonder Cements Ltd	WONDER CEMENT	17, Old Fatehpura, Sewa Mandir Road, Udaipur (Raj) - 313 004 Tele-029433991133

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

S. No	DESCRIPTION OF ITEM	CATEGORY - I	CATEGORY - II
1	2	3	4
3	Ready Mix Concrete (RMC)	Lafarge Ultra Tech ACC RMC Ready Mix Ramco	
4	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 MP Wood Products, Indore M/S Jain Doors Pvt Ltd, Haryana M/S India Wood & Wood Pdts, Mangalore M/S A1 Teak Products, Indore	M/s Prince Timbers M/S Door King Industries, Kolkata M/s Ashish Enterprise (Ashish) M/S Indian Timber Product, Hyderabad M/s Jain Wood Industries (JAYNA) M/s Punjab Plywood Industries (Brand : Black Cobra)
5	Factory made PVC, FRP Shutters and Frames	M/S Rajshri Plastiwood, Indore (Rajshri) M/S Sintex Industries Ltd (Sintex) M/S Accura Polytech (ACCUCCEL) M/S Dura Plast Exfousion (Duraplast) M/s Madhu Industries (Madhu) M/s Navratna Co Specialty Chemicals (GIZA) M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)	M/S Janik Developers M/s Kumar Arch Tech Pvt Ltd (Echon) M/s Engco Industries, Jodhpur M/S Selected Products (SPC) M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)
5A	UPVC Windows, Ventilators, Door frames, Shutters	M/S Rajshri Plastiwood, Indore (Rajashri) M/s Poly Window, Pune M/s Aparna Profiles Pvt Ltd (Aparna Venstar Okotech) M/s Madhu Industries (Madhu)	M/S Accura Polytech (ACCUCCEL) M/s Astrapia
6	Steel Windows, Ventilators, Door, Frames, Shutters	M/s Madhu Industries	M/S Jagnid Engineering, Jaipur (JEW) M/s Deccan Structural PvtLtd, Bangaluru M/s Chandni Industries M/s Ashwani& Sons M/s Anoop Industries M/s Trisul Industries M/s Ashish Industries M/s Umar Steel Press, Bhopal (Except for steel windows)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
6A	WPC Boards	M/S Rajshri Plastiwood, Indore (Rajshri)	M/s Kumar Arch Tech Pvt Ltd (Echon)
		M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)	M/s Navratna Co Speciality Chemicals (GIZA)
			M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)
7	Aluminium section for shutters/frames for door/ window/ ventilator	M/s Hindalco Ind Ltd (Hindalco)	M/s Associated Profile & Alum Ltd
			M/s Sterlite
		M/s Indian A1 Company (Indal)	M/s Bhoruka Alum Ltd
		M/s Jindal	M/s Architecture Incorporation, Chennai
7A	Rolled Formed GI section pre-painted/pre-coated window		M/s Deco Grill
		M/s NCL Alltek & SeccolorElexir Met (SECCOLAR)	M/s Ashwani& Sons
8	Steel Rolling Shutters Grills & Collapsible Gates	M/s Shree Lakshmi Engg Wks, Bangalore	M/S Darshan Rolling Shutters, Nasik
		M/S Prakash & Co, New Delhi	M/S Shalimar Rolling Shutters & Co
		M/S Senthil Rolling Shutters & Engg Co, Chennai	M/s Ganesh Rolling Shutters, Hyderabad
		M/S Swastik Rolling Shutters, Mumbai	M/S Shapana Dock & Steel
		M/S Jayaraj Industries, Chennai	
9	Hydraulic Door Closer	M/s Everite	M/s Ranjan
		M/s Universal	M/s Kelin
		M/s Dyna	M/s Amar Engg Co, New Delhi
		M/s Hardwin	M/s Prabhat Door King Perfect Hydraulic
9A	Stainless Steel Plate Rack		M/s Perfect Hydraulic
		M/s Prayag	M/s Selected Products Co (SPC)
		M/s Nirali	
9B	PTMT Bathroom & Hardware fittings	M/s Blue star Sanitary Industries Pvt Ltd (SILVERLINE)	M/s JAYNAM
			M/s Prayag
			M/s RS Industries (Polytuf)
9C	Aluminium Tower bolt/alldrops/door		M/s JAYNAM
		M/s Argent Industries (Argent/Door)	M/s Aluminium Udyog
10	Towel Rails	M/s Jaquar	M/s Swastik
		M/s KICH	M/s Crown
			M/s Prayag
			M/s ESS ESS

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
10A	Mortice Locks	M/s Harrison	M/s RP Lock Co, New Delhi
		M/s Godrej & Boyee Co Ltd	M/s Kick
10B	Drapery Rod	M/s Vista Levlor	M/s Sophia
		M/s Mac-Décor	
10C	Venetian Blinds	M/s Vista Levlor	M/s Aeroluxe
		M/s Mac-Décor	
11	Mangalore Tiles	M/s Charminar	M/s Mari tile Wks, Kawiyoore
		M/s Raja	M/s Saint Anthony's Muvattupuzha, Ernakulam
		M/s RECHO	M/S Haessika Decorative Tiles,
		M/s Prajapati	M/s Trisur
		M/s Kerala Tile Wks, Trisur	
11A	Non Asbestos fibre Reinforced (poly-propylene) 6mm cement corrugated sheets	M/s Everest Industries Ltd	
		M/s Charminar Fortune (M/s HIL Ltd)	
		M/e Ramco Indus Ltd (Ramco)	
12	Pre-Painted Galvalume / Galvanised Corrugated Steel Sheets	M/s TATA	M/s METCO Roof Pvt Ltd
		M/s JSW	M/s MB Engineering (Proflex System)
		M/s ESSAR	
13	Galvanised Plain/ Corrugated Steel Sheets	M/s TATA	M/s Indian Steel Corporation Ltd
		M/s JSW	M/s National Steel & Agro Industries Ltd
		M/s ESSAR	
14	Pre-moulded bituminous joint filler board	M/s STP Ltd	
		M/s Tikitar Industries Ltd	
		M/s Sikka	
15	AC Sheets & Ridges	M/s Charminar	M/s Swastik
		M/s Everest	M/s Visakha Industries
		M/s UP Asbestos	M/s Asbestos Cement Ltd
		M/s Ramco	
16	Water Proofing Compound	M/s Pidilite Industries Ltd, Taloja	M/s EXCOT
		M/s FOSROC	M/s IMERMO
		M/s Dr Fixit	M/s Sico
			M/s Super Aquacem(India) Ltd
17	APP Membrane	M/s STP Ltd	
		M/s Texsa India Ltd	
		M/s IWL Ltd	
		M/s Tiki Tar Danosa (India) Pvt Ltd (HYDROSTOP)	
		Torch tar Membranes and Bitumen Product Pvt Ltd	
18	Perforated particle Board / tiles for insulation and acoustic	M/s Anchor Ceiling Tiles	M/s Eternite
		M/s Armstrong wood Ind	M/s Aerolite
		M/s GYP Board	M/S STP
		M/s Bison Panel	M/s SN Industries
		M/s Lagyp	

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
18A	PVC false Celimg, wall lining & solid PVC partitions	M/s Rajshri Plastiwood	M/s Kumar Arch Tech Pvt Ltd (Echon)
			M/s Navratna Specialty Chemicals (GIZA)
		M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)	M/s Yamuna Interiors Pvt Ltd (Brand : Black Cobra)
19	Plywood	M/s Kitply	M/s Swastik
		M/s Century Plywood	M/s Bhutan Board
		M/s Archid Ply	M/s Indian Plywood
		M/s Green Ply	M/s Jain Wood Industries (JAYNA)
		M/s Anchor	
			M/s Punjab Plywood Industries (Brand Black Cobra)
20	Particle Board Gypsum	M/s Mangalam Timber Product	M/s Anchor Bombay
		M/s Gypsum Board	M/s Indian Ply Wood
		M/s Jolly Bd, Mumbai	M/s Boral Gypsum India
		M/s Indian Gypsum product	M/s Aerolite Ceiling System
		M/s Armstrong World Industries	M/s Associate Décor Limited
21	Laminated Sheets	M/s Formica	M/s Nova Teak Super
		M/s Sungloss	M/s Nova Pan
		M/s Sunmica	M/s Kitlam
		M/s BacklyteHylum	M/s Green Lam
		M/s Eco Board	
			M/s Punjab Plywood Industries (Brand Black Cobra)
22	Adhesives	M/s Pidilite	M/s Armacell India Pvt Ltd (ARMAFLEX)
		M/s Fevicol	
		M/s Vermicol	
23	Pre-laminated Particle board	M/s Novapan	M/S Bhutan board
		M/s Eco Board Industries, Pune	M/s Archid Ply
			M/s Archid Board
		M/s Kitply	M/s Associate Décor Limited
		M/s Green Ply	M/s Greenply Industries Limited
		M/s Anchorlam	
24	Block boards and veneered particle board	M/s Century Plywood	
		M/s Bajaj Boards	M/s Lotus
		M/s NU Wood	M/s Swastik
		M/s A-1 Boards	M/s Duratuff
		M/s Bhutan Board	M/s Kitply
		M/s Charminar	M/s Jain Wood Industries (JAYNA)
25	Glazed Ceramic wall / Flooring tiles		M/s Greenply Industries Ltd
		M/s Kajaria	M/s Spartek
		M/s Somany	M/s Regency
		M/s Asian Granite India (AGI)	M/s Murudeshwar Ceramics
		M/s Johnson Tiles	M/s Orient Bell Limited
		M/s RAK Ceramics	M/s OASIS
			M/s Sunshine Tiles Company Pvt Ltd (SUNHEART)
			M/s Varmora Granite Pvt Ltd
			M/s Arpana Enterprises (VITRO)
			M/s Qutone Ceramics Pvt Ltd (Qutone)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
26	Non-skid Ceramic tiles	M/s Kajaria	M/s Spartek
		M/s Somany	M/s Regency
		M/s Johnson Tiles	M/s Asian
		M/s Orient Bell Limited	M/s Ambani Vitrified Pvt Ltd
			M/s Naveen Tiles
27	Vitrified Tiles	M/s Kajaria	M/s Murudeshwar Ceramics
		M/s Somany	M/s Bell Granito
		M/s Asian Granite (I) Ltd (AGL)	M/s Naveen Tiles
		M/s Johnson marbonite	M/s Varmora Granito Pvt Ltd(VARMORA)
		M/s RAK Ceramics	M/s Swastik Ceracon Ltd (Swastik Tiles)
		M/s Orient Bell Limited	M/s Sunshine Tiles CompanyPvt Ltd (SUNHEART)
			M/s CENGRES Tiles Ltd
			M/s Qutone Ceramics Pvt Ltd (Qutone
			M/s OASIS Vitrified Pvt Ltd (OASIS)
			M/s Ambani Vitrified Pvt Ltd
			M/s Arpana Enterprises (VIETRO)
28	Mosaic/Cement Flooring Tiles	M/S NITCO, Mumbai	M/S Gwalior Granite, Gwalior
		M/s Ultra	
		M/S Mehatab Tiles, Indore	
		M/s Duracrete	
		M/s National Tiles	
		M/s Bharat Tiles and Engg Coy, Bangalore	
		M/s Modern Tiles and Marbles Bangalore	
29	Acid Resistant Tiles	M/S Johnson, Mumbai	M/S Coromandel Products
		M/s Somany	M/S Ishwar Industries, Delhi
		M/s Kajaria	M/S Regency Ceramics
		M/S Burn Standard Co, Jabalpur	M/s Duracrete
		M/S Purshottam Pottery Wks, Marvi	
30	Cement Concrete Interlocking Paver Blocks / Tiles	M/s Mehtab Tiles, Indore	M/s SAP Pavers, Jodhpur
		M/s NITCO	M/s Sagar Tiles, Saharanpur
		M/S Ultra Tiles	M/s CEME
		M/s Navya Tiles, Jodhpur	M/s Topaz Tiles
		M/s Patel Furniture Mart	M/S Swami Tiles
		M/s Hiscon Industries	M/s Sukhi Enterprises
			M/s Supreme Tiles (SUPREME)
			M/s Lucky Cement Block Works
			M/s Vaishnavi Developers
			Shapers Pipe Industries, Bhopal
31	PVC Sheet and tile flooring	M/s Krishna Vinyl Tiles	M/s Ravi Tiles
		M/s Armstrong	M/s Neelkamal
		M/S Marbles Tiles	M/s Premier Vinyl Flooring, New Delhi
		M/s Polyfin Tiles	M/s Rikvin Floors, New Delhi
		M/s Square Foot	
		M/s Krishna Vinyl Tiles	

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
32	Distemper oil-emulsion (OBD)	M/s Asian Paints	M/s Shalimar Paints
		M/s Nerolac	M/s Jenson & Nicholson
		M/s Berger Paints	M/s Jotun
		M/s ICI India	M/s Garware Paints
33	Plastic Emulsion Paint and exterior Emulsion Paint	M/s Asian Paints	M/s Shalimar Paints
		M/s Berger Paints	M/s Jenson & Nicholson
		M/s Nerolac	M/s Pidilite Weatherproof
		M/s ICI India	M/s Jotun
34	Cement Base Paint	M/s Super Snowcem	M/s Asian
		M/s Duracem	M/s Accrocem
		M/s Aquacem	M/S Nitco Mumbai
		M/s Shalimar	M/s Jenson & Nicolson
		M/s Berger	
35	Cement Putty	M/s Birla Cement	
		M/s JK White	
		M/s Asian Paints	
		M/s Golden Mohar	
		M/s Jenson & Nicolson	
		M/s Shalimar	
36	Sheet glass plain	M/s Saint Gobin,	M/s Atul Glass Industries
		M/s Asahi	M/s Gold Fish
			M/s Trupti
			M/s Modi Float
			M/s Modi Guard
			M/s Hindustan Pilkington GlassWorks.
37	Sheet glass frosted	M/s Saint Gobin,	M/s Atul Glass Industries
		M/s Asahi	M/s Gold Fish
			M/s Trupti
			M/s Modi Float
			M/s Modi Guard
			M/s Hindustan Pilkington Glass Works.
38	Heat absorbing glass& reflective solar control film	M/s Saint Gobin	M/s Gold Fish
		M/s Modi Float	M/s Trupti
		M/s Modi Guard	
		M/s Hindustan Pilkington Glassworks	
39	Rough cast wiredglass	M/s Saint Gobin	M/s Gold Fish
		M/s Modi Float	M/s Trupti
		M/s Modi Guard	
		M/s Hindustan Pilkington Glassworks	
40	Oil Putty	M/s Jenson & Nicholson	M/s Shalimar Hardware
		M/s Asian Paints	M/S Anglo Dutch Colour& Varnish wks, Najafgarh Rd
		M/s Berger Paints	M/s UK Paint Industries, Gurgaon
			M/s Golden Mohar
			M/s Atul Dyes and Chemicals
41	Mirror	M/s Modi	M/s Gold Fish
		M/s Atul	M/s Hindustan Glass Kolkata
		M/s Saint Gobain	M/s Asahi Works
			M/s Kohinoor
			M/s Swastik

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
42	Synthetic Enamel Paint	M/s Asian Paints	M/s Jonson & Nicholson Paints
		M/s Nerolac Paints	M/s Jotum
		M/s ICI Paint	M/s Shalimar Paints
		M/s Dulux	
43	CI Pipe and fittings	M/s Electro Steel Casting Ltd	M/s Kapilansh
		M/s Kejriwal	M/s Kalinga
		M/s NECO	M/s Babulal Bajaj Iron Foundry (HIF)
		M/s Kesoram	M/s True Form Engineers
44	GI Pipes & Fittings	M/s Tata	M/s BST
		M/s Jindal	M/s Surya
			M/s KS Engineering Works (K.S)
			M/s Zenith
			M/s Swastik
			M/s Prakash
45	DI Pipes & Fittings	M/s Jindal Ltd, Gujarat	M/s Electrotherm (India)
		M/s Electrosteel Castings Ltd, W.B	M/s AARKO Pipe Gram Udyog
		M/s Tata Metaliks, Kolkata	M/s TRUFORM Techno Products Ltd
		M/s SAW Pipes	M/s TRUFORMENGINEERS
		M/s Srikalahasthi Pipes Ltd	M/s Jai Balaji Industries Ltd
45A	Hubless Centrifugally		M/s Jayswal NECO Indus Ltd (NECO)
			M/s Singhal Iron Foundry Pvt Ltd (SKF)
			M/s Raj Pattern Motors Founder Pvt Ltd (RPMF)
46	MS Pipes & Fittings	M/s Tata	M/s Swastik
		M/s Jindal	M/s Prakash
			M/s Surya
			M/s BST
			M/s Zenith
47	HDPE Pipes & Fittings	M/s Finolex	M/s Kisan
		M/s Prince	M/s Tirupati
		M/s Supreme	M/s RC Plasto Industries
		M/s Jain Irrigation Sys	
		M/s KSR	
48	CPVC pipes and fittings (Chlorinated polyvinyl Chloride)	M/s Prince Pipes & Fittings (Smart Fit)	M/s Vectus Industries Ltd
			M/s HSIL Ltd (Hindware)
		M/s Finolex	M/s Fusion Industries
		M/s Dutron	M/s Ajay Industrial Corporation Ltd
		M/s SFMC	M/s Ashirvad Pipes Pvt Ltd (ashirvad)
		M/s Birla Aerocon	M/s Ajay Flowguard, Delhi
			M/s Prayag Polymers(P) Ltd
			M/s RC Plasto Industries (Plasto)
			M/s Avon Plastics Industries (Avonplast)

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
49	PVC Soil, Waste, rainwater (SWR & Drainage pipes)	M/s Supreme	M/s Dinesh
		M/s Prince (Ultrafit)	M/s Amogh Plast
		M/s Kisan	M/s Astron Plastic
		M/s Finolex	
50	PPR Pipes & Fittings	M/s Prince (Green Fit)	M/s Fusion Industries
		M/s Finolex	M/s Kanha Plastics Pvt Ltd (KPT)
		M/s Supreme	M/s Vectus Industries Ltd
		SHK Polymers	M/s SHK Polymers (SHK)
		M/s Savoir Faire Manufacturing Co Pvt Ltd (SFMC)	
51	PVC Pipes & Fittings	M/s Prince (Aqua Fit)	M/s GM Modular Pvt Ltd
		M/s Finolex	M/s Avon PlastIndPvt Ltd
		M/s Supreme	
		M/s HIL Limited (Birla Aircon)	
		M/s KSR	
52	UPVC Pipes and Fittings	M/s Prince (Aqua Fit)	M/s Kanha Plastics Pvt Ltd(KPT)
		M/s Finolex	M/s Sarovaram Industries (LLP)
		M/s Supreme	M/s AKG Extrusions Pvt Ltd (AKG)
		M/s HIL Limited (Birla Aircon) M/s KSR	M/s Ajay Industrial Corporation Ltd (GREENLINE)
			M/s Kisan Mouldings Ltd
			M/s Vectus Industries Ltd
			M/s Ashirvad Pipes Pvt Ltd (ashirvad)
			M/s CRI Pumps Pvt Ltd
			M/s Avon Plastics Ind (Avonplast)
			M/s RC Plasto Industries (Plasto)
			M/s Fusion Industries
			M/s HSIL Ltd (Hindware)
53	UPVC Pipes and Fittings for SWR	M/s Prince	M/s Arovaram Industries LLP
		M/s Finolex	M/s AKG Extrusions Pvt Ltd (AKG)
		M/s Supreme	M/s Ajay Industrial Corporation Ltd
		M/s HIL Limited (Birla Aircon) M/s KSR	M/s Vectus Industries Ltd
			M/s Ashirvad Pipes Pvt Ltd (Ashirvad)
			M/s HSIL Ltd (Hindware)
			M/s Avon Plastics (Avon Plast)
54	Polyethylene / Aluminium / Polyethylene Composite Pressure Pipe	M/s Prince	M/s Vectus Industries Ltd
		M/s Finolex	
		M/s Supreme	
55	Plastic Pipe (for non- pressure Drainage & Sewerage)	M/s Prince (Foam Fit)	M/s Ashirvad Pipes Pvt Ltd
		M/s Finolex	
		M/s Supreme	

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
56	CI - Soil, waste, rainwater (SWR) & Drainage pipes	M/s NECO, Nagpur	M/s Bengal Iron Co
		M/s SKF (Singhal Iron Foundry, Mathura)	M/s Dhatu Udyog
			M/s Kapilansh, Nagpur
			M/s Anand Founder & Engineers
			M/s Raj Pattern Motors Founder Pvt Ltd (RPMF)
57	AC - Soil, waste, rainwater (SWR) & Drainage pipes	M/S Everest Asbestos Hyderabad	M/s Rajasthan Asbestos
		M/s Vishakhald Ltd	M/S Asbestos Cement Ltd
		M/S Hyderabad Asbestos Cement (Charminar)	M/s Sarbamangala Mfg Co Kolkata
		M/S Ramco	M/s Rohtas Industries, Dalmia Nagar Bihar
			M/s Swastik
58	RCC pipes, Drain pipes	M/s Indian Hume Pipes	M/s Poona Concrete product
		M/s Everest	M/s Aswathy Spun Pipes
		M/s Himalaya	M/s Vardhaman Concrete Product, Pune
		M/s Thuluvananikal Pipes	M/s Dhere Concrete product,Pune
			M/s Shivam Industries
59	Air Release Valves	M/s Leader	M/s Venus
		M/s BIR	M/s Normax
		M/s Kirloskar	M/s AUDCO
		M/s Sant	
		M/s L&T	
		M/s Upadhyay	
60	Foot Valves	M/s Upadhyay	M/s Varun
		M/s Leader	M/s Venus
		M/s Kirloskar	M/s AARKO Pipe Gram Udyog
		M/s Sant	M/s AUDCO
			M/s Normax
61	Reflex Valves	M/s Kirloskar	M/s Upadhyay
			M/s AARKO Pipe Gram Udyog
		M/s Leader	M/s Varun
		M/s Sant	M/s Venus
		M/s L&T	M/s Normax
			M/s AUDCO
62	Sluice valves	M/s Leader	M/s AARKO Pipe Gram Udyog
		M/s Kirloskar	M/s Kalpana
		M/s Zoloto	M/s Venus
		M/s L&T	M/s AUDCO
		M/s Bir	M/s CairEuromatic Automation
		M/s Upadhyay	
63	Butterfly Valves/ Disc Valves	M/s Leader	M/s BIR
		M/s Zoloto	M/s NORMAX
		M/s Sant	M/s AARKO Pipe Gram Udyog
		M/s L&T	M/s Castle
		M/s Kirloskar	M/s ValcoInt
		M/s Upadhyay	M/s AUDCO
			M/s Cair Euromatic Automation

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
64	Gate valves	M/s Leader	M/s Hindustan Metal Industries
		M/s Zoloto	M/s Jaypee
		M/s Sant	M/s Kingston
			M/s Hansa
			M/s Valco International (Quinn)
65	Water Meter	M/s Capstan	M/s Ashai
		M/s Dashmesh	M/s GEC
		M/s Kaycee	M/s Dhawan Sanitary Udyog (PRIMA)
		M/s Capital	M/s MECO
		M/s AnandAsahi	
		M/s Kirloskar	
66	PVC Water Tanks/ Polyethylene	M/s Sintex	M/s Plasto, Nagpur
		M/s Polycon, Jaipur	M/s Polywell
			M/S Okey PolymersPvt Ltd
		M/s Rotex	M/s JS Polyplast
			M/s Carris Pipes Tubes Pvt Ltd
			M/s Ergen Plastic Industries, Jodhpur
			M/s Vectus Industries Ltd
			M/s AshishPlast
			M/s Piyush Plasto Chems Pvt Ltd (MODIGOLD)
			M/s Simplex Plast
			M/s Kaveri Plasto, Infra
			M/s Rotamatic Containers Pvt
			M/s Infra
67	C P Bib Cock, Stop cock, pillar cock and accessories	M/s Jaquar	M/s Soma
		M/s CERA	M/s Dhawan Sanitary Udyog (PRIMA)
		M/s Kohler	M/s Sieco Indus
		M/s Marc	M/s Gem
			M/s Mohan Metal Industries (CORONET)
			M/s Shakti Enterprises
			M/s Prism Johnson Ltd
68	Copper/ Brass Alloy Bib Tap, Pillar Tap, Angle Valve & Stop Valves and accessories	M/s Soma	M/s Shree Balaji Industries (Glacier)
		M/s Leader	M/s Plastocraft Sanitary (I) Pvt Ltd (KINGSTON)
		M/s Zoloto	M/s Vardhaman Enterprises (JAINKO)
		M/s Jaquar& Co.Pvt.Ltd (JAQUAR)	M/s KS Engineering Works
			M/s Aluminium Udyog (KUNCHAL)
			M/s SHAKTI Enterprises(SHAKTI)
			M/s Dhawan Sanitary Udyog(PRIMA)
			M/s Prayag
			M/s Goel Sinks India Pvt Ltd
			JAYNAM

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
69	PVC Stop Cock and Bib Cock /float valves and accessories	M/s Jaypee	M/s GEM
		M/s GMP	M/s Hansa Kingston
		M/s Neta	M/s SEIKO
		M/s Zolota	M/s Ajanta Polymers(Millennium)
		M/s Prayag polymer	M/s Shakti Enterprises (SHAKTI)
		M/s Symet	M/s Precision Products (PEARL)
			M/s JAYNAM
70	Gun-Metal Globe/ Gate Valves/ Angle Valves	M/s Leader	M/s Balaji
		M/s Bir	M/s Shakti
		M/s Zoloto	M/s Dashmesh
		M/s Kirloskar	M/s Chambla
			M/s Kartar
			M/s Valco International (Quinn)
71	Shower Rose	M/s Jaquar	M/s Kingston
		M/s Kohler	M/s Meera
		M/s Crabtree	M/s Marc
		M/s CERA	M/s Parko
			M/s Prison Johnson Ltd
			M/s ESS-ESS
			M/s Soma
72	CI / Brass Ball Cocks (Float Valves)	M/s Leader	M/s Dhawan Sanitary Udyog (PRIMA)
		M/s NETA	M/s AARKO Pipe Gram Udyog
		M/s Zoloto	M/s Prayag Polymers (P) Ltd
73	Water Closet - Vitreous China (European /Indian)/ Squatting pan Orissa pattern	M/s CERA Sanitaryware	M/s Prayag Polymers (P) Ltd
		M/s Parryware	
		M/s Jaquar	M/s Neyveli Ceramics (Neycer)
		M/s Hindware	M/s Simpolo Vitrified Pvt Ltd
		M/s Johnson	M/s Glint Faucets Inc (GLINT)
		M/s RAK Ceramics	M/s Somany Ceramics Ltd (SOMANY)
74	Flushing Cistern - PVC Low Level including Flush Valves and fittings for WC andUrinals	M/s Parryware	M/s Neycer
		M/s CERA	M/s Jaquar & Co Pvt Ltd
		M/S Johnson Peddar	M/s Prayag
		M/s RAK Ceramics	M/s Speed Flo
			M/s R.S. Industries (POLYTUF)
			M/s Ajanta Polymers
			M/s Shakti Enterprises
			M/s Precision Products
			M/s Commander
			M/s Goel Sinks India Pvt Ltd
			M/s Ambani Vitrified Pvt Ltd
75	Plastic Seat Covers for EWC	M/s CERA	M/s Duralite
		M/s Neycer	M/s Champion
		M/s Parryware.	M/s Speed Flo
		M/s RAK Ceramics	M/s Prayag
			M/s Commander
			M/s Ajanta Polymers

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
76	Urinals - Vitreous China	M/s CERA	M/s Shakti Enterprises
		M/s Parryware	M/s Prayag Polymers
		M/s Neyveli Ceramics (Neycer)	M/s Sempolo Vitrified Pvt Ltd
		M/s Hindware	M/s Somany Ceramics Ltd (SOMANY)
		M/s Jaguar & Co Pvt Ltd	M/s Ambani Vitrified Pvt Ltd
		M/s Johnson	
		M/s Kajaria Sanitaryware Ltd (KEROVIT)	
77	Wash Basin - Vitreous	M/s Kajaria Sanitaryware Ltd (KEROVIT)	M/s Shakti Enterprises
		M/s CERA	M/s Ambani Vitrified
		M/s RAK Ceramics	M/s Prayag
		M/s Parryware	M/s Johnson
		M/s Hindware	M/s Sempolo Vitrified Pvt Ltd
		M/s Neyveli Ceramics (Neycer)	M/s Somany Ceramics Ltd (SOMANY)
		M/s Jaquar	M/s GLINT Faucets Inc (GLINT)
78	Sink Steel	M/s Jayna	M/s Diamond
		M/s Nirali	M/s Shakti
		M/s Neelkant	M/s Prayag
		M/s Parryware	M/s Phoenix
			M/s Plastocraft Sanitary (I) Pvt Ltd
			M/s Bluestar Sanitary Ind Pvt Ltd (Silver Shine)
			M/s Goel Sinks India Pvt Ltd
			M/s JAYNAM
79	Centrifugal / mono block Pump	M/s Kirloskar	M/s BEST
		M/s Beacon	M/s Calama
		M/s CRI Pumps	
		M/s Crompton Greaves	M/s BE
		M/s KSB Pumps	M/s Shakti Pumps India Ltd (Shakti)
		M/s Wilo Mather & Platt	
		M/s Jyoti	
		M/s V-Guard	
80	Submersible Pump / open well pumps	M/s Kirloskar	M/s Kishore Pumps
		M/s KSB	M/s WASP
		M/s Wilo Mather & Platt	
		M/s Jyoti	M/s Calama
		M/s V-Guard	M/s Grindfos Pumps India Pvt Ltd
		M/s CRI Pumps	M/s Shakti Pumps India Ltd (Shakti)
81	Vertical Turbine Pumps		M/s Jasco Pumps
		M/s Kirloskar	M/s Modi-Atlanta
		M/s KSB	M/s Johnson
		M/s Wilo Mather & Platt	M/s Worthington
82	Non Clog Sewage Submersible Pumps	M/s Jyoti	M/s WASP
		M/s KSB	M/s Kishor
		M/s Kirloskar	M/s Grindfos Pumps India Pvt Ltd
		M/s Wilo Mather & Platt	

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
83	Pumps for Fire Fighting	M/s Kirloskar	
		M/s WiloMather & Platt	
		M/s Crompton Greaves	
		M/s Bharat Bijlee	
84	Pole - Pre-stressed concrete	M/S Cement Fabric India, Jodhpur	M/s Precto, Chandigarh
		M/S Hindustan Pre-stressed Concrete, Faridabad	M/s Sri Balaji Enterprises
		M/S Indian PCC Poles	M/s Bator Concrete product, Aurangabad
		M/S Concrete Udyog Jhansi	M/S Concrete Fabrics Haryana
		M/S SanklaUdyog, Jhansi	
85	Pole - Steel tubular	M/s India Tube and Co	M/s Metal Coats Chennai
		M/s India Electric Poles Mfg Co, Maharashtra	M/s Quality Steel Products Ltd, Kanpur
		M/s Bombay Tubes	M/s SohanLal
		M/s The National Tubing company, Kanpur	M/s Bharat Conduit and Steel wks Kanpur
		M/s Kalinga Tubes	
		M/s Singh Profile, Pune	
86	Insulators HT/LT Disc/Pin/Shackel /loop /String Type	M/s BHEL	M/s Bengal Potteries
		M/s Jayshree	M/s Pactil
		M/s WS Insulators	M/s Jaipuria
		M/s Southern Insulators	
		M/s MEI	
86A	RMU & PSS	M/s Modern Insulators	
		M/s Lucy Electric India Pvt Ltd	M/s Megawin Switchgear
87	Air Circuit Breaker (ACB) LT 1100 Volts	M/s Larsen & Turbo	M/s C&S Electric Ltd
		M/s Larsen & Tubro	M/s Control and Switchgear
		M/s Siemens	M/s BCH
		M/s ABB	M/s Novateur Electrical (Indo Asian)
		M/s Schneider	
		M/s Crompton Greaves	
		M/s GEC	
		M/s English Electric	
		M/s Havells India Pvt Ltd	
88	Vacuum Circuit Breaker (VCB) suitable for 36 KV, 22KV and 12 KV system incl accessories	M/s SIEMENS	M/s Voltech System
		M/s Crompton Greeves, Mumbai	M/s Andrew Yule
		M/s ABB Ltd, Bangalore	M/s C&S Electric Ltd
		M/s Alsthom	M/s Techno System
		M/s BHEL	M/s Megawin Switchgear
		M/s Larsen & Tubro	
		M/s Schneider Electricals	
89	Automatic Power Factor Correction (APFC) Panel	M/s Larsen & Tubro	M/s Shakti
		M/s GEC	M/s Asian
		M/s Siemens	M/s Shreem
		M/s ABB	M/s BCH
		M/s Epcos	M/s Electro control system
			M/s Voltech Manufacturing Co (VOLTECH)
			M/s Liveline Electronics
			M/s Havells India Pvt Ltd

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
89A	Automatic Power Factor Correction (APFC) Panel		M/s Electro control system
			M/s Voltech Manufacturing Co
			M/s Techno System
			M/s Neptune Systems Pvt Ltd
90	Power Factor Improvement Capacitor Banks	M/s Larsen & Tubro	M/s Shreem
		M/s Siemens	M/s Universal
		M/s EPCOS	M/s Crompton & Greaves
		M/s GE	M/s Havells India Pvt Ltd
		M/s ABB	
91	HT Switch Gear 66/33/ 11KV 3 Phase, Gas Circuit Breaker circuit breaker SF-6 Type	M/s Crompton Greeves, Mumbai	
		M/s Schneider, New Delhi	
		M/s ABB Ltd, Bangalore	
		M/s Siemens Ltd, Mumbai	
92	HT 11 KV, 3 Ph Automatic Switch Fuse Unit	M/s ABB Ltd, Bangalore	M/s MEI
		M/s AREVA T&D India Ltd, Noida	M/s Jyoti
		M/s Crompton Greaves, Mumbai	M/s Southern Switch Gear, Chennai
		M/s Schneider, New Delhi	M/s Andrew Yule
		M/s C&S Electric Ltd (C&S Electric)	
93	Air Break Switch Gang Operated (33KV/11 KV)	M/s Pactil, Mumbai	M/s Mysore Electrical Industries
		M/s Jaipuria Brothers	M/s Southern Switchgear
		M/s HEI	M/s BHEL
			M/s ELPRO
			M/s Atlas
94	Air-break Switch (Isolators)	M/s Mysore Electrical Industries(MEI)	
		M/s Southern Switchgear	
		M/s Andrew Yule	
		M/s Crompton Greaves	
95	Arresters Lightning LT / HT	M/s Oblum	M/s Atlas
		M/s BHEL	M/s Rashtriya
		M/s GEC-Elpro	M/s Elpro
		M/s Crompton & Greaves	M/s Jaipuria
		M/s AREVA T&D	
95A	Chemical Earthing Electrode		M/s U-Portech Earthing
			M/s Shivangi Engineering Works
96	Change Over Switch /Starter/ Contactor /DOL/ Star-Delta/ Synchronising Panel/ Single phase preventer	M/s Siemens	M/s V-Guard
		M/s Larsen & Tubro	M/s HPL
		M/s ABB	M/s C&S Electric Ltd
		M/s Crompton Greaves	M/s Polycab Cab Ltd
		M/s GE	M/s Hagger Electric Ltd
			M/s Voltech System & Swichgear
			M/s Adhunik Switchgear
			M/s Bentec India Ltd
			M/s Havells India Pvt Ltd
97	Main Switch Iron Clad, Switch fuse unit	M/s Havells India Pvt Ltd	M/s HPL
		M/s C&S Electric Ltd	M/s Standard
		M/s Siemens	M/s Novatuer Electrical
		M/s L&T	M/s C&S Electric Ltd
		M/s Crompton Greaves	M/s Voltech System & Swichgear
			M/s Anchor Electricals
			M/s V-Guard

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
97A	Isolation Transformer	M/s Vintek Electronics (Volina)	M/s Power One Micro System Pvt Ltd (Power One) M/s India Techno Indus (Spectron)
97B	Transformers 6.6 KV/ 433 V, three phase upto & incl 100 KVA	M/S Indian Transformer, Gurgoan M/s Voltech Manufacturing Co Ltd	
98	Transformers 11 KV or 6.6 KV Copper Wired 500 KVA and above	M/s Crompton Greaves Mumbai M/s ABB Ltd, Bangalore M/s Bharat Bijlee Ltd, Mumbai M/s Schneider M/s Kriloskar M/s ECE M/s Andrew Yule	M/s Voltech Manufacturing Company Ltd M/s Sankla Udyog Jaipur M/s Toshiba M/s Silverline Electricals Pvt Ltd M/s PACTIL M/s Indian Transformer M/s PME M/s Volt amp Ltd Baroda M/s EMCO
99	Transformer 11 KV/433 V Copper wound, below 500 KVA	M/s Volt amp Ltd Baroda M/s Indo Tech Transformers M/s Alstom (GEC) M/s Schneider M/s Bharat Bijlee Ltd, Mumbai	M/s Silverline Electricals Pvt Ltd M/s Transfab M/s Rajasthan Transformers & Switchgear Ltd New Delhi M/s Paston Transformers Bahruch M/s Indian Transformer Electricals M/s PME M/s JaybeeInd M/s Everest M/s Transtrom
100	Transformer 11 KV/433 V Copper wound, 100 KVA and below	M/s PME M/s Rajasthan Transformers & Switchgear Ltd New Delhi M/s Everest M/s RK Industries M/s Pactil M/s Kotson M/s Hi Tech Industries M/s JaybeeInd	
101	Cable Jointing Kit for 11 KV/22 KV	M/s Raychems M/s Densons M/s M-Seal M/s Birla -3M	M/s Yamuna Gases and chemicals
102	UG HT XLPE, PVC Insulated Aluminum Conductor for 3.3/33/22/11KV System	M/s Cable Corporation of India M/s Havells India Ltd M/s Universal Cables Ltd, Satna M/s Asian Cables (RPG) M/s Gloster M/s RPG Cables Ltd, Thane M/s Finolex M/s RR Kabel M/s KEI M/s Polycab Pvt. Ltd M/s Uniflex	M/s Industrial Cables, Punjab M/s Paragon M/s Asian Galaxy Pvt Ltd M/s Pymen Cables India Ltd

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
103	UG LT XLPE, PVC Insulated	M/s Cable Corporation of India,Mumbai	M/s Plaza cables
		M/s Asian Cable Co, Chattisgarh	M/s Grandlay Electricals India
		M/s Finolex Cable Ltd, Pune	M/s Paragon Cable India
		M/s Polycab	M/s HPL Electric and Power Ltd
		M/s Gloster	M/s V-Guard Industries Ltd (V-GUARD)
		M/s Universal	M/s Asian Galaxy Pvt Ltd
		M/s RR Kabel	M/s Pymen Cables India Ltd
		M/s RPG Cables Ltd, Thane	M/s Vishal Cable
		M/s Havells India Ltd,	
		M/s KEI Industries Ltd (KEI)	
		M/s Shalabh	
104	Aluminum Conductor Steel Reinforced (ACSR)	M/s All-Ind	M/s VK Conductors
		M/s ICC	M/s Ujala
		M/s Bharat Conductors	M/s Konark,
			M/S Power Cables Ind
		M/s NICCO	M/s Gupta Cable Ind (RHINO)
105	Street Light fittings(LED)	M/s Indian Aluminum Co	
		M/s Bajaj	M/s Control & Switchgear
		M/s Phillips	M/s Asian
		M/s Wipro	M/s Insta Power Ltd
		M/s Crompton	M/s Gold Medal Electrical
		M/s GE	M/s HPL
		M/s Havells India Ltd,	M/s SHAKTI
		M/s Luker	M/s Gupta Power Infra Ltd (RHINO)
		M/s Jaquar	M/s Anchor Electrical Pvt Ltd
		M/s Bentec India (BENLO)	M/s Green Surfer PvtLtc
		M/s Eveready Indus India	M/s Olive Export Pvt Ltd
		M/s Orient Electric	M/s Jilco
		M/s Polycab	M/s Adhunik Switchgear (Adhunik)
		M/s Surya Roshni	
		M/s Pyrotech Electronic Pvt Ltd	
		M/s Halonise Technologies Pvt	
		M/s SYSKA	
		M/s FIEM Ind Ltd	
106	Solar Street light Fitting	M/s Phillips	M/s Crompton
		M/s BHEL	M/s Sun Technic
		M/s Tata	M/s Surya
		M/s Bajaj	M/s Goldwin
		M/s Havells India Ltd	M/s Kripa
			M/s Ptronix
107	High Mast light		M/s Axxon (AXXON)
		M/s Bajaj	M/s Utkarsh Tubes & Pipes
		M/s Phillips	
		M/s Crompton	M/s Metal Coats
108	Fluorescent tube light Fittings/LED/ lamp holder	M/s Wipro	M/s Surya
		M/s Bajaj	M/s Indo-Asian
		M/s Crompton	
		M/s Phillips	
		M/s Havells India Ltd	

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
109	Flame Proof Light Fittings(LED/Fan /well glass/bulk head including accessories	M/S Sudhir M/S Batiga M/s Flexipro Electricals, Nasik M/S Shyam Switchgears, Mumbai M/s Bajaj M/s Crompton	
110	Florescent lamp Lt lamp	M/s Phillips M/s Wipro M/s Bajaj M/s GE- Lighting M/s Osram M/s Havells India ltd M/s Crompton	M/s HPL Electric & Power Ltd M/s Indo-Asian M/s Surya M/s Halonix Technologies Pvt Ltd (Halonix)
111	Light fittings LED	M/s Crompton M/s Phillips M/s Havells India ltd M/s Osram M/s FIEM Ind Ltd M/s Pyrotech Electronic Pvt Ltd M/s Wipro M/s Bajaj M/s GE M/s Luker M/s Jaquar M/s Bentec India (BENLO) M/s EVEREADY M/s ORIENT Electric M/s POLYCAB M/s SURYA ROSHNI M/s SYSKA M/s Halonix	M/s Gupta Power Infra Ltd M/s Lightening Technology M/s Goldwin M/s Siemens M/s Anchor Electrical Pvt Ltd M/s Jain Ind Lighting Co M/s Gold Medal Electrical M/s Instapower Ltd M/s Green Surfer Pvt Ltd M/s SHAKTI M/s C&S Electric Ltd M/s Adhunik Switchgear (Adhunik) M/s Olive Export Pvt Ltd (Olive LED)
112	LED Tubelights/bulbs	M/s Phillips M/s Havells India ltd M/s Osram M/s Wipro M/s Bajaj M/s GE M/s Luker M/s Jaquar M/s BENLO M/s EVEREADY M/s ORIENT Electric M/s POLYCAB M/s SURYA ROSHNI M/s Pyrotech Electronic Pvt Ltd M/s Halonix M/s FIEM Ind Ltd	M/s Instapower Ltd M/s Gold Medal Electrical M/s C&S M/s HPL M/s RR Electric M/s Shakti M/s Gupta Power Infra Ltd (RHINO) M/s Anchor Electrical Pvt Ltd M/s Green Surfer Pvt Ltd M/s Olive Export Pvt Ltd M/s Adhunik Switchgear (Adhunik) M/s Jilco

(Signature of Contractor)

DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
113	Electronic / Photoelectric Switch for Auto Op of Street Lights	M/s Larsen & Tubro M/s GE M/s Siemens M/s Bajaj M/s Legrand	M/s Indo-Asian
114	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 Indo Asian M/s C&S Electric Ltd	M/s Standard M/s HPL Electric & Power Ltd M/s Honeywell M/s Panasonic Anchor M/s Cosmo Electric (KOLORS) M/s Voltech Mfg Co M/s BENLO M/s V-Guard M/s POLYCAB M/s Electro control system M/s Hagger Electric Pvt Ltd
115	Microprocessor based MCCB/RCCB LT 415 Volts	M/s Larsen & Tubro M/s Schneider M/s ABB M/s Legrand M/s Siemens M/s IndoAsian M/s C&S Electric Ltd (C&S Electric)	M/s DATAR M/s Standard M/s HPL Electric & Power Ltd M/s POLYCAB M/s Honeywell M/s Panasonic Anchor M/s Havells M/s BENLO M/s V-Guard
116	Electrical Panel (LT) NOTE:- (i) The above makes are subject to their possessing CPRI test report for equivalent rating. (ii) The accessories shall be of makes given elsewhere in respective items.	M/s L&T M/s Legrand M/s Standard M/s Universal Switchgear, New Delhi M/s Osian Switchgears & Controls, Jodhpur M/s Shalabh M/s Shalabh (India) Ltd	M/s Sombansi Enviro Engg Pvt. Ltd (SEEPL) M/s NEO Power Electronic & Project Pvt Ltd M/s C&S Electric Ltd (C&S Electric) M/s Accurate Ind Control Pvt Ltd M/s Bafna Electric Company, Jodhpur M/s Voltech Mfg Co Ltd M/s Techno System & Switchgears M/s Neptune System Pvt Ltd M/s Adhunik Switchgear M/s Electro Control Systems M/s Universal Switchgear M/s Osian Switchgears & Controls, Jodhpur
117	Electric Accessories, Piano Switches, Ceiling rose, call bells, Buzzers, Lamp Holders/ socket outlet, etc, plug & socket boards	M/s Panasonic Anchor M/s Crabtree M/s Leader M/s Legrand M/s Havells India Ltd M/s C&S Electric Ltd	M/s V-Guard M/s Cona M/s SSK M/s Kinjal M/s HPL Electric & Power Ltd (HPL) M/s Honeywell M/s Goldmedal Electricals Pvt Ltd M/s GM Modular Pvt Ltd M/s VK Industries M/s Standard

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
118	Ammeter / Voltmeter / Power Factor/frequency Meters	M/s IMP	M/s Conserv
		M/s Automatic Electric	M/s Universal
		M/s L&T	M/s Digitron
		M/s Havells India Ltd	M/s HPL
		M/s MECO	M/s C&S Electric Ltd
119	Digital Meters with built in selector switches for Voltmeter, Ammeter, Frequency, Energy, KW, Power Analyser	M/s Larsen & Tubro	M/s HPL Socomec
		M/s Automatic Electric	M/s Control and Switchgear
		M/s Enercon	M/s Trinity
		M/s Secure Meter	M/s Legrand
		M/s Havells India Ltd	M/s Neptune System
119A	DC Power Supply		M/s Power One
			M/s Liveline Electronics
120	Modular Switches /Sockets	M/s Anchor Roma	M/s HPL Electric & Power Ltd (HPL)
		M/s Legrand	M/s Goldmedal Electricals Pvt Ltd
		M/s Crabtree	M/s C&S Electric Ltd (C&S Electric)
		M/s POLYCAB	M/s Finolex Cables Ltd (Finoswitch)
		M/s Havells India Ltd	M/s BENLO
		M/s IndoAsian	M/s Honeywell
		M/s Panasonic Anchor	M/s Elleys Industries
			M/s VK Industries (Vinay)
			M/s Hagger Electric
			M/s Cosmo Electric (KOLORS)
			M/s Pressfit
			M/s Adhunik Switchgear
121	Electric Energy Meters, Tamper Proof	M/s Larsen & Tubro	M/s HPL
		M/s Jaipuria Meters	
		M/s Havells	
		M/s Secure Meters	
		M/s Elmeasure	
		M/s BENLO	
122	SCADA System	M/s Schneider	M/s RDS
		M/s Elmeasure	M/s Techlogous Aumn Pvt Ltd
		M/s Forbes Marshall Pvt Ltd	M/s Universal Switch Gear Control
123	Ceiling Fan	M/s Bajaj	M/s RR Fans
		M/s Crompton	
		M/s Polar	
		M/s Khaitan	
		M/s Havells India Ltd	
		M/s Orient	
		M/s POLYCAB	
		M/s V-Guard	
		M/s Panasonic	

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
124	Exhaust fan/ Air circulators	M/s Crompton	M/s Orient
		M/sKhaitan	M/s Anchor
		M/s Usha	M/s Electrical Products Company (India) Pvt Ltd (AIRTECH)
		M/s Bajaj	
		M/s Almonard	
		M/s Havells India ltd	
		M/s POLYCAB	
125	Fan Regulator	M/s Anchor	M/s Liveline Electronics
		M/s Havells	
		M/s Bajaj	
		M/s Usha	
		M/s Khaitan	
		M/s GEC	
		M/s Legrand	
126	Electronic Type Fan Regulator	M/s Legrand	M/s GM Modular Pvt Ltd
		M/s Crompton	M/s RR Fans
		M/s Havell	M/s Panasonic Anchor
		M/s Bajaj	M/s Goldmedal Eletrcials
		M/s Orient	
		M/s V-Guard	
		M/s Polycab	
127	Geyser	M/s Havell	M/s Madhuban
		M/s Bajaj	M/s Bharat
		M/s Racold	
		M/s Usha	
		M/s Venus	
		M/s Jaquar	
		M/s V-Guard	
128	PVC Insulated Copper/ Aluminium Cable 1100V of all types	M/s Plaza	M/s HPL
		M/s Finolex	M/s Paragon Cable India
		M/s Anchor Electricals	M/s Paraflex
		M/s Havells	M/s GM Modular Pvt Ltd
		M/s Nicco	M/s Dneo Cables Pvt Ltd
		M/s Polycab	M/s Grandlay Electricals India
		M/s RPG	M/s V-Guard Industries Ltd (V-GUARD)
		M/s Gloster	M/s Asian Galaxy Pvt Ltd
		M/s RR Kabel	M/s Fortune Art Wires & Cables Pvt Ltd (Fortune Art Cable)
		M/s KEI	M/s Kalinga
		M/s Shalabh	M/s CRI Pumps
			M/s VK Industries (Vinay)
			M/s Cosmo Electric (KOLORS)
			M/s Pressfit
			M/s Tamra Dhatu Udyog
			M/s Bonton Cable India Ltd

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
129	PVC conduits (Rigid or flexible)/FRLS rigid PVC conduits/fittings	M/s Anchor	M/s AKG
		M/s Modi	M/s Plaza
		M/s Presfit	M/s Kalinga
		M/s Precision	M/s National Pipe Products (VIP)
		M/s Astral	M/s VIP Extrusions(ATUL)
		M/s Panasonic Anchor	M/s Avon
		M/s Polycab Wires	M/s GM Modular Pvt Ltd
			M/s Asian
			M/s Bajaj Plast
130	MS conduit	M/s BEC Industries	M/s NIC
		M/s Kalinga	M/s CTI
		M/s Jindal	M/s Asian
		M/s Bharat	M/s Viraj Industries
		M/s AKG	M/s RMG Steels Pvt Ltd (RMCON)
131	Casing capping & Accessories	M/s Precision	M/s Prince
		M/s Modi	M/s Asian
		M/s Presto Plast	M/s National
		M/s Supreme	
		M/s Polycab	
		M/s Plaza	
		M/s Pressfit	
132	Indication Lamps Neon / LED Type	M/s ABB	M/s C&S
		M/s Siemens	
		M/s Schneider	
		M/s Larsen & Turbo	
		M/s EPCOS India Pvt Ltd	
		M/s Jaipuria	
133	LT Relay Numerical / Static / Protective / Auxiliary	M/s Siemens	M/s C&S Electric Ltd (C&S)
		M/s ABB	M/s Voltech Manufacturing Co
		M/s Schnieder	
		M/s Larsen & Tubro	
		M/s EPCOS	
		M/s Jaipuria	
134	UPS		M/s Tata-Liebert
			M/s APLAB
			M/s Luminous
			M/s Sukam
			M/s Protect Services
			M/s Microtech
			M/s Labotech
			M/s Power Conversion Tech
			M/s Sinetrac
			M/s Power-One
			M/s liveline Electronics

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
135	Automatic Voltage Stabilizer(Servo controlled)	M/s Automatic Electric	M/s Sinetrac
		M/s Vinitec	M/s Microtech
		M/s Aplab	M/s Andrew Yule
		M/s V Guard	M/s Brent Ford
		M/s Vintek Electronics (Volina)	M/s Power Ware, Meerut
			M/s India Techno Indus
			M/s Power one Micro system
136	DG Set (Engine)	M/s Kirloskar	M/s Ruston
		M/s Cummins	M/s Eicher
		M/s Greaves -Cotton	M/s Mahindra
		M/s Ashok Layland	
		M/s Caterpillar	
		M/s Sterling Gen	
137	DG Set (alternator)	M/s Kirloskar	
		M/s Stamford	
		M/s Jyoti	
		M/s Crompton Greaves	
		M/s Alstom	
		M/s AREVA	
		M/s Bharat Bijlee	
138	DG Set Assembled with Sound Proof Canopy	M/s Kirloskar	M/s Meera & Co
		M/s Jackson	M/s Control & Switch Gear
		M/s Sudhir	M/s Mahindra
		M/s Greaves -Cotton	
		M/s Cummins India	
139	Induction Motors	M/s Crompton Greaves	M/s Jyoti Ltd
		M/s Kirloskar Electric	
		M/s Bharat Bijlee	
		M/s Siemens	
		M/s NGEF	
		M/s ABB	
140	Gang operated devices (GOD)	M/s Pactil (Metro)	M/s Universal
		M/s Jaipuria	M/s MEI
		M/s Atlas	M/s GEC
		M/s ECE	M/s GR Power Switch
		M/s AREVA	
141	Precast Concrete Cable Cover	M/s Mehtab Tiles	M/s Lucky Cement Block Works(LC)
		M/s Patel Furniture Mart Betul	M/s Sukhi Enterprises
142	Air Handling Unit		M/s Hiscon Industries
		M/s Bluestar	M/s Universal
		M/s National	M/s Cooltech and Aerotherm
		M/s Zeco	M/s Bhupati
143	Air Curtains	M/s Voltas	
		M/s Almonard	M/s Technocraft
		M/s Air Con	M/s National
		M/s Crompton Greaves	M/s Sneha Vardhan
144	Cooling Towers		M/s Filtrose
		M/s Paharpur	M/s Polo
		M/s Mihir	
		M/s Delta	
		M/s Advance	

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DCWE (Contracts)
For Accepting Officer

LIST OF MAKES/BRANDS/MANUFACTURERS

1	2	3	4
145	Centrifugal Chillers & Screw Chillers	M/s Carrier	M/s Kirloskar Chillers
		M/s Voltas	
		M/s Daikin	
		M/s Hitachi	
146	Window type Air Conditioner	M/s Carrier	M/s Godrej
		M/s Voltas	M/s Samsung
		M/s Daiin	M/s Feeders Iloyd
		M/s Hitachi	M/s LG
			M/s Bluestar
147	Split type Air Conditioner	M/s Carrier	M/s Godrej
		M/s Voltas	M/s Samsung
		M/s Daiin	M/s Lloyd
		M/s Hitachi	M/s LG
			M/s Bluestar
148	Solar water system	M/s Tata-BP Solar System	M/s Novel Energy, New Delhi
		M/s BHEL	M/s Solar Equipment Mfg, Noida
		M/s Best & Crompton	M/s Solautomatic Electrical Eqpt, Noida
			M/s Digiflic Controls (I) Pvt Ltd, Bangalore
			M/s Solchrome Systems India Ltd, Parwanoo-Himachal
			M/s Surya-Jyoti Devices, Punjab
			M/s Jain Solar
149	SEWAGE TREATMENT PLANTS	(i) M/s Sombansi Enviro Engg Pvt. Ltd. (SEEPL)	
		(ii) M/s Nitasha Constructions	
		(iii) M/s Hydrotech Paryavaran (India) Pvt Ltd	
		(iv) M/s Optimus Enviropro Pvt Ltd	
		(v) M/s Thermax Limited	
		(vi) M/s Daiki Axis India Pvt Ltd	
150	Fire Fighting equipment like hose reel, nozzles, couplings, valves, etc	M/s Cease Fire	M/s Flame Guard Indus
		M/s Safex	M/s Nitin

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DCWE (Contracts)
For Accepting Officer

MATERIAL TESTING AND TESTING CHARGES**NOTES TO APPENDIX 'B'**

1. The materials listed here-in-after shall be tested as per the frequency indicated therein, expenses of these shall be borne by the contractor.
2. Level of testing shown in legend as A, B and C are defined as under :-

LEVEL 'A'

- (a) "Site Lab" means own site lab established by contractor at the work site for such tests. This lab shall house all the facilities including T&P machinery, equipment, manpower etc required for conducting tests. This lab shall be operative for the entire duration of the contract till its completion. Tests shall be carried out in the presence of Engineer-in-Charge to be nominated by the GE. Random check of compliance of frequency of testing shall be done by GE.
- (b) Records shall be maintained at work site. These test results shall be signed by the contractor or his authorised representative and aforesaid departmental official.
- (c) Within 15 days of placement of work order No.1 site lab shall be established and action reported by the contractor to GE in writing who will verify the fact and satisfy himself the facilities provided. Thereafter GE will issued a certificate to this effect in writing listing out equipment particulars etc of each materials tests. Only after issue of this certificate by the GE the tests shall be carried out and materials so approved shall be incorporated in the work.
- (d) Manpower, materials, land infrastructure like electricity water etc requires for conducting these tests shall be provided by the contractor.
- (e) Tenderer is deemed to cater for above provisions in his quoted rate of item.
- (f) Remedial measures, if any, required to achieve/obtain desired results for each test shall be taken promptly by contractor.
- (g) In case during any point of time contractor fails to adhere to the laid down frequency of the tests for any reasons whatsoever, the contractor shall get the tests done from any other lab whose name shall be approved by GE in writing. The testing charges payable by contractor to such labs shall be paid by the contractor's quoted rates of item is deemed to include for this eventuality and nothing extra shall be payable to the contractor. No extension of time shall be admissible on this account.
- (h) However, in case GE in his opinion considers that the contractor is purposely not adhering to the laid down frequencies of the tests, he shall reserve the right to deduct penal recovery which shall be double the rates of tests indicated in appendix 'D'. However, besides affecting penal recovery for non-compliance of contractual testing frequency get tests done from zonal lab as per laid down frequency and necessary tests charges given against level 'A' shall be recovered from running bills. In case facilities are not available to conduct tests in zonal lab, then charges paid by GE shall be debited to their running payments. GE's decision shall be final and binding on recoveries.

LEVEL 'B'

- (a) "Zonal Lab" means lab of CE Bhopal Zone, Bhopal at Bhopal.
- (b) The tests shall be conducted as per frequencies laid down for these tests in these labs for which contractor shall provide all requisites facilities like samples, cubes, materials etc, transportation to these labs for testing purposes, it will be contractor's responsibility to adhere to the laid down frequency of testing. Test results shall be sent by lab to the GE whose copies can be made by contractor at his own expense. Testing charges for the tests so conducted shall be recovered at the rates indicated in appendix 'E' from the running payments. The contractor's quoted rates sum is deemed to include for above provision.
- (c) Provision of para (h) above of level 'A' shall be applicable to level 'B' also.

LEVEL 'C'

- (a) Level 'C' lab stands for National Test House/SEMT Wing Pune located in CME Pune 31/Local Engineering College.
- (b) Rest provisions contained in para (b) of Level 'B' above shall be applicable here except that contractor shall obtain test results from these labs and hand over to GE. The testing charges payable to these labs for conducting these tests shall be borne by the contractor and his quoted rate of items sum is deemed to include this provision.

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DCWE (Contracts)
For Accepting Officer

MATERIALS AND TESTS

SI No	Material	Test	Method of testing	Frequency of tests			Level of test	Rate	Remark
1	2	3	4	5			6	7	8
1.	Brick	1) Compressive strength	IS-3495 (Part-II)	As per IS-5454 as given under:-			A	180/-	Checks for visual and Dimensional characteristics shall also be carried out as per IS:5454
		2) Water Absorption 3) Efflorescence	--Do-- ---Do-- (Part-II)	Lot Size.	sample Size	permissible Nos of defective bricks	A	150/-	
				1001 to 10000	5	0	A	180/-	
				10001 to 35000	10	0			
				35001 to 50000	15	1			
2.	Coarse Aggregate	1) Sieve Analysis	IS:2386(Part-I)	One test for every 15 cum of aggregates or part there of brought to site.			A	120/-	
		2) Flakiness Index	---do--	---do--			A	90/-	
		3) Estimation of deleterious materials	---do--	One test for every 100 cum of aggregate or part thereof.			A	120/-	
		4) Organic impurities	---do--	One test per source of supply			C	120/-	
		5) Moisture content	IS:2386(Part-II)	Regularly as Reqd.			A	120/-	
		6) Specific gravity	--do--	One test for each source of supply.			B	120/-	

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DCWE (Contracts)
for Accepting Officer

MATERIALS AND TESTS (Contd)

SI No	Material	Test	Method of testing	Frequency of tests	Level of test	Rate	Remark
1	2	3	4	5	6	7	8
3.	Fine aggregate	1) Sieve Analysis	(IS:2386 Pt-I)	One test for every 15 cum of FA or part thereof when brought to site.	A	180/-	
		2) Test for clay, silt and impurities.	--do-- Pt-II	--do--	A	90/-	
		3) Specific gravity	--do--	One for each source of supply	B	180/-	
		4) Test for organic impurities	--do--	One test for each source of supply.	C	180/-	
		5) Moisture content	-do- but (Part-II)	Regularly as required subject to 2 tests/ per day when being used.	A	180/-	
4.	Cement	1) Setting time	IS-4031-63 Reaffirmed 1980	Once for each consignment or as and when Reqd.	B	180/-	
		2) Soundness	--do--	--do--	C	120/-	
		3) Compressive strength	--do--	--do--	B	360/-	
		4) Fineness	--do--	--do--	C	120/-	
5.	Structural concrete (M-15 grade and above)	1) Slump test or compacting factor test or VEE-BEE test	IS-119	The Min frequency of sampling of concrete of each grade shall be as under :-	A	180/-	(1) Random sample shall be carried out to cover all mix units.
		2) Compressive strength	IS-516	Qty of Conc. No of IN THE work(M ³) samples 1 – 5 1	A	120/-	(2) Refer IS-456-2000 clause 14 for frequency of sampling.
				6 – 15 2 16 – 30 3 31 – 50 4 51 and above 4+1 for each Addl 50 cum. or part thereof.			

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MATERIALS AND TESTS (Contd)

SI No	Material	Test	Method of testing	Frequency of tests	Level of test	Rate	Remark
1	2	3	4	5	6	7	8
6.	(a) PCC block for walling (Hollow Block)	1) Compressive strength.	IS:2156-1984 (Appx 'B')	8 Blocks out of 14	A	60/-	Samples :- 14 blocks from consignment of every 5000 blocks or part thereof.
		2) Water Absorption.	-do- (Appx 'E')	3 Blocks out of 14	B	120/-	
		3) Density.	-do- (Appx 'A')	5 Blocks out of 14	B	90/-	
	(b) PCC solid for walling.	1) Compressive strength	IS-2185	12 Blocks out of 18	A	60/-	Samples :- 18 Blocks from consignment of every 1000 or Part thereof.
		2) Water absorption.	-do- (Appx 'E')	3 Blocks out of 18	B	120/-	These Blocks shall be checked for dimensions
		3) Density	-do- (Appx 'A')	3 Blocks out of 18	B	120/-	weight.
7.	Cement flooring Tiles/Terrazzo tiles	1) Water absorption	IS:1237-1980 (Appx 'D')	6 Tiles out of 18	B	180/-	Samples : 18 Tiles from each source of supply selected at Random.
		2) Wet Transverse strength	-do- (Appx 'E')	-do-	B	144/-	
		3) Resistance wear	-do- (Appx 'F')	-do-	C	540	
8.	Burnt clay roofing Tiles (Hand Made) IS:2690(Pt-II) LENGTH 150 MM to 250MM WIDTH 100 MM to 200MM THICKNESS 35 MM TO 50 MM	1) Water absorption	IS : 3495 (Part-II)	6 Tiles out of 12	B	216/-	Samples : 12 tiles from each source of supply selected at Random.
		2) Compressive strength	-do- (Part-I)	-do-	A	180/-	
9.	Manglore Pattern Roofing Tiles	1) Water absorption	IS : 654 (Appx 'A')	6 Tiles out of 32	B	180/-	SAMPLES : 32 tiles from each consignment of 3000 tiles or part thereof. These tiles shall be checked for dimensions and weight.
		2) Breaking load	-do- (Appx 'C')	-do-	B	120/-	
10.	Timber	1) Specific gravity and weight	IS:1708	Minimum 3 samples from a lot of 4 Cum or 250 pieces of seasoned timber.	B	120/-	
		2) Moisture content	-do-	-do-	A	120/-	

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MATERIALS AND TESTS (Contd)

SI No	Material	Test	Method of testing	Frequency of tests	Level of test	Rate	Remark
1	2	3	4	5	6	7	8
11.	Water for constn purpose	1) Test for acidity 2) Test for alkalinity 3) Test for solid content	IS:456 & 3025 -do- -do-	Once at the stage of approval of source of water	B B C	240/- 240/- 300/-	Also refer clause 4.3 of IS:456 and its subsequent clauses regarding suitability of water.
12.	Welding of steel work	Visual inspection Test.	IS:822-1970 Clause-7.1	100% by visual inspection		360/-	Specialized tests, their method and frequency to be decided on consideration of their importance by the Accepting Officer.
13	Timber paneled and glazed door/window shutters(including factory made shutter) -do- -do-	a) Dimensions, sizes workmanship and finish b) STRENGTH TEST 1) Slamming 2) Impact Indentation 3) Shock Resistance 4) Edge Loading	IS:1003 (Pt-I) IS:1303 -do- -do-	Frequency of sampling from each lot shall be as under :- Lot size Sample Size 26 to 50 5 51 to 100 8 101 to 150 13 151 to 300 20 301 to 500 32 501 to 1000 50 1001 and above 80 From each lot 5% of the factory made shutter shall be manufacturer tested for strength tests.	A Manuf- acture	180/-	
14.	Ply Wood (IS:303)	a) Moisture content b) Water Resistance	IS:1734(Pt-I) -do- (Part-6)	Six test pieces cut from each of the boards selected as per table-I shall be subjected to tests.	B C	240/- 240/-	SAMPLING shall be as per IS-7835 Tables II

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MATERIALS AND TESTS (Contd)

SI No	Material	Test	Method of testing	Frequency of tests	Level of test	Rate	Remark
1	2	3	4	5	6	7	8
15.	Wood Particle Board(Medium Density) IS:3087-1985	a) Density b) Moisture content c) Water absorption d) Swelling due to surface absorption e) Swelling in water f) Modules of rupture g) Screw withdrawal strength	IS:2380 (Part-3) --do-- --do-- (Part-16) --do--(Part-17) --do-- --do-- (Part-4) --do-- (Part-4) --do-- (Part-4)	Three test specimen from each sample(Size 150mm x 75mm) --do-- --do-- (Size 300mm x 300mm) --do-- (Size 125mm x 100mm) -do- (Size 200mm x 100mm) --do--Three test specimens as per IS : 2380-1977 --do-- as per IS:2385	A A&B A A A B C	60/- 60/- 60/- 60/- 90/- 120/-	Sampling shall be done as per IS:3487 with moisture meter.

Legend**A-Site Lab****B-Zonal Lab****C-National test house/SEMT WING/Engg College**

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