

NAME OF WORK : REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD

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Drawing : (Nil)

* Not enclosed alongwith tender documents, which can be sent in the office of GE (NW) Mankhurd during working hours on any working day.

Signature of Contractor

AGE (Contracts)
For Accepting Officer

Dated :

Tele : 022-25580236

Garrison Engineer (NW)
Mankhurd, Mumbai-400088

8402/ 04 /E8

28 Oct 2024

NAME OF WORK : REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD

Dear Sir(s),

1. Tender documents for the above mentioned work are uploaded herewith. You are invited to participate in this competitive tendering by submitting tender in two covers i.e one is technical bid/application and the second is price/financial bid
2. All critical dates, downloading dates and bid submission dates shall be referred as per NIT details mentioned and uploaded in the website “defproc.gov.in”.
3. Instructions for submission of bid /tender documents and general instructions for compliance for submission of bid shall be as mentioned here after.
4. This letter including enclosures shall form part of the tender documents.

Yours faithfully,

AGE (Contracts)
For Accepting Officer

Encls : (Tender documents)

Signature of Contractor

Dated :

**INSTRUCTIONS FOR FILLING IN AND SUBMISSION OF TENDER
DOCUMENTS TO BE COMPLIED WITH BY THE CONTRACTOR**

1. GENERAL INSTRUCTIONS FOR COMPLIANCE

- 1.1 The tender will only be accepted in the electronic form. All bids shall be submitted in “defproc.gov.in” portal. Documents should be scanned and forwarded in ‘pdf’ form or ‘xls’ form as indicated.
- 1.2 Tenders shall be forwarded online through “defproc.gov.in” portal on or before the bid closing date mentioned in the tender. No physical form of the tender will be accepted.
- 1.3 All bids shall be digitally signed by the Contractor.
- 1.4 The tender shall be accompanied by the **scanned certified true copy** of the power of attorney of the signatory to the tender documents. In case the signatory himself is the Sole Proprietor, 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**. The person signing the tender on behalf of another partner (s) or on behalf of the firm or company shall attach with the tender scanned copy of a proper power of Attorney duly executed in his favour by such other person or by the partners(s) or in accordance with constitution of the company in case of company, stating that he has authority to bind such other person or the firm or the company as the case could be, in all matters pertaining to the contract including the Arbitration Clause.
- 1.5 Even in case of firms or companies which have already given power of attorney to an individual authorizing him to sign tender and in pursuance of which tender documents 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 partner (s) of the firm, or the company as the case could be, including the condition relating to Arbitration clause **should be submitted with the tender as a scanned copy**.
- 1.6 Power of attorney shall be executed on stamp paper of adequate value as applicable. **Scanned copy of the same shall be forwarded alongwith the bid.**
- 1.6.1 In case of an individual, self-sworn affidavit shall be executed by the contractor himself. **Scanned copy of the same shall be forwarded along with the bid.**
- 1.6.2 In case of partnership concern, power of attorney shall be executed by all partners. **Scanned copy of the same shall be forwarded along with the bid.**
- 1.6.3 In case of a company, power of attorney shall be executed in accordance with the constitution of the company. **Scanned copy of the same shall be forwarded along with the bid.**
- 1.7 **Bids shall be submitted online well in time. Bid closes 19 Nov 2024 upto 1800hrs.**
- 1.8 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. Attention is also drawn to special condition 3 and also conditions 24 and 25 of IAFW-2249 (General conditions of contracts).
- 1.9 Tenders will be opened by two bid openers.
- 1.10 Tenderer shall quote his rates on the BOQ file only. No alteration to the format will be accepted and otherwise in case any alteration is found made to BOQ FORMAT the bid will be disqualified.
- 1.11 In case the tenderer has to revise/modify the rates quoted in the Schedule ‘A’ and/or General Summary, he can do so only in the Schedule ‘A’/General Summary through “defproc.gov.in” portal only.
- 1.12 In case a tenderer shall intend to revise his offer, he can do so through the defproc.gov.in portal only before the bid closing time and date.
- 1.13 In the event of lowest tender revoking his offer or revising his rates upwards/ offering voluntary reduction, after opening of the tenders, 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, will be notified to the tenderer for depositing the amount through MRO. Issue of tender to such contractors will remain suspended till the aforesaid amount equal to the earnest money is deposited in Govt Treasury. In addition, such tenderer and his related firm will not be issued the tender in second call or subsequent calls. Reduction offered by the tenderer on freak high rates referred to the tenderer for review will not be treated as voluntary reduction.

Contd...

**INSTRUCTIONS FOR FILLING IN AND SUBMISSION OF TENDER DOCUMENTS
TO BE COMPLIED WITH BY THE CONTRACTOR (Contd/....)**

1.14 **Un-enlisted Contractors:-** All contractors shall submit their bids of tenders which will have clear stipulation/ condition that their priced bids will be opened only after eligibility criteria is fulfilled. Tenderer shall upload copy of police verification certificate from police authority of the area where the registered office is located. For proprietor/ each partner/ each Director a notarised copy of valid passport shall be acceptable in lieu of police verification. All documents as asked for in NIT i.e, immovable/ movable property details, works executed as applicable for enlistment of eligible class/ category shall be uploaded. If the tenderer is found to be lowest then independent police verification shall be carried out after opening of price bid.

1.15 The department can issue amendments/errata's to the tender documents before due date of submission of tenders. The tenderer is required to read the tender documents in conjunction with amendments, if any, issued by the department. The tenderer is not supposed to incorporate the amendments/errata's in the body of the tender documents issued either in ink or pencil. In case the amendment/errata issued are incorporated by the tenderer in the body of the tender, they shall not be considered and the amendments/errata's to tender documents as issued by the department shall only hold good.

2. EARNEST MONEY

(a) Contractors who are not enlisted in MES/who are enlisted but have not deposited standing security deposit and not executed standing security bond with Chief Engineer Southern Command will be required to furnish earnest money as detailed in Para 11 of Notice of Tender in one of the following forms along with their tender. Tenderers shall note that no other form of earnest money is acceptable.

(b) Earnest money shall be submitted alongwith the tender in one of the following norms:-

(i) Deposit at call Receipt from a Nationalised scheduled bank drawn in favour of GARRISON ENGINEER (NW) MANKHURD.

(ii) Receipt of treasury challan, the amount being credited to the Revenue deposit of GARRISON ENGINEER (NW) MANKHURD.

(iii) Scanned copies of Earnest Money shall be uploaded alongwith the ebid.

Note: Tender submitted by an **un-enlisted contractor** not accompanied by acceptable form of earnest money shall be treated as non-bonafide and shall be rejected.

3. PERFORMANCE SECURITY (Refer condition No 19 of IAFW-2249 of General Condition of Contract)

3.1 The performance security for an amount equivalent to 5% of the contract sum shall be in favour of Accepting Officer and shall be in any of the forms mentioned below. Work order No 01 shall be placed only after submission of Performance Security of adequate value by the contractor. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit :-

(a) A Bank Guarantee in the prescribed form.

(b) Government securities, FDR or any other Government instruments stipulated by the Accepting Officer i.e in favour of GE (NW) Mankhurd.

3.2 If the Performance Security provided by the successful Contractor in the form of Bank Guarantee, it shall be issued by Nationalized / Scheduled Indian bank but its confirmation shall be done only from the Head Office of the Bank.

3.3 Failure of the successful Contractor to comply with the requirements of sub clause 3.1 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.

Contd...

INSTRUCTIONS FOR FILLING IN AND SUBMISSION OF TENDER DOCUMENTS
TO BE COMPLIED WITH BY THE CONTRACTOR (Contd/....)

4. Facilities for execution of bank guarantee for following purposes are available for the contractors as details below :-

- (a) Performance security for individual work as applicable covering contract period and defects liability period thereafter.
- (b) Retention money for payment of running accounts.

5. (a) 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 literatures on the subject are widely available which the tenderer may make use of.

(b) The tenderers attention is drawn to special condition of the tender documents regarding preparation of the detailed network 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 effect his class of enlistment and future prospects of receiving in invitations of tender for work.

6. Conditional tender shall be treated as non-bonafide and is liable to be rejected.

7. The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. Attention of contractor is also drawn to condition 24 and 25 of IAFW-2249 (General condition of contract)

8. Information / documents (Forming part of this contract) mentioned here in below are not enclosed with these documents. These are available for perusal during working hours on working day in the office of the GARRISON ENGINEER (NW) MANKHURD, MUMBAI-88

(a) IAFW-2249(1989 Print) - General condition of contracts including errata and amendments.

(b) Schedule of Minimum Fair wages - As per latest Government of India Notification Wages

Whether the documents mentioned in Para 8 above are actually seen or not, the contractor is deemed to have made himself acquainted with the contents of the above mentioned documents not enclosed herewith before submission of the tender and no claim whatsoever on this account shall be entertained.

9. Refer to special condition of the tender documents in connection with taxes, levies, duties etc.

10. These instructions shall form part of the contract documents and shall be signed and returned along with the tender documents on acceptance of the bid. Accepted firm to submit hard copies of all documents duly signed by the authorized person.

11. No out of pocket expenditure incurred by tenderer for quoting the tender will be reimbursed.

Signature of contractor
Dated :

AGE (Contracts)
for Garrison Engineer

NOTICE INVITING TENDER (NIT)

1. A tender is invited for the work as mentioned in Appendix 'A' to this NOTICE INVITING TENDER (NIT)
2. The work is estimated to cost as indicated in aforesaid Appendix 'A'. This estimate, however, is not a guarantee and is merely given as a rough guide and if the work cost more or less, a tenderer/bidder will have no claim on that account. The tender shall be based on as mentioned in aforesaid Appendix 'A'.
3. The work is to be completed within the period as indicated in aforesaid Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over site, which will be on or about two weeks after the date of Acceptance of tender.
4. Normally contractors whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, contractors of categories SS to E may tender/bid. Not more than one tender/bid shall be submitted/uploaded by one contractor or one firm of contractors. Under no circumstances will a father and his son(s) or other close relations who have business dealing with one another be allowed to tender/bid for the same contract as separate competitors. A breach of this condition will render the tenders/bids of both the parties liable for rejection.

5 PERFORMANCE SECURITY (Refer condition No 19 of IAFW-2249 General Condition of Contracts)

5.1 The performance security for an amount equivalent to 5% of the contract sum shall be in favour of Accepting Officer and shall be in any of the forms mentioned below. Work order No 01 shall be placed only after submission of Performance Security of adequate value by the contractor. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnished additional security to the Government to make good the deficit :-:

- (a) A Bank Guarantee in the prescribed form.
- (b) Government securities, FDR or any other Government instruments stipulated by the Accepting Officer i.e in favour of GE (NW) Mankhurd.

5.2 **If the Performance Security provided by the successful Contractor in the form of Bank Guarantee, it shall be issued by Nationalized / Scheduled Indian bank but its confirmation shall be done only from the Head Office of the Bank.**

5.3 Failure of the successful Contractor to comply with the requirements of sub clause 5.1 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.

5.4 Enlistment in adjoining command facility is not applicable. The Contractor will be recognized by the Index proof only his Parent Command and there will be no reference to his enlistment under any Adjoining Command Facility/Parallel Enlistment Facility.

5.5 The GE/GE(I) will return the earnest money wherever applicable to all unsuccessful tenderer/bidder by endorsing an authority on the deposit-at-call receipt for its refund on production by the tenderer/ bidder, a certificate of the accepting officer that a bonafide tender/bid was received and all documents were returned.

5.6 The GE/GE(I) will either return the earnest money to the successful tenderer/bidder by endorsing an authority on the deposit-at-call receipt for its refund on receipt of an appropriate amount of Performance Security if such a transaction is feasible.

6. Garrison Engineer (NW) Mankhurd 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 by the tenderer/bidder on or before the date & time mentioned in NIT. A scanned copy of DD with enlistment details/documents shall be uploaded as packet 1/cover-1 ('T' bid) of the tender/bid on e-tendering portal. DD is refundable in case T bid is not accepted resulting in non-opening of 'Q' bid. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD and shall not have any claim from Government whatsoever on this account.

7.1. Tender form and conditions of contract and other necessary documents shall be available on <http://defproc.gov.in> for download and shall form part of contract agreement in case the tender/bid is accepted.

7.2. In Case of contractor who has not executed the Standing Security Bond, the Cover-I shall be accompanied with by Earnest Money of amount as mentioned in Appendix 'A' in the form of deposit at call receipt in favour of concerned 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').

7.3. The GE will return the Earnest Money wherever applicable to all unsuccessful tenderers/bidders by endorsing an authority on the deposit-at-call receipt for its refund, on production by the tenderer, bidder a certificate of the Accepting Officer that a bonafide tender/bid was received and all documents were returned.

NOTICE INVITING TENDER (NIT)

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

7.5. 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.

8. 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

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

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

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

12. Invitation for e- tender does not constitute any guarantee for validation of 'T' bid and subsequent opening of finance bid of any applicant/bidder, even of enlisted contractors of appropriate class, merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the 'T' bid and not open the finance bid of any applicant/bidder. 'T' bid validation shall be decided by the Accepting Officer based on, interalia, capability of the firm as per criteria given in Appx 'A' to this NIT. The applicant contractor/bidder will be informed regarding non- validation of his 'T' bid assigning reasons thereof through the www.defproc.gov.in website. The applicant contractor/bidder if he so desires may appeal to the next Higher Engineer Authority viz. CWE (Subs) Bhandup on email id on email id sbmb3-mes@nic.in with copy to the Accepting Officer on email.id nwmnkd4-mes@nic.in before the scheduled date of opening of Finance Bid. The decision of the Next Higher Engineer Authority (NHEA) shall be final and binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

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

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

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

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

Signature of Contractor
Date:

AGE (Contracts)
for Accepting Officer

APPENDIX 'A' TO NOTICE OF E-TENDER INVITING APPLICATION

1.	Name of Work	:	REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD
2.	Estimated cost	:	Rs 46.69 Lakhs (Approx) at par market rates.
3.	Period of completion	:	300 days
4.	Cost of tender documents	:	Rs 500/- in the form of DD/Bankers Cheque from any scheduled Bank in favour of GE (NW) Mankhurd payable at Mankhurd, Mumbai
5.	Website/portal address	:	http://defproc.gov.in and www.mes.gov.in
6.	Type of contract	:	The tender shall be item rate contract based on IAFW-1779-A & IAFW-2249 (GCC) with Schedule 'A' (list of items of works) to be priced by the tenderer.
7.	Timeline details	:	
	Bid submission start date	:	Refer critical dates on the web site
	Bid submission end date	:	
	Date of bid opening	:	
8.	Eligibility Criteria	:	
	(a) For MES enlisted contractors	:	Contractors shall be enlisted with MES in Class ' D ' and above and category ' a (i) ' subject to the remarks wrt performance in respect of works in hand reflected in Work Load Return (WLR) or any other report circulated by competent engineer authority.
	(b) For other contractors not enlisted with MES	:	<p>(i) Contractor not enlisted with MES shall meet the enlistment criteria of 'D' class MES contractors & category 'a (i)' i.e. with regard to having 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 of Contracts 2020 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/blacklisted (either permanently or temporarily) from participating in any bid or for business dealing 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>
9.	Tender Issuing and Accepting Officer	:	Garrison Engineer (NW) Mankhurd Mankhurd, Mumbai – 400088 Email ID : nwmnkd4-mes@nic.in Tele No : 022-25580236/25550714
10.	Executing agency	:	Garrison Engineer (NW) Mankhurd
11.	Earnest Money	:	Rs 93,380.00 in favour of GE (NW) Mankhurd in the form of Deposit at call receipt from any Scheduled / Nationalized Bank in favour of GE (NW) Mankhurd or Receipted Treasury Challan, the amount being credited to the revenue deposit of GE. MES enlisted contractors are exempted from submission of EMD. Copy of EMD to be uploaded online and original EMD to be forwarded off line to the office of Accepting Officer so that the same are received within 5 days of bid submission end date. FDR not acceptable.

APPENDIX 'A' TO NOTICE INVITING TENDER(CONTD...)**NOTES :-**

1. After opening of Cover 1, if the number of MES enlisted contractors of eligible class as well as un-enlisted contractors, if any, fulfilling the other eligibility criteria give in NIT are less than 7 (seven). Applications in respect of contractors one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE Command/ADG below eligible class shall also to be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore MES contractors one class below (two class below in case of remote and difficult areas) may also bid for this tender. However contractors of one/two classes below the eligible class shall not be considered in case their present residual work in hand is more than 05 times of their present tendering limit. Such bidders shall upload in their Cover-1 bid details of works in hand showing names of work, names of Accepting Officers, Contract amount, dates of commencement and completion (stipulated) and progress as on bid submission date. These details shall be verified by the Tender Issuing Authority from concerned formations in case bids of such contractors are considered for evaluation.
2. In case after opening of Cover 1, the number of MES enlisted contractors of eligible class as well as un-enlisted contractor. If any, fulfilling the other eligibility criteria given in NIT are 7 (Seven) or more, applications of only those one class below the eligible class bidders shall be considered, who have previously completed similar works satisfactorily and are meeting the criteria of upgradation in respect of past experience of completed works (individual work experience and/or average annual turnover as applicable) and financial soundness (solvency/financial soundness and working capital) as per details given in Manual on Contracts. Therefore such contractors shall upload the requisite information/documents in the Cover-1.
3. Un-enlisted contractor shall be considered provided he meets the criteria. Foreign firms shall not be eligible for this tender. However Indian Firms having foreign national / Indian nationals staying abroad / Indian national having taken foreign citizenship, as director(s) shall be considered subject to security clearance from the concerned authorities.
4. Contractors enlisted with MES will upload following documents in Cover 1 for checking eligibility :-
 - (a) Application for tender on Firm's letterhead.
 - (b) Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
 - (c) Scanned copy of DD /Bankers Cheque toward cost of tender and EMS instrument in case SSD bond is not signed at the time of registration.
 - (d) Any other document required as described in this Appendix.
5. Contractors not enlisted with MES will be required to upload following documents in Cover 1 for checking eligibility.
 - (a) Application for tender on Firm's letterhead.
 - (b) Scanned copy of DD/ Bankers Cheque toward cost of tender and Earnest Money Deposit (EMD) instrument.
 - (c) Copy of Police Verification Report/Police Clearance Certificate/ Character Certificate from the Police Authority of the area where the registered office of the firm is located/notarized copy of valid passport of Proprietor/each Partner/each Director.
 - (d) All documents required for enlistment in MES for the class mentioned in Para 8(b) above as per Para 1.5 of Section 1 of MES Manual on Contracts 2020.
 - (e) Details of works being executed in MES, if any.
 - (f) 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 (Seven) days or bid submission end date (* The number of days to be mentioned shall be as decided by the Accepting Officers. but it shall not be less than 5 days) tailing 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 or six months commencing from the date of opening of Financial bid ((Cover 2).

APPENDIX ‘A’ TO NOTICE INVITING TENDER(CONTD...)

- (c) In case of tenders from enlisted and un-enlisted contractors. where scanned copies off 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 submitting 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 I and during its technical evaluation. in case any deficiency is noticed in the documents required to be uploaded by the tenderers as per NIT, a communication in the form of e-mail/SMS/Speed Post etc shall be sent to the contractor to rectify the deficiency within a period of seven days from date of communication failing which their financial bid (Cover 2) shall not be opened and contractor shall not have any claim on the same.
10. Invitation for e-tender docs 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 give in this Appendix. Tenderer/bidder will be informed regarding non-validation of his Technical bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires may appeal to the next higher Engineer Authority (NHEA) viz CWE (Subs) Bhandup on email id sbmb3-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 receipt of appeal. The decision of the NHEA small be Final and binding. The Tenderer/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.
11. In case an 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 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 alter 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 MES enlisted tenderer having deposited the standing security bond an amount equal to the earnest money stipulated in the NIT shall be shall he 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 it any, shall not be eligible for this tender in second call or subsequent calls.
14. Tender to related lines shall not be issued simultaneously. Firms shall be termed as related if Proprietor/one or more Partners/Directors arc common. Decision of Accepting Officer on issue/deny the tender to any one of the related firms shall be final and binding.
15. INTERGRITY PACT (to be included as per value of work) - NA
16. JOINT VENTURE (to be included as per value/type of work) - NA
17. Court of the place from where tender has been issued shall alone have jurisdiction to decide any dispute out of or in respect of this tender. After acceptance of tender, condition 72 jurisdiction of courts of IAFW 2249 shall be applicable.

(Signature of Contractor)

Accepting Officer

File No: 8402/ 03 /E8

28 Oct 2024

Garrison Engineer (NW)
Mankhurd-400 088

Email ID : nwmnkd4-mes@nic.in
Tele No : 022-25580236/25550714

IN LIEU OF IAFW-1779-A(REV-1955)

**TO BE USED CONNECTION WITH GENERAL CONDITION OF
CONTRACT (IAFW-2249 1989 PRINT)**

E-TENDER

Tele :022-25580236

Garrison Engineer (NW)
Mankhurd, Mumbai - 400088

8402/ 04 /E8

28 Oct 2024

**ITEM RATE TENDER AND CONTRACT FOR WORKS REQUIRED IN THE EXECUTION OF
“REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD
ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK
AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD”**

1. M/s _____ of _____
are/is hereby authorised to tender for the above work. The quoted tender is to be uploaded in
“defproc.gov.in” on or before **19 Nov 2024 upto 1800 hrs.**

Any correspondence concerning this tender should be addressed as indicated at top of this sheet
quoting the reference as **‘CA NO. GE (NW) MKD- OF 2024-2025.**

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

Signature of the Officer
Issuing the document

SCHEDULE 'A'

NAME OF WORK : REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD

NOTES :-**1. PERIOD OF COMPLETION :**

(a) The entire work under this contract shall be completed within **300 (Three Hundred) Days** from the date of commencement shown in work order No. 1 placed by the GE.

(b) Site for execution of work shall be handed over on the date of handing over of site shown on work order No. 1. In case it is not possible for the department to make the entire site available on the said date, the contractor shall have to arrange his programme accordingly (Contractor's own Cost). No claim whatsoever for not giving the entire site in one go and for giving the site gradually shall be tenable.

2. For schedule of items refer BOQ document in Excel format. The quantities inserted in Schedule of works (BOQ) under Col. 4 are approximate and are inserted as a guide only. They do not constitute any guarantee of the ultimate quantities which will be ordered on the contractor. They shall not however be not varied beyond the limits laid down in condition 7 of IAFW-2249. (General conditions of contracts).

3. The contractor shall quote the unit rate in column 13 of BOQ. The unit rates in figures only shall be entered.

4. The total amount in column 53 will be treated as 'contract sum' referred to in IAFW-2249 (1989 Print) General Conditions of Contracts.

5. Unless otherwise specifically stated in the description of the items, the unit rates quoted in column 13 Schedule of works (BOQ) shall be deemed to include for all material and labour, supply and fix complete as required for executing the respective items of works.

6. (a) The unit rates quoted by the tenderer against respective items of Sch of works (BOQ) shall be deemed to include minor details of construction of work, not specifically mentioned in description of items of Schedule of works (BOQ) and or in the particular specifications/drawing and which are fairly and obviously intended/essential to the execution of work in a workmen like manner and sound constructions.

(b) In case difference of opinion between the contractor and the Engineer-in-Charge as to, whether or not certain items of work constitute " minor constructional details" which is deemed to have been included in the contractor's quoted rates, the decision of the Accepting Officer shall be final, conclusive and binding.

7. The description of items of Schedule of works (BOQ) shall be read in conjunction with particular specifications and drawings.

8. Unit rate quoted shall be deemed to include for all the preambles stipulated for relevant items of SSR 2020 Part –II (Rates).

9. The quoted rate/ amount shall be deemed to include all type of taxes, cesses, service tax, duty & GST etc as applicable as per prevailing law.

10. The contractors quoted rate shall also be deemed to include all type of GST as well as the provn of GST Act. Nothing extra whatsoever shall be admissible on this account.

11. The tender shall be remain open for acceptance for a period of **60 (sixty)** days from the date as specified for its submission.

12. In case the contractor does not quoted rate against any item or items in any particular part of BOQ for which he has quoted the tender, the rate will be treated as Rs 0.00 (Rupees zero only). The contractor shall execute the work against such items of the particular part of schedule without any cost to Govt minimum upto the extent of quantities inserted in BOQ.

13. In case any repeated items in BOQ the lowest rate quoted by the contractor against any of items shall be considered for the purpose of payment no claim whatsoever shall be entertained on this account

14. (a) In case of any deviation, mode of pricing shall be decided by Accepting Officer in terms of Condition 62 of IAFW-2249.

(b) In the event of a deviation order involving fixation of Special (Star) Rate, Draft Rate shall be prepared by GE (within a maximum period of 30 days) while initiating the proposal for deviation seeking approval of Accepting Officer and notified to contractor. While notifying the Draft Rate, it will be clearly stipulated that the same is merely and estimated rate and firm rate shall be fixed based on actual and receipt of supporting documents from contractor such as vouchers/literature of product/test certificates etc (as applicable) on completion of the work involving Star Rate. Any objection to the method of fixing Star Rate will be dealt as per Condition 7 of IAFW-2249.

(c) Draft Star Rate shall be made based on market enquiry through telephonic enquiry/quotation/email/rate lists/internet base sources, material & labour constants available in various civil engg books and record available in respect of Star Rates approved in the past for similar items of work etc. Contractor may also assist GE's office in preparation of draft Star Rate.

(d) The Draft Star Rate shall be purely a draft rate and shall not be used for claiming final payment during execution of work. However GE shall allow part payment to the tune of 80% during execution to avoid any financial hardship to contractor.

(e) After completion of the item of work involving Star Rate, contractor shall submit the vouchers/literature of product/test certificates (as applicable, decision of GE being final in case of any disagreement) for finalization of Star Rate. The Star Rate shall be technically checked by DCWE (C) / Director (C) depending upon the financial effect & approved by competent authority within a period of one month from submission of relevant documents by the contractor as mentioned above.

(f) The Star Rate as approved by competent authority after technical check by DCWE (C) / Director (C) depending upon the financial effect shall be referred as "the rate decided by GE" under Para 62 (G) of IAFW-2249.

Signature of Contractor
Date:

AGE (Contracts)
for Accepting Officer

In lieu of IAFW-1779-A (revised 1955)

NAME OF WORK : REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD

SCHEDULE OF CREDIT

(For materials likely to be obtained from dismantling and becoming the Contractor's property)

Notes:-

- (a) All unserviceable materials likely to be retrieved from dismantling/demolition shall become the Contractor's property. Materials likely to be retrieved from dismantling/demolition are on 'as and where basis'. No financial adjustments whatsoever shall be made at later stage. Materials thus retrieved shall be removed from the site immediately as directed by Engineer-in-Charge. Credit assessed below for this schedule shall be catered in RAR/FB
- (b) Credit for materials obtained from demolition / dismantling as assessed by the Department are shown in this schedule.
- (c) Quantities under col 4 are provisional. The tenderer shall have no claim whatsoever if there is any variation in actual quantities and those mentioned in this schedule and the cost indicated there in and the actual cost.
- (d) Material obtained from dismantling/ demolition of any other item which is not included in schedule of credit shall become property of Govt and shall be returned to the Garrison Engineer (NW) Mankhurd.

SI No	Description of item	Units	Qty	Credit assessed by the Department	
				Rate	Amount (Rs)
1	Old unserviceable chowkats	Each	23.00	225.00	5175.00
2	Old unserviceable aluminium scrap	Kg	30.00	50.00	1500.00
3	Old unserviceable tiles/stone slabs any type	Sqm	675.00	10.00	6750.00
4	Old unserviceable CGI/PGI sheets	Sqm	235.00	30.00	7050.00
5	Old unserviceable PVC flushing cisterns any size / type	Each	10.00	20.00	200.00
6	Old unserviceable GI tubing 15mm / 20mm bore with fittings	Rm	70.00	8.00	560.00
7	Old unserviceable GI tubing 25mm bore with fittings	Rm	20.00	8.00	160.00
8	Old unserviceable bib taps, stop cocks, pillar taps, Health faucet, shower (any dia/ type)	Each	75.00	25.00	1875.00
9	Old unserviceable gate valves /Float valve (any dia)	Each	8.00	30.00	240.00
10	Old iron scrap	Kg	20.00	10.00	200.00
11	Old brick masonry / bats /Solid block masonry	Cum	1.00	150.00	150.00
12	Old unserviceable urinal/ wash hand basin, EWC any type/ size with fittings	Each	20.00	50.00	1000.00
13	Old PVC/AC pipes any dia	RM	70.00	5.00	350.00
14	Old Concrete debris	Cum	2.00	50.00	100.00
Total Schedule of Credit					25,310.00

Signature of Contractor
Date:

AGE (Contracts)
for Accepting Officer

NAME OF WORK : REPAIRS TO HARD STANDING, FOOTPATH AND CERTAIN MISC WORKS AT OTM AND MD ACCN OF NSD SEWRI AND DOOR TO DOOR MAINT AND CERTAIN MAINTENANCE WORK AT SPDC, NSD MANKHURD, WED AND DSRV UNDER GE (NW) MANKHURD

SCHEDULE `B`

(ISSUE OF MATERIALS TO CONTRACTOR)
(See condition 10 of IAFW-2249)

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

SCHEDULE - `C`

List of Tools and plant (other than transport) which will be hired to the Contractor
(See conditions 15, 34 and 35 of IAFW 2249)

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

SCHEDULE - `D`

(TRANSPORT TO BE HIRED TO THE CONTRACTOR)
(See conditions 16 and 35 of IAFW 2249)

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

Signature of Contractor
Date:

AGE (Contracts)
for Accepting Officer

T E N D E R

To,

The President of India

Having examined and perused the following documents:

1. Specifications signed by the AGE (Contracts), Garrison Engineer (NW) Mankhurd, Mumbai -400 088.
2. Schedule `A', `B', `C', and `D' attached hereto.
3. MES Standard Schedule of Rates Part-I 2009 Specifications (including amendment Nos. 01 to 03) and MES Standard Schedule of Rates 2020 Part-II Rates (including amendment Nos. 01 to 122) {hereinafter and in IAFW-2249 referred to as the MES Schedule}.
4. General Conditions of Contracts IAFW-2249 [1989 Print] together with errata 01 to 20 and amendments 01 to 49 and the Schedule of Minimum Wages.
5. Water Condition 31 of IAFW-2249 [General Conditions of Contracts].

WATER WILL NOT BE SUPPLIED BY MES.

6. Should this tender be accepted, * I/WE AGREE

*(a) "That the sum of Rs. _____ forwarded as Earnest Money which shall either be retained as a part of Performance Security or be refunded by the Government on receipt of an appropriate amount of the Performance Security, within the time specified as per condition 19 of IAFW-2249.

(b) To execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as detailed in the General Summary and to carry out such deviations as may be ordered vide condition 7 of IAFW-2249 upto a maximum of (\pm) **10% (Ten percent)** and further agree to refer all disputes as required by condition 70 to sole Arbitration of 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 to be appointed by the Chief Engineer Southern Command, Pune whose decision shall be final, conclusive and binding.

*Delete whichever not applicable.

In lieu of IAFW-1779-A (Revised 1955)

Signature_____in the capacity of _____duly authorised to sign the
tender for and on behalf of M/s _____

(BLOCK CAPITALS)

Name of the Signatory: _____
(IN BLOCK CAPITALS)
Date :

Postal Address: _____

Witness _____ Telegraphic Address: _____

Address _____

Telephone: _____

ACCEPTANCE

_____ alterations have been made in these documents and as evidence that these alterations were made before the execution of the Contract Agreement these have been initialed by the Contractor and Shri AAW Shaikh, AGE (Contracts), GE (NW) Mankhurd, Mumbai-88.

The said Officer/Officers is/are hereby authorised to sign and initial on my behalf the documents forming part of this contract.

The above tender was accepted by me on behalf of the President of India for the item rates contains in Schedule ‘A’

Rs_____ (Rupees_____

_____ only) on the day of..... 2024.

Signature dated this..... day of..... 2024.

(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)
The Garrison Engineer (NW) Mankhurd
Mumbai -400 088
Accepting Officer

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

A copy of the GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 Print) with errata1 to 20 and amendment Nos. 01 to 49 have been supplied to me/us, has been perused by me/us and is in my/our possession. I/We have read and understood the provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We shall abide by the terms and conditions thereof, as modified if any, elsewhere in these tender documents.

It is hereby further agreed and declared by me/us, that the GENERAL CONDITIONS OF CONTRACTS, IAFW-2249 (1989 Print) including condition 70 thereof pertaining to settlement of disputes by arbitration, containing 33 pages (serial page Nos. 17 to 47) with errata 1 to 20 and amendment Nos. 1 to 49 (serial page Nos. 48 to 78) form part of these tender documents.

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

*Delete whichever is not applicable.

Signature of Contractor

AGE (Contracts)
For Accepting Officer

Dated:

SCHEDULE OF MINIMUM FAIR WAGES

It is hereby agreed that the `Schedule of Minimum Fair Wages' as published vide the Government of India latest Notification, forms part of these tender documents. My/Our signature hereunder amounts to my/our having read and understood the provisions contained therein and I/We agree that I/We shall abide by the same and that aforesaid documents form part of this tender.

Signature of Contractor

AGE (Contracts)
For Accepting Officer

Dated:

SPECIAL CONDITIONS**1.1 GENERAL**

1.1.1 The following conditions shall be read in conjunction with General Conditions of Contracts IAFW-2249 (1989 Print) and IAFW-2159 (Revised 1947) including errata and amendments thereto.

1.1.2 If any provision in these special conditions is at variance with the provisions of the above mentioned documents, provisions in these special conditions shall be deemed to take precedence there over.

1.2 VISIT TO SITE

The tenderer is advised to inspect the site, by prior appointment with the Garrison Engineer, to ascertain the nature of site, access thereto, local facilities for procurement of materials, working hours and labour rates prevalent in the area and all other matters affecting his price in the tender for execution and the completion of the work. The tenderer shall be deemed to have full knowledge of the site (s) whether or not he actually visits it/these. For the purpose of collection of materials and execution of the works, the site will be considered as lying in area as mentioned in clauses hereinafter.

1.3 SECURITY AND PASSES

1.3.1 Tenderers attention is invited to condition 25 of IAFW-2249. He shall employ only Indian Nationals after verifying their antecedents and loyalty. He shall ensure that no person of doubtful antecedents and nationality is, in any way, associated with work. If for reasons of technical collaboration or other consideration, the employment of any foreign national is unavoidable, the Contractor shall furnish full particulars to this effect to the Accepting Officer at the time of submission of his tender. The Contractor shall on demand by the Engineer-in-Charge, submit a list of his agents, employees and work people concerned and shall satisfy the Engineer-in-Charge as to the bonafide of such people.

1.3.2 The Engineer-in-Charge shall, at his discretion has the right to issue passes, as per rules and regulations of the installation/area in force, to control the admission of the Contractor, his agents, and employees and work people to the site of the work or any part thereof. Passes shall be returned on any time on demand by the Engineer-in-Charge or the authorities concerned and in any case on completion of work.

1.3.3 The Contractor and his agents, employees and work people shall observe all the rules promulgated by the authority controlling the installation/area in which the work is to be carried out e.g. prohibition of smoking and lighting, fire precautions, search of persons at entry and exit, keeping to specific routes, observing specified timings etc. Nothing extra shall be admissible for any man hours etc lost on this account.

1.4 MATERIALS AND SAMPLES

1.4.1 Refer condition 10 of IAFW-2249 and clause 1.6 & 1.7 of MES Schedule.

1.4.2 Materials provided by the Contractor for incorporation in the works shall, unless otherwise specified in the particular specifications be ISI marked. IS means Indian Standards as issued by the Bureau of Indian Standards. Wherever in the specifications 'IS' is referred to, it means the edition with all amendments, current on the due date of receipt of the tender documents.

1.4.3 The tenderer is advised to inspect other materials, which are displayed in the office of the GE, before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfied himself as to the nature and quality of materials, he is required to incorporate in the work irrespective of whether he has actually inspected them or not. The materials to be incorporated in the work by the Contractor shall be ISI marked or shall be equal or superior in quality to sample displayed and shall comply with the specifications given hereinafter.

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

1.4.5 The Contractor shall not procure materials unless the samples are first got approved by the Garrison Engineer. All items/materials for which approval is obtained from the GE shall be recorded in MBs as 'Not to be abstracted'

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

SPECIAL CONDITIONS (Contd...)

1.4.7 (a) It is mandatory that ISI certified marked items/articles shall be incorporated in the work.

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

1.5 PROPRIETARY/ BRANDED MATERIAL

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

1.5.2 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.

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

1.5.4 PRODUCTION OF VOUCHERS Contractor shall produce purchase vouchers from the manufacturers and/or their authorised agents for the full quantity of following materials to the Garrison Engineer, as applicable as a prerequisite before submitting claims for payment for advances on account of the work done and/or materials collected in accordance with condition 64 of General Conditions of contracts (IAFW-2249). The Garrison Engineer shall check the same before making RAR payment against these items. Production of purchase vouchers for these items is mandatory. The Garrison Engineer shall not make payment against the items listed below in RARs unless the purchase vouchers for the same have been produced to him and verified by him:

- (a) Water proofing compound
- (b) Chemicals for anti-termite treatment
- (c) Paints
- (d) All proprietary articles
- (e) Bitumen for road work
- (f) Air blown grade bitumen for water proofing work
- (g) Cement
- (h) Steel

1.5.5 The vouchers shall be endorsed, dated and initialled by the Engineer-in-Charge giving the contract number and name of work. A certified copy of each of such vouchers signed both by the Engineer-in-Charge and the Contractor shall be kept on record.

1.6 TIME AND PROGRESS (CPM CHART)

1.6.1 The CPM 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 Garrison Engineer and the Contractor soon after acceptance of the tender. The Contractor so as to finish the work within the stipulated time will do the time scheduling of the activities. On completion of the time schedule, firm calendar date Schedule will be prepared and submitted by the Contractor to the Garrison Engineer who will approve it after due scrutiny. The Schedule will be submitted in four copies within two weeks from the date of handing over the site.

SPECIAL CONDITIONS (Contd...)

1.6.2 During the currency of the contract, the Contractor is expected to adhere to the time schedule and this adherence will be a part of the Contractor's performance under this contract. During the execution of work, the Contractor is expected to participate in the reviews and updating of the net work undertaken by the GE. These reviews may be undertaken at the discretion of the Garrison Engineer either as a periodic appraisal measure or when the quantum of work ordered on the Contractor is substantially changed through deviation orders or amendments. Any revision of the time schedule as a result of the review will be submitted by the Contractor to the Garrison Engineer within a week for his approval after due scrutiny. The Contractor will adhere to the revised schedule thereafter. In case of the Contractor disagreeing with the revised schedule the same will be referred to the Accepting Officer, whose decision will be final, conclusive and binding. Garrison Engineer'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.

1.6.3 Extension of time shall be considered and decided by the appropriate authority mentioned in condition 11 of IAFW-2249 and separately regulated.

1.6.4 The Contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad frame work of the accepted methods of working and safety.

1.6.5 No additional payment will be made to the Contractor for any multiple shift work or other intensive methods contemplated by him in his work schedule, even though the department approves the time schedule.

1.7 SECURITY OF CLASSIFIED DOCUMENTS

The 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 sub-Contractors or others without prior approval of the Engineer-in-Charge. The Contractor shall also not make copies of the design/drawings

and other documents furnished to him in respect of the works and he should return all documents furnished to him in respect of the works on completion of the work or earlier termination of the contract. The Contractor shall along with the final bill, attach a receipt from the Engineer-in-Charge in respect of his having returned the classified documents as per condition 3 of General Conditions of Contracts (IAFW-2249).

1.8 FAIR WAGES

The Contractor shall have no claims, whatsoever if on account of any rules and regulation or otherwise he is required to pay wages in excess of the fair wages shown in the schedule of wages under condition 58 of General Conditions of Contracts IAFW-2249.

1.9 PERIOD FOR KEEPING TENDER OPEN

The tender shall remain open for acceptance for a period of 60 (Sixty) days from the date specified for its submission.

1.10 Blank

1.11 **ROYALTIES** Delete the existing condition 14 of IAFW-2249 and insert the word "BLANK" in lieu.

1.12 LAND AND LABOUR ACCOMMODATION, AND STORES AND WORKSHOP ETC.

1.12.1 Delete lines 5 to 9 of Para 1 of Condition 24 of General Conditions of Contracts IAFW-2249 i.e. from "In the event of area of land" to "land allotted to him" and insert as under: "The Contractor shall be allotted, the area as marked on the layout plan for the purpose of erection of temporary workshop, stores for which he shall pay the nominal rent of Re.1/- per year or part of a year. No MD land is available for accommodation of labour and canteen in restricted area for which the Contractor shall make his own arrangement at his own expense."

1.12.2 The Contractor will not be allowed to quarry/ win earth from MD land.

1.13 CO-OPERATION WITH OTHER AGENCIES

1.13.1 The Contractor shall permit free access and generally afford reasonable facilities to other agencies or departmental workmen engaged by Government to carry out their part of the work, if any, under separate arrangements.

1.13.2 The Contractor's prices shall be deemed to cater for all the above contingencies and nothing extra shall be admissible on this account.

1.14 LABOUR (REGULATION & ABOLITION) ACT

1.14.1 Contract labour (Regulation & Abolition) Act 1970 is applicable to MES Contractors. Rates quoted by the tenderer shall be deemed to take into account the cost, etc., required to comply with the provisions contained in the said act and the rules framed under the said act.

SPECIAL CONDITIONS Contd...

1.14.2 Refer Condition 58 of IAFW-2249. The "Schedule of Minimum Wages" as published vide Govt. Of India Notifications, as available on date of receipt of tender forms part of these tender documents. However, the Contractor shall not pay wages lower than minimum wages for labour as fixed by the Govt. Of India/ State Govt/ Union territory under Minimum Wages Act or Contract Labour (Abolition and Regulation Act), whichever is higher.

1.14.3 The fair wages referred to in condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages payable as referred to above.

1.14.4 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.

1.15 WATER SUPPLY

1.15.1 Refer condition 31 of General Conditions of Contracts (IAFW-2249) and clause 1.13 of MES Schedule.

1.15.2 Water will NOT be supplied by the MES & the Contractor shall make his own arrangements for water for the entire work. However, the Contractor if he so desires, will be permitted to drill bore well(s) in the area at his own cost. The well(s) dug/drilled by the Contractor shall become the property of the Govt. without any extra cost. The Contractor shall at his own cost, get the water tested from recognised Govt. Laboratory about the portability of water and produce the certificate to the GE.

1.15.3 Water used for mixing and curing shall be generally potable water, clean and free from impurities viz. oils, acids, alkaline salts, sugar, organic materials or other substance that may be deleterious to concrete or steel and also conform to IS-456.

1.16 ELECTRIC SUPPLY

1.16.1 In the case the Contractor desires to buy electricity from the MES and if the same is available for supply with the department he shall be charged for the electric energy consumed at the following rates:

- (a) At Rs. 15.94 per unit for lighting and
- (b) At Rs. 15.94 per unit for power

1.16.2 Electric supply required for works shall be made available by the MES at the points marked on site plan. The main switch and kWh meter to register the electric energy supplied shall be provided and installed by the Contractor. The Contractor shall provide all necessary connections, cables, fittings etc. from main switch in order to ensure a proper and suitable supply of electricity for the execution of work.

1.16.3 MES do not guarantee availability/continuity or supply of full quantity of electricity as required/demanded by the Contractor. The electricity shall be supplied to the extent available with the department. No compensation whatsoever shall be allowed for supply becoming intermittent or for break down in the system.

1.16.4 The GE or his representative shall be free to inspect all the power consuming devices or any electric lines provided by the Contractor. Any devices or electric lines provided by the Contractor, which are not to the satisfaction of the GE shall be disconnected from the supply, if so directed by the GE.

1.17. PERFORMANCE SECURITY AND REFUND OF PERFORMANCE SECURITY (Refer condition No 19 of IAFW-2249, General Condition of Contracts)**(A) PERFORMANCE SECURITY**

1.17.1 The performance security for an amount equivalent to 5% of the contract sum shall be in favour of Accepting Officer and shall be in any of the forms mentioned below. Work order No 01 shall be placed only after submission of Performance Security of adequate value by the contractor. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnished additional security to the Government to make good the deficit :-:

- (a) A Bank Guarantee in the prescribed form.
- (b) Government securities, FDR or any other Government instruments stipulated by the Accepting Officer i.e in favour of GE (NW) Mankhurd.

1.17.2 If the Performance Security provided by the successful Contractor in the form of Bank Guarantee, it shall be issued by Nationalized / Scheduled Indian bank but its confirmation shall be done only from the Head Office of the Bank.

SPECIAL CONDITIONS (Contd...)

1.17.3 The period of validity of the Bank Guarantee Bond against Performance Security shall be initially valid upto the stipulated date of expiry of Defects Liability Period plus minimum 60 days beyond that. In case final bill is not paid during this period, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time required for payment of final bill.

1.17.4 Failure of the successful Contractor to comply with the requirements of sub clause 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.

1.18 REFUND OF PERFORMANCE SECURITY

The Performance Security Deposit mentioned in Condition 19 of IAFW-2249 will be refunded to the Contractor after the expiration of the Defects Liability Period (stipulated in condition 46) by the GE provided always that the Contractor shall first have been paid the final bill and have rendered a No-Demand Certificate (IAFW -451).

1.19 MINOR CONSTRUCTIONAL DETAILS

Unit rates / lump sum quoted by the Contractor shall be deemed to allow for all minor constructional details which are not specifically shown on drawings or given in the Particular Specifications but are essential for the execution of work and services in workman like manner and sound construction. In case of difference of opinion between the Contractor and the Garrison Engineer as to whether or not certain item of work constitutes 'Minor Constructional Details' which is deemed to have been included in the Contractor's quoted lump sum, the decision of the Accepting Officer shall be final, conclusive and binding.

1.20 SALES TAX CONSEQUENT UPON THE CONSTITUTION (FORTYSIXTH AMENDMENT ACT 82)

(a) Tendered rates shall be inclusive of all taxes and levies payable under the respective statute including Sales Tax/ VAT/GST imposed on transfer of the right to use any goods for any purpose, Act of the State Government promulgated consequent to the 46th amendment to the constitution.

(b) Tenderer shall note that no separate amount is to be indicated for the above mentioned Sales Tax /VAT/GST payable to the Government, in his tender. The element of this Sales Tax shall be included by the tenderer in his lump sum/unit price quoted.

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

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

(a) The rates quoted by the Contractor shall be deemed to be inclusive of all taxes (including Sales Tax/VAT/GST on materials, Sales Tax/VAT/GST on Works Contracts, Turnover Tax, Service Tax, Labour Welfare Cess/ GST etc.), duties, Royalties, Octroi & other levies payable under the respective statutes. No reimbursement/refund for variation in rates of taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies shall be made except as provided in sub para (b) here-in-below.

(b)(i) The taxes which are levied by Govt at certain percentage rates of Contract Sum/Amount shall be termed as "taxes directly related to Contract value" such as Sales Tax/VAT/GST on Works Contracts, Turnover Tax, 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"

SPECIAL CONDITIONS (Contd...)

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.

(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 there to which he may be in a position to supply. The Contractor shall submit the other documentary proof/information's as the GE may require.

(iii) The Contractor shall, for the purpose of this condition keep such books of account and other documents as are necessary and shall allow inspection of the same by a duly authorized representative of 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”.

1.22 ADVANCES ON ACCOUNT OF NON-PERISHABLE MATERIALS

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

- (i) Factory made panelled shutters
- (ii) Factory made Aluminium windows/ ventilators
- (iii) Sanitary fittings
- (iv) Builders hardware fittings (iron mongery)
- (v) Electrical cables/ wires/ fittings/ fixtures
- (vi) Water supply pipes, fittings/ fixtures
- (vii) All other non-perishable materials as decided by the GE

The Bank Guarantee Bonds shall be executed for a period and on a form as directed by the Accepting Officer. The Contractor shall further arrange to extend the period of Guarantee Bond if and when necessary, as directed by the Accepting Officer or shall furnish fresh guarantee bond of similar value. It will be noted that advance on account to the full value to materials brought on the site is permissible only in respect of fittings and fixtures and other manufactured items which do not lose their identity. Materials like bricks, aggregate, precast concrete and similar items shall not be taken in the list.

1.23 CLEANING DOWN (Refer Condition 49 of IAFW-2249)

The Contractor shall clean all floors, walls, remove cement, lime, paint marks/drops etc clean the joinery, glass panes etc, touch up all painters work and carry out all other necessary items of work in connection therewith and leave the whole premises clean and tidy before handing over the building. No extra payment shall be claimed by the Contractor for this operation.

1.24 LABEL OF ARTICLES

The Contractor shall provide aluminium LABEL of not less than 75mmx25mm and of adequate gauge with brass screws on articles like transformer, panel board, generating set etc indicating there on the names of the firm, the contract No. and year as directed by the GE. The cost of such aluminium labels shall be deemed to be included in the quoted rates against respective item of Schedule-`A'.

1.25 DAMAGE TO STRUCTURE

Any damage done to the structure built or being built by other agency during execution of work shall be made good by the Contractor at his own cost and the site of work left clean and tidy on completion. Rectification, reinstatement, making good etc shall conform to the standard of materials originally used in the work and finished work shall match with existing work in all respect to the entire satisfaction of the GE. In case of any dispute on this account the matter shall be referred to the CWE whose decision in writing shall be final, conclusive and binding.

SPECIAL CONDITIONS (Contd...)**1.26 CONDITIONS OF WORKING:****1.26.1 CONDITIONS OF WORKING IN RESTRICTED AREA**

The entire work under this contract lies in "RESTRICTED AREA". The conditions of working in restricted area are stipulated as under:

(a) DEFINITION: Restricted area(s) for the purpose of this contract means the area(s) declared as such by the units as shown in site plan/described in Special Condition.

(b) VERIFICATION OF ANTECEDENTS: Verification of antecedents of Contractor's representatives / labours deployed at site in connection with execution of work under the contract, as per security requirement of User Unit/installation shall be the responsibility of the Contractor and all expenses in connection with verification of antecedent by Police Authority / Security Agency shall be borne by the Contractor.

(c) VISIT TO SITE WITHIN THE RESTRICTED AREA: Permission to enter the restricted area(s) at time of submission of tenders can be obtained, through the Garrison Engineer. Tenderers are advised to send prior intimation to the Garrison Engineer about the particulars of the agents, representative etc., if any, the date and the time of their proposed visits so that necessary arrangement may be made by the GE, to secure admission. Whether tenderers visit the site or not they shall be deemed to have full knowledge of the restrictions on entering in, exit from and working within the restricted area.

(d) ENTRY AND EXIT: The Contractor/ his agent(s)/ representative(s)/ workmen etc., and his materials carts, trucks or other means of transport, etc., will be allowed to enter through and leave from only such gate or gates and at such times as the GE or Authorities in charge of the restricted area may at their sole discretion permit to be used. The Contractor's authorised representative is required to be present at the places of entry and exit for the purpose of identifying his carts, trucks, etc, to the personnel-in-charge of the security of the restricted area.

(e) IDENTITY CARDS OR PASSES:

(i) The Contractor, his agents and representatives are required individually to be in possession of an identity card or pass duly verified by the GE. The identity card or pass will be examined by the security staff at the time of entry into or exit from the restricted area, and also any time or number of times inside restricted area.

(ii) Identity of Workmen Every workman shall be in possession of an Identity Card. The identity cards shall be issued after a thorough investigation of the antecedents of the labourers, by the Contractor and attested by the officer-in-charge of the units concerned in accordance with the standing rules and regulations of the unit.

(iii) The Contractor shall be responsible for conduct of his workmen, agents or Representatives.

(f) SEARCH Thorough search of all persons and transport shall be carried out at each gate and for as many times as gate is used for entry or exit and may also be carried out any time or any number of times at the work site within the restricted area.

(g) FEMALE SEARCHER If the Contractor desires to employ female labour on works to be carried-out inside the area of factory, depot, park, unit, etc and a female searcher is not borne on the authorised strength of the factory, depot, park, unit, etc, at the time of submission of tender, he shall be deemed to have allowed in his tender for pay and allowances etc. for a Female Searcher (Class IV servant/ GP'D' servant) calculated for the period, female labours are employed by him inside the area. If more than one Contractor employs female labour during any month and female searcher(s) has/have to be employed in addition to the authorised strength of the factory, depot, park, unit, etc, the salary and allowances paid to the additional female searcher(s) shall be distributed on equitable basis between the Contractors employing female labour taking into consideration the values and periods of completion of their contracts. The GE's decision in regard to the amount recoverable on this account from any Contractor shall be final and binding.

(h) WORKING HOURS The units controlling restricted area, usually work during six days in a week and remain closed on the 7th day. The working hours available to the Contractor's labour/staff are however accordingly get reduced because of the time taken in security checks observed at the time of entry and exit and during working hours. The exact working hours, working days and non working days observed for these restricted area(s), where works are to be carried out shall be deemed have been ascertained by the Contractor before submitting his tender. The tenderers' attention is invited to the fact that total number of working hours for a unit, are prescribed in regulations and that they cannot be increased by the Garrison

Engineer. The definition of "Working Day" as given under condition 1(t) of IAFW-2249 does not apply in case where the works are carried out in restricted area.

SPECIAL CONDITIONS (Contd...)

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

(k) ACCESS TO RESTRICTED AREA AFTER COMPLETION After the works are completed and surplus stores etc. removed, the Contractor, his agents, representatives or workmen etc., will not be allowed any access to the restricted area except for attending to any rectification of defects pointed out to him by the GE.

(l) FIRE PRECAUTIONS

- (i) The Contractor, his agents, representatives, workmen etc., shall strictly observe the orders pertaining to fire precautions prevailing within the restricted area.
- (ii) Motor transport vehicle, if allowed by the authorities to enter the restricted area must be fitted with serviceable fire extinguishers.

1.27 METHOD STATEMENT

1.27.1 The Contractor shall plan for execution and completion of work with foresight to ensure timely execution with the quality of work desired.

1.27.2 Period of completion shall be divided into months/ fortnights/ weeks and plan for each months/fortnights/weeks by preparing schedule for every months/ fortnights/weeks with following details, even before commencement of work.

- (a) Items of work to be executed with quantity
- (b) Labour to be deployed trade wise,
- (c) T & P to be deployed
- (d) Material to be brought to site for works to be executed next week
- (e) Type and number of engineers to be employed.

1.27.3 Any special item of work to be executed alongwith description of method as to how the Contractor intends to execute. It must be submitted in advance.

1.27.4 The Contractor shall also plan in advance and make available all the requisite safety equipment for the labour. A list of the same shall be given.

1.27.5 The Contractor shall produce test certificate of T&P being deployed at site. The test certificates shall indicate the present capacity of the T&P and shall not be more than 6months old.

1.27.6 The above details shall be furnished by Contractor within 10days of commencement of work. Work will be not allowed to be executed without these details. However, date of commencement of work will be within one month of acceptance as per contract.

1.27.7 Delay on account of non-submission of these details /test certificate will be attributable to Contractor and no extension of time will be granted on this account.

****MONTH/FORTNIGHT/WEEK NO**

From _____ To _____
EXECUTION

SI No	Item of work	Quantity
1		
2		
3		

SI No	No of Engineers to be employed	
		Nos
1	Civil (a) Graduates (b) Diploma Holders	
2	Electrical (a) (b)	
3	Mechanical (a) (b)	

SPECIAL CONDITIONS (Contd...)

SI No	Labour required to be employed	
	Trade	Nos
1	Mazdoor	
2	Manson	
3	Electrician	
4		
5		
6		

SI No	T&P to be deployed	
	Type	Nos
1		
2		
3		
4		

MATERIALS TO BE BROUGHT AT SITE FOR EXECUTION MONTH/FORT NIGHT/ WEEK WISE DETAILS

SI no	Description of material	Quantity	Source
1.			
2.			
3.			
4.			

1.28 OFFICIAL SECRETS ACT

The Contractor shall be bound by the Official Secrets Act, 1923.

1.29 CONCILIATION

1.29.1 Scope of conciliation - The scope of conciliation shall be restricted to the following types of disputes with financial limits as indicated therein:

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

1.29.2 For items (b), (c), (d) and (e) each as stated above the financial limit shall be 2,00,000/- (Rupees two lakh) or one percent of the Contract amount whichever is less.

1.29.3 COMMENCEMENT OF CONCILIATION PROCEEDINGS

1.29.3.1 The party initiating conciliation shall send to the other party a written invitation to Conciliate, briefly identifying the subject of the dispute.

1.29.3.2 Conciliation proceedings shall commence when the other party accepts in writing the invitation to conciliate.

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

1.29.4NUMBER OF CONCILIATORS There shall be a sole Conciliator

1.29.5 APPOINTMENT OF CONCILIATOR All disputes brought out in para 1.29.1. (a) to (e) above shall be referred to the Sole Conciliator viz Serving Officer not below the rank of Superintending Engineer / Superintending Engineer (QS & C) having degree in Engineering or equivalent or having passed final / direct final examination of Sub Division II of Institution of Surveyors (India) to be appointed by the Engineer-in-Chief, Army Headquarters, New Delhi or in his absence the Officer officiating as Engineer-in-Chief or Director General of works specifically delegated by the Engineer-in-Chief in writing.

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

SPECIAL CONDITIONS (Contd...)**1.30 PROCEDURE FOR REFERING DISPUTES (OTHER THAN THOSE FOR WHICH THE DECISION OF THE CWE OR ANY PERSON IS BY THE CONTRACT EXPRESSED TO BE FINAL AND BINDING) TO SOLE CONCILIATOR FOR CONTRACTS VALUING LESS THAN RS.10.00 CRORE IN TERMS OF CONDITION 71 OF IAFW-2249.**

- (a) The party initiating conciliation shall send to the other party a written communication to conciliate identifying the subject disputes.
- (b) on receipt of such request , the Accepting Officer shall with in fifteen days refer the matter to CE (Navy) Mumbai or in his absence the officer Officiating as Chief Engineer
- (c) Chief Engineer within one month of receipt of request for appointment of sole conciliator shall appoint Sole conciliator who shall be serving officer having degree in Engineering or equivalent or having passed final/direct final examination of sub division II of Institution of Surveyors of India) recongnised by Govt and refer the disputes for settlement/agreement between the parties to the contract.
- (d) The sole Conciliator so appointed within fifteen days will enter into reference and fix a hearing to represent the matter by both the parties and finalize the finding within two months after entering into reference and shall forward his proposed settlement/agreement to both the parties to contract.
- (e) After receipt of settlement/agreement, the accepting officer and the other party with in one month shall communicate their consent or rejection of settlement/agreement to each other in writing and if the settlement/agreement as suggested by sole conciliator is agreed to by both the parties, shall have the same status and effect as it is on arbitral award on agreed terms within the provisions of Arbitration and conciliation Act 1996. The silence of both the parties after receipt of settlement/agreement as arrived by Sole Conciliator after one month shall be considered as finality of the settlement/agreement and shall be binding on both the parties not subject to challenge again. However, if any party rejects the settlement/agreement within one month from the date of receipt of settlement/agreement, the dispute may be referred by the aggrieved party for adjudication by arbitrator as per agreed terms of contract.
- (f) The amount of settlement shall be treated as an agreed amount payable under the contract and such payment shall be processed through hand receipt.

Date:

AGE (Contracts)
for Accepting Officer

PARTICULAR SPECIFICATIONS**1. GENERAL**

- 1.1 Works under this Contract shall be carried out as detailed in different parts of Schedule-'A' and in accordance with Particular Specifications, Special Conditions, provisions given in General Summary and General rules and Specifications / Provisions given in MES SSR Part-I 2009 as well as General rules, Special conditions and preambles to various rates given in MES SSR Part-II 2020 (MES SSR Part-I and II hereinafter called as MES Schedule).
- 1.2 The term 'General Specifications' referred to in these documents as well as referred to in IAFW- 2249 (General Conditions of Contracts) shall mean the specifications contained in the MES Schedule Part-I.
- 1.3 General Rules, Specifications, Special conditions, method of measurements and all preambles in the MES Schedule shall be deemed to be applicable to the work under this contract, unless specifically stated otherwise in these documents. In case of variance between provisions in these documents and those given in MES Schedule, the provisions in these documents shall take precedence over the aforesaid provisions in the MES Schedule.
- 1.4 The term 'as specified' wherever appears in tender documents and drawings, relates to relevant particular specifications and in its absence General specifications.
- 1.5 Particular Specifications in this section given hereinafter shall be generally applicable to all works covered under all parts of Schedule-'A'. The particular specifications are in brief and are only to particularise, amend and emphasize the specifications given in MES Schedule, which are not repeated.
- 1.6 Where specifications for any item of work are not given in these particular specifications or in MES Schedule, specifications as given in relevant Indian Standard or Code of Practice shall be followed.
- 1.7 Reference to any drawings which is mentioned in these Particular Specifications shall be deemed to be forming part of the tender. The tenderer shall refer such drawings/ details in the office of the Accepting Officer before quoting his tender.

2. SCOPE OF WORK

The scope of work consists of :-

- (a) Repairs to Hard Standing, Footpath and certain misc works at OTM and MD Accn of NSD Sewri under AGE B/R Sewri.
- (b) Door to Door maint and certain Maintenance work at SPDC, NSD Mankhurd, WED and DSRV under AGE B/R Sewri.

shall have to plan his progress accordingly to the relocation / shifting of users as directed by the Engineer-in-charge. Site as available and rendered by the Engr-in-charge shall be completely repaired so as to facilitate shifting / relocation of users, so that further site can be made available to the Contractor to progress work.

3. **DIMENSION** In laying out the centre line dimensions mentioned in the drawings or deduced there from and or as directed by the Engineer-in-charge, shall be strictly followed.

4. MATERIALS

- 4.1 All materials to be supplied by the Contractor for incorporation in work shall conform to relevant specifications / IS.
- 4.2 In case specifications of materials needed for incorporation is not contained anywhere in the contract documents, the specifications of such materials proposed to be incorporated in work shall be got approved in writing from the GE before incorporation in the work. The Contractor is advised to check availability, lead, time of procurement from these suppliers before quoting.
- 4.3 As far as practicable all manufactured articles other than those manufactured in the Contractor's workshop at site shall bear ISI certification mark and which are readily available in the market and are as given in Special Conditions. It is mandatory for the Contractor that ISI certified marked items/articles as listed therein shall only be incorporated in the work.
- 4.4 Local materials such as stone aggregate, sand, lime, etc shall generally conform to the sample kept in the GE's office in addition to their conformity with relevant specifications given in the tender documents. The samples of such materials shall be got approved from GE in writing before the materials are brought at site in bulk. The Contractor shall submit samples of materials to the GE through Engineer-in-Charge for approval.

PARTICULAR SPECIFICATIONS (.....Contd)

- 4.5 Letters conveying approval of samples / materials by the GE will interalia mention source of supply / name of manufacturer, trade name/brand (if applicable) and reference to clause of the tender documents containing specification of particular materials.
- 4.6 The Contractor and executives will ensure that the materials incorporated in the work are identical with the approved samples.
- 4.7 Materials brought by the contractor on the site in connection with the subject contract shall be adequately stored and/or protected against damage by weather or other causes. In case of any loss or damage to the above materials, the contractor shall be wholly responsible and no claim what so ever shall be entertained by the department.
5. **TESTING OF MATERIALS**
- 5.1 All the materials to be incorporated in the work shall be subject to quality control tests as per the testing procedure and frequency as laid down in relevant IS and or as specified in the tender and or as directed by the Engineer-in-charge.
- 5.2 However any test required in the work shall also be got done in Govt. approved lab/Engineering College/National Test House as approved by the GE and entire cost of sample, handling, transportation and actual testing charges will be borne by the Contractor directly.
6. **SCAFFOLDING & SAFETY MEASURES FOR WORKING AT HEIGHTS**
- 6.1 The exterior works shall be carried out by using scaffolding and or as directed by the Engineer- in-charge. Suitable protections viz. safety belts, safety helmets, etc shall be provided for workmen. The Contractor shall be solely responsible for all the labourers deployed for the work for identity/security. In case of any accident/injury fatal or of partial disability, the Contractor shall be solely responsible for settling all claims, compensation. Department shall have all rightsto recover any sum indicated/claimed by labour commissioner/court directives. Engineer-in-charge will have to ensurethat Contractor has provided all adequate safety and required means for the workmen and Contractor may get his personnel insured as per labour law. TheContractor shall ensure that his workmen working at heights shall always wear safety belts, etc and workmen working on ground shall wear helmets.
- 6.2 Scaffolding or staging more than 3.5m above the ground or floor, swung or suspended from any overhead support or erected with stationery support shall have a guard rail properly attached, braced and otherwise secured at least 1m high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
- 6.3 Working platform, gangways and stairways should be so constructed so, that they should not sag unduly or unequally, and if the height of the platform or the gangway of the stairway is more than 3.5m above ground level they should be closely boarded, should have adequate width and should be suitably fenced, as described herein before.
- 6.4 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 1m.
- 6.5 Safe means of access shall be provided to all working platforms and other working places.
- 6.6 The rates quoted are deemed to included the above provision of scaffolding and no extra will be payable to Contractor on this account. The scaffolding shall be removed only after obtaining clearance of the Engineer-in-Charge/Garrison Engineer after considering the quality of the work undertaken.
7. **EXCAVATION AND EARTH WORK**
- 7.1 **EXCAVATION - GENERAL**
- (a) Excavation shall be done to the depth as indicated or as directed by the Engineer-in- Charge.
- (b) Decision of the Garrison Engineer shall be final, conclusive and binding as regards classification of soils and rocks met during excavation.
- 7.2 Quoted cost of all items of shall also be deemed to include for bailing, pumping, dewatering from foundation trenches if water is met with or accumulated from any source or cause or working in water or liquid mud. No additional payment as stipulated in Clause 3.11 of MES Schedule Part-II will be admissible. In the event of deviations, no adjustment shall be made for cost of bailing, pumping and dewatering, specified hereinbefore. The Contractor shall be deemed to have acquainted himself with the sub-soil water table at site before submitting his tender.
- 7.3 (a) Stone obtained from excavation in hard rock (if met with during excavation) (other than by chiseling) shall become property of the Contractor. The Contractor shall pay Rs 352.50/cum of measured quantity of stone obtained in excavation and shall remove it off the site with prior permission of the GE/ the Engineer-in-Charge. No lead shall be payable for the removal of stone from site. The Contractor may use the stone obtained from excavation in filling under floors or road work if permitted by the GE. In cases the excavation in hard rock is carried out by chiseling then the excavated material shall be used in filling as specified hereinafter in floors or road work. The recovery of Rs 411.25/cum of stack measurement (without any deduction for voids) of hard rock shall be effected from the Contractor to the extent of material used in filling. Surplus excavated material shall be disposed off outside MD land as directed.

PARTICULAR SPECIFICATIONS.....(Contd)

- (b) Blasting of rock is prohibited. Excavation in hard rock (if met with during excavation) shall be by chiseling or any other agreed method.
- 7.4 In case timbering to excavation is required and specifically ordered by the GE in writing, it shall be paid as deviation.
- 7.5 **TRENCHES FOR FOUNDATION AND PIPES**
- (a) The excavation shall be restricted to dimensions as directed and or as 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 Government
- (b) 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 slopes as directed by Engineer-in-Charge.
- 7.6 **FILLING IN TRENCHES/UNDER FLOORS**
- (a) The approved soil/soft rock obtained from excavation (except earth/ spoil obtained from surface excavation) shall be used for returning, filling in trenches, under floors or any other situation after removing big stones, grass, roots and vegetables and other organic matter. Earth mixed with small stones/pebbles (if approved by the GE) is permitted for use in filling around pipes after the pipes are laid and tested. Any additional earth required for the purpose of filling shall be arranged by the Contractor at no extra cost to the Department from outside the Defence Land.
- (b) Filling under floors / sides of trenches shall be in layers not exceeding 250mm and each layer shall be watered, compacted and rammed as approved by the Engineer-in-Charge.
- 7.7 **METHOD OF MEASUREMENTS FOR EXCAVATION AND EARTH WORK**
- (a) The area of cutting and /or filling in each cross section shall be separately computed by Simpson's rule as described here in after. The volume {cubic contents} of cutting and/or filling shall be separately computed by Prismoidal formula all as described here in after. For computing area of cross section the interval between two ordinates shall be as described by the Engineer-in-charge to suit the site conditions but in no case it shall exceed 3.0m.
- (b) Computation of areas (Simpson's Rule)
- Simpson's rule given below shall apply for the computation of areas where the total number of ordinates is odd and the ordinates are spaced at equal interval.
- $A = d/3[(h_1 + h_n) + 2 (h_3 + h_5 +) + 4 (h_2 + h_4)]$
- Where: A = Area of the cross section in square meter
- d = Common distance between successive ordinates in meters
- h₁ = Height of the first ordinate in meters
- h_n = Height of the last ordinate in meters
- (h₃ + h₅ +) = Sum of the heights of odd ordinates in meters in between h₁ and h_n
- (h₂ + h₄ +) = Sum of the heights of even ordinates in meters in between h₁ and h_n
- (c) In case of odd number of divisions (i.e. where the number of ordinates is even), the area of end division shall be computed as per the formula given below and added to the area of the other divisions computed by Simpson's Rule. Similarly where the distance between any two parallel ordinates is different, then the area between these ordinates shall be computed by the formula given below and added to the rest of the area computed by the Simpson's Rule.
- $A_x = d/2 [(h_x + (h_x + 1)]$
- Where: A_x = Area to be computed between any two ordinates in square meters.
h_x, (h_x+1) = are heights of two ordinates respectively.

(d) Computation of Volume (Prismoidal Formula)

$V = \frac{d}{3} (a_1 + a_n) + 2 (a_3 + a_5 + + a_{n-2}) + 4 (a_2 + a_4 + + a_{n-1})$ where 3

V	Volume in cum
D	Distance between successive ordinates in m
a ₁	Area of the first cross section in sqm
a _n	Area of the last cross section in sqm
a ₃ + a ₅ + +a _{n-2}	Sum of the areas of odd cross section in sqm between a ₁ and a _n
a ₂ +a ₄ + +a _{n-1}	Sum of the areas of even cross section in sqm between a ₁ and a _n

(e) The formula shall be applicable only in case where number of cross section is odd. In case where the number of cross sections is even, volume covered by last two sections shall be calculated by applying the formula (given here-in-after) and added to the volume of the remaining sections calculated by application of Prismoidal Formula.

$V_x = \frac{d}{3} (a_x + a_{x+1})$

V _x	Volume to be computed between any two cross sections in cum
a _x	Area of the first cross section in sqm
a _{x+1}	Area of the other cross section in sqm
D	Distance between the two cross sections in m

PARTICULAR SPECIFICATIONS.....(Contd)

8. CONCRETE WORK.

8.1 Refer clause CEMENT: herein-before.

8.2 FINE AGGREGATE

8.2.1 Fine aggregate for concrete works shall be natural sand/crushed stone sand/crushed gravel. Sand or combination thereof shall be conforming to IS-383 and grading within the limits of Grading Zones II to III all as specified in clause 4.4 of MES Schedule Part-I. Sand conforming to grading zone IV of IS-383 shall not be used for RCC works.

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

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

8.3 COARSE AGGREGATE. Coarse aggregate for all cement concrete work shall be graded broken / crushed trap stone obtained from approved quarries as specified in clause 4.4 of MES Schedule Part-I. Mixture of the two types shall not be used.

8.4 GRADING OF COARSE AGGREGATE. Graded Aggregate of nominal sizes given hereunder, shall be used, unless specified otherwise, in the specifications hereinafter:

(a) Plain or reinforced cement concrete except in foundation of brick or stone walls/ pillars, floors and sub base to floors.

(i) For structural elements of depth/thickness more than and including 100mm : 20mm

(ii) For structural elements of depth/thickness less than 100mm : 12.5mm

Note: However, in no case the nominal size of aggregate shall be greater than one fourth of the minimum thickness of the member.

(b) Plain concrete in foundation of brick or stone walls, pillars, floors and sub-base to floors:

(i) Under 30mm thickness : 12.5mm

(ii) 30mm to 80mm thickness : 20mm

(iii) Exceeding 80mm thickness : 40mm

8.5 WATER

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

8.6 MIX OF CONCRETE

Irrespective of what is specified in drawings, mix of cement concrete in various situations shall be as under, unless otherwise stated in Schedule-‘A’ or hereinafter in Particular Specifications

Situation	Types of Concrete
(a) Foundation concrete under brick/ stone/PCC Block walling and lean concrete under grid/toe beam, dwarf wall and steps, in gaps between plinth/column under footing.	PCC (1:4:8) type D2 (by volume)
(b) Foundation concrete under column footing.	PCC 1:2:4 type B-1 (by volume)
(c) PCC in sub floors (base concrete) for PCC / tiles floor.	PCC (1:4:8) type D2 (by volume)
(d) PCC in foundation concrete of plinth Beam, plinth protection, drain and channel, PCC cills and PCC block for holder-bats, hold-fasts and plugging for scaffolding holes.	PCC (1:3:6) type C1 (by volume)
(e) All RCC work.	RMC Grade M-30 (Design mix as per IS-456).
(f) PCC in bed plate, benching, splash stones, coping, DPC and pre-cast articles.	PCC (1:2:4) type B1
(g) Cement concrete in any other situation not mentioned above.	PCC (1:2:4) type B1

8.7 Design Mix. Concrete to be mixed in an machanical mixture machine with min capacity of 01 bag per batch. Mixing to be done by weight batching only, no volumetric mix is permissible for design mix concrete.

8.8 Minimum average slump for reinforced cement concrete and maximum water cement ratio for RCC M-30 (design mix) and above grades shall be as specified in IS-456-2000. Design mix of RCC for various grades shall be all as per provisions catered for in IS-456-2000 duly considering 456-2000. The exposure condition shall be considered as ‘SEVERE’ unless otherwise specified in structural drawings. Accordingly the tenderers are advised to verify the quality of various ingredients available for incorporation in the subject work and quote accordingly. The tenderers are advised to note that if the cement contents works out to be less than the above specified minimum cement contents as mentioned hereinbefore, then the above specified minimum cement contents have to be incorporated and in case cement contents works out to be more than the above specified minimum cement contents, then the cement as per design mix shall be provided without any extra cost to the department. The contractor shall have no claim in this regard due to misunderstanding of above provisions and decision of GE in this regard shall be final and binding.

PARTICULAR SPECIFICATIONS.....(Contd)

- 8.9 Concreting shall be carried out by any of the following ways at the option of contractor. However, no financial adjustment will be done if the contractor uses any of the two methods:-

8.10 LABORATORY MIX DESIGN AND TESTS

As soon as possible, after receiving the order to commence work, the contractor shall procure sufficient quantities of required type of aggregates, cement and water and find their characteristics to suitability of the specifications in the laboratory approved.

- 8.11 The contractor shall get the design mix, from approved Institution IIT/NIT/SEMT Pune /Govt approved Lab / Any NABL approved lab, and shall produce the design for approval of GE. The contractor shall submit the approved materials alongwith the required information as per clause 9.1.2 of IS 456-2000 through Engineer-in-Charge to the institution carrying out the mix design. The mix design shall be carried out on the basis of laboratory trial mixes using approved materials and methods as per IS : 10262 (Recommended guide lines for Mix design) or on the basis of any other method in consultation with Garrison Engineer. The aggregate cement ratio and water cement ratio once decided based on Trial Mix design shall not be changed without reference to GE. Any change in sources of coarse and fine aggregate and cement shall be informed to GE and accordingly a fresh mix design shall be submitted for approval. Calculation Details in support of mix design shall also be provided.

- 8.12 For design mix, it is an express condition that only weigh-batching shall be followed and no conversion of weights into volumes shall be permitted.

- 8.13 Adequate number of tests at regular intervals shall be carried out to ascertain the properties of materials. In case of variation in grading of aggregate noticed at any point of time, the same shall be made good by suitably blending of different sizes of aggregates wherever possible. If this is not feasible, the mix design shall be changed immediately before carrying out further work. In case of change in source or quality of cement, fine aggregates or coarse aggregates, the design mix shall be revised as specified hereinabove.

8.14 SAMPLING

- (a) The sampling and testing of concrete batched and mixed at site shall be carried out as per IS : 456-2000.
- (b) The onside tests for workability, cube strength tests etc as specified shall be carried out.

8.15 PRECAST CONCRETE ARTICLES

Cement concrete lintels with or without integrally cast chajjas upto 1.5m clear span, shelves, bed blocks/plates, cover slabs, fencing posts, fins and jalli and the like may either be pre-cast or cast in situ at the Contractor's option, unless otherwise shown on drawings. If pre-cast, these shall be set in cement mortar (1:3). In case of deviation involving these items, pricing shall be done on the basis of cast-in-situ work.

8.16 RCC CHAJJAS

- 8.17 RCC chajjas shall be provided as per details shown on drawings. Thickness of the finished fin after application of rendering in CM (1:3) on both sides shall be 50mm unless otherwise shown on drawings.

- 8.18 RCC chajjas (whether cast integral with the lintel or pre-cast embedded in the wall) shall be provided with a coved fillet of radius 50mm in PCC (1:2:4) type B-0, mixed with integral water proofing compound, preferably casted on green concrete.

- 8.19 The top surface of chajjas / fins /canopy and the coved fillet shall be finished with 10mm thick cement plaster in CM 1:3 with mixture of approved water proofing compound as per manufacturer's instructions while the concrete is yet green viz. just after the initial setting has taken place.

- 8.20 **THROATING/WEATHERING.** Throating to projections or RCC/PCC beyond external faces of the walls where shown on drawings, and where RCC chajjas are not provided with downward fascia shall be formed in the concrete while casting, by planting fillets/bar of 12mm diameter in the form work and finished smooth.

8.21 BEARINGS OF RCC STRUCTURAL MEMBERS

- 8.21.1 Bearings to all roof/floor slabs on masonry walls shall comprise of 20mm thick bearing plaster in CM (1:3) finished even and smooth with one coat of white wash applied and two layers of laminated water proofing building paper type - I conforming to IS-1308 weighing not less than 100gms/sqm, each layer laid over it. However, in case floor/roof slab rests on RCC beams/bands, this provision does not apply.

- 8.21.2 All RCC beams / lintels/ bressumers resting on masonry work shall be provided with PCC bed blocks cast in PCC (1:2:4) type B-1. Bed blocks shall be twice the width of beams in length covering the entire thickness of wall and of depth 150mm, unless otherwise shown on drawings.

PARTICULAR SPECIFICATIONS.....(Contd)

8.21.3 The bearing of lintels shall be 15cms or effective depth, whichever is more, unless otherwise shown in drawings.

8.21.4 No treatment shall be provided under bearing of RCC bands.

9. STEEL AND IRON WORK

9.1 All steel required for the work under the contract shall be procured, supplied and in the work by the Contractor under his own agreement.

9.2 GRADES & QUALITY Steel supplied by the Contractor shall conform to the following grades and quality:

(a) STEEL FOR CONCRETE REINFORCEMENT AT LOCATIONS AS DETAILED

(i) Irrespective of whatever is specified elsewhere or indicated / shown in drawing, all steel for reinforcement shall be corrosion resistant steel of grade SAIL 500D HRC / TATA TISCON CRSD (Fe-500D) / RINL CRS Fe-500D or equivalent grade of any other primary producer as approved upto closing date of bid by E-in-C's Branch conforming to IS-1786 shall be incorporated. If bars of Fe-500D grade are not available due to manufacturing status next higher grade may be used without revising the design and without any price adjustment.

(ii) Where indicated as HIGH YIELD STRENGTH DEFORMED BARS, it shall be corrosion resistant steel (CRS) specified above conforming to IS-1786-1985 (Reaffirmed 1990).

(b) STRUCTURAL STEEL

(i) Structural steel standard quality shall conform to IS-2062-2006 and grade E 250 (Fe 410W (quality B). This type of steel shall be provided in the locations mentioned in clause 10.4.1 of MES Schedule Part I.

(c) HARD DRAWN STEEL WIRE FABRIC FOR CONCRETE REINFORCEMENT

Fabric reinforcement shall conform to IS-1556, 1982.

Note: Any items of steel specified in clause 9.2 (a) to (c) above not conforming in grade and quality shall be rejected and the rejected steel items under the particular consignment shall be removed from the site by the Contractor at his own cost within 7 (seven) days. The Contractor will have no claim whatsoever on this account.

9.3 SOURCE OF PROCUREMENT

(a) Structural Steel. The contractor shall procure structural steel from the main producer viz., **(i)** SAIL **(ii)** Rashtriya Ispat Nigam Ltd. **(iii)** TISCO or any other primary producers as approved by the E-in-C's Branch upto closing date of bid. In case of non availability of structural steel from all main producers and primary producers mentioned above, the same can be procured from secondary producers as approved by E-in-C's Branch upto closing date of bid with necessary **minus price adjustment @ 5%** of the accepted rate of structural steel. In case the desired section of structural steel is not rolled/ manufactured by main/primary producers, there shall be no price adjustment in use of structural steel procured from approved secondary producers.

(i) Non structural steel ordinary quality shall be used in frames of doors and windows, guard bars, grill gates and like and shall conform to IS-2062-2006, Grade E- 165 (Fe-290). This type of steel shall be provided as per respective item of Schedule 'A'.

(ii) Non structural steel as for guard bars, hold fast railing gates etc may be procured from main producers/secondary producers/BIS marked manufacturer's or their authorized dealers at the option of contractor without any minus price adjustment. Test will not be insisted upon for such steel sections.

(iii) However, non structural steel as for hold fast, railing etc and the structural steel where total requirement under the contract in less than 5.0 tonnes may be procured locally after obtaining permission of the GE in writing.

(b) CRS Steel. Steel required for the work shall be procured by the Contractor from main producers like SAIL, Rashtriya Ispat Nigam Ltd and TISCO or Primary Producers as approved by the AHQ E-in-C's Branch upto closing date of bid or authorized dealers. The steel shall conform to the requirements as stated in clause 9.2 above. The documents in support of the purchase of steel shall be verified by the site staff and the GE. The particulars of the manufacturer/supplier of steel shall be obtained from the Contractor for every lot of steel separately. The form given at Appendix-'D', shall be used for the purpose.

(c) The Contractor shall submit original vouchers from the manufacturer/ authorized dealer 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 test certificates and vouchers shall be defaced by the Engineer-in-Charge and kept on the record in the office of the GE duly authenticated and with cross reference to the control number recorded in the Steel Acceptance Register.

PARTICULAR SPECIFICATIONS.....(Contd)

The Steel Acceptance Register, as given at Appendix ‘D’ shall be signed by the JE, Engineer-in-Charge, the GE and the Contractor. The Accepting Officer may order a Board of Officers for random check of steel and verification of connected document. The entire quantity of all steel items shall also be suitably recorded in the Measurement Book for record purposes as ‘not to be Abstracted’, before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.

9.4 MINIMUM FREQUENCY OF TESTING FOR EACH SOURCE & EACH CONSIGNMENT

Steel for concrete reinforcement

(i)	Bar size less than 10mm	One sample (3 specimens) for each test for every 25Tonnes or part thereof
(ii)	Bar size 10mm to 16mm (inclusive)	One sample (3 specimens) for each test for every 35Tonnes or part thereof
(iii)	Bar size over 16mm	One sample (3 specimens) for each test for every 45Tonnes or part thereof

Structural Steel

(i)	Tensile Test	One Test for every 25tonnes of steel or Part thereof
(ii)	Bend Test	One Test for every 10tonnes of steel or part thereof

(a) For high strength deformed bars tensile, bend test & re-bend test shall be done as per IS-1786 of 1975. For MS bars tensile & bend test shall be carried out as per IS-432 of 1982.

(b) Testing by the GE as per above frequency is mandatory before payment is released to the Contractor or steel is incorporated in the work. However, tests will not be insisted upon for the steel required for guard bars, holdfasts, grills and such other allied items. Any items of steel, not meeting the requirements, shall be rejected and the particular consignment removed from the site by the Contractor, at his own cost. The Contractor will have no claim on this account. The cost of tests and test samples as per above frequency shall be borne by the Contractor.

(c) Cost of transportation of samples to the approved laboratory/test house and all testing charges shall be borne by the Contractor.

9.5 **Storage** Steel supplied by the Contractor shall be stored in accordance with the requirement of BIS. Each grade and quality of steel shall be stored separately and have identification tags indicating the source, quality and grade.

9.6 **Preservation and Maintenance of Steel**The steel brought by the Contractor shall be preserved to ensure that no rusting takes place till it is incorporated in the works.

9.7 **Schedule of Supply**The Contractor shall procure the steel sections, timely as required in accordance with CPM chart, agreed between the GE and the Contractor. The Contractor shall have no right to demand extension of time if the supply of steel got delayed due to his failure in placing order in time to the manufacturers / authorised suppliers. In case of non-availability of steel from the main manufacturers listed above, non-availability certificate duly signed by their authorised representative shall be submitted by the Contractor.

9.8 **Payment**Receiving payment of steel shall be governed by in accordance with condition 64 of IAFW-2249. Payment shall be allowed after production of test certificate & original paid/purchase vouchers by the Contractor.

9.9 **Measurement**The entire quantity of steel brought to the site shall be recorded in measurement book ‘Not to be Abstracted’ indicating the reference to manufacturer, source of supply, voucher No. & test certificate before incorporation in the work & shall be signed both by the Engineer-in-Charge and the Contractor. Proper documentations/records shall be maintained as per the instructions on the subject.

9.10 **Weight Conversion** Weight of steel supplied by the Contractor shall be calculated at unit weights given in Appendix-‘A’ of MES Schedule 2004 Part-II. For section not listed in MES Schedule, the ISI conversion table shall be followed or manufacturers certificate if the weights are not available in MES Schedule/ISI tables.

PARTICULAR SPECIFICATIONS.....(Contd)

9.11 Normal waste and cut offs shall be stacked neatly which shall be the property of the Contractor. The Contractor shall be allowed to remove such cut pieces after inspection & certification by the Engineer-in-Charge.

9.12 Advance on account payment made towards these cut pieces shall be recovered from advance on account of payment immediately falling due & before removal of such cut pieces from site.

9.13 Bending and fixing of bars for concrete reinforcement including mild steel wire for binding shall be carried out all as specified in MES Schedule.

9.14 Hooks shall be provided only for mild steel bars. In case of CRS / Cold twisted / Deformed /TMT steel bars ends shall be bent instead of hooks.

9.15 Binding wire for reinforcement shall be mild steel wire (annealed) of size not less than 0.9mm.

9.16 **FIELD TEST ON RING FORMATION USING NITRIC ACID AND METHANOL FOR DIFFERENTIATING TMT FROM TOR STEEL**

(a) A field test of ring formation using Nitric acid and Methanol shall be carried out to differentiate TMT from TOR steel. The test shall be conducted in the presence of the Engineer-in Charge/ MES rep and the Contractor / his authorized representative and the test results shall be recorded and duly signed by the Engineer-in Charge and the Contractor and countersigned by the GE.

(b) The test shall be carried out as mentioned below:

(i) Solution of Nitric acid and Methanol is prepared by using 2% of Nitric acid and 98% of Methanol

(ii) Steel rod to be checked is cut into small pieces of 200mm length and cross section is smoothened by sand paper.

(iii) Rod is kept in contact with above solution for 24hours.

(iv) Annular ring is visible on cross section in case of TMT. If the ring is not visible, then steel is not TMT steel

9.17 **STEEL SUPPLY / ACCEPTANCE FORM.** For each consignment of steel supply/acceptance form (Refer Appendix 'D') will be filled in & jointly signed by the Department representative (Engineer-in-charge/JE (Civil)) and the Contractor and accepted/rejected by the GE before incorporation in the works. (Note: Steel supply/acceptance form shall be issued by the GE)

9.18 **WELDING.** Welding wherever shown on drawings shall be by metal arc process in accordance with IS-816 and IS-823.

10. PLASTERING

10.1 GENERAL

(a) Where plaster on concrete surfaces is shown to match the adjacent brick surfaces, the mix of plaster shall be as for the brick surfaces.

(b) All plastered surfaces shall be troweled to a smooth and even surface without using extra cement.

(c) Thickness of cement plaster mentioned hereinafter shall be finished thickness exclusive of dubbing. Dubbing may however be done in one operation with plaster.

(d) All corners, angles, junctions and edges shall be truly vertical or horizontal as the case may be and shall be carefully finished. Corners around jambs of openings and junctions of walls shall be rounded to minimum radius of 5mm. 12mm wide groove at the junction of walls and RCC slabs to the entire thickness of wall plaster shall be provided. Also trowel groove shall be provided at the junction of walls and RCC columns or any other dissimilar material e.g. wooden/steel chowkats etc.

(a) Particular attention of the Contractor is invited to take note of local practices and local availability of materials like bricks / stones, form work etc for any extra quantity of mortar required for rendering smooth, extra dubbing required, touching up properly and achieving smooth and even surfaces. This shall be deemed to have been included in the lump sum quoted for plaster work, as applicable.

10.2 MATERIALS

- (a) Cement - Refer Appendix-`B' to Particular Specifications attached hereafter
- (b) Sand - Refer clause 14.5 of MES Schedule Part-I 2009
- (c) Water - Refer clause 14.11 of MES Schedule Part-I 2009

10.3 CEMENT PLASTER (INTERNAL) & CEILING PLASTER

- (a) Cement plaster (internal) walls shall comprise rendering of 15mm thick in cement and sand mortar (1:6) all as specified in Sch `A`.
- (b) Cement plaster for soffits of slabs i.e. ceiling and all exposed concrete (except false ceiling surfaces) surfaces shall comprise rendering of 5mm thick in cement and sand mortar (1:3).
- (c) The plaster work on the concrete surfaces adjoining to wall shall be carried out as per specification for the wall plaster.

10.4 CEMENT PLASTER (EXTERNAL)

- (a) Cement plaster (external) for wall shall comprise two coats of plaster i.e. 15mm thick backing coat of cement and sand mortar (1:4) mixed with integral water proofing compound and 5mm thick finishing coat in CM 1:4 mixed with integral water proofing cement. After application the surfaces shall be finished even and smooth all as specified in MES Schedule Part-I/Sch `A`.
- (b) The percentage of integral water proofing compound to be used in the work shall be as per the manufacturer's instructions, but in case of deviation the same shall be 2% (by weight of cement).

10.5 INTEGRAL WATER PROOFING COMPOUND. Integral Water proofing compound wherever specified in these particular specifications shall conform to IS 2645, ISI marked & shall be in powder form. Mixing shall be done strictly as per manufacturer’s instructions.

11. BLANK

12 PRECAST PCC SOLID BLOCK MASONRY.

12.1 All masonry work shall be with the precast PCC solid block of grade (C-5) having block density of not less than 1800 Kg/Cum. The concrete shall be mixed as laid down in IS-2185 (Part-I).

12.2. AGGREGATES

- (a) Coarse aggregate shall be crushed or natural aggregate 20mm and below size, conforming to IS-383.
- (b) Fine aggregates (Sand/Crushed rock fines) shall be free from dust and well graded having fineness modulus 3.5 to 4 of combined aggregate conforming to IS-383.

12.3 The size of blocks shall be one of the following:-

Size designation	Nominal Length CM	Bread th CM	Height CM	Actual Length CM	Breadth CM	Height CM
A	40	30	20	39	30	19
B	40	20	20	39	20	19
C	40	10	20	39	10	19
D	20	20	20			
E	20	20	10			

Sizes other than these specified above may also be used with the approval of Engineer-in-Charge.

PARTICULAR SPECIFICATIONS.....(Contd)**12.4 MANUFACTURE OF BLOCKS**

(a) The blocks shall be machined made. The process of concrete mixing, fabricating/ casting of blocks, curing and drying shall be in accordance with IS-2185 and all as specified and in MES Schedule.

(b) Faces of the blocks shall be flat and rectangular.

12.5 PHYSICAL REQUIREMENT

(a) General

All blocks shall be sound and free of cracks or other defects which interfere with proper placing of the block or impair the strength or performance of the construction. Minor chopping resulting from the customary methods of handling during delivery shall not be deemed ground for rejection.

(b) Tolerance

The maximum variation in the dimension shall be not more than ± 3.0 mm in height and breadth and ± 5 mm for length.

(c) Block density

The block density shall be as per IS-2185, (Part-I ,2005) for solid PCC block. It will not be less than 1800 Kg/Cum.

(d) Compressive Strength

The average compressive strength of eight blocks when determined in the manner described in IS-2185 shall not less than 5.0 N/Sq mm of the gross area. The strength of lowest individual block shall not less than 80 percent of the average compressive strength of eight (8) blocks.

(e) Water absorption

The water absorption shall be as per IS-2185.

(f) Drying shrinkage

The drying shrinkage on the blocks shall be as pr IS-2185.

(g) Moisture movement

The moisture movement shall be as per IS-2185.

12.6 TESTS

Tests as described in ANNEX 'B' to 'G' of IS-2185 shall be conducted on samples of blocks selected according to the sampling procedure as per Para 11 of IS-2185 to ensure conformity with the physical requirement laid in IS-2185.

12.7 SAMPLING & CRITERIAL FOR CONFORMITY

The blocks required for carrying out the tests laid down in the standard shall be taken by one of the methods given in Para 10 of IS-2185 and shall be considered as conforming to the requirements of the specifications if the conditions mentioned in IS-2185 are satisfied,

12.8 (a) Mort for walling

20cm thick PCC solid block shall be in cement mortar 1:6 and 10cm thick PCC solid Block walling shall be built in cement mortar 1:4.

(b) Laying

The blocks shall be slightly wetted before and / or during laying in the wall. The blocks shall be laid with joints complete filled without any void left in the masonry. The thickness of the horizontal and vertical joints shall not exceed 1cm. The $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{2}{3}$, block shall be used for breaking the joints, The face joints shall be raked to a depth of 1cm by raking tool during the progress of the work when the mortar is still green, so as to provide proper key for plaster or to facilitate pointing to be done later. Where plaster or pointing is not required, the joints shall be struck flush and finished side by side.

(c) Curing of walling

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

(d) Scaffolding for walling

Only double scaffolding shall be used. The scaffolding shall be strong and sound. No holes in the masonry for supporting scaffolding shall be allowed.

PARTICULAR SPECIFICATIONS.....(Contd)

13. WATER PROOFING TREATMENT TO ROOF

- 13.1** The Contractor shall carryout water proofing work over roof to ensure the entire roof water tightness during the guarantee period of 10years and he will be responsible to keep the entire surface of roof water tight for a period of 10years from certified date of completion of work. The security deposit shall be calculated over work done towards the guarantee for water proofing treatment and shall be retained from the RAR/final bill amount. This amount shall be calculated as per the scales laid down by MES for calculating individual security deposit over the final work done amount of water proofing at contract rate. The amount shall be released to the Contractor after the satisfactory completion of ‘Ten Years’ guarantee period. During the guarantee period if any leakage is found out same shall be got rectified by the contractor without any extra cost to the Government. In any case during the guarantee period the contractor who executed the WPT works should inspect and examine the treatment once in every year and make good any defects observed. Defects liability period of one year as laid down under condition 46 of IAFW-2249 is not applicable for water proofing work covered under this contract and shall deemed to be amended to the extent mentioned above for WPT work. Garrison Engineer may accept Bank Guarantee Bond from Schedule Bank or fixed deposit receipt (pledged in favour of the GE) from any approved Bank for the above said amount for a period of 10 years in which case no further amount will be recovered from the final bill on this account.
- 13.2** Tenderer shall submit 10 years guarantee certificate (as per performa enclosed herewith) duly undertaking and accepting the responsibility to carryout all required rectifications at his own risk and cost. In case of contractor’s failure to carryout the rectifications, the Government shall be at liberty to get all such rectifications carried out at his risk and cost from security amount. Tenderer is required to visit the buildings in which the water proofing treatment is to be done in order to ascertain the exact nature and extent of work involved. His quoted rate in the Schedule ‘A’ against the respective items shall be deemed to include for the following aspects for effective water proofing treatment and no extra claim on whatever account will be entertained from the Contractor.

13.3 WATER PROOFING MEMBRANE

APP modified water proofing membrane to be incorporated in the work for WPT shall be obtained from one of the following manufacturers:

- | | | |
|------------|-----------------|--|
| (a) | Super Thermolay | Manufactured by STP limited (formerly Shalimar Products) B-46, Hind Road Extension, Kolkata-700 008 |
| (b) | Chemistik | Chemisol Adhesives Pvt Ltd, 7/10 Botawala Building, 2 nd floor, Horniman Circle, Fort, Mumbai-400 023 (Tel: 022-2661936, 2625389 & 2625520) |
| (c) | Moply | Manufactured by TEXSA India Ltd., A-418, 1 st floor, DLF City, Gurgaon -02 |
| (d) | Hyperplas | Manufactured by IWL India Ltd., W-360, North Main Road, Anna Nagar West Extension, Chennai-600101 (Tel: 0 -45536000) |

13.4 PHYSICAL PROPERTIES

The physical properties of APP modified water proofing membrane shall be as under:

- | | | |
|--------------|-------------------------------------|---|
| (i) | Membrane Weight | Not less than 3.5 kg/sqm |
| (ii) | Not woven polyester weight | Not less than 160gms/sqm |
| (iii) | Softening point of membrane | Not less than 150°C |
| (iv) | Joint tensile strength | Longitudinal > 650N/sqcm at 230°C
Transverse > 450N/Sqcm |
| (v) | Tear strength (L/T) | Longitudinal > 300N,
Transverse > 250N |
| (vi) | Elongation | > 20% |
| (vii) | Impermeability under water pressure | > 2kg F/cm ² |

- 13.5** The water proofing membrane treatment shall be carried out by the approved applicator of the manufacturer as approved by the GE.

13.6 CERTIFICATE BY SPECIALISED AGENCY

A certificate by the specialized AGENCY who has executed the water proofing treatment under this contract will be rendered that they have executed the said work.

PARTICULAR SPECIFICATIONS.....(Contd)**13.7 APPLICATION AND WATER PROOFING OVER ROOF**

(a) The locations of seepage/leakage if any shall be identified and marked. Grouting will be carried out in portion of roof slab observed with seepage at Contractor's expense as under:

(b) A matrix of dimension 1.0x1.0m shall be drawn on the affected portion of roof slab and 1m beyond on all sides. 12mm dia grouting nozzles shall be fixed at each cardinal point of the matrix in the affected portion of slab. The nozzle should penetrate up to 40mm below roof slab or up to top reinforcement in roof slab. After cleaning the roof slab, the roof slab shall be grouted using injection-grouting method with a pressure of 2.0kg/cm^2 , using a grout of cement slurry with 20 parts of water and 1 part of cement by volume till rejection. After grouting is over, the nozzles holes shall be sealed off with cement mortar 1:3 and cured. Then the entire roof slab shall be washed with fresh water and allowed to dry.

(c) PCC padding 1:2:4 mixed with 2% WPC of 40mm average thickness on the cleaned roof surface shall be provided and cured for 7 days minimum. PCC padding shall be turned round into coving at all junctions with wall/parapet upto a height of 150mm. The rain water gutter portion shall not be provided padding but shall be finished with cement mortar 1:4 with 2% WPC of minimum 20mm thickness with requisite slope to permit easy drainage and roof allowed to dry.

(d) Oil bound bitumen primer @ 0.4litre/sqm manufactured by the same agency as that of APP with a density of 0.87-0.89kg/litre at 25°C shall be applied on the prepared dry roof surfaces. Provide and lay APP modified water proofing membrane reinforced with non woven polyester mat one layer weighing > 3.5kg/sqm.

(e) APP membrane shall be laid using butane torch-on application with minimum 10cm side overlap and 15cm end lap. The laying of membrane shall be got done through an authorised applicator of manufacturer of membrane.

(f) Over the membrane provide a finishing coat of solar reflective bituminous aluminium paint @ 0.10kg/sqm or as detailed in Sch-'A' and all as prescribed by manufacturer of membrane.

13.8 TESTING OF MEMBRANE

The following tests shall be carried out in approved Government Laboratories and necessary test reports shall be submitted to Garrison Engineer for the materials before incorporation in the work:

- (a) Thickness of membrane
- (b) Weight of membrane
- (c) Tensile strength (Longitudinal/Crosswise)
- (d) Tear Resistance
- (e) Softening point
- (f) Weight of Carrier (Polyester)

Apart from above tests Contractor shall also produce manufacturer's test certificate. Test certificate shall be produced with every consignment of material brought at site by the Contractor.

**13.9 GUARANTEE TO BE EXECUTED BY CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS OF ROOF/LEAKAGE SEEPAGE/ SUNKEN PORTION/ ANTIFUNGAL PAINT
(to be submitted in a ` 100/- non-judicial stamp paper)**

This agreement made this ____ day of _____ two thousand _____ between _____ of _____ (son of _____)

(hereinafter called guarantor on the one part) and the PRESIDENT OF INDIA (hereinafter called the Government on other part).

WHEREAS this agreement is supplementary to a contract hereinafter called the contract) dated _____ and made between the GUARANTOR of the one part and the GOVERNMENT on the other part where by the Contractor inter alia, undertook to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to effect that the said structures will remain water leak proof for ten years from the certified date of completion.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be Ten years to be reckoned from the certified date of completion.

Provided that the guarantor will not be responsible for leakages caused by earthquakes or structural defects or misuse of roof and sunken floor slabs or alterations and for such purpose.

(a) Misuse of and sunken floor slabs shall mean by operation which will damage roofing treatment, like chopping of firewood and things of the same nature which might cause damage to the roof.

(b) Alteration shall mean construction of any additional storey or any part of roof or construction adjoining to existing roof, where by roofing treatment is removed in parts and removal of finishes of sunken portion of slabs.

(c) The decision of the Garrison Engineer with regard to cause of leakage shall be final and binding. During this period of guarantee the guarantor shall make good all defects and in case of any defects being found, render the building water proof and finish the disturbed surfaces as existed to the satisfaction of the Garrison Engineer at his cost and shall commence the work for

PARTICULAR SPECIFICATIONS.....(Contd)

such rectification within seven days from the date of issue of the notice from the Garrison Engineer calling upon him to rectify the defects, failing which the work shall be got done by the department by some other contractor at the Guarantor's risk and cost. The decision of the Garrison Engineer as to the cost, payable by the Guarantor shall be final and binding.

That if the Guarantor fails to execute the water proofing or commit breach there under then the Guarantor will indemnify the Principal and his successors against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of GUARANTOR in performance and observing of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Government, the decision of the Garrison Engineer will be final and binding on the parties.

IN WITNESS THEREOF these presents have been executed by the obligator_____ and by _____for and on behalf of the PRESIDENT OF INDIA on the day month and _____ year _____ first above written.

SIGNED sealed and delivered by OBLIGATOR in the presence of:

1.

2.

SIGNED ON BEHALF OF THE PRESIDENT OF INDIA BY _____

14 HARD CORE

Hard core shall be hand crushed or broken trap / basalt / granite stones of gauge not exceeding 63 mm well graded to provide dense and compact sub grade all as specified in Para 3.27.1 and 3.27.6 of MES Schedule Part I. The finished consolidated thickness of hard core shall be as shown in drawings or 150mm unless otherwise specified. Thickness shown on drawings / Schedule of finishes shall be treated as consolidated thickness. The crushed or broken stones shall be brought from the source(s) approved by GE.

15. BRICK WORK:

Brick shall be kiln burnt sub class 'B' locally available best quality, conforming to the samples kept in GE's office. The bricks shall have average compressive strength of 35 Kg/Sq. cm of not less than 50kg/Sqcm. Water absorption of bricks shall not exceed 20% when tested in accordance to IS - 3495. Sampling and testing of bricks shall be carried out as per IS-5454 and IS -3495. The size of the bricks shall be 230 x 115 x 75mm. The tolerance in size of bricks shall be + 8%.

16. SYNTHETIC ENAMEL PAINTING WORKS

(a) All synthetic enamel paint, emulsion paint shall be of 1st quality manufactured by the standard firms of make as per Appendix- 'B' attached.

(b) The Contractor shall inform the GE, within three weeks of the acceptance of the tender, the brand/names of the manufacturers of paint proposed to be used in the works and submit samples thereof and obtain prior written approval of the GE before their use in works.

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

(d) Paints for priming coat, under coat and finishing coat shall be of the same manufacturer.

(e) Tint of paint, if shall be as stipulated and as approved by the GE.

(f) Steel and iron work shall be painted in the manner as specified in clause 17.8 of MES Schedule Part-I.

17 WHITE WASHING

17.1 White (lime) wash shall be provided as indicated, all as specified in clause No. 15.2, 15.12, 15.12.3 and 15.12.5 of MES Schedule. For white washing on ceiling adequate quantity of zinc oxide shall be added to lime wash for achieving egg white shade.

17.2 Lime used for white washing shall be freshly burnt fat lime (class 'C') or magnesium lime (class 'D' or 'F') white in colour, conforming to IS-712 of 1984.

17.3 Blue vitriol shall comprise of fresh crystals of hydrous copper sulphate (blue vitriol) conforming to IS-261 – 1982 and shall be ground to fine powder.

18. ACRYLIC EMULSION ANTIFUNGAL PAINT**18.1 APPLICATIONS**

(a) Fungus / moss / algae affected surface on new or old surfaces shall be removed if any with antifungal treatment or with the help of available fungicide bleaching powder solution all as per Manufacturer's instructions. The surfaces shall be cleaned by wire brushing and washed with water before application of primer or paint.

PARTICULAR SPECIFICATIONS.....(Contd)

(b) Before application of primer for plastered surfaces, the surfaces shall be cleaned, made free of loose particles, dust, grease, chalk, fungus and mould. One coat of acrylic emulsion weather coat paint with water (1:1 by volume) as a self priming coat shall be applied as per manufacturer's instructions and as directed by the Engineer-in-Charge.

(c) The acrylic emulsion weather coat paint shall be applied by brush or roller. No strainer or colorants shall be used. The paint shall be stirred well before use. The primer coat shall not be left without application of top coats for a long period of time.

(d) Application of Acrylic emulsion weather coat paint. Two coats of acrylic emulsion weather coat paint thinned with 400ml water per lit of paint shall be applied. The drying period between two coats shall be minimum 4hours or as per Manufacturer's instructions. The shade shall be as approved by the GE. Finish of acrylic emulsion weather paint shall be smooth matt finish.

(e) The paint shall be as per manufacture's original colour as available no mix of tint shall be made into original shades.

(f) The weather coating acrylic emulsion paint shall be any one of the make given in Appendix 'B'.

18.2 STAGewise APPLICATION FOR ACRYLIC PAINT

Work for acrylic emulsion paint shall be carried out as per stage given below. Before starting the work for next stage prior approval of Engineer-in-charge shall be obtained.

Stage I : Preparation of surface.

Stage II : Applying priming coat

Stage III : Applying first coat of acrylic emulsion paint

Stage IV : Applying second coat of acrylic emulsion paint

18.3 Acrylic Emulsion Paint (Interior grade)

Acrylic emulsion painting (interior grade) shall be carried out all as specified in clause No. 17.17 under section 17 of SSR Part-I 2009.

18.4 GUARANTEE

(a) The Contractor shall ensure that all the buildings painted with acrylic paint free from fungal infections, light patches, discolour, etc. during the guarantee period of 05 years and he shall be responsible to upkeep the entire surface for a period of 05 years from the certified date of completion of work. The security deposit towards the guarantee for efficiency of treatment (acrylic painting) shall be retained from the RAR/Final bill amount. The security deposit amount shall be calculated as per the scales laid down by MES for calculating Individual Security deposit on the total amount of exterior painting carried out at contract rates. This amount shall be released to the Contractor after satisfactory expiry of five years guarantee period. The GE may accept BGB from schedule bank or a fixed deposit receipt (pledged in the GE's favour) from any Nationalised bank for the said guarantee amount for a period of five years, in which event no further amount will be recovered from the final bill/RAR on this account. The defects liability period under condition 46 of General conditions of contract (IAFW-2249) shall be deemed to be amended to the extent mentioned above for acrylic painting works.

(b) The Contractor has to submit necessary guarantee for 05years in prescribed format on ` 100/- non-judicial stamp paper from the certified date of completion of Contract to keep the building free from fading, peeling off paint during guarantee period. The Contractor shall be responsible to ensure that the buildings are kept free from fading or peeling off the acrylic paint during guarantee period. However, the Contractor may take equivalent back to back guarantee from the manufacturer / applicator of acrylic paint he opts / employs in the work.

19. FLOORING**19.1 GENERAL**

(a) Provisions contained in Clause 13.25, 13.32, 13.38 and 13.39 of MES Schedule are to be adopted for laying floors and pavements.

(b) Floors shall be laid to levels or to falls as directed by the Engineer-in-Charge.

(c) Floor finish over base shall be laid all as specified in MES Schedule.

20. CUDDAPPA STONE IN FLOORS / JAMBS / CILLS / KITCHEN PLATFORMS, ETC

(a) Cudappah stone in floors, platforms, jabs, cills, etc shall be provided at locations as directed by the Engineer in Charge and these shall be machine cut and machine polished.

(b) Cudappah stone tiles/slab shall be of selected quality, hard, sound dense & homogeneous in texture, free from defects & conforming to specifications of SSR Part-I. Thickness of tile shall be 20 to 25mm and or as directed.

PARTICULAR SPECIFICATIONS.....(Contd)

(c) Cudappah stone tiles/slabs shall be set, jointed & pointed in neat cement slurry with pigment to match the colour of tiles and laid over bedding layer / concrete sub-base/ RCC slab. Joints shall be thin & nearly indistinguishable.

(d) Polishing of Cudappah stone shall be done using polishing machine and with required grinding stones and in a manner and to the satisfaction of the Engineer-in-charge.

(e) Slabs / stone shall be provided in a chase inside the wall at least 25mm deep and set, jointed & pointed in neat cement slurry to match with the colour of the slab. The exposed edges shall be bull nosed as directed by the GE.

21. VITRIFIED TILES

Vitrified tiles shall be of first quality and all as specified in CL 13.5 of SSR part I, 2009 print. Vitrified tiles shall be of size 600mm x 600mm (where specified) fixed with cement sand screed 1:4 and minimum uniform joint thickness of 3mm. Joints grouted with Epoxy grout “ Ezy grout from Somany”, “Ferro 102 from Ferrous Crete”, Bal Endura, Fevimate TG from Dr Fixit.

22. NON SKID/MATT FINISHED CERAMIC TILES FLOORING/DADO/SKIRTING

(a) Non skid/Matt finished ceramic tiles flooring / dado shall be provided in the locations indicated and as directed.

(b) Non skid/matt finished ceramic tiles in flooring shall be of size as indicated and as specified in items of Sch-‘A’ and shall not less than 6 to 7mm thick, coloured, Grade B II (a) confirming to IS No 13712 of superior quality with water absorption not more than 3 to 6%, matt finish. Tile shall be laid bedding / sub base as stipulated in Schedule-‘A’. Tiles shall be set and jointed in neat cement paste and shall be pointed in white cement mixed with approved pigment to match the colour of tiles. Joints shall be thin and nearly indistinguishable. The workmanship in all respects shall be as specified in Clause 13.40 of SSR Part-I 2009.

(c) Makes of tiles shall be as specified hereinafter and colour, pattern and design of tiles shall be as approved by the GE.

(d) Glazed ceramic tiles in dado shall be as indicated in respective items of Sch-‘A’ and shall be 6 to 7mm thick, coloured, Grade B II (b) confirming to IS No 13712 of superior quality with water absorption not more than 3 to 6% and shall be provided in locations as directed. Tiles shall set and jointed in neat cement paste over backing coat and shall be pointed in white cement mixed with approved pigment to match the colour of tiles. Joints shall be thin & nearly indistinguishable. The workmanship in all respects shall be as specified in clause 13.40 of SSR Part-I.

(e) Height of dado shall be as indicated or as directed.

23. MACHINE CUT MACHINE POLISHED MARBLE STONE PLATFORM FOR KITCHEN

Provide Kitchen platform Marble stone slab shall be in one piece of selected quality, hard, sound dense & homogeneous in texture, free from defects and conforming to clause 13.12 of SSR Part-I and of thickness 18 to 20mm machine cut machine polished (exposed surfaces only) and shall be provided over RCC Slab as per locations shown in drawings. Colour of stone slab shall be Baroda Green or any other colour as approved by the GE. Stone Slab shall be provided in a chase inside the wall at least 25mm deep and set, jointed and pointed in neat cement slurry to match with the colour of the slab. The edge exposed shall be bull nosed as directed by the GE. 19 mm thick prelaminated particle board shutter below cooking platform shall be provided all as shown on drawing. Provide Cuddappa stone shelving 20 to 25 mm thick below cooking platform as shown on drawing.

24. MACHINE CUT MIRROR POLISHED KOTA STONE FLOORING

(a) Machine cut mirror polished Kota stone flooring shall be provided in the locations /Schedule of finishes.

(b) Kota stone tiles/slab shall have size 450mm x 600 mm for flooring shall be of selected quality, hard, sound dense & homogeneous in texture, free from defects & conforming to clause 13.12 of SSR Part I. Thickness of tile shall be 20 to 25mm as indicated. Mirror polished Kota stone shall be cut to correct geometry at site and table rubbed to achieve fine joints.

(c) Kota stone tiles/slabs shall be set, jointed & pointed in neat cement slurry with pigment to match the colour of tiles and laid over 20mm thick bedding layer in CM 1:4 over concrete sub-base/ RCC slab. Joints shall be thin & nearly indistinguishable.

(d) Polishing of Kota stone flooring shall be done to achieve mirror polish with using polishing machine and required grinding stones and in a manner and to the satisfaction of GE

25. WOOD WORK AND JOINERY

25.1 TIMBER

- (a) Timber for all joinery and wood work shall conform to specifications given in Clause 7.3 of the MES Schedule and shall be within the permissible limits of defects defined in Clauses 7.4 and 7.5 of the MES Schedule.
- (b) Timber shall be well seasoned, whether air or kiln dried at the discretion of the Contractor but without any price adjustments. The moisture content of timber shall not exceed the limits laid down vide Clause 7.7 of the MES Schedule. Adequate number of test shall be carried out by the Engineer-in-Charge to determine the moisture content in the timber to be used in the work and the Contractor shall provide necessary facilities for test as required by Engineer-in-Charge without any extra cost to Government. Testing charges shall also be deemed to be included quoted rates by the Contractor.

25.2 PRESERVATION OF TIMBER

- (a) Preservative anti-termite treatment shall be carried out to all wood work and joinery fabricated by the Contractor at site. Factory made ply/boards are deemed to be provided with anti-termite treatment.
- (b) Chemical used for anti-termite treatment to wood work and joinery shall be copper NAPTHANATE, ASCU or any other chemical specified in IS-401, applied in any one of the manners specified in ibid IS.
- (c) The species of timber for joinery/furniture items fabricated at site and prefabricated wood products i.e. particle board etc. shall be as specified hereunder:
- | | | |
|-------|--|--|
| (i) | Fully paneled or partly paneled/ glazed/wire gauzed shutters | Factory made shutters with styles/rails of 2 nd class hard wood as per IS-1003 (Part-I) of species Laurel/Bijasal/Benteak/Venteak/Sal, to be obtained from list of approved manufacturers given in Appendix-`B' |
| (ii) | Frames of built-in cupboards/ cabinets and furniture items, if indicated of timber | 2 nd class hard wood (Sal) |
| (iii) | Wooden pelmets | Pelmets of particle boards shall be provided as specified hereinafter |
| (iv) | Edging/beading for particle/ block/ medium density fiber board exposed to view in shutters, shelves and tops of built-in furniture, cupboards and cabinets | Teak/Shisham wood |
| (v) | Gutties, plugs, cleats / stoppers, beading and fillets for shutters and frames | 2 nd class hardwood (Sal/Kalasiris/Chaplash/ Hollock) |
| (vi) | All other woodwork and joinery not otherwise specified | 2 nd class hardwood (Sal/ Kalasiris/Chaplash/ Hollock) |
| (vii) | Door frames | 2 nd class hard wood (Sal) |

26 FACTORY MADE PANELLED DOOR SHUTTERS

- 26.1 Panelled door shutters and glazed / gauged shutters shall be factory made shutters conforming to IS-1003 (Part-I). Styles and rails shall be kiln seasoned and chemically treated by pressure process as per para 5.5 of IS-401 (under vacuum pressure). The dimensions and overall sizes shall however be as shown on drawings.
- 26.2 The thickness of door shutters shall be as shown on drawings and if not shown on drawings, the same shall be 35mm.
- 26.3 If not shown on drawings panels for panelled door shutters shall be with 12mm thick particle board BWR quality grade 'A' exterior grade solid core, general purpose commercial face veneer on both sides conforming to IS-3097. Panelled shutter shall be provided with suitable size wooden beading all round the panel insert on both the sides of the shutter.

27. FACTORY MADE SOLID PANELLED PVC DOOR SHUTTERS &FRAMES

Factory made solid paneled PVC door shutters and frames shall be as specified in clause 8B.2 and 8B.3 of SSR Part-I 2009 and shall be of approved makes as specified hereinafter.

PARTICULAR SPECIFICATIONS.....(Contd)**28 FACTORY MADE PANELLED / FLUSH DOOR SHUTTERS**

(a) Paneled door shutters and glazed / gauged shutters shall be factory made shutters conforming to IS-1003 (Part-I). Styles and rails shall be kiln seasoned and chemically treated by pressure process as per para 5.5 of IS-401 (under vacuum pressure). The dimensions and overall sizes shall however be as required and as directed.

(b) The thickness of door shutters shall be as directed and as per requirement.

(c) Panels for paneled door shutters shall be with 12mm thick particle board BWR quality grade-'A' exterior grade solid core, general purpose commercial face veneer on both sides conforming to IS-3097. Paneled shutter shall be provided with suitable size wooden beading all round the panel insert on both the sides of the shutter.

29 FACTORY MADE SKELETON SHUTTER FOR FLY PROOF DOORS

(a) Mosquito proof shutters where indicated shall be of factory made skeleton shutters conforming to IS-1003 (Part-I) with second class hard wood styles and rails of species specified here-in-before and wire gauze.

(b) Timber shall be of kiln seasoned and chemically treated by pressure process as specified in para 5.5 of IS-401 (under vacuum pressure).

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

29.1 Factory made paneled / skeleton shutters shall be obtained from any one of the manufacturers specified here-in-after. Sample of shutters along with test certificates shall be produced to the GE for inspection and approval. Sample shutters shall be got approved from the GE before placing bulk order.

29.2 Factory made paneled / skeleton shutters may be obtained from any other manufacturer, provided the same fulfill the following requirements:

(a) Shall conform to the specification given above.

(b) Standard and quality are equal or superior to that of the products mentioned above.

(c) Is approved by the Accepting Officer in writing before incorporation in the work.

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

29.4 WORKMANSHIP

(a) Joinery shall be wrought all over. Timber surface exposed to view shall be wrought and for surface not exposed to view shall be clean sawn. The workmanship and fixing of joinery shall be as per Clauses 8.11 to 8.24 of MES Schedule.

(b) The dimensions of the various components of joinery (other than block board shutters) wherever at variance, shall supersede the standard dimensions mentioned in the MES Schedule. However for pricing deviations involving any joinery work, the rates in the MES Schedule for the corresponding joinery shall be applicable.

(c) Unless otherwise specified, all work both carpenter's and joineries shall have full dimension except that an allowance of 1.5mm shall be allowed for each wrought face. Wooden beads and fillets shall however, hold the full dimensions. The Contractor shall also maintain the overall sizes of the doors and windows etc.

(d) Timber member's upto 3.0m length shall be in one piece.

(e) Plugging to walls shall be done with wooden plugs as per Clause 7.29 of the MES Schedule and specified hereinbefore.

(f) Vertical members of wooden doorframes shall be embedded 40mm deep below FFL. All door shutters shall have 2 to 3mm clearances above FFL.

30. WOODEN DOOR FRAMES Wooden door frames and fixing shall be all as specified hereinbefore and as stipulated in clause no. 8.14 and 8.15 of SSR Part-I.

31. BUILDERS HARDWARE

31.1 All articles of iron mongery (Builder's hardware) shall generally conform to the specifications given in section 9 of MES Schedule Part-I. The Contractor shall produce the samples of each article of builder's hardware which he proposes to use and get the same approved in writing by the Garrison Engineer. Articles of builder's hardware shall bear ISI mark, wherever available.

31.2 The type of builder's hardware shall be as follows:

(a) Butt hinges shall be of stainless steel (with stainless steel pin) and shall be of bright finish with smooth surface

(b) Double / single action spring hinges and catches shall be of mild steel.

(c) Coat hooks/pegs shall be of brass chromium plated.

(d) All other articles / fittings of builder's hardware shall be of extruded sections, aluminium anodised white. Thickness of anodising shall be 15 microns.

(e) All hardware shall be fixed with steel cadmium plated screws.

PARTICULAR SPECIFICATIONS.....(Contd)

- 31.3** The type pattern and size of aluminium anodised fittings shall be as follows:
- (a) Aldrop bolts (sliding door bolt) shall be provided to doors where directed. These shall be with hasp and staples (bolt type) and fixing clips etc. complete and shall conform to IS-2681. Aldrop bolts shall be fixed with nuts and bolts only.
 - (b) Hasp and staples shall be of safety pattern plate type.
 - (c) Hooks and eyes shall be plate type and the hooks shall be out of extruded section.
 - (d) Door handles shall be of plain pattern with back plate. The dia of the bars shall be 10mm.
 - (e) Barrel bolt/tower bolts shall be provided with 10mm dia shoot upto 150mm and 12mm dia shoot above 150mm.
 - (f) Sliding latch shall be 200mm long of 15.5x9mm flat slide.
 - (g) Magic eye shall be provided in the main entrance door of each quarter as approved by the GE.
 - (h) Screws for all fittings shall match the respective fittings, both in materials and finish except that screws for anodized aluminium fittings shall be of steel cadmium plated.
 - (i) Piano type hinges shall be continuous type and shall be of stainless steel, bright finish.

31.4 TOWER BOLTS

- 31.4.1** Aluminium anodized tower bolts shall comply with IS-204 (Part-II) specification for tower bolts, Part-II non-ferrous metals. The shape and size of tower bolt shall be as indicated. The type and size of tower bolt shall be as specified in respective item.
- 31.4.2** Barrel and tower bolts, wherever possible shall have the knob integral with bolts. In case it is not possible to provide a single piece construction of bolt, the knob may preferable be fitted to the bolts with a pin or alternatively screwed and riveted to the bolts, and its shape may be round as directed. Where diameter of bolt of particular size of tower bolt is not stated in the IS, the bolt shall be of 10mm dia upto size 125mm and 12mm dia for sizes 150mm and above.

- 31.5 BUTT HINGES** Butt hinges shall be stainless steel of weight all as specified in clause 9.7.2 of SSR Part-I.

- 31.6 HANDLES** Handles for doors shall be aluminium anodized fabricated type as specified in clause No.9.11 of MES Schedule Part-I, and sizes of handles shall be provided as indicated in Schedule- 'A'.

- 31.7 ALUMINIUM SLIDING DOOR BOLTS** Aluminium sliding door bolts shall be aluminium anodized all as specified in clause No 9.5.2 of MES Schedule Part-I.

- 31.8 FLOOR DOOR STOPPER** These shall be as specified in clause No. 9.15, 9.15.1 and 9.15.2 of MES Schedule Part-I 2009 and as approved by the GE.

- 32. STAINLESS STEEL WIRE CLOTH** Wire cloth shall be stainless steel and shall conform to relevant IS of size 0.36mm nominal dia of wire and average width of aperture 1.40mm, cut to required size and fixed to window/ventilator shutters with stainless steel wire staples.

33. PLUMBING WORK**33.1 GENERAL**

- (a) Plumbing work shall be carried out as specified in clause 18.27 A of MES Schedule Part-I
- (b) Soil / waste / vent pipe / fittings / accessories - These shall be of PVC (SWR) and shall be conforming to IS- 13592-1992 with spigot and socket ends. All the pipes and fittings shall have ISI certification mark.
- (c) Jointing - All PVC (SWR) pipes shall be jointed with sealing compound as per manufacturer's instructions. These shall be carried out as specified in clause 18.67 A of MES Schedule Part-I
- (d) Fixing of pipes to walls - Pipes and fittings shall be fixed to wall all as specified to Clause 18.67.4 to 18.67.6 of MES Schedule except that MS clamps fixed to walls by nails of adequate size.

33.2 BIB TAPS AND STOP VALVES

Bib taps and stop valves shall be as specified in clause 18.14 and 18.15 of MES Schedule.

33.3 PILLAR TAPS

These shall be as specified in clause No. 18.16 of MES Schedule.

PARTICULAR SPECIFICATIONS.....(Contd)**33.4 GI WATER TUBING**

(a) All water tubing shall be galvanised medium grade conforming to IS: 1239 and fittings shall comply with the requirement of relevant IS. Laying of GI pipes shall be in accordance with Clause 18.51 of MES Schedule. The Contractor shall use proper bends, elbows, tees etc at turning corners. The Contractor shall provide screwed plugs to all open ends of pipe on completion of days work. The requirement pertaining to materials, conformity with National Building Code, workmanship, testing, record of installation shall be all as specified in MES Schedule (clause 18.40 and 18.41) shall be followed. All pipe work shall be laid or fixed to be completely airtight and watertight as specified. Testing of pipe shall be carried out as specified in Clause 18.50.4 of the MES Schedule. The entire water piping work, when completed shall be tested for leaks under working conditions of pressure flow. The joints found leaking on pipes shall be removed and replaced at the Contractor's expense. Works shall be executed by a licensed plumber.

(b) The pipes passing through the walls, floor, slabs, roof slab etc. shall pass through sleeves of approved materials of adequate sizes. Holes through walls, etc. around the sleeves to full thickness of wall shall be finished to match surrounding surface.

33.5 PVC CONNECTIONS

Cold water supply connection shall be of PVC connection pipes 450mm long suitable for 15mm nominal bore GI pipe complete with brass chromium plated unions and rubber washers. The weight of brass coupling nuts shall not be less than 40 gm. The weight of PVC pipe shall not be less than 47gm.

33.6 PVC (SWR) PIPES & FITTINGS

PVC (SWR) pipes shall conform to IS-13592-192 fittings shall conform to IS-5382. PVC (SWR) fitting shall be used as per recommendations of the manufacturer of the pipes. PVC (SWR) pipes and fittings shall be strong, dimensionally stable and shall be free from defects.

34. URINAL FLAT BACK

Urinal shall be of size as stipulated and shall be vitreous China bowl type, white, first quality, and shall conform to IS-2556 (Part VI Sec-I) 1979 and shall be as per clause No 18.32.7.2 of SSR Part-I. Urinal and shall be fixed as per clause No 18.88 of SSR Part-I 1991. Urinal shall be provided with not less than two fixing holes on each side. The bottom of the pan shall have sufficient slope from the front toward the out let for efficient draining. It shall be ensure that when urinal is installed there should be no liquid left over in the bottom of the pan of urinal after flushing.

35. WATER CLOSET (ORISSA PATTERN)

(a) Water Closet (Orissa Pattern) shall conform to IS 2556 (Part III) and shall be long pattern, coloured of size 580x 0mm provided with integral foot rests and with 'P' or 'S' trap, as directed

(b) The pan shall be set in the lime concrete (1:2) at least 15cm around and finished just below the ring to receive the specified thickness of floor finish

(c) PVC readymade connecting pieces suitable for 15mm GI Pipes, 450mm long low density conforming to IS-4985 including brass union and nuts at both ends.

36. FLUSHING CISTERNS These shall be as specified in clause No. 18.34, 18.34.1 to 18.34.7 of MES Schedule Part-I 2009 and as approved by the GE.**37. SALT GLAZED STONE WARE PIPES** These shall be grade 'A' conforming to IS-651 and shall be laid and jointed all as specified in MES Schedule.**38. CONCRETE PIPES** Reinforced concrete pipes for drain shall be non-pressure type clause NP-2 as indicated and conform to IS-450-1971 all as specified in clause No.18.29 of SSR Part-I.**39. CAST IRON PRESSURE PIPES AND FITTINGS** All pipes and fittings shall be as specified in clause 18.2 of SSR Part-I of 2009.**40 WATER CLOSET PEDESTAL PATTERN**

Water closet shall be of size as indicated in Schedule. Fixing of the Pan, fixing of seat and covers & Fixing of flushing cistern shall be as per Para 18.87 to 18.87.3 of SSR Part I.

41 WASH HAND BASIN

(a) Wash hand basin of size stipulated shall be of vitreous glazed ware oval shape and colour as approved by the GE with waste union and perforated grating (both fittings of brass chromium plated)

(b) 32mm diagalvanised steel medium grade waste pipe fitted with brass chromium plated screws coupling outlet complete. Length of waste pipe shall be as directed.

(c) Chromium plated steel chain and rubber plug

PARTICULAR SPECIFICATIONS.....(Contd)**42. CUTTING HOLES AT LOCATIONS**

These shall be done very carefully so as to keep damage to existing face / location to a minimum. After cutting and facilitating required items of work the face / location shall be made good to the original finish and nothing extra shall be paid extra on this account. The rate quoted for cutting in shall be deemed to be inclusive of this aspect.

43. CHEQUERED CEMENT CONCRETE TILES

- 43.1** PCC chequered tile flooring shall be provided in the locations as directed by the Engineer-in-charge.
43.2 Tiles used in flooring shall be chequered cement tiles conforming to IS-13801-1993 except for their wear quality and when tested in the manner specified in the said IS,
43.3 Tiles shall be procured from any of the manufacturer as listed. Entire quantity of tiles required for incorporation in this work shall be obtained from one firm to maintain uniformity.
43.4 The tiles shall be 25mm thick, 300 x 300mm square with a tolerance of 0.15 cm in size. Tiles used in one room / location shall be of one size only
43.5 Tiles shall be laid to straight pattern as stipulated in Sch-'A'.
43.6 Tiles shall be set in neat cement slurry, jointed and pointed in neat cement slurry of colour to match the tiles. Joints shall be thin and nearly indistinguishable.

PAVER BLOCK

Paver block shall be of approved pattern factory cast, hydraulically pressed precast of grade M- 35, 60mm thick heavy duty, steam cured inter locking type from approved make/brand. Paver block shall be laid over average 25mm thick sand cushioning all as described in Schedule 'A.' Paver blocks shall conform to IS- 15658. Shade & pattern of Non fadeable coloured paver block shall be as approved by GE.

45. BIB TAPS, PILLAR TAPS, STOP VALVES AND GUN METAL GATE VALVE

These shall be all as indicated in relevant items of Sch 'A' and as specified in relevant clauses of SSR Part-II 2020. Make of PPR pipe shall be as specified in Appx 'A'.

46. PVC OVER HEAD WATER TANK (HDPE)

(a) Over head water tank(s) shall be HDPE water storage tank(s) of polythene in one piece of capacity as indicated and conforming to water tank shall be 'Rotational moulded polyethylene water storage tank' as per IS 12701-1996

(b) Water tank shall be provided with inlet and outlet connections with ball valve to suit the size of inlet pipe. Wash out pipe and over flow pipe shall be as recommended by manufacturers. The ball valve shall be high pressure brass (excluding float or ball) conforming to IS – 1703 including polythene float or ball.

(c) Water tank shall be provided at location as directed. Inlet and out let pipes shall be measured and paid for separately under relevant item of Schedule-'A'. Cost of PVC tanks, float valves, over flow pipe, washout sockets, wash out pipe with valve, inlet pipe from water meter to tank and outlet pipes up to sluice valve and connections shall be deemed to include in unit rate quoted.

(e) Water tank shall be double wall layer conforming to IS and shall be procured from any one of the manufacturer as listed in approved makes hereinafter.

(f) Hosting of tanks into position shall be carried out with proper tackle care being taken that no part of the tank or of the structure is damaged in the operation. The tanks shall be installed in position truly level, unless otherwise directed.

(g) The joints or connection to pipes shall be made with boiler screw, union, tee etc. as directed. Supports for tanks shall be provided as indicated. , hoisting and fixing in position, connecting up pipes etc. shall be executed as per manufacturer's instruction.

47. ALUMINIUM GRILLS PATTERN DG-104 (10MM)**47.1 TECHNICAL SPECIFICATIONS**

- | | | |
|---|---|------------------------------------|
| (a) Material | - | Aluminium Alloy No.6063 - T6 |
| (b) Ultimate tensile strength | - | 19kg/sqm |
| (c) Elongation of 50mm GL | - | 14% (min) |
| (d) Yield strength (0.2%) Proof stress | - | 6.5kg/sqmm (min) |
| (e) Brinell Hardness | - | (Typical) 50 |
| (f) Modulus of elasticity | - | Generally 7x10 ³ kg/sqm |
| (g) The anodizing will be carried out to the extent of 15microns. | | |
| (h) Decogrille shall be made out of 10mm plate and finished Decogrille/equivalent will have 10mm width and 5.2mm thick. | | |

47.2 **STANDARD SIZES** Design catalogues of manufacturers shall be referred

47.3 **SPACING & WEIGHT**

Design	Length	Width (expansion size)	Weight /sqm (kg)
DG-102	80 mm	66 mm	3.260
DG-103	113 mm	84 mm	2.625
DG-104	102 mm	99 mm	2.507
DG-107	100 mm	140 mm	3.572
DG-112	-	102 mm	3.766
DG-117	120 mm	75 mm	2.755
DG-118	-	80 mm	4.239
DG-124	70 mm	80 mm	4.487
DG-902	75 mm	72 mm	3.271
DG-916	114 mm	71 mm	3.131
DG-201	101 mm	25 mm	5.563
DG-202	60 mm	45 mm	4.282
DG-203	-	-	6.004
DG-205	-	-	4.326
DG-206	90 mm	110 mm	4.067

47.4 Aluminium anodised grill of design DG-104 pattern or equivalent, 10mm thick, fixed with and including standard aluminium frame of 'F' section of size 23.4x15.3x1.4mm thick shall be all as per manufacturer's instructions and as directed.

48. **OIL BOUND DISTEMPER**

Oil bound distemper conforming to IS 428- 1969 shall be provided as indicated, all as specified in clause No 15.14 and its sub-clauses therein of MES Schedule

49. **ALUMINIUM WINDOWS/VENTILATORS/PARTITIONS/DOOR.**

Aluminum windows/ ventilators/ partition/ doors shall be made out of extruded aluminum sections and shall be powder coated. The thickness of powder coating shall not be less than 50 microns of shade as approved by the GE. The section of Aluminum windows/ventilators shall be manufactured by INDALCO/ HINDALCO/ JINDAL.

49.1 Glazing of aluminum doors/ windows/ventilators shall be with sheet glass smoke white ordinary quality conforming to IS-2835, 1977 and thickness of sheet glass shall be as mentioned in respective item of schedule.

49.2 All fittings to aluminum windows/ventilator shall be as per the manufacturer instructions and all as directed by GE.

50. **MACHINE CUT MACHINE POLISHED GRANITE STONE FLOORING/DADO:-**

(a) Granite stone slab in flooring/dado shall be single piece of selected quality, hard, sound dense & homogeneous in texture, free from defects & conforming to clause 13.12 of SSR Part-I. Thickness of slab shall be 20 to 25 mm. Granite stone slab shall be machine cut machine polished (exposed surfaces only) and shall be provided as per locations shown in drawings. Colour of slab shall be 'Ruby Red' with 'Black' colour in border. Granite stone Slab in flooring shall be set, jointed & pointed in neat cement slurry & shall be laid over 20mm thick bedding in CM 1:3 over concrete sub-base/ RCC slab. Joints shall be thin & nearly indistinguishable. In case of dado Granite stone slab shall be fixed over 10mm thick cement mortar (1:3), jointed & pointed in grey cement. The exposed surface shall be machine polished.

(b) For platform Granite stone slab shall be in one piece of selected quality, hard, sound dense & homogeneous in texture, free from defects & conforming to clause 13.12 of SSR Part I and of thickness 20 to 25 mm machine cut machine polished (exposed surfaces only) and shall be provided as per locations shown in drawings. Colour of slab shall be 'Ruby Red' or 'Black' as approved by GE. Slab shall be provided in a chase inside the wall at least 25 mm deep and set, jointed & pointed in neat cement slurry to match with the colour of the slab. The edge exposed shall be bull nosed as directed by GE.

PARTICULAR SPECIFICATIONS.....(Contd)**51. BLANK****52. FORM WORK**

52.1.1 Form work shall comply with requirement of clause 4.11.6 of MES Schedule

52.1.2 Props shall be of steel of adequate length and strength. Formwork using steel props depending upon the provisions in the contract shall be designed by the Contractor's site engineer and approved by the GE keeping in view the following guidelines:

- (i) Deadweight of concrete and steel
- (ii) Load carrying capacity of the props
- (iii) Sequence and schedule of concrete pours
- (iv) Number of vibrators to be put in service and
- (v) Any other criteria as considered necessary by the GE

52.1.3 Form work shall be of marine plywood or steel of adequate strength at the option of the Contractor. However deformed steel sheet shall not be used or permitted for use as formwork

52.1.4 Props shall be straight and placed in true vertical position. Vertical props shall be provided with braces in both directions. Number of vertical intervals at which braces are to be provided, shall be decided and as approved by the GE depending upon height of the structure and horizontal loading. Bracings and supports may be of steel at the option of the Contractor and shall be properly and adequately tied to form firm joint.

52.1.5 Moving loads in the form of workers on the top of the form work should be minimized by pumping the concrete and restricting the number of workers. The impact and horizontal loads due to movement of workers should be minimized by keeping them stationery and just moving concrete containers from one person to other upto the place of pouring. It should be ensured that sub base of the floor is completed and cured after consolidating the earth underneath so that it gives firm base to the props. Vertical props should be provided with braces in both directions. Number of vertical intervals at which braces are to be provided depending upon the height of the structure and horizontal loading.

52.1.6 Safety of the workmen and structure shall be ensured by through checks that scaffolds are safe, the spacing of verticals, horizontals and braces are carefully designed, making safe access arrangement, preferring steel scaffolds to wooden scaffolds, no bamboo scaffolds shall be used, taking adequate measures against fire, use of safety helmets and safety belts, providing sufficient illumination of work area if work is in progress at night, special attention of female workforce for loose garments etc. The decision of GE in this regard shall be final and binding

52.1.7 In case of any deviation involving form work, the pricing shall done at the rates of timber formwork for fair finished surfaces.

52.1.8 Steel props used for beam, slab, and other supports shall be screw type height adjustable with steel base. All connections shall be with forged steel couplers. The props shall be properly tied together at 3m intervals of height. For soffit of all beams and slabs and sides of walls, PU coated plywood shall be used. Shuttering shall be supported on adjustable steel spans. For all columns prefabricated steel box type form work shall only be used.

52.2 Walk Boards. Ready made steel walk boards shall be used for movement of labour and material on slabs while concreting. No pedestrian/machinery movement shall be allowed on bare reinforcement. For buildings more than two storey, motorized concrete/material lift shall be used.

52.3 Cover Blocks. Cover blocks for slabs, beams and columns shall be factory made covers made of Fibre reinforced concrete of strength not less than 50 MPa or polypropylene. For columns and vertical members such as walls PVC ring type/polypropylene blocks shall be used.

52.4 EXPOSED SURFACES OF CONCRETE

52.4.1 All the exposed RCC/plain cement concrete surfaces which are ultimately required to be finished by application of white/colour wash, distemper, cement based or oil paint or Acrylic Paint etc., shall be provided with 5mm thick plastered in cement mortar 1:3 and finished even and smooth without using extra cement. Soffits of roof slab which will be covered with false ceiling shall not be finished with cement plaster.

52.4.2 Exposed surfaces of lintels, beams, columns, etc. which are continuous with plastered surfaces of walls and exposed surfaces of shear wall walls shall be plastered, in the manner specified for the walls.

PARTICULAR SPECIFICATIONS.....(Contd)**52.5 STRIPPING TIME FOR FORM WORK**

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The Contractor's attention is invited to the stipulation in clause 4.11.6.3 of MES Schedule Part-I 2009, regarding stripping of form work. The periods stipulated therein are for concrete using ordinary Portland cement.

52.6 LEAVING / FORMING HOLES AND CHASES

The Contractor as the work proceeds should Leave/form holes/chases in concrete/masonry and RCC where and as directed by the Engineer-in-Charge and make good in cement and sand mortar (1:3) when ordered to do so.

53. INTERNAL WATER SUPPLY

53.1 SCOPE OF WORK The extent of work under this contract is as indicated in relevant schedule and in these Particular Specifications and drawings. All reference to clauses in succeeding paragraphs pertains to MES Schedule Part-I, 2009.

53.2 GENERAL REQUIREMENT

(a) The requirement pertaining to materials, conformity with National Building Code, workmanship, testing, record of installation shall be all as specified in MES Schedule (Clause 18.40 and 18.41). Laying and jointing of GI pipes shall be in accordance with clause 18.60 to 18.61 of MES Schedule.

(b) All pipe work shall be laid or fixed to be completely airtight and watertight as specified.

(c) Testing of pipe shall be carried out as specified in Clause 18.60.4 of MES Schedule.

53.3 WATER TUBING

Laying of pipe shall be in accordance with Clause 18.61 of MES Schedule. The pipes (for supply of water), with all fittings, shall run concealed in the walls except where otherwise specified. Where pipes crosses the wall, sleeve piece of suitable dia / length shall be provided to accommodate the pipe and cost of same shall be deemed to be included in the lump sum cost of building. The Contractor shall use proper bends, elbows, tees etc at turning corners. Contractor shall provide screwed plugs to all open ends of pipe on completion of days work.

53.4 BIB TAPS, STOP VALVES AND GUN METAL GATE VALVE

Bib taps, Stop Valves and gun metal Gate valves shall be all as mentioned in BOQ and specified in clause 18.14 to 18.2 and 18.102 of MES Schedule and shall have IS certificate marks and of make mentioned in Appendix 'A' and as approved by GE.

53.5 TESTING

(a) The entire water piping work, when completed shall be tested for leaks under working conditions of pressure flow. The joints found leaking on pipes shall be removed and replaced at Contractor's expense.

(b) Works shall be executed by a licensed plumber. The Contractor shall produce the license of the plumber for verification.

53.6 WORKMANSHIP

The pipes passing through the walls, floor, slabs, roof slab etc. shall pass through sleeves of approved materials of adequate sizes. Holes through walls, etc. around the sleeves to full thickness of wall shall be finished to match surrounding surface. Unit rate for the building given in Schedule-`A' Part-I shall be deemed to be inclusive of the cost of these provisions also.

54 PRE -PARTICLE BOARDS & PLYWOOD

54.1 Plain Particle board shall be BWP grade (exterior grade) bonded with BWP quality phenol formaldehyde synthetic resin adhesive and conform to IS 3087. Pre-laminated particle board wherever specified hereinafter shall be of decorative type provided with laminated decorative surfaces and shall conform to IS-12823.

54.2 Edges of shutters of particle boards, shall be provided with 4mm edging of wood

54.3 All plywood shall be BWP grade conforming to IS-303. Decorative lamination where indicated shall conform to IS-1328.

PARTICULAR SPECIFICATIONS.....(Contd)

55. WATER PROOFING TO SUNKEN FLOOR OF TOILET/ BATH/ WC : Water proofing to sunken floor of toilet/bath/WC shall be carried out all as described in relevant item of Schedule 'A'.

55.1 GUARANTEE:

(a) The contractor shall ensure that the sunken floors shall be free from leakages etc during the guarantee period of 05 years and he shall be responsible to upkeep the entire surface for a period of 05 years from the certified date of completion of work. The security deposit shall be calculated over work done towards the guarantee of water proofing treatment to sunken portion as per the scale laid down by MES for calculating individual security deposit over the final work done statement for a period of 05 years for satisfactory performance of treatment. This amount shall be released to the contractor after satisfactory expiry of 05 years guarantee period. The GE may accept BGB from Schedule Bank or a fixed deposit receipt (pledged in GE's favour) from any Nationalized Bank for the said guarantee amount for a period of 05 years, in which event no further amount will be recovered from the final bill/ RAR on this account. The defects liability period under condition 46 of General conditions of contract (IAFW-2249) shall be deemed to be amended to the extent mentioned above for acrylic painting works.

(b) Necessary guarantee shall be obtained from the contractor on non judicial stamp paper giving five years guarantee from the certified date of completion of contract to keep the toilet free from leakages during guarantee period. The guaranteed does not however, absolve the contractor from the responsibility in respect of this specialized work as per contract conditions.

56. INTERNAL ELECTRIFICATION

56.1 SCOPE OF WORK

The work included in this schedule comprises of internal electrification complete including testing as shown on drawings and as specified in relevant schedule 'A'. The layout of conductors/cable route shall be as directed by the Engineer-in-charge.

56.2 GENERAL REQUIREMENTS

(a) This installation shall strictly comply with the provisions contained in the latest edition of the Indian Electricity Rules and amended IS-732-1989. Code of Practice for Electrical wiring and fittings in buildings as applicable to these works except where such regulation and rule are modified by these specifications.

(b) All electrical work shall be executed properly by skilled licensed electricians and ITI certificate holder under the supervision of suitably qualified electrical supervisors with minimum qualification shall be degree in electrical Engineering. The Contractor on demand by Engineer-in-charge shall produce such evidence of qualification of his workmen, supervisors(s) either at the time of commencement of the work or at any time thereafter during the contract period.

(c) The position of various electrical fittings and fixtures shown on the drawings may be changed by the Engineer-in-charge at the time of execution if found necessary

(d) The run of PVC/Steel conduits shall be marked on the walls and soffits of roof / floors slabs for the wiring. Approval of the Engineer-in-charge shall be obtained in writing before starting the works

(e) Looping back system of wiring shall invariably be used throughout the installation

(f) All electrical fittings and wirings shall be clear of door, windows and other openings

(g) The main switches and controls should have the voltage of supply clearly painted on them

(h) The phase indication (RYB) should be provided at the main incoming switches and controls

(j) The name of functions of each distribution board shall be clearly and neatly painted on the distribution boards

56.3 MATERIALS AND SAMPLE BOARD

(a) All materials unless otherwise specified shall possess ISI mark or conform to relevant IS specifications or to BSS if ISS is not available. Approval of the GE referred to in clause 18.2.1 and 18.2.2 of MES Schedule shall be in writing. Approved samples shall be labeled as such and signed both by the Contractor and the Engineer-in-charge. They shall remain in the custody of Engineer-in-Charge, till final completion of work.

PARTICULAR SPECIFICATIONS.....(Contd)

(b) The Contractor is deemed to have included in rates, cost of making holes/chases where required through masonry or concrete work for taking in cables/conduits and conductors etc and making good the same to match with existing surfaces.

56.4 TYPE OF WIRING

The type of wiring shall be as given in BOQ, Particular Specification and as directed by the Engineer-in-charge. Point wiring for light / power / fan / bell or buzzer / telephone point(s) includes all works comprising of:

(a) Supplying and fixing/drawing of copper conductor cables including conduits / PVC casing and capping and fittings and accessories for carrying out wiring as specified in Schedule-'A'.

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

56.5 CABLES Cable for internal wiring for light, power and sub mains shall be with copper conductor and shall be of following type:

56.6 Wiring in concealed PVC conduit: PVC insulated single core multi-stranded copper conductor sheathed cable upto 1100 volts grade conforming to IS 694.

56.7 FLEXIBLE CORDS TWISTED WITH COPPER CONDUCTOR

Flexible cord twin core with tinned annealed copper conductor stranded, PVC insulated, twisted together, size 23/0076.

56.8 PVC CONDUIT AND PVC FITTING/FIXTURES

These shall be in accordance with IS specification and make as per Appendix 'A' attached.

56.9 PLUG, SCREWS AND FASTNERS

All as specified in Clause 18.30 and 18.31 of MES Schedule

56.10 SUNK TYPE BOXES

These shall be of cast iron or pressed steel conforming to IS-14772-2000 and as specified in clause 18.38 of MES Schedule.

56.11 CEILING ROSE & SHADES

These shall be as specified in Clause 18.32 of MES Schedule.

56.12 SWITCH, SOCKET OUTLETS

These shall be of Bakelite flush type 5 or 15 amps multipurpose non-shuttered type conforming to relevant IS.

56.13 LAMP HOLDER

These shall be of brass conforming with IS-1258-2005 and as per Clause 19.41 of MES Schedule.

56.14 MINIATURE CIRCUIT BREAKER/MCB DB

These shall conform to IS 8828-1996 and shall be housed in suitable size standard sheet metal enclosure.

56.15 LIGHT FITTING

These shall be as specified in Schedule-'A', Particular Specifications and as shown on drawings.

56.16 LOCATION OF VARIOUS FITTINGS

Particular attention is drawn to the neatness in appearance which is to be achieved by judicious location of light fittings, switches socket outlets and main controls etc. Due regards shall be given to doors, windows, opening, etc. in fixing the run of cables, position of fittings, control switches etc. The location of fittings etc shall be marked in advance on walls etc. and approved by the GE.

PARTICULAR SPECIFICATIONS.....(Contd)**56.17 APPROVAL OF SAMPLES**

Sample of all materials to be incorporated should be approved by the GE before incorporation and shall conform to IS wherever applicable.

56.18 SITING ELECTRICAL EQUIPMENT

The siting of cable conduit, controls, distribution boards, fittings and accessories, etc. shall be as laid down in IS 4648-1968 'Guide for electrical layout in building' or as directed by the GE / Engineer-in-charge.

56.19 SYSTEM OF WIRING

Wiring shall be carried out with PVC insulated cable and shall run as far as possible near walls, ceilings so as to be easily accessible and capable of being inspected. Power wiring shall be kept apart and shall be distinct from other wiring. Separate conduit shall be used for power wiring.

56.20 CONTROLS AT POINT OF ENTRANCE OF SUPPLY

These shall be a linked main switch gear with MCB on each live conductors of supply main at the point of entrance. No fuse shall be inserted in the neutral.

56.21 TYPE OF SWITCH BOARD

Hinged type metal boards for mounting main switch/MCCB/MCB and electric meter shall be of 16 gauge MS sheets with provision of locking arrangement and all as specified.

56.22 FAN REGULATORS AND CLAMPS

(a) All ceiling fans and regulators shall be earthed effectively by means of suitable aluminium earth continuity conductors. Cost of earthing of fans and regulators/fittings (with aluminium earth continuity conductors) shall be deemed to be included in the unit rate for point wiring for fans/lights.

(b) The ceiling fans with down rods and regulators shall be issued under Schedule 'B' free for fixing and connecting only.

56.23 CABLE TRAYS

(a) All cables shall run through slotted cable tray running the entire length of the lighting bar terminating at the light distribution board or dimmer panel. Cable tray shall have its own suspenders to the ceiling / beam / MS grid. The size of the suspenders shall be 12mm dia steel duly painted with anti rust paint.

57. EXTERNAL WATER SUPPLY**57.1 GENERAL**

Works under this contract shall be carried out in accordance with the drawing and these particular specifications read in conjunction with the specifications, general rules, special conditions and all preamble contained in MES Standard Schedule of Rates 2009 Part I and SSR-2020 Part II. Where at variance the provisions in these particular specifications shall take precedence over the aforesaid provisions in the MES Schedule.

57.2 SCOPE OF WORK

Laying of GI (medium grade) water tube with necessary fittings and connections from existing pipe line to building / structure.

57.3 MATERIALS

All materials incorporated in this work shall conform to the relevant Indian Standard Specifications and shall be best indigenous make of reputed firm approved by GE.

57.4 TESTING OF PIPE LINES

Testing of pipelines shall be carried out as stated in Clause 18.48.7 and 18.50.4 of MES Schedule 2009, Part I and result of test shall be recorded.

57.5 PIPING WORK

The entire work including GI pipe shall be done as per ISS and as specified in MES Schedule. All joints shall be flanged type and shall be provided with suitable rubber ring, bolt, nut and washers etc. as per ISS. Flanges to the GI pipe shall be welded and the joints shall be treated with anticorrosive agents before painting.

57.6 GI WATER TUBING : GI water tubing shall be all as described in relevant item of Schedule and as specified in SSR Part-I (2009). Make of GI tubing shall be as per Appx 'C'

PARTICULAR SPECIFICATIONS.....(Contd)**57.7 MAKING GOOD**

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

57.8 Gun metal gate / globe valve shall have IS certificate marks and shall be as mentioned in schedule-'A' and specified in clause 18.102 of MES Schedule and of make mentioned in Appendix 'B' and as approved by GE.

58. EXTERNAL ELECTRIFICATION

58.1 All electrical work shall be carried out by properly skilled electricians under the supervision of suitably qualified electrical supervisors. The contractor on demand, to the Engineer-in-Charge, shall produce such evidence of qualifications of his workman/supervisors either at commencement of the work or at any time thereafter.

58.1.1 The installations shall strictly comply with the provisions contained in the latest edition of the "Regulations for the Electrical Equipment of Buildings" issued by the Institution of Electrical Engineers (hereinafter referred to as the IEE Regulations) and the Indian Electricity Rules as applicable to these works except where such regulations and rules are modified by the specifications. However, the tenderers shall also ensure that the requirements of the supplying agency DEB are also complied while executing the work.

58.2 LAYING OF CABLES

58.2.1 LT underground cables shall be laid in trenches with sand cushioning and PCC cover slabs protection all as specified in MES Schedule (Part-I).

58.2.2 For road/Nallah/Floor crossings and to cross-hard standing the cable shall be laid in GI Pipe, etc. Rates quoted for cables shall include for cost of straight through cable box with compound if required to be provided. Cable route indicators shall be provided at regular intervals of 30 meters or as directed by Engineer-in-Charge. In addition one indicator shall be provided at every turning of route and at every cable joint.

58.2.3 The LT cables shall be of 1100 volts grade XLPE insulated PVC sheathed, armoured heavy duty conforming to IS-7098 - I (amended upto date).

58.2.4 The LT cables shall be issued under Schedule 'B' on payment and LT cables other than Schedule 'B' issue shall be procured by the contractor as per make mentioned in Appendix 'B' and approved by GE.

58.2.5 The LT cables shall be of 1100 volts grade XLPE insulated PVC sheathed, armoured heavy duty conforming to IS-7098 - I (amended upto date).

58.2.6 The LT cables shall be issued under Schedule 'B' on payment and LT cables other than Schedule 'B' issue shall be procured by the contractor as per make mentioned in Appendix 'B' and approved by GE.

58.3 SAND CUSHIONING FOR LAYING CABLES

Sand cushioning shall be provided as specified in clause 19.75 of MES Schedule Part I. Naturally occurring fine dry sand conforming to the requirements given in clause 14.5 of SSR-2009 Part-I and from the sources approved by GE shall be incorporated. Punned thickness of sand shall be measured for payment.

58.4 CABLE COVER

Protection covers for HT/LT cables shall be as per schedule 'A' and shall be laid as per MES schedule and as directed.

58.5 CABLE TERMINATION AND JOINT KITS

This shall comply with the requirements as specified in clause 19.22 to 19.22.2 of MES Schedule Part I, 2009.

59. MCCBs MCBs shall conform to IS 13947(Par 3,1993) and IEC-60947 (Part 2)

59.1 MCCBs shall all as specified in Clauses 19.100.14 to 19.100.14.7 of MES Schedule Part I(2009)

59.2 The terminal shall be suitable for both copper and aluminium terminations.

PARTICULAR SPECIFICATIONS.....(Contd)

60. **SEWAGE DISPOSAL:** These shall be executed as per the relevant items of Sch 'A' read in conjunctions with the specifications given for the relevant trade sections here-in-before and as per below.
- 60.1 **EXCAVATION AND EARTH WORK**
Irrespective of the width of trenches for the pipes excavated, the width for the purpose of payment shall be the authorised width as defined in clause 3.2 of MES Schedule SSR 2020. Other requirements specified hereinbefore and in the MES Schedule as applicable shall be complied with.
- 60.2 **RCC DRAIN PIPE:-**
- (a) These shall be laid all as specified in relevant clauses of SSR Part-I
 - (b) Laying and jointing of pipe shall be done all as specified in relevant clauses of MES Schedule Part I.
 - (c) PCC in concrete bedding and haunching shall be of the type and mix given in relevant section of Schedule 'A'.
 - (d) Filling of spoil in trenches and ramming shall be carried out in layers not exceeding 25 cm thick and surfaces left slightly proud of the adjacent ground. Surplus spoil shall be disposed off to a distance exceeding 250 meters and not exceeding 500 meters.
- 60.3 **TESTING**
Drains and sewers shall be tested as per clause 17.79 and 17.79.2 to 17.79.5 of MES Schedule Part I.
61. **HARD STANDING:-** These shall be executed all as per the relevant of items of BOQ in conformity with the specifications given hereinbefore and MES Schedule.
62. **EARTHING**
- 62.1 Refer clause 19.137 to 19.145 of MES Schedule (Part-I) and electrical plate No. 3 MES Schedule (Part-I).
- 62.2 The Contractor shall execute installation of earth plate in the presence of the Engineer-in-Charge. Charcoal dust and salt and return filling shall be done in layers not exceeding 20cm depth, properly watered and rammed. Surplus spoil shall be carted away to a distance not exceeding 50m and the site left clean and tidy.
- 62.3 No earth pit shall be made within 2m of a wall or foundation. Efforts shall be made to locate them in grass or near flower beds or water taps and or as directed by the Engineer-in-charge. The distance between two earthing pits shall be at least 2m.
63. **DEMOLITION / DISMANTLING**
- 63.1 Demolition / dismantling shall be carried out in accordance with and all as specified in section 21 of SSR Part-I 2009 and preambles contained in SSR Part-II 2020 for respective items. Schedule-'A' items shall be inclusive of the same.
- 63.2 The Contractor shall take every precaution to prevent damages to any part of the structure and also the adjacent structures, which are to be left intact. Any damage caused to the structures due to carelessness and negligence of the Contractor, the same shall be made good conforming to the existing specifications and to the entire satisfaction of the Garrison Engineer without any extra cost to the Government.
- 63.3 The rates quoted in respective items of demolition / dismantling in Schedule-'A' shall include for all the precautionary measures to be taken including custody of serviceable materials / temporary shoring for the safety of portion not required for demolition / dismantling of adjacent portion where considered necessary by the Engineer-in-charge and removing debris from site as directed.

PARTICULAR SPECIFICATIONS.....(Contd)**64. DISMANTLING AND MAKING GOOD**

- 64.1** All dismantling work (except for which separate item is given in Schedule-‘A’) required for execution of work mentioned in Sch-‘A’ shall be deemed to be included in the rate quoted. The Contractor shall make good all disturbed surface to match with the existing specification and to the entire satisfaction of the Engineer-in-Charge. All dismantled material except shown in Schedule of credit shall be property of department and shall be handed over in store yard for which no removal shall be payable.
- 64.2** The Contractor should take necessary precaution for dismantling to the required shape/size. Contractor without any payment shall make all excess dismantling and damages caused to existing structure good.
- 64.3** Rates quoted for dismantling/taking down/fixed in repair shall include cost of making good, sorting of materials, and their removal as directed by the Engineer-in-Charge.
- 64.4** Old material/rubbish/unserviceable materials obtained as a result of taking down etc shall be removed outside MD land and unit rate quoted for dismantling/demolition/taking down shall be inclusive of this provision.
- 64.5** However old retrieved material for which credit has been offered to the contractor as per Sch of Credit shall be become contractor's property and shall be removed by the contractor after payment.
- 64.6** Other retrieved material which has any re-sale/salvage value or serviceable materials and which has not offered on credit shall be removed to the MES store yard as directed by the Engineer-in-Charge without any extra cost.

65. SAFETY CLAUSE

The contractor before asking for completion certificate of subject work shall produce “Safety Certificate” duly signed by him specifying that all work carried out wrt to CA such all electric wires/cables, joints, screws, light fillings of any type and size, exhaust fan/Ceiling fan hood end pin, nuts bolts, door, windows, grill, roof sheeting, roof trust, false ceiling and other related works are properly secured and are safe for use/operation under the defect liability period. If accident arises due to defects on account of substandard/poor workmanship, the contractor would be liable to make good/rectify the defects at his own cost and penalty may board with warning on violation of safety provision. Repeated violation of safety measures by contractor would liable for strict action as deem fit by the department.

66. CLEANING OF SITE

All demolished and disposal materials which are not in reusable condition, as mentioned in Sch ‘A’ shall be removed, spread and leveled at places at a distance mentioned under Sch ‘A’ item and al as directed by Engineer-in-Charge. Debris shall be cleared from the site from time to time as directed by and to the satisfaction of Engineer-in-Charge, failing which the cost of the debris removal as worked out by the Engineer-in-Charge shall be withheld from the next RAR payment due to the contractor. The decision of Engineer-in-Charge on the value of withheld amount shall be final and binding.

Signature of Contractor

AGE (Contracts)
For Accepting Officer

CEMENT SUPPLY & ACCEPTANCE FORM

Appendix ‘A’

1. Contract No. :

2. Name of work :

3. Control No. :

4. (a) Name of Manufacturer : (b) Brand Name: (c) Grade of Cement :

5. (a) Quantity of Cement (bags): (b) Lot No. /Week No. :

6. Manufacturer's Test Certificates No. :

7. Random Test Details:

(a) Physical Test Report from (*) vide their letter No. : (Name of approved lab / Engineering College)

(b) Chemical Test Report from (*) vide their letter No. : (Name of approved lab / Engineering College)

* to be filled the name of approval Lab/Engg. College

8. Details of Physical & Chemical Proprieties :

	Physical Requirement (as per IS: 4031)										Chemical Requirements (as per IS: 4032)								Remarks
	Specific Surface (m ² /kg)	Soundness by Le Chatellar Expansion (%)	Soundness by Auto Clave Expansion	Initial Setting Time (minutes)	Final Setting Minutes (minutes)	Compressive Strength (Mpa)			Temperature during testing (°C)	Standard Consistency (%)	Lime Saturation Factor (Ratio)	Alumina Lon Ratio (Ratio)	Insoluble Residue (%)	Magnesia (%)	Sulphuric Anhydride (%)	Loss Opn Ignition (%)	Alkales (%)	Chlorides (%)	
						03days	07days	28days											
As per relevant IS																			
As per Manufacturer's certificate																			
As per random test certificate																			

Remarks with signature

Contractor

JE(Civil)

Engineer-in-Charge

Accepted/Rejected

Garrison Engineer

Remarks of BOO/Inspecting Officer/CWE:

* To be allotted serially by the GE consignment wise

APPENDIX - 'B' TO PARTICULAR SPECIFICATIONS

1. CEMENT
1.1 GENERAL

Cement required for the work under the contract shall be procured, supplied and incorporated in the works by the Contractor under his own arrangement. Cement shall be of tested quality and shall comply with the requirements mentioned in the drawings, SSR, IS specifications as amended and particular specifications given hereinafter.

1.2 TYPES OF CEMENT

- (i) Ordinary Portland cement Grade 53 - (IS: 12269-1987)
- (ii) Rapid Hardening Portland cement - (IS: 8041-1990)
- (iii) Portland Pozzollana Cement - (IS: 1489-1991 Pt-I)
- (iv) High Alumina Cement - (IS: 6452-1989)
- (v) Sulphate Resisting Portland cement - (IS: 12230 – 1988)

1.2.1 Type of cement for the subject work shall be Ordinary Portland Cement grade 53 (Fifty Three) in accordance with IS: 8112-1989 unless otherwise mentioned in structural drawings forming part of the tender documents.

1.2.2 In case of non availability of OPC (Ordinary Portland cement) in the market, the Contractor can use PPC (Pozzollana Portland Cement) with prior permission from the Accepting Officer and his decision shall be final and binding, and in that case PPC shall meet the strength criteria of 53grade OPC (Ordinary Portland Cement) as laid down in IS-8112-1989. Mixing of OPC and PPC is not allowed.

1.2.3 The type of cement to be selected for use shall invariably depend upon the specific usage in the work (s). 33grade OPC shall not be used in the works. Use of PPC of required strength with fly ash content as per IS: 1489-1991 Pt-I is also permitted.

1.3 PROCUREMENT / SUPPLY OF CEMENT BY CONTRACTOR

(a) PROCUREMENT The cement supplied by the Contractor shall only be procured from main producers of cement. The particulars of the manufactures of cement along with the date of manufacture shall be obtained from the Contractor for every lot of cement separately. The documents in support of the purchase of cement shall be verified by the Engineer-in-Charge / GE and site staff. The cement shall be procured by the Contractor from the manufacturers as given below.

(b) MANUFACTURES The following are the main producers of Ordinary Portland cement & Portland Pozzollana Cement:

- (i) The Associated Cement Companies Ltd
 - (ii) Ultra Tech Cement
 - (iii) The India Cement
 - (iv) Dalmia Cement
 - (v) Andhra Cement Ltd
 - (vi) Century Cement
 - (vii) Saurashtra Cement
 - (viii) Madras Cement
 - (ix) Mangalam Cement
 - (x) Birla Corp Ltd
 - (xi) Orient Cement
 - (xii) Lafarge Cement
 - (xiii) Shree Cement
 - (xiv) JK Cement
 - (xv) JK Laxmi Cement
 - (xvi) JaypeeRewa Cement
 - (xvii) Ambuja Cement Ltd
 - (xviii) NK Cement Pvt Ltd (OPC & PCC)
 - (xix) Dhruv Industrial Company Ltd
- (c)** Besides the above only OPC can be procured from the following producers also.
- (i) Shiva Industries Kathua, J&K
 - (ii) Star Cement, Meghalaya
 - (iii) Meghalay Cement

APPENDIX - 'B' TO PARTICULAR SPECIFICATIONS (contd...)**1.3.1 USE OF PPC (POZOLONA PORTLAND CEMENT)****1.3.1.1** Portland Pozzollana Cement shall not be used for the following:

- (i) In cold climate reason
- (ii) Over head reservoir
- (iii) Under ground sump
- (iv) Prestigious Building
- (v) Building with spans 10metre or more
- (vi) PPC and OPC shall not be mixed

1.3.1.2 While using PPC the following conditions shall generally be met:

- (i) Strength criterion for PPC cement shall be as per IS: 8112-1989
- (ii) Stripping time shall be 14days
- (iii) Both OPC and PPC shall not be permitted for use in the same building except for plaster and mortar
- (iv) Mandatory certificates of testing and quality assurance shall continue to be submitted as hither-to-fore, with fly ash content as per IS: 1489-1991 (Part-I)

1.3.1.3 While procuring Portland Pozzollana Cement, the following requirement are to be ensured and certificate to be obtained from the manufacturer for each batch of PPC procured:

- (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 soils only pneumatic pumping is used.
- (iv) The fly ash is received from thermal power plant using high temperature combustion above 1000⁰C
- (v) The fly ash content in PPC is not more than 25%

1.3.2 The Contractor shall furnish the particulars of the manufacturer/ supplier of cement along with the date of manufacture to the Garrison Engineer for every lot of cement separately. The cement so brought shall be fresh and in no case older than 60days from the date of manufacture. The document in support of purchases of cement shall be verified by the Garrison Engineer. Before placing the order for supply of cement by the Contractor, he shall obtain written approval from the GE regarding name of manufacturer, quantity of cement etc. Cement shall be procured for minimum requirement of one month and not exceeding the requirement of the same for more than two months at a time. The cement shall be consumed in the work within three months after receipt. Cement shall conform to the requirement of Indian Standard Specification and each bag of cement shall bear relevant ISI mark. The weight of each consignment shall be verified by the GE and recorded. The content of cement shall be checked at random to verify the actual weight of cement per bag. However, the content of cement per bag shall be 50kgs only subject to tolerance given in clause 9.2.1.1 and Annexure-`B' of IS-8112- 1989.**1.4 TESTING OF CEMENT****1.4.1** The manufacturer shall carry out inspections and testing of cement in accordance with relevant BIS provisions. The Contractor shall submit the manufacturer's Test Certificate in original alongwith Test Sheets giving the result of each physical test as applicable and chemical composition of the cement in accordance with relevant IS provisions and the chemical composition of the cement or authenticated copy thereof duly signed by the manufacturer with each consignment, as per the following IS provisions:

- (a) Method of Sampling Hydraulic Cement as per IS-3535-1986
- (b) Method of Physical Tests for Hydraulic Cement as per IS-4031
- (c) Method of Chemical Analysis of Hydraulic Cement as per IS-4032-1985

The test certificate and test sheet shall be furnished with each batch of the manufacture. The Engineer-in-Charge shall record these details in the Cement Acceptance Register as given in Appendix-'A' to be maintained by him which will be signed by Supdt B/R Gde-I/JE (Civil), Engineer-in-Charge, Garrison Engineer and the Contractor as given in the format hereinafter for verification.

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

APPENDIX - 'B' TO PARTICULAR SPECIFICATIONS (contd...)

(b) The GE shall carry out independent testing as per the tests mentioned in the 'CEMENT SUPPLY/ ACCEPTANCE FORM' of random samples of cement drawn from various lots, if sample fails in 7 days compressive strength. The testing shall be carried out through NATIONAL TEST HOUSE, SEMT wing CME, REGIONAL RESEARCH LABORATORIES IITs, GOVT Engineering Colleges, MES ZONAL LABORATORIES, National Institute of Technology as per BIS and as per test methods referred hereinbefore and shall be recorded in respective portion of Appendix-'C-1'. The decision as to where the testing of cement is to be done shall be taken by the GE. In case the cement is not of requisite standard despite manufacturer's test certificate, the Contractor shall remove the total consignment from the site at his own cost after written rejection order of the consignment by the GE. The cost of test shall be borne by the Contractor irrespective of the results of testing.

(c) The random samples as per relevant IS shall be selected by the GE before carrying out testing. The random samples of cement to be tested shall be drawn as per MES Quality Assurance Manual. The record of such samples selected by the GE for testing shall be properly maintained in the 'Cement Testing Register' giving cross reference to relevant consignment of cement and quantity received etc.

(d) Cost of transportation of samples to the approved laboratory / test house and all testing charges including cost of sample shall be borne by the Contractor.

1.4.3 The Contractor shall be required to set up adequate testing facilities at site to the entire satisfaction of the Garrison Engineer for conducting 'Setting Time Test' and 'Compressive Strength Test' as per IS codes referred to hereinbefore for the samples collected from the lot brought at site. These tests shall be carried out within 7days of receipt of cement at site. The tests can alternatively be carried out at the Zonal Laboratory so designated by the GE.

1.4.4 The Contractor shall submit original purchase vouchers for the total quantity of cement supplied under each consignment to be incorporated in the works. All consignments received at the work site shall be inspected by the GE along with the relevant documents to ensure the requirements as mentioned hereinbefore, before acceptance. The original purchase vouchers and the test certificates shall be verified for subject contract and defaced by the Engineer-in-Charge and kept on record in the office of GE duly authenticated and with cross reference to the consignment/ control number recorded in the Cement Acceptance Register. The 'Cement Acceptance Register' shall be signed by the JE (Civil), Engineer-in-Charge, GE and the Contractor. The Contractor shall maintain schedule of supply of cement for each consignment.

1.4.5 The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents during the currency of contract.

1.4.6 For repair, maintenance and works where entire requirement of cement is less than 300bags, cement can be procured from authorised dealers of the firm listed hereinbefore.

1.5 STORAGE / ACCOUNTING / PRESERVATION OF CEMENT

1.5.1 Cement shall be stored in covered godown over dry platform at least 20cm high in such a manner as to prevent deterioration due to moisture or intrusion of foreign matters. In case of store rooms, the stack should be at least 20cm away from floors and walls. The stacking of cement shall be not more than 10bags and or done as specified in relevant IS. The storage, accounting and preservation of cement supplied by the Contractor shall be done as per standard engineer practice till the same is incorporated in the work and the cost of the same is deemed to be included in the unit rate/amount quoted by the tenderer. The EIC shall inspect once a day to verify that cement lying at site is stored, accounted, preserved and maintained as per the norms. The cement shall be stored so as to differentiate each tested and untested consignment separately with distinct identification. If the GE is not satisfied with the storage/ preservation of cement, he may order for any test(s) of cement as applicable for that consignment to ensure its conformity to the quality mentioned in the manufacturer's test certificate. The Contractor shall bear the cost of necessary testing(s) in this regard and no claim whatsoever shall be entertained.

1.5.2 Stacking of cement shall be done as per relevant IS and as under:

(a) Each cement consignment shall be stacked separately and removal shall be made on the basis of 'First in First out'.

(b) Adequate top cover will be provided

(c) Stacks in no case shall be higher than 10bags. The maximum width of each stack shall be 3.00m. If the stack is to be more than 7 or 8bags high, the bags shall be arranged in header and stretcher fashion, alternatively lengthwise and crosswise so as to tie the piles together and avoid danger of topping over.

(d) Adequate space shall be kept between two stacks.

APPENDIX - 'B' TO PARTICULAR SPECIFICATIONS (contd...)

- 1.5.3** Cement godown shall be provided with two locks on each door. The key of one lock at each door shall remain with the EIC 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 daily requirement with the knowledge of both the parties. During the period of storage, if any cement bag(s) found to be in damaged condition due to whatsoever reason, the same shall be removed from the cement godownon written orders of the GE and suitable replacement for the cement bag(s) so removed shall be made and no claim whatsoever shall be admissible on this account.
- 1.5.4** Cement shall be removed from the store only according to daily requirement with the knowledge of both the parties and daily consumption of cement shall be recorded in cement consumption register which shall be signed by the Engineer-in-Charge and the Contractor. Cement constants given in Appendix `A' to E-in-C's branch letter No.19280/E8 dated 03 May 1976 shall form the basis of consumption of cement for various items of works unless indicated otherwise.
- 1.5.5** In case of consumption of cement as per cement consumption register is found to be more than the estimated quantity of cement due to whatsoever reason, the Contractor shall not have any claim whatsoever for such excess consumption of cement.

1.6 SCHEDULE OF SUPPLY

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

1.7 DOCUMENTATION, MEASUREMENT AND PAYMENT OF CEMENT

- 1.7.1** The Contractor shall submit original vouchers from the supplier for the total quantity of cement supplied under each consignment to be incorporated in the work, all consignment received at the work site shall be inspected by the GE alongwith relevant documents received at the work site. The original vouchers and the test certificate shall be defaced by the Engineer in Charge and kept on record in the office of GE duly authenticated with cross reference to the control number recorded in cement acceptance register. This register shall be signed by the JE, Engineer in Charge, GE and the Contractor.
- 1.7.2** The Accepting Officer may order a Board of Officer for random check of cement and verification of connected documents. The entire quantity of cement shall also be suitably recorded in the Measurement Book for record purposes as `NOT TO BE ABSTRACTED' before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.
- 1.7.3** The payment shall only be allowed after production of original purchase voucher, certified copies of test certificates from manufacturer for each consignment and results of testing carried out in laboratory on receipt of cement (7days compressive test) are found satisfactory after testing as specified hereinbefore. Cement shall be paid as material lying at site under Condition 64 of IAFW-2249. Rate of cement given in SSR shall be applicable for cement irrespective of grade of cement specified for use in the work.

Signature of Contractor
Date:

AGE (Contract)
For Accepting Officer

APPENDIX - 'C' TO PARTICULAR SPECIFICATIONS

APPENDIX - 'C'

LIST OF APPROVED MAKES TO BE INCORPORATED IN WORK

S.NO	ITEMS	MAKES
1.	Factory made panelled shutters and Glazed / Skeleton / Wire Gauged Shutters	M/s Berar Timber Industries Pvt.Ltd. National Highway No.8, Village Saran, Valsad, Gujarat-396 001
		M/s Pioneer Timber Projects. 22, Madhya Marg, Sec. `C', Chandigarh
		M/s Goyal Bros. Goyal House, Ramkund, Raipur-01
		M/s Betul Wood Products Pvt. Ltd. Industrial Estate, Betul -460 022 (M.P.) (INDIA)
		M/s Egwood Electrical and General Industries. 1st floor, M.G. Secunderabad-500 003
		M/s Goyal Industrial Corpn. 8343, D.B. Gupta Marg, New Delhi 110 005
		M/s Prince Timbers, Gulab Nagar, Outside Victoria Bridge, Jam Nagar-261001
		M/s Pioneer Wudbilt Pvt. Ltd. 3141, Sector 21-D, Chandigarh
		M/s Arkay Doors (P) Ltd. G-1/45 Shop No.24, Lawrence Rd., Industrial Area, New Delhi - 110 035
		M/s Doorking Industries. 27, G.N. Block Sector-V, Industrial Estate, Salt Lake, Calcutta - 700 091
		Mehta Seaschem Wood Industries Pvt Ltd, Old Bunder Road, Near Ferri Naka Behind Sharda Timber Mart, Bhavnagar – 364001
		MP Wood Products, 124, LabriyaBheru, Dhar Road, Indore – 452 002 (MP), Tele Fax : 0731-4057401, Mobile :098292 45000, 98270 24211
		M/s Jain Doors Pvt Ltd., Kundli Industrial Area. Distt. Sonpet
		M/s VPRP ART, H-399, Mini Growth Centre Phase-II Sangaviya, Jodhpur.
		M/s A1 Teak Products Indoor
2.	Factory made PVC door frames& shutters.	M/s Sintex Industries Ltd., Plastic Division, Kalol, N Gujarat-382 721, M/s RajshreePalstiwood Ltd., 10/1 South Tukoganj, Kanchan Baug Road, Indore, M/s Accucell, M/s Ercon Plastic Industries, P-7, Industrial Estate, Jodhpur-34
3.	Wood based partitions	Novopan, Bhutan Board, Green Ply, Mangalore, Mysore & Chipboard.
4.	Dash tru-hold expansion fasteners	Dash Fasteners Pvt. Ltd. C-16, South Extension Part II, New Delhi, M/s Mon Traders. C-16, Tardeo Air-conditioned Market, Bombay – 34
5.	Rolling shutters & collapsible gates	M/s Shaparia Dock And Steel Co. Pvt. Ltd.
		M/s Swastik Rolling Shutters And Engineer Works
		M/s Sentinal Rolling Shutters & Engineering Co.
		M/s Shalimar Rolling Shutters
		M/s Darshan Rolling Shutters, Panchvati, Nasik
		M/s AFebta Engineering Works, Pune
6.	Mortice locks	M/s Shiv Shakti Engineering, Pune
		Harrison, RP Lock Co., New Delhi, Godrej & Boyce Co Ltd., Mumbai
7.	Hydraulic Door Closers	Everlite, Prabhat, Everest, Universal, Jai Engineering

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
8.	Glass for glazing	Modiguard, Saint-Gobain, Haryana Sheet glass
9.	MS Sheet	TATA, Jindal, SAIL
10.	Aluminium sections	Indal / Jindal / Everlite
11.	Drapery rod	Vista
12.	Aluminium& Brass Mongery	Argent Industries, Crown Industries, Mech India, Nu-Lite Industries, Perfect Fabricators
13.	Gypsum Based ceiling	Gypsum board, Arm stong, Ramco, Bisan
14.	Aluminum sections for false ceiling	Jindal, Indal, Hindalco
15.	Venetian Blinds	Trac, Kurlon, MAC
16.	Laminated sheets	Sungloss, Formica, Sunmica, Hollywood
17.	Particle board & Pre-laminated particle board	Anchor, Kitply, Century, Diamond, Archidply, Novopan, Deco board.
18	Pre moulded non bituminous joint filler board	Elcon, Dura Board HD-100
19	Pre moulded bituminous joint filler board	STP Ltd, Tikitar Industries Ltd, Capital Steel and Chemicals Ltd, Garlex Joint Filler by M/s Garlick& Co Pvt Ltd
20	AC sheets and ridges	Charminar, Everest, UP Asbestos, Rohtas Industries, Swastik, Ramco, Visakha Industries.
21	AC rain water pipes	Everest, Rajasthan Asbestos Cement, Hyderabad Asbestos Cement, India Asbestos Products, Rohtas, Sarbamangala.
22	Polymer modified readymix plaster	Easy Plast from Wall Plast, Chemplast, Ready Plast from Ultra Tech
23	Kitchen chimneys	Bajaj, Sunflower, Faber, Butterfly
24	Stainless steel sink ISI marked	Nirali, Blue Star, Prayag (Gold Range, Silver Gange& Solitaire), JAYNA, Impex Sanitation (Marlex/AMC/Simpex)
25	EWC, IWC, Wash Hand Basin, Urinal, Flushing Cistern and other vitreous china Sanitary ware	NeycerKermag (Standard), Hindware, , Parryware (Super Fine), Cera (Ist Quality), Jaquar, Johnson
26	Towel Rails	Crown, Jindal, EssEss
27	PVC Low level flushing cistern	Commander (Champion), Parryware (Slimline), Cera, JINDAL, SARAL Slimtouch (RiddiSiddi)
28	Seat and cover for WC	Commander, Parryware, Cera, Necycer, Johnson
29	CP Fancy bib taps, stop valves and pillar taps	Jaquar, Marc, Kohler
29A	CP, Bib tabs, Stop valves and pillar taps (other than fancy type)	SEICO, GEM, ZOLOTO, PARKO, ESSCO
30	PVC toilet cabinet	Commander, Jasmine, CiplaPlast
31	Hot & cold water supply fittings	M/s Jaquar, M/s L&K, M/s Crabtree
32	Mirror	Atul, Kohinoor, Swastik, Golden Fish
32A	UPVC (SWR) Pipes and Fittings	KISAN, PRINCE, SUPREME

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
	CHEMICALS/ WATER PROOFING COMPOUNDS	
33	Chemical for anti-termite treatment for structures (Chloropyrifos) (20 EC)	Montari Industries Ltd., 78, Nehru Place, New Delhi - 110 019 4-H Clubs (India), 487 A, Gandhi Nagar, Jammu-04 TRISHUL bearing ISI Mark confirming to IS specifications` M/s Dara Chemicals Industries Ltd, D-3, Lajpat Nagar-01, New Delhi- 24 'DURSBAN TC' manufactured by DENOCIL marketed at Mumbai by DE-NOCIL Corporation Protection Ltd, Ist& 2 nd Floor, Pirojshah Nagar, Eastern Express Highway, Vikroli (East), Mumbai -79 M/S Kanonia Chemicals & Industries Ltd., P O Renukoot – 231217, District – Sonebhada (UP) M/S India Pesticides Ltd , E-17 to 23, UOSIDC industrial Area, Deva Road ,Chinhal, Lucknow (UP)-227105. M/s. Dara Chemicals Industries Ltd, D-3, Lajpat Nagar-01, New Delhi
34	Water proofing compound	Pidilite Industries Ltd., Taloja, Raigad District, Super Aquacem (India) Ltd., New Delhi M/s Krishna Conchem Products Pvt Ltd STP Ltd SICO No 1, IMPERMO EXCOT, MS Bauchemimic (India) Pvt Ltd
	FLOORING/ TILING	
35	Cement tiles/Terrazzo tiles	(i) M/s Bharat Tiles & Marble Pvt Ltd. (ii) M/s National Tiles & Industries Pvt Ltd. (iii) M/s Kajaria Tiles Pvt Ltd. (iv) M/s Nitco Tiles (v) M/s Somani Tiles (vi) M/s VITCO Tiles, Mumbai M/s Ultra Tiles
36	Glazed earthen ware / Ceramic tiles {rectified (edge cut) tiles}	(i) Johnson Tiles (ii) Somani Tiles (iii) Neycer Tiles (iv) Nitco Tiles (v) Asian Granito India Ltd (vi) Kajaria Tiles (vii) Orient Bell (viii) RAK ceramics
37	Vitrified Tiles	(i) Johnson tiles (ii) Somani Tiles (iii) Asian Granito India Ltd (iv) Regency (v) NITCO Tiles (vi) Kajaria (vii) Orient Bell (viii) RAK ceramics
38	Acid resistant Tiles	(i) Johnson Tiles (ii) Somani Tiles (iii) Kajaria Tiles (iv) Orient Bell
39	Inter locking tiles /Paver Blocks	(i) Super tiles & marble Pvt Ltd, Dadar (E), Mumbai -14 (ii) ACME Floor (s) Tiles Mfg Co, Maulana Azad Road, Mumbai – 04 (iii) Vipurva tiles & Pavers Andheri (W), Mumbai – 53 (iv) Vitco Pavers & Tiles, Thane (W) (v) M/s Ultra Tiles

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
40	Primer	For Wood: Pink primer from asian paints, Nerolac, Shalimar, J & N, Berger Synthetic Enamel
41	Synthetic enamel paint	Berger Paints (Luxol high gloss), GoodlassNerolac (Nerolac), Asian Paints (Apcolite Premium), Dulux Gloss 5 in 1
42	Anti corrosive paint on structural steel	Asian Paints, Nerolac, Berger, Dulux
43	Cement Base Paint	SUPER SNOWCEM, DURGOCEM, SILVOCEM, AQUACEM
	Acrylic emulsion paints (interior)	Berger Paints (Rangoli Acrylic emulsion), Asian Paints (Premium emulsion), Nerolac Paints (Beauty Gold acrylic emulsion), ICI Dulux (Super smooth acrylic emulsion)
45	Acrylic exterior antifungal paints	Asian Paint (Apex)
		Berger Paint (Weather coat all guard emulsion),
		Dulux (Weather shield max / Ultra clean emulsion)
		Nerolac (Excel anti peel emulsion)
46	Dry/ Oil bound distempers and emulsions	Asian Piants (Tractor acrylic distemper), Nerolac Paints (Beauty premium acrylic distemper), Berger Paints (Bison acrylic distemper), Shalimar Paints, Jenson & Nicholson (Jensolin acrylic distemper), ICI (Maxilite acrylic distemper)
47	Colour anodizing for Aluminium sections	Conpaptex, Vadodara, Krishna Metal industries, Mumbai, Mansi Chemicals, Ahemdabad, Anad Tech Process, Bengaluru
48	Putty	Gold Mohar, Diamond Paints, New Delhi, UK Paint Industries, New Delhi
49	Hot applied thermo plastic road marking paint (As per cl 803.4 of MORTH)	M/s Shivalik Primo India Pvt Ltd, New Delhi, Asian Paints Ltd , SHALIMARK, STP Ltd,
50	APP membrane	Texas, STP, IWL, Hydrotech, Tikitar Danosa (India) Pvt Ltd, Pidilite Industries Ltd, Mumbai
51	Epoxy Coating to Reinforcement	PSL ltd, Zary Causeway, Kachigam, Daman(UT)
52	Bituminous Sealing Compound	STP Ltd, SN Industries, Tikitar
53	ERW pipes	Jindal, Tata, BST
54	Polycarbonate Sheet	M/s VM Plastic Sunlite Polycarbonate/M/s Rajmohan Roll Forming Pvt Ltd., VMI Plastic Pvt Ltd –New Delhi, M/s Everest Industries Ltd
55	Pre-painted galvalume sheet	JSW Ispat Steel Ltd-Mumbai, Shiv Shakti FibreUdyog, M/s Everest Industries Ltd
56	FRP Door	Delux, Polyfab, Advance Marketing, SaiSwarnaFibre Plast, Pune , OMEGA Fibres, Goa
57	Acrylic emulsion sealent	Araidite, Elastseal or equivalent as approved by GE.
	ELECTRICAL ITEMS	
58	Power Transfomer 33/11 KV	CROMPTON GREAVES, ANDREW YULE, BHEL, SCHNEIDER, BHARAT BIJLEE, INDO TECH TRANSFORMER
59	Transformer 11 KV/ 415 Volts	BHEL, KIRLOSKAR, CROMPTON GREAVES, SCHNEIDER, ABB, ANDREW YULE, BHARAT BIJLEE, VOLTAMP, PACTIL, GE ENERGY, INDOTECH TRANSFORMER
60	Isolation Transformers	PUREVOLT, CONSUL, ADROIT

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
61	GOD (Gang Operated Device), 11 KV and above	PACTIL (MATRO), ELPRO, ECE, OBLUM, ATLAS
62	HT Switch gear 33 KV, VCB (Out Door)	BHEL, ABB, SIEMENS, CROMPTON GREAVES, SCHNEIDER, BIECCO LAWRIE LIMITED
63	HT Switch gear 11 KV, VCB (Indoor/Outdoor)	BHEL, ABB, SIEMENS, CROMPTON GREAVES, SCHNEIDER, BIECCO LAWRIE LIMITED, PASCAL Switch Care.
64	HT Switch gear protection relay electronics	ASHIDA, EASUN REYROLL, ABB, SCHNEIDER, C&S, MEGAWIN, L&T
65	HT Trivector Meter	SECURE, L&T, ABB (ELSTER), SCHLUMBERGER
66	HT Ring main unit, SF6, 11 KV	ABB, SIEMENS, CROMPTON GREAVES, SCHNEIDER
67	Package/unified Sub-Station	ABB, SIEMENS, CROMPTON GREAVES, SCHNEIDER
68	HT Cable joints heat shrinkable/cold shrinkable/push on type	RAYCHEM, M-SEAL, DENSON, BIRLA 3M, MAHINDERA & MAHINDERA
69	CT & PT, 11 KV/33 KV	PRAGATI, AE, KAPPA, SCHNEIDER, L&T (AS PER HT PANEL MANUFACTURERS DESIGN)
70	HT 33 KV/11 KV XLPE Cables	UNIVERSAL CABLES (UNISTAR), KEI, ASIAN CABLES (RPG), CCI (TROPODOUR), VIJAY CABLES
71	Disc Insulator/Pin Insulator 11 KV and 33 KV ratings	BHEL, WS INSULATORS, JAYSHREE, SOUTHERN INSULATOR, MODERN INSULATOR, YAMUNA POWER (DENSON)
72	HT/LT Steel tubular swaged pole	NATIONAL TUBING CO. KANPUR, SOHAN LAL & SONS, QUALITY STEELS, BHARAT CONDUIT & POLES CO MUMBAI, INDIA ELECTRIC POLES MFG CO LTD (RAIGARH), INDIA TUBE CO LTD (JAMNAGAR), JAIBHARAT POLES MFG & ENGRS CO (BARODA)
73	HT/LT PCC Poles	SATHE CEMENT VASTU NIRMITI PUNE, DEVANG FENCE THANE, VAIBHAV CEMENT PRODUCT PUNE, AKAT COMPANY MUMBAI
74	Bus Bar Trunking	L&T/SIEMENS/SCHNEIDER/ABB/GE/LEGRAND
75	Lightning Arrestor non-linear resistor type	OBLUM/ELPRO/ATLAS/PACTIL/CROMPTON GREAVES/SCHNEIDER/BHEL
76	LT Panels	SIEMENS/CROMPTON GREAVES/L&T/ABB/SUDHIR, ADLEC, UNILEC, NEPTUNE, JAKSON MILESTONE, TRICOLITE, ADHUNIK SWITCH GEAR, CPRI APPROVED MANUFACTURER/ISO 9001 CERTIFIED / UNIVERSAL SWITCHGEAR CONTROL.
77	LT AIR CIRCUIT BREAKER	L&T/ABB/GE/SIEMENS/BCH/LEGRAND/SCHNEIDER/
78	MCCB	PREMIUM : LEGRAND (DPX), SIEMENS (SENTREN)/HAVELLS,BENTEC
79	ACB (Drawout type)	GE, SCHNEIDER, HAVELLS,
80	Contactors	SIEMENS, ABB, L&T, GE, SCHNEIDER
	MCB/RCBO/RCCB/DB/Isolators	LEGRAND (LEXIC), SIEMENS (BETAGUARD), SCHNEIDER (MG-MULTI-9), ABB,BENTEC
81	Prewired DB	HAVELLS/LEGRAND/L&T/SIEMENS/ABB
82	Voltmeter/Ammeter/Frequency meter/Meters/ PF Meter (Analog Type)	AE, IMP, L&T (RISHAB), HAVELLS, BENTEC, TTL TECHNOLOGIES

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
83	Voltmeter/Ammeter/Frequency meter/PF Meter (Digital Type)	ENERCON, DIRIS, DUCATI, L&T (RISHAB), TRINITY, RAAS, CONCORD, CONTROL & SWITCH GEAR, AE, SECURE, TTL TECHNOLOGY.
84	Selector Switch	SIEMENS, SULZER, KAYCEE
85	Street light timers	L&T, LEGRAND, GE, BAJAJ, SIEMENS, ABB, BCH.
86	LT Cables, 1100 Volts, XLPE	ASIAN CABLES (RPG), UNIVERSAL CABLES (UNISTAR), KEI, ELECTRON, CCI (TROPODOUR), FINOLEX, FORT GLOSTER, POLYCAB, VIJAY CABLES
87	Change over Switches	L&T, SIEMENS, CROMPTON GREAVES, GE, HAVELLS
88	Tamper proof electronic meter	SECURE, L&T, ANCHOR, ACCURATE METERS, HAVELLS,
89	(a) Voltage Stabilizers 5 KVA to 25 KVA	SINETRAC, BRENTFORD, VINITEC, AE, MICROTECH
	(b) Voltage Stabilizers upto 4 KVA	VINTEC, SINETRAC, MICROTECH, SAB, POWER WARE, V GUARD
	(c) Voltage Stabilizers above 25 KVA (Servo Controlled)	ANDREW YULE (BRENTFORD), AE, APLAB, VINTEC
90	UPS (off line & on line) (a) above 5 KVA	TATA LIMBART, SINETRAC, APLAB, POWER CONVERSION TECH, PROTECH SERVICES
	(b) upto 5 KVA	MICROTECH, LUMINOUS, LABOTEK
91	DG SETS (I) Engine	CUMMINS, KIRLOSKAR OILS ENGINES, ASHOK LEYLAND, GREAVES LTD, COTTON, MAHINDRA
	(II) Alternator	KIRLOSKAR ELCTRIC, CROMPTON GREAVES, STAMFORD, ABB, SIEMENS
	(III) Acoustic Enclosures for DG Sets (as per CPCB norms)	BHASKAR POWER PROJECTS PVT LTD, KALA GENSET, GOEL POWER ENGINEERS, JACKSON, SUDHIR GENSET LTD, POWERICA, RA POWER, SHREE DIESELS
92	LT Capacitor Banks	DUCATI, SIEMENS, L&T, ABB, EPCOS, GE, UNIVERSAL (UNISTAR)
93	APFC Panels	L&T, SCHNEIDER, CROMPTON GREAVES,
94	Electronic Energy Meters	SECURE, L&T, ALSTOM (AREVA),
95	CTs (LT)	KAPPA, IMP, AE, SIEMENS, L&T
96	PVC insulated Copper wires - 650/1100 Volts	FINOLEX, L&T, KEI, ELEKTRON, NICCO, HAVELLS
97	Steel Conduit	AKG, BEC, NIC, BHARAT STEEL TUBES, CTI
98	PVC casing caping	PRESS FIT, CLASSIC, PRECISION, SUPREME
99	PVC Rigid Pipe (Heavy Duty)/ PVC Conduit Pipe	FINOLEX, PRINCE, TIRUPATI, DUTRON, SUPREME, AKG, PRECISION
100	Piano type Switch/ Sockets	ANCHOR, LEGRAND, HAVELLS, PRECISION
101	Modular Switches/ sockets	ANCHOR (ROMA), LEGRAND, CRABTREE, PRECISION
102	Ceiling Rose	ANCHOR, LEGRAND, CRABTREE, PRECISION
103	Street light luminaires HPSV/Metal Halide	PHILIPS, CROMPTON GREAVES, BAJAJ, WIPRO, SHAKTI, SURYA,
104	LED Street Light, LED Highbay Fittings	PHILIPS, CROMPTON, BAJAJ / HAVELLS,SHAKTI
105	Fluorescent tube light fittings , LED tube light fittings	PHILIPS, CROMPTON, BAJAJ / HAVELLS,SHAKTI
106	CFL Fittings	PHILIPS, CROMPTON GREAVES, BAJAJ, WIPRO, SURYA, HAVELLS, SHAKTI
107	CFL Lamps	OSRAM, PHILIPS, CROMPTON GREAVES, BAJAJ, WIPRO, HALONIX, ADHUNIK SWITCH GEAR, SURYA ROSHNI LTD
107(a)	LT PCC Cable cover	Mehtab Tiles ISI marked, National Tiles

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
108	Exhaust Fans	CROMPTON, KHAITAN, BAJAJ, USHA
109	Electric Call Bell	ANCHOR, LEGRAND
110	Wall Mounted Fan/Air Circulator	CROMPTON, ALMONARD/USHA/KHAITAN/BAJAJ
111	PVC Pole Boxes	SINTEX, FINOLEX, UNIVERSAL
112	Flame Proof Electrical Fittings	BALIGA LIGHTNING EQUIPMENT, BAJAJ, SUDHIR ELECTRICALS, SHYAM SWITCHGEAR, FLEXPRO
113	ACSR Conductor	ALL-IND, ICC, NICCO, BHARAT CONDUCTORS, INDIAN ALUMINIUM CO
114	Laminated Sheet Cover	HYLAM, FORMICA, GREEN LAMINATED BOARDS, ANCHOR, BAKELITE
115	Aviation Obstruction Light	BAJAJ, CROMPTON GREAVES, WIPRO, PHILIPS
116	Thimbles/Studs/Lugs	DOWELLS, JAIPURIA BROTHERS
117	Lifts	OTIS, KONE, SCHINDLER, JHONSON
118	LT Changeover Switch	L&T, SCHNEIDER, HAVELLS
119	Battery Charger	VOLTSTART, AE, BCH
	<u>WATER SUPPLY</u>	
120	GI Pipes	JINDAL, TATA, BST, SWASTIK, BANSAL, SURYA ROSHNI
121	HDPE Pipe	DUTRON, FINOLEX, TIRUPATI, SUPREME, DUPLON (RELIANCE), KISAN MOULDING LTD
122	CI Pipes	ELECTRO-STEEL, KESORAM, IISCO
123	DI Pipes	ELECTRO-STEEL, JINDAL SAW, TATA METALIKS KUBOTA PIPES LTD, LANCO INDUSTRIES, ELECTROTHERM (INDIA LTD)
124	CPVC Pipe	FLOW GUARD, DUTRON, FINOLEX, ASTRAL
125	PPR Pipe	SFMC, RELIANCE, SUPREME
126	MS/ERW Pipes	TATA, JINDAL, BST
127	Sluice Valves	KIRLOSKAR, L&T (AUDCO), LEADER, UPADHAYAY, KALPANA
128	Non Return Valve	KIRLOSKAR, LEADER, IVC, VENUS, NVR
129	Pump Sets-Mono Block	KIRLOSKAR, CROMPTON GREAVES, BEST & CROMPTON (BEACON), MATHER & PLATT
130	Centrifugal Pumps	KIRLOSKAR, BEST & CROMPTON (BEACON), KSB, MATHER & PLATT
131	Submersible Pumps	KSB, CALAMA, KIRLOSKAR,GREAT INDIA
132	Submersible Cable	FINOLEX, NICCO, HAVELLS, ELEKTRON
133	Motor Starter	L&T, BCH, SCHNEIDER, SIEMENS, GE
134	Motor	BHARAT BIJLEE, KIRLOSKAR ELECTRIC, CROMPTON GREAVES, ABB
135	Single Phase Preventor/Phase Sequence corrector	L&T, SIEMENS, MINILEC
136	Silver Ionization Plant	Siemens, BHEL, Bharti Waters, Jyoti Waters, Pious Waters
137	Dual Ionization Plant	Siemens, BHEL, Bharti Waters, Jyoti Waters, Pious Waters
138	Air Release Valve	BIR, KIRLOSKAR, LEADER AUDCO, L&T
139	Foot valve	VENUS, KIRLOSKAR, LEADER, VENUS, L&T (AUDCO)
140	Butterfly Valves	ADVANCE, L&T (AUDCO), NORMAX, CASTLERS
141	Battery	EXIDE, AMCO, AMARARAJA
142	CI Fitting	UPADHAYAY, KEJERIWAL, BIR, SANT, VENUS
143	Water Meter	CAPSTON, DASHMESH, ACCUFLOW.
1	Gate Valves/ Globe Valves	ZOLOTO/LEADER/ROTEX/CRI

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
	<u>AIR CONDITIONING</u>	
145	Air Handling Unit	BLUE STAR/VOLTAS/CARRIER/ZECO
146	Cooling Tower	MIHIR/PAHARPUR/VOLTAS/POLO/DELTA
147	Chillers/Condenser	VOLTAS/BLUE STAR/CARRIER
148	Compressors	COPELAND/DANFOSS/SANYO
149	Pumps (Chillers & Condensers)	KIRLOSKAR/GRUNDFOSS/MATHER & PLATT/BEST & CROMPTON (BEACON)
150	Motors	SIEMENS/ABB/CROMPTON GREAVES/KIRLOSKAR ELECTRIC/BHARAT BIJLEE/NGEF
151	Pot/Y-Strainer	EMERALD/RAPID COOL/DANFOSS/SPARLAN
152	MS Piping	TATA/BST/JINDAL
153	(a) Butterfly Valve	ADVANCE/AUDCO/SANT
	(b) Check Valve/Non Return Valve	ADVANCE/AUDCO/SANT/BIR
	(c) Gate Valve	LEADER/AUDCO/ITT BELL & GOSSETT
154	Balancing Valve	ADVANCE/ AUDCO / DANFOSS / FLOWCOM
155	Pressure Gauge	FIEBIG/ H. GURU/ BAKER MERCER/ DANFOSS
156	Dial Type Thermometers	FIEBIG/ H. GURU/ TEDDINGTON
157	Insulation	
	(i) Glass wool	OWENS CORNING/UP TWIGA/LLOYD
	(ii) Insulation (Expand Polystyrene)	CAPRICORN/BEARDSELL/PENGUIN/LLOYD
	(iii) Insulation (Cross Polyethylene Foam)	SUPREME/TROCELLANE/PARAMOUNT/LLOYD
158	(a) Controls (3 Way Valves Actuator & Motor)	SIEMENS/HONEYWELL/JOHNSON/ANERGY
	(b) Thermostats	ANERGY/SIEMENS/HONEYWELL/JOHNSON/ANERGY
159	Extruded Aluminium Grills Diffusers	DYNA CRAFT/RAVISTAR/MAPRO/CARRYAIRE/COSMOS
160	(a) Control Cable	NICCO/ASIAN CABLES/UNIVERSAL/FINOLEX/CCI (TROPODOUR)/ELEKTRON
	(b) Power Cable	GLOSTER, ASIAN, UNIVERSAL, ELEKTRON
161	Contactors/Starters	L&T/SIEMENS/ABB/BCH
162	Overload Relay	L&T/SIEMENS/ABB/BCH
163	Time Delay Device	L&T/SIEMENS/SCHNEIDER/BCH
164	Single Phasing Preventer	L&T, SIEMEN, MINILEC, SCHNEIDER
165	GSS Sheets	SAIL / TATA / JINDAL
166	Fire Dampers/ Grill/Diffuser	DYNA / RAVISTAR / MAPRO / CARYAIRE / ATE
167	Expansion Valve	DANFOSS/SPORLAN/RANCO
168	Switchgears MCCBs/ ACBs/MCBs	LEGRAND/L&T/SCHNEIDER (MERLIN GERIN)/ GE / SIEMENS / BCH / C&S
169	BLANK	
170	LT current transformer	IMP, KAPPA, AE, SIEMENS
171	HP/LP/Op Cut Out	PENN/INDOFOSS/RANCO/DANFOSS/JOHNSON
172	Digital temp and RH meters	HONEYWELL/FORBES MARSHALL/SUBZERO/JOHNSON CONTROL
173	Centrifugal Fans (for AHU's)	NICOTRA/KRUGER/COMBIFREE/OEM'S MAKE
174	Strip Heaters	RACOLD/DASSPASS/UE
175	Humidstat	PENN, DANFOSS, HONEY WELL, JOHNSON, INDOFOSS
176	Filter	JOHN FOWLER/THERMODYNE/TENACITY/PUROLOTER
177	Factory Built Duct	ROLASTAR/TECHNO AIR/CAM DUCT

PARTICULAR SPECIFICATIONS (Contd....)

Appendix “C” (Contd...)

S.NO	ITEMS	MAKES
178	Selector Switch	L&T, ELMA, OMEGA, KAYCEE
179	Indicating light	SIEMEN, CONCORD, C&S
180	Digital Voltmeter/ Ammeter	AE/EMERCON/SECURE/L&T/DUCATI/C&S/DIRIS
181	Current Transformer	AE, KAPPA, SCHEINDER
182	Flexible Connector	CORI ENGINEER, RESISTO FLEX
183	Hot Water Generator	RAPID COOL/ROSS THERMAL SYSTEM PVT LTD/REYNOLD/RAPID CONTROL
184	Air Washer	BREEZE AIR/THERMODYNE/CHEMPAC/KLENZOID
185	Non chemical type electrostatic scale preventer	SCALEOFF (MFD BY M/S WELDON), SCALEX (MFD BY M/S TBI SYSTEM), HYDROCON
186	Split AC , Window AC	DAIKIN/BLUESTAR/LG/VOLTAS/SAMSUNG
187	ALUMINIUM GRILL.	M/s Aluminium profiles Associates Mumbai, AERO GRILL Chennai, Specialist Grill Kanpur/Deco Grill, Royal Grill
188	PVC /HDPE WATER TANKS (ISI MARKED)	SINTEX, ROTOMEX, POLYCON,, OMTEX, ASHISH

LIST OF SECONDARY APPROVED PRODUCERS

FOR STRUCTURAL STEEL

1. M/s KL Steel Pvt Ltd, Post Box No 61, Lal Kuan, Bulandhser Shahar Road, Ghaziabad (UP)
2. M/s Kashi Vishwanath Steel Ltd, Narain Nagar Bazpur Road, Kashipur, Distt - US Nagar
3. M/s Shyam Steel Industries Ltd, White Towers, 115 College Street, Ist floor, Kolkata – 12
4. M/s Pushpak Steel Industries Pvt Ltd, Gate No 119, Alandi Market Road, Dhanore, Tak Khed, Pune, Tele-02135-232427/28/2322 , Fax – 02135-238927
5. M/s Amba Shakti Ispat Ltd, Plot No 06, Phase-II, Industrial Area, Kaia, Distt Sirmour-173030 (HP), Tele – 01734-309983, Fax – 01702-238927.
6. M/s SRMB Udyog Ltd Kolkata, Regd Office – 45 B-B Ganguly Street, Kolkata 700012, Works : 1’ oil installation Road, Paharpur, Kolkata 700008
7. M/s SRMB SriFeb Pvt Ltd, Regd Office 7 No Khetra Das Lane, Kolkata – 700012, Works : Sagar Bhanga, Durgapur 713211.

NOTES:

1. Items shall be considered whichever is applicable only
2. Sources indicated are only for guidance and approval of the Garrison Engineer shall be taken in proper time before procurement of materials and its incorporation.
3. The above list is not exhaustive but indicative of all items required for work under the contract.
4. Sources of materials shall be as above or in the vicinity thereof. The tenderer shall ascertain the actual position/exact location of source before submitting his tender and no additional payment shall be made on account of misunderstanding of its distance from site of works. Contractor may bring material conforming to contract specifications from other sources without any price adjustment after obtaining written approval of the Garrison Engineer.
5. The tender shall amongst other things also ascertain all information such as royalties, taxes duties and other charges etc. on the materials and no additional payment shall be made on account of the foregoing.

Signature of Contractor
Dated:

AGE (Contracts)
for Accepting Officer