

MILITARY ENGINEER SERVICES

NAME OF WORK: **REPAIR/ MAINT AND REPLACEMENT OF OLD VINTAGE GARDEN LIGHT, POST TOP LANTERN, BOLLARD LIGHT, SOLAR LIGHT AND HIGH MAST LIGHT AND ALLIED WORKS UNDER AGE E/M OF GE SUKNA AT MIL STN SUKNA**

C O N T E N T S

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Drawings: NIL sheets

Total _____ pages

Signature of contractor
Dated : _____

AGE (Contracts)
For Accepting Officer

Tele: 0353 2573027

Garrison Engineer Sukna

Post: Simulbari – 734 009

Dist: Darjeeling (WB)

9032 / 10 / E8

27 May 2026

M/s _____

**REPAIR/ MAINT AND REPLACEMENT OF OLD VINTAGE GARDEN LIGHT, POST TOP
LANTERN, BOLLARD LIGHT, SOLAR LIGHT AND HIGH MAST LIGHT AND ALLIED
WORKS UNDER AGE E/M OF GE SUKNA AT MIL STN SUKNA**

Dear Sir (s)

1. Tender documents in respect of above work are uploaded on the site defproc.gov.in. The tender is on single stage two cover e-tendering system. The contents of cover I & cover II are specified in NOTICE OF TENDER.
2. Bids will be received online by ACCEPTING OFFICER upto the date & time mentioned in the NOTICE INVITING TENDER (NIT). No tender/bid will be received in physical form and any tender/bid received in such manner will be treated as non bonafide tender/bid.
3. Bid will be opened on due date and time fixed for opening in the presence of tenderer/bidders or their authorized representatives, who have uploaded their quotation bid and who wish to be present at the time of opening the bids.
4. Your attention is also drawn to instruction on filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion on tender/drawing and to clarify doubts, if any, on or before the stipulated clarification end date. You are requested not to write piecemeal points and forward your points duly consolidated before due date viz the stipulated clarification end date.
5. **EARNEST MONEY DEPOSIT (EMD):** Contractor(s) who are not enlisted with MES/who are enlisted but have not executed the Standing Security Bond shall submit Earnest Money deposit as detailed in Notice of Tender in one of the following forms, alongwith their tender/ bid :-
 - (a) Deposit at Call Receipt from a schedule Bank in favour of Garrison Engineer concerned.
 - (b) Receipted Treasury Challan, the amount being credited to the Revenue Deposit of Garrison Engineer.

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

Contd/-.....

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

6. On acceptance of the tender, the Contractor is required to deposit Performance Security for an amount equivalent to 5% of the contract sum in the form of FDR or BGB in favour of the Accepting Officer from any of the Scheduled Indian Bank within 28 days of receipt of letter of Acceptance. Work Order shall be placed to the contractor after submission of Performance Guarantee of stipulated value by the contractor, failing which action as per condition 19.3 of IAFW-2249 shall be taken. The FDR for the Performance Security shall be valid till the stipulated date of the defects liability period and the BGB for the Performance Security shall be initially valid up to the stipulated date of expiry of defects liability period plus minimum 60 days beyond that. In case the Final Bill is not paid during this Guarantee Period, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time required for payment of the Final Bill

7. Enlisted contractors of MES shall submit the scanned copies (pdf file) of enlistment letter, tender fee and such other documents as mentioned in Appx 'A' to NIT on e-procurement portal and submit physical documents in the office of GARRISON ENGINEER SUKNA, PO-SIMULBARI, DISTT – DARJEELING (WB), PIN-734009 before date & time fixed for this purpose.

8. The contractor must ensure that the tender/bid on the proper form is uploaded in time as the accepting officer will take no cognizance of any quotations/offer received in any other electronic or physical form like email/fax/by hand/through post from tenderer/bidder even if they are received in time.

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

10. General conditions of Contracts (IAFW-2249) (1989 Print) and errata and amendments thereto, schedule of minimum fair wages and MES SSR [Part-I (2009) and Part-II (2020)] are not enclosed with these documents. These are available for perusal in the Office of GE concerned and this office.

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

Yours faithfully,

AGE (Contracts)
FOR ACCEPTING OFFICER

SIGNATURE OF CONTRACTOR

DATED:

**INSTRUCTIONS FOR UP-LOADING OF TENDER DOCUMENTS TO BE
COMPILED WITH BY THE TENDERER(S)**

1. EARNEST MONEY DEPOSIT

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

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

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

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

NOTE:- All the enlisted contractors (who have not executed Standing Security Bond and deposited Standing Security Deposit) who submit/upload/participate for the above tender shall be deemed to have signed and accepted the above "Bid Security Declaration".

2. PERFORMANCE SECURITY:

2.1 On acceptance of the tender, the Contractor is required to deposit Performance Security for an amount equivalent to 5% of the contract sum in the form of FDR or BGB in favour of the Accepting Officer from any of the Nationalized/Scheduled Indian bank within 28 days of receipt of letter of Acceptance as per condition 19 of IAFW- 2249 (General Conditions of the Contracts) failing which action as per condition 19.3 of IAFW-2249 shall be taken. The FDR for the Performance Security shall be valid till the stipulated date of the defects liability period and the BGB for the Performance Security shall be initially valid up to the stipulated date of expiry of defects liability period plus minimum 60 days beyond that. In case the Final Bill is not paid during this defects liability period, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time required for payment of the Final Bill. Work Order shall be placed only after receipt of the Performance Security of requisite value from the contractor.

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

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

**INSTRUCTIONS FOR UP-LOADING OF TENDER DOCUMENTS TO BE
COMPILED WITH BY THE TENDERER(S) contd...**

2.4 All compensation or other sums of money payable by the contractor to the government under the terms of this contract or under any other contract with Government may be deducted from, or paid by the sale of a sufficient part of the performance Security of form the interest arising there from or from any sums which may be due to become due to the contractor by the event of his performance Security being reduced by reason of any such deduction, or sale as aforesaid, the contractor shall within ten days thereafter make good in cash or securities, endorsed as aforesaid any sum or sum which may have been deducted from or realized by the sale of his Performance Security or any part therefore

2.5 Government shall not be responsible for any loss of securities or any depreciation in the value of securities while in their charge nor for loss of interest thereon.

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

2.7 **Refund of performance security** : The performance Security Deposited shall be refunded to the contractor after the expiration of the defects liability period (vide Condition 46) by the GE provided always the contractor shall first have been paid the final bill and have rendered a No-Demand Certificate (IAFW-451).

2.8 BANK GUARANTEE BOND AGAINST PERFORMANCE SECURITY:-

(a) Condition 19.1 of IAFW-2249 provides for submission of Performance Security by the successful contractor in the form of Bank Guarantee Bonds or Govt Securities, FDR or any other form of deposit stipulated by the Accepting Officer.

(b) Form for Bank Guarantee Bond against Performance Security Deposit shall be same as Appendix 2.1 of MES Manual on Contracts 2007 (Reprint 2012) with "security deposit" in Para line 4 replaced by "Performance Security Deposit".

3. GENERAL INSTRUCTIONS FOR COMPLIANCE

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

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

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

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

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

**INSTRUCTIONS FOR UP-LOADING OF TENDER DOCUMENTS TO BE
COMPILED WITH BY THE TENDERER(S) contd...**

3.6 In the technical bid, a scanned copy of power of Attorney in favour of the person uploading the bid using his/her DSC shall be uploaded. In case the digital signatory himself is the sole proprietor, scanned copy of an affidavit on stamp paper of appropriate value to this effect stating that he has authority to bind the firm in all matters pertaining to contract including the Arbitration Clauses, shall be attached in 'pdf' form. In case of partnership concern or a limited company, digital signatory of the bid/tender shall ensure that he is competent to bind the contractor (through partnership deed, general power of attorney or memorandum and Articles of Association of the Company) in all the matters pertaining to the contracts with Union of India including arbitration clause. A scanned copy of the documents confirming of such authority shall be attached with the tender/bid in 'pdf' form, if not submitted earlier. The person uploading the bid on behalf of another partner(s) or on behalf of a firm or company using his DSC shall upload with the tender/bid a scanned copy (in 'pdf' form) of Power of Attorney duly executed in his favour by such other or all of the partner(s) or in accordance with constitution of the company in case of company, stating that he has authority to bind such other person of the firm or the Company, as the case may be, in all matters pertaining to the contract including the Arbitration Clause.

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

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

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

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

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

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

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

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

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

**INSTRUCTIONS FOR UP-LOADING OF TENDER DOCUMENTS TO BE COMPILED
WITH BY THE TENDERER(S) contd...**

5. Department may issue amendments/errata in form of CORRIGENDUM to tender/revised BOQ to the tender documents. The tenderer/bidder is requested to read the tender documents in conjunction with all the errata / amendments / corrigendum, if any, issued by the department.
- 6 Bidders should check the website periodically for any modified/Revised BOQ uploaded by the Department through Corrigendum and it is bidder's responsibility to ensure uploading of correct BOQ. The bidder whose bid is not on correct BOQ shall be treated as NON-BONAFIDE.
7. Being maintenance contract, the contractor shall make his program in such a way to execute the works covered under BOQ with consultation of Engineer-in-Charge to complete the entire work within stipulated period as per work order No.1 issued by the Accepting officer.
8. These instructions shall form part of the contract documents.

Yours faithfully,

Encls: As above

AGE (Contracts)
For Accepting Officer

Signature of Contractor

Dated: _____

(In lieu of IAFW-2162) (Revised 1960)

MILITARY ENGINEER SERVICES
NOTICE OF e -TENDER contd...

1. A tender is invited for the work as mentioned in Appendix 'A' to this NOTICE OF INVITING TENDER (NIT)
2. The work is estimated to cost as indicated in aforesaid Appendix 'A'. This estimate, however, is not a guarantee and is merely given as a rough guide and if the work cost more or less, a tenderer/bidder will have no claim on that account. The tender shall be based on as mentioned in aforesaid Appendix 'A'.
3. The work is to be completed within the period as indicated in aforesaid Appendix 'A' in accordance with the phasing, if any, indicated in the tender from the date of handing over site, which will be on or about two weeks after the date of Acceptance of tender.
4. Normally contractors whose names are on the MES approved list for the area in which the work lies, and within whose financial category the estimated amount would fall, may tender/bid but in case of term contracts, contractors of categories SS to E may tender/bid. Contractors whose names are on the MES approved list of any MES formation and who have deposited standing security and have executed standing security bond may also tender / bid without depositing Earnest money along with the tender / bid. Not more than one tender / bid shall be submitted / uploaded by one contractor or one firm of contractors. Under no circumstances will a father and his son(s) or other close relations who have business dealing with one another be allowed to tender / bid for the same contract as Decarate competitors. A breach of this condition will render the tenders / bids of both the parties liable for rejection.
5. The office GE Sukna will be the Accepting Officer here in after referred to as such for purpose of the contract.
6. The Technical Bid and Financial Bid (Cover-1 and Cover -2) shall be uploaded by the tenderer / bidder on or before the date & time mentioned in NIT. A scanned copy of enlistment details / documents shall be uploaded as packet 1 / cover-1 ('T' bid) of the tender/bid on e-tendering portal.
- 6.1 Tender form and conditions of contract and other necessary documents shall be available on defproc.gov.in site for download and shall form part of contract agreement in case the tender / bid is accepted.

NOTICE OF e - TENDER contd...

6.2 A contractor who is not enlisted for the area in which the work lies but whose name is in the MES approved list of any MES formation and who has deposited standing security and executed standing security Bond may bid without depositing earnest money alongwith the tender.

6.3 Copies of the drawings and other document pertaining to the work signed for the purpose of identification by the Accepting Officer or his accredited representative, sample of materials and stores to be supplied by the contractor will also be available for inspection by the tenderer/bidder at the office of Accepting Officer and concerned GE Sukna during working hours.

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

8 The tender/bid which proposes any alteration to any of the conditions alid down or which proposes any other condition or prescription whatsoever, is liable to be rejected.

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

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

11 Invitation for e-tender does not constitute any guarantee for validation of 'T'bid and subsequent opening of finance bid of any applicant/bidder, even of enlisted contractors of appropriate class, merely by virtue of enclosing documents. Accepting Officer reserves the right to reject the 'T'bid and not open the finance bid of any applicant /bidder. 'T'bid validation shall be dicided by the Accepting Officer based on, inter alia, capability of the firm as per criteria given in Appx 'A' to this NIT. The applicant contractor /bidder will be informed regarding non- validation of his 'T'bid assigning reasons therof through the eprocuremes website. The applicant contractor/bidder if he so desires may appeal to the next higher Engineer authority viz **HQ 136 Wks Engr** with copy to the Accepting Officer on email before the schedule date of opening of Finance bid. The decision of the Next Higher Engineer Authority (NHEA) shall be final and binding. The contractor/bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

MILITARY ENGINEER SERVICES
NOTICE INVITING TENDER (NIT) (Contd/.....)

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

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

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

Your's faithfully

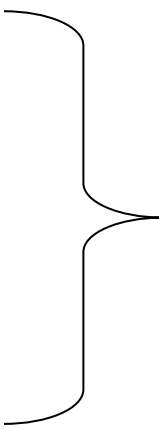
Enclosures: As above

AGE (Contracts)
For Accepting Officer

Signature of Contractor

Dated :_____

APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION (Contd..)

1.	Name of work	<u>REPAIR/ MAINT AND REPLACEMENT OF OLD VINTAGE GARDEN LIGHT, POST TOP LANTERN, BOLLARD LIGHT, SOLAR LIGHT AND HIGH MAST LIGHT AND ALLIED WORKS UNDER AGE E/M OF GE SUKNA AT MIL STN SUKNA</u>
2.	Estimated cost	45.00 Lakh (At Par Market)
3.	Period of completion	180 Days
4.	Cost of tender	Rs. 500.00 in the form of DD / Bankers cheque from any scheduled Bank in favour of GE Sukna and payable at Sukna (Note : In case of retendering, the contractor who had quoted in the previous call is not required to submit the cost of tender)
5.	Website/portal address	<u>www.defproc.gov.in and www.mes.gov.in</u>
6.	Tender Reference Number and Tender ID	GE Sukna/9032 and 2026_MES_768170_1
7.	Type of Contract	The Tender shall be based on item rate contract (IAFW-1779A and GCC IAFW -2249) with Sch 'A' (list of item of works) to be priced by contractor electronically (BOQ).
8.	Timeline Details :	
	(a) Date of publishing of tender	 Refer Critical Dates on the website (www.defproc.gov.in)
	(b) Documents Download/Sale Start date	
	(c) Bid submission start date	
	(d) Document download/sale end date	
	(e) Bid submission end date	
	(f) Bid opening Date (Cover-I)	
9.	Eligibility Criteria	
	(a) For MES enlisted contractors	All contractors enlisted with MES in class 'D' and above and category b (i) shall be considered subject to satisfactory remarks w.r.t performance in respect of works in hand as reflected in Work Load return (WLR) or any other report circulated by competent engineer authority

APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION (Contd..)

	(b) For other contractors not enlisted with MES	(a) All contractor not enlisted with MES should meet the enlistment criteria of ‘D’ class & b (i) category MES Contractors with regard to satisfactorily completion of requisite value works with Central / State Government / Central / State PSUs / AWHO /AFNHB / CGEWHO / DGMAP, annual turnover, bank solvency, working capital and other requirements given in Para 1.4 & 1.5 of Section 1 of MES Manual of Contracts 2020 as available in all MES formations as well as MES website (www.mes.gov.in) (b) Not carrying adverse remarks in Work Load Report (WLR) or any other similar report circulated by any competent authority, if already working in MES. (c) Not suspended / debarred / blacklisted (either permanently or temporarily) from participating in any bid or for business dealings by any Central / State Government Department or any Central / State Government PSU or any Autonomous Body under Central / State Government or any local Body as on the bid submission end date. (d) The firm shall submit EMD as stated below. (e) Details of works completed and under progress in MES be submitted in the following format:- <table><tr><th>Ser No</th><th>CA No. & Name of Work</th><th>Value of CA</th><th>Date of Commencement</th><th>Date of Completion</th><th>Extended date of Completion</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> (f) Un-enlisted contractor who have secured two works in MES should get themselves registered in the appropriate designated class with any Registering Authority, else the firm will not be eligible for participation in the tender unless until the firm is enlisted with the MES.	Ser No	CA No. & Name of Work	Value of CA	Date of Commencement	Date of Completion	Extended date of Completion						
Ser No	CA No. & Name of Work	Value of CA	Date of Commencement	Date of Completion	Extended date of Completion									
10.	Tender issuing and Accepting Officer	Name : GE Sukna Adress : Garrison Engineer Sukna Post: Simulbari – 734 009 Dist: Darjeeling (WB) Contact Detail : Phone : 0353 2573027 Email : gesukna11@gmail.com												
11.	Executing Agency	GE Sukna												
12.	Earnest Money	Rs. 90,000.00 in favour of GE Sukna and payable at Sukna in the form of Deposit at call receipt, FDR not acceptable												

APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION (Contd..)

13.	Performance Security	In case the tender submitted is accepted, the contractor will be required to lodge PERFORMANCE SECURITY DEPOSIT for an amount equivalent to 5% of the contract sum/Lumpsum in favour of the accepting officer within 28 (Twenty Eight) days of receipt of notification of acceptance by the contractor with reference his tender/ bid in the form of BANK GUARANTEE or FDR. Failure of the contractor to comply with the requirements of Performance Security shall constitute sufficient grounds for cancellation of the award of work and forfeiture of the Earnest money. In case of MES enlisted contractor, amount equal to the Earnest Money stipulated in the Notice of Tender, shall be notified to the tenderers for depositing the amount through MRO. Issue of tender to such tenderers shall remain suspended till the aforesaid amount equal to the Earnest Money is deposited in Government Treasury (See condition 19 of General Condition of Contract IAFW 2249).
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APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION**NOTES :-**

1. In case after opening of Cover 1, the number of MES enlisted contractors of eligible class as well as eligible un-enlisted contractors, if any, fulfilling the other eligibility criteria given in NIT is less than 7 (Seven), applications in respect of MES contractors of one class below the eligible class shall also be considered subject to fulfillment of other eligibility criteria given in the NIT. Therefore MES contractor's one class below may also bid for this tender. Such contractors (contractors of one class below the eligible class) shall not be considered in case / their present residual work in hand is more than FIVE TIMES their present tendering limit. However in case such contractors fulfill the criteria /of upgradation to the stipulated eligible class based on past experience of completed works (individual work experience and/or average annual turnover, as applicable) and financial soundness (solvency/financial soundness and working capital), the ceiling of present residual work will not apply and they will be considered for issue of tender. Such bidders shall upload in their Cover-1 bid details related to residual work in hand like details of works in hand showing names of work, names of Accepting Officers, Contract amounts, dates of commencement and completion (stipulated) and progress as on bid submission date. Such contractors, if claim to fulfill the criteria of upgradation shall also upload the requisite information/documents in support of upgradation. These details shall be verified by the tender issuing authority i.e. GE Sukna from concerned formations in case bids of such contractors are considered for evaluation.
2. In case after opening of Cover 1, the number of MES enlisted contractors of eligible class as well as unenlisted contractors, if any, fulfilling the other eligibility criteria given in NIT, are 7 (Seven) or more, applications of only those one class below the eligible class bidders shall be considered, who have previously completed similar works satisfactorily and are meeting the criteria of upgradation in respect of past experience of completed works (individual work experience and/or average annual turnover as applicable) and financial soundness (solvency/financial soundness and working capital) as per details given in Manual on Contracts. Therefore such contractors shall upload the requisite information/documents in the Cover-I.
3. Unenlisted contractor shall be considered provided their firm meets the criteria. Foreign firms shall not be eligible for this tender. However Indian Firms having foreign national / Indian nationals staying abroad / Indian national having taken foreign citizenship, as director(s) shall be considered subject to security clearance from the concerned authorities.
4. Contractors enlisted with MES will upload following documents in Cover 1 for checking eligibility :-
 - (a) Application for tender on Firm's letterhead
 - (b) Enlistment letter issued by the Registering Authority duly renewed for the cycle period in vogue.
 - (c) Scanned copy of DD /Bankers Cheque toward cost of tender and EMD instrument in case SSD bond is not signed at the time of registration (as applicable).
 - (d) Scanned copy of Provident Fund Code Number letter
 - (e) Scanned copy of GST Registration Certificate
 - (f) Any other document required as described in this Appendix.
5. Contractors not enlisted with MES will be required to upload following documents in Cover 1 for checking eligibility:-
 - (a). Application for tender on Firm's letterhead
 - (b). Scanned copy of DD / Bankers cheque toward cost of tender and Earnest Money Deposit (EMD) instrument (as applicable).
 - (c). Scanned copy of Provident Fund Code Number
 - (d). Scanned copy of GST Registration Certificate
 - (e). Copy of Police Verification Report/Police Clearance Certificate / Character Certificate from the Police Authority of the area where the registered office of the firm is located / notarized copy of valid passport of Proprietor / Each Partner / Each Director.
 - (f). All documents required for enlistment in MES for the class mentioned in Para 8(b) above as per Para 1.5 of section 1 of MES Manual on Contracts 2020.
 - (g). Details of works being executed in MES, if any.

APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION (Contd..)

- (h). Any other document required as described in this Appendix.
6. Tenders not accompanied by scanned copies of requisite DD / Bankers Cheque towards cost of tender and earnest money (as applicable) in Cover 1 shall not be considered for validation of 'T' bid and their Financial Bids will not be opened..
 7. Contractors should ensure that their original physical DDs and Earnest Money Deposit (EMD) instruments (as applicable) reach the office of Accepting Officer within **07 days** of bid submission end date failing which following action shall be taken:-
 - (a). In case of tenders from an enlisted contractor of MES, where scanned copies of requisite DD/ Bankers Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will be opened. However non-submission of physical copies of cost of tender shall be considered as willful negligence of the tenderer with ulterior motives and such tenderer shall be banned from bidding for a period of six months commencing from the date of opening of Financial Bid (Cover 2).
 - (b). In case of tenders from unenlisted contractor, where scanned copies of requisite DD / Bankers Cheque towards cost of tender have been uploaded in Cover 1 but physical copies are not received within the stipulated period, their financial bids (Cover 2) will not be opened. Name of such contractors along with complete address shall be circulated for not opening of their bids for a period of six months commencing from the date of opening of Financial bid (Cover 2).
 - (c). In case of tenders from enlisted and unenlisted contractors, where scanned copies of instruments for Earnest Money Deposit (as applicable) have been uploaded in Cover 1 but the same are not received in physical form within stipulated period, such tenders shall not qualify for opening or financial bid (Cover 2).
 8. Contractor will not be allowed to execute the work by subletting or through power of attorney to a third party / another firm on his behalf. However a contractor can execute the work through power of attorney to sons / daughters / spouse of Proprietor / Partner / Director and firm's own employees, director, project manager **provided they are not having a Decarate enlisted firm in MES in their name as Proprietor / Partner / Director.**
 9. After opening of Cover 1 and during its technical evaluation, in case any deficiency is noticed in the documents required to be uploaded by the tenderers as per NIT, a communication in the form of e-mail / SMS / Speed Post etc shall be sent to the contractor to rectify the deficiency within a period of seven days from date of communication failing which their financial bid (Cover 2) shall not be opened and contractor shall not have any claim on the same.
 10. Invitation for e-tender does not constitute any guarantee for validation of Technical bid and subsequent opening of financial bid of any applicant / bidder merely by virtue of enclosing DD. Accepting Officer reserves the right to reject the Technical bid and not to open the financial bid of any applicant / bidder. Technical bid validation shall be decided by the Accepting Officer based on eligibility of the firm as per criteria given in this Appendix. Tenderer / bidder will be informed regarding non-validation of his Technical bid assigning reasons therefore through tender evaluation report which shall be uploaded on the website. Such tenderer, if desires, may appeal to the next higher Engineer Authority (NHEA)) viz **HQ 136 Wks Engr** on email id "sil1363-mes@nic.in" with copy to the Accepting Officer on email before the scheduled date of opening of Cover 2. NHEA shall decide the matter within a period of seven working days from the date of receipt of appeal. The decision of the NHEA shall be final and binding. The tenderer / bidder shall not be entitled for any compensation whatsoever for rejection of his bid.

APPX 'A' TO NOTICE INVITING e-TENDER INVITING APPLICATION (Contd..)

11. In case an unenlisted contractor is already executing works in MES, he shall not be considered eligible for the subject tender if the total value of such works is more than twice the tendering limit of the MES Class of contractor for which it is eligible. For this purpose, details of the works being executed by such a contractor shall be uploaded in the Cover -1 of the bid and shall be checked / verified by the Accepting Officer.
12. In case the BOQ is revised through the corrigendum and the bidder has failed to quote on revised BOQ (ie he has quoted on pre revised BOQ), such bid shall be treated as willful negligence by the bidder and his quotation shall be considered non-bonafide. In such cases the lowest tender shall be determined from amongst the valid / bonafide bids only. Accepting Officer may decide whether to re-tender or consider the lowest bonafide tender for acceptance.
13. Revoking the offer or revising the rates upward or offering voluntary reduction by the lowest tenderer after opening of Cover 2 shall be considered as a willful default. For this default a penalty of an amount equal to Earnest Money shall be levied. In case of an unenlisted tenderer, Earnest Money deposited by him shall be forfeited. In case of MES enlisted tenderer having deposited the Standing Security Bond, an amount equal to the earnest money stipulated in the NIT, shall be notified to the tenderer for depositing through MRO and consideration of such tenderer in tender evaluation for future works shall remain suspended till the aforementioned amount is deposited in the Government Treasury. No other disciplinary/administrative action shall be taken against such tenderers. In such a situation, the next lowest offer shall not be considered for acceptance. Instead, retendering shall be resorted to in a transparent and fair manner and the defaulting tenderer and his related firm if any, shall not be eligible for this tender in second call or subsequent calls.
14. Tender to related firms shall not be issued simultaneously. Firms shall be termed as related if Proprietor / one or more Partners / Directors are common. Decision of Accepting Officer on issue / deny the tender to any one of the related firms shall be final and binding.
15. Court of the place where tender has been issued/ uploaded, shall be alone jurisdiction to decide any dispute out of or in respect of this tender. After acceptance of tender condition 72 (Jurisdiction of courts) of IAFW-2249 shall be applied.

SIGNATURE OF CONTRACTOR

AGE (Contracts)
For Accepting Officer

File No. 9032/ 09 /E8

Dated: 27 May 2026

Tele: 0353 - 2573027

NIC Mail Id : suksz4-mes@nic.in

Garrison Engineer Sukna

PO : Simulbari-734009

Distt – Darjeeling (WB)

In lieu of IAFW-1779-A (Revised-1968)

{To be used in conjunction with General Conditions of Contract
(IAFW-2249-1989 print)}

MILITARY ENGINEER SERVICES

Garrison Engineer Sukna
Post: Simulbari – 734 009
Dist: Darjeeling (WB)

9032/ 10 /E8

27 May 2026

**ITEM RATE CONTRACT OF : REPAIR/ MAINT AND REPLACEMENT OF OLD
VINTAGE GARDEN LIGHT, POST TOP LANTERN, BOLLARD LIGHT, SOLAR LIGHT
AND HIGH MAST LIGHT AND ALLIED WORKS UNDER AGE E/M OF GE SUKNA
AT MIL STN SUKNA**

1. All eligible bidders is/are hereby authorised to tender for the above-mentioned work. The online bid only is to be submitted on line through eprocurement portal (single stage two cover system) on website www.defproc.gov.in as per relevant dates given therein.
2. All correspondence concerning this tender should be addressed as indicated at the top of this sheet quoting the reference as given.

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

(Signature of Officer Issuing tender)

Appointment: Asst Garrison Engineer
(Contracts)

Signature of Contractor

(IN LIEU OF IAFW-1779-(R-1955))

SCHEDULE 'A' NOTES

(List of items & prices)

Notes:-**1. SCOPE OF WORK**

1.1 This contract covers full, final and entire completion of all the works detailed in Sch'A' (BOQ) and all as specified in these tender documents read in conjunction mutually explanatory to each other.

2. All items/quantities inserted in BOQ are provisional and are inserted for guidance only. These shall however not to be varied beyond the limits laid down in condition 7 of IAFW-2249 (General conditions of contracts).

3. The entire work under this contract shall be completed within **180 (One Hundred Eighty) Days from the date of commencement as indicated in Work Order No. 1. Site for execution of work will be available on the date of handing over of site as mentioned in Work Order No 1. In case it is not possible for the department, to make the entire site available on the date of handing over of site, the contractor shall have to arrange the programme accordingly. No claim whatsoever for not giving the entire site on the date of handing over of site and for giving the site gradually will be tenable.**

4. The rate to be filled in col 5 by tenderer in figures. The rate in words, amount & total shall automatically generate in BOQ for each unit.

5. Measurement of work done shall be as per items and unit given in BOQ and this mode of measurement shall take precedence over standard schedule of rates 2009 Part-I and SSR Part-II 2020 wherever at variance with later.

6. Unless otherwise specified, the rates quoted by the contractor(s) shall include for all incidental and additional labour and materials to cover all the work enumerated and described under the description of items and in the preamble to similar items in Standard Schedule of Rates Part-II 2020. It is an express condition of this tender that the rates quoted by the contractor in the tender for various items of work shall be deemed to include for supply and fixing, testing, entire and final completion of the items of work in accordance with provisions of this tender. The Government will not entertain any claim, whatsoever, on account of inaccuracies/ misunderstanding if any in the aforesaid rates.

7. Cost of testing including transportation of materials or equipments or items, provision of all facilities for testing in accordance with the specification and/ or IS shall be borne by the contractor unless otherwise mentioned.

8. Unless otherwise specified, rates per unit for various items of the Schedule 'A' include for materials and labour etc. complete. Wherever indicated in Schedule 'A' as "S&F" or "M&L", the same shall be read as "Supply & Fix" and "Material & Labour" respectively.

9. Description of items given in Schedule 'A' are in brief. These are deemed to be amplified and read in conjunction with latest ISS, special conditions, particular specifications, specification of materials of workmanship and condition given in the relevant sections of the standard schedule of rates 2009 Part- I and SSR Part-II 2020.

SCHEDULE 'A' NOTES (Contd.....)**(List of items & prices)**

10. The rates quoted by the tenderer against each item of Schedule 'A' shall also be deemed to include for all minor extras and constructional details, which are not specifically specified in particulars specifications but are essential for execution of works/services in a workman like manner and sound constructions and established Engineering practice. In case of difference of opinion between the contractor and GE as to whether or not a certain item of work constitutes minor extras and constructional details in the contract price, the decision of the Accepting Officer in this regard shall be final, conclusive and binding.

11. TAXES, DUTIES & LEVIES ETC. (REFER SPECIAL CONDITION FOR REIMBUSMENT/ REFUND ON VARIATION IN TAXES DIRECTLY RELATED TO CONTRACT VALUE: It is pertinent to mention that contractor's quoted rates shall be deemed to include for all statutory levies, duties, taxes including GST, labour welfare cess/ tax etc as prevailing on the last date of bid submission. It may be noted that conditional tender on this aspect and/ or on any other account will not be considered and shall be liable to be 'REJECTED'.

12. The particular attention of the participants is invited to amendment No 21 applicable to condition 6A (A) of IAFW 2249. In case the contractor does not quotes the rates against any of the item (s), the quoted rates for such item (s) shall be deemed to read as Rs NIL and prices/cost for provision of such items shall be deemed to be covered against other item (s) of BOQ.

13. In case the BOQ is revised by the depts and the bidder has failed to quote his rates in revised BOQ (i.e. the contractor has quoted in unrevised BOQ), such Bid shall be treated as willful negligence on the part of contractor and such Bid/Quotation shall be considered Non-Bonafide. Also necessary action against such contractor(s) shall be taken by the Accepting Officer. Further it is clarified that in such cases, lowest tender shall be determined by the lowest amount amongst the valid/bonafide bids only.

14. Tenderer attention is invited to Employees Provident fund as per Employees Provident Fund and Miscellaneous provisions Act, 1952 and Tenderer shall have Provident Fund Code Number and provide Universal Account Number (UAN) to their employees.

15. On acceptance of the tender, the Contractor is required to deposit Performance Security for an amount equivalent to 5% of the contract sum in the form of FDR or BGB in favour of the Accepting Officer from any of the Scheduled Indian Bank within 28 days of receipt of letter of Acceptance. Work Order shall be placed to the contractor after submission of Performance Guarantee of stipulated value by the contractor, failing which action as per condition 19.3 of IAFW- 2249 shall be taken. The FDR for the Performance Security shall be valid till the stipulated date of the defects liability period and the BGB for the Performance Security shall be initially valid up to the stipulated date of expiry of defects liability period plus minimum 60 days beyond that. In case the Final Bill is not paid during this Guarantee Period, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time required for payment of the Final Bill.

16. The weight of concertina coil, barbed wire and chain link fencing shall be ascertained by the board of officers conveyed by the Accepting Officer. The concerned Engineer-in-Charge shall intimate the Accepting Officer well in advance for conveying Board of Officers.

17. Bidders shall note that if the similar items of works catered in BOQ, and the quoting found different against the similar items, then the minimum quoted rate shall be considered for making the payment.

18. If the Make/Brand of any material to be incorporated in the work not specified in the tender documents, the same shall be of ISI Mark or superior than ISI as approved by the GE before incorporation in the work and the same shall be ensured by the Engineer-in-Charge

SCHEDULE 'A' NOTES (Contd.....)**(List of items & prices)****19. INSPECTION OF WORKS (DEFECT LIABILITY PERIOD) (REFER CONDITION 46 OF IAFW-2249 (GENERAL CONDITIONS OF CONTRACTS)):-**

- 19.1 The defects liability period for this contract shall be **TWELVE calendar months** after the works have been handed over to the Government. Any defects in the work noticed during this period shall be rectified by the contractor forthwith, on demand in writing from the GE specifying the area affected notwithstanding that the work executed might have been inadvertently passed, certified and paid. The contractor shall carry out the rectification of the defects notified at his own expense during the defect liability period and in the event of his failure to do within a period to be specified by the GE in his demand, the GE shall undertake such rectification work at the risk and expense of the contractor.
20. The contractor shall abide himself to take the payments of RARs/Final bill of the executed work through Emb only to compliance the directions issued by the HQ E-in-C's branch Vide letter No – A/37696/E-MB/Pol/E2W/(PPC) dt 13 Aug 2025.
21. (a) **BLANK**
- (b) It is clarified that the period of completion specified in these tender documents is inclusive of the period required for arranging and execution of works.
- (c) On physical completion of the work and before issue of the Completion Certificate, all the T&P, Machinery and unused materials shall be removed by the contractor and site shall be made neat and clean all as directed by the GE.
- (d) The contractor's quoted rates shall be deemed to be included for all material and labour for entire of completion of works.
22. Diameter of wire and size of mesh of chain link fencing shall be as approved by the GE and weight shall be ascertain by a Board of Officers convened by GE Sukna.
23. The entire work under this contract lies in **"Un-Restricted Area"** normal working hours are to be followed in un-restricted area hours for restricted area pl refer SI No. 4 of Special conditions.

SIGNATURE OF CONTRACTOR

Date : 2026

AGE (CONTRACTS)
FOR ACCEPTING OFFICER

SCHEDULE OF CREDIT**Notes:-**

1. The materials obtained from taking down / dismantling / demolition shall become contractors property except to certain serviceable items which are being reused under respective items of BOQ for which the contractor shall offer credit at the rates shown below against each item. In the event any taken down/dismantled materials not mentioned in schedule of credit below for whatsoever reason in that case contractor are required to deposit the materials to MES store without any cost to Govt.
2. The department has assessed the rate of credit for each item and inserted under col-5 extended the amount to Col-6 The total of the credit so assessed shall be deducted from the contract sum quoted by the tenderer in summary of BOQ. The contractor shall have no claim regarding fixation of credit rate in this schedule.
3. The materials becoming contractors property shall be permitted to be removed from the site of work only after realization of credit from RAR/Final bill.
4. The total credit amount may vary as per execution of work and the contractor shall have no claim if the quantities are varied during execution of work.
5. Contract sum will be derived after deduction of credit amount from the quoted amount.

SI No.	Description of item	Unit	Qty	Rate Rs.	Amount Rs.
1	3	4	5	6	7
1.	Old unserviceable cable of size 16/10sqmm 4 core.	RM	1000	20.00	20,000.00
2.	Old unserviceable GI Pipe 40mm light grade	RM	36	25.00	900.00
3.	Old unserviceable steel tubular pole 9m long.	Each	9	1,500.00	13,500.00
4.	Old unserviceable cross arms	Qtl	0.5	1,000.00	500.00
5.	Old unserviceable street light fittings any capacity	Each	215	50.00	10,750.00
6.	Old unsv GI Brackets 32/40 mm	Each	150	10.00	1,500.00
7.	Old unsv pole mounted junction box	Each	80	20.00	1,600.00
8.	Old unsv Earthing	Each	5	200.00	1,000.00
9.	Old unsv cable 1.5 sqmm 3 core	RM	550	5.00	2,750.00
10.	Old unsv street light timer panel	Each	5	150.00	750.00
11.	Old unsv GI pipe 15 mm dia	RM	280	15.00	4,200.00
12.	Old unsv street light timer	Each	10	10.00	100.00
13.	Old unsv power contactor	Each	6	10.00	60.00
14.	Old unsv LED driver of any capacity	Each	335	15.00	5,025.00
15.	Old unsv LED flood light any capacity	Each	28	150.00	4,200.00
16.	Old unsv Post Top Lantern	Each	18	50.00	900.00

Contd.../-

SCHEDULE OF CREDIT (Contd..)

Sl No	Description of item	Unit	Qty	Rate Rs.	Amount Rs.
17.	Old unsv LED bollard light	Each	30	50.00	1,500.00
18.	Old unsv solar street lights	Each	6	500.00	3,000.00
19.	Old unserviceable LT panel any type	Each	2	4,000.00	8,000.00
20.	Old unserviceable LT Busbar Panel	Each	3	500.00	1,500.00
	Total Credit Amount			Rs 81,735.00	

GENERAL SUMMARY

1.	Total amount of BOQ	:	
2.	Deduct Schedule of Credit amount B/F from Serial Page No. 32	:	Rs 89,320.00
	CONTRACT SUM	:	Rs.....

Signature of Contractor

Date : _____

AGE (Contracts)

For Accepting Officer

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

Ser No	Particulars	Rate at which materials will be supplied to the contractor		Place of issue (by Name)	Remarks
		Unit	Unit rate		
1	2	3	4	5	6

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

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

(See Condition No 15, 34, & 35 of IAFW-2249 of 1989 Print)

Ser No	Quantity	Particulars	Details of MES Crew Supplied	Hire charges per unit per working day	Standby charges per unit per off day	Place of issue by name	Remarks
1	2	3	4	5	6	7	8

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

SCHEDULE 'D'

TRANSPORT TO BE HIRED TO THE CONTRACTOR

(See Condition No 16, 35, of IAFW-2249 of 1989 Print)

Ser No	Quantity	Particulars	Rates per unit per working day	Place of issue by name	Remarks
1	2	3	4	5	6

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

Signature of Contractor

Date : _____

AGE (Contracts)

For Accepting Officer

(IN LIEU OF IAFW-1779-A (R-1955))**TENDER**

To,

The President of India

Having examined and perused the following documents:-

1. Specifications signed by the AGE (Contracts).
2. Drawings detailed in the list of drawings.
3. Schedule 'A', 'B', 'C' and 'D' attached hereto.
4. MES Standard Schedule of Rates – 2009 - Part I (Specifications) with amendments 1 to 3 and MES Standard Schedule of Rates 2020 - Part II (Rates) with amendments 1 to 122 hereinafter referred to as the MES Schedule together.
5. General conditions of contracts IAFW-2249 (1989 Print) together with amendments Nos 1 to **49** and errata 1 to 20 for English version only and the Schedule of minimum wages applicable to the area.
6. Water condition 31 of IAFW-2249 General conditions of contract:

Water will be supplied by MES and shall be paid for by the contractor at Rs 3.75.00 per every 1,000/- worth of work done priced at contract rate.

7. SHOULD THIS TENDER BE ACCEPTED: I/WE AGREE

* That the sum of **Rs 90,000/- (Rupees ninety thousand only)** forwarded as earnest money shall either be retained as a part of security deposit or refunded by the Govt. On receipt of the appropriate amount of security deposit all as per condition 22 of IAFW-2249.

(b) To execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein at the item rates contained in the aforesaid Sch 'A' (BOQ) from OR at such other rates as may be fixed under the provision of condition 62 and to carry out such deviations as may be ordered the condition 7 of IAFW-2249 up to a maximum **10% (Ten percent only)** and further agreed to refer all disputes as required by condition 70 to the sole arbitration of serving officer having degree in Engineering or equivalent or having passed final/direct final examination of the Sub Division-II of institution of surveyors (India) recognised by the Govt of India to be appointed by the CHIEF ENGINEER EASTERN COMMAND (CEEC) Kolkata, or in his absence the officer, officiating as CHIEF ENGINEER EASTERN COMMAND (CEEC) Kolkata whose decision shall be final conclusive and binding.

* To be deleted where not applicable.

(IN LIEU OF IAFW-1779- A 1955)

T E N D E R (CONTD.....)

Signature ----- Name -----

In the capacity of ----- duly authorised to sign the tender for and on
behalf of M/s. _____

(In block letters)

Date :

Postal Address

Witness Signature -----

Name -----

Address -----

Phone No.-----

A C C E P T A N C E

----- Alterations have been made in these documents as evidence, that these alterations were made before the execution of the contract agreement, they have been initialed by the contractor and **AGE (Contracts) for Accepting Officer.**

The tender was accepted by me on behalf of the President of India at item rates contained therein for the contract sum of Rs _____ (Rupees
_____ only)
on _____ 2026.

Signature : -----
(FOR AND ON BEHALF OF THE PRESIDENT OF INDIA)
APPOINTMENT: GARRISON ENGINEER SUKNA

DATED THIS ----- DAY OF -----2026

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

FOR

ITEM RATE CONTRACT (IAFW-1779A, REVISED 1955)

1. A copy of the GENERAL CONDITIONS OF CONTRACTS (IAFW-2249)-1989 Print with Errata 1 to 22 and amendments No. 1 to 49 has been supplied to me/us and is in my/our possession. I/We have read and understood the provisions contained in the aforesaid GENERAL CONDITIONS OF CONTRACTS before submission of this tender and I/We agree that I/we shall abide by the Terms and Conditions thereof, as modified, if any, elsewhere in this tender document.

2. 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. **34 to 66**) with errata 1 to 22 and amendments No. 1 to 49, containing 26 pages (Serial Page No. **67 to 92**) from part of this tender documents.

NOTE:-

- (i) The documents mentioned above can be seen in the office of the Garrison Engineer Bengdubi or in any other MES (CE/CWE) office during working hours.

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.

AGE (Contracts)
For Accepting Officer

Signature of Contractor
Dated:

SCHEDULE OF MINIMUM FAIR WAGES

1. It is hereby agreed that the “Schedule of Minimum Fair Wages” as published vide Government of India Notification dated 10 March 1992 and further Notification till date of receipt of tender, forms part of these tender documents.

2. My/Our signature hereunder amounts to my/our having read and understood the provisions contained therein and I/we agree that I/we shall abide by the same and that aforesaid documents form part of this tender.

3. It is also agreed by me/us that although latest notification, as available with the Accepting Officer, has been formed part of the contract, in case the Government has further revised the wages, the latest revised wages for labour shall only be applicable.

Notes: [a] The documents mentioned above can also be seen in the office of the Garrison Engineer, Sukna, Simulbari [Post], Darjeeling, Pin – 734009 or in any other MES office during working hours.

[b] In case of difference in interpretation due to wordings of English and Hindi versions, the English version will prevail as per Article 348 of Constitution of India.

AGE (Contracts)
For Accepting Officer

Signature of Contractor
Dated:

SPECIAL CONDITIONS AND REQUIREMENT**1. GENERAL:**

The following special conditions should be read in conjunction General conditions of contracts, IAFW-2249 (1989 print) and IAFW-1779A (revised 1955) including Errata/amendments thereto. If any provision in these special conditions is at variance with that of the aforesaid documents, the provisions in these special conditions shall be deemed to take precedence.

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

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

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

3. SECURITY AND PASSES:

- 3.1 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 work. If for reasons of technical collaboration or other consideration, the employment of any foreign national is unavoidable, the contractor shall furnish full particulars to this effect to the Accepting Officer at the time of submission of his tender.
- 3.2 The contractor shall, on demand by the Engineer-in-Charge, submit list of his agents, employees and work people concerned and shall satisfy the Engineer-in-Charge as to the bonafides of such people.
- 3.3 The Engineer-in-Charge shall at his discretion have the right to issue passes as per rules and regulations of the installation/Area in force to control the admission of the contractor, his agents, employees and work people to the site of the work or any part thereof. Passes should be returned at any time on demand by the Engineer-in-Charge or the authorities concerned and in any case on completion of work.
- 3.4 The contractor and his agents, employees and work people shall observe all the rules promulgated by the authority controlling the installation/area in which the work is to be carried out e.g. prohibition of smoking and lighting, fire precautions, search of persons on entry and exit, keeping to specific routes, observing specified timing etc. Nothing extra shall be admissible for any man hours etc. lost on this account.

Contd...

SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**4. PROVISION FOR RESTRICTED AREA**

4.1 **CONDITIONS OF WORKING IN RESTRICTED AREA.** Restriction for entry to work site and working conditions in Restricted Area shall be as under:-

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

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

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

(d) **IDENTITY CARDS OR PASSES**

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

(ii) **IDENTITY OF WORKMEN.** Every workman shall be in possession of an Identity Card. The identity cards shall be issued after a thorough investigation of the antecedents of the labourers, by contractor and attested by the officer-in-Charge of the unit concerned in accordance with the standing rules and regulations of the unit.

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

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

SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

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

(g) **WORKING HOURS.** The units controlling restricted area, usually work during six days in a week and remain closed on the 7th day. The working hours available to contractor's labour/staff shall however accordingly get reduced because of the time taken in security checks observed at the time of entry and exit and during working hours. The exact working hours, working days and non working days observed for these restricted area(s), where works are to be carried out shall be deemed to have been ascertained by contractor before submitting his tender. The tenderers attention is invited to the fact that total number of working hours for a unit are prescribed in regulations and that they cannot be increased by the Garrison Engineer. The definition of "Working Day" as given under condition 1 (t) of IAFW-2249 does not apply in case where the works are carried out in restricted area.

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

5. **Access to Worksite Area after completion of works:** After the works are completed and surplus stores etc removed, the contractor, his agents, representatives or workmen etc shall not be allowed to have access to the Worksite Area except for attending any rectification of defects pointed out to him by the GE.

6 **FIRE PRECAUTIONS**

- 6.1 The contractor, his agents, representatives, workmen etc shall strictly observe the orders pertaining to fire precautions prevailing within the restricted area.
- 6.2 Motor transport vehicles, if any allowed by authorities to enter the restricted area, must be fitted with serviceable fire extinguishers.

SPECIAL CONDITIONS AND REQUIREMENT (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 Govt of India/Sate Govt./Union Territory under Minimum Wages Act or Contract Labour (Abolition and Regulations Act) whichever is higher.
- 7.2 It is the responsibility of the contractor to ensure payment of wages complying with Govt. notification in vogue alongwith taxes, if any. Prices quoted by contractor shall be deemed to be inclusive of all such wages and taxes.
- 7.3 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.
- 7.4 The contractor shall have no claim whatsoever if on account of local factors and /or regulations, he is required to pay the wages in excess of minimum wages as described above during the execution of work.

8. ROYALTIES:

- 8.1 Reference condition 14 of General Conditions of Contracts (IAFW-2249). No quarries on Defence land are available.

9. LAND FOR TEMPORARY WORKSHOP STORES ETC:

- 9.1 Delete the following from lines 5 to 9 of Sub Para 1 of condition 24 of IAFW-2249 reading "In the event of area of land..... land allotted to him" and insert as under:-

(a) "The contractor shall be allotted free of charge, the area as marked on the layout plan for purpose of erection of temporary workshop, stores etc. No M of D land is available for accommodation of labour and canteen in restricted area for which the contractor shall make his own arrangement at his own expense. However, land for accommodation of Labour and Canteen in unrestricted are may be allotted to him" .

(b) "Separate land will be allotted to the contractor for the storage of materials, temporary workshop and offices, for which he shall pay the nominal rent of Rs. 1/- per year or part of a year as mentioned in condition 24 of IAFW-2249. The land/open space available within vicinity of site of work as directed by GE may also be used by the contractor for these purposes but free of charge".

10. WATER

- 10.1 Refer condition 31 of General Conditions of Contract IAFW-2249 and Clause 1.13 of MES Schedule:-

Water will be supplied by MES at the points(s) as directed by the Engineer – in - Charge. As the water supply by MES is likely to be intermittent/short supply the contractor shall make his own arrangement for storing the water required for the works, labour and workmen etc. at his own expense. The contractor shall not have any claim on account of short/intermittent supply and shall make his own arrangement to supplement the requisite quantity of water.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**11. ELECTRIC SUPPLY:**

- 11.1 In case the contractor desires to buy the electricity from the MES, in such case Electric supply required for the work upto a maximum of 5 KW single phase shall be made available by the MES at points(s) as directed by the GE. KWH meters to register the electric energy supplied and main switch shall be provided and installed by the MES. Contractor shall provide all necessary cable, fittings etc, from the tapping point in order to ensure a proper and suitable supply of electricity for execution of work:-

The contractor will be charged for the electric energy consumed for execution of works at the following rates:-

- (i) At Rs. 14.26 per Unit for lighting purpose
- (ii) At Rs. 14.26 per Unit for power

- 11.2 MES do not guarantee continuity of supply and no compensation whatsoever shall be allowed for supply becoming intermittent or for breakdown in the system.
- 11.3 GE or his representative shall be free to inspect all the power consuming devices or any electric lines provided by the contractor. Any devices or electric lines provided by the contractor, which is not to the satisfaction of the GE shall be disconnected from the supply, if so directed by him.

12. CO-OPERATION WITH OTHER AGENCIES:

- 12.1 The contractor shall permit free access and generally afford reasonable facilities to other agencies or department workmen engaged by the Govt to carryout their part of the work, if any, under separate arrangements.
- 12.2 The contractor's prices shall be deemed to cater for all the above contingencies and nothing extra shall be admissible on these accounts.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**14. MATERIALS AND SAMPLE OF MATERIALS:**

- 14.1 Refer condition 10 of IAFW-2249 and Clause 1.6 and 1.7 of MES Schedule Part -I.
- 14.2 Materials provided by the contractor for incorporation in the works shall unless otherwise specified in the particulars specifications be ISI marked, ISI means Indian Standards as issued by the Bureau of Indian Standards. Wherever in the specifications I.S. is referred to, it means the edition with all amendments, current on the due date of receipt of the tender documents. The materials listed in Appx 'B' shall be of the makes as specified therein.
- 14.3 The tenderer(s) is advised to inspect other materials which are displayed in the office of GE, before submitting his tenders. The tenderer shall be deemed to have inspected the samples and satisfied himself as to the nature and quality of materials, he is required to incorporate in the work irrespective of whether he has actually inspected them or not. The materials to be incorporated in the work by the contractor shall be IS marked or shall be equal or superior in quality to sample displayed and shall comply with the specifications given hereinafter.
- 14.4 The contractor shall produce samples of all materials, articles, fittings, accessories etc that he proposes to use and get these approved in writing by the Garrison Engineer within reasonable time from the date of commencement of works as per work order. The materials, articles, etc as approved shall be labeled as such and shall be signed by the GE and the contractor's representative. These samples shall be kept in the custody of the Garrison Engineer/Engineer- in-Charge.
- 14.5 The contractor shall not procure materials unless the samples are first got approved by the Garrison Engineer.
- 14.6 The brand of all materials, articles, fittings, etc, approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded in the works passing register.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

- 14.7 The Govt. reserves the right to get the items/articles to be incorporated in the work tested in approved laboratories. The cost of sample for testing shall be borne by the contractor and the remaining expenses such as cost of transportation of sample to laboratory and testing fee shall be borne by the Govt, if the test result is found to be satisfactory. However, in the event of the test result being found unsatisfactory, the entire cost of testing including cost of sample shall be borne by the contractor. Government may get more than one sample of the same material tested and the cost of such testing shall be borne by the Government.
15. **RECORD OF PROPRIETARY MATERIALS:**
- 15.1 The quantity of materials such as cement, steel, paints, water proofing compound, chemicals for ant-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.
- 15.2 Materials brought to site shall be stored as directed by the Engineer-in-Charge and those already recorded in measurement book shall be suitable marked for identification.
- 15.3 The contractor shall obtain proprietary/branded materials from manufacturers or from manufactures authorised stockists where such authorised stockist have been appointed. The contractor shall, on demand, produce original receipted vouchers/invoices of suppliers to the Garrison Engineer, to ensure that the contractor has actually brought the required quality of the materials from the authorised dealers/manufactures and also to find out the rates thereof. The original vouchers, invoices shall be defaced and stamped by Engineer-in-Charge, indicating contract number, name of work, under his dated signature. The contractor shall ensure that the materials are brought to site, in original sealed containers/packing bearing manufacturer's marking except in the case of the requirement of material(s) being less than the smallest packing.
16. **PRODUCTION OF VOUCHERS**
- 16.1 Contractor shall produce purchase vouchers/invoices from the manufacturers and/or their authorised agents for the full quantity of following materials to the Garrison Engineer, as applicable as a prerequisite before submitting claims for payment for advance on account of the work done and/or materials collected in accordance with condition 64 of General Conditions of contracts (IAFW-2249). The Garrison Engineer will check the same before making RAR payment against these items. Production of purchase voucher for these items is mandatory. The Garrison Engineer will not make payment against the items listed below in RARs unless the purchase vouchers for the same have been produced to him and verified by him.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

- (a) All proprietary articles/Materials/Items
- (b) Cement
- (c) Steel
- (d) LED Street Light/ Flood Light Luminaire, Hot Dip Galvanised Octagonal Poles, LED Flood Lights, Junction Box.
- (e) Pipes & fittings (GI ,CI ,DI, SGSW , CPVC, PVC)
- (f) Floor/wall tiles
- (g) E/M Equipments like Transformer, DG Set, Pumps, AC, Lifts, Factory Made Panels, VCB, OCB, SF-6 etc.
- (h) Electric poles, HT/LT cable, Geo-switch, Lightning Arrestor.
- (i) For each material /Items for which payment is claimed by the contractor as material at Site (Except materials of local origin).
- (j) For any other Items/ Materials as specified elsewhere in the tender documents and in addition for any other item as directed by the GE as per condition 10 of IAFW-2249

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

16.3 When the cost of each category of material is less than Rs. 1,000/-, production of voucher may not be insisted upon, if the Garrison Engineer is otherwise satisfied with the quality & quantity of material brought by the contractor.

16.4 **Once a purchase voucher is received from contractor, thorough verification by Engineer-in-Charge is mandatory.**

17. **RECORD OF CONSUMPTION OF CEMENT**

- (a) The contractor shall maintain a pucca bound register with serially numbered pages with all pages initialed by Engineer-in-Charge again numbering showing quantities of cement procured received at site used in work and balance at the end of each day. The form of record shall be as approved by Engineer-in-Charge. The register shall be signed daily by representative of MES and the contractor in token of verification of its correctness and will be checked by Engineer-in-Charge at least once a week and on the days cement is consumed by the contractor.
- (b) The register shall be kept at site in safe custody of the contractor representative during the progress of the work and on demand be produced for verification to the inspecting officer(s).
- (c) On completion of the contractor shall deposit the cement register with the Engineer-in-Charge for record.

18. **PERIOD FOR KEEPING THE TENDER OPEN:**

18.1 The tender shall remain open for acceptance for a period of **60 (Sixty)** days from the next date subsequent to bid submission end date.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**19. SECURITY OF CLASSIFIED DOCUMENTS:**

- 19.1 Contractor's special attention is drawn to conditions 2-A and 3 of IAFW-2249 (General Conditions of Contracts). The Contractor shall not communicate any classified information regarding the work either to subcontractors or other 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 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).

20. OFFICIAL SECRETS ACT:

- 20.1 The contractor shall be bound by the Official Secret Act – 1923.

21. CONTRACTOR'S PLANT/EQUIPMENT AT SITE:

- 21.1 The contractor shall furnish to the Engineer-in-Charge every morning distribution return of his plants/equipments on the site of work stating the following particulars:-

(a) Particulars of plants/equipments, their make, manufacturers Model Number, if any, Registration number if any, capacity, year of manufacture and year of purchase etc.'

(b) Total No.(Quantity) on site of work.

(c) Location, indicating No., (Quantity) at each location on the site of work.

(d) Purchase value on the date of purchase. For the purpose of this condition, plant/equipment shall include Vehicles i.e. trucks and lorries but neither the workman's tools nor any manually operated tools/equipment shall be given. The Engineer-in-Charge shall record the particulars supplied by the contractor in the works diary and send the return to the GE for record in his office.

- 21.2 **LOSS OR DAMAGE ON ACCOUNT OF ENEMY ACTION:** If as a result of enemy action the contractor suffers any loss or damage the Government shall reimburse to the contractor such loss or damage to the extent and in the manner hereinafter provided:-

(i) The loss suffered by him on account of my damage or destruction of his plant/equipment (as defined in special condition (a) above) or materials or any part or parts thereof. (The amount of loss assessed by the Accepting Officer of the contract or the CWE in case of contracts accepted by GE, on this account shall be final and bindings).

(ii) The compensation paid by him under any law for the time being in force to any workman employed by him for any injury caused to him or to the workman's legal successors for loss of the workman's life

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

(iii) Payment of compensation for loss or damage to any work or part of work carried out (The amount of compensation shall be determined in accordance with condition 48 of General Conditions of Contracts IAFW-2249).

No reimbursement shall be made nor any compensation be payable under the above provision unless the contractor had taken Air Defence Precautions ordered in writing by the GE/OC concerned or in the absence of such orders, reasonable precautions. No. reimbursement shall be payable nor shall any compensation be payable for any plant/equipment or materials not lying on site of work at the time of enemy action.

22. **ADVANCES ON ACCOUNT OF NON PERISHABLE-MATERIALS/ITEMS WHICH DO NOT LOOSE IDENTITY AS DECIDED BY THE GE:**

22.1 Refer Condition 64 of IAFW 2249.

23. **RETENTION MONEY/COMPENSATION FOR DELAY:**

23.1 Refer Condition 50 of IAFW-2249 of General Condition of Contracts for compensation for delay. For the purpose of calculating retention money under condition 64 of IAFW-2249, and under condition 50 of IAFW-2249, the value of contract as revised by above mentioned price variation under modified Condition 63 of IAFW-2249 shall be taken into account.

24. **CLEANING DOWN:**

24.1 Refer condition 49 of IAFW-2249. General Conditions of Contracts.

24.2 The contractor shall clean all floors, walls, remove cement/lime/paint marks/drops, etc clean the joinery glass panes etc, touch up all painters work and carry out all other necessary items of works in connection therewith and leave the whole premises clean before handing over the building.

25. **LABEL ON ARTICLES.** Contractor shall provide aluminium LABEL of not less than 75 mm x 25 mm and of adequate gauge with brass screws on articles like transformer, panel board, generating set etc indicating there on the names of the firm, the contract No, and year ass directed by GE. The cost of such aluminium labels shall be deemed to be included in the quoted rates against respective item of Schedule 'A'.

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

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**23. ELECTRICAL LICENSE FOR CARRYING OUT ELECTRICAL WORKS:-**

- 23.1 For execution of electrical works / electrical component of works requiring Electrical License in accordance with Rule 29 under Part-III of Central Electricity Authority Regulation, 2010 the contractor shall have valid Electrical License issued by the concerned State / Union Territory in the name of the Firm or get the work executed through an agency having valid Electrical License. Items of works under category (c) [including its sub-categories (i) to (vii)] and category (d) (v) shall also be executed in this manner to the extent Rule 29 mentioned above is applicable to such items.
- 23.2 Prior to commencement of electrical work / electrical component of works and other works as mentioned in Para 28.1 above, copy of valid Electrical License in the name of the contractor or copy of agreement with agency having valid Electrical License along with agency's Electrical License shall be submitted by the contractor to the Accepting Officer through GE / Project Manager with copy to CWE, as applicable. In case contractor does not possess valid Electrical License and he intends to get such work executed through agency having valid Electrical License and with whom he has agreement, prior approval of such agency in all contracts shall be got done from competent authority, who shall be concerned CWE (Concerned CE Zone / CCE in case there is no CWE). Copy of License shall be kept on record by GE/AGE(I)/PM as well as CWE/CE Zone/CCE for future reference.
- 23.3 GE/PM and concerned AGE / Engineer-in-Charge shall ensure that electrical work / electrical component of works and other works as mentioned in Para 28.1 above required to be executed in accordance with Rule 29 mentioned above are executed by contractor / agency having valid Electrical License, as applicable. In addition, Supervisor for execution of electrical works / electrical component of works employed by the contractor shall possess Supervisor Certificate of Competency issued by concerned State Government / Union Territory and the worker / tradesmen for execution of electrical works / electrical component of works shall hold necessary Permit issued by concerned State Government / Union Territory.
- 23.4 Reference of Electrical License and details of Supervisor's Certificate of Competency and Permit of tradesmen employed for execution of electrical work / electrical component of works shall be duly incorporated in the Works Diary and relevant site documents respectively for the whole period during which such work is executed.
- 26. FEES CHARGEABLE BY POLICE AUTHORITIES FOR VERIFICATION OF ANTECEDENTS:**
- 26.1 Verification of antecedents of Proprietor/partner/Directors of the firm in connection with issue of tender and of Enlistment shall be Govt responsibility and accordingly payment to police authorities towards verification of antecedents shall be borne by Govt.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

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

27. GUARANTEE FOR ANTITERMITE TREATMENT.

27.1 Should the GE, at any time during construction or reconstruction or prior to the expiration of period of ten years after the certified date of completion of work as per contract finds that buildings have been infested with termites, the contractor shall on demand in writing from the GE, specifying the building(s) complained or not-with-standing the same may have been inadvertently passed, certified and paid for forthwith under take to carry out such treatment as may be necessary to render (the said building) free from termite infestation at his own expense for period of ten years from the certified date of completion and in the event or failing to do so with in a period to be specified by the GE in his demand aforesaid, the GE shall undertake such treatment at the risk and expenses in respect of the contractor. The liability of the contractor under this condition shall not extend beyond the period of ten years from the certified date of completion unless the GE has previously given notice to the contractor. Conditions of contract (IAFW-2249) shall be deemed to be amended to the extend as mentioned above.

27.2 An amount of security deposit calculated as per scales laid down for Earnest Money enhanced by 25% on the amount of antitermite treatment at contract rates for the buildings for which treatment to be carried out shall be retained out of the final bill amount towards security deposit for antitermite treatment and will be refunded to the contractor after expiry of the period of ten years from the certified date of completion by the GE, provided there are no termite infestation in the buildings. Condition 10, 46 and 68 of General Conditions of Contracts (IAFW-2249) shall be deemed be to amended to the extent mentioned above.

Amount Of Anti-Termite At Contract Ra		Amount to be retained from contractor's dues Rounded to nearest thousand rupees
(i)	Up to Rs 50.00 lakh	2% of amount subject to minimum of Rs 5000/- and enhanced by 25%
(ii)	Over Rs 50.00 lakh and up to Rs 100.00 lakh	Rs. 1,00,000/- + 1.5% of amount exceeding Rs. 50.00 lakhs and enhanced by 25%
(iii)	Over Rs 100.00 lakh and up to Rs 500.00 lakh	Rs. 1,75,000/- + 1.0% of amount exceeding Rs. 100.00 lakhs and enhanced by 25%
(iv)	Over Rs 500.00 lakh and up to Rs.1500 lakhs	Rs. 5,75,000/- + 0.5% of amount exceeding Rs. 500.00 lakhs and enhanced by 25%
(v)	Over Rs 1500.00 lakhs	Rs. 10,75,000/- + 0.5% of amount exceeding Rs.1500.00 lakhs subject to a maximum of Rs.15.00 lakhs and enhanced by 25%.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)**28. GUARANTEE FOR WATER PROOFING TREATMENT**

- 28.1 The period of Guarantee for the water proofing treatment shall be 10(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 own cost.
- 28.2 The contractor shall furnish guarantee in favour of the GE for the efficacy of the water proofing treatment during the guarantee period.
- 28.3 An amount of security deposit calculated as per scales laid down for Earnest Money enhanced by 25% on the amount of water proofing treatment at contract rates for the building for which treatment to be carried out shall be retained from the contractor's final bill as security deposit for the water proofing treatment which shall be released to the contractor only after expiry of guarantee period. The contractor may alternatively furnish a fixed deposit receipt in favour of GE in lieu of sum to be retained as security deposit for water proofing treatment from any approved Scheduled Bank.
- 28.4 Condition 46 of the General Conditions of Contracts (IAFW-2249) shall be deemed to be amended to the extent mentioned above.

Amount of Water Proofing treatment at contract rate		Amount to be retained from contractor's dues rounded to nearest thousand rupees
(i)	Up to Rs 50.00 lakh	2% of amount subject to minimum of Rs 5000/- and enhanced by 25%
(ii)	Over Rs 50.00 lakh and up to Rs 100.00 lakh	Rs. 1,00,000/- + 1.5% of amount exceeding Rs. 50.00 lakhs and enhanced by 25%
(iii)	Over Rs 100.00 lakh and up to Rs 500.00 lakh	Rs. 1,75,000/- + 1.0% of amount exceeding Rs. 100.00 lakhs and enhanced by 25%
(iv)	Over Rs 500.00 lakh and up to Rs.1500 lakhs	Rs. 5,75,000/- + 0.5% of amount exceeding Rs. 500.00 lakhs and enhanced by 25%
(v)	Over Rs 1500.00 lakhs	Rs. 10,75,000/- + 0.5% of amount exceeding Rs. 1500.00 lakhs subject to a maximum of Rs.15.00 lakhs and enhanced by 25%.

29. **GUARANTEE FOR LED, EARTHING/ WEATHER COAT** : The contractor shall produce 05 years guarantee for LED, Earthing/ Weather coat.

30. PRE-CONSTRUCTION ANTI-TERMITE TREATMENT

- 30.1 Anti-termite chemical treatment shall be carried out to the buildings as specified under scope of work and in particular specifications. The work of Anti-termite treatment shall be carried out either by a specialist firm or by any other firm/agency enlisted for carrying out anti- termite treatment work in MES and who is holding a valid license under Insecticides Act to carryout the anti-termite pest control operation, with the prior written approval of CWE.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

- 30.2 The contractor shall stand a guarantee to the Government for a period of ten years from the certified date of completion of the work for the effectiveness of the treatment carried out. The contractor shall furnish a written guarantee for the effectiveness of the treatment for a period of ten years in favour of GE.
- 30.3 Chemical used for Anti-termite treatment shall be treated as proprietary item and the quantity procured shall be recorded in measurement book duly signed by Engineer-in-Charge and the contractor. Chemical brought to site in sealed containers bearing ISI certification marks shall only be permitted to be used.
- 30.4 Should GE at any time during construction or reconstruction or prior to the expiry of the guarantee period, find that the buildings have been infected with termites, the contractor shall on demand in writing from the GE specifying the building complained of notwithstanding that the same may have been inadvertently passed, certified and paid for, undertake to carry out such treatment as may be necessary forthwith to render the building(s) free from termite infection at his own expense, till expiry of the guarantee period. In the event of his failure to do so, within the specified period to be specified by the GE in his aforesaid demand, the GE may undertake such treatment at the risk and expense in all respects of the contractor. The liability of the contractor under this condition shall not extend beyond the period of ten years from the certified date of completion, unless the GE had previously given notice to the contractor to rectify the defects.
- 30.5 Chemicals shall be stored carefully at site, seals of the containers shall be broken only in the presence of the Engineer-in-Charge. Empty containers should be got removed off the site promptly. If on any particular day the contents of full containers could not be used in the work, the containers should be got sealed at the end of the day in the presence of the Engineer-in- Charge and opened when required, also in the presence of the Engineer-in-Charge.
- 30.6 The Engineer-in-Charge should ensure that paid vouchers are produced by the agency executing the work for the full quantity of chemicals required and brought to site and record of such vouchers should be kept by the Engineer-in-Charge.
- 30.7 Tests may be carried out, in a recognized laboratory or test house at the discretion of the GE, of the chemicals brought by the agency executing the work, to satisfy that spurious materials are not being used, and testing charges borne by the contractor. A copy of IS 6313 (Part-II) should be made available at site by the contractor.
- 30.8 The contractor shall provide a plate/board of dimensions 45cm x 30cm x2cm thick in CM (1:4) on all the buildings as directed by the Engineer-in-Charge and engrave there on the contract No, Name of the Agency executing the termite treatment and the date of expiry of the guarantee period.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

- 30.9 The Security Deposit at rate of 0.25% of the assessed cost of the building as per payment schedule as calculated for the buildings for which treatment is to be carried out shall be retained from the contractor's final bill as security deposit for the anti-termite treatment. This will be over and above the Performance Security. This amount shall be refunded to the Contractor after the expiration 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 (IAFA-451). The facility of furnishing fixed deposit receipt in lieu of the sum to be retained as security may be accepted.

31. **TESTING OF MATERIALS**

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

27. **RE-IMBURSEMENT/REFUND ON VARIATION IN TAXES DIRECTLY RELATED TO CONTRACT VALUE:**

- 27.1 The rates quoted by the contractor shall be deemed to be inclusive of all taxes (including GST, Sales Tax/VAT on Work contracts, turnover Tax, Service Tax, Labour Welfare Cess/Tax etc), duties, Royalties, Octroi and other levies payable under the respective Statutes. No reimbursement/refund for variation in rates of taxes, duties, Royalties, Octroi and other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi and other levies shall be made except as provided here-in-below.
- 27.2 The taxes which are levied by Govt at certain percentage rates on Contract Sum/Amount shall be termed as "Taxes directly related to Contract Value" such as GST, Sales Tax/VAT on Work Contracts, Turnover Tax, Labour Welfare Cess/Tax and like but excluding Income Tax. The tenderer 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 of receipt of tenders. Any increase in percentage rates of "Taxes directly related to Contract Value" with reference to prevailing rates on last due date for receipt of tenders shall be reimbursed to the Contractor and any decrease in percentage rates of "Taxes directly related to Contract Value" with reference to prevailing rates on last due date for receipt of tenders shall be refunded by the Contractor to the Govt/deducted by the Govt from any payments due to the Contractor. Similarly imposition of any new "Taxes directly related to the 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 the Contract Value" prevailing on last due date of receipt of tenders shall be refunded by the Contractor to the Govt/deducted by the Govt from the payments due to the Contractor.

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SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

- 27.3 The contractor shall, within a reasonable time of his becoming aware of variation in percentage rates and/or imposition of any further "Taxes directly related to Contract Value" give written notice thereof to the GE stating that the same is given pursuant to this Special Condition, together with all information relating thereto which he may be in a position to supply. The Contractors shall submit the other documentary proof/information as the GE may require.
- 27.4 The Contractor shall, for the purpose of this condition keep such books of account and other documents as are necessary and shall allow inspection of the same by a duly authorized representative of Govt. And shall further, at the request of the GE furnish, verified in such a manners the GE may require, any documents so kept and such other information as the GE may require.
- 27.5 Reimbursement for increase in percentage rates/imposition of "Taxes directly related to Contract Value" shall be made only if the contractors necessarily and properly pays additional "taxes directly related to Contract Value" to the Govt, without getting the same adjusted against any other tax liability or without getting the same refunded from the concerned Govt Authority and submits documentary proof for the same as the GE may require.

28. SCOPE OF CONCILIATION

- 28.1 The scope of conciliation shall be restricted to the following types of disputes with financial limit as indicated therein :-
- (a) Disputes relating to levy of compensation for delay in completion actual amount of compensation.
 - (b) Disputes relating to technical examination of works.
 - (c) Disputes relating to interpretation of the provisions of the contract with reference to their application to parties.
 - (d) Disputes relating to non return of schedule 'B' stores over-issued to contractor.
 - (e) Any other dispute having fair chances of being resolved by conciliation and considered fit to be referred to conciliation by the parties.
- For item (b), (c), (d) and (e) each as stated above the financial limit shall be Rupees two lakhs or one percent of the contract amount whichever is less.

29. COMMENCEMENT OF CONCILIATION PROCEEDINGS

- 29.1 The party initiating conciliation shall send to the other party a written invitation to conciliate, briefly identifying the subject of the dispute.
- 29.2 Conciliation proceedings shall commence when the other party accepts in writing the invitation to conciliate.
- 29.3 If the other party rejects the invitation, there will be no conciliation proceedings. If the party initiating conciliation does not receive a reply within 30 days from the date on which he sends or within such other periods of time as specified in the invitation, he may elect to treat this as a rejection of the invitation to conciliate and if he so elects, he shall inform in writing the other party accordingly.

Contd...

SPECIAL CONDITIONS AND REQUIREMENT (CONTD....)

30. NUMBERS OF CONCILIATORS :

30.1 There shall be a sole conciliator.

30.2 APPOINTMENT OF CONCILIATOR:-

30.3 All disputes brought out in Para 38.1(a) to (e) herein before shall be referred to the sole conciliator viz serving officer not below the rank of Superintending Engineer/Superintending Engineer (QS & C) having degree in Engineering or equivalent or

SIGNATURE OF CONTRACTOR
DATE:

AGE (Contracts)
For Accepting Officer

PARTICULAR SPECIFICATIONS**1. GENERAL**

- 1.1. The work under this contract shall be carried out in accordance with the description in BOQ, Particular Specifications, drawings forming part of the contract, General Specifications and other provisions in the MES Schedule read in conjunction with each other.
- 1.2. The term General Specifications, referred to in clause 1.1 above and in IAFW – 2249 shall mean the specifications contained in the MES Standard Schedule of Rates, Part – I [2009] [Specifications] and MES Standard Schedule of Rates, Part – II [2020] [Rates] including errata and amendments thereto.
- 1.3. General rules, Specifications, Special Conditions, method of measurements and all preambles in the MES Schedule shall be deemed to apply to the works under this contract unless otherwise mentioned in these tender documents.
- 1.4. Particular Specifications given hereinafter shall be applicable to all the works covered in BOQ and these are brief and only to particularise and emphasize the specifications given in MES Schedule which are not repeated.
- 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. In case no specifications are given in these Particular Specifications for any item of work then the work shall be executed to the specification given in the MES Schedule in preference to the local trade practice.
- 1.7. Where specification for any item of work is not given in these particular Specifications or in MES Schedule in that case specifications given in relevant Indian standard specifications or code of practice shall be followed.
- 1.8. In the event of any discrepancy between various documents forming Part of the tender, the following order of precedence shall be observed:
 - [a] Description of BOQ including notes therein
 - [b] Particular Specifications [Sections I & II]
 - [c] Drawings including notes thereon
 - [d] MES Schedule [SSR]. 2009 for specification
 - [e] Indian Standard specifications/Code of practice

NOTE: In case no provision is made in [a] to [d] above, Indian Standard Specification/Code of Practice shall be followed.

MAKING GOOD:- The contractor shall cut, leave or form holes, recesses, chases etc, in concrete, brick work, walls, ceilings, floors and in any other situations as required or as directed by the Engineer-in-Charge and make good in cement and sand mortar (1:3)/PCC (1:2:4) type Bo as decided by Engineer-in-Charge and finish to match the adjoining surfaces.

2. STORES & MATERIALS:

- 2.1. In case specification of any material needed for incorporation in the work is not contained in any of the contract documents mentioned in Clause 1.1 above, the specification of such materials proposed to be incorporated in the work shall be got approved in writing from the GE before their incorporation in the work.

PARTICULAR SPECIFICATIONS (Contd...)

- 2.2. All manufactured materials/articles other than those manufactured in contractor's workshop at site shall bear IS certifications mark.
- 2.3. Items conforming to IS will be accepted only when ISI marked materials are not manufactured in the country. However, materials which are superior to ISI specifications such as particular type of paints, may be used without any extra cost to the Government but before incorporating such materials/items in the work, the contractor shall produce necessary test certificate as required by the GE as a proof that the materials/items to be incorporated in the work conform to relevant IS or superior to IS.
- 2.4. If the contractor, at his own discretion, intends to provide materials/items conforming to IS specifications and bearing IS certification mark from any other manufacturer's other than those listed in the tender, such materials shall be allowed to be incorporated with prior approval of GE and without any price adjustment. However, this option shall only be exercised when none of the manufacturers mentioned in these tender documents produce the materials with IS certification mark.
- 2.5. **SAMPLES:** The contractor shall produce samples of all building materials and fittings before making arrangements for bulk supplies for prior approval of the GE. The materials to be provided by the contractor shall conform to or shall be superior to the samples approved. Please also refer clause 1.6 at Serial Page No. 1 – 3 of MES Schedule [Part – I].
- 3. STORAGE OF MATERIALS:** Materials shall be stored and protected all as specified in Clause 1.9 at Serial Page No. 1 – 4 of MES schedule [Part – I].
- 4. MATERIALS AND SAMPLES [REFER CONDITION 10 OF IAFW – 2249]:**
- 4.1. Materials and articles shall bear IS certification marks and only those shall be incorporated in the work except for the materials for which specific makes are specified in the tender. The tenderer is advised to inspect the samples of other materials 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 required to incorporate in the work once he submits his quoted tender irrespective of whether he has actually inspected them or not. The materials to be incorporated in the work by the contractor shall be ISI marked or shall be superior to the quality of samples displayed in the office of the Garrison Engineer and shall comply with the specification given herein after.
- 4.2. The contractor shall not procure materials unless the Garrison Engineer first approves the samples in writing. The materials, articles etc approved shall be labeled as such and shall be signed by the GE and contractor's representative. These samples shall be kept in the custody of the Garrison Engineer / Engineer – in – Charge till the completion of the work or as directed by the GE. The brand of all materials, articles, fittings etc, approved together with the names of the manufacturers and firms from which supplies have been arranged shall be recorded.
- 4.3. With reference to condition 10 of IAFW – 2249 in respect of materials, if specific name of firm or make is inserted in this document for materials to be supplied, the materials only of that firm or make will be supplied by the contractor. In no case the materials of any other firm or make will be accepted. This will also apply to cases where more than one firm or make is specified in this document, in that case, the choice of make or firms so specified rests with the contractor.

PARTICULAR SPECIFICATIONS (Contd...)

- 4.4. Materials provided by the contractor for incorporation in the work shall, unless otherwise specified in the particular specifications comply with the requirement of the relevant Indian Standards [IS] and bear IS certification mark. IS means Indian Standards as issued by the Bureau of Indian Standards. Wherever in the specifications of "IS" are referred, it means the latest edition of Indian standards with all amendments, current on the due date of receipt of the tender documents.
- 4.5. Samples of all the materials required for completion of for entire contract shall be produced by the contractor to GE in stages for approval with in a period of one month from the date of commencement of work as per work order No.1. Accordingly, CPM chart shall reflect the target date by which samples are to be produced by the contractor.
- 4.6. The contractor shall submit a list of various materials / equipments to the GE within 02 weeks of acceptance of tender, for which samples are required to be got approved from GE in this work and the list shall be returned to contractor duly approved by GE immediately but not later than 07 days of receipt of the same with a copy to Accepting Officer. The list so approved by GE shall not be final but will serve as a guide only. It is contractor's responsibility to produce samples of all the materials for approval of GE before incorporation of the materials in the work. If it is found that any material has been incorporated in the work by the contractor without getting the sample approved from GE, GE shall be at liberty to reject the same at any time without assigning any reason. Contractor shall have to remove / demolish the same without any extra cost. No claim of contractor shall be entertained on this account.

5. PROPRIETARY MATERIALS:

- 5.1. The quantity of materials such as paints, Bitumen, Bituminous felt, WPC, chemicals, and the like as applicable and as directed by the Engineer-in-Charge [The quantity of which cannot be checked after incorporation in the work] shall be recorded in measurement book and signed by the contractor and the Engineer-in-Charge as a check to ensure that the required quantity had been brought to site for incorporation in the work. Materials brought to site shall be stored as directed by the Engineer-in-Charge and those already recorded in measurement books shall be suitably marked for identification.
- 5.2. Materials brought to site shall be stored as directed by the Engineer – in – Charge and those already recorded in measurement book shall be suitably marked for identification. The contractor shall ensure that the materials are brought to site, in original sealed container/packing bearing manufacturers marking except in the case of the procurement of material[s] being less than smallest packing. Sealed containers shall be opened in the presence of Engineer – in – Charge as and when required and empty containers should be kept in contractors store till the completion of the work for inspection by GE / Other Inspecting Officers.
- 5.3. Contractor shall produce original receipted vouchers/invoices from manufacturers and/or their authorised dealers and test certificates where applicable for the full quantity of the materials as required for respective items of the work under this contract before submitting claims for payment of advances on account of the work done and / or materials collected in accordance with Condition – 64 IAFW – 2249, General Condition of contracts. Vouchers / invoices so produced shall be defaced by Engineer – in – Charge as a token of verification.

PARTICULAR SPECIFICATIONS (Contd...)**6. TESTING OF MATERIALS [REFER CONDITION – 10A OF IAFW – 2249]:**

- 6.1. Sampling and testing of materials shall be done as per BIS stipulations and as specified / modified in tender documents. The cost of samples of materials and other expenses required to be incurred for taking the samples, packing, conveyance, preservation for future reference and testing charges shall be borne by the contractor. Tests stipulated as "Independent" and by "Board of officers" shall also be carried out without any extra cost to the Government.

7. SCOPE OF WORK:

- 7.1. The scope of work under this contract is as described in BOQ, as specified in Particular Specifications [Section – I & II] and as directed by the Engineer – in – Charge. Accepting Officer may, at his absolute discretion change the site during currency of contract. In the event of his decision to change the site, the contractor shall not be entitled to any extra payment.
- 7.2. **EXPRESS CONDITION:** The said work shall be executed other than the area specified in the work, as per urgent requirement as directed by Engr-in-Charge / GE. There shall not be any extra claim what so ever to this effect.

8. EXCAVATION AND EARTH WORK**8.1. GENERAL**

- 8.1.1. Excavation and Earth work shall be carried out as described in BOQ and as specified in the respective items. The work shall be carried out in accordance with provision of MES Schedule. Excavation shall be carried out to the shape and dimension as directed and as specified in the MES Schedule.
- 8.1.2. Excavation in trenches for pipes shall be carried out all as specified at clause No 18.42 to 18.42.6 of SSR Part – I (2009 Print).
- 8.1.3. Measurement of excavation in trenches for cable shall be as per authorised width as given in section 19.75 Clause 19.85 of SSR Part – I (2009 Print).

8.2. RETURNING, FILLING AND RAMMING IN TRENCHES

- 8.2.1. Material used for filling shall be free from salts, organic and other deleterious matter. All clods of earth exceeding 50 mm shall be broken or removed. Filling sides of trenches shall be all as specified in section 3 clause 3.19.2 of SSR Part-I (2009 Print).
- 8.2.2. Filling Plinth, Under Floor etc shall be carried out all as specified in section 3, clause No 3.19.3, 3.19.3.1 of SSR Part-I (2009 Print).
- 8.2.3. Filling in trenches for pipes shall be commenced only after the joints have been tested and passed by the Engineer-in-Charge in writing. In case where the trenches are excavated in soil, the filling shall be done with earth on both the sides simultaneously and on top of the pipes in layers not exceeding 250 mm thick, watered, rammed and compacted taking care that no damage is caused to the pipe below. In case of excavation in rock, the filling up to a depth of 300 mm above the crown of pipe shall be done with fine material such as earth, moorum or pulverized decomposed rock according to the availability at site. The remaining filling shall be done with rock fragments mixed with fine material to fill up the voids, watered, rammed and compacted in layers not exceeding 250 mm thick.

PARTICULAR SPECIFICATIONS (Contd...)**8.3. MAKING GOOD**

- 8.3.1. Roads, foot path including side drains if any cut through for cable trenches, shall be made good by the contractor to match with the existing specification at no extra cost and as directed by the Engineer – in – Charge unless other wise stated in BOQ when roads have to be crossed, half the road shall be dug at a time and proper warning notice, signs and lights shall be displayed and watch men posted by the contractor at his own cost.
- 8.3.2. Unit rates quoted by the contractor for various items in BOQ shall be deemed to include for all the contingencies as referred above, No claim, whatsoever, will be entertained by the department on this account.

8.4. EXISTING WORK

- 8.4.1. All pipes, water mains, cables etc, met with the course of excavation shall be carefully protected and supported without extra cost to the Government and the cost for the same shall be deemed to include in the unit rates quoted in BOQ.

8.5. WATER IN EXCAVATION

- 8.5.1. All water which may accumulate in excavations during the progress of work from rain, storms, seepages sub soil water or other causes as specified in clause 3.7© on Page No 18 of MES Schedule Part II is to be bailed/pumped out or other wise removed to keep the trench clean and dry. Care should be taken to ensure that water is not discharged where it is likely to cause inconvenience to the traffic. The tenders should note that no additional payment will be allowed to the contractor for bailing/pumping out all such water and the cost of the same shall be deemed to have been included in the rates quoted by the tenderer except for the inflow of water due to causes as specified in clause No 3.11 on pages 23 and 24 of MES Schedule Part II.

8.6. REMOVAL OF SURPLUS SOIL

- 8.6.1. Removal of surplus soil to a distance upto 50m shall be all as directed by Engineer-in-Charge.

8.7. SURFACE EXCAVATION

- 8.7.1. Excavation exceeding 1.5m in width as well as 10 Sqm area on plan; but not exceeding 30 cm in depth shall be carried out all as specified in BOQ.

9. CONCRETE WORK

- 9.1. **CEMENT**: Refer Appendix 'A' to Particular specifications

9.2. PRECAST CEMENT CONCRETE / PCC / RCC

- 9.2.1. Cement concrete shall be carried out all as specified in Clause 4.20 to 4.20.9 of SSR Part –I.

9.3. COARSE AGGREGATE

- 9.3.1. Coarse aggregate shall be crushed granite stone obtained from the sources as mention at **Appx – 'C'** conforming to cl 4.4 of MES Sch. The quality of aggregate shall be all as specified in clause 4.4.1 of SSR Part-I (2009). The size and grading of aggregate shall be all as shown in table –I of clause 4.4.7.1 of SSR Part-I.

PARTICULAR SPECIFICATIONS (Contd...)**9.4. FINE AGGREGATE**

- 9.4.1. Fine aggregate for concrete shall be natural river bed sand obtained from the sources as mention at **Appx – 'C'** as approved by GE and shall be free from admixtures of clay, loam, split, organic matter and other impurities and shall conform to Zone II to III of table IV of IS-383.

9.5. MIXING

- 9.5.1. All cement concrete shall be machine mixed deposited, rammed or consolidated. The GE may however approve hand mixing for small quantities of work which will be consolidated manually or by vibrator at the description of contractor with the approval of Engineer-in-charge.

9.6. WATER:

- 9.6.1. Water shall conform to requirement stipulated in IS-456 and as per class 4.9 of MES schedule.

9.7. CURING :

- 9.7.1. Exposed surfaces of concrete shall be kept continuously in a damp or wet condition as specified in clause 4.11.13 of SSR part –I (2009).

- 10.1.1. **PLASTICISER:** Plasticiser shall be used in Design Mix Concrete as per the Manufacturer's instruction without any Extra Cost to achieve the desired Results Strength and Workability. Plasticiser manufactured by M/S FOSROC CHEMICALS, INDIA LTD, SIKA QUALCRETE LTD ORMC-BAUCHEMIE (INDIA) PVT LTD shall be used. However, Plasticiser should confirm to IS-9103.

11.1.1. MIX OF CEMENT CONCRETE:

- (a) Mix of concrete shall be as specified in Sch 'A' / BoQ. If not specified the mix of cement concrete required in various situation shall be of the following specified grade/proportions. Plain cement concrete and the RCC shall be provided in accordance with IS: 456-2000: -

Sl No	1.2. Situation	Mix of cement concrete	Type with nominal size of graded aggregates
1	2	3	4
i	Sub-base of floor	1:3:6	Type C-2 (40mm)
ii	Lean concrete below RCC column footing	1:3:6	Type C-2 (40mm)
iii	All RCC work.	-	M-25 (design mix) where not mentioned in BoQ/Tender
iv	Lean concrete for wall, foundation and dwarf wall.	1:3:6	Type C-2 (40mm)
v	PCC in foundation for steps in GF and lean concrete to RCC post of staircase.	1:3:6	Type C-2 (40mm)

PARTICULAR SPECIFICATIONS (Contd ...)

vi	PCC chills, PCC drain, PCC plinth protection and hopper of gully trap and PCC blocks.	1: 3: 6	Type C-1(20mm)
vii	All PCC bed block and pre-cast Jalli.	1:2:4	Type B-0 (12.5mm)
viii	All plain cement concrete not described in (a) to (g) above	1:2:4	Type B-1(20mm)
ix	Plain cement concrete below plinth beam where shown on drawings	1: 3:6	Type C-2 (40mm)

- (b) All concrete except lime concrete shall be machine mixed. Where small quantities of concrete work is involved, hand mixing may be permitted by the Engineer-in-charge at his own discretion subject to addition of 10% extra cement.
- (c) Compaction of RCC slabs, beams, foundations and columns shall be done with approved mechanical vibrator using pin and surface type vibrators for all concrete works including for flooring concrete. In other locations compaction may be achieved manually as directed by Engineer-in-charge.
- (d) For batching, workability, mixing, form work, removal of form work, transportation, placing, compaction, construction joint, curing, protection and inspection of concrete refer relevant paras of MES Schedule Part-I.
- (e) Sampling and testing of concrete of grade M-30 / M-25 shall be done as per paras 4.11.17 of MES Schedule part I. Testing of concrete as mentioned in IS456 shall be carried out by the contractor without any extra cost to the department i.e. cost of samples, transportation and testing will be borne by the contractor. Sampling and strength testing of concrete shall be done in accordance with clause 15 of IS-456.

11.1.3. **CURING AND MINIMUM PERIOD FOR STRIKING OF FORM WORK WITH POZZOLANA CEMENT USED:**

- (a) Where pozzolana cement is used for RCC works in various locations, the minimum period for curing and striking off form work shall be as under in lieu
- (b) of that specified in clause 4.11.6.3 of MES Schedule Part-I :-

(a)	Curing :- Structural RCC work, PCC work, Plastering etc.	14 days
(b)	Striking off Form Work Walls, columns and vertical sides of beams-	3 to 4 days
(c)	Slabs (Props left under)	8 days
(d)	Beams soffits (Props left under)	9 days
(e)	Removal of props to slab/beam	
	(i)Spanning upto 6 M span	16 days
	(ii)Spanning beyond 6 M span	22 days
(f)	For cantilever portion of slab formwork with support shall be retained until the completion of the casting of the entire frame work of the building.	

PARTICULAR SPECIFICATIONS (Contd ...)

- (c) In case of bad weather, periods mentioned above may be revised at the discretion of the Engineer-in-charge. The contractor shall be deemed to have considered the above provision before tendering and quote lump sum accordingly. No claim will be entertained if longer periods required for striking off form work and curing and all such effected matters is looked into upon the use of pozzolana cement as a result being issued to the contractor in full or in part or for bad weather.
- (d) Curing shall be carried out using pump of suitable capacity at no extra cost to the Govt. all as directed by Engineer-in-Charge.

11.1.4. : FINISHES:

- (a) For finishing to exposed surfaces of concrete, refer at paras 4.11.16.1, 4.11.16.2(b),(c),(d),(e) and 4.11.16.3 of MES Schedule Part-I. If thickness of plaster in cement mortar (1:3) as specified in para 4.11.16.2(b) of MES Schedule Part-I is required to be increased in excess of 5mm to achieve fair and even surface, it shall be provided by the contractor without any extra cost to the Govt.
- (b) All projections of chajja, RCC roof, cills and the like shall be provided with proper drip course and/or throating in plastering only and not while casting RCC/PCC.

All flat surface exposed to weather shall be weathered with imperceptible slope for smooth run of rainwater.

12. BRICK WORK**12.1. BRICKS:**

- 12.1.1. Bricks shall be kiln burnt sub class 'B' best quality, conform or superior to the samples kept in GE's Office. Unless otherwise specified in BOQ/Notes on drawings, Bricks shall have average compressive strength of 75 Kg/Cm². Water absorption of brick shall not be 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 size of bricks shall be 250x125x75 mm .The permissible tolerance in size of bricks shall be $\pm 8\%$. The entire work shall be carried out all as specified in relevant applicable clauses of MES Schedule Part-I.

12.2. FLY ASH BRICKS

- 12.2.1. The clay fly ash bricks shall conform to IS: 13757: 1993: Specification for burnt clay fly ash building bricks. The bricks shall be sound, compact and uniform in shape and colour. Bricks shall have smooth rectangular faces with free lime and organic matter. The bricks shall be hand or machine moulded. The bricks shall have frog of 100 mm in length, 40 mm in width and 10 to 20 mm deep on one of its sides. If made by extrusion process, the bricks may not be provided with frogs. Fly ash shall conform to grade 1 or grade 2 of IS: 3812: 1981: Specification for fly ash for use as pozzolana and admixture (First Revision).

12.3. HALF BRICK THICK WALL:

- 12.3.1. Wherever half brick thick walls are specified. It shall be executed by providing two Nos 8mm dia TMT bars at every fourth course.

PARTICULAR SPECIFICATIONS (Contd...)**12.4. SAND:**

- 12.4.1. Sand for masonry mortars shall be hard, durable, clean and free from adherent coatings and shall not contain clay and impurities as specified in clause 5.4 to 5.4.2 of SSR Part-I (2009 Print).

12.5. WORKMANSHIP

- 12.5.1. The workmanship for mortar and plaster work shall be all as specified in BOQ Clause 5.19.1, 5.19.2, 5.21, 5.22, 5.23, 5.24 to 5.29 of SSR Part-I 2009.

12.6. CURING:

- 12.6.1. The brick work shall be constantly kept wet for at least seven days.

12.7. PREPARATION OF CEMENT MORTAR

- 12.7.1. The mortars shall be of mix as indicated. Mixing shall be done by in a mechanical mixer. It shall be carried out all as specified in clause 5.19.2 of SSR part-I (2009 Print).

12.8. CURING:

- 12.8.1. Each coat shall be kept damp continuously for at least two days. Moistening shall commence as soon as the plaster has hardened sufficiently and is not susceptible to injury. The water shall be applied preferably by using a fine fog spray

12.9. INTEGRAL WATER PROOFING COMPOUND

- 12.9.1. Integral Water proofing compound wherever specified in these particular specifications shall conform to IS 2645, ISI marked. Mixing shall be done strictly as per manufacturer's instructions. For purpose of deviations it shall be taken as 3% by weight of cement.

13. WOOD WORK & JOINERY:**13.1. GENERAL**

- 13.1.1. All wood work and joinery for chowkats and shutters to be incorporated in this work shall as specified in clauses 7.3 to 7.5.2 of MES Schedule Part - I [2009] and as approved by the Accepting Officer. The species of timber shall be as specified in BOQ.
- 13.1.2. Unless and otherwise mentioned in Schedule 'A timber for wood work and joinery shall be 2nd class hard wood of species as specified in BOQ.
- 13.1.3. Timber for chowkats for door/window shall of second class hard wood of species as specified in BOQ.
- 13.1.4. Timber for wood work and joinery other than chowkats and panels for paneled door shutter shall be of second class hard wood of make specified as specified in BOQ.

13.2. PRESERVATION OF TIMBER:

- 13.2.1. Preservative anti termite treatment shall be carried out to all woodwork and joinery fabricated by the contractor at site. Factory made ply / boards are deemed to be provided with anti termite treatment.
- 13.2.2. Chemical used for anti termite treatment to wood work and joinery shall be copper NAPTHENATE, ASCU or any other chemical specified in IS 401 , applied in any one of the manners specified in IS.

PARTICULAR SPECIFICATIONS (Contd...)**13.3. WORKMANSHIP:**

13.3.1. Unless otherwise specified hereinafter the surfaces of timber in contact with or buried in masonry/concrete/plaster shall be clean sawn. All other surfaces shall be wrought. The workmanship and fixing of joinery shall be as per clauses 8.15 to 8.33.2 of MES SSR Part-I, 2009.

13.3.2. Timber member's up to 3.00 metre length shall be is one piece.

13.3.3. Plugging to walls shall be done with wooden plugs as per clause 7.29 of the MES SSR Part-I, 2009 and specified herein before.

13.3.4. Chowkats shall be treated with anti-fungal and intermit unreachable preservative as per IS 401-1982 code of practice for preservation of timber.

Note: Unit rate quoted against BOQ shall be deemed to be include for such contingencies.

13.3.5. Timber for joinery work shall be air or kiln seasoned and chemically pressure treated such as ASCU treatment or other approved treatment as approved by the Accepting Officer.

13.4. FIXING OF CHOWKATS AND FRAMES

13.4.1. Timber frames of door, window, ventilator etc., shall be installed by 'built in method' unless indicated to be installed by 'prepared opening method'. Precautions shall be taken to fix the door frames so as to take care of the final floor level and whether the shutters open inside or outside.

13.5. TIMBER FRAMES AND CHOWKATS

13.5.1. All members of the timber frames shall be straight without any warp or bow and shall be exactly at right angles, which shall be checked from the inside surfaces of the respective members. Frames shall have smooth, well planed surfaces except the surfaces touching the walls, lintels, cills etc. which may be left clean sawn, unless it is required for straightening up or to obtain the overall sizes. Rebates, roundings and moulding etc. shall be done before the members are jointed into frames.

13.5.2. Timber frames shall have dovetail joints. The jamb post shall be through tenoned into the mortices of the transom to full width and the thickness of the tenon shall be not less than 15 mm. The tenons shall be closely fitted into the mortices without any wedging or filling and shall be pinned with hard wood or bamboo dowels not less than 10 mm dia. The depth of rebate in the frames for housing the shutters shall be 15 mm. The joints before being put together shall be glued with a synthetic adhesive conforming to IS 851-1978 or to IS 4835-1979 or animal glue conforming to IS 852-1994.

13.5.3. All door, window and ventilator frames shall be clamped together so as to be square and flat before being built in. Each assembled door frame shall be fitted with temporary cross battens.

13.5.4. The faces of frame abutting the wall, lintel, cill etc., shall be given two coats of hot tar before fixing, unless otherwise indicated.

13.6. FORMWORK

13.6.1. All propping and centering shall be of steel tubes with extn or built up sections of rolled steel, shuttering used shall be designed with required extension pipes as approved by Engr-in-Charge. Shuttering shall be of sufficient stiffness to avoid excessive deflection and joints shall be tightly butted to avoid leakage of slurry.

PARTICULAR SPECIFICATIONS (Contd...)

- 13.6.2. Formwork shall be carried out as specified in BOQ. The general requirement of formwork propping, centering, shuttering, surface treatment shall be all as specified in clauses 7.15.3 to 7.15.6 of SSR Part-I (2009). Striking and removal of forms shall be all as specified in clause 7.15.9 of SSR Part-I (2009). Completed formwork shall be approved by Engr-in-Charge before reinforcement bars are placed in position, erection of formwork shall be all as specified in clause 7.15.12 of SSR Part-I (2009).

14. JOINERY**14.1. FACTORY MADE SOLID PVC MOULDED DOOR SHUTTERS**

- 14.1.1. 28 to 30 mm thick factory made Solid PVC Moulded Door shutter shall be of 2, 4 or 6 raised panel design with solid core of particle board of 24mm thick (12mm x 2) as indicated. The particle board shall be lipped with 25mm thick baton made from PVC sheets on the stile where hinges are to be fitted. On the three other sides the lipping shall be of 15 mm thick PVC baton. 2mm thick moulded PVC sheet shall be stuck on the front face of the particle board suitable prepared to accept the moulded design and 2 mm PVC sheet shall be stuck on the back face of the particle board with thermosetting adhesive. The 2 mm PVC sheets shall be stuck with lipping by using solvent cement.

14.2. SOLID PVC DOOR SHUTTER

- 14.2.1. Solid single PVC door frame shall be all as specified in clause 8.34.3.1 of SSR Part-I (2009). 30 mm thick factory made solid panel PVC door shutters consisting of frame made out of MS tubes of 19mmx19mm for styles & 15mm for top & bottom rails. MS frame shall be covered with 5mm thick single piece extruded PVC profile 'C' channel having a 5mm thick PVC sheet strip of 20mm width stuck inside with solvent cement, forming styles, and 5mm thick single piece extruded PVC profile for top rail, lock rail & bottom rail on either side, and 10mm (5mmx2) thick, 20 mm wide cross PVC sheet as gap inset for top rail & bottom rail. Paneling of 5 mm thick PVC sheet to be fitted in the MS frame welded /sealed to the stiles & rails with PVC sheet beading and joint together with solvent cement adhesive etc. shall be as per direction of Engineer in Charge, manufacturer's instruction and drawing.
- 14.2.2. The width of stiles & rails shall be proportion to the width of the door shutter as detailed below :-

Door width (in feet)	Stile & size (mm)	Rails size (mm)	Remarks
1 Up to 2'	50mm	50mm	
More than 2' up to 2.5	50mm	75mm	
More than 2.5' up to 3'	75mm	100mm	Gap insert of 15mm to be provided between stiles and rails & panel

14.3. WIRE GAUZZED SOLID PVC DOOR SHUTTERS

- 14.3.1. Wire gauged solid PVC door shutters shall be Solid Panel PVC Door as per clause no 8.34.2.1 of SSR Part-I but panel shall be of G.I wire gauze. The wire gauze shall be wrapped on an additional 8 mm square MS Solid tube and this tube shall be welded to 19mm X 19mm MS tubes. The GI wire gauge shall be stretched to tighten firmly.

PARTICULAR SPECIFICATIONS (Contd...)**14.4. SOLID SINGLE PVC DOOR FRAME**

- 14.4.1. If not indicated in BOQ, solid PVC Door Frame shall be of the size 50 X 47 mm made out of 5mm PVC sheet. The door profile are to be reinforced with 19 X 19mm MS Square tube. EPDM rubber gasket weather seal shall be provided through out the frame. The profile shall be mitre cut at two corners and joined by inserting 2 nos of 150mm long brackets of 15 X 15mm MS square tube inside the 19mm X 19mm MS square tube and suitably screwed.

14.5. GLAZED, GAUZED AND SKELETON SHUTTER:

- 14.5.1. The species of timber to be incorporated shall be all specified in BOQ.
- 14.5.2. Stiles and rail of shutter shall be in one peace. Stiles and rails shall be jointed to each other by tenon and mortice joints at right angles. Muntings and glazing bars shall have mitred joints and shall be stub tenoned to the maximum depth which the size of the number would permit or to a depth of 25 mm whichever is less. The thickness of each tenon shall be approximately one third the finish thickness of the number and the width of each tenon shall not exceed five times its thickness.
- 14.5.3. Unless otherwise with specified, the beading shall be 15x10mm and shall be secured to frames either with panel pins or screws with cups. Exposed edges of beads shall be rounded for glazed shutters.
- 14.5.4. For wire gauzed shutters, wire cloth shall be securely housed in to the rebates by giving a right angled bend and fixing by means of suitable staples at intervals of 75mm. Over this wooden bead 15x15mm shall be fixed with nails. The space between the beading and rebate shall be filled with putty to give a neat finish. Exposed edges of beads shall be rounded.
- 14.5.5. Factory made gauzed door and window shutter shall be made in a factory as given in BOQ.

14.6. PANELLED SHUTTERS

- 14.6.1. Ref clause no.8.21 & its subclauses of SSR Part-I (2009).

14.7. FLUSH DOOR SHUTTERS:

- 14.7.1. Flush door shutter shall be solid core type with block board core or particle board core as indicated and shall conform to IS - 2202 [Part - I], specifications for wooden flush door shutters [Solid Core Type] Part - I, Plywood Face Panels, except with regard to the sizes of shutters which shall be as indicated. Flush Door Shutters shall be non Decorative [Commercial] type or Decorative type where indicated and shall be as specified in clause 8.21 of SSR Part - I.

14.8. MEDIUM DENSITY FIBRE (MDF) BOARD

- 14.8.1. Medium density fibre board shall conform to the requirement of IS 12406-2003. Grade of the board shall be as indicated and shall be ISI marked.

15. BUILDERS HARDWARE:**15.1. GENERAL**

- 15.1.1. Unless otherwise specified hereinafter, the articles of builder's hardware shall be anodized [anodic film transparent] aluminum materials except for butt hinges. The butt hinges shall be of cold rolled mild steel, medium weight, copper oxidized. The screws, bolts nuts to be used for fixing shall be cadmium plated iron screws for anodized aluminum articles and GI for MS articles.

PARTICULAR SPECIFICATIONS (Contd...)

15.1.2. All items of builder's hardware shall bear ISI marked on them and the samples shall be got approved by GE before bulk procurement.

15.2. **ALUMINIUM SLIDING DOOR BOLTS**

15.2.1. Metal steel sliding door bolt shall be comply with the requirement of IS 2681-1993, These shall be all as described in BOQ and as specified in Para 9.5.2 of MES SSR Part -I, 2009.

15.3. **BARREL TOWER BOLT:**

15.3.1. Refer para 9.3 of MES Schedule part-I.

15.4. **GALVANISED MILD STEEL WIRE CLOTH**

15.4.1. Wire cloth shall comply with IS 1568-1970, Wire shall be of galvanised mild steel and shall conform to the width of aperture and nominal dimension of wire as specified in BOQ. Wire cloth shall be regularly woven with a number of equally spaced parallel wires in both warp and weft directions to produce uniform square meshes or openings.

15.5. **STAINLESS STEEL WIRE CLOTH**

15.5.1. These shall be of 0.36 mm nominal diameter stainless steel wire and average width of aperture shall be 1.40mm unless otherwise indicated.

15.6. **BALL CATCHES**

15.6.1. These shall be as mentioned in BOQ and all as specified in SSR Part-I (2009).

15.7. **CONTINUOUS (PIANO) HINGES**

15.7.1. These shall be as mentioned in BOQ and all as specified in SSR Part-I (2009).

15.8. **HASPS AND STAPLES**

15.8.1. These shall be as mentioned in BOQ and all as specified in SSR Part-I (2009).

15.9. **HANDLES**

15.9.1. Ref Clause no 9.11 of SSR Part-I (2009).

15.10. **CURTAIN ROD**

15.10.1. These shall conform to IS 10342-1982 Specification for curtain rail system. Curtain rails of the specified size shall be supplied with rings and brackets for fixing and as described in BOQ and as specified in clause 9.21 of MES SSR Part-1, 2009.

16. STEEL AND IRON WORK:

16.1. Refer **Appendix 'B'** to particular specifications

16.2. **STEEL / ALUMINIUM DOOR / WINDOW AND VENTILATORS:**

16.3. **STEEL WINDOW AND VENTILATORS:**

16.3.1. Steel window and ventilators shall be conforming to the requirement of IS-1038-1983. These shall be all as described in BOQ and as specified in Para 10.25 of MES SSR Part -I, 2009.

16.3.2. The handles for side hung shutters shall be of steel corrosion resistant Black Japan finish and shall be mounted on a steel handle plate. Striking plate shall of mild steel.

16.3.3. Steel window and ventilators frames shall be pointed with cement mortar (1:3) as specified in MES SSR Part-I, 2009. Lugs shall be embedded in PCC 1:3:6 type C-1 and shall be not tarred and sanded before fixing.

16.3.4. Hinges shall be projecting type hinges.

PARTICULAR SPECIFICATIONS (Contd...)

- 16.3.5. Steel windows and ventilators shall be fixed with lugs on jambs. Lugs shall not be provided for fixing windows/ventilators to lintels and cill, instead fixed with screw and wooden plugs at cill / lintel.
- 16.3.6. The contractor shall submit one sample of each type of steel windows with all fittings for approval of Accepting Officer and Accepting Officer shall certify that the steel windows and fittings conform to the contract specification in all respects. The Engr-in-Charge shall ensure that all windows provided and fixed are strictly in conformity with the approved sample.
- 16.3.7. The term “steel window” used in the particular specification shall be “steel window/ventilators”.
- 16.3.8. Steel windows/ventilators shall be ISI Marked with IS-1038-1983. Rolled steel sections used for fabrications shall conform to IS-7452.
- 16.3.9. Steel windows/ventilators with only flush butt welding shall be incorporated in the work.
- 16.3.10. Fixing lugs to fixed frames shall be as per provision of IS-1038-983 except that the top lugs shall not be provided. The bedding of steel frame shall be done in cement mortar (1:4).
- 16.3.11. The sub dividing/sash bars of windows and vents shall be tennoned to frame and riveted as specified in IS-1038.
- 16.3.12. All steel surfaces shall be thoroughly cleaned, free of rust, mild scales, dirt, oil etc. either by mechanical or chemical process and shall be treated with a coat of anticorrosive red oxide primer.
- 16.3.13. Centre hung windows shall be mounted on antifriction brass pivots.
- 16.3.14. Handle to fly proof window shall be pressed type.
- 16.3.15. Steel windows and ventilators shall be obtained from any of the firms as approved.

16.4. PRESSED STEEL DOOR FRAME

- 16.4.1. All the doors frame/chowkat shall be of pressed steel pressed out of commercial mild steel sheet of 1.25mm thick. The tolerance over the profiles shall be ± 2 mm. Pressed steel door frame shall be constructed as per IS4351-1976. The frame shall be provided as per details shown on drawings. Pressed steel door frames shall be filled with PCC (1;3:6) type C-1.
- 16.4.2. The frame shall conform to specification given in IS 4351-1976 with regard to fittings, hinges and shock absorbers except that hinges shall be of mild steel. Cleat hinges shall be welded on top of frames. The mortar guard and fixing arrangement of hinges shall be all as shown in IS irrespective of what is shown on drawings.
- 16.4.3. The fixing of lugs and inner surface of above frames coming in contact with concrete shall be treated with two coats of bituminous paint. The door frames shall be thoroughly cleaned of rust, mini scale, dirt oil etc and exposed surfaces shall be painted with two coats of synthetic enamel paint over a coat of red oxide primer.
- 16.4.4. MS tie as shown on drawing shall be provided at the bottom of frames by welding to the frame and the tie shall be embedded and left in floor.
- 16.4.5. Pressed steel door frame shall be factory made and shall be procured from any of the approved firms.

PARTICULAR SPECIFICATIONS (Contd...)**16.5. ANODISED ALUMINIUM DOORS, WINDOWS, VENTILATORS, PARTITIONS, COMPOSITE UNITS**

- 16.5.1. Sizes and types of aluminium sections given in IS 1948-1961 are rarely available in market, therefore sections manufactured by reputed firms shall be used for fabrication as indicated. Chemical and mechanical properties of sections shall comply with requirements given in IS 733-1983, Specification for wrought aluminium and aluminium alloys bars, rods and sections, IS 737-1986, Specification for wrought aluminium and aluminium alloys sheet and strip for general engineering purposes and IS 1285-2002, Specification for wrought aluminium and aluminium alloys extruded round tube and hollow sections for general engineering purposes.
- 16.5.2. Aluminium sections and fittings shall be anodized and minimum average thickness of anodizing (coating of anodizing) on all aluminum section and fitting shall be 15 micron and shall conform to IS: 1868- 1996, Testing of anodizing coating shall be in accordance with IS:5523-1983
- 16.5.3. Joining of sections, providing fittings, lugs, method of fixing etc shall be as per IS 1948- 1961.
- 16.5.4. Aluminium doors, windows, ventilators, partitions, composite units etc, shall have matt, scratch-brush or polished finish as indicated
- 16.5.5. Powder coated wherever specified the thickness of powder coating shall not be less than 50 micron.

14.6 CHAIN LINK FENCE:

- 14.6.1 Refer relevant items of Sch 'A' and Para 10.34 of MES schedule Para I.
- 14.6.2 Chain link fence shall be made of galvanised steel wire and shall conform to IS: 2712-2003 - Specification for galvanised steel wire chain link fence fabric. The mesh wire and line wire of the fabric shall be manufactured from galvanised steel wire conforming to IS: 280-2006 of zinc coating of type heavy as laid down in IS: 4826- Hot dip galvanised coatings on round steel wire or IS: 12753, Electro-galvanised coatings on round steel wires. Tensile strength of wires shall be within 400 to 500 MPa.
- 14.6.3 Dia. of galvanised steel wire & mesh size of the chain link fence and dia. of line wire shall be as indicated in description of relevant item of Sch 'A' and in case not indicated in the Sch 'A', the same shall be as directed by the GE.
- 14.6.4 The chain link fence shall be of reputed make as approved by the GE.
- 14.6.7 The chain link fence shall be fixed to any type of standard, posts, rails etc. as indicated in Schedule 'A' and shall be provided at location(s) as directed by the Engineer-in-Charge.
- 14.6.8 Weight of chain link fencing, barbed wire and concertina coil shall be determined by Board of Officer.

14.7 ROOFING / CEILING AND LINING**14.7.1 PRE-LAMINATED PARTICLE BOARD**

- 14.7.2 Pre-Laminated particle board shall be carried out as described in BOQ and as specified in clause No. 12.13 of SSR Part-I, 2009 and shall conform to the requirements of IS 3087-2005, Specification for wood particle boards (medium density) for general purposes.

PARTICULAR SPECIFICATIONS (Contd...)**14.8 GI FRAME WORK OF SEAMLESS CEILING**

- 14.8.1 GI frame work for seamless ceiling comprising of GI perimeter channel 0.55 mm thick with two unequal flanges of 20 and 30 mm and web of 27 mm fixed to surrounding wall using nylon sleeves and screws at 450 mm centre to centre / intermediate channel 0.9 mm thick having two equal flanges of 15 mm each and web of 45 mm suspended from soffit at approx 900 mm centre to centre with GI cleat and steel expansion fasteners with and including ceiling section (not exc 1.2 m length) of 0.55 mm thickness having kurlled web of 50 mm and flange of 26 mm each with lips of 10.5 mm fixed to the intermediate channel with connecting clips across the intermediate channel at 457 mm centre to centre.

14.9 PVC INSULATION PANELS

- 14.9.1 PVC insulation panel shall consist of Expanded Poly Styrene (EPS) conforming to IS 4671 of minimum density 15 Kg/m³ flame retardant (TF) grade of desired thickness (mm) stuck to PVC sheet of 1 mm, 1.5 mm, 2 mm, or 5 mm thickness using thermosetting adhesive on one side and as specified in BOQ.

14.10 GALVALUME SHEET ROOFING

- 14.10.1 Galvalume sheet shall be 0.50 mm thick (total coated thickness), 550 Mpa minimum, yield strength. It shall be coated with hot dip alloy of 55% Aluminium 43.5% Zinc 1.5% Silicon and finished with resin coat on both surfaces @ 150 gm/sqm of coating (total both surfaces) having overall width and laid width as specified and shall be fixed using hot dip galvanized, self drilling and self tapping screws neoprene and EPDM washers. Penetrations and laps in sheet shall be sealed by using proper sealant profile. HDPE fillers shall be provided wherever required to close voids between sheets, sheet & fasteners etc.
- 14.10.2 Fixing system shall be as per manufacturers instructions and shall be safe against effects of Wind velocity.
- 14.10.3 Roofing accessories ie. Corner piece apron, eaves/valley gutters, hoopers, ridges, sheet floor connectors etc shall be of galvalume sheet and of size shape as specified.

14.11 AC CORRUGATED SHEET

- 14.11.1 AC sheets shall comply with ISI-459-1970. AC sheet shall have rectangular shape, smooth surface on the exposed side and shamble free from defects. The corrugations shall be true and regular. Ridge covering and other AC accessories shall be of the same quality as of sheets.

14.12 LAYING OF THE SHEETS

- 14.13 Asbestos cement sheets shall be laid with smooth side upwards, from left to right or from left to depending upon the prevailing wind direction, starting at the eaves. If laid from left to right, the first sheet shall be laid uncut, but the remaining sheets in the bottom rows shall have the top left hand corners cut or mitred. The sheets in the second and other sheets, except the last sheet shall have both the bottom right hand corner and top left hand corner cut. The last sheet shall have only the top left hand corner cut. The last or the top row sheets shall have the bottom right hand corner cut with the exception of the last sheet which shall be laid un cut. If the sheets are laid from right to left the sheet shall be laid and the remaining procedure reversed.

14.14 NON ASBESTOS FIBRE CEMENT BUILDING BOARD

- 14.14.1 Non asbestos fibre cement building board shall be conforming to IS- 14862. These shall be carried out all as specified in BOQ and as directed by Engr-in-Charge.

PARTICULAR SPECIFICATIONS (Contd...)**14.15 PLASTER OF PARIS (GYPSUM) ANHYDROUS TILES) CEILING BOARD**

14.15.1 Plaster of Paris (Gypsum Anhydrous) tiles shall be made from Gypsum Anhydrous conforming to IS-2547: Part1-1976 reinforced with Hessian cloth. The thickness of tiles shall be 12mm or as indicated.

14.16 SOLID PVC WALL LINING

14.16.1 Solid PVC Wall Lining shall be provided all as specified in clause 12.34.3 of MES Schedule Part – I

15 FLOORING:**15.1 GENERAL**

15.1.1 Provision contained in clause 13.25, 13.27, 13.28, 13.32, 13.34, 13.38, 13.39, 13.40, 13.43, 13.44, 13.45 and 13.47 of MES Schedule Part – I are to be adopted for laying, jointing of floors. Floors shall be laid to levels or to falls as directed by Engineer – in – Charge. Floor finish shall be extended over dwarf walls, door openings and other openings. The dividing lines between the floors of different types wherever they so meet between adjoining rooms shall be determined on the basis of the finish visible when the doors are closed and the applicable finish shall accordingly be provided. Floor finish over RCC slabs shall be laid all as specified in clause 13.32.5 of MES Schedule Part – I. Sub floor may not be laid in panels. Topping layers of PCC floor and under and top layers of terrazzo cast in situ floors shall be laid in square or rectangular panels as directed by Engineer-in-Charge. Length of panel not exc. 2.0m, length to width ratio not exc. 1.5 times in rectangular panels

15.1.2 Floors of types and composition as indicated in the BOQ and shall be laid as specified in Section - 13 of MES Schedule Part – I and as directed by Engineer – in – Charge.

15.2 CEMENT CONCRETE FLOOR

15.2.1 PCC floors (laid over hard core/cement concrete sub floor/RCC slab) plain cement concrete and the same shall be provided as per thickness shown in BOQ and location as directed by Engineer-in-Charge. The surface of PCC floor shall be finished (with a steel trowel) to a even and smooth surface using extra cement.

15.3 NONSKID CERAMIC TILE FLOORING:

15.3.1 The size of the tile shall be as mentioned in BOQ. The tiles shall be plain, first quality, Grade B II A with water absorption 3 to 6% and shall conform to relevant IS. The shade shall be as approved by GE. The screed for laying the tiles shall be as specified in BOQ. The tiles shall be laid as per pattern described by GE, set, jointed in cement slurry. Joints shall be pointed flush in white cement mixed with pigment to match the colour of tile wherever applicable. The workmanship shall be all as specified in clause No.13.40.2 of MES Schedule Part I.

15.4 VITRIFIED TILE FLOORING:

15.4.1 Vitrified tiles shall be of homogenous body, first quality, conforming to relevant IS. Tiles shall be laid over screed in Cement Mortar as per instructions of Engineer-in-Charge. The shade and the size shall be as specified in BOQ. The tiles shall be laid with a border of different dark shade to the width as directed by the GE. Joints shall be pointed flush using polymer based cementitious tiling joint filler to match the shade of the tile.

PARTICULAR SPECIFICATIONS (Contd...)**15.5 COLOURED GLAZED CERAMIC TILE**

- 15.5.1 The size of tile shall be as specified in BOQ. The tile shall be plain, coloured, Type B-III, grade-I quality with water absorption not more than 10% and shall be got approved by the GE. The tile shall be set over cement screed / backing all as specified in BOQ, jointed in neat cement slurry and pointed with white cement mixed with pigment, to match the colour of the tile. The height of dado shall be as specified. The height of dado shall be as directed by Engineer-in-Charge. The dado thickness projecting from the rendered wall surface shall be flushed using cement mortar 1:3. The top level of the flushed surface shall be finished to a true line as directed by the Engineer-in-charge. The workmanship shall be all as specified as 13.40.2 of MES Schedule Part-I.

15.6 GRANITE STONE FLOORING AND SKIRTING

- 15.6.1 18-20 mm thick (minimum) polished granite stone (area of each stone exc 0.35 sqm) shall be laid over 20mm thick screed in cement mortar 1:6 over 75mm thick sub-base with PCC 1:4:8 type D-2 over rammed (compacted) earth (in case of tread/riser stone used shall be single piece). Granite stone shall be pointed and jointed in white cement mixed with pigment/colour cement matching with the shade of stone. Thickness of granite stone for skirting shall be 10 mm and height of skirting shall be 10cm. Granite stone skirting of length same as the length of adjacent floor stone to match the better look shall be used in skirting. Granite stone in skirting shall be laid over 15mm thick screed in cement mortar 1:3. Flooring and skirting shall be done as specified in Clause 13.28 of SSR Part-I.

15.7 GRANITE SLAB / TILE FLOORING / DADO:

- 15.7.1 The slabs/ tiles shall be of best quality and of colour and size as approved by the GE or as specified in Schedule "A". The thickness of the slabs shall be as specified in Schedule "A" with permissible tolerance of +/-3%. The stone shall be hard, durable, sound, tough, regular in shape, uniform in colour and free from soft veins, cracks, flaws, decay and weathering. The contractor shall get samples of granite slabs/ tiles approved by the GE for their colour. Every slab/core shall be machine cut to the required size and shape. Laying and polishing shall be carried out all as specified in clauses 6.20.5 to 6.20.8 of MES Schedule Part – I.

15.8 POLISHED KOTA STONE FLOORING/SKIRTING

- 15.8.1 The slab shall be of selected quality, hard, sound, dense and homogeneous in texture, free from cracks, decay, weathering and flaws. They shall be machine cut to the requisite thickness as indicated and they shall be of uniform colour. Dressing of slabs shall be all as specified in clause 13.47.2 of MES schedule Part-I. Preparation of surface and laying shall be as specified in clause 13.47.3.1 to 13.47.4.5 of MES Schedule Part-I. Size of kota stone 550mm x 550mm of approved colour in ground floors.

15.9 CHEQUERED CEMENT CONCRETE TILE FLOORING:

- 15.9.1 Chequered cement concrete tiles, coloured chequered cement concrete tiles and chequered terrazzo tiles shall conform to IS -13801, Specification for Chequered cement concrete tiles. Chequered tiles shall be with the centre to centre distance of chequers not less than 25mm and not more than 50mm, the groove in chequers being uniform and straight with the depth of grooves not less than 3mm. Tiles shall be manufactured by pressure process. Thickness of wearing layer measured from top of the chequers shall not be less than 6mm. Laying of tiles shall be all as specified in clause 13.39 of MES Schedule Part - I.

PARTICULAR SPECIFICATIONS (Contd...)

15.9.2 Unless otherwise directed, the tiles shall be supplied with initial grinding and grouting of the upper layer. The upper layer of the tiles shall be free from projections, depressions and cracks, holes, cavities and other blemishes. The edges of the tiles may be rounded. All angles shall be right angles and all arises shall be sharp and true. The colour and texture of the wearing layer shall be uniform throughout its thickness. The size of Chequered Tiles shall be 200mm x 200mm x 22mm thick or 250mm x 250mm x 22mm thick or 300 x 300mm x 25mm thick as indicated. The tolerance on length or breadth of tiles shall be +1mm and tolerance on thickness of tiles shall be +5mm. In addition the difference in thickness between the thickest and thinnest tile in the sample shall not exceed 3mm.

15.10 SCREED BED

15.10.1 Screed bed shall be carried out as specified in BOQ and as directed by Engr in Charge.

16 PLASTERING AND POINTING**16.1 GENERAL**

16.1.1 All plastered surfaces shall be trowelled to a smooth and even surface without using extra cement.

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

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

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

16.1.5 Curing of plastering as soon as plastering has hardened sufficiently. The plaster shall be kept wet at least seven days.

16.1.6 The type and mix of mortar for plastering, the No of coats to be applied and surface finish of the plaster shall be as specified in BOQ.

16.2 MATERIALS

16.2.1 Cement - Refer 'Appendix 'A'.

16.2.2 Sand - Refer Clause 14.5 of MES Schedule Part I.

16.2.3 Water - Refer Clause 14.11 of MES schedule Part I.

16.3 CEMENT PLASTER (INTERNAL) & CEILING PLASTER

16.3.1 Cement plaster (internal) for walls shall comprise rendering to the thickness and with the mix of cement mortar as specified in relevant items of BOQ finished even and smooth without using extra cement where directed.

16.4 CEMENT PLASTER (EXTERNAL)

16.4.1 Cement plaster (external) wherever indicated shall comprise of one coat of rendering in cement and sand mortar and of thickness as mentioned in BOQ or in two coats comprising backing coat of cement and sand mortar and finishing coat of cement plaster comprising cement and sand mortar mixed with integral water proofing compound as specified in BOQ. After application the surfaces shall be finished sponge finish.

PARTICULAR SPECIFICATIONS (Contd...)

16.4.2 The percentage of integral water proofing compound to be used in the work shall be as per the manufacturer's instructions.

16.4.3 Rate quoted against external plaster shall be deemed to be included the cost of necessary scaffolding etc., upto 3 storied buildings.

16.5 **POINTING:**

16.5.1 The type and mix of mortar for pointing and the type of pointing shall be as specified in BOQ. The workmanship for pointing shall be all as specified in clause 14.29.5 of SSR Part-I.

17 WHITE WASHING, COLOUR WASHING, DISTEMPERING, PAINTING

17.1 **WHITE WASHING**

17.1.1 White wash on walls shall be provided as indicated in BOQ and all as specified in clause 15.2,15.3 & 15.12 MES Schedule Part-I. For white washing on ceiling adequate quantity of zinc oxide shall be added to lime wash for achieving egg white shade. Skirting and dado are not to be white washed.

17.2 **WALL CARE PUTTY**

17.2.1 Wall Care Putty shall be of approved make and shall be provided as indicated in BOQ.

17.3 **OIL BOUND DISTEMPER**

17.3.1 Oil bound distemper shall conform to IS 428. Material shall be in the form of homogeneous paste.

17.3.2 Workmanship shall be all as specified on clause 15.14 of SSR Pt I 2009. The make.

17.4 **CEMENT BASE PAINT**

17.4.1 Cement base paint shall conform to IS 5410. Material shall be in the power form, free from lumps that are not friable and when mixed with required volume of water shall be suitable for use on porous of masonry, concrete blocks and rough plaster work.

17.4.2 Workmanship shall be all as specified on clause 15.15 of SSR Pt I 2009. The make.

18 PAINTING:-

18.1 **GENERAL**

18.1.1 Painting work shall be carried out all as described in BOQ. The surface to be painted shall be finished properly and get approved by Engineer-in-Charge before painting Contractor shall execute painting as per the guidance of the manufacturer's instructions.

18.1.2 Members specified to be painted shall first be passed by the Engineer-in-Charge and marked as such before commencement of painting work.

18.1.3 The exact tint shall be decided by GE where painting is specified. Painting shall be carried out all as described in Sch `A' and as specified in respective applicable clauses as mentioned in Section 17 of SSR Part I 2009 print.

18.1.4 Synthetic enamel Paint shall be of first quality. Paint conforming to approved sample shall only be used in the work.

18.2 **PROTECTIVE MEASURES:** Surfaces of doors, windows, floors, articles of furniture etc., and such other parts of buildings not to be treated shall be protected from being splashed upon. Such surfaces shall be cleared off splashes of white wash/ colour wash/ distemper etc, The contractor shall be responsible for any damage to the fittings, fixtures and furniture.

PARTICULAR SPECIFICATIONS (Contd...)**18.3 WORKMANSHIP:**

- 18.3.1 All brushes, tools, pots, kettles etc., used in carrying out the work shall be free from foreign matter and shall be thoroughly cleaned with hot water and solutions at the end of a day's work or before use for a different type of material. No finish shall be executed until a sample of the finish to the required colour and shade has been approved by the Engineer-in-charge. Where more than one finish is indicated, each coat shall be approved by the Engineer-in-charge before the subsequent coat is applied.
- 18.3.2 The colour shall be even shade over the whole surface, if it is patchy or otherwise bad, the work shall be redone by the contractor at his own expense.

18.4 PAINTING TO STEEL IRON SURFACES:

- 18.4.1 All steel/iron surfaces exposed to view except galvanized surfaces shall be applied of synthetic enamel paint 1st quality as mentioned in BOQ and all as specified in clause 17.8 (including sub paras) of MES SSR Pt-I, 2009.

18.5 PAINTING TO WOOD SURFACES:-

- 18.5.1 Painting to wood work shall be done all as shown on BOQ and all as specified in clause 17.6 (Including sub Paras) of MES SSR Pt –I, 2009.

NOTE:-

(a) The contractor shall inform Engineer-in-charge within 4 weeks of the commencement of the work as per work order the name of the manufacturer and brands of paint he want to use in the works and submit samples thereof and obtain prior written approval of GE before their use in the work and containers of capacity not exceeding 4 litres.

(b) All paints and allied materials shall be of quality not inferior to that required by the relevant IS specification. Paints shall be ready mixed. The colour and tints of paints shall be approved by GE.

(c) The material required for the painting work shall be obtained direct from approved manufacturer or their authorised agent and shall be brought to the makers, drums etc with seals unbroken.

(d) All containers of paints, shall preferably be stored in well ventilated room free from excessive heat, sparks or flame or direct rays of sun. The containers of paints shall be kept covered or properly fitted with lid and shall not be kept open except while using. Materials which have become stale or fat due to improper long storage shall not be used for mixed with usable stuff.

19.5.2 INTEGRAL WATER PROOFING COMPOUND

Integral Water proofing compound wherever specified in these particular specifications shall conform to IS 2645, ISI marked. Mixing shall be done strictly as per manufacturer's instructions. For purpose of deviations it shall be taken as 3% by weight of cement.

19.5.3 GUARANTEE FOR WATER PROOFING TREATMENT

- 19.5.4 Contractor should obtain guarantee certificate for material from the company and 10 years guarantee certificate from companies authorized applicator immediately after completion of the work. This guarantee will be in addition to 10 years guarantee of water proofing treatment to be furnished by the contractor to the department.

PARTICULAR SPECIFICATIONS (Contd...)

- 19.5.5 A sum of equal to 2% of the amount of roof treatment calculated @ not less than Rs 400/ per sqm of entire roof area covered with water proofing treatment enhanced by 25% subjected to minimum of Rs. 5000/- shall be retained out of the contractor's final bill as security deposit during the Guarantee period of 10 (Ten) years, which shall be refunded to him after expiry of the period of ten years from the certified date of completion by the GE.
- 18.6 **FRENCH POLISH**
- 18.6.1 Material for French Polishing Pure shellac varying from pale orange to lemon yellow colour, free from resin and dirt shall be dissolved in methylated spirit at the rate of 0.15 Kg of shellac per litre of spirit conforming to IS 348-1981, Specification for French polish. Suitable pigment shall be added to get the required colour.
- 18.7 **ANTI CORROSIVE PAINT**
- 18.8 The make and brand of Anti corrosive paint shall be as specified in BOQ and as directed by Engineer-in-charge.
20. **WEATHER PROOF EXTERIOR WATER PROOF PAINT**
- 20.1 **ACRYLIC EMULSION PAINT**
- 20.2 The Acrylic emulsion paint shall be of manufacturer as indicated or as approved by GE and of premium quality. The paint shall be 100% Acrylic and semi Acrylic paint shall not be used in the work.
- 20.3 Workmanship shall be all as specified on clause 17.17 of SSR Part-I 2009.
- 20.4 **APPLICATION**
- 20.4.1 **(a) Old fungus/Moss/Algae/affected surfaces on new or old surfaces:** Remove fungus growth if any with anti fungal treatment or with the help of available fungicide bleaching powder solution all as per Manufacturer's instructions (2-5%). The surface shall be cleaned by wire brushing and washed with water before application of primer or paint.
- (b) The surfaces shall be cleaned, made free of loose particles, dust, grease, chalk, fungus and mould wash the surface with water. One coat of weather proof plastic water proof coat paint as a self priming coat shall be applied as per manufacturer's instructions and as directed by Engineer-in-Charge.
- (c) The weather proof plastic water proof coat paint shall be applied by brush or roller. No strainer or colorants shall be used. The paint shall be stirred well before use. The primer coat shall not be left without application of top coats for a long period of time.
- (d) Two coats of weather proof plastic water proof coat shall be applied. The drying period between two coats shall be minimum 4hours or as per Manufacturer's instructions. The shade shall be as approved by Accepting Officer. The finish of paint shall be smooth matt finish.
- (e) The paint shall be as per Manufacturer's original colour as available. No mix of tint shall be made into original shade.
- (f) The Contractor shall produce manufacturers test certificate along with purchase voucher in original for the paint and primer brought to site before claiming payment for the same. Purchase voucher of paint and primer shall contain the complete description of material, batch No., net weight, test certification No., quantity in each package, number of packages etc. The quantity of material brought at site indicating No. of packages, quantity in each package, batch No., purchase voucher number, test certification number, date of manufacturing, date of expiry etc., shall be entered in MB as 'Not to be Abstracted' and shall be signed by the JE, the Engineer-in-charge, GE and the Contractor.

PARTICULAR SPECIFICATIONS (Contd...)**21. GLAZING****21.1. GENERAL**

- 21.1.1. All glazing shall be with plain ordinary sheet glass or frosted glass as detailed in BOQ. Glass shall be free from defects viz bubbles, waviness etc and shall be homogeneous thickness. All glass panes in wooden members shall be neatly back puttied and carefully secured with rounded hard wooden beads mitred angle fixed with steel panel pins, beads, beads of appropriate size shall be of the same specifications as used in shutters. Priming coat of paint shall be applied to rebates of joinery before glazing.

21.2. SHEET GLASS

- 21.2.1. Sheet glass shall conform to IS-2835-1977. These shall be of 'B' quality i.e. ordinary quality, thickness and size all as described in BOQ and as specified in clause 16.2 of MES SSR Part -I, 2009, specification for transparent sheet glass. Tolerance on the thickness of sheet glass shall be all as specified in clause 16.2.3 of SSR Part-I.

21.3. CLEANING :

- 21.3.1. Cleaning of glazing shall be all as specified in clause 16.13 of MES SSR Part-I, 2009.

21.4. PVC LOW LEVEL FLUSHING CISTERN

- 21.4.1. PVC low level flushing cistern shall be 10 litres discharge capacity and of colour to match colour of WC with valve less symphonic fittings, brass ball valve horizontal plunger type and polythene float ball all conforming to IS-1703 and flush pipe. PVC flushing tank shall be provided all as directed and as specified in clauses 18.34 & 18.99 of MES schedule part I 1991.

21.5. SQUATTING PAN (ORISSA PATTERN)

- 21.5.1. Squatting pan (Orissa Pattern) shall confirm to IS and shall be white in colour and all as specified in BOQ and as per clause 18.32.3 of MES schedule Part-I.

21.6. WASTE FITTINGS

- 21.6.1. Waste fitting shall be of brass chromium plated and shall conform to IS 2963 specification for cast copper alloy waste fittings for wash basins.

21.7. WASH HAND BASIN

- 21.7.1. Wash hand basin, shall confirm to IS and shall be white in colour and all as specified in BOQ and as per clause 18.32.5 of MES schedule Part-I.

21.8. CURTAIN ROD

- 21.8.1. These shall conform to IS 10342-1982 Specification for curtain rail system. Curtain rails of the specified size shall be supplied with rings and brackets for fixing and as described in BOQ and as specified in clause 9.21 of MES SSR Part-1, 2009.

21.9. CAST IRON SOIL, WASTE AND VENTILATING PIPES

- 21.9.1. They shall comply either with IS 1729-2002. Pipes and fittings shall be sound and free from defects other than unavoidable surface imperfections. Pipes and fittings shall be such that they may be cut, drilled or machined. All Pipes and fittings shall be coated externally and internally with a composition having tar or otherwise similar base. The tolerance permissible on weight shall be (-) 10%. Pipe nails shall be galvanized, chisel pointed, with 8 mm dia shank and 18 mm dia head. Pipe nails shall be 100 mm long for pipes upto 100 mm dia and 150 mm long for 150 mm dia pipes. The jointing of CI pipes & fittings shall be as specified in BOQ. Fixing of CI Pipes shall be all as specified in clause 18.67.4 and testing shall be as specified in clause 18.79 of SSR Part -I, 2009 Print.

PARTICULAR SPECIFICATIONS (Contd...)**22. ELECTRIFICATION****22.1. GENEERAL**

- 22.1.1. The extent of work under this contract is as indicated in relevant section of BOQ. All references to clause in succeeding paragraphs pertain to MES Schedule. The layout of conductors/cables shall be as directed by the Engr-in-Charge.
- 22.1.2. The requirement pertaining to materials, conformity with Indian Electricity Act and rules duly amended up to 2000, workmanship, testing, record of installations, safety procedure and fire safety shall be all as specified in 19.2 of MES Schedule.
- 22.1.3. The contractor is deemed to have included in rates, cost of making holes/chases where required through masonry or concrete work for taking in conductors etc, if any and making good the same to match with the existing work.
- 22.1.4. Samples of all materials, fittings and fixtures shall be submitted to GE for his approval before incorporation in the work.

22.2. CONDUIT/CASING & CAPING WIRING

- 22.2.1. The rigid steel/PVC conduit shall confirm to IS 9537 [1983] as amended and fittings shall be confirm to IS 3419 [1976] as amended and fitting for rigid steel conduit shall be confirm to IS 2667 [1978] as amended. The PVC conduits shall be medium grade of min 20 mm dia and shall be fixed with rigid PVC saddles and spacer bar with GI/Aluminum screws. The rigid steel conduit shall be fixed with GI saddles and GI spacer bars of size confirming to IS 3837 [1976] with GI/sheet metal screws. The PVC casing & caping and fittings shall be ISI marked as approved by GE. The recessed steel box for electrical accessories [switch board] shall be strictly as per IS – 5133 [1969]. The switch board shall be recessed/surface as directed by Engineer-in-Charge. The steel enclosures shall be painted with 2 coats of anticorrosive paint.
- 22.2.2. The wooden/steel switch board shall be fixed with min 3 mm thick laminated electrical insulation sheet of Hylum/Anchor for housing electrical switches /regulator/socket/switch socket/accessories etc. The cover shall rest on steel board projecting min 3 mm around the box uniformly resting on the wall surface duly fixed with GI/aluminium machine screws and cup washers.

22.3. SAND CUSHIONING:

- 22.3.1. Sand shall be procured from the approved quarries. The sand shall be filled in trench with a layer of 8cm below cable for the purpose of sand cushioning. The cables are then laid and shall be covered with sand to a depth of 15cm. This is then getting punned down to a depth of 10cm above the top of the upper most cable, thus providing a good bedding for the protective bricks which are placed centrally over the cable.

22.4. CABLES FOR WIRING:

- 22.4.1. Cables for wiring shall be ISI marked and FRLSH grade of size and type as described in BOQ with copper conductor conforming to specification laid down in clause 19.25 of MES Schedule Part-I. All cables shall be 1100 Volts grade conforming to IS 694-1990 for point wiring and shall be of such size as to be capable of the carrying maximum current which normally flow through them without regulations. Cables shall be delivered at site in the wrappers etc. with the seal of test and shall not be installed unless approved by the Engineer-in-Charge. If cables of size specified in BOQ as per relevant IS are not available cables of equivalent sizes with identical current carrying capacity and with multistranded shall be got approval of Accepting Officer before incorporating in works without extra cost to the Government.

PARTICULAR SPECIFICATIONS (Contd...)**22.5. TEST CERTIFICATE**

22.5.1. The contractor shall produce manufacturers original Test certificate for cables etc and shall hand over to Engineer-in-charge as soon as the equipments are brought at site.

22.6. WIRING

22.6.1. System of wiring as directed by Engineer-in-Charge, PVC casing of required width for wiring shall be of best quality as approved by GE.

22.6.2. Colour coding for wiring shall be strictly followed as per clause No 19.25 (b)(ii) of MES Schedule Part-I.

22.6.3. Joints in wire / cable in between switch board and points shall not be allowed.

22.6.4. Circuit from DB for 15A Points, 5A Points and light points shall be separate and independent.

22.6.5. All socket points shall be provided at table top height for ease of operation.

22.6.6. All earth wire shall be terminated to DB's earth bus for further connection with earth pit.

22.7. CONFORMITY WITH INDIAN ELECTRICITY ACT RULES ETC

22.7.1. All electrical work shall be carried out in conformity with the requirement of the Indian Electricity Act 1910 and Indian Electricity Rules 1956 frame there under and fire insurance act as applicable and also the relevant regulations of electric supply authorities concerned as amended from time to time.

22.8. SAFETY PROCEDURE AND PRACTICES, FIRE SAFETY

22.8.1. Safety procedure and practices, fire safety shall be all as specified as described in clause No. 19.2.7 and 19.2.8 of MES schedule SSR Part I of 2009.

22.9. FAN REGULATOR

22.9.1. All items shall be all as specified in BOQ and shall confirm to relevant IS and as per clause 19.115.4 of MES schedule Part-I.

22.10. SUB MAIN WIRING:

22.10.1. Sub main wiring shall be as described in BOQ and at locations as directed by Engineer-in-Charge.

22.11. SWITCHES/ SOCKET OUTLETS/ SWITCH SOCKET COMBINATION/ LAMP HOLDERS/ CEILING ROSE

22.11.1. All items shall be all as specified in BOQ.

22.11.2. All switches/switches sockets, etc shall be of colour white/ivory unless otherwise specified.

22.11.3. Socket outlets surface or flush type 5 or 15 amps, 250 volts shall be three pin shuttered/ non shuttered or interlocking type as indicated and shall be comply with the following IS:

22.11.3.1. IS 1293-2005, Specification for 3 pin plugs and socket outlets

22.11.3.2. IS 4615-1968 Switch socket outlets (non interlocking type)

22.11.3.3. IS 4160-2005 Specification for interlocking switch socket outlets

22.11.4. Lamp holder shall be metal cased type or insulated type as indicated and shall be comply with IS 1258-2005. Specification for bayonet lamp holders. Lamp holders shall be suitable for fixing in pendent or to bracket or angular as ordered.

PARTICULAR SPECIFICATIONS (Contd...)

22.11.5. The ceiling rose shall be surface type and shall be comply with IS:371-1979, specification for ceiling roses having two or three terminal plates and of outside diameter not less than 63.5mm. Ceiling rose shall be provided with means of gripping flexible and cord which shall not damage the insulation and/ or sheath of the cord and shall be such that the load on the cord is not transmitted to the terminals.

22.12. MCCBs / DBs/ MCBs

22.12.1. All items shall be all as specified in BOQ.

22.12.2. MCCB DB shall be factory made and conforming to IS : 8623 suitable for universal mounting copper busbar, Neutral bar, Earth bar, Standard DIN bar Rail and cable ties for cable management. Top and bottom shall have removable gland plates with knock outs.

22.12.3. All MCBs shall be conforming to IS/IEC 60898-1 and shall be ISI marked. These shall be suitable for 'C' curve and 10 KA Breaking capacity and shall be provided with box terminal on top and bottom both suitable for adopting cable size upto 35 Sqmm. The enclosure of MCBs shall be of Moulded Self Extinguishing thermo set plastic and these shall be suitable for snap fixing on standard Din Rail

22.13. EARTHING AND TESTING

22.13.1. Earthing system shall be all as shown on electrical plate No. 3 of MES schedule part I and all as specified in BOQ. The earth plate shall be as specified in BOQ. The earth electrode shall be buried in ground with its faces vertical and top not less than 1.5 m below ground level. For watering arrangement a funnel with a wire mesh be provided on top of 20 mm GI pipes which shall be buried from ground level to the top of plate as shown on drawing. A funnel arrangement shall be housed in PCC 1:2:4 type B-1 enclosure of not less than 300 x 300 x 300 mm in size. The location of earth pit shall be as directed by Engineer-in-Charge.

22.13.2. The electrode shall be surrounded by charcoal and salt.

22.13.3. The earth leads shall be securely bolted to the plate with two bolts, nuts, check nuts and washers.

22.13.4. Value of earth resistance of the lead to the earth shall not be more than 1 Ohm in case of difficulty in certain specific areas, subject to the approval of GE in writing maximum value acceptable to the department would be 1.5 ohms.

22.13.5. **Contractor shall submit guarantee for the efficiency of encapsulated compound based CPRI tested maintenance free earthing for a period of 5 (Five) years from the certified date of completion of the work.**

22.14. LIGHT FITTING & LAMP/ALL SECURITY LIGHTS/LED FITTINGS/FLOOD LIGHTS

22.14.1. All items shall be supply and fixing complete all as specified in Schedule (BOQ) and specified in Clause 19.34 and 19.35 of MES schedule.

22.14.2. LED LIGHTS / LUMINARIES

22.14.2.1. All LED light products shall have replacement warranty of 5 (Five) years from the date of completion. The product will be replaced by the contractor, free of cost in the following cases:-

(i) Manufacturing defects.

(ii) Failure due to mechanical and electrical impact.

(iii) Drop in lumen (or lux at 1m) below 90% of claimed values of lumen (or lux at 1m) of the LED/Luminaries.

PARTICULAR SPECIFICATIONS (Contd...)

Guarantee certificate for complete quantity of LED light fitting shall be submitted by the contractor before any payment. Contractor shall be responsible for replacing at his cost any parts which are rendered defective and unserviceable during the above period.

23. DISMANTLING /DEMOLITION /TAKING DOWN:

- 23.1. Prior to commencement of work, inventory of all materials and fittings to be dismantled / demolished shall be prepared and signed by the Engineer-in-Charge and the contractor.
- 23.2. Proper care shall be taken while dismantling without disturbing other existing structures nearby which are not to be dismantled. Dismantling/ demolition shall be carried out all as specified in the MES Schedule Part-I.
- 23.3. The items obtained from dismantling shall be stored properly and the debris/ demolished materials shall be cleared off the site with prior written permission of the Engineer-in-Charge. The serviceable/ un used materials if any shall be returned back to the stores. The decision of Engineer-in-Charge shall be final and binding.
- 23.4. The items obtained from dismantling for which credit has been offered vide Schedule of credit, shall become the property of contractor and the same shall be removed from site time to time with prior written permission of Engineer-in-Charge.

24. SITE CLEARANCE

- 24.1. Contractor's tender rates shall be interalia, deemed to include the cost of disposal of dismantled / demolished and taken down materials from the site and cleaning the site of work on completion and leave the premises neat and tidy.
- 24.2 If any Items is required to be taken out of station area for repairs, shall be taken out of area only after obtaining written permission from the Engr-in-Charge.
- 24.3 All damaged/unserviceable components/spare parts replaced shall be of same make as per the existing. In case of non availability of components/spare parts of same make, alternative of the same can be incorporated in the work only after prior written approval from GE. Contractor shall submit samples of all new parts proposed for incorporation in the work and get them approved in writing from the Engineer-in-Charge & GE before supply.
- 24.4 The contractor shall take all precautions against damage to the remaining part of the appliances/ equipment, which are not required to be replacement/ repaired. In case of any damages caused to any equipment/appliances/installation as a result of faulty workmanship or due to negligence in repairs in the opinion of GE, the contractor shall make good such damages/loss to the Government at his own cost and the decision of GE as regards the faulty workmanship/ negligence/assessment of loss to the Government shall be final and binding and in case failure of the contractor to make good, GE shall be entitled to effect recovery as per the prevailing market rate of such equipment from any payment due to the contractor.
- 24.5 The contractor shall take all the precautions regarding safety of his workman. No extra cost on this account shall be admissible to the contractor. Any accident/injury in performance of this contract shall be at the sole risk and cost of the contractor and no compensation claim of whatsoever kind shall be entertained by the department.

Signature of Contractor

Dated : _____

AGE (Contracts)

For Accepting Officer

PARTICULAR SPECIFICATIONS contd....

1. **Cement** The Cement used shall be of 43 grade ordinary Portland cement conforming to IS : 8112-1989 or Portland Pozzolana cement conforming to IS : 1489-Part-I : 1991 specification for Portland Pozzolana cement, Part-I flash based. Cement bags shall bear ISI certification mark and date of manufacture.

1.1. The following checks and procedure shall be followed before the cement supplied by the contractor is accepted and is approval for incorporation in the work.

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

(i)	The Associated Cement Companies Ltd.	(xiii)	JK Cement
(ii)	Ultra Tech cement Ltd	(xiv)	JK Lakshmi Cement Ltd
(iii)	The India Cement	(xv)	Jaypee Rewa Cement
(iv)	Dalmia Cement (Bharat) Ltd	(xvi)	Ambuja Cement Ltd
(v)	Century Cements	(xvii)	M/s Shree Guru Kripa Cement (Pvt) Ltd.
(vi)	Saurashtra Cement	(xviii)	M/s Parasakti Cements Ltd.
(vii)	The Ramco Cements Ltd. (Formerly Madras Cement)	(xix)	M/s Chettinad Cement Corporation Ltd.
(viii)	Mangalam Cement Ltd	(xx)	M/s JSW Cements Ltd. A.P
(ix)	Birla Corporation Ltd.	(xxi)	M/s Sagar Cements Ltd
(x)	Orient Cement	(xxii)	M/s Sanghi Industries Ltd.
(xi)	Nuvoco Vistas Corporation Ltd (Formerly Lafarge Cement)	(xxiii)	M/s My Home Industries Ltd
(xii)	Shree Cement	(xxiv)	M/s Wonder Cement Ltd

For repair and maintenance contracts, where entire requirement of cement **it less than 1200** bags, same can be procured from authorized dealers of the above firms.

The contractor shall furnish the particulars of the manufacturers of cement alongwith the date of manufacture to the GE for every lot of cement Decarately. The documents in support of the purchase of cement shall be verified by the site staff and GE. The cement so brought shall be fresh and in no case older than 60 days from the date of manufacture. Before placing the order for cement by the contractor, he shall obtain written approval from the GE regarding name of manufacture, quantity of cement etc. Based on the CPM chart finalised , monthly requirement of cement and the proposed date wise schedule of deliveries for bringing the cement at site shall be worked out by the contractor and the same shall be submitted to the GE for information and approval. Cement shall be procured for requirement of not more than two months at a time. The cement shall be consumed in the work within three months after receipt. Cement shall confirm to the requirements of IS specification and each bag of cement shall bear relevant ISI Mark. The weight of each consignment shall be verified by the GE and recorded. The content shall be checked at random to verify the actual weight of cement per bag.

1.3. **USE OF PPC :**

For using PPC, the following requirements should be met :-

(a) PPC should meet the strength criteria of 43 Grade OPC as laid down in IS 8112-1989.

(b) The minimum period for curing and striking off form work shall be as under in lieu of that specified in clause 4.11.6.3 of MES Schedule Pt-I :-

PARTICULAR SPECIFICATIONS contd....

- (i) Curing :- Structural RCC work, PCC work, Plastering etc : 14 days
- (ii) Striking off formwork from Walls, columns and vertical sides: 3 to 4 days of beams.
- (iii) Slabs (Props left under) : 14 days
- (iv) Beams soffits (Props left under) : 14 days
- (v) Removal of props to slab/beam
 - (aa) Spanning upto 6M span : 16 days
 - (ab) Spanning beyond 6M span : 22 days
- (vi) for cantilever portion of slab form work with support shall be retained until the completion of casting of the entire frame work of the building.
- (c) For all water retaining structure i.e. over head reservoir, U.G sump and static water tanks only OPC shall be used.
- (d) Mixing of OPC & PPC shall not be permitted in the same buildings except for plaster and mortar.
- (e) While procuring PPC, the following requirements are to be ensured and certificate to the effect is to be obtained by the contractor for each batch from the manufacturer and the same shall be submitted to the GE for approval to procure PPC.
 - (i) The quality of fly ash is strictly as per IS-1489 (Part-I)-2002
 - (ii) Fly ash is inter-ground with clinker not mixed with clinker.
 - (iii) The fly ash content in PPC does not exceed 25%.

1.4. TESTING OF CEMENT:

1.4.1 The manufacture /main producer shall carry out inspection and testing of cement in accordance with the relevant BIS provisions. The Contractor shall submit the manufacturer's test certificate in original alongwith the test sheet giving the result of each physical test as applicable and the chemical composition of the cement or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in-Charge shall record these details in the cement acceptance register (Annexure 'IV') given here in after, after due verification. The GE may organize independent physical testing of random samples of cement drawn from each lot from NABL laboratories as NATIONAL TEST HOUSE, SEMT WING CME, REGIONAL RESEARCH LABORATORIES, IITs, MES ZONAL LABORATORIES, GOVT ENGINEERING COLLEGES and NATIONAL INSTITUTE & TECHNOLOGY as per relevant BIS and record the results in the relevant portion of cement acceptance Register (Annexure 'IV'). The random samples of cement to be tested shall be drawn as per Quality Assurance manual. The cost of materials for testing, samples, conveyance etc shall be borne by the contractor irrespective of the test result. However the cost of testing charges shall be governed in terms of condition 10(A) of IAFW 2249. In case as per the result of independent test, the cement is found to be not of requisite standard despite manufacturer's test certificate, the contractor shall remove the total consignment from the site within 24 hrs at his own cost after written rejection order of consignment by the GE.

1.4.2. The record of random samples selected by the GE for testing shall be properly maintained in the cement testing register given cross reference to relevant consignment of cement and quantity received etc.

1.4.3. The contractor shall be required to set up adequate testing facilities at site to the entire satisfaction of GE for conducting setting time test and compressive strength test as per BIS for the samples collected from the lot brought at site. These tests shall be carried out within 7 days of receipt of cement as site. The test can alternatively be carried out at the zonal laboratory, or any other recognised laboratory so designated be GE.

1.4.4 The contractor shall be allowed to use the cement only after satisfactory compressive strength of 7 days. 7 days strength will be relied upon to accept the lot of cement, 28 days compressive strength test will be final criteria to accept/ reject the lot.

PARTICULAR SPECIFICATIONS contd....

1.5 **Storage** : A temporary cement storage shed of appropriate capacity shall be constructed by the contractor at the site for keeping the consignments of cement as and when brought at site. The cement shed shall meet the following requirement :-

- (a) The roof, walls, doors, windows, ventilators of storage accommodation shall not allow any leakage, seepage and dampness.
- (b) Suitable dunnage of height not less than 200mm shall be provided to prevent deterioration due to moisture or intrusion of foreign matters.
- (c) Each cement consignment shall be staked Decarately, similarly the tested and untested cement shall be segregated and stored Decarately with distinct identification.
- (d) Cement bags shall be stacked at least 200mm away from the walls and adequate protective top cover shall also be provided.
- (e) Stacks in no case shall be higher than 10 bags and the stacks shall be arranged in header & stretcher fashion.
- (f) The cement godown shall be provided with two locks at each door. The key of one lock at each door shall remain with Engineer-in-Charge and the key of the other lock with contractor or his authorised agent at site of works so that cement is removed from the go down as and when required with the knowledge of both the parties.
- (g) The store shed shall be inspected once a day for ensuring proper preservation of cement bags & also for the purpose of taking out cement as per daily requirement.

1.6. **Documentation** : The contractor shall submit original vouchers from the manufacturer for the total quantity of cement supplied under each consignment to be incorporated in the work. Purchase of cement of approved manufacturers from their local dealer is permitted in the works having no structural work in the scope. All consignments received at the work site shall be inspected by GE and documents verified before acceptance. The original vouchers and the Test Certificates shall be defaced by the Engineer-in-Charge, signed by contractor and kept on record in the office of GE duly authenticated and with cross reference to the control number recorded in the cement acceptance register. This register will be signed by JE, Engineer-in-Charge, GE and the contractor. The accepting officer may order a Board of Officers for random check of cement and verification of connected documents. The entire quantity of cement shall also be suitably recorded in the measurement book (Not to abstracted) for record purposed before incorporation in the work and shall be signed by the Engineer-in-Charge and the contractor.

Signature Of Contractor

Dated :

AGE (Contracts)

For Accepting Officer

PARTICULAR SPECIFICATIONS contd....

1. CA No & Name of work
2. Control No*
3. Name of manufacture/Brand Name/Gde of cement (a) Manufacture_____ (b) Brand _____ (c) Grade_____
4. Qty of cement & Lot No/Week No (in Bags) : Qty_____ (b) Lot No/Week No_____
5. Manufacture's test certificates 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 :-

	Physical Requirements (As per IS 4031)										Chemical Requirements (As per IS 4031)							
	Specific Surfaces Area (Sqm /Kg)	Soundness by Le Chatelier	Soundness by Auto Clave	Initial Setting Time (Minute)	Final settings time (Minute)	Compressive strengths (Mpa)			Temp during testing C	Standard consistency (%)	Lime saturation factor (Ratio)	Alumina Iron (Ratio)	Insoluble Residue (%)	Magnesium (%)	Sulphuric Anhydride(%)	Loss on ignition(%)	Alkalies(%)	Chlorides(%)
						03 days	07 days	28 days										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
As per relevant IS																		
As per manufacture's test certificate																		
As per random test																		

Remarks with Signature

Accepted/Rejected

Contractor

Junior Engineer

Engineer-in-Charge

Garrison Engineer

Remarks of BOO/Inspecting Officer/CWE

*to be allotted serially by the GE consignment wise

Signature Of Contractor

Dated :

9032/E8

AGE (Contracts)

For Accepting Officer

(Appx 'B' to Particular Specifications)**PARTICULAR SPECIFICATIONS contd....****1. STEEL AND IRON WORK**

1.1 The entire steel required for incorporation in the work shall be arranged by the contractor and shall comply with the requirement of following specifications:-

(a) **REINFORCEMENT STEEL**: High strength deformed steel bars produced by Thermo Mechanical Treatment process (TMT) steel bars of Grade Fe 500 (D) meeting all other requirements of IS-1786-2008. The procurement shall be done as per procedure given below.

(b) **STRUCTURAL STEEL**: Standard quality: Fe-410-S Conforming to IS- 2062, Structural Steel Tube shall be YST-310 grade.

(c) **HOLD FASTS, GRILLS ETC & OTHER THAN STRUCTURAL**: Fe-310-0 conforming to IS – 1977.

(d) **GALVANISED SHEETS PLAIN OR CORRUGATED**: Conforming to IS -227.

(e) **FABRIC REINFORCEMENT FOR CONCRETE**: Conforming to IS- 1566 . Wire fabric for General use, window Grills, etc shall be conforming to IS-4948 and all as per MES Sch Part I clause 10.33

1.2 **PROCUREMENT**: TMT Reinforcement steel shall be procured from the following Manufacturers:

Srl No.	Company Name & Brand	Address	Type of Steel
1.	Rashtriya Ispat Nigam Ltd. (RINL) Brand : "RINL"	Visakhapatnam Steel Plant, Visakhapatnam- 530031, India, Tel : (91891)518226, 518376, Fax : (91891) 518316, Email: cmdvsp@itpvis.ap.nic.in	All
2	Tata Iron & Steel company (TISCO, or Tata Steel) Brand : "TATA"	Bombay House, 2,4 Homi Modi Street, Mumbai-400001, India Tel : (9122) 2049131 Fax : (9122) 2049522, 287 840 Email : corpcomm@jsr.tatasteel.com (Br office for North : Jeevan Tara Building, Patel Chowk New Delhi)	All
3.	Steel Authority of India Ltd. (SAIL) Brand : "SAIL"	Central Marketing Organization, Northern Region, 17th Floor, Scope Minar, Laxmi Nagar Distt Centre, Delhi-110092	All
4.	M/s Kamachi Industries Ltd. Brand : "KAMACHI"	ABC Trade Centre, 3rd Floor (Inside Devi Theatre Complex) Old No. 50, New No. 39, Anna Salai, Chennai-600002, India Tele : +91- 044-42961100, Fax : 044-42961122, Customer Care : 7700067000, Email: sales@kamachitmt.com , Website : www.kamachitmt.com	TMT Bars of Gde Fe 500, Fe 500D, Fe 550, Fe 550D & HCRM (Size 8-40mm)

PARTICULAR SPECIFICATIONS contd....

Sr No.	Company Name & Brand	Address	Type of Steel
5.	M/s. Shyam Metalics & Energy Ltd. Brand : "SEL"	Viswakarma, 1st Floor, 86 C, Topsia Road, Kolkata-700046, Ph : +91-33-4011-3000, Fax : +91-33-2285-2212, Website : www.shyammetalics.com,	TMT Bars of Gde Fe 500, Fe 500D (Size 8-32mm)
6.	M/s Electrotherm (India) Ltd. Brand : "ET TMT"	Survey No. 72, Palodia, Via-Thaltej, Ahmedabad) Gujarat-382115, Tele : +91-2717-234553/660550, Fax : +91-2717-234866, Website: www.electrotherm.com	TMT Bars of Gde Fe 500, Fe 500D & CRS (Size 8-36mm)
7.	M/s Tulsyan Limited Brand : "TULSYAN TMT"	APEX Plaza, 1st Floor, Old No. 3, New No. 77, Nungambakkam High Road, Chennai – 600 034 (TN), Website : www.tulsyanneec.in, Tele – 044-61991060/ 61991045, Mob – 9840354010, 9677088334	TMT Bars of Gde Fe 500, Fe 500D & Fe 550 (Size 8-32mm)
8.	M/s Incredible Industries Limited (Formely M/s Adhunik Industries Limited). Brand : "ADHUNIK Fe 500 SD"	Lansdowne Towers, 2/1A, Sarat Bose Road, 6th Floor, Kolkata – 700 020, Tele : 033-66384700, Fax : +91-33-2289 0285, Website : www.adhunikindustries.com	TMT Bars of Gde Fe 500D (Size8-32mm).
9.	M/s Gallantt Ispat Ltd., Gujrat Brand : "GALLANTT TMX"	Ward 10BC, Plot No. 123, Ground Floor, Gandhidham Kutch, Gujarat - 370 201, Tele : 02836-228164, Fax : 02836-235787, e-Mail : gml@gallant.com , Website: www.gallantt.com	TMT Bars of Gde Fe 500, Fe 500D & CRS (Size 8-32mm)
10.	M/S Rashmi Metaliks Limited, WB Brand : "RASHMI TMT"	Premlata Building, 39, Shakespeare Sarani, 6th Floor, Kolkata-700017, Tele : 033-2894255/56, Fax : 033-22894254, Email : mkt.domesticdip@rashmigroup.com , Website : www.rashmigroup.com	TMT Bars of Gde Fe 500 (Size 8-32mm), Fe 500D, Fe 550D (Size 8-25mm)
11.	M/S Real Ispat & Power Limited, Chhattishgarh Brand : "G K TMT"	Vrindavan, Near IDBI Bank Civil Lines, Raipur- 492001, Chhattisgarh., Tele : 0771-4224000, Fax : 0771-4224010, E-mail: real@realispat.com , Website: www.realispat.com	TMT Bars of Gde Fe 500
12.	M/s Steel Exchange India Ltd. (AP) Brand : "SIMHADRI TMT"	D No. 1-65/K/60, Plot No. 60, Abhis Hiranya, 1st Floor, Kavuri Hills, Hyderabad, Telangana – 500 081, Tele: 040-23403725 / 23413267 E-mail : info@seil.co.in	TMT bars of Gde Fe 500D & Fe 500D HSCRM)

PARTICULAR SPECIFICATIONS contd....

Sr No.	Company Name & Brand	Address	Type of Steel
13.	M/s Super Smelters Limited, Kolkata, Brand: "SUPER SHAKTI"	Premlata Building, 39, Shakespeare Sarani, 2nd Floor, Kolkata-700017, Tele / Fax: 91-33-2289-2734/36, e-Mail: info@supershakti.in, Website: www.supershakti.in	TMT Bars of Gde Fe 500D & Fe 550 (Size 8- 32mm)
14.	M/S Shyam Steel Industries Ltd., (WB) Brand : "SHYAM"	Shyam Towers EN-32, Sector-V, Salt Lake, Kolkata-700091 (WB), Tel : 033-40074007, Fax-033-40074010, E-mail-marketing@shyamsteel.com, Website : www.shyamsteel.com	TMT bars of Gde Fe 500D CRS
15.	M/s Jai Balaji Industries Ltd. (WB) Brand : "JAI BALAJI"	5 Bentick Street, Kolkata-700001 Tele : 033-22489808 / 22488173, Fax : 033-22430021 / 22107893 / 22426263 E-mail-info@jaibalajigroup.com.	TMT Bars of Gde Fe 500D & Fe-500 D CRS (Size 8-32mm)
1.3	16. M/s MSP Steel & Power Limited., Chhatisgarh Brand: "MSP TMT 500D"	16/S, Block-A, New Alipore, Kolkata 700 053 Tele – 033 4005 7777 / 2398 2239, Mob : 7381028976, e-Mail : contactus@mspsteel.com, Website : www.mspsteel.com	TMT Bars of Gde Fe 500D (Size 8-32mm)

Reinforcement steel for water retaining structure shall be as per table below:-

SAIL : HCR Rebar
TISCO : TISCON CRS
RINL : High Strength Corrosion Resistant Rebar (HSCRM)

- 1.4 It shall be noted that contractor can also procure steel from the manufacturer who is approved by HQ E-in-C's Branch till end date of submission of bid for above work irrespective of the fact that name of manufacturer is not listed above. In such case it is the responsibility of the contractor to produce copy of approval letter by HQ E-in-C's branch and other documents, if any, to GE for verification and further action. Similarly, if any manufacturer from the above list is disapproved by the HQ E-in-C's Branch till end date of submission of bid, steel shall not be procured from such manufacturer. GE shall verify such record prior to approval of manufacturer.

Srl No.	Company Name & Brand	Address	Type of Steel
1.	Rashtriya Ispat Nigam Ltd. (RINL) Brand : "RINL"	Visakhapatnam Steel Plant, Visakhapatnam- 530 031, India, Tele : (91 891) 518226, 518376, Fax : (91 891) 518316, e-Mail : cmdvsp@itpvis.ap.nic.in	Structural Steel (Angle, Beam, Colum, Channel, Plate etc.)
2	Steel Authority of India Ltd. (SAIL) Brand : "SAIL"	Central Marketing Organization, Northern Region, 17th Floor, Scope Minar, Laxmi Nagar, Distt Centre, Delhi-110 092.	-do-

PARTICULAR SPECIFICATIONS contd....

Srl No.	Company Name & Brand	Address	Type of Steel
3.	Tata Iron & Steel Company (TISCO or Tata Steel) Brand : "TATA"	Bombay House, 2, 4 Homi Modi Street, Mumbai-400 001, India Tele : (91 22) 204 9131, Fax : (91 22) 204 9522, 287 0840, e-Mail : corpcomm@jsr.tatasteel.com (Br office for North : Jeevan Tara Building, Patel Chowk, New Delhi)	-do-
4.	M/s Jindal Steels and Power Ltd. Brand : "JINDAL"	Jindal Centre, Plot No. 2, Sector-32, Gurgaon – 122 001, Haryana Tele : 0124 661 2000 Fax : 0124 661 2125 Website : www.jindalsteelpower.com	-do-

2. **STRUCTURAL STEEL:** Structural steel sections of all sizes shall be procured directly from main producers SAIL/TISCO (Tata Steel)/RINL/JINDAL only. In case the desired section of Structural Steel is not rolled/manufactured by main producers as aforesaid, the same shall be procured from any other reputed producer as approved by the Accepting Officer.
- 2.1 **FABRIC REINFORCEMENT OF CONCRETE** : These shall be Procured directly from main producers. Testing provisions are given here in after in these particular specifications.
- 2.1.1 Contractor shall have to check from GE as to whether the proposed secondary producer is approved by the Deptt or not. No claim whatsoever shall be entertained in case proposed secondary producer is rejected due to non approval of Deptt.
- 2.1.2 Structural steel, and Fabric reinforcement for concrete may be procured from authorized dealers of main producers in case total requirement of structural steel / Fabric reinforcement for concrete is less than 05 Tonnes.
- 2.1.3 Steel sections for railings, gates, fencing. Guard bars, grills, steel chowkhats, hold fasts etc. which do not constitute structural members, may be procured from main producers / secondary producers / BIS marked manufacturers or their authorized dealers at the option of contractor without any price adjustment. Testing of these articles is optional at the discretion of GE.
- 2.1.4 The contractor may procure TMT steel from the authorized conversion agents of main producers provided that the main producers have given such direction in a specific sale / purchase order and they are producing TMT steel using Thermax / Tempcore / EVCON Turbo Technology. In such case the purchase Voucher or cash memo shall be from main producers.
- 2.1.5 All finished steel shall be well and clearly rolled to the dimensions, sections and weight specified. The finished material shall reasonably free from cracks, surface flaws, laminations rough, jagged and imperfect edges and other harmful defects and shall be finished in a workmanlike manner.
- 2.1.6 Tolerance in size and weight of reinforcement bars shall be as specified in clause 10.17.14 and clause 10.17.5 of MES Sch. (Part I).

PARTICULAR SPECIFICATIONS contd....**2.2 TESTING OF STEEL:-**

- 2.2.1 The contractor shall submit the manufacturer's test certificate in original along with test sheet giving the results of each chemical test as applicable and the chemical composition of steel or authenticated copy thereof, duly signed by the manufacturer with each consignment. The Engineer-in- Charge shall record these details in Steel Supply & Acceptance Register, as given at Appendix "F" after due verification and send a certified true copy of test sheet to GE for record. The CWE/GE shall also organize independent testing of random samples of steel drawn from various lots from National Test House, SEMT Wing CME, Regional Research Labs, Govt. approved Labs, Zonal Labs etc. as per recommended minimum frequency shown in Table below. Samples from each lot should be tested for quality and elongation. The elongation shall not be less than 16%(as per IS 1786-2008).

Srl no.	Nominal size of steel for concrete reinforcement	Quantity
1.	Bars of size less than 10mm	1 sample (3 specimens) for each test for every 25 tonne of steel or part thereof.
2.	Bars size 10mm to 16mm	1 sample (3 specimen) for each test for every 35 tonne of steel or part thereof
3.	Bars size over 16mm	1 sample (3 specimen) for each test for every 45 tonne of steel or part thereof
STRUCTURAL STEEL		
4.	Tensile Test	1 Test for every 25 tonne of steel or part thereof
5.	Bend Test	1 Test for every 10 tonne of steel or part thereof

- 2.2.2 Independent testing of reinforcement steel and structural steel by GE is mandatory and testing charge shall be borne by the contractor.

- 2.2.3 In all case, the contractor at his own cost shall provide all facilities required for testing and cost of material consumed in tests and transportation charge shall be borne by contractor.

1.3 DOCUMENTATION:-

- 2.3.1 The contractor shall produce original purchase vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. The GE along with relevant documents before acceptance shall inspect all the consignments received at the work site. The original purchase vouchers and test certificates shall be defaced by 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.
- 2.3.2 The Steel Supply & Acceptance register shall be signed by JE, Engineer-in-Charge, GE and contractor. The entire quantity of steel be suitably recorded in the measurement book not to be abstracted before incorporation in the work and shall be signed by Engineer-in-charge and contractor.
- 2.3.3 **STEEL IN COILS ETC:** Any bar of any dia for reinforcement may be procured in round bundles or coils and the cost of straightening the same shall be borne by the contractor. When bars are procured in bundles, the length of each bundle shall be worked out on the basis of unit weight predetermined by the GE by getting suitable length (not less than 3 m) out of each consignment received, getting it straightened, length measured and weighed in presence of contractors accredited representative. The said length and the weight shall be recorded from which unit weight (weight per unit length) shall be calculated. The length of bars worked out on the basis of unit weight determined as above shall form the basis for the purpose of calculating quantity of steel used/to be used in work and making payment of materials lying at site. However if the unit weight works out more than the unit weight given in SSR, then unit weight given in SSR shall be followed for computing weight of steel for the purpose of making payment of steel lying at site.

PARTICULAR SPECIFICATIONS contd....

- 2.3.4 **STORAGE**: Steel of different sizes shall be stacked separately. For each classification of steel, separate areas shall be earmarked. Steel shall be marked with distinct painting marks for easy identification. All steel shall be so stored that it is always at least 15cm above the GL Steel shall be stored in a manner so as to prevent distortion and corrosion. Any section that has deteriorated and corroded or if considered defective by Engineer-in-Charge shall not be used in the work and shall be removed by the contractor without any extra cost. It will be the responsibility of the contractor to make sure that all possible arrangements are made for the safe custody of the steel. In case of any loss of steel only contractor will be responsible and the loss will/shall be made good without any delay or claim what so ever.
- 2.3.5 **SCHEDULING AND SUPPLY**: Schedule of supply of steel shall be finalized by contractor with GE and shall be incorporated in CPM chart so that supply of steel is monitored in a way to avoid any delay in completion of the work. The complete requirement of steel of various sizes will be worked out before making any RAR payment and procurement of steel by the contractor will be completed sufficiently in advance of the date of completion, No extension of time will be considered for non-availability of any section of steel.
- 2.3.6 Assembly of reinforcement shall be as per clause 12 of IS 456.
- 2.4 **NOMINAL COVER TO REINFORCEMENT**: Nominal cover shall be as under:-

Exposure	Nominal cover Not less than **		Slab	Wall	Beams	Columns
Mild	20mm		20mm	20mm	20mm	40mm *
Moderate	30mm		30mm	30mm	30mm	40mm *

* In case of columns of minimum dimension of 200mm or under, whose reinforcing bars do not exceed 12mm, a nominal cover may be of 25mm.

** For further details refer clause 26.4 of IS 456 of 2000 .

- 2.4.1 **WELDING**: Welding where directed shall be gas or arc electric welding which shall be at the contractor's option and as per IS: 816 and IS: 1323 as applicable.
- 2.4.2 Tee or Angle Iron Door, Window and Ventilators Frames Tee or Angle Iron Door, Window and Ventilators Frames shall be all as specified in clause 10.28 of SSR Part I 2009.
- 2.4.3 Pressed Steel Frames for Wooden Doors/Window Shutters Pressed Steel Frames for Wooden Doors/Window Shutters shall be all as specified in clause 10.27 of SSR Part I 2009 and IS-4351-2003. Frames shall be either painted with two coats of ready mixed paint or power coated conforming to IS 13871 as indicated and frames shall be fitted with PCC 1:3:6.
- 2.4.4 Barbed Wire Barbed Wire shall be all as specified in clause 10.32 of SSR Part I 2009 and shall conform to IS 278-2001.

PARTICULAR SPECIFICATIONS contd....**2.5 STEEL WINDOWS/VENTILATORS**

- 2.5.5 Steel windows/ventilators shall be ISI Marked with IS-1038. Rolled steel sections used for fabrications shall confirm to IS-7452.
- 2.5.6 Steel windows/ventilators with only flash butt welding shall be incorporated in the work.
- 2.5.7 Both fixed and openable frames shall be constructed of sections mitered at corners. The Hinges shall be as per drawing for side hung shutters openable outside and friction type for openable inside. Size of projecting type hinges shall be 65mm to 75mm wide. The hinges pin shall be of electro galvanized steel of suitable thickness. Friction hinges shall be provided with stainless steel washers. The handle of minimum thickness 3mm and peg stays (minimum thickness 2mm) for side hung shutter shall be of mild steel copper oxidized or stove enamelled finish at the choice of contractor. Peg stays shall be 300mm long with steel peg and locking arrangement riveted or welded to the fixed frames. Machine screws as specified in IS -1038 shall only be used for fixing. Side hung shutters fitted with friction hinges shall not be provided with peg stays. Stay shall have three holes for keeping the shutters open in these different positions.
- 2.5.8 Fixing lugs to fixed frames shall be as per provision of IS-1038 except that the top lugs shall not be provided. The bedding of steel frames shall be done in cement mortar (1:4).
- 2.5.9 The sub dividing/sash bars of windows and vents shall be tennoned to frame and rivetted as specified in IS-1038.
- 2.5.10 All steel surfaces shall be thoroughly cleaned, free of rust, mill scales, dirt, oil etc. either by mechanical or chemical process and shall be treated with a coat of anticorrosive red oxide primer.
- 2.5.11 Centre hung windows shall be mounted on antifriction brass pivots.
- 2.5.12 Handle to fly proof window shall be pressed type.
- 2.5.13 Steel windows and ventilators shall be obtained from any of the firms mentioned as indicated in Appx-'B'

2.6 MILD STEEL GRILL/GUARD BARS

- (i) All steel windows and ventilators shall be provided with grills of 12 mm square mild steel bars welded to window frame. The pattern of guard bar/grills shall be as per TD drg No SZ/TD/219/99.
- (ii) Size of guard bars for Guard room, detention room and like shall be provided as per TD Drg.
- (iii) Size of guard grill for gun store, telecom store etc to be specified by user unit.

Signature Of Contractor

Dated :

AGE (Contracts)

For Accepting Officer

(Appx 'B' to Particular Specifications)**PARTICULAR SPECIFICATIONS contd....****STEEL SUPPLY & ACCEPTANCE REGISTER**

1. CA No & Name of work :
2. Control No* :
3. Name of manufacture's TC No :
4. Manufacturer :
5. Random test details (a) Physical test report from _____vide their letter No _____(Name of NABL Approved Lab/Govt Engg College)
(b) Chemical test report from _____vide their letter No _____(Name of NABL Approved Lab/Govt Engg College)
6. Type of steel, Dia & Qty (a) type : TMT/CRS (b) Dia-mm (c) Actual Wt- MT (d) Conversion Wt-MT :-

	Chemical Test							Mechanical Test						Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Carbon %	Sulphur %	Phosphorous %	Sulphur + phosphorus %	Manganese %	Silicon %	Corrosion resistant	Wt per meter	Yield Stress (N/mm ²)	Tensile strength (N/mm ²)	Percentage Elongation (Min 18%)	Bend test	Rebend test	
As per relevant IS 1786														
As per manufacture's test certificate														
As per independent test														

Remarks with Signature

Accepted/Rejected

Contractor

Junior Engineer

Engineer-in-Charge

Garrison Engineer

Remarks of BOO/Inspecting Officer/CWE

* to be allotted serially by the GE consignment wise

Signature of Contractor

AGE (Contracts)
For Accepting Officer

Dated :

9032/E8

APPENDIX - 'C' TO PARTICULAR SPECIFICATIONS**LIST OF BIS CERTIFIED PRODUCTS TO BE INCORPORATED IN THE WORK :-**

Ser No	MATERIALS		IS NUMBERS
1	2		3
1.	Concrete	Integral water proofing compounds	IS-2645-2003
2.	Joinery	Wooden flush door shutters, solid core type	IS-2202, Part I-1999
3.	<u>Building Hardware:-</u>		
	(a) Steel butt hinges		IS-1341-1992
	(b) Ferrous tower bolts		IS-204, Part I-1991
	(c) Non-ferrous tower bolts		IS-204, Part II-1992
	(d) Door handles (non-ferrous)		IS-208-1996
	(e) Parliament hinges (ferrous)		IS-362-1991
	(f) Continuous piano hinges		IS-3818-1992
	(g) Non-ferrous metal sliding door bolts		IS-2681-1993
	(h) Tee and strap hinges		IS-206-1992
	(j) Mild steel sliding door bolts		IS-281-1991
4.	Steel and Iron Work		
	Steel Doors, Windows and Ventilators		IS-1038-1983
5.	Roof Covering		
	Bitumen felts for water proofing and damp proofing		IS-1322-1993
6.	<u>Ceiling & Lining :</u>		
	(a) Plywood for general purposes		IS-303-1989
	(b) Block boards		IS-1659-2004
	(c) Veneered particle board		IS-3097-2006
	(d) Marine plywood		IS-710
	(e) Fibre hardboard		IS-1658-2006
	(f) Medium density fibre board		IS-12406-2003
7.	<u>Flooring:-</u>		
	(a) White portland cement		IS-8042-1989
	(b) Cement concrete flooring		IS-1237-1980
8.	<u>Water supply, plumbing, drains & sanitary appliances:-</u>		
	(a) Concrete pipes with or without reinforcement		IS-458-2003
	(b) Salt glazed stoneware pipes & fittings		IS-651-1992
	(c) Centrifugally cast (Spun) Iron spigot & socket soil, 1984 waste & vent pipes, fittings & accessories		IS-3989-
	(d) UPVC soil, waste & rain water pipes		IS-4985-2000
	(e) Cast iron / ductile iron drainage pipe & pipe fittings for over 2002 ground non-pressure pipes, spigot & socket services		IS-1729-
	(f) Galvanised mild steel tubes		IS-1239 Part-I-2004
	(g) Galvanised mild steel tube fittings		IS-1239, Part II-1992
	(h) Vitreous China sanitary appliances		
	(i) Wash down water closets		IS-2556-Part-II-2004
	(ii) Squatting pans		IS-2556 Part-III-2004
	(iii) Wash basins		IS-2556 Part-IV-2004

APPENDIX - 'C' TO PARTICULAR SPECIFICATIONS (Contd....)

Ser No	MATERIALS	IS NUMBERS
1	2	3
	(j) Plastic WC seat covers	IS-2548 (Part-I & II)-1996
	(k) Flushing cisterns for water closets and urinals other than plastic	IS-774-2004
	(l) Ball valves (horizontal plunger type) including floats for water supply purposes	IS-1703-2003
	(m) Cast copper alloy screw down bib taps and stop valves	IS-781-1984
	(n) Pillar taps	IS-1795-1982
	(o) Cast iron manhole covers and frames	IS-1726-1991
9.	Electrical Works:	
	(a) Ceiling rose	IS-371-1979
	(b) Tumbler switches	IS-3854-1966
	(c) Socket outlet – 3 Pin plug and socket	IS-1293-2005
	(d) Switch fuses (mains & switches)	IS-4064-
	(e) Rigid steel conduit	IS-9537 Part-II-1981
	(f) Rigid non-metalic conduits	IS-3419-1988
	(g) Single core cable polythylene insulated and PVC sheathed cable	IS-1596-1977
	(h) Starter for tube light	IS-2215-1983
	(j) Fluorescent lamps	IS-2418 Part-I to IV-1977
	(k) Aluminium stranded conductor	IS-398-1976
	(l) MCBs	IS-1828-1996
10.	Code of practice for fire safety of buildings (general) fire fighting equipment and its maintenance.	IS-1648 - 1961
11.	Code of practice for installation of internal fire hydrants in multi-storied Buildings.	IS-3844 - 1966
12.	Dimensions for pipes, threads where pressure tight joints are required on the threads.	IS- 554
13.	Sheet rubber jointing and rubber insertion jointing.	IS- 638
14.	Copper alloy gate, globe and check valves for water work purposes.	IS-778
15.	Sluice valves for water work purposes (50mm to 300mm).	IS-780
16.	Couplings double male and double female, instantaneous pattern for fire fittings	IS-901
17.	Mild steel tubes, tubular and other wrought (Part-I & II) steel fittings	IS-1239
18.	Swinging type wall mounted hose reel with drum	IS-884
19.	Fire hose tubing	IS-388
20.	Foot valves for water work purposes	IS-4038
21.	Landing valves.	IS-5290
22.	Anti-corrosion treatments for under ground MS pipes.	IS-10221
23.	Swing check type reflux (non- return) valves.	IS-5312
24.	Fire fighting delivery hose.	IS-636-1988
25.	Specification for fire hose, delivery coupling, branch pipe, nozzles	IS- 903-1984
26.	Pumps.	IS-12469

Note: Corresponding year against each IS code whether mentioned / not, latest version in the trade shall be implied

Signature of Contractor
Dated:

AGE (Contracts)
for Accepting Officer

<u>APPENDIX - 'D' TO PARTICULAR SPECIFICATIONS (Contd....)</u> <u>LIST OF PRODUCTS TO BE INCORPORATED IN WORKS</u>		
Ser No	Brief Description of Products	Makes
1	2	3
B/R RELATED PRODUCTS		
1.	<u>PVC / UPVC DOOR, WINDOW & CHOWKHAT</u>	
(a)	PVC/ UPVC Door, Window and Chowkhat	(i) Kumar Arch Tech Pvt Ltd. (ii) M/s Sintex India Ltd. (iii) Polywood (iv) M/s Rajshri Plastiwood Ltd. (v) Hindopan (vi) Marino (vii) Plastone (viii) Fusion
2.	<u>WOODEN DOORS & WINDOWS</u>	
(a)	Wooden Panel / Flush Doors & Windows	(i) MP Wood Products (ii) Doorking Kolkata (iii) M/s Ambika Timber Works (iv) M/s Premier Wood Craft (P) Ltd. (v) M/s Jain Doors Pvt Ltd.
3.	<u>DOOR & WINDOW FITTINGS</u>	
(a)	Automatic Door, Glass fitting	(i) Toshi (ii) Hardwin
(b)	Aluminium Door & Window fittings	(i) Bharat (ii) Classic (iii) Alans (iv) Argent (v) Hettich (vi) Crown
(c)	Extruded Polished / Matt Finish Brass Builders Hardware	(i) Harrison (ii) Godrej (iii) Crown
(d)	MS Stove Enamelled	(i) Mowjee (ii) Crown (iii) Everlite (iv) Harrison (v) Godrej
(e)	Floor Springs / Door Closers/ Accessories	(i) Hardwin (ii) Godrej (iii) Doorset (iv) Crown
4	<u>FALSE CEILING & PARTITION PANELING</u>	
(a)	PVC False Ceiling	(i) Kumar Arch Tech Pvt Ltd. (ii) Accura (iii) Rajshri Plastiwood (iv) Saint Gobain (v) Modi Guard
(b)	Calcium Silicate Board / Calsidicor Tiles in False Ceiling / Wall lining	(i) Saint Gobain (ii) India Gypsum (iii) Lafarge (iv) Gypstone (v) Armstrong (vi) Everest
(c)	Mineral Fibre False Ceiling	(i) Armstrong Gyroe (Saint Gobain) (ii) Twiga Insulation (iii) UP Twiga Fibre Glass Ltd. (iv) Lloyd Insulation
(d)	Metal False Ceiling	(i) Armstrong (ii) Unifloors (iii) Nittobo
(e)	Cement Fibre Board Ceiling	(i) Everest (ii) Lafarge (iii) Armstrong
(f)	Anodized Aluminium Partition System with Solid / Glazed panels	(i) Jindal (ii) Hindalco (iii) Indalco
(g)	Frameless Glass Partition System / Wall Panelling	(i) Saint Gobain Glass (ii) IAG
(h)	PVC Partitions and Wall Panelling	(i) Kumar Arch Tech Pvt Ltd (ii) Rajshri Plastiwood
5.	<u>CUPBOARDS, CABINETS & WARDROBE</u>	
(a)	PVC Kitchen (Cupboards, Cabinets & Wardrobes)	(i) Kumar Arch Tech Pvt Ltd. (ii) Commander (iii) Rajshri Plastiwood (iv) Sintex

APPENDIX - 'D' TO PARTICULAR SPECIFICATIONS (Contd....)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
6.	PVC, GALVANIZED SHEETS, PANELLING, PARTITIONS, HUTS & BATHROOMS	
(a)	Rigid foam PVC sheets from 0.50 mm thickness to 40 mm thickness	(i) Kumar Arch Tech Pvt Ltd. (ii) Sintex (iii) Rajshri Plastiwood (iv) Marino
(b)	Pre-laminated PVC Sheets from 0.50 mm thickness to 40 mm thickness	(i) Jain Irrigation Systems Ltd. (ii) Rajshri Plastiwood
(c)	Pre-fabricated PVC Hut & Bathrooms	(i) Kumar Arch Tech Pvt Ltd. (ii) Prestar
(d)	Galvanized Colour / Powder Coated Steel Windows, Doors, Partition and Structural Glazing	(i) NCL Alltek & Seccolor Ltd
(e)	Aluminium Composite Panel	(i) Alstone International
(f)	Calcium Silicate Partition	(i) Ramco Industries Ltd.
(g)	Polycarbonate Sheets	(i) Prestar Infrastructure Pvt Ltd. (ii) GE (iii) M/s Fibreways Technology
7.	PRE-PAINTED GALVALUME SHEETS	(i) Colour Roof (India) Ltd (ii) Tata Bluescope Steel Ltd (iii) JSW Steel (iv) Dynaroom Pvt Ltd (Brand : Dyand Roof) (v) Bhushan Power (vi) Shalini roofing PVT LTD (Spectrum)
8.	SANITARY WARES	
(a)	CP Bath Fittings	(i) Prayag Polymer Pvt Ltd (ii) Century (iii) Lauret (iv) Aqueel (v) Ess Ess (vi) Gem (vii) Parko (viii) Essco (ix) Plastocraft Sanitary Pvt Ltd (x) Coronet (xi) RSM
(b)	Wash Basins / WCs	(i) Jaguar & Company Pvt Ltd (ii) Prayag (iii) Kohler (iv) Roca (v) Cera (1 st quality) (vi) Hindware (Italian Collection) (vii) Parryware (Super Fine) (viii) Johnson Pedder (ix) Coronet
(c)	SS Wash Basins / WCs	(i) Diamond (ii) Nirali
(d)	Stainless Steel Kitchen Sink	(i) Prayag Polymer Pvt Ltd (ii) Jain Brothers Sanitation Pvt Ltd (iii) Cera (iv) Kohler (v) Blue Star & Silver Shine (vi) Coronet (vii) RSM
(e)	PTMT Float valves / Ballcocks, Cockroach Traps, Glass Shelves, Bath Fittings	(i) Prayag Polymer Pvt Ltd. (ii) Polytuff (iii) Prima (iv) Coronet (v) RSM
(f)	SS Plate Rack	(i) Suyog (ii) Prayag (iii) Coronet
(g)	Kitchen Cabinets and Trolleys	(i) Godrej Interio (ii) Zuari (iii) Kitchen Crafts (iv) Kitchen Concepts (v) Dream Kitchens
(h)	Conclealed Cisterns	(i) Kohler (ii) Grohe (iii) Hindware (iv) Jaguar
(j)	Normal or Dual-Flow PVC Flushing Cistern	(i) Parryware (ii) Hindware (iii) Cera (iv) Commander (v) Coronet
(k)	Glass Mirror	(i) Saint Gobain (ii) Modiguard (iii) Cera (iv) Zircon (v) Prayag
(l)	PVC / Acrylic Toilet Mirror Cabinet	(i) Parryware (ii) Polytuff (iii) Commander (iv) Cera (1 st Quality)
(m)	Stainless Steel Towel Rail / Towel Rack / Towel Ring / Soap Dish / TPH, etc	(i) Kohler (ii) Grohe (iii) Jaguar (iv) Blue Star & Silver Shine (v) Cera (vi) Coronet

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
(n)	Toilet Seat Cover	(i) Commander (ii) Parryware (iii) Cera (1 st Quality) (iv) Hindware (v) Jaguar
(o)	Shower Panels	(i) Grohe (ii) Kohler (iii) Jaguar & Company Pvt Ltd.(iv) Lauret
(p)	Bath Suites	(i) Kohler (ii) Grohe (iii) Jaguar
(q)	Glass WHB	(i) Zircon (ii) Sparkle Glass (iii) Seabird
(r)	Glass Frameless Shower Enclosures / Cubicles	(i) Cera (1 st Quality) (ii) Hindware (iii) Jaguar (iv) Lauret
(s)	Glass Urinal Partitions	(i) Kesar
9.	<u>PAINT / DISTEMPER / POLISH / VARNISHES</u>	
(a)	Acrylic Washable Distemper	(i) Jotun India Pvt Ltd. (ii) Jadoo (Bergar) (iii) Nerolac (iv) Velvet , Acrylic distemper (Crimson Paints Pvt Ltd)
(b)	Plastic Emulsion Paint	(i) Jotun India Pvt Ltd (ii) Silk (Berger) (iii) Dulux Velvet Touch (ICI) (iv) Shalimar Paints(v) Asian Paint Ltd (vi) Nerolac Paints Ltd
(c)	Synthetic Enamel / Acrylic Paint	(i) Shalimar Paints Ltd (Superlac) (ii) Apcolite (Asian) (iii) Luxol (Berger) (iv) Jenson & Nicholson Paints Ltd. (Borolac) (v) Jotun India Pvt Ltd
(d)	Cement Base Paint	(i) Snowcem Plus (ii) Berger Paints (iii) Asian Paint (Gutucam) (iv) Jotun India Pvt Ltd (v) Crimocem Super cement paints.
(e)	Exterior Acrylic Emulsion Weather Coat Paint	(i) Asian Paint Ltd (Appex Ultima) (ii) Shalimar paints Ltd (Extra Maxium Ultra) (iii) Berger Paints Ltd (Weather Coat) (iv) Dulux (v) Royal Acrylic (Crimson Paints Pvt Ltd) (vi) Jotun India Pvt Ltd.
(f)	French Polish	(i) Jotun India Pvt Ltd. (ii) Berger (iii) J&N (iv) Asian
(g)	Thermoplastic Road Marking Paint / Retro-Reflective Paint	(i) Asian Apcomark (ii) STP (iii) Shalimar Paints Ltd (iv) Berger Paints Ltd (v) Jenson & Nicholson Paints Ltd. (Borolac) (vi) Jotun India Ltd.
(h)	Water Based Road Marking Paint	(i) Jonson & Nicholson Paints Ltd (ii) Berger Paints Ltd (iii) Asian Paint Ltd (Apcotrak) (iv) Shalimar Paints Ltd (v) Jotun India Pvt Ltd.
(j)	Acid Resistant Paint	(i) Jotun India Pvt Ltd. (ii) Asian (iii) Berger
(k)	Epoxy Paint / Polyurethane Paint	(i) Jotun India Pvt Ltd. (ii) Fosroc (iii) Pidilite (iv) Asian (v) Berger (vi) Jenson & Nicholson Paints Ltd. (Borolac)
(l)	Black Bituminous Paint	(i) Asian (ii) Berger
(m)	White Cement / Wall Putty	(i) Berger (ii) J&N (iii) Birla Laval Plast (iv) Shalimar Paints (v) Asian Paints
10.	<u>PLY BOARD / MDF & HDF BOARDS</u>	
(a)	Plywood / Pre-laminated Plywood / Marine Plywood / Veneered Decorative Plywood / Structural Plywood / Fire Retardent Ply wood	(i) Greenply Industries Ltd (Ply & Board Division). (ii) Kitply (iii) Century (iv) National Plywood Indus Pvt. Ltd (v) Archid Ply
(b)	Veneered Plain Particle Board / Pre-laminated particle board	(i) Greenply Industries Ltd. (Ply & Board Division) (ii) Kitply (iii) Anchor (iv) Bhutan Board (v) Novapan (vi) Associate Decor
(c)	Fire Insulation Board	(i) Everest
(d)	Gypsum Board	(i) Laffarge (ii) Gysum India Ltd.
(e)	Cement Bonded Particle Board (Plain / Prelaminated)	(i) NCLS Bison
(f)	MDF / HDF Boards	(i) Greenply Industries Ltd (Engineered Panel Division). (ii) Balaji Action Buildwell (iii) Novapan (iv) National (v) Kitply

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
11.	<u>TILES</u>	
(a)	Glazed Vitrified Floor Tiles, Polished Vitrified Floor Tiles, Ceramic Glazed Wall Tiles, Ceramic Glazed Floor Tiles, Wall Tiles, Floor and Wall Tiles of different sizes and types	(i) Kajaria Ceramic Ltd. (ii) Asian Granito India Ltd. (iii) Nitco (iv) Varmora Granito Pvt Ltd. (v) M/s H&R Johnson India. (vi) Orient Bell Ltd
(b)	Precast Concrete Interlocking Paving Blocks and kerb stones	(i) Anjali Tiles (ii) Ultra Tiles Pvt Ltd (iii) Terra Firma (iv) Ecco Scope (v) Mehtab Tiles (vi) Vijaya (vii) Sarkar Tiles (viii) Lovely Tiles (ix) Any ISI Marked as approved by GE.
(c)	Precast Plain / Chequered Cement Tiles for flooring	(i) Ultra (ii) Bansal (iii) Nitco (iv) Anjali (v) Multiwyn
(d)	Precast Terrazzo Tiles for Flooring	(i) Johnson (ii) Ultra Tiles Pvt. Ltd (iii) Nitco
(e)	Wooden Laminated Floor Tiles/ Parquet Tiles	(i) Vista (ii) Pergo (iii) Haro
(f)	Glazed Mosaic Tiles	(i) Hindustan Tiles (ii) Johnson (iii) Ultra Tile Pvt Ltd. (iv) M/s National Tiles & Industries (v) Coral (vi) Ceco
(g)	Heavy duty exterior Vitrified tiles	(i) Johnson (Endura) (ii) Multiwyn (iii) Century (iv) Cristal (v) Orient bell Ltd
(h)	Glazed Porcelain Elevation Wall Tiles	(i) Century Porselato (ii) Porselato (iii) Porcelain (iv) Crystal Porcelain
(j)	Acid resistant Vitrified tiles	(i) Johnson (Endura)
(k)	Metallic Floor hardener for wear-proof topping	(i) Ironite (ii) Stillonite (iii) Hardonate
(l)	Non-metallic Floor Hardener	(i) Fosroc (ii) Fibrex (iii) Sika (iv) BASF
(m)	Epoxy resin/Polyurethane based floor coating	(i) Sika (ii) Fosroc (iii) BASF (iv) Pidilite Industries
12.	TILE ADHESIVE	(i) Pidilite Industries Ltd (ii) Kajaria (iii) Latecrete
13	<u>STEEL AND ALUMINIUM JOINERY (DOOR / WINDOWS / GRILLS / MESH / CUP BOARD / SHUTTERS / SHELVES etc.</u>	
(a)	Pressed Steel Frames/ Doors / Windows/ Ventilators	(i) Steel Engineers (ii) AVA Steel Industries. (iii) Sen- Harvic (iv) AGEW Steel Manufacturers Pvt Ltd (v) Ajanta Ispat
(b)	Anodised / Powder Coated Aluminium Frames	(i) Jindal (ii) Hindalco (iii) Ajit India (iv) Indal
(c)	Aluminium Doors / Windows (Solid / Glazed Panel)	(i) Jindal (ii) Hindalco (iii) Balco (iv) M/s Modern Fabricator (v) M/s Alumilite Pvt Ltd Dhiraj (vi) Ajit India Pvt Ltd.
(d)	Frameless Glass Doors	(i) Kesar (ii) Super Aluminium (iii) Haresh Aluminium
(e)	Metal Rolling Shutters and Rolling Grills / Collapsible Gates	(i) Steel Engineers (ii) AVA Steel Industries. (iii) Sen- Harvic (iv) AGEW Steel Manufacturers Pvt Ltd
14.	<u>WINDOW GLAZING, GLASS SHELVING, GLASS URINAL PARTITIONS</u>	
(a)	Plain Sheet Glass / Float Glass / Frosted Glass	(i) Saint - Gobain Glass (ii) Modiguard Float Glass (iii) Asahi India (iv) Hindustan Plikington Glass (v) Triveni Float Glass (vi) IAG
(b)	Toughened Glass /Laminated Glass	(i) Safex (ii) Saint - Gobain Glass (iii) Modiguard Float Glass (iv) Kesar (v) Asahi India (vi) Atul Tuf (vii) Hindustan Plikington Glass Work (viii) Triveni Float Glass

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.) LIST OF PRODUCTS TO BE INCORPORATED IN WORKS		
Ser No	Brief Description of Products	Makes
1	2	3
(c)	Solar Control and Thermal Insulations Glass	(i) SGG EVO (ii) Evolite (iii) Envision
(d)	Wired Glass	(i) Saint - Gobain Glass (ii) Modiguard Float Glass (iii) Triveni (iv) Safex (v) Atul Tuf (vi) Hindustan Plikington Glass Works (vii) Kesar
(e)	Black Painted Glass Tiles	(i) Kesar (ii) Marvel (iii) Dreamwalls Colour Glass (iv) Paladio (v) Italia (vi) Mridul (vii) Mehtab Tiles
(f)	Tinted / Coloured Glass	(i) Saint - Gobian (ii) Modi Guard
(g)	Glass Tops Shelves	(i) Kesar (ii) Ozone (iii) Sparkle Glass
15.	<u>ROAD FURNITURE</u>	
(a)	Cat Eyes / Studs (Metal Plastic) /Rumble Strips/Speed Breakers	(i) 3 M (ii) Dark Eye
(b)	Delineators / Road Barriers	(i) 3 M (ii) Dark Eye
(c)	Road Signage	(i) 3 M (ii) Dark Eye
16.	HDPE / LDPE WATER TANK	(i) Sintex (ii) Polycon (iii) Oriplast (iv) Jindal
17.	<u>SEWAGE DISPOSAL</u>	
(a)	UPVC/PPR/HDPE Pipes for Sewerage	(i) Jain Irrigation (ii) Kisan (iii) Prince (iv) Supreme (v) Finolex (vi) Oriplast (vii) Diplast. (viii) Fusion
(b)	RCC Pipes (NP2)	Any ISI marked makes
18.	<u>MISCELLANEOUS ITEMS</u>	
(a)	CI centrifally Cast (Spun) Pipes & Fittings	(i) Neco Centri (ii) BIC (iii) Electro Steel (iv) AIC (v) PIC (vi) Jai Balaji Industries (vii) Sri Kalahasti Pipes Ltd
(b)	PVC Soil / Waste / Rain Water (SWR) Pipes and Fittings	(i) Jain Irrigation (ii) Kisan (iii) Supreme (iv) Prince (v) Anant (vi) Oriplast
(c)	CPVC / UPVC Pipes and Fittings (Water & Sewerage)	(i) Astral (ii) Ashirwad Flowguard (iii) Kisan (iv) Reliance (v) Supreme (vi) Prince (vii) Fusion
(d)	HDPE Pipes and Fittings (Water)	(i) Kisan (ii) Jain Irrigation (iii) Supreme (iv) Prince (v) Oriplast (v) Ajay Flow
(e)	Brass Ball (Float) Valves	(i) Leader (ii) Kirloskar (iii) Zoloto
(f)	PGI Sheet	(i) Tata (ii) Jindal (iii) Sail
(g)	CI Manhole Covers	(i) AIC (ii) PIC
<u>E/M RELATED PRODUCTS</u>		
1.	LT WIRES & CABLES	
(a)	PVC Insulated Cable upto 1100 Volts Copper / Aluminium Conductor sheathed / unsheathed as per IS 694 : 1990	(i) Polycab (ii) Havells India Ltd. (iii) RR Kabel Ltd. (iv) Finolex (v) Nicco (vi) KEI (vii) Richa Cables Pvt Ltd (viii) BENLO (ix) V-Marc
(b)	PVC / XLPE insulated PVC sheathed heavy duty armoured / unarmoured cables upto 1100 Volts, Aluminium / Copper Conductors, Solid / Stranded as per IS 1554 Pt 1 : 1998 & IS 7098 Pt 1 : 1988	(i) Polycab (ii) Havells India Ltd. (iii) Richa Cables Pvt Ltd (iv) KEI Industries Ltd. (v) Asian Cable (vi) Finolex (vii) V-Marc

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
2.	HT XLPE Cables	(i) Havells India Ltd. (ii) Gloster Cables Ltd (iii) KEI Industries Ltd. (iv) Asian (RPG) (v) CCI (vi) Polycab (vii) Finolex (viii) V-Marc (ix) Richa Cables Pvt Ltd
3.	PIPES CI, DI & CI PIPES	
(a)	CI Pipes	(i) Electrosteel (ii) Kesoram (iii) Tisco
(b)	DI Pipes with ISI marks in range of 80 mm to 1000 mm (except DN 125 mm & 750 mm) of Class K7 , K8, K9 conforming to IS 8329/2000	(i) Jindal Saw Ltd. (ii) Electro steel Casting Ltd. (iii) Tata Metaliks (iv) Tata Kabuto
(c)	ERW MS pipes / GI Pipes / Fittings	(i) Surya Roshni Ltd. (ii) Tata (iii) Jindal Steel (iv) Prakash
4.	PVC, UPVC & HDPE PIPES & FITTINGS	
(a)	PVC Pipes & Fittings	(i) Kisan Mouldings Limited. (ii) Ori-Plast (iii) Supreme (iv) Prince (v) Finolex
(b)	UPVC / CPVC / RWP	(i) Ori-Plast (ii) Supreme (iii) Prince (iv) Finolex (v) Fusion
(c)	UPVC Casing for Bore well Pipes	(i) Kisan Mouldings Limited.
(d)	UPVC/PPR/HDPE Pipes & Fittings	(i) Kisan Mouldings Limited.
5.	PVC (SWR) Pipes	(i) Kisan Mouldings Limited. (ii) Supreme (iii) Prince
6.	PPR Pipes & Fittings	(i) Savoir- Faire Manufacturing Co Ltd (ii) Reliance (iii) Vectus (iv) Finolex (v) Supreme
7.	Other Cat of Pipes	
(a)	Composite Pipes/ASTM Plumbing Pipes/ Summersible Pipes /Micro Irrigation Pipes Casing Pipes/Under Ground Drainage Pipes Hot & Cold Water Distribution system	(i) Kisan Mouldings Limited (ii) Jain Irrigation Systems Ltd (iii) Savoir- Faire Manufacturing Co Ltd
8.	Conduit Steel ERW	(i) Tata (ii) Jindal (iii) Kalinga (iv) BEC
9.	Conduit PVC	(i) Presto Plast (ii) Finolex (iii) Indo American Electricals Ltd (iv) Kalinga Gold (v) Richa Cables Pvt Ltd
10.	PVC casing caping	(i) Presto Plast (ii) Finolex (iii) Kalinga (iv) Payal
11.	<u>LIGHT FITTINGS / LAMPS</u>	
(a)	Flame Proof fittings	(i) Bajaj (ii) Crompton Greaves (iii) Sudhir
(b)	Fluorescent Tube light / CFL Fittings	(i) Philips (ii) Crompton Greaves (iii) Havells (iv) Surya Roshni Ltd. (v) Bajaj (vi) Wipro
(c)	FTL / CFL / PLS / HPSV / HPMV / Metal Halide Fittings/ Lamps (Outdoor Lighting)	(i) Philips (ii) Crompton Greaves (iii) Havells (iv) Surya Roshni Ltd. (v) Bajaj (vi) Wipro
(d)	LED Light Fittings External /Internal	(i) Philips (ii) Havells India Ltd. (iii) Wipro (iv) Bajaj (v) BENLO (vi) Orient Electric Ltd. (vii) Surya

<u>APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)</u> <u>LIST OF PRODUCTS TO BE INCORPORATED IN WORKS</u>		
Ser No	Brief Description of Products	Makes
1	2	3
12.	Switch Fuse / Change over Switch	(i) LAURITZ KNUDSEN (ii) Legrand (iii) ABB (iv) Siemens (v) GE (vi) Schneider(vii) Havells India Ltd (viii) Indo Asian (ix) BENLO (x) Orient Electric Ltd.
13.	MCB, RCCB, RCBO & Distribution boards for MCBS	(i) Legrand (ii) Hager (iii) Siemens (iv) ABB (v) Schneider (vi) GE (vii) C&S (viii) Indo Asian (ix) BENLO (x) LAURITZ KNUDSEN (xi) Orient Electric Ltd. (xii) Havells
14.	MCCB & Air CB	(i) Legrand (ii) LAURITZ KNUDSEN (iii) Siemens (iv) ABB (v) C&S (vi) Schneider (vii) GE (viii) Indo Asian (ix) BENLO (x) Havells
15.	Switches / Buzzer / Socket / Bell / Ceiling Rose / Regulator Piano Type	(i) Havells (ii) Anchor (iii) Legrand (iv) Schneider (v) LAURITZ KNUDSEN
16.	Switches / Sockets, Regulator Modular type	(i) Havells (Crabtree) (ii) Anchor (Woods) (iii) Legrand (iv) RR Kabel Ltd. (v) M K Honey Wall (vi) Schneider (viii) C & S Electric Ltd (ix) Indo Asian (x) BENLO (xi) Orient Electric Ltd.
17.	<u>SUB STATION / TRANSFORMER</u>	
(a)	Power Transformer 33/11 KV	(i) BHEL (ii) ABB (iii) Siemens (iv) Andrew Yule (v) Alston (vi) Schneider (viii) Bharat Bijlee
(b)	Transformers 11 KV, Distribution Type Step Down / UP < 400 KVA	(i) Voltamp (ii) Siemens (iii) Crompton Greaves (iv) Alston (v) Schneider (vi) ABB (viii) Bharat Bijlee
(c)	Transformers 11 KV, Distribution Type Step Down / UP $\geq$ 400 KVA	(i) BHEL (ii) ABB (iii) Siemens (iv) Areva T&D (v) Schneider (vi) Crompton Greaves
(d)	Packaged / Unified Sub Station	(i) BHEL (ii) ABB (ii) Siemens (iv) Andrew Yule (v) Schneider (vi) Crompton Greaves
(e)	Vacuum CB & SF6 (11 KV & 33 KV) & Ring Main Units	(i) BHEL (ii) ABB (iii) Areva T&D (iv) Siemens (v) Andrew Yule (vi) Schneider
(f)	Current & Potential Transformers (LT & HT)	(i) AE (ii) English Electric (iii) Crompton Greaves (iv) Areva T&D (iv) Schneider
18.	Electronic Energy Meter (Temper Proof with Optical Port)	(i) Siemens (ii) LAURITZ KNUDSEN (iii) Havells India Ltd. (iv) HPL India Ltd. (v) Schneider
19.	Electrical Instrumentation / Measuring Instruments Digital / Analog / Energy Meters / Voltmeter / Ammeter	(i) Havells India Ltd. (ii) HPL India Ltd. (iii) LAURITZ KNUDSEN (iv) AE (v) Schneider (vi) BCH
20.	Water Heater (Geyser)	(i) Bajaj (ii) Usha (iii) Crompton Greaves (iv) Jaquar & Company Pvt Ltd
21.	Energy Saver	MEGA Energy Solutions
22.	Exhaust / Ceiling Fans / Air Circulators / Wall Mounting	(i) Crompton Greaves (ii) Havells (iii) Bajaj (iv) Almonard (v) Orient
23.	Capacitor Bank / APFC Panel	(i) ABB (ii) Siemens (EPCOS) (iii) LAURITZ KNUDSEN (iv) BCH (v) Schneider
24.	Thermoplastic Street Light Junction Box / DB	(i) Hensel (ii) Sintex Industries Ltd. (iii) C & S Electric Ltd
25.	Nature Switch / Street Light Timer	(i) Legrand (ii) LAURITZ KNUDSEN (iii) Bajaj (iv) Schneider

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
26.	LT Switch Board Panel (Indoor Wall Mounted Prewired)	(i) Schneider (ii) LAURITZ KNUDSEN (iii) ABB (iv) Havells (v) C & S Electric Ltd
27.	LT Control Panel / Feeder Pillar Box	(i) LAURITZ KNUDSEN (ii) Milestone (iii) Advance (iv) Unilec (v) C & S Electric Ltd (vi) Schneider (vii) LAURITZ KNUDSEN
28.	Steel Tubular Poles	(i) Jindal Steel (ii) National Tubing Co. (iii) Bombay Tube & Store (iv) Calcutta Poles & Tubes
29.	Cable Joint LT & HT Hot and Cold Shrinkable	(i) M-Seal/3 M (ii) Dension (iii) Raychem
30.	Air Break Switches / HT Isolators /Gang Switches	(i) Pactil (ii) BHEL (iii) Jaypuria Brothers
31.	DSC / Pin type Porcelain Insulators	(i) BHEL (ii) Jaypuria Brothers (iii) Pactil (iv) Southern Insulators
32.	Diesel Generating Set Engines	(i) Kirloskar Green (ii) Cummins (iii) Ashok Leyland (iv) Greavs Cotton
33.	Alternators	(i) Alstom (ii) Crompton Greaves (iii) Kirloskar Electric (iv) Siemens (v) Bharat Bijlee
34.	Lightning Arrestors (Station Class)	(i) Oblum (ii) Elpro (iii) BHEL (iv) Areva T&D (v) Jaypuria Brothers
35.	ACSR Conductor	(i) Indian Aluminum Ltd. (ii) Alind (iii) Bharat Conductors
36.	Single Phase Preventor / Contactors / Thermal Overload Relay	(i) ABB (ii) BCH (iii) LAURITZ KNUDSEN (iv) Siemens (v) C&S Electric Ltd (vi) Schneider
37.	Battery Maintenance Free	(i) Exide (ii) Amco (iii) Nicco (iv) Amaron
38.	Battery Charges	(i) Escorp (ii) Su-Kam (iii) Microtek
39.	Servo Control LT Voltage Stabilizer	(i) Voltamp (ii) APLAB (iii) Andrew Yule (iv) Brentford , (v) AE (vi) Vintek (Brand Name-Volina)
40.	HT Voltage Stabilizer (11 KV)	(i) Andrew Yule (ii) Brentford (iii) APLAB
41.	Indicator Lamp / Selector Switch	(i) LAURITZ KNUDSEN (ii) Siemens (iii) GE (iv) RR Micro (v) BCH (vi) Schneider
42.	Sluice / Reflux / Air Release / Foot / Non Return Valve	(i) Kirloskar (ii) Leader (iii) Zoloto (iv) Audco (v) Venus (vi) Upadhyaya
43.	Dol / Star-Delta Starter	(i) BCH (ii) Siemens (iii) LAURITZ KNUDSEN (iv) ABB (v) Schneider (vi) C&S
44.	Submersible Cable	(i) Finolex (ii) Havells (iii) RR Kabel (iv) Polycab
45.	Centrifugal Pumps	(i) Crompton Greaves (ii) Kirloskar (iii) KSB
46.	Submersible Pumps	(i) Crompton Greaves (ii) Calama (iii) KSB (iv) Kirloskar
47.	Bleaching Dozer	(i) Ion Exchange (ii) RMCO (iii) Avon (iv) Aquapura (v) Malc-India
48.	Chloronome Plant / Chlorinator	(i) Aqua (ii) Pearl Filters (iii) Jesco (iv) Advance - 2000
49.	Electric Motors	(i) Crompton Greaves (ii) Siemens (iii) ABB (iv) Kirloskar Electric (v) Havells
50.	Monoblock Pumps	(i) Crompton Greaves (ii) Kirloskar (iii) KSB

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
51	Chiller Units / Compressors, Scroll / Screw Type	(i) Blue Star (ii) Voltas (iii) York (iv) Kirloskar (v) Carrier (vi) Daikin (vii) Trane
52	Condenser & Chiller Pumps	(i) Crompton Greaves (ii) Kirloskar (iii) ABB
53	Cooling Towers	(i) Paharpur (ii) Mihir (iii) Delta
54	Cooling Coil / AHU	(i) Blue Star (ii) Voltas (iii) Zeco (iv) Llyod
55	Filters	(i) Blue Star (ii) Airtech (iii) Thermodyne
56	Balancing Valves	(i) Leader (ii) Audco (iii) C&R (iv) Advance
57	Refrigerant Controls	(i) Sporlan (ii) ALCO (iii) Honeywell (iv) Danfoss (v) Jhonson Control
58	Stainer	(i) Rapid Control (ii) Emberland (iii) Sant
59	Insulation Crosslink Polyethelene with Adhesive	(i) Torcellen (ii) Paramount (iii) Thermoflex
60	Thermometers / Pressure Gauges	(i) Hguru (ii) Taylor (iii) Fiebig
61	Thermostat, Humidistat	(i) Honeywell (ii) Jhonson Control (iii) Danfoss (iv) Siemens
62	Actuators	(i) Siemens (ii) Rapid Control (iii) Honeywell
63	Heaters	(i) Daspas (ii) Recold (iii) Bajaj
64	Thermostatic Expansion Valve	(i) Siemens (ii) Honeywell (iii) Danfoss
65	Grills / Diffusers / Fire Dampers	(i) Caryaire (ii) Mapro (iii) Conaire
66	Split Type AC/Package Type AC/ Window Type AC	(i) Blue Star (ii) Voltas (iii) Hitachi (iv) Darkin (v) Carriers
67	Fire Pump	(i) Crompton Greaves (ii) Kirloskar (iii) KSB
68	Fire Hose Reel	(i) Minimax (ii) Firex (iii) Safex
69	Stand Post Type Hydrant	(i) Minimax (ii) Firex (iii) Safex
70	RRL Hose Pipe	(i) Dunlop (ii) Cosmos (iii) Jayshree
71	Sprinkler Head	(i) Minimax (ii) Tyco (iii) Ceasefire (iv) Safex
72	Pressure Switch	(i) Siemens (ii) Honeywell (iii) Danfoss (iv) Schneider (v) Rapid Control
73	Fire Extinguisher (All Type)	(i) Minimax (ii) Firex (iii) Newage (iv) Cease Fire
74	Single Head Landing Valves three/four way brigade inlet, hose reel drum and shut off nozzle, aluminium branch pipe	(i) Minimax (ii) Safex (iii) Superex

APPX 'D' TO PARTICULAR SPECIFICATIONS (CONTD.)
LIST OF PRODUCTS TO BE INCORPORATED IN WORKS

Ser No	Brief Description of Products	Makes
1	2	3
75	20mm dia Rubber Pipe	(i) Jyoti (ii) Dunlop (iii) Minimax
76	Hooter	(i) Safex (ii) Honeywell (iii) Minimax
LIST OF APPROVED PRODUCTS (CIVIL CONSTRUCTION PRODUCTS)		
1.	Road Marking Material	(i) M/s STP Limited (ii) M/s Tiki Tar Industries (Baroda) Limited (iii) M/s Choksey Pvt Ltd
2.	Water Proofing Chemical/Materials	(i) M/s Apurva India Limited, Mumbai (ii) M/s Shivam Tar Products (iii) M/s BASF India Limited (Construction Chemical Division) (iv) M/s Sika India Pvt Ltd (v) M/s Maruti Bitumen Pvt Ltd (vi) M/s Fosroc Chemicals (vii) M/s STP Limited (viii) M/s Chouksey Chemicals Pvt Ltd. (ix) M/s Tiki Tar Danosa (India) Private Limited
3.	APP Membrane	(i) M/s Sika India Pvt Ltd (ii) M/s STP Limited (iii) M/s Fosroc Chemicals (iv) M/s Bengal Bitumen (v) M/s IWL India Limited (vi) Texa (MOPLY-FP) (vii) Pidilite
4.	FENCING: Barbed wire, Chain link fencing, Concertina coil, Electric fence	(i) Global Technocrats Pvt Ltd(ii)A-1 Fence (iii) Shankar Weldmesh Pvt Ltd

SIGNATURE OF CONTRACTOR
DATE: _____

AGE (Contracts)
FOR ACCEPTING OFFICER

