

MILITARY ENGINEER SERVICES
(CENTRAL COMMAND)

INDEX

NAME OF WORK: COMPREHENSIVE MAINT TO JCOS/ OR MD ACCN SUP DEP & REGION 3 ANARWALA UNDER AGE B/R-I OF GE DEHRADUN.

Srl No.	Particulars	Page Nos		
1	2	3		
1.	Index Page.	01		
2.	Tender forwarding letter including instructions to tenders.	02	TO	06
3.	Tender and item rate contract for works by measurement IAFW-1779-A (Revised 1955).	07	TO	40
4.	*General Condition of Contract IAFW-2249, (1989 Print) together with errata and amendment thereto.	41	TO	81
5.	*Schedule of Minimum fair wages.	82		
6.	*Special Conditions.	83	TO	88
7.	Particulars Specifications including Appx for Makes.	89	TO	138
8.	*Notice of tender IAFW-2162 including Appendix 'A' Notice Inviting Tender.	139	TO	144
9.	Errata/Amendments to Tender Documents.	TO		
10.	Relevant correspondence.	TO		
11.	Acceptance Letter.	TO		

Drawing _____Sheets.*

Total _____Pages

* Note:- These documents can be seen in the Office of the GE Dehradun during working hours.

(Signature of Contractor)
Dated_____

AGE (Contracts)
For Accepting Officer

Tele Mily : 6060

Garrison Engineer
Military Engineer Services
Dehradun Cantt

8874/A/ 05/E8

30 Sep 2024

M/S _____

_____**TENDER FOR : COMPREHENSIVE MAINT TO JCOS/ OR MD ACCN SUP DEP & REGION 3 ANARWALA UNDER AGE B/R-I OF GE DEHRADUN.**

Dear Sir(s),

1. Tender documents in respect of above work are uploaded on the site defproc.gov.in. The tender is two stage two cover e-tendering system. The contents of Cover I & II are specified in NOTICE OF TENDER.
2. Bid will be received online by ACCEPTING OFFICER upto the date and time mentioned in the **NOTICE INVITING TENDER (NIT)**. No tender/bid will be received in physical form and any tender/bid received in such manner will be treated as non bonafide tender/bid.
3. Bid will be opened on due date and time fixed for opening in the presence of tenderers/bidders or their authorized representatives, who have uploaded their bid and who wish to be present at the time of opening the bids.
4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion on tender/drawings and to clarify doubts, if any, on or before the bid submission start date. You are requested not to write piece meal points and forward your points duly consolidated before the bid submission start date.
5. Unenlisted contractors are required to submit the scanned copies (in pdf file) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents and Appendix 'A' to **NIT** along with EARNEST MONEY DEPOSIT (EMD) and tender fee on e-procurement portal and submit the physical documents in the office of GE DEHRADUN within time limit specified in **NIT**. Inadequacy/deficiency of documents shall make the bid liable for rejection resulting in disqualification for opening of finance bid.
6. Contractors having not executed standing security bond and standing security deposit in any MES formation shall upload scanned copy of EARNEST MONEY DEPOSIT (EMD) mentioned in Notice of Tender and shall ensure receipt of hard copy of EMD in the office of tender issuing authority before date & time fixed for this purpose. In case of failure to abide by any of these two requirements, the finance bid will not be opened.
7. Blank.
8. Enlisted contractors of MES shall submit the scanned copies (pdf file) of enlistment letter, 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 GE DEHRADUN before date & time fixed for this purpose.
9. The contractors must ensure that the tender/bid on the proper form is uploaded in time as the Accepting Officer will take no cognizance of any quotations/offer received in any other electronic or physical form like email/fax/by hand/through post from tenderer/bidder even if they are received in time.
10. In view of delays due to system failure or other communication related failures, it is suggested that the tender/bid be uploaded, if necessary, sufficiently in advance of the last due date and time fixed.
11. 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 Dehradun.
12. The contractor shall comply with all labour regulations including EPF and MP Act 1952.
13. Any tenderer, which proposes alterations to any of the condition, specification laid down in the tender documents or any new condition, whatsoever, is liable to be rejected.

Encls: As above

Yours Sincerely,

Signature of Contractor

Dated : _____ 2024

AGE(Contracts)
For Accepting Officer

**INSTRUCTIONS FOR COMPLETION OF TENDER DOCUMENTS TO BE COMPLIED
WITH BY THE TENDERER(S)**

1. EARNEST MONEY DEPOSIT (EMD)

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

- (a) Deposit at Call Receipt from a Scheduled Bank in favour of Garrison Engineer concerned.
- (b) Receipted Treasury challan, the amount being credited to the revenue deposit of Garrison Engineer.

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

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

2. PERFORMANCE SECURITY:

2.1 Within 28 days of receipt of letter of Acceptance, the successful contractor shall deliver to the Accepting Officer a Performance Security in any of the forms given below for an amount equivalent to **5%(FIVE PERCENT)** of the contract sum.

- (a) A Bank Guarantee in the prescribed form.

- (b) Government Securities, FDR or any other Government Instruments stipulated by the Accepting Officer.

2.2 The performance security in favour of Accepting Officer and shall be in any of the forms mentioned above. Work Order No 1 shall be placed only after submission of Performance security of adequate value by the contractor. In Case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the Performance Guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.

2.3 If the performance security is provided by the successful contractor in the form of a Bank Guarantee, it shall be issued by Nationalized/Scheduled Indian Bank but its confirmation shall be done only from the Head Office of the Bank.

**INSTRUCTIONS FOR COMPLETION OF TENDER DOCUMENTS TO BE COMPLIED
WITH BY THE TENDERER(S)(Contd....)**

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

2.5 Failure of the successful contractor to comply with the requirements of sub-clause 2.1 above shall constitute sufficient grounds for cancellation of the award of work and forfeiture of Earnest Money. In case of MES enlisted contractor, amount equal to the Earnest Money stipulated in the Notice Inviting Tender, shall be notified to the tenderer for depositing the amount through MRO. Issue of tender to such tenderers shall remain suspended till the aforesaid amount equal to the Earnest Money is deposited in Government Treasury.

2.6 All compensation or other sums of money payable by the contractor to the Government under the terms of this contract or under any other contract with Government may be deducted from, or paid by the sale of a sufficient part of the Performance Security or from the interest arising 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.

3. GENERAL INSTRUCTIONS FOR COMPLIANCE

3.1 The bid received only in the electronic form will be considered. All bids shall be submitted on www.eprocuremes.gov.in portal. Documents should be scanned and forwarded in 'pdf' form and 'xls' form as indicated.

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

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

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

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

3.6 In the technical bid, a scanned copy of Power of Attorney in favour of the person uploading the bid using his/her DSC shall be uploaded. In case the digital signatory himself is sole proprietor, scanned copy of an affidavit on stamp paper of appropriate value to this effect stating that he has authority to

**INSTRUCTIONS FOR COMPLETION OF TENDER DOCUMENTS TO BE COMPLIED
WITH BY THE TENDERER(S)(Contd....)**

bind the firm in all matters pertaining to contract including the Arbitration Clause, shall be attached in 'pdf' form. In case of partnership concern or a limited company, digital signatory of the bid/tender shall ensure that he is competent to bind the contractor (through partnership deed, general power of attorney or Memorandum and Articles of Association of the Company) in all the matters pertaining to the contracts with Union of India including arbitration clause. A scanned copy of the documents confirming of such authority shall be attached with the tender/bid in 'pdf' form, if not submitted earlier. The person uploading the bid on behalf of another partner(s) or on behalf of a firm or company using his DSC shall upload with the tender/bid a scanned copy (in 'pdf' form) of Power of Attorney duly executed in his favour by such other or all of the Partners(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 of 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 and individual authorizing him to sign tender in pursuance of which bids are being uploaded by such person as a routine, fresh Power of Attorney duly executed in his favour stating specifically that the said person has authority to bind such partners of the Firm, or the Company as the case may be, including the condition relating to Arbitration Clause, should be uploaded in 'pdf' form with the tender/bid, unless such authority has already been given to him by the Firm or the Company. It shall be ensured that power of attorney shall be executed in accordance with the constitution of the company as laid down in its Memorandum & Article of Association.

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

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

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

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

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

3.13 In case the tender/bidder has to revise/modify the rates quoted in the BOQ (excel sheet) he can do so only in the BOQ, through defproc.gov.in website only before the bid closing time and date.

**4. REVOKATION/REVISION OF OFFER UPWARD/OFFERING VOLUNTARY REDUCTION,
AFTER OPENING OF FINANCIAL BIDS BY LOWEST BIDDER**

In the event of lowest tenderer/bidder revoking his offer or revising his rates upward/ offering voluntary reduction, after closing of bid submission date & time, his offer will be treated as revoked and the Earnest Money deposited by him shall be forfeited. In case of MES enlisted Contractors, the amount equal to the Earnest Money stipulated in the Notice of tender, shall be noticed to the tenderer/bidder for depositing the amount through MRO. Bids of such Contractors/bidders shall not be

**INSTRUCTIONS FOR COMPLETION OF TENDER DOCUMENTS TO BE COMPLIED
WITH BY THE TENDERER(S)(Contd....)**

opened till the aforesaid amount equal to the earnest money is deposited by him in Govt Treasury. In addition, bids of such tenderer/bidder and his related firm shall not be opened in second call or subsequent calls. Reduction by the tenderer/bidder on the freak high rates referred for review shall not be treated as voluntary reduction.

5. CPM (Critical Path Method)

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

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

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

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

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

(Signature of Contractor)
Dated :

AGE (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

Tell Mily : 6060

Garrison Engineer
Military Engineer Services
Dehradun Cantt

8874/A/ 05/E8

30 Sep 2024

**TENDER FOR: COMPREHENSIVE MAINT TO JCOS/ OR MD ACCN SUP DEP & REGION 3
ANARWALA UNDER AGE B/R-I OF GE DEHRADUN.**

1. Sarvashri/Shri _____ is/are hereby

authorized to tender for the above work. The online bid only is to be submitted on MES website defproc.gov.in
before date as mentioned in critical dates on defproc.gov.in portal.

2. Any correspondence concerning to this tender should be addressed as indicated at the top of this sheet
quoting the reference as given.

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

(Signature of Contractor)
Dated _____

Signature of Officer
Issuing the tender documents

Appointment
GARRISON ENGINEER
DEHRADUN

SCHEDULE 'A'**NAME OF WORK: COMPREHENSIVE MAINT TO JCOS/ OR MD ACCN SUP DEP & REGION 3 ANARWALA UNDER AGE B/R-I OF GE DEHRADUN.****Notes:-**

1. This contract comprises for full and final execution of the work including material and labour complete all as described in Schedule 'A' (BOQ).
2. The rate in Col 5 are to be filled by the tenderer in figures only.
3. **PERIOD OF COMPLETION:** - The entire work under this contract shall be completed within a period of **120 Days** from the date of commencement as mentioned in the work order No. 1.
4. **Defect liability period:**-Refer condition 46 of IAFW 2249 (General Condition of Contracts) amended vide amendment No. 49 of IAFW-2249. Defects liability period for this contract shall be 12 (Twelve months) calendar months after the work have been handed over to the Government
5. Unless, otherwise specifically mentioned, the unit rates quoted against all items of Schedule 'A'(BOQ) shall be inclusive of costs towards materials, labour, T&P, taxes/ duties i.e. GST, labour cess and any other tax as applicable day by day, insurance charges, freight charges, transportation, loading, unloading, testing charges as applicable, fixing in position as described in the respective items and all other ancillaries items of work required for the satisfactory execution of the items of work as per description given in the Schedule 'A'(BOQ) and as specified in the particular specification. Nothing extra will be admissible to the contractor.
6. Form 3D, 31 & 32 or any other form shall not be issued by MES. This is an express condition of this contract No claim of the contractor shall be entertained by MES on this account.
7. The quantities shown under column 3 are approximate, and are inserted as guide only. These shall however not be varied beyond the limits laid down in condition 7 of IAFW-2249 (General Condition of Contracts).
8. Total amount under column 7 is not firm but will be treated as "Contract Sum" as referred to in IAFW-2249. The amount schedule of credit (if any) shall be deducted from the total amount of BOQ under Col-7 contract sum shall be arrived accordingly to arrive lowest tender L1.
9. Description of works given in Schedule 'A'(BOQ) are brief, these shall deemed to be amplified and read in conjunction with special condition particular specification, specifications for material and labour, preamble and condition given in the relevant sections of MES Schedule of rates Part-I 2009 specification and part-II rates 2020.
10. The unit rates quoted by the contractor shall be deemed to included for all minor extra constructional details and accessories which are not specifically mentioned in Schedule 'A'(BOQ) and or given in particular specification but are essential for the execution of works in workman like manner and sound Engineering practice. In case of difference of opinion between the contractor and Engineer-in-Charge as to whether or not certain items of work constitute minor constructional details and accessories which is deemed to have been included in the Unit rates, the decision of the Accepting Officer shall be final conclusive and binding.
11. Unit rates of all items shall be incisive of Supply & Fixing (S&F) Materials & Labour (M&L) Laying, Jointing & Testing (as applicable) unless mentioned specifically 'Fixing only', 'Supply only' or 'Hanging only'.
12. The work will be carried out up to tripple storey buildings. The rates quoted by the bidders shall include erecting/construction of platforms and scaffolding up to required height.
13. The work for periodical surfaces shall include the following and the rates quoted by the bidders shall include the same:
 - (a) Use of all scaffolding, trestles, ladders, cradles, etc. necessary for execution of work and protective measures.
 - (b) Removing of nails, making good holes, cracks, etc.
 - (c) Work in patches, and in narrow \widths. bands, cornices, pilasters, etc. and cutting in edges to line, where necessary.
 - (d) Spreading and removing coverings to doors, windows, floors, fittings, etc., to protect them from splashes.
 - (e) Removing and replacing furniture, movable cupboard, chicks, blinds, etc.
 - (f) Washing floors, cleaning glass, joinery, electric fittings, wiring, etc. of drops and splashes and leaving premise, clean and tidy.

(g) First coat of finish on plastered surfaces, wherein the previous decoration has been completely removed, shall be treated as on undecorated surfaces.

14. Contractor shall observe all necessary precautions for working on heights, over head tanks, in manholes, soak wells, septic tanks and in foul conditions. Workmen shall be provided with safety equipments, masks, gloves, gum boots etc for protection from hazardous gases and polluted sewage.

15. Preparation of surfaces shall be carried out as specified for carrying out finishes. After preparation of surfaces, approval shall be obtained from Engr-in-charge before applying further treatment / coat. Building wise stage passing register shall be maintained.

16. Painting on area exc more than 3 sqm will be done with roller. Painting brush will be used only in corner, grill etc with the permission of Engr-in-Charge.

17. The contractor shall inspect & examine site by prior appointment with GE & satisfy himself with the work & its site condition etc., before submitting his tender. No claim on account of any misunderstanding or otherwise shall be entertained at later date.

18. Whether or not mentioned anywhere else, cleaning of sewage lines, septic tanks, soakwells, manholes and any other similar situation shall be executed by mechanical means. In situations where application of mechanical means is not feasible, Engr-in-Charge shall be intimated before carrying out the work manually. The persons deployed for work in these situations shall be provided necessary safety equipments and gears. Contractor shall be responsible for safety of workmen. All the norms and rules for working in foul and hazardous conditions as per prevailing act shall be followed. Any Equipment/ Machine / T&P necessarily & technically required for effective & safe workmanship as directed by Engr-in-Charge shall be arranged by the contractor at his own cost.

19. Complete site for work may not available at the time of placing of work order and as on the stipulated date of commencement of work. In such case the contractor may have to start the work on part site. The contractor while preparing the phased schedule of work shall take this into consideration and schedule his programme accordingly. No claim whatsoever for not handing over the entire site on acceptance of contract / placing of work order and for giving the site gradually shall be tenable.

20. ENGINEERING ESTABLISHMENT

20.1 Contractor shall employ Engineering and Supervisory staff as per condition 25 of IAFW 2249 (General condition of the contract) and mentioned in the tender documents.

21. T&P/ MACHINERY/ EQUIPMENT :

21.1 Contractor shall arrange minimum following T&P required for the work at his own cost for entire completion of work.

B/R Works

(a)	One bag capacity concrete mixer (diesel)	-	01
(b)	Vibrator (Needle and plate type)	-	02
(c)	Steel shuttering with spans, props etc.	-	As per site requirement
(d)	Drillings machines	-	01

E/M Works

(a)	Steel/ Aluminium ladders 1.5m to 8m	-	02 (Nos)
(b)	Chase cutting machines	-	01
(c)	Torque wrench for nuts/bolts/ screws	-	01
(d)	LT Meggar 500 volts	-	01
(e)	Tong tester	-	01
(f)	Earth tester	-	01
(g)	Welding sets	-	01
(h)	Machines for srew driving	-	01

21.2 Any other Equipment/ Machine / T&P not listed in para 2 above but necessarily & technically required for effective & workmanship like execution of work as directed by Engr-in-Charge shall be arranged by the contractor at his own cost.

22. Contractor will be required to strictly ensure engagement of engineers and deployment of 'T&P' Machinery & Transport as stipulated in the contract and IAFW 2249. Inadequate engagement of engineers/ deployment 'T&P', Machinery & Transport as per contract conditions shall be considered as serious lapse attracting ban/ removal/ downgrading/ debarment of the Firm/ Company.

23. Amendments 1 to 49 to IAFW-2249 (General Condition of Contracts) are applicable for this tender, which are made public through MES website www.MES.govt.in. Bidder's are advised to take cognizance of these amendments before quoting their rates. No claim on what so ever grounds and any misunderstanding shall be entertained later on in this regard.

24. **Performance Security:-** Bidder's special attention is invited to amendment No. 47 of IAFW-2249 by which a new condition No.19 has been added. Successful bidder shall be required to submit to accepting officer a performance Security in the prescribed format for an amount equivalent to **5%(FIVE PERCENT)** of the contract sum, within 28 days of receipt of letter of acceptance, failing which actions as envisaged in the ibid condition shall be contemplated. Non submission within 28 days shall be sufficient ground for cancellation of contract.

25. **DISPOSAL OF MATERIALS OBTAINED AFTER DEMOLITION/DISMANTLING** : All the materials obtained from dismantling/ demolition/taking down except for those re-fixing is specified or in credit schedule shall become the property of Govt and the same shall be deposited in MES store yard by the contractor. Unserviceable materials as declared by GE shall be disposed off as directed by Engineer-in-Charge outside MD land at authorized dumping site declared by Local Administration.

26. The list of makes of the items to be incorporated in the work are given in Appx for makes or in BOQ (for Spl items). In case of items of BOQ No make shall have been given in Appx for makes or in BOQ, the same shall be provided strictly as per BOQ of ISI/BIS make as approved by GE.

27. DEVIATIONS (REFER CONDITION 64 OF IAFW-2249): Contractor's special attention is invited to the fact that no deviation at site shall be implemented/executed without prior written approval of deviation along with details of rates & mode of measurement by the Accepting Officer. It is also added that deviation if any executed by the contractor at site without written approval, he shall be doing so at his risk & cost. No payment for such work carried out by contractor shall be made to him in RARs/Final Bill. In case, payment on this account is released by the MES in any of the RARs inadvertently, MES may deduct the same at a later stage from any subsequent RARs or Final Bill and contractor shall not have any whatsoever on this account at a later date.

Contd...

COLLECTION OF SCHEDULE 'A' (BOQ)

- | | | |
|----|---|--------------|
| 1. | Total amount BF from Srl Page No 34 | Rs. _____ |
| 2. | Deduct the amount of Schedule of credit | Rs. 65784.00 |

Net Amount	Rs. _____
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Signature of Contractor
Dated:

AGE (Contracts)
For Accepting Officer

SCHEDULE OF CREDIT

NAME OF WORK: COMPREHENSIVE MAINT TO JCOS/ OR MD ACCN SUP DEP & REGION 3 ANARWALA UNDER AGE B/R-I OF GE DEHRADUN.

S No	Description of items	Unit	Qty	Rate of recovery	Amount	Remarks
1.00	Old Brick/ Brick Bats/ stone	Cum	14.00	350.00	4900.00	
2.00	Old shutter of any description n exc 1.00 Sqm each including all mongries	Each	5.00	150.00	750.00	
3.00	Old shutter of any description exc 1.00 sqm and nex 2 Sqm each including all mongries	Each	20.00	200.00	4000.00	
4.00	Old chowkhat with shutter area nex 1.50 Sqm each	Each	15.00	250.00	3750.00	
5.00	Old chowkhat with shutter area exc 1.50 Sqm but nex 4.0 Sqm each	each	10.00	350.00	3500.00	
6.00	Old wire cloth	Sqm	5.00	5.00	25.00	
7.00	Old Tower bolt, hinges, sliding bolt, handle, hasp and staple, floor door stopper, rat tail spring etc	Each	305.00	2.00	610.00	
8.00	Old u/s drapery rod any type	RM	200.00	5.00	1000.00	
9.00	Old U/s steel Window without glazing bars	Sqm	20.00	50.00	1000.00	
10.00	Old U/s steel Window with glazing bars	Sqm	20.00	50.00	1000.00	
11.00	Old PPR tubing 15 mm	Rm	250.00	2.00	500.00	
12.00	Old PPR tubing 20 mm	Rm	200.00	3.00	600.00	
13.00	Old GI tubing 15 mm	Rm	150.00	10.00	1500.00	
14.00	Old GI tubing 20 mm	Rm	50.00	15.00	750.00	
15.00	Old PVC Connection	Each	40.00	1.00	40.00	
16.00	Old Sink	Each	4.00	100.00	400.00	
17.00	Old WC Seat Cover	Each	4.00	5.00	20.00	
18.00	Old flushing ceistern	Each	20.00	50.00	1000.00	
19.00	Old PVC pipe 75/90/110 mm	Rm	140.00	2.00	280.00	
20.00	Old CP Bib tap, Pillar tap, angle valve, float valve, shower, etc	Each	254.00	40.00	10160.00	
21.00	Old Health faucet, cp jet, toilet paper holder, towel rail	Each	17.00	20.00	340.00	
22.00	Old waste fittings of WHB/Sink	Each	8.00	5.00	40.00	
23.00	Old PVC waste pipe	Each	200.00	1.00	200.00	
24.00	Old PVC Tank 500 Ltr	Each	20.00	100.00	2000.00	
25.00	Old PVC Tank 1000 Ltr	Each	2.00	200.00	400.00	
26.00	Old Floor Trap/grating	Each	30.00	10.00	300.00	
27.00	Old scrap iron	Kg	250.00	25.00	6250.00	
28.00	Old Scrap Aluminium	Kg	0.21	100.00	21.00	
29.00	Old boarding of any description	Sqm	285.00	10.00	2850.00	
30.00	Old Looking mirror /cabinet mirror	Each	15.00	50.00	750.00	
31.00	Old scrap Brass	Kg	1.00	200.00	200.00	
32.00	Old scrap PVC	Kg	1.00	10.00	10.00	
33.00	Old U/S point wiring light, fan, power, bell, s/socket incl U/S Switches, sockets 5&15, bell push, holder, ceiling rose, ragulators etc etc	Point	243.00	30.00	7290.00	
34.00	Old U/S Swiches,sockets, Ceiling rose ,lamp holder,Bell,Regulator,bell pushetc	Each	434.00	2.00	868.00	
35.00	Old u/s Light fittiings any type/any description	Each	126.00	5.00	630.00	
36.00	Old u/s building security light fitting	Each	6.00	100.00	600.00	
37.00	Old u/s submain wiring	RM	325.00	5.00	1625.00	
38.00	Old u/s rusted sunken box	Nos	20.00	5.00	100.00	
39.00	Old u/s DBs (TPN/SPN)	Each	12.00	50.00	600.00	
40.00	Old u/s Busbar chamber	Each	2.00	125.00	250.00	
41.00	Old u/s Meter box	Each	2.00	150.00	300.00	
42.00	Old U/S MCCBs	Each	4.00	100.00	400.00	
43.00	Old U/s MCB combo box	Each	10.00	50.00	500.00	
44.00	Old U/s MCBs	Each	70.00	1.50	105.00	
45.00	Old U/s Scrap of earthing	Each Lot	5.00	50.00	250.00	
46.00	Old U/s Service cable/UG alum armored cable any type & size	RM	150.00	20.00	3000.00	
47.00	Old U/s GI tubing any type & size	RM	6.00	20.00	120.00	
				Total	65784.00	

SCHEDULE OF CREDIT(CONTD/..)**Notes: -**

1. The department has assessed the rate of credit and inserted under Column -5 and extended the amount to column 6. The total of the credit so assessed shall be deducted from amount quoted by the tenderer under collection of schedule 'A' (BOQ).
2. The rate of credit assessed by the department is firm. The quantity is measurable. The final credit shall be based on the sum arrived at by the final quantity multiplied by the unit rate of credit assessed by the Department.
3. Recovery shall be affected for the net quantity dismantled/demolished under Schedule 'A' (The quantity reused in the work will be deducted) for the purpose of credit measurement of AC/CGI Sheet actual quantity shall be measured after dismantling.
4. The amount of credit shall be deducted from the RAR for the completed portion of work.
5. Items issued under Schedule of Credit shall not be re-used in the work.
6. The site shall be kept clean and tidy after removal of the materials issued under schedule of credit.
7. No claim of any nature regarding the rate of credit, quality of material obtained and its suitability, etc shall be entertained at any stage
8. No lead will be measured and paid for stacking or subsequent removal of material.
9. The items not included in Schedule of Credit but dismantled/demolished shall be the property of Govt and shall be returned/deposited by the contractor to MES store yard without any extra cost to Govt.

Signature of Contractor

Dated : _____

AGE (Contracts)

For Accepting Officer

SCHEDULE 'B'**LIST OF MATERIALS TO BE ISSUED BY THE DEPARTMENT****SEE CONDITION 10 OF IAFW-2249**

Srl No	Description of items	Unit	Rate	Place of issue by name	Remarks
1	2	3	4	5	6

-----N I L-----

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

(See Conditions 15, 34 and 35 IAFW-2249)

Ser No	Quantity	Particulars	Details of MES crew supplied	Hire charges per unit per working day	Stand by charges per units per off day	Place of issue (by name)	Remarks
1	2	3	4	5	6	7	8

-----N I L-----

SCHEDULE 'D'**(TRANSPORT TO BE HIRED TO THE CONTRACTORS)**

(See Conditions 16 & 35 of IAFW-2249)

Ser No	Quantity	Particulars	Rate per Unit per working day	Place of issue (by name)	Remarks
1	2	3	4	5	6

-----N I L-----

(Signature of Contractor)

Dated :

AGE (Contracts)

For Accepting Officer

TENDER

THE PRESIDENT OF INDIA

Having examined and perused the following documents:-

1. Specifications signed by GE & AGE (Contracts).
2. Drawings detailed in the specifications.
3. Schedule 'A' (BOQ), 'B', 'C' & 'D' attached hereto.
4. MES Standard Schedule of Rates (2009) Part-I specification and Part-II Rates (2020) (hereafter referred to as MES Schedule) together with errata/amendments Nos 1 to 3 for SSR Part –I (2009) and errata/amendment Nos. 1 to 122 for SSR Part - II (2020).
5. General Conditions of Contract IAFW-2249, 1989 Print together with amendments No. 1 to 49 and errata No. 1 to 20.
6. WATER: [Condition 31 of IAFW-2249 (General Condition of Contracts)] Water will be supplied by MES and shall be paid, by the contractor @ Rs. 3.75 per Rs. 1000/- worth of work done priced at contract rates.
7. Should this tender be accepted I/We agree:-

* (a) That the sum of Rs. _____ (Rupees _____ only) forwarded as earnest money, shall either be retained as a part of security deposit or refunded by the Govt. on receipt of the appropriate – amount of security deposit with in the time specified in condition 22 of IAFW-2249.

(b) To execute all the work referred to in the said documents upon the terms and conditions contained or referred to there in and at the item rates contained in the aforesaid Schedule 'A' (BOQ) or at such other rates and may be fixed under the provision of condition 62 of IAFW-2249 and to carry out such deviations as may be ordered vide condition 7 of IAFW-2249 upto maximum of **10% (Ten percent)** and further agree to refer all disputes as required by conditions 70 of IAFW-2249 to the Sole Arbitration of a serving officer having a degree in Engineering or equivalent or having passed final/direct examination of Sub Division II of Institution of Surveyors (India) recognized by Govt. of India, to be appointed by the Chief Engineer Bareilly Zone, Bareilly or his absence the Officer Officiating as Chief Engineer Bareilly Zone, Bareilly whose decision shall be final, conclusive and binding.

* To be deleted where not applicable.

Contd.../-

TENDER (CONTD....)

Signature_____in the capacity of_____
_____duly authorized to sign the tender for and on behalf of

Dated_____

Postal Address_____

Witness Address:-**TELEGRAPHIC ADDRESS**_____

Telephone_____

ACCEPTANCE

_____Alternations have been made in these documents and as evidence that these alternations were made before the execution of Contract Agreement, they have been initialed by the Contractor and Shri Dwarika Puri AGE (Contracts) of Garrison Engineer Dehradun Cantt. The said officer is hereby authorized to sign and initial on my behalf the documents forming part of this contract.

The above tender is accepted by me on _____ day of _____ on behalf of PRESIDENT OF INDIA, for the item rates contained in Schedule 'A' (BOQ) and contract sum of Rs.

_____(Rupees_____
_____)

Signature_____Dated_____Day of_____

APPOINTMENT GARRISON ENGINEER
DEHRADUN CANTT
(For and on behalf of the President of India)
Accepting Officer

GENERAL CONDITIONS OF CONTRACTS (IAFW-2249: PRINT - 1989)**FOR***** LUMP SUM CONTRACTS (IAFW-2159) & *MEASUREMENT CONTRACTS****(IAFW 1779 & 1779A)**

A copy of the MES GENERAL CONDITIONS OF CONTRACTS (IAFW-2249: Print -1989) with errata and amendments has been supplied to me/us and is in my/our possession. I/We have read and understood the Provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We agree that I/We shall abide by the terms and conditions thereof.

It is hereby further agreed and declared by me/us, that the MES General Conditions of Contracts (IAFW-2249: Print - 1989) including Condition 70 thereof pertaining to settlement of disputes by Arbitration containing 33 pages (Serial page Nos. **41 to 74**) with errata 1 to 20 and amendment Nos. 1 to 49 (Serial page Nos **75 to 81**) shall form part of these tender documents.

* DELETE WHICHEVER IS NOT APPLICABLE

AGE (Contracts)
for Accepting Officer

(SIGNATURE OF CONTRACTOR)
DATED : _____

SCHEDULE OF MINIMUM WAGES

It is, hereby, agreed that the "Schedule of Minimum wages" as published by Government of India/State Govt./Govt. Local authorities whichever is highest and which specifies minimum rates of wages for various categories of workmen as applicable on the last due date of receipt of this tender shall form part of these tender documents.

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

AGE (Contracts)
for Accepting Officer

(SIGNATURE OF CONTRACTOR)
DATED : _____

SPECIAL CONDITIONS

1. **GENERAL** : The following Special Conditions shall be read in conjunction with the general Conditions of Contracts, IAFW-2249 and IAFW-1779-A including Errata/ amendments thereto. If any provision in these Special Conditions is at variance with that of the aforesaid documents, the former shall be deemed to take precedence there over. The term General specification used in any of the documents forming part of the contract refers to the specification contained in the MES Schedule.

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

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

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

3. CONDITIONS FOR WORKING

3.1 (a) The work lies in **UNRESTRICTED AREA**. However, the contractor, his agents, working people and vehicles may pass through the unit lines in which case the Engineer-in-Charge shall, at his discretion, have the right to issue passes to control their admission to the site of work or any part thereof. The contractor shall on demand by the Engineer-in-Charge submit a list of personnel's, etc. concerned and shall satisfy the Engineer-in-Charge as to the bonafides of such people having been checked. 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 agents, employees and work people shall observe all the rules promulgated by the authority controlling the area in which the work is to be carried out e.g. prohibition of smoking, lighting and fire precaution, search of persons at entry and exit, keeping specified routes, restricted hours of working etc. Any person found violating the security rules laid down by the authority, shall be immediately expelled from the area without assigning any reasons whatsoever and the contractor shall have no claim on this account. Nothing shall be admissible for any man hours lost on this account.

4. ACCEPTABLE QUALITY OF WORK AND FINISHES

(i) To determine the acceptable standard of materials and workmanship/final finishes and layout of fittings etc, the contractor shall execute stages of work viz excavation, foundation concrete, walling upto plinth/lintel/roof levels, roofing, flooring, joinery, built in items, finishes and the like and services i.e. internal electrification, water supply, plumbing, sanitary fittings as directed by the GE under the close supervision of Engineer-in-Charge and shall get it approved by the GE. The workmanship of various trades, finishes and fittings shall serve as guiding samples.

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

5. WORK ON HOLIDAY

The contractor shall not carryout any work on gazetted holidays except when he is specially authorised in writing to do so by GE. The GE may at his sole discretion declare any day as holiday or non-working day without assigning any reason for such declaration.

6. RECORD OF CONSUMPTION OF CEMENT

6.1 The contractor shall maintain a pucca bound register with serially numbered pages with all pages initialed by Engineer-in-Charge against numbering showing quantities of cement received, used in the work and balance at the end of each day. The form of record shall be as approved by Engineer-in-Charge. The register shall be signed daily by the representatives of MES and the contractor in token of verification of its correctness and will be checked by Engineer-in-Charge, at least once a week.

6.2 The register shall be kept at site in safe custody of the contractor's representative during the progress of the work and shall on demand, be produced for verification to the inspecting officer(s).

6.3 On completion of the work the contractor shall deposit the cement register with the Engineer-in-Charge for record.

SPECIAL CONDITIONS (Contd.....)**7. MINIMUM WAGES PAYABLE (REFER CONDITION 58 OF IAFW-2249)**

7.1 Refer condition 58 of IAFW-2249. The contractor shall not pay wages lower than minimum wages including allowances for labour as fixed by Govt. of India/State Govt. OR Union Territory whichever is higher.

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

8. ROYALTIES

Refer condition 14 of general condition of contracts (IAFW-2249). Quarries on defence land are not available.

9. LAND FOR TEMPORARY WORKSHOP, STORES ETC.

Delete the following from lines 5 to 9 of sub para 1 of condition 24 Of IAFW-2249 reading "in the event of area of land.... land allotted to him" and insert as under : -

" Separate land will not be allotted to the contractor for the storage of materials, temporary workshop and offices. The land for these purposes shall be arranged by contractor at his own and the lump sum cost quoted in the tender shall deemed to be included for the same."

10. WATER

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

10.2 Water will be supplied by MES at the point(s) marked on site plan. Necessary arrangement for taking water from point of supply to other places, storage tanks etc. All such temporary arrangements shall however be removed and ground and surroundings shall be made good after the completion of the work.

10.3 As the water supply be MES is likely to be intermittent, the contractor shall make own arrangements for storage the water required for the works, labour and workman etc. at his own his expense. The contractor shall not have any claim on account of such intermittent supply and make his own arrangement to supplement to required quantity of water.

10.4 Point of supply, if not indicated in site plan will be decided by GE. Cost of supply of water at point stated above shall be born by MES and beyond that point it will be responsibility of the contractor to make necessary arrangement in terms of sub para 2 of condition 31 of IAFW-2249.

11. CO-OPERATION WITH OTHER AGENCIES

The contractor shall permit free access and generally afford reasonable facilities to other agencies or departmental workmen engaged by the Govt. to carryout their part of the work, if any, under separate arrangements.

12. ELECTRIC SUPPLY

Electric supply required for the work up to a maximum 5 KW single phase/three phase shall be made available by the MES at point(s) shown on site plan. The exact location of the electric point(s) will be shown by the GE. KWH meters to register the electric energy supplied and main switch shall be provided and installed by the MES. Contractor shall provide all necessary cables, fittings etc. from the tapping point in order to ensure a proper and suitable supply of electricity for execution of work. The contractor will be charged for the electric energy consumed for execution of work at the following rates : -

(a) At Rupees **Eight and paise eighty six** per unit for lighting and power.

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

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

SPECIAL CONDITIONS (Contd.....)**13. NET WORK ANALYSIS**

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

13.2. During currency of the work, the contractor is expected to adhere to the time Schedule and this adherence will be a part of his/their performance under the contract. During the execution of the work, the contractor is expected to participate in the reviews and updating of the net work undertaken by the GE, either as a periodical appraisal measure or when the quantum of work ordered on the contractor is substantially changed through deviation orders or amendments. Any revision of the time Schedule as result of the review will be submitted by the contractor to the GE within a week for his approval after due scrutiny.

13.3. The contractor shall adhere to the revised time Schedule thereafter. In case of contractor disagreeing with revised Schedule, the same will be referred to the Accepting Officer, whose decision shall be final, conclusive and binding. GE's approval to the revised Schedule resulting in a completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension of time. Extension of time shall be considered and decided by the appropriate authority mentioned in condition 11 of IAFW-2249 and separately regulated.

13.4. Contractor shall mobilise and employ sufficient resources to achieve the progress, detailed within the broad framework of the accepted method of working and safety. No additional payment will be made to contractor for any multiple shift work or other intensive methods contemplated by him in his Schedule, even though the time schedule is approved by the department.

14. SAMPLE OF MATERIALS

14.1. Refer condition 10 of IAFW-2249 and clause 1.6 & 1.7 of MES Schedule Part-I.

14.2. Materials provided by the contractor for incorporation in the works, unless otherwise specified in the particular specifications, shall be ISI marked. ISI means Indian Standards as issued by the Indian Standard Institute. Wherever in the specifications ISI is referred to, it means the edition with all amendments, current on the due date of receipt of the tender documents. The materials listed in Appx 'B' shall be of the makes as specified therein.

14.3. The tenderer is advised to inspect other materials which are displayed in the office of GE, before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfied himself, as to the nature and quality of materials, he is required to incorporate in the work irrespective of whether he has actually inspected them or not. The materials (not listed in Appendix 'A' and 'B') to be incorporated in the work by the contractor shall be ISI marked or shall be equal or superior in quality to sample displayed and shall comply with the specifications given hereinafter. In case the contractor provides products of superior specification after getting it approved, it shall be at his own cost and nothing extra shall be payable on this account.

14.4. The contractor shall not procure materials unless the samples are first approved by GE.

14.5. The cost of testing of all materials shall be borne by the contractor. While quoting their lump sum, this aspect should be kept in mind and nothing extra shall be admissible on this account.

15. PERIOD FOR KEEPING THE TENDER OPEN

The tender shall remain open for acceptance for a period of **60 (SIXTY)** days from the date on which the tenders are due to be submitted.

16. SECURITY OF CLASSIFIED DOCUMENTS

Contractor's special attention is drawn to conditions 2-A and 3 of IAFW-2249 (General Condition of Contracts). The contractor shall not communicate any classified information regarding the work either to sub contractors or another person without the prior approval of the Engineer-in-Charge. The contractor shall not make copies of the design/drawings and other documents furnished to him in respect of the work, and shall return all documents on completion of the works or earlier on termination of the contract. The contractor shall along with the final bill, attach a receipt of his having returned the classified documents as per condition 3 of IAFW-2249 (General Conditions of Contracts).

17. **OFFICIAL SECRETS ACT:** The contractor shall be bound by the Official Secrets Act -1923.

SPECIAL CONDITIONS (Contd.....)**18. RECORD OF MATERIALS**

18.1 The contractor shall, produce to the GE, original receipted vouchers/invoices in respect of the following items.

(i) Cement (ii) Steel (iii) OBD, acrylic emulsion paint (iv) Glazed ceramic / non skid ceramic tile/ vitrified tile/ heavy duty tile/ inter locking paver block (v) Prepainted galvalume sheet (vi) Water supply and sanitary fittings (vii) false ceiling (viii) aluminum door and partition (ix) LED lights & fittings and cables (x) Proprietary items

18.2 The vouchers/invoices shall be defaced and stamped by Engineer-in-Charge indicating contract no, name of work, under his dated signature. The contractor shall ensure that the materials are brought to site, in original sealed containers/packing, bearing manufacturer's marking except in the case of the requirement of material(s) being less than smallest packing. Refer condition 10(A) of IAFW-2249

18.3 Contractor shall produce vouchers/invoices from the manufacturers and/or their authorized agents for the full quantity of the material, as a pre-requisite before submitting claims for payment for advances on account of the materials collected (lying at site) in accordance with condition 64 of General Conditions of Contracts IAFW-2249.

18.4 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.

19. RELEASE OF PERFORMANCE SECURITY DEPOSIT

19.1 Refer conditions 22 and 68 of IAFW-2249.

20. CLEANING DOWN

Refer Condition 49 of IAFW-2249, General Condition of Contracts : - The contractor shall clean all floors, walls, remove cement/ lime/paint marks/ drops, etc. clean the joinery glass panes etc, touch up all painters work and carryout all other necessary items of work in connection therewith and leave the whole premises clean and tidy before handing over the completed work.

21. SAFETY PRECAUTION

21.1 The contractor shall take every/precaution to control traffic on road keeping danger boards, necessary lighting arrangements, fencing and watchman to avoid any damage. In case due to excavation or others the road is to be blocked the contractor shall, without any extra cost to the Govt, provide separate by pass so that normal traffic is not disturbed.

21.2 Any damage to the existing road/building etc, shall be made good by the contractor with the same specifications as per existing work, without any extra cost to the Govt. In the event of contractor not fully complying with the above provisions to the satisfaction of the GE, the GE may provide the same for which the expenses incurred will be recovered from the contractor.

22. EMPLOYMENT OF PERSONAL

22.1 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 nationality is in any way, associated with the work. If for the reasons of technical collaboration or other considerations the employment of foreign national(s) is unavoidable, the contractor shall furnish full particulars to this effects to the Accepting Officer at the time of submission of the tender. As a proof that the contractor has employed only Indian Nationals, he shall render a certificate to GE within one month from the date of acceptance of tender to this effect. In case the GE desires contractor will have the police verification done of personnel employed by him.

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

22.3 The contractor's attention is also draw to condition 25 of IAFW-2249 in this connection.

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

SPECIAL CONDITIONS (Contd.....)**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 applicable taxes. No reimbursement/refund for variation in rates of taxes, and/or imposition/abolition of any new/existing taxes, except as provided in Sub para (b) (i) to (iv) here-in-below.
- (b)(i) The taxes which are levied by Govt at certain percentage rates of Contract Sum/Amount shall be termed as “taxes directly related to Contract value”. The tendered rates shall be deemed to be inclusive of all “taxes directly related to Contract Value” with existing percentage rates as prevailing on last due date for receipt of tenders. Any increase in percentage rates of “taxes directly related to Contracts Value” with reference to prevailing rates on last due date for receipt of tenders shall be reimbursed to the contractor and any decrease in percentage rates of “taxes directly related to Contract Value” with reference to prevailing rates on last due date of receipt of tenders shall be refunded by the contractor to the Govt/deducted by the Govt from any payments due to the contractor. Similarly imposition of any new “taxes directly related to Contract value” after the last due date of receipt of tenders shall be reimbursed to the Contractor and abolition of any “taxes directly related to Contract value” prevailing on last due date for receipt of tenders shall be refunded by the Contractor to the Govt/deducted by the Govt. from the payments due to the Contractor.
- (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 Dehradun stating that the same is given pursuant to this Special Condition, together with all information relating there to which he may be in a position to supply. The Contractors shall submit the other documentary proof/information as the GE Dehradun may require.
- (iii) The Contractor shall, for the purpose of this condition keep such books of account and other documents as are necessary and shall allow inspection of the same by a duly authorized representative of Govt and shall further, at the request of the GE Dehradun furnish, verified in such a manner as the GE Dehradun may require, any documents so kept and such other information as the GE Dehradun may require.
- (iv) Reimbursement for increase in percentage rates/imposition of “taxes directly related to Contract Value” shall be made only if the Contractor necessarily & properly pays additional “taxes directly related to Contract Value” to the Govt without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Govt Authority and submits documentary proof for the same as the GE Dehradun may require.

24. TAXES AND DUTIES:-

- 24.1 The tender's rates shall be deemed to include all mandatory charges and **GST** as referred in condition 10 of IAFW-2249. Any other condition stipulated by the tenderers regarding taxes will not be considered and such tender shall be **liable for rejection**. The contractor shall not include any condition for fluctuation in price of labour and/or materials in his tender. Variation in prices of labour and materials during the progress of work consequent to any act of legislature is already covered in condition 63 of IAFW-2249 as modified by special condition here-in-above. Recovery of **GST** if any at source shall be done as per Government Notification.

25. LABOUR WELFARE TAX/CESS:- Contractor's quoted rates shall be inclusive of the labour welfare tax/cess levied by labour welfare authorities. The prevailing percentage of which as on date of issue of tender is 1% of the gross payment due to contractor and the same will be recovered by the department from the contractor at source.**26. OUTPUT OF ROAD ROLLERS (REFERENCE CONDITION 15 OF IAFW-2249)**

26.1 Road roller will not be issued under Sch 'C' contractor should arrange road roller under his own arrangement. 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/his authorized representative and by the Engineer-in-Charge.

26.2 To ensure proper consolidation, roller must work for at least the number of days assessed on the basis of output given here-in-after. 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 failing short of the days assessed on the basis of outputs stipulated. The recovery shall be effected as under:-

SPECIAL CONDITIONS (Contd.....)**OUTPUT OF ROAD ROLLER PER DAY OF 8 HOURS**

(i)	Consolidation of formation surfaces/sub grade.	1850 Square Metres
(ii)	Consolidation of stone soling 23 cm thick (spread thickness) with 8 to 10 tonne roller.	518 Square Metres
(iii)	Consolidation of stone soling 15 cm thick (spread thickness) with 8 to 10 tonne roller.	800 Square Metres
(iv)	Consolidation of water bound macadam (stone metal) 11 cm spread thickness including spreading and consolidation with binding materials.	248 Square Metres
(v)	Consolidation of water bound macadam (stone metal) 7.5 cm compacted thickness including spreading and consolidation with binding materials.	372 Square Metres
(vi)	Consolidation of 2 cm thick premixed carpet including seal coat.	744 Square Metres
(vii)	Consolidation of 2.5 cm thick premixed carpet including seal coat.	600 Square Metres
(viii)	Consolidation of 3 cm thick premixed carpet including seal coat.	456 Square Metres

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

(Signature of Contractor)

Dated : _____

AGE (Contracts)

for Accepting Officer

(PARTICULAR SPECIFICATIONS)

- 1.1 **GENERAL:**
- 1.1.1 Specifications for materials and workmanship shall be all as described in MES Schedule part-I 2009 except where specifically mentioned otherwise in these documents. General rules, preamble to various sections, special conditions, method of measurements, etc., given in MES schedule part-II 2020 shall also apply to this contract unless otherwise mentioned in these documents.
- 1.1.2 Particular specifications given hereinafter are in brief and are meant only to particularize, amend and emphasize the specifications given in MES schedule
- 1.1.3 Particular specifications given hereinafter shall be read in conjunction with the provisions in MES Schedule part-I 2009 and relevant IS referred therein and these particular specifications. In case of discrepancy the provisions of these particular specifications shall take precedence.
- 1.1.4 Materials provided by the contractor for incorporation in the works shall comply with the requirements of relevant Indian Standards (IS) of latest edition i.e. edition current at the date of issue of tender document.
- 1.1.5 Where specifications for any item of work is not given in MES Schedule or in these particular specifications, the specifications given in relevant Indian Standard specification or code of practice shall be followed. Specifications given for the items not included in this tender shall be deemed deleted for the purpose of this tender.
- 1.2. **MATERIALS :**
- 1.2.1 All the materials required to be incorporated in the work shall conform to the relevant IS number and bear the ISI certification mark. However the materials which are not being manufactured with ISI certification mark and IS embossing, shall conform to the relevant IS provisions and shall be as approved by the GE.
- 1.2.2 Materials, which are not being manufactured with ISI certification mark and IS embossing / local materials such as sand, aggregate etc. shall strictly conform to samples kept in GE's office or shall be superior to respective samples kept in GE's office.
- 1.2.3 Unless otherwise indicated in schedule 'A', Contractor shall incorporate the material either of the makes listed in list of makes, with prior written approval of GE.
- 1.3. **SAMPLES AND MATERIALS :**
- 1.3.1 Samples of materials shall be supplied by the contractor to GE for approval within 15 days of the date of issue of work order.
- 1.3.2 The contractor shall ensure that the materials used in the work are identical with the approved samples; the materials shall be brought to the site by the contractor in the maker's original packing with the seal intact or with wrapper and shall not be installed unless approved by the Engineer-in-Charge.
- 1.3.3 **TESTING OF BUILDING MATERIALS:** Sampling and testing of materials shall be done as per IS specification and as modified in tender documents. The cost of samples of materials and other expenses required to be incurred for taking the samples, packing, transportation, preservation for further reference and testing charges shall be borne by the contractor.
- 1.4 **MATERIALS WHICH LOOSE IDENTITY AFTER INCORPORATION:**
- (a) For materials, the quantity of which cannot be checked after incorporation in the work shall when collected at site, be recorded in measurement book and signed by both the MES representative and the contractor as a check to ensure that the required quantity has been brought to site for incorporation in the work. Reference to purchase vouchers No; Name of Manufacture/ dealer from whom material has been purchase shall be recorded on the measurement book (s).
- (b) The contractor shall obtain/ procure materials from Manufacture's authorised dealers/ stockists where such authorized sockets have been appointed. The contractor shall produce original receipted voucher of suppliers to the GE to ensure that the contractor has actually brought the required quantity and the quality of the materials from the authorized dealers/ stockists also to find out the dates thereof. These vouchers shall be endorsed, dated and initialed by the Engineer-in-Charge giving the contract, and name of work and a certified copy of each of such vouchers signed by both the Engineer-in-Charge and the Contractor shall be kept on recodes with the Engineer-in-Charge who shall forward these to the GE soon after completion of work.
- 1.5 **WORKMANSHIP :**
- (a) The contractor shall employ qualified supervisors and skilled tradesman during the entire period of execution of the contract. He shall be demanded by the Engineer-in-Charge to produce such evidence of qualification of his supervision tradesman at the time of commencement of work or at any time during the execution of the contract.

(PARTICULAR SPECIFICATIONS (CONTD...))

- (b) The work carried out shall be of the highest standard conforming to modern Engineering practice both as regards to design and execution. The work shall be executed to the entire satisfaction of the Garrison Engineer
- (c) All work shall be executed as per the code of practice as listed in the IS. All electrical work shall be governed by the requirement as specified under the Indian Electricity Act/Rules with latest amendments. The code of practice for electric wiring installation as per IS-274 with amendment No.1 will be strictly followed.
- (d) All other items not particularly specified in the aforesaid clause here-in-before shall conform to the samples kept in GE's office and shall be got approved by GE. The workmanship shall be all as described in SSR Part-I (2009).

2. EXCAVATION:

2.1.1 Excavation and earth work shall be all as described in Schedule 'A'.

2.1.2 The unit rates in Schedule 'A' do not include the cost of timbering to uphold the sides of excavations. The same if considered necessary by the Garrison Engineer will be ordered as deviation.

2.1.3 Unit rates in Schedule 'A' shall be deemed to include for bailing, pumping, dewatering foundation trenches, if water is met with or accumulated from any sources or cause. No additional payment as stipulated in para 3.11 of MES Schedule 2020 (Part II) shall be admissible. In the event of deviation, no adjustment shall be made for cost of bailing, pumping and dewatering specified here-in-before.

2.2. FILLING IN TRENCHES/UNDER FLOORS:

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

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

2.2.3. Surplus soil shall be removed and spread at places as directed by the Engineer-in-Charge, at a distance as specified in Schedule 'A' and levelled. Rubish shall be removed from site time to time as directed by Engineer-in-Charge.

3. DEMOLITION/ DISMANTLING/ TAKING DOWN AND MAKING GOOD:

3.1 Dismantling/demolition/taking down to the extent as specified shall be carried out all as directed by the Engineer in Charge. Particular precaution shall be taken to prevent damage to the part of equipment to be left intact and adjacent equipments. If any damage caused to the equipments due to carelessness and negligence on the part of the contractor shall be made good by the contractor at his own expense.

3.2 Rubbish shall be disposed off to a distance as specified in sch 'A' as directed by the Engineer-in-Charge.

3.3 All works in any trade, dismantled/demolished/taking down in excess of the requirements given in contract due to mistake/carelessness of contractor or his workman or any case whatsoever, shall be made good by the contractor to the original state at his own cost.

(PARTICULAR SPECIFICATIONS (CONTD...))**3.3.1 ANTI TERMITE PRECONSTRUCTION SOIL TREATMENT IN FOUNDATION AND GROUND FLOORS.**

3.3.2 Preconstruction anti termite chemical treatment, which includes bottom and sides of foundation trenches/ pits, filling in trenches/ pit, and below floors, junctions of wall and floors external perimeter of building (s), under plinth protections/ paving surroundings of conduits/ pipes, of all buildings as mentioned in schedule 'A' notes, shall be carried out all as specified in clause 3.26 of MES Schedule Part-I. However, in case of RCC framed structure with column and plinth beams, the treatment shall start at a depth of 500 mm below ground level.

3.3.3 Antitermite treatment shall be got done by main contractor through approved specialist agency holding valid license as per clause 13 of insecticides Act-1968. Persons employed to do the antitermite treatment shall be qualified as per rule 10 of the rules framed under the Insecticide rules 1971. The contractor shall furnish particulars of agency to the GE for his approval and work shall be entrusted only if name is approved by GE in writing if necessary, frequent checks with regard to composition, concentration of chemicals shall be carried out in approved laboratory and a record shall be maintained incorporation the laboratory results. Testing charges shall be borne by the contractor.

3.3.4 Antitermite treatment shall be carried out with emulsion of any chemical specified here in after, purchase direct from the manufacturer or his authorised agents. Purchase vouchers shall be produced to the Engineer-in-Charge for verification and defacement against this contract.

3.3.5 The defects liability period of antitermite treatment shall be ten years and the main building contractor shall be responsible to keep the entire buildings free from termite infestation for a period of 10 years after the date of taking over the completed buildings from the contractor. The contractor may obtain a similar guarantee from the specific firm engaged by him for the purpose.

3.3.6 The GE at any time during the construction or prior to the expiry of said Guarantee period of 10 years, find that the buildings have been infested with termite, the contractor, on demand in writing from the GE, will forthwith undertake to carry out such treatment which may be necessary to render the buildings free of termite infestation at his own expense till expiry of the Guarantee period of ten years.

3.3.7 In the event of contractor's failure to comply with the GE's direction within the stipulated period, the work shall be carried out at the risk and cost of the contractor. The liability of the contractor under this condition shall not be however extended beyond the period of the 10 years from the certified date of completion, unless the notice was served on the contractor previously to rectify such defects.

3.3.8 SECURITY DEPOSIT TOWARDS ANTITERMITE TREATMENT

The amount calculated as per table given below shall be retained out of the contractor's bill as security deposit for the guarantee period of 10 years which shall be refunded to him after expiry of the guarantee period satisfactory. Alternatively, contractor may give a separate interest bearing security deposit or bank guarantee bond to GE valid for 10 years for the sum mentioned above. Security deposit/ bank guarantee shall be released after expiry of defect liability period of 10 years as specified. The contractor may at his discretion furnish fixed deposit receipt for the above amount in lieu of the security for guarantee period mentioned. For the purpose of calculating security deposit on account of guarantee for ATT for 10 years as per table given below, the amount is the cost of termite work (on which amount of security deposit is to be calculated) shall be calculated as per SSR 2020 (Part II) subject to contractor's percentage.

S No	Amount (Cost of termite work)	Amount to be retained from contractor's dues
(i)	Up to Rs 50.00 lakhs	: 2% of amount subject to minimum of Rs 5,000.00 and enhanced by 25%
(ii)	Over Rs 50.00 Lakhs and up to Rs 100.00 lakhs	: 1,00,000.00 + 1.5% of amount exceeding Rs 50 Lakhs and enhanced by 25%
(iii)	Over Rs 100.00 lakhs and upto Rs 500.00 lakhs	: Rs 1,75,000.00 + 1% of amount exceeding Rs 100 Lakhs and enhanced by 25%
(iv)	Over Rs 500.00 lakhs and upto Rs 1500.00 lakhs	: Rs 5,75,000.00 + 0.5% of amount exceeding Rs 500 Lakhs and enhanced by 25%
(v)	Over Rs 1500.00 lakhs	: Rs 10,75,000.00 + 0.5% of amount exceeding Rs 500 Lakhs subject to maximum of Rs 15,00,000.00 and enhanced by 25%

(PARTICULAR SPECIFICATIONS (CONTD...))

3.3.9 The contractor shall provide a cement plaster plate of requisite size in situation as decided by the Engineer-in-Charge on the wall of each of the building. The plate shall be 10 mm thick in cement mortar (1:4) to indicate the CA No., Name of the contractor, the date of completion of the work and the date of expiry of 10 years guarantee for antitermite treatment by engraving and painting (black). The cost of plaster plates etc is deemed to be included in the unit rates of the buildings.

3.3.10 Chemical for antitermite treatment shall be brought in sealed containers. The sealed container of the chemical for use in antitermite treatment shall bear ISI mark. Chemical brought without ISI marked sealed container shall be rejected. Quantity of chemicals brought to site with manufacturer's name, brand, batch No. etc shall be recorded in M.B. The empty container shall be kept at site till completion of the work for inspection by GE/Engineer-in-Charge.

3.3.11 For the purpose of advance on account, the main contractor shall produce proof of payment/ paid receipts and written guarantee from the nominated specialist firm/ agency.

3.3.12 The antitermite treatment in foundation, back fill floor and plinth etc shall be carried out all as per clause 3.26 of MES Schedule Part-I and as specified in IS-6313 Part-II. The chemical used shall be chlorophyryfos 20% EC/ Gammx- 20 (Lindane- 20% EC) Conforming to IS 8944 and as per manufactures instructions. The concentration of chemical for antitermite treatment in different stages shall be 1.00%.

4. **HARD CORE:**

4.1. Refer Clause 3.27 of MES Schedule. The material for hardcore shall be broken stones.

4.2. Hard core shall be of broken stone / boulders gauge/size as specified. Hard core shall be deposited, spread and levelled in layers n-exc 15 cm thick and well watered, rammed to a true surface and compacted. The thickness of the hard core specified or as indicated in the TD drawings, is the thickness after consolidation.

4.3 **PCC ROADS:** - The work of road shall be carried out as per specifications given in Section 20.A of SSR Part I (2009).

4.3.1 **SUB GRADE PREPARATION AND CONSOLIDATION:** The work of sub grade preparation and consolidation shall be carried out as per clause No 20.A.19A.1 of SSR Part I (2009).

4.3.2 **BROKEN STONE SOLING:** The work of soling shall be carried out as per clause No 20.A.20.1 of SSR Part I(2009).

5. **CONCRETE WORK**

5.1 **CEMENT**

5.1.1 **GENERAL:** Cement required for the entire work under the contract shall be procured, supplied and incorporated in the works by the contractor under his own arrangement. Cement shall be of tested quality and shall comply with the requirements mentioned in the drawings, MES Schedules, IS specification as amended and particular specifications given here-in-after.

5.1.2. Type of cement for the subject work shall Ordinary Portland cement of Grade 43 (Forty Three) in accordance with IS-8112 of 1989 or Portland Pozzolana Cement (IS : 1489-1991) as mentioned in notes of Structural drawings. Mixing of OPC & PPC shall not be allowed in the work.

5.1.3. While using the PPC, following requirement shall be met by the contractor :-

- (a) PPC shall meet the strength criteria of 43 Grade OPC as laid down in IS : 8112-1989.
- (b) The minimum period before striking formwork given in clause 11.3.1 of IS : 456 of 2000 shall be increased at site by 03 days. Contractor shall not claim any thing extra on this account.
- (c) Wet curing shall be done for a period of 14 days, wet curing of columns shall be done through Hessians cloth wrapped on the columns.
- (d) Contractor shall submit the following certificates from the manufacturer of the cement for every batch of cement: -
 - (i) The quality of fly ash is strictly as per IS : 14989 (Part-I)-2002.
 - (ii) Fly ash is inter-ground with clinker and not mixed with clinker.
 - (iii) Dry fly ash is transported in closed containers and stored in silos. Only pneumatic pumping has been used.
 - (iv) The fly ash is received from thermal power plant using high temperature combustion above 1000⁰C has only been used.

(PARTICULAR SPECIFICATIONS (CONTD...))

(e) The compressive strength of cement at 03 days, 07 days and 28 days shall not be less than 23 Mpa, 33 Mpa and 43 Mpa respectively. Each lot of cement brought at site shall be tested for compliance by the GE before acceptance.

(f) In cold climate regions, where temperature is lower than 15⁰C, OPC shall be used (However during working seasons in cold climate regions, where OPC is not available use of PPC may be permitted provided it shall be ensured that while using PPC, atmospheric temperature should be more than 15⁰C).

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

5.1.4. SOURCES OF PROCUREMENT

5.1.5. (a) Cement shall be procured by the contractor directly from any of the following main producers of cement (for All Grades) :-

- | | | |
|--|----------------------|-------------------------|
| (i) The Associated Cement Companies Ltd. | (vi) Mangalam Cement | (xi) JK Lakshmi Cement. |
| (ii) Ultra Tech Cement | (vii) Orient Cement | (xii) The India Cement |
| (iii) Dalmia Infra Pro Cement | (viii) Shree Cement | (xiii) Birla Corp Ltd. |
| (iv) Century Cements | (ix) Jaypee cement | (iv) Saurashtra Cement |
| (v) JK Cement | (x) Ambuja Cement | |

(b) Cement shall be procured by the contractor directly from any of the following main producers of cement (OPC 43 Grade)

- | | | |
|------------------------|------------------------|------------------|
| (i) Sartaj | (iii) Chettinod Cement | (v) Sagar Cement |
| (ii) Para Sakti Cement | (iv) JSW OPC 43 | (vi) Maha Cement |
| (vii) Wonder Cement | | |

(c) Cement shall be procured by the contractor directly from any of the following main producers of cement (for PPC):-

- | | | |
|------------------------|-----------------------|-------------------|
| (i) Sartaj Cement | (iv) Chettinod Cement | (vi) Sangi Cement |
| (ii) Para Sakti cement | (v) Sagar Cement | (vii) Maha Cement |
| (iii) Wonder Cement | | |

(PARTICULAR SPECIFICATIONS (CONTD...))

(c) However, where the quantity of cement required is less than 1200 bags, same may be procured from authorised distributors/dealers of approved manufacturer's, if so, permitted by GE in writing. Testing of cement shall invariably be got done before incorporation in work. The contractor shall submit test certificate for each batch of cement issued by the manufacturer.

(d) The contractor shall furnish the particulars of the manufacturer of cement along with the date of manufacture to the GE for every lot of cement separately. The cement so brought shall be fresh and in no case older than 90 days from the date of manufacture. The GE shall verify the document in support of the purchase of cement. Before placing order for supply of cement by the contractor, he shall obtain written approval from the GE regarding name of manufacturer, quantity of cement etc. Cement shall be procured for minimum requirement of one month and not exceeding the requirements of the same for more than two months at a time. The cement shall be consumed in the work within three months after receipt. Cement shall conform to the requirement of IS specification and each bag of cement shall bear relevant ISI mark. The weight of each consignment shall be verified by the GE and recorded. The content of cement shall be checked at random to verify the actual weight of cement per bag. However, the content of cement per bag shall be 50 Kg only subject to tolerance given in Clause 9.2.1.1 and Annexure 'B' of IS-8112 and Clause 10.2.1.1 and Annexure 'B' of IS – 1489 for OPC and PPC respectively.

5.1.6. TESTING OF CEMENT:

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

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

(b) The test certificate and test sheet shall be furnished with each batch of cement. The Engineer-in-Charge shall record these details in cement acceptance register to be maintained by him which will be signed by JE (Civil), Engineer-in-Charge, GE and the Contractors as given in the format here-in-after for verification.

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

(d) The random samples as per relevant IS shall be selected by GE before carrying out testing. The record of such samples selected by the GE for testing shall be properly maintained in the cement testing register giving cross reference to relevant consignment of cement and quantity received etc.

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

(f) The contractor shall be required to set up adequate testing facilities at site to the entire satisfaction of GE for conducting setting time test and compressive strength test as per IS codes referred to here-in-before for the samples collected from the lot brought at site. These tests shall be carried out within 07 days of receipt of cement at site. The tests can alternatively be carried out at the Zonal laboratory, or any other recognized laboratory so designated by GE.

(PARTICULAR SPECIFICATIONS (CONTD...))

(g) The GE shall carryout independent testing as per the tests mentioned in the 'CEMENT SUPPLY AND ACCEPTANCE REGISTER' (as per Annexure 'I') of random samples of cement drawn from various lots, if sample fails in 7 days compressive strength. The testing shall be carried out through National Test House, SENT, CME, Regional Research Laboratories, Govt. approved Laboratories, Zonal laboratories/ IIT Kanpur as per IS : 3535-1986, (method of sampling hydraulic cement), IS-4031 (Method of physical test for hydraulic cement) and IS-4032-1985 (Method of chemical analysis of hydraulic cement) referred to above. The decision as to where the testing of cement is to be done shall be taken by GE. In case the cement is not of requisite standard despite manufacturer's test certificate, the contractor shall remove the total consignment from the site at his own cost after written rejection order of the consignment by the GE. The cost of test shall be borne by the contractor irrespective of the results of testing.

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

(j) The Accepting Officer may order a board of officers for random check of cement and verification of connected documents during the currency of contract.

5.1.8. STORAGE/ACCOUNTING/PRESERVATION OF CEMENT:

(a) Cement shall be stored in covered godown over dry platform at least 20 cm high in such a manners as to prevent deterioration due to moisture or intrusion of foreign matter. In case of store room the stack should be at least 20 cm away from floors and 60 cm from walls. The stacking of cement shall be done as specified in relevant IS. The storage accounting and preservation of cement supplied by the contractor shall be done as per standard Engineering practice till the same is incorporated in the work and the cost of the same shall be deemed to be included in the unit rate/ amount quoted by the tenderer. The Engineer-in-Charge shall inspect once a day to verify that cement lying at site is stored, accounted, preserved and maintained as per the norms. The cement shall be stored so as to differentiate each tested and untested consignment separately with distinct identification. If the GE is not satisfied with the storage/preservation of cement, he may order for any test (s) of cement as applicable for that consignment to ensure its conformity to the quality mentioned in the manufacturer's test certificate. The contractor shall bear the cost of necessary testing (s) in this regard and no claim whatsoever shall be entertained.

(b) Stacking of cement shall be done as per relevant IS and as under :-

- (i) Each cement consignment shall be stacked separately and removal shall be made on the basis of First in First out.
- (ii) Adequate top cover will be provided.
- (iii) Stacks in no case shall be higher than 12 bags. The maximum width of each stack shall be 3.0 m. If the stack is more than 07 or 08 bags high, the bags shall be arranged in header and stretcher fashion, i.e. alternatively lengthwise and crosswise so as to pile together and avoid topping over.
- (iv) Adequate space shall be kept between two stacks.

(c) Cement godown shall be provided with two locks on each door. The key of one lock at each door shall remain with Engineer-in-Charge or his representative and that of the other lock with the contractor's authorized agent at site of works so that cement is removed from the godown only according to daily requirement with the knowledge of both the parties. During the period of storage, if any cement bag (s) is found to be in damaged condition due to whatsoever reason, the same shall be removed from the cement godown on written orders of the GE and suitable replacement for the cement bag (s) so removed shall be made and no claim whatsoever shall be admissible on this account.

(PARTICULAR SPECIFICATIONS (CONTD...))

(d) In case more than one type of cement is used in the work i.e. Ordinary Portland cement or Portland Pozzolana Cement, both type of cement shall be stored separately as directed by the Engineer-in-Charge to avoid mixing of these type of cement. Separate record shall be maintained including the location/ items where these type of cement are used.

(e) Cement shall be removed from the store only according to daily requirement with the knowledge of both the parties and the Engineer-in-Charge and the contractor shall record daily consumption of cement in cement consumption register, which shall be signed. Cement constants given in Appendix 'A' to E-in-C's branch letter No. 19280/E8 dated 03 May 1976 shall form the basis of consumption of cement for various items of works unless specifically indicated otherwise.

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

5.1.9. SCHEDULE OF SUPPLY:

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

5.1.10. MEASUREMENTS AND PAYMENT OF CEMENT:

5.1.11.(a) The entire quantity of cement shall also be suitably recorded in the measurement book for record purposes as 'Not to be abstracted' before incorporation in the work and shall be signed by the Engineer-in-Charge and the contractor.

(b) The payment shall only be allowed after production of original purchase voucher, certified copies of test certificates from manufacturer for each consignment and results of testing carried out in laboratory on receipt of cement (07 days compressive test) are found satisfactory after testing as at site as per condition 64 of IAFW-2249. Rate of payment given in SSR shall be applicable for cement irrespective of type and grade of cement specified for use in the work.

Annexure 'I'**CEMENT SUPPLY AND ACCEPTANCE REGISTER**

01. CA No. & Name of work :

02. Control No.* :

03. Name of Manufacturer/Brand Name/Grade of Cement :-

(a) Manufacturer :

(b) Brand :

(c) Grade :

04. Qty of cement & Lot No./Week No. (in Bags) :-

(a) Quantity :

(b) Lot No./Week No. :

05. Manufacturer's test Certificates No. :

06. Random Test Details :-

(a) Physical test report from _____ vide their letter No. _____
(Name of approved Lab/Engineering College)

(b) Chemical test report from _____ vide their letter No. _____
(Name of approved Lab/Engineering College)

07. **Details of Physical & Chemical properties :-**

(PARTICULAR SPECIFICATIONS (CONTD...))

	Physical Requirements (as per IS-4031)									Chemical Requirements (As per IS-4032)								
	Specific Surface Area (Sqm/Kg)	Soundness by Le Chatelier	Soundness by Auto Clave	Initial Setting Time (Minutes)	Final Setting Time (Minutes)	Compressive Strengths (Mpa)			Temp during testing 0C	Standard Consistency (%)	Lime Saturation Factor (Ratio)	Alumina Iron Ratio (Ratio)	Insoluble Resdue (%)	Magnesium (%)	Sulphuric Anhydride (%)	Loss on Ignition (%)	Alkailes (%)	Chlorides (%)
As per relevant IS						03 Days	07 Days	28 Days										
As per manufacturer's test certificate																		
As per random test certificate																		

Remarks with Signature

Accepted/Rejected**Contractor****Junior Engineer****Engineer-in-Charge****Garrison Engineer**

Remarks of BOO/Inspecting Officer/CWE

* To be allotted serially by GE consignment wise

5.2. **Fine Aggregate.** Fine aggregate for concrete work shall conform to material specifications and gradings within the limits of Grading Zones II to III all as specified in clause 4.4 of MES Schedule 2009 Part-I.

5.3. **Coarse Aggregate.** Refer Clause 4.4 of MES Schedule Part I. Coarse aggregate for all plain cement concrete shall be graded crushed stone at contractor's options. For all RCC work the coarse aggregate shall be graded crushed stone.

5.3.1. **Grading of Coarse Aggregate.** Graded Aggregate of nominal sizes given herein under shall be used, unless specified otherwise: -

(a) Plain or reinforced cement concrete except in foundation of Brick or stone Walls/Pillars, Floors and Sub base to Floors.

(i) For structural elements of depth/thickness more than 50 mm - 20 mm.

(ii) For structural elements of depth/thickness less than 50 mm - 12.5 mm.

(b) Plain Cement concrete in Foundation of Brick/stone Walls, Pillars, Floors and Sub Base to Floors.

(i) Under 30 mm thickness : 12.5 mm

(ii) 30 to 80 mm thickness : 20 mm

(iii) Exceeding 80 mm thickness : 40 mm

(PARTICULAR SPECIFICATIONS (CONTD...))

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

5.5.1 All cement concrete, both plain and reinforced shall be mixed in mechanical mixer of approved type. However, in case of small quantity (i.e. the quantity of concrete required being less than one batch of mix). The contractor may, after obtaining written permission of the Garrison Engineer, be allowed hand mixing. Where hand mixing is permitted, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the concrete is uniform in colour and consistency.

5.5.2. All concrete for RCC work shall be consolidated/compacted by mechanical vibrators of approved type. Precast/cast-in-situ, plain cement concrete may however, be rammed and consolidated by tamping and rodding as specified in MES Schedule.

5.5.3. **Curing and protection of cement concrete surfaces** : -

All cement concrete surfaces shall be cured and protected as specified in clause 4.11.13 and 4.11.14 of SSR Part I.

5.5.4. **Sampling and testing of concrete** : -

(a) Refer clause 4.11.17 of MES Schedule Part I.

(b) Test will be carried out on 15 cms cubes as per IS 456.

(c) The contractor shall provide all necessary materials (including moulds etc) and labour for mixing and casting of cubes and carrying the test cubes including its transportation to Govt labs and any other assistance that may be required for the samples tested in the lab and cost/charges of testing shall be borne by the contractor.

(d) For relatively very small quantities and unimportant work even though testing is waived off by GE, the contractor shall be responsible for to achieve the desired strength of concrete.

(e) The concrete which is not upto the desired strength shall be rejected and the same shall be made good by the contractor without any extra cost to the Govt.

(f) The test results shall be entered in register and shall be signed both by the Engineer-in-Charge and by the contractor.

5.6. **FORM WORK:**

5.6.1 Form work shall be all as specified in para 4.11.6 4.11.6.1 to 4.11.6.5 and para 7.15 7.15.1 to 7.15.12 of MES Schedule 2009 (Part I). Form work shall be timber, contractor may use steel/plywood form work without any price adjustment.

5.6.2 Following precautions shall be taken for structural concrete work while using portland/pozzolana/blast furnace slag cement: -

i) Wet curing shall be done for a period of 14 days.

ii) For stripping of form work the following provisions of IS-456 shall be strictly adhered to.

6.1 **BRICK WORK:**

6.1.1 Bricks shall be kiln burnt Sub Class 'B' best quality conforming to the samples kept in GE's office. Irrespective of whatever specified in Sch 'A'/Notes on drawings, bricks shall have average compressive strength of not less than 75 Kg/cm² for all works. Water absorption of bricks shall not exceed 20% when tested in accordance with IS-3454 and IS-3495. The nominal size of bricks shall be 230mm x 115mm x 75mm. The tolerance in size of bricks shall be +/-8%.

(PARTICULAR SPECIFICATIONS (CONTD...))

6.2 **Fly ash brick work:** Fly ash brick shall be factory made fly ash lime-cement brick. Visually the bricks shall be sound, compact & uniform in shape and free from visible cracks, war page & organic matters, the bricks shall be solid with 10 to 20 mm deep on one of its flat side. The bricks shall have smooth rectangular faces with sharp corners & shall be uniform in shape & color. Bricks shall be manufactured by using standard & latest technology with indigenous fly ash brick making machine and shall be of following specifications:-

Technical Specification

- (a) **Size:** Non-modular 230x110x70 mm
- (b) **Wet Compressive Strength :** Min 7.5 MPa.
- (c) **Water Absorption :** 8-12%
- (d) **Efflorescence :** Nil
- (e) **Density :** 1250-1600Kg/M³
- (f) **Drying Shrinkage:** Shall not exceed 0.15 percent.
- (g) **Brick Colour :** Grey
- (h) **Tolerances:** As per IS: 12894: 2002 and IS: 5454:1978.

6.2.1. Composition:-

- i. Cement: Cement OPC 53 Grade- Minimum 6%
 - ii. Fly Ash: Thermal Station Fly Ash (Gde-II) confirming to IS: 3812: 1981 for physical & chemical properties –Minimum 55-60%
 - iii. Crushed Sand/ Stone (VSI Grade)
 - iv. Hydrated Lime
 - v. Gypsum and POP
- } As per requirement of mix to achieve above properties and specification.

Admixtures: Construction chemicals as per manufacturer's instructions.

6.2.2. Bricks shall be tested in accordance and as described in IS: 3495 (Part I to IV). Sampling criteria for conformity of the bricks shall be as given in IS: 5454:1978. Each brick shall be marked in a suitable manner with manufactures identification mark. In general, bricks shall be as per IS: 12894:2002.

6.2.3. **Acceptance Criteria:-** Bricks shall be tested for above parameters for each lot. For the purpose of sampling , lot shall be maximum 50000 bricks and for every day of production of bricks. In general bricks shall be as per IS: 12894:2002.

6.2.4 **Makes:-** Aditi Infra works/Resources Bareilly, Power Bricks corporation Ghaziabad and any other make approved by HQ CEBZ Bareilly.

6.3 Cement – Cement shall not be issued under Schedule 'B'. Contractor shall make his own arrangement. Cement shall be as specified in para 5.1 to 5.11(b) here in above.

6.4 Sand for mortar shall be as specified in Clause 5.4 of MES Schedule.

(PARTICULAR SPECIFICATIONS (CONTD...))**7. WOOD WORK AND JOINERY:**

7.1 Type of timber in various location is as described in Sch `A'. However if the species of timber is not specified in CA, it shall be as under:-

- | | | | |
|----|----------------------|---|---------|
| a) | Ist Class hard wood | : | Shisham |
| b) | IInd Class hard wood | : | Sal |
| c) | Ist Class soft wood | : | Deodar |

7.2 Particle board shall be veneered teak face particle board bonded with phenol formaldehyde synthetic resin exterior grade conforming to IS-3097.

7.3 All surfaces of joinery and wood work shall be wrought except hidden surfaces and surfaces in contract with or embedded in concrete or masonry which shall be clean swan.

7.4. PANELLED / GLAZED/ GAUZED SHUTTERS:

7.5 Refer to para 8.16.8 of MES schedule Part I. All panelled/glazed and wire gauged shutters for doors shall be factory made conforming to IS:1003 (1987), manufactured from well selected kiln seasoned, chemically pressure treated timber. Styles and rails shall be of 2nd class hard wood Hollock /Sal / Bijasal/Benteak treated as per IS-1141. The panel inserts shall be 12mm thick BWR ply wood having seven ply commercial veneers on both faces of BWR grade and bonded with phenol formaldehyde synthetic resin adhesive and shall be ISI marked with IS-303. The shutters shall be procured from any one of specified manufacturers. Sample of shutters shall be got approved from the GE before placing the bulk order.

Factory made shutters shall be brought to site without application of primer. Primer shall be applied after the shutters are got approved from the GE.

7.6 Panelled shutter shall be provided beading around the panel insert both side of shutters, size of beading shall be 20mm width and tapered thickness from 10mm to 5mm.

7.7 FACTORY MADE SOLID PANEL PVC DOORS/PVC WALL LINING:

7.9 These shall be factory made and shall be provided as specified in schedule 'A' and all as described in clause 8-B-1 to 8-B-10 and shown in the section 08 of SSR Part II – 2020.

8.0 BUILDERS HARDWARE:

8.1 Builders hardware shall be provided of type and size as specified in Sch `A'. Fittings shall be of ISI marked/approved makes as indicated.

8.2 Irrespective of what is mentioned in Sch 'A', sliding door bolt shall be bolt type, conforming to relevant IS.

8.3 The shape and dimension of the fittings shall conform to that given in relevant IS Specifications, unless otherwise indicated. Where however shape of fitting or its components are indicated in the relevant IS specifications, as illustrative, they are not intended to limit there design. Such fittings or components shall be provided of the shape as approved by the GE.

8.4 Where no IS Specifications are indicated, such fittings shall be provided equal in quality to the sample maintained in GE office or otherwise as approved by GE.

8.5 Except where otherwise specified, articles of builder's hardware shall have the following finishes:-

- | | | | |
|-----|----------------------------------|---|---|
| (a) | Mild steel or cast iron fittings | - | Stove enamelled black |
| (b) | Brass fittings | - | Finished bright or satin polished |
| (c) | Aluminium fittings | - | Anodised, Anodic film shall be transparent unless indicated |

8.6 Fittings shall be well made and finished to correct shape and size, free from surface defects and flaws and shall have smooth action. Cast fittings or components shall be free from casting and other defects. All screw holes shall be countersunk to suit the countersunk head wood screws. All burrs, sharp edges and corners shall be removed and finished smooth.

8.7 Unless otherwise indicated, brass articles shall be fixed with brass screws and mild steel, cast iron and aluminium articles with steel chromium plated screws or as indicated. Screws shall be of the size as given in the IS specifications for the fitting or as required.

PARTICULAR SPECIFICATIONS (CONTD...)

8.8 **WIRE CLOTH:** Wire cloth shall comply with IS-1568-1970. Wire cloth shall be regularly woven with a number of equally spaced parallel wires in both wrap and weft directions to produce uniformly square meshes or opening. The wire cloth shall be properly selvaged by one or more wires in each edge. It shall be of size as mentioned in relevant item of Schedule 'A'.

9. **ALUMINIUM WORK:**

9.1 Aluminium doors, windows, ventilators shall be provided all as specified in Sch 'A' shall be fixed in position all as specified and directed by Engineer-in-Charge .

9.2 Aluminium work shall be provided all as per clause 10.37 and 10.38 of MES SSR Part I .

9.3 Make of all Aluminium Section shall be M/s Jindal Aluminium Ltd/ INDAL.

9.4 In case of non availability of section specified in Sch 'A', section of higher size shall be allowed without any extra cost to the Govt.

9.5 In case any variation in section and size in catalog No. the dimension on higher side shall be followed.

9.6 Contractor shall furnish drawings for windows/doors/ventilators prior to fabrication in triplicate for approval without any extra cost to Govt.

10. **STEEL AND IRON WORK.**

NOTE: No item of steel and iron work for incorporation/ required in this contract shall be issued under Schedule 'B'. Contractor shall make his own arrangements to procure steel and iron all as specified here-in-after. The following checks shall be carried out before the steel supplied by contractor is accepted and is approved for incorporation in the work.

10.1 **GENERAL**

10.1.1 Items of steel and iron brought to site by the contractor for incorporation in the work shall be free from defects all as specified in clause 10.4.3 and 10.17.6 of SSR Part-I and shall be conforming to IS specifications as given below: -

- | | | | |
|-----|--|---|---|
| (a) | Reinforcement Steel | - | High strength deformed steel bars produced by Thermo Mechanical Treatment Process (TMT steel bars of grade Fe-500/Fe 500D/ Fe 550/Fe 550D) meeting all other requirements of IS-1786. |
| (b) | Structural Steel
(i) Standard Quality
(ii) Ordinary quality | - | Conforming to IS-2062.
Conforming to IS-1977. |
| (c) | Galvanized Steel Sheets
(Plain & Corrugated) | - | Conforming to IS-277. |
| (d) | Fabric Reinforcement for Concrete | - | Conforming to IS-1566 |

(PARTICULAR SPECIFICATIONS (CONTD...))

10.1.2

Procurement of materials:

10.1.2.1

(A) Reinforcement Steel

TMT Steel bars of all sizes of grade Fe 500/Fe 500D/Fe 550/Fe 550D shall be procured directly from the following primary producers only :-

- | | |
|---|--|
| <p>(a) Rashtriya Ispat Nigam Limited (RINL)
Visakhapatnam Steel Plant
Visakhapatnam-530031, India
Tel: (91 891) 518226, 518376
Fax: (91 891) 518316
Email:cmdvsp@itpvis.ap.nic.in</p> | <p>(b) M/S Shyam Steel Industries Ltd
Shyam Towers EN-32,
Sector-V Salt Lake,
Kolkata-700091
Tel-033-40074007
Fax -033-40074010
E-mail-marketing@shyamsteel.com</p> |
| <p>(c) Tata Iron Steel Company (TISCO)
Bombay House, 2, 4 Homi Modi Street
Mumbai- 400001, India
Tel: (91 22) 2049131
Fax: (91 22) 2049522, 2870840
Email:corpcomm@isr.tatasteel.com</p> | <p>(d) M/S SRMB Srijan Ltd
Srmb House 7,
Khetra das lane
Kolkata – 700012
Tel – 033-6600 6600
Fax: 033 -2211 0483</p> |
| <p>(e) M/S Jai Balaji Industries Ltd
1401-1402 Nirmal Tower, 14th Floor
26, Barakhamba Road,
New Delhi-110001
Tel: 033-22489808/22488173
Fax: 033-22420021/22426263
Email: info@jaibalajigroup.com</p> | <p>(f) M/s Electrosteel Steels Ltd Bokaro, Jharkhand
G K Tower, 2nd & 3rd Floor ,19
Camac Street ,Kolkata WB-700017
Board No 91-33-2283-9990</p> |
| <p>(g) Steel Authority of India Limited
Central Marketing Organisation
Northern Region, 17th Floor,
Scope Minar, Laxmi Nagar
Distt Centre Delhi-110092</p> | <p>(h) M/S Jindal Steels and Power Ltd
Plot No2, Sector-32, Gurgaon
Haryana-122001
Tel: 91 1662 224471-84
Fax: 220476</p> |
| <p>(j) M/S Rashmi TMT</p> | <p>(k) M/s Neo Steel</p> |
| <p>(l) M/s Simhadri TMT,</p> | <p>(m) M/S Super shakti</p> |
| <p>(n) M/S ET TMT</p> | <p>(o) M/S GK TMT</p> |

(PARTICULAR SPECIFICATIONS (CONTD...))

- 10.1.2.2 (B) **Structural Steel.** Structural steel shall also be procured from primary producers mentioned above. In case of non availability with primary producers, the structural steel can be procured from approved secondary producers with a reduction of 5% (five percent) of the accepted rate of structural steel. In case the desired section of structural steel is not rolled/ manufactured by primary producers, there shall be no price adjustment in use of structural steel procured from approved secondary producers as per list given below.
- 10.1.2.3 (C) **Galvanised Steel Sheets and Fabric Reinforcement for Concrete.** These shall be procured directly from primary producers mentioned above and shall be ISI marked.
- 10.1.2.4 (D) Steel section for railings, gates, fencing, guard bars, grills, steel chowkhat, hold fasts etc, which do not constitute structural members, can be procured from prry producers/secondary producers/BIS marked manufacturers or their authorized dealers at the option of Contractor without any minus price adjustment. Tests will not be insisted upon for such steel sections.
Note: Reinforcement steel and structural steel may be procured form authorized dealers of main producers in case the total requirement of steel is less than 5 tonnes.
- 10.1.2.5 The contractor will place their demand/requisition of steel with adequate lead time. The steel will be procured from the storage depots of the prry producers/approved secondary producers (as applicable) and not from their authorized agents/dealers.
- 10.1.2.7 **Testing of Steel.**
The manufacturer is to carry out inspections and testing of steel in accordance with relevant BIS provisions. The contractor shall submit the manufacturer's test certificate in original along with the Test Sheet giving the results of each mechanical test as applicable and the chemical composition of the steel or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in Steel Acceptance Register, as given at **Appendix 'B'** after due verification and send a certified true copy of test sheet to GE for his records. The GE shall also organize independent test of random samples of steel drawn from various lots from National Test House, SEMT Wing CME, Regional Research Labs, NABL approved labs etc. as per the recommended minimum frequency shown in Table here in below. Sample from each lot should be tested for quality and elongation. The elongation shall not be less than 18%. Cost of samples, transportation and testing shall be borne by the contractor. The records of such checks shall be maintained in steel test register.

If the test fails and steel has been incorporated in the work, the further execution of work with that steel will be stopped and matter shall be referred to Accepting Officer. The decision of Accepting Officer regarding acceptance of work with the steel, which has failed in test with price adjustment as decided by him, or redoing the work with steel of proper specifications or any other decision shall be final and binding on the contractor. In case Accepting Officer decides to remove the sub standard steel, the work executed using substandard steel shall also be demolished and site cleared by the contractor without any extra cost to the Govt.

FREQUENCY FOR NORMAL MASS, TENSILE, BEND AND REBEND TESTS OF STEEL

Ser No	Nominal size	Quantity
A. STEEL FOR CONCRETE		
1	Bars size less than 10mm	1 sample (3 specimens) for each test for every 25 tonnes or part thereof.
2	Bar size 10mm to 16mm inclusive	1 sample (3 specimens) for each test for every 35 tonnes or part thereof.
3	Bar size over 16mm	1 sample (3 specimens) for each test for every 45 tonnes or part thereof

(PARTICULAR SPECIFICATIONS (Contd....))**B. STRUCTURAL STEEL:**

1 Tensile Test 1 Test for every 25 tonnes of steel or part thereof.

2 Bend Test 1 Test for every 25 tonnes of steel or part thereof.

Note:- For various tests, acceptance criteria tolerance etc, refer to Appendix 'B' and relevant BIS Code.

10.1.2.8 Documentation.

The Contractor shall submit original purchase vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. The GE shall inspect all consignments received at the work site alongwith relevant documents before acceptance. The original vouchers and the Test Certificate shall be defaced by the Engineer-in-Charge and kept on record in the office of the GE duly authenticated and with cross reference to the control number recorded in the Steel Acceptance Register. The Steel Acceptance Register will be signed by JE, Engineer-in-Charge, GE and Contractor. The entire quantity of all steel items shall be suitable recorded in the Measurement Book as not to be abstracted. Before incorporation in the work and shall be signed by the Engineer-in-Charge and the Contractor.

10.1.3. Tolerances :

10.1.3.1 Structural steel products shall be as specified in IS-1852. Tolerance on size and weight of reinforcement bars shall be as specified in clause 10.17.4 and 10.17.5 of SSR Part-I. Steel with less weight than permissible shall not be used and the steel below permissible limit shall be removed from the site of work without any extra cost to Govt. If weight of steel bars per metre is more than specified in SSR, the payment shall be allowed based on conversion factor specified in SSR. The contractor shall have no claim whatsoever in this regard.

10.1.3.2 Schedule of supply

The contractor shall ensure that procurement action is taken immediately after acceptance of contract so as to adhere to schedule of activity as per CPM net work

10.1.3.3 STORAGE, ACCOUNTING, PRESERVATION AND MAINTENANCE

10.1.3.4 Structural steel/ bars of different classification, sections, sizes and lengths shall be stacked separately. Steel shall be marked with distinct painting marks for easy identification. Steel shall be recorded in MB for record purposes only.

10.1.3.5 All steel shall be stored on dunnage at least 15 Cms above ground level. Steel reinforcement shall be stored properly to prevent distortion and corrosion. In case of long time storage, suitable protective measures like cement coating, provision of temporary shelter etc. to save it from rusting/distortion etc shall be taken. Any item of steel that has deteriorated or corroded or considered defective by Engineer-in-Charge shall not be used in the work and shall be removed from the site of work.

**10.1.3.6 Procedure for Making Payments for Steel including measurements, conversion weight etc.
METHOD OF MEASUREMENT**

10.2 All items of steel brought at site shall be entered in MB as “Not to be abstracted” indicating the diameter and length of bars, quantities, voucher number with dates. It shall form the basis to allow advances on account through RAR's. While allowing advance on such materials, quantities so entered in MB shall be reduced by 2% to account for waste and off cuts and every care shall be taken to ensure that all such quantities will be utilised in the work.

(PARTICULAR SPECIFICATIONS (Contd....))**RECORD OF MEASUREMENTS**

- 10.3 Before casting of concrete, reinforcement incorporated shall be measured by rep. Of GE and contractor jointly. These measurements shall be entered in a register for the purpose of records and shall be signed by contractor's rep and Engineer-in-Charge. Proper reference of Drg No. Location, date etc. shall also be given therein.

WEIGHT CONVERSION

- 10.4 Conversion factor for various sections/ sizes of steel shall be as per conversion tables given in SSR. Where conversion table is not available in SSR, IS conversion table shall be followed.
- 10.5 Testing of steel as referred above is an essential requirement before the payment is released to contractor, as material lying at site or before the steel is incorporated in the work.

Note:-

- (a) Mixing of different types and grades of bars shall not be done in the same structural members as main reinforcement to satisfy clause 26.1 of IS-456 of 2000 shall be avoided.
- (a) TMT bars shall not be treated as corrosion resistant steel bar

- 10.6 **LIST OF APPROVED SECONDARY PRODUCER:-**

M/S Shri Badri Narayan Alloys & Steel Ltd
95, Stephon House
M/S K L Steel Pvt Ltd
Bulandshar Road, Ghaziabad (UP)
Tele: 0120-2867911,2867915
Faz:0120-2867917
M/S Kashi Viswanath Steel Ltd, Narain Nagar
Bajpur Road Kashipur-244713, Distt-U S Nagar
(Phone No. 05947-262109,262138,Fax 05947-262103)
(E-mail: Kvs ksi@datainfosys.net, kvscorporate@ kvsl.com)
M/S Shyam Steel Industries Ltd Shyam Towers EN-32,
Sector-V Salt Lake,
Kolkata-700091
Tel-033-40074007
Fax -033-40074010
E-mail-marketing@shyamsteel.com
M/S Amba Shakti Ispat Ltd
Plot No 6, Phase-II, Industrial Area, Kala Amb,
Distt. Sirmour-173030 (H.P)
Tele : 01734-309983, 309986

Regd Office:

M/s Shree Parashnath Re-Rolling Mills Ltd
4C, Maharshi Devendre Roa 3rd floor
Kolkata -700007
Phone :03322740054/4475 Fax: 033-22740039

Admn Office:

M/s Shree Parashnath Re-Rolling Mills Ltd
3511 Part Dr B C Roy Avenue
Durgapur – 713201
Phone: 0343-2550537/0538 Fax 0343-2554457

PARTICULAR SPECIFICATIONS (Contd....)**10.7 STEEL SUPPLY AND ACCEPTANCE REGISTER**

1. CA No and Name of Work :
2. Contract No :
3. Name of Manufacturer's TC No :
4. Manufacturer :
5. Random Test details
 - (a) Physical test report from _____ vide letter No _____
(Name of NABL approved Lab/Govt Engr College)
 - (b) Chemical test report from _____ vide letter No _____
(Name of NABL approved Lab/Govt Engr College)
6. Type of steel, dia and qty :
 - (a) Type : TMT/CRS
 - (b) Dia : _____mm
 - (c) Actual wt : _____MT
 - (d) Conversion wt : _____MT

	Chemical Test							Mechanical Test						
	Carbon %	Sulphur %	Phosphorous%	Sulphur+ Phosphorous%	Manganese%	Silicon%	Corrosion Resistant element	Wt per meter	Yield Stress (N/mm ²)	Tensile Strength (N/mm ²)	Percent elongation (Min 18%)	Bend test	Rebend test	Remarks
As per IS 1786-2008														
As per manufacturer's test certificates														
As per independent test														

Remarks with Signature

Accepted/Rejected

Contractor Junior Engineer Engineer-in-Charge
Remarks of BOO/Inspecting Officer/CWE

Garrison Engineer

* To be allotted serially by GE consignment wise.

(PARTICULAR SPECIFICATIONS (CONTD...))**10.8 ACCEPTANCE/REJECTION OF STEEL:**

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

10.9 WELDING:

10.9.1 Refer clause 10.15 of MES schedule Part-I and shall be carried out by metal arc process all as per IS-816 and IS- 823.

10.9.2 Unless, otherwise specified hereinafter, welding shall be 6 mm thick continuous fillet weld over the joints.

10.9.3 All welding for lightening protection work shall be done by of oxy acetylene gas welding

10.10 STEEL WINDOWS

10.11 Steel doors shall conform to IS-1038 (Specification for steel doors, windows and ventilators third revision) as indicated and detailed on drawings. The section particulars shall be provided as per TD drawing and clause 10.25 of SSR Part-I. steel window shall be procured from approved manufacturer as per list given in Appx 'B' shall be confirmed and approved by GE.

10.12 All steel windows shall be provided with mild steel 10 mm square guard bars at 150mm center to center and all ventilators shall be provided with mild steel 10mm square guard bars at 100mm center to center. The guard bars shall be welded to 12x6 mm flat iron and the assembly shall then be fixed to the window/ventilator with screws. Rate quoted in BOQ shall be deemed to be included respective the guard bar also, if not otherwise indicated in BOQ.

10.13 The glazing of windows shall be with 4mm thick float glass and fixing shall be as shown on TD drawings.

10.14 **ALUMINIUM DOOR/ WINDOW:** Aluminium Door/window shall be provided as per BOQ. Specification for aluminium door and window shall be 15 micron anodized (colored) aluminum section having embossment of the name of the manufacturer on each section at every metre and thickness of colour anodizing shall be not less than 15 micron. The section particulars shall be provided as per drawing and clause 10.37 of SSR Part-I, 2009. In case of non availability of any particular section mentioned the next available section (having higher per Kg/Rm weight) shall be provided without any price adjustment. The test certificate from Govt authorized testing laboratory shall be produced by the contractor to conform thickness of anodizing. The glazing to door and window shall be provided as specified in BOQ.

10.15 **ALUMINIUM GRILL:** The grill shall be provided as per BOQ.

11. ROOFING**11.1 CGI SHEET/PGI SHEET ROOFING**

11.1.1 Galvanised steel sheets, plain or corrugated shall comply with the requirements of IS/277- 1977 , Specification for galvanised steel sheets, plain or corrugated. Galvanising of sheets shall range from 120 Gms/Sqm to 175 Gms/Sqm as specified in schedule 'A'. Laying and fixing of sheets shall be carried out as specified in para

11.22 of SSR 2009(Part-I). Galvanised J/L hooks/bolts and nuts, 8 mm dia with bitumen and GI washers filled with white lead shall be used for fixing sheets.

11.1.2 The size of flats, sections etc. shall be as decided by GE.

11.2 AC SHEET ROOFING:

11.2.1 **AC SHEET ROOFING :** Wherever AC sheet roofing shall be provided with 6mm thick AC corrugated sheet roofing as described in Sch 'A' and shall be one of the makes as specified in Appendix 'B' to Particular Specifications confirming to IS-459 and as specified in Para 11.2.2 of MES Schedule 2009 Part-I. AC sheet shall be fixed with 'J' type or 'L' type hook bolts and nuts of 8mm dia and shall be provided all as specified in clause 11.24 of MES Schedule 2009 Part-I. AC ridge shall be serrated and two-piece adjustable for corrugated sheet

(PARTICULAR SPECIFICATIONS (Contd....))

11.3 **GALVALUME SHEETROFFING:**Galvalume sheet shall be 0.5mm thick (total coated thickness), 550 Mpa minimum, yield strength. It shall be coated with hot dip alloy of 55% Aluminium 43.5% Zinc 1.5% Silicon and finished with resin coat on both surfaces @ 150 gm/sqm of coating (total both surfaces) having overall width and laid width as specified and shall be fixed using hot dip galvanized, self drilling and self tapping screw neoprene and EPDM washers. Penetrations and laps in sheet shall be sealed by using proper sealant profile. HDPE fillers shall be provided wherever required to close voids between sheets, sheet & fasteners etc. The colour of the sheet shall be approved by GE.

11.3.1 Fixing system shall be as per manufacturer's instructions and shall be safe against effects of Wind velocity. The work shall be executed completely as per manufacturer's instructions and literature. The work shall be executed as per clause 11.3 of SSR part I.

11.3.2 **GALVALUME SHEET WALL CLADDING:** Galvalume sheet wall cladding shall be same as for roof and shall be fixed with 8mm and 30mm deep trapezoidal profile sheeting fixed with self trapping fasteners.

11.3.3 **ROOFING ACCESSORIES:** Roofing accessories ie. Corner piece apron, eaves/valley gutters, hoopers, ridges, sheet floor connectors etc shall be of galvalume sheet and of size shape as directed by Eng-in-charge.

11.4 **RAIN WATER PIPE:-** UPVC rain water pipe shall be 110mm dia & 75 mm dia as indicated in Sch 'A' and shall conform to IS 13592-1992, thickness of pipe shall be 3.2mm to 3.8mm. UPVC pipe shall have withstand continuous hydraulic pressure of 4ksf/sqcm. Pipes and fittings shall be secured to wall just below all joints with UPVC clamps and holder bats. Pipe and fittings jointed with epoxy resin or compound as recommended by manufacturer's instruction.

11.5 **ROOF TREATMENT:-** Roof treatment shall be provided as described in Sch 'A'

11.5.1 **TESTING OF WATER PROOFING TREATMENT:-**Test shall be done by ponding. For this purpose, mud, mortar, fillet ponds shall be made longitudinally one meter apart over entire treated surfaces of roof slab to form ponds of suitable size as directed by the Engineer-in-Charge. These ponds shall be filled with potable water so that an average 50 mm (minimum 25 mm and maximum 75 mm) height of water is maintained during the test period. Test shall be carried out continuously for a period of 48 hours. Any seepage notified shall be rectified by the contractor and the defective portion shall be made good to entire satisfaction of the GE without any extra cost. All mud fillet ponds shall be removed and surface made clean and tidy after completion of satisfactory testing. Satisfactory completion of test shall not absolve the contractor from his responsibilities of rectification of defects which may arise during guarantee period.

11.5.2 **GUARANTEE OF ROOF TREATMENT:-**Water proofing treatment executed under this contract is under the guarantee of contractor for **10 (TEN)** years after the certified physical completion of work. Contractor is fully liable under this guarantee to replace / rectify all defective work intimated to him during this period. In case contractor fails to rectify / replace the defective work, Accepting officer shall get the replacement / rectification as necessary at the risk and cost of contractor and recover the cost in full from the contractor. If the contractor consider that any additional treatment is required over and above that specified here in before in Schedule 'A',

the same shall be carried out by the contractor without any extra cost to the Government. During the Guarantee period if any leakage /seepage of water is found, the contractor shall rectify or replace defective work/ material at his own expenses, when called upon in writing to do so by the GE. Condition 46 of IAFW-2249 (for defects liability period) for the Guarantee period shall be deemed amended accordingly.

11.5.3 **SECURITY DEPOSIT FOR MINOR RECTIFICATIONS:-**Contractor shall furnish security deposit for water proofing treatment carried out @ 2.5% of amount of waterproof treatment at contract rates for the guarantee period of TEN years in favour of Garrison Engineer. In case the contractor fails to submit the FDR on completion of work, the said amount will be retained from the final bill. The Guarantee money shall be released

by the GE after expiry of the guarantee period of ten years after obtaining clearance from the Engineer-in-Charge by submitting a certificate duly signed by him that no seepage/leakage has been noticed. This security deposit amount is only for covering the minor repairs/ rectifications required to be executed urgently. This deposit shall not in any way limit the liability of contractor under the guarantee as per clause here above, under which contractor is fully liable for complete rectification / replacement of entire defective work/ material.

(PARTICULAR SPECIFICATIONS (Contd....))

11.5.4 The contractor shall provide a plaster plate of size 450 x 450mm on places as directed by the Engineer in charge on the wall of the buildings where roof treatment has been carried out. The plate shall be 15 mm thick in CM 1:4 to indicate CA No, Name of contractor, date of completion of work and date of expiry of ten years guarantee period by engraving and painting (Black). The cost of plaster plates etc shall be deemed included in the unit rates of roof treatment.

12. FLOOR:

12.1.1 Refer clause No 13.25 of MES Schedule 2009(Part I).

Exposed edges of floor shall be finished to match with top surface of floors.

The junction between floor and walls shall be at right angle.

Floors shall be laid to level or to slope of sunk as directed by Engineer-in-Charge.

Floors shall be laid through all openings in walls and over dwarf walls of passage, verandah etc.

Composition of floor shall be as described in Schedule 'A'.

PCC floors shall be laid in bays adopting panel dimensions specified in clause 13.32.1 of MES Schedule 2009 Part I.

12.2 Sub base need not be laid in bays. No price adjustment shall be made on this account.

12.3 MARBLE/UDAIPUR GREEN/GRANITE STONE:

Marble/udaipur green shall be of selected quality, hard, sound, durable, and free from weathering, decay and defects like cavities, crack flaw, sand holes, injurious veins, patches of loose or soft materials and other similar defects that may adversely effect its strength and appearance. As far as possible marble/udaipur green shall be uniform in colour and texture. Marble/Udaipur green shall be laid and polished all as specified in relevant clause of SSR part I.

12.4 **KOTA STONE FLOORING:** 20 to 25 mm thick polish kota stone slab shall be laid over bedding complete all as specified in Schedule 'A' and directed. Colour and shade shall be approved by GE. Kota stone slab flooring shall be laid in the manner as specified in relevant clause No. 13.47 of MES SSR Part-I (2009). Colour of kota stone shall be uniform.

12.5 **NON SKID CERAMIC TILES FLOORING:** Non skid ceramic coloured tiles shall be conforming to the requirements as given in clause No. 13.14 of MES SSR Pt-I (2009) and shall be provided of size 300 x 300 x 6 to 7mm over screed bed and jointed in neat cement slurry pointed in white or coloured cement to match the shade of tiles. The design of tiles shall be approved by GE. Non skid ceramic tiles shall be laid as in the manner as specified in relevant clause of SSR Part-I. The tiles shall be ISI marked and best quality classification and characteristics shall be given in Table-I here in after and as approved by the Garrison Engineer. Workmanship shall be as per clause 13.40 and 13.40.1 to 13.40.3 of SSR part I.

12.6. GLAZED CERAMIC TILES:

Glazed ceramic tiles shall be laid in the manner as specified in relevant clause of MES Schedule 2009(Part I). Tiles shall be white or coloured and of size as mentioned in respective item of Schedule 'A'. These shall be laid over screed as described in Sch 'A' and set and jointed in neat cement slurry and pointed in white cement or coloured cement as per site requirement. Glazed tiles shall conform to relevant IS and shall be from any one of the makes given in Appendix 'A'. Workmanship shall be as per clause 13.40 and 13.40.1 to 13.40.3 of SSR Part I. Classification and characteristics shall be given in Table-I below and shall approved by GE.

12.7. **PREPOLISHED CHEQUARED CEMENT CONCRETE TILES:** Prepolished chequered cement concrete tiles shall conform to IS 13801-1993, chequered cement concrete tiles shall be with centre to centre of chequars not less than 25 mm and not more than 50 mm, the groove of chequers being uniform and straight with the depth of grooves not less than 3 mm. The tiles shall be manufacturers in pressure process. Thickness of wearing layer measured from top of the chequres shall not be less than 6mm. The upper of tiles shall be pre-polished/ un polished as indicated in Sch 'A' and shall be free from projection, depression and cracks holes, cavities and other blemishes. All angles shall be right angle and all arises shall be sharp and true. The colour and texture of wearing layer shall be uniform throughout the thickness. The size of tiles shall be mentioned in Sch 'A', the tolerance length & breadth shall be + 1mm and tolerance of thickness shall be +5mm. In addition the difference in thickness between the thickest and thinnest in the sample shall not exceeded 3mm. Tile shall be laid in accordance with clause No.13.39, 13.39.1 to 13.39.6 of SSR Part-I"

13. **PREPOLISHED CEMENT CONCRETE PAVER BLOCK:** Pre cast concrete Paver block shall confirm to IS 15658-2006, the paver block shall be sound, free from cracks and other visual defects, the tolerance of length and breadth as specified in SSR, the colour shall be approved by GE. Grade of concrete of Paver block as specified in BOQ. The paver block shall be laid over sand cushioning minimum consolidated thickness 50 mm or as recommended by manufacturers. Sand cushioning shall be measured and paid separately"

(PARTICULAR SPECIFICATIONS (Contd....))**TABLE-I**

Ser No	Characteristics	Ceramic wall tiles	Non-Skid Ceramic floor tiles.	Ceramic fully vitrified tiles	Method of Test, Ref to Part of IS 13630
1	2	3	4	5	6
(A)	(i) Classification according to their water absorption (Group)	Group BIII	Group BII	Group BIa	
	(ii) Size(Minimum Nominal Size)	300mmx200mm	300mmx300mm	600mmx600mm	
	(iii) Thickness (Minimum)	6 mm	7 mm	10 mm	
	(iv) Color	Light	Light	Light	
(B)	Dimensions and Surface Quality				
	(i)Length and width:-				Part-1
	(a)The deviation in percent of the average working size of each tile (2 or 4 sides) from the work size (W):	±0.2	±0.1	±0.1	Part-1
	(b) The deviation in percent of the average working size of each tile (2 or 4 sides) from the average size of the 10 test specimen (20 or 40 sides):-	±0.15	±0.1	±0.1	Part-1
	ii) Thickness :- The deviation, in percent of the average working thickness of each tile from the work size thickness:-	±4.0	±5.0	±4.0	Part-1
	iii)Straightness of sides(Facial sides) The maximum deviation from straightness, in percent related to the corresponding work sizes:	±0.15	±0.1	±0.1	Part-1
	iv) Rectangularity The maximum deviation from rectangularity in percent related to the corresponding work sizes:	±0.15	±0.1	±0.1	Part-1
	v) Surface flatness The maximum deviation from flatness, in percent:-				Part-1
	(a) Centre curvature, related to diagonal calculated from the work sizes	±0.22	±0.5	±0.2	Part-1
	b) Edge curvature, related to the corresponding work size	±0.22	±0.5	±0.2	Part-1
	c) Warpage, related to the diagonal calculated from the work-sizes	±0.22	±0.5	±0.2	Part-1
	vi) Surface quality ³	Minimum 95 percent of tiles shall be free from visible defects that would impair the appearance of a major area of tiles.			Part-1
(C)	Physical Properties				
	i) Water absorption, % by mass	$10 \leq E < 20$	Average $3 < E \leq 6$, Individual maximum 6.2	Average ≤ 0.08 , Individual maximum 1.0	Part-2

(PARTICULAR SPECIFICATIONS (Contd....))

	ii) Modulus of rupture, in N/mm ²	Average 12 for thickness <7.5 mm Average 15 for thickness ≥ 7.5 mm	Average 30, , Individual minimum 28	Average 47, Individual minimum 44	Part-6
	iii) Breaking strength, in N	200 for ≤ 7.5mm thickness, Minimum 500 for >7.5mm thickness, Minimum	500 for ≤ 7.5mm thickness, Minimum 1000 for >7.5mm thickness Minimum	1500 for >7.5mm thickness Minimum	Part-6
	iv) Scratch hardness of surface (Mohs' scale)				
	(a) Residential applications	3, Minimum	5, Minimum	6, Minimum	Part-13
	v) Resistance to abrasion of glazed tiles Class 1 to V	-			
	(a) Residential applications		(a) Class II with 600 Revolutions for Wet Abrasion Test (PEI Method) (b) Class II with 1000 Revolutions for Dry Abrasion Test (MCC Method)		Part-11
	vi) Co-efficient of linear thermal expansion from ambient temperature to 100°C (K ⁻¹)	9 x 10 ⁻⁶ K ⁻¹ , Maximum	9 x 10 ⁻⁶ K ⁻¹ , Maximum	6 x 10 ⁻⁶ K ⁻¹ , Maximum	Part-4
	vii) Thermal shock resistance	10 cycles, Minimum	10 cycles, Minimum	10 cycles, Minimum	Part- 5
	viii) Craze resistance ⁴ glazed tiles	4 cycles at 7.5 bar, Minimum	4 cycles at 7.5 bar ,Minimum	4 cycles at 7.5 bar ,Minimum	Part- 9
	(ix) Bulk density, in (g/cc)	-	-	2.2 (Minimum)	Part- 2
(D)	Chemical Properties				
	(i) Resistance to staining of glazed tiles	Class 1, Minimum	Class 1, Minimum	-	Part- 7
	ii) Resistance to household chemicals and swimming pool water cleansers except to cleansing agents containing hydrofluoric acid and its compounds Glazed tiles	Class AA, Minimum	Class AA, Minimum	Class AA, Minimum	Part- 7

14. PLASTERING & POINTING:

14.1 Sand for plastering/pointing work shall be fine sand and shall be obtained from as per sample kept in GE's/AGE's office and shall be conforming to the requirement as specified in 14.5 of SSR Part I.

14.2 Cement:- Ref clause 5.1 including sub paras.

14.3 Plastering/pointing shall be carried out all as described in Sch 'A' (BOQ).

14.4 Mortar for plastering/pointing work may be machine mixed or hand mixed at the discretion of the contractor.

(PARTICULAR SPECIFICATIONS (Contd....))

14.5 All plaster surface shall be trowel led to a smooth and even surfaces without issuing extra cement if not otherwise specified in Sch 'A' and external surfaces shall be even & fair.

14.6 All external plaster shall be carried out 15 Cum below GL.

14.7 Thickness of cement plaster mentioned in BOQ shall be finished thickness, exclusive of dubbing. Dubbing may however be done in one operation with plaster.

14.8 All corner, angles, junction and edges shall be truly vertical or horizontal as the case may be and shall be care fully finished corners around jambs, of opening and junction of walls shall be rounded to minimum radius 5mm, 12mm wide groove at the junction of wall and RCC slab to the entire thickness of wall plaster shall be provided. Also trowel groove shall be provided at the junction of wall and RCC columns or any other dissimilar material eg wooden/steel chowkat etc.

14.9 Particular attention of the contractor is invited to take note of local practices and local availability of material like brick stone form work etc for any extra quantity of mortar is required for rendering smooth, extra dubbing required, touching up properly and archiving smooth & even surfaces. This shall be included in the quoted rates of plaster work as applicable.

15. **PLINTH PROTECTION:-**

15.1 Plinth protection shall be laid all as described in relevant items of BOQ (Sch 'A'). The exposed surface shall be floated with fair and even surface without using extra cement; PCC shall be laid in alternate bays not exc 2 mtr in length with 10 mm gap to the full depth of PCC. Gap shall be filled with mastic filling comprising one part of bitumen blown grade (any penetration and three parts of sand (all by weight)). The plinth protection shall be laid in slope 1:40

15.2. **WHITE LIME WASH/COLOUR WASH:-**White wash shall be prepared by slaking freshly burnt class 'C' (fat) lime confirming to IS-712 and shall be done at site with an excess of water and lime allowed to remain under water for two days. The mixture of lime and water shall be drawn off, placed in the suitable receptacle and clean fresh water added to bring it to the consistency of thin clean cream. Mixture so prepared shall be strained through coarse cloth or fine sieve 300 micron and mixed with gum water. The quantity of gum to be used shall be at the rate of 1 Kg. per cum of cream. Sodium chloride (common salt) dissolved in hot water in proportion 1.3 Kg in 10 Kg of lime shall be added. Small quantity of ultramarine blue (3 grams per Kg. lime) shall also be added to the white wash solution.

15.3 All brushes, spray tools, pots, kettles etc, used in carrying out the work shall be clean and free from foreign matters and shall be thoroughly cleaned with hot water soap solution at the end of a day work before use of different type of class materials.

15.4 White wash shall be applied with proper brushes or suitable sprayers. When applied, the operation for each coat shall consist of a stroke of brush from top down wards another from bottom upwards over the first stroke and similarly one stroke horizontally from right to left another from left to right before the previous stroke dries. The brushes shall be dipped in white wash etc pressed lightly against the wall of the container and then applied lightly pressing against the surface with a full swing hand. The finish on ceiling shall be done prior to that on walls.

15.5 Wherever scaffolding is necessary, it shall be erected on double supports and no ballies, bamboo or planks shall be inserted in floor. Where ladders are used pieces of old gunny bags on cloth shall be tied to their top to avoid damage or scratches on the walls.

15.6 White wash shall be provided to the surfaces as indicated in Sch 'A' (BOQ) and shall be carried out all as specified in clause No 15.12 of MES SSR Part I (2009).

CEMENT BASED PAINT:

15.7. Cement base paint shall comply with IS 5410-1992. The material shall be in powder form, free from lumps that are not friable and when mixed with required volume of water shall be suitable for use on porous surfaces of masonry, concrete, bricks and rough plaster surfaces the tint of cement base paint shall be approved by GE.

(PARTICULAR SPECIFICATIONS (Contd....))

15.8 Cement base paint shall be applied all as specified in clause 15-15 and its sub clauses of SSR 2009 (Part I).

15.9. **OIL BOUND DISTEMPER:** Oil bound distemper of required colour and shade shall be obtained ready mixed conforming to IS 428-2000. The material shall be in the form of a homogeneous paste free from odour of putrefaction as such and when mixed with water and shall be carried out all as specified in clause No 15.14 of MES SSR Part I. The tint of distemper shall be approved by GE.

16 GLAZING:

Glazing shall be provided of size as specified in relevant item of Schedule 'A' (BOQ) and as specified in clause 16.2 to 16.16 of MES SSR Part-I.

16.1 The glass in steel frame shall be fixed with special spring glazing clips with golden putty as specified in SSR Part I. However glazing with wooden joinery shall be fixed with wooden beads including panel pins, bedding with putty as specified in SSR part I.

17 PAINTING

17.1 All synthetic enamel paint emulsion paint shall be of 1st quality manufactured by standard firm as listed in Appx 'B'

17.2. **SYNTHETIC ENAMEL PAINT:-**All paints unless otherwise specified shall be of Ist quality not inferior to that required by the relevant Indian Standard specifications and as mentioned in clause 17.2 to 17.2.5 of page 17-2 of MES Schedule 2009 (Part I). Synthetic enamel paint shall be ready mixed of tint as approved by the Engineer In Charge. Paint as approved by the Garrison Engineer shall be brought in manufacturers original packing of tins/containers duly seal intact. Synthetic enamel paint shall be ready mixed of tint as approved by the Engineer In Charge and shall be of any of brands as listed in appendix 'A'.

17.3 **WORKMANSHIP:** Synthetic Enamel Paint shall be applied all as described in schedule 'A' and as specified in clause 17.8 and its sub clauses on Sl page No 17-6 and 17-7 of MES Schedule Part I - 2009 for steel and iron work and clause 17.6 and its sub clauses on Sl page No 17-3 and 17-4 of MES Schedule Part I - 2009 for wood work.

17.4 The contractor shall inform GE within 15 days of the date of acceptance of tender, the brand name of manufacturer's of paint proposed to be used in the works and submit sample thereof well in time and obtained prior written approved of GE before their use in work.

17.5 Contractor where so required by GE, produce certificate from the manufacture or their representative to established that the brands of paints prepared by the contractor from them satisfy the requirement of the relevant Indian standard.

17.6 Paints for priming coat, under coat and finishing coat shall be same manufactures.

17.7 Tint of of paint shall be approved by GE.

17.8 **WEATHER COAT PAINT:-** This shall be withstand extreme topical condition of high rainfall and humidity and heat, this shall be antifungal performance resistance to growth of alaye and fungi on the wall, this shall be UV protected, The paint shall applied on wall through brush or as recommended by the manufactures, Paint shall be procured from approved manufactures as listed in Appendix 'B'.

17.9. PLASTIC EMULSION PAINT:

17.9.1 The plastic emulsion paint shall confirm to IS 5411 (Part I) 1974 or IS 5411(Part II) – 1972 as indicated.

PARTICULAR SPECIFICATIONS (Contd....)

17.9.2 The surface shall be thoroughly cleaned of dust. The surface shall then be allowed to dry for at least 48 hrs. It shall then be sand papered to give smooth and even surface. Any unevenness shall be made good by applying putty made of Plaster of Paris with water on the entire surface including filling up of undulation and then sand papering the same again when surface is dry.

17.9.3 The paint shall then be applied either by brush or by roller.

17.9.4 Each coat of paint shall be allowed to dry before the next coat is applied.

17.9.5 The thinning of emulsion shall be done with water not Turpentine oil. The quantity of water added as per manufacturer's instruction.

17.9.6 No washing shall be done within 3 to 4 week of application.

17.10 **SILICONE WATER REPELLANT** Providing and applying silicon based breathable non flim foaming, transparent alkaline stable, impregnable solvent soluble silane siloxane mixture on exposed mineral substrate like plaster/natural porous stone/grit wash/lime panning/concrete etc for exterior wall application. The chemical shall be dilute with solvent like MTO weight ratio 1:5 or as recommended by manufacturers. The diluted solution shall be applied by spraying pre ferably not under pressure. If required two coats then do not leave long back between two coats. Next coat shall be applied, when substrate has absorbed the previous coat and shall no longer shine. The substrate shall not have damp spots and it shall look dry before application. Minimum covering area approx 35 sqm approx, it may vary depend upon the absorbency of the substrate. Make: - Alstone-International or wacker.

18. **WATER SUPPLY**

18.1 **GALVANISED STEEL WATER TUBING & FITTINGS:** Galvanized steel tubes/pipes shall be as per IS-1239 (Part I) 1979 and shall bear ISI mark. The pipe fittings shall be as per IS-1239 (Part-II) 1982 and shall bear ISI mark. For pipes and fittings refer clause 18.4 of MES Schedule 2009 (Part-I)".

18.2. **BIB TAPS/STOP VALVES/ANGLE COCKS (CAST COPPER ALLOY/ CP BRASS):-**These shall be as described in Schedule `A` & shall be ISI marked and of any of the make as specified herein after. If ISI marked product is not available in the market, in that case product as approved by the Garrison Engineer shall be incorporated in the work. Fancy bib tap and stop valves shall conform to IS-8931 cast copper alloy nickel chromium plated and shall be procured from approved manufacture as given in appendix 'B'.

18.3 **PILLAR TAP:-** Fancy pillar taps shall be cast copper alloy and shall confirm to IS 8934-1978, and shall be of approved pattern and shall be nickel chromium plated.

18.4 **BALL VALVES:-** Ball valve shall confirm to IS 1703-2000 ISI marked and comply the requirement laid down in clause 18.19 of MES Standard Schedule of Rates (Part I) -2009.& fixed as specified in clause 18.102 of MES Standard Schedule of Rates (Part I) -2009

18.5 **GUN METAL GATE VALVE:**Gun metal valve shall confirm to IS:778 and bear ISI marked & fixed as specified in clause 18.102 of MES Standard Schedule of Rates (Part I) -2009.

18.6 **SHOWER ROSE:-** Shower rose shall be brass chromium plated, size of shower rose as specified in Sch 'A', shower rose shall be bent in swivel action of approved quality and make only.

18.7 **TOWEL RAIL:-** Towel rail shall be brass chromium plated, 'D' type with flanged ends, towel rail shall be fixed on wall with brass chromium plated screws with rawl/plugs, size of towel rail as indicated in sch 'A' (BOQ)

18.8 **SOAP TRAY:-** Soap tray shall be brass chromium plated size and design shall be approved by GE, soap tray shall be fixed on wall with chromium plated brass screws and rail/plug.

18.9 **MIRROR:-** Mirror shall be selected quality sheet glass not less than 5.5mm thick the edges shall be rounded or berelled as specified in Sch 'A', It shall be free from all floors, specks or bubbles. The glass shall be uniformly silver plated back, free from silvering defects. The silvering shall have uniforms protective coating red lead paint.

19. **PLUMBING**

19.1 Plumbing work shall be carried out in accordance with clause No. 18.13 to 18.23 of SSR Part I.

19.2 **SOIL WASTE VENT PIPE/FITTINGS/ACCESSORIES:-** All CI pipes shall be of cast iron (sand cast/centrifugally cast as indicated in BOQ) conforming to IS 1729/3989 respectively with or without ears and with spigot & socket ends. All pipe and fitting shall have IS certification mark.

PARTICULAR SPECIFICATIONS (Contd....)

19.3 **JOINTINGS:-** All soil & waste pipe shall be jointed with run lead joints as specified in clause No. 18.48 and 18.67 of SSR Part I, However vent pipe shall be jointed with cement mortar all specified in SSR.

19.4 **FIXING OF PIPES ON WALLS:-** CI pipes and fitting shall be fixed to wall as specified in clause No. 19.67.4 to 18.67.6 of SSR Part I.

19.5 **NAHANI TRAP/FLOOR TRAP:-** Nahani trap/floor trap shall be cast iron and confirm to IS 3989 nahani/floor trap shall be provide CP steel grating if not otherwise specified in Sch 'A' (BOQ).

19.6 **SALTGLAZED STONE WARE PIPE:-** Salt glazed stone ware pipe shall be gade 'A' conforming to IS-651 and shall be laid and jointed in cement sand mortar (1:1) and as specified in clause in 18.70 of SSR Part-I.

19.7 **CONCRETE BED TO DRAIN PIPE:-** Concrete foundation to the drain and sewer pipe and the hunching or encashing to be provided as described in Sch 'A' work shall be executed in accordance with clause No. 18.68, 18.68.1 to 18.68.5 of SSR Part-I.

19.8 **GULLY TRAP :-** 150mm dia gully trap shall be of glazed stone ware of grade 'A' connected with cast iron pipe with cement joint, Gully trap shall be bedded and haunched in PCC (1:3:6) type CI.

20. **SANITARY AND TOILET FITTINGS**

20.1 All sanitary appliance shall be vitreous china (white) if not otherwise categorically specified in BOQ and shall be 1st quality and shall conform to IS-2556 for Genera/requirements and specified requirements as mentioned in relevant clause of SSR part I. These shall be of approved make from the list given in appendix 'B'

20.2 Flush pipe and socket of flushing rim of WC shall be jointed with white and red lead cement (white and red lead cement shall be equal proportion by weight) and linsed oil added to form paste.

20.3 'P' or 'S' trap shall be of cast iron and jointed to WC pan with cement joint as specified in clause 18.45.5 of SSR Part-I.

20.4 **WATER CLOSET (SQUATTING PATTERN):-** Water closet squatt pattern shall conform to IS 2556 (Part III) these shall be Orrisa pattern 580x440mm with integral foot rests, The flushing inlet shall be provided at both end, Each pan shall be provided with or 100mm dia 'p' or 's' trap with or without inspection vent at directed. The trap shall be glazed inside. The inside of pan shall be regular and smooth to ensure efficient flush.

The pan shall be set in lime concrete (1:2) or PCC (1:5:10) with brick ballast 40 mm nominal size, The thickness of concrete 15cm average. The concrete shall be left 115mm below the top level of pan so as to allow flooring and bed concrete. The joint between the pan and the trap shall be made leak proof with cement sand mortar (1:1)

20.5 **WASH DOWN WATER CLOSET (EWC):-** Wash down water closet shall conform to IS-2556 (Part-II) and their pattern shall be Pattern-4 (Pedestal WC with independent cistern and concealed 'S' Trap or 'P' Trap, white, 410 mm high. WC shall be provided with 10 litres capacity PVC flushing cistern as mentioned here-in- before and 32mm bore PVC flush pipe for pedestal pattern WC and plastic water closet seat cover, flat with hinging device. All other details shall be as per MES schedule Part-I

20.6 **UNIVERSAL WATER CLOSET (ANGLO-INDIAN TYPE):-** Universal Water Closet (Anglo-Indian Type) shall conform to IS-2556 (Part-15) and their pattern shall be size-1 i.e 560mm x 460mm with S-Trap or P-Trap, WC shall be provided with 10 litres capacity PVC flushing cistern with PVC connection 15mm size with PTMT nuts of length 450mm and 32mm bore PVC flush pipe for pedestal pattern WC and Universal plastic water closet seat cover, flat with hinging device. All other details shall be as per MES schedule Part-I.

20.7 **WASH HAND BASIN (WASH HAND BASIN OVAL TYPE):-** Oval shaped Ceramic Basin to be provided as indicated in Sch 'A' oval below counter basin. The basin shall be provided with a granite slab counter even if it is not shown in drawings wherever Oval Type Wash hand Basin is shown. The diameter of the opening in the counter slab over the basin shall be 10mm less than the diameter of the said basin. The counter slab shall be of 18mm thick granite slab and all exposed edges of the counter slab shall be grinded with portable power driven

PARTICULAR SPECIFICATIONS (Contd....)

grinder to smoothness and rounded finished and to be polished for shining of size as shown on drawings. The pillar tap shall be fixed on the counter slab. The granite facia in front shall be in one piece fixed to the RCC band behind with polymer brand cementations adhesive and supported on brick walls on both sides.

20.8 **WASH HAND BASIN:-** Wash hand basin (WHB) shall conform to IS-2556 (Part-IV), white, Flat back pattern WHB shall be with single tap hole.

20.9 **URINAL:-** The urinals shall be flat back type of size as specified in sch 'A' and if no size is mentioned then the size shall be 465x355x265mm (minimum), white and fitted with automatic PVC flushing cistern. Capacity of flushing system to be provided for numbers of urinal in range shall be all as per SSR Part I clause 18.88.3. Each urinal shall be provided with chromium plated grating and union for discharge pipe and PVC waste pipe of required diameter and length and 5 Ltr capacities PVC flushing cistern shall be provided with PVC connection 15mm size with PTMT nuts of length 450mm, 390x810mm ceramic partition plate shall be provided as partition wherever any type of partition wall is shown in drawings.

20.10 **PVC CABINET WITH MIRROR:-** Cabinet with mirror shall be PTMT of size 450mmx350mm, Cabinet with mirror shall procured from approved manufacturer as given in BOQ/Appendix 'B'.

20.11 **WATER STORAGE TANKS:-** Water storage tanks shall be of HDPE vertical type and of capacity as specified in Schedule 'A'. Water tank shall be rotational moulded polyethylene water storage tank as per IS-12701-1989. Water tank shall have three layer wall construction. The tank shall be installed in position truly leveled. The tank shall be placed on staging/brick platform as directed by the Engineer in charge. The installation of same shall be done as directed by the Engineer in Charge and as per clause 18.60 of MES Schedule.

20.12 **SEPTIC TANK:-** Work shall be executed in accordance with drawing no TD/217 Sht 1/7 to 7/7 with the following specification :-

- | | | |
|-----|---------------------------|---|
| (a) | Excavation and Earth Work | :-Hard /Dense Soil. |
| (b) | Lean Concrete | :- 100mm PCC 1:4:8 type D-2 (Using 40mm graded aggregate) |
| (c) | Flooring | :-200mm PCC (1:2:4) type B-1 (Using 20mm graded aggregate) |
| (d) | Brick work | :-As described here in before, in brick work section, brick work shall be in cement mortar (1:4). |
| (e) | RCC Slab | :-RCC(1:1:5:3) type A-1 (using 20mm graded aggregate) |
| (f) | Reinforcement | :-TMT Bars as described here in before, dia of bar as shown on drawing. |
| (g) | Plaster | :-(a) Internal plaster shall be 15mm thick in cement mortar (1:4) mixed with water proofing compound as per manufactures instructions. |
| (h) | M. S rung | (1:6), (b) External plaster shall be 20mm thick in cement mortar external plaster shall be carried out 15cm below G1.
:-12 mm dia TMT bar, embed in PCC block, size of PCC block as shown on drawing |
| (j) | Manhole Cover | :-450mm dia Pre RCC Man hole cover with lifting handle embeded in angle iron frame. |
| (k) | Inlet/Out let Pipe | :-100 mm dia cast iron (sand cast) pipe. |

- (l) Vent Pipe :- 75mm dia cast iron (Sand cast) pipe with cowl. If height of pipe is not shown on drawing the same shall be considered as 2 mtr.

20.13. **Soak Well**:- Work shall be executed in accordance with drg No **TD/309/Sht 1/4 TO 4/4** with the following specifications:-

- (a) Excavation :-Hard/Dense Soil
- (b) Lean Concrete :- PCC(1:4:8) type D-2 (using 40mm graded aggregate)
- (c) Honey Comb Brick wall/ Brick Wall :-Brick asw described here in before brick work shall be in cement mortar (1:4).
- (d) RCC Slab :-100 mm thick RCC (1:1:5:3) type A-1 (using 20mm graded aggregate).
- (e) Manhole Cover :-450 mm dia Precast RCC manhole cover with lifting handle.
- (f) Brick Aggregate :- 63 mm Jhama brick bats shall be filled in soak well up to the depth as shown on drg.
- (g) RCC Band :- RCC (1:1:5:3) type A-1 (using 20mm graded aggregate).

20.14. **List of Drawings**

S No	Description of drawing	Drawing No	Sheet No	Date of drg	Date of last rev.
1.	Details of Septic Tank	TD/217	1/7	25-11-68	08-08-81
2.	Details of Septic Tank	TD/217	2/7	25-11-68	-
3.	Details of Septic Tank	TD/217	3/7	25-11-68	-
4.	Details of Septic Tank	TD/217	4/7	25-11-68	16-1-71
5.	Details of Septic Tank	TD/217	5/7	25-11-68	1-1-90
6.	Details of Septic Tank	TD/217	6/7	25-11-68	-
7.	Details of Septic Tank	TD/217	7/7	25-11-68	1-1-90
8.	Typical Details of Soakwell	TD/309	1/04	17-02-86	-
9.	Typical Details of Soakwell	TD/309	2/04	17-02-86	-
10.	Typical Details of Soakwell	TD/309	3/04	17-02-86	-
11.	Typical Details of Soakwell	TD/309	4/04	17-02-86	-

(Signature of Contractor)
Dated: _____

AGE (Contracts)
for Accepting Officer

PARTICULAR SPECIFICATIONS (Contd....)**INTERNAL ELECTRIFICATION**

21. Scope of work. The extent of work under this contract is as indicated in relevant part of Schedule 'A'. Particular specifications and drawings. All references to clauses in succeeding paragraphs pertain to MES Schedule. The layout of conductors/cable, route shall be as directed by the Engineer-in-Charge.

22. General.

22.1 Refer relevant clauses for earthwork, concrete, brick work, plastering etc shall be followed except for specific provisions given in Schedule 'A' or specified here-in-after.

22.2. The IS mentioned in the MES Schedule and in the other documents shall deemed to be changed/modified as per latest amendments issued to IS upto date of receipt of tender.

22.3. The installation shall strictly comply with the provision contained in the latest edition of the Indian Electricity Rules and code of practice and IS-732 for electrical wiring and fittings buildings as applicable to these works except where such regulation and rules are modified by these specifications.

22.4. (a) All electrical works as well as works under category including its category (d) (v) to the extent Rule 29 under Part III of Central Electricity Authority (Measures Relating to Safety and Electric Supply) Regulation, 2010 is applicable forming either in full or part of the scope of work of contract awarded to him and that all such electrical works shall be executed by him through such agency only (either self or other agency) having valid Electrical License of required class.

22.4 (b) Prior to commencement of electrical work/ electrical component of works and other works as mentioned in Para (c) above, copy of valid Electrical License in the name of the contractor or copy of agreement with agency having valid Electrical License along with agency's Electrical License shall be submitted by the contractor to the Accepting Officer. In Case contractor does not possess valid Electrical License and he intends to get such work executed through agency having valid Electrical License and with whom he has agreement, prior approval of such agency in all contracts shall be got done from competent authority, who shall be concerned CWE.

22.5. The position of electrical fittings and fixtures shown on the drawings may be changed by the Engineer-in-Charge at the time of execution, if found necessary. Such changes do not entail any price adjustment.

22.6. The 5 amps socket on independent boxes shall be mounted at 100 cms height from FFL.

22.7. The run of wires shall be marked on the walls and soffits of roof/floor slabs for wiring. Approval of the Engineer-in-Charge shall be obtained in writing before fixing plugs, cables and fittings etc.

22.8. Loop-in-system of wiring shall invariably be used throughout the installation.

22.9. All electrical fittings and wiring shall be clear off doors, windows and other openings.

22.10. Wiring shall be done strictly in conformity with IE rules and IS specifications. Layout shall be strictly in conformity with modern Engineering practice.

22.11. No twisting/jointing in earth wire is allowed. All continuous earth wires shall be connected to main earth/Switch boxes/DBs/MCCB, Socket. Outlets, fittings etc by use of suitable size lugs/sockets and application of crimping tools only.

22.12. The phase identification should clearly be provided at the main incoming switch.

22.13. The name of functions of each distribution board like 'Power' 'Light' or Sub main/DB as applicable shall be clearly and neatly painted on the distribution boards.

22.14. The height of the MCB, distribution boards, enclosures, various light fittings, and fans shall be as per TI and as decided by the Engineer-in-Charge. However the height of the distribution boards shall not be less than one metre.

PARTICULAR SPECIFICATIONS (Contd....)

22.15. The contractor shall submit wiring diagram to the Engineer-in-Charge for his approval within two months from the date of placing work order to commence the work. Approval of the Engineer-in-Charge shall be obtained to proposed run of wires and exact positions of fittings before resorting to the fixing of conduits, cable and fittings etc.

22.16. General conditions and specification as given in para 19.2 of MES Schedule shall be complied.

22.17. The main supply in all buildings shall be 230 volts, AC single phase or 400 volts, 3 phase or as indicated in Schedule 'A'.

22.18 **Materials and sample Boards.** All materials shall be ISI marked. In case ISI marked product are not available these shall conform to relevant IS specifications or to BS specifications where ISI is not existing. In absence of any IS specifications these shall be as approved by GE.

22.18.1 Approval of GE referred to in clause 19.2 of MES Schedule Part I shall be in writing.

22.18.2. Sample of all materials, fittings and fixture to be supplied by the contractor shall be submitted to GE for his approval. The contractor shall not commence his work until the samples are approved in writing by the GE. The contractor shall ensure that all the materials incorporated in the work are identical in all respect. Samples approved and samples destroyed in testing shall be returned to the contractor after completion of contract. No payment shall be made for samples destroyed in testing.

22.18.3. Of the makes specified (if any) materials shall be arranged of the best available make as approved by the GE. Out of different makes as specified in CA, the makes approved by the GE shall only incorporated in the work.

22.18.4. All manufactured articles required for incorporation shall be brought to site in the manufacturer's original packings with the seal intact. Incorporation shall be done when approved by Engineer-in-Charge.

22.19. **SCREWS AND NAILS ETC.** All screws and nails used in the work shall be of brass. Screws which are visible such as for switch box covers etc shall be brass chromium plated.

22.20. System of Wiring shall be as described in Schedule 'A'.

22.20.1. Surface/concealed conduit of ISI marked. Wiring PVC insulated and single core cable with stranded copper conductor cable shall be ISI marked.

22.20.2. No bare or twist joint shall be made at intermediate points in through run of cables unless the length of final sub circuits or sub main is more than the length of standard coil. If any joint becomes unavoidable, such joint shall be made through proper junction boxes as approved by Engineer-in-Charge.

22.20.3. Wiring shall be done without any junction or connection boxes on line.

22.20.4. Cable shall bear ISI mark on reel IS-694 for PVC insulation and copper conductors and shall be suitable for voltage of supply. Cable shall be fixed as specified in para 19.124 and 19.125 of MES Schedule Part I.

23. CONDUITS AND CONDUIT FITTINGS. All conduits and conduit fittings and accessories shall be rigid PVC conduit and shall be ISI marked.

23.1. Brass machine screws shall be used in all conduit wiring.

23.2 Fixing Screws in conduit boxes and inspection covers shall be of brass.

23.3. All electrical fittings/accessories shall be mounted inside the conduit boxes, boards or directly on the surface available when these are conduit entry metallic type as directed by the engineer-in-Charge.

PARTICULAR SPECIFICATIONS (Contd....)

23.4. Colour of insulation of cable shall be one throughout for all phases (line) conductors and other neutral conductor, where insulated earth continuity conductor is specified, the colour of insulation shall be different from that of phase and neutral conductors and preferably green.

24. WIRING

24.1 **CONDUIT WIRING.** Conduit wiring shall be carried out all as specified in Para 19.124 to 19.132 of MES Schedule (Part I) and IS-732.

25. TERMINATION OF WIRING POINTS. Wiring points for light/fans points and light/power plugs (socket outlets) for mounting switches, sockets, regulators and other fittings etc shall terminate in a recessed cast iron or sheet metal boxes fixed flush to the walls and covered with 3 mm thick plastic laminated sheet non inflammable.

26. Each circuit shall have its separate neural conductor originated from neutral busbar.

26.1. It shall be ensured that in case of single phase circuits the phase conductor is taken to the single pole switches with single switches 'OFF' position. There should be no live conductor at the outlet controlled by the switch.

26.2. Power circuit and lighting circuit which have three pin piano type socket outlets shall have separate earth wire for each circuit brought upto the earth terminals on the control boards from where the circuit originates.

26.3 All circuit arrangements shall be got approved from the Engineer-in-Charge before fixing the control and fittings.

26.4 All the connection of wire/cable shall be lugs/bottle neck only.

27. Terminals Boxes. Cost of recessed terminal boxes for housing switches, socket outlets, power plugs and regulators etc shall deemed to be included in the unit rates of respective point wiring and no extra payment shall be admissible on this account. Works pertaining to all niches, their frames/shutters boxes etc for mountings of MCB, DBs shall also deemed to be included in the lump sum cost of the bldg and the percentage/rate quoted by the contractor and nothing extra shall be paid on this account.

28. Electrical fittings/fixtures. Lamp holder shall be of brass with porcelain insulator standard size complied with IS 1258 provided with brass back plate with brass screws and shall be ISI marked. These shall be suitable for fittings of pendant, bracket or batten type fittings as indicated.

28.1. The terminal points for switches, socket outlets etc for all wiring shall terminate in recessed cast iron boxes fitted flush with wall surface and covered with 3 mm thick Hylam sheet fixed with brass screws. The cost of the above arrangement is deemed to be included in rates for respective items of point wiring.

28.2. To reduce the risk of corrosion of copper conductors as a result of galvanizing action with brass/copper in wet conditions, the stripped end of copper conductors, before inserting into fittings, shall be smeared with anticorrosive grease as recommended by the manufacturer.

29. SWITCHES SOCKET OUTLETS BUZZER/BELL PUSH. Switches, socket outlets, Buzzer shall be flush/piano type white ivory finish and shall be of any of the makes specified in Appx 'B'. Switches shall be of ISI marked if no makes here. Multipurpose socket outlets 5 Amps 5 pin sockets shall conform to relevant IS.

30. LIGHT FITTINGS/EXHAUST FANS:

30.1 Light fittings/exhaust fans shall be all as described in Schedule 'A'. Light fittings/exhaust fans shall be of any of the makes specified in Appx 'B'. All the luminaries (lighting fixtures/exhaust fans) as specified in Schedule 'A' shall be purchased directly from the manufacturers or the authorised dealers and brought to site duly packed and sealed in their original packing cases. The relevant purchase documents and factory gate passes for each lot shall be produced to Engineer-in-Charge for their perusal and according of necessary approval.

PARTICULAR SPECIFICATIONS (Contd....)

30.2. The cost of all accessories required for hanging/fixing light fittings/exhaust fans including proven welding of hooks wherever necessary and connecting with flexible cable as applicable shall be deemed to be included in the lump sum/rates quoted for the fittings.

30.3. Wherever specifications have not been given, the materials components shall comply with the relevant IS specifications. In its absence such specifications/Code of practice or good engineering practice shall be followed.

31. EARTHING:

31.1 The earthing shall generally conform to IS-3043.

31.2 The contractor shall obtain approval of Engineer-in-Charge for the earthing before commencement and it shall be executed in presence of his representative. Excavation shall be passed by the Engineer-in-Charge before filling. The charcoal dust filling and back filling of earth shall be done in 15 cm layers well watered and rammed. Surplus spoil shall be disposed off and site cleared on completion.

31.3 The earthing shall be done as shown in electrical plate No 5 on page 19.49 of MES Schedule 2009 (Part -I).

31.4 The ultimate depth of earth electrode would depend on the nature of soil and contractor is required to take it upto a depth where sufficient moisture exists and natural conditions are suitable for resistance as specified below.

31.5 The test link shall be provided in the circuit of each pit at a suitable point as approved by the Engineer-in-Charge for carrying out resistance measuring test. The earth resistance of the whole system shall be as near as possible to zero but shall not in any case exceed one ohm.

31.6 As far as possible joints in earthing strips shall be avoided. But wherever it is absolutely necessary, prior permission of Engineer-in-Charge will be obtained in writing. While jointing, GI strip shall be properly cleared. Straight joint shall overlap 50 mm. All joints in GI strip shall be riveted (using 6 mm dia GI rivets in 2 rows with 2 Nos rivets in each row) and then soldered/welded on all the four sides and to full length of the joint.

31.7 Concrete Chamber shall be of PCC 1:3:6 type C-1, using 20 mm graded crushed stone aggregate. Casing shall be of PCC 1:3:6 using 20 mm graded crushed stone aggregate. All internal surfaces of concrete chamber shall be given 12 mm thick plaster in CM 1:4 finished fair and even. Funnel in the chamber shall be provided with wire gauge of 22 gauge, 8 mesh per linear inch. The cover of earth pit shall be 50 mm thick RCC 1:2:4 type B1 duly reinforced with 6 mm dia MS round bars @ 100 mm C/C both ways.

32. UNDERGROUND CABLES:

32.1 LT/HT power cable shall conform to relevant IS specification and shall be laid as mentioned in clause 19.74 to 19.76, 19.78, 19.80 to 19.82.2 of MES Schedule. Cable terminations and joint kits shall conform to requirements as given in clauses 19.22.1 and 19.22.2 of MES Schedule. Testing of underground cable during and after laying shall be done as per IS Code and as mentioned in MES Schedule.

32.2 Contractor should note that out of the makes as given herein after, cables of make as approved by the Garrison Engineer shall only be incorporated in the work.

32.3 **METHOD OF LAYING:-** Before laying the cable, the trench shall be provided with a layer of sand of 8 cm depth for the purpose of cushioning. After the cable has been uncoiled and laid into the trenches over the rollers, the cable shall be lifted slightly over the rollers beginning from one end by helpers standing about 10 metres apart and drawn straight. The cables shall then be taken off the rollers by additional helpers lifting the cable and then laid straight into the route. When the cable has been properly straightened, it shall be covered with sand to a depth of 15 cm. This is then gently punned down to a depth of 10 cm above the top of the uppermost cable, thus providing a good bedding for the protective cable covers or warning covers which are placed centrally over the cable. The punning shall be done by hand, mechanical punners shall not be used.

PARTICULAR SPECIFICATIONS (Contd....)

32.4. **TESTING OF CABLE** : The cable shall be tested before laying and after laying and jointing as specified in clause 19.93 of SSR Part-I.

32.5. All the expenses incurred on tests including provision of testing apparatus required to carry out shall be borne by the contractor without any extra cost to the Government. If the result of tests are not found satisfactory, the contractor shall at his own expense, rectify/replace the defective materials or any part thereof as directed by the Engineer-in-Charge. The decision of the Accepting Officer shall be final, conclusive and binding in this respect.

33. MCB DISTRIBUTION BOARDS, MCBS:

33.1. Distribution boards shall consist of miniature circuit breakers steel enclosure and isolators of ratings as described in Schedule 'A'. Miniature circuit breakers shall be suitable for 250/240 volts AC supply ISI marked and shall be one of the reputed make given in Appendix "B" hereinafter.

33.2. Miniature circuit breakers shall be housed in factory made sheet steel enclosures and shall be made of minimum 1.2 mm thick MS sheet totally enclosed type, having hinged gasket, doors and locking arrangements, for protections. The sheet metal enclosures shall be vermin proof and painted with two coats of synthetic stove enameled scratch resistant paint over a coat of primer. These shall be of the same make as that of MCBs.

33.3. The MS door of the box shall be kept flush with the wall and fixed at a height of not less than 1.00 metre (bottom of box) from finished floor level.

33.4. Sunken type boxes shall be of sheet steel and shall conform to IS-5133 Part I. The boxes shall be factory made duly painted with two coats of black bituminous paint both internally and externally before fixing of the bolts. Cast iron boxes have welded, drilled and screwed earth dolly separately for fixing the earth wire/leads.

33.5. All MCBs/DBs enclosures shall be connected with PVC insulated copper conductor earth wire of size as per Sch 'A'. Three phase boards and enclosures shall be connected with two distinct earth connections.

33.6. Sub bus bar chambers shall be connected with two distinct earth lugs and nut/bolts.

34. Testing.

Refer para 19.14.6 of MES Schedule Part I. The work will be completed only after such testing and the record of such testing will be certified as satisfactory by Engineer-in-Charge and shall be signed by the Engineer-in-Charge and contractor jointly. The contractor at his own cost shall provide all instruments, material and labour required for testing.

35. STREET LIGHT / FLOOD LIGHT/ POST TOP LANTERN FITTINGS:

35.1. Street light/Flood light / Post top lantern fittings shall be all as described in Schedule 'A'. Light fittings shall be of any of the makes specified in Appx 'B'. All the luminaries (lighting fixtures) as specified in Schedule 'A' shall be purchased directly from the manufacturers or the authorised dealers and brought to site duly packed and sealed in their original packing cases. The relevant purchase documents and factory gate passes for each lot shall be produced to Engineer-in-Charge for their perusal and according of necessary approval.

35.2. The cost of all accessories required for hanging/fixing light fittings including provn of welding of hooks wherever necessary and connecting with flexible cable as applicable shall deemed to be included in the lump sum/rates quoted for the fittings.

35.3. Wherever specifications have not been given, the materials components shall comply with the relevant IS specifications. In its absence such specifications/Code of practice or good engineering practice shall be followed.

36. SAND CUSHIONING TO UNDERGROUND CABLE : Sand used for sand cushioning shall be clean, dry, free from vegetation and other forge in materials, laying of sand cushioning shall be done in accordance with clause No. 19.75 of SSR Part-I.

37. BRICK PROTECTION: Brick used for protection of UG cable shall be sub class 'B' bricks and as described here in before, Bricks shall be laid in accordance with clause No.19.75 of SSR Part-I.

38. Record Drawings:

On completion of work, the contractor shall supply the following record drawings on tracing cloth: -

- (a) Plan showing position of lights, switches, sockets, fans and circuits as per symbols adopted in contract drawings.
- (b) All the outlets marked with circuit number to which belong.
- (c) Typical section indicating mounting heights etc adopted.
- (d) Any other connected details required by GE/Engineer-in-Charge shall be incorporated in these drawings.

PARTICULAR SPECIFICATIONS (Contd....)**39. TESTING OF MATERIALS**

39.1.1 Before incorporation in the work and before any payment the building material, concrete, cement, steel etc are required to be tested for quality control in material testing laboratory, as per Appendix 'C' here-in-after.

39.1.2 Testing of various materials under this contract shall be done as per the details mentioned in Appendix 'C' here-in-after.

40. A LEVEL TESTS FOR WORKS COSTING UP TO Rs 100 LAKHS:- The contractor may set up site laboratory at his option for works costing upto 100 lakh. In case the contractor has not set up the site laboratory and tests are carried out in Zonal or any other laboratory approved/ set up by GE, the recovery shall be made at the rates given in Appendix 'C' for tests carried out in Zonal lab or otherwise as per actual rates in case the tests are carried out in other labs. Testing charges will be deducted from the RAR's irrespective of the test results for such tests.

41. B & C LEVEL TESTS: For tests of 'B' and 'C' level as indicated in Appendix 'C', the contractor shall provide all facilities for testing of materials at Zonal Laboratory/Govt approved laboratories or test houses/Engg. Colleges at his own cost. The lump sum/rates quoted by the contractor shall be deemed to be inclusive of these tests. For 'C' level tests, actual cost of testing shall be borne by the Contractor and for 'B' level tests recovery shall be made at the rates of various tests conducted in Zonal Laboratory of MES as indicated in Appendix 'C'. Wherever it is convenient to get 'B' level test done at approved test house/Engg. College, the same can be done at the cost of the contractor and no separate recoveries will be made by the Department for the same.

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 test or whenever the test is due whichever is earlier.

In case requisite No of applicable tests catered in Appx 'C' are not carried out by the contractor and GE is satisfied about the material, the same is in accordance with the contract specification, he may dispense with the tests and in that event the contractor shall be liable to bear the recovery for not carrying out the tests at the panel rate which will be three times the rate given in Appx C. In case GE is not satisfied about the quality of material he will get the test in MES Zonal lab/SEMT wing Pune/National Test House/Govt approved lab/ Engineering college and in that event contractor shall bear the recovery for such tests carried out at panel rate of three times the rate given in Appx C or twice the actual expenditure whichever is higher.

This clause supersedes all other stipulations, if any, with regard to testing of materials specified elsewhere in the tender documents. 29.

42. MCCB:

These shall be as described in Schedule 'A' and shall be approved product of BIS having ISI certification mark. MCCB shall be current limiting and comprise of quick make-break, switching mechanism, insulated moulded case with high stand capacity against thermal and mechanical stress, MCCB shall employ maintenance free contact system to minimize the let through energy. MCCB shall be meeting necessary standard as per IS-13947-2/IEC 947-2 or IEC-60947-2. All these MCCB shall be provided in thermal magnetic releases rated operational voltages up to 600 volts and rated insulation voltage to be 690 voltage. MCCB shall be made as per Appendix 'B'.

43. GALVANISED STEEL WATER TUBING & FITTINGS: Galvanized steel tubes/pipes shall be as per IS-1239 (Part I) 1979 and shall bear ISI mark. The pipe fittings shall be as per IS-1239 (Part-II) 1982 and shall bear ISI mark. For pipes and fittings refer clause 18.4 of MES Schedule 2009 (Part-I)".

44. PANEL BOARD:

44.1 LT panel board/Feeder pillar box shall be described in BOQ or out door type cubicle suitable for 3 phase 4 wire 415V, 50 Hz and type tested at CPRI for 35 MVA rupturing capacity at 415 volts factory fabricated in an approved factory having modern fabrication and testing process which includes seven tank pretreatment process comprising of decreasing rinsing, de-rusting rinsing, phosphatising rinsing and passivation followed by powder coat painting having thickness not less than 100 microns provided with suitable gasket to make it dust/vermin proof & general construction conforming to IS : 8623/93 comprising of following:-

PARTICULAR SPECIFICATIONS (Contd....)

- (a) **OUTER SHELL:-** The outer shall be made out of 2.00mm thick CRCA sheet & MS angle section 50x50x6mm frame, factory fabricated with front & back openable, double door system lockable/openable by keys from both sides having chromium plated 19mm dia fancy locks, louvers & air vent gasket for natural flow of air. 'U' type gasket shall be used to make the outer shell completely vermin proof. The bottom of the outer shell contains a detachable plate having provision for entry of armoured cable of adequate size with glands. The outer shell shall be powder coated with pure polyester siemens grey structural RAL 7032 shade. The dimension of the shell shall be adequate to accommodate inner shell described below giving minimum 75mm space all around and shall be fabricated in such a way that the complete inner shell alongwith its control gears/accessories could be taken outside without disturbing outer shell. The outer shell shall be mounted on a zinc metal coated stand having zinc coating not less than 100 microns. Provision of threaded earthing stud at bottom and lifting lugs of suitable size at top to lift the panel. Safety shall be made with degree of protection of outer shell IP-54 Panel board shall be indoor type totally enclosed dust & vermin proof suitable for trouble free and efficient service and suitable for local climate with an ambient temperature of 45 deg C and RH of 100%. Bus bars shall be of copper, if not otherwise mentioned in Sch 'A' (BOQ), of rated capacity as specified in Sch 'A' and shall have full round edges.
- (b) **INNER SHELL:-** Inner shell shall be made out of 2.0mm thick CRCA sheet duly compartmentalized for each control gear, front and back openable single door system lockable/openable by keys from both sides, having louvers and air vent gasket for natural flow of air. 'U' type gasket shall be used to make the inner shell completely vermin proof and to accommodate incoming/outgoing MCCBs and TPN, bus bar of rating not less than the 1.5 times. The rated capacity of the incomer MCCB, the TPN bus bar shall be insulated with colour coded heat shrinkable sleeve and shall be mounted on suitable size 'F' class insulator made on non hygroscopic non combustible track resistant, high strength FRP/SMC/DMC material at an interval not less than 500mm throughout the length of the TPN bus bar. The cubicle incomer MCCB as well as outgoing shall have TPN copper extension links of current carrying capacity not less than 1.5 times the rated capacity of individual feeders. The extension links shall not be less than 300mm long supported on suitable size 'F' class insulators made of non hygroscopic, non combustible, track resistant, high strength FRP/SMC/DMC material having provision for termination of incomer and outgoing cables. All inner connections between the main bus bar as well as outgoing feeders shall be carried out with TPN aluminium bus bar of rating not less than 1.5 times rated capacity of individual outgoing feeders & should be insulated with heat shrinkable PVC sleeves. All control wires shall be with PVC insulated and sheathed 2.5sqmm multi stranded copper conductors and shall be properly bunched, tied, ferruled for proper identification and crimped with adequate size of copper lugs. The cubical shall have a bottom channel of size 75x40mm duly coated with zinc metal coating having thickness not less than 100 microns. A detachable predrilled gland plate of thickness 3.15mm powder coated should be used at the bottom. The inner shell shall be powder coated Siemens grey structural RAL 7032 shade. The degree of protection for inner shell shall be IP-42.
- (c) The contractor shall submit proposed drawing of the panel interlia mentioning make of switchgears to be incorporated for approval of Engineer-in-Charge before manufacturing.
- (d) The quoted rate is inclusive of marking of letters with white paint such as incoming and outgoing and capacity of breakers etc.
- (e) The cost of fixing of the panel on suitable PCC (1:3:6) type C-1 (using 20mm graded black trap/basalt/granite stone aggregates) foundation as directed by Engineer-in-Charge is deemed to be included in the quoted rates by the contractor for the above item.
- (f) The bottom of panel shall have minimum 60cm height from existing ground/floor level.
- (g) The door shall be fitted with Neoprene gaskets with fasteners designed to ensure proper compression of the gasket.

PARTICULAR SPECIFICATIONS (Contd....)

(h) Each switch gear/MCCB/MCB shall be housed as an individual unit in a not less than 2mm thick sheet steel housing having the bus bars etc. on the top side control termination shall be accessible and from the front side, outgoing bus bars shall be accessible. Removable lift off type hinged panel doors shall be on the rear side.

44.2 Incoming and out going cable will be identified with arrow marks and the name of circuit on each out let will be written in front and rear of panel board.

44.3 All screws, bolts and nuts which secure current carrying parts to the panel will be of brass, copper or similar rust proof materials. The base plate of cable chamber will be of large size to accommodate all cable glands intended for outgoing cables.

44.4 The top of the out door type feeder pillar shall be fitted with a sloping canopy design of which shall be such that rain water shall not accumulate on top.

44.5 A bayonet lamp holder complying with IS-1258-1279 with a tumbler switch complying with IS-3884-1966, a three pin plug and socket complying with IS-1293-1978 with necessary fuse and wiring shall be provided inside the pillar on the front bottom portion of the shell near the neutral bus bar.

44.6 The contractor shall submit CPRI type test report of the panels and test report of panel as per IE rules as directed by the Engineer-in-Charge.

44.7 (i) Approval from the Accepting officer for the design and specifications of panel board/feeder pillar box and its components and makes shall be taken by the contractor before procurement.

(ii) The complete panel board/feeder pillar box shall be procured by the contractor either directly from the manufacturer's of switchgear or their authorized dealers only. No system house panel shall be permitted. Minor variation in technical specifications as per OEM recommendation is permissible.

45. BUS BAR CHAMBER

45.1 Bus bar chamber shall be made out from 3.15mm CRCA steel sheet or describe in BOQ, epoxy powder coated both inside and outside, size of bus bar shall be 600x600x450mm with pre fabricated hinge device bus chamber shall have front opening door with locking arrangement, bus bar chamber shall be rest on 75mmx75mmx6mm thick angle iron frame 4 legs of frame shall be embedded in pcc (1:3:6) type C-1 size of pcc block 200x200x450mm depth from existing ground level, bus bar chamber shall be rest on 450mm above ground level, the angle iron frame shall be painted with two coats of synthetic enamel paint over a coat of primer, the portion of angle iron which are embedded in concrete shall be painted with black bituminous paint. Each bus bar chamber shall be provided with 3 Nos 400 Amps and 1 No 200 Amps aluminium bus bar 400mm long mounted on epoxy FRP heavy duty insulators including provision of required number of holes for incoming and outgoing of cable connection and providing necessary gasket to prevent dust, vermin, inside the box. All incoming and outgoing cable shall be provided with duly insulated heat shrinkable sleeves 1.1 kv heavy grade cable brass gland/aluminium legs with nuts and bolts and washers complete all as directed by Eng-in-charge during execution.

46. Testing of materials:

Sampling and testing of materials shall be done as per IS specification and as modified in tender documents. The cost of samples of materials and other expenses required to be incurred for taking the samples, packing, transportation, preservation for further reference and testing charges shall be borne by the contractor

47. EXTERNAL ELECTRIFICATION

47.1 MATERIALS: The specifications and general rules/conditions contained in Section 19 of MES Schedule Part I and Part II including errata/amendments there to will generally applicable to the work unless otherwise specified here-in-after.

47.2 PAINTING AND PROTECTION: - Each item of the plant/equipment shall be painted or protected as detailed here-in-after. It is essential that before any coat of paint is applied either in the shops or at the site the surface shall be clean and free from all deleterious matter and shall be completely dry. The contractor shall produce when demanded by GE paint manufacturers guarantee that each coat of paint is comparable with the previous and subsequent coats so that pooling flaking or other faults do not occur.

47.3 BUS BAR: Refer Para (including sub paras) 19.134, 19.135 & 19.136 of MES Schedule Part-I.

PARTICULAR SPECIFICATIONS (Contd....)**48 LT SWITCH GEAR PANEL**

48.1 Refer Para (including sub paras) 19.100 of MES Schedule Part-I

48.2 The panel board shall be factory made. Panel boards shall be obtained from the specified manufacturers and panels will be epoxy powder coated factory made and tested as per IS. All LT panels shall have extra space for installing one MCCB in future.

48.3 The cable chamber of the board shall be with adequate space for housing cable and connecting for safety of working and for avoiding accidental contacts with live parts by providing barriers.

49. POWER CABLE

49.1 Refer clauses 19.19 & 19.73 to 19.96 of MES Schedule Part-I.

49.2 The rates quoted by the tenderer in Sch 'A' for supplying and laying of cables includes connecting, testing and fixing to walls/poles and in other similar portions and shall be deemed to include clamps fabricated out of MS flat iron 50 x 6mm including nuts, bolts and washers fixed at interval of 1.5 m apart.

49.3 The cable terminations at various sections which will be connection to the respective ACB/MCCB/MCB etc. shall be provided with aluminium cable lugs either thimble type or pencil type as per site requirement basis and jointed to the cable by crimped joint.

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

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

49.6 While laying, the cable shall be lifted over roller beginning from one end by helper 10 yard apart and drawn straight taken off the rollers by the route provided the help of string line drawn into the trench, kinks shall be avoided. Cable glands shall be of brass with nut and shall be approved by GE.

49.7 The new cable shall be megger tested before jointing as well as after completion jointing of cables. Cables shall be tested for:-

Continuity

Insulation resistance in earth

Insulation resistance between conductors

Contractor shall give minimum two weeks notice to Accepting Officer for all tests.

The result shall be submitted to the Engineer-in-Charge duly signed by the contractor and authorized MES rep.

49.8 Earth mat shall be provided to ensure absolute protection, Men at places where isolator and switches are to be operated manually at extra cost.

50 DISTRIBUTION / FEEDER PILLARS BOX

50.1 Refer clauses 19.21 of MES Schedule Part-I.

51. EARTHING

Refer Para 19.137 to 19.146 of MES Schedule Part-I (2009).

51.1 Earthing shall be all as per IS and IE regulations and applicable electrical plates in MES Schedule Part I. The contract shall obtain the approval of GE for layout of earthing before commencement of work and it shall be executed in the presence of an authorized MES representative.

51.2 The earth plates shall be of GI of size 600 x 600 x 6 mm thick. The earth conductor beyond 7.5 m length shall be measured and paid separately.

51.3 The charcoal dust, common salt and returning filling in shall be done in not exceeding 150mm thick and shall be properly watered and rammed. Surplus soil shall be disposed off and site left neat and tidy on completion.

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

51.5 The test link shall be provided in the circuit of each pit at suitable point to be approved by the Engineer-in-Charge for carried out resistance measuring test. The earth resistance of whole system shall be as near as possible to zero but shall not exceed in any case 1-Ohm.

51.6 Earth mat shall be provided to ensure absolute protection, men at places where isolators and switches are to be operated manually at no extra cost.

52 INSPECTION TESTING AND COMMISSIONING OF ELECTRICAL EQUIPMENT AND INSTALLATIONS

52.1 The Engineer-in-Charge / GE may visit the workshop at local station from time to time. The contractor shall provide necessary facility for inspection of equipment as and when desired by the Engineer-in-Charge/GE.

52.2 The equipment shall be tested within 24 hours before taking over. In case of any defect noticed during testing the same shall be carried out by the contractor without any extra cost to the department.

52.3 The contractor shall make all arrangements for testing at site at the entire satisfaction of Engineer-in-Charge. However electricity required for testing shall be issued by the department free of cost.

PARTICULAR SPECIFICATIONS (Contd....)

52.4 The testing and commissioning of electrical equipments at site shall be according to the procedure laid down below :-

52.5 All electrical equipments shall be tested, installed and commissioned in accordance with the latest relevant IS and code of practice published by ISI wherever available and stipulations made in the relevant general specifications.

52.6 In case IS are not available, the tests shall be carried out in accordance with the latest standards and code of practice published by any other recognized standard institution or latest publication of IEC.

52.7 The testing of all electrical equipments as well as the system as a whole shall be carried out to ensure that the equipment and its components are in satisfactory condition and will successfully perform its functional operations. The inspection of the equipment shall be carried out to ensure that all materials, workmanship and installation conform to the accepted design, engineering and construction standards as well as accepted codes of practice and stipulations made in the specifications.

52.8 All tests shall be carried out by the contractor using his own arrangements, testings, equipments as well as qualified testing personnel.

52.9 The results of the test shall conform to the specifications required as well as any specific performance rate guarantee during finalization of the contract.

53. GUARANTEE:

53.01 The item of machinery / equipments / plants for which repairs are required to be done under this contract shall be handed over to the Contractor. A guarantee for the satisfactory performance of the item repaired replaced / remoulded shall be given by the Contractor for a period of "TWELVE MONTHS" from the date of completion of the contract (as indicated by the Engineer-in-Charge through a letter of completion). The defects liability as envisaged vide condition 46 of IAFW-2249 shall be applicable to the contract.

54. NOTE FOR LED LIGHT/FITTINGS

54.1 The defect liability period for LED lights supplied by the contractor under this contract shall be 05 years in lieu of 02 years. The provision of condition 46 of IAFW-2249 is deemed to be amended to above effect.

54.2 The contractor shall submit a written guarantee for satisfactory performance of LED lights for a period of 05 (Five) year to the GE wef certified date of completion. In case any LED light/lights are not found functional during the above mentioned guarantee period, the same shall be replaced by the contractor without any extra cost to the govt.

54.3 The amount of security deposit/guarantee money for satisfactory performance of LED lights shall be 2.5% of the total amount of LED lights actually installed based on the rates quoted by the contractor against relevant items of BOQ and same shall be retained by the government from the contractor's dues. This amount shall only be released after successful expiry of the guarantee period of 05 years.

54.4 The contractor may however, furnish a fixed deposit receipt in lieu above mentioned security deposit/guarantee money from a sch bank, pledged in favour of Garrison Engineer for the period of Guarantee in which case the amount if any, deducted from the dues/final bill shall be refunded.

55. REMOVAL/SITE CLEARANCE:- Old demolished materials considered under Sch of credit shall be the property of the contractor and will remove by the contractor at his custody and material obtained from demolition or dismantling other than credit schedule shall be the property of Govt and contractor has to deposit the same in MES store yard without any extra cost. Debris and other materials if any shall be disposed off and sites to be cleared to the entire satisfaction of the GE.

(Signature of Contractor)

Dated: _____

AGE (Contracts)

for Accepting Officer

PARTICULAR SPECIFICATIONS (Contd....)

Sr l N o	Materials	Test	Method of testing	Frequency of Tests	Lev el of test	Rate per test Rs. Ps	Remarks	
1	2	3	4	5	6	7	8	
1	Coarse aggregate	(i) Sieve analysis	IS-2386 (Part – I)	One test for every 15 M ³ of aggregate or part thereof brought to site	‘A’	120/-		
		(ii) Flakiness Index	--do--	--do--	‘A’	90/-		
		(iii) Estimation of deleterious materials	IS-2386 (Part-I)	One test for every 100M ³ of aggregates or part thereof	‘A’	120/-		
		(iv) Organic impurities	--do--	One test per source of supply	‘C’	120/-		
		(v) Moisture content	--do— (Part- II)	Regularly as required	‘A’	120/-		
		(vi) Specific gravity	--do--	One test for each source of supply	‘B’	120/-		
2	Fine aggregate	(i) Sieve analysis	IS-2386 (Part – I)	One test for every 15 M ³ of FA or part when brought to site	‘A’	180/-		
		(ii) Test for clay, site and impurities	--do— (Part-I)	--do--	‘A’	90/-		
		(iii) Specific gravity	--do— (Part-II)	One for each source of supply	‘B’	180/-		
		(iv) Moisture content	--do— (Part – II)	Regularly as required subject to 2 tests/day when being used	‘A’	180/-		
		(v) Test for organic impurities	--do— (Part – II)	One test for each source of supply	‘C’	180/-		
3	Structural Concrete (M-15 grade and above)	(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 : -	‘A’	180/-	Random sampling shall be carried to cover all mix units	
	(ii) Compressive strength	IS-516	<u>Qty of concreteNo of samples in the work</u> <u>(Cubic Meter)</u> 1-5 1 6-15 2 16-30 3 31-50 4 51 and above 4+1 for each Addl 50 M ³ or part thereof			‘A’	120 /-	As per IS-456 clause 14 for frequency of sampling

PARTICULAR SPECIFICATIONS (CONTD...)

4	Cement Flooring Tiles/Terrazzo Tiles	(i) Water absorption	IS-1237 (Appx 'D')	06 tiles out of 18	'B'	180/-	Sample of 18 tiles from each source of supply selected at random
		(ii) Wet transverse, strength	--do-- (Appx 'E')	-----do-----	'B'	144/-	
		(iii) Resistance of wear	--do-- (Appx 'F')	-----do-----	'C'	540/-	
		(ii) Breaking Load	--do-- (Appx 'C')	-----do-----	'B'	120/-	
5	Water for construction purposes	(i) Test for Acidity	IS-456 & 3015	Once at the stage of approval of source of water	'B'	240/-	Also refer clause 4.3 of IS-456 and its subsequent sub clauses regarding suitability of water
		(ii) Test for Alkalinity	--do--		'B'	240/-	
		(iii) Test for solid content	--do--		'C'	300/-	
6	Brick	(i) Compressive strength	IS-3495 (Pt-II)	As per IS : 5454 given under:-	A	180/-	Checks for visual and dimensional characteristics shall also be carried out as per IS : 5454
		(ii) Water absorption	IS-3495 (Pt-II)	Lot size Sample size Permissible No of defective bricks	A	150/-	
		(iii) Efflorescence	IS-3495 (Pt-II)	1001 to 05 0 10000 10001 10 0 to 35000 35001 15 01 to 50000	A	180/-	
7.	Cement	Setting Time	IS-4031-63 affirmed 1980	Once for each consignment or as and when required	B	180/-	LEGEND A - Site Lab B - Zonal Lab C - National test house/SEMT Wing/Engg. College
		Soundness			B	120/-	
		Compressive strength			B	360/-	
		Fineness			B	120/-	

SIGNATURE OF CONTRACTOR

DATED:

AGE (CONTRACTS)

FOR ACCEPTING OFFICER

APPENDIX 'A'**SOURCES OF MATERIALS**

Sl No	Name of Materials	Source of materials for works at station
1	2	3
1.	Bricks and brick tiles	Local Kiln burnt bricks of best quality
2.	(a) Coarse aggregate (Single) for RCC/PCC works.	Rishikesh/Haridwar / Raspana / Tons / Song Raipur / Dehradun
	(b) Coarse aggregate (crushed) for RCC/PCC works.	Jwalapur/Haridwar / Chhutmalpur / Harbatpur
3.	Coarse sand for RCC/PCC lime concrete, DPC and seal coat.	Rishikesh/Haridwar / Raspana / Tons
4.	Sand for plastering, pointing, brick work, sand for cushioning filling and covering for LT cables.	Yamuna river near Dak Pathar and Raspana / Tons mixed in such proportion so as to give grading as specified in SSR
5.	Broken/ crushed stone/ boulders for hard core and road work, stone chipping for premix carpeting.	Rishikesh / Haldwani / Jwalapur
6.	Stone for WBM and Sub base / soling, screening and Premix carpet	Rishikesh / Haridwar

NOTE :

1. Sources indicated are for guidance only. 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.
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 Government/any other authority on obtaining the materials from the sources specified hereinabove and /or specified materials is not available at the source mentioned above, these materials conforming to specifications as given in particular specifications will be obtained by the contractor from any other place/source without any extra cost to the Government.

(Signature of Contractor)
Dated : _____

AGE (Contracts)
for Accepting Officer

Appendix 'B'**LIST OF MAKES/MANUFACTURERS**

SI No.	ITEMS	APPROVED MAKES/ MANUFACTURES
1	2	3
1.	UPVC Shutters for doors (Panel doors, moulded doors) Window, ventilators & frames	Fenesta Koemmerling Aluplast Prominace NCL Veka Ltd / Rajshri Plasticwood
2.	PVC Shutters for doors (Panel doors, moulded doors) Window, ventilators & frames	Kumar Arch Tech Ltd(Ecocell) Navatan Speciality Chemicals LLP Ahmedabad (GIZA) Yamuna Interiors Pvt Ltd, Yamuna Nagar (Black Cobra) Rajshri Plasticwood
3	WPC door shutter/door frame/board	Kumar Arch Tech Ltd(Ecocell) Navatan Speciality Chemicals LLP Ahmedabad (GIZA) Rajshri Plasticwood Yamuna Interiors Pvt Ltd, Yamuna Nagar (Black Cobra)
4	Wooden flush door/panel/gauge shutters for door and windows	A-1 Teak Products Pvt Ltd Century Plyboard (India) Ltd Greenply Industries Ltd Mahashakti Udyog Mandir Dehradun Punjab Plywood Industries
5	Pre-painted steel door/windows, ventilators & frames	Tata Pravesh NCL Buildtek Ltd Elixir Met Form Pvt Ltd
6	Steel windows, ventilators, door frames, shutters, Z section steel windows	Ashwani& Sons Trishul Industries meerut NCL Alltek&SeccolorLtd Hyderabad Ashish Industries Ghaziabad Chandni Industries Ghaziabad
7	Aluminium shutters, frames for doors, windows & ventilators	Trishul Industries meerut Chandni Industries Ghaziabad Deco Grill
8	Aluminium door and window fittings	Aluminium Udyog New Delhi (Brand-Global) Mohan Metal Industries (Brand-Crown) Argent Industries New Delhi
9	Plain / pin headed / frosted sheet glass	Saint Gobian Modi Guard Hindustan Pilkington glass works Asahi
10	Putty for Glazing	Gold Mohar J&N, Shalimar hardware Berger
11	UPVC/PVC False ceiling	Kumar Arch Tech Pvt Ltd, Polyline Extrusions Pvt Ltd Accura Polytech Pvt Ltd
12	Metal false ceiling	PR Ceiling Products Pvt Ltd Armstrong Manraj Ceiling Products Pvt Ltd(Brand- Royal Craft)
13	Gypsum board false ceiling	PR Ceiling Products Pvt Ltd Everest Industries Ltd Armstrong
14	Non-Asbestos Fibre Cement Board	Everest Industries Ltd Shera Kalsi
15	Glass Reinforced Gypsum False Ceiling	Armstrong Gyproc USG Boral

16	Wall Panelling/Plain Particle Board/ Particle board ceiling/ Ply Board/ Pre-laminated Particle Board/ MDF& hdf Boards	Century Ply Greenply Kitply ,
17	Aluminium Composite Panels (ACP)	Aludecor Alucobond Alutech Industries New Delhi Alexia Panels (alex)
18	CGI / PGI Sheet	Everest Charminar, Visaka
19	Galvalume aluminium zinc coated roof sheet	SAIL, Tata, JSW
20	CP Bath Fittings & Accessories	Jaquar & Co Pvt Ltd Cera (1 st quality) Kajaria Pearl Precision
21	PTMT Bath Fittings & Accessories	Shakti Enterprises New Delhi Sak Plast Pvt Ltd Prabhat Sanitaryware Pvt Ltd Prayag Polymers Pvt Ltd
22	Stop Valves/Gate Valves/Float Valves	Prayag Polymers Pvt Ltd Dhawan Sanitary Udyog New Delhi KS Engg Works Ghaziabad
23	Wash Basin / WCs/Urinals	Jaquar& Company Pvt Ltd Kajaria Cera (1 st quality)
24	Stainless steel wash basins / WCs	Prayag Polymer Pvt Ltd Hindware Nirali
25	Stainless steel Kitchen Sink	Prayag Polymer Pvt Ltd Hindware Nirali
26	Stainless Steel Plate Rack	Prayag Polymer Pvt Ltd Blue star-Silver Shine Nirali
27	Seat Cover for EWC	Kajaria Cera (1 st quality) Jaquar & Co Pvt Ltd
28	PVC Flushing cistern	Kajaria Parryware Cera (1 st quality)
29	Centrifugally cast (Spun) iron S/S soil, waste,ventilating & rain water pipes, fittings & accessories confirming to IS: 3989 /2009	Jaiswal Neco Industries Ltd (Brand-NECO) Raj Pattern Makers & Founders Pvt Ltd Singhal Iron Foundry Pvt Ltd Mathura(Brand-SKF)
30	SWR pipes as per IS-13592 for pipes & IS-14735 for fittings/ UPVC pipes & fittings/ CPVC pipes & fittings	Astral Ltd HIL Ltd Supreme / SFMC (Savour Fair Manufacturing Co Pvt Ltd)
31	HDPE/MDPE/PVC Pipe	Finolex Astral Ltd RC Plasto Tanks & Pipes Pvt Ltd
32	Looking Mirror	Saint Gobin Modi Guard, Asahi Atul
33	Exterior Paint	Asian Paints Ltd Berger Paints India Ltd Kansai Nerolac Paints Ltd
34	Interior Paint	Asian Paints Ltd Berger Paints India Ltd Kansai Nerolac Paints Ltd
35	Enamel/Oil Paint	Asian Paints Ltd Berger Paints India Ltd Kansai Nerolac Paints Ltd
36	White cement & wall care putty	JK White Birla White
37	Cement Based Paints	Super Snowcem Duracem Plus Accro Paints Ltd

38	Cement Concrete Interlocking Paver Blocks/ Chequered tiles any type/Wall cladding tiles	Jain Tiles Industries Haldwani (Brand-JTI) NTC Tulip Infrastructure Saharanpur
39	PVC tiles / Wooden Flooring	Armstrong Hil Ltd Greenpanel Industries
40	Vitrified tiles	Johnson Kajaria Somany/ Orient Bell
41	Ceramic tiles / Non skid Ceramic tiles	Kajaria Johnson Somany/ Orient Bell
42	Tile Adhesive tile Grout	Bostik India Pvt Ltd J K Cement Ltd
43	APP MEMBRANE	IWL India Limited Hyperplas Pidilite Industries Ltd Sika India Pvt Ltd STP Ltd M/s Torchstar membranes & Bitumen Product Pvt Ltd.
44	Chemical for anti-termite treatment (chloropyrifos 20 %, Lindain 20%)	M/S Singhal Pesticides, Agra M/S Crop Health Products Ghaziabad M/S Pest Control India Limited
45	Integral WP Compound/Construction Chemical	Pidilite Fosroc, Sika
46	Bituminous Product	IOCL BPCL HPCL STP Limited
47	Asbestos sheet	Charminar UP Everest
48	HDPE Water storage Tank	RC Plasto Tanks and Pipe Pvt Ltd Vectus Industries Ltd Sintex Sheetal
49	Structural Steel	Rashtriya Ispat Nigam Ltd (RINL) Tata iron and steel company (TISCO or Tata Steel) Steel Authority of India Ltd (SAIL) Jindal steel and power Ltd (JINDAL)

E/M MAKES

1	LT CABLES U/G (XLPE/PVC) Heavy Duty armoured/ unarmoured upto 1100V Aluminium & copper solid/ stranded as per IS 1554 Pt I & 7098 / 1988 Pt I	Havells / SCI / Shalabh Polycab Gloster Gemscab
2	PVC Insulated 1100 V grade ISI marked FRLS internal wiring cables with copper conductor	Havells / SCI / Shalabh / HPL Polycab Anchor
3	HT XLPE CABLE upto 66 KV as per relevant IS	Havells Polycab Gloster
4	SUBMERSIBLE COPPER FLAT CABLE	Havells / SCI Polycab Grandlay
5	DI PIPE & FITTINGS	Jindal Saw Ltd Electrosteel Tata
6	ERW MS PIPES	TATA JINDAL Surya Roshni Ltd
7	GI PIPES	JINDAL TATA Surya Roshni Ltd
8	STEEL CONDUITS /MS CONDUITS	JPC Pipes Pvt Ltd Tata Jindal
9	PVC CONDUITS/ Casing & Caping	FINOLEX JINDAL ASIAN POLYCAB AKG
10	LED light fittings for indoor/outdoor use	CRMOPTON, ORIENT,BAJAJ,HAVELLS,HALONIX,PHILIPS
11	Solar based LED street light fittings	CRMOPTON,BAJAJ,HAVELLS,HALONIX,PHILIPS

12	MCB / ELCB / RCCB / RCBO / ISOLATORS	Havells / Shalabh Indo Asian, HPL,
13	MCCB / MPCBs	Havells / Shalabh Indo Asian, HPL,
14	VCB / OCB / SF6 CIRCUIT BREAKER / HT SWITCH GEAR PANELS	SCHENIDER CROMPTON SIEMENS ABB
15	ACB	Havells Indo Asian HPL
16	GOD/DO SWITCH (AIR BREAK)	PACTIL JAIPURIA MEI BHEL
17	MOTOR PROTECTION CIRCUIT BREAKER (MPCB)	L&T BCH SIEMENS
18	DISTRIBUTION BOARDS	Havells / Shalabh Indo Asian, HPL,
19	HT RING MAIN UNIT	SCHENIDER CROMPTON SIEMENS ABB
20	HT LOAD BREAK SWITCH	SIEMENS SCHENIDER L&T ABB
21	CHANGEOVER SWITCH / STARTER / HRC FUSES	INDO ASIAN / Shalabh HPL L&T SCHNEIDER SIEMENS HAVELLS
22	MODULAR SWITCH/SOCKETS	ANCHOR LEGRAND INDO ASIAN(GLINT) Havells HPL
23	ELECTRIC SWITCHES/SOCKETS/BELL PUSH	ANCHOR LEGRAND HAVELLS HPL C & S
24	FAN REGULATOR(ELECTRONIC)	Usha CROMPTON BAJAJ HAVELLS ANCHOR
25	LAMP HOLDER/CEILING ROSE	ANCHOR CRAB TREE (HAVELLS),ESS ESS KAY
26	ELECTRIC CALL BELL	ANCHOR LEGRAND HAVELLS WIPRO BAJAJ
27	TIME SWITCHES	LEGRAND SCHENIDER L&T GE Indo Asian
28	COMPACT SUBSTATION	SIEMENS SCHENIDER CROMPTON ABB
29	TRANSFORMERS UPTO 500KVA	CROMPTON SCHENIDER ITE GURGAON

30	TRANSFORMERS ABOVE 500KVA	CROMPTON SCHENIDER ITE GURGAON
31	TRANSFORMER 33 KV STEP DOWN/ TRANSFORMER 33/0.433 KV STEP DOWN	CROMPTON SCHENIDER ITE GURGAON
32	VOLTAGE STABILIZER UPTO 5 KVA	CHIME ELECTRONICS DELHI (BRAND -SINETRAC) VINTEK ELECTRONICS NEW DELHI (BRAND-VOLINA) INSTRUMENTS & EQUIPMENT CO(BRAND-IECO) ITE GURGAON
33	SERVO VOLTAGE STABILIZER	CHIME ELECTRONICS DELHI (BRAND -SINETRAC) VINTEK ELECTRONICS NEW DELHI (BRAND-VOLINA) INSTRUMENTS & EQUIPMENT CO(BRAND-IECO) ITE GURGAON
34	HT VOLTAGE STABILIZER	KIRLOSKAR BRENTFORD ANDREW YULE AE
35	CURRENT & POTENTIAL TRANSFORMERS/CT'S(LT)	SCHENIDER CROMPTON GREAVES ABB SIEMENS
36	SWITCH FUSE/MAIN SWITCH/FEEDER PILLAR BOX AND LT DISTRIBUTION PANELS/POWER FACTOR COMPENSATOR HARMONIC FILTER/AUTOMATIC POWER FACTOR CONTROLLER	L&T / HPL / M/S PRESTIGE SWITCH GEAR PVT LTD SCHNEIDER SIEMENS LEGRAND HAVELLS C&S
37	CAPACITOR BANKS HT & LT	SCHNEIDER L&T SIEMENS
38	PUSH BUTTON/SELECTOR SWITCH/INDICATING LAMP	L&T LEGRAND SIEMENS C&S
39	MEASURING INSTRUMENTS/ RELAYS/CT'S/AMMETER/ VOLTMETER/ POWER FACTOR METER & FREQUENCY METER	AE L&T SCHNEIDER
40	KWH METER TEMPER PROOF DIGITAL/ ANALOG	L&T HAVELLS HPL INDO ASIAN SECURE LEGRAND
41	GEYSERS Kitchen / Bathrooms	BAJAJ HAVELLS JAQUAR
42	CEILING/EXHAUST/CABIN FANS	USHA CROMPTON BAJAJ HAVELLS KHAITAN ORIENT
43	EXHAUST FANS PVC BODY	KHAITAN HAVELLS CROMPTON BAJAJ USHA
44	AIR CIRCULATOR /TURBO VENTILATOR /WALL MOUNTED FAN	BAJAJ HAVELLS KHAITAN USHA
45	CABLE BOXES HEAT/COLD SHRINKABLE	M-SEAL RAYCHEM, CAB SEAL
46	ALUMINIUM / ACSR CONDUCTORS	INDIAN ALUMINIUM CO. BHARAT CONDUCTOR ALUMINIUM IND.
47	HT / LT INSULATORS	WS INSULATOR SOUTHEN INSULATORS JAYSHREE JAIPURIA REYCHEM BIRLA 3M

48	CABLE LUGS	JOHNSON DOWELL, ASCON, AXIS, INDIANA
49	DG SET – ALTERNATOR	STEMFORD KIRLOSKAR CROMPTON GREAVES JYOTI
50	DG SET – ENGINE	CUMMINS CATTERPILLAR, CROMPTON GREAVES KIRLOSKAR EICHER ENGINES
51	DG set assembled with sound proof canopy	CUMMINS SUDHIR GREEVES COTTON KIRLOSKAR
52	LIGHTNING ARRESTORS	SCHENIDER / HPL BHEL GE POWER OBLUM INSULATORS WS INSULATORS SOUTHERN INSULATORS
53	AIR INSULATED TRUNK BUS BARS/BUS DUCTS/ BUS BAR TRUNKING SYSTEM	C&S / M/S PRESTIGE SWITCH GEAR PVT LTD LEGRAND SCHENIDER
54	PCC POLES	CONCRETE UDJOG/MOHANCONCRETE HINDUSTAN PRESTRESSED CONCRETE STRUCTURE RK INDUSTRIES & POLES
55	STEEL TUBULAR POLES/ Casted Aluminium Architectural powder coated designer pole	FABRICO (INDIA) PVT LTD / HPL MEPRO TWINKLE INDUSTRIES PVT LTD
56	HT SWITCH GEAR PROTECTION RELAY ELECTROMECHANICAL/DIGITAL	SCHNEIDER L&T GE POWER SIEMENS
57	SOLAR LIGHTING PANELS	TATA BPL PHILIPS, BAJAJ, CROMPTON, SURYA ROSHNI LTD
58	BATTERY CHARGER & BATTERY	EXIDE SINETRAC LUMINUOUS OKAYA
59	SUBMERSIBLE PUMP & MOTORS	KIRLOSKAR CROMPTON JYOTI KSB SHAKTI PUMP INDIA LTD SINETRAC
60	TURBINE PUMP/VERTICAL TURBINE PUMP	KIRLOSKAR JYOTI JOHNSON KSB
61	MOTOR STARTER / SINGLE PHASE PREVENTOR / PHASE SEQUENCE CORRECTOR(AUTO) / FASD STARTER / DOL STARTER / AUTO MOTOR CONTROL TIMER PANEL ELECTRONIC DIGITAL MOTOR PROTECTION RELAYS	L&T / SHALABH / HPL C&S HAVELLS BCH INDO ASIAN CROMPTON SCHNEIDER
62	WATER LEVEL INDICATOR DIGITAL/DEVICE	SINETRAC AKASH PHOTRON SURYA SECO
63	COOLING COIL/AHU	VOLTAS BLUE STAR ZECO ACCEL CARRIER
64	CONDENSOR	VOLTAS BLUE STAR ZECO ACCEL CARRIER
65	AIR FILTER	KIRLOSKAR, TENACITY, ATHLETE
66	COOLING TOWER	PAHARPUR MIHIR

		DELTA ADVANCE
67	EXPANSION VALVE/THERMOSTAT/HUMIDISTAT	DANFOSS SPORLON INDFOSS HONEYWELL
68	HP/LP CUT OUT	DANFOSS INDFOSS JOHNSON
69	THERMO METERS	H-GURU THERMAX ZENITH SCIENTIFIC
70	HOT WATER GENERATOR	THERMAX ZENITH RAID CONTROL
71	STRIP HEATER	RACOLD DASS PASS HOTWEL
72	SHUT OFF VALVE	DANFOSS INDFOSS
73	CHILLER	VOLTAS BLUESTAR CARRIER LLOYED CORP LTD
74	WINDOW/SPLIT TYPE AC	VOLTAS HITACHI CARRIER DAIKIN
75	PACKAGE TYPE AC	BLUE STAR HITACHI, VOLTAS , DAIKIN
76	CHILLING PACKAGE UNIT	VOLTAS BLUE STAR, KIRLOSKAR
77	PUMP MONO BLOCK	KIRLOSKAR CROMPTON
78	AC CONTACTORS	L&T / HPL SIEMENS, C & S, GE
79	SOLAR WATERHEATINGSYSTEM	TATA BP SOLAR BHEL, V GUARD , INTER SOLAR SYSTEMS (P)LTD
80	ELECTRICAL INSULATION RUBBER MAT	JAIPURIA BROTHERS JYOTI , INSULATICA
81	FIRE DETECTOR	SIEMENS HONEYWELL ASES SECURITY PVT LTD ASKA EQUIPMENTS LTD
82	Fire Pump / Jockey Pump	KIRLOSKAR KSB,CRI
83	GI SHEET CLASS 8, 120 Gram / Sqm	TATA SAIL, JINDAL
84	CRANE	SAFEX ENERGY PVT LTD PIONEER CRANES & ELEVATORS PVT LTD HERCULES HOISTS LTD
85	AIR CURTAIN	ALMONARD CROMPTON, PIONEER CRANES
86	ADVANCE LIGHTNING PROTECTION UNITY	PHEONIX VOLTAS PRAGATI ELECTROCOM
87	WATER COOLERS	VOLTAS BLUESTAR USHA
88	UPS	SIEMENS V GUARD, MICROTECH
89	DAMPER	CARRIER, ATE, MHP
90	DIFFUSERS/ GRILLER	CARRIER, ATE, MHP
91	INVERTER	LUMINOUS SUKAM, MICROTECH
92	AIR COMPRESSOR	BLUE STAR INGEROLL RAND
93	FIRE PUMP/JOCKEY PUMP	KIRLOSKAR KSB, CRI
94	ELECTRIC LIFTS	OTIS KONE INDIA HITACHI LIFTS INDIA PVT LTD

		SCHINDLER INDIA PVT LTD
95	NON GASES BASED CHLORINATION SYSTEM/DOSING SYSTEM WITH DOSING PUMP	DECLIBAC POTER & WATTS CORP BRIQZING UNLIMITED
96	CHEMICAL FOR CHLORINATION	DECLIBAC POTER & WATTS CORP BRIQZING UNLIMITED
97	CHLORONOME PLANT	CAPITAL CONTROL JESCO PATTERSON
98	Electronic Meter	Havells India Ltd, HPL India Ltd
99	LOW Voltage Power Capacitors & Energy Efficient LT Motors	Havells India Ltd Bajaj Crompton POLYCAB, LEGRAND
100	LT Panels	SHALABH (INDIA) INDUSTRIES / HPL Indo Asian Power Systems & Control, Jalandhar Rew Construction Pvt Ltd, Elite Panel M/S PRESTIGE SWITCH GEAR PVT LTD

Notes :

1. Makes specified in Schedule 'A' / BOQ shall only be provided when makes are mentioned in Schedule 'A' / BOQ.
2. Makes specified in Particulars specification shall be provided only when no makes are specified in Schedule 'A' / BOQ.
3. Makes specified in this Appendix shall be provided only when no makes are mentioned in schedule 'A' / BOQ and particular specifications.
4. If the make of any item of BOQ is not available in above mentioned list then approved make of MES shall be used in the work after approval of GE.
5. If the approved make of any special item / item of BOQ is not available in market then make shall be approved by GE.
6. Contractor will supply the material only after obtaining the written approval from GE regarding use of specific make of item and will supply the material at appropriate time as and when required by the GE.
7. To ensure genuineness of material the contractor will order only on manufacture or authorised dealer and the Engr-in-Charge will receive material after verifying the delivery challan of the supplier and after satisfying the genuineness of material.
8. Delete the make whichever is not applicable

Sig of Contractor

AGE (Contract)

APPENDIX 'A' TO NOTICE OF TENDER(E-TENDER)
MILITARY ENGINEER SERVICES

1. A tender is invited for the work as mentioned in Appendix 'A' to this NOTICE INVITING TENDER (NIT).
2. The work is estimated to cost as indicated in aforesaid Appendix 'A'. This estimate, however, is not a guarantee and it is merely given as rough guide and if the work cost more or less, the tenderer/bidder will have no claim on this account. The tender shall be based as mentioned in aforesaid Appendix 'A'.
3. The work is to be completed within the period as indicated in aforesaid Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over site, which will be on or about two weeks after the date of Acceptance of tender.
4. Normally Contractors whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, Contractors of category SS to E may tender/bid. Contractors whose names are on the MES approved list of any MES Formation and who have deposited standing security and have executed standing security bond may also tender/bid without depositing Earnest Money along with the tender/bid. Not more than one tender/bid shall be submitted/uploaded by one contractor or one firm of contractors. Under no circumstances will a father and his son (s) or other close relations who have business dealing with one another be allowed to tender/bid for the same contract as separate competitors. A breach of this condition will render the tender/bids of both parties liable for rejection.
5. The Office of GE Dehradun will be the Accepting Officer here in after referred to as such for the purpose of the contract.
6. The Technical Bid and Financial Bid (Cover-1 & Cover-2) shall be uploaded by the tenderer/bidder on or before the date & time mentioned in NIT. A scanned copy of DD with enlistment details/documents shall be uploaded as cover-1 ('T bid) of the tender/bid on e-tendering portal. DD is refundable in case Cover-I is not accepted resulting in non-opening of Cover-2. The applicant contractor shall bear the cost of bank charges for procuring and encashing the DD and shall not have any claim from Government whatsoever on this account.
 - 6.1 Tender form and conditions of contract and other necessary documents shall be available on defproc.gov.in/website for download and shall form part of contract agreement in case the tender/bid is accepted.
 - 6.2 In the case of a contractor who has not executed the Standing Security Bond, the Cover-I shall be accompanied with by Earnest Money of amount as mentioned in Appendix 'A' in the form of deposit at call receipt issued in favour of concerned GE Dehradun (see Appendix 'A') by Scheduled Bank or receipted treasury Challan the amount being credited to the revenue deposit of the concerned GE Dehradun (see Appendix 'A')
 - 6.3 A contractor who is enlisted for the area in which the work lies but whose name is in the MES approved list of any MES formation and who has deposited standing security and executed standing security Bond may bid without depositing earnest money along with the tender.
 - 6.4 BLANK
 - 6.5 The concerned GE will return the earnest money wherever applicable to all unsuccessful tenderers/bidders by endorsing an authority on the deposit-at-call receipt for its refund, on production by the tenderer, bidder a certificate of the Accepting Officer that a bonafide tender/bid was received and all documents were returned.

APPENDIX 'A' TO NOTICE OF TENDER(E-TENDER)
MILITARY ENGINEER SERVICES (Contd...)

- 6.6 The concerned GE will either return the Earnest Money to the successful tenderer/bidder by endorsing an authority on the deposit -at-call Receipt for its refund on receipt of an appropriate amount of security Deposit or will retain the same in part or full on account of security deposit if such transaction is feasible.
- 6.7 Copies of the drawings and other documents pertaining to the work signed for the purpose of identification by the Accepting Officer or his accredited representative, sample of material and stores to be supplied by the contractor will also be available for inspection by the tenderers/bidder at the office of Accepting Officer and concerned GE Dehradun during working hours.
7. The tenderers/bidders are advised to visit the site by making prior appointment with the GE Dehradun who is also the Executing Agency of the work (see appendix 'A'). The tenderers/bidders are deemed to have full knowledge of all relevant documents, samples, sites etc, whether they have inspected them or not.
8. Any tender/bid which proposes any alteration to any of the conditions laid down or which proposes any other condition or prescription whatsoever, is liable to be rejected.
9. The uploading of bid implies that bidder has read this notice and the conditions of Contract and has made himself aware of the scope and specification of work to be done and of the conditions and rates at which stores, tools and plants etc will be issued to him and local conditions and other factors having bearing on the execution of the work.
10. Tenderers/bidders must be in possession of a copy of the MES Standard Schedule of Rates (see appendix 'A') including amendments and errata thereto.
11. Invitation for e-tender does not constitute any guarantee for validation of Cover-I bid and subsequent opening of finance bid of any application/bidder, even of enlisted contractors of appropriate class, merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Cover-I and not open the finance bid of any application/bidder. Cover-I validation shall be decided by Accepting Officer based on, inter alia, capacity of the firm as per criteria given in Appx 'A' to this NIT. The applicant contractor/bidder will be informed regarding non-validation of his Cover-I bid assigning reasons thereof through the eprocuremes website. The applicant contractor/bidder if he so desires may appeal to the next higher Engineer authority HQ CWE Dehradun on email id dhdnbz3-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Finance Bid. The decision of the Next Higher Engineer Authority (NHEA) shall be final and binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.
12. The Accepting Officer reserves the right to accept a tender submitted by a public Undertaking, giving a price preference over other Tender(s)/bids which may be lower, as are admissible under the Government Policy. No claim for any compensation or otherwise shall be admissible from such tenderer/bidder whose tender/bid is rejected.
13. Accepting Officer does not bind himself to accept the lowest of any tender/bid or to give any reason for not doing so.
14. This **Notice Inviting Tender (NIT)** including Appendix 'A' shall form part of the contract.

Signature of Contractor
Dated : _____

GE Dehradun
Accepting Offr

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

1.	Name of work	Comprehensive Maint to JCOs/ OR Md Accn Sup Dep & Region 3 Anarwala under AGE B/R-I of GE Dehradun.															
2.	Estimated cost of work	Rs 45.00 Lakhs (At Par Market)															
3.	Period of Completion	120 Days															
4.	Cost of tender documents	Rs 500/- in the shape of DD/ Bankers cheque from any schedule Bank in favour of Garrison Engineer Dehradun and payable at Dehradun. (Note : In case of retendering, the contractor who had quoted in the previous call is not required to submit the cost of tender.)															
5.	Website/portal address	https://defproc.gov.in															
6.	Type of Contract	The tender shall be based on drawings and specifications IAFW- 1779-A and GCC (IAFW -2249) with Schedule ‘A’ (list of items of works) to be priced by tenderer.															
7.	Timeline details :-																
	(a) Bid submission start date	Refer critical dates on the website.															
	(b) Bid submission end date																
	(c) Date of bid opening																
8.	Eligibility Criteria:-																
5	(a) For MES Enlisted contractors	All contractors enlisted with MES in Class ‘D’ and above and category a (i) subject to satisfactory remarks wrt performance in respect of works in hand as reflected in Work Load Return (WLR) or any other report circulated by competent engineer authority.															
	(b) For contractors not enlisted with MES	<p>(i) Contractor not enlisted with MES should meet the enlistment criteria of ‘D’ class & a (i) 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 requirements given in Para 1.4 & 1.5 of section 1 of MES Manual of Contracts 2020 as available in all MES formations as well as MES website (www.mes.gov.in).</p> <p>(ii) Not carrying adverse remarks in Work Load Return (WLR) or any other similar report circulated by any competent authority if already working in MES.</p> <p>(iii) Not suspended/ debarred/ blacklisted (either permanently or temporarily) from participating in any bid or for business dealing by any Central/ State Government Department or any Central/ State Government PSU or any Autonomous Body as on the bid submission end date.</p> <p>(iv) Details of works completed and under progress in MES be submitted in the following format:-</p> <table border="1"><tr><td>Srl No</td><td>CA No & Name of work</td><td>Value of CA</td><td>Date of commencement</td><td>Date of completion</td><td>Extended date of completion</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table> <p>(v) Un-enlisted contractor who have secured two works in MES should get themselves registered in the appropriate designated class with any registering authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES.</p>					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	GE (MES) Dehradun, Garhi Cantt, Mall Road Email : dhdnbz4-mes@nic.in Tele : 01352750580															
10.	Executing agency	Garrison Engineer Dehradun															
11.	Earnest Money	Rs 90000 /- in favour of Garrison Engineer Dehradun															

NOTES :-

1. In case of Cover 1, the number of MES enlisted contractors of eligible class as well as un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT is less than 7 (Seven), applications in respect of MES contractors of one class or two classes (in case of remote and difficult areas to be decided as per list circulated by CE Command / ADG) below the eligible class shall also be considered subject to 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. Such contractors (contractors of one/ two classes below the eligible class) shall not be considered in case their present residual work in hand is more than FIVE TIMES their present tendering limit. However in case such contractors 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/

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

financial soundness and working capital), the ceiling of present residual work will not apply and they will be considered for issue of tender. Such bidders shall upload in their Cover-1 bid details of works in hand showing names of work, names of Accepting Officers, Contract amounts, dates of commencement and completion (Stipulated) and progress as on bid submission date. Such contractors, if claim to fulfil the criteria of upgradation shall also upload the requisite information/ documents in support of upgradation. These details shall be verified by Tender Issuing Authority from concerned formations in case bids of such contractors are considered for evaluation.

2. In case after opening of Cover 1, the number of MES enlisted contractors of eligible class as well as un-enlisted 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 Contracts. Therefore such contractors shall upload the requisite information/ documents in the Cover-1.

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

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

- (a) Application for tender on Firm's letterhead.
- (b) Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
- (c) Scanned copy of DD/ Banker Cheque toward cost of tender and EMD instrument in case SSD bond is not signed at the time of registration.
- (d) Any other document required as described in this Appendix.
- (e) Scan copy of EPF, ESIC, GST will be provided by bidder at the time of bid submission.

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

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

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

7. Contractors should ensure that their original physical DDs and Earnest Money Deposit (EMD) instruments (as applicable) reach the office of Accepting Officer within 15 days of bid submission end date (*The number of days to be mentioned shall be as decided by the Accepting Officers, but it shall not be less than 5 days) failing which following action shall be taken.

- (a) In case of tenders from an enlisted contractor of MES, where scanned copies of requisite DD/ Bankers Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will be opened. However non-submission of physical copies of cost of tender shall be considered as will full negligence of the tenderer with ulterior motives and such tenderer shall be banned from bidding for a period of six months commencing from the date of opening of Financial Bid (Cover2).
- (b) In case of tenders from unlisted contractor, where scanned copies of requisite DD/Banker Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will not be opened. Name of such contractor along with complete address shall be circulated for not opening of their bids for a period of six months commencing from the date of opening of Financial bid (Cover 2).
- (c) In case of tenders from enlisted and unenlisted contractors, where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover 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).

APPENDIX 'A' TO NOTICE INVITING TENDER (NIT)

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

9. After opening of Cover 1 and during its technical evaluation, in case any deficiency is noticed in the documents required to be uploaded by the tenderers as per NIT, a communication in the form of e-mail/SMS/Speed Post etc shall be sent to the contractor to rectify the deficiency within a period of seven days from date of communication failing which their financial bid (Cover 2) shall not be opened and contractor shall not have any claim on the same.

10. Invitation for e-tender does not constitute any guarantee for validation of Technical bid and subsequent opening of financial bid of any applicant/ bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the financial bid of any applicant/ bidder. Technical bid validation shall be decided by the Accepting officer based on eligibility of the firm as per criteria given in this Appendix. Tenderer/ bidder will be informed regarding non- validation of his Technical bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires, may appeal to the next higher Engineer Authority (NHEA) viz HQ CWE Dehradun on email id dhdnbz3-mes@nic.in with copy to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer/ bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

11. In case 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 willfull 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.

12. 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 willfull default. For this default a penalty of an amount equal to Earnest Money shall be levied. In case of an unenlisted 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.

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

14. **JURISDICTION OF COURTS** :- Court of the place from where tender has been issued shall alone have jurisdiction to decide any dispute out of or in respect of this tender. After acceptance of tender condition 72-Jurisdiction of courts of IAFW-2249 shall be applicable.

Signature of Contractor

Dated : _____

8874/A/04 /E8

Dated: 30 Sep 2024

GE (MES) Dehradun, Garhi Cantt, Mall Road, PIN-248003.

Tele : 01352750580

(Anjali Tyagi)

Maj

GE Dehradun

Distributions:-

1.	HQ CWE Dehradun		2.	HQ CWE (Hills) Dehradun
3	GE (IMA) Dehradun		4.	GE (P) Dehradun
5.	GE Clement Town		6	GE (I) (R&D) Raipur, Dehradun
7	AGE (I) (P) Dehradun		8	M/S Vijay Traders, MES Builders Association, Dehradun Branch, House No 2 Ballupur Road Dehradun
9	Employment Exchange Dehradun		10	Cantonment Board Dehradun Cantt
11	Shri Vivek Gupta, Hony Secretary, MES BAI, Dehradun Branch, 32 Krishna Vihar, Jakhan, Dehradun		12	Shri S K Bhardwaj, Hony Secretary, MES Builder Association of India, Gyan Lok, Defense Colony, PO- Milap Nagar, Delhi Road, Roorkee.
13	MES Builder Association of India 807-808, Sahyog 58, Nehru Place, New Delhi-110019		14	ONGC, Tel Bhawan Dehradun,