

MILITARY ENGINEER SERVICES**HEADQUARTERS****COMMANDER WORKS ENGINEER (ARMY) JODHPUR****CA NO CWE (A) JODH/GE (A) NO. 02- OF 2026-27 : REPAIR TO CERTAIN REPAIR TO
ROADS, HARDSTANDING, BERMS, PATHS & CULVERTS ETC UNDER AGE B/R-I AT ARMY
AREA JODHPUR UNDER GE (ARMY) NO. 02
CONTENTS**

S. No	Description	Page		
		From	To	To
01.	Contents	01	To	01
02	Forwarding letter including instructions for filling and submission of tender documents	02	To	07
03.	Notice Inviting tender including Appendix 'A' & 'B'	08	To	12
04.	Schedule 'A' notes	13	To	16
05.	Tender/contracts for works IAFW-1779-A (Sch 'A'/BOQ)	17	To	24
06.	Sch of Credit, Sch B, C & D Tender and Acceptance Page	25	To	28
07.	General Conditions of Contract (IAFW – 2249) including Errata & amendments thereto and Schedule of Minimum Wages	29	To	96
08.	Special Conditions	97	To	129
09.	Particular specifications including Appendix 'A', 'B', 'C', 'D', 'E', 'F'	130	To	162
10.	Errata/Amendments to tender documents		To	
11.	Relevant correspondence		To	
12.	Acceptance letter		To	
	Total No of Pages			

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

BY REGISTERED POST WITH A/D

Military Engineer Services
 Commander Works Engineers (Army)
 Multan Line Jodhpur-342010

Tele 0291-2511550

82627 / 20 / 10 / E8

18 May 2026

M/s -----

**CA NO CWE (A) JODH/GE (A) NO. 02- OF 2026-27 : REPAIR TO CERTAIN REPAIR TO
 ROADS, HARDSTANDING, BERMS, PATHS & CULVERTS ETC UNDER AGE B/R-I AT ARMY
 AREA JODHPUR UNDER GE (ARMY) NO. 02**

Dear Sir (s),

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

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

3 Bid will be opened online on a due date fixed for opening or any time after that, as per critical dates given on the portal. Cover-1 will be opened first. Tenderers may see the result of the opening of Cover-1 on the tender portal. Date of opening of Cover-2 shall be decided after technical evaluation of Cover-1 keeping in view the various eligibility criteria given in the NIT and the same will be intimated to the tenderers while uploading the technical evaluation on the tender portal.

4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents through e-mail and/or depute your technical representative for discussion on tender/drawings and to clarify doubts, if any, before the bid submission starts. You are requested not to write piece meal points and forward your points duly consolidated in one go. You may also attend the pre bid meeting on the date fixed by the accepting officer if given in the tender.

5. Unenlisted contractors are required to submit the scanned copies (in pdf file) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents and Appx 'A' to NIT along with earnest money deposit (EMD) and tender fee on eprocurement portal and submit the physical documents in the office of **HQ CWE(Army) Jodhpur, PIN-342010** within time limit specified in NIT. Inadequacy/deficiency of documents shall make the bid liable for rejection and in such event the financial bid Cover-2 shall not be opened.

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

(b) Tender/bid from contractor having not executed standing security bond and standing security deposit in any MES formation shall be accompanied with EARNEST MONEY mentioned in Notice of Tender, failing which the tender will be treated as non-bonafide.

7. Enlisted contractors of MES shall submit the scanned copies (pdf file) of enlistment letter and tender fee and such other documents as mentioned in Appx A to NIT.on e procurement portal and submit physical documents in the office of HQ CWE Jodhpur .

8. The contractor must ensure that the tender/bid is uploaded on the tender portal using the authorised DSC in time as the Accepting Officer will take no cognizance of any quotations/offer received in any other electronic or physical form like email/fax/by hand/through post from tenderer/bidder.

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

10. General Conditions of Contracts (IAFW-2249) (1989 Print) and errata and amendments thereto, Schedule of Minimum Fair Wages and MES SSR (Part-I and Part- II) are not enclosed with these documents. These are available for perusal in the Office of GE/AGE concerned and this office. Tenderer is also requested to keep the copy of these documents with him as same are available in the market.

11. ANY TENDERER, WHICH PROPOSES ALTERATIONS TO ANY OF THE CONDITIONS, SPECIFICATIONS LAID DOWN IN THE TENDER DOCUMENTS OR ANY NEW CONDITION, WHATSOEVER, IS LIABLE TO BE REJECTED.

12. Tenderer is advised to cross check his quotation in BOQ after uploading and before the Bid closing time and date. If he fails to quote the rate for any item, in terms of amendment 21 (c) (ii) to condition 6-A(A) of IAFW-2249, his overall quotation shall deem to include cost of execution of these items for the quantity mentioned in BOQ. No representation on this account shall be entertained.

13. After acceptance of tender the contractor will be required to lodge with the Accepting Officer "PERFORMANCE SECURITY DEPOSIT" @ 5% (Five Percent) of the Contract Sum. The amount is required to lodge within 28(Twenty Eight) days of the receipt by the contractor of notification of acceptance of Tender / Bid, failing which action as stipulated in condition 19.3 of IAFW-2249 shall be taken.

Yours faithfully

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

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

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

- (a) Deposit at Call Receipt from a Scheduled Bank in favour of Garrison Engineer concerned
- (b) Demand Draft, Bankers cheque, Fixed deposit receipt (FDR), Government Securities like account payee demand draft, Insurance surety bonds etc.

It is advisable that Earnest Money is deposited in the form of deposit call receipt from an approved Schedule Bank for easy refund. In case the tenderer wants to lodge 'EARNEST MONEY' in any other form allowed by MES, a confirmation about its acceptability will be obtained from the Accepting Officer well in advance of the date and time of receipt of the tender. Earnest Money shall be submitted in the name of concerned GE/AGE(I)

NOTES : Earnest Money in the form of cheque/Bank Guarantee etc will not be accepted. NON-SUBMISSION OF EARNEST MONEY WILL RENDER THE TENDER AS NON-BONAFIDE AND CONSEQUENTLY LIABLE TO BE IGNORED.

2. Performance Security

2.1 Within 28 days of receipt of the letter of Acceptance, the successful contractor shall deliver to the Accepting Officer a performance Security in any of the forms given below for an amount equivalent of 5% of the contract sum:-

- (a) A Bank Guarantee in the prescribed form. (Refer Appendix 'E')
- (b) Fixed deposit receipt (FDR), Government Securities like account payee demand draft, Insurance surety bonds etc .

2.2 If the performance security is 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.

2.3 Failure of the successful contractor to comply with the requirements of sub-clause 2.1 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.

2.4 All compensation or other sums of money payable by the contractor to the Government under the terms of this contract or under any other contract with Government may be deducted from, or paid by the sale of sufficient part of the Performance Security or from the interest arising there from or from any sums which may be due or become due to the contractor by the Government on any account whatsoever and in the event of his Performance Security being reduced by reason of any such deduction, or sale as aforesaid, the contractor shall within ten days thereafter make good in cash or securities, endorsed as aforesaid, any sum or sums which may have been deducted from or realized by the sale of his Performance Security or any part thereof. Government shall not be responsible for any loss of securities or any depreciation in the value of securities while in their charge nor for loss of interest thereon.

2.5 In the event of contract being cancelled, under Condition 52, 53 & 54 of General Conditions of Contract (IAFW-2249), the Performance security shall be forfeited in full and shall be credited into consolidated fund of India. Irrespective of whatever is mentioned in condition 19.3 of IAFW 2249 with regard to suspension of tenders on account of non-submission of Performance Security, issue of tenders to such tenderers shall remain suspended for a period of six months from the date of cancellation of contract under condition 19. 3 of IAFW 2249 in case of unenlisted Contractors. In case of MES enlisted contractor, issue of tenders shall remain suspended till deposit of EMD or six months from date of cancellation whichever is later.

2.6 The Performance Security shall be in favour of Accepting Officer and shall be in any of the forms mentioned here-in-before. Work Order No 1 shall be placed only after submission of Performance Security of adequate value by the contractor. In case a fixed deposit receipt of any bank is furnished by the contractor to the Government as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed 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.

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

2.7 The period of validity of the Bank Guarantee Bond against Performance Security shall be initially valid up to 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.

3. GENERAL INSTRUCTIONS FOR COMPLIANCE

3.1 The tender will only be accepted in the electronic form. All bids shall be submitted on 'defproc.gov.in' portal. Documents should be scanned and uploaded in 'pdf' form and 'xls' form as indicated.

3.2 Tender shall be uploaded on 'defproc.gov.in' portal on or before the bid closing date mentioned in the tender. No tender in physical form will be considered. Such tender shall be non bonafide.

3.3 Tender shall be DIGITALLY signed using valid DSC. All pages of tender documents, corrigendums shall be signed by the tenderer after acceptance.

3.4 Drawings (if applicable) must be returned duly initialled by the tenderer with tender documents in separate envelope indicating his name and address.

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

3.6 The tender shall be accompanied by a scanned copy of Power of Attorney in favour 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. In case of partnership concern or a limited company, signatory of the bid/tender shall ensure that he is competent to bind the contractor (through partnership deed, general power of attorney or Memorandum and Articles of Association of the Company) in all the matters pertaining to the contracts with Union of India including arbitration clause. A scanned copy of the documents confirming of such authority shall be attached with the tender/bid in 'pdf' form, if not submitted earlier. The person signing the tender on behalf of another partner(s) or on behalf of a firm or company shall attach with the tender/bid a scanned copy (in 'pdf' form) of Power of Attorney duly executed in his favour by such other or all of by the Partner(s) or in accordance with constitution of the company in case of company, stating that he has authority to bind such other person of the firm or the Company as the case may be, in all matters pertaining to the contract including the Arbitration Clause.

3.7 Even in case of Firms or Companies which have already given Power of Attorney to an individual authorizing him to sign tender in pursuance of which tenders are being signed by such person as a routine, fresh Power of Attorney duly executed in his favour stating specifically that the said person has authority to bind such partners of the Firm, or the Company as the case may be, including the condition relating to Arbitration Clause, should be submitted in 'pdf' form with the tender/bid; unless such authority has already been given to him by the Firm or the Company. It shall be ensured that power of attorney shall be executed in accordance with the constitution of the company as laid down in its Memorandum & Article of Association.

3.8 Bid (cover 1 & 2) shall be submitted online well in time.

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

3.10 Tenders will be opened on or after the bid opening date mentioned in on critical dates.

3.11 The tenderer shall quote his rate on the BOQ uploaded by the department file only. No alteration to the format will be accepted or the bid will be disqualified. Tender is advised not to tamper the BOQ uploaded by the department.

3.12 In case the tenderer has to revise / modify the rates quoted in the BOQ (excel sheet) he can do so only in the BOQ, through defproc.gov.in site only.

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

3.13 In case a tenderer has to revise his offer, he can do so through the defproc.gov.in site only before the bid closing time and date. Contractor has to upload their revised BOQ. No other form of bid revision shall be acceptable.

4. -NIL--

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

6. Department may issue amendments/errata in form of corrigendum to tender /revised BOQ to the tender documents before due date & time of submission of tender. The tenderer is requested to read the tender documents in conjunction with the corrigendum, if any, issued by the department prior to bid submission end date and time. Contractor shall be deemed to have taken into cognizance all such corrigendum issued / published by the department.

7. The tenderer will not make, on his own, any alteration in tender documents published to him by the Department. In this connection tenderers special attention is drawn to Para 10 of notice of tender. It is expressly brought to the notice of the tenderers that if he makes any alteration in tender documents and does not specifically bring out the alteration to the notice of the Accepting Officer, through a letter along with the tender and his tender is accepted by the Accepting Officer, the alteration(s) made by the tenderer shall be deemed to become null and void and the original provisions in the tender documents as originally made by the department or amended subsequently through amendments to tender documents issued by the department shall hold good and the contractor will not have any claim on this account.

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

9. These instructions shall form part of the contract documents and shall be signed and returned along with the tender.

10. Tenderer is advised to cross check his quotation in the BOQ after uploading and before the Bid closing time & date. If he fails to quote his rate for any item/items, his overall quotation shall deem to include for cost of execution of these items also to the extent of quantities mentioned in BOQ. No representation on this account shall be entertained.

11. To facilitate bidders to upload his bid even at last moment, adequate time is required for receipt of original DD. Considering this time of clear five days is allowed to the bidders to ensure that their original DD's are received These five days shall be exclusive of the date of bid submission.

12. In case of MES enlisted tenderers, if original DD is not received within period stated above subject to satisfying other prequalifying criteria, the financial bid shall be opened. The amount of cost of tender shall be recovered from any amount due to the MES enlisted contractor. Failure of non submission of hard copy of DD tantamount to willful negligence with ulterior motive and therefore the tenderer shall be barred to tender during the period of 6 months commencing from the date of opening of financial bid.

13. Applications/bids not accompanied by requisite DD/Bankers Cheque toward cost of tender shall not be considered for validation of "T" bid.

14. A tenderer is supposed to check if any Revised BOQ has been uploaded, and quote in Revised BOQ only. Thus uploading quotation in pre-revised BOQ shall be considered as a willful negligence by the bidder and his quotation shall be considered non-bonafide.

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

15. Uploading of copy of Service Tax registration number in addition to other documents required shall be mandatory. Contractor not in possession of this number shall be disqualified in 'T' bid evaluation and his finance bid shall not be opened.

16. In case of un-enlisted tenderers, if original DD is not received within the time stipulated, the cover 1 ('T' bid) shall not be validated for opening of financial bid. Name of such contractors alongwith complete address shall be circulated for not opening of bids for the period six months commencing from date of opening of financial bid.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

MILITARY ENGINEER SERVICES
NOTICE INVITING TENDER (NIT)

1. A tender is invited for the work as mentioned in Appendix 'A' to this 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.
3. The work is to be completed within the time period as indicated in aforesaid Appendix 'A' in accordance with phasing, if any, indicated in the tender from the date of handing over the site, which will be on or after the date of acceptance of tender (see Appendix 'A').
4. Contractors whose names are on the MES approved list and within whose financial category of the estimated amount would fall and unenlisted contractors may submit tender/bid subject to other criteria as mentioned in Appendix 'A'. However, in case of term contracts, enlisted contractors of class SS to E may submit tender. In case, where the tender amount is in excess of the financial limit of the contractor and the Accepting officer decides to accept the tender, tenderer is require to deposit performance security deposit. Tender not more than one tender shall be submitted/uploaded by one contractor / firm. 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 for the same contract as separate competitors. Two firms shall be deemed to have business dealing if any of the partners / proprietor director is common among both of them. A breach of this condition will render the tenders of both parties liable for rejection.
5. The Headquarters, Commander Works Engineer, Multan Lines Jodhpur-342010 will be the Accepting Officer here in after referred to as such for purpose of the contract.
6. Applications for the tender form along with cost of tender (see Appendix 'A') must be submitted to Headquarters, Commander Works Engineer, Multan Lines Jodhpur - 342010 so as to reach this office on or before the date mentioned in NIT uploaded on website defproc.gov.in. A scanned copy of DD with enlistment details/documents shall be uploaded as packet 1 ('T' bid) of the tender on e-tendering portal. DD is refundable in case T bid is not accepted resulting in non-opening of price bid. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD shall not have any claim from Government whatsoever on this account. The applicant/contractor will be informed regarding non issue of tender with assigning reasons. The applicant / contractor, if he so desires may appeal to the next higher Engineer authority with copy to the Accepting officer. No appeal /representation shall be entertained in respect of applications for issue of tender as received after the due date of receipt of application/extended date of receipt of application. The decision of the next higher Engineer authority shall be final. No applicant / contractor shall be entitled for any compensation whatsoever for rejection of his application.
- 7.1. Tender form and conditions of contract and other necessary documents shall be available on defence procurement portal for download and shall form part of contract agreement in case the tender is accepted. (See Appendix 'A').
- 7.2 In Case of contractor who has not executed the Standing Security Bond, the tender shall be accompanied with by Earnest Money for the amount mentioned in Appendix 'A' in the form of deposit at call receipt in favour of Garrison Engineer/AGE (I) (see appendix 'A') by a scheduled Bank or in received treasury Challan the amount being credited to the revenue deposit of the Garrison Engineer (see appendix 'A').
- 7.3 The GE/AGE (I) will return the Earnest Money wherever applicable to all unsuccessful tenderers by endorsing an authority on the deposit receipt for its refund, on production by the tenderer a certificate of the Accepting Officer that a bonafide tender (vide condition 13 here in after) was received and all document were returned.
- 7.4 The GE/AGE (I) will either return the Earnest Money to the successful tenderer by endorsing an authority on the deposit Receipt for its refund on receipt of an appropriate amount of security Deposit or will retain the same in part or full on account of security deposit if such a transaction is feasible.
- 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 at the office of (see appendix 'A') during working hours.

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NOTICE INVITING TENDER (CONTD..)

8. The tenderers are advised to visit site by making prior appointment with GE/AGE(I) who is also the Executing Agency of the work (see appendix 'A'). The tenderers are deemed to have full knowledge of all relevant documents, samples, site etc., whether he has inspected them or not.
9. The bids shall be uploaded on the E-tendering site in two packets upto the last date of submission of bids indicated therein. Bids shall be opened at 1500 hrs on the date mentioned on www.defproc.gov.in.
10. Any 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.
11. The uploading of bid by a bidder 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.
12. The bidders must be in possession of a copy of the MES Standard Schedule of Rates (SSR) (Part-I & Part-II) of latest edition including amendments and errata thereto.
13. Tenderer must be very careful to upload a bonafide tender failing which the Accepting Officer, at his absolute discretion, reserves the right of forfeiting earnest money, security deposit or security bond amount (Not exceeding the cost of tender documents) (see Appendix "A") deposited by tenderer. A bonafide tender must satisfy each and every condition laid down in this notice.
14. Invitation for E-tendering does not constitute any guarantee for validation of 'T' bid for downloading tender to applicant even to enlisted contractors of appropriate class and to applicants by virtue of enclosing DD and the Accepting Officer reserves the right to deny tender (not validating the 'T' bid) to any applicant. 'T' bid validation shall be decided by the Accepting Officer based on, inter alia, past track records, financial position, turnover, value of balance work in hand and experience of similar works executed by the applicant/contractor. The Accepting Officer shall consider applications and 'T' bids received up to the date of receipt of application/extended date of receipt of applications for issue of tender. The applicant/contractor will be informed regarding non-validation of 'T' bid assigning reasons therefore. The applicant/contractor if he so desires may appeal to the next higher Engineer authority viz chief engineer, Jodhpur Zone on email id cezjp2-mes@nic.in with copy to the Accepting Officer on email id. The decision of next higher engineer authority shall be final and binding. No appeal/representation shall be entertained in respect of applications received after the due date of receipt of applications/ extended date of receipt of applications. The decision of the next higher authority shall be final and binding. No applicant/contractor shall be entitled for any commendation whatsoever for rejection of his bid.
15. The Accepting Officer reserves the right to accept a tender submitted by a public Undertaking / small & medium enterprises (SME's), giving a price preference / purchase 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 tenderers whose tenders is rejected.
16. Accepting Officer does not bind himself to accept the lowest or any tender / bid or to give any reason for not doing so.
17. This Notice inviting tender (NIT) i.e. including Appendix 'A' and Annexures thereto, if any, shall form part of the contract agreement.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

1	Name of work	REPAIR TO CERTAIN REPAIR TO ROADS, HARDSTANDING, BERMS, PATHS & CULVERTS ETC UNDER AGE B/R-I AT ARMY AREA JODHPUR UNDER GE (ARMY) NO. 02												
2	Estimated Cost	Rs. 55.00 Lakhs (At Par Market)												
3	Period of completion	09 (NINE) Months												
4	Cost of tender documents	Rs. 1000/- in the form of DD/Bankers cheque from any schedule Bank in favour of GE (ARMY) NO. 02 JODHUR and payable at JODHPUR Note :- In case of retendering, the contractor who had quoted in the previous call is not required to submit the cost of tender)												
5	Website/Postal address	www.defproc.gov.in and www.mes.gov.in												
6	Type of contract	The tender shall be based on drawings and specifications IAFW-1779 (A) and GCC (IAFW-2249) with Schedule 'A' (list of items of work). The contractor is required to quote their rates against each item of Schedule 'A'.												
7	Time line & Details													
	(a) Bid submission start date	Refer critical dates on defence procurement portal of e-tendering (www.defproc.gov.in)												
	(b) Bid submission end date													
	(c) Date of bid opening													
8	Eligibility Criteria													
	(a) For MES enlisted contractors	Contractors shall be enlisted with MES in Class 'C' and above and category a(v) subject to satisfactory remarks wrt performance in respect of works in hand as reflected in Work Load Return (WLR) or any other report circulated by competent engineer authority.												
	(b) For contractors not enlisted with MES:-	(i) Contractor not enlisted with MES should meet the enlistment criteria of 'C' class & a(v) category contractor with regard to satisfactorily completion of requisite value works with Central/State Government/ Central/ State PSUs/ AWHO/ AFNHB/ CGEWHO/ DGMAP, annual turnover, bank solvency, working capital and other requirement given in Para 1.4 & 1.5 of Section 1 of MES Manual of Contractor 2020 as available in all MES formations as well as MES website (www.mes.gov.in). (ii) Not carrying adverse remarks in Work Load Report (WLR) or any other similar report circulated by any competent authority, if already working in MES. (iii) Not suspended/ debarred/ blacklisted (either permanently or temporarily) from participating in any bid or for business dealings by any Central/ State Government Department or any Central/ State Government PSU or any Autonomous Body under Central/state Govt. or any Local Body as on the bid submission end date. (iv) Details of works completed and under progress in MES be submitted in the following format :- <table border="1" data-bbox="764 1602 1507 1779"> <thead> <tr> <th>Srl No</th> <th>CA No. & Name of Work</th> <th>Value of CA</th> <th>Date of Commencement</th> <th>Date of Completion</th> <th>Extended Date of Completion</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> (v) Un-enlisted Contractor who have secured two works in MES should get themselves registered in the appropriate designed Class with any Registering Authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES.	Srl No	CA No. & Name of Work	Value of CA	Date of Commencement	Date of Completion	Extended Date of Completion						
Srl No	CA No. & Name of Work	Value of CA	Date of Commencement	Date of Completion	Extended Date of Completion									
9.	Tender issuing and Accepting Officer	CWE (Army) Jodhpur, Multan Line, Jodhpur, PIN-342010 Phone No : (0291-2512288) Email Address : ajdh3-mes@nic.in												
10.	Executing agency	GE (ARMY) NO. 02 JODHPUR												
11.	Earnest Money	Rs. 1,07,500.00 in favour of GE (ARMY) NO. 02 JODHPUR the form of Deposit at call receipt, FDR not acceptable.												

NOTES:-

1. In case After opening of Cover-1, If the number of MES enlisted contractors of eligible class as well as eligible unenlisted contractors, If any, fulfilling the other eligibility criteria given in NIT are less than 7 (seven), applications in respect of MES contractors of one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE command/ADG) below the eligible class shall also be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore MES contractors one class below (two classes below in case of remote and difficult areas) may also bid for this tender. However contractors of **one/two** classes below the eligible class shall not be considered in case their present residual work in hand is more than **FIVE TIMES** their present tendering limit. However in case such contractors fulfill the criteria of upgradation to the stipulated eligible class based on past experience of completed works (Individual work experience and / or average annual turnover, as applicable) and financial soundness (solvency / financial soundness and working capital), the ceiling of present residual work will not apply and they will be considered for issue of tender. Such bidders shall upload in their Cover-I bid details of work in hand like details of works in hand showing names of work , names of Accepting Officers,

APPENDIX 'A' TO NOTICE INVITING TENDER (CONTD...)

Contract amounts, dates of commencement and completion (stipulated) and progress as on bid submission date. Such contractors, if claim to fulfill the criteria of upgradation shall also upload requisite information/document in support of upgradation. These details shall be verified by the Tender Issuing Authority from concerned formations in case bids of such contractors are considered for evaluation.

2. In case after opening of Cover I, the number of MES enlisted contracts of eligible class as well as un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT, are 7 (seven) or more, applications of only those one class below the eligible class bidders shall be considered, who have previously completed similar works satisfactorily and are meeting the criteria of 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 Contract. Therefore such contractors shall upload the requisite information/documents in the Cover-I.

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.

3A. In case the enlisted contractors has been removed from approved List of Contractors by concerned command, All such contractors who have forwarded their appeal to E-in-C Br, the Appellate Authority, will be allowed to continue to participate in tendering after last date of validity of current enlistment. However, such contractors will be treated as un-enlisted and their bid will be evaluated similar to un-enlisted contractors, except that they will not be required to submit Earnest Money Deposit till disposal of their appeals by Appellate Authority. This implies that such contractors should fulfill the criteria of work experience, turnover, financial soundness etc. Contractors who do not opt to file appeal to E-in-C Br shall not be considered eligible for participating in the tenders issued in MES. In this regard, an undertaking shall be given by the contractor stating, if they have appealed to E-in-C Br and current status of their appeal.

4. Contractor Enlisted with MES will upload followings documents in Cover-I for checking eligibility :-

- (a) Application for tender on Firm's letterhead.
- (b) Enlistment letter issued by the Registering Authority duly renewed for cycle period in vogue.
- (c) Scanned copy of DD /Bankers Cheque toward cost of tender and EMD instrument in case SSD bond is not signed at the time of registration.
- (d) Details of works in hand showing names of work, names of Accepting Officers, Contract amounts, dates of commencement and completion (stipulated) and progress as on bid submission date.
- (e) Any other document required as described in this Appendix 'A'

5. Contractors not enlisted with MES will be required to upload following documents in Cover I 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 I of MES Manual on Contractor 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/Bakers Cheque towards cost of tender and earnest money (as applicable) in Cover I shall not be considered for validation of 'T' bid and their Financial Bids will not be opened.

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

(a) In case of tenders from an enlisted contractor of MES, where scanned copies of requisite DD/Bankers Cheque towards cost of tender have been uploaded in Cover I 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 tenderer with ulterior motives and such tenderer shall be banned from bidding for 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/Banker Cheque towards cost of tender have been uploaded in Cover I but physical copies are not received within the stipulated period, their financial bids (Cover 2) will be opened. Name of such contractor's alongwith complete address shall be circulated for not opening of their bids for period of 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 of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover 1 but the same are not received in physical form within stipulated period, such tenders shall not qualify for opening of financial bid (cover 2).

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

9. After opening of Cover 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 (Cover2) shall not be opened and contractor shall not have any claim on the same.

10. Invitation for e-tender does not constitute any guarantee for validation of Technical bid and subsequent opening of financial bid of any applicant/bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the financial bid of

any applicant/bidder. Technical bid validation shall be decided by the Accepting Officer based on eligibility of the firm as per criteria given in this Appendix.

Tenderer/ bidder will be informed regarding non-validation of his Technical bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires may appeal to the next higher Engineer Authority (NHEA) viz CEJZ, Jodhpur on email id cezjp2-mes@nic.in with copy of to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

11. In case an 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 more than twice the tendering limit of the MES Class of contractor for which it is eligible for this purpose, details of the works being executed by such a contractor shall be uploaded in the Cover-I 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 (ie he has quoted on pre revised BOQ), such bid shall be treated as willful negligence by the bidder and his quotation shall be considered non-bonafide. In such cases the lowest tender shall be determined from amongst the valid/bonafide bids only. Accepting Officer may decide whether to re-tender or consider the lowest bonafide tender for acceptance.

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

13A. Irrespective of whatever is mentioned in condition 19.3 of IAFW 2249 with regard to suspension of tenders on account of non-submission of Performance Security, issue of tenders to such tenderers shall remain suspended for a period of six months from the date of cancellation of contract under condition 19. 3 of IAFW 2249 in case of unenlisted Contractors. In case of MES enlisted contractor, issue of tenders shall remain suspended till deposit of EMD or six months from date of cancellation whichever is later.

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

Signature of contractor

(Milin Mittal)
EE (QS&C)
DCWE (Contracts)
For Accepting Officer

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

**TO BE READ IN CONJUNCTION WITH GENERAL CONDITIONS
OF CONTRACTS (IAFW-2249- 1989 PRINT)**

MILITARY ENGINEER SERVICES

Tele 0291-2511550

Military Engineer Services
Commander Works Engineers (Army)
Multan Line, Jodhpur-342010

**CA NO CWE (A) JODH/GE (A) NO. 02- OF 2026-27 : REPAIR TO CERTAIN REPAIR TO
ROADS, HARDSTANDING, BERMS, PATHS & CULVERTS ETC UNDER AGE B/R-I
AT ARMY AREA JODHPUR UNDER GE (ARMY) NO. 02**

Dear Sir (s),

1. Shri/S'Shri _____
of _____ is/are hereby authorised to tender

for the above work. Online bid only is to be submitted/quoted on web site

www.defproc.gov.in on or before the bid submission end date and time mentioned in the tender details on the defence procurement portal.

2. All documents must be submitted while forwarding the bid on above mentioned portal.

3. **THE PRESIDENT OF INDIA DOES NOT BIND HIMSELF TO ACCEPT THE LOWEST**

OR

ANY TENDER

Signature of the contractor

(Signature of the officer issuing the documents
Appointment DCWE (Contracts))

SCHEDULE 'A' NOTES
(LIST OF WORKS AND PRICES)

NOTES :

1. Tenderers is required to quote his unit rates against each items of schedule 'A' (BOQ)
2. The quoted rates shall be deemed to be subject to all special conditions and all preambles as given in the MES standard schedule of Rates Part-II – 2020 and also all preambles of schedule 'A' unless specifically mentioned to the contrary in any item of schedule 'A' (BOQ) or in the special conditions of particular specifications.
3. The items of Schedule 'A' shall be read in conjunction with the particular specifications, drawings and specifications given in SSR Part-I (2009).
4. Period of completion for the entire work under this contract shall be **09 (NINE) months** from the date of handing over site mentioned in the WORK ORDER NO 1 **which shall be placed after receipt of requisite amount of performance security.**
5. Unit rate to be quoted by the tenderer shall be deemed to include for any minor details of construction/minor accessories which are obviously and fairly intended which might not have been referred to in these tender documents but which are essential for the execution and entire completion of the work. The decision of the Accepting Officer as to what constitutes minor details of construction/minor accessories shall be final and binding.
6. Unless otherwise indicated unit rates quoted in Schedule 'A' (BOQ) shall be deemed to include for labour and material/supply and fix and testing etc complete.
7. All quantities mentioned in Sch 'A' (BOQ) are approximate and are inserted as guide only. They shall however, not be varied beyond the limits laid down in condition 7 of IAFW-2249.
8. Irrespective of whatever is mentioned in condition 19.3 of IAFW 2249 with regard to suspension of tenders on account of non-submission of Performance Security, issue of tenders to such tenderers shall remain suspended for a period of six months from the date of cancellation of contract under condition 19. 3 of IAFW 2249 in case of unenlisted Contractors. In case of MES enlisted contractor, issue of tenders shall remain suspended till deposit of EMD or six months from date of cancellation whichever is later.
9. It is pertinent to mention that contractor's quoted rates shall be deemed to include for all statutory Levies/duties/taxes including GST applicable as on the date of receipt of tender. It may be noted that Conditional tender regarding this aspect and/or any other account will not be considered and shall be liable to be REJECTED. The contractor shall upload GST registration certificate failing which his financial bid shall not be opened.
 - (b) Tenderer's attention is invited to deduction of Sales Tax at source for execution of works contract as levied by the Govt. The rates quoted by the tenderer in Schedule 'A' shall be deemed to include for the above mentioned Tax and all other taxes levied by the Govt/Statutory body and nothing extra will be payable on this account
 - (c) Tenderers attention is invited to deduction of Labour Welfare Cess at sources @ 1% of construction cost as enforced by Govt of India under building and other construction workers Act 1996 and building and other construction workers welfare Cess Act 1996. This shall deemed to be included in rates quoted by the Contractor.
10. Site for execution of work will be available as soon as the work is awarded. In case it is not possible to make the entire site available on the award of work, the contractor will have to arrange his working program accordingly. No claim whatsoever, for not giving entire site on award of work and for giving site gradually, will be tenable.
11. Tenderer is advised to cross check his quotation in the BOQ after uploading and before the Bid closing time & date. If he fails to quote his rate for any item/items, his overall quotation shall deem to include for cost of execution of these items also to the extent of quantities mentioned in BOQ. In this connection bidders' attention is drawn towards amendment No 21 (c) (ii) to Condition 6-A(A) of IAFW-2249. No representation on this account shall be entertained.

Contd...

12. Labour Welfare Cess/Tax and element towards ESIC&EPF contribution shall also be applicable to this contract besides other applicable taxes/ levies as per law of land. The quoted Rates are deemed to include all these provisions. BOQ is uploaded in the standard format given, the quoted rates in BOQ is deemed to be inclusive of all the taxes and duties even if the format of BOQ mentions the rates without taxes also.

13. The performance security shall be in favour of accepting officer and shall be in any form mentioned at para2 on SI page No 04 of tender and work order No 1 shall be placed only after submission of performance security. No extension of time for delay in submission of performance security shall be granted and action of cancellation of tender shall be considered if the performance security received after 28 days of receipt of acceptance letter of this work.

14. MAKES OF ITEMS:-

- (a) Makes to be incorporated in the work shall be from those listed as Appendix to Particular Specifications [B/R& E/M]. In case manufacturer of the item makes both ISI and non ISI marked items, then ISI marked item shall only be used. Please note that even if any makes are given in Particular Specifications, they shall stand supersede and only the makes given in Appendix [B/R & E/M] shall be applicable for all purposes.
- (b) Materials/items for which no make have been specified, shall be ISI marked. Contractor will download list of BIS marked manufacturer from BIS site www.bis.org.in and submit name of manufacturer meeting the contract specifications criteria and hand over the report with a request letter to Engineer-in-charge with his signature for approval of makes. The material shall only be procured by Contractor after approval of makes by GE/AGE(I) concerned. In case ISI marked material/items are not manufactured then same shall conform to relevant IS amended up to date as approved by GE.
- (c) For material/items not covered in para (a) to (b) here-in-before, the same shall be of best quality available in market and as approved by GE/AGE(I).
- (d) Contractor will intimate in writing to GE/AGE(I) the name of make of material, brand, model No/Cat Part No, etc., which he intends to procure. GE/AGE(I) will approve the same within 10 days of receipt of such request after due verification of documents provided by contractor with his request letter.

15. STAR RATES:-

- (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/AGE(I) (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 an 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/quotations/ email/ rate lists/ internet based sources, material &labour constants available in various civil engineering books and record available in respect of Star Rates approved in the past for similar items of work etc. Contractor may also assist GE/AGE(I)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/AGE(I) 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/AGE(I) 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 the relevant documents by 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 to as "the rate decided by GE/AGE(I)" under Para 62 (G) of IAFW-2249.

16. The bidder shall note that they will be required to strictly ensure engagement of Engineers and deployment of 'T&P', Machinery & Transport as stipulated in the contracts. Inadequate engagement of Engineers/ deployment of T&P Machinery & Transport as per contract conditions shall be considered as a serious lapse attracting ban/ removal/ downgrading / debarment of the Firm/Company.

17. The bidder shall also upload the copy of Provident Fund (PF) code number for coverage of building and construction workers (BACW) in the schemes framed under Employee's Provident Fund & Miscellaneous Provisions (EPF & MP) Act 1952 and not in possession/uploading the copy the same shall be disqualified in 'T' bid evaluation and financial bid shall not be opened. The quoted rates are deemed to be included EPF.

18. Total amount in "Amount" column of the BOQ is not firm. A Separate Schedule of credit has been enclosed along with this tender. The amount of schedule of credit shall be deducted from the total amount of BOQ to arrive at the "Contract Sum" referred to in IAFW – 2249.

19. GOODS AND SERVICE TAX (GST):-

Goods and Service Tax (GST) on works contracts shall be applicable and deducted as per the existing rules and regulations as per Govt statutory rules/provisions. All the bidders shall get themselves acquainted with the relevant provision of GST Act and enrolled for GST as per rules / regulations of the State Govt / Central Govt. Contractor's bid shall be deemed to have included GST and all other taxes, duties, cess etc prevailing at the time of Bid Submission End Date. The deduction of GST at source by the department shall be as per rules and regulation of Govt prevailing at the time of payment.

20. The unit rate quoted by the tenderer under "Rate" Column of the (BOQ) shall be deemed to include for labour and materials complete unless specifically stated otherwise in these tender documents.

21. Production of purchase vouchers and test certificates of main producers mentioned in particular specifications are mandatory for all consignments of reinforcement steel supplied by the contractor before making any payment and incorporation of steel in work. In case of structural steel, production of purchase vouchers and test certificates of main producers or secondary producers as mentioned in particular specifications are mandatory before making any payment and incorporation of steel in work.

22. **Defect Liability Period** for this work will be **Twelve months (12 Months)** or as per condition 46 of IAFW-2249 after the works have been handed over to the Government (MES) and after satisfactory completion of subject work.

23. The tenderers are requested to note that if any item/items is/are repeating in BOQ and tenderers has quoted different rate for the same item, the minimum rate shall be considered for acceptance & payment purpose.

24. In case of repair of painting work, existing surface shall be completely removed and scrapping shall be done with mechanical means and thereafter the treatment all as specified shall be done to the wall as per manufacturer's instruction.

25. Paints will be procured from company authorized distributor not from any retail shop. The contractor shall submit MOU with manufacturing company before commencement of painting work. Also, the contractor shall submit a 05 years GUARANTEE for quality Paint Work from manufacturer of the paint. In this regard Security Deposit of 2% of the total value of painting work shall be submitted by the contractor in form of FDR for a period of 05 years post project completion.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

SCHEDULE OF CREDIT**NOTES**

- (a) Contractor shall have no claims what so ever if the actual value of the materials is different from the value indicated in column (e).
- (b) The tenderer shall be deemed to have visited the site and acquainted themselves with the nature and extent of quantity of materials that will become contractor's property as per this schedule.
- (c) All the materials indicated in this Schedule of credit shall become the property of the contractor and credit there of shall be recovered from the contractors RAR/Final bill.
- (d) For purpose of recovery the measurements shall be the same as the net measurement for demolition/dismasting.
- (e) All quantities are provisional and will depend upon the quantities of items as per Schedule 'A' and credit shall be adjusted accordingly.
- (f) Unserviceable materials obtained from demolition/taking out shall not be reused in the work and shall be removed from site after the same has been inspected by the Engineer-in-Charge.
- (g) Any other material retrieved from the work and not entered for in this schedule shall be deposited in MES store yard and all other rubbish material not fit for any further use shall be removed outside MD land without any extra cost of Govt. The rates quoted shall deem to include this provision.

S N	Description of item of works	Unit	Qty	Rate (Rs)	Amount in (Rs)
(a)	(b)	(c)	(d)	(e)	(f)
1	Old U/S Cat eye of any size and type	Each	150.00	10.00	1500.00
2	Old U/S solar stud (cat eye) of any size and type	Each	100.00	50.00	5000.00
3	Old U/S stone slab of any size and type	Sqm	350.00	20.00	7000.00
4	Scrap iron	Kg	35.00	12.00	420.00
5	Old U/S delinator any type	Each	125.00	10.00	1250.00
				TOTAL	15,170.00

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

SCHEDULE 'B'
ISSUE OF MATERIALS TO THE CONTRACTOR
(SEE CONDITION 10 OF IAFW – 2249)

Ser No 1	Particulars 2	Rates at which stores will be issued to the contractor		Place of issue (by name for all items)	Remarks
		Unit	Rate		
1	2	3	4	5	6

----- NIL -----

SCHEDULE 'C'
LIST OF TOOLS AND PLANTS (OTHER THAN TRANSPORT)
WHICH WILL BE HIRED TO THE CONTRACTOR

(See condition 15, 34 and 35 of IAFW-2249 of 1989 prints)

SN	Qty	Particulars	Details of MES crew supplied	Hire charges per unit per working day Rs	Stand by charges per unit/off day Rs	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 CONDITION 16 & 35 OF IAFW-2249)

SN	Qty	Particulars	Rate per unit per working day	Place of issue (by name)	Remarks
1	2	3	4	5	6

----- NIL -----

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

TENDER

To,

The president of India

Having examined and perused the following documents:-

1. Specifications signed by the DCWE (Contracts).
2. Drawings detailed in particular specifications
3. Schedule 'A', 'B', 'C' & 'D' attached hereto.
4. MES Standard Schedule of rates Part-I-2009 (Specifications) & Part-II 2020 (Rates) here-in-after and IAFW-2249 referred to as the MES Schedule together with amendments No 1 to 3 for SSR Part-I and as applicable up to date.
5. General Conditions of Contracts IAFW-2249 (1989 Print) together with amendments Nos 1 to 49 and errata 1 to 20.
6. Water: Refer condition 31 of IAFW-2249 (General Conditions of Contracts) : Water will not be supplied by the MES.
7. Should this tender be accepted I/We agree:-

(a) That within 28 days of receipt of acceptance, I/we shall deliver to the Accepting officer a performance security in any of the form as described at note 02 on Ser Page No 04 of tenders for an amount equivalent to 5% of the contract sum.

(b) To execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and detailed in the General Summary below or at such other rates as may be fixed under provisions of conditions 62 and to carry out such deviations as may be ordered vide condition 7 of IAFW-2249 up to maximum of **10% (Ten percent)** and further agree to refer all disputes, as required by condition 70 of IAFW-2249 to the Sole Arbitration of a serving officer having degree in Engineering or equivalent or having passed final/direct final Examination of Sub - Division II of Institution of Surveyors (India) recognized by the Govt of India to be appointed by the Chief Engineer Southern command (CESC), Pune or in his absence the officer officiating as, if specifically delegated in writing by whose decision shall be final, conclusive and binding.

· To be deleted where NOT APPLICABLE

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

Signature _____ (Name in capital letter of Signatory)

_____ in

the capacity of _____ duly

authorized to sign the tender for and on behalf of

(IN BLOCK CAPITALS)

Date : _____

Postal Address : _____

Witness : _____

Address : _____

Telegraphic Address :

Telephone No. _____

ACCEPTANCE

_____ alterations have been made in these documents and as evidence that these alterations were made before the execution of Contract Agreement, they have been initiated by the contractor and **SHRI MILIN MITTAL, DCWE(CONTRACTS)**

The said officer(s) is/are hereby authorized to sign and initial on my behalf the documents forming Part of this contract.

The above tender is accepted by me on behalf of the President of India at the item rates contained in Schedule 'A'.

Signature _____ dated this _____

day of _____

APPOINTMENT : Commander Works Engineer (Army) Jodhpur

(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

GENERAL CONDITIONS OF CONTRACTS

FOR

(LUMP SUM CONTRACTS IAFW-2159)

AND

MEASUREMENT CONTRACTS (IAFW-1779 & 1779-A)

1. It is hereby agreed by me/us that the following documents shall form an integral part of the tender documents.
 - (a) General Conditions of Contracts including condition 70 pertaining to the settlement of disputes by Arbitration, IAFW-2249 (1989 Print) containing 33 pages (Serial Page No 30 to 62).
 - (b) Errata 1 to 20 and amendment 1 to 49 to (IAFW-2249)-(1989 Print) in 28 pages (Serial Page No 63 to 90).
 - (c) Schedule of minimum rates of wages (Revised UPTODATE) in 6 pages (Ser page No 91 to 96)
2. The tender submitted by me/us is/are subject to the aforesaid documents and copy of which is in my/our possession and which I/We have read fully and understood before submission of the tender.
3. My/our signature hereunder is in token of my/our having accepted the aforesaid documents as forming an integral part of this tender.

NOTE :

- (i) The documents mentioned above can be seen in the office of CWE (A) Jodhpur or in any other MES (CWE/GE/AGE (I)) office during working hours.
- (ii) In case of difference in interpretation due to wordings of English and Hindi versions, the English version will prevail as per Article 348 of constitution of India.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

SPECIAL CONDITIONS**1. GENERAL**

The following special conditions shall be read in conjunction with the General conditions of Contracts, IAFW-2249 (1989 Print) including Errata/amendments thereto. If any provision in these special conditions is at variance with that of aforesaid documents, the former shall be deemed to take precedence there over.

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

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

(b) The tenderers shall be deemed to have visited the site(s) and made themselves familiar with the working conditions irrespective of the fact whether they actually inspect the site(s) or not.

3. SECURITY AND PASSES**3.1. Employment of Personnel**

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

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

(c) The contractor's attention is also drawn to condition 25 of IAFW-2249 in this connection.

3.2. Approval of Sample of Workmanship in Building

(a) To determine the acceptable standard of workmanship, the area ordered to be completed (to be decided by the GE) shall be completed by the contractor well in advance as directed by GE under close supervision of the Engineer-in-Charge and shall be approved by the GE. The workmanship of various trades and shall serve as guiding samples for work in the remaining work.

(b) The sample area shall be completed in all respects as per time of completion ordered by GE in writing.

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

SPECIAL CONDITIONS (CONTD)

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

3.5. Location of Buildings and Works There may be some changes in site of work to suit local conditions and/or departmental requirements. The contractor shall have no claim what-so-ever consequent to such changes in the location/siting of works.

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

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

4. **Condition for Working in Restricted Area .**

(A) Condition for Working in Unrestricted Area.: If All works lie in Unrestricted Area. The restrictions for entry to work site and conditions of working in unrestricted area shall be as under:-

(a) The work lies in an Unrestricted Area. However, the contractor, his agents, servants, workmen and vehicles may pass through the unit lines, in which case, the Engineer-in-Charge at his discretion has the right to issue the passes, control their admission to the site of work or any part thereof. The contractor shall, on demand by the Engineer-in-Charge, shall submit a list of personnel etc concerned and any other information called for by the Engineer-in-Charge and shall satisfy the Engineer-in-Charge as regards the bonafide of such people. Passes shall be returned at any time on demand by the Engineer-in-Charge and in any case on completion of work.

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

SPECIAL CONDITIONS (CONTD)

5. MINIMUM WAGES PAYABLE

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

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

(c) The fair wages referred to in Condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages referred to above as updated from time to time.

(d) Schedule of minimum wages are not enclosed along with tender documents. However, the contractor shall be deemed to have verified the minimum fair wages payable as on the bid submission end date.

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

6. ROYALTIES

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

7. AVAILABILITY OF LAND FOR TEMPORARY WORKSHOP, STORAGE OF MATERIALS ETC

“(Reference Condition 24 of IAFW—2249)

The contractor shall be permitted to store his materials including erecting temporary sheds therefore at the areas of land marked on the site plan and he shall pay a licence fee of Rs..... Per year or part thereof in respect of each and every separate area of land allotted to him.”

8. WATER

(A) Condition 31 of IAFW-2249.

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

9. COORDINATION WITH OTHER AGENCIES

The contractor shall permit free access and afford normal facilities and usual convenience to other agencies or Departmental workmen to carry out connected works or services under separate arrangements. The contractor will not be allowed any extra payment on this account and no compensation shall be admissible to the contractor on this account.

SPECIAL CONDITIONS (CONTD)

10. ELECTRIC SUPPLY

In case the Contractor desires to buy electricity from the MES, he shall be charged for the electric energy consumed at the following rates :-

- (i) At Rs 13.00 per unit for lighting purposes.
- (ii) At Rs 13.00 per unit for power purposes.

Electric supply upto maximum of KVA shall be made available by the MES at the incoming terminal of the main switch marked. The main switch and KWH meters to register electric energy supplied shall be provided and installed by the MES. The Contractor shall provide all necessary cables, fitting, etc. from the main switch in order to ensure a proper and suitable supply of electricity for the execution of work.

MES do not guarantee continuity of supply and no compensation whatsoever shall be allowed for supply becoming intermittent or for breakdown in the system.

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

11. SAMPLE OF MATERIALS

(a) Refer to Condition of 10 of IAFW-2249.

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

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

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

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

(e) The contractor shall not procure materials and articles unless the samples are first got approved by the GE or as specified in IAFW 2249.

12. PERIOD FOR KEEPING THE TENDER OPEN

The tender shall remain open for acceptance for a period of 90 days from the next day subsequent to the bid submission end date.

SPECIAL CONDITIONS (CONTD)**13. ADVANCE ON ACCOUNT OF MATERIALS WHICH DO NOT LOOSE IDENTITY**

13.1 The contractor may be paid advance on account of the full value of the under mentioned materials only, brought on the site, on his furnishing guarantee Bonds from a Schedule Bank for the amount of retention money which should otherwise be recoverable from him under the contract.

- (a) Glazed/PCC Tiles, factory made shutters, PVC door, steel windows, sanitary fittings, WPT, kota stone & steel etc.
- (b) Electrical cables, wires/fittings /fixtures.
- (c) Water supply pipes, fittings/fixtures.
- (d) All other non- perishable materials as decided by GE/AGE(I)

13.2 The Bank Guarantee Bonds shall be executed for a period 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.

13.3 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 loose their identity. Materials like bricks, aggregate, pre-cast concrete and similar items shall not be taken in the list.

14. SECURITY OF CLASSIFIED DOCUMENTS

Contractor's special attention is drawn to Conditions 2A and 3 of General Conditions of Contracts (IAFW-2249). The Contractor shall not communicate any classified information regarding 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 works and he shall return all documents on completion of the works or on earlier determination of the Contract. The Contractor shall along with 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)."

15. OFFICIAL SECRETS ACT

The contractor shall be bound by the official secret Act 1923.

16. RECORD OF MATERIALS AND PURCHASE VOUCHERS

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

(b) 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.

(c) Materials to be Procured by Contractors.

(i) Vouchers in respect of cement, steel, major E/M equipment like transformers, DG Sets, pumps, motors, AC and lift equipment will be submitted invariably. For all original works, keeping in view specific provisions and circumstances for each

SPECIAL CONDITIONS (CONTD)

contract, it may be necessary that certain additional items require verification of vouchers. GE shall require vouchers other than mentioned above require prior approval of accepting officer .

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

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

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

SPECIAL CONDITIONS (CONTD)

17. ACCEPTANCE QUALITY OF WORK AND FINISHES

17.1 To determine the acceptance standard of materials and workmanship/final finishes and layout fittings etc. the contractor shall execute stages of work viz excavation, foundation concrete walling up to plinth/lintel/roof levels, roofing, flooring, joinery built-in items finishes and the like and services i.e. Internal Electrification, Water supply, plumbing sanitary fitting of work under the close Supervision of Engineer-in-Charge and shall get it approved by the GE. The workmanship of various trades and finishes as such shall serve as guiding samples for the remaining work.

18. Refund of Performance Security:-

The performance security deposit mentioned in condition 19 shall be refunded to the contractor after the expiration of defects liability period liability period (Refer condition 46 of IAFW-2249) by the GE provided always that contractor shall first have paid the final bill and have rendered no demand certificate (IAFW-451).

19. CLEANING DOWN

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

20. OUTPUT OF ROAD ROLLERS

Wherever applicable: (Refer Condition 15 of IAFW -2249)

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

20.2. To ensure proper consolidation, roller must work for at least the number of days assessed on the basis of output given hereunder. If the roller has not worked for the number of days so assessed, recovery shall be effected from the contractor for the number of days falling short of the days so assessed on the basis of output stipulated. The recovery shall be effected as under :-

(a) Where a road roller is hired out only by the Department to the contractor, at rates given in Schedule 'C'.

(b) Where a road roller is hired by the Contractor from sources other than the department at Rs 1,500.00 (Rate to be inserted as stated in Note 2 above) per working day of 8 hours.

(c) Where a road roller is hired by the contractor from the Department as also from sources other than the Department, at higher of the two rates given in Schedule 'C' of contract and Para 2 (b) above.

20.3. The above provision shall, however, not absolve the contractor of his responsibility of properly consolidating surfaces as required under the provisions of the Contract.

SPECIAL CONDITIONS (CONTD)

20.4. The output of road rollers should be as under:-

		Output per day of 8 hours work (Square Metres)
(i)	Consolidation of formation surfaces/subgrade	1850
(ii)	Consolidation of stone soling 23cm thick with 8 to 10 Tonne Roller	518
(iii)	--Ditto—15cm thick --Ditto---	800
(iv)	Consolidation of water bound macadam (stone metal) 11cm spread thickness including spreading and consolidation with binding materials	248
(v)	--Ditto-7.5 Cm—Ditto--	372
(vi)	Consolidation of single coat surface dressing	774
(vii)	--Ditto—two coat surface dressing	558
(viii)	Consolidation of 2.50 cm thick premix carpet including seal coat.	600
(ix)	Consolidation of 2 cm thick premix carpet including seal coat.	744
(x)	Consolidation of bituminous mixture 2 parts of broken stone metal and one part of sand and bitumen, consolidated thickness 4 cm.	372

SPECIAL CONDITIONS (CONTD)

21. (a) During the currency of the work the contractor is expected to adhere to the time schedule and this adherence will be a part of the contractor's performance under the contract. During the execution of the work the contractor is expected to participate in the reviews and updating of the network undertaken by the GE. These reviews may be undertaken at the discretion of the GE either as a periodic appraisal measure or when the quantum of work ordered on the contractor is substantially changed through deviation orders or amendments. Any revision of the schedule as a result of the review will be submitted by the contractor to the GE within a week who will approve it after due scrutiny. The contractor will adhere to the revised schedule thereafter. In case of a contractor disagreeing with the revised schedule, the same will be referred to the Accepting Officer whose decision will be final, conclusive and binding. GE/AGE (I) approval to the revised schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time. Extension of time shall be considered and decided by the appropriate authority mentioned in condition 11 of IAFW- 2249 and separately regulated
- (b) The contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad framework of the accepted methods of working and safety.
- (c) No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the Department.
- (d) The tenderer is expected to be fully conversant with this technique and employ technical staff who can use this technique in sufficient detail. Sufficient books and other literature on the subject are widely available which the tenderer may take use of.
- (e) The tenderer's attention is drawn to the Special Condition of the tender regarding preparation of the detailed network and time schedule and his liability for employing sufficient resources to adhere to his schedule. Any inability on the part of the tenderer in using the technique will be taken as his technical insufficiency and will affect his class of enlistment and further prospects of receiving tenders for works.
- (f) The contractor shall also deploy Engineer having experience in use of Primavera/MS Project tools for project monitoring on day to day basis for works costing Rs 15 Crore or more. The dated project time schedule shall be jointly prepared by GE and contractor using these tools within four weeks of conclusion of contracts. The project time schedule shall be updated weekly with all necessary details and work done report shall be signed by the contractor and included as part of the Works Diary by the JE ,which will be checked by the Engineer-in-Charge.

22. SPECIAL CONDITION FOR INCLUSION IN TENDERS APPLICABLE WHEN ESTIMATED COST AT MARKET RATE EXCEEDS RS 50 LAKHS

Refer Condition 64 of IAFW-2249 Advances on Account. Add the following in continuation of Para 8.

1. Provided further, the Contractor may be paid advance on account to the full value of the under mentioned materials only, brought on the site, on his furnishing Guarantee Bond (s) from a Schedule Bank for the amount of the retention money which should otherwise be recoverable from him under contract:

*Accepting officer to list out the materials before the issue of tenders. The materials shall be confined to "fittings and fixtures" and other manufactured items which do not lose their identity.

- (a) Sanitary fittings
(b) Water Supply pipes and Fittings

Contd...

- (c) Electric Fittings
- (d) CI manhole covers
- (e) Iron Mongery/Fittings
- (f) Factory made paneled/flush doors
- (g) Steel windows, rolling shutters
- (h) Electric cables, conductors
- (i) DI pipes, SGSW pipes, CI, soil, waste, vent, RW pipes
- (j) Steel

2. The Bank Guarantee Bond (s) shall be executed for a period and on a form as directed by the Accepting Officer. The Contractor shall further arrange to extend the period of Guarantee Bond(s) if and when necessary, as directed by the Accepting Officer or shall furnish fresh Guarantee Bond(s) of similar value in lieu”.

23. REIMBURSEMENT / REFUND ON VARIATION IN TAXES DIRECTLY RELATED TO CONTRACT VALUE

- (a) The rates quoted by the Contractor shall be deemed to be inclusive of all taxes (including GST on materials, GST on Works Contracts, Labour welfare cess/tax etc.), duties, Royalties, Octroi & other levies payable under the respective statutes. No reimbursement/refund for variation in rates of taxes, duties, Royalties, Octroi & other levies and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies shall be made except as provided in sub para (b) here-in-below:-
- (b) (i) The taxes which are levied by Government at certain percentage rates of Contract Sum/Amount shall be termed as “taxes directly related to Contract value” such as GST on materials, GST on Works Contracts, Labour welfare cess/tax and the like but excluding Income tax. The tendered rates shall be deemed to be inclusive of all “taxes directly related to Contract value” with existing percentage rates prevailing on the bid submission end date. Any increase in percentage rates of “taxes directly related to Contract value” with reference to prevailing rates on the bid submission end date shall be reimbursed to the Contractor and any decrease in percentage rates of “taxes directly related to Contract value” with reference to prevailing rates on the bid submission end

SPECIAL CONDITIONS (CONTD)

date shall be refunded by the Contractor to the Govt/deducted by the Government from any payments due to the Contractor. Similarly imposition of any new "taxes directly related to Contract value" after the bid submission end date shall be reimbursed to the contractor and abolition of any "taxes directly related to Contract value" prevailing on the bid submission end date shall be refunded by the Contractor to the Govt/deducted by the Government from the payments due to the Contractor.

(ii) The Contractor shall within a reasonable time of his becoming aware of variation in percentage rates and/or imposition of any further "taxes directly related to Contract value" give written notice thereof to the GE stating that the same is given pursuant to this Special Condition, together with all information relating thereto which he may be in a position to supply. The Contractors shall also submit documentary proof/information as the GE may require.

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

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

24. **TESTING OF MATERIALS**

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

(b) **'A' Level Tests for Works Costing upto 100 Lakhs** .The contractor may set up a site laboratory at his option for works costing upto 100 lakhs. Other stipulations will be the same as specified in preceding para (a). However in case the contractor has not set up the site laboratory and tests are carried out in Zonal or any other laboratory approved/setup by GE, the recovery shall be made at rates applicable ie as given in Annexure –I to IV.

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

SPECIAL CONDITIONS (CONTD)

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

Inspection of Site by the Tenderer.

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

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

25. REFERENCE CONDITION NO 25 OF IAFW-2249

25.1 The requirement of Engineering Staff to be deployed by contractor for supervision of work for this work shall be as under :-

- (a) Cost of work between Rs 60 Lakhs and Rs 100 Lakhs other than those covered in 'D' below:- A Degree holder in Engineering from a Govt. Recognised Institution or equivalent final or direct final pass or sub div II of institution of surveyor (India) with at least 3 year practicable experience of works. or A Diploma holder in Engineering from a Govt. Recognised Institution with at least 05 years practical experience of works.
- (b) Cost of work between Rs. 7.5 Lakhs and Rs 60 Lakhs other than those covered in 'D' below:- A Degree holder in Engineering from a Govt. Recognised Institution or equivalent final or direct final pass or sub div II of institution of surveyor (India) with a lease 2 years practicable experience of works. OR A Diploma in Engineering from a Govt. Recognised institution with at least 06 years practical experience of works.
- (c) Cost of work between Rs 2 Lakhs and Rs 7.5 Lakhs other than those covered in 'D' below:- A Degree or Diploma holder in Engineering from a Govt. Recognised Institution with adequate practicable experience of work.
- (d) Work of any value for repairs to building and roads, periodical services to building, term contracts, grass cutting and fending. A competent person with adequate practical experience of works.

25.2 The provision above shall be applicable irrespective of the fact whether contractor himself is a Qualified Engineer or not.

25.3 Contractor shall employ additional Engineers as directed by GE where there are scattered sites.

26. The minimum requirement of T&P, Machinery and Transport to be deployed at site during execution of whole work shall be as follows, as applicable for the respective eligible class & category of work as indicated in Appx 'A' of NIT.

SPECIAL CONDITIONS (CONTD)

Category	Special T&P/Machinery/Transport	Minimum Nos required for respective class as per Appendix 'A' of NIT.							Remarks
		SS	S	A	B	C	D	E	
a(v)	Building & Road Category								
	1. One bag capacity concrete mixer (diesel)	-	-	-	3	2	1	1	
	2. Vibrators (Needle and Plate type)	20	15	6	4	4	2	2	
	3. Tower/builder's hoist.	4	2	1	1	1	-	-	
	4. Steel shuttering with spans, props etc. (Sqm)	6000	4000	2000	1500	1000	500	200	
	5. Truck/Tipplers	5	2	1	1	2	1	1	
	6. DG Sets 5/10 KVA	3	2	1	1	-	-	-	
	7. Total Stations	3	2	1	1	1	1	-	
	8. Concrete cube testing machine (Hydraulically operated)	3	2	1	1	-	-	-	
	9. Fully automatic concrete batching plant	1	1	1	-	-	-	-	
	10. Transit Mixers.	3	2	2	-	1	1	-	
	11. Concrete Pumps	3	2	2	2	1	-	-	
	12. Concrete mobile weigh batchers.	3	2	2	2	1	-	-	
	13. Cranes.	2	2	1	1	-	-	-	
	14. Excavators (Power shovels/draglines).	2	2	1	2	2	1	1	
	15. Bull dozers	2	2	1	2	1	1	1	
	16. Road Rollers	2	2	1	2	2	1	1	
	17. Paver	3	2	1	1	1	1	1	
	18. Boring rig	5	4	3	2	1	1	1	Optional in case of tube well boring work.
	19. Pile driving equipment (sets)	5	4	3	2	1	1	1	Optional in case of pilling work
	20. Pipe testing equipment (sets)	3	2	1	1	-	-	-	-do-

SPECIAL CONDITIONS (CONTD)

27. QUALIFIED TRADESMEN (APPLICABLE FOR WORKS COSTING RUPEES ONE CRORE OR MORE)

In compliance with Condition 26 of IAFW-2249 (General Conditions of Contracts), the contractor shall employ skilled /semi skilled tradesmen who are qualified and possessing certificate in particular trade from Industrial Training Institute (ITI)/National Institute Of Construction Management and Research (NICMAR)/National Academy of Construction (NAC) Hyderabad and similar reputed and recognized Institutes by State/Central Government, to execute the works of their respective trades. The number of such qualified tradesmen shall not be less than 25% of total skilled/semi skilled tradesmen required in each trade. The contractor shall submit a list of such tradesmen along with requisite certificates to GE for verification and approval. Notwithstanding the approval of such tradesmen by GE, if the tradesmen are found to have inadequate skill to execute the work of their trades leading to unsatisfactory workmanship, the contractor shall remove such tradesmen within a week after written notice to this effect by the GE and shall engage other qualified tradesmen after prior approval of GE. GE's decision whether a particular tradesman possesses requisite qualification, skill and expertise commensurate with the nature of work, shall be final and binding. No compensation whatsoever on this account shall be admissible.

SPECIAL CONDITIONS (CONTD)**MATERIALS AND THEIR TESTS SITE LAB ANNEXURE-I**

S N	Material	Test	Method of testing	Frequency of tests			Rate (in Rs)	Remarks
1	2	3	4	5			6	7
1	Bricks	(i) Compressive strength	IS-3495 (Part-I)	As per IS 5454 as given under			330	Checks for visual and dimensional characteristics
		(ii) Water absorption	IS-3495 (Part-II)	Lot size	Sample size	Permissible %age of defective bricks	330	Shall also carried out per IS5454
		(iii) Efflorescence	IS-3495 (Part-III)	2001 10000	to	6	330	
				10001 35000	to	10	330	
				35001 50000	to	15	330	
2	Coarse aggregate	(i) Sieve analysis	IS-2386 (Part-I)	One test for every 100 Cum of aggregate or part thereof brought to site			660	
		(ii) Flakiness Index	--DO--	--DO--			250	
		(iii) Estimation of deleterious materials	IS-2386 (Part-II)	One test for every 100 Cum of aggregate or part thereof			600	
		(iv) Moisture content	IS-2386 (Part-III)	Regularly as required			330	
3	Fine aggregate	(i) Sieve analysis	IS-2386 (Part-I)	One test for every 100 Cum of FA or part when brought to site			660	
		(ii) Test for clay silt and impurity	IS-2386 (Part-II)	--DO--			500	
		(iii) Moisture content	IS-2386 (Part-III)	Regularly as required subject to 2 tests/day when being used			300	
4	Structural concrete (M-20 Grade and above) or quality concrete design for flexural concrete	(i) Slump test or compacting factor test or Vee-Bee time	IS-1199	The minimum frequency of sampling of concrete of each grade shall be as under			300	For number of cubes, samples etc., please refer Particular Specifications
4	Structural concrete (M-20 Grade and above) or quality concrete design for flexural concrete	(ii) Compressive strength	IS-516	Qty of concrete in the work (Cum)	No sample		900	
				1-5	1			
				6-15	2			
				16-30	3			
				31-50	4			

Contd...

SPECIAL CONDITIONS (CONTD)

				51 and above 4+1 for each additional 50 Cum or part thereof		
5	PCC block for walling (Hollow block)	Compressive strength	IS 2185-1983 (Appx B)	3 Block out of 20	900	Sampling 20 blocks from consignment of every 5000 block or part thereof
	PCC solid block walling	Compressive strength	IS2185	8 Blocks out of 20	900	Sampling 20 blocks from consignment of every 5000 blocks or part thereof.

SPECIAL CONDITIONS(Contd...)**ANNEXURE-I (Contd...)****MATERIALS AND THEIR TESTS SITE LAB**

SN	Material	Test	Method of testing	Frequency of tests	Rate (in Rs)	Remarks																
1	2	3	4	5	6	7																
6	Burnt clay roofing tiles (hand made) as per IS 2690 (Part-II) length 150-250mm width 100-200mm	Compressive strength	IS3495 (Part-II)	6 tiles out of 12	180	Samples 12 tiles from each source of supply selected at random																
7	Welding of steel work	Visual inspection test	IS 8280-1970 clause 7.1	100% by visual inspection	360	Specialised test, their method and frequency to be decided or consideration or thereof																
8	Timber	Moisture content	IS-1708 1960	Maximum three samples from a lot of 4 Cum or 250 pieces of seasoned timber	120																	
9	Timber panelled and glazed door wooden shutters (including factory made shutters)	(a)Dimensions sizes, workmanship and finish	IS 1003-1977 (Part-I)	Frequency of sampling from each lot shall be as under <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Lot size</th> <th>Sample size</th> </tr> </thead> <tbody> <tr> <td>20-50</td> <td>5</td> </tr> <tr> <td>51-100</td> <td>8</td> </tr> <tr> <td>101-150</td> <td>13</td> </tr> <tr> <td>151-300</td> <td>20</td> </tr> <tr> <td>301-500</td> <td>32</td> </tr> <tr> <td>501-1000</td> <td>50</td> </tr> <tr> <td>1001 and above</td> <td>80</td> </tr> </tbody> </table>	Lot size	Sample size	20-50	5	51-100	8	101-150	13	151-300	20	301-500	32	501-1000	50	1001 and above	80	180	
Lot size	Sample size																					
20-50	5																					
51-100	8																					
101-150	13																					
151-300	20																					
301-500	32																					
501-1000	50																					
1001 and above	80																					
10	Wood particle board (Medium density)	(a) Density	IS 2380 1977 (Part-III)	Three test specimens from each sample (size 150x75 mm)	60	Sample shall be as per IS 3087- 1983 with moisture meter																
		(b) Moisture content	-DO-	-DO-	60																	
		(c) Water absorption	-DO- Part- 16	-DO- (Size 300x300 mm)	60																	
		(d) Swelling due to surface absorption	-DO- Part- 17	-DO- (Size 125x100 mm)	60																	
		(e) Swelling in water	-DO-	-DO- (Size 200x100 mm)	60																	

Contd...

SPECIAL CONDITIONS(Contd...)**ANNEXURE-II****MATERIALS AND THEIR TESTS ZONAL LAB**

Ser No	Material	Test	Method of testing	Frequency of tests	Rate (in Rs)	Remarks
1	2	3	4	5	6	7
1	Coarse aggregate	Specific gravity	IS- 2386 (Part-II)	One test for each source of supply	330	
		Organic impurities			275	
2	Fine aggregate	Specific gravity	IS- 2386 (Part-III)	One test for each source of supply	330	
		Organic impurities			275	
3	Cement	(a) Setting time	IS 4031 – 63 Reaffirms 1988	One for each consignment or as and when required	500	
		(b) Compressive strength	--DO--	--DO--	550	
		(c) Soundness	IS 4031-63 Reaffirms 1988	One for each consignment as and when required	550	
		(d) Fineness	--DO--	--DO--	275	
4	(i) PCC block for walling (Hollow)	(a) Water absorption	IS 2186-1983 (Appx B)	3 block out of 20	330	Sample 20 blocks from consignment of every 5000 blocks or part thereof. These blocks to be checked for dimensions & weight
		(b) Density	IS 2185-1983	3 block out of 20	330	Sampling 20 blocks from consignment of 5000 blocks or part thereof. These blocks to be checked for dimensions & weight
	(ii) PCC solid block for wall	(a) Density	IS 2185-1983	3 block out of 20	330	
		(b) Water absorption	IS 2185-1983	3 block out of 20	330	
5	Cement flooring tiles/terrazzo tiles	(a) Water absorption	IS 1237 1980 (Appx E)	6 tiles out of 18	330	Sample 18 tiles from each source of supply select at random
		(b) Wet transverse strength	IS1237-1980 (Appx E)	6 tiles out of 18	660	
6	Brunt clay roofing (Hand made) as per IS 2690 (Part-II) break line length 150 to 250 mm width 100 to 200 mm thickness 35 to 50 mm	Water absorption	IS 349 5 (Part-II)	6 tiles out of 12	216	Sample 12 tiles from each source of supply selected at random

Contd...

SPECIAL CONDITIONS(Contd...)**ANNEXURE-II****MATERIALS AND THEIR TESTS ZONAL LAB**

Ser No	Material	Test	Method of testing	Frequency of tests	Rate (in Rs)	Remarks
1	2	3	4	5	6	7
7	Mangalore roofing tiles pattern	(a) Water absorption	IS 654 (Appx A)	6 tiles out of 32	180	Samples 32 tiles from each consignment of 3000 tiles or part thereof. These tiles shall be checked for dimension and weight.
		(b) Breaking load	IS 654 (Appx A)	6 tiles out of 32	120	
8	Timber	Specific gravity and weight	IS 1960 1708-	Maximum three sample from a lot of 4 Cum or 250 pieces of seasoned timber	120	
9	Water for construction purpose	(a) Test for acidity	IS 3025 & 456	Once at stage of approval of source of water	500	Also refer clause 43 of IS- 456 and its subsequent sub clause regarding Suitability of water
		(b) Test for alkalinity	IS 456 & 3015	Once at the stage of approval of source of Water	500	
		(c) Test for TDS content			500	
10	Wood particle board (Medium density) IS 3097-1085	(a) Modulus of rupture	IS 2380 of 1977 (Part-4)	Three test specimens as per IS-2380-1977	90	Sample shall be as per IS 3087-83 class with moisture meter
		(b) Moisture content	--DO-- (Part-III)	Three test specimen from each sample (size150x75mm)	60	---- DO---
11	Reinforcement steel	(a) Physical test upto 16 mm dia (Normal mass, tensile longation, bend & rebend)			2500	
		(b) More than 16 mm dia			2750	

SPECIAL CONDITIONS(Contd..)**ANNEXURE-III****MATERIALS AND THEIR TESTS NATIONAL TEST
HOUSE/SEMT WING/ENGG COLLEGE**

Ser No	Material	Test	Method of testing	Frequency of tests	Rate (in Rs)	Remarks
1	2	3	4	5	6	7
1	Coarse aggregate	Organic impurities	IS- 2386 (Part-II)	One test for each source of supply	120	
2	Fine aggregate	Test organic impurities for	IS- 2386 (Part-II)	One test for each source of supply	180	
3	Cement flooring tiles/terrazzo tiles	Resistance to wear	IS 1237-1980 (Appx F)	6 tiles out of 18	1000	Sample 18 tiles from each source of material selected at random
4	Water construction purpose for	Test for TDS content	IS 456 3025 &	Once at the stage of approval of source of water	300	Also refer clause 43 of IS-456 and sub Clause regarding suitability of water
5	Plywood (IS 303-1989)	Moisture content	IS 1734-1983 (Part-6)	Six test pieces cut from each of the boards selected as per 1 shall be subject to tests	240	Sampling shall be as per IS 7533 (1975) tables
6	Wood particle board (medium density) IS 3097-1985	Screw withdrawal strength	IS 2309 (Part-14)	Three specimens IS 2380 as test per	120	
7	Timber panelled and glazed door wooden shutters (including factory made shutters)	Strength test			180	
		(i) Slamming	IS 1303-1990	From each lot 5% of the factory made shutters shall be tested for strength tests		
		(ii) Impact indentation	-DO-	-DO-		
		(iii) Shock resistance	-DO-	-DO-		
		(iv) Edge loading	-DO-	-DO-		

Legend

- A : Site Lab.
 B : MES Lab/Zonal Lab/Command Test Lab.
 C : NABL Accredited Lab.

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****A. CONTROL TESTS AND THEIR MINIMUM FREQUENCY FOR SUB-BASES AND BASES (EXCLUDING BITUMEN BOUND BASES)**

SI No	Type of Construction	Test	Frequency of tests (Minimum)
1	Granular	(i) Gradation (ii) Atterberg limits (iii) Moisture content prior to compaction (iv) Density of compacted layer (v) Deleterious constituents (vi) CBR	One test per 400 cu.m One test per 400 cu.m One test per 400 cu.m One test per 1000 sq.m As required As required
2	Lime/cement stabilised soil sub-base	(i) Quality of lime/cement (ii) Lime/Cement content (iii) Degree of pulverization (iv) CBR or Unconfined Compressive Strength test on a set of 3 specimens (v) Moisture content prior to compaction (vi) Density of compacted layer (vii) Deleterious constituents	One test for each consignment subject to a minimum of one test per 5 tonnes Regularly, through procedural checks Periodically as considered necessary As required One set of two tests per 500 sq.m One set of two tests per 500 sq.m As required
3	Water bound macadam	(i) Aggregate impact value (ii) Grading of aggregate (iii) Combined Flakiness and Elongation Indices (iv) Atterberg limits of binding material (v) Atterberg limits of screenings	One test per 1000 cu.m of aggregate One test per 250cu.m One test per 500 cu.m of aggregate One test per 50 cu.m of binding material One test per 100 cu.m of aggregate
4	Wet Mix Macadam	(i) Aggregate impact value (ii) Grading of aggregate (iii) Combined Flakiness and Elongation Indices (iv) Atterberg limits of portion of aggregate passing 425 Micron sieve. (v) Density of compacted layer	One test per 1000 cu.m of aggregate One test per 200cu.m One test per 500 cu.m of aggregate One test per 200 cu.m of binding material One set of three tests per 1000 sq.m

Contd...

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****B. CONTROL TESTS FOR BITUMINOUS WORKS AND THEIR MINIMUM FREQUENCY**

Sl No	Type of Construction	Test	Frequency of tests (Minimum)
1	Prime Coat/ Tack Coat/ Fog Spray	(i) Quality of binder (ii) Binder temperature for application (iii) Rate of spread of Binder	Number of samples per lot and tests as per IS:73, IS:217 and IS:8887 as applicable At regular close intervals Three tests per day
2	Seal Coat/ Surface Dressing	(i) Quality of Binder (ii) Aggregate Impact Value or Los Angeles Abrasion Value (iii) Combined flakiness and elongation indices (iv) Stripping value of aggregates (Immersion Tray Test) (v) Water absorption of aggregate (vi) Water sensitivity of mix (vii) Grading of aggregate (viii) Soundness (Magnesium Sulphate/Sodium Sulphate) (ix) Polished stone value (not applicable for SAM/SAMI) (x) Temperature of binder in boiler, aggregate in dryer and mix at the time of laying and compaction (xi) Rate of spread of materials (xii) Percentage of fractured faces (When gravel is used)	Same as mentioned under Serial No. 1 One test per 200 cu.m of each source and whenever there is change in the quality of aggregate One test per 100 cu.m of aggregate for each source and whenever there is change in the quality of aggregate One test of each source and whenever there is change in the quality of aggregate -do- -do- Two tests per day One test of each source and whenever there is change in the quality of aggregate -do- At regular intervals Same as mentioned under Serial No. 1 One test per 100 cu.m of aggregate
3	Open-graded premix surfacing/ close-graded premix surfacing	(i) Quality of binder (ii) Aggregate Impact Value or Los Angeles Abrasion Value (iii) Combined Flakiness and Elongation Indices (iv) Stripping value	Same as mentioned under serial No. 1 Same as mentioned under serial No. 2 Same as mentioned under serial No. 2

Contd...

		(v) Water absorption of aggregates	Same as mentioned under serial
		(vi) Water sensitivity of mix	No. 2
		(vii) Grading of aggregates	Same as mentioned under serial
		(viii) Soundness (Magnesium Sulphate and Sodium Sulphate)	No. 2
		(ix) Polished stone value	Same as mentioned under serial
		(x) Temperature of binder at applicable	No. 2
		(xi) Binder content	Same as mentioned under serial
		(xii) Percentage of fractured faces	No. 2
			Same as mentioned under serial
			No. 2
			At regular interval
			Two tests per day per plant
			Same as mentioned under serial
			No. 2

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****B. CONTROL TESTS FOR BITUMINOUS WORKS AND THEIR MINIMUM FREQUENCY**

Sl No	Type of Construction	Test	Frequency of tests (Minimum)
4	Bituminous macadam	(i) Quality of binder	Same as mentioned under serial No. 1
		(ii) Aggregate Impact Value or Los Angeles Abrasion Value	Same as mentioned under serial No. 2
		(iii) Combined Flakiness and Elongation Indices	One test per 350 cu.m for each source
		(iv) Stripping value	Same as mentioned under serial No. 2
		(v) Water absorption of aggregates	Same as mentioned under serial No. 2
		(vi) Water sensitivity of mix	Same as mentioned under serial No. 2
		(vii) Grading of aggregates	Same as mentioned under serial No. 2
		(viii) Soundness (Magnesium Sulphate and Sodium Sulphate)	Same as mentioned under serial No. 2
		(ix) Percentage of fractured faces	Same as mentioned under serial No. 2
		(x) Binder content	Same as mentioned under serial No. 2
		(xi) Control of temperature of binder and aggregate for mix and of the mix at the time of laying and rolling	Same as mentioned under serial No. 2
		(xii) Density of Comp layer	One test per 700 sq.m area
		(xiii) Rate of spread of Mixed Material	At regular intervals
5	Dense bituminous macadam/ bituminous concrete	(i) Quality of binder	Number of samples per lot and tests as per IS:73 or IRC:SP:53, IS:15462
		(ii) Aggregate impact value or los Angeles abrasion value	One test per 350 cu.m of aggregate for each source and whenever there is change in the quality of aggregate
		(iii) Flakiness and elongation indices	One test per 350 cu.m of aggregate for each source and

Contd...

	(iv) Soundness test (Sodium Magnesium Sulphate test)	whenever there is change in the quality of aggregate
	(v) Water absorption of aggregates	One test for each source and whenever there is change in the quality of aggregate
	(vi) Sand equivalent test	One test of each source and whenever there is change in the quality of aggregate
	(vii) Plasticity index	One test of each source and whenever there is change in the quality of aggregate
	(viii) Polished stone value	One test of each source and whenever there is change in the quality of aggregate
	(ix) Percentage of fractured face	One test of each source and whenever there is change in the quality of aggregate
	(x) Mix grading	One test per 350 cu.mof aggregate when crushed gravel is used
		One set for individual constituent and mixed aggregate from dryer for each 400 tonnes of mix subject to minimum of two tests per day per plant

SPECIAL CONDITIONS(Contd..)**ANNEXURE-IV****B. CONTROL TESTS FOR BITUMINOUS WORKS AND THEIR MINIMUM FREQUENCY**

SI No	Type of Construction	Test	Frequency of tests (Minimum)
5	Dense bituminous macadam/ bituminous concrete	(xi) Stability and voids analysis of mix including theoretical maximum specific gravity of loose mix (xii) Moisture susceptibility of mix (AASHTO T283) (xiii) Temperature of binder in boiler, aggregate in dryer and mix at the time of laying and compaction (xiv) Binder content (xv) Rate of spread of mix material (xvi) Density of compacted layer	Three tests for stability, flow value, density and void contents for each 400 tonnes of mix subject to minimum if two tests per day per plant One test for each mix type whenever there is change in the quality of source of coarse or fine aggregate At regular intervals One set for each 400 tonnes of mix subject to minimum of two tests per day per plant After every 5 th truck load One test per 700 sq.m Area
6	Sand Asphalt Base course	(i) Quality of binder (ii) Aggregate Impact Value or Los Angeles Abrasion Value (iii) Sand equivalent test (iv) Plasticity index (v) Mix grading & binder content (vi) Stability of mix (vii) Control of temperature of binder in boiler, aggregate in the dryer and mix at the time of laying and rolling (viii) Thickness of layer (ix) Density of Compacted layer	Same as mentioned under serial No. 2 Same as mentioned under serial No. 2 Same as mentioned under serial No. 2 Same as mentioned under serial No. 5 Same as mentioned under serial No. 2 and 3 Same as mentioned under serial No. 5 Same as mentioned under serial No. 2 Same as mentioned under serial No. 5 Same as mentioned under serial No. 5
7	Slurry seal and micro surfacing	(i) Quality of Aggregate Sand Equivalent Value Water Absorption Soundness Test (Sodium/ Magnesium Sulphate Test)	One per source /site One per lot of 20 t as per IS :

Contd...

	(ii) Quality of emulsion	8887
	(iii) Aggregate moisture	Two per day
	(iv) Aggregate gradation	Two per at site
	(v) Binder content	Two per lane per Km
	(vi) Calibration of machine	Once per project
	(vii) Quantity of slurry (By weigh of aggregate)	Daily (Travel time of Machine)

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****B. CONTROL TESTS FOR BITUMINOUS WORKS AND THEIR MINIMUM FREQUENCY**

Sl No	Type of Construction	Test	Frequency of tests (Minimum)
8	Stone matrix asphalt	(i) Quality of binder	Number of samples per lot and tests as per IS:73 or IRC:SP:53, IS:15462
		(ii) Aggregate Impact Value/ Los Angeles Abrasion Value	One test per 100 cu.m of aggregate
		(iii) Flakiness and Elongation Indices	One test per 100 cu.m of aggregate
		(iv) Soundness Test (Sodium and Magnesium Sulphate Test)	One test for each method for each source and whenever there is change in the quality of aggregate
		(v) Water absorption of aggregates	One test for each source and whenever there is change in the quality of aggregate
		(vi) Sand equivalent test	One test for each source
		(vii) Plasticity index	One test for each source
		(viii) Polished stone value	One test for each source
		(ix) Percentage of fractured faces	One test for each source
		(x) Mix grading	One test per 50 cu.m of aggregate when crushed gravel is used
		(xi) Air voids and VMA analysis of mix including theoretical maximum specific gravity of loose mix	One set for individual constituent and mixed aggregate from dryer for each 400 tonnes of mix subject to minimum of two tests per day per plant
		(xii) Moisture Susceptibility of mix (AASHTO T 283)	Three tests per day
		(xiii) Temperature of binder in boiler, aggregate in the dryer and mix at the time of laying and compaction	One test for each mix type whenever there is change in the quality or source of coarse or fine aggregate
		(xiv) Binder content	At regular intervals
		(xv) Rate of spread of mix material	
		(xvi) Density of compacted layer	One set for each 400 tonnes of mix subject to minimum of two tests per day per plant After every 5 th truck load
			One test per 250 sq.m Area

Contd...

9	Mastic asphalt	(i) Quality of binder (ii) Aggregate impact value or los angeles abrasion value (iii) Combined flakiness and elongation indices (iv) Stripping value (v) Water sensitivity of mix (vi) Grading of aggregates (vii) Water absorption of aggregates	Same as mentioned under serial No. 5 Same as mentioned under serial No. 5 Same as mentioned under serial No. 5 Same as mentioned under serial No. 2 Same as mentioned under serial No. 5 Two tests per day per plant on the individual constituent and mixed aggregates from the dryer Same as mentioned under serial No. 5
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SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****B. CONTROL TESTS FOR BITUMINOUS WORKS AND THEIR MINIMUM FREQUENCY**

9	Mastic asphalt	(viii) Soundness (magnesium sulphate/sodium sulphate) (ix) Percentage of fractured faces (x) Binder content and aggregate grading (xi) Control of temperature of binder and aggregate for mixing and of the mix at the time of laying and rolling (xii) Rate of Spread of Mixed Material (xiii) Hardness number	Same as mentioned under serial No. 5 Same as mentioned under serial No. 5 Same as mentioned under serial No. 3 At regular close intervals Regular control through check of layer thickness Minimum two tests per day
10	Recycled material grading of aggregate		Two tests per day
11	Cold mixes		All tests as per S. No. 5
12	Quality of modified binder		Number of samples per lot and tests as per IS : 15462
13	Geotextiles		The requirements of section 700 shall apply

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****C. FREQUENCY OF QUALITY CONTROL TESTS FOR PAVMENT CONCRETE**

1.	Levels, alignment and texture		
	(a) Level tolerance		Clause 902.3 of MoRTH specification for roads and bridges (Fifth Revision)
	(b) Width of pavement and position of paving edges		Clause 902.2 of MoRTH specification for roads and bridges (Fifth Revision)
	(c) Pavement thickness		Clause 902.3 and 903.5.2.4 of MoRTH specification for roads and bridges (Fifth Revision)
	(d) Alignment of joints, widths, depth of dowel grooves		To be checked @ one joint per 400m length or a day's work.
	(e) Surface regularity both transversely and longitudinally		Once a day or one day's work without disturbing the curing
	(f) Alignment of dowel bars and their accuracy/ tie bars		To be checked in trail length as per clause 602.6.5.2 of MoRTH specifications for roads and bridges (fifth revision) and once on every 2 km
	(g) Texture depth		Clause 602.12 of MoRTH specifications for roads and bridges (fifth revision)

SPECIAL CONDITIONS(Contd...)**ANNEXURE-IV****C. FREQUENCY OF QUALITY CONTROL TESTS FOR PAVMENT CONCRETE**

Sl No	Material	Test	IS Code	Frequency of tests (Minimum)
2.	Quality of materials and concrete shall be as under			
	(a) Cement Physical and Chemical Tests		IS:269 IS:455 IS:148 9 IS:811 2 IS:122 69	Once for each source of supply and occasionally when called for in case of contractor also will submit daily test data on cement released by the manufacture.
	(b) Coarse and Fine Aggregate	(i) Gradation	IS : 2386	One test for every day's work of each fraction of coarse aggregate and fine aggregate, initially; (may be relaxed later at the discretion of the engineer)
		(ii) Deleterious Constituents	IS:2386 (Pt. 3)	--do--
		(iii) Water absorption	IS:2386 (Pt. 3)	Regularly as required subject to a minimum of one test a day for coarse aggregate and two tests a day for fine aggregate. This data shall be used for correcting the water demand of the mix on a daily basis.
	(c) coarse aggregate	(i) Los Angeles abrasion value or Aggregate Impact Test	IS:2386 (Pt. 4)	Once for each source of supply and subsequently on monthly basis.
		(ii) Soundness	IS:2386 (Pt. 5)	Before approving the aggregates and every month subsequently.
		(iii) Alkali Aggregate Reactivity	IS:2386 (Pt. 7) IS:456	---do----
	(d) water	Chemical Tests	IS : 2386	Once for approval of source of supply subsequently only in case of doubt.
	(e) concrete	(i) Strength of Concrete	IS : 516	2 cubes and 2 beams per 150 Cu.m or part thereof (one for 7 day and other for 28 day strength) or minimum 6 cubes and 6 beams per day's work whichever is more.
		(ii) Core Strength on hardened Concrete	IS:516	As per the requirement of the Engineer, only in case of doubt.

Contd...

		(iii) Workability of Fresh Concrete-Slump Test	IS:1199	One test per each dumper load at both Batching plant site and paving site initially when work starts. Subsequently sampling may be done from alternate dumper.
		(iv) Thickness Determination		From the level data of concrete pavement surface and sub-base at grid points of 5/6.25 m x 305 m
		(v) Thickness Measurement for Trail Length		3 cores per trial length
		(vi) Verification of level of string line in the case of slip form paving and steel forms in the case of fixed form paving		String line or steel forms shall be checked for level at an interval of 5.0 m or 6.25 m. the level tolerance allowed shall be ± 2 m. these shall be got approved 1-2 hours before the commencement of the concreting activity.

Note:- Daily, weekly, monthly reports on test results shall be prepared indicating the location of sampling and testing, deviation from the specified values for materials and works and remedial action taken in respect of removal of defective work shall be prepared by the Contractor. The test record shall be certified by the Engineer in charge that these tests were done in his presence and testing has carried as per prescribed methodology.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATIONS (contd...)**1****GENERAL**

- (a) Work under this contract shall be carried out in accordance with schedule 'A' particular specifications, general specifications and other provisions in MES standard schedule of Rate Part I (2009) and Part II (2010) including amendments/errata as applicable
- (b) Term General Specifications referred to herein before and as well as referred to IAFW-2249 (General Conditions of Contracts) shall mean the specifications contained in the MES Standard Schedule of Rates.
- (c) General Rules, specifications, special conditions and all preambles in the MES Schedule shall deemed to be applicable to the work under this contract unless stated otherwise in these documents in which case the provisions in these documents shall take precedence over the aforesaid provision in the MES Schedule
- (d) The rates quoted by the tenderer shall be deemed to include for any minor details of construction which are obviously and fairly intended, which may not have been included in these documents but which are essential for the execution and entire completion of work. The decision of the Accepting Officer as to whether any MINOR details of work and/ or constructions is obviously and fairly intended to be included in the contract or not shall be final conclusive and binding
- (e) Particular specification given hereinafter are brief and are only to particularizes amend and emphasize the specification of MES standard Schedule of Rates which are not repeated. In case no specification exists, specification given in MES standard Schedule of Rates is adopted.

2.**SCOPE OF WORK**

- (a) The tender (contract when accepted) caters for all the work described in schedule 'A' as specified hereinafter and in General Specifications of MES Standard Schedule of Rates and all as directed by Engineer-in-Charge
- (b) The exact location of item of schedule 'A' shall be shown by the Engineer-in-Charge at site before commencement of work.

3.**SAMPLES AND MATERIAL**

- (a) In case specification of any material needed for incorporation in work is not contained in any of the contract documents, the specification of such material proposed to be incorporated in work shall be got approved in writing from the GE before their incorporation in the work.
- (b) The contractor at his own discretion if intends to provide material items conforming to IS specifications and bearing IS certification mark from any other manufacturers other than those listed in the tender, if any, such material shall be allowed to be incorporated with prior approval of GE and without any price adjustment, However, this option shall be applicable only when none of the manufacturer listed in the tender emboss IS certification mark on materials/articles.
- (c) The contractor and the executives will ensure that the materials incorporated in work are identical with the approved samples.
- (d) Local materials such as aggregate, sand, etc. shall be as specified hereinafter. The samples of such materials shall be got approved in writing from GE before the materials are brought at site in bulk.
- (e) Letters conveying approval of samples/materials by GE will interlia mention source of supply/ name of manufacturer/trade name/containing specifications of particular materials

PARTICULAR SPECIFICATIONS (contd...)**4. EXCAVATION AND EARTH WORK****4.1 EXCAVATION**

“Excavation work shall be carried out as mentioned in schedule “A”/BOQ or SSR part-I & part-II.”

4.2 REMOVAL OF MATERIAL

All the unserviceable materials obtained from demolition/dismantling/taking down shall be removed to low lying area and or as directed by Engineer-in-Charge. The serviceable materials obtained from dismantling/ demolition/taking down shall be removed to the MES store and rates quoted by contractor shall be deemed to include for such removals and nothing extra shall be payable.

4.3 DEMOLITION

Contractor shall ensure that demolition/dismantling shall be done carefully without damaging the stone patties/adjoining walls or to the building. The work shall be executed as per directions of Engineer-in-Charge

4.4 DISMANTLING AND MAKING GOOD

(a) All dismantling work (except for which separate item is given in schedule 'A') required for execution of work mentioned in Schedule 'A' shall be deemed to be included in the rate quoted. The contractor shall make good all disturbed surfaces to match with the existing specification and to the entire satisfaction of Engineer-in-Charge.

(b) Rates quoted for dismantling taking down/fixing in repair shall include cost of making good, sorting of materials and their removal as directed by Engineer-in-Charge.

(c) The rates quoted for dismantling/taking down/fixing in repair shall include for removal of all unserviceable materials from site to outside MD land. No extra payment for removal shall be made.

(d) The contractor shall take all safety measures for protection of existing floor, plastering, joinery etc during demolition of items of contracts, RCC etc. The contractor quoted rate shall include for the same.

5. MASONRY WORK**5.1 STONE MASONRY**

(a) Stone for masonry shall be from the sources as indicated in Appendix 'A' and shall conform to the sample kept in the Office of the GE.

(b) Sand and for mortar shall be from the source as mentioned in Appendix 'A' and as approved by the GE and shall conform or superior to the sample kept in the Office of the GE

(c) squared rubble, Jodhpur type shall be random rubble, uncoursed well bonded bedded and solidly hearted all as described in clause 6.10.1 of MES SSR Part I, built in cement mortar (1:6)..

(d) Leave or form holes as and where required or as directed by the Engineer-in-Charge shall be made good as per Clause 14.14.8 of MES SSR Part-I.

(e) Chases and recess in walls where required or where directed by the Engineer-in-Charge shall as far as possible be provided during construction to avoid cutting afterwards

(f) The joints of stone masonry shall be raked out and cleaned as the work proceeds as specified in Clause 6.9.3 and 6.9.4 of MES SSR Pt-I

5.2 REPAIRS TO PATCHES

Repairs to patches shall be done as described in Schedule 'A'. The measurement of repaired potholes shall be checked hundred percent by Engineer-in-Charge and at least twenty percent by GE.

Workmanship shall be in accordance with relevant clause and Para of MES schedule part-I.

PARTICULAR SPECIFICATIONS (contd...)**5.3 THERMO PLASTIC ROAD MARKING PAINT (TRMP)**

- (a) Thermo plastic road making paint shall conform to the requirement of BS-3262-1989 and shall be applied as per IRC pattern.
- (b) The material should be melted in heater fitted with a mechanical stirrer to give a smooth consistency to the material and to avoid over heating.
- (c) The molten mass should be used as expeditiously as possible.
- (d) The molten material should not be kept on heating for more than 4 hours.
- (e) All surfaces to be marked shall be thoroughly cleaned of all dust, dirt, grease, oil and all other foreign matters before application of TRMP.

Make: CMS Bombay/Shivalik Prime-Chandigarh/Ritactor-Meerut/SN Industries-Delhi

6. WATER BOUND MACADAM

- 6.1 Stone aggregate, screenings and binding materials for water bound macadam shall be as specified in clause 20-A.3 of MES schedule and conform to the samples kept in GE's office and approved by the GE before incorporation in the work. Screenings shall be of Grade 'A' as specified in clause 20-1.3.2 of MES Schedule. Water bound macadam shall consist of thickness as described in respective item of Sch 'A' (compacted thickness). Spreading, rolling, applying screening and watering shall be as specified in clause 20-1.21.1 to 20-1.21.13 of MES Schedule. The rolling shall be done with power roller after the specification of screenings and wet rolling as described in MES Schedule.

7. The use of mechanical paver is mandatory.**8. CEMENT**

Refer Clause herein after for cement.

8.1 MIXING AND CONSOLIDATION OF CEMENT CONCRETE

- (a) All cement concrete shall be mixed in an approved machine mixer where however small quantity of cement concrete are involved hand mixing may be adopted with the approval of the Engineer-in-Charge. Mixing shall be continued until there is a uniform in colour and consistency.
- (b) Mix of concrete shall be as specified in respective item of Sch 'A'.
- (c) Cement concrete in flooring shall be consolidated by tamping and punning.

8.2 WATER

Quality of water to be used for mixing and curing of concrete work shall conform to the requirement of clause No. 4.3 of IS-456-1978.

9.0 BLANK**10.0 BINDER**

Binder for tack coat shall be paving bitumen VG-10 and for premix carpet and sand seal coat shall be paving bitumen VG-40 penetration. Bitumen shall be procured by the contractor from his own arrangement and shall only be brought directly from the following:-

- (i) Indian oil corporation
- (ii) Hindustan Petroleum
- (iii) Bharat Petroleum.

The bitumen shall be brought by the contractor in manufacturers original sealed container at site'.

PARTICULAR SPECIFICATIONS (contd...)**10.1 PREPARATION OF SURFACE AND APPLICATIONS OF TACK COAT**

The existing surface shall be cleaned by removing dust, caked earth other foreign matters with wire brushes sweeping with brooms & finally dusting with sacks as described in Sch 'A'. Any depressions or pot holes shall be properly made up and thoroughly compacted. The binder shall be heated to appropriate temperature and applied uniformly over the prepared surface by mechanical sprayers.

10.2 SEMI-DENSE ASPHALTIC CONCRETE/ ASPHALTIC CONCRETE**10.3 AGGREGATE**

- (a) Aggregate shall conform to both IS-383 of 1970 and IRC 29 of 1968 (Amended/revised up to date). Aggregates shall be non-porous hard strong, durable clean and free from various impurities and adherent, coating and shall not contain any deleterious materials exceeding the limits specified in the above refereed IS/IRC. When required by Engineer-in-Charge the contractor shall at his own expense, arrange to carry out any test laid down in both IS-383 of 1970 & IRC 29 of 1968 to verify that the aggregates comply with the requirement of the IS/IRC. The tests will be carried out in any laboratory approved by the GE.
- (b) Coarse aggregate shall consist of crushed/broken stone aggregate.
- (c) Sample of the aggregates proposed to be used shall be approved by the GE prior to bulk delivery of the same at site of work. Field tests for determining the contents of silt, loam, clay etc for fine aggregate shall be carried out by Engineer-in-Charge from time to time to ensure that materials brought to site are in conformity with the samples approved by the GE.
- (d) Coarse aggregate shall satisfy the following requirements and all other tests/properties specified in IS-383 of 1970.
 - (i) Crushing value when tested as per IS-2386 (Part-IV) shall not exceed 30%
 - (ii) Impact value when tested as per IS-2386 (Part-IV) shall not exceed 30%
 - (iii) Abrasion value when tested in accordance with IS-2386 (Part-IV) using Loss Angles machine shall not exceed 25%
 - (iv) Flakiness index when tested in accordance with IS-2386 Part-I shall not exceed 25%
 - (v) Stripping value shall not exceed more than 25%

10.4 HANDLING OF AGGREGATES

- (a) Stock piles shall be made immediately on supply of aggregate at the site of work. Aggregates shall be stacked separately according to the nominal sizes, for fine aggregates separate stacks shall be made.
- (b) Before batching the aggregates shall be stack piled for at least 24 hours to allow for drainage of water, if any, contractor shall make adequate provision for stock piling aggregates sufficient to meet the needs for the work taking into account the availability of supplies and rate of delivery etc and shall include in his tender for necessary double handling and transportation of materials from stock piles to mixing plant etc.

PARTICULAR SPECIFICATIONS (contd...)**10.5. PREPARATION OF SURFACES AND APPLICATIONS OF TACK COAT**

The surfaces shall be dry, cleaned off all dust and foreign matter with wire brush as described in schedule 'A' all depressions shall be properly made good and thoroughly compacted. The binder shall be heated to appropriate temperature and applied uniformly over the prepared surface by mechanical sprayer. Bitumen VG-10 shall be used for tack coat.

10.6. MATERIALS FOR ASPHALTIC SEMI DENSE CONCRETE

(a) **Bitumen:** Bitumen shall be VG-40.

(b) **Coarse Aggregate:** Coarse aggregate for asphaltic concrete shall be graded aggregate obtained from approved sources and conforming to IS-383. Coarse aggregate shall be crushed stone aggregate retained on 2.36mm sieve and shall consist of angular fragments, clean tough and durable rock, free from disintegrated pieces or organic or deleterious materials and adherent coating. The aggregate shall satisfy the following physical requirement:-

Srl No	Test	Semi dense asphaltic concrete Max percentage
(i)	Aggregate impact value when tested as per IS-2386 Pt-V	27
(ii)	Crushing value	30
(iii)	Flakiness index when tested in accordance with IS-2386 Pt-I	15
(iv)	Stripping test as per IRC-27	25
(v)	<u>SOUNDNESS TEST</u>	
	(a) Loss with sodium sulphate-6 cycles	12
	(b) Loss with magnesium sulphate -5 cycles	18
(vi)	Maximum water absorption	1
(vii)	Loss Angles abrasion value	35

***NOTE :-** In case stripping test value of aggregate is more than 25% the contractor shall use Antistripping agent to bring down the stripping value upto 25% as directed by GE, Anti-stripping agent shall be of make as approve by GE, Nothing extra shall be paid to the contractor on this account.

(c) Fine aggregate shall be the fraction passing 2.36mm sieve and retained on 75 micron sieve consisting of crushed stone screenings from approved stone of naturally accruing coarse sand. It shall be clean, hard durable uncoated and dry free from injurious soft or flaky pieces and organic deleterious substance.

(d) Filler for asphaltic concrete shall be cement/lime stone dust the whole of which passes 710 micron sieve at least 90% passing 180 micron sieve, and not less than 70% passing 90 micron sieve care shall be taken that dust thrown by plants through dust collector is not used as a filler.

PARTICULAR SPECIFICATIONS (contd...)**10.7. DESIGN CRITERIA FOR BITUMINOUS PREMIX SEMI DENSE ASPHALTIC**

(a) The following criteria for mix design shall be adhered to during execution:-

Srl No	Properties	Semi dense asphaltic concrete
(i)	Marshal stability with 75 blows on each of test (samples) at 60°C minimum	1050 (Min)
(ii)	Marshal Flow value at 60°C, mm	2-4
(iii)	Marshal quotation, Kg/mm	250-500
(iv)	Voids in compacted mix 3%	3-5
(v)	Requirement of retained stability after 24 hours in water at 6°C minimum	90
(vi)	Type of binder	VG-40
(vii)	Binder content percent by weight of total mix	5.5%

In order to satisfy the above mentioned requirements, the mix shall consist of coarse aggregate fine aggregate and filler in suitable proportion and with sufficient binder content.

- (b) **GRADATION OF MATERIAL** True and representative samples of the aggregate likely and proposed to be used in the work shall be tested in the laboratory and the proper blend of the aggregate shall be worked out so that the gradation of the final composition will satisfy the set as specified in clause 20.B.2.5.4 of SSR Part-I .
- (c) The grading of aggregate to be used for semi dense asphaltic concrete shall be as per approved mix design from the laboratory.
- (d) The exact binder (bitumen VG-40) and filler content required shall be arrived at as per Marshal Procedure for the aggregated gradation worked out in the laboratory. The binder content as mentioned in Sch 'A' shall be deemed to be included in unit rates quoted.
- (e) **JOB MIX FORMULA:** While the laboratory mix design give different proportion of aggregate combination in terms of individual sieve sizes, for actual execution of the work, blending of two three or more sizes of aggregate (each size having within a range of individual sieve sizes) would be necessary. This blending ratio shall be contained on weight basis giving the percent weight and /or volume of one or more of the coarse, fine aggregate and filler for action to give ultimate aggregate gradation. This aggregate combination together with the corresponding optimum binder content as determined in the laboratory shall constitute the job mix formula for adoption during execution of the work.

The job mix formula shall be obtained by the contractor through the GE from CRR I New Delhi/Any Govt Engineering College or any other recognized institution approved by the Garrison Engineer. For this purpose the various materials as would be incorporated in the work shall be supplied by the contractor.

All expenses in this regard shall be borne by the contractor.

This shall not however absolve the contractor of his responsibility to provide the mix to satisfy the various requirements laid down.

PARTICULAR SPECIFICATIONS (contd...)**Note:**

- (i) If Paving bitumen content above 5.5% if required on account of design mix shall not be paid and shall be deemed to be included in unit quoted rate.
- (ii) Paving bitumen content less than 5.5% shall be adjusted as per purchase voucher rate of bitumen.

11. MIXING, LAYING AND COMPACTION OF SEMI DENSE ASPHALTIC CONCRETE:-**(a) PREPARATION OF THE MIX:**

It is imperative that the Asphaltic mix are made by using hot mix plants of adequate capacity to yield a mix of proper and uniform quality. The plant may be either a batch type or a continuous use, having a coordinated set of essential units such as dryer for heating the aggregate, arrangements for grading and batching by weight or volume the required quantities of aggregate. Binder heating and control unit for metering out the correct quantity of heated binder together with a paddle mixer for intimate mixing of the binder by volume only and the mix design worked out and proposed to be adopted by the contractor is on weight basis, necessary conversion of the ingredients shall be done by the contractor to arrive at the corresponding volumetric mix design and approval of the GE obtained. File feeder for incorporation of the correct quantity of filler is also a necessary auxiliary. The hot mix plants shall be fitted with temperature measuring device both for aggregate and bitumen. The variation from the specified temperature shall not be more than 10 degree Centigrade on the lower side only.

- (b) Spreading of the mix. The mix shall be carried from the mixer by tipper trucks to the place(s) of deposit and spreading done by means of self propelled mechanical paver with suitable screed capable of spreading, tamping and finishing the mix true to grade line and cross section.

The work shall not be allowed to progress if the spreading is done manually due to failure of the mechanical paver.

The mix is to be spread in such a manner, that after consolidation the required thickness of carpet is uniformly laid to the required levels and camber etc.

(c) CONSOLIDATION

- (aa) Immediately after spreading, the mix shall be rolled with 8 to 12 tonne power roller, At the time of rolling temperature of the mix shall be between 80 Degree Celsius and 120 Degree Celsius.

- (bb) The rolling shall start longitudinally along with edges and proceed towards the centre of the pavement over lapping on successive strips of the roller by at least half the width of the rear wheel.

- (cc) The rollers shall move on the fresh materials with the driven wheel leading so as to minimize movement and forward position of the mix.

PARTICULAR SPECIFICATIONS (contd...)

- (dd) Alternative passes of the roller shall be of slightly different lengths to enable the roller on its next pass to take out any depression or pushing which may have occurred during the reverse pass of the roller.
- (ee) The speed of the roller shall not exceed 5 KM per hour to avoid displacement of the mix.
- (ff) To prevent adhesion of the mix to the roller wheels, the wheels shall be kept damp with water but excess water shall be avoided. Fuel oil, lubricating oil or kerosene shall not be used for this purpose.
- (gg) Areas of pavement in accessible to the roller shall be thoroughly compacted with hand tampers.
- (hh) The compacted surface of asphaltic concrete shall be uniform and conform to the finished level, gradient and camber indicated on cross sections and longitudinal section drawings within the tolerance limits as specified herein after. The compacted surface shall be tested by camber boards and straight edges for variation in the finished levels indicated. Any variation exceeding 6 mm over 3 meters length shall be corrected by the contractor by scarifying cutting out and removing all loosened materials from the affected patch to the full depth of layer , applying fresh tack coat, adding fresh mix as required reshaping and rolling. No material loosened by scarifying or cutting out will be left in position or reused. The patch to be cut out should have an enlarged area and will be rectangular or square in shape with sides parallel and perpendicular to the direction of traffic in cross section the side of full patch should be vertical.
- (jj) No traffic shall be allowed on the newly laid carpet.

NOTE: Irregularities which may appear during or immediately after break down rolling (initial rolling) but before completion of final rolling shall be remedied by loosening the mix and removing or adding material as may be required.

- (ii) **Asphaltic concrete** : Consolidation of asphaltic concrete wearing course shall be carried out all as specified in here in before except that the initial or breakdown rolling shall be with 8 to 12 tonne3 wheeled rollers and the surface finished by final rolling with 8 to 12 tonne tandem rollers. The finished surfaces shall be tested straight edge on the surface and there should be no gap exceeding 3 mm between the bottom of the straight edge and the surface of the pavement any where along with the straight edge. Any irregularity exceeding 3 mm shall be rectified corrected.
The method of carrying out rectification/correction in the finished surface shall be the same as specified in clause 5.2.6 (c)(i)(hh) herein before except that the deviation limit for Asphaltic concrete shall be 3 mm . The Fresh mix to be added to cut out patch will be asphaltic concrete.

PARTICULAR SPECIFICATIONS (contd...)**(d) Joints:**

- (i) The edges (longitudinal as well as transverse) of the previously laid and compacted carpet should be raked out to its full depth so as to expose a fresh surface. .
- (ii) The exposed surface should be painted with a uniform coat of hot bitumen and the new mix should be placed in contact with it and raked to the proper depth and grade.

(iii) Longitudinal joints and edges shall be constructed true to line marking and as far as possible parallel to the centre line of the prepared surface. Longitudinal joints should be offset at least by 150 mm from those in base course if any , and transverse joints or construction joints shall be placed in the vertical plane after cutting back to the original , thickness of the previously laid mix .

(iv) Transverse Joints: Transverse joints shall be carefully constructed and thoroughly compacted to provide smooth riding surface. Joints shall be straight and stream lined to ensure smoothness and true alignment. If the joints is formed with a bulk head , such as a board to provide a straight line and vertical face. It shall be checked with a straight edge before fresh material is placed against it to complete the joints. If a bulk head is not used to form the joint or the roller is permitted to roll over the end of the newly laid material, the line or joint shall be located back of the rounded edges , at sufficient distance to provide the true surface and cross section . If the joints has been distracted it shall be trimmed to line. In either case the joint face, shall be painted with a thin coating of bitumen before the fresh material is placed against it to obtain thorough consolidation of these joints. The material placed against the joint shall be lightly packed against the vertical face of the joint. To accomplish this, the paving machine shall be positioned so that the material shall overlap the edge of the joint 2.5 to 5 cm the coarse aggregates the overlapped material that has dislodged shall be removed from the pavement surface and discarded. The roller shall be placed on the previously compacted material transversely so that not more than 15 cm of the rear rolling wheels rides on the edges of the joint. The roller shall be operated to press the mix into place at the transverse joint . The roller shall continue to roll along this line shifting its position gradually across the joint in 15 cm to 20 cm increment, until the joint has been rolled with the entire width of the roller wheels. Rolling shall be continued until a thoroughly consolidated neat joint is obtained .

Transverse joint shall be kept to a minimum at the end of each working day, all lanes shall be completed to approximately the same length .

PARTICULAR SPECIFICATIONS (contd...)

- (v) **LONGITUDINAL JOINTS** :- Longitudinal joints shall be rolled directly during the paving operation. The first lane shall be true to line and grade and shall have an approximately vertical face. The material being placed in the abutting lane shall then be tightly packed against the face of the previously placed lane. The paver shall be positioned so that in spreading, the material overlaps the edge of the lane previously placed by 2.5 cm to 5 cm. The width and depth of the overlapped material shall be kept uniform at all times. The paver shall closely follow the line or marking placed along side for alignment purpose. Before rolling, the coarse aggregate in the materials overlapping the joint shall be carefully removed with a rake and discarded. While rolling it shall be ensured that the roller moves on the previously placed lane so that no more than 15 cm of the rear roller wheel rides on the edge of newly laid lane. The roller then be Operated to press the fines gradually across the joint. When the abutting lane is not placed in the same day, or the joints is distorted during the days works, the edge of the lane shall be carefully trimmed to line and painted with a very thin coating of bitumen before the abutting lane is placed.
- (vi) **EDGES** :- The edges of the pavement shall be rolled concurrently with or immediately after rolling the longitudinal joints. Care shall be exercised to consolidate the course along the entire length of the edges. Before it is consolidated, the material along the unsupported edges shall be slightly elevated with a tamping tool. This will permit the full weight of the roller wheel to bear on the material to the extreme edges of the carpet. In rolling pavement edges, roller wheels shall extend 5 cm to 10 cm beyond the pavement edge.
- (vii) Top surface of Asphaltic dense concrete shall be finished by final rolling with 8 to 12 tonne with 'TANDEM ROLLER'.
- (e) **Opening of traffic:** Traffic may be allowed immediately after completion of the final rolling when the mix has cooled down to the surrounding temperature.

PARTICULAR SPECIFICATIONS (contd...)**12. TRIAL BAYS :**

- (a) When the work of semi dense asphaltic concrete commences, a trial bay at fag edge of the road shall be laid for this purpose. The mix shall be prepared as per the job mix formula, spread and consolidated all as per clause 5.2.5 & 5.2.6 hereinbefore.
- (b) To ensure that the mix satisfies the design criteria of the mix design all as per clause 5.2.5 herein before sample of asphaltic concrete shall be taken and tested all as per clause 5.2.8 for :-
 - (i) Marshall stability, voids content and density.
 - (ii) Binder content
 - (iii) Sieve analysis of the aggregates.
- (c) Field density test shall be conducted to determine the density of the mix as laid consolidated and finished.
- (d) The finished surface of the asphaltic concrete should be reasonably smooth so that it is free from projecting aggregates and surface voids. The contractor shall produce the specified surface in trial bay for approval by GE. This approved surface texture is thereafter to be reproduced uniformly throughout the asphaltic concrete overlay work.

NOTE :-

- (i) Asphaltic concrete work in trial bay the size of which will be decided by the GE shall be measured and paid for along with other work.
- (ii) In case the surface texture of the asphaltic concrete in the trial bay is not acceptable to the GE or the mix does not satisfy the design criteria the same may be removed and re- laid at the discretion of the GE.
- (iii) The trial bay should be laid at a place which is used comparatively less frequently.
- (e) in the actual overlay work the asphaltic concrete surface shall conform to the finally approved trial bay in the respects.

13. CONTROLS AND TESTS

Test specified on table under clause 20.B.4.9.2 of SSR Part I shall be got done from approved lab in presence of E-in-Charge and contractor and test results shall be jointly recorded. Contractor shall supply materials required for the above test without any extra cost to the dept.

The permissible variation of various ingredients shall be as per table given under Clause 20.B.4.9.3 of SSR Part-I(2009).

14. SOLING

- 14.1 Soling shall be provided all as specified in clause 20.A.2 and 20.A.20.1 of MES Schedule Part I.

PARTICULAR SPECIFICATIONS (contd...)**15. WATER BOUND MACADAM (WBM)**

15.1 Aggregates for WBM shall be all as specified in clause No.20.A.3. of MES SSR Part I. Coarse aggregate shall be hard crushed/ broken stone aggregate and shall be all as specified in clause No. 20.A.3. 1.2 of MES SSR Part I.

15.2 Screenings shall be all as specified in clause No. 20.A.3.2 of MES SSR Part I.

15.3 Binding materials shall be all as specified in clause No. 20.A.3. 3 of MES SSR Part I. Water Bound macadam shall be laid all as specified in clause No. 20.A.21.1 to 20.A.21.13 of MES SSR.

16.0 PREPARATION OF WBM/ BLACK TOP SURFACE AND APPLICATION OF PRIMING COAT

16.1 Before Priming the top surfaces, these shall be prepared all as described in clause 20.B.4.1 on srl page No 548 of MES SSR Part 1.

Contd.../-

17.0 PRIMING COAT

17.1 Bitumen shall be heated to temperature as specified in MES schedule and applied to the prepared surfaces as per clause No. 20.B.2.3.2. of MES schedule Part-I at the rate of 05 Kgs/10 Sqm on existing black top surfaces and 10 Kgs/10 Sqm on new surfaces. The tack coat shall be applied just ahead of spreading premix.

18.0 BITUMINOUS MACADAM.

18.1 Bituminous macadam shall be carried out as per BOQ description and as described in the SSR Part-I 2009 Clause No 20.B.3 and subsequent related classes.

18.2 Bitumen content beyond percentage specified in the BOQ if required on account of design mix shall not be paid and shall be deemed to be included in unit quoted rate. Paving bitumen content less than percentage specified in the BOQ shall be adjusted as per purchase voucher rate of bitumen.

19.0 ROAD MARKING LINES:**19.1 MATERIALS**

19.1.1 Road marking paints shall conforming to MOST 803.4, Ver.III (Specification for thermoplastic road marking material) and shall be of ordinary road marking paint (retro-reflective), hot applied thermoplastic compound as specified in the item.

19.2 WORKMANSHIP

19.2.1 The colour, width and layout of road markings shall be in accordance with the Code of Practice for road Markings with paints, IRC:35, and as specified and as directed by the Engineer in charge.

20.0 RCC PIPE

PARTICULAR SPECIFICATIONS (contd...)

20.1 Reinforced pipe shall be all as specified in SSR Part I Clause 18.29.

21.0 PROGRESS OF WORK

21.1 The work shall be planned in such a way that all the activities shall be taken up for one side of the road only from a length as desired by the Contractor but not less than 0.50 KM and after completion of the stretch, the other side shall be taken up and complete. In no case the work shall be allowed to progress on both sides of the road at the same time. All necessary measures like provision of sign boards, markings, flag lights and flagmen etc to avoid any accidents/mis-happenings shall be taken by the contractor during execution of work.

22.0 OPENING TO TRAFFIC

22.1 The roads are important roads full of traffic are as such care shall be taken to cause minimum inconvenience to the users.

23. CONCRETE WORK**23.1 COARSE AND FINE AGGREGATE**

- (a) Aggregate shall conform to IS-383 and shall be from the source(s) mentioned in Appendix 'A' to this particular specification. Aggregate shall be non porous, hard strong, durable clean and free from various impurities and adherent coating and shall not contain any deleterious materials exceeding the limits specified in the above referred IS. When required by the Engineer-in-Charge the contractor shall at his own expense carry out all tests laid down in IS-383 to verify that the aggregate comply with the requirements of IS. The tests shall be carried out in any laboratory approved by GE.
- (b) Coarse aggregate shall consist of crushed or broken stone aggregate. The nominal sizes of the aggregate shall be as specified in clause 4.4.7 of MES Schedule Part-I.
- (c) Fine aggregate shall consist of naturally occurring coarse sand. Fine aggregate shall conform to zone II or zone III of table IV of IS-383 and shall be from the source(s) mentioned in Appendix 'A' to particular specifications.
- (d) Samples of the aggregate proposed to be used shall be approved by the GE. Prior to bulk delivery of the same at site of work, field tests for determining the contents of loam, clay etc., for fine aggregate shall be carried out by the Engineer-in-Charge from the time to time to ensure that the materials brought to site are in conformity with the samples approved by the GE.

PARTICULAR SPECIFICATIONS (contd...)**23.2 GRADING OF AGGREGATE**

The grading of coarse and fine aggregate shall be as per MES Schedule. Grading of coarse and fine aggregate shall be checked as frequently as possible. The frequency for a given job shall be determined by Engineer-in-Charge to ensure that the specified grading is maintained.

23.3 AGGREGATE

Coarse aggregate for all cement concrete work unless otherwise specified shall be crushed or broken and graded hard stone coarse aggregate and fine aggregate (sand) shall be from the source as mentioned in Appendix 'A' and approved by the GE and shall conform to IS-383 and to the samples kept in GE's office.

24. CEMENT CONCRETE

Type of concrete required for work in various situations all as specified in respective item of Schedule A'.

24. CEMENT Refer Clause 25.0 herein after**MIXING AND CONSOLIDATION OF CEMENT CONCRETE**

(a) All cement concrete shall be mixed in an approved machine mixer where however small quantity of cement concrete are involved hand mixing may be adopted with the approval of the Engineer-in-Charge. Mixing shall be continued until there is a uniform in colour and consistency.

(b) Mix of concrete shall be as specified in respective item of Sch 'A'.

(c) Cement concrete in flooring shall be consolidated by tamping and punning.

WATER

Quality of water to be used for mixing and curing of concrete work shall conform to the requirement of clause No. 4.3 of IS-456-1978.

25 CEMENT

The cement supplied by the contractor shall be procured from main producers of cement and shall be either OPC grade 43 conforming to IS 8112 (1989) or PPC conforming to IS 1489 (1991). The quantity of fly ash in PPC cement shall be in accordance to IS 1489 (2002) Part-I. However, in case the total quantity of cement required in the work is less than 1200 bags then the same can be procured from authorized dealer/distributor of the main producers at the discretion of the contractor.

Type of Cement: The details of various types and grades of cement are enumerated below which shall be used in work:

(i) Ordinary Portland cement Grade 43 (IS: 8112-1989).

(ii) Ordinary Portland cement Grade 53 (IS: 12269-1987).

(iii) Rapid Hardening Portland Cement (IS: 8041-1990).

(iv) PortlandPozzolana Cement (IS: 1489-1991 Part I).

(v) High Alumina Cement (IS: 6452-1989).

(vi) Sulphate Resisting Portland Cement (IS: 12230-1988).

The type of cement to be selected will invariably depend upon the specific usage in the works(s). OPC 33 grade will not be used in work.

PARTICULAR SPECIFICATIONS (contd...)

The following checks and procedure shall be followed before the cement supplied by the contractor is accepted and is approved for incorporation in the work:-

(b)- PROCUREMENT : The Cement supplied by the Contractor will be procured from main producers of cement. However where estimated requirements of cement is less than 1200 bags and in all term contracts, the contractor can procure cement from the authorised distributors/dealers of the approved firms but the contractor will have to submit test certificates of the batch issued by the main producers. The particulars of the manufacturer 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 purchases of cement shall be verified by the site staff and GE and kept as a record in the office of GE.

(c)- Manufacturers: The main producers of OPC & PPC shall be as approved by Design Dte of E-in-C Branch from time to time.

(d)- USE OF PPC

Use of PPC (Portland Pozzolana Cement) of required strength with fly ash content as per IS 1489-1999 Part-I is also permitted. While using PPC, the following conditions will generally be met :

- (i) Strength criteria for PPC will be as per IS-8112-1989.
- (ii) Stripping time shall be 14 days.
- (iii) Both OPC and PPC shall not be permitted for use in the same building expect for plaster and mortar.
- (iv) Mandatory certificates of testing and quality assurance will continue to be submitted as hither-to-fore with fly ash content as per IS-1489-1999 Part-I.
- (v) Specifications for use of PPC would be compiled and incorporated suitably by Accepting Officer for inclusion in tender documents.
- (vi) The Accepting Officers are required to ensure that PPC meets the strength criteria of 43 Grade OPC as laid down in IS-8112-1989

(e)- TESTING OF CEMENT:

The manufacturer is to carry out inspections and testing of cement in accordance with relevant BIS provisions. The contractor shall submit the Manufacturer's Test Certificate in original along with the Test Sheet giving the result of each physical test as applicable and chemical composition of the cement or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in the Cement Acceptance Register, as given after due verification. The GE shall also organise independent physical tests of random samples of cement drawn from various lots from NABL, National Test House, SEMT CME, IITs, MES Zonal Laboratories, Command Test Laboratories (CTL), as per IS3535 (Method of sampling Hydraulic Cement), IS-4031 (Methods of Physical Test for Hydraulic Cement) and IS 4032 (Method of Chemical Analysis of Hydraulic Cement). In order to undertake departmental testing, requisite facilities shall be organised by the contractor.

(f)- MEASUREMENTS AND PAYMENT OF CEMENT

- (a) 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.
- (b) The payment shall only be allowed after production of original purchase vouchers, certified copy of test certificates from manufacturer for each consignment and results of testing carried out in laboratory on receipt of

PARTICULAR SPECIFICATIONS (contd...)

cement (7days compressive test) are found satisfactory after testing as specified hereinbefore. Cement shall be paid as material lying at site as per 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.

(g)- Storage: Cement shall be stored over dry platforms at least 20 cm high in such a manner as to prevent deterioration due to moisture or intrusion of foreign matters. In case of store rooms, the stack should be at least 20 cm away from floors and walls. The stacking of cement shall not be more than 10 bags high. It shall be ensured that tested and untested cement are segregated and stored separately with distinct identification.

(h)- Documentation: Contractor shall submit original voucher from the manufacturer for the total quantity of cement supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by the GE along with relevant documents before acceptance. The original vouchers and the Test Certificates shall be defaced by the Engineer-in – Charge and kept on record in the Office of GE duly authenticated and with cross reference to the Control Number recorded in the Cement Acceptance Register. This register will be signed by JE, Engineer-in-Charge, GE and the Contractor. The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of cement shall also be suitably recorded in the Measurement Book for record purpose “not to be abstracted” before incorporation in the work and shall be signed by the Engineer-in-Charge and Contractor.

(i) Design Mix Concrete :

(a) Only the grade of concrete required for each location are given in the tender, while providing all other basic data required for design mix like exposure conditions all as per IS-456-2000. Contractor shall be required to quote his offer keeping in view the given parameters and other relevant provisions of design mix concrete. Accepting Officers shall however specify minimum cement contents for each grade of design mix concrete for various stations on the basis of trial mix design to be carried out in reputed Labs/Zonal Lab to arrive at optimum cement contents to be specified in tender documents along with exposure conditions.

(b) There shall be no provision for price adjustment on account of variation in cement contents of design mix approved and minimum cement indicated in tender. However it shall be made clear that even if cement contents as per actual mix design are working out lower than minimum cement contents indicated in tender, the contractor shall provide minimum cement contents indicated in tender and nothing extra shall be payable on this account.

PARTICULAR SPECIFICATIONS (contd...)**26. CEMENT CONCRETE INTER LOCKING PAVER BLOCK****26.1 PAVER BLOCKS**

All cement concrete interlocking paver blocks shall be factory made using machines. All moulds & machines shall be subjected to inspection by GE/Engr-in-Charge. The hand made paver blocks shall not be accepted.

The pavers shall be manufactured as mono layer only.

The concrete pavers shall have perpendicular ties. The pavers shall have uniform special chamfers to facilitate easy drainage of surface run off. The surface shall be anti-skid and anti-grade type. The pavers shall have uniform interlocking space of 2 to 3mm to ensure compacted sand filling.

The paver blocks shall be tested one out of every 500 pieces and the test results kept on record. The testing charges shall be born by the contractor and deemed to be included in the rate of the item.

The shape of the pavers shall be as approved by GE & the paver block as a whole shall conform to the sample kept in sample room of GE's office.

27. FLEXURAL CONCRETE PAVEMENT:- Flexural concrete pavement shall be provided as described in respective item of Sch 'A' and as per specification in MES SSR part-I and as under:-**27.1 CEMENT:-**

(a) Cement shall be as stated in PS clause as mentioned here-in-before.

(b) The GE and contractor shall satisfy themselves that the cement conform to the relevant IS codes.

27.2 AGGREGATE:-

(a) Aggregate shall conform to IS-383, Aggregates shall be non-porous, hard strong, durable, clean and free from various impurities and adherent coating and shall not contain any deleterious material exceeding the limits specified in the above referred IS. When required by Engineer-in-charge the contractor shall at his own expense arrange to carry out any test laid down in IS-383 to verify that the aggregates comply with the requirement of IS. The tests will be carried out in any NABL accredited laboratory as approved by the GE/AGE(I).

(b) Coarse aggregate shall consist of crushed/broken stones aggregate, the maximum size of the aggregate shall be 40mm.

(c) Fine aggregate shall consist of naturally occurring coarse sand. Fine aggregated shall conform to Zone II of Table IV of IS-383.

(d) Samples of the aggregates proposed to be used shall be approved by the GE/AGE prior to bulk delivery of the same at site of work. Field tests for determining to contents of silt, loam, clay etc. for fine aggregate shall be carried out by the Engineer-in-Charge from time to time to ensure that materials brought at site are in conformity with the sample approved by the GE/AGE(I).

(e) Coarse aggregate shall satisfy the following and all other tests laid down in IS-383.

(i) Crushing value when tested as per IS-2386 shall not exceed 30%.

(ii) Impact value when tested as per IS-2386 shall not exceed 30%.

(iii) Abrasion value when tested in accordance with IS-2386 using Los Angeles method shall not exceed 30%.

(iv) Flakiness index when tested in accordance with IS-2386 shall not exceed 25%.

(v) Soundness test shall be as per IS-2386.

27.3. HANDLING OF AGGREGATES:-

(a) Stock piles shall be made immediately on supply of aggregate at the site of work. Aggregate, shall be stacked separately according to the nominal sizes.

PARTICULAR SPECIFICATIONS (contd...)

For fine aggregate separate stacks shall be made.

(b) Aggregate shall be stacked on a hard surface so as to exclude the possibility of soil or grass being mixed up. When stacks are in close proximity the piles shall be separated by bulk head. Special care shall be taken to clean and wash the bottom layer of aggregate in contact with ground surface before use.

(c) Before Batching, the aggregate shall be stock piled for at least 24 hours to allow for drainage of water, If any contractor shall make adequate provision for stock piling aggregate to an extent sufficient to meet the needs of the work taking into account the availability of supplies and rate of delivery etc, and he shall be deemed to have included in his tender for necessary double handling and transportation of materials from stock piles to mixing plant etc.

27.4 GRADING OF AGGREGATE FOR FINAL MIX

(a) The grading of coarse and fine aggregate to be used in the work shall be determined. The coarse aggregates and fine aggregate shall be mixed in suitable proportion so that the grading of the mix shall be in the range indicated in the following table for each size of IS sieve :-

<u>IS Sieve No</u>	<u>Percentage passing</u>
40 mm	100
20mm	50 to 67
10mm	36 to 52
<u>IS Sieve No</u>	<u>Percentage passing</u>
4.75mm	24 to 40
2.36mm	18 to 31
1.18mm	12 to 24
600 micron	7 to 17
300 micron	3 to 11
150 micron	1 to 2

The sieve analysis test of the mixed aggregate shall be carried out at least once in a day at random and result recorded to ensure that the grading lies within the specified percentage for each size as given above. The proportioning of coarse and fine aggregate may require adjustment in case it does not satisfy this grading. For any subsequent change in grading. The contractor shall have no claim what-so-ever.

(b) Aggregate shall be stored in single sizes in separate bins or piles on area covered with wooden planks, sheets metal of hard clean surfaces, which shall be self draining.

27.5 WATER:- Water used for mixing and curing shall be clean and free from injurious amounts of oils, acids, alkalis or any other substances that may be deleterious to concrete the water shall be used in the work only after it is got tested and approved by the GE/AGE in writing.

NOTE :- Only potable water shall be used for mixing concrete. GE/AGE will ensure that testing of water is carried out at regular interval of three months to comply with the requirement cost of testing of water shall be borne by the contractor.

27.6 MIX PROPORTION AND STRENGTH

The strength of controlled concrete shall be as specified hereinafter :-

- (a) The strength to be achieved - Not less than 40 kg.
Per sq cm flexural
Strength at 28 days
In field and 45.5 kg
Per sq cm on laboratory

PARTICULAR SPECIFICATIONS (contd...)

- (b) Aggregate/Cement ratio by weight. - As per mix design.
- (c) Water/Cement ratio - As per mix design.
- (d) Slump for concrete - Not more than 2.5 cm.
- (e) Compacting factor test - 0.85+0.02
- (f) Minimum degree of quality control - Very good
- (g) Not more than 5% of test results should fall below flexural strength.

27.7 TRIAL MIX

(a) At the time of tendering, the contractor after taking into account the type of aggregate, plant/method of laying concrete he-intends to use/adopt, shall allow in his tender for aggregate /cement and water cement ratio which he considers will achieve the strength requirement specified.

(b) The quantity of cement for one cubic meter of cement concrete as determined and applied by the department is 400 kg for a flexural strength of 40 kg/sqcm.

(c) As soon as possible after receiving the order to commence work, the contractor shall make trial mixes to satisfy the Engineer-in-Charge that the strength specified is obtained.

(d) From Each trial mix, nine numbers of preliminary test of beams shall be made and tested in accordance with IS-516 and IS-1199 for flexural strength. For compaction in the moulds for beams, the following procedure shall be adopted. The test specimens shall be made as soon as practicable after mixing and in such way as to produce full compaction of the concrete with neither segregation nor excessive laitance.

(e) The concrete shall be filled in the mould in layers of 5 cm, while filling, the spoon shall be moved around the top edge of the mould to distribute the concrete uniformly. Each layer of concrete shall be compacted fully by the use of the tamping bar/vibrator all as per IS-516. The number of strokes per layer required to produce the specified condition will vary according to the type of concrete, but in no case shall the concrete be subjected to less than 100 strokes per layer for 10 cm thickness. The strokes shall penetrate into the underlying layer and the bottom layer shall be rodded through out its depth. Three of these beams shall be tested at seven days (i.e. on the 8th day) from the date of casting and another set of three beams at 28 days (i.e. on the 29th day) from the date of casting. The remaining three beams shall be preserved by the GE/AGE for one year after certified date of completion of the work for any subsequent check. The test after 7 days (i.e. on the 8th day) is intended only to give an early indication of the strength likely to be achieved. The strength achieved should be 70 % to 75 % of the 28 days strength specified in Para (1) below. In case the strength achieved is less than 70 % to 75 % the mix shall be suitably re-designed.

(f) The mix will be approved if all the following conditions based on the tests are satisfied :-

(i) The average flexural strength is not less than 40 kg/sqcm at 28 days in field conditions and 45.5 kg/sqcm in laboratory. The trial mix shall be designed taking into account the quality control and other probable factors according to IS-456 and IS-10262 recommended guide lines for concrete mix design.

(ii) The difference between the highest and the lowest values of flexural strength at 28 days is not more than 15% of the average flexural strength.

PARTICULAR SPECIFICATIONS (contd...)

(g) Whenever there is any change in the type of grading of metal of change in quality of cement or method of laying etc. the test as enumerated above shall again be conducted for ascertaining the suitable design mix for obtaining the specified flexural strength.

(h) On the results of the above tests. The mix actually to be used shall be agreed to and approved by the GE/AGE the approval of GE/AGE shall not relieve the contractor of his responsibility for obtaining the required minimum strength of the quality concrete in the works tests beam/cubes.

(j) All test records in support of mix design shall be maintained as part of the records under the contract.

28. TESTING OF MATERIALS

28.1 It will be mandatory for the contractor to establish his own laboratory, at his own cost at site on commencement of work for carrying out the tests of materials specified in Annexure herein before for the works costing Rs 1 crore and above. The contractor will be permitted to set up a site laboratory at his own cost for the works costing less than Rs 1 crore at his option. All equipment of the laboratory will be got calibrated by the contractor from the authorised test house at commencement of work and thereafter on yearly basis and tests certificate produced to the GE.

28.2 It will be mandatory for the contractor to carry out all the tests specified in the Annexure I to III in addition to other tests specified else where such as cement, steel etc in the tender documents. The cost of material and transportation to different laboratories will be borne by the contractor in addition to testing charges given in succeeding paras.

28.2.1 The contractor shall employ a competent technical representative having minimum qualification of Diploma in civil Engineering for carrying out tests in site laboratory. This will be in addition to Engineers(s) required to be employed for supervision of works as required vide condition 25 of IAFW-2249.

28.2.2 The tests shall be carried out in the presence of Engineer-in-Charge.

28.2.3 There will be no recovery by the department for the tests specified to be carried out in site laboratory established by the contractor as per Annexure 'II' here in before.

PARTICULAR SPECIFICATIONS (contd...)**29.0 DISMANTLING /DEMOLITION**

- 29.1 Dismantling items shall carefully be taken up or down without damaging the item structure. Laid down precaution shall be taken prior to dismantling. Dismantled portion shall be made good as required/as directed by Engineer-in-Charge
- 29.2. If the equipment/material are handed over to contractor for any repair, the same shall be done on proper loan/issue voucher and after repairing the same shall be taken back through receipt voucher.
- 29.3. Dismantling work shall be carried out all as described in SSR Part – I. Any damages caused during dismantling shall be made good by the contractor to the entire satisfaction of Engineer-in-Charge without any extra cost to the Government. The dismantled materials will become the property of contractor and hence the contractor shall offer credit for the dismantled materials.
- 29.4 Any damage caused to CI/DI/GI/UPVC pipes/electric cables due to default of contractor during repair works, the same shall be rectified by the contractor to the entire satisfaction of Engineer-in-Charge without any extra cost to the Government.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

SOURCES OF MATERIALS

1. FOR WORKS IN JODHPUR/BANAR :- The sources of material as mentioned below are applicable if the subject work is to be executed at Jodhpur or Banar or nearby area/station:-

SI No.	Name of Materials	Sources of materials for works at station **
1	2	3
1	(a) Stone for masonry (b) Stone aggregate for RCC (c) Stone aggregate for PCC	(a) Gangana / Bhadasia/Soor Sagar (b) Kakani/Daijar/ Rinya / SawriBhakari (c) Kankani / Daijar / Rinya / Sawri Bhakari / Ganganal / Bhadasia / Soor Sagar
2	Fine aggregate (sand) for cement concrete and mortar in masonry	Binawas River / Luni River / Bhandu
3	Sand for mortar in plastering and pointing	Binawas River / Luni River / Bhandu
4	Stone for soling, WBM and hard core	Ganganal / Daijar / Bhadasia / Soor Sagar
5	Stone for kerb / edging	Balesar / Soor Sagar / Jodhpur/ Gangna
6	Stone chipping for road work	Kakani / Daijar / Rinya / SawriBhakari/Sevki
7	Stone for stone sett flooring	Jalore or sanawara near pokhran.

2. FOR WORKS IN UDAIPUR/ MOUNT ABU:- The sources of material as mentioned below are applicable if subject work is to be executed at Udaipur/ Maunt Abu or or nearby area/station:-

SI No.	Name of Materials	Sources of materials for works at station **
1	2	3
1	Fine aggregate (Sand) for masonry	Banas River Abu Road
2	Coarse aggregate for all RCC and PCC work	Abu Road
3	Coarse sand, sand for all RCC and PCC works	Banas River Abu Road
4	Sand for mortar in stone masonry, PCC masonry, plastering and pointing, seal coat and sand cushion	Banas River Abu Road
5	Stone for stone masonry, Soling , Hard core and WBM	Abu Road
6	Lime	Kewari Kinal Nathdwara Koptra Sojat
7	Chipping for premixed carpet	Locally best available as approved by GE/AGE(I)
8	Stone for kerbs, road edging and stone slab for cable protection cover.	Locally best available as approved by GE/AGE(I)

****Sources indicated are for guidance purpose only**

NOTES :-

1. Sources of materials shall be given in above tables 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 or 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 GE.
2. The tenderer 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.
3. However, if due to any ban imposed by the state Govt authority on obtaining the materials from the sources specified above and or specified materials is not available at the sources mentioned above these materials conforming to specifications as given in particular specifications will be procured from any other place/source which is Locally best available as approved by GE/AGE(I)& after getting the same approved from GE/AGE(I) in writing and without any extra cost to Govt.

CEMENT SUPPLY & ACCEPTANCE REGISTER

1. CA NO & Name of Work :
2. Control No * :
3. Name of Manufacturer/Brand Name and Gde of Cement (A) Manufacturer _____ (b) Brand _____ (c) Grade _____
4. Qty of Cement & lot No /Week No (in Bags) : (a) Qty _____ (b) Lot No /Week No : _____
5. Manufacturer's test Certificate No : _____
6. Random Test Details (a) Physical test report from _____ vide letter No _____
(Name of approved Lab/Engg College)
- (b) Chemical test report from _____ Vide letter No _____
(Name of approved Lab/Engg College)
7. Details of Physical & Chemical properties :

	Physical Requirement (As per IS 4031)								Chemical Requirement (As per IS 4032)								
	Specific surface (M ² /Kg)	Soundness by Le Chatellar	Soundness by Auto claye	Initial setting Time (Minutes)	Final Setting Time (Minutes)	Compressive Strengths (Mpa)			Temp. during Standard Consistency (%)	Lime Saturation Factor (Ratio)	Aclumina iron Ratio (Ratio)	Insoluble Residue (%)	Magnesium (%)	Sulphuric Anhydride (%)	Loss on ignition (%)	Alkalis (%)	Chlorides (%)
						03 days	07 days	28 days									
As per relevant IS																	
As per manufacturers test certificate																	
As per random test certificate																	

Remarks with signature
Contractor
Remarks of

Junior Engineer
BOO/Inspecting Officer/CWE

Accepted/ Rejected
Engineer-in-Charge

*To be allotted serially by GE Consignment wise

Garrison Engineer

IN /OUT CEMENT REGISTER

Srl No.	Date	Cement IN		Cement OUT			Qty Balance (In Bags)	Signature		Remarks
		Qty (In Bags)	Control No	Qty (In Bags)	Reasons	Age of Cement		Contractor	AGE/GE	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(j)	(k)	(l)

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

1. For testing purpose.
2. For use in work.
3. Rejected cement taken out of site.

APPENDIX- "C"**LIST OF BIS CERTIFIED PRODUCTS TO BE INCORPORATED IN WORKS**

<u>Sr. No.</u>	<u>Materials</u>	<u>IS Nos.</u>
1	2	3
1	Concrete	
a	Integral Water Proofing Compound	IS : 2645
2	Joinery	
a	Panelled Door Shutters	IS: 1003
3	Builder's Hardware	
a	Steel Butt Hinges	IS : 1341
b	Ferrous Tower Bolts	IS : 204 Part - I
c	Non-Ferrous Tower Bolts	IS : 204 Part - II
d	Door Handles (Non – Ferrous)	IS : 208
e	Parliament Hinges , Ferrous	IS : 362
f	Continuous piano Hinges	IS : 3818
g	Non- Ferrous Metal Sliding Door Bolts	IS : 2681
h	Tee and Strap Hinges	IS : 206
i	Mild Steel Sliding Door Bolts	IS : 281
4	Steel and Iron Work	
a	Steel Doors , Windows and Ventilators	IS : 1038
5	Roof Covering	
a	Bitumen Felts for water proofing and damp proofing	
b	Un-reinforced corrugated or semi – corrugated asbestos cement	
6	Ceiling and Lining	
a	Plywood for general purposes	IS : 303
b	Block boards	IS : 1659
c	Veneered particle board	IS : 3097
d	Marine Plywood	IS : 710
e	Fibre Hardboard	IS : 1658
f	Medium Density Fibre Board	IS : 12406
7	Flooring	
a	White Portland cement	IS : 8042
b	Cement concrete flooring tiles	IS : 1237
8	Water supply , Plumbing , Drains and Sanitary Appliances	
a	Concrete Pipes with or without reinforcement	IS : 458
b	Salt Glazed Stoneware pipes and fittings	IS : 651
c	Centrifugally cast (spun) iron spigot and socket soil,waste and ventilating pipes , fittings and accessories	IS : 3989
d	UPVC , Soil , waste and Rain water Pipes	IS : 4985
e	Sand cast iron spigot and socket soil waste and ventilating Pipes	IS : 1729
f	Galvanized Mild Steel tubes	IS : 1239
g	Galvanized mild steel tubes fittings	IS : 1239 Part-I
h	Vitreous china sanitary appliances	
(i)	Wash down water closets	IS : 2556 Part-II
(ii)	Squatting Pans	IS : 2556 Part – III / Part - XIII
(iii)	Wash Basin	IS : 2556 Part - IV
(iv)	Foot Rests	IS : 2556 Part - X

Contd...

APPENDIX- "C" (Contd...)**LIST OF BIS CERTIFIED PRODUCTS TO BE INCORPORATED IN WORKS**

<u>Sr. No.</u>	<u>Materials</u>	<u>IS Nos.</u>
1	2	3
j	Plastic WC seats and covers	IS : 2548
k	Flushing Cisterns for water closets and urinals other than Plastic	IS : 774
l	Ball Valves (Horizontal plunger type) including floats for water supply.	IS : 1703
m	Cast copper alloy screw down bib taps and stop valves.	IS : 781
n	Pillar Taps	IS : 1795
o	Cast Iron manhole cover frames	IS : 1726 Part –I to VII
9	Electrical Works	
a	Ceiling Rose	IS : 371
b	Tumbler Switches	IS : 2120 Part – 15A / IS : 1087 Part – 5A
c	Socket outlet – 3 Pin plug and socket	IS : 1293
d	Switches fuses (main & switch)	IS : 4064
e	Rigid Non-Metallic Conduit	IS : 2509
f	Rigid Steel Conduit	IS : 1653 / 9537 Part – II
g	Single Core Cable Polyethylene insulated and PVC sheathed Cable	IS : 1596
h	Starter for Tube light	IS : 2215
i	Fluorescent Lamps	IS : 2418
j	Aluminium stranded Conductor	IS : 398
k	MCB	IS : 8828

Contd...

Appendix "D"1. **APPROVED CEMENT MANUFACTURERS FOR MES WKS ON PAN INDIA LEVEL :-**

<u>SI No.</u>	<u>Company Name</u>	<u>Address</u>	<u>Cement Grades</u>	<u>Valid Upto</u>	<u>Remarks</u>
1	The Associated Cement Companies Ltd BRAND "ACC"	414-421, Splendor Forum (4th Floor), 3, District Centre, Jasola,, New Delhi — 110044, Ph- 01146583600	All	-	
2	Ultra Tech Cement Ltd BRAND "ULTRATECH"	'B' Wing, 2nd Floor, Mahakali Caves Road, Andheri (East), Mumbai 400093, Ph- 022-66917800	All	-	
3	The India Cement	Dhun Building, 827, Anna Salai, Chennai - 600002	All	-	
4	Dalmia Cement (Bharat) Ltd BRAND "DALMIA INFRA PRO"	Dalmiapuram Distt-Truchirappalli, Tamil Nadu-621651	All	-	
5	Century Cements BRAND "CENTURY"	Industry House, 159 Church gate Reclamation, Mumbai-400020, Ph- 022 22023936	All	-	
6	Saurashtra Cement BRAND "SAURASHTRA"	Gala No A-I, Ground Floor, Udhog Sadan No 3 MIDC, Central Road, Andheri (East), Mumbai 400093, Ph-022 32955557/67, Mo-9320290081	All	-	
7	The Ramco Cements Ltd BRAND "RAMCO"	Auras Corporate Centre, 98-A, Dr. Radhakrishnan Salai, Mylapore, Chennai - 600004 Ph- 044 28478666	All	-	
8	Mangalam Cement Ltd BRAND "MANGALAM"	PO Adityanagar, Morak, Dist- Kota, Rajasthan — 326520 Ph- 9351468076	All	-	
9	Birla Corporation Ltd BRAND "BIRLA"	Birla Building (3rd & 4th Floor) 9/1, R.N Mukherjee Road, Kolkata - 700001, Ph-033 30573700	All	-	
10	Orient Cement BRAND "BIRLA-A1"	5-9-22/57/D, 2nd and 3rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad-500063, Pin- 044 23688600	All	-	
11	Nuvoco Vistas Corporation Ltd (Formerly Lafarge Cement) Brand "NUVOCO"	Equinox Business Park Tower-3, East Wing, 4th Floor LBS Marg, Kurla (West), Kurla Mumbai, Maharashtra-400070	All	-	

Appendix “D” (Contd/-)

Sl No.	Company Name	Address	Cement Grades	Valid Upto	Remarks
12	Shree Cement Ltd BRAND “SHREE”	Bangur Nagar, Beawar, Dist- Ajmer, Rajasthan 305901 Ph - 01462 228101-06	All	-	
13	J K Cement BRAND “J K”	Kamla Tower Kanpur-208001	All	-	
14	J K Lakshmi Cement Ltd BRAND “J K LAKSHMI”	Jaykaypuram, Dist-Sirohi, Rajasthan-307019, Ph 02971 244409/10	All	-	
15	Jaypee Rewa Cement BRAND “JAYPEE”	Jaypee Nagar P.O.-Jaypee Nagar, Rewa-486450, M.P.	All	-	
16	Ambuja Cement Ltd BRAND “AMBUJA”	Kodinar, PO- Ambujanagar, Taluka-Kodinar, Dist Junagadh,Gujarat-362715, Ph- 02795 237000	All	-	
17	M/s Chettinad Cement Corporation Pvt. Ltd. Chennai BRAND “CHETTINAD CEMENT”	M/s Chettinad Cement Corporation Pvt. Ltd. 4th Floor, Rani Seethai Hall Building 603, Anna Salai Hall, Chennai 600 006 Tele +91-44-28292727/42149955 FAX +91-44-28291558 Email-shares@chettinadcement.com Website www.chettinad.com	OPC-43 & PPC	13 May 2027	
18	M/s My Home Industries Ltd BRAND “MAHA CEMENT”	MIS My Home Industries Pvt Ltd 9th Floor, Block-3 My Home Hub, Madhapur Hyderabad-500081, Telangana Tel- +91-40-66929696 Fax-m+91-40-23118000 Email-corp@myhomegroup.in Website-www.myhomeindustries.com	PSC	13 Oct 2027	
19	M/s My Home Industries Ltd BRAND “MAHA CEMENT”	MIS My Home Industries Pvt Ltd 9th Floor, Block-3 My Home Hub, Madhapur Hyderabad-500081, Telangana Tel- +91-40-66929696 Fax-m+91-40-23118000 Email-corp@myhomegroup.in Website-www.myhomeindustries.com	OPC 43 & PPC	13 Oct 2027	
20	M/s Wonder Cement Ltd. BRAND “WONDER CEMENT”	M/s Wonder Cement Ltd. 17, Old Fatehpura Seva Mandir Road, Udaipur — 313 004 Rajasthan (India) Tele : +91-294-33991133 Fax : +91-274-3006333 Email:corp.office@wibdercenebt.com Website: www.wondercement.com	OPC 43, OPC 53 & PPC	19 Jan 2030	

Note:-

1. It will be ensured by the GE that validity of approval of the any make is not expired before procurement by contractor. If validity of approval of any make is expired, the same shall automatically be deemed to be deleted from the list.

2. Validity of Product approval letter issued by EinC br/HQCESC shall be checked and verified by GE before the sample approval of products to be incorporated in work.

Appendix "E"**APPROVED STRUCTURAL STEEL MANUFACTURER FOR MES WK**

<u>Sl No.</u>	<u>Company Name</u>	<u>Address</u>	<u>Type of Steel</u>
1	Rashtriya Ispat Nigam Limited (RINL) Brand "RINL"	Visakhapatnam Steel Plant Visakhapatnam 530 031, India Tel: (91 891) 518226, 518376 Fax: (91 891) 518316 Email: cmdvsp@itpvis.ap.nic.in	Structural Steel (Angle, Beam, Column, Channel, Plate etc.)
2	Steel Authority of India Limited (SAIL) Brand "SAIL"	Central Marketing Organization, Northern Region 1 7th Floor, scope Minar, Laxmi Nagar Distt. Centre, Delhi 110092	Structural Steel (Angle, Beam, Column, Channel, Plate etc.)
3	Tata Iron & Steel Company (TISCO or Tata steel) Brand "TATA"	Bombay House, 2, 4 Homi Modi Street, Mumbai 400 001, India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522, 287 0840 Email: corpcomm@jsr.tatasteel.com (Br office for North : Jeevan Tara Bldg, Patel Chowk , New Delhi)	Structural Steel (Angle, Beam, Column, Channel, Plate etc.)
4	M/S Jindal Steel & Power Ltd, Hissar, Brand "JINDAL"	Jindal Centre, Plot No 2, Sector-32, Gurgaon-122001, Haryana Tele — Fax 0124 661 2000 0124 661 2125 Website: www.jindalsteelpower.com	Structural Steel (Angle, Beam, Column, Channel, Plate etc.)

Appendix "E" (Contd/-)**APPROVED TMT STEEL MANUFACTURER FOR MES WK**

SI No.	Company Name	Address	Steel/Grades/Sizes	Valid Upto
1	Rashtriya Ispat Nigam Limited (RINL) Brand "RINL"	Visakhapatnam Steel Plant Visakhapatnam 530 031, India Tel: (91 891) 518226, 518376 Fax: (91 891) 518316 Email: cmdvsp@itpvis.ap.nic.in	All	-
2	Tata Iron & Steel Company (TISCO or Tata steel) Brand "TATA"	Bombay House, 2, 4 Homi Modi Street, Mumbai 400 001, India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522, 287 0840 Email: corpcomm@jsr.tatasteel.com (Br office for North : Jeevan Tara Bldg, Patel Chowk , New Delhi)	All	-
3	Steel Authority of India Limited (SAIL) Brand "SAIL"	Central Marketing Organization, Northern Region 1 7th Floor, scope Minar, Laxmi Nagar Distt. Centre, Delhi 110092	All	-
4	M/S Real Ispat & Power Limited, Chhattishgarh, Brand "G K TMT"	MIS Real Ispat & Power Limited Vrindavan, Near IDBI Bank Civil Lines, Raipur 492 001, Chhattisgarh Tele Fax 0771-4224000 0771-4224010 Email — real@realispat.com www.realispat.com	TMT Bars of Gde Fe 500D 8-36mm	09 Mar 2026
5	M/s MSP Steel & Power Limited, Chhattisgarh BRAND "MSP TMT 500D"	M/s MSP Steel & Power Limited Chhattisgarh Tele 16/S, Block-A, New Alipore Kolkata 700 053 033 4005 7777/2398 2239 Mob 7381028976 Email contactus@mbspsteel.com Website www.ms steel.com	TMT Bars of Gde Fe 500D (Size 8-32mm)	10 Mar 2026
6	M/S SPS Steel Rolling Mills Ltd, (WB), Brand "ELEGANT TMT"	M/s SPS Steel Rolling Mills Ltd, (WB) Regd Office "Diamond Heritage" 16, Strand Road, Room No H523 A, 5th Floor, Kolkata-700001 Corp Office " Diamond Prestige, 41 A, A.J.C Bose Road, 8th Floor, Room No 801, Kolkata-700017 Mob 9831055568/ 9830281273 E mail — info@spsgroup.co.in	TMT Bars of Gde Fe 500D 8-32mm	15 May 2027
7	M/s Sugna Metals Limited, Hyderabad Brand "SUGNA TMT"	MIS Sugna Metals Limited Plot No 76, Vemireddy Enclave Road No 12, Banjara Hills, Hyderabad-500 034 (Telangana) Tele-040 27664502/27663527 Email — Info@sugnatmt.com	TMT Bars of Gde Fe 500D with (Sizes 8 to 32mm)	12 Sep 2026

Appendix "E" (Contd/-)

Sl No.	Company Name	Address	Steel/Grades/Sizes	Valid Upto
8	M/S Shyam Metalics & Energy Ltd Brand "SEL TIGER"	M/s Shyam Metalics and Energy Ltd Viswakarma Building, North West Block 1st, 2nd & 3rd Floor' 86 C, Topsia Road, Kolkata-700 046 (WB) Tele- +9133-40113000 Fax- +9133 2285 2212 Website www.shyammetalics.com	TMT Bars of Gde Fe 500D with (Sizes 8 to 32mm)	18 Sep 2026
9	M/S Jindal Steel & Power Ltd, Hissar, Brand "JINDAL PANTHER"	M/s Jindal Steel and Power Ltd, Haryana OP Jindal Road Hissar, Haryana, Pin-125005 Tel +91-1662-222471/84 Fax- +91-1662-222476 Website- www.jindalsteelpower.com	TMT bars of Gde Fe 500, Fe 500D, Fe 550, Fe 550D & CRS with (Sizes 8mm to 40mm)	05 Nov 2027
10	M/s Tulsyan NEC Limited Chennai Brand "TULSYAN TMT"	M/s Tulsyan NEC Limited, Chennai APEX Plaza, 1 st Floor Old No.3, New No. 77 Nungambakkam High Road Chennai-600 034 (TN) Website- www.tulsyanec.in Tele-044-- 61991060/61991045 Mob 044-9840354010, 9677088334	TMT bars of Gde Fe 500, Fe 500D & Fe 550 with (Sizes 8mm to 32mm)	06 Mar 2030
11	M/S Electrotherm (India) Ltd, Gujarat, Brand "ET TMT"	M/s Electrotherm (India) Ltd., Gujarat Survey No. 72, Palodia Via- Thaltej, Ahmedabad Gujarat - 382 115 Tele +91-2717-234553/660550 Mob + 91-9687-234866 Website- www.electrotherm.com	TMT bars of Gde Fe 500, Fe 500D & CRS with (Sizes 8mm to 32mm)	15 Apr 2030

Note:-

1. It will be ensured by the GE that validity of approval of the any make is not expired before procurement by contractor. If validity of approval of any make is expired, the same shall automatically be deemed to be deleted from the list.
2. Validity of Product approval letter issued by EinC br/HQCESC shall be checked and verified by GE before the sample approval of products to be incorporated in work.
3. The contractor shall procure structural steel sections directly from SAIL/RINL/TATA/JINDAL. In case of nonavailability of structural steel with SAIL/RINL/TATA/JINDAL, the structural steel can be procured from approved secondary producers given in above table with a reduction of 5% (five percent) of the accepted rates of structural steel with prior approval of the Accepting Officer. In case the desired section of structural steel is not rolled / manufactured by primary producers (SAIL/RINL/TATA/JINDAL), there shall be no price adjustment in case of structural steel procured from approved secondary producers as listed above in table.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer

APPENDIX 'F'**APPROVED LIST OF PRODUCTS & MAKES/BRANDS**

	ROAD WORK	
1	Bitumen	IOCL / HPCL / BPCL
2	Bitumen Emulsion	M/s Ooms Polymer / M/s STP Limited / Liquibit / Hincol / M/s Verma Industries / EMULSIS / SHELL SPRAMUL
3	Polymer Modified Bitumen (PMB)	Hincol / Ooms Polymer / STYRELF / SHELL CARIPHALTE
4	Cement Concrete Interlocking Paver Blocks/Tiles	Mehtab Tiles, Indore / NICTO / Ultra Tiles / Navya Tiles, Jodhpur / Patel Fur Mart / Sap Paver, Jodhpur / Sagar Tiles, Saharanpur / CEME / Sukhi Enterprise / Topaz Tiles / Swami Tiles / Supreme Tiles / Lucky Cement Block Works / Vaishnavi Developers / M/s Shree Ji Super Precast Pvt/ Shri Ganesh Tiles Jaisalmer
5	Pothole Repair Material	M/s Fosroc Chemicals / M/s STP Ltd / M/s Choksey Chemicals Pvt Ltd
6	Pre-moulded bituminous joint filler board	STP Ltd / Tikitar industries Ltd / Sikka / Thermax / Fosroc / M/s Maruti Bitumen Pvt Ltd
7	Road marking paints	Asian / Shalimar / SNI Infratech Pvt Ltd (ESN TRMP) / M/s Maruti Bitumen Pvt Ltd (Mariti Reflo Mark) / STP Ltd (Shali Mark)
8	Road Furniture (Solar stud, Cat Eye, Safety Cone, Plastic Chain, ABS/Rubberized speed bumps, Spring post / Traffic Bollard, (ABS) Plastic Road Studs, Aluminium Road studs & Solar road studs, Plastic Barricades Delinerators, Median Marker / Refelectors, Parking lot solutions / rubberized corner guard, Road safety convex mirror, Electric safety devices / Search light, Guide post, etc.	Pioneer Swift / 3M / DARK EYE / TATA BP/ SAFE ZONE / GREEN LIGHT /

Note :-

1. All Products/ items shall be ISI marked only. In case certain items in the scope of work / BOQ are not having corresponding makes in the above list of approved makes/products, Makes so selected for incorporation in work shall be ISI marked only and as approved by GE. In case if there is no BIS certification system / Indian standard for such materials/ products, these shall be certified by accredited (NABL) Laboratories to conform to other standards of repute, like British standard / EU standards/ American Standard. The above list of approved product will superceed ,if makes of any product at other location of tender documents is mentioned. Makes shall be selected only from the above list irrespective of given at other locations, if any .

2. It will be ensured by the GE that validity of approval of the any make is not expired before procurement by contractor. If validity of approval of any make is expired, the same shall automatically be deemed to be deleted from the list. Validity of Product approval letter issued by EinC br/HQCESC shall be checked and verified by GE before the sample approval of products to be incorporated in work.

3. Use of product makes approved by any Command/ADG other than parent Command :-
In addition to makes mentioned in the Tender If a contractor request for use of product makes approved by any other Command/ADG/CE Jodhpur Zone (other than the parent command) alongwith the documentary proof in respect of the approval, the same shall be allowed to be used without any financial effect.

Signature of Contractor

DCWE (Contracts)
For Accepting Officer