### MILITARY ENGINEER SERVICES

### REPAIR/REPLACEMENT OF UNSERVICEABLE COMPONENT OF WATER TREATMENT PLANT INCLUDING CONNECTED WORKS AT WATER SUPPLY INSTALLATIONS UNDER <u>GE UTILITY BATHINDA MIL STN</u>

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### INDEX SHEET

(Signature of Contractor)

. GE (U) BTD- /2018-19

Tele Mil : 5075

8350/2018-19/ /E8

M/S: \_\_\_\_\_

REGISTERED Garrison Engineer (Utility) Bathinda Mil Station

Dec 2018

### REPAIR/REPLACEMENT OF UNSERVICEABLE COMPONENT OF WATER TREATMENT PLANT INCLUDING CONNECTED WORKS AT WATER SUPPLY INSTALLATIONS UNDER GE UTILITY BATHINDA MIL STN

Dear Sir (s),

1. Tender documents in respect of above work are uploaded in site <u>www.defproc.gov.in.</u>. The tender is on single stage two e-tendering system. The contents of cover I and Cover II are specified in NOTICE TENDER.

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

3. Bid will be opened on due date and time fixed for opening in the presence of tenderers/bidders or their authorized representative 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 of filling and submission of tender attached herewith. You may forward your points on tender documents and/or depute your technical representative for discussion of tender/drawings and to clarify doubts. If any, on or before \_\_\_\_\_\_ **2018.** You are requested not to write piece meal points and forward your points duly consolidated before due date \_\_\_\_\_\_ **2018.** 

5. Unenlisted contractors are required to submit the scanned copies of (in pdf file) of documents required as per eligibility criteria mentioned in instructions for filling the tender documents and Appendix A to NIT alongwith EARNEST MONEY DEPOSIT(EMD) and tender fee on e-procurement portal and submit the physical documents in the office of GE(Utility) Bathinda, Bathinda Mil Stn within time limit specified in NIT. Inadequacy/deficiency of documents shall make the bid liable for rejection resulting in disqualification for opening of finance bid.

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

(b) Contractor having not executed standing security bond and standing security deposit in any MES formation would be required to deposit individual security deposit on acceptance of tender which will be calculated with reference to the tendered cost as per scales laid down by MES for calculation of "EARNEST MONEY" enhanced by 25% subject to maximum of Rs. 18,75,000/- (Rupees Eighteen Lakhs Seventy Five Thousand Only).

7. Enlisted contractors of MES shall submit the scanned copies (pdf files) of enlistment letter, tender fee and such other documents as mentioned in Appx A to NIT on e-procurement portal and submit physical documents in the office of GE (Utility) Bathinda, Bathinda Mil Stn before date and 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 Condition of Contracts (IAFW-2249) (1989 print) and errata and amendments thereto, schedule of minimum fair wages and MES SSR (Part I and Part-II) are not enclosed with these documents. These are available for perusal in the Office of GE concerned.

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

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

(b) Contractor having not executed standing security bond and standing security deposit in any MES formation would be required to deposit individual security deposit on acceptance of tender which will be calculated with reference to the tendered cost as per scales laid down by MES for calculation of "EARNEST MONEY" enhanced by 25 % subject to maximum of Rs. 1875000/- (Rupees Eighteen Lakhs seventy five thousand only).

Yours faithfully,

AGE (Contracts) for Garrison Engineer

Encls : (As above)

(Signature of contractor)

### INSTRUCTION ON FILLING AND SUBMISSION OF TENDER

### 1. EARNEST MONEY DEPOSIT (EMD)

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

(a) Deposit at Call Receipt from a Scheduled Bank in Favor of Garrison Engineer Utility Bathinda.

(b) Receipted Treasury Challan, The amount being credited to the Revenue Deposit of Garrison Engineer Utility Bathinda.

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

**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 and hard copy before the date and time fixed for opening of BOQ) WILL RENDER THE BID DISQUALIFIED FOR OPENING OF COVER II (FINANCE BID).

### 2. SECURITY DEPOSIT.

In case the tender/bid submitted by such contractor who is not enlisted with MES is accepted, the contractor will be required to lodge with Controller of Defence Accounts INDIVIDUAL SECURITY DEPOSIT calculated with references to TENDERED COST as notified by the Accepting Office subject a maximum Rs. 18,75,000/-. The amount is required to be lodgd within 30 (Thirty) days of the receipt by the contractor of notification of acceptance of tender/bid. Failing which the sum shall be recovered from the 1<sup>st</sup> RAR payment or from the Final Bill (see Condition 22 of GCC (IAFW-2249)).

### 3. <u>CONTRACTORS ENLISTED WITH CHIEF ENGINEER SOUTH WEST COMMAND/CWE</u> BATHINDA AND WHO HAVE EXECUTED STANDING SECURITY BOND AND DEPOSITED STANDING SECURITY DEPOSIT BUT OF LOWER CLASS.

In case the tender/bid is accepted, the amount of additional Security Deposit will be as notified by the Accepting Officer. The amount will be the difference between the "Individual Security Deposit" calculated with reference to the "TENDERED COST" and 'Standing Security Deposit' lodged. The amount is required to be lodged within 30(Thirty) days of the receipt by the contractor of notification of acceptance of tender/bid, Failing which the sum shall be recovered from the 1<sup>st</sup> RAR payment or from the Final Bill (see Condition 22 of GCC (IAFW-2249)).

### 4. <u>CONTRACTORS ENLISTED IN MES FORMATIONS OTHER THAN CE SOUTH WEST</u> <u>COMMAND/CWE BATHINDA</u>

Contractors whose names are on the approved list of any MES formation i.e, other than CE SOUTH WEST COMMAND/CWE Bathinda and who have deposited Standing Security and have executed Standing Security Bond may tender/bid without depositing Earnest Money with the bid and if the Accepting Officer Junides to accept the tender/bid, such tenderers will be required to lodge Security Deposit as notified by the Accepting Officer. The amount is required to lodged within 30 (Thirty) days of the receipt by the contractor of notification of acceptance tender/bid, Failing which the sum shall be recovered from the 1<sup>st</sup> RAR payment or from the Final Bill.

### 5. GENERAL INSTRUCTIONS FOR COMPLIANCE

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

5.2 Bids shall be uploaded on 'eprocuremes.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.

5.3 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.

5.4 Drawing, if issued in physical form, must be returned duly initialed by the tenderer/bidder in Octarate envelope indicating his name and address.

5.5 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.

In the technical bid, a scanned copy of Power of Attorney in favor of the person uploading the 5.6 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 Clause, shall be attached in 'pdf' form. In case of partnership concern or a limited company, digital signatory of the bid/tender shall ensure that he is competent to bid the contractor (Through partnership deed, general power 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 favor 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.

5.7 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 favor stating speciality 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 and Article of Association.

5.8 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 and time fixed for the same.

5.9 Bid (Cover I & II) shall be uploaded online well in time.

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

5.11 Tenderer/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.

5.12 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.

5.13 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 eprocuremes.gov.in site only before the bid closing date and time.

### 6. <u>REVOKATION/REVISION OF OFFER UPWARD/OFFERING VOLUNTARY REDUCTION,</u> AFTER OPENING OF FINANCIAL BIDS BY LOWEST BIDDER

In the event of lowest tenderer/bidder revoking his offer of revising his rates upward/offering voluntary reduction, after closing of bid submission date and time, his offer will be treated as revoked and the Earnest Money Deposited by his shall be forfeited. In case of MES enlisted contractors, the amount equal to the Earnest Money Stipulated in the Notice of Tender , shall be notified to the tenderer/bidder for depositing the amount through MRO. Bids of such contractors/bidders 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 tenderes/bidders and his related firm shall not be opened in second call or subsequent calls. Reduction offered by the tendere/bider on the freak high rates referred for review shall not be treated as voluntary reduction.

### 7. CPM (Critical Path Method).

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

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

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

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

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

(Signature of contractor)

### **MILITARY ENGINEER SERVICES**

### <u>IN LIEU OF IAFW – 1815-Z (REVISED) ITEM RATE TO BE</u> <u>USED IN CONJUNCTION WITH GENERAL CONDITIONS OF</u> <u>CONTRACT (IAFW-1815-Z OF 1969 PRINTS)</u>

Tele / Fax : 0164-2246486

<u>REGISTERED</u> Militray Engineer Services Garrison Engineer (U) Bathinda Mil Stn

Dec 2018

8350/2018-19/ / E8

### CA NO GE (U) /2018-19: REPAIR/REPLACEMENT OF UNSERVICEABLE COMPONENT OF WATER TREATMENT PLANT INCLUDING CONNECTED WORKS AT WATER SUPPLY INSTALLATIONS UNDER GE UTILITY BATHINDA MIL STN

Sh./Sarvasari M/S \_\_\_\_\_\_ of \_\_\_\_\_\_ is/are hereby authorised to tender for the above work. Online bid only is to be submitted on web site www.eprocuremes.gov.in

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

SIGNATURE OF CONTRACTOR

SIGNATURE OF OFFICER ISSUEING THE TENDER DOCUMENTS

APPOINTMENT: Garrison Engineer

### BOQ NOTES

- 1. The entire work covered under this contract shall be completed within 180 days the date of handing over site as indicated in the work order to be given by GE.
- 2. The quantities shown BOQ are approximate and the inserted for guidance only. These shall however, not be varied beyond the limits laid down in conditions 7 of IAFW-2249 (General conditions of contracts). The payment shall be made for the actual quantities of work carried out and measured in accordance with the method of measurements as given in SSR-2010 part II unless other wise specified.
- 3. Rates and amounts in BOQ are to be filled by the tenderers.
- 4. Total amount in BOQ is not firm but will be treated as Contract sum referred to as such in IAFW-2249.
- 5. Unless otherwise stated in this Schedule, unit rates quoted by the tenderers in BOQ shall be deemed to include for all materials and labour complete all as described in BOQ and specified in particular specifications. The cost of any addition/alteration required in existing system in order to fix the make other than existing make is deemed to be included in the rates quoted by the tenderers.
- 6. The work under this contract lies in the Military area. The tenderers are advised to visit the site and ascertain conditions, approach to work site and any other element likely to influence their rate before quoting their tender. Nothing extra shall be paid to the contractor on account of any difficulty faced by them at site during execution of the work.
- 7. Unless otherwise stated in BOQ / or particulars specifications the rates quoted by the tenderer in BOQ shall be deemed to include for all provisions in the preambles given in MES Schedule 2009 (Part I) and 2010 (Part II) as applicable to respective items unless otherwise specified.
- 8. The rates quoted by the contractor in BOQ will be deemed to allow for minor extras and constructional details or accessories which are not specifically given in Particular specifications but are essential for the execution of works / service in a sound and workman like manner / sound construction and established Engineering practices. In case of difference of opinion between the contractor and the Engineer-in-charge as to whether or not certain items of work constitutes minor extras and constructional details or accessories include in the contractors prices, the decision of the Accepting Officer's will be final and binding.
- 9. No Bangladeshi national labour has been / will be employed in any circumstances.
- 10. The total amount of schedule of credit when deducted from total amount of BOQ will arrive at the net contract sum quoted by the tenderer.
- 11. Contractors shall be contractually bound to the responsibility of a breach of security by him or their staff/labour be borne him.
- 12. Contractors, permt employees and mates to have identity proof and police verification and Stn HQ to issue photo identity card, with info to local Mil Int, CMP and entry gate.
- 13. Casual labour should posses a photo identity proof i.e. Aadhar Card, Voter Card etc, copy of which should be deposited before issue of unique & non-duplicate security token by Stn HQ. The list of labour should be vetted by Engineer-in-charge and fwd to local Mil IntDet, CMP Det and Stn HQ.
- 14. Bidders should check the website periodically for any modified BOQ uploaded by Department and it is his responsibility to ensure uploading of correct BOQ.
- Bidder's quoted rates shall be inclusive GST (Goods and service tax) (Applicable from 1<sup>st</sup> Jul
   2017) on works contract. Slab of GST on works contract shall be as decided by appropriate authorities. Bidders shall be include this tax (GST) in their tender while quoting rates. Provisions at other places in tender documents such as sale tax/VAT on materials. Sale tax/VAT on works contract, turn over tax, service tax, Labour welfare cess/tax etc, duties royalitie, octroi, other levies etc payable under respective statues now replaced by GST shall be deemed to be amended accordingly

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## <u>SCHEDULE 'B'</u> <u>LIST OF MATERIALS TO BE ISSUED TO THE CONTRACTOR</u> (See condition 10 of IAFW – 2249)

Srl No	Particulars	Rate materia issued contrac	als etc to	will be	Place of issue by name	Remarks
		Units	Rate i	n Rs.	-	
1	2	3	4		5	6

-----NIL-----

(Signature of contractor)

### SCHEDULE 'C'

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### LIST OF TOOLS AND PLANTS (OTHER THAN TRANSPORT) WHICH WILL BE HIRED TO THE CONTRACTOR (Refer conditions 15 and 35 of IAFW-2249)

Srl No	Quantity	Particulars		Hire charge per unit per working day	•	issue by	Remarks
1	2	3	4	5	6	7	8

----- NIL -----

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### SCHEDULE 'D'

### TRANSPORT TO BE HIRED TO THE CONTRACTOR (Refer conditions 16 and 35 of IAFW-2249)

Srl No	Quantity	Particulars	Rate per unit per working day (Rs)	Place(s) of issue (By name)	Remarks
1	2	3	4	5	6

----- NIL -----

(Signature of the contractor)

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Serial page No.

Accepting Officer

Serial nage No

6.

### <u>TENDER</u>

### <u>THE PRESIDENT OF INDIA</u> Having examined and perused the following.

- 1. Specifications signed by Garrison Engineer (Utility) Bathinda.
- 2. Drawings detailed in the list of drawings.
- 3. Schedule 'A', 'B', 'C' and 'D' attached here to.
- 4. MES Standard Schedule of Rates-2009 (part-I specifications) and Standard Schedule of Rates 2010 Part-II (Rates) (hereinafter and in IAFW-2249 referred to as the MES schedule) together with errata/amendments as under:-

SSR-2009 (Part-I)	:	1 to 3
SSR-2010 (Part-II)	:	1 to 59

- 5. General conditions of contracts IAFW-2249 (1989 print) together with amendment Nos. 1 to 40 and errata 1 to 20.
  - <u>Water</u>: -Refer condition 31 of IAFW-2249. Water will be supplied by the department at point as decided by GE. Water will be charged at the rate of Rs. 3.75 (Rupees Three point seven five ) per one thousand worth of work done priced at contract rates.
- 7. Should this tender be accepted I/We agree.
  - \* (a) That the sum of Rs\_\_\_\_\_ (Rupees \_

\_\_\_\_\_\_ only ) forwarded as earnest money either be retained on account of security deposit or be refunded by Government on receipt of an equal amount as security deposit within the time specified vide 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 BOQ or at such other rates as may be fixed under the provision of condition 62 of IAFW – 2249 and to carry out such deviations as may be ordered vide condition-7 of IAFW-2249 upto a maximum  $\pm 10$  % (Ten percent) and further agree to refer all disputes as required vide condition-70 of IAFW-2249 to the sole Arbitration of a serving officer having degree in Engineering or equivalent or having passed final/direct final Examination of sub Division II of Institution of Surveyors (India) recognised by the Govt of India to be appointed by the Engineer-in-Chief in his absence the officer officiating as Engineer-in-Chief or Director General of Works if specifically delegated in writing by the Engineer-in-Chief Army Headquarters New Delhi whose decision shall be final conclusive and binding.

\* To be deleted where not applicable

Contd/-

### TENDER (CONTD...)

<u></u>		
Signature	in <sup></sup>	the capacity of
duly authorised to sign the tender for and o	n behalf of M/S	
		(IN BLOCK LETTERS)
Witness	Postal address	·
Address		
	Telegra address	
	Telepho	ne No
ACCEPTENC	E	
Alteration have been made i (s) were made before the execution of the andAi Rahul Rawat, Garrison Engineer sign the initial on my behalf the documents The above tender is accepted by me rates contained in BOQ on theday	contract agreement, <u>(U) Bathinda).</u> Th forming part of the C e on behalf of the I	PRESIDENT OF INDIA For the item
On th	e	day of
APPOINTI	MENT :	Garrison Engineer ( Utility) Bathinda Mil Station (FOR AND ON BEHALF OF THE PRESIDENT OF INDIA
Signature of Contractor		

### GENERAL CONDITION OF CONTRACTS (IAFW-2249)

### FOR

### MEASUREMENT CONTRACT (IAFW-1779 & 1779A)

- 1 It is hereby agreed by me/us that the following documents shall be forming as integral part of the tender documents:-
  - (a) General conditions of contracts including condition 70 pertaining to the settlement of disputes by Arbitration, IAFW-2249 (1989 print) and errata 01 to 20 containing 34 pages (serial page No 32 to 65)
  - (b) Amendments Nos 1 to 40 to IAFW-2249 in 19 pages (Serial page No  $\underline{66}$  to  $\underline{84}$ )
  - (c) Schedule of Minimum Rates of wages Act-1940 (revised dated 29 Oct 86) in 10 pages (serial page No
     85 to 94 )
- 2 This tender submitted by me/us is subject to the aforesaid documents and copy of which is in my/our possession and which I/We have read fully and understood before submission of this tender.
- 3 My/our signature here under is in token of my/our having accepted the aforesaid documents as forming an integral part of this tender.

### NOTES:-

- (i) The documents mentioned above can be seen in the office of the Garrison Engineer (U) Bathinda, Bathinda Mil Stn or in any other MES (CE/CWE/GE) office during working hours.
- (ii) In case of difference in interpretation due to wording of English and Hindi versions, the English version will prevail as per article 348 of constitution of India.

(Signature of the contractor)

### SPECIAL CONDITIONS

1. <u>GENERAL</u>

- 1.1 The following special conditions shall be read in conjunction with General Conditions of Contracts, IAFW-2249 (1989 print) including amendments and errata thereto. Any provisions in these special conditions, if at variance with the provisions in the above-mentioned documents, provisions given in these special conditions shall take precedence there over.
- 1.2 General rules, preambles, special conditions, method of measurements etc specified in MES standard schedule of Rates shall be applicable unless specific provisions to the contrary are made in these tender documents.

### 2. <u>INSPECTION OF SITE</u>

2.1 Refer para 11 and 14 of notice of tender (IAFW- 2162), condition 4 of General conditions of contracts (IAFW –2249) for the purpose of inspection of site, the tenderers are advised to contact the GE concerned and visit the site of works with his permission. The tenderer shall be deemed to have satisfied himself before submitting his tender as to the nature of the ground and buildings, (so far as practicable) nature of work and materials necessary for the completion of the works and the means of access to the site, the accommodation he may require and in general shall be deemed to have himself obtained all necessary information on inspection on site as to affect risks, contingencies and other circumstances which may influence his tender. No extra payment consequent on any misunderstanding or mistake or otherwise on this account will be allowed.

### 3. <u>ALLOTMENT OF LAND FOR STORAGE OF MATERIALS (INCLUDING TEMPORARY BUILDING)</u> <u>ACCOMMODATION OF LABOUR CANTEEN, FABRICATING WORKSHOP ETC.</u>

Delete the following in para 1 of condition 24 of IAFW-2249 General Conditions of Contracts: -

"In the event------ of land allotted to him" and the following shall be read in conjunction with condition 24 of IAFW-2249. "The contractor shall only be permitted to store his materials including erecting temporary sheds therefore and also to erect his labour camps, temporary workshop and the like at the area of land allotted to him by GE The contractor shall pay a nominal rent of Rupees one per year or part thereof in respect of each and every separate area of land allotted to him".

### 4. <u>CO-OPERATION WITH OTHER AGENCIES AT SITE OF WORK</u>

The Contractor shall permit free access and generally afford all facilities and usual convenience to other agencies or departmental workers to carryout work if any, under separate arrangements. The contractor shall not be allowed any extra payment on this account.

### 5. <u>SECURITY OF CLASSIFIED DOCUMENTS</u>

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

### 6. <u>MINIMUM WAGES PAYABLE</u>

- 6.1 Refer condition 58 of IAFW-2249. The contractors shall not pay wages lower than minimum wages for labourers as fixed by the Govt of India/State Govt/Union Territory, whichever is higher.
- 6.2 Contractor's attention is also drawn amongst other things to the "explanation to the Schedule of minimum wages".
- 6.3 The fair wage referred to in condition 58 of IAFW-2249 will be deemed to be the same as minimum wages referred to above.
- 6.4 The contractor shall have no claim whatsoever, if on account of any local factory and/or regulation, he is required to pay the wages in excess of minimum wages as aforesaid during the execution of work. However in case of minimum wages of the employees directly engaged at site of work by the contractor are revised as a result of the coming in force of any fresh law or statutory rule or order as mentioned in condition 58 of IAFW-2249 during the progress of work and the contractor pays to the labour such revised rates, reimbursement / return to the extent permissible under condition 63 of IAFW-2249 shall be admissible.

### 7. <u>WATER</u>

7.1 Refer condition 31 of IAFW-2249. Water will be supplied by the department at point as decided by GE. Water will be charged at the rate of Rs. 3.75 (Rupees Three point seven five ) per rupees one thousand worth of work done priced at contract rates. The contractor shall make his own arrangement for the conveyance and storage of water required for the work, labour/workmen, etc. In the event of break down of MES supply of water or in the event of said supply of MES water becoming intermittent, the contractor shall not be allowed any compensation, whatsoever, on this account.

### SPECIAL CONDITIONS (CONTD....)

- 7.2 The contractor, if he so desires, will be allowed to augment the department's water supply by boring wells at his own cost at site(s) approved by the GE. On completion of the work the contractor shall remove pipe etc. installed and make good the site as directed by the Engineer-in-Charge without any extra cost to Govt. No rebate shall be given for augmentation of water supply by the contractor and charges for water shall be recovered at the rate mentioned hereinbefore. The contractor shall however, ensure that water drawn from such sources is clear and free from all impurities and is suitable for mixing concrete, mortar, washing aggregate and curing of concrete as specified in IS-456-2000.
- 7.3 The outlet of tube well(s) shall be plugged after completion of work to the entire satisfaction of Engineer-in-charge and shall hand over the plugged tube well(s) to the GE. The contractor shall have no claim on this account of whatever nature.

### 8. <u>SUPPLY OF ELECTRICITY</u>

- 8.1 In case the contractor desires to buy electricity from MES, he shall be charged for the electric energy consumed at Rupees eight and paise ten only per unit for lighting as well as power.
- 8.2 Electric supply required for the work shall be made available by MES at one point as decided by the GE. The main switch and KWH meter to register the electric energy supplied shall be provided and installed by MES. Contractor shall provide all necessary cables, fittings, etc., from the main switch in order to ensure proper and suitable supply of electricity for the execution of works. All contractor's installation shall conform to and be strictly in accordance with Indian Electricity Act and Rules. Moreover, the layout of cable etc., as proposed by him shall be as per plan approved by the Engineer-in-Charge.
- 8.3 MES do not guarantee continuity of supply and no compensation whatsoever shall be allowed for supply becoming intermittent or for breakdown in the system

### 9. <u>CONTRACTOR'S REPRESENTATIVE AND WORKMEN</u>

9.1 Refer condition 25 of IAFW-2249. The contractor shall employ only Indian National as his representative, 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 any work. If for reasons of technical collaboration or other considerations the employment of any foreign national is unavoidable, the tenderer shall furnish full particulars to this effect to the Accepting Officer at the time of submission of the tender. The Engineer-in-Charge shall have full power and without giving any reasons, to require the contractor immediately to cease to employ in connection with this contract any representative, agents servants and workmen or employees whose continued employment in his opinion is undesirable. The contractor shall not be allowed any compensation on this account.

### 10. <u>CRITICAL PATH NET WORK METHOD</u>

- 10.1 The time and progress chart to be prepared as per condition 11 of General conditions of contracts (IAFW-2249) shall consist of detailed net work analysis and a time schedule. The critical path net work will be drawn jointly by the GE and contractor soon after acceptance of the tender. The time schedule of the activities will be done by the contractor so as to finish the work within the stipulated time. On completion of time schedule a firm calendar date schedule will be prepared and submitted by the contractor to the GE who will approve it after due scrutiny. The schedule will be submitted in four copies within two weeks from the date of handing over the site.
- 10.2 During the currency of the work the contractor is expected to adhere to the time schedule and this adherence will be part of the contractor's performance under the contract. During the execution of the work the contractor is expected to participate in the reviews and updating of the net work undertaken by the GE.
- 10.3 These reviews may be undertaken at the discretion of the GE either as a periodical appraisal measure or when the quantum of work ordered on the contractor is substantially changed through deviation order or amendments. Any revision of the schedule as a result of the review will be submitted by the Contractor to the GE within a week, who will approve it after due scrutiny. The contractor will adhere to the revised schedule thereafter. In case of contractor disagreeing to the revised schedule, the same will be referred to the Accepting Officer whose decision will be final, conclusive and binding. GE's approval to the revised schedule resulting in completion date beyond the stipulated date of completion shall not automatically amount to a grant of extension. Extension of time shall be considered and decided by the appropriate authority mentioned in condition 11 of IAFW-2249 and separately regulated.
- 10.4 The Contractor shall mobilise and employ sufficient resources to achieve the detailed schedule within the broad framework of the accepted methods of working and safety.
- 10.5 No additional payment will be made to the contractor for any multiple shift work or other incentive methods contemplated by him in his work schedule even though the time schedule is approved by the department.

### 11. <u>ADVANCE ON ACCOUNT</u>

- 11.1 Refer condition 64 of IAFW-2249.
- 12. <u>VALIDITY OF TENDER</u>
- 12.1 The tender shall remain open for acceptance for a period of 60 days from the date specified (or amended through subsequent amendments if any)for its submission.

### 13. OFFICIAL SECRET ACT

13.1 Refer condition 2A of IAFW-2249 (General Conditions of contracts). The contractor shall be bound by the Official Secret Act and particularly section 5 thereof.

### SPECIAL CONDITIONS (CONTD....)

14. <u>QUARRIES</u>: Quarries are not available on MD land, which is in the charge of the MES authorities. Condition 14 of IAFW-2249 shall thus be treated as deleted.

### 15. <u>CHANGE OF SITING</u>

- 15.1 No claim shall be entertained and acceptable for any changes in siting if ordered. Adjustment on account of any variation in the quantity or quality of works, will however, be made as a normal deviation but no adjustment will be made on account of lead and lift.
- 16. <u>ADJUSTMENT OF TAX CONSEQUENT UPON AMENDMENT TO CONSTITUTION</u> Tendered rates are inclusive of all taxes and levies payable under the respective states including the sale tax on works contract levied by the state government in pursuant to Amendment No 46 to the constitution.

### 17. <u>LABOUR REGULATION AND ABOLITION ACT</u>

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

### 18. <u>OUT OF POCKET EXPENSES</u>

No out of pocket expenses incurred by the tenderer in submitting this tender will be reimbursed whether his tender is accepted or not.

### 19. DAMAGE TO EXISTING BUILDINGS, ROADS AND DRAINS ETC

Any damage to the existing structure/construction/building etc during the execution of work shall be made good by the contractor at his own cost and the site of work shall be left clean and tidy on completion. Rectification/reinstatement, making good etc. shall conform to the standard of material originally used in the work and finished work shall match with existing work in all respects and 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 and binding.

## 20. <u>CONDITIONS OF CONTRACT AND EXECUTION OF WORK</u> The material and workmanship shall satisfy the job specifications contained in latest relevant Indian Standard Codes as applicable as on the date of issue of tender by the accepting officer where the job specifications stipulate requirement in addition to those contained in the Indian standard Codes of practice, these additional requirements shall also be satisfied by the contractor.

### 21. OCTROI, SALES TAX AND OTHER DUTIES

- 21.1 The tendered rates shall be deemed to include all taxes & duties such as octroi, sales tax, excise, Services Tax, Labour Welfare cess/tax etc. as referred in condition 10 of IAFW 2249.
- 21.2 The contractor shall quote all in rates for various items of equipment inclusive of all taxes and cost of supply and installation and inclusive of all taxes, Octroi, sales tax excise, Services Tax, Labour Welfare cess/tax etc. and the like payable by him. Even if the, contractor has shown his rates separately for supply of equipment and installations the contract being lump sum contract will be treated as composite and indivisible work contract and the contractor shall not be entitled to any reimbursement of sales tax, all taxes or any other tax he may have paid to the authorities concerned. Any tender not complying with the condition will be treated as non-bonafide.

### 22. <u>EQUIPMENT AND MATERIALS</u>

All equipment and materials to be incorporated in the work shall be new and of the best of their kind conforming to the latest IS or in their absence to British or other relevant standard specifications.

### 23. <u>SOURCES OF MATERIALS; Refer Appx 'C' here –in- after.</u>

### 24. FOREIGN LABOUR

The Contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. Foreign Nationals including labour shall be excluded from all contract sites Contractor's attention is also drawn to the provisions contained in condition 26 of IAFW-2249 and the official security Act particularly section 5 thereof of the unit concerned in accordance with the standing rules and regulations of the units

### 25. <u>INDEMINITY BOND FOR PAYMENT OF LABOUR, WORKMEN EMPLOYED ON WORKS OR OTHER</u> <u>MONEYS OF TENDER PAYMENTS</u>

The contractor shall execute indemnity bond with the GE for enforcement of various enactments like wages Act 1936, Minimum wages Act 1948, employees liability Act 1938 workmen's compensation Act 1923 or any other Act or enactment's related to indirectly and directly labour employed on works and rules framed there under from time to time for the time being enforce. In case of non compliance of any of the enactment's by the contractor, the GE shall be empowered to exercise the powers vested in him as the principal employer and the amount so not paid to the labour/workman to be deducted from the sum become due under this Contract or from other Contracts in terms of condition 67 of IAFW-2249, General Condition of Contracts.

### 26 <u>FIRE PRECAUTIONS</u> :

- 26.1 The contractor, his agents, representatives, workers etc shall strictly observe the orders pertaining to fire precautions prevailing within the defence area.
- 26.2 Motor transport vehicles, if any allowed by authorities to enter the defence area, must be fitted with serviceable fire extinguishers if so ordered by GE.

### 27. <u>TAXES DIRECTLY RELATED TO CONTRACT VALUE</u>

27.1 The rate quoted by the contractor shall be deemed to be inclusive of all taxes (including sales Tax/VAT on materials, sales Tax/VAT on works contracts, Turnover Tax, Services 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 & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, and/or imposition/abolition of any new/existing taxes, duties, Royalties, Octroi & other levies, Royalties, Octroi & other

### 28. CONDITIONS OF WORKING

### 28.1 The work under this contract lies in UN-RESTRICTED AREA.

- 28.1.1 The work lies in UN-RESTRICTED AREA However the contractor, his agents, servants, workmen and vehicles may pass through the unit lines, in which case, the Engineer-in-Charge and/ or controlling authority shall at his discretion have the rights to issue passes, control them admission to the site of work or any part therof. The contractor shall apply in writing well in advance of the commencement of the work, for the issue of security pass and shall satisfy the Engineer-in-Charge as to the bonafide as such people. Cost of photographs required for passes shall be born by the contractor.
- 28.1.2 Passes will be returned at any time on demand by the Engineer-in-Charge and in any case immediately after the completion of work or earlier on termination of contracts.
- 28.1.3 The contractor and his work people shall observe all the rules promulgated from time to time by the authority controlling the area in which the work is to be executed viz. Prohibition of smoking etc. Any person found violating the security rules laid down by the authority shall be immediately expelled from the area without assigning any reasons whatsoever and the contractor shall have no claim on this account. Nothing shall be admissible for any man hours lost on this account.
- 28.1.4 The working hours shall be as notified by the authority controlling the area, which will be normally from 0800 hours to 1700 hours. If, however, contractor wants to work beyond these normal hours he can do so, if permitted by the GE in writing.

(Signature of Contractor)

other.

### PARTICULAR SPECIFICATIONS SECTION-I GENERAL REQUIRMENTS

# WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS The work under this contract shall be carried out in accordance with schedule `A', Special condition, particular specifications, General specifications and other provisions in the MES Schedule, relevant latest Indian standards and codes of practice. National building codes and drawings forming part of this contract read in conjunction with each

- 1.2 The term "General specifications" referred to above as well as in IAFW-2249 (General conditions of contracts) shall mean the specifications contained in MES schedule of rate 2009 (Part-I Specifications) and 2010 (Part-II-Rates) briefly mentioned as MES schedule or SSR.
- 1.3 General Rules, specifications, special conditions and preambles in the MES schedule shall be deemed to be applicable to the work under this contract. Unless mentioned otherwise the provisions in these tender documents shall take precedence over the above said provision in the MES schedule.
- 1.4 Where specifications for any item of work are not given in MES schedule or in these particular specifications or drawings, specifications given in the relevant INDIAN standard specifications or code of practice shall be followed.

### 2. <u>SAMPLES OF MATERIALS (ARTICLES AND EQUIPMENTS)</u>

- 2.1 All materials, articles and equipment's to be incorporated in the work shall be brand new and shall be procured from the manufacturer/authorised agents of the manufacturer and these shall be brought at site in the original packing. If any article is manufactured in more than one quality, the material/article of first quality shall be provided. These materials shall be got approved from the GE in writing before placing bulk order for incorporation in the works. Two samples of each articles (except heavy equipment/article for which the decision of GE shall be final and binding) shall be produced by the contractor for the approval of GE well in time. Keeping in view the activities agreed to in CPM Chart .The approved sample shall be signed by GE as well as contractors representative and shall be kept in safe custody till the expiry of the defect liability period.
- 2.2 The materials articles and equipment referred to as such shall invariably bear ISI certification mark. These materials although conforming to relevant IS will not be accepted if they do not bear ISI certification mark.
- 2.3 The materials articles and equipment referred to as such shall be conforming to relevant ISS or be superior thereto and shall be one of the Brand/Makes manufacturer indicated against each. The contractor may bring the materials from any of the firms listed therein but the material brought shall be subject to approval of GE in writing with regard to its quality and workmanship. The decision of the GE in this regard shall be final, conclusive and binding on the contractor.
- 2.4 The materials, articles and equipment not covered in the above Appendices shall bear ISI certification mark. If ISI mark not available, then conforming to relevant IS and if conforming to IS are also not available then these shall be of best quality available in the trade as approved by the GE. The decision of the GE in this regard shall be final, conclusive and binding.
- 2.5 The contractor shall produce on demand original receipted paid vouchers to the GE in respect of all materials as per latest policy, articles and equipment except those of local origin mentioned in appendix and BOQ.

### 3. <u>PROPRIETORY MATERIALS</u>

- 3.1 All the proprietary materials such as cement, steel, water proofing compound, bitumen, paints, chemicals for anti termite-treatment and the like which lose their identity and which cannot be measured after incorporation in the work shall be recorded in the measurement book 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.
- 3.2 Proprietary materials brought to site shall be stored as directed by Engineer-in-Charge and those already recorded in measurement book shall be suitably marked for identification.

### 4. MAKING CHASES HOLES, ETC IN WALLS AND OTHER SITUATIONS

4.1 Chases/holes etc. shall be left in concrete, brick work, stone masonry, floors and in any other situation for carrying out various items of works as required or as directed by the Engineer-in-Charge, as far as possible during the progress of work in the particular situation and shall be made good in the same mortar/mix as specified for that portion of the work.

### 5. <u>CLEANING DOWN</u>

5.1 Refer condition 49 of IAFW-2249 (General Conditions of Contracts). The contractor shall clean all floors, remove cement/lime/paint drops etc. clean the joinery, glass panes etc. touch up all paints work in connection therewith and leave the whole premises clean and tidy to the entire satisfaction of Engineer-in-Charge before handing over the buildings.

### 6. <u>STANDARD OF WORKMANSHIP</u>

- 6.1 To determine the acceptable standard of workmanship, the GE shall order the contractor to execute certain portion/stretch of work as sample work. These work shall be completed preferably at least one stage ahead of progress on the remaining work. Each stage of work on this sample portion/stretch shall be executed under the close supervision of the Engineer-in-Charge. Workmanship of various trades/stages shall be got approved by GE.
- 6.2 The fact of such inspection and passing such stages of sample shall be recorded by the GE under their dated signature. The workmanship of the sample shall serve as guiding sample for adoption for further work and contractor shall ensure adherence to sample of workmanship passed by the GE.

### PARTICULAR SPECIFICATIONS SECTION-I (CONTD...) GENERAL REQUIRMENTS

6.3 For special and particular finishes and any other items not covered in the sample work(s), the sample shall be approved in situation where actually required or as decided by the GE at their sole discretion.

7. <u>CURING AND STRIKING OFF FORM WORK</u>

7.1 The following specifications with regard to curing and striking off form work will be adopted in case of various type of cement issued.

A.	Curing period for structural RCC/PCC Work/Plastering/ pointing/brick work etc for ordinary Portland cement	:	As per IS 456 of 2000.
В.	Form work (Striking period) for ordinary Portland cement	:	As per IS 456 - 2000.
C.	REMOVAL OF PROPS TO SLABS		
	(a) Spanning up to 4.5 metre	:	9 days
	(b) Spanning over 4.5 metre	:	16 days
	(c) Spanning over 6 metre	:	23 days
D.	REMOVAL OF PROPS TO BEAMS AND ARCHES		
	(a) Spanning up to 6 metre	:	16 days
	(b) Spanning over 6 metre	:	23 days

- 8. No claim what-so-ever on account of use of various types of cement used shall be admissible. In case more than one type of cement is used in the work, record shall be maintained indicating date, the exact location of work and type of cement. Record register shall be maintained with daily entries duly authenticated by the contractor or his authorized representative and Engineer-in-Charge. The register shall be kept in the safe custody of the Engineer-in-Charge and shall be produced to the inspecting officer as and when the inspecting officer visits the site for his authentications.
- 9. A properly bound register showing consumption of steel shall be maintained at site and signed by the Engineer-in-Charge and contractor or his authorized rep and shall be forwarded along with final bill.

### 10. <u>TESTING OF MATERIALS</u>

- 10.1 It will be mandatory for the contractor to establish his own laboratory, at his own cost at site on commencement of work, for carrying out the tests of level 'A' specified in **Appendix** here-in-after for the works costing Rs. 1.00 Crore and above. The contractor will be permitted to set up a site laboratory at his own cost for the works costing less than Rs. 1.00 crore at his option. All equipment of the laboratory will be got calibrated by the contractor from the authorised test house at commencement of work and thereafter on yearly basis and tests certificate produced to the GE.
- 10.2 It will be mandatory for the contractor to carry out all the tests specified in the **Appendix** in addition to other tests specified elsewhere such as cement, steel etc. in the tender documents. The cost of material and transportation to different laboratories will be borne by the contractor in addition to testing charges given in succeeding paras.
- 10.3 The contractor shall employ a competent technical representative having minimum qualification of Diploma in Civil Engineering for carrying out tests in site laboratory. This will be in addition to Engineer(s) required to be employed for supervision of works as required vide Condition 25 of IAFW-2249.
- 10.4 The tests shall be carried out in the presence of Engineer-in-Charge.
- 10.5 There will be no recovery by the department for the tests specified to be carried out in site laboratory established by the contractor as per **Appendix** here in after.
- 10.6 A percentage/selective checks as desired by the Accepting Officer shall be got done independently in the Zonal/Govt. approved laboratory, the expenditure for such tests shall be borne by the Department. However, the cost of material and transportation charges shall be borne by the contractor. In case the test results are found at variance from the site laboratory, then the results obtained from the Zonal/Govt. approved laboratory will be final and binding.
- 10.7 For the works costing less than Rs. 1.00 crore, if the contractor does not opt to establish site laboratory, the materials required to be tested in site laboratory as indicated in **Appendix** (Level 'A') shall be got tested by the Contractor in site laboratory if established by the Department or in the Zonal Laboratory and the recovery as specified in **Appendix** shall be effected from the contractor.
- 10.8 The recovery in respect of tests required to be carried out in MES laboratory marked as level 'B' tests in column 6 of **Appendix** shall be made as per rate mentioned in **Appendix**.
- 10.9 The recovery for the tests required to be carried out in National Test House/Engineering College marked as level 'C' tests under column. 6 of **Appendix** shall not be effected by the Department, and the cost of these tests shall be paid directly by the Contractor to these Institutions and no reimbursement thereof shall be made.
- 10.10 The cost of charges for the tests carried out in SEMT Wing (level 'C' tests) shall be recovered from the contractor at rates stated in **Appendix**. Submission of samples for testing to SEMT wing will be at the sole discretion of GE.

(Signature of Contractor)

### PARTICULAR SPECIFICATION SECTION -II

### 1. <u>GENERAL</u>

- 1.1 These particular specifications shall be read in conjunction with MES Schedule 2009 Part I and 2010 Part II rates. Wherever in these specifications in else where in the tender the word SSR is referred that means SSR-2009 Part I & SSR-2010 Part II.
- **1.2** The terms general specification referred to here-in-before as well as referred to in IAFW-2249 (General Condition of contract) shall mean the specifications contained in the MES Schedule of Rates Part-I.
- **1.3** Where specification for any of work are not given in MES Schedule or in these particular specifications, the relevant Indian standard specifications and latest Engineering trade practice shall be followed.
- 1.4 Work under this contract shall be carried out in accordance with BOQ particular specification, General specifications and shall be carried out to the entire satisfaction of the Engineer-in-Charge and in such a fashion and manner as may be directed by the Engineer-in-Charge.
- 1.5 All works shall confirm to the best methods of modern practice and shall be executed by competent workmen. General rules specifications, special conditions and all preambles in the MES schedule shall deemed to apply to the work under this contract unless mentioned otherwise in this tender document in which case the provision in these tender documents shall take precedence over the aforesaid provision in the MES schedule.
- 1.6 All work shall strictly comply with the provisions in the India Electricity Act and rules framed there under (amended up to date) as applicable to this work. The work shall also comply with the provisions contained in the latest edition of the relevant ISS/BSS issued up to the date of receipt of the tender irrespective of what is referred to in the particular specifications.
- 1.7 All works conform to the best method of modern practice and shall be executed by fully qualified electricians/lineman/wire man etc. The evidence of their qualifications shall be produced by the contractor on demand by GE/ Engineer-in-Charge.
- **1.8** The contractor shall make all arrangements of testing at site to the entire satisfaction of Engineer-in-Charge. However electricity required for testing shall be issued by MES free of cost.
- 1.9 The measurements shall be recorded in MB.

### 2. <u>SCOPE OF WORK</u>

- 2.1 The work shall be carried out all as mentioned in BOQ and as specified in particular specifications and as directed by the Engineer-in-Charge.
- 2.2 The layout site of work can be seen in the office of GE Utility Bathinda Mil Stn during working hours on any working day.
- 2.3 The contract can be foreclosed by the department at any time during its currency due to administrative and technical reasons. The contactor shall not have any claim whatsoever due to premature foreclosing the contract agreement.

### 3.

### SAMPLE AND MATERIAL

- 3.1 All materials, articles and equipment to be incorporated in the work shall bear ISI certification mark. If ISI marked is not available, then conforming to relevant IS. All the materials/articles/equipments shall be got approved by the GE before placing bulk order for incorporation in the work.
- 3.2 Materials offered for incorporation shall be new and no reconditioned equipment/materials will be accepted in the work.
- 3.3 Specific requirements, regarding dimensions, strength, weight and finishes, as per IS, MES SSR and the particular specifications given hereinafter vis-à-vis actual properties check, tests carried out, reference to test certificates and markings, etc based on which samples of each materials are approved as conforming to relevant specification shall be recorded in the sample approval register.
- 3.4 The contractor shall not procure materials unless the samples are first got approved from the Garrison Engineer.
- 3.5 All the proprietary materials such as cement, steel, water proofing compound, bitumen, paints, chemicals for anti termite-treatment and the like which lose their identity and which cannot be measured after incorporation in the work shall be recorded in the MB 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 and the contractor shall produce original receipted paid vouchers in respect of these materials and the same shall be defaced by the Engineer-in-charge duly signed by contractor and kept the record

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3.6 The contractor shall also produce on demand original receipted paid vouchers in respect of materials, articles and equipments as applicable other than proprietary materials and the same shall be defaced by the Engineer-incharge duly signed by contractor and kept the record and Photostat copies of the same shall be produced with the RAR's in GE's office for record.

### 4. WORKSMAN SHIP

- 4.1 The workmanship shall be of the highest quality to the entire satisfaction of Engineer-in-Charge.
- 4.2 The contractor shall be solely responsible for all people deputed for the jobs and all transport as required.
- 4.3 Any minor item like nuts, bolts, washer etc required for work is to be carried out without any extra cost. Cost of these items is deemed to be included in the unit rate quoted in BOQ.

### 5.2 <u>CAST IRON FITTINGS</u>

5.1 Cast iron fittings shall be all as per clause 18.23 to 18.26 of SSR – 2009 (Part – I). The contractor shall produce purchase voucher & test certificate on demand by the GE.

### 6. JOINTS

- 6.1 <u>RUN LEAD JOINTS</u>:- Lead shall comply with IS-782-1978. Run lead joints shall be provided as specified vide clause 18.48.2 to 18.48.2.4 on page 18-15 & 18-16 of SSR Part-I
- 6.2 The pipe shall be laid jointed and tested all as specified vide clause 18.46 to 18.48 on srl page 18-15 of SSR Part-I.
- 6.3 The flanged joints shall be made by providing rubber insertion sheet 3 mm thick. All nuts and bolts shall conform to IS-1963 and washers to IS-2016 and shall be of sizes as mentioned for 'F' type flanges in BS table-10.
- 6.4 <u>TYTON JOINT</u>:- It shall be as per clause 18.48.4 , 18.48.4.1 to 18.48.4.4 of SSR -2009 Part-I
- 6.5 Push on jointing shall be carried out as per manufacturers design/ direction. Rubber shall be confirming to IS-5382.
- 7 <u>MEASUREMENT</u>:- All pipe shall be measured net (without any allowances for cutting and wastage) length as laid including all fittings, special etc shall be measured alongwith the centre line of the pipes and pipe joints.
- 8 <u>CAST IRON SLUICE VALVE</u>:-Sluice valve shall be cast iron body (class PN-I) ISI marked with IS-14846 with cap and wheel bolts in spindle, flanged joints drilled for bolts, nuts and washers. Sluice valve shall be fixed as specified vide clause 18.75 on Srl page 18-24 of SSR Part-I.

### 9. <u>TESTING</u>

- 9.1 The trenches for pipe shall be kept open and no fillings shall be done till the pipe line is tested as given below. In case the trenches have been refilled these shall be reopened before the testing to pipe line is commenced. After testing the trenches shall be filled with approved earth in 25 cm layers.
- 9.2 The water supply mains and joints shall with stand hydraulic pressure as mentioned in SSR Part-I without showing leakage, sweating or other defects.
- 9.3 For the work where the test results are unsatisfactory shall be re-done by the contractor to obtain satisfactory test results at his own risk and cost with in the stipulated period of completion

### 10. <u>GI TUBES & FITTINGS</u>

- 10.1 GI tubing and fittings shall be of mild steel tubes (ISI marked) medium/light grade galvanised as per BOQ item and complying with IS-1239 (Part-I), GI fittings shall comply with IS-1239 (Part-II) and shall have ISI mark as per clauses 18.4 of MES Schedule 2009 Part-I
- 10.2 <u>Water supply fittings</u> :- Refer paras 18.62 to 18.66 of MES Schedule Part-I (2009).
- 10.3 The contractor shall provided screwed plug to all open ends of pipe fittings at the end of day work and at time when work is stopped.

### PARTICULAR SPECIFICATION SECTION -II (CONTD.....)

- 10.4 <u>Testing</u> :- As per relevant clause of MES Schedule Part-I (2009).
- 10.5 <u>MEASUREMENT</u>:- All pipe shall be measured net (without any allowances for cutting and wastage) length as laid including all fittings, special etc shall be measured alongwith the centre line of the pipes and pipe joints.

### 11. <u>APPLICABILITY OF RULES REGULATIONS AND CODE OF PRACTICE</u>

- 11.1 The entire electrical installation under this contract shall comply with the requirements of Indian Electricity Rules/Acts National electrical Code, relevant Indian Standard Specifications and other regulations such as those made under factories Act and fire insurance Act, as may be applicable from time to time.
- 11.2 Power is being received from State electricity Board and therefore all plants, equipment's and electrical work shall comply with relevant rules of that authority also. It shall be the responsibility of the contractor to ascertain from state electricity Board Rules and Regulations, application for these installation under this contract shall be executed as per latest Indian Standard code of practice.

### 12. SCAFFOLDING / LADDERS

- 12.1 Wherever scaffolding is necessary required to execute the work, it shall be carried out all as per relevant clause of SSR 2009 (Part-I) and the same shall be arranged by the contractor at their own cost and arrangement.
- 12.2 The T & P / vehicles and necessary ladders etc. will be arranged by the contractor and the cost deemed to be included in the quoted rates of respective items of BOQ.

### 13. <u>EXCAVATION/EARTH WORK</u>

- 13.1 Trenches for pipes shall be excavated to the level or gradient as directed by the Engineer- in-Charge.
- 13.2 The excavation for pipe lines shall be restricted to authorized width as laid down in clause 3.2.3 of MES Schedule Part II & it shall be measured accordingly. Nothing extra whatsoever will be paid to the contractor in addition to the authorized width.
- 13.3 Any additional width/depth of excavation done at the location of pipe fittings/valves etc shall not be paid extra over the authorized width and depth of the trench.
- 13.4 Care shall be taken to keep the trenches free from water during the work. All water which may accumulate from the rains or any other sources shall be bailed/pumped out or otherwise removed which no extra payment will be made.
- 13.5 The bottom of trenches shall be carefully prepared so that the barrels of the pipe when laid are well bedded for their whole length of firm surface.
- 13.6 All excavated earth shall be deposited at least one meter away from the edge of the trenches.
- 13.7 Excavated earth from trenches shall be used for refilling to the extent approved by the Engineer-in-Charge and surplus earth if any shall be removed to a distance as specified in BOQ deposited, spread and leveled to the satisfaction of the Engineer-in-Charge.
- 13.8 No joint shall be covered with earth till the pipe line is tested under pressure, unless directed otherwise by the Engineer-in-Charge to avoid traffic hazards and to ensure safety of personnel.

### 14. <u>SAFETY PROCEDURE AND PRACTICE</u>

- 14.1 Work shall be carried out all as specified in BOQ as directed by Engineer-in-Charge. The contractor shall take precaution to entire safety as per latest safety code execute the work as per the code of precautions and also as per para 19.2.7 of SSR 2009 (Part I)
- 14.2 All safety precautions as per IE Rule shall be taken by the contractor. Contractor shall be responsible for any loss/ damage to MES equipments/ machinery and the same shall be made good without any extra cost to the Govt. In case of any mishap/ accident the contractor shall solely be responsible to settle all the claims with labour reps/ Labour Welfare Officer/ Court without any extra cost to the Govt

### PARTICULAR SPECIFICATION SECTION -II (CONTD.....)

- 15. <u>DISMANTLING / TAKING DOWN</u>
- 15.1 It shall be as per relevant section of SSR-2009 part-I.
- 15.2 No recondition, used equipment/material, old dismantled material shall be allowed to be used in the work. Unless otherwise specifically mentioned in BOQ.
- 15.3 The old dismantled material mentioned in Schedule of credit shall be property of the contractor. The rates for credit of these materials has been mentioned by the deptt in the Schedule of credit. The contract sum shall be calculated after deducting the credit amount. The material, if any, for which no credit is considered in the schedule of credit, the same shall be the property of department and shall be deposited in the store yard of AGE E/M (W/S) of GE (Utility) Bathinda Mil Stn without any extra cost to the Govt.
- 15.4 If at the time of dismantling, any existing near by material/equipment etc is damage/disturbed, the contractor shall be make good all disturbed/damaged surfaces/equipment/material without any extra cost to the Govt.
- 15.5 All the new material against the old dismantled materials shall be of the same make, quality as of the original one or superior to that.
- 15.6 The inventories shall be prepared before the taking down of the materials duly signed by the Engineer-in-Charge and contractor. The contractor shall be responsible for dismantling without proper inventories.
- 15.7 After completion of work site/sites shall be cleared to the entire satisfaction of Engr-in-Charge.
- 15.8 Proper care shall be taken while taking down and refixing the material in position to avoid any damage to the equipment. Any damage done to the equipment by the negligence of contractor or his workmen shall be made good by the contractor without any extra cost to the Govt.

(Signature of Contractor)

### <u>APPENDIX 'B'</u> SOURCE OF MATERIALS

Srl No.	Name of Material	Sources of materials					
1.	Coarse aggregate for all PCC & RCC Works.	:	Crushed stone aggregate/Single aggregate from Near Chandigarh or near pathankot.				
2.	Fine aggregate for all RCC and PCC Works.	:	Near Chandigarh or near pathankot.				
3.	Sand for plastering, pointing, brick work & cushioning.	:	Chakki river near Pathankot or Ghaggar river near Mubarakpur near Chandigarh.				
4.	Bricks /brick tiles	:	Locally best available having compressive strength not less than 75Kg/Sqm.				

### Notes :

- 1. The location of the source may be in the vicinity of the source mentioned above. The tenderers shall ascertain the actual position/exact location of the source before submitting his tender. No additional payment shall be made on account of exact source being at longer distance from the site of work than to distance involved in the case of source of materials as mentioned.
- 2. The tender shall, amongst other things also ascertain all the information such as Royalton taxes duties and other charges etc. the materials and no additional payment shall be made on account of the same.

Signature of Contractor

### **MATERIAL AND THEIR TESTS**

### RECOVERY RATES OF TESTING CHARGES (REFER CLAUSE 10 OF PARTICULAR SPECIFICATION SECTION-1)

Ser No	Materials		Test	Method of testing	Frequency of tests	Level of test	Rate per test. In	Rem- arks
1	2		3	4	5	6	Rs. 7	8
1	Bricks	(i)	Compressive strength	IS-3495 (Part-II)	As per IS 5454	'A'	330.00	<u> </u>
		(ii) (iii)	Water absorption Efflorescence	-do- -do-(Part-I)	-do- -do-	'A' 'A'	330.00 330.00	
		Note :-	Checks for visual an	d dimensional	characteristics shall also b	be carried	out as per I	5 5454
2.	Coarse aggregate	(i)	Sieve analysis	IS-2386 (Part-I)	One test for every 15 Cubic Metre of aggregates or part there of brought to site.	ʻA'	660.00	
		(ii)	Flakiness Index	-do-	-do-	'A'	250.00	
		(iii)	Estimation of deleterious materials	-do-	One test for every 100 Cubic Metre of aggregates or part there of	ʻA'	600.00	
		(iv)	Organic impurities	-do-	One test per source of supply	'C'	275.00	
		(v)	Moisture content	IS-2386 (Part-II)	Regularly as required	'A'	330.00	
		(vi)	Specific gravity	IS-2386 (Part-II)	One test for each source of supply	'В'	330.00	
3.	Fine aggregate	(i)	Sieve analysis	IS-2386 (Part-I)	One test for every 15 Cubic Metre of FA or part thereof when brought to site.	'A'	660.00	
		(ii)	Test for clay, silt and impurities	-do- (Part-I)	-do-	'A'	500.00	
		(iii)	Specific gravity	-do- (Part-II)	One for each source of supply	'В'	330.00	
		(iv)	Moisture content	-do- (Part-II)	Regularly as required subject to 2 tests/ day when being used.	'A'	330.00	
		(v)	Test for organic impurities	-do- (Part-II)	One for each source of supply	'C'	275.00	
4.	Cement	(i)	Setting time	IS – 4031	Once for each consignment of 50 MT or part there of	'B'	500.00	
		(ii)	Soundness	- do -	- do -	'В'	550.00	
		(iii)	Compressive Strength	- do -	- do -	'В'	550.00	
		(iv)	Fineness	- do -	- do -	'В'	275.00	

<u>NOTE</u> :-1. Legend A - Site lab. 2.

B- Zonal Lab. C- National test house/SEMT wing Pune/Engg College. In case the tests are conducted in national Test House/ CME Pune / Engineering college Labs /any other Govt. approved Lab, contractors shall have to pay the actual amount of test charges levied by these test house , Labs etc. This shall apply to all levels i.e. level A, B and C tests.

In case of site laboratories established by the contractor for 'A' level tests, no recovery shall be made. 3.

(Signature of Contractor)

WA	TER SUPPLY ITEMS				
1.	MOTORS	1	BHARAT BIJLEE	2	CROMPTON
		3	ВСН	4	AREVA
5		5	KIRLOSKAR ELECTRIC	6	SIEMENS
-			ABB	8	JYOTI
2		1	KIRLOSKAR BROTHERS LTD	2	KSB
	(A) CENTRIFUGAL	3	CROMPTON GREAVES	4	JYOTI
		5	BEACON	6	MATHER & PLATT
		7	WASP		
	(B) SUBMERSIBLE	1	KIRLOSKAR	2	KSB
		3	CROMPTON GREAVES	4	CALAMA
		5	BEACON	6	MATHER & PLATT
		7	TEXMO (COIMBATORE)	8	JYOTI
	(C) VERTICAL TURBINE	1	KIRLOSKAR	2	KSB
		3	JOHNSON	4	CROMPTON
		5	JYOTI	6	WORTHINGTON
		7	WASP		
3	GI TUBING & FITTNGS	1	ТАТА	2	JINDAL
		3	PRAKASH	4	BST
		5	ADVANCE STEEL TUBES	6	OSWAL
		7	SWASTIC		
4	CI PIPES & CI FITTINGS / SPECIALS	1	ELECTRO STEEL CASTING	2	JAISWAL NECO
		3	KESORAM (BIRLA GROUP)	4	KEJRIWAL
		5	TISCO	6	LISCO
		7	KESOSPUN		
5	DI PIPES & DI FITTINGS	1	ELECTRO STEEL CASTING	2	JINDAL SAW PIPES
		3	LANCO	4	ELECTRO THERM
		5	TATA METALICS	6	JAI BALAJI INDUSTRIES LTD KOLKATA
		7	KAPILANS DHATU UDYOG	1	

6       HDPE PIPES       1       RELIANCE       2       FINOLEX         3       PRINCE       4       DIPLAST         5       SUPREME       6       NEEL KAMAL'         7       DUPLON (RELIANCE)       1       TIRUPATI         9       DUPLON (RELIANCE)       1       KRICK VALVE / HIGH PRESSURE SV / RV / GATE VALVE / FOOT VALVE       1       KRICOSKAR       2       VENUS         8       NRV/ARI VALVE       1       KRICOSKAR       2       KSB         3       L&T       4       KSB       4       VENUS         6       NRV/ARI VALVE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       4       VENUS         5       LEADER ISI       6       UPADHYAYA       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       KIRLOSKAR       2       KSB       4       VENUS         10       MOTORS STARTER       1       L&T       2       BCH       4       LEGRAND         5       ABB       6       GE / ENGLISH ELECT		1		2		3
5       SUPREME       6       NEEL KAMAL'         7       DURTON       8       TIRUPATI         9       DUPLON (RELIANCE)       1         7       SLUICE       VALVE / REFLUX       1       KRILOSKAR       2       VENUS         7       SLUICE VALVE / REFLUX       1       KRILOSKAR       2       VENUS         7       REFLUX       VALVE / (GATE VALVE / FOOT VALVE       1       KRILOSKAR       2       VENUS         8       NRV/ARI VALVE       RELEASE       1       KIRLOSKAR       2       KSB         9       SUBMERSIBLE CABLE       1       KIRLOSKAR       2       KSB         3       LAT       4       VENUS       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       KIRLOSKAR       2       KSB       1         10       MOTORS STARTER       1       FINOLEX       2       HAVELL'S         10       MOTORS STARTER       1       L&T       2       ABB         11       SINGLE       PHASE       1       L&T       2       ABB	6	HDPE PIPES	1		2	
7       DURTON       8       TIRUPATI         7       DURION (RELIANCE)       1       1       KRUOK       1         7       SLUICE VALVE / REFLUX VALVE / FOOT VALVE / FOOT VALVE       1       KRILOSKAR       2       VENUS         3       L&T       4       KSB       5       LEADER ISI       6       UPADHYAYA         7       KEJRIWAL       8       AUDCO       8       AUDCO         8       NRV/ARI       RELEASE VALVE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       5       LEADER ISI       6       UPADHYAYA         7       KEJRIWAL       8       AUDCO       3       L&T       4       VENUS         5       LEADER       1       KIRLOSKAR       2       KSB       4       VENUS         6       UPADHYAYA       3       L&T       4       VEAZA       5       LEADER       6       RELEASE       1       L&T       2       BCH       3       SECONCO       5       ABB       6       GE / ENGLISH LECT       7       C&S       8			3	PRINCE	4	DIPLAST
7   SLUICE   VALVE   1   KRILOSKAR   2   VENUS     7   SLUICE   VALVE   1   KRILOSKAR   2   VENUS     7   REFLUX   VALVE   3   L&T   4   KSB     7   REFLUX   VALVE   3   L&T   4   KSB     7   KEJRIWAL   8   AUDCO     8   NRVIARI   RELEASE   1   KIRLOSKAR   2   KSB     3   L&T   4   VENUS   5   LEADER   6   UPADHYAYA     9   SUBMERSIBLE   1   KIRLOSKAR   2   KSB     3   L&T   4   VENUS     5   LEADER   6   UPADHYAYA     9   SUBMERSIBLE   1   FINOLEX   2   HAVELL'S     3   BCH   4   PLAZA     5   RALLISON   6   RR KABLE     10   MOTORS STARTER   1   L&T   2   BCH     3   SIEMENS   4   LEGRAND     5   ABB   6   GE / ENGLISH ELECT     7   C&S   8   HAVELLS     9   MDS   1   L&T     2   ABB   6			5	SUPREME	6	NEEL KAMAL`
7     SLUICE     VALVE     1     KRILOSKAR     2     VENUS       7     REFLUX     VALVE     3     L&T     4     KSB       7     KGATE VALVE     3     L&T     4     KSB       7     KGATE VALVE     5     LEADER ISI     6     UPADHYAYA       7     KEJRIWAL     8     AUDCO     8     AUDCO       8     NRV/ARI     RELEASE     1     KIRLOSKAR     2     KSB       9     SUBMERSIBLE     1     KIRLOSKAR     2     HAVELL'S       3     L&T     4     VENUS     5     LEADER       9     SUBMERSIBLE     1     FINOLEX     2     HAVELL'S       3     BCH     4     PLAZA     5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH     3     SIEMENS     4     LEGRAND       5     ABB     6     GE / ENGLISH ELECT     7     C&S     8     HAVELLS       11     SINGLE     PHASE     1     L&T     2     ABB			7	DURTON	8	TIRUPATI
REFLUX VALVE / HIGH PRESSURESS / RV / GATE VALVE / FOOT VALVE       3       L&T       4       KSB         7       KEJRIWAL       8       AUDCO         8       NRV/ARI VALVE       7       KEJRIWAL       8       AUDCO         8       NRV/ARI VALVE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       KIRLOSKAR       2       HAVELL'S         3       BCH       4       VENUS       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       FINOLEX       2       HAVELL'S         3       BCH       4       PLAZA       5       RALLISON       6       RR KABLE         10       MOTORS STARTER       1       L&T       2       BCH       3       SIEMENS       4       LEGRAND         5       ABB       6       GE / ENGLISH ELECT       7       C&S       8       HAVELLS         9       MDS       1       L&T       2			9	DUPLON (RELIANCE)		
HIGH PRESSURE SV / RV / GATE VALVE / FOOT VALVE       3       L&T       4       KSB         7       KEJRIWAL       6       UPADHYAYA         8       NRV/ARI VALVE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       5       LEADER       8       AUDCO         8       NRV/ARI VALVE       RELEASE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       FINOLEX       2       HAVELL'S         3       BCH       4       PLAZA       5       RALLISON       6       RR KABLE         10       MOTORS STARTER       1       L&T       2       BCH       3       SIEMENS       4       LEGRAND         5       ABB       6       GE / ENGLISH ELECT       7       C&S       8       HAVELLS         10       MOTORS STARTER       1       L&T       2       ABB       6       GE / ENGLISH ELECT         7       C&S       8<	7		1	KRILOSKAR	2	VENUS
FOOT VALVE     5     LEADER ISI     6     UPADHYAYA       7     KEJRIWAL     8     AUDCO       8     NRV/ARI VALVE     1     KIRLOSKAR     2     KSB       3     L&T     4     VENUS       5     LEADER     6     UPADHYAYA       9     SUBMERSIBLE CABLE     1     FINOLEX     2     HAVELL'S       3     BCH     4     PLAZA       5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       11     SINGLE PHASE SEQUENCE CORRECTOR     1     L&T     2     ABB       11     SINGLE PHASE SEQUENCE CORRECTOR     1     L&T     2     ABB       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       14     CHEMICAL DOZER /		HIGH PRESSURE SV	3	L&T	4	KSB
8       NRV/ARI VALVE       RELEASE       1       KIRLOSKAR       2       KSB         3       L&T       4       VENUS       5       LEADER       6       UPADHYAYA         9       SUBMERSIBLE CABLE       1       FINOLEX       2       HAVELL'S         3       BCH       4       PLAZA         5       RALLISON       6       RR KABLE         10       MOTORS STARTER       1       L&T       2       BCH         1       ABB       6       GE / ENGLISH ELECT       7       C&S       8         10       MOTORS STARTER       1       L&T       2       BCH       1         10       MOTORS STARTER       1       L&T       2       BCH         3       SIEMENS       4       LEGRAND         5       ABB       6       GE / ENGLISH ELECT         7       C&S       8       HAVELLS         9       MDS       1       L&T       2       ABB         11       SINGLE       PHASE       1       L&T       2       ABB         12			5	LEADER ISI	6	UPADHYAYA
VALVE     3     L&T     4     VENUS       3     L&T     4     VENUS       5     LEADER     6     UPADHYAYA       9     SUBMERSIBLE CABLE     1     FINOLEX     2     HAVELL'S       3     BCH     4     PLAZA       5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH       3     SIEMENS     4     LEGRAND     5       10     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       3     SIEMENS     4     LEGRAND     5       5     ABB     6     GE / ENGLISH ELECT     7       7     C&S     8     HAVELLS     9       9     MDS     3     BCH     4     MINILEC       11     SINGLE PHASE SEQUENCE CORRECTOR     1     LAT     2     ABB       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       13     ION EXCHANGE <td></td> <td></td> <td>7</td> <td>KEJRIWAL</td> <td>8</td> <td>AUDCO</td>			7	KEJRIWAL	8	AUDCO
3     L&T     4     VENUS       5     LEADER     6     UPADHYAYA       9     SUBMERSIBLE CABLE     1     FINOLEX     2     HAVELL'S       3     BCH     4     PLAZA       5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       11     SINGLE     PHASE     4     LEGRAND       5     ABB     6     GE / ENGLISH ELECT       7     C&S     8     HAVELLS       9     MDS	8		1	KIRLOSKAR	2	KSB
9     SUBMERSIBLE CABLE     1     FINOLEX     2     HAVELL'S       3     BCH     4     PLAZA       5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH       3     SIEMENS     4     LEGRAND       5     ABB     6     GE / ENGLISH ELECT       7     C&S     8     HAVELLS       9     MDS     1     L&T     2       11     SINGLE PHASE SEQUENCE CORRECTOR     1     L&T     2     ABB       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       14     CHEMICAL DOZER /     1     AITOC     4     MAIC (INDIA)			3	L&T	4	VENUS
CABLE3BCH4PLAZA3BCH4PLAZA5RALLISON6RR KABLE10MOTORS STARTER1L&T2BCH3SIEMENS4LEGRAND5ABB6GE / ENGLISH ELECT7C&S8HAVELLS9MDS11SINGLE PHASE PREVENTOR /PHASE SEQUENCE CORRECTOR1L&T2ABB12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX13BLEACHING DOZER SODIUM1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC4MAIC (INDIA)			5	LEADER	6	UPADHYAYA
3     BCH     4     PLAZA       5     RALLISON     6     RR KABLE       10     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       11     MOTORS STARTER     1     L&T     2     BCH       10     MOTORS STARTER     1     L&T     2     BCH       11     SINGLE     PHASE     6     GE / ENGLISH ELECT       7     C&S     8     HAVELLS       9     MDS     9     MDS       11     SINGLE     PHASE     1     L&T     2     ABB       11     SINGLE OPHASE     1     L&T     2     ABB       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       14     CHEMICAL DOZER /     1     ALTOC     1     MAIC (INDIA)	9		1	FINOLEX	2	HAVELL'S
10MOTORS STARTER1L&T2BCH3SIEMENS4LEGRAND3SIEMENS4LEGRAND5ABB6GE / ENGLISH ELECT7C&S8HAVELLS9MDS9MDS11SINGLE PHASE PREVENTOR /PHASE SEQUENCE CORRECTOR1L&T23BCH4MINILEC5SIEMENS6HAVELLS12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX13BLEACHING DOZER SODIUM1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC4MAIC (INDIA)		CABLE	3	BCH	4	PLAZA
1     SIEMENS     4     LEGRAND       3     SIEMENS     4     LEGRAND       5     ABB     6     GE / ENGLISH ELECT       7     C&S     8     HAVELLS       9     MDS     9     MDS       11     SINGLE PHASE PREVENTOR /PHASE SEQUENCE CORRECTOR     1     L&T     2     ABB       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       12     CHOLORONOME PLANT     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       13     BLEACHING DOZER     1     CAPITAL CONTROL     2     CHLOROMAX       14     CHEMICAL DOZER / SODIUM     1     ALTOC     MAIC (INDIA)			5	RALLISON	6	RR KABLE
Image: second	10	MOTORS STARTER	1	L&T	2	ВСН
7C&S8HAVELLS9MDS11SINGLE PHASE PREVENTOR /PHASE SEQUENCE CORRECTOR1L&T2ABB3BCH4MINILEC3BCH4MINILEC5SIEMENS6HAVELLS12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX3ION EXCHANGE4MAIC (INDIA)13BLEACHING DOZER SODIUM1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC4MAIC (INDIA)			3	SIEMENS	4	LEGRAND
Image: sequence of constraints of the sequence			5	ABB	6	GE / ENGLISH ELECT
Indext red by the second sec			7	C&S	8	HAVELLS
PREVENTOR /PHASE SEQUENCE CORRECTOR3BCH4MINILEC3BCH4MINILEC5SIEMENS6HAVELLS12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX13ION EXCHANGE4MAIC (INDIA)13BLEACHING DOZER ODZER1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC			9	MDS		I
SEQUENCE CORRECTOR3BCH4MINILEC5SIEMENS6HAVELLS12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX3ION EXCHANGE4MAIC (INDIA)3ION EXCHANGE4MAIC (INDIA)13BLEACHING DOZER1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC4MAIC (INDIA)	11		1	L&T	2	ABB
5SIEMENS6HAVELLS12CHOLORONOME PLANT1CAPITAL CONTROL2CHLOROMAX3ION EXCHANGE4MAIC (INDIA)3ION EXCHANGE4MAIC (INDIA)13BLEACHING DOZER1CAPITAL CONTROL2CHLOROMAX14CHEMICAL DOZER / SODIUM1ALTOC4MAIC (INDIA)		SEQUENCE	3	BCH	4	MINILEC
PLANT   Image: second s		JOINEOTON	5	SIEMENS	6	HAVELLS
3   ION EXCHANGE   4   MAIC (INDIA)     5   PALTERSON   5     13   BLEACHING DOZER   1   CAPITAL CONTROL   2   CHLOROMAX     3   PATTERSON   4   MAIC (INDIA)     14   CHEMICAL DOZER / SODIUM   1   ALTOC   5	12		1	CAPITAL CONTROL	2	CHLOROMAX
13   BLEACHING DOZER   1   CAPITAL CONTROL   2   CHLOROMAX     3   PATTERSON   4   MAIC (INDIA)     14   CHEMICAL DOZER / 1   ALTOC			3	ION EXCHANGE	4	MAIC (INDIA)
Image: 14   CHEMICAL DOZER / 1   ALTOC   4   MAIC (INDIA)			5			
14   CHEMICAL DOZER / 1   ALTOC     SODIUM   1	13	BLEACHING DOZER	1	CAPITAL CONTROL	2	CHLOROMAX
SODIUM			3	PATTERSON	4	MAIC (INDIA)
SOLUTION	14	SODIUM HYPOCHLORITE SOLUTION	1	ALTOC		
15   C PVC PIPES (FLOW   1   ASTRAL   2   ASHIRVAD     GUARD)   2   ASHIRVAD   2   ASHIRVAD	15	C PVC PIPES (FLOW			2	ASHIRVAD
3 AJAY			3	AJAY		

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1	2				3			
MIS	<u>C ITEMS</u>							
1	RUBBER MATS	1	JYOTI	2	SINTEX			
		3	ELECTROMAT	-				
2	PVC SHEET FLOORING	1	PREMIER VINYL	2	FINOLEX			
		3	INARCO	4	ELECTROMAT			
3	SOLAR WATER HEATER	1	BHEL	2	SINTEX			
		3	TATA BP SOLAR					
4	BATTERY / BATTERY	1	EXIDE	2	AMCO			
	CHARGER	3	MICORTEX	4	AMRON			
		5	SUKAM					
5	CONTACTOR	1	BCH	2	ABB			
		3	LEGRAND	4	L&T			
		5	SIEMENS	6	GE / ENGLISH ELECT			
		7	C&S	8	HAVELLS			
		9	STANDARD	10	MDS			
6	CAPACITORS INCL RELAY	1	L&T	2	ABB			
		3	EPCOS	4	GE			
		5	HPL	6	HAVELLS			
		7	DUCATI	8	NEPTUNE			
7	MEASURING	1	L&T	2	ABB			
	INSTRUMENTS	3	AE	4	SIEMENS			
		5	HAVELLS	6	IMP			
		7	MECO	8	SECURE			
		9	HPL					
8	PHOTO ELECTRIC TIME	1	L&T	2	INDO-ASAIN			
	SWITCH, SINGLE PHASE /	3	STANDARD	4	C&S			
	3 PHASE	5	HAVELLS					
9	SHADOW LESS LIGHT	1	BAJAJ	2	CROMPTON GREAVES			
		3	PHILIPS	4	WIPRO			
		5	HILLROM-UK					
10	POST TOP LATERN	1	PHILIPS	2	CROMPTON GREAVES			
		3	BAJAJ	4	GE/ENGLISH ELECT			
		5	HAVELLS	6	WIPRO LIGHTING			
		7	SURYA ROSHNI LTD					
11	TOOLS (HAND & CRIMING	1	TAPARIA	2	EVEREST			
	ETC)	3	IMPRIAL	4	EASTMAN			
		5	JHALANI					
12	REFRIGERATORS & DEEP	1	WHRIL POOL	2	GODREJ			
	FREEZERS	3	LG	4	VOLTAS			
		5	SAMSUNG	5	HITACHI			
13	WATER COOLERS	1	VOLTAS	2	BLUE STAR			
		3	USHA SHRIRAM					
14	AVIATION LIGHT	1	BAJAJ	2	WIPRO			
		3	GEC	4	PHILIPS			
15	UNDER WATER LIGHTS	1	PHILIPS	2	BAJAJ			
-		3	CROMPTON GREAVE					
16	UPS	1	TATA – LIEBERT	2	APC			
-	_	3	SUKAM	4	LUMINIOUS			
		5	MICROTEK	•				
17	FIRE HOSE REEL	1	MINIMAX	2	FIREX			
.,		3	SAFEX	4	SAFEZONE			
		5	UFECON	5	ELECTRO EQUIP			
		6	GODREJ & BOYCE	0				
18	STAND POST TYPE	1	MINIMAX	2	FIREX			
10	HYDRANT	3	SAFEX	4	SAFEZONE			
		5	UFECON	5	ELECTRO EQUIP			
		6	GODREJ & BOYCE	J				
19	RRI HOSE PIPE	о 1	NEWAGE	2	DUNLOP			
19		3	COSMOS	4	SAFEZONE			
		J	JUJIVUJ	4	JAFEZUNE			

1	2	3			
20	SPRINKLER HEAD	1	TYCO	2	CEASEFIRE
		3	SAFEX	4	MINIMAX
21	PRESSURE SWITCH	1	DANFOSS		
22	ALARM VALVE	1	HD	2	SPRASAFE
		З	TYCO		
23	FIRE EXTINGUISHER	1	MINIMAX	2	FIREX
		З	NEWAGE	4	CEASEFIRE
		5	SAFEZONE	6	UFECON
		7	ELECTRO EQUIP	8	GODREJ & BOYCE
24	SINGLE HEAD LANDING	1	MINIMAX	2	FIREX
	VALVES THREE/ FOUR WAY	2	SAFEX	4	AGNI SUPEREX
	FIRE BRIGADE INLET, HOSE	5	NEWAGE	6	SUKAN
	REEL DRUM AND SHUT OFF				
	NOZZLE ALUMINIUM BRANCH				
	PIPE				
25	20MM DIA RUBBER PIPE	1	JYOTI TYPE-III	2	DUNLOP
		3	COSMOS NEWAGE	4	MINIMAX
26	RI/HOOTER	1	SUPEREX	2	SUKAN
		3	NEWAGE	4	AGNI
		5	SAFEX	6	MINIMAX
27	ASBESTOS INSULATION ROPE	1	CHAMPION		