

MILITARY ENGINEER SERVICES GE 859 EWS**E - TENDER****NAME OF WORK:** REPAIR AND MAINTENANCE OF INTERNAL ELECTRIFICATION CUM ACCESSORIES AND OTHER CONNECTED WORK AT TAWANG AREA UNDER GE 859 EWS

SL NO	DESCRIPTION	SERIAL PAGE NOS	
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1.	Content Page	01	
2.	Tender forwarding letter including instruction for filling/ Guidance and submission of tender	to	
3.	Notice of tender IAFW-2162 (Revised 1960) including Appx 'A' to Notice of tender & IAFW 1779-A (Revised 1955)}	to	
4.	Schedule " A " Notes	&	
5.	BOQ	to	
6.	Schedule of credit, Schedule 'B', 'C' & 'D' , General Summery, Acceptance Page	to	
7.	General Conditions of contracts IAFW-2249 (1989 Print) including Errata/amendment thereto.	to	
8.	Schedule of minimum fair wages as per notifications of Govt. of India, Min of Labours		
9.	Special conditions	to	
10.	Particular specifications including Appendix	to	
11.	Errata / amendment to tender documents if any	To	
12.	Relevant correspondences	To	
13.	Acceptance letter	To	

Encls : (Drawing - Nil Sheets)Total pages - _____
-----Signature of Contractor

Dated : 2026

AGE (Contracts)
for Accepting Officer

Tele: 03782-273304

REGISTERED POST/ACK. DUEGarrison Engineer
859 Engr Wks Sec
PIN - 913859
C/O 99 APO

9014 / /E8

2026

M/S -----

e-TENDER**NAME OF WORK: REPAIR & MAINTENANCE OF INTERNAL ELECTRIFICATION CUM ACCESSORIES AND OTHER CONNECTED WORK AT TAWANG AREA UNDER GE 859 EWS.**

Dear Sir, (s)

1. Tender documents for the above Work are uploaded in **www.defproc.gov.in**.
2. Tender will be received by the Accepting Officer on as per critical dates shown in subject tender details & subsequent amendment if any available on **www.defproc.gov.in**.
3. Tender will be opened on DUE DATE & TIME fixed for Receipt of Tenders in the presence of those Tenderers who will submit PRICED TENDERS and will be present at the time of Opening of Tenders.
4. Please note that QUOTED TENDER received after the specified DATE & TIME will not be considered under any circumstances. However Tender received BY POST after DUE DATE & TIME OF OPENING, may be opened and filed in the Office instead of returning of Tender. Such Tenders shall not be considered for Acceptance, but may be taken into consideration for deciding the desirability of going out to Tender again.
5. **EARNEST MONEY & PERFORMANCE SECURITY DEPOSIT**
 - 5.1 Tenders issued to Contractors who are not Enlisted with the MES/who are enlisted but have not executed the Standing Security Bond: -
 - (a) The Amount of 'EARNEST MONEY' Rs. _____ (as mentioned in the APPENDIX 'A' TO NOTICE OF TENDER) for the Work to be furnished along with the Tender documents on the DUE DATE and TIME.
 - (b) Contractors who are Not Enlisted with MES/who are Enlisted but have not executed the STANDING SECURITY BOND shall be deposit EARNEST MONEY as mentioned here-in-above in any one of the following forms : -
 - (i) DEPOSIT AT CALL RECEIPT from a Scheduled Bank in favour of GE
 - (ii) RECEIPTED TREASURY CHALLAN, the Amount being credited to the Revenue Deposit of GE

NOTE: Earnest Money in any other form i.e. CHEQUE, BANK GUARANTEE, etc. will not be Accepted.
 - 5.2 Non-submission of EARNEST MONEY will render the Tender as non-bonafied and consequently liable to be ignored.
 - 5.3 The Amount of '**PERFORMANCE SECURITY DEPOSIT**' for the work, in case the Tender is accepted, indicate that the '**PERFORMANCE SECURITY DEPOSIT**' would be the amount, calculated with reference to the TENDERED COST as per the Scale laid down by the MES which would be equal to 3% of the accepted contract amount as detailed under amendments to General Conditions of Contract IAFW-2249 here-in-after.

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- 5.4 Any Contractor borne on the APPROVED LIST OF CONTRACTORS of any MES Formation and who has executed Standing Security Bond will be permitted to Tender for Works under any other MES Formation without furnishing Earnest Money along with his Tender. If the Tender submitted by such Contractor is proposed to be accepted, the Contractor will be required to lodge with Accepting Officer before acceptance of Tender the Amount of PERFORMANCE SECURITY DEPOSIT calculated as per Para 5.2 above.
6. INSTRUCTIONS TO TENDERERS
- 6.1 Instructions to Tenderers is enclosed at SERIAL PAGE No 4, 5 and 6 of these Tender documents for your guidance. Please read these Instructions carefully for filling of Tender and submission of the Tender documents.
7. IN LIEU SHEET(S)
- 7.1 Information's/documents (Forming Part of this Contract) mentioned here-in-below are not enclosed with these documents and are available for perusal in this Office. Whether these documents are actually seen or not, if a valid Tender has been submitted, it is deemed that the Contents thereof have been taken into account.
- (a) GENERAL OCNDITIONS OF CONTRACTS, IAFW-2249- (1989-PRINT).
- (b) SCHEDULE OF MINIMUM WAGES
- 7.2 The Tenderer will ensure that the 'IN LIEU SHEET' referred to above duly signed is returned alongwith his/ their Offer.
8. **SUMMARY PAGE INCLUDED IN COVER II SHALL BE PREPARED BY THE DEPARTMENT BASED ON CARRY OVER OF TOTAL AMOUNT OF BOQ MINUS SCH OF CREDIT AND ACCORDINGLY CONTRACT SUM SHALL BE ARRIVED AT.**
9. **BIDDERS SHALL KEEP TRACK OF CORRIGENDUM & AMENDMENTS ISSUED TO TENDER DOCUMENTS, BOQ AND CRITICAL DATES. BIDDER SHALL BE DEEMED TO HAVE SEEN ALL THE CORRIGENDUM & AMENDMENT AND QUOTED ACCORDINGLY. THE BID NOT QUOTED ON LATEST BOQ SHALL BE CONSIDERED NON BONAFIDE AND REJECTED.**
10. This Tender Forwarding Letter shall form Part of the contract.

Yours Faithfully,

Signature of the Contractor
Dated: _____

AGE (Contracts)
for Accepting Officer

INSTRUCTIONS OF TENDERERS**1. GENERAL**

- 1.1 The Tenderer shall quote his Rates on the BOQ and the same shall be uploaded in cover-II of tender only.
- 1.2 The Tender shall be accompanied by a Certified True Copy of the Power of Attorney as per new enactment being enforced, in favour of the Signatory of the Tender documents. In case the Signatory himself is the Sole Proprietor, an Affidavit on Stamp Paper of appropriate Value to this effect stating that he has authority to bind the Firm in all matters pertaining to Contract including the Arbitration Clause, shall be attached. The Person signing the Tender on behalf of another Partner(s) or on behalf of a Firm or Company shall attach with the Tender a proper Power of Attorney duly executed in his favour by such other Person or by all the Partner(s) or in accordance with Constitution of the Company in case of Company, stating that he has authority to bind such other Person(s) or the Firm or the Company as the case may be, in all matters pertaining to the Contract including the Arbitration Clause.
- 1.3 Even in case of Firms or Companies which have already given Power of Attorney to an individual authorizing him to sign Tender and Contract documents on behalf of the firm and in pursuance of which Tenders are being signed by such Persons as a routine, a Fresh Power of Attorney duly executed in his favour by all Partners or the Firm stating specifically that the Person has Authority to bind such Partner(s) or the Firm or the Company as the case may be, including the condition relating to Arbitration Clause, should be submitted with the Tender, unless such Authority already been given to the Persons concerned by the Firm or the Company.
- 1.7 Power of Attorney shall be executed as indicated below: -
- (a) In case of an Individual, Sworn Affidavit shall be executed by the Contractor himself.
 - (b) In the case of Partnership concern Firm, Power of Attorney shall be executed by the all Partners.
 - (c) In the case of Company, Power of Attorney shall be executed in accordance with the Constitution of the Company.

2. FILLING IN OF TENDERS AND GUIDELINES/ PROCEDURE TO BE FOLLOWED IN THE PROCESS OF E - TENDERING

- 2.1 It is mandatory for all the bidders to have class-III digital signature certificate (in the name of person who will sign the Application) from any of the licensed certifying agency (Bidders can see the list of licensed CAs from the link www.cca.gov.in) to participate in e-tendering process.
- 2.2 There is no physical supply of tender documents. The bidders, participating in eprocurement solution, can view/ download the tender documents from the www.defproc.gov.in. The bidder shall submit their offer online in electronic formats, however DD/ banker cheque for Tender Fees, and EMD required to be submitted manually in the office of GE 859 EWS, Tawang as done in conventional tender, before date & time of opening of bid (first stage) and scanned copy of DD/ banker cheque for Tender Fees, and EMD etc must also be uploaded at www.defproc.gov.in.
- 2.3 The tender to be submitted online at www.defproc.gov.in by due date and time as mentioned in NIT, which shall form the part of the contract document. The bidders who are desirous of participating in 'e' procurement shall submit their price bids in the standard formats prescribed in the Tender documents, displayed at www.defproc.gov.in. The bidder should upload the scanned copies of all the relevant certificates, documents etc., in the www.eprocuremes.gov.in in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/ authenticity.
- 2.4 The Price Bids will be opened online by the opening officer/ officers at the specified date & time and the result will be displayed on the www.defproc.gov.in, which can be seen by all the bidders who participated in the tenders. If the office happens to be closed on the date and time of bid opening as specified OR due to some unforeseen reason (s), the bid could not be opened on the date and time of bid opening as specified, the bid will be opened on the next working day on same venue and on the time as decided by the accepting officer without assigning any reason. No claim will be entertained on this account.

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2.5 The bidders have two options to participate in tendering process at the time of opening of Bids :-

- (i) Bidders can come at the place of opening of bids (electronically) as done in the conventional tender process. Or
- (ii) Bidders can visualize to process online.

2.6 The concerned officer/ officers will evaluate and process the tenders as done in the conventional tenders and will communicate the decision to the bidder online/ by registered post. After the award of the contract, an agreement shall be signed as done in conventional Tenders.

2.7 No physical form of tender will be accepted in any MES office anywhere and shall be summarily rejected. The department does not take any responsibilities for non availability of internet connection or network traffic jam etc for online bid at any stage. The MES will not be responsible for any error like missing of schedule data while downloading by the Bidder. No claim will be entertained on this account.

2.8 One bidder can submit only one bid for one work/ project. If a bidder will submit more than one bid, his bids will be summarily rejected.

2.9 The tender for the works shall remain open for acceptance for a period of sixty (60) days from the date of opening of tenders. If any lowest tenderer revoking his offer/ tender or revising his rates upward (which will be treated as revocation of offer), before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money as aforesaid. In case of MES enlisted contractors, the amount equal to the Earnest Money stipulated in the Notice of Tender, shall be notified to the tenderer for depositing the amount through MRO, failing which the amount shall be recovered from payment due to such Contractor or shall be adjusted from his Standing Security Deposit. Participation for further tender to such tenderer (s) shall also remain suspended till the aforesaid Earnest money is deposited in the Govt Treasury. Further the tenderer shall not be allowed to participate in the retendering process of the work.

2.10 In case any tempering/ alteration is noticed between the documents as uploaded at the time of submission of the bid online and the original one as uploaded by the office of GE 859 EWS, Tawang, then the bid submitted shall become invalid and the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money as aforesaid. In case of MES enlisted contractors, the amount equal to the Earnest Money stipulated in the Notice of Tender, shall be notified to the tenderer for depositing the amount through MRO, failing which the amount shall be recovered from payment due to such Contractor or shall be adjusted from his Standing Security Deposit. Participation for further tender to such tenderer (s) shall also remain suspended till the aforesaid Earnest money is deposited in the Govt Treasury. Further the tenderer shall not be allowed to participate in the re-tendering process of the work.

2.11 The bidder should keep checking the website www.defproc.gov.in for any Errata/ Amendments to tender documents/ price bid till the date and time of online submission of price bid. Bidders are supposed to take in account the changes carried out by department while quoting their bids. No claim will be entertained on this account.

2.12 Before deadline for submission of bids, the department can modify the bid document(s) by issuing addendum/ corrigendum. Any addendum/corrigendum thus issued shall be part of the bidding documents and shall be uploaded on the website as a corrigendum.

3. To give prospective bidders reasonable time to take an addendum/ corrigendum into account in preparing their bids, the department may, at his discretion, extend as necessary the deadline for submission of bids. However, no claim will be entertained on this account.

4. Your attention is drawn to the official secret Act, particularly section 5 thereof for compliance.

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

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6. SUBMISSION OF TENDER

6.1 TENDERS RECEIVED AFTER DUE DATE AND TIME WILL NOT BE CONSIDERED FOR ACCEPTANCE UNDER ANY CIRCUMSTANCES.

7. OPENING OF TENDERS

7.1 During opening of Tender, Proprietor/Partner of the Firm or their Authorised Representative may be present. In case of an Authorised Representative, an Authority letter from the Proprietor/Partner of the Firm shall be deposited to the Opening Officers for attending in the Tender Opening.

8. It is mandatory for the contractor to upload their GST registration number and copy of provident fund code number in addition to other documents along with 'T' bid. Contractor not in possession of Provident fund code number and Service Tax regn. No. shall be disqualified in the 'T'bid evaluation and his Finance bid shall not be opened

9. These INSTRUCTIONS TO TENDERERS shall form Part of the CONTRACT

Signature of the Contractor
Dated: _____

AGE (Contracts)
for Accepting Officer

MILITARY ENGINEER SERVICESNOTICE OF E-TENDER

1. **Garrison Engineer 859 EWS, Tawang** on behalf of President of India invites applications from eligible enlisted contractors of MES and enlisted / unlisted Contractors working with other Govt Departments meeting eligibility criteria for selection of Contractors for e-tender of under mentioned work on single stage two cover system.
 - (a) The Name of work is as mentioned in Appendix 'A'.
 - (b) The work is estimated to cost as indicated in the aforesaid Appx 'A'. The estimate however, is not a guarantee and is merely given as rough guide and if the work cost more or less tenderer will have no claim on this account.
2. The work is to be completed within the period as indicated in the aforesaid Appx 'A' (in accordance with the Phasing, (if any) from the date of handing over site/ commencement date which may be one or about two weeks after the date of acceptance of the tender.
3. Normally contractors whose names are on the MES approved list for the areas in which the work lies and within whose financial category, the estimated amount would fall may tender, but in case of tem contract, contractors in categories 'S' to 'E' may tender irrespective of category, whether or not, the estimated amount is within the financial category of the contractor the Accepting Officer reserves the right to accept the tender, in which event the tenderer would be required to lodge additional security deposit as notified by the accepting officer in terms of condition of contract. Contractors whose names are on the MES approved list of any MES formations and who have deposited standing security & have executed standing security bond may also tender without depositing Earnest money along with the tender and the accepting officer proposes to accept the tender such tenderers would be required to deposit security deposit as notified by the accepting officer before acceptance of tender. One contractor or one firm of contractor shall submit not more than one tender. Under no circumstance will father and his son (s) or other closed relations, who have business dealing with one another will be allowed to tender for the same contract as separate competitor. Breach of this condition will render the tender of both parties liable for rejection.
4. The **Garrison Engineer 859 EWS, Tawang - 913859** will be Accepting Officer, here in after refer to as such +for the purposes of this contract.
5.
 - (a) Application for the tender forms must be uploaded to **Garrison Engineer 859 EWS, Tawang - 913859** on line in cover No 1 alongwith scanned copy of DD prior to the bid submission date as mentioned in the aforesaid Appx 'A'.
 - (b) Invitation for issue of tender does not constitute any guarantee for consideration and opening of price bid in cover No 2 which will be done only after opening and evaluation of technical bid/applications in cover No1 even to enlisted contractors of appropriate class. Opening of price bid (Cover No 2) of tender will be decided by the Accepting Officer based on interalia past track record, financial position and experience of similar works executed by the applicants/contractor. The Accepting Officer shall consider applications (Cover No1) received up to date of receipt of application/ extended date of receipt of applications for consideration and subsequent opening of cover No 2. The applicant / contractor will be informed regarding non-opening of cover No 2 of teder without assigning reasons. The applicant / contractor if he so desires, may appeal to the next higher Engineer Authority with copy to the Accepting Officer upto seven days prior to date of opening of price bid (cover No 2). The decision of the next higher authority shall be final. No applicant / contractor shall be entitled for any compensation whatsoever for non consideration / opening of cover No 2.
6.
 - (a) Tender forms and conditions of contract and other necessary documents will be uploaded in website as per date given in aforesaid Appx 'A'.
 - (b) In the case of contractor who has not executed the Standing Security bond, and unenlisted firms, tender shall be accompanied by earnest money (for amount refer aforesaid Appx 'A') by a Schedule Bank or in Receipt Treasury Challan, the amount being credited to the revenue deposit of the GE (mentioned in Appx 'A').

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7. The tenderers are advised to visit the site by making prior appointment with the GE/AGE(I) in sufficient time. A tenderer shall be deemed to have full knowledge of all related documents, samples, site etc. whether he has inspected site or not. The tenderers can submit the tender (cover No 1 & 2) up to the last date & time of submission of bid and the bid will be opened by Garrison Engineer 859 EWS, Tawang - 913859 on the date & time mentioned in Appx 'A'.
8. Any tender which proposes any alternations to any of the conditions laid down or which proposes any other conditions of any descriptions whatsoever is liable to be rejected.
9. The submission of a tender by a tender implies that he has read this notice and the conditions of contract & has made himself aware of the scope and specifications of work to be done & the conditions & the stores, tools and plants etc, which will be issued to him and local conditions & other factors having bearing on execution of the work.
10. Tenderers must be in possession of copy of MES Standard Schedule of Rates 2009 (Part I) & 2020 (Part-II) including errata/amendments thereto.
11. Tenderers must be very careful to deliver & upload a bonafide tender, failing which the Accepting Officer may at his absolute discretion, reserve the right of forfeiting a portion of Earnest Money, Security Deposit or Security Bond amount (not exceeding amount of cost of tender) deposited by the tenderer. A bonafide tender must satisfy each & every conditions laid down in this office.
12. The Accepting Officer does not bind himself to accept the lowest or any tender or to give any reason for not doing so.
13. The Accepting Officer reserves the right to accept a tender submitted by a public sector undertaking giving a price preference over other tenders(s) which may be lowest, as are admissible under the Govt. Policy. No claim for any compensation or otherwise shall be admissible from such tenderers whose price bid (cover No2) may be rejected on account of said policy.
14. Subletting by contractor is not permitted.
15. This notice of tender shall form part of the contract.

(Signature of the Contractor)

Dated: _____

AGE (Contracts)
for Accepting Officer

Annexure No 1**Eligibility criteria for un-enlisted contractors****1. EXPERIENCE (for last 5 years)**

(a) Having completed Three works costing not less than Rs 7.50 lakhs for 'E' class. (In any of the Govt Deptt/Public Sector Undertakings/ AWHO/ANWHO/DGsNP)

or

Two works costing not less than Rs 10.00 lakhs for 'E' class (Rs 25.00 lakhs for 'D' class. (In any of the Govt Deptt/Public Sector Undertakings/AW-IO/ANWHO/DGsNP)

or

One work costing not less than Rs 20.00 lakhs for 'E' class (Rs. 40.00 lakhs for 'D' class) (In any of the Govt Deptt/Public Sector Undertakings/AWHO/AMWHO/DGsNP).

or

(b) Average annual turnover for last two consecutive years shall not be less than Rs 25.00 lakhs. (Rs 50.00 lakhs for 'D' class)

(c) Having adequate experience of execution in Private Sector, AWHO, CGEGHO etc shall also be considered for issue of tender after verification of receipt of payments against works executed from the Income Tax Returns filed for the last 5 years (Contractor to upload the relevant documents)

2. FINANCIAL SOUNDNESS

(a) Solvent upto Rs 10.00 lakhs (Rs 20.00 lakhs for 'E' class)

or

Financially sound for engagement upto Rs 25.00 lakhs (Rs. 50.00 lakhs for 'D' class)

(b) Working capital not less than Rs 5.00 lakhs (Rs 7.5 lakhs for 'E' class)

3. ENGINEERING ESTABLISHMENT

One graduate Engineer from a Government recognized institution. (for 'D' class engineer should have min experience of 2 years) (minimum experience 4 years for 'D' class)

or

One diploma Engineer from Government recognized institution with minimum experience of 2 years.

4. LIMIT OF MINIMUM RESERVE / ASSETS (IMMOVABLE AND MOVABLE)

Rs. 8.00 lakhs - 80% of minimum reserve shall be in the form of immovable property.

5. T & P :-

(a) One bag capacity concrete mixer (diesel) 01 No

(b) Vibrators (Needle & plate type) 02 Nos

(c) Steel shuttering with spans, props etc 200 Sqm (500 sqm for 'D' class)

6. POLICE VERIFICATION

Copy of police verification certificate from police authority of the area where registered office is located. Alternatively notarized copy of valid passport of proprietor / each partner / each director can be submitted.

7. CERTIFICATE REGARDING NO RECOVERY OUTSTANDING IN ANY GOVT DEPARTMENT.

Affidavit to this effect to be furnished.

Note:- Contractor shall upload copies of all the above documents prior to closing date of bid submission.

AGE (Contracts)
for Accepting Officer

Annexure No II

Contractor to upload following documents

(a) Enlisted contractor

- (i) Enlistment letter
- (ii) Application for Tender & DD towards tender fee

(b) Un-enlisted contractors

- (i) Application for Tender & DD towards tender fee
- (ii) EMD
- (iii) List of works indicating completion cost, executing agency, date of completion & scope of work
- (iv) Solvency and working capital certificate from Bank.
- (v) Affidavit regarding engineering establishment
- (vi) Affidavit regarding T&P
- (vii) Affidavit regarding immovable and movable properties
- (viii) Copy of police verification/passport duly Notarised.
- (ix) Affidavit regarding no recovery outstanding in any Govt Detp.
- (x) List of near relatives working in MES/ Corp of Engrs.

In addition following documents to be submitted by both enlisted & un-enlisted contractor:-

- (i) TDS certificate of last three years clearly indicating Turn-over in construction business.
- (ii) List of works in hand (Indicating value of work), balance works (Value of balance work) to be completed , on an affidavit on non-judicial stamp paper of Rs 100/- duly signed and notarized.
- (iii) It is mandatory for the contractor to upload their GST Registration Number and copy of provident fund code number in addition to other documents along with 'T' bid. Contractor not in possession of Provident fund code number and Service Tax regn. No. shall be disqualified in the 'T'bid evaluation and his Finance bid shall not be opened.

AGE (Contracts)
for Accepting Officer

IN LIEU OF IAFW-1779A (REVISED 1955)

ITEM RATE TENDER AND CONTRACT TO BE USED IN CONJUNCTION
WITH GENERAL CONDITIONS OF CONTRACTS IAFW-2249 (1989 PRINT)

e-TENDERMILITARY ENGINEER SERVICESREGISTERED POST/ACK. DUE

Garrison Engineer
859 Engr Wks Sec
PIN - 913859
C/O 99 APO

9013/

/E8

2026

e-TENDER

NAME OF WORK: REPAIR & MAINTENANCE OF INTERNAL ELECTRIFICATION CUM ACCESSORIES AND
OTHER CONNECTED WORK AT TAWANG AREA UNDER GE 859 EWS.

1. Shri/ M/S _____ of _____

is/ are hereby authorised to e-tender for the above mentioned work.

2. The complete tender (BOQ) is to be uploaded on the MES portal of **www.defproc.gov.in**. The bid of successful bidder will be opened in office of Garrison Engineer 859 EWS, Tawang valley in the presence of such tenderer/s who have uploaded their priced tender and who wish to be present.

3. All correspondence must be returned to this office whether or not the tender has been online submitted.

4. All correspondence concerning to this tender shall be addressed as indicated on the top of this letter quoting the reference as given.

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

Signature of Officer Issuing tender:

Appointment : AGE (Contracts)
Dated : 2026

(_____)
Signature of contractor

SCHEDULE 'A'NAME OF WORK: REPAIR & MAINTENANCE OF INTERNAL ELECTRIFICATION CUM ACCESSORIES AND OTHER CONNECTED WORK AT TAWANG AREA UNDER GE 859 EWS.

1. **SCOPE OF WORK:** - This contract comprises of works as listed in BOQ and as specified Particular Specifications.
2. The Sch 'A' of this contract has been divided in two parts as under:-
 - (i) Part-I - B&R and E/M Works
 - (ii) Part-II - Sch of credit
3. Special conditions and preambles to items given in MES Schedule Part-I (2009) & Part-II (2020) under respective trades shall be applicable. If any provision in the description of items of Schedule 'A' and/or in Particular Specifications is at variance with the provisions in Special Conditions and preambles to MES Schedule items, the provisions in description of items of Schedule 'A' and provisions in Particular Specifications shall take precedence there over.
4. All items of Schedule 'A' are for "Material and Labour," "supply and fix" including testing as applicable complete unless specifically mentioned otherwise in the description of any particular item under column-2.
5. The quantities shown under column 5 of Sch 'A' are approximate and are inserted as a guide only. However, these quantities shall not be varied beyond the limit laid down under condition 7 of IAFW-2249. The Sch 'A' Part-I as elaborated in BOQ has not been pre-priced by the MES. The tenderers shall quote/upload there rates under respective columns against various items. The total amount of whole BOQ shall be summed up automatically at the end. The total amount so summed up shall be carried forward to the General Summary/ Acceptance page at the place provided for. The total amount so arrived at **after deducting amount of Credit (where applicable)** shall be firm and will be treated as "Contract sum" as per condition 6 (A) of IAFW-2249. Tenderers shall upload revised BOQ/ revised pages of BOQ (**where applicable**) only. Financial bid not quoted/ uploaded on revised pages of BOQ shall be treated as non bonafied and Bid of tenderer as a whole shall be rejected.
6. **METHOD OF MEASUREMENT**
Method for measurement for all items listed in Schedule 'A' shall be as given in MES Standard Schedule of Rates 2020 (Part II) unless specifically stated otherwise hereinafter for any particular item/items of work.
7. The unit rates quoted by the tenderer for works under Schedule 'A' shall be deemed to include for all minor extra constructional details, which might not have been specifically mentioned in these tender documents and/or shown on drawings, but are obviously and fairly intended and essential for the execution and entire completion of the works and services in the workmen like manner, sound construction and established engineering practice. The details of such items shall be furnished during execution of works. In case of difference in opinion between contractor and the GE as to whether or not certain items of works/minor extra/minor construction details are deemed to have been included in the quoted rates, the decision of the Accepting Officer shall be final, conclusive and binding.
8. The tenderer shall quote his unit rate against each item of Schedule 'A' under column-6 both in figures and in words and shall extend the amount in column-7
9. **PERIOD OF COMPLETION**
The entire work under this contract described in Schedule 'A' shall be completed within **270 Days** from the date of handing over of site.
10. The under mentioned remarks shall be deemed to have been inserted under respective columns of Schedule 'A' against each item: -

Under column 8:	Refer Note No 9 of Schedule 'A' on ser Page No 9 for all items.
Under column 9:	Refer notes to Schedule 'A' on ser Page No 9 and 10 for all items.

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SCHEDULE 'A' NOTES (CONTD...)

11. Total amount in Col 7 is not firm but shall be treated as the "contract sum" referred to in IAFW-2249 (General Conditions of contracts).
12. The date of completion for the purpose of issue of completion certificate by GE under condition 49 of IAFW-2249 (General Conditions of contracts) shall be the date of taking over of works, in all respect, after obtaining satisfactory test results for items of works as applicable and as specified under respective items of Schedule 'A'. The defects liability period referred to in condition 46 of IAFW-2249 shall commence from the certified date of completion of the work as per completion certificate issued by GE.
As per latest amendments to General Conditions of Contract IAFW-2249 the defect liability period has been specified as:
a) Twenty-four calendar months after the works have been handed over to Government (hereinafter referred to as "defect liability period")
13. Unit rates quoted by the tenderer shall deem to include the cost towards all types of tests as applicable in terms of provisions contained in this contract.
14. In any case repeated items in Sch 'A', lowest rate quoted shall be considered for payment purpose.
15. Wherever in Sch 'A'/ anywhere else in tender document, it is mentioned "or equivalent" in the makes; the equivalent makes shall only be provide only in case the makes mentioned does not manufacture the respective item.
16. In case only single make is given, the contractor shall be allowed to use any other make as given in the list/ approved by E in C's branch provided that the alternate make is technically acceptable as approved by GE.
17. Irrespective whatever written elsewhere in the tender documents the fine aggregate, coarse aggregate shall be procured from only the legal sources.
18. The subject tender comprises of following jobs :

Sr No.	Job No	Job Description
1	CPP	Repair & maintenance of internal electrification cum accessories and other connected work at Tawang area under GE 859 EWS.

Signature of Contractor

Dated: 2026

AGE (Contracts)
for Accepting Officer

(SCHEDULE OF CREDIT)**NOTES:-**

1. The contractor shall take proper precaution for demolition /dismantling work. If any damage caused due to dismantling/demolition to the existing structure, the contractor shall make good the same at this own cost without any extra cost to the Govt.
2. All dismantling / taking down materials (except those included in Sch of Credit and those re-used in the work) shall be returned to MES store without any extra cost to the Government. However useless materials as per the opinion of Engineer-in-charge shall be removed outside MD land or thrown away at low laying area as directed by Engineer-in-Charge without any extra cost to the Government
0253. The rates inserted by the department under column 5 are the minimum recovery rate which shall be final and binding. However the contract may offer higher rates under Col-7. The rates whichever is higher between Col-5 and Col-7 will be considered at the time of Acceptance.
4. Unless specifically mentioned in Sch 'A', the Contractor shall not be permitted to incorporate the demolished materials in the work under any circumstances.
5. The contractor shall be allowed to take away the demolished materials only after deduction of credit amount from the Contractors payment due with prior permission of Engineer-in-Charge.
6. The quantities mentioned under Col-4 are for rough guidance only. However the quantities mentioned under this column will be measured as per actual quantity obtained from demolition/dismantling against respective items of Sch 'A'. No claim whatsoever due to any variation in quantities shall be entertained.

Srl No	Brief description of item	Unit	Qty	Unit Rate RS P	AMOUNT RS P	Remarks
1	2	3	4	5	6	7
1	Old Unsv point wiring of light, fan, socket & power of any type and size	Per Point	695	10.00	6950.00	
2	Old Unsv switch, socket ,ceiling rose, plate cover,Holder, Lamp, Modular cover plate, Capacitor, Driver,gun metal bush,indicator lamp,PVC flexible connection pipe,prssure release valve,NRV & thermostat of any type and size	Each	973.00	1.00	973.00	
3	Old Unsv light fitting of any type and size	Each	740.00	10.00	7400.00	
4	U/s old MCCBs of any type & size	Each	10.00	5.00	50.00	
5	U/s old MCB DB/sheet metal enclouser of any type & size	Each	31.00	10.00	310.00	
6	U/s old MCBs of any type & size	Each	210.00	1.00	210.00	
7	Old Unsv sub main wiring of any tyoe and size	RM	430.00	5.00	2150.00	
8	U/s old ball bearing of any type & size	Each	10.00	2.00	20.00	
9	U/s old copper wire of any type & size	RM	25.00	1.00	25.00	
10	U/s old copper winding wire of any type & size	Kg	2.00	320.00	640.00	
11	Old Unsv Earthing material retrived from GI earthing.	Each Set	5	100.00	500.00	
12	Old Unsv GI wire of any size	RM	15	2.00	30.00	
13	Old Unsv GI pipe of 20 mm dia	RM	15	30	450.00	
14	Old Unsv Heating coil of any capacity	Each	36.00	5.00	180.00	
15	Old Unsv base plate of geyser of any type & capacity	Each	5.00	1.00	5.00	
				Total Rs	19893.00	

GENERAL SUMMARY

- | | | | |
|----|--|---|--------------|
| 1. | Total amount of Sch 'A' worked out by contractor | : | Rs. _____ |
| 2. | Sch of Credit | : | Rs. 19893.00 |
| 3. | Less Reduction offered by Contractor | : | Rs. _____ |

TOTAL CONTRACT SUM = Rs. _____

Rupees in words (Rupees-----

-----Only)

Signature of the Contractor

Dated: _____

AGE (Contracts)

for Accepting Officer

SCHEDULE 'B'**(LIST OF MATERIALS TO BE ISSUED TO CONTRACTORS)****(See Condition 10 of IAFW-2249)**

SI No	Particulars	Rate at which stores etc will be issued to the contractor		Place of issue (by name)	Remarks
		Unit	Rate Rs.		
1	2	3	4	5	6
NIL					

Signature of ContractorAGE (Contracts)
for Accepting Officer

Dated : 2026

SCHEDULE 'C'**LIST OF TOOLS AND PLANTS (OTHER THAN TRANSPORT) WHICH WILL BE HIRED TO THE CONTRACTOR (REFER CONDITION 15, 34 AND 36 OF IAFW – 2249)**

SI No	QTY	Particulars	Details of MES crew supplied	Hire charges per unit per working days Rs.	Standing by charges per unit per day Rs.	Place of issue (by name)	Remarks
1	2	3	4	5	6	7	8

----- NIL -----

Signature of ContractorAGE (Contracts)
for Accepting Officer

Dated : 2026

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

SI No	QTY	Particulars	Rate per unit per working days Rs.	Place of issue (by name)	Remarks
1	2	3	5	6	7

----- NIL -----

Signature of ContractorAGE (Contracts)
for Accepting Officer

Dated : 2026

TENDER

To

THE PRESIDENT OF INDIA

Having examined and perused the following documents:-

1. Particulars specifications signed by AGE (Contracts).
2. Drawings details in the list of drawings.
3. Schedule 'A', 'B', 'C' and 'D' attached hereto.
4. MES Standard Schedule of Rates-2009 Part I (Specifications) amendment 1 to 3 and MES Standard Schedule of Rates- 2020 Part II (Rates) (hereinafter and in IAFW-2249 referred to as the MES Schedule).
5. General conditions of contracts, IAFW – 2249 (1989 Print) together with errata 1 to 20 amendments 1 to 48 and Schedule of Minimum Wages
6. WATER. Refer Conditions 31 of IAFW – 2249, General Conditions of contracts. Water will be supplied by MES and shall be paid for @ Rs.3.75 for every Rs.1000.00 value of work carried out by the contractor where the water supplied is unmetered.
7. Should this tender be accepted, I/We agree.

** (a) that the sum of Rs. _____ Rs. _____
() forwarded as Earnest money shall either be retained as part of Security Deposit/ be refunded by the Government on received of the appropriate amount of security deposit, all as per Condition 22 of IAFW – 2249.

(b) To execute all the work referred to in the said documents upon the terms and condition contained or referred to therein as detailed in item rate/General Summary and to carry out such deviations as may be ordered vide condition 7 of IAFW-2249 upto a maximum of 10 % (Ten Percent) and further agreed to refer to all disputes, as required by condition 70 of IAFW – 2249 to the sole arbitrator a serving Officer heaving degree in Engineering or equivalent or having passed final/ direct final examination of sub-division – II of Institution of surveyors of India) recognized by the Govt. of India to be appointed by the **CHIEF ENGINEER, SILIGURI ZONE** or in his absence the Officer Officiating as **CHIEF ENGINEER, SILIGURI ZONE** if specifically delegated in writing by **CHIEF ENGINEER, SILIGURI ZONE** whose decision shall be final, conclusive and binding.

** To be deleted where Not applicable.

TENDER (CONTD.)In lieu of IAFW-1779-A (Revised 1955) contd.

Signature _____ Name _____ (IN BLOCK CAPITALS)

In the capacity of _____ duly authorized to sign the tender for and on behalf of

M/S _____ (BLOCK LETTERS)

Witness _____

Date _____

Address _____

Postal address _____

Telegraphic address: _____

Telephone No _____

ACCEPTANCE

_____ alteration (s) have been made in these documents and as evidence that these alteration(s) were made before the execution of the Contract Agreement these have been initialed by the contractor and **AGE (Contracts)**, GE 859 EWS, PIN 913859, C/O 99 APO.

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

The above tender was accepted by me on behalf of the President of India for the item rates contained in the Sch'A'for Rs. _____ (Rupees _____ only)

on the _____ day of _____ 2026.

Signature _____ dated this _____ day of _____ 2026.

(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)**Garrison Engineer****859 Engr Wks Sec****C/O 99 APO****(ACCEPTING OFFICER)**

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

A copy of the GENERAL CONDITIONS OF CONTRACTS - IAFW 2249 (1989 Print) with errata 1 to 20 and amendment No. 1 to 48 has been supplied to me/us*, has been perused by me/us* and is in my/our* possession. I/We* have read and understood the provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We* shall abide by the terms and conditions thereof, as modified if any, else where in these tender documents.

It is hereby further agreed and declared by me/us, that the GENERAL CONDITIONS OF CONTRACTS, IAFW-2249 (1989 Print) including condition 70 thereof pertaining to settlement of disputes by arbitration, containing 33 pages (Serial Page No.36 to 68) with errata 1 to 20 and amendment Nos. 1 to 48, containing 14 pages (Serial Page No. 69 to 82) form part of these tender documents.

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

*Delete whichever is not applicable.

Signature of Contractor

Dated: 2026

AGE (Contracts)
for Accepting Officer

MILITARY ENGINEER SERVICESERRATA TO GENERAL CONDITIONS OF CONTRACT IAFW-2249 (1989 PRINT)

ERRATA NO	PAGE NO	PARTICULARS
1.	4	Condition 3, Para 3, Line-1 : <u>FOR</u> : “an” <u>READ</u> : “and”
2.	7	Condition 7, Last Para , Line-9 : <u>FOR</u> : “Objection” <u>READ</u> : “objection”
3.	7	Condition 7, Last Para, Line-11 : <u>FOR</u> : “thetein” <u>READ</u> : “therein”
4.	8	Condition 8, Line-7 : Delete : “after the word `necessary”
5	10	Condition 10(C) General, Sub Para 2, Line-3 <u>FOR</u> : “actory” <u>READ</u> : “factory”
6.	11	Condition 15, Para 2, Line-6 : <u>FOR</u> : “escept” <u>READ</u> : “except”
7.	11	Condition 15, Para 2, Line-6 : <u>FOR</u> : “authorise” <u>READ</u> : “authorised”
8.	11	Condition 15, Para 5, Line-1 : <u>FOR</u> : “Maintence” <u>READ</u> : “Maintenance”
9.	16	Condition 32, Para 1, Line-4 : <u>FOR</u> : “sitting” <u>READ</u> : “siting”
10.	16	Condition 32, Para 2, Line-6 : <u>FOR</u> : “reinstead” <u>READ</u> : “reinstated”
11.	16	Condition 34, Line-6 : <u>FOR</u> : “revese” <u>READ</u> : “revest”
12.	16.17	Condition 36, Para 2, Line-2 : <u>FOR</u> : “conbusitable” <u>READ</u> : “combustible”
13.	17	Condition 37, Line-3 : <u>FOR</u> : “whese” <u>READ</u> : “whose”
14.	17	Condition 43, Line-1 : <u>FOR</u> : “shal” <u>READ</u> : “shall”
15.	17	Condition 44, Para 2, Line-4 : <u>FOR</u> : “visit this” <u>READ</u> : “visit his”
16.	18	Condition 48, Para (a), Line-5 : <u>FOR</u> : “airising” <u>READ</u> : “arising”
17.	20	Condition 54, Line-1 and 2 : illegible word is “Contractor”
18.	20	Condition 54, Para below (a) : Insert : “b” in the existing bracket “()”
19.	20	ANNEXURE `B’ , Clause 6, line-2 Delete the word “after”
20	30	ANNEXURE `B’ , Clause 6 but line-3 Insert fullstop “(.)” after the word “thereof ” and <u>FOR</u> : “laddor” <u>READ</u> : “Ladder”

Signature of Contractor

Dated : 2026

AGE (Contracts)
for Accepting Officer

Amendment No	Page No	Particulars
1.	28 & 29	Annexure `A' Military Engineer Services Contractor's labour Regulations (a) Para 2 (a) line 3 For : Not exceeding Rs.400 per month Read: Not exceeding Rs.500 per month" (b) Para 11, line 5 Add the following after the words labourers concerned. "The Garrison Engineer shall payments to the labour concerned within 45 days from the receipt of the report from the labour welfare officer or other person authorised as aforesaid, as the case may be."
2.	9	Condition 10(R), Line 2 to 6. For : Materials which _____ as aforesaid. Read: "Materials which Govt shall supply are shown in Schedule `B' which also stipulates place of issue and rate(s) to be charged in respect thereof".
3	19	Condition 50, Sub para 4(b) (iii) Delete the existing description against sub para 4(b) (iii) and insert as under:- (iii) Where the contract sum exceeds Rs.20lakhs but does not exceed Rs. 150 lakhs. Seven and half percent of the Contract value of the item or group of items of work for which a separate period of completion is given or Rupees seven and a half lakhs whichever is less. (iv) Where contract exceeds Rs.150 lakhs but does not exceedRs. 300 Lakhs. Five percent of the contract value of the item or group of the items of work for which a separate period of completion is given or Rupees twelve and a half lakhs whichever is less. (v) Where the contract sum exceedsRs. 300 lakhs. Four percent of the contract value of the item or group of items of work for which a separate period of completion is given subject to a maximum of Rupees twenty five lakhs."
4	27	<u>CONDITION 70 TO SUB PARA-9</u> Add the following at the end of the sub para : "If the value of the claims or counter claims in an arbitration reference exceeds Rs. 1 Lakh the arbitrator shall give reasons for the award."
5	14 & 15	<u>CONDITION 25</u> Delete para 2 and 3 of the above condition and substitute the following :- "Where the contractor is not a qualified Engineer or even if he is so qualified, he cannot, in the opinion of the GE give his full personal attention to the works, he shall at his own expense employ a person/person(s) possessing the following qualifications, and/or experience as his accredited agent(s)to supervise the works and to receive instructions from the Engineer-in-Charge:- (a) For works costing over Rs. 300 lakhs other than those covered in(g) below. Two Degree holders in Engineering from Government recognised Institution or equivalent with atleast 5 years practical experience of works. & Adequate numbers of Diploma holders in Engineering from a govt recognized Institution with at least 8 yrs practical experience of works. (Note :- The above provision shall be applicable irrespective of the fact whether contractor himself is a qualified Engineer or not). (b) For works costing between Rs.100 lakhs and Rs.300 lakhs. other than those covered in (g) below A degree holder in Engineering from a Government recognised Institution or equivalent with at least 4 years practical experience of works OR Two diploma holders in Engineering from a Govt recognised Institution with at least 6 years practical experience of works.

1	2	3
	(c) For works costing between Rs.60 lakhs and Rs.100 lakhs other than those covered in (g) below (d) For works costing between Rs.7.5 lakhs and Rs.60 lakhs other than those covered in (g) below (e) For works costing between Rs.2 lakhs and Rs.7.5 lakhs other than those covered in (g) below (g) For works of any value for repairs to buildings and roads, periodical Services to building, term contract, grass cutting and fencing	A degree holder in Engineering from a Government recognised Institution or equivalent with at least 3 years practical experience of works. OR A diploma holder in Engineering from a Government recognised Institution with at least 5 years practical experience of works. A degree holder in Engineering from a Government recognised Institution or equivalent with at least 2 years practical experience of works. OR A diploma holder in Engineering from a Government recognised Institution with at least 4 years practical experience of works. A degree or diploma holder in Engineering from a Government recognised Institution with adequate practical experience of works. A competent person with adequate practical experience of works. The employment of Agent(s) as aforesaid shall be to the approval of GE who may verify his / their qualifications and experience by referring to original degree/diploma/ testimonials which shall be made available to him by the contractor or by the individual employed or proposed to be employed.
6.	27	Delete the description added at the end of sub para 9 vide amendment No.4 (1989 Print) and insert as under :- "The arbitrator shall give reasons for the award in each and every case irrespective of the value of claims or counter-claims".
7	24	CONDITION 64 Delete para 4 viz `Provided the amount_____ shall not exceed Rs. 1.5 lakhs in toto.
8	26	CONDITION 70 ARBITRATION PARA 1, LINE 4 Amend the words "Engineer Officer" to Read" Serving Officer having degree in Engineering or equivalent or having passed final/direct final Examination of of Sub-Division II of Institution of Surveyor (India) recognised by the Govt. Of India."
9	2	Add the following new condition under chapter IV:- "71. Jurisdiction of Courts".
	27	Add the following new condition:- "71. Jurisdiction of Courts-Irrespective of the place of issue of tenders, the place of acceptance of tenders, the place of execution of contract or the place of payment under the contract, the contract shall be deemed to have been made at the place from where the acceptance of tenders has been issued and the work is executed/executable, The courts of the place from where the acceptance of the tender has been issued and the work is executed/under execution shall alone have jurisdiction to decide any dispute arising out of or in respect of the contract."

1	2	3
10	14 & 15	<u>CONDITION 25 AS AMENDED VIDE AMENDMENT No.5</u> FOR " Degree holders in Engineering from a Government recognised Institution or equivalent" wherever occurring. READ "Degree holders in Engineering from a Government recognised Institution or equivalent/final or direct final pass of sub division II of the Institution of Surveyors (India)."
11	27	<u>CONDITION 70 : ARBITRATION PARA 8</u> FOR : "The Arbitrator may, from time..... Publishing the award." READ: "The arbitrator may, from time to time with the consent of the parties, enlarge the time for making and publishing the award."
12	24	Add the following Para 4 after Para 3 (c) :- "The amount so retained from the contractor shall be called retention money and shall be released to the contractor along with the final bill. However, in case the amount of this retention money is more than 1.50 lakhs, then after retaining an amount of Rs. 1.50 lakhs or 1% of the contract amount as executed whichever is more, the balance amount of retention money will be refunded to the contractor at satisfactory completion of works as certified by the GE."
13	23	Condition 62 (G) valuation of deviation para 1 line 3 For : "Plus 10 %" Read : "Plus 15 %"
14	5	(a) Condition 4A(a), Line 4 FOR: "Rs. 2,500/-" READ : "Rs.5,000/-" (b) Condition 4A(d), Line 2 & 3 FOR : "Rs. 5,000/-" READ: 10,000/-
15	13	Condition 22, Security Deposit, sub para 3, Line 3 and 4 For : "Controller of Defence Accounts concerned" Read : "Accepting Officer"
16	24	<u>Condition 64</u> Sub para 7, lines 4 & 5 For: "Controller of Defence Accounts" Read: "Accepting Officer"
17	19	(a) <u>Condition 50, Sub Para 2, Line 2a</u> For : " Deviation orders on the contractor" Read : "Deviation order, escalation amount" (b) Condition 50, Sub Para 4 (b) (i) to 4 (b) (v) Delete existing sub para 4 (b) (i) to 4 (b) (v) in toto and insert as under ; "Ten percent of the contract value of the item or group of items of work for which a separate period of Completion is given." (c) <u>Condition 50, Sub Para para 5</u> <u>Add Sub para 5 as under</u> "Amount of retention money plus compensation during currency of contract shall not exceed ten percent of contract value. Contractor shall furnish BGB or Fixed Deposit Receipt in lieu of retention money and if compensation amount is not fully met from retention money, the difference if any shall be recovered from the payments due to the contractor."

1	2	3
18	3 & 4	(a) <u>Condition 1(a), line 4</u> For : " the M.E.S. Schedule, the Specifications" Read : "the M.E.S. Schedule, the Special Conditions, the Specifications" (b) <u>Condition 1(b), line 2</u> For : " these conditions, and the Specifications" Read : "these conditions, the Special Conditions and the Specifications" (c) <u>Condition 1(b), line 3</u> For : " loaned" Read : "sold" (d) <u>Condition 1(g), line 3</u> For : " Garrison Engineer" who administers" Read : "Garrison Engineer" (or Assistant Garrison Engineer (Independent) if applicable) who administers" (e) <u>Condition 1(g), line 3</u> In the end, add the following:- " Where the office of the CWE does not exist and the GE is directly under the Chief Engineer, the authority of the CWE stipulated in these conditions shall vest in the concerned Chief Engineer." (f) <u>Condition 1(h), line 3</u> For : "the Superintendent Grade I" Read: " the Junior Engineer (JE)" (g) <u>Condition 1(i), line 1</u> For : "Indian Standards Institution." Read: " Bureau of Indian Standards." (h) <u>Condition 1(p), line 4</u> For : "air craft and acts of God" Read: "air craft and natural calamities" (j) <u>Condition 1(p), line 5</u> For : "floods and tornado." Read: "floods, tornado and Tsunami."
19	5	(a) <u>Condition 4A, line 7</u> For : "Rs. 60,000/-" Read: "Rs. 1,50,000/-" (b) <u>Condition 4A(a), line 4</u> For : "Rs. 2,500/-" Read: "Rs. 10,000/-" (c) <u>Condition 4A(c), line 4</u> For : "Rs. 2,500/-" Read: "Rs. 10,000/-" (d) <u>Condition 4A(d), lines 2 and 3</u> For : "Rs. 5,000/-" Read: "Rs. 20,000/-" (e) <u>Condition 4A(f), line 1</u> For : "Rs. 60,000/-" Read: "Rs. 1,50,000/-"

1	2	3				
20	5	(a) <u>Condition 6, subpara 1</u> The existing contents shall be substituted as under:- “6. Provisional Items- The amount pertaining to provisional items need not be deducted from the Contract Sum. The Engineer-in-Charge and contractor shall set out the works covered under provisional items and provisional lump sum based on the description of items, drawings forming part of contract agreement and considering the ground conditions as encountered at site of works. The statement of variation in quantities, new items or deletion of items from the contract agreement as required will be worked out for approval of Engineer-in-Charge who will convey approval of such changes through site order book. For the purpose of payment the variation in value of work executed under these items shall be ascertained by measurement or valuation as for deviation. The variations shall be regularized as per condition 7.”				
21	6 and 7	(a) <u>Condition 6A, line 6</u> Add following after the words ‘preference to scale.’:- “However the provisions of any drawing of a later date shall take precedence over that of a drawing of previous date further subject to the condition that working drawing will take precedence over a Typical Detail Drawing.” (b) <u>Condition 6 A(a), line 1</u> For: “Quantities.” Read: “Quantities, Schedule ‘B’, ‘C’, ‘D’,” (c) <u>Condition 6 A(a), subpara 3, line 1</u> For: “one document forming” Read: “one document as defined hereinabove forming” (d) <u>Condition 6 A(A)</u> (i) Existing subpara (b) to (f) shall be enumerated as subpara (c) to (g) (ii) Add new subpara (b) after existing subpara (a) as under:- “(b). Items and their quantities for which no rates or prices have been quoted shall be deemed to have been covered by the rates and prices quoted for the other items of Schedule ‘A’ or bill of quantities.” (e) <u>Condition 6 A(C) (iii)</u> The existing contents shall be substituted as under:- <table><tr><td>(iii) Contract sum exceeding Rs. 10 lakh but not exceeding Rs.100 lakh</td><td>: Rs. 20,000 plus 2% of Contract Sum exceeding Rs. 10 lakh subject to a maximum of Rs. 1,00,000/-</td></tr><tr><td>(iv) Contract sum exceeding Rs. 100 lakh</td><td>: 1% of Contract Sum subject to a maximum of Rs. 5 lakh</td></tr></table>	(iii) Contract sum exceeding Rs. 10 lakh but not exceeding Rs.100 lakh	: Rs. 20,000 plus 2% of Contract Sum exceeding Rs. 10 lakh subject to a maximum of Rs. 1,00,000/-	(iv) Contract sum exceeding Rs. 100 lakh	: 1% of Contract Sum subject to a maximum of Rs. 5 lakh
(iii) Contract sum exceeding Rs. 10 lakh but not exceeding Rs.100 lakh	: Rs. 20,000 plus 2% of Contract Sum exceeding Rs. 10 lakh subject to a maximum of Rs. 1,00,000/-					
(iv) Contract sum exceeding Rs. 100 lakh	: 1% of Contract Sum subject to a maximum of Rs. 5 lakh					
22	8	(a) <u>Condition 9 (c), line 19</u> For: “labour at Site” Read: “labour and tools and plants at Site” (b) <u>Condition 9(c), line 19</u> Add following at the end of para (c) viz line 21:- “The contractor shall give the details of idle labour, workmen, employees, tools and plants and such other details as asked by the GE, within seven days of issue of order of suspension and the GE shall verify the necessity and correctness thereof. Proper record of these details shall be maintained duly signed by the GE and the contractor.”				

1	2	3
23	8, 9 and 10	(a) <u>Condition 10 A, subpara 2</u> Add in the end after the word "comply" following:- "However if the cost of particular item of material in a contract exceed Rs. 1 lakh, these materials shall be procured only from the manufactures or from their authorised dealers/ stockist (except in case of material of local origin) and the contractor shall furnish proof thereof to the satisfaction of the GE that the material so comply." (b) <u>Condition 10 A, subpara 2</u> Add in the end after the word "in the Contract." following:- "The approved samples of materials which loose their identity after incorporation in the work shall be preserved with the GE till completion of work. Thereafter the same shall be removed in 'as is where is' condition by the contractor with prior permission of the GE without any extra cost to the government. However, the approved samples of material which do not loose their identity after incorporation and which can be incorporated in the work as decided by the Engineer-in-Charge shall be allowed to be used in the sample quarter/ block/ work." (c) <u>Condition 10 B, line 1 of last subpara of page 9</u> For: "cost of loading," Read: "cost of carriage, loading," (d) <u>Condition 10 B, line 3 of subpara 3 of page 10</u> For: "the Engineer-in-Charge may," Read: "the GE may," (e) <u>Condition 10 B, line 5 of subpara 3 of page 10</u> For: "as decided by the GE." Read: "on the date of notifying to the contractor by GE (after technical check of final bill in CWE's Office) as decided by the GE or the stock book rate as fixed by the department, whichever is higher." (f) <u>Condition 10 B, line 6 of subpara 3 of page 10</u> For: "the market rate," Read: "the recovery rate,"
24.	10 and 11	(a) <u>Condition 11(A), subpara (i) to (vii)</u> Existing contents of subpara (i) to (vii) shall be replaced as under with sub para (i) to (iv):- "(i) by reason of civil commotion, local combination of workmen, strike or lockout, affecting any of the trades employed on the work, or (ii) by reason of delay on part of nominated sub contractors, or nominated suppliers which the Contractor has , in the opinion of G.E., taken all practicable steps to avoid, or reduce, or (iii) by reason of delay on the part of Contractors or tradesmen engaged by Government in executing works not forming part of the contract, or (iv) by reason of any other cause (except force majeure) which in the absolute discretion of the Accepting Officer is beyond the Contractor's control;"

**AMENDMENT TO GENERAL CONDITIONS OF
CONTRACT IAFW - 2249 (1989 PRINT)**

1	2	3
24 (Contd..)		(b) <u>Condition 11(A), last subpara, line 2</u> For: "G.E." Read: "Accepting Officer" (c) <u>Condition 11(B), last but 3rd line from end</u> For: "G.E." Read: "Accepting Officer" (d) <u>Condition 11(C)</u> The existing contents shall be substituted as under:- "(C) Extension of time if due shall be granted within 45 days of receipt of request from the contractor along with supporting documents, but before expiry of original/extended period of completion. (D) No claim in respect of compensation or otherwise, for idle labour and/ or idle machinery etc. and/ or business loss or any such loss, howsoever arising, as a result of extensions granted under Conditions (A) and (B) above shall be admissible. The decision on reason and quantum of extension shall be final binding. (E) DELAY ON ACCOUNT OF FORCE MAJEURE – Should any force majeure circumstances arise, each of the contracting party will be excused for the non fulfilment or for the delayed fulfilment of any of its contractual obligations, if the affected party within 15 days of its occurrence informs the other party in writing. Force majeure shall mean fires, floods, natural calamities such as earth quakes, lightening or other acts such as war, turmoils, strikes (otherwise than contractor's employees), invasion, act of foreign enemies, hostilities, civil war, rebellion, revolution, insurrection, military or usurped power, damage from aircraft, sabotage, explosions, quarantine restrictions, beyond the control of either party. It is understood and agreed between the parties here to that the rights and obligations of the parties shall be deemed to be in suspension during the continuance of the force majeure even as aforesaid and the said rights and obligation shall automatically revive upon cessation of the intervening force majeure event. The period within which the rights and obligations of the parties shall be in suspension due to force majeure event, shall not be considered as a delay with respect of the period of completion and/ or taking over work under the contract or otherwise to the detriment of either party. Notwithstanding the provision of the immediately foregoing clauses, it is further understood and agreed between the parties hereto that in the event of any force majeure persisting for an uninterrupted period exceeding 6 (Six) months, either party hereto reserves the right to terminate this contract upon giving prior written notice of 30 (thirty) days to the other party of the intension to terminate without any liability other than agreement for the completed work and/ or contractor's materials lying at site." (a) <u>Condition 17, line 1</u> For: "The Contractor shall not" Read: "The Contractor including Public Sector undertaking/ Government agency shall not"
25	12	

**AMENDMENT TO GENERAL CONDITIONS OF
CONTRACT IAFW - 2249 (1989 PRINT)**

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26 13 (a) Condition 18, line 1
For: "The Contractor shall not"
Read: "The Contractor including Public Sector undertaking/ Government agency shall not"

27 14 and 15 (a) Condition 25, the contents of subpara 2 after line 5 shall be substituted as under:-

(a) For works costing between Rs. 50 lakh to 1000 lakh	A Degree holder in Engineering from a Govt recognized Institution or equivalent, with final or direct final passed of Sub Division II of the Institution of Surveyors (India) with at least 4 years practical experience of works.
(b) For works costing between Rs. 7.5 lakh to 50 lakh	A Degree holder in Engineering from a Govt recognized Institution or equivalent, with final or direct final passed of Sub Division II of the Institution of Surveyors (India) with at least 2 years practical experience of works.
(c) For works costing below Rs. 7.5 lakh	A Diploma holder in Engineering from a Govt recognized Institution with adequate practical experience of works.

Notes:-

(1) Engineers (Degree/ Diploma holders) employed should be of the relevant discipline to which nature of work pertains.

(2) The provision at Serial (b) & (c) above shall be applicable irrespective of the fact whether contractor himself is a Qualified Engineer or not.

(3) Contractor shall employ additional Engineers as directed by GE where there are scattered sites.

(4) For works costing more than Rs. 10 crore, the requirement of Engineering staff shall be as given in the tender documents.

(5) For specialist works/ services Accepting Officer may vary requirement of supervisory staff in tender documents.

(b) Condition 25, last subpara on page 15:

The contents of last subpara on page 15 shall be substituted as under:-

" The G.E. shall have full powers, to put the contractor on notice on account of default either for non-employment of Engineer(s) or absence of Engineer(s) from site and levy penalty @ Rs. 500/- per day per vacancy upto 30 days period. Thereafter GE shall have the option to either suspend the work or employ Engineer(s) at contractor's cost and recover the amount from contractor's dues."

28 15 (a) Condition 26, last subpara, last line

For: "Rs. 50/-"

Read: "Rs. 5,000/- (Rupees five thousand only)"

29 16 (a) Condition 31, third subpara, line 2

For: "at the *All India Flat Rate per 1,000 gallons which"

Read: "at the *All in cost Rate per 1,000 gallons subject to a minimum of Rs. 3.75per every Rs. 1000/- worth of work done priced at contract rates which"

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30	17	(a) <u>Condition 36, last subpara</u> Add the following at the end:- “ Fencing be provided wherever necessary as decided by GE to isolate the working area to make the area unrestricted from restricted”
31	17	(a) <u>Condition 44, subpara 3, line 1</u> For: “rupees one lakh” Read: “rupees two lakh” (b) <u>Condition 44, subpara 3, line 2</u> For: “rupees five lakh” Read: “rupees ten lakh”
32	18	(a) <u>Condition 46, subpara 2, line 11 to 14</u> For: “Provided always that the liability of the Contractor under this Condition shall not extend beyond the defects liability period except as regards workmanship which the G.E. shall have previously given notice to the contractor to rectify.” <u>Read:</u> “Alternatively, such work, if technically/ structurally acceptable, without detriment to the safety and utility of the item and the structure may be permitted to be accepted as devalued and recovery shall decided by competent authority (CWE in respect of contract concluded by himself and GE's and AGE(I) and CE in respect of contract concluded by him) or he may reject the work outright without any payment and/ or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Whether any particular defect is due to unsound, imperfect or unskillful workmanship or due to normal wear & tear or user's negligence, decision of GE shall be final and binding. Provided always that the liability of the contractor under this Condition shall not extend beyond the defects liability period except as regards workmanship which the G.E. shall have previously given notice to the contractor to rectify. Govt. further reserves the right to get the work technically inspected during currency of the contract and also during defects liability period by the Additional Director General of Technical Examination and/ or his Officers or any other agency. The defects observed as a result of such technical examination shall be rectified by the contractor as notified by the GE. However, if the defects are not rectified, the devaluation of the work shall be carried out and recovery thereon shall be affected. ”
33	19	(a) <u>Condition 49, subpara 2, line 2,3 and 4</u> For: “within such period as may be notified by the Engineer-in-Charge, to the place of issue against written receipt from the Engineer-in-Charge.” Read: “to the place of issue as stipulated in Condition 10(B) here-in-before against written receipts from the Engineer-in-Charge.” (b) <u>Condition 49, subpara 5, line 3,4 and 5</u> For: “before the completion of entire group, but for all purposes of the contract except for compensation for delay, the completion of the entire group shall be taken into account.” Read: “before the completion of the entire group. In such event, the grouping (phasing) of items as catered for in the contract shall be deemed to have been amended accordingly.” (c) <u>Condition 49, subpara 7</u> Existing contents shall be substituted as under:- “On receipt of notice from the Contractor that the work has been completed, the G.E. shall within seven days certify to the Contractor the Date(s) on which the items or group of items of works are completed and taken over and the state thereof or shall notify the details of incomplete items of work to the contractor. In case of dispute between G.E. and the Contractor over completion of work, the decision of Accepting Officer or CWE in case of G.E.'s contract shall be final and binding.”

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34	21	(a) <u>Condition 55</u> Existing contents shall be substituted as under:- “55. Termination of Contract for Death—Without prejudice to any of the rights or remedies under this contract, if the Contractor dies, the Accepting Officer shall have the option of terminating the Contract without compensation to the Contractor. If proprietor has nominated a person during his lifetime, the nominee will be allowed by the GE to complete the balance work. However if the nominee is not willing or in the opinion of Accepting Officer is not capable of completing the work as contracted for, he shall terminate the contract without any compensation to the nominee. The decision of the Accepting Officer whether the nominee is capable or not shall be final and binding.”
35	21 and 22	(a) <u>On page 2 against SI 59, Blank, add following in description</u> “Determination of contract in the event of Force Majeure _” (b) <u>On page 22, against SL 59, Blank</u> Insert new condition 59 in lieu of Blank as under:- “59. Determination of Contract in the event of Force Majeure— The contract may be determined at the option of either party by giving 30 days’ notice in writing to the other party should any event of ‘Force Majeure’ continue to prevail for an uninterrupted period of six months and no progress of work is achieved owing to such circumstances during these six months. On receipt of notice from one party to other explaining circumstances of ‘Force majeure’ the Garrison Engineer and contractor will carry out joint inspection of works and an inventory of completed, incomplete works and the materials collected for incorporation in the work shall be prepared for processing of final bill. The contractor shall have no claim to payment of any compensation on account of any profit or advantage which he may have derived from the execution of work in full but which he could not derive due to determination of contract on account of ‘Force Majeure.’”
36	22	(a) <u>Condition 61, Last but one para, line 6</u> For: “Rs. 500/-” Read: “Rs. 5,000/-”
37	24	(a) <u>Condition 64, subpara 1 and 2</u> Substitute existing contents with following:- “64. Advances on Account-- The contractor may at intervals of not less than 30 days for contracts of value less than Rs. 50 lakhs and 15 days in case of contracts more than 50 lakhs submit claims on I.A.F.W. – 2263 provided the payment due is not less than Rs. 50,000/- and for Term Contracts, contractor may prefer not more than two claims for payment of advances on account of work done and of materials delivered in connection with Measurement and Lump Sum Contracts. However such claim for work done, which are required to be measured, shall be submitted only after recording joint measurements in the MES Measurement Book IAFW-2261.” (b) <u>Condition 64, subpara 3, line 3</u> For: “Engineer-in-Charge:-” Read: “Garrison Engineer:-” c) <u>Condition 64, subpara 8 and 9</u> Insert a new subpara between subpara 8 and 9 as follows:- “ Provided further, the contractor may be paid advance on account to the full value of materials such as fittings and fixtures and other manufactured items as decided by the GE which do not lose their identity, brought on the site, on his furnishing Guarantee Bond(s) or Fixed Deposit Receipt(s) from Schedule Bank for the amount of retention money which should otherwise be recoverable from him under the contract. The Guarantee Bond and Fixed Deposit Receipt shall be executed and kept valid in a manner as described here-in-before.”

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38	25	(a) <u>Condition 66, line 2</u> For: "the period being" Read: "the period to be" (b) <u>Condition 66, line 3</u> For: "by the G.E." Read: "by the Engineer-in-Charge" (c) <u>Condition 66(a)</u> For: "Four months" Read: "Six months" (d) <u>Condition 66(b)</u> For: "Six months" Read: "Nine months"
39	27	Existing Condition 71 Jurisdiction of Courts shall be renumbered as Condition 72
40	27	Add a new Condition 71 Conciliator as under:- "71. Conciliator—If a dispute (other than those for which the decision of the CWE or any person is by the contract expressed to be final and binding) of any kind whatsoever arises between the parties to the contract during the execution of the works, or after completion or after determination cancellation/ termination of the contract, including any disagreement by either party with any action, inaction, opinion, instruction, certificate or valuation by the Accepting Officer or his nominee, the matter in dispute shall, in the first place be referred to the Disputes Resolution Board (DRB) in case of contracts valuing Rs. 10 crore or more and to conciliation, by a sole conciliator, in case of contracts valuing less than Rs. 10 crore. In case of disagreement with the decision of such DRB or conciliator, any party may invoke arbitration clause. Procedure for the constitution/ appointment of DRB/ Conciliator shall be as laid down in the Contract Agreement." <u>Condition No 22, Security Deposit including all its sub para</u> Deleted <u>Condition 53, Three Paragraphs after Para 53 (c)</u> Substitute existing contents with following:- Whenever the Accepting Officer exercises his authority to cancel the contract under this condition, he may complete the work by any means independently without risk and cost of the original contractor. On cancellation of contract, the performance security and retention money upto last paid RAR shall be forfeited. All T&P and material of contractor lying at site shall be confiscated by Govt and shall be absolutely at the disposal of the President of India and no compensation whatsoever shall be allowed by department. If the failed contractor is a Company, or a Firm then every member/ partner/ Director of company, or firm shall be barred from participating in the tender for the balance work either in his/ her individual capacity or as a partner of any other Company/ firm.

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43 **Condition 54, Paras after Para 54 (d)**

Substitute existing contents with following:-

The Accepting Officer may without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to the Govt, cancel contract as a whole or only such work orders (s) or items of work in default from the contractor. Whenever the Accepting Officer exercises his authority to cancel the contract under this condition, he may complete the Work by any means independently without risk and cost of the original contractor.

On cancellation of contract, the performance security and retention money upto last paid RAR shall be forfeited. All T&P and material of contractor lying at site shall be confiscated by Govt and shall be absolutely at the disposal of the President of India and no compensation whatsoever shall be allowed by department.

If the failed contractor is a Company, or a Firm then every member/ partner/ Director of company, or firm shall be barred from participating in the tender for the balance work either in his/ her individual capacity or as a partner of any other Company/ firm.

44 (a) **Condition 67, Recovery from contractor Para 67 (a) line 10**

For: "Security Deposit or Security Bond amount"

Read: "Performance Security amount (or from the Contractor's Standing Security Deposit amount or Security Bond if Performance Security amount is not adequate)"

(b) **Condition 67, Recovery from contractor Para 67 (g) line 5**

For: "Security Deposit or Security Bond amount"

Read: "Performance Security amount (or from the Contractor's Standing Security Deposit amount or Security Bond if Performance Security amount is not adequate)"
Read: "Six months"

45 **Condition 68, Refund of security deposit including all sub paras**

Substitute existing contents with following:-

Refund of Performance Security :- The Performance Security Deposit mentioned in Condition 19 above may be refunded to the contractor after the expiration of the defects liability period (vide Condition 46) by the GE provided always that the contractor shall first have been paid the final bill and have rendered a No-Demand Certificate (I.A.F.W-451).

46 **Condition 70, Para 3**

Deleted

47 **Condition 19**

Substitute existing contents with following:-

19. Performance Security :

19.1 Within 28 days of receipt of the Letter of Acceptance, the successful contractor shall deliver to the Accepting Officer a Performance Security in any of the forms given below for an amount equivalent to 5% of the contract sum.

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(a) A Bank Guarantee in the prescribed form.

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

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

19.3 Failure of the successful contractor to comply with the requirements of sub-clause 19.1 shall constitute sufficient grounds for cancellation of the award of work and forfeiture of the Earnest Money. In case of MES enlisted contractor, the 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 tenderer shall remain suspended till the aforesaid amount equal to the Earnest Money is deposited in Government Treasury.

19.4 All compensation or other sums of money payable by the contractor to the Government under the terms of this contract or under any other contract with Government may be deducted from, or paid by the sale of 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 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.

19.5 In the event of contract being cancelled, under Condition 52, 53 & 54 of General Conditions of Contract, the Performance Security shall be forfeited in full and shall be credited into Consolidated Funds of India.

Condition 46, Inspection of the Works, Second Para, lines 1 to 5

Substitute existing contents with following:-

“Should the G.E consider at any time during the construction or reconstruction or prior to the expiration of period of :-

- (a) Thirty six calendar months after the works have been handed over to Government (hereinafter referred to as the “defect liability period”) for Runway works & Specialist works of Hospitals & Medical Equipment/ Medical Gas.
- (b) Twenty four calendar months after the works have been handed over to Government (hereinafter referred to as “defect liability period”) for works other than mentioned in sub para (a) above.

SIGNATURE OF CONTRACTOR

DATED :

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

SCHEDULE OF MINIMUM WAGES

1. It is hereby agreed that the “**Schedule of Minimum Wages**” as published by Govt. of India/State Govt./Govt. local authorities which is higher and which specified minimum rates of wages for various categories of workman as applicable on the last due date of receipt of this tender shall form part of these tender document.
2. The minimum rates of wages shall consist of all inclusive rates and include also the wages for weekly day of rest.
3. My/our signature hereunder amount to my/our having signed the aforesaid documents forming part of this tender.

Signature of Contractor**Dated : 2026****AGE (Contracts)
for Accepting Officer**

SPECIAL CONDITION AND REQUIREMENTS**1. GENERAL**

- 1.1 The following Special Conditions shall be read in conjunction with General Conditions of Contract IAFW-2249 (1989 Print) including amendments and Errata thereto and IAFW-2159 (Revised 1947/IAFW-1779 (Revised 1955) including all amendments and errata thereto. Any provision in these special conditions, if at variance the provision in the above mentioned documents shall take precedence there over.

2. INSPECTIONS OF SITE

Refer Paras 11 & 19 of Notice of Tender (IAFW-2162 and Condition 4 of IAFW-2249. The tenderer shall be deemed to have satisfied himself before submitting his tender as to the nature of the ground and sub soil (so far as it is practicable), the climate conditions, the form and nature of the site nature of work and the manner of access to the site, the accommodation he may require, in general he shall be deemed to have himself obtained all necessary information on inspection of site as to risk, contingencies and other circumstances which may influence or affect his tender. No extra payments consequent to any mistake and mis-understanding or otherwise on this account will be allowed.

3. AVAILABILITY OF LAND FOR STORAGE OF MATERIALS ACCOMMODATION FOR LABOUR ETC.

Delete the following in Para 1 of Condition 24 of IAFW-2249 General Conditions of Contracts.

"In the event of the areas of land..... allotted to him". And the following shall be read in conjunction with Condition 24 of IAFW-2249.

"The contractor shall be permitted to store his materials including erecting temporary sheds thereof, temporary workshops and the like at the area of land marked for the purposed, on the site plan/shown by the GE free of rent, if it is on Class A-1 land. For other types of land he shall be charged license fee of Rs.1/- per year or part of year for each and every separate area of land allotted to him". No land shall be allotted to the contractor for construction of huts for accommodation of labour.

4. CONDITIONS OF WORKING

- 4.1 The work lies in UNRESTRICTED area. The contractor and his agents, employees and work people shall observe all the rules promulgated from time to time by the authority controlling the area in which the work is to be executed viz prohibition of smoking, lighting and fire precautions, search of workmen /agents and transport on entry and exit, keeping on specified routes, restricted hours of working etc.
- 4.2 Contractor shall not carry out any work on Gazetted holidays, weekly holidays and other non working days except when he is expressly authorised 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.
- 4.3 No payment shall be admissible for any man-hours lost on this account.

5. CONTRACTOR'S REPRESENTATIVES AND WORKMEN

- 5.1 Refer Condition 25 of IAFW-2249. The contractor shall employ only Indian Nationals as his representatives, servants and workmen and verify their antecedents and loyalty before employing them for the works. He shall ensure that no person of doubtful antecedents and nationality is, in any way, associated with works. If for reasons of technical collaboration, or other consideration, the employment of any foreign national is unavoidable, the contractor shall furnish full particulars to this effect to the Accepting Officer at the time of submission of his tender.

6. SECURITY OF CLASSIFIED DOCUMENTS

- 6.1 Contractor's special attention is drawn to Condition 2-A and 3 of IAFW-2249 (General Conditions of Contracts). The contractor shall not communicate any classified information regarding the work either to sub contractors or others without the prior approval of the Engineer-in-Charge. The contractor shall also not make copies of the design/drawings and other documents furnished to him in respect of the work and shall return all documents on completion of the works or earlier on determination of the contract. The contractor shall also 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).

SPECIAL CONDITION AND REQUIREMENTS (CONTD)**7. MINIMUM WAGES PAYABLE**

- 7.1 Refer Condition 58 of IAFW-2249. The contractor shall not pay wages lower than minimum wages for labour as fixed by the Government of India/State Government/Union Territory whichever is higher.
- 7.2 The fair wage referred to in Condition 58 of IAFW-2249 will be deemed to be the same as the minimum wages payable as referred to above.
- 7.3 The contractor shall have no claim whatsoever if on account of local factor and or regulations, he is required to pay the wages in excess of minimum wages as described above during the execution of work.

8. CO-OPERATION WITH OTHER AGENCIES AT SITE OF WORK

- 8.1. The contractor shall permit free access and generally afford facilities and usual convenience to other agencies or departmental workmen to carry out work if any, under separate arrangements. The contractor shall not be allowed any extra payment on this account.

9. QUARRIES

- 9.1 Quarries are not available on land which is in the charge of the MES authorities. Condition 14 of IAFW- 2249 shall thus be treated as deleted.

10. WATER

- 10.1 Refer Condition 31 of IAFW-2249, if contractor desires to buy water from Government, water will be supplied by the department at point(s) as indicated in the site plan. The water supply shall be unmetered and the contractor shall pay for water used in works and by his workmen at the rate of Rs.3.75 for every Rs.1000.00 value of work carried out by the contractor where the water supplied is unmetered. The supply of water may however not be continuous the contractor shall be deemed to have ascertained the hours availability of water before submitting his tender. MES do not guarantee the output of water supply, and nor compensation whatsoever shall be allowed for intermittent supply or break down in the system or if supply is not sufficient. The contractor shall make his own arrangements to store and supplement the water supply at his own cost.
- 10.2 The contractor if he so desires, will be allowed to augment the department's water supply by boring wells at his own cost at site(s) approved by the GE. On completion of the work, the contractor shall remove pipe etc installed and make good the site as directed by Engineer-in-Charge without any extra cost to Government. No rebate shall be given for augmentation of water by the contractor and charges for water shall be recovered at the rate mentioned above. The contractor shall, however, ensure that water drawn from such sources is clean and free from all impurities and is suitable for mixing concrete, mortar, washing aggregate and curing of concrete as specified in IS-456.

11. SUPPLY OF ELECTRICITY

- 11.1 MES do not guarantee for supply of electricity and no compensation, whatsoever, shall be allowed for not supply or for break down in the system.
- 11.2. Electric supply required for the work shall **NOT** be made available from MES for the execution of works. All contractor's installation / work sites shall conform, to and be strictly in accordance with Indian Electricity Act and Rules, Moreover the layout of cables etc, as proposed by him shall be as per plan approved by the Engineer-in-Charge. Any risk either for materials or personnel will be the contractor's responsibility.

12. SAMPLES OF MATERIALS

- 12.1 Refer Condition 10 of IAFW-2249.
- 12.2 The tenderer is advised to inspect samples of the materials, which are displayed in the office of the GE, before submitting his tender. The tenderer shall be deemed to have inspected the samples and satisfied himself as to the nature and quality of materials, he is required to incorporate in the work. Irrespective of whether he has actually inspected them or not. The materials to be incorporated in the work by the contractor shall conform to, or shall be superior in quality to the sample displayed and shall comply with the specification given here-in-after.

SPECIAL CONDITION AND REQUIREMENTS (CONTD)

- 12.3 The contractor shall not procure materials unless the samples are first got approved by the Garrison Engineer.
- 12.4 The materials other than those as mentioned in Para 12.2 before to be provided by the contractor for incorporation in the work shall comply with the requirement of the Indian Standard Specifications of the year of publication as specified in MES Schedule Part-I. The contractor may however, at his own discretion provide and incorporate in the works such materials complying with the requirements of any corresponding subsequently amended or revised addition of Indian Standard without any price adjustment.
- 12.5 The following materials shall however have ISI certification marking :-
- (a) Aluminum fittings for joinery like tower bolts, handles etc.
 - (b) Cement base paints.
 - (c) Sanitary fittings.
 - (d) Plywood, particle/block boards (both veneered or unveneered).
 - (e) Chemicals for antitermite treatment for wood and soil treatment.
 - (f) Electrical switches – Piano type.
 - (g) PVC cables (marking on drums as well as on cable item).

13. RECORD OF MATERIALS

- 3.1 The quantity of materials such as paints, water proofing compound, chemicals, for anti-termite treatment and the like, as directed by the Engineer-in-Charge (the quantity of which cannot be checked after incorporation in the works) shall be recorded in measurement books and signed by the contractor and the Engineer-in-Charge as a check to ensure that the required quantity has been brought to site for incorporation in the work.
- 13.2. Materials brought to site shall be stored as directed by the Engineer-in-Charge and those already recorded in Measurement Book shall be suitably marked for identification.
- 13.3. The contractor shall, on demand, produce to the GE, and original receipted vouchers/invoices in respect of the supplies. Vouchers/invoices so produced and verified shall be stamped by Engineer-in-Charge indicating contract number. The contractor shall ensure that the materials are brought to site, in original sealed containers/packing, bearing manufacturers marking except in the case of the requirement of materials being less than smallest packing.
14. **ACCEPTABLE QUALITY OF WORK AND FINISHES.** The determine the acceptable standard of workmanship one quarter (to be decided by GE) shall be completed by the contractor well in advance as directed by GE under close supervision of the Engineer-in-Charge and shall be got approved from GE. The workmanship of various trades and finishes of this quarter shall serve as guiding sample for work in the remaining quarter/buildings.

15. REIMBURSEMENT/REFUND ON VARIATION IN “TAXES DIRECTLY RELATED TO CONTRACT VALUE”

- 15.1 15.1 The rates quoted by the contractor shall be deemed to be inclusive of **all taxes /cesses viz GST** duties, Royalties, Octroi & other levies payable under the respective Statutes. No reimbursement/refund for variation in rates of taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any **new/existing taxes/cesses**, duties, Royalties, Octroi & other levies shall be made except as provided in sub para 14.2 here-in-below.
- 15.2 (i) **The taxes/cesses** which are levied by Govt. at certain percentage rates of Contract Sum/Amount shall be termed as “taxes directly related to Contract value” **such as GST, Labour welfare cess/tax and like as applicable but excluding Income Tax.** The tendered rates shall be deemed to be inclusive of all “taxes directly related to Contract value” with existing percentage rates as prevailing on last due date for receipt of tenders. Any increase in percentage rates of “taxes directly related to Contract Value” with reference to prevailing rates on last due date for receipt of tenders shall be reimbursed to the contractor and any decrease in percentage rates of “taxes directly related to Contract Value” with reference to prevailing rates on last due date for receipt of tenders shall be refunded by the Contractor to the Govt./deducted by the Govt. from any payments due to the contractor. Similarly any imposition of 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 shall be refunded by the contractor to the Govt. from the payments due to the contractor

Contd....

SPECIAL CONDITION AND REQUIREMENTS (CONTD)

15.2.1 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 Govt. stating that the same is given pursuant to this Special Condition, together with all information relating there to which he may be in position to supply. The contractors shall submit the other documentary proof information's as the GE may require.

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

15.2.2 Reimbursement for increase in percentage rates/imposition of "taxes directly related to Contract Value" shall be made only if the Contractor necessarily & properly pays additional "taxes directly related to Contract Value" to the Govt. without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Govt. authority and submits documentary proof for the same as the GE may require.

16. VALIDITY OF TENDER

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

17. B L A N K

18. RELEASE OF PERFORMANCE SECURITY DEPOSIT

18.1 Refer Condition 46 and 68 of IAFW-2249.

19. TAXES

The contractor's quoted rates shall be deemed to be inclusive of all taxes/cesses viz GST, duties royalties, octroi and other levies payable under respective statutes as applicable on the date of receipt of tender. It may be noted that any tender imposing any condition in this regard or on any other account shall be treated as a conditional tender and the same shall be liable to be rejected.

20. RETENTION MONEY/COMPENSATION FOR DELAY

20.1 Refer Condition 64 of IAFW-2249 (Advance on account) and Condition 50 of IAFW-2249 (Compensation for Delay).

21. OFFICIAL SECRET ACT

21.1 Refer Condition 24 of General Condition of Contracts IAFW-2249. The contractors attention is invited to Indian Official Secret Act 1923 (XIX of 1923) particularly Section 5 thereof. The contractors shall be bound by the provision of this Act.

22. DAMAGE TO EXISTING STRUCTURE/BUILDING

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

Signature of Contractor

DATED: 2026

AGE (Contracts)
for Accepting Officer

PARTICULAR SPECIFICATION**1. GENERAL REQUIREMENT**

- 1.1 These particular specifications shall be read in conjunction with MES Schedule 2009 (Part I) and 2020 (Part II).
- 1.2 General specifications referred to mentioned in IAFW-2249 (1989 print) and other tender documents mean specifications including other provisions & preambles given in MES Schedule 2009 (Part I) and 2004 (Part-II) including amendments and errata as mentioned here-in-before.
- 1.3 Reference to some paragraphs of MES Schedule has been made in these particulars specifications but other paragraphs and provisions as applicable are also be followed e.g. reference to paras pertaining to general workmanship for brick work, block walling, joinery, iron and steel work, etc, have not been made but provisions therein as required for work are applicable.
- 1.4 Where specifications for any item of work are not given in MES Schedule or in these particular specifications, specification given in relevant Indian Standard specification or code of practice shall be followed.
- 1.5 Where specifications/provisions given in these particular specifications are at variance with the provisions/specifications given in MES Schedule, Specifications provisions given in these particular specifications shall be followed.

1.6 SCOPE OF WORK

- 1.6.1 This contract includes for the full, final and entire completion of works described in schedule 'A' and specified in these particular specifications and/or shown in drawings forming part of this tender.

1.7. MATERIALS.

- 1.7.1 All material to be supplied by the contractor for incorporation in the work shall conform to relevant specification. Any material needed for incorporation in the work, if not contained in any where in the contract documents, the specification of such materials proposed to be incorporated in the work shall be got approved in writing from GE before their incorporation in work by the contractor without any price adjustment.
- 1.7.2 As for as practicable all manufactured materials/articles other than those manufactured in contractor's workshop at site shall bear IS certification marks. In case any article not bearing IS certification marks but conforming to a relevant IS sample of the same shall be got approved in writing form Garrison Engineer before its incorporation in work. The contractor shall submit sufficient evidence to the GE to show that the articles conform to the relevant specifications and no price adjustment shall be made on the account.
- 1.7.3 Manufactured materials/articles shall be brought at site in original sealed containers, packing-bearing manufacturers marking unless the quantity required is in fraction of smallest packing. Letters conveying approval of samples/materials by Garrison Engineer shall interalia mentions the sources of supply, name of manufacturer, trade name/brand (if applicable) and reference to Clause of tender documents containing specification of particular material.

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PARTICULAR SPECIFICATION (CONTD)**2. EXCAVATION AND EARTH WORK.****2.1 PREPARATORY WORK :**

2.1.1. Before setting out the layout of building and commencing the construction, contractor shall carry out the preparatory work such as removal of grass, bushes, vegetation etc and trimming/surface dressing of the area as per Clause 3.6, 3.8 and 3.10 of MES Schedule Part-I to the entire satisfaction of Engineer-in-Charge. The 'area' referred to implies the entire building plot extending upto three metres all around from the outer edge of plinth protection of the building. The cost of such work as may be necessary shall be deemed to be included in the contractor's quoted lump sum.

Note : In case buildings to be constructed under this contract are located on the area of site clearance, above condition number 2.1 shall not be applicable.

2.2 EXCAVATION

2.2.1 Soft/loose soil, hard/dense soil and mud shall be classified as any type of soils.

2.2.2 Unit rates for building in Schedule 'A' Part-I shall include for excavation and earth work in any type of soil as aforesaid.

2.2.3 However, in the event of deviation involving excavation and earth work, the rate shall be the average of loose/soft soil and hard/dense soil.

2.2.4 The measurement of excavation shall be as explained in MES Schedule (Part-II) with the exception that separate quantities of soft/loose soil, hard/dense soil and mud shall not be worked out but these materials shall be grouped together as any type of soil as aforesaid.

2.2.5 Boulders and stones obtained from excavation shall be sorted out and neatly stacked at site by the contractor as directed by the Engineer-in-Charge, without any extra cost to the Govt. The aforesaid boulders and stones in stacks shall be issued to the Contractor under Schedule 'B'. These boulders may be used in the work in soling/WBM/Hard Core/hand packing in retaining wall/Filling in wire crates etc, after breaking them into specified size as approved by GE. Balance boulders/stones, if required will be arranged by the Contractor and nothing extra shall be payable on this account. In case the quantity of Stone /boulders stones is more than what can be incorporated in the work , the balance quantity issued under Sch 'B' shall be the property of contractor.

2.2.6 If rock (soft/hard/disintegrated) is met at site, contractor shall immediately notify the fact to the GE in writing, who will after the verification, regularise the change through a proper deviation order.

2.3. FILLING IN TRENCHES/UNDER FLOORS AND REMOVAL

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

PARTICULAR SPECIFICATION (CONTD)

2.3.2 Filling under floors/sides of trenches shall be in layers not exceeding 250mm thick, and Each layer shall be watered and well rammed.

2.3.3 Surplus spoil (obtained in Schedule 'A' Part-1) shall be removed and spread at places as directed by the Engineer-in-Charge, to a distance exceeding 100 metres, but not exceeding 200 metres, and leveled as directed by Engineer-in-Charge.

2.4. TRENCHES FOR FOUNDATIONS AND PIPES

2.4.1 The excavation shall be restricted to dimensions shown on the drawings. Excavation made, if any, in excess of required depth/width shall be made good by the contractor with cement concrete PCC M-10(Nominal mix) without extra cost to the Govt.

2.4.2 The bed of the trenches, if in soft or made up earth, shall be watered and well rammed and any depressions thus formed shall be filled with approved earth as required to the level and slope as directed by Engineer-in-Charge.

2.5 DRESSING AROUND BUILDINGS

2.5.1 After construction and before handing over any building, the area around, as defined in Clause 2.1 here-in-before shall be dressed without extra cost to the Govt. Spoil obtained from surface dressing shall be removed to a distance exceeding 50 metres and not exceeding 100 metres, spread and leveled as directed by Engineer-in-Charge.

2.6 FOUNDATION AND PLINTH

2.6.1 Any change in foundation/plinth necessitated due to undulating ground, which may have to be carried out as per the decision of the GE, shall be adjusted through a proper deviation order.

2.6.2 For the purpose of reckoning the depth of the foundation, the average level of the ground after surface dressing shall be considered except at the places where cutting is involved.

2.7 PRECONSTRUCTION ANTITERMITE TREATMENT: " BLANK"

2.8 HARD CORE

2.8.1 Hard core shall be of hard broken stone or boulders broken to gauge not exceeding 63mm. The material of hard core shall be well graded for providing dense and compact sub grade. Hard core shall be deposited, spread and leveled in layers not exceeding 15cm thick and watered and well rammed to a true surface and compacted with sufficient fine material. The thickness of hard core specified or indicated in the drawing, is the thickness after consolidation. Where thickness has not been mentioned it shall be 150mm consolidated.

2. CONCRETE WORK

3.1 CEMENT:

3.1.1 Cement will be procured by the contractor at his own arrangements. The cost of cement, its transportation, storage, testing charges, its accounting and preservation etc till consumed in work shall be borne by the contractor.

3.2 TYPE OF CEMENT

3.2.1 Type of cement to be used in this contract shall be ordinary portland cement, grade 43, conforming to IS-8112-1989 in all situation. However, the contractor may also use Portland Pozzolana cement conforming to IS-1489-1991 at his discretion without any price adjustment except in over head tanks, sumps, water retaining structure and the like wherein only OPC shall be used.

3.3 PROCUREMENT.

3.3.1 Cement supplied by the contractor shall be procured from main producers of cement

3.3.2 The following are the approved main cement manufacturers company of OPC and PPC.

Srl no	Company Name	Address	Approved grade of cement
1.	M/s Cement Manufacturing Company Ltd	Mayur Graden, 2nd Floor, opp- Rajuv , Bhawan, GS Road, Guwhati-781005 , Ph- 0361-2462215/216/513 , Fax: 0361-2462217 , Email: cmclghy@cml.co.in	OPC-43, 53 Grade & PPC
2.	Ultra Tech Cement	'B' Wing . 2n Floor, Mahakali Caves Road, Andheri (East), Mumbai- 400093	OPC-43 Grade, PSC & PPC
3.	OCL India Ltd	Rajgangpur, Dist- Sundargarh, Orissa, Pin- 770017, Ph- 0361-2668504 , Fax-2662131	OPC-43 Grade & PPC
4.	Dalmia Cement (Bharat) Ltd	Dalmiapuram, Disttiruchirappalli, Tamil Nadu – 621651	OPC-43 Grade & PPC
5.	M/s Chettinad Cement Corporation Ltd	4 Floor, Rani Seethai Hall Building, 603, Anna Salai Hall, Chennai-600006, Tel No. 044-42951800, Fax No. 044-28291558, EMail: - info@chettinadcement.com Website- www.chettinadcement.com	OPC-43 Grade, PSC & PPC

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Srl no	Company Name	Address	Approved grade of cement
6.	M/S Heidelberg Cement India Ltd	9th Floor, Infinity Tower "C", DLF Cyber City, Gurgaon, Haryana - 122002, Ph- 0124- 4503700, Fax- 0124-4147698	PPC
7.	M/S My Home Industries I Ltd	9 Floor, Block-3, My Home Hub, I Madhapur, Hyderabad- 500081, Ph- 040-66929696, Fax- 040-66929797198	OPC-43 Grade & PPC
8.	M/S Parasakti Cements Ltd	REGD OFFICE:-123/3 RT, Plot # 8-3-214/21 , Srinivasa Nagar Colony(West), Tel- 040-44119100 /200, Fax- 040-23747562	OPC-43 Grade & PPC
9.	M/S Zuari Cement Ltd	No. 6, MC Nichols Road, Chetpet Chennai - 600031 Ph. 044-28363958, 28365047	OPC-43 Grade & PPC
10.	M/S Toshati Cements Pvt Ltd	123/13RT, 2nd Floor Sanjeeva Reddy Nagar, Hyderabad -500038, Ph 040-2300675 CORPORATE OFFICE 9-14-13, C.B.M Compound, Near Mehar Apartments, Visakhapatnam-530003	OPC-43 Grade, PSC & PPC
11.	MIS Saifco Cement Pyt	Opposite Post Office, Batwara, Srinagar - 190114(J&K) Ph 0194-2466061	OPC-43 Grade
12.	MIS Prism Cement Ltd Prism	3/113, Vivek Khand, Gornto Nagar, Lucknow - 226010 Ph. 0522- 2396847, 2397589	OPC-43 Grade & PPC
13.	MIS Shree Guru Kripa cement (Pvt) Ltd	4/4 Trikuta Nagar Jammu, Phone no-0191-2472043	OPC-43 Grade & PPC
14.	M/S Barak Valley Cements Ltd	Debendra Nagar, Badarpur Ghat, Distt :- Karimganj Assam -788803, Ph. 03845-269258	OPC-43 Grade
15.	M/s Dhruv Industrial Company Ltd.	49/27 Sinha Market General Ganj, Kanpur-208001	OPC-43 Grade
16.	Madras Cement	Auras Corporate Centre, 98-A, Dr., Radhakrishnan Salai, Mylapore, Chennai – 600004, Ph-044 28478666	OPC-43 Grade & PPC
17.	Saurashtra Cemen-t	Gala No A-1, Ground Floor. Udhog, Sadan No 3 MIDC, Central Road, Andheri (East), Mumbai- 400093	OPC-43 Grade & PPC
18.	Lafarge Cement	Crescenzo, 1004, 8-wing , 10 Floor, C-38/39, G Block, Bandra Kurla, complex, Bandra (East) . Mumba-400051	OPC-43 Grade & PPC
19.	The Associated Cement Companies Ltd	414-421 , Splendor Forum (4th Floor} , 3, District Centre, Jasola, New Delhi – 110044, Ph- 011 46583600	OPC-43 Grade & PPC
20.	Grasim Industries ltd	Birlagram. Nagda, Madhya, Pradesh, Pin- 456331 Phone- 07366-246760/246766	OPC-43 Grade & PPC
21.	The India Cement	Building, 827,, Anna Salai, Chennai- 600002	OPC-43 Grade & PPC
22.	The India Cement	Dhun Building, 827, Anna Salai, Chennai- 600002	OPC-43 Grade & PPC
23.	Andhra Cement Ltd	Durga Cement Works, Durgapuram, Dechepalli Guntur, Andhra Pradesh, Pin-522414 , Ph-0863 257429	OPC-43 Grade & PPC
24.	Century Cements	Industry House, 159 Church gate Reclamation, Mumbai -400020 , Ph-22-22023936	OPC-43 Grade & PPC
25.	Binan Cement Ltd	Mercantile. Chambers. 12, J.N Heredia Marg, Ballard Estate, Mumbai -400001 Ph-022- 22690506/10	OPC-43 Grade & PPC
26.	Mangalam Cement Ltd	PO Adityanagar, Morak, DistKota, Rajasthan- 326520 Ph-9351468076	OPC-43 Grade & PPC
27.	Birla C orporation Ltd	Birla Building (3rd &4th Floor) -9/1 , R.N Mukherjee Road, Kolkata -700001, Ph-033- 30573700	OPC-43 Grade & PPC

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PARTICULAR SPECIFICATION (CONTD)

Srl no	Company Name	Address	Approved grade of cement
28.	Orient Cement	5-9-22/57/0, 2nd and 3rd Floor, GP Birla Centre, Adarsh Nagar, Hyderabad-500063, Pin-044 23688600	OPC-43 Grade & PPC
29.	Shree Cement	Bangur Nagar, Beawar, Dist:-Ajmer, Rajasthan-305901 Ph -01462 228101-06	OPC-43 Grade & PPC
30.	J K Cement		OPC-43 Grade & PPC
31.	J K Lakshmi Cement Ltd	Jaykaypuram, Dist-Sirohi, Rajast) aQ .. Ph-02971 244409/10	OPC-43 Grade & PPC
32.	Jaypee Rewa Cement		OPC-43 Grade & PPC
33.	Ambuja Cement Ltd	Kodinar, PO-Ambujanagar, Taluka-Kodinar, Dist:Junagadh, Gujarat-362715 Ph-02795 237000	OPC-43 Grade & PPC
34.	M/s Calcom Cement India Ltd (NE region only)	Silpukhuri South Bank, Guwahati, Assam, Pin-781003 Ph-0361-2668504, Fax-2692131, Website: www.calcom.co.in	OPC-43 Grade & PPC
35.	M/S Meghalaya Cements Ltd	Lohia House, M. G Road Factory Bazar, Guwahati-781001. Tel 0361 -260367/671	OPC-43 Grade
36.	M/S Narayan Kar & Associates Pvt Ltd	Bodhjungnagar Ind, Growth Centre , P.O Khayerpur-799008 West Tripura Ph. 0381-2514927/4786	OPC-43 Grade & PPC
37.	Star Cement Manghalaya	Lumshnong, PO-Khaliehriat, Dist-Jantia Hills, Meghalaya, Ph-03655 278215/16/18	OPC-43 Grade & PPC

3.3.4 While using PPC, the following requirements shall be met with:-

- 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 shall be suitably modified at site by the GE. The contractor shall not claim any extra cost on this account.
- c) Mixing of OPC and PPC shall not be allowed in a work.
- d) While procuring PPC, the following requirements are to be ensured and certificate to that effect from the manufacturer shall be submitted by the contractor for Each batch:-
 - (i) The quality of fly ash used is strictly as per IS-1489 (Part-I)-1991.
 - (ii) The fly ash is inter ground with clinker and not mixed with clinker.
 - (iii) The dry fly ash is transported in closed containers and started in silos. Only pneumatic pumping has been used.
 - (iv) The fly ash has been received from thermal power plants using high temperature combustion above 1000 Degree Centigrade.
 - (v) The fly ash content in PPC is less than 25% to achieve desired consistency.

3.3.5 Cement brought by the contractor at site(s) of work shall be in jute/polythene/paper bags containing 50Kg cement in Each bag originally sealed by manufacturer. Before allowing any on account payment for materials at site, test check shall be carried out to ascertain average weight of cement per bag.

3.3.6 Contractor shall produce purchase vouchers, test certificates and other valid documentary proof to the entire satisfaction of the GE for entire quantity of Each consignment to prove that cement has been purchased from the main producers as in para 3.2.2.1 above. The contractor shall also submit particulars of the manufacturer of cement for every lot for verification by the site staff and GE.

3.4 TESTING OF CEMENT

3.4.1 The contractor shall submit the manufacturer's test certificate in original along with the test sheets giving the result of Each physical test as applicable and the chemical composition of the cement or authenticated copy thereof, in accordance with BIS provisions duly signed by the manufacturer or his authorised representative with Each consignment. The Engineer-in-Charge shall record these particulars in the Cement Acceptance Register (Format given in Appx 'B' attached herewith).

3.4.2 Cement brought to site of work shall remain the property of Govt. Contractor shall in no case, remove any bag of cement unless permitted in writing by the GE. In addition to manufacturer's test certificate, the GE shall also take random samples of cement drawn from various lots of Each consignment as specified in IS Codes and get them tested from any one of the Govt. approved laboratories at his discretion or from SEMT CME, Regional Research Laboratory or Zonal Laboratory, all as per IS-3535(Method of Sampling Hydraulic Cement), IS-4031 (Method of Physical Test of Hydraulic Cement)1985 and IS-4032 (Method of Chemical Analysis of Hydraulic Cement). Irrespective of results, cost of materials for such samples, cost of requisite handling & conveyance etc shall be borne by the contractor. Cement from Each consignment shall be allowed to be incorporated in the work only after the GE is satisfied with the quality of cement brought by contractor.

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PARTICULAR SPECIFICATION (CONTD)

3.4.3 It shall be ensured that tested and untested cement is segregated and stored separately with distinct identification. Cement of different brands shall be stacked separately by the contractor. The stacking of cement shall not be more than 10 bags high.

3.4.4 Cost of testing undertaken as per provision in Clause 4.3.1 of SSR Part-I shall also be borne by the contractor.

3.4.5 If the test results on samples of a particular consignment are not within acceptable limits, the matter shall be referred to the Accepting Officer, whose decision regarding acceptability of such cement with price adjustment or removal from the site shall be final and binding. Cement so rejected or any bag of cement in godown showing indication of any setting shall be segregated and removed by contractor from the site within a week's time, with due permission of the GE for their removal.

3.5 STORAGE/CONSUMPTION OF CEMENT

3.5.1 Cement in bags shall be stored in proper leak proof/damp proof storage godown, over at least a 20cm high platform, away from walls in such manner as to prevent deterioration due to moisture or intrusion of foreign matter, all as specified in Clause 4.3.1 of SSR Part-I.

3.5.2 For the purpose of keeping a record of cement procured and consumed in works, the contractor shall maintain a properly bound register in the form approved by the Engineer-in-Charge showing all procurements, quantity used in the work and balance in hand, at the end of Each day and such other information as may be required to control the consumption of cement. Pages of the register shall be numbered and initialled by Engineer-in-Charge. This register shall be signed daily by the contractor or his representative as token of correctness of the entries made. In token to check, it shall be signed by MES representative also as follows :-

- a) Daily by JE(Civil) in-charge of works.
- b) Twice in a week by the Engineer-in-Charge.

3.5.3 The said register shall remain at site of work, in the safe custody of the contractor and on demand same shall be produced for verification of Inspecting Officer. On completion of the work, the register shall be returned to MES. The cement godown shall be provided with two locks on Each door. The key of one lock on Each door shall remain with the Engineer-in-Charge or his authorised representative and that of the other lock with the contractor's authorised agent at site of work so that cement is removed from the godown according to daily requirements and with the knowledge of both the parties.

3.5.4 Foregoing provisions shall not, however absolve the contractor of his responsibility of incorporating required quantity of cement in various items of works as per contract provisions.

3.5.5 Cement shall be used in order of which it is received. It shall be ensured that only one type/make of cement is used in any structural member.

3.5.6 Cement shall not be more than 02 months old and shall be consumed within next 02 months of its packing.

3.6 DOCUMENTATION

3.6.1 The contractor shall submit original purchase vouchers from the main producer 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 along with the relevant documents before acceptance. The original vouchers and the test certificates shall be defaced by the Engineer-in-Charge and kept on record in the office of the GE duly authenticated and with cross reference to the control number recorded in the Cement Acceptance Register. The cement Acceptance Register will be signed by the JE(Civil), Engineer-in-Charge, GE and the contractor. The Accepting Officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of cement shall be suitably recorded in the Measurement Book also for record purposes before incorporation in the work, as "Not to be abstracted" indicating the voucher number with dates, quantity, date of manufacture/expiry date etc. It shall form the basis to allow advance on account through RARs.

3.7 SCHEDULE OF SUPPLY

3.7.1 The Contractor shall ensure that procurement action is taken immediately after acceptance of the contract so as to adhere to schedule of activities as per CPM Net Work.

3.7.2 The periodicity of striking the form work and curing for works with ordinary Portland cement, shall be as stipulated in Clause 11.3 and 13.5 of IS 456 of 2000 and the same shall be suitably modified by the GE when PPC is used. No claim, whatsoever on his account shall be admissible.

3.8 AGGREGATES

3.8.1 Aggregates for concrete work shall conform to specifications all as specified in Clauses 4.4.1 to 4.4.7 of MES Schedule Part-1.

3.9 FINE AGGREGATE (SAND)

3.9.1 Grading for fine aggregate shall be within the limits of grading zone I to III as given in Clause 4.4.7.2 of MES Schedule Part-I. Crushed stone sand of grading I to IV may be used for concrete and masonry work only.

3.10 COARSE AGGREGATE

3.10.1 Unless specified otherwise in these particular specifications coarse aggregate for all concrete work in all situations shall be graded crushed stone aggregate of approved quality. The contractor may however use graded stone aggregate/all in aggregate graded of approved quality in lean concrete under foundation and sub base of floor (in all parts of Sch 'A') without any price adjustment. However, two types of aggregate shall not be mixed.

3.11 GRADING OF COARSE AGGREGATE

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

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a) REINFORCED CEMENT CONCRETE :

- (i) For elements of depth/thickness more than and including 100mm :20mm
- (ii) For elements of depth/thickness less than 100mm :12.5mm

NOTE : However, in no case the nominal size of aggregate shall be greater than one fourth the minimum thickness of the member and further it should conform to the requirement given in Clause 5.3 of IS 456-2000.

b) PLAIN CEMENT CONCRETE:

- i) Under 30mm thickness : 12.5mm
- ii) 30 to 80mm thickness : 20mm
- iii) Exceeding 80mm thickness : 40mm

3.12 WATER

3.12.1 Water shall conform to the requirements stipulated in Clause 5.4 of IS 456-2000.

3.13 ADMIXTURE

3.13.1 Admixture, if used shall conform to the requirements stipulated in Clause 5.5 of IS 456-2000.

3.14 MIX OF CONCRETE FOR WORKS (COVERED UNDER SCHEDULE 'A' PART-1)

3.14.1 Unless otherwise specified elsewhere in these particular specifications, mix of cement concrete in various situations shall be as under :-

<u>SITUATIONS</u>		<u>TYPE OF CONCRETE</u>
a)	Lean concrete under foundation of wall/plinths/toe beam/steps & in gaps between plinth beam/column footings.	M-10 (Nominal mix)
b)	Foundation concrete under column footings	M-10 (Nominal mix)
c)	PCC chills, PCC block for holder bats, holdfasts/lugs for doors, windows and ventilators, plugging for scaffolding holes and plinth protection.	M-15 (Nominal mix)
d)	PCC in bed blocks/plates, kerbs padding, benching, splash stones, coping and PCC in any other situation (except sub floor/sub base of floor and flooring) not covered above.	M-15 (Nominal mix)
e)	All RCC works	M-25 (Design mix)

3.15 blank

4. BRICK WORK

4.1 MATERIALS

4.1.1 Bricks:-Bricks shall be kiln burnt, available locally or in the neighbouring region, best quality conforming to the samples kept in CWE/GE's office. Unless specified otherwise in Schedule 'A'/Notes on drawing, bricks shall be old size bricks having minimum crushing strength of 75 Kg/Sqcm. Water absorption of bricks shall not exceed 20% when tested in accordance with IS-3495. Sampling and testing of bricks shall be carried out as per IS-5454 and IS-3495. The nominal size of brick shall be 230mm x 115mm x 75mm. The tolerance in the dimensions shall +/- 8 percent.

4.1.2 CEMENT : Refer Clause Nos 3.1 to 3.11 herein before.

4.1.3 SAND : Sand for mortar shall be as specified in Clause 5.4 of MES Schedule Part-I.

4.2 WORKMANSHIP

4.2.1 Unless otherwise specified hereinafter and/or shown on drgs, brick work in various situations shall be built in cement mortar as under :-

- (i) Brick work in half brick thick and under the independent pillars and reinforced brick work including foundation and brick work in buildings having load bearing structure - Cement Mortar 1:4
- (ii) Brick work in all other situations - Cement Mortar 1:6

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4.2.2 Half brick thick wall of height more than 90cms shall be reinforced with two Nos 8mm TMT steel bars, placed horizontally at every fourth course, starting from top of first course from floor and anchored in wall/column at junctions. The anchorage length provided shall not be less than 100mm. Over laps, if any, required in the reinforcement shall not be less than 30cms.

4.2.3 In the event of deviations, brick work as specified above shall be priced at the applicable rates in MES Schedule (Part-II) for M&L with sub class 'B' Bricks.

4.3 FI TIES

4.3.1 Brick masonry coming in contact with RCC columns shall be anchored to columns with MS flat iron ties, starting from 15cms above plinth beam/band/DPC. The ties shall be of 25mm x 3mm flat iron, 40cm long provided at every fourth course. At least 15cm shall be embedded inside the column.

4.4 DAMP PROOF COURSE

4.4.1 DPC shall be provided where shown on drawing. Damp proof course shall consist of a layer of 40mm thick PCC M-20(Nominal mix) using 12.5mm stone aggregates with water proofing compound conforming to IS-2645 liquid grade as per manufacturer instructions. A layer of hot blown bitumen of grade 85/25 shall be applied @ 1.2 Kg/Sqm over DPC after 14 days of curing. DPC shall be provided on half brick walls also.

4.4.2 Integral liquid water proofing admixture shall be of Make as specified in Appendix 'F' and shall be conforming to IS-2645-1975, IS-9103-1999. It shall be mixed with cement mortar in the proportion and manner as given in manufacturer's instructions. Deviation, if any, shall be priced at the rate of 0.4% by weight of cement.

4.4.3 Damp proof course shall also be provided under door/openings below floor by giving vertical drop irrespective of what is shown on the drawings equal to the thickness of top layer of flooring. PCC/Terrazzo floor where provided shall be extended in door/openings.

4.5 LAYING AND BONDING

4.5.1 Bricks shall be laid and bonded, all as specified in Clauses 5.23 and 5.24 of MES Schedule Part-I as applicable to old size bricks (FPS conventional bricks).

4.5.2 Half brick walls upto 2100mm height shall rest directly on sub base of floor. Half brick walls above 2100mm height and dwarf walls shall be provided with foundations.

5.0 WOOD WORK AND JOINERY

5.1 TIMBER

5.1.1 Timber for all joinery and wood work shall conform to specifications given in Clause 7.3 of the MES Schedule Part-1 and shall be within the permissible limits of defects in Clauses 7.4 and 7.5 of the MES Sch Part-1.

5.1.2 Timber shall be well seasoned whether air or kiln dried at the discretion of the contractor (except factory made door shutters which shall be kiln seasoned only) but without any price adjustments. The moisture contents of timber shall not exceed the limits laid down in Clause 7.7 of MES Schedule Part-1.

5.2 PRESERVATION OF TIMBER

5.2.1 Preserving antitermite treatment shall be carried out to all wood work and joinery fabricated by the contractor at site. Factory made wood based boards are not to be treated at site with any chemical.

5.2.2 Chemical used for antitermite treatment to woodwork and joinery shall be copper nephanate or any other chemical specified in IS-401 applied in any one of the manners specified in the ibid IS.

5.3 SPECIES OF TIMBER

5.3.1 The species of timber and prefabricated wood products (ie plywood, wood particles board etc) shall be as specified below:-

- | | | | |
|-----|---|---|--|
| i) | Panelled/glazed/wire gauzed shutter for doors (Styles, rails, glazing bars only, beading/ moulding fillets) | - | Factory made shutter using IInd class hard wood (Hollock Wood) |
| ii) | Any wood work not covered above and hereinbefore | - | First class soft wood (Deodar wood). |

5.3.2 In the event of deviation the pricing shall be done at the rates given in SSR Part II.

5.3.3 Paneled shutters shall be provided with beading all-round the panel inserts on one side of door. The size of beading shall be 20mm in width and tapered thickness from 10mm to 5mm.

5.4 PARTICLE BOARD

5.4.1 Particle board shall be ISI marked exterior grade-1 (medium density). Particle board shall be flat pressed, BWP grade bonded with phenol formaldehyde synthetic resin adhesive conforming to IS-3087 (Type-I Part-I) all as specified in Para 12.13 of MES Schedule Part-I.. Particle board shall be of uniform thickness and density throughout. Both the faces of particle board shall have sanded smooth finish. Where thickness of particle board has been shown as 20mm, it shall be read as 18/19mm.

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PARTICULAR SPECIFICATION (CONTD)**5.5 PLYWOOD**

5.5.1 Plywood where indicated shall be BWR grade bonded with phenol formaldehyde synthetic resin adhesive and marked with IS -303 for general purpose plywood and IS-1328 for decorative face plywood. Facing shall be of teak veneer or commercial veneer as shown on drawing/specified.

5.6 PRELAMINATED PARTICLE BOARD

5.6.1 The prelaminated particle board in all situations shall be three layered exterior grade ISI marked (IS :12823 Gde I) with prelamination of approved shade on one side and balancing white on other side, irrespective of what is shown on drawings.

5.7 WORKMANSHIP

5.7.1 Joinery shall be wrought all over. Timber exposed to view shall be wrought and timber not exposed to view shall be clean sawn. The workmanship and fixing of joinery shall be as per Clause 8.11 to 8.22 of MES Sch Part I.

5.7.2 The dimensions of the various components of joinery (other than block board shutters) shown on drawings, wherever at variance, shall supersede the standard dimensions mentioned in Clause 8.20 of the MES Schedule Part I. However, for pricing deviations involving any joinery work, the rates in MES Sch (Part-II) for the corresponding joinery items shall be applicable.

5.7.3 Unless otherwise specified, all work both carpenter's and joiner's shall hold full dimensions as shown on drgs except that an allowance of 1.00mm shall be allowed for Each wrought face. Wooden beads and fillets shall however, hold the full dimensions as shown on drgs. The contractor shall also maintain the overall sizes of the doors and windows etc. as shown on drgs.

5.7.4 Timber members upto 3.00 metre in length shall be in one piece.

5.7.5 Plugging to walls shall be done with wooden plugs as per Clause 7.29 of the MES Schedule Part-I.

5.8 FACTORY MADE PANELLED/GAUGED/GLAZED SHUTTERS

5.8.1 All paneled/glazed/wire gauged shutters of doors shall be factory made, manufactured in accordance with IS-1003, made of well selected kiln seasoned, chemically pressure treated, 2nd class hardwood (as approved by GE). Styles, rails and glazing bars shall be as specified in Clause 6.3 (i) hereinbefore. Panel inserts shall be 12mm ply or thick particle board commercial on both faces, conforming to specifications mentioned in Clause 6.4 hereinbefore. Thickness of shutter shall be 35mm thick. Factory made shutters shall be procured from the manufacturers as listed in Appendix 'F' here-in-after.

5.8.2 A Tolerance of (plus/minus) 3mm on width and height only shall be allowed, provided the shutter snugly fits into the frame. The thickness of shutters given in drawing shall be the finished thickness and no tolerance on this shall be permissible.

5.8.3 The GE should visit the factory when a lot of factory made paneled shutters are ready for despatch to site. The GE should ascertain whether the testing facilities are available for seasoning, preservative treatment of timber and shutters are manufactured as per IS-1003 specifications.

5.8.4 Testing of shutters is mandatory from Govt approved lab as per IS-1003 Part-I before incorporation in the work. Shutters shall be allowed to be incorporated in the work only after the GE is satisfied with the quality of the shutters brought by the contractor. The cost of testing shall be borne by the contractor.

6.0 BUILDERS HARDWARE**6.1 GENERAL**

6.1.1 Items and quantities:-Hardware fittings shall be provided according to the scales indicated in the schedule of iron mongry on the relevant drgs and in conformity with any note that may be appearing on particular drawings.

6.1.2 In case the size of particular fitting is not given in the drawings, it shall be of size as decided by the GE.

6.1.3 All articles of builders hardware shall bear ISI marking. In case ISI marked articles are not manufactured, those shall conform to the relevant IS specifications given in the MES schedule for the relevant item.

6.1.4 Finish of articles shall be as specified in Clause 9.2.4 of the MES Schedule Part-I.

6.1.5 Screws used for fixing the articles of builders hardware shall be as specified in Clause 9.2.6 of the MES Schedule(Part-I).

6.2 BUTT HINGES

6.2.1 Butt hinges shall be cold rolled, mild steel, medium weight all as specified in Clause 9.7.2 of MES Schedule Part-I.

6.3 WIRE CLOTH

6.3.1 Wire cloth to be used for wire gauged shutters shall be galvanised mild steel with average width of aperture 1.18mm and nominal dia of wire 0.457mm all as specified in Clause 9.25 and 9.32 of MES Schedule Part-I.

6.3.2 Irrespective of what is shown on drgs, door handles, tower bolts and sliding door bolts shall be aluminium anodised duly ISI marked for all buildings covered under Sch 'A' Part-I

6.4 DRAPERY RODS

6.4.1 Drapery rods shall be of 25mm dia plastic coated and shall be in one length per window/door and provided with one number Funnel and bracket on Each end. Rings shall be of appropriate size and shall be provided at 15cm C/C. Design & Colour shall be as approved by GE.

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PARTICULAR SPECIFICATION (CONTD)**7. STEEL & IRON WORK****7.1. GENERAL**

7.1.1. Refer relevant Clause No. of MES Schedule Part-I and as approved by GE. All Steels require to Incorporate in the Work shall be Contractor's Supply.

7.2. TYPES OF STEEL

7.2.1. REINFORCEMENT STEEL FOR ALL LOCATIONS AND:- Steel bars for concrete reinforcement wherever shown on drawings shall be TMT bars produced by Thermo Mechanical Treatment Process and grade of steel shall be mention on structural drawing, unless other wise the grade of steel is not specified on drawing , the grade of steel shall be (Grade 500D) and meeting all requirement of IS-1786-2008. Where ever mild steel reinforcement bars are shown on drawings these shall be amended to read as TMT bars of same dia or nearest higher dia and accordingly to be provided.

7.2.2. STRUCTURAL STEEL

7.2.2.1. STANDARD QUALITY : Structural steel except hollow steel sections shall be conform to IS-2062-2006, E-250 (Fe 410W). This steel shall be provided in the location mentioned in the drawings and as specified in Clause 10.4.1 of MES Schedule Part-I. . In case the quality of structural steel i.e. A, B or C is not mentioned in drawings then quality A shall be used and same shall be followed for deviation if any

7.2.2.2. ORDINARY QUALITY : Unless otherwise specified, Mild Steel Members in Grills/Guard Bars, Holdfasts, Door and Window, Frames, Railing, Steel Windows, Steel Doors and the like shall be ordinary quality of Steel conforming to IS-2062-2006, E-165 (Fe 290).

7.2.2.3. HOLLOW STEEL SECTIONS FOR STRUCTURAL USE : Hollow steel sections for structural steel section shall be conform to IS-4923-1997 and grade of steel shall be YSt 310. This steel shall be provided in the location mentioned in the drawings.

7.2.3. SOURCE OF PROCUREMENT

7.2.3.1. REINFORCEMENT STEEL (TMT STEEL Fe- 500D):- TMT steel bars of all sizes shall be procured directly from following primary producer.

1.	Rashtriya Ispat Nigam Limited (RINL) Visakhapatnam Steel Plant Visakhapatnam- 530 031, India Tel: (91 891) 518226. 518376 Fax: (91 891) 518316 Email: cmdvsp@itpvis.ap.nic.in	2.	Tata Iron & Steel Company (TISCO, or Tata Steel) Bombay House. 2. 4 Homi Modi Street Mumbai - 400 001. India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522. 287 0840 Email: corpcomm@isr.tatasteel.com (Br office for North : Jeevan Tara Bldg. Patel Chowk . New Delhi)
3.	Steel Authority of India Limited Central Marketing Organization. Northern Region 17th Floor, scope Minar, Laxmi Nagar Distt. Centre. Delhi- 110092	4.	M/S Jai Balaji Industries Ltd Registered Office 5 Benteck street, Kolkata- 700001, Delhi Office 510, Block-b, Navraung House 21 Kasturba Gandhi Marg, New Delhi- 110001, 011-43620219, 43620230 Mob: 7838272772/9958936103 E-mail- 1nfo@jaibalajigroup.com
5.	M/S Shyam Steel Industries Ltd, Shyam Towers EN-32, Sector-V, Salt Lake. Kolkata-700091, Tel.:033-40074007, Fax- 033-40074010, E-mailmarketing@shyamsteel.com	6.	M/S SPS Steel Rolling Mills Ltd., 68, Ballygunge Circular Road, Kolkata- 700019 Ph- 033- 2895560/67 Fax- 033- 22894386 E-mail- spsdelhi@spsgroup.co.in
7.	M/S Steel Exchange India Ltd, My Home Laxminivas Apartments. A Am. Pe. erpet, Hyderabad-500016, Tel-040-23403725, Fax-040-23413267, E-mail-info@seil.co.in	8.	M/S Jindal Steels and Power Ltd. (TMT) Plot No 2, Sector- 32, Gurgaon-1 22001 , Haryana Tel- +91 1662 222471-84 Fax- +91 1662 220476.
9.	M/S SRMB Srijan Ltd Srmb House, 7, khetra das lane Kolkata-700012 Tel : 033- 6600 6600, Fax: 033- 2211 0483	10	BLANK
11.	M/S Adhunik Metaliks Ltd, Orissa Lansdowne Towers. 2/1A Sarat Bose Road. Kolkata - 700 020 Tel: 033 3051 7100 Fax: 91 33 2289 0285 Email: mfo@adhunikgroup.com	12.	M/S Shri Bajrang Power & Ispat Ltd, Raipur, Chhattisgarh Viii - Borjhara, Urla Industrial Area. Raipur- 493 221, Chhattisgarh. Tel : 0771 4288019/29 / 39
13.	M/S JSW Steel Ltd, Karnataka Jindal Mansion, 5A Dr G Deshmukh Marg. Mumbai- 400026	14.	M/S Electrosteel Steels Ltd, Bokaro, Jharkhand G K Tower, 2"d & 3"d Floor. 19 Camac Street. Kolkata, WB- 700017 Board No: 91-33-2283-9990

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7.2.3.2. STRUCTURAL STEEL (EXCEPT HOLLOW STEEL SECTIONS):- Structural steel any section/plate (except hollow steel sections) shall be procured from main producers like SAIL, Rashtriya Ispat Nigam Ltd, IISCO, TISCO and M/S Jindal Steels and Power Ltd. However in case of its non availability with above mentioned primary producers, the same can be procured from approved secondary producers with a reduction of 5% (Five percent) of the accepted rates of structural steel. In case the desired section of structural steel is not rolled/manufactured by abovementioned primary producers, there shall be no price adjustment in use of structural steel procured from approved secondary producers for such sections of structural steel. In case the quality of structural steel i.e. A, B or C is not mentioned in drawings then quality A shall be used and same shall be followed for deviation if any.

7.2.3.3. Steel section for railings, gate, fencing, guard bars, grills, steel chowkhat, holdfasts etc which do not constitute structural members, can be procured from main producers/ secondary producer/BIS marked manufacturers or their authorized dealers at the option of contractor without any price adjustment. Tests will not be insisted upon for such steel sections.

7.2.3.4. STRUCTURAL STEEL (HOLLOW STEEL SECTIONS):- Structural hollow steel sections shall be directly procured from TATA (STRUCTURA)/JINDAL STAR/ ISI Marked .

7.2.4. TESTING OF STEEL

7.2.4.1. The manufacturer is to carry out inspections and testing of steel in accordance with the relevant BIS provisions. The contractor shall submit the manufacturer's test Certificate in original alongwith the test sheet giving the results of each mechanical test as applicable and the chemical composition of the steel or authenticated copy thereof, fully signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in Steel Acceptance Register, as given at Appendix 'F' after due verification and send a certified true copy of test sheet to GE for his records. The GE/CWE shall also organize independent testing of random samples of steel drawn from various lots from National Test House, SEMT Wing CME, Regional Research labs, IITs, National Institutes of Technology, NABL Approved laboratories, Command Testing Laboratory, Govt Engineering Collage or Any Govt laboratories as per the recommended minimum frequency shown in para here-in-after. Samples 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 would be maintained in the steel test register.

7.2.4.2. Nominal mass of any size of finishes bar/section of steel shall be checked as specified in relevant IS code. The nominal mass so determined shall be recorded in steel testing register giving cross reference to consignment number. Nominal mass of any size of finished bar/section of steel if found to be beyond the tolerance limits on minus side as specified in relevant IS code, the same shall be rejected and the contractor shall remove the same at his own cost without any extra cost to the Government. However, if the weight of steel section is beyond the tolerance limit on higher side the same can be provided with approval of the GE but without any extra cost to the Government.

7.2.4.3. If any Test Result of any particular size of Bar/Section of steel of any consignment is not found satisfactory as specified in relevant IS, the contractor shall remove the same at his own cost and no claim of contractor shall be entertained on this account

7.2.4.4. TYPE OF TESTING**7.2.4.4.1. REINFORCEMENT STEEL**

- | | | | |
|-----|-----------------------------------|---|---|
| (a) | High Strength Deformed Steel Bars | - | Nominal Mass Test, Tensile Test, Bend Test and Re-bend Test shall be carried out as per Clause No. 8 of IS-1786-1985 and Test Specimens shall be as per Clause No. 10 of IS-1786-1985 |
| (b) | Mild Steel Bars | - | Nominal Mass Test, Tensile Test and Bend Test shall be carried out as per Clause No. 9 of IS-432 (Part-I)-1982. Re-bend Test is not required to be carried out for Mild Steel Bars. |

7.2.4.4.2. STRUCTURAL STEEL

- | | | | |
|-----|--|---|--|
| (a) | Structural Steel (Standard Quality) | - | Tensile Test and Bend Test shall be carried out as per Clause No. 6, 7 and 8 of IS-226-1975 for Standard Quality of Steel Sections |
| (b) | Structural Steel (Ordinary Quality) | - | Tensile Test and Bend Test shall be carried out as per Clause No. 6, 7 and 8 of IS-1977-1975 for Ordinary Quality of Steel Sections. |
| (c) | Structural Steel (hollow steel sections) | - | Tensile Test shall be carried out as per IS-4923-1997 for Standard Quality (Hollow Steel Section) of Steel Sections. |

PARTICULAR SPECIFICATION (CONTD)**7.2.4.4.3. FREQUENCY OF TESTING**

7.2.4.4.4. REINFORCEMENT STEEL:-Normal Mass Test, Tensile Test, Bend and Re-bend Test shall be carried out as per Minimum Frequency given below :-

	NOMINAL SIZE OF BARS	FREQUENCY
(a)	Bars size less than 10mm	- 1 SAMPLE (3 SPECIMENS) for Each Test for Every 25 TONNES or Part thereof
(b)	Bar size 10mm to 16mm	- 1 SAMPLE (3 SPECIMENS) for Each Test for Every 35 TONNES of Part thereof
(c)	Bar size over 16mm	- 1 SAMPLE (3 SPECIMENS) for Each Test for Every 45 TONNES of Part thereof

7.2.4.4.5. STRUCTURAL STEEL(FOR ALL GRADE):- Tensile Test and Bend Test shall be carried out as per Minimum Frequency given below :-

	NOMINAL SIZE OF BARS	FREQUENCY
(a)	TENSILE TEST	- 1 SAMPLE (3 SPECIMENS) for Each Test for Each Individual Section for Every 25 TONNES of Steel or Part thereof
(b)	BEND TEST	- 1 SAMPLE (3 SPECIMENS) for Each Test for Each Individual Section for Every 25 TONNES of Steel or Part thereof

7.2.4.5. TESTING CHARGES:-The Unit Rate/Amount quoted by the Contractor in the Tender shall be inclusive of Cost of all sorts of Testing to the extent as specified here in before and in relevant Indian Standards.

7.2.5. DOCUMENTATION:- The contractor shall submit Original Purchase Vouchers and Test Certificate from the Main Producer/ Secondary Producer/BIS marked manufacturer/authorized dealer as applicable for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignments received at the work site shall be inspected by the GE alongwith the relevant documents before acceptance. The Original Purchase Vouchers and Test Certificates 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 consignment number recorded in the Steel Acceptance Register. The steel Acceptance Register will be signed by the JE (Civil), Engineer in Charge, GE and the, Contractor. The Accepting Officer may order a Board of Officers for random check of steel and verification of connected documents. The entire quantity of steel items shall also be suitably recorded in the measurement book for record purposes as "Not to be abstracted" before incorporation in the work and shall be signed by the Engineer in Charge and the contractor.

7.2.6. STORAGE, ACCOUNTING, PRESERVATION & MAINTENANCE OF STEEL: The storage, accounting, preservation and maintenance of steel supplied by the contractor shall be done as per standard engineering practice till the same is consumed in the work and the cost of the same shall be deemed to be included in the unit amount quoted by the tenderer. The GE shall inspect at regular interval to verify that steel lying at site are stored, accounted, preserved and maintained as per the norms. The steel shall be stored so as to differentiate each consignment separately. If the GE is not satisfied with the storage/preservation of any size of bar/section of steel, he may order for any test (s) of steel as applicable for that size of bar/section of steel and as specified in tender documents and relevant Indian Standard to recheck the acceptability criteria for the same. The contractor shall bear the cost of necessary testing(s) in this regard and no claim what's ever shall be entertained by the Govt.

7.2.7. MEASUREMENTS AND PAYMENT OF STEEL:-

7.2.7.1. The entire quantity of all steel items shall also be suitably recorded in the Measurement Book for record purposes as "Not to be abstracted" before incorporation in the work and shall be signed by the Engineer in Charge and the contractor.

7.2.7.2. The nominal mass conversion factor for various steel sections/size of finished bars as given in relevant IS codes shall be considered standard for measurement.

7.2.7.3. The payment of steel shall only be allowed after production of Original Purchase Vouchers, Test Certificates by the contractor for each consignment of steel and results of testing carried out by the Department are found satisfactory after testing.

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7.2.8. CORNER REINFORCEMENT/SUPPORT BARS/CHAIRS, ETC.

7.2.8.1. These shall be provided all as shown in TD & STD drawing. In case these provision have been modified in main drawings specifically, then the provision of main drawing shall be followed.

7.2.8.2. Reinforcement bars shall be TMT bars and shall be provided as indicated in drawings. For the purpose of pricing deviation involving reinforcement bars, the length of each bar shall be considered as 10 (Ten) meters for calculating laps unless otherwise shown on drawings.

7.2.8.3. In case of pricing deviations 10mm and over dia TMT bars as stirrups shall be priced at the rate of TMT bar stirrups of 5 to 10 mm in MES Schedule Part-II subject to contractor's percentage.

7.2.9. Mild Steel guard bars shall be of 12 mm x12mm square bars of Fe-310-0 or Fe-410-0 quality. Guard bars shall be provided to all windows & vents as shown on drawings. The guard bars including window shall be painted with 2 coats of synthetic enamel paints over a coat of red oxide zinc chrome primer.

7.2.10. Other steel items like steel door with PGI sheet covering, railing in balconies and stair case, water meter and switch board boxes etc shall be fabricated to the dimensions as shown on drawings as directed by Engineer-in-Charge. Welding, bolting, drilling holes etc shall be as specified in MES Schedule. NOTE : For various Tests, Acceptance Criteria, Tolerance, etc. refer to STEEL SUPPLY &ACCEPTANCE REGISTER given in APPENDIX 'F' and relevant BIS Codes.

7.3. STEEL WINDOWS/VENTILATOR

7.3.1. Refer Clause No. 10.25 of MES Schedule Part-I.

Note : All items of steel and iron work including steel for reinforcement required for incorporation in this contract shall not be issued under Schedule 'B'. Contractor shall make his own arrangements to procure steel and iron all as specified hereinafter.

7.4 GENERAL

7.4.1 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 :-

- | | | | |
|-------|--|---|---|
| (i) | Structural steel standard quality | : | Conforming to IS-2062 |
| (ii) | Structural steel ordinary quality | : | Conforming to IS : 1977 |
| (iii) | Reinforcement steel | : | High strength deformed steel bars produced by Thermo Mechanical Treatment Process (TMT steel bars of grades Fe 500) meeting all requirements of IS : 1786 |
| (iii) | Galvanised Steel Sheets (Plain and corrugated) | : | Conforming to IS-277 |
| (iv) | Fabric Reinforcement for concrete | : | Conforming to IS-1566 |

7.5 MATERIALS

7.5.1 The Galvanised Iron Sheets and Fabric Reinforcement for concrete to be supplied by the contractor shall be ISI marked and shall be procured from Main manufacturers.

7.5.2 The Structural steel supplied by the contractor will only be procured from SAIL / Rashtriyaspat Nigam Ltd/ TISCO. Also in case of non availability of Structure steel with SAIL/ Rashtriyaspat Nigam Ltd/ TISCO, the same shall be procured from Secondary producers (as listed in Appendix 'F') with a reduction of 5% (five percent) of the accepted rates of structural steel.

7.2.3 Reinforcement steel (TMT steel) supplied by the contractor will be procured only from SAIL / Rashtriyaspat Nigam Ltd/ TISCO/M/s Shyam Steel Industries Ltd Durgapur (WB)/ M/s SPS rolling Mills Ltd Durgapur (WB)/ M/s Jai Balaji Industries Ltd Durgapur (WB).

7.2.4 Steel sections for railing, gates, fencing including angle iron posts/horns, guard bars, guard bars, grills, steel chowkhats, holdfasts etc which do not constitute structural members, can be procured from main producers/secondary producers/ BIS marked manufacturers or their authorized dealers at the option of contractor without any minus price adjustment. The requirement of production of Test certificates and Testing will not be insisted upon for such steel sections.

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PARTICULAR SPECIFICATION (CONTD)**7.3 PROCUREMENT**

7.3.1 The GE for every lot of steel shall obtain the particulars of the manufacturer/supplier of steel from the contractor separately. The form given at Appendix 'C' will be used for this purpose.

7.3.2 The Engineer-in-Charge and GE shall verify the original documents in support of the purchase of steel and will retain certified true copy of the results in GE's office.

7.3.3 The GEs will ensure that contractors place their demand/requisition of steel with adequate lead-time. The reinforcement steel will be procured from the storage depots of the main producers and not from their authorized agents/dealers. Similarly Structural steel will be procured from the storage depots of the main producers/approved Secondary producers and not from their authorised agents/dealers.

7.4 DOCUMENTATION

7.4.1 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 alongwith the relevant documents before acceptance shall inspect all consignment received at the work site. The original vouchers and the Test Certificate shall be defaced by the Engineer-in-Charge and kept on record in the office of 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 suitably 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.

7.5 TOLERANCE

7.5.1 Rolling and cutting tolerance of structural steel products shall be as specified in IS-1852 of 1985. 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.

7.6 SCHEDULE OF SUPPLY

7.6.1 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 network.

7.7 STORAGE, ACCOUNTING, PRESERVATION AND MAINTENANCE

7.7.1 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 purpose only.

7.7.2 All steel shall be stored on dunnage at least 15cm above ground level. Steel reinforcement shall be stored properly to prevent deterioration and corrosion. In case of long time storage, suitable protective measures like cement coating, provision of temporary shelter etc to save it from rusting/deterioration 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.

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PARTICULAR SPECIFICATION (CONTD)**7.9 SOURCE OF PROCUREMENT**

7.9.1 REINFORCEMENT STEEL (TMT STEEL Fe- 500D):- TMT steel bars of all sizes shall be procured directly from following primary producer.

1.	Rashtriya Ispat Nigam Limited (RINL) Visakhapatnam Steel Plant Visakhapatnam- 530 031, India Tel: (91 891) 518226. 518376 Fax: (91 891) 518316 Email: cmdvsp@itpvis.ap.nic.in	2.	Tata Iron & Steel Company (TISCO, or Tata Steel) Bombay House. 2. 4 Homi Modi Street Mumbai - 400 001. India Tel: (91 22) 204 9131 Fax: (91 22) 204 9522. 287 0840 Email: corpcomm@isr.tatasteel.com (Br office for North : Jeevan Tara Bldg. Patel Chowk . New Delhi)
3.	Steel Authority of India Limited Central Marketing Organization. Northern Region 17th Floor, scope Minar, Laxmi Nagar Distt. Centre. Delhi- 110092	4.	M/S Jai Balaji Industries Ltd Registered Office 5 Bentek street, Kolkata- 700001, Delhi Office 510, Block-b,Navraung House 21 Kasturba Gandhi Marg, New Delhi- 110001, 011-43620219,43620230 Mob: 7838272772/9958936103 E-mail- 1nfo@jaibalajigroup.com
5.	M/S Shyam SteelIndustries ltd, Shyam Towers EN-32, Sector-V, Salt Lake. Kolkata-700091, Tei.:033-40074007, Fax-033- 40074010, E-mailmarketing@ shyamsteel.com	6.	M/S SPS SteelRolling Mills Ltd., 68, BallygungeCircular Rcad,Kolkata- 700019 Ph- 033- 2895560/67 Fax- 033- 22894386 E-mail- spsdelhi@spsgroup.co.in

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7.	M/S SteelExchange India Ltd, My Home Laxminivas Apartments. AAm.Pe.erpet, Hyderabad-500016, Tel-040-23403725, Fax-040-23413267, E-mail-info@seil.co.in	8.	M/S Jindal Steels and Power Ltd. (TMT) Plot No 2, Sector- 32, Gurgaon-1 22001 , Haryana Tel- +91 1662 222471-84 Fax- +91 1662 220476.
9.	M/S SRMB Srijan Ltd Srmb House, 7, khetra das lane Kolkata-700012 Tel : 033- 6600 6600, Fax: 033- 2211 0483	10.	BLANK
11.	M/S Adhunik Metaliks Ltd, Orissa Lansdowne Towers. 2/1A Sarat Bose Road. Kolkata - 700 020 Tel: 033 3051 7100 Fax: 91 33 2289 0285 Email: mfo@adhunikgroup.com	12.	M/S Shri Bajrang Power & Ispat Ltd, Raipur, Chhattisgarh Viii - Borjhara, Urla Industrial Area. Raipur- 493 221, Chhattisgarh. Tel : 0771 4288019/29 / 39
13.	M/S JSW Steel Ltd, Karnataka Jindal Mansion, 5A Dr G Deshmukh Marg. Mumbai- 400026	14.	M/S Electrosteel Steels Ltd, Bokaro, Jharkhand G K Tower, 2"d & 3'd Floor. 19 Camac Street. Kolkata, WB- 700017 Board No: 91-33-2283-9990

7.9.2 Reinforcement shall be fabricated and placed in position all as shown on drawings and specified in Clause 10.17 to 10.22 of MES Schedule (Part-I) without application of heat.

7.9.3 STRUCTURAL STEEL(EXCEPT HOLLOW STEEL SECTIONS):- Structural steel anysection/plate (except hollow steel sections) shall be procured from main producers like SAIL, Rashtriya Ispat Nigam Ltd, IISCO, TISCO and M/S Jindal Steels and Power Ltd. However in case of its non availability with above mentioned primary producers, the same can be procured from approved secondary producers with a reduction of 5% (Five percent) of the accepted rates of structural steel. In case the desired section of structural steel is not rolled/manufactured by abovementioned primary producers, there shall be no price adjustment in use of structural steel procured from approved secondary producers for such sections of structural steel. In case the quality of structural steel i.e. A, B or C is not mentioned in drawings then quality A shall be used and same shall be followed for deviation if any.

7.9.4. Steel section for railings, gate, fencing, guard bars, grills, steel chowkhat, holdfasts etc which do not constitute structural members, can be procured from main producers/ secondary producer/BIS marked manufacturers or their authorized dealers at the option of contractor without any price adjustment. Tests will not be insisted upon for such steel sections.

7.9.5 STRUCTURAL STEEL (HOLLOW STEEL SECTIONS):- Structural hollow steel sections shall be directly procured from TATA (STRUCTURA)/JINDAL STAR/ ISI Marked .

7.10 WELDING

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

7.11 GUARD BARS

7.11.1 Mild steel guard bars shall be provided to all steel windows and steel ventilators The Guard bars shall be provided as per details shown in drawing and unit rate of buildings shall include for the aforesaid provision.

7.12 HOLD FASTS/LUGS

7.12.1 Flat iron hold fasts/lugs shall be provided by welding as and where shown on drgs, except those, to be provided to wooden chowkats which shall be fixed with bolts/nuts as per details shown on drawings. Holes in wooden chowkats shall be plugged with hard wood plugs. The hold fasts/lugs shall be embedded in PCC 1:2:4 blocks of size 230x 230x 150 mm for doors and 100x100x100mm for windows/ventilators respectively.

7.13 EXPANDED METAL SHEET (XPM)

7.13.1 Irrespective of what is shown on drawing the expanded metal sheet (XPM) shall be of following size:-

- a) SIZE OF MESH (NOMINAL) :
 - i) Short way of mesh (SWM) = 12.5mm
 - ii) Long way of mesh (LWM) = 50mm
- b) DIMENSIONS OF STRANDS :
 - i) Width = 2.50mm
 - ii) Thickness = 1.25mm

PARTICULAR SPECIFICATION (CONTD)**8. ROOFING****8.1 RCC ROOF**

8.1.1 RCC roof slabs shall be laid to the slope as shown in drawings. Slab surfaces shall be roughened and 10 mm thick plaster in CM 1:4 mixed with water proofing admixture shall be applied on roof slab when the concrete is still green to bring it to level and grade as specified.

8.1.2 After RCC slab is laid, plastered as above and fully cured and set, pending shall be done over RCC slab by filling water which shall be kept there for 48 hours. In case a slightest indication of seepage/ leakage is noticed, the same shall be rectified by grouting the affected portion at no extra cost. Thereafter pending test shall be repeated till there is no indication of seepage/leakage. A proper record for pending Test of RCC slabs shall be maintained by GE.

8.2. WATER PROOFING TREATMENT TO RCC ROOF SLAB (Except sloped roof portion ie Hip roof)

8.3. The water Proofing treatment to RCC roof shall be provided as specified in Schedule 'A'.

8.4 WATER PROOFING TREATMENT TO SLOPED PORTION OF ROOF SLAB (HIP ROOF) : RCC roof slabs shall be laid to the slope as shown in drawings. Slab surfaces shall be roughened and 10 mm thick plaster in CM 1:4 mixed with water proofing admixture shall be applied on roof slab when the concrete is still green to bring it to level and grade as specified. Thereafter earthen clay tiles as approved by GE shall be fixed over 10mm thick screed in CM 1:4.

8.5. GUARANTEE

8.5.1. The defects liability period of water proofing treatment shall be 10 years and the contractor shall be responsible to keep the entire buildings free from leakage/seepage for a period of 10 years after the certified date of completion for the work by the GE. The contractor may obtain a similar guarantee from the specialist firm engaged by him for the purpose.

8.5.2 A sum equal to 2.5% of the quoted lumpsum against buildings covered as per Schedule 'A' Part-I for which water proofing treatment has been specified, will be held back 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 this period. Alternatively, the contractor may give a separate interest bearing security deposit or bank guarantee bond to GE valid for ten years for sum mentioned above.

8.5.3 Should the GE at any time during the construction or prior to the expiry of said Guarantee period of 10 years finds that there is seepage/leakage in the buildings wherein water proofing treatment has been given under the contract, the contractor shall on demand in writing from the GE specifying the bldgs complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith undertake to carry out such treatment which may be necessary to render the buildings free from leakage/seepage at his own expenses, till expiry of the Guarantee period of ten years.

8.5.4. In the event of contractor's failure to comply with GE's directions 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, however, extend beyond the period of the 10 years as elaborated in Para 8.5.1 hereinbefore unless the notice was served on the contractor previously to rectify such defects.

8.5.5. Security deposit/Bank guarantee shall be released to the contractor after the expiry of the period of ten years from the certified date of completion by the GE, provided always that the contractor shall first have been paid the final bill and have rendered a No Demand Certificate.

8.7 RAIN WATER PIPES AND ACCESSORIES

8.7.1 Where ever Rain water pipes shown on drawings, the same shall be of PVC (S.W.R) pipes Type 'A' conforming to IS:13592 and fittings conforming to IS:14735 of makes as specified in Appendix 'F'. The diameter of rain water pipe shown /indicated on drawings as 100mm and 140/150mm, the same shall be read as 110mm and 160mm respectively. The pipes and fittings shall be secured to walls below all joints with mild steel holder bat clamps as specified in Clause 11.34.5 of the MES Schedule Part I.

8.7.2 The grating shall be of CI round type weighing not less than 0.5Kg Each, provided and fixed at the inlet of rain water pipe.

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8.7.3 Splash stones as specified hereinbefore shall be provided below the rain water pipe. Top & sides surfaces shall be finished even & smooth using extra cement. The size of splash stones shall be 400x300x100mm if otherwise not shown in drawings.

8.7.4 Spouts and pipe outlet where shown on drawing shall be of GI tubing medium grade as per IS-1239. Size and length shall be as shown on drawing, wherever, the same is not shown on drawing it shall be 50mm bore, projecting 250mm beyond outer face of walls. Spout/ GI Pipe/Conduit wherever passed through beam/RCC, it shall be put in position at the time of casting of beam/RCC.

8.8 EARTHEN CLAY TILES

8.8.1 These tiles shall conform to the requirements of IS-654. These shall be of class AA. These shall be made from suitable soil of even texture and shall be well burnt. These shall be free from irregularities such as twists, bends, cracks and laminations. These shall be free from impurities all as specified in Clause 11.5 of SSR Part-I. Earthen clay tiles as approved by GE shall be fixed over 10mm thick screed in CM 1:4 as per locations shown in the drawings.

9. FLOORING**9.1 GENERAL**

9.1.1 Ordinary portland cement/Portland pozzolana cement for all flooring shall be used.

9.1.2 Provisions contained in Clauses 13.25, 13.27, 13.32 & 13.38 of MES Schedule (Part-I) are to be adopted for laying floors and pavements.

9.1.3 Floors shall be laid to levels or to falls as shown on drgs or as specified in Schedule 'A' and as directed by the Engineer-in-Charge.

9.1.4 Floor finish shall be extended over dwarf walls, doors and other openings.

9.1.5 Wherever cement concrete finish is shown on drawings for treads and landing, these shall be provided with cast-in-situ cement concrete topping 20mm thick in cement concrete M-20(Nominal mix). Risers in such cases shall be finished with 10mm thick cement plaster in Cement Mortar 1:4 finished even and smooth.

9.1.6 Marble aggregate (Chips) shall be of size 7mm to 10mm for terrazzo floors. The colour of marble chips shall be as shown on drawings or as approved by GE, when not indicated in drgs but in no case black marble aggregates (black chips) shall be used.

9.1.7 Surface of floors, skirting/dado/treads/landings when finished in terrazzo shall be grinded and wax polished as specified in Clause 13.38.6 to 13.38.8 of MES Schedule Part-I. The grinding by hand may be allowed in WC/Bath, if grinding by machine is not feasible in such situations. these situations are in addition to those as specified in Clause 13.38.6 of MES Schedule Part-I.

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

9.1.9 Floor finish over RCC slabs shall be as specified in Clause 13.32.5 of MES Schedule Part-I.

9.1.10 Sub base shall not be laid in panels.

9.1.12 NON-SKID TILES

9.1.12.1 Non skid vitreous ceramic tiles (Light coloured) shall be vitreous ceramic tiles of Ist quality and of shade as decided by GE. Unless otherwise specified, the size of tiles shall be 400mm x 400mm x not less than 8 mm thickness. The make of tile shall be as per Appendix 'F'.

9.1.13 MARBLE SLAB

9.1.13.1 Marble slab where shown on drawings or as specified in Schedule 'A' shall not be less than 18mm in thickness. The size of marble stone slab shall be as shown in drawing if the same is not mentioned in drawing it shall not be less than 90cm in length and 60cm in width. In situations where the minimum size does not adjust in that case the size of stone shall be as decided by GE. The marble slab shall be plain white makrana, machine cut and polished. Marble shall be hard, sound, dense and homogeneous in texture with crystalline and coarse grains all as specified in Clause 6.20.3, 6.20.4.2, 6.20.5 to 6.20.8 of SSR Part-1. Marble slab shall be bedded, jointed & pointed in neat cement slurry over 10mm thick screed layer of cement mortar 1:3.

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9.1.14 CHEQUERED TILES

9.1.14.1 Chequered tiles (with grey cement) shall be 1st quality, (ISI marked) factory made of shape/pattern as decided by GE. The thickness of tiles shall be 300mm x 300mm x 25mm. Make: NTC/AI/NITCO/MODERN

9.2 TYPE AND COMPOSITION OF FLOORS

9.2.1 The flooring for all buildings shall be provided in situation as shown on drawings for Schedule of finishes and specified hereinafter.

9.2.2 PCC FLOORING

9.2.2.1 40mm thick PCC M-20(Nominal mix) type A1, finished fair using extra cement over 75mm thick PCC M-10 (Nominal mix) sub base over 75mm thick sand filling over rammed earth in ground floor. Top layer shall be laid in panels not exceeding 1.2 sqm panels using 4mm thick and 38mm wide glass dividing strips. In first floor 40mm thick PCC M-20 (Nominal mix) type A1 finished fair using extra cement and using glass dividing strips shall be provided after applying neat cement slurry @ 3Kg of cement per Sqm on RCC slab.

9.2.3 NON-SKID CERAMIC TILE FLOORING

9.2.3.1 Wherever shown on drawing/ Sch of finishes or as specified in Schedule 'A' , Non skid ceramic tile flooring (size of Non skid tiles 400mm x 400mm x not less than 8 mm thick) shall be laid over 3mm thick (average thickness) of polymer adhesive as per IS:15477 (Ferrous Crete-Ferro 1111/ Fevimate XL of Pidilite/ Gold star of Bal endure) over 15mm thick screed in cement mortar 1:4, over 25mm thick PCC M-15 (Nominal mix) type B0 over 100mm thick PCC (1:5:10) type E2 over rammed earth for ground floor. In first floor ,non skid tile flooring shall be laid over 3mm thick (average thickness) of polymer adhesive as per IS:15477 (Ferrous Crete-Ferro 1111/ Fevimate XL of Pidilite/ Gold star of Bal endure) over 15mm thick screed in cement mortar 1:4, over 25mm thick PCC M-15 (Nominal mix) type B0 after applying neat cement slurry @ 3Kg of cement per Square meter over RCC slab. Tiles shall be fixed with adhesives as per manufacturer instructions. The tiles shall be pointed in white cement with pigment to match the colour of tiles.

9.2.4 KOTA STONE FLOORING

9.2.4.1 Wherever shown on drawing/ Sch of finishes or as specified in Schedule 'A' , Mirror Polished kota stone not less than 18mm thickness shall be laid on 20mm thick screed in Cement Mortar 1:4 over 30mm thick PCC M-15 (Nominal mix) over 100mm thick M-10 (Nominal mix) over 75mm thick sand filling over rammed earth in floors where indicated in sch of finishes. The size of kota stone shall not be less than 55cm in length and 55cm in width. The situation where the minimum size of kota stone does not adjust in that case size of kota stone will be decided by GE whose decision in this regard shall be final and binding. The type and laying of kota stone shall be as specified Clause No 13.47, 13.47.1 to 13.47.4 of SSR Part-I. In first floors Mirror Polished kota stone not less than 16mm thickness shall be laid on 20mm thick screed in Cement Mortar 1:4 after applying neat cement slurry i.e. 3 Kg per sqm of RCC slab.

Note : Where shown/mentioned in drawing/Schedule of finishes, 100mm wide white marble/granite strip (not less than 18mm thickness) shall be provided in border of Kota stone flooring as per pattern shown in drawing or as directed by Engineer-in-Charge.

9.2.5 CHEQUERED TILE FLOORING

9.2.5.1 Chequered tiles shall be of size 20cm x 20cm x 25mm factory made, laid on 10mm thick screed in cement mortar 1:3 over 30mm thick PCC M-15 (Nominal mix) over 75mm thick M-10 (Nominal mix) sub base over rammed earth in floors where indicated in Schedule of finishes.

9.2.6 STEPS9.2.6.1 BRICK STEPS (PCC finish):

Wherever PCC finish is shown on drawing/ Schedule of finishes, treads of steps shall be provided with Cast-in-situ cement concrete topping 20mm thick in PCC M-20 (Nominal mix) with chequered finish on top of treads. Risers of steps in such cases shall be finished with 10mm thick cement plaster in cement mortar (1:3) finished even and smooth without using extra cement. However the sides of the steps shall be finished with 5mm thick plaster in (1:3) finished even and smooth without using extra cement.

PARTICULAR SPECIFICATION (CONTD)**10. PLASTERING AND POINTING****10.1 GENERAL**

10.1.1 Plaster and skirting/dado shall be returned in jambs, soffits of lintels and windows etc.

10.1.2 Where plaster on concrete surface is shown to match the adjacent wall surface, the mix of plaster shall be same as for the wall surfaces.

10.1.3 All plastered surfaces shall be towelled to even and smooth surfaces without using extra cement.

10.1.4 All external finishes shall be carried out upto 15cm below ground level except where plinth protection etc is provided.

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

10.1.6 All corners, angles, junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Corners around joints openings and junction of walls shall be rounded to minimum radius of 5mm.

10.2. MATERIALS

10.2.1 CEMENT – As specified for concrete.

10.2.2 SAND - It shall be as per Clause 14.5.2 of SSR Part-1.

10.3 GROOVES AT THE JUNCTION OF MASONRY AND RCC

10.3.1 Irrespective of what is specified and shown on drawing, 10mm wide and 5mm deep continuous groove shall be provided in plaster throughout, at the junction of brick wall and RCC works on the internal surfaces of buildings as per SP-25 of Bureau of Indian Standards and edges shall be properly made up.

10.3.2 No grooves shall be provided at the junction of brick wall and RCC work on the external surfaces of buildings. A strip of chicken wire mesh 15 cm wide having aperture approximately 12.5 mm in least dimension with a weight not less than 0.40 Kg per Sqm shall be fixed over the junction of RCC and brick work on the internal surfaces of buildings before plastering. The chicken wire mesh shall be fixed on the wall surface with the help of nails of suitable size. The chicken wire mesh shall be fixed in a manner that it covers 7.5cm of brick work and 7.5 cm of RCC work. However in case of lintel band, chicken wire mesh shall be fixed covering whole width of lintel band and projecting 7.5 cm Each on either side of brick work. After fixing of chicken wire mesh, 10mm thick plaster in CM (1:4), finished fair and even shall be applied as mentioned in Clause 11.4.2 here-in-after. However no such provision shall be required where columns,/ beams / slabs are projecting from external faces of wall.

10.4. CEMENT PLASTERING

10.4.1 Internal surfaces as indicated in Sch of finishes of buildings under Sch 'A' Part I, shall be plastered in cement mortar 1:6 over dubbing coat when required all as specified in Clause 14.17 of MES Schedule (Part -1). The thickness of internal plaster exclusive of dubbing shall be 10mm irrespective of whatsoever is shown on drgs. However, plaster on ceiling/soffit of slab shall be with cement and sand mortar (1:3), minimum 5mm thick finished even and smooth after removal of form work.

10.4.2. All external surfaces, except where otherwise indicated/specified, shall be plastered in cement mortar 1:4 ; 15mm thick in one coat mixed with water proofing admixture (conform to IS 2645-Specifications for integral cement water proofing admixture) as approved as per manufacturers instructions. For the purpose of the deviation the water proofing admixture shall be considered @ 0.4% by weight of cement.

10.5 Where pointing is indicated in drawing, it shall be keyed pointing in cement mortar 1:3 as per Clause 14.29 of MES SchPt-I.

10.7 SKIRTING/DADO :**10.7.1 CEMENT SKIRTING/DADO**

10.7.1.1 Where cement floor is indicated, cement skirting/dado shall be provided unless otherwise indicated or specified. Cement skirting/dado shall be provided in locations as indicated in the drgs. Skirting/dado shall be finished even and smooth with steel trowel using extra cement. Height of cement dado/skirting, where not shown on drawings, shall be 1.15 metre for dado and 10 cm for skirting. The thickness of skirting/ dado shall be 5mm in cement mortar 1:3 over plastered surfaces (10mm thick in cement mortar 1:6) as specified here-in-before.

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10.7.2 GLAZED TILES DADO

10.7.2.1 Where glazed tiles dado is indicated in drawings/Schedule of finishes, the same shall be with Glazed tiles of size 300mmx200mm and not less than 5mm thick all as specified in Clause 13.14 of MES Schedule Part-I and shall be provided as specified in Clause 13.40 of MES schedule Part-I. Glazed tiles shall be laid over 10mm thick screed in cement mortar 1:3. The tiles shall be glossy and shade shall be as approved by GE. Make of tiles shall be as mentioned in Appendix 'F'.

10.7.3 NON SKID CERAMIC TILES SKIRTING

10.7.3.1 Where non skid ceramic tiles skirting is indicated in drawings/Schedule of finishes, the same shall be with Non skid ceramic tiles of shade, colour and texture as per flooring, shall be laid over 10mm thick screed in cement mortar (1:3), jointed & pointed in white cement with colour pigment (suitable to match with the colour of tiles). Irrespective of whatever is shown on drawings, the height of skirting shall be 100 mm.

11. STEEL SHEETING PLAIN OR CORRUGATED

- 11.1 Galvanized sheet sheets, plain or corrugated shall comply with the requirement of IS-277-2003, Specification for galvanized steel sheets plain or corrugated. Galvanized sheet shall be of grade of coating 275 with minimum zinc coating of 275 gms/Sqm.
- 11.2 Plain sheets shall be reasonably flat and free from twist, corrugated sheets shall be free from twist or buckle and shall have uniform corrugation, true in depth and pitch, and parallel to the side of sheets, the galvanized spots and other defects. Tolerance on weight of an individual sheet shall be $\pm 10\%$ and tolerance on bundle of sheet shall be $\pm 5\%$.
- 11.3 Galvanized sheet sheets, plain or corrugated shall comply with the requirement of IS-277-2003, Specification for galvanized steel sheets plain or corrugated. Galvanized sheet shall be of grade of coating 275 with minimum zinc coating of 275 gms/Sqm.
- 11.4 Plain sheets shall be reasonably flat and free from twist, corrugated sheets shall be free from twist or buckle and shall have uniform corrugation, true in depth and pitch, and parallel to the side of sheets, the galvanized spots and other defects. Tolerance on weight of an individual sheet shall be $\pm 10\%$ and tolerance on bundle of sheet shall be $\pm 5\%$.
- 11.5 Lap. The sheet shall be made with minimum end lap of 150 mm and side lap of two corrugations. The side and end lap may be increased to avoid cutting of sheets, if the Engineer-in-Charge agrees thereto but to no extra payment shall be made for the additional sheet so fixed.
- 11.6 Laying and fixing of sheets. The sheets shall be laid on the purlins to a true plane with lines of corrugation truly parallel or normal to the sides of the area to be covered.
- 11.7 Sheets shall be fixed to the purlins with galvanized or MS 'L' or 'J' hook bolts and nuts, 8 mm diameter with bitumen and GI limpet washers filled with white lead. The length of hook bolt shall be varied to suit the particular requirements. The bolt shall be sufficiently long so that after fixing they project above the top of their nuts not less than 12 mm. The grip of 'J' or 'L' hook bolt on the side of the purlins shall be not less than 25 mm. There shall be a minimum of three coach screws hook bolt placed at the ridges of corrugation in each sheet on even purlins and their spacing shall not exceed 300 mm.
- 11.8. All holes for bolts shall be made in the crown of corrugations and shall be drilled (and not punched). The holes in the washers shall be of the exact diameter of the hook bolt or the scan bolt. The nuts shall be tightened from above to give a leak proof roof.
- 11.9. RIDGES AND HIPS
- 11.9.1 Ridges and hips shall be covered with ridge and hip sections with a minimum 150 mm lap on either side over the roofing sheets and shall be properly bent to shape and fixed. The end lap of the ridges the hips and between ridges and hips shall be not less than 150 mm.
- 11.9.2 Ridges and hips shall be fixed to the roof members with GI hook bolts and nuts and bitumen and GI limpet washer, which fix the sheets to the purlins. At least one of the fixing bolts shall pass through the end laps of ridges and hips, on one-side laps shall be set in red lead. The edges of the ridges and hip shall be straight when fixed and to end planes of the roof. The ridges and hips shall fit squarely on the sheets.

13. WATER PROOFING TREATMENT

- 13.1 Bitumen Primer: - Refer para 11.44.2.1 of MES Schedule Part-I.
- 13.2 Atactic Polypropylene Polymer Modified Pre Fabricated Membrane: - Refer para 11.44.2.1 of MES Schedule Part-I. Polymeric water proofing membrane shall be of type 3 mm thick with non-woven polyester matt.
- 13.3 Preparation of Surface:- Refer para 11.44.3 of MES Schedule Part-I.
- 13.2 Treatment: - Refer para 11.44.4 of MES Schedule Part-I.
- 13.3 Laying: - Refer para 11.44.5 of MES Schedule Part-I.

13.4 Procurement: - Membrane shall be of Make IWL India Ltd. (HYPERPLAS)/STP Ltd. (STP Super Thermo lay 'APP Modified')/ M/S Texsa India Ltd. MOPLY-FP.

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- 13.4.1 The Contractor shall produce Manufacturers test certificate for the membrane. The membrane shall have name of manufacturer printed on it and sticker, which shall specify the name and details of original product i.e. the firm importing membrane and re-branding with their own name, original product name of manufacturing company.
- 13.4.2 In addition to the production of test certificate as mentioned above the contractor shall carry out independent testing of random samples of membrane drawn from various lots from a National Test House at Guwahati/Kolkata/ Shriram Institute for Industrial Research, 19, University Road, Delhi-110007 (where the facility for the all tests are available) as per the direction of GE. The GE shall approve the random samples before carrying out any testing.
- 13.4.3 The membrane application shall be done by authorized applicators that are certified by the firms for quality application.
- 13.4.4 The period of guarantee for the water proofing treatment shall be Ten years from the certified date of completion. The Contractor shall be responsible for effectiveness of the water proofing treatment during this period and any leakage noticed therein during this period shall be made good by him at his own cost.

14. CEILING AND LINING

- 14.1 Plywood: Refer para 12.10 and 12.10.1 of MES Schedule Part I.
- 14.2 Particleboards: Refer para 12.13 to 12.13.5 of MES Schedule Part I.
- 14.3 Asbestos cement building boards: - Refer Para 12.2, 12.2.1 and 12.2.2 of MES Schedule Part-I.
- 14.4 High pressure steam cured (HPSC) Non asbestos fibre cement reinforced multipurpose board: - The board shall be as per IS-14862 and shall be manufactured from homogeneous mixture of cement, quartz and cellulose and shall be cured with high pressure steam using auto claving process. Everest Designer Ceiling 4 mm (Formerly E-BOARD CLASSIC) of Make " Eternit Everest Ltd." or equivalent as approved by GE in writing.
- 14.5 Gypsum Hard Board: - Refer Para 12.31 of MES Schedule Part-I.
- 14.6 Nails and Screws: Refer 12.17 of MES Schedule Part I.
- 14.7 Workmanship:
- 14.7.1 Material: The type of boarding etc in ceiling and lining, their thickness and finish shall be as indicated in Schedule 'A'.
- 14.7.2 Fixing Generally: Refer 12.20.1 to 12.20.8. of MES Schedule Part I.
- 14.7.3 Finishing: Refer para 12.20.9 of MES Schedule Part I.
- 14.8 Fixing of Plywood, Particleboard and veneered particleboard: Refer para 12.24.1 to 12.24.4 of MES Schedule Part I.
- 14.9. Fixing of AC building boards: Refer para 12.21.1 and 12.21.2 of MES Schedule Part I.

15. SUNDRY ITEMS, BUILT IN FURNITURE AND MISCELLANEOUS ITEMS**15.1. NUMBERING OF BUILDINGS/BLOCKS**

- 15.1.1 Numbering of all blocks [at both end walls] shall be done by the contractor by engraving and painting [black] the exquisite letters/figures on a cement plaster [1:3] plate [format] of size and shape as shown on drgs.

16-17 blank

18. PLUMBING WORK**18.1 GENERAL**

Plumbing work shall be carried out as specified in Clause 18.13 to 18.23, 18.40 and 18.62 to 18.67 of MES Schedule part-I.

18.2 SOIL/WASTE/VENT PIPES/FITTINGS/ACCESSORIES

Soil waste and vent pipes (except of 50mm bore) shall be of cast iron (Spun pipe) conforming to IS-3989:1984 with or without ears and with spigot and socket ends. 50mm bore CI pipe shall be sand cast conforming to IS-1729:1979 with or without ears and with spigot and socket ends . All the pipes and fittings shall bear ISI certification mark.

18.3 JOINTING

- 18.3.1 CI pipes and fittings laid under floor/hidden portion shall be jointed with run lead joints as specified in Clause 18.40 and 18.67 of MES Schedule part-1 and all other joints shall be in cement mortar as specified in MES Schedule Part- 1.

PARTICULAR SPECIFICATION (CONTD)**18.4 FIXING OF PIPES TO WALLS**

18.4.1 CI pipes and fittings shall be fixed to wall with mild steel clamps as specified in Clause 18.67 to 18.67.6 of MES Sch Part-1.

18.5 NAHANI/FLOOR TRAPS

18.5.1 Nahani/floor traps shall be provided in situations as shown on drawings. These shall conform to IS-1729. Floor traps shall be provided with CI grating.

NOTES : Where Nahani/floor traps of 22.5cm depth can not be accommodated in sunken floor, a 300mm x 300mm portion of the RCC slab shall be sunk to the extent it accommodates the Nahani trap without any additional cost.

18.6 SHORTER LENGTH

18.6.1 Except for WC connections, the contractor may use pipe pieces without sockets in shorter lengths (less than one pipe length), where approved by the GE and connect these to pipe fittings with double sockets/collars including additional joints as specified above without extra cost to the Government.

18.7 GULLY TRAPS

18.7.1 Gully traps shall be salt glazed stone ware complying with the requirements of IS-651. These shall be set in PCC M-10 (Nominal mix) block measuring 450 x 450mm and 100mm thick. Jointing to drain pipe shall be done in cement mortar (1:1).

18.7.2 Cast iron perforated grating shall be 150mmx150mm bituminous coated and fixed as directed by Engineer-in-Charge. PCC M-10 (Nominal Mix) in kerb and RCC cover slab reinforced with XPM weight not less than 4Kg/Sqm and shall be provided all as directed by Engineer-in-Charge.

18.8 TRENCHES FOR PIPE LINES

18.8.1 Excavation for trenches shall be done as per the width given in Clause 3.2.3 of MES Schedule Part-II and as specified hereinbefore and depth as required at site. The trenches shall be back filled after testing of pipes with excavated earth in layers not exceeding 250mm and surplus spoil disposed off to a distance not exceeding 50 metres.

18.9 TESTING

18.9.1 All soil, waste and vent pipes shall be tested as specified in Clause 18.79.1 to 18.79.5 of MES Schedule part-1.

19. INTERNAL WATER SUPPLY**19.1 WATER TUBING, BIBTAPS, STOP VALVES AND SHOWER ROSE**

19.1.1 Mild steel galvanised tubes (pipes) and fittings shall be ISI Marked & all as specified in Clause 18.4 of MES Schedule part-1, bib taps and stop valves shall be all as specified in Clause 18.14 and 18.15 of MES Schedule part-1. Shower rose shall be of approved make as per sample kept in GE's office.

19.2 LAYING AND FIXING PIPES

19.2.1 The pipes for supply of water to all fittings inside the buildings/toilets shall be run on the walls except otherwise as specified in these tender documents or shown on drawings, connected to various fittings and shall be brought in the room at point/position approved by the Engineer-in-Charge at site.

19.2.2 Where pipes are laid underground, the trenches shall be excavated as directed by the Engineer-in-charge. The pipes running along face of the walls/concealed in walls shall be clamped in the walls as specified in SSR. Where pipe is passing through a wall, a mild steel tube sleeve shall be fixed all as specified in Clause 18.51.1 of SSR part-1.

19.3 PVC PIPE CONNECTION

19.3.1 Readymade PVC connection pipes of standard make shall be 450mm long suitable for 15mm bore GI pipe complete with brass chromium plated coupling nuts and rubber washer. The weight of brass coupling nuts shall not be less than 40 grams. The weight of PVC pipe 450mm long shall not be less than 40 grams.

PARTICULAR SPECIFICATION (CONTD)**19.4 WORKMANSHIP**

19.4.1 Laying of GI pipes (internal works) shall be in accordance with Clause 18.51 of MES Schedule part-1.

19.4.2 The contractor shall use proper bends, elbows, unions etc at turning corner. Bending of pipes shall not be allowed in any case.

19.4.3 Pipe shall not run diagonally.

19.4.4 Contractor shall provide screwed plugs to all open ends of pipes on completion of days work.

19.5 TESTING : Testing of pipes shall be carried out all as per Clause 18.50.4 of MES Schedule Part-1.

19.6 RECORD DRAWINGS : Three copies of line plan of complete work indicating the line of pipes, position of fittings etc. shall be submitted by the contractor to the Engineer-in-Charge on completion of work.

20. EXTERNAL WATER SUPPLY**20.1. GENERAL**

20.1.1 Materials, workmanship and testing required to be incorporated in these works shall be as given under specification and workmanship in the trade section of MES Standard Schedule Part-I duly modified by these particular specifications and notes on the drawings.

20.1.2 Layout of water supply pipelines including fittings and locations of valves, valve chambers as shown on drawing are tentative. The exact layout/alignment of water supply pipe lines including their fittings and location of valves, valve chambers shall be as directed and approved by the Engineer-in-Charge in writing before the contractor takes the work in hand and nothing extra shall be paid due to any change in layout/location.

20.1.3 On completion of entire work, the contractor shall submit layout plans drawn to a suitable scale on tracing cloth, showing actual routes/alignment of various pipelines, indicating the size of pipes and distance of pipelines from the main buildings and roads to the Engineer-in-Charge. All sizes and dimensions shall be shown in the above plans in metric units (i.e. in CGS system) only. All work shall be carried out by plumber/fitters/skilled labours. Nothing extra shall be paid due to above for preparation of final layout plan etc.

20.1.4. Before commencement of excavation, the contractor shall mark the proposed pipe route on ground along with the alignment as directed by the Engineer-in-Charge. Exact position of valve chamber, pipe supports etc. which are to be considered on Each route shall similarly be marked thereon.

20.2 SCOPE OF WORK

20.2.1 The work consists of work described in Sch 'A'. All references to Clauses in succeeding paragraphs pertaining to MES Sch Part-1.

20.3 MATERIALS**20.3.1 MILD STEEL GALVANISED TUBES (PIPES) AND FITTINGS**

20.3.1 These shall conform to the Clause 18.4.1 to 18.4.5 and shall bear ISI certification mark.

20.3.2 RUBBER GASKET FOR JOINTING

20.3.2.1 It shall be as specified in Clause 18.11 of MES Schedule part-1.

20.3.3 SLUICE VALVE

20.3.3.1 It shall be of cast iron class PN-1 with flanged ends. It shall bear IS certification mark and shall comply with the requirements of IS-14846 of 2000. Sluice valve shall be long body type non rising type loaded with tin bronze sheet and stainless steel stem.

PARTICULAR SPECIFICATION (CONTD)**20.3.4 MASONRY VALVE PITS**

20.3.4.1 Masonry valve pits shall be of size as given in relevant item of schedule 'A' and drawings. Pit shall be underground with foundation in PCC M-10(Nominal mix) brick work in CM (1:6), internally finished with 15mm thick cement plaster in CM (1:6) and externally flush pointed in same mortar as work proceeds. Flooring shall be 40mm thick PCC M-15(Nominal mix) laid over 75mm thick hardcore. Cover shall be 3.15mm thick MS sheet fixed with nuts/bolts having proper locking arrangements and shall be provided with two coats of synthetic enamel paint over a coat of primer. Excavation and earth work shall be in any type of soil, returning filling in and disposal of surplus spoil to a distance not exc. 50 metres.

20.3.5 Cast iron pipes and fittings shall be of class as per description of relevant item of Sch 'A' and shall conform to relevant IS.

20.4. WORKMANSHIP

20.4.1 The work shall be carried out in compliance with the requirement specified in Clause 18.41 to 18.48 of MES Schedule part-1 applicable to handling/laying of cast iron pipe.

20.4.2 Laying and jointing of GI pipe shall be in accordance with Clause 18.50 of MES Schedule part-1 laying and jointing of CI pipe shall be all as per Clause 18.48 of MES Schedule part-1 and as per description of Sch 'A'.

20.4.3 BACK FILLINGS OF TRENCHES

20.4.3.1 It shall be all as specified in Clause 18.56 of MES Sch Part-1.

20.4.4 FIXING OF SLUICE VALVE/REFLUX VALVE/AIR RELEASE VALVE

20.4.4.1 It shall be in accordance with Clause 18.57 of MES Sch Part-1.

20.4.5 MAKING CONNECTION OF GI/CI DISTRIBUTION WITH GI/CI MAIN

20.4.5.1 It shall be as per Clause 18.59 of MES Schedule part-1.

20.4.6 CUTTING OF GI PIPE LINE, FIXING METER AND STOP VALVE

20.4.6.1 It shall be as specified in Clause 18.63 to 18.63.2 of MES schedule part-1.

20.4.7 TESTING OF PIPE LINE

20.4.7.1 Testing of pipe line shall be carried out as specified in Clause 18.49.7 and 18.54 of MES Schedule part-1.

21 GI PIPES AND FITTINGS

21.1 GI pipes and fittings shall be laid in trenches, fixed to walls/floor/ceiling/poles and jointed all as specified in Clause 18.50 and 18.50.3 and 18.51.1 to 18.51.5 of MES Schedule Part-I.

22. DEMOLITION/DISMANTLING/TAKING DOWN

22.1 Refer to relevant Para under section 21 of MES Schedule Part-I.

22.2 The contractor shall take proper precaution for demolition/dismantling work. If any damage caused due to dismantling/demolition to the existing structure, the contractor shall made good the same at his own cost without any extra cost to the Govt.

22.3 Unserviceable materials obtained from demolition/dismantling shall be property of the contractor and shall credited as per schedule of credits. All demolished/dismantled materials shall be removed from the site of the contractor as directed by the Engineer-in-Charge without any extra cost to the Govt.

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PARTICULAR SPECIFICATION (CONTD)Appendix 'B'CEMENT SUPPLY AND ACCEPTANCE REGISTER

1. CA No & Name of work :
2. Control No :
3. Name of Manufacturer/Brand Name/Gde of Cement
a) Manufacturer_____ b) Brand_____ c) Grade_____
4. Qty of cement & Lot No (in Bags) :
a) Qty_____ b) Lot No _____
5. Manufacturer's Test Certificate No _____
6. Random Test Details :
(a) Physical Test report from_____ vide their letter No _____
(NAME OF APPROVAL LAB/ENGG COLLEGE)
(b) Chemical test report from_____ vide their letter No _____
(NAME OF APPROVAL LAB/ENGG COLLEGE)
7. Details of Physical & Chemical properties

1	Physical Requirements (As per IS-4031)							
	Specific Surface area (M/KG)	Soundness by Le Chatellier	Soundness by auto clave	Initial setting time Minutes	Final setting time Minutes	Compressive strength (Mpa)		
						03 days	07 days	28 days
1	2	3	4	5	6	7	8	9

As per
relevant IS

As per
Manufacturer's
test cert

As per
random test
cert

Temp during testing 0C	Standard consistency(%)	Chemical Requirements (As per IS-4032)							
		Lime saturation factor (Ratio)	Alumina Iron factor (Ratio)	Insoluble Residue (%)	Magnesium (%)	Sulphuric Anhydride (%)	Loss of Ignition (%)	Alkali-test (%)	Chlorides (%)
10	11	12	13	14	15	16	17	18	19

Accepted/Rejected

JE

Engineer-in-Charge

Garrison Engineer

Contd....

PARTICULAR SPECIFICATION (CONTD)Appendix 'C'STEEL SUPPLY/ACCEPTANCE REGISTER

1. CA No & Name of work :
2. Control No :
3. Name of Manufacturer's TC No :
4. Manufacturer _____:
5. Random Test Details :
 (a) Physical Test report from _____ vide their letter No _____ (NAME OF APPROVAL LAB/ENGG COLLEGE)
 (b) Chemical test report from _____ vide their letter No _____ (NAME OF APPROVAL LAB/ENGG COLLEGE)
6. Types of Steel, Dia & Qty : (a) Type : TMT/CRS (b) Dia ____ mm
 (c) Conversion Wt _____ MT

	Chemical Test				
	Carbon %	Sulphur %	Phosphorous %	Silicon %	Corrosion Resistant
1	2	3	4	5	6

As per IS-1786

As per Manufacturer's
test certAs per independent
cert

Mechanical Test						Remarks
Wt per meter	Stress (N/MM ²) 0.02% proof	Tensile strength (N/mm ²)	Elongation%	Bend Test	Rebend Test	
7	8	9	10	11	12	13

Accepted/Rejected

JE

Engineer-in-Charge

Garrison Engineer

Contd....

PARTICULAR SPECIFICATION (CONTD)Appendix 'D'

(Refer Clause No. 8.8 of Particular Specifications)

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

SRL NO	NOMINAL SIZE	QUANTITY
--------	--------------	----------

A. STEEL FOR CONCRETE REINFORCEMENTS :

- | | | |
|----|------------------------------------|---|
| 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. |

B. STRUCTURAL STEEL :

- | | | |
|----|--------------|---|
| 1. | Tensile Test | 1 Test for every 25 tonnes
of steel or part thereof
for Each class of steel product
(namely plate, sections & flats
rolled from Each cast). |
| 2. | Bend Test | 1 Test for every 10 tonnes
of steel or part thereof. |

NOTE :-

- For various tests, acceptance criteria, tolerances etc. refer to Clause No. 8.8 and relevant BIS Codes.
- Independent testing of steel received from primary producers is optional. However, independent testing of steel received from secondary producers is mandatory before approval to the contractor/release of payment or steel is incorporated in the work. However, tests will not be insisted upon for the steel required for guard bars, holdfasts, grills and such other allied items. Any item of steel, not meeting the requirements shall be rejected and the particular consignment removed from the site by the contractor at his own cost. The contractor will have no claim on this account. Cost of tests and test samples as per above frequency shall be borne by the contractor irrespective of test results.
- The GE may also increase frequency and number of samples/tests for his satisfaction. The cost of these additional tests shall be governed as per condition 10(A) of IAFW-2249. However, cost of samples transportation and other overhead shall be borne by the contractor irrespective of test results.

Appendix 'E'**CHEMICAL COMPOSITION IN PERCENT (MAXIMUM)**

SL NO.	DESCRIPTION	IS-1786-1985 ALL GRADES	SAIL-TMT ALL GRADES	TISCON-42	RASTRIYA ISPAT NIGAM LTD. R-BARS ALL GRADES
a)	Carbon	0.30	0.25	0.17	0.20
b)	Sulphur	0.06	0.05	0.045	0.04
c)	Phosphorous	0.06	0.05	0.045	0.05
d)	Sulphur and Phosphorous	0.11	0.10	0.09	0.09
e)	Manganese	-	-	-	0.60

Contd....

23. INTERNAL ELECTRIFICATION**23.1 STANDARD OF QUALITY & WORKSMANSHIP**

23.1.1 KNOWLEDGE OF WORK:- The tenderers shall be deemed to have thorough working knowledge of the exact requirement of the job. In case of any doubt clarification may be sought from GE/Engineer-in-Charge before tender is submitted. Tenderers are advised to visit the site and get themselves conversant with site conditions. No claim what so ever shall be entertained/accepted in case the tenderer is coming up with an excuse of having incomplete knowledge of work involved.

23.1.2 WORK IN ACCORDANCE WITH SPECIFICATION:- Work under this contract shall be carried out as per brief description given in Schedule 'A'/BOQ and Particular Specifications. Work shall also be in conformity with IE Rules, relevant IS specification and MES Schedule which are forming part of the contract. The entire work shall be carried out properly with due care and under the supervision of competent technical personnel.

23.3 GENERAL

23.3.1 Refer Clause No. 19.2 of MES Schedule Part-I and requirements of Clause No. shall be strictly followed.

23.3.2 Supply and Installation of Electrical Equipments and Accessories shall strictly comply with the provisions contained in the Latest Edition of India Standard Code of Practice and/or IS Specification as applicable, Works except where such Regulations and Rules are modified by these Particular Specifications.

23.3.3 All Electrical Work shall be carried out in conformity with the requirements of the Indian Electricity Act 1910, Indian Electricity Rules 1956 framed there under, Indian Standard Codes of Practice, Fire Insurance Act as applicable and also the relevant Regulations for Electric Supply and Installations of all Electrical Equipments, Fittings and Accessories as amended from time-to-time.

23.3.4 The supply and installation of all Electrical Equipments and Accessories shall strictly comply with the provisions contained in the latest edition of Indian Standard code of Practice IS Specification as applicable to above mentioned work except where such regulations and rules are modified by these specifications.

23.4 QUALIFIED ELECTRICAL SUPERVISORS/ENGINEERS:-

Refer Condition 25 of General Conditions of Contracts, IAFW-2249. All Electrical Works shall be carried out by properly Skilled and Licensed Electricians under the supervision of qualified Electrical Supervisors/ Engineers. The Contractor shall on demand shall produce such evidence of qualifications of his Workmen/ Supervisors/Engineers, either at the commencement of Work or at any time thereafter/ during currency of the Contract. The entire Work shall be High Class with the best Workmanship and to the entire satisfaction of Engineer-in-Charge/ GE.

23.5 WIRING:-

23.5.1 All work of electrification shall be executed by fully qualified licensed electricians as per the latest Engg practice and latest IS code/IE Rules. Certificates of qualification shall be produced on demand by EIC.

23.5.2 The position of electrical fittings and fixtures shall be as directed by EIC at the time of execution.

23.5.3 Looping-in-system of wiring shall invariably be used through out the installation.

23.5.4. PRECAUTIONS :-

23.5.4.1 All safety precautions shall be taken by the contractor to prevent danger to persons.

23.5.4.2 The contractor/his workmen shall not start work in the electric line or on electric equipment unless he obtains proper shut down and unless he/they are reasonably satisfied that there is no danger to the life of workmen.

23.5.4.3 The contractor shall be responsible for providing all necessary safety equipment to his workmen to avoid accidents. In case of accidents the department will not be held responsible.

23.5.5 TOOLS, LADDERS, SAFETY EQUIPMENTNS ETC. :

23.5.5.1 All tools, ladders, safety equipment's etc required to execute the work shall be arranged by the contractor and no extra payment shall be admissible to him for the same.

23.5.6 MATERIALS AND WORKMANSHIP

23.5.6.1 All electric works shall be carried out in conformity with the requirement of the Indian Electricity Act 1910 and Indian Electricity Rules 1950 framed there under also the relevant regulations of electric supply authorities concerned as amended from time to time.

- 23.5.6.2 Unless otherwise exempted under the rules of the Indian Electricity Rules all electrical works shall be carried out under the supervision of person having a certificate of competency issued by the recognized authority. The workman shall also held certificate of competency.
- 23.5.6.3 Good workmanship is an essential requirement for compliance with their specifications. The work shall be executed in such manner as directed by the EIC.

23.5.7 **TYPE OF WIRING :**

- 23.5.7.1 The type of wiring shall be given in relevant section of schedule 'A' and particular specification and as directed by EIC. Point wiring for light/ power/ fan/ bell or buzzer etc including all works comprising of :-

(a) Supply and fixing/drawing of cable for carrying out wiring.

(b) Supplying and fixing of suitable size sunk pressed steel terminal box covered with white PVC laminated sheet to accommodate requisite switches, sockets, fan regulators or switch socket combination.

23.5.7.2 **NON METALLIC (PVC) CONDUIT AND CONDUIT ACCESSORIES:-**

- 23.5.7.2.1 Refer clause 19.29 of MES Schedule Part-I, 2009. Conduit and conduit accessories shall conform to relevant IS i.e., IS-9537 (Part-III) 1983 and IS-3419-1976. Conduit shall be non-metallic PVC conduit and shall show no appreciable un-evenness. Interior and ends of conduit and conduit accessories shall be free from bushes, ducts fins and the like which may cause damage to the cables. Each length of PVC conduit shall be marked with the following :-

- (a) Manufacturer's name or trade mark.
- (b) Country of manufacture.
- (c) Nominal size of the conduit.

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- 23.5.7.2.2 Each length of conduit shall also be marked with the ISI certificate mark.
- 23.5.7.2.3 PVC flexible conduit of size as directed by the Engineer-in-charge shall be provided as required without any extra cost.
- 23.5.7.2.4 **CONDUIT ACCESSORIES**
- 23.5.7.2.4.1 The conduit fittings shall be made of non metallic PVC and shall be fabricated or cast to shape. They shall be so designed and constructed that they match with the corresponding conduit sizes without any adjustment and ensure reliable mechanical protection to the cable. The inside edges, through which the cables are intended to pass, shall be smoothly routed in order to prevent abrasion of cables. Entries for conduits shall be formed so as to prevent the conduit being screwed or pushed right through to the interior of the fittings. Inspection fittings shall be so constructed that the screws fixing the cover do not deform the conduits or damage the insulation of the cable enclosed. The screwed couplers shall be screwed inside throughout their entire length.
- 23.5.7.2.4.2 The axis of any elbow shall be a quadrant of a circle plus a straight portion at each end. Normal bend shall be large sweep being giving a diversion of 90 degree in the turn of the conduit half normal bends shall be similar to normal bends both as regards of curvature and length of straight portions at the ends but shall give a diversion in the run of the conduit of 45 degree small circular boxes shall be provided with lugs of thickness not less than 2.8 mm for fixing the covers. Large circular boxes shall have been lugs of thickness not less than 4mm for fixing the cover fittings shall be adequately protected against rust and corrosion both outside and inside with medium protective coating.
- 23.5.7.2.4.3 Fitting shall comply with the dimensions given in appropriate tables of IS-2667-1976 subject to a tolerance of + 5 percent.
- 23.5.7.2.4.4 Each fittings shall be marked clearly and with the following information :-
- (a) Name or trade mark of manufacturers.
 - (b) Country of manufacture.
- 23.5.7.2.4.5 The fittings may also be marked with the ISI certification mark.
- 23.5.7.2.4.6 Conduit pipes shall be fixed by heavy gauge saddles, secured to suitable wood plugs or other plug with screws in an approved manner at an interval of not more than one metre, but on either side of couplers at bends or similar fittings, saddles shall be fixed at a distance of 30 cm from the center of such fittings. All necessary bends in the system, including diversion shall be done by bending pipes or by inserting suitable solid or inspection by normal bends, elbows or similar fittings, or fixing inspection boxes whichever is more suitable. Conduits fittings shall be avoided as per as possible on conduit system exposed to weather, where necessary solid type fittings shall be used. All the screws shall be cadmium coated.
- 23.5.7.2.4.7 The conduit of each circuit or section shall be completed before conductors are drawn in the entire system of conduit after erection shall be tested for mechanical and electrical continuity through out and permanently connected to earth wire by means of suitable earthing clamp efficiently fastened to conduit pipe in a workman like manner for a perfect continuity. Gas or water pipes shall not be used as earth medium.
- 23.5.7.2.4.8 Inspection type conduit fittings such as inspection boxes, drawn boxes, bends, elbows and tees shall be so installed that they can remain accessible for such purposes as to withdrawal of existing cables or the installing of additional cables.
- 23.5.7.2.4.9 Separate conduit shall be used for normal light, fan, exhaust fan.
- 23.5.7.2.4.10 In case of concealed wiring, conduits shall be laid before casting in the slab so as to conceal the entire run of conduits and ceiling outlet boxes. Vertical drops shall be buried in columns or walls.

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23.5.7.2.5 All wiring from FFL upto a height of 100 cm shall be drawn through non-metallic (PVC) conduit, concealed in walls. Contractors rates for the respective item of point wiring shall included for this provision.

23.5.7.2.6 All the fan boxes shall be covered with 3 mm thick hylem sheet and contractors rate for the point wiring for fan shall include this provision.

23.5.7.2.7 **LAYING OF CONDUITS**

23.5.7.2.7.1 Conduits shall be laid either recessed in walls and ceilings or on surface on walls and ceilings or partly recessed partly on surface, as required.

23.5.7.2.7.2 Same rate shall apply for recessed and surface conduiting in this contract.

23.5.7.2.7.3 Stranded copper conductor insulated wire of size as per schedule of quantities shall be provided in entire conduiting for loop earthing.

23.5.7.2.7.4 GI wire of suitable size to serve as a fish wire shall be left in all conduit runs to facilitate drawing of wires after completion of conduiting.

23.5.7.3 **PVC CASING - CAPPING WIRING:-**

23.5.7.3.1 PVC Casing – Capping wiring shall be all as described in Schedule- 'A' .

23.5.7.3.2 PVC Casing -Capping and their fittings/accessories shall be as per relevant IS .

23.5.7.3.3 The point wiring cable shall be enclosed and secured within the PVC Casing- Capping and fitting / accessories .

23.5.7.3.4 PVC Casing – Capping and fittings / accessories shall be fixed to the surface of wall/ceiling by means of PVC sleeves /dash fasteners with cadmium plated steel screws at distance required for proper holding, all as directed by GE However in long runs this distance shall not exceed 75cms.

23.5.7.3.5 Their shall be no gap between two lengths of casing and capping or between casing -capping and PVC fittings / accessories

23.5.7.4 **DISTRIBUTION BOARD:-**

23.5.7.4.1 (a) Distribution board shall be as described in Schedule 'A' and shall be made of 1.6mm thick steel sheet properly pretreated conforming to IS: 13032 and stove enameled powder painted. Bus bar shall be of copper and shall be fixed all as directed by EIC.

(b) Suitable earth terminal shall be provided in the distribution board for bonding to each.

(c) Distribution board shall be any one of the make as described in Sch 'A' and should bear ISI marking .

23.6 MCB AND DISTRIBUTION BOARD

23.6.1 Extra length of cable shall be kept inside the distribution board for connection with MCB. All cable terminals with MCB shall be provided with suitable crimping lugs. All MCB and their distribution board shall comply with IS 8828-1978 and shall have minimum rupturing capacity as 10.0 kA.

23.8 SWITCHES / SWITCH SOCKET:-

23.8.1 Switches / Switches socket shall be as described in Sch 'A' and current carrying parts shall be make of brass, copper phosphor bronze, aluminium alloy or any other suitable materials, springs shall be of corrosion resistant metal. Attachment fitting screw and other non current carrying parts shall be of mild steel aluminium alloy or insulation materials. All socket shall bear ISI marking. These shall be any one of the make as described in Sch 'A' .

PARTICULAR SPECIFICATIONS (CONTD.....)**23.9. SUB MAIN WIRING :**

23.9.1 Wiring shall be carried out as specified in the Sch 'A' item and as per Para 19.102 of SSR (Pt-I). Cable shall be ISI marked SSR Part-I, 2009.

24. EARTH CONTINUITY :-

24.1 Earth continuity conductor shall be as mentioned in Schedule 'A' and all specified in clause 19.142 and 19.143 of MES SSR Part-I, 2009 and as directed by EIC.

25. TESTING :

25.1 After completion of work necessary tests as specified in clause 19.2.5 under Section 19 of MES SSR Part-I, 2009 testing of all internal electrical installations shall be carried out by the contractor in accordance with clause No 19.146.1 to 19.146.3 of MES SSR Part -I, 2009 and as per IE rules shall be carried out by the contractor in presence of EIC. Test results shall be kept in record duly authenticated by the EIC if satisfactory result is obtained.

25.2 RECORD DRAWING

25.2.1 Record drawings for the complete work of wiring on tracing cloth with two prints as directed by the Engineer-in-Charge shall be submitted by the contractor at his own expense.

25.3. ROUTINE AND COMPLETION TESTS**25.3.1 Installation Completion Tests:**

25.3.1.1 At the completion of the work, the entire installation shall be subject to the following tests:

- (a) Wiring continuity test
- (b) Insulation resistance test
- (c) Earth continuity test
- (d) Earth resistivity test

25.3.1.2 Besides the above, any other test specified by the local authority shall also be carried out. All tested and calibrated instruments for testing, labour, materials and incidentals necessary to conduct the above tests shall be provided by the contractor at his own cost.

25.3.2 Wiring Continuity Test:

25.3.2.1 All wiring systems shall be tested for continuity of circuits short circuits and earthing after wiring is completed and before installation is energized.

25.3.3 Insulation Resistance Test

25.3.3.1 The insulation resistance shall be measured between earth and the whole system conductors, or any section thereof with all fuses in place and all switches closed and except in concentric wiring all lamps in position of both poles of the installation otherwise electrically connected together, a direct current pressure of not less than twice the working pressure provided that it does not exceed 1100 volts for medium voltage circuits. Where the supply is derived from AC three phase systems, the neutral pole of which is connected to earth, either direct or through added resistance, pressure shall be deemed to be that which is maintained between the phase conductor and the neutral. The insulation resistances lower than one mega ohm. The insulation resistance shall also be measured between all conductors connected to one phase conductor of the supply and shall be carried out after removing all metallic connections between the two poles of the installation and in those circumstances the insulation shall not be less than that specified above. The insulation resistance between the frame work of housing of power appliances and all live parts of each appliance shall not be less than that specified in the relevant standard specification or where there is no such specification, shall not be less than half a mega ohm or when PVC insulated cables are used for wiring 12.5 mega ohms divided by the number of outlets. Where a whole installation is being tested a lower value than that given by the above formula subject to a minimum of 1 Mega ohms is acceptable.

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PARTICULAR SPECIFICATIONS (CONTD.....)**25.3.4 Testing of Earth Continuity Path**

25.3.4.1 The earth continuity conductor including metal conduits and metallic envelopes of cable in all cases shall be tested for electric continuity and the electrical resistance of the same along with the earthing lead but excluding any added resistance of earth leakage circuit breaker measured from the connection with the earth electrode to any point in the earth continuity conductor in the completed installation shall not exceed one ohm.

25.3.5 Testing of Polarity of Non-Linked Single Pole Switches

25.3.5.1 In a two wire installation a test shall be made to verify that all non-linked single pole switches have been connected to the same conductor throughout, and such conductor shall be labeled or marked for connection to an outer or phase conductor or to the non-earthed conductor of the supply. In the three or four wire installation, a test shall be made to verify that every non-linked single pole switch is fitted to one of the outer or phase conductor of the supply. The entire electrical installation shall be subject to the final acceptance by GE.

25.3.6 Earth Resistivity Test

11.3.6.1 Earth resistivity test shall be carried out in accordance with IS Code of Practice for earthing IS 3043.

25.3.7 Performance

25.3.7.1 Should the above tests not comply with the limits and requirements as above the contractor shall rectify the faults until the required results are obtained. The contractor shall be responsible for providing the necessary instruments and subsidiary earths for carrying out the tests. The above tests are to be carried out by the contractor without any extra charge.

25.3.8 Tests and Test Reports

25.3.8.1 The contractor shall furnish test reports and preliminary drawings for the equipment to the GE for approval before commencing supply of the equipment. The contractor should intimate with the tender the equipment intended to be supplied with its technical particulars. Any test certificates etc. required by the local Inspectors or any other Authorities would be supplied by the Contractor without any extra charge.

26. EARTHING

26.1 Earthing shall be carried out by Earth Electrodes as shown in Electrical Plate No. 3 of MES Schedule Part-I and as specified in IS-3043 including upto date amendments thereto. The Earth Electrodes shall be placed all as specified and as directed by Engineer-in-Charge and 2.0 Metre away from the Main Structure. The surplus soil obtained from the excavation shall be removed to distance not exc. 50 Metre. The Concrete for Chamber shall be PCC 1:3:6 (using 20 mm graded stone aggregate) and exposed surfaces need to be finished fair. Funnel shall be prepared out 3.15mm thick PGI Sheet by welding and shall be leak proof. It shall be provided with wire gauge with 1.18mm average width of aperture and 0.45mm average dia of wire soldered to Funnel Cover. Dust shall be used for Medium Grade 20mm with 12mmdia holes drilled staggered @ 300mm C/C through out Pipe. The bottom of Pipe shall be layed at an angle of 45°. Earthing shall be interconnected with strip as per directed by the Engineer-in-Charge.

26.2 The following Tests shall be carried out to the entire satisfaction of the Engineer-in-Charge :-

- (a) Earth Resistance Test : Resistance of each Earthing shall be measured individually and shall not exceed 0.5 Ohm in ordinary soil and 3 Ohm in Rocky situation.
- (b) In case the Resistance is more than as specified, the Contrctor shall increase the depth of the Bore hole, quantity of Charcoal, Salt and length of Electrodes to bring the Resistance of Earth to the Value specified above, without any Extra Cost to the Government.

Contd..../

PARTICULAR SPECIFICATIONS (CONTD.....)**27. GUARANTEE/ PRODUCTION OF TEST CERTIFICATE**

27.1 After completion of work the contractor shall guarantee that materials and workmanship of the equipment, power system and connected items offered and installed by him are new and best quality in every respect and he will make good the defects, damages which are not attributed to normal wear and tear or misuse for which decision of the GE is final and binding. Contractor shall be responsible for repairing and or replacing at his cost any parts which are rendered defective and unserviceable during the defect liability period.

27.2 Manufacturer's test certificate in respect of HT/LT cables and other equipment as directed by GE are to be submitted to the Engineer-in-Charge by the contractor before any payment from Department.

28. **SAFTY PRECAUTION:-** The contractor shall take precautions during execution of work i.e. "MES SAFETY CODE" as laid down in IAFW-2249 annexure 'B' para 1 to 15 of serial page No. 30 and 31.

29. DEMOLITION/DISMANTLING/MAKING GOOD

29.1 Refer paras of section 21 of MES Schedule Part-I. All demolished/taking down materials (except those were re-used and not accounted in Schedule of Credit) shall be returned to MES store without any extra cost to the Government.

29.2 Please note that if any existing surface is damaged during taking down/execution of work that surface shall be made good as per existing one without any extra cost to the Govt. The rate for making good is deemed to be inclusive in the quoted rates of Schedule 'A'/BOQ.

30. PROTECTION DURING EXECUTION

30.1 During execution of work adequate preparation and care shall be given so that the existing structures and other allied items are not damaged. If anything happens in this regards, the same has to be made good by the contractor at his own expense.

31. **REMOVAL/SITE CLEARANCE:** Old demolished materials considered under Schedule of credit shall be the property of the contractor and will be removed by the contractor from the site. Debris and other materials if any shall be disposed off and sites to be cleared to the entire satisfaction of the GE.

32. MATERIALS (DG SET)

All materials to be supplied by the contractor for incorporation in the work shall be of specified makes i.e. KOEL/KIRLOSKAR CUMMINS/KIRLOSKAR BLISS/KIRLOSKAR GREEN/MAHINDRA otherwise conform to relevant IS specification and also should bear ISI Mark. In case specification of any materials needed for incorporation in the work is not contained in any of the contract documents, the specifications of such materials proposed to be incorporated in work shall be approved in writing from the GE before their incorporation in the work, whose decision with regard to quality shall be final and binding.

32.1 All materials/Parts/Components to be provided in replacement shall conform to the make and specification of the existing materials etc. unless otherwise mentioned here-in-before in description of items in Schedule 'A' or in these specifications herein- after.

32.2 Contractor shall produce original copy of purchase vouchers for the electrical equipment/materials/Parts/Components provided by him.

SIGNATURE OF CONTRACTOR**AGE (Contracts)
For Accepting Officer**

PARTICULAR SPECIFICATION (CONTD)**Appendix 'F'****B/R items**

1. **BLANK**
2. **APPROVED FACTORIES FOR FACTORY MADE PANELLED/GLAZED/WIRE GAUGE SHUTTERS**
 - A) M/S DRONE TIMBERTECHNOLOGISTS (P) LTD NEW DELH
 - B) M/S TARA PRODUCTS, NEW DELHI
 - C) M/S SHRI KRISHNA INDUSTRIES, PLOT NO. 299, PHASE-II, PANCHUKLA -134109.
 - D) M/S POINEER TIMBER PRODUCTS, CHANDIGARH.
 - E) M/S CHANDIGARH TIMBER PRODUCTS, CHANDIGARH
 - F) M/S JAIN WOOD INDUSTRIES, 50KM STONE, GT ROAD, MURTHAL, SONIPAT.
 - G) M/S GOYAL INDUSTRIAL CO, NEW DELHI.
 - H) M/S JAGAN SAW MILLS TOO SHEKHANIA JAMMU
 - I) M/S EVEREST TRADING CORPN. DAMTAL (H.P).
 - J) M/S SARAB ENTERPRISE, DHAMTAL (HP).
3. **UPCV WINDOWS**
 - a) POLY WINDOWS, b) FENISTA c) ACCURA POLYTECH
4. **PVC MOULDED DOORS**
 - a) RAJSHREE b) SINTEX
5. **MANUFACTURERS FOR STEEL WINDOWS/VENTILATORS WITH TUBULAR FRAME, PRESSED STEEL DOOR FRAMES, STEEL LOCKERS, CUP BOARD SHUTTERS**
 - A) M/S AGEW STEEL MANUFACTURERS PVT. LTD. AHMEDABAD-380002.
 - B) M/S ASHWANI & SONS, 1246/2, MEERUT ROAD, MORTHA, GHAZIABAD.
 - C) M/S STEELMAN INDUSTRIES, JALLANDHAR.
 - D) M/S SEN HARVIC, 37, ABDUL REHMAN STREET, BOMBAY-400063.
 - E) M/S MULTIWYN INDUSTRIAL CORPORATION, 3-B, CARMEC STREET CALCUTTA-700016.
 - F) M/S SHREE KRISHNA ASSOCIATES, 304 INDUSTRIAL AREA, PHASE II, PANCHKULA.
 - G) M/S SHIVAM METAL SHAPERS NATIONAL HIGHWAY, GANGYAL, JAMMU.
 - H) M/S FRIENDS MANUFACTURING CO. KOTKAPURA (FARIDKOT).
 - I) M/S CHANDNI INDUSTRIES, J-142, PATEL NAGAR 1ST GAZIABAD 201001
 - J) M/S DHIMAN ENGG WORKS, MAMUN, TEZPUR.
 - K) M/S MOHINDRA FABRICATORS, FOCAL POINT, HARYAL, TEZPUR (PB)
 - L) METAL WINDOW CORPORATION, 29/1 GA NO 6, NEW ROHTAK ROAD, DELHI
 - M) GR KALSI & CO, PLOT NO 7 B GLAI NO D ,ANAND PARNAT DELHI
 - N) PD INDUSTRIES, 16 PHASE 1 INDL AREA, PANCHKULA, HARYANA
 - O) SHRI GANPATI DOORS 18 INDUSTRIAL ESTATE RAJPURA, PATIALA , ASSAM
 - P) EVERSHINE MECHANICAL WORKS B-18 INDUSTRIAL AREA NEAR ITI CHOWK, BHATINDA
 - Q) AAR GEE INDUSTRIES, INDST. AREA, GANGYAL, JAMMU
 - R) SURJEET STEEL WORKS, TEZPUR (PB)
 - S) INDIAN STEEL WORKS. BARNI AKHNUR ROAD, JAMMU
 - T) ANGAD STEELS, SURAJPUR, MOTLI (DAMTAL) , DISTT KANGRA
 - U) PARSHOTAM STEEL INDUSTRIES, VILLAGE BHUNGAL, TEZPUR
6. **PLY WOOD (ISI MARKED)**
 - A) KITPLY. B) MYSORE CHIP BOARD C) CENTURY PLYWOOD
 - D) GREEN PLY E) UNIPAC, YAMUNA NGR F) WUD TECH
 - G) DUROBOARD, SHARDA PLYWOOD
7. **PARTICLE BOARD/ PRELAMINATED PARTICLE BOARD PLY WOOD (ISI MARKED)**
 - A) KITPLY. B) ACTION TESA C) GREENLAM
 - D) NOVAPAN E) BHUTAN BOARD F) ECCO BOARD
 - G) NEPAL BOARD H) ARCHID PLY I) MERINOVA
 - J) M/S GREEN PLY INDUSTRY LIMITED (ECO BOARD)
8. **DRAPERY RODS AND VENETIAN BLIND**
 - A) VISTA LEVOLOR (ALPS INDUSTRIES LTD)
 - B) MASCUT OVERSEAS PVT LTD, DESH BANDHU GUPTA ROAD, KAROL BAGH, NEW DELHI.
 - C) LUXAFLEX (HUNTER DOUGLAS INDIA LTD)
 - D) AEROLUX
9. **WHITE CEMENT:-**
 - A) BIRLA B) L & T C) J K CEMENT
10. **GLAZED/EARTHENWARE TILES/NON SKID TILES:-**
 - A) SOMANY B) KAJARIA C) ORIENT.
 - D) JOHNSON E) NITCO F) SPARTEK
 - G) SUNHEART H) SUNSHINE TILES CO PVT LTD
11. "BLANK"
12. **VITRIFIED TILES:-**
 - A) MARBONITE TILES MANUFACTURES BY M/S H&R JHONSON B) BELL GRANITO
 - C) NITCO D) VARMORA F) SUNHEART
 - F) ASIAN GRANITO G) MURUDESHWAR CERAMICS(NAVIN DIAMOND) H) KAJARIA
 - I) SOMANY J) EURO I) ORIENT

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PARTICULAR SPECIFICATION (CONTD)

14. **TERRAZO TILES , PCC TILES/PCC CHEQUERED TILES, EXTERIOR/SEMI EXTERIOR COLOURED CEMENT CONCRETE DESIGNER TILES , INTERLOCKING PAVER BLOCKS**
- | | | | |
|----|---|----|---|
| A) | REDSUN TILES 375 INDUSTRIAL AREA-2, PANCHKULA | F) | GICO TILES 124 INDUSTRIAL AREA , PHASE-I CHANDIGARH |
| B) | NITCO, MUMBAI | G) | DURACRETE |
| C) | NTC , 36 IND AREA PHASE-1 PANCHKULA | H) | M/S MAHENDRA INDUSRIES HARYAL, TEZPUR |
| D) | SURYA TILES & PAVERS CHANDIGARH | J) | ULTRA |
| E) | EUROCON | K) | OYSTER TECHNOLOGY JAMMU |
15. **EXTERIOR PAINT**
- | | | | | | | | |
|----|--------------------|----|------------------------|----|-----------------------|----|-----------------|
| a) | ASIAN PAINT (APEX) | b) | BERGER (WEATHER COAT) | c) | ICI (WEATHER SHIELD) | d) | NEROLAC (EXEL) |
|----|--------------------|----|------------------------|----|-----------------------|----|-----------------|
16. **A. DISTEMPER (OIL BOUND/ACRYLIC WASHABLE):-**
- | | | | |
|----|--|----|---|
| A) | GOODLASS NEROLAC(SUPER ACRYLIC). | E) | SHALIMAR PAINTS (NO 1 PREMIUM) |
| B) | JENSON & NICHOLSON (JENSOLINE ACRYLIC DISTEMPER) | F) | ASIAN PAINTS(TRACTOR ACRYLIC DISTEMPER) |
| C) | BERGER PAINTS (BISON SUPER) | D) | ICI INDIA .(MAXILITE ACRYLIC DISTEMPER) |
- B. DRY DISTEMPER :-**
- | | | | | | |
|----|---------------|----|--------------|----|-------|
| A) | BERGER PAINTS | B) | ASIAN PAINTS | C) | DULUX |
|----|---------------|----|--------------|----|-------|
17. **CEMENT BASE PAINT:-**
- | | | | | | |
|----|-----------------|----|---------------------------|----|-------------|
| A) | SNOWCEM | B) | BERGER | C) | ASIAN GUTTU |
| D) | DURACEM | E) | ACCROCEM | F) | ECOCHEM |
| G) | RUBIACEM (J&N) | H) | POWER PAINTS (I) PVT LTD. | | |
18. **CEMENT PUTTY:-**
- | | | | | | |
|----|----------|----|-------------|----|--------------|
| A) | JK WHITE | B) | BIRLA WHITE | C) | TATA PIGMENT |
|----|----------|----|-------------|----|--------------|
19. **PUTTY OIL:-**
- | | | | | | |
|----|----------|----|--------------------|----|--------|
| A) | SHALIMAR | B) | JENSON & NICHOLSON | C) | BERGER |
|----|----------|----|--------------------|----|--------|
20. **SYNTHETIC ENAMEL PAINT:-**
- | | | | | | |
|----|-------------------------|----|------------------------------|----|---------------------|
| A) | LUXOL HI GLOSS [BERGER] | B) | BOROLAC [JENSON & NICHOLSON] | | |
| C) | NEROLAC [NEROLAC] | D) | APCOLITE [ASIAN] | E) | SUPERLAC [SHALIMAR] |
| F) | DULUX GLOSS (ICI PAINT) | G) | CORAL | H) | ACRO |
21. **PLASTIC EMULSION PAINT:-**
- | | | | |
|-----|-------------------------------------|-----|--------------------------------------|
| (A) | GOODLASS NEROLAC (ALL ESCAPES) | (B) | SHALIMAR PAINTS (HUSSAIN COLLECTION) |
| (C) | JENSON & NICHOLSON (SPECIAL EFFECT) | (D) | ASIAN PAINTS (ROYAL) |
| (E) | BERGER PAINTS (LUXOL SILK SPLENDER) | (F) | ICI INDIA (DULUX VELVET TOUCH) |
22. **VITEROUS CHINA WATER CLOSET (SQUATT PATTERN/PADESTAL PATTERN/ANGLO INDIAN), URINALS, WASH HAND BASINS (ISI MARKED, IST QUALITY) :-**
- | | | | | | |
|----|-----------------------|----|-------------------------------|----|---------------------------|
| A) | NEYCER KENMAG | B) | CERA(1 ST QUALITY) | C) | PARRYWARE (SUPERFINE) |
| D) | H R JOHNSON | E) | HINDWARE (IST QUALITY) | F) | HINDUSTAN (FIRST QUALITY) |
| G) | PARRYWARE (SUPERFINE) | H) | NEYCER (STANDARD) | | |
23. **POLYETHYLENE LOW LEVEL FLUSHING CISTERN(ISI MARKED):-**
- | | | | | | |
|----|------------------------|----|----------------------|----|----------------|
| A) | COMMANDER -WATER BIRD | B) | SLIMLINE - PARRYWARE | C) | JOHNSON PEDDER |
| D) | HINDUSTAN SANITARYWARE | E) | ORIENT (CORAL) | D) | SHAKTI BRAND. |
24. **PLASTIC SEAT AND COVER:-**
- | | | | | | |
|----|------------------------|----|---------------|----|-----------|
| A) | COMMANDER | B) | DURALITE | C) | PARRYWARE |
| D) | HINDUSTAN SANITARYWARE | E) | SHAKTI BRAND. | | |
25. **MIRROR:-**
- | | | | | | |
|----|-----------------|----|----------------------|----|------------------|
| A) | ATUL GLASS | B) | SWASTIK | C) | BAWA |
| D) | JOLLY | E) | INDO ASAHI. | F) | M/S SAINT GOBLIN |
| G) | MODI FLOAT | H) | TRIVENI FLOAT GLASSS | I) | CROWN |
| J) | PRAYAG POLYMERS | | | | |

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PARTICULAR SPECIFICATION (CONTD)

26. **DECORATIVE LAMINATES**
 a) FORMICA b) SUNMICA c) MERINO LAM d) HYLUM
 e) SUNGLOSS f) BHUTAN BOARD g) RAM MICA
27. **DRAPERY RODS**
 VISTA LEVALOR
28. **PLAIN/PIN HEADED/FROSTED SHEET GLASS :-**
 A) M/S SAINT GOBLIN B) TRIVENI FLOATGLASS
 C) MODI FLOAT D) HINDUSTAN PILKINGTON
29. **STAINLESS STEEL SINK WITH DRAINAGE BOARD/ STAINLESS STEEL SINK/PLATE RACK :-**
 A) DIAMOND B) NIRALI C) JAYNA
 D) AMCO E) NEEL KANTH F) BLUE STAR
 g) ALLEX h) KOBRA i) PRAYAG POLYMER
30. **INTEGRAL WATER PROOFING COMPOUND (POWDER/LIQUID), CONSTRUCTION CHEMICALS, ADMIXTURES, PLASTICISERS:-**
 A) PIDILITE INDUSTRIES B) WATERSEAL C) CICO
 D) ROFFEE CHEMICAL E) IMPERMO F) SNOWCEM INDIA LTD
 G) FAIRMATE H) BOSTIC I) J K CEMENT
 J) FOSROCK K) MC BAU CHEMIC (I) PVT LTD
31. **AC SHEETS(PLAIN/CORRUGATED) ,BOARDS, PIPES AND FITTINGS:-**
 A) CHARMINAR B) EVEREST C) ETERMITE
 D) M/S RAMCO INDUS E) UPPAL
32. **CI SOIL, WASTE CENTRIFUGALLY CAST (SPUN) PIPES AND FITTINGS (ISI MARKED) :-**
 A) M/S JAYASWALS NECO B) M/S ELECTRO STEEL C) M/S ASHUTOSH IRON FOUNDRY LTD, NAGPUR
 D) HIF (MATHURA) E) KESORAM F) BIR (G) SKF
33. **CI SOIL AND WASTE PIPES SAND CAST IRON PIPES(ISI MARKED):-**
 A) SRIF B) BIC C) ALC
 D) SKF E) MIC F) HIF (MATHURA)
34. **GI PIPES (ISI MARKED):-**
 A) JINDAL B) TATA C) PRAKASH SURYA
 D) SWASTIK E) KALINGA F) BST
 G) NEZONE H) APPOLO I) KASHMIR TUBES
 J) GOODLUCK K) TIRUPATI L) SURYA
35. **PTMT FITTINGS**
 (A) PARYAG(SYMET) (B)SHAKTI BRAND (c)POLYTUFF
36. **BATHROOM CAPINET WITH MIRROR**
 a) CAMMANDER b) PARRYWARE c) JOHNSON PEDDER d) PRAYAG
 e) SUPREME
37. **ALUMINIUM COMPOSITE PANELS**
 a) ALCO BOND b) ALSTRONG c) AL CAD
38. **CHROMIUM PLATED FANCY BIB TAPS, STOP VALVES, PILLAR TAPS, BASIN MIXER, SHOWER ROSE, SELF CLOSING TAPS-**
 A) ORIENT B) ESSCO C) GEM
 D) JAQUAR E) PLUMBER F) MARC
 G) JAINKO H) RIVIERA I) JOHNSON
 J) JAQUAR K) KINGSTON L) PARCO
 M) GEM N) PRIMA N) JAYANA
39. **PVC (POLYTHENE ROTATIONAL MOULDED) WATER STORAGE TANKS (ISI MARKED):-**
 A) SINTEX B) DIPLAST C) J S POLYPLAST
 D) ROTEX E) POLYCON F) FINOLEX
40. **PVC RAIN WATER PIPES (ISI MARKED):-**
 A) SUPREME B) KISAN C) TIRUPATI
 D) FINOLEX E) PRINCE
41. **ALUMINIUM FITTINGS FOR DOOR/WINDOWS (ISI MARKED):-**
 A) NULITE B) MEPRO C) ARGENT
 D) ELITE E) CLASSIC
42. **ALUMINIUM SECTION FOR DOOR/WINDOWS :-**
 A) M/S INDIA COMPANY LTD (B) M/S HINDUSTAN ALUMINIUM CORPORATION CO. C) M/S JINDAL
 D) HINDALCO (E) INDAL

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PARTICULAR SPECIFICATION (CONTD)

44. **BITUMEN PRODUCTS**
 A) BENGAL BITUMEN B) STP C) SHIVA BITUMEN
 D) SHIVA ASHPHALTIC
45. **CGI SHEETS :-**
 A) TATA B) BHUSHAN C) SAIL
 D) JINDAL E) PRESTAR
46. **MAIN PRODUCERS OF STRUCTURAL STEEL :-**
 A) SAIL B) RASHTRIYA ISPAT NIGAM LTD C) TISCO
47. **BLANK**
 48. **BLANK**
 49. **FLUSH DOOR SHUTTERS (ISI MARKED) :**
 A) M/S PIONEER TIMBER PRODUCT, CHANDIGARH E) CENTURY PLYWOOD
 B) M/S GOYAL INDUSTRIES CORP NEW DELHI F) TREHAN DOORS, TEZPUR
 C) M/S NORTHERN DOORS PVT LTD, KANPUR G) SWASTIK
 D) M/S MYSORE WOOD PRODUCTS H) KITPLY INDUSTRIES, SHAHBAD ROAD, RAMPUR
50. **BITUMEN:-**
 A) INDIAN OIL CORPORATION LTD. B) HPCL C) BPCL
51. **MANUFACTURER / APPROVED AGENCIES OF POLYMERIC WATER PROOFING MEMBRANCE (APP) ATACTIC POLYPROPY LENE POLYMER)**
 (a) HYPERPLAS POLYMERIC WATER PROOFING MEMBRANCE MANUFACTURED BY IWL INDIA LTD, C&D LAXMI BHAWAN, 609 ANNA SALAI CHENNAI – 600006.
 (b) MULTIPLAS WATER PROOFING MEMBRANCE BY STP TEXRA LTD, 570 PHASE V, UDYOG VIHAR, GURGAON 122016 INDIA.
 (c) STP SUPERIOR POLYPLUS WATER PROOFING MEMBRANCE MANUFACTURED BY STP LTD
 (d) DOCTOR FIXIT MANUFACTURED BY PIDILITE INDUSTRIES LTD, CONSTRUCTION CHEMICALS DIVISON, ANDHERI MUMBAI – 400059
52. **PVC DOORS AND WINDOWS**
 (a) M/S RAM FABRICATORS PVT LTD.
 (b) RAJSHREE, 10/1 SOUTH TUKOGANJ, KANCHANBAGH MAIN ROAD, INDOOR –452 001/ HR ENTERPRISES (TEZPUR).
 (c) ECHO INDUSTRIES LTD UDAIPUR
 (d) TEE PEE ENTERPRISES, COURT ROAD OPP UCO BANK AMRITSAR.
 (e) PLASOPAN ENGINEERINGS (INDIA) PVT LTD, FARIDABAD – 121 003.
53. **SGSW PIPE**
 A) PERFECT JABALPUR C) BHASKAR
 B) DEVRAJ ANAND IND GHAZIABAD D) TFC(THREE FRIENDS & CO)
54. **HDF door shutters :**
 A) M/s Trehan Doors, Tezpur c) M/s Perfect House, Bangalore
 B) M/s Sej Pal & Sons, Mumbai d) M/s Door craft Industry, Delhi
55. **FALSE CEILING**
 A) ANCHOR CEILING TILES B) LAFARGE C) ETERNIT EVEREST
 D) ARMSTRONG(RAMCO) E) HILUX CALCIUM SILICATE BOARDS
 F) DIAMOND INTERNATIONAL G) INDIA GYPSUM BOARD
 H) M/S LAFUGE BOARD INDIA PVT LTD I) BHUTAN BOARD
 j) ANCHORLAM ANCHOR CEILING TILES K) DURATUFF
 k)
57. **GALVALUME PLAIN/CORRUGATED SHEETS :-** A) DYNA ROOF B) PRESTAR C) JSW D) TATA E) Dura Roof
58. **BARBED WIRE :-** ISI MARKED

PARTICULAR SPECIFICATIONS(CONTD)**APPENDIX 'A'****LIST OF PRODUCTS FOR WHICH SPECIFIC MAKES
ARE TO BE INCORPORATED IN WORKS****GENERAL**

Materials to be incorporated in the Work shall be any one of the following MAKE as approved by the GE in writing before incorporated in the Work. These shall strictly comply with latest appropriate Indian Standard Specification or where IS Specification is not available these shall comply with the latest BS Specification.

Sl No.	MATERIALS	MAKE / NAME OF MANUFACTURER
1	2	3

ELECTRICAL ITEMS

1. POINT WIRING CABLES – FINOLEX/ PLAZA/ GLOSTER/ HAVELLS/ POLYCAB.
2. PIANO SWITCHES, SOCKETS, CEILING ROSS, BELL, BELL PUSH, FAN REGULATOR, etc – CONA / PLAZA / SSK / HAVELLS / LEGRAND / ANCHOR
3. PVC CASING CAPPING – PRINCE / PLAZA / AKG/ HARSH / FINOLEX / KALINGA.
4. LT XLPE/ PVC CABLES (UG) (ARMOURED & UNARMOURED). – HAVELLS/ UNICAB / NICCO / PRIMECAB / PLAZA / TORRENT / NICCO / FINOLEX / GLOSTER.
5. MCBs & DBs & ISOLATOR – HAVELLS/ L&T/ LEGRAND/C & S/ SCHNEIDER (MERLIN GERIN)/ SIEMENS/ABB
6. MCCBs/ ACB – HAVELLS/ ABB/ L&T/ LEGRAND/ SCHNEIDER/ SIEMENS
7. SWITCH FUSE – SCHNEIDER (MERLIN GERIN)/ SIEMENS/ LEGRAND/ ABB.
8. FLUORESCENT FITTING/ HPMV / HPSV/LED light – CROMPTON GREAVES/ PHILIPS/ WIPRO/ BAJAJ/HAVLLES
9. PVC JUNCTION BOX --- ANCHOR/HAVELLS/ L&T/ LEGRAND
10. HEAT SHRINKABLE JOINTS – DENSON/ 3M (M-SEAL)/ RAYCHEM
11. AMMETER, VOLTMETER, ETC. – AE/ L&T/ HPL/ MECO/ MP/ME
12. EXHAUST FAN/PADESTAL FAN/ CEILING FAN/ AIR CIRCULAR FAN – CROMPTON GREAVES/ USHA/ ORIENT/ALMONARD/ KHAITAN/ BAJAJ
13. LT PANEL BOARD (CPRI – CPRI approved make.
14. PVC CONDUIT - GARWARE/ FINOLEX/ SUDHAKAR/ AVONPLAST
15. LAMINATED SHEETS - HYLAM/ FORMICA/ SUNGLUSS
16. INDICATING LAMP - PHILIPS/ GE/ BAJAJ/ L & T/ AE/ TRINITY/ MECO/ C&S
16. DG SETS - PHILIPS/ GE/ BAJAJ/ L & T/ AE/ TRINITY/ MECO/ C&S

PARTICULAR SPECIFICATIONS(CONTD)**Note:-**

1. The makes have been given tradewise only for the purpose of easily locating the items and otherwise makes given are applicable to the entire contract.
2. Wherever word “equivalent make” has been specified the option of equivalent make will only be considered after taking approval from Accepting Officer and only where products of brand/ manufacturer specified are not available in market.

APPENDIX `B`**SOURCES OF MATERIALS**

SI No.	Name of Materials	Source of materials for works at station
1.	Bricks	Locally available best quality of fly ash bricks
2.	Coarse Sand	Locally available
3.	Fine Sand	Locally available
4.	Aggregates	Locally available

NOTES:- (i) The above sources are given for guidance only. This does not absolve the contractor from his responsibility of incorporating various materials in the work as per specifications mentioned in contract. Contractor has to ascertain the availability of material at the source given above. In case of non availability/scarcity of material mentioned at the source above the contractor has to arrange the materials from other sources without any extra cost to the Government. No claim whatsoever shall be entertained by the department on this account at later stage.

(ii) In case coarse aggregate and fine aggregate do not conform to contract specifications, the same shall be modified by addition or subtraction of appropriate materials by the contractor without any extra cost so that aggregate conform to contract specifications.

Signature of the Contractor**AGE (Contracts)
For Accepting Officer**