BEML LIMITED

(A Government of India Undertaking)
Belvadi Post, Mysuru – 570 018
(Purchase Department)

TENDER DOCUMENT

For

Upgradation of existing Sewage Treatment Plant (STP) at Township, BEML Ltd, Mysuru Complex.

Tender Document No. MY01/YMN/002/STP-TS

DATE OF SUBMISSION As per NIC portal

ISSUED BY

The Senior Manager (Purchase Department)
Belvadi Post,
Mysuru – 570 018
KARNATAKA, India

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Signature of the Contractor(s) with seal

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Note:

1. The tenderer shall download the complete set of tender documents. The tender documents from Serial Page No: 01 to 65 shall be duly filled, signed along with the company seal, scanned and upload the requisite documents as per the technical bid.
2. Commercial bid shall be submitted on NIC (GePNIC) Portal.
3. If the attachment is uploaded in C folders technical bid attachments, **the bid will be summarily rejected.**
4. The Commercial bids of technically qualified tenderers/bidders shall be considered for opening.

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INVITATION FOR TENDER

Sub: Tender For "Upgradation of existing Sewage Treatment Plant (STP) at Township, BEML Ltd, Mysuru Complex."

*****

BEML Limited invites tenders for the subject work in Two bid system (Part 'A'-Technical bid & Part 'B'-Commercial bid) through e- Tendering mode i.e BEML NIC (GePNIC) platform.

2. Earnest Money Deposit (EMD): Rs. 85,000.00 (Rupees Eighty-Five Thousand Only)

a) EMD amount can be paid online

Online Payment of EMD amount can be made account detail as mentioned below:

ACCOUNT NAME	**: BEML LIMITED**
ACCOUNT NO	**: 10562407488**
ISFC CODE	**: SBIN0003130**
BANK NAME	**: STATE BANK OF INDIA, MYSORE, MAIN**
BRANCH SWIFT CODE	**: SBININBBM08**

Please ensure that online payment of EMD amount is made well ahead of the EMD Submission Date & Time mentioned in the Tender and details needs to be attached in technical bid.

OR

Payment of EMD amount through DD / Banker's Cheque:

b) EMD in the form of Account Payee Demand Draft (DD) / Banker's Cheque drawn in favour of BEML Ltd, Mysuru payable at Mysuru.

c) The above said Demand Draft DD / Banker's Cheques shall be submitted in **Sealed envelope** duly superscribing the **Bid Invitation No. Closing date and Time on** top of the envelope. The name and address of the bidder shall be printed or written legibly on the left-hand bottom corner of the envelope.

Please attach the details duly filled-up for refund of EMD amount (for bidders who do not qualify in the Technical Bid) in the following format along with the DD / Banker's Cheque for EMD;

BRANCH NAME	
CITY	
IFSC CODE	
ACCOUNT NO	
BENEFICIARY NAME	

The above sealed envelope has to reach the address as mentioned below on or before the closing date & time of the tender.

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The Senior Manager (Purchase Department)
Belvadi Post,
Mysuru – 570 018
KARNATAKA, India

Note: Bidder shall ensure that their EMD is dispatched well in advance so that it reaches this office before the time and date stipulated. Requests will NOT be entertained for late receipts.

General Instructions with regard to EMD:

a) Quotation submitted online without submission of EMD in-time will not be considered.

b) EMD submitted in any other form will not be accepted and the offer is liable to be rejected.

c) EMD lesser than **prescribed amount** will not be accepted and the quotation is liable to be rejected.

d) EMD of technical disqualified bidders will be returned.

e) EMD does not carry any interest on return.

f) Pre-qualification and technical bids shall be opened **on closing date**

g) No responsibility will be taken for postal delay or non-delivery/non-receipt of EMD.

Tenderers shall ensure that, the Demand Draft/Bankers Pay Order towards EMD in original shall reach the above said office on or before the closing time of the tender.

Offers without EMD or EMD in the form other than the one specified or EMD with lesser amount shall not be considered and tenders will be rejected. No Interest would be paid on the Earnest Money Deposit.

3 Completion Period: The period allowed for execution of the work is **4 (Four) Months** from the date to be mentioned in the Purchase order to be placed on the successful bidder.

4. Firms willing to participate in the tender may contact through e-mail: admin.srm@beml.co.in to obtain the user name and password for submitting the bids. The bidders have to submit their quotation ON LINE THROUGH NIC (GePNIC) PLATFORM. All corrigendum, addenda, amendments, time extension etc., if any to the tender will be hosted on BEML website www.bemlindia.com only. Bidders shall regularly visit BEML's website to keep themselves updated. No separate advertisement shall be published in the newspaper in this regard.

5. Any queries/clarification / information / details regarding tender enquiry to be communicated through email Id: mohankumar.s@bemlltd.in, kirankumar.na@bemlltd.in, Chinnappa.k@bemlltd.in maltesh.k@bemlltd.in queries/clarification/ information/details will be accepted up to 03 (Three) days prior to the closing date of the tender.

7. Any queries related to submission of quotation may please be communicated through e-mail: admin.srm@bemlltd.in , anithak@bemlltd.in or the bidder may contact BEML NIC (GePNIC) team at Phone No.080-22963269, 22963141.

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8. **DIGITAL SIGNATURE:** To participate in this e-tender, the bidder shall have a valid class III Digital Signature issued by Authorized Certifying Authority to submit bid in our NIC (GePNIC) e-procurement system.

9. The quantities shown against each item are only approximate and hence any reduction / increase thereof during the execution of work shall not vitiate the contract. The company does not bind itself to accept the lowest or any other tender.

10. The tender shall remain open for acceptance for a period of **90 days** from the date of opening of tenders.

11. The tenderers shall visit the site and acquaint themselves with the conditions of the site prior to submission of tenders and no claims will be entertained later on the grounds of ignorance.

12. Successful tenderer is required to employ qualified Engineer to supervise the work and they should be present when the work is under progress.

13. The successful tenderer is required to sign the work order prepared based on the quoted rates placed on him by the Accepting Officer.

14. The Accepting Officer reserves the right to place order as a whole or part of any item only as deemed fit.

15. In case, the contractor / firm after quoting withdraw from the tender or refuse / delay in commencing the work or stop the work abruptly, their EMD will be forfeited.

16. Conditional tenders are liable to be rejected.

Thanking you

Yours faithfully,
for BEML Limited

Senior Manager

Purchase

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DETAILS OF TECHNICAL BID

Sl. No.	Item Description	Estimated Cost (In Rs. Lakhs) / Completion Period	EMD Amount (Rs)	Last date for submission of Tenders / Date of opening of pre qualification bid / Date of opening of technical bid / Date of opening of commercial bid	Similar Nature of Work
1	Upgradation of existing Sewage Treatment Plant (STP) at Township, BEML Ltd, Mysuru Complex.	Rs. 42.37 (approx.) Lakhs (Excl GST) / **4 (Four) Months**	Rs 85,000/-	As Per NIC Portal / As Per NIC Portal / As Per NIC Portal / Date of opening the commercial bids will be intimated to only the technically qualified Tenderers/bidders.	Establishment/ Construction/ Upgradation of sewage treatment plants

Mode of submission and Documents

Sl. No.	Nature of Bid	Mode of submission	Documents required to be submitted by the bidder
A	Pre-qualification bid	1. Online Payment of EMD amount **OR** Payment of EMD amount through DD / Banker's Cheque to reach Senior Manager (Purchase Department), BEML LIMITED., Belvadi Post, Mysore – 570 018.	EMD Details
B	Technical Bid	1) Through e-mode / BEML NIC (GePNIC) Platform wherein Tenderers/bidders to submit their technical bids will be opened on closing date.	The complete tender documents shall be duly filled, signed along with the company seal, scanned and upload the requisite documents as per the Eligibility Criteria in 'C-Folder Technical Attachments' in the NIC (GePNIC) system

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C	Commercial Bid	1) Through e-mode / BEML NIC (GePNIC) Platform. 2) The commercial bids of only the shortlisted / qualified Contractors will be opened.	Commercial bid shall be submitted on BEML NIC (GePNIC) platform.

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ELIGIBILITY CRITERIA OF TECHNICAL BID

In the Technical Bid, the firm has to furnish the following details / documents with regard to their experience etc:

CREDENTIALS i.e., EXPERIENCE / FINANCIAL STATUS ETC.

1. **Financial Position:** Average Annual financial turnover during the last Three (3) years, ending 31st March of the previous financial year, should be at least 30% of estimated cost. **(i.e. Rs. 12,71,000.00).**

   Details of Annual financial turnover during the last three (03) years, ending 31st March of the previous financial year.

Financial Year	2023-24	2024-25	2025-26
Annual turnover (Rs in Lakhs)			
Profit / Loss (Rs in Lakhs)			

   NOTE: Copy of annual turnover certificate duly certified by Chartered Accountant (CA) to be uploaded. If latest year turnover (2025-26) is not available then firm can submit turnover for the year 2022-23 along with other year turnover duly certified by Chartered Accountant (CA).

2. **Experience:** Experience of having successfully completed similar works **(**Establishment/ Construction/Upgradation of sewage treatment plants**)** during last Seven (07) years ending last day of month previous to the one in which applications are invited should be either of the following:

   (i) Three similar completed works costing not less than the amount equal to 40% of the estimated cost. **(i.e. Rs.16,95,000.00)**

   Or

   (ii) Two similar completed works costing not less than the amount equal to 50% of the estimated cost. **(i.e. Rs.21,19,000.00)**

   Or

   (iii) One similar completed work costing not less than the amount equal to 80% of the estimated cost. **(i.e. Rs. 33,90,000.00)**

Details of having successfully completed similar works (Establishment/ Construction/Upgradation of sewage treatment plants) during last Seven (07) years ending last day of month previous to the one in which applications are invited from any Government/Public Sector Undertakings/Large Private Organizations with Certificates.

NOTE: Copies of the completion certificate issued by respective clients shall be scanned and uploaded along with the technical bid. If the completion certificate is from Private organization, the same shall be scanned and uploaded along with the technical bid along with TDS certificate.

3. **Earnest Money Deposit:** Payment of EMD amount can be made Online or to submit original Demand Draft/Bankers Cheque for in favour of "BEML LIMITED, Mysuru" payable at Mysuru, in a sealed envelope superscripting the name of work, towards Earnest Money Deposit on or

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before the closing date & time of the tender to the office of "The Senior Manager (Purchase Department), BEML LIMITED., Belvadi Post, Mysuru – 570 018, KARNATAKA, India" as part of the Pre-Qualification Bid.

Offers without EMD or EMD in the form other than the one specified or EMD with lesser amount shall not be considered and tenders will be rejected. No Interest would be paid on the Earnest Money Deposit.

4. The bidders are required to mention and submit copies of the following:

(i)	Please quote your PAN/GIR No. (Registration Certificate of PAN/PAN Card/GIR issued by the IT Authorities shall be scanned and uploaded along with the technical bid)	
(ii)	Please quote your ESI No. (Registration Certificate issued by the ESI Authorities shall be scanned and uploaded along with the technical bid)	
(iii)	Please quote your PF No. (Registration Certificate issued by the PF Authorities shall be scanned and uploaded along with the technical bid)	
(iv)	Please quote your GST No. (Registration Certificate issued by the GST Authorities shall be scanned and uploaded along with the technical bid)	
(v)	EMD details: Amount, DD No & date	

5. The commercial bids of the tenderer who have submitted the satisfactory documentary evidence for the above requirements shall be opened. The commercial bids of other tenderer i.e., who does not qualify in the technical requirements will not be opened and EMD shall be refunded.

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DETAILS TO BE FILLED/ UPLOADED BY THE PARTICIPATING FIRM
(to be given on the Firm's Company letter head)

Sl. No.	Description	Details to be filled/uploaded
1	Name of the Firm & Postal address for correspondence (With name of the Contact Person) with telephone number, fax and email id	
2	Bank Details like Bank account numbers & IFSC code with Banker's Name, Address & Contact No.:	Bank account numbers: - IFSC Code: Banker's Name: - Branch Name: Address: - Contact Number: -

I / we hereby certify that all the information given above is factual.

Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____

Signature of the Contractor(s) with seal

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TENDER CONDITIONS ACCEPTANCE LETTER

(To be given on the Firm's Company letter head)

To,
M/s. BEML Ltd,
Belvadi Post
Mysuru-570 018.

Dear Sir,
Sub: Acceptance of terms and conditions of the tender

Tender Reference No. MY01/YMN/002/STP-TS

I/We have downloaded / obtained the tender documents for the above mentioned "Tender/Work from the website(s) namely **"Upgradation of existing Sewage Treatment Plant (STP) at Township, BEML Ltd, Mysuru Complex."**

As per your advertisement given in the above-mentioned website(s).

2.I/ We hereby certify that I/We have read entire terms and conditions of the tender documents from the page No.01 to 65 Which form the part of Contract agreement and I/we shall abide hereby the terms /conditions/clauses contained therein.

3. The corrigendum issued from time to time by your department/organization to have also been taken into consideration while submitting this acceptance letter.

4. I/We hereby unconditionally accept that the tender conditions of the above-mentioned tender documents / corrigendum in its totality/entirety.

5. In case any provision of this tender are found violated, your department / organization shall be at liberty to reject this tender/bid including the forfeiture of the full said Earnest Money Deposit absolutely and we shall not have any claim/right against department in satisfaction of this condition.

Date: Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____

Signature of the Contractor(s) with seal

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UNDERTAKING

(To be given on the Firm's Company letter head)

This is to certify that _____ (Name of the Firm) has not been banned / black listed / debarred from Trade by any Central /State Govt. Dept. / Autonomous Institution / PSUs in India as on the date of submission of the bid.

I / we hereby certify that all the information given above is factual.

Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____

Signature of the Contractor(s) with seal

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REVISED TENDER AND GENERAL CONDITIONS

To,
M/s. BEML Ltd,
Belvadi Post
Mysuru-570 018.

Sir,

I/We, the undersigned, do hereby tender to execute and fully complete the whole of the work set forth and described in the General Conditions, Specifications, Schedule of Prices and Bill of "**Upgradation of existing Sewage Treatment Plant (STP) at Township, BEML Ltd, Mysuru Complex.**" in accordance with the terms, conditions and obligations therein contained.

I/We, further agree to add to or deducting from contract sum, as the case may require, the net value of all deviations (additions and deductions) including non-tendered items, of the value of work completed, shall not exceed 20% of the approved contract value and 40 % in respect of any individual item, indicated in BOQ. The value of such additions and deductions being calculated upon the prices for similar work set forth in the accompanying Bill of Quantities, or if similar work in the opinion of the Engineer in charge be not included in the Bill of Quantities, then upon the price set forth in the Schedule of Prices attached hereto or as otherwise provided in the Clause-15 of the General Conditions.

I/We, also herewith send Rs _____ by Receipt/Draft as Earnest Money as required and to enter further into a contract with the Company for the execution of the said works in conformity with the aforesaid General Conditions, Specifications, both preliminary as well as Standard Schedule of Prices, and Bill of Quantities and the Drawing accompanying to all of which I/We hereby give…….……assent and concurrence.

I/We, also undertake to complete and hand over the same in a satisfactory manner to the BEML Limited, or its authorized representative within the period stipulated from the date of commencement of the work in accordance with Para-8 of General Conditions of the Contract, signed, sealed and delivered by the said …… this……...day of…… Two Thousand and…….... in the presence of:

Yours faithfully,

(SIGNATURE)

WITNESS:

1.

2.

Home address of the Contractor/Business Address

Signature of the Contractor(s) with seal

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GENERAL CONDITIONS

(UNDER WHICH THE WORKS HEREINAFTER DESCRIBED ARE TO BE PERFORMED)

1. INTERPRETATION CLAUSE:

In these General Conditions and the Specifications attached, the word 'COMPANY' shall be held to mean 'BEML LIMITED', the work 'CONTRACTOR' shall be held to mean one or more contractor or contractors jointly or generally engaged in the works to which these General Conditions and the specifications relate, and shall include his/their heirs, executors and administrators. The word 'ENGINEER-IN-CHARGE, shall be held to mean a Member of the staff of the BEML to supervise the work. The expression 'SITE OF WORKS, shall be held to mean the extent of land which the Company places at the disposal of the Contractor from time to time for the purpose of executing the contract works. The word 'DRAWINGS' shall be held to mean 'THE PLANS, SECTIONS, ELEVATIONS AND DETAILS OF WORKS' annexed to the contract and such further drawings, as the Engineer in charge may issue from time to time during the progress of the works and shall be held to include tracings and photographic prints. The word SPECIFICATIONS shall be held to include the tender General Conditions, Specifications, Schedule of Prices and Bill of Quantities.

2. SUFFICIENCY OF PRICED BILL OF QUANTITIES AND TENDER:

On the acceptance of this tender, the contractor shall forthwith satisfy himself as to the correctness and sufficiency of his tender for the works as well as all prices stated in the Bill of Quantities and the schedule of Prices and within SEVEN DAYS of the acceptance of his tender, he shall sign the contract which shall be construed and taken as an acknowledgement on his part of his complete satisfaction and acquiescence in the sufficiency of the prices. The amount of the tender shall be the sum at which the contractor engages to execute whole of the works set-forth in the Bill of Quantities, the contractor shall submit to the company, with his tender both Schedule of Prices and Bill of Quantities upon which the tender has been based fully and completely priced. Items left unpriced in the bill of Quantities shall be held to be included in the prices for other items of the work.

3. CONTRACTOR TO EXECUTE CONTRACT WITH THE COMPANY:

The successful contractor shall within SEVEN DAYS of the acceptance of his tender enter into and execute a formal indenture of contract to be prepared by the Company's Solicitor. The contractor shall not be entitled to make any charges for perusal of the contract.

4. CONTRACT NOT TO BE ASSIGNED OR UNDERLET AND CONSEQUENCE OF GRATUITIES BEING GIVEN:

The contractor shall not assign or make over the contract to any other person, or underlet it, or make a sub-contract with any workmen or workman for the execution of any part of work(s), but shall employ his own workmen for the labour thereof, who shall be paid by him in wages by the day. And in case the Contractor assigns or makes over the contract, or underlet or make sub-contract, contrary to this clause or either himself or his agents give

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any gratuity to any employee of the Company, the company shall be at liberty to terminate the contract.

5. TENDER OR AGREED RATE:

The contractor shall agree not to petition for revision of rates tendered for by him under any circumstances at any stage of the work, either during execution or when the final claims are settled.

6. In the event of anything evidently necessary to the due and complete performance of the works being omitted to be shown on the drawings or described in the specification or being omitted from the Bill of Quantities through oversight or error, the contractor shall, not withstanding, execute (in the most perfect manner) all such works the same as if they had been severally shown, described and included without being entitled to make any extra claim or charge.

7. The contractor shall satisfy himself or shall be deemed to have satisfied himself as to the nature of the sub-soil, the three dimensions, levels, character and nature of all roads, existing drains, sewers, water, gas or other mains, electric cables and other things as regards any connection they may have with the works the subject of the contract, and he shall also inspect the site of the works and surroundings, the means of access there to and egress therefrom and shall generally obtain his own information on all matters and things which can in any manner influence his tender, No claims for extra works otherwise will be allowed in consequence of any misunderstandings, error or incorrect information on these points, or of any other in-accuracies in reference thereto, which may appear on the drawings, or in the specification, nor shall the contract be nullified in consequence of any such misunderstanding, error incorrect information or in-accuracies.

8. ENGINEER IN CHARGE'S ORDERS TO COMMENCE WORKS AND AS TO NON-DELIVERY OF SITE:

The Contractor having signed the contract, the Chief Engineer will forthwith give him notice to commence the works and the contractor shall upon receipt of such notice, commence the works and carry them on at such point and points and in such portions as the Engineer in charge may direct.

The Company shall, with the Engineer in charge written order to commence the works, give to the contractor, the use of so much of the site of works, as may in the opinion of the Chief Engineer be required in order to enable the contractor to commence and continue the construction of the works, and shall from time to time as works proceed give the contractor the use of such further portions of such site as the Engineer in charge may from time to time consider proper in that behalf, but the non delivery in manner aforesaid of the use of such site or any portion thereof shall not vitiate or affect the contract, nor any provision contained in the specification nor entitle the contractor to any increased allowance in respect of money.

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9. SETTING OUT WORKS AND NOTICES:

The Contractor shall set out the whole of the works and be responsible for the correctness of the position, levels and dimensions of the several works, according to the drawings and written instructions of the Engineer in charge. If at any time during the progress of the works any error shall appear or arise in the position, levels or dimensions of the several works, the contractors on being required to do so by the Engineer in charge, shall at his own expense remove and amend the works to the satisfaction of the Engineer in charge, not-withstanding that he may have been assisted by Engineer-In-Charge in setting out the same. The contractor shall observe, perform and comply with the requirements of all statutes and byelaws and shall also serve notice on the authorities having control of the road surfaces before the same are broken up and he shall likewise serve notices on the owners of the sewers, drains, water, gas or other mains, electric cables and other things which may be in any way affected by the execution of the contract work.

10. TIME OF WORKING (APPLIES ONLY FOR FACTORY AREA):

As the entry and exit of the workmen into the factory area is controlled by the Security Authorities of the Factory, the contractor should strictly adhere to the timings of entry and exit, laid down by the authorities and the rates quoted are deemed to include for this provision.

11. NIGHT WORKS:

The works shall be carried on day and night continuously without extra charge. If bad or treacherous ground be met with or if there be any other causes whatsoever, which in the judgment of the Engineer-In-Charge, requires, it, but no work shall be carried on in the night without the knowledge and sanction of the Engineer-in-charge.

12. WATCHMEN, LIGHTS, ETC., TO BE PROVIDED BY THE CONTRACTOR:

The Contractor, shall at his own cost provide night watchmen to all parts of the work where necessary required by the Engineer-in-charge. He shall also keep all open trenches, excavation or other dangerous places properly and sufficiently lighted between sunset and sunrise, and shall provide and fix proper fencings and boarding and temporary bridges to protect and assist the public traffic. The contractor shall also at his own cost erect temporary fences on the site of works where required by the Engineer-in-charge.

13. TEST MATERIALS:

All the materials to be used in and on every part of the works shall be subjected from time to time to such tests as the Consultant and Engineer in charge may direct. Such tests shall be performed at the expense of the contractor but the Company shall refund to the Contractor the actual cost of testing any of the materials which are proved to conform with the conditions of the specifications but the samples shall be, in all cases, selected by the Engineer in charge, and supplied by the contractor as part of the contract. If, at any time, any materials so tested is not equal to the test for such materials, hereinafter specified, the same shall be removed from the site of works, and other materials substituted therefor, but in

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the absence of any specified test, the decision of the Engineer in charge, shall be final as to whether the said material or materials shall be used in the works, or forthwith removed and other materials substituted.

14. MATERIALS, TOOLS ETC., BROUGHT ON TO WORKS TO BECOME PROPERTY OF COMPANY DURING CONTINUANCE OF CONTRACT:

All materials, tools, implements and other things brought by the Contractor upon Company's works shall there upon become and shall continue to be the absolute property of the Company and be considered in its possession, the Contractor having only the right of using the same for the purpose of the contract. After the works have been completed and all obligations under the contract duly fulfilled, the Company shall return to the Contractor the tools, implements and surplus or waste materials then remaining upon the Company's works to be removed by him forth-with and cleared away. Nevertheless, the Company shall not at any time be liable for the loss of any of the said materials, tools, implements or other things but the whole of this liability shall fall upon the Contractor, the same as if they had remained in his possession.

15. POWER TO VARY WORKS:

The Company shall have full power and authority from time to time, and at all times, to order works additional to the contract, and to make and issue such further drawings and to give such further instructions and direction as may appear necessary or proper for the guidance of the contractor and the good and sufficient execution of the contract, and the contractor shall receive, execute, obey and be bound by the said further drawings, instruction and directions, according to the true intent and meaning thereof and as fully and effectively as though they had accompanied, or had been mentioned or referred to in the original drawings and specifications. The company shall also have power to vary or alter the levels or position of any of the works, the subject of this contract, or may order any of the works contemplated thereby to be omitted with or without the substitution, of any other works in lieu thereof, or may order any work, or any portion of work executed or partly executed , to be removed, changed or altered, and if needed that other work shall be substituted in lieu thereof and the difference of expense occasioned by any such increase, diminution or alterations so ordered and directed shall be added to or deducted from the amount of the contract agreeable to the prices for similar works set forth in the Bill of Quantities, or failing which the Schedule of Prices attached hereto, and in the absence of any such similar work being scheduled, the Engineer in charge shall determine the amount to be paid for such additions or deductions. The company will in no case become liable to the payment of any charge in respect of any such conditions, alteration or deviations, unless the instructions for the performance of the same shall have been given in writing and signed by the Engineer in charge ,, nor unless such instructions distinctly states that the matter thereof is to be subject of an extra or varied charge, in the form of an order hereinafter set forth nor unless the claim thereof shall be made in writing, signed by the Contractor and in the form of claim herein as set forth and properly filled up nor unless such claim be make within the week in which the work is executed and materials used, and before the same shall have been placed out of view, or beyond check of measurement, nor unless the value of any altered or varied works, or any further works shall wherever practicable have been determined and settled before such altered, varied or further works shall have been commenced. Such value in case of dispute shall be ascertained by the Engineer in charge ,, who shall determine in all cases whether such previous determination and settlements were practicable or not, and in all the cases where he shall consider the same to have been practicable, the contractor shall not be entitled to make any claim in respect of such altered, or

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varied or further works if it shall, in the opinion of the Engineer in charge ,, if any special instance become necessary to execute any additional or substituted work, either wholly or in part by the day the claim therefor, shall not be recognized unless the contractor shall have delivered to the Engineer-in-charge , within one working day, and so on from day to day a true and exact list of the name, occupations, time and wages of the several workmen engaged during the previous day on any and every such works in respect of when a charge 'BY THE DAY' is intended to be made in the next succeeding weekly claim of contractor, Nevertheless, no charge 'BY THE DAY' shall be made unless, in the opinion of the Engineer in charge, it is impracticable or unreasonable to determine the value of the amount of work in manner otherwise provided for in these general conditions. All such instruction given by the Engineer in charge , shall be in the following form or as near there to as may be:

ORDER No: CONTRACT No.

In pursuance of clause-15 of the General Conditions of contract and subject as there in mentioned, we request you to perform the under mentioned at the under mentioned price, namely :

SUCH WORK BEING IN | ADDITIONAL TO SUBSTITUTION FOR | WORK INCLUDED IN THE

tender, and we request you to omit the under mentioned work at the under mentioned prices, viz.

DATE:

SIGNATURE OF THE
ENGINEER-IN-CHARGE.
AND every claim shall be made in the following form:

CLAIM No: _____CONTRACT No._____
Contractors claim under and subject to Clause-18 of the General Conditions of Contract for the week ended Saturday the _____ day of _____ in respect of other than contract work.

Work Claimed For		Number Of Engi-neer's Order	Price of Similar Work in Bill of Quantity of Schedule.		Where no Similar Work in Bill of Quantity Of Schedule.	Amount claimed Rs.
Quan-titiy in Mtrs.	Des-crip-tion.		Number/ Number of items	Value of Item.	Schedule Price of Labour.	

DATE: SIGNATURE OF THE CONTRACTOR 'S

The claim shall be delivered to the Engineer-in-charge , for his examination before being transmitted by him to the Chief Engineer and shall be subject in all respect to the consideration, ratification and correction of the Chief Engineer who shall be at liberty to decide whether any such claim entitle the Contractor to any, and if so, what extra charges, according to the true meaning and intention of the specifications, and whether any and what allowance shall be made to the company in respect of any work or obligation to be

performed under the contract and from the performance of which the contractor may be or become directly or consequently relived by reasons of any such additional or substituted works.

16. SUSPENSION OF WORK:

The Contractor(s) shall suspend the execution of work or any part or parts thereof whenever called upon in writing by the Chief Engineer to do so and shall not resume work thereon until so directed in writing by the Chief Engineer. The Contractor will be allowed by the Chief Engineer an Extension of time (not less than the period of suspension) for completion of the item or group of items of work for which a separate period of completion is given in the contract and of which the suspended work forms part but not other claims in this respect for completion or otherwise, however, shall be admitted. The contractors shall have no claim to any payment of compensation or otherwise, whatsoever on account of suspension of work.

17. WORKS TO BE EXECUTED IN APPROVED MANNER:

The works, the subject of the contract, specified and provided for or that they may be necessary to be done to form and complete any part thereof, shall be executed and completed in the best substantial manner, with materials of the best and most approved quality of their respective kinds agreeable to the particulars contained in or implied by the specification or as referred to and represented by the drawings and memoranda thereon or as referred to by any of the said further drawings and memoranda thereon or as referred to by any of the said further drawings, instructions and directions and shall be to the full satisfaction of the Engineer in charge ,. The Engineer in charge, shall have full liberty at all reasonable time to inspect and examine the works, materials and workmanship, and may every such time reject any or all of such works, materials and workmanship which to him/them or either of them may appear defective, unfit or improper for the several purposes to which they are applied, or intended to be applied, or as not in accordance with the specification or the said drawings, memoranda, instruction or directions respectively.

18. WORK TO BE CARRIED ON WITH EXPEDITION FAILING WHICH THE COMPANY MAY EMPLOY OTHER CONTRACTOR WITHOUT VITIATING THE CONTRACT:

The Contractor shall commence to carry on the works with due diligence, and as such expedition as the Engineer in charge, may reasonably expect, having regard to the specified time of completion of the whole of the works. In case the contractor fails to do so, or neglect to provide proper and sufficient materials, or to employ a sufficient number of workmen to execute the work, then the company shall have full power, without vitiating the contract, to take the works wholly or in part out the hands of the contractor to engage or employ any other person or workmen to procure all requisite materials and implements for the due execution and completion of the said works, and the cost and charges incurred by the company in so doing shall be ascertained by the Chief Engineer and be paid for or allowed to the company by the contractor and it shall be competent for the Company to deduct the amount of such costs and charges along with overheads out of any sum or sums due or to become due from the company to the contractor under this or any other contract.

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19. INFERIOR MATERIALS OR WORKMANSHIP TO BE AMENDED:

The materials as well as the workmanship and finish of the whole of the contract works shall be best of their kind and should any materials be brought upon the site of works or on any land or property of the company or on the places where the operations are being carried out in connection with the works, which in the judgment of the Engineer in charge , is of an inferior description and improper to be used in works, the said materials shall be removed. All inferior workmanship or finish shall be amended by and at the cost of the contractor forthwith, or within such period or periods as the Engineer in charge , may direct, and the contractor shall pull down, amend and reconstruct any work he may have erected upon an insecure or insufficient foundation or that he may have insufficiently secured and protected against immediate and future injuries, whether arising or likely to arise in future from weight, pressure action of water or otherwise, on being required to do so by the Engineer in charge ,. Incase the contractor neglects or refuses to remove such materials or comply with such directions it shall be lawful for the Chief Engineer, on behalf of the company and by its agents, servants and workmen to remove the materials and amend the workmanship and finish, so objected, to, or any part thereof, and to replace the same with such other materials, workmanship and finish as shall be satisfactory to the company and on the certificate of the Chief Engineer to deduct the expense thereby incurred, or to which the company may be put or be liable or which may be incidental thereto, from the amount of any sum or sums due to or become due to contractor, or to recover the same by action at law or otherwise from the contractor as the company may determine.

When it is apparent to the Chief Engineer that defects exists in the work, or that damage or accident has occurred to the works, or that the works are not upheld or maintained in good sound and water right conditions, or repair or in working order, but the cause thereof is not apparent, a general requisition in writing by the Chief Engineer to the contractor to amend, make good or maintain the works in sound, perfect and water tight conditions shall be under no obligation to specify the work or repair, but such requisition shall be conclusive evidence against the contractor that he is not performing his obligations under the contract.

20. EMERGENCY POWERS:

In the event of any accident or failure occurring in or on the works, which, in the opinion of the Chief Engineer requires immediate attention either during construction or during the period of maintenance the company may by their own or other workmen make necessary repairs at the expenses of the contractor.

21. OPENING TO BE MADE FOR EXAMINATION OF WORKS:

Should Engineer-in-charge require it for their more perfect satisfaction, the contractor shall at any period during the continuance of the contract, pull down any part of the work and make such openings, as to such extent through any part of the said work as the Engineer-in-charge, may direct and the contractor shall make such works good again to his or their satisfaction. Should the work be found faulty in any respect, the whole of the

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expenses thereby incurred shall be defrayed by the contractor but if otherwise by the company.

22. PRECAUTIONS AGAINST INJURY TO PROPERTY ADJACENT TO THE WORK IN PROGRESS:

The contractor shall take special care, by the erection of temporary fences and by every other means which circumstances may render necessary, to prevent all injury and damage to or trespass upon the lands, roads, fences or property adjacent to the site of works and shall confine the passage of his workmen to existing public roads, foot paths. He shall likewise pay and satisfy all claims whatsoever and from whomsoever, for temporary occupation, way-leaves, damages, the trespass or otherwise, in reference to the said lands, roads, fences and property adjacent and bear the company harmless from any and all such claims. If any greater extent of land than the site of work be required by the contractor for his operations, he shall obtain and occupy the same at his own cost and charge.

23. PRECAUTIONS AGAINST ACCIDENTS OR INJURY:

The Contractor shall, at his own expense, shore, sling, protect, support, alter, restore make good and maintain as may be necessary, all buildings, water and gas pipes, sewers, drains, electric cables and other things which may be disturbed, exposed or injured during the execution of works or in consequence of the execution of the works and shall also provide any extra timbering which may be temporarily required and all labour in fixing and removing the same and shall, at his own expenses provide for the continuous use of all buildings, pipes, sewers, drains electric cable, water sources and other things, the use of which may be liable to interruption during the progress of the work. The Contractor shall at his own expense restore all such buildings, water and gas pipes, sewers, drains, electric cables and other things to the satisfaction of the owners thereof and he shall like wise, at his own expense, construct and maintain such works as may be necessary for the due permanent support of all such buildings, pipe, sewers, drains, electric cables and other things met with in the construction of works, and shall indemnify, save, harmless and keep indemnified, the Company and its officers from and against all action, suits, claims, penalties, liabilities, cost, expenses and demands whatsoever, by reasons or on account of damage to such buildings, pipes, sewers, drains, electric cables and other things whether caused by the execution of the contract works or in the insufficiency of the aforesaid permanent support. The Company may deduct the expenses thereby incurred or to which the Company or its Officers may thereby be put or be liable or which may be incidental thereto from, the amount of any sum or sums due or to become due to the contractor or may recover the same by action at law or otherwise from the contractor and the Company may compromise any such action suits or other proceedings, or such terms as it shall see fit and contractor shall thereupon forthwith pay the Company the sum or sums paid by the Company upon the occasion thereof, and shall in every case pay such sum or sums as shall fully indemnify the Company according to the present stipulation.

24. COVERING OF CONSTRUCTION SITE:

The Contractor shall, at his own expense, make arrangements to cover/wrap the construction site in mesh material of green color to prevent the dust from the escaping into

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the adjoining Properties or premises and atmosphere and also to prevent accidental fall of debris onto the people. The contractor at his own expense should make arrangements to remove the cover after completion of the work.

25. ROYALTIES:

The Contractor shall be liable to pay all royalties chargeable on Government or Company materials required for the work.

26. REJECTED MATERIALS:

All rejected materials will at once be removed from site by the contractor to such distance as may be desired, failing which the company after giving three days notice in writing may do so and recover the cost of removal from the contractor.

27. COMPANY'S PLANT:

No Company's plant, materials or Labour will ordinarily be lent or hired to the contractor. Exceptional cases must have the approval of the company in writing.

28. SCOPE OF COMPLETION:

Completion includes completion of all work in accordance with the plans and specifications, removal of all yard mess accumulated during construction, levelling and cleaning up the site and generally cleaning the whole building or works.

29. FINAL MEASUREMENTS TIME:

The final measurement must invariably be preceded by a thorough remeasurement of the whole of the work, performed which will be made by the company's authorized representative and at which the contractor or his accredited agent must be present. For this purpose, a written notice will be sent to him at least THREE DAYS before the date fixed for the measurements, appointing the day, hour and place of meeting. Should he not attend to this the measurements will proceed without him, and he will be precluded from making any protest.

30. If a dispute arises between the company and contractor as to the quantity or quality of work, performed, involving sum larger than Rs.500.00, the contractor may appeal in writing to the company for remeasurement or reappraisal, as the case may be. If the company considers that Contractors claim is valid, they may appoint an officer, other than the Officer who made the final measurement and inspection and his report shall be considered as final and binding on the contractor. The Contractor shall have a representative present when the remeasurement or the appraisal is being made.

31. ATTENTION:

i) Time will be the essence of the contract and the contractor is to complete the whole of the work in the time stated in the tender, subject to the schedule of conditions.

ii) The contractor is to provide at all times during the progress of work and the maintenance period proper means of access, with ladders, gangways, etc., and the necessary attendance to move and adopt as directed for the inspection of their representative (no separate rate will be allowed).

iii) The Contractor is to keep all persons under his control and within the boundaries of the site and he will be held responsible for the care of the works generally until their completion including all works executed and materials deposited in the sites by himself or suppliers, together with all risks arising from weather, carelessness of operatives, damages or loss by thefts or by any other cause, and is to allow for all necessary watching and protective lighting.

32. LABOUR ACTS:

i. The Contractors shall employ labour in sufficient number to achieve the required rates of progress and quality to ensure best workmanship of the degree required under various specifications and to the satisfaction of Engineer-in-charge. The contractors shall remain liable for the payment of all wages or other remunerations to his labourers or employees under the Payment of Wages Act 1936, Minimum Wages Act 1948, Employers liability Act 1938, Workmen's Compensation Act 1923, ESI Act 1948, or any other Acts or enactments relating there to and rules framed there under from time to time. In the event, the contractor fails or neglects to pay any amount due by him under the workman's compensation Act, ESI Act or other Labour Laws, the Company is entitled to withhold the same from any other amount payable by it to the contractor and remit the same to the authority concerned and such payment shall be binding on the contractor.

ii. In the event of contract, the contractor shall be responsible for implementing the provision of the contractor Labour Act in to and also responsible for any repercussions arising there from for non-compliance thereof.

iii. The intending tenderers should quote their organization registration/code numbers for the registration with ESI/PF Authorities. It may be noted that other things being equal, preference will be given in the acceptance of tender to firms having independent registration with ESI/PF Authorities.

iv. BEML shall arrange to recover from the contractors bills requisite amounts of both Employer's and Employee's contribution for both ESI and PF calculated on the basis of 25% of the value being taken as the labour cost and recover such amounts from the respective bills and keep the same in suspense account. On production of requisite documentary evidence supporting payment of ESI/PF Authorities/supported by the acquaintance rills, the amount earlier recovered from contractor's bills shall be paid duly adjusting the shortfall in remittance, if any.

v. In the event of any accident/injury/disablement, the contractor shall arrange to pay the requisite compensation legally payable to the concerned employee/dependents and also indemnify to BEML in case of any claim arising therefore later.

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vi. CONTRACTOR should employ only ESI Registered workmen on any item of work. If contractors have workman who have not yet been Registered under the ESI they should ensure that the workers have been duly registered before employing them in work.

vii. CONTRACTORS should produce his MUSTER ROLL duly certified by Engineer-in-charge once in a month say before 5th of each month to the Pay roll section, so that the ESI amount can be ascertained and recovered/payment obtained irrespective of the fact whether work order is issued or not.

viii. If there is any default on the part of the contractor, an estimated amount towards ESI liability including the would-be penalty/damage, will be recovered by the company from the bills of the contractors.

ix. CONTRACTORS should maintain all registers and records required for ESI, PF Payment of wages, etc., under the statutes and produce them for verification as and when called for by company inspecting Authorities.

x. THE contractor shall disperse the wages to the workmen in the presence of the authorized representative of the company.

xi. CONTRACT Labour (Regulation and Abolition) Act 1970 under section 12 and Rule 21 prescribes that every contractor who employs labour for executing contract works should obtain license from Labour Authorities to carry out any works contract, so that the laborer's employed by the contractor are not deprived of the facilities provided under the Act. Such license shall be produced to BEML Authority before commencement of the work.

33. TRAINING APPRENTICES:

The CONTRACTOR shall comply with the provision of the Apprentices Act 1961 and the rules and order issued there under from time to time. If he fails to do so his failure will be a breach of contract and the Accepting Officer may in his discretion cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provision of the Act.

34. FAIR WAGES:

The Contractor shall not pay less than fair wage to labourers, workmen engaged by him on the work. Fair wages mean wage for the various categories of labour, workmen, fixed from time to time by the labour authorities of the area. The contractor shall ascertain the minimum fair wages prevailing in the area before submitting his tender. The Contractor should also abide by labour regulations in regard to the payment of wages, wage period, fines and deductions from wages, maintenance of wage book, wage slip, publication of scales of wage and other terms of employment, inspection and submission of periodical returns and all other matter relating to labour rule in force.

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35. DISPUTE RESOLUTION AND JURISDICTION:

All disputes or differences whatsoever arising between the parties out of or relating to the construction, meaning and operation or effect of the contract or the breach thereof arising during the progress of work or after completion or abandonment thereof shall be mutually discussed and settled amicably by conciliation Committees/ Councils comprising of independent subject experts constituted by BEML, failing which, the dispute shall be settled by arbitration consisting of sole arbitrator appointed by the Company in accordance with the provisions of Arbitration and Conciliation Act 1996 and the arbitration proceedings shall be conducted at the place of awarding of original contract.

The court at the place of awarding of contract only shall have jurisdiction to entertain any dispute/matter relating to the contract

In case of any dispute between the Company and any other Public Sector / Government department relating to the interpretation and application of the provisions of the contract, such disputes / differences shall be referred by either party to the arbitration of one of the arbitrators in the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 and amendment thereof shall not be applicable to this clause. Any party aggrieved by such award, shall make further reference to the Ministry of Law and Justice, Government of India.

In case BEML challenges the Arbitral Award passed against it, 75% of the award may be paid to the contractor / concessionaire against Bank Guarantee without prejudice to the final order of the Court in the matter under challenge. The payment may be made into a designated Escrow Account with the stipulation that the amount so released will be used, first, for payment of lenders' dues, second, for completion of the project and then for completion of other projects of BEML, as mutually agreed / decided. Any balance remaining in the Escrow Account subsequent to settlement of lenders' dues and completion of projects of BEML, may be allowed to be used by the contractor / concessionaire with the prior approval of the lead banker and BEML.

In case the subsequent court order required refund of the money paid by BEML to the contractor / concessionaire against Bank Guarantee, the amount shall be refunded by the contractor / concessionaire along with appropriate interest. The rate of interest on such refund amount shall be decided by BEML keeping in view the cost of capital to BEML or the rate of interest provided for in the Contract Agreement or the rate of interest awarded under the Arbitral Award under challenge.

36. FORCE MAJEURE:

If, at any time during the currency of the contract, the performance of any obligation (in whole or in part) by the Employer or the Contractor shall be prevented or delayed by reason of any war, hostilities, invasion, acts of public or foreign enemies, rebellion, revolution, insurrection, civil commotion, sabotage, large scale arson, floods, earth quake or any other act of God, large scale epidemics, nuclear accidents, any other catastrophic unforeseeable circumstances, quarantine restrictions, any statutory, rules, regulations, order or requisitions issued by a Government department or competent authority (hereinafter referred to as "event") then, provided notice of the happening of such an event is given by either party to the other within 21 days of the occurrence thereof.

a. Neither party by reason of such event be entitled to terminate the contract or have claim for damages against the other in respect of such non-performance or delay in performance, if not covered under insurance.

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b. The obligations under the contract shall be resumed as soon as practicable after the event has come to an end or ceased to exit.

c. In case of doubt or dispute, whether a particular occurrence should be considered an "event" as defined under this, clause the decision of the Engineer shall be final and binding.

d. If the contractor is fore-closed under this clause, the Contractor shall be paid fully for the work done under the contract, but not for any defective work or work done which has been destroyed or damaged before its measurement. The Engineer shall have the option to take over any plant and material lying at site, at rates provided for in the contract, failing that, as per rates which are determined to be fair and reasonable by the Engineer.

If no notice is issued by either party regarding the event within 21 days of occurrence, the said event shall be deemed not to have occurred and the contract will continue to have effect as such.

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REVISED SPECIAL CONDITIONS

1. The tender shall remain open for acceptance for a period of 90 days from the date on which the tenders are due to be submitted.

2. The contractor shall visit the site to acquaint himself with site conditions and study the drawings and specifications in detail prior to tendering, and no claims will be entertained later on the ground of ignorance or otherwise of the conditions under which the work shall have to be executed.

3. The contractor shall arrange for at least one qualified Engineer with experience in similar construction work to be at the work spot through out the period of construction to ensure correct undertaking and execution of the work as per drawings and specifications.

4. The setting of the building shall be done by the contractor himself. All measurements shall comply with the dimensions noted on the drawings if any. The contractor shall construct centre line pillars and Bench Marks wherever necessary at his own cost and the setting out shall be got checked, approved and certified by the Engineer-in-charge before execution of the work.

5. Foundations shall generally conform to the dimension indicated on the drawings, unless the nature of soil after excavation examined by the Engineer-in-charge, of works necessitates modifications. The foundation trenches for RCC columns and walls after excavation indicated on the drawing shall be got inspected, approved and certificated by the Engineer-in-charge of works before laying concrete.

6. Provision shall be made during the progress of work for embedding Electric conduits etc., wherever necessary as directed. Openings shall be left for service lines, machine foundations, as required and as per instructions of the Engineer-in-charge.

7. Care shall be taken in execution of work not to damage service lines etc., coming in the way of construction. If any damage is caused in the lines, the cost of replacing or repairs shall be borne by the contractor.

8. CONTRACTOR(S) shall provide himself/themselves with requisite number of welding sets, mixers with hoppers, vibrators builders hoist, Tools, meters and testing equipments, transport vehicles, etc., required for the complete satisfactory execution of work.

9. WATER:

While Company shall make all endeavors to supply water to the Contractors on a chargeable basis, the Contractors should examine the possibility of making their own arrangements for the water required for construction activities. It is suggested that the Contractors could drill required number of boreholes from where available water could be used by them by pumping the same for the Construction activities. In such a case, the borewell sunk by the Contractors shall remain the property of the company. After completion of the work, the Contractors will not be charged for the water which he consumes from such bore wells.

Signature of the Contractor(s) with seal

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i) If the nature of the soil encountered with demands the use of casing pipes for the borewells, the contractor has to provide casing pipes to enable him to draw water from the borewell, and the contractor shall hand over the borewell with such casing pipes to the company for which no extra payment would be made. The contractor could however with draw the pumping sets and other accessories used by him for pumping water out of the bore wells.

ii) Where the contractor does not draw water from company's source and makes his own arrangement for water required for the work, as certified by the Engineer-in-charge, then no recovery shall be affected from the contractor's bill.

iii) In Case company supplies water for construction purpose, water shall be supplied at a single point as near as possible to the work spot, from which the contractor has to draw his own distribution system. The following procedure shall be followed for recovery of the cost of water so consumed by the contractor.

iv) A meter shall be installed by the contractor at his own cost which shall be duly certified for calibration. Based on the meter readings recovery shall be affected at the prevailing rates of Mysuru Water Supply Board.

v) In Case contractor is not able to install a meter due to various circumstances or the meter fixed mal-functions, and he continues to draw water supplied by the company, the recovery towards water shall be affected based on the quantity of water consumed which would be assessed as follows:

a) For Building works involving excessive use of cement like construction of buildings, Hangars, Concrete hard standing, etc., consumption of water will be calculated at the rate of 455 liters per bag of cement consumed for the work (including wastage) and this consumption shall be charged as per rates stipulated in the contract.

b) For such works where consumption of cement is negligible like construction of Roads, and this consumption of the water shall be at the rate of 0.5% of the value of the contract as per the final bill.

c) The water supplied by the company shall be used only for bonafide work as directed by Engineer-In-charge,

10. POWER SUPPLY TO THE CONTRACTORS:

ELECTRICAL energy will be provided 'FREE OF COST' on 50 cycles at 433 V on 3 Phase 4 wire system and will be made available to the contractors at a fixed point convenient to BEML. The contractor will have to make their own arrangement for tapping the Electrical energy there from. KEB will provide separate meter for that connection. Electrical connection so taken shall conform to the Indian Electricity Act Rules and Factory Act.

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FURTHER to electrical energy supplied shall be used only for Bonafede works. In the event of any wastage/misuse is noticed, the electric supply will be disconnected and shall not be resumed. The decision of Engineer-in-charge in this regard is final and binding.

Company will not guarantee continuity of supply and no compensation will be allowed if the supply becomes intermittent or for breakdown or any reasons whatsoever.

11. TAXES (Excluding GST):

WHATEVER Taxes and duties, as applicable, chargeable in respect of this contract whether by the Central or State Government shall be borne by the contractor(s) and the price quoted shall be inclusive of such taxes, cess or any other statutory duties or taxes payable by them and price quoted shall be firm and shall be inclusive of such duties and taxes. WHEREVER Taxes are deductible at source, the company will recover the amount as per the statutory requirement.

12. THE Contractor shall agree to execute the work progressively in co-ordination with the concerned officers or shop supervisors and as directed by Engineer-in-charge.

13. THE specifications contained in the MES Schedule (referred to in the tender) in appropriate sections shall apply to this contract to the extent applicable, cement co-efficient shall also form part of MES Schedule.

14. VALUATION OF DEVIATIONS:

Every deviation shall be subject to the limits specified as under:

a. The net value of all deviations (additions and deductions) including non-tendered items, of the value of work completed, shall not exceed 20% of the approved contract value and 40% in respect of any individual item, indicated in schedule A-BOQ
b. In case of non-tendered items, the total value of such non-tendered items shall not exceed 5% of the approved contract value.

The basis for ascertaining the non-tendered items shall be as follows:

(i) The value of all deviations shall be ascertained by measurements, on the basis of the rates or prices for similar work in the bill of quantities of the same contract in so far as such rates or prices apply.

(ii) Where the rates or prices in Bill of Quantities do not apply, the value shall be based upon rates or prices deduced there from to the extent practicable to do so.

(iii)The rates for NT items shall be based on the SSR rates after proportionate adjustment in comparison with the tendered rates of like items in the contract. The basis to be adopted for working out the NT rate is the

comparison of the NT item with similar trade item in the bill of Quantity for which the contractor has quoted.

(iv) wherever NT items cannot be deduced from the like items quoted in the tender or SSR rates, market rate shall be allowed based on vouchers/invoices as per the actual including transportation, labour etc., plus 10% overheads and the labour rate shall be taken as per minimum wages inforce, based on the recommendations of the Chief Engineer.

(v) As a last resort a tender shall be floated to ascertain the rate for NT items. All Deviations in contracts for works including non-tendered items shall be approved by the Competent Authority as per DoP within the limits prescribed in the contract. The deviations and NT items shall be technically checked and processed by the respective "Engineer-in-charge " in concurrence with Finance Department of the respective division.

15. PROVISION OF FITTING/FIXTURES OF DIFFERENT MAKE:

The contractor shall provide the same make of fittings/fixtures specified in the tender documents unless he has quoted for other equivalent for genuine reasons. In case due to exigency of the work and difficult market conditions, the contractor is not able to provide the same make, he shall be allowed to provide equivalent approved make subject to his obtaining the concurrence of the Chief Engineer for the price adjustment as between the quotation and the purchase price for the item involved. The base for reckoning shall be the date of purchase. The contractor shall produce purchase invoice as a proof of expenditure for the items other than those specified in the tender documents allowed for incorporation in the work. Construction Department in respective Divisions/Regional/District Offices shall ensure the reasonableness of the rate in the purchase bill produced by the contractor. The price adjustment shall be the difference between the two makes on the date of purchase.

16. The Company reserves the right to accept the tender in parts i.e. on the basis of lowest quotation in each part or as a whole, at its own discretion and hence it is important that the tenders take sufficient care and quote reasonable rates in each part, so that if one part only is separated and entrusted to one Contractor he should be able to do it without difficulty. The rates quoted for similar items should be consistent. THE company also reserves the right to accept the lowest or any other tender at its discretion without assigning any reasons whatsoever.

17. EXTENSION OF TIME:

Time is the essence of the contract. The contractor is bound to complete the work within the stipulated time. The Chief Engineer has to assess the delay arising out of default of the contractor. Where the delay is due to default of the contractor, and if there is no financial loss due to such delay, the Chief Engineer can recommend for grant of extension of time by the same authority who accepted the tender/awarded the contract, subject to recording the reasons for granting such extension of time.

Where the delay is due to default of the contractor, and if there is a financial loss due to such delay, the extension of time requires the approval of Competent Authority. In the absence of Competent Authority approval, Liquidated Damages for delay in completion of the work shall become enforceable.

Where the delay is not due to default of the contractor, for example: - a) not providing clear work front to the contractor by the Company, b) Company's delay in decision making for changes relating to original work., etc necessary extension of time shall be granted with the approval of Competent Authority, as per DoP without sanctioning escalation claimed by the contractor except statutory levies.

Extension of time when granted with the approval of the Competent Authority as per Company's Delegation of Powers shall have the effect of rendering the clause Liquidated Damages for delay in completion work' inoperative upto the period of extension of time so granted unless otherwise specifically stated.

18. LIQUIDATED DAMAGES FOR DELAY IN COMPLETION OF WORKS

In case the Contractor fails to complete the works and clear the site on or before the stipulated time mentioned in the Work order he shall without prejudice to any other right or remedy of the Company in this behalf pay, as agreed Liquidated Damages and not as penalty, pay sum equal to 0.5% of the Contract sum (excluding non tendered/extra items, if any) for every week's delay subject to maximum of 10% of the total final bill value of the Contract.

Liquidated Damages shall be applicable in the following cases:

a) where the contractor fails to complete the work within the stipulated time;

b) where the extension of time is granted with levy of LD;

c) Where extension of time is granted without levy of LD but the contractor has failed to complete the work within the extended period.

The amount of Liquidated Damages shall be adjusted or set off against any sum payable to the contractor under this or any other contract/s awarded by the Company.

In case where the contract is subjected to levy of LD, the Chief Engineer shall be the authorized person to issue 'Work Completion Certificate', which shall be final and binding the Company as well as the Contractor concerned.

19. FORE-CLOSURE OF CONTRACT:

It shall be noted that at any time after acceptance of the tender, the Company can decide to abandon or reduce the scope of work for any reason whatsoever, the Chief Engineer shall give notice in writing to that effect to the contractor. The compensation, if any, payable for such foreclosure of work shall be discussed mutually between the Company and the contractor and settled after taking into consideration the loss suffered by the contractor on

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account of foreclosure of the contract. The contractor shall have no claim for any compensation whatsoever on account of any profit or advantage which he might have derived consequent to foreclosure of the whole or part of the works. The Company shall have the option to take over the contractor's materials or any part thereof, either brought to the site. The amount of compensation payable to the contractor due to foreclosure shall be decided by the authority one level above the level of the authority competent to award the contract, or by the CMD.

20. BEML revised General Conditions together with BEML specifications will form part of the contract. Should there be any discrepancy between the provision in the Bill of quantities and drawings, the former shall be deemed to take precedence there over.

21. No modification or change of specifications in the bill of quantities shall normally be accepted and such changes are to be rejected. Acceptance of such deviations shall be at the discretion of the Engineer-in-charge.

22. EARNEST MONEY DEPOSIT:

TENDERES should submit their tender accompanied by EMD of value indicated in the tender. It should be paid by bank draft or Bankers Cheque drawn in favour of the Company along with tenders. Tender without Earnest money deposit will be rejected. On finalization of the tender, Earnest money deposit will be refunded to unsuccessful tenderers under proper acknowledgement.
In case, the contractor/firm after quoting, withdraws from the tender or refuse/delay in commencing the work or stop the work abruptly, their EMD/ SD, as the case may be, will be forfeited. No interest amount is payable on EMD.

23. SECURITY DEPOSIT:

The successful tenderer shall be required to furnish security deposit for the fulfillment of contract and amount shall be 10% of the value of the contract, to be paid by the contractor. No waiver can be allowed in this regard. Such security deposit shall not entail any interest payment on refund.

The contractor shall choose any one of the following options for payment of security deposit in writing as under:

(i)The contractor shall within 30 days of acceptance of the contract deposit the difference between Earnest Money and full Security Deposit by Demand Draft/Banker's cheque drawn on any of the commercial bank made in favour of Company. PEMD held with BEML cannot be considered for such adjustment in the Security Deposit payable by the contractor.

(ii) Bank guarantee from any commercial bank equivalent to the amount of security deposit valid for a period required by BEML shall also be accepted.

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(iii)Security Deposit amount shall be deducted from the running bills of the contractor at the rate of 10% or higher of the gross value of each bill. However, the entire security deposit amount shall be deducted before completion of 90% of work.

The above deposit shall be held by the Company as security for the satisfactory performance of the contract. All compensations or other sums or money payable by the contractor to the Company under the terms and conditions of this contract shall be deducted from this security deposit or from any other sums that shall be due, or shall become due to the contractor by the Company on any account whatsoever and in the event of the security deposit being reduced by reasons of any such deductions the contractor shall within ten days thereafter make good these deductions.

23.1 REFUND OF SECURITY DEPOSIT

The above deposit, as the name itself signifies, shall be held as Security for performance of the contract. One half of the Security Deposit i.e. 50% shall be refunded to the contractor on completion of the contract based on the recommendations of the Chief Engineer in writing that the work has been physically completed in all respects.

The balance 50% of the security deposit shall be refunded to the contractor on written demand from the contractor after the expiry of the DEFECT LIABILITY PERIOD or on payment of final bill whichever is later, with the recommendation of the Chief Engineer, provided the Chief Engineer is satisfied that there are no dues outstanding against the contractor.

If the Security Deposit is in the form of Bank Guarantee, on completion of the contract, the BG already with BEML will be returned to the contractor. The contractor has to then submit a fresh Bank Guarantee for 50% of the security deposit value valid for a period of 1 year from the actual date of completion of the entire contract shall be deposited by the contractor.

Any refund of security deposit shall be made only with the recommendation of the Chief Engineer.

24. RUNNING ACCOUNT REMITTANCE: (RAR)

During the progress of work, contractor shall submit the claims giving complete details of work done, rate and value to the Engineer-in-charge, nominated by Chief Engineer who shall certify the rate and quantity as per the MB and prepare a statement showing the description and quantity for which he recommends payment. These claims are called RAR bills and RAR payments are made once in a calendar month or more depending upon the periodicity of contract/progress of work.

Where the RAR payment is based on the measurements recorded in the MB, the recommendation for payment shall be stage-wise co-related with the bill of quantities.

Due to technical reasons, where pro-rata payments on stage-wise progress of work is considered necessary though not specified in the contract, the Chief Engineer with the

approval of competent authority, shall decide the number/type of stages correlating with the bill of quantities and submit a statement showing the stage-wise break-up of the contract value indicating work progress details including percentage of completion, cost, and remarks, if any, of the Engineer-in-charge with a copy to Accounts in the respective Division for regulating the quantity and payment. This shall form the basis for the Engineer-in-charge to prepare a bill for actual progress of work. The basis as decided above shall uniformly be adopted for regulating all RAR payments till the final bill is submitted.

However, in respect of hidden works, recording of measurements in MB shall invariably be made then and there and the MB produced to Accounts at the time of RAR payment.

Accounts shall arrange payment for RAR bills within a fortnight's time from the date of receipt based on the certification of the Engineer-in-charge and after necessary check/verification.

As per Expenditure Management Commission, Government of India, in large projects above Rs.10.0 Crore, 50% of running bill amount shall be released within 7 days of submission without a detailed check on the claim. The balance shall be released after the claim is scrutinized as per procedure in order to get more competitive bids and for speedy execution as cash flow is a critical requirement in a project.

The contractor shall also be paid 'Material Advance' for the material brought to site for incorporation in the work duly certified by the Engineer-in-charge. For such materials brought inside by the contractor, the contractor has to produce necessary test certificates from reputed Testing Laboratories for steel and hypothecation deed duly executed by the contractor in favour of the Company on a non-judicial stamp paper of requisite value.

Payment of 'Material Advance shall be recommended by the Engineer-in-charge for materials required to be used in the works as per the planned progress of work. However, payment of material advance against materials brought to site by the contractor ahead of scheduled progress of work shall be considered not exceeding 75% of the value of such material in exceptional cases with the approval of Competent Authority, with justification recorded in writing.

RAR payments shall be regulated to the extent of the value of work done, with due adjustments for recoveries and other payments (including material advance/adhoc payments made if any) effected so far against the contract.

25. PRE-FINAL RARs

Pre-final RAR is raised only when the work is completed and the complete measurement is recorded in the MBs by the Engineer-in-charge designated by Chief Engineer duly accepted by the contractor.

Pre-final RAR shall be sent to the Accounts Department by the Engineer-in-charge Only after Technical check of the measurements and endorsement in the MBs by the Chief Engineer.

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The Engineer-in-charge, shall recommend for payment not exceeding 90% of the value of work completed with due adjustments for recoveries and RAR payments (including Material advance if any) effected so far against the contract.

Such bills shall be paid within 2 weeks from the date of their receipt in the Finance Department after scrutiny and check for the correctness of the bill duly linking up with the MBs.

The recommendation of Pre-final RAR is based on the discretion of the Chief Engineer on case to case basis.

26. ADHOC PAYMENTS:

If payment for final bill could not be arranged within 5 months from the date of the completion of the contract for genuine reasons other than undue delay in submitting the final bill by the contractor, an Adhoc payment not exceeding 90% of the value of the work done after making all necessary deductions for statutory dues, RAR payments, Material advances if any paid, shall be recommended by the Chief Engineer with the approval of respective Complex chief/ respective Business Group Director. Such Adhoc payment can be recommended only if the contractor is having concurrent running contracts in the Complex.

The following guide-lines shall be adopted while making such adhoc payment;

- Such payment shall not exceed 90% of the final bill value.
- All conditions of contract and recoveries to be effected shall be taken care before effecting Adhoc payment.
- If a contractor has no other contract concurrently running in the Complex, adhoc payment need not be made. Instead, final bill shall be expedited and paid atleast within six months from the date of completion of the contract.

27. COMPLETION CERTIFICATE:

As soon as the Contractor completes the work assigned to him the same shall be inspected and if found satisfactory shall be taken over by the Chief Engineer. A "Completion Certificate" shall be issued to the contractor within 30 days from the date the contractor has given request for the same. If there are minor defects which can be rectified even after the building has been taken over, the defects shall be listed out and the contractor shall be asked to rectify the same before the final bill is submitted. The final bill along with the completion certificate duly certified by the Engineer in charge, shall be submitted to Finance Department for payment. The completion certificate shall have the following details:

a) Particulars of the work and Contract Number,
b) The date of work order to commence the work,
c) Date of completion as per original contract agreement,
d) Actual work done value.
e) Extension of time if any, granted,
f) Date on which contractor was required to complete the work,

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g) Actual date of completion and taking over by BEML.

28. FINAL BILL:

On completion of the work and the recording of measurements in the MBs, a final bill shall be submitted by the contractor. On receipt of the final bill duly signed by the contractor, the same shall be scrutinized by the Engineer-in-charge to see that the claim is in order.

The final bill prepared by the Department and accepted by the contractor, shall be accompanied with the following documents:

- Original Completion certificate
- A statement showing stores issued for incorporation in the work, stores actually incorporated by the contractor, theoretical quantity of stores required for work and whether there has been any over issue/under issue of the stores to the contractors.
- No claim certificate duly signed by the contractor
- Original Contractor's All Risk Insurance Policy covering up to the actual date of completion of work.
- Contract Agreement
- Revised estimate as duly approved by Competent Authority.
- ESI & PF statement duly co-ordinated by Welfare Section.
- Measurement books duly technically checked by Engineer in charge.
- Any other documents which are specified by the Management from time to time.

The Engineer-in-charge has to certify in the work Completion certificate as well as in the Measurement Book, that the work is executed in conformity with the contract specification, drawings and other conditions. The final bill duly checked and coordinated by the Engineer-in-charge shall be sent to the Finance Department through Chief Engineer along with the documents stated above.

29. DEFECT LIABILITY PERIOD:

The period of maintenance for the subject work shall be **ONE YEAR**.

During this period, the contractor shall be responsible to rectify all the defects noticed and attributable to the work done by him in respect of works executed by him. As soon as any defect in the work come to the notice, the Chief Engineer shall inform the contractor, in writing, to rectify the defect and inform him that in case he fails to do so within a reasonable time, the Company would rectify the defects at his risk and expense as per the conditions of the contract.

If the contractor does not attend to the rectifications in-spite of repeated requests, the Company shall proceed at his risk and expense and get the work completed. The cost incurred by the Company shall be recovered from the defaulting contractor. The Company shall forfeit the balance 50% of the Security Deposit retained and adjust this amount against the expenses so incurred. The balance amount, if any, after recovering the expenses incurred shall be refunded to the contractor. In case the amount available is

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insufficient to cover the expenses in full, that portion of the expenditure still remaining unadjusted shall be recovered from any of the subsequent bills due for payment to the contractor against any other contract.

Even after such adjustments, the amount available is insufficient to cover the expenses in full, the Company reserves the right to take legal course of action to recover such unadjusted amount.

30. CONTRACTORS LIABILITY AND INSURANCE:

From commencement to completion of the works, the contractor shall take full responsibility taking precautions to prevent loss or damage. He shall be liable for any damage or loss that shall happen to the works or any part thereof.

In addition, the contractor shall indemnify and keep the Company indemnified against all losses and claims for injuries or damages to any person or any property whatsoever which shall arise out of or in consequence of the construction works. For this purpose, the contractor shall take an insurance policy-"**Contractors All Risks Insurance**"- to cover the risks, as per the Conditions of the Contract. The insurance policy has to be kept valid till the work is completed and the possession handed over to the Company. The policy shall be taken at his cost showing the Company as the 'principal' to simplify the work in the matter of raising claims and settlement thereof.

31. MATERIALS obtained from demolition/dismantling work shall remain with the Contractor at his own risk till such time the Contractor removes them to BEML stores or as directed within 10 days from the date of completion. If he fails to remove such dismantled materials to BEML stores or as directed within 10 days from the date of completion, the Engineer-in-charge will be entitled to remove them at the risk and cost of the Contractor.

32. THE various provisions in this special condition shall be deemed to take precedence over those in General conditions/specifications to the extent applicable.

33. The quoted rate is deemed to include for execution of work in a phased manner/part by part if necessary and as directed by BEML and no extension of time nor extra claims shall be entertained in the regard.

I/WE AGREE TO EXECUTE THE ABOVE AS PER DRAWINGS AND SPECIFICATIONS OF BEML WITHIN THE STIPULATED TIME FROM THE DATE OF ISSUE OF WORK ORDER. I/WE ARE ENCLOSING HEREWITH A RECEIPT/DRAFT NO._____DTD._____ FOR RS._____ TOWARDS EARNEST MONEY DEPOSIT, ADHERING TO THE REVISED SPECIAL CONDITIONS (1987) AND REVISED CONDITIONS MENTIONED.

Signature of the Contractor(s) with seal

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PARTICULAR SPECIFICATIONS

1. GENERAL:

These particular Specifications are to be read in conjunction with the specifications contained in the MES Standard Schedule of Rates 2020, i.e. PART I - Specifications and PART II-Rates, including errata (here-in-after referred to as the MES Schedule) and specifications given hereunder and the drawings mentioned in these documents, rates and specifications thereon shall be deemed to apply to the works unless mentioned otherwise in the tender documents. In case of discrepancy between the documents, viz., Bill of Quantities, Particular specifications and Drawings, the following order of precedence shall be followed:

(a) Bill of Quantities
(b) Particular specifications
(c) Drawings

2. SCOPE OF THE CONTRACT:

THE contract comprises full, final and entire completion of Subject Work all as shown in Schedule-A and as described in these Particular Specifications and detailed in the drawings given in the list of drawings enclosed hereto and also subject to the General and Special Conditions of Contract. The work shall be completed in stipulated period.

THE time for completion is to be reckoned from the date of commencement mentioned in the Purchase Order.

3. SAMPLES OF MATERIALS:

THE contractor shall produce samples of all materials and shall obtain approval of Engineer-in-Charge in writing before he places bulk order for the material for incorporation in the works. In respect of materials for which samples are not kept or detailed specifications are not given herein-after, such materials shall comply with the latest relevant Indian Standard Specifications as published upto the date of issue of this tender.

3.1. THE contractor shall on demand produce original receipted vouchers / invoices in respect of materials supplied by him.

4. PROPRIETORY MATERIALS:

THE contractor shall ensure that proprietary materials like paints etc., are brought to site in original sealed containers / packing and bear the manufacturer's markings.

5. CLEANING DOWN:

THE contractor shall clean all the floors, walls, glass panes, fittings and fixtures, etc., touch up all painter's works and carryout all other necessary items of work in connection therewith and leave the whole premises clean and tidy before handing over the buildings.

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6. ATTENDANCE UPON BUILDING:

THE contractor shall permit free access and generally afford facilities and usual convenience to other agencies and or departmental workmen to carryout works under separate arrangements.

THEREFORE, the rates quoted by the contractor shall be deemed to include for all such costs as consequence for having to work in the circumstances described above and no claim shall in any event be entertained on this account.

7. EXCAVATION AND EARTH WORK:

THE earthwork, excavation, filling etc., in ordinary/hard soil shall be carried out to the extent ordered/indicated in the drawings. Excavation inadvertently made deeper than what is ordered or indicated in the drawings shall be made good by the contractor with PCC 1:4:8 using not larger than 40mm graded granite aggregate with out extra cost to the company.

The earth obtained from excavation shall be filled, spread, watered and well rammed in layers not exc. 20 cm thick around foundations, under floors and in other situations to make up levels / slopes as directed/shown in drawings. Use of vegetable soil, turf, peat and black cotton soil in filling shall not be permitted. No lead whatsoever shall be allowed extra for earth obtained from excavation and reused for filing around foundation and under floors. If on the actual excavation, hard rock or ordinary rock is met with the contractor shall intimate the Engineer-in-charge in writing for making necessary price adjustment. Excavation done in ordinary/hard rock will be priced as an authorized extra item.

8. CONCRETE MATERIALS

8.1 **CEMENT:** Cement used in the work shall be ordinary PORTLAND/PUZZOLANA cement and shall be stored by the contractor in a dry place under proper cover and stack. Stacks shall not be more than 10 bags high.

8.2 **FINE AGGREGATE**: Fine aggregate (sand) for concrete shall be of approved quality natural sand. Fine aggregate shall be clean, free from any admixture of clay, loam, silt, organic matter and other impurities.

8.3 **COARSE AGGREGATE**: Coarse aggregate for concrete shall be of approved broken granite stone and shall conform to IS-383-1963.

8.4 **WATER:** Water used in concrete shall be clean, fresh and non-saline.

Rate: Rate quoted for cement concrete works in Schedule-A shall include the cost for the use and waste of formwork as necessary.

Unless otherwise specified, the rates quoted against various items of schedule 'A' shall not include for plastering. The various concrete surfaces shall be finished as under:

a) All concrete surfaces occurring in conjunction with wall and the like: Immediately after the formwork is removed all irregularities shall be removed and air holes shall be stopped with CM 1:3 so that the surface is ready for application of plaster which is paid for separately.

b) Soffits & edges of roofs, soffits & edges of chajjas, facias, soffits and sides of beams and columns, exposed surfaces of shelves, not occurring with conjunction of walls: These shall be finished as described above to receive plastering which is paid for separately.

c) Exposed surfaces of concrete members other than those specified above and tops and edges of chajjas and the like, independent columns and other concrete surfaces not specified to be plastered: These surfaces shall be finished fair and smooth. On account of any reason whatsoever, if fair and smooth surface cannot be achieved, the contractor is permitted to plaster these surfaces with CM 1:3, to obtain a fair, uniform and smooth finish. However, he shall ensure that the thickness of plaster is kept to a minimum. The contractor shall not be paid anything extra for the application of this CM 1:3 plaster.

d) The rate quoted for pre-cast concrete shall include for cost involved in the cutting of grooves, etc., in walls, etc, and fixing as specified.

8.5 **Mixing concrete:**
All concrete shall be mixed in mechanical concrete mixers with hopper. The mixing drum shall be washed and cleaned on completion of work, every day and on every stoppage of work, if the stoppage exceeds 30 minutes. If the total quantity of concreting proposed to be carried out in any one day does not exceed 0.25 cum hand mixing may be adopted for such concrete.

9. FORM WORK

All form work shall be as mentioned in MES schedule 2009, Part I, section 7, Where concrete is to be finished smooth, the forms shall be wrought on the inside surface. Contractor may at his discretion use steel or plywood form work in lieu of timber formwork at no extra cost to the Company.

10. COMPACTING CONCRETE

The compacting of concrete shall be done all as specified in SSR Part I – Specifications. The mechanical vibrator shall be used to compact the concrete in footing, columns and beams etc., and vibrator shall be used to compact the PCC 1:2:4 in flooring and shop irrespective of the fact whether the thickness of concrete exceeds 30 cm or not.

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11. CONCRETE CUBES AND TESTING

Test cubes shall be taken from the important concrete works for testing purpose at the sole discretion of the Engineer-in-charge. Such tests shall be performed at the expense of the contractor.

12. HOLLOW CONCRETE BLOCKS:

Hollow Concrete blocks shall conform to the requirements of IS-2185 specifications for hollow concrete blocks. Hollow blocks shall be sound, free from cracks, broken edges, honey combing and other defects that would interfere with the proper placing of blocks or impair the strength or performance of construction. The water absorption shall not exceed 240 kg./Cum.

TOLERANCE: The maximum variation in the dimensions shall be not more than +/- 1.5mm for height and breadth and +/- 3.0mm for length.

The total width of cavity in any block measured horizontally at right angles to the face of the block as laid in the wall, shall not exceed 65% of the total breadth (that is the overall dimensions of the block at right angle to the face of the block as laid in wall) of the block. The volume of the cavity in the block shall not exceed 50% of the gross volume of the block.

Surface characteristics of blocks intended to be plastered or rendered, shall be such as to provide a satisfactory bond with the plaster.

Faces of blocks shall be flat and rectangular, opposite faces shall be parallel and all arises shall be square. The ends of the blocks which form the vertical joints may be plain butt unless tongue and grooved or double grooved ends are indicated.

The block shall be cured in an immersion tank or in a curing yard and shall be kept continuously moist for atleast 21 days. When the blocks are cured in an immersion tank, the water of the tank shall be changed atleast every four days.

After curing, the blocks shall be dried in shade before being used on the work. They shall be stacked with voids horizontal to facilitate through passage of air. The blocks shall be allowed to complete their initial shrinkage before they are laid in the wall.

Construction of Masonry:

For single storeyed buildings, the hollows of blocks in the foundation and basement masonry shall be filled up with sand and only the top foundation course shall be of solid blocks. But for two or more storeyed buildings solid concrete blocks shall be used in foundation courses, plinth and basement walls unless otherwise indicated. The hollow blocks are used, their hollows shall be filled up with cement concrete 1:3:6 using 12.5 mm nominal size aggregate.

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Wetting of Blocks:

Blocks need not be wetted before or during laying in the walls. In case of the climatic condition so required, the top and the sides of the blocks may only be slightly moistened so as to prevent absorption of water from the mortar and ensure the development of the required bond with the mortar.

Laying:

Blocks shall be laid in mortar, as indicated and the roughly bedded in mortar, spread over the entire top surface of the previous course of blocks to a uniform layer of not less then 10mm in thickness and not more than 12mm.

All courses shall be laid truly horizontal and all vertical joints made truly vertical. Blocks shall break joints with those above and below for not less than quarter of their length pre-cast half length closers (and not cut from full size blocks) shall be used for battered faces; bedding shall be at right angles to the face unless other-wise directed. Care shall be taken during construction to see that edges of blocks are not damaged.

INTERSECTING WALLS:

When two walls meet or intersect and courses are to be held up at the same time, a true masonry bond between atleast 50 percent of the units at the intersection is necessary. When such intersecting walls are laid up separately pockets with 20mm maximum vertical spacing shall be left in the 1st wall laid. The corresponding course of the 2nd wall shall be built into these pockets.

Fixtures, fittings, etc., shall be built into the masonry in cement and sand mortar 1:3 while laying the blocks where possible. Hold-fasts shall be built into the joints of masonry during laying.

Holes, chases, sleeves, openings, etc., of the required size and shape shall be formed in the masonry with special blocks while laying, for fixing in pipes, service lines, passage of water, etc. After service lines, pipes, etc., are fixed voids left, if any, shall be filled up with cement concrete 1:3:6 type and neatly finished. Construction details specified for block masonry which have not been specified herein shall apply to hollow blocks masonry to the extent applicable.

FINISHES:

Renderings shall not be applied to the walls when these are wet. Joints for plastering or pointing, as specified shall be raked to a depth of 12mm. Joints on internal faces, unless otherwise indicated shall be raked for plastering.

13. SIZE STONE MASONRY IN CEMENT MORTAR IN FOUNDATIONS

Face work shall be hammer dressed with no stone to tail into a point. No face stone to be narrower or shorter than its height. Thickness of mortar in beds and joints shall not exceed

20mm.HEIGHT OF COURSES 150mm to 230mm but no course shall be greater in height than any course below.

13.1 BOND OR THROUGH STONES: Bond or through stones shall be provided at 1.5m in every course and are to be staggered. No stone shall tail into a point. Bond stones shall extend from the front to the back of walls. For walls 600mm thick and under, bond stones shall be in one piece. For walls over 600mm thick they shall either be in one piece (if available locally) or be in series of headers, each header overlapping the adjoining one by not less than 150mm. No header shall preferable be less than 600mm in length.

13.2 Quoins and jambs to be squared back in beds and joints are faced as ordered.

13.3 HEARTING Stone to be not less than 150mm in any direction, carefully laid hammered down into place with wooden mallet and solidly bedded with mortar. The hearting must not be brought to same level as the facing stones with spalls or pinning, which are only to be used as wedges in the hearting.

14. SIZE STONE MASONRY IN PLINTH AND SUPER STRUCTURE

Facing stone shall have hammer dressed faces with no stone tailing into a point. No face stone shall be narrower or shorter than its height. Face beds shall be squared back at least 50mm and joints 25mm. No spalls or pinning shall show on face. All other details shall be as detailed herein before for foundations.

15. BRICK MASONRY IN CEMENT MORTAR

Brick shall be table moulded / clamp burnt bricks locally available of approved quality having a minimum compressive strength of 50kgs/Sq.cm from the local kilns and shall be used in bonds as specified in MES schedule 2009 Part I, Section – 5.

16. WOOD WORK JOINERY

16.1 TIMBER: Unless otherwise specified the timber used in all situations shall be of good quality of wood as detailed in relevant items of schedule ‘A’. The timber shall be well kiln seasoned and free from defects of any sort. The contractor should particularly note that all timber required for the work should be brought to site, cut to required sizes and properly stacked and stores well ahead of actual use as directed by the Engineer-in-charge.

16.2 FINISH: Unless otherwise specified timber surfaces shall be wrought and sand papered smooth. However, backs of chowkats can be left clean saw and shall be tarred and sanded before erecting in position.

16.3 TOLERANCE: Tolerance for wrought faces of joinery is as specified in MES schedule SSR Part I, Section 7, except in the case of practical board panel shutter/boarding/planking wooden beads which shall hold the full thickness/sizes

shown in drawings. The overall dimensions of door etc., as shown in drawing shall be maintained.

16.4 PLUGGING: Wooden plugs for fixing timber fixtures and fittings and the like in walling or concrete shall be cut to size, tapered and built into walls. 'PHIL' plugs made out of asbestos cement powder where specified in the drawings or as directed shall be used wherever raw plugs are specified in the drawings or as directed the same shall be fixed after punching holes of the correct size.

16.5 JOINERY: Provide timber doors and other joinery all as per details shown in drawings and as specified in schedule 'A'. All door shutters shall be fixed so that there is a clearance of 3mm between the finished floor level and the bottom edge of shutter. The chowkats size is as shown in the drawings/described in Schedule 'A'.

16.6 Nails and spikes shall not be used in joinery works. Bamboo wood pins of proper sizes only shall be used. All joiner's works chowkats shall be cut and framed together soon after commencement of building operations, but shall not be wedged up until required and passed. Any portion that may warp or develop shakes or other defects shall be replaced with new ones before being placed in position. Timber chowkats shall be fixed in position all as directed and shown on drawings.

16.7 Paneled and battened doors/flush shutters/glazed doors : Styles and rails of skeleton frames for shutters shall be out of well kiln seasoned timber of the species specified in Schedule 'A' and panels shall be as specified in Schedule 'A'. The flush shutters shall be having solid core type with well seasoned block board and commercial veneered face and approved by the Engineer -in-charge. All flush shutters shall be provided with internal lipping to a total depth of 25mm. The width of lapping shall be equal to the thickness of core.

17. STEEL WINDOWS / VENTILATORS:

17.1 Steel windows / ventilators shall conform to IS-1038 / IS-1361 and of approved make. The fittings such as handles etc., shall be as specified and in Schedule- A & shall be fixed as per manufacturers instructions.

17.2 For steel windows, steel hold fasts of size shown in drawings and fabricated all as per "DETAILS of lugs for brick or concrete" shown in the leaflet of manufacturer shall be provided. The number of hold fasts/lugs shall be as indicated in the above leaflets.

17.3 Glass panes using standard anodized aluminium beads fixed with chromium plated flat head steel screws or as specified in schedule 'A'. Glazing to windows shall be of selected quality as specified in schedule-A. MS guard bars/weld mesh to the windows, wherever indicated shall be provided as specified and shown in drawings.

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18. STEEL AND IRON WORK

Steel and iron work shall be executed all as indicated in the drawings and as per standard practice in the best workmanship like manner and shall conform to IS-1786 and IS-226.

18.1 The rate quoted by the contractor against structural steel items of Schedule 'A' shall be applicable for various steel sections required and used for the work. Bolts and nuts required for the work shall be procured by the contractor.

18.2 The preamble under structural steel work of SSR Part I and other relevant notes and specification of SSR shall apply to this work. One coat of red oxide shall be coated to the structural steel surfaces before erection and two coats of approved enamel paint shall be done after fabrication and hoisting on all exposed surfaces and before fixing the sheets. No deductions shall however be made for the two coats of painting in respect of structural steel surfaces of columns, trusses, etc., which are embedded in brick or stone or concrete after erection and fixing in position is complete.

18.3 STEEL bars incorporated in the reinforcement concrete work shall be all as per details shown on the drawings.

18.4 LAPS and crossings shall be tied with mild steel wire annealed of size not less than 0.9mm conforming to IS 280, to be procured by the contractor.

18.5 Welding of bars shall be done where indicated or directed by Engineer in charge in lieu of lapping in accordance with IS-2751. Welding in general shall be done as described for structural work. Bars upto and including 20mm shall be lap welded and those larger than 20mm dia shall be butt welded. IN case of lap welds, the length of lap shall be five times the dia or 100mm whichever is greater. The throat thickness shall not be less than 3m for bars upto 16mm dia and 5mm for bar over 16mm dia and upto 20mm dia.

18.6 All structural steel shall be fabricated and fixed at site as and where shown in the drawings. Welding should be of arc welding and shall conform to IS-823-1692. Electrodes used for welding should conform to IS-814-1963. Welding design and welded fabrication of standard steel shall conform to IS-816-1956 and IS-800-1962 respectively.

18.7 The contractor shall be responsible for accurate fixing of reinforcement shown in drawings and shall not place any concrete until the reinforcement has been inspected in position, and passed (one day prior to concreting) by the Engineer -in-charge ,. The contractor shall take necessary precautions to prevent any displacement of reinforcement bars during concreting.

18.8 The weight of all types of steel/bars shall be calculated from the weight conversion given in the relevant ISI tables and the sections for which conversion is not available in the ISI tables; the actual weight conversion of such sections shall be arrived at for the same. The alignment shall be made carefully to suit the operation of EOT cranes all as directed by the Engineer in charge.

Flat/sloped RCC roof shall be provided all as shown on drawings and as specified and directed complete.

19. WATER PROOF COURSE

Water proof course with lime concrete and machine made pressed clay tiles: The roof surface shall be wire brushed and cleaned of all dust and foreign matter before laying the coba. Lime and brick aggregate coba shall be made out of good quality fat lime and brick aggregate 20mm size mixed in preparation of 1:3 by volume and allowed to cure for 3 days. The cubed brick bat coba shall be spread over the roof slab to the required thickness and slopes etc. and consolidated with wooden mallets using beal fruits and gur all as specified of section 11 of SSR Part I, and finished rough. Over the coba, one course of machine made tiles or other equivalent and approved make shall be laid all as specified in Bill of Quantities.

20. AC RAIN WATER PIPES

Rain water pipes and accessories shall be as manufactured by approved make. The rain water pipe and the accessories shall be fixed in position as per the code of Practice published by M/s. Asbestos Cement Pvt. Ltd., and as directed. The rate quoted includes cost of accessories like bends, shoes, painted MS clamps etc., and fixing. The centre line length of the accessories shall be added to the length of pipes for purpose of measurements. The rain water pipes shall conform to IS-1626-1960.

Unplasticised PVC rain water pipes

Unplasticised PVC pipes shall conform to IS-4985. The pipes shall be reasonably sound. Inernal and external surfaces of the pipes shall be smooth and clean, and free from other defects. Pipes shall be of pressure ratings as indicatd in Schedule-A- Bill of quantities.

21. FLOORING

Floors shall be provided all as shown in drawings and as detailed in Schedule-A. Floors shall be laid to level and/or to slopes as shown in drawings or as directed. Slopes shall be achieved by giving required slope to earth filling under floors. Floors shall be sunk wherever shown in drawings. Floors shall be carried through all doors and other openings. Exposed edges of floors shall be finished in the same manner as for the top surface.

21.1 Concrete floors: Sub-floors with PCC 1:4:8 PCC 1:4:8 sub-floor shall be laid over well consolidated sub-base. The surface shall be left rough to receive the screeding/floor finish. Concrete floors shall be laid as and where indicated in drawings/as directed.

21.2 PCC floors/ramps: PCC 1:2:4 shall be laid over in alternative bays system all as described in MES schedule2009, part I, Section 13. The top surface shall be finished as specified in schedule ‘A’.

21.3 Vacuum Concrete the concrete flooring with vacuum treatment to be done by M/s. Authorized firms, or other equivalent reputed agency. The concrete should be designed for medium workability and should not be dry. Surface vibrators should be used after laying the concrete. If necessary, poker vibrators should precede surface vibrators. The top layer must be leveled with surface vibrators and then vacuum processing should start after placing top cover and filter pads. Cleaning with skim floater using planning disc should be done immediately after vacuum processing. Blade polishing should be done after the concrete has hardened sufficiently.

21.4 Flooring/Skirting with Terrazo tiles Terrazo tiles for floor shall conform to IS-1237-1959 and shall be laid over cement mortar, screed, etc., all as specified and detailed in Schedule 'A'.

21.5 Glazed Tiles Glazed tiles shall conform to relevant IS and shall be laid all as per SSR Part I and all as specified/detailed in Schedule 'A'.

22. PLINTH PROTECTION

Plinth protection 75mm thick shall be provided. Plinth protection need not be provided where portions are covered by steps and ramps and shall be laid to slope as directed and in bays of length not exc. 3M adopting alternate bay system. The top surface shall be finished smooth using extra cement.

23. PLASTERING GENERAL

The surface to be plastered shall be prepared by raking out joints and wetting the surface thoroughly. Curing of plastering work shall be properly done by means of stirrup pumps or similar devices. The contractor shall take every precaution right from the commencement of plaster work to prevent any defect that may appear on the surface of plaster and shall be responsible to make good any portion of plaster, which in the opinion of the Engineer -in-charge requires removal and re-doing.

23.1 Sand for plastering and pointing work shall be as specified herein before for RCC works.

23.2 The thickness specified in relevant Schedule 'A' item is the thickness above the proudest part of brick/concrete/stone surface and is exclusive of dubbing coat. Any dubbing coat that may be necessary to bring the surface to uniform level shall be provided by contractor and shall be of the same mix specified for the plastering. The rate quoted for Schedule 'A' items shall be deemed to be inclusive for the dubbing coat also.

23.3 No rounding off of external and internal angles or corners of plaster shall be done. The junction/arises shall be made true and square.

23.4 Plastering on walls, dados and skirting shall be returned along with the jambs of opening in walls and cills of windows.

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23.5 Plastered surfaces shall be finished fair and even.

23.6 Cement Mortar Plastering: Plain cement plaster or ordinary cement plaster where shown in drawings/schedule of finishes shall be of mix/proportion and thickness as specified in Schedule 'A' finished fair and even without using extra cement.

23.7 Keyed pointing: Keyed pointing to size stone masonry shall be in CM 1:4 all as MES SSR, part I.

23.8 Rough cast plastering: Provide rough cast plastering of thickness over and including cement mortar screeding as specified in Schedule A. The mixing laying of rough cast plastering shall be as specified in SSR Part I 2009.

24. WHITE COLOUR WASH

Before application of white wash/colour wash etc., the surface shall be prepared, to a clean and fair surface.

24.1 White wash: White wash shall be carried out to surface as indicated in drawings/schedule of finishes and all as directed by the Engineer -in-charge. White wash shall be carried out in three coats.

24.2 Distemper: Provide two coats of approved oil bound washable distemper over a coat of primer (cement primer) all as specified in Schedule 'A'. Shade/tint shall be as directed by the Engineer -in-charge. The surface to be distempered shall be prepared with a coat of full putty.

24.3 Cement based paint: Two coats of cement based paint such as Snowcem or Surfacem or other equivalent and approved make & colour, shall be applied on surfaces all as directed and as per manufacturer's instructions.

25. BUILDER'S HARDWARE

Builder's hardware of sizes shall be provided and fixed as specified in Bill of Quantities and detailed in drawings. Sample of fittings shall be first got approved by the Engineer -in-charge before placing bulk orders for the same.

25.1 Butt hinges for doors shall be MS cold rolled steel butt hinges all as specified in Bill of Quantities and as shown on drawings.

26. GLAZING:

Unless otherwise specified, glazing for doors, windows, ventilators etc., shall be with not less than 3mm thick plain glass and of the best quality. The glass shall be free from bubbles, scratches and other imperfections. The glass shall not be wavy.

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27. PAINTING

Paint shall comply with the relevant IS and shall be of approved manufacture. Paints for priming coat, under coat and finishing coat shall be of the same manufacture. The colour and the manufacture shall be approved by Engineer-in-charge.

27.1 Painting to steel surfaces with Enamel paint: Where painting to steel surface with enamel paint is indicated drawings/schedule of finishes, the surface shall be prepared, cleaned with sand paper to remove scales and rust. Apply a coat red oxide primer followed by two coats of synthetic enamel paint of approved make, and finish the surface so as to have a highly glossy appearance. Tints/shade of paint shall be superior tint and shall be approved by Engineer-in-charge. The tint for under and finishing coat shall be same.

Painting to Timber surfaces: Where painting to timber surfaces with approved synthetic enamel paint is indicated in drawings/schedule 'A' the surface shall be prepared and given a priming coat using approved primer. The surface shall then be bodied in with liquid wood filler of approved make, allowed to dry and rubbed with sand paper, after moistening the surface with water. Clean the surface and then apply two coats of paint of approved quality. Tint/shade of paint shall be superior tint and shall be approved by Engineer-in-charge. The tint for under and finishing coat shall be the same.

27.2 Unless otherwise specified, the rate quoted for relevant items of Schedule 'A' such as doors, windows, etc, shall include for two coats of painting (one under coat and one finishing coat) over a coat of primer all as specified hereinbefore.

28. SOLING

The stone for soling shall be hard granite sound and free from decay. Stones shall be clean and of height equal to the thickness of soling and as described in MES schedule SSR, Part-I, Stones shall not be laid flat on the sub-grade. The soling stones shall be hand packed to the proper width and to the profile as directed and by laying correct to the template placed 5M apart, soling stones shall be laid resting on their broad bases with their height equal to the thickness of soling & the largest dimensions at right angles to the centre line. Stones shall be laid breaking joints in close contact with each other not leaning against each other. Larger size stones shall be arranged at the edges and centre. All interstices between stones shall be wedged on by smaller size stones of suitable size, well driven by crowbars, hammers to ensure tight packing. After hand packing and checking of high and low spots by templates is complete the soling shall be consolidated by power roller of 10 tones weight all as specified in Part-I, section-20 of MES schedule A, covering up the surface during rolling by blinding with stone spalls and gravel, high and low spots being corrected by removing or adding she soling respectively as the case may be. Over the consolidated soling, moorum shall be spread to a thickness of 50mm, to proper levels, watered and rolled all as specified in Bill of Quantities.

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29. WATER BOUND MACADAM

Water bound macadam shall be provided with granite stone aggregate conforming to the grading given in the table, for granite or trap of SSR Part I, under section 20, SSR part-I. The rolling shall be done with 8/10 tonne power roller. Over the consolidated surface, moorum shall be spread to a thickness of 25mm to proper level, watered and well rolled/consolidated all as per Bill of Quantities and as directed.

30. FERRO CEMENT WATER TANKS: MATERIALS: CEMENT:

30.1 Ordinary Portland cement shall be in accordance with IS-269-1976

30.2 Fine aggregate: Aggregate shall generally conform to IS-383-197

30.3 Reinforcement: Shall be in accordance with following specification

a) Weld Mesh – IS 412 or 1962

b) Chicken Mesh IS 1566 of 1967

c) 6mm MS Rods IS 432-1966, Part I

30.4 Fabrication: A weld mesh and mild steel rod cage shall be cut and bent and covered either side using chicken mesh/square woven mesh all as shown in drawings. Both meshes and main mild steel rods shall be tied together using binding wire along with fittings such as drain off pipe, inlet pipe outlet pipes, over flow pipe connections and fittings hooks in correct position.

30.5 Casting Platform: Tank will be cast on leveled masonry platform and before casting it shall be lubricated in advance by mould oil.

30.6 Mixing and casting: Cement and fine river sand shall be mixed dry in proportion 1:2 by weight. Water cement ratio shall be 0.5 for preparing the wet mortar. Bottom slab shall be cast first then vertical walls can be plastered with cement mortar. Small pieces of plywood shall be used on opposite side as a back up and mortar shall be forced into cage from outside and finished to required thickness by following the same process from either side. Both inside and outside surfaces should be finished fine after initial setting of mortar. Cover shall be casted separately and finished fine.

30.7 Curing: The tank shall be cured by gunny bags after 24 hours of casting for 7 days. The water shall be slowly filled and leakages observed shall be made good.

30.8 Painting: The tank shall be painted by using tar mastic paint IS-158/8 grade by giving one coat internally after positioning the tank, 2 coats of snowcem of approved colour shall be given for external surface.

30.9 Testing: The contractor shall fill the tank initially in three days after painting and ensure that water level shall not fall 3mm in the 24 hours.

31. ROLLING SHUTTERS

Rolling shutters shall be of standard or other equal and approved make and shall be provided all as specified latest SSR. The rolling shutters shall be painted with two coats of paint over one shop coat of red oxide primer.

32 ALUMINIUM DOORS

Aluminium doors shall be fabricated and fixed in position all as shown in drawings and as described in Schedule 'A'. The rates quoted is deemed to include the cost of fixtures, locking arrangements etc., all as shown in drawings/directed.

SLIDING DOOR WITH TRACK: Providing sliding doors with track and other joinery all as per details shown in drawings and as specified in Schedule 'A'. All categories of steel required for the work shall be of contractors supply. Other conditions as given in Clause 'STEEL AND IRON WORK' shall be applicable in this case also.

32.1 MS Sheet gutters: MS sheet gutters shall be fabricated and fixed in position including all the necessary accessories in accordance with the relevant IS and as directed by the Engineer -in-charge. MS sheets required for the work shall be arranged by the contractor.

33. WATER SUPPLY

Water supply (General) Work shall be carried out by licensed plumber and layout of the pipes shall be as directed by the Engineer -in-charge. All pipes shall be truly vertical/horizontal and bending of pipe shall not be permitted. Appropriate specials shall be invariably used at bends, junctions and connections.

33.1 Materials: Water tubing with all accessories shall be of mild steel tubes, galvanized, screwed, medium quality or light quality (conforming to IS1239) as specified in Schedule 'A' . Stop cocks shall be screw down, high pressure pattern, heavy quality and shall conform to IS 731, stop cocks shall be of brass. Bib cocks, shall be of brass chromium plated suitable for high pressure, conforming to IS-1795-1961.

33.2 Laying and Fixing of pipes :Pipes running on walls/floors/roofs inside the building shall be fixed on surface of walls/roofs all as specified in Section-18, of MES 2004, Part I. However, where pipes are shown through the floors the same shall be laid in position before laying the concrete floors. Where pipes are laid underground, trenches, shall be excavated as and where directed.

33.3 In jointing the pipes, the inside of the socket and the screwed end of the pipes shall be smeared with red lead and few turns and hemp yard wrapped round the screwed end of the pipe, which shall then be screwed in the socket with a pipe wrench.

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33.4 Making Good: Unless otherwise specified all holes cut in floors/walls, chases cut in walls, etc., for providing pipes etc., shall be made good by the contractor in the same manner and mix as specified for that portion of wall and or floor. Cutting in to wall or floors shall be restricted to the bare minimum extent practicable for the finished sizes of holes required. The cost involved in these items are deemed to be included in the contractors quoted rates of respective items of Schedule `A'.

34. MIRRORS

Mirrors shall be as per the BOQ.

35. SANITARY WORKS:

35.1 European type water closet: Provide and fix white European type water closet all as specified.

35.2 Indian type squatting pattern water closet: Provide and fix squatting pattern (Indian type) water closet, white with a pair of foot rests, all as specified.

35.3 Wash Basin / Urinal: Provide wash hand basin and flat back urinals all as specified. The wash hand basins and squatting pattern shall be fixed all as per manufacturers' instructions.

35.4 Testing: All sanitary fittings, waste pipes, vent pipes and SWG pipes etc., shall be tested as approved in MES schedule. The rate quoted for the respective items are deemed to include for cost of testing also.

35.5 Sanitary and plumbing: General: The contractor shall employ approved licensed plumbers for installation of sanitary fittings and for executing the necessary plumbing works.

35.6 Nahani Traps: Where Nahani Traps are indicated in the drawings provide 100mm (Internal) dia cast iron nahani trap with hinged gratings and without let for 75mm dia. pipe. Nahani traps shall be firmly embedded in concrete floors all as directed.

35.7 Gully trap: Where gully traps are indicated in drawings standard gully trap salt glazed stoneware, with rebated top, strong make, square body, with 150x150mm CI gratings and 100mm dia. outlet shall be provided. Gully trap shall be fixed all as specified in MES schedule and as shown on drawings. The rate quoted for gully trap shall be included for excavation and concrete. PCC type C-1, etc., complete all as specified.

35.8 SWG PIPE: SWG pipes shall be class-A conforming to is-651 of 1965, SWG pipe shall be laid as directed and shall be jointed all as specified in section –18, of MES schedule 2004, part I.

35.9 Cast iron soil and waste pipes with fittings: CI soil and waste pipes with fitting shall conform to IS-1729-1964. CI soil and waste pipes shall be laid as directed and shall be cement jointed all as specified in Schedule A.

35.10 Manholes: Manholes independent shall conform to IS 1742 1960 and all as shown on drawing. Brick work shall be in well burnt bricks in cement mortar 1:4 all as specified in MES Schedule And to the thickness shown on drawing. Foundation shall be in PCC 1:3:6 type C-2 with 40mm graded granite stone aggregate for manholes. Benching and channels shall be in PCC 1:2:4 type B-1 using 20mm graded granite stone aggregate, steel trowelled to a smooth and even surface using extra cement. Plastering to brick walls shall be in CM 1:3 15mm thick finished even and fair. All internal surfaces of walls shall be plastered. The external surfaces of walls shall also be plastered to a depth of 150mm from top. The rates quoted by the contractor for manholes shall include for the cot of reinforcement of the Precast cover slab and fixing precast PCC cover slabs of PCC 1:2:4 type B1 for manholes and inspection chamber including PCC 1:2:4 type B-1 bed below the slab removal of surplus spoil to a distance not exc. 50M and any extra excavation and earth work for working space as required.

35.11 Testing: All sanitary fittings, waste pipes, vent pipes and SWG pipes etc., shall be tested as provided in MES schedule. The rates quoted for the respective items of Schedule A are deemed to include for cost of testing also.

36. AC NORTH LIGHT CURVE

AC North light curve shall be of approved make and shall be fixed as per manufacturers' instructions and as directed. The net length only shall be measured for payment purpose.

37. NORTH LIGHT GLAZING

6mm thick wire cast glass shall be fixed in position with aluminium glazing bars as directed and as per manufacturers' instructions. The overall size of north light glazing including the aluminium glazing bars shall be taken into consideration for payment purpose.

38. AC RADIAL EXHAUST

AC radial exhaust shall be of 'EVEREST' make or other equivalent and approved make and shall be fixed all as per manufacturer instructions and all as shown on drawing/directed.

39. EXPANSION AND CONTRACTION DUMMY JOINTS

Provide expansion and contraction (Dummy) joints to the width and lengths specified in Schedule 'A'. These shall be straight and the slab edges adjacent to the joints shall be formed truly vertical. The top edges of the slab at joints shall be bull nosed to 10mm radius. The joint shall be thoroughly cleaned, sides brushed before filling the filler. The molten bituminous charge before incorporation.

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Note:

a) All concrete work should be strictly done according to the description and specifications given in the tender. If the same is to adhered to in respect of any concrete items by the contractors the Engineer in charge shall have the power to reduce the quoted rates in respect of such schedule items and the decision of the Engineer in charge is final and binding on the contractors.
b) Contractor should note that only the relevant clauses of particular specifications attached to the tender documents are applicable to Schedule A – Bill of quantities.

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BILL OF MATERIAL

SL. No	Description	Unit	Quantity
1	Demolition of the existing RCC/ PCC in floors of any description using manual or mechanical means including removing the debris off the premises, all lead, lift, labour etc complete all as specified and directed by Engineer in charge	Cum	20.00
2	Demolition of existing brickwork of any description by manually/mechanically including removing the debris off the premises, all lead, lift, labour etc complete all as specified and directed by Engineer in charge.	Cum	5.00
3	Surface excavation n.exc (not exceeding) 30 cm deep and averaging 15cm deep and getting out etc., complete all as specified and directed by Engineer in charge	Sqm	100.00
4	Site clearance including cutting and grubbing up tree trunk, digging out roots, filling holes and levelling off ground (avg 1.0 mtr) using mechanical means and stacking of tree trunks and roots at a place all as shown etc., complete all as specified and directed by Engineer in charge	Sqm	50.00
5	Excavation over areas in soft / hard soil using manual or mechanical means, not exceeding 3.00 mts deep and getting out etc. complete all as specified and directed by Engineer-in-charge.	Cum	185.00
6	Earth work Excavation in trenches in hard/dense soil using manual or mechanical means, not exceeding 1.50 mtr deep and not exe 1.5 mts wide and getting out for foundations/ground water pipeline etc. complete all as specified and directed by Engineer in charge	Cum	8.00
7	Returning & filling the earth under floors/trenches in layer not exc.,25 cm depth including consolidation etc., complete all as specified and directed by Engineer in charge	Cum	30.00
8	Providing and Constructing burnt brick masonry wall of required thickness in cement mortar 1:6, using table moulded bricks of first quality, conforming to relevant IS, including necessary curing etc., complete all as specified and directed by Engineer in charge.	Cum	20.00
9	Rendering in cement mortar 1:6, avg 20 mm thick, over brick or concrete external wall surfaces, finishing the surface even and smooth including grooves, scaffolding and necessary curing etc complete all as specified and directed by Engineer in charge.	Sqm	125.00

Signature of the Contractor(s) with seal

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10	Providing and Laying in position Plain Cement Concrete of mix 1:3:6 using 20mm downgraded granite aggregate, required thickness including compacting and necessary curing etc complete all as specified and directed by Engineer in charge	Cum	10.00
11	Providing and Laying of Ready mix reinforced Cement Concrete M-25 using 20mm downgraded granite aggregate of first quality, conforming to relevant IS, Manufactured by M/s Ultratec/RMC India /M PRO RMC/ACC/L&T/Cormandel to required gradient including necessary compacting, texturing the surface and curing etc complete all as specified and directed by Engineer-in-charge. **NOTE:** a) The contractor has to cast the cubes periodically as per the IS Standard and to conduct test for both 7 days & 28 days and to submit test report. Frequency of test shall be as per the IS Standard and the quoted rates shall deem to include for the cost of testing. b) Reinforcement will be measured and paid separately. c) The quoted rate shall include for cost of shuttering where ever needed.	Cum	75.00
12	Providing TMT Bars for reinforcement conforming to relevant IS cut to length, bent to shape required and binding with mild steel wire not less than 0.9mm dia (annealed) including cranking etc, complete all as specified and directed by Engineer-in-charge.	Kgs	6700.00
13	Providing, erecting & removal of formwork including centering & shuttering including strutting, propping etc., using MS/plywood conforming to relevant IS with necessary wooden formwork supports, metal propping, MS pipe ties so as to have a smooth finish at all levels while casting the concrete members of any thickness, laying to the proper line & level and greasing/ chemical to the inner sides so that the cement/concrete does not stick to the shuttering etc., complete all as specified & directed by Engineer in charge	Sqm	325.00
14	Supplying, Fabricating and erecting Structural steel of standard sections for columns, purlins, rafters, anchor bolts, supporting tie members / additional members including providing and applying two coats of Synthetic enamel paint over a coat of primer of first quality, approved colour, manufactured by M/s. Asian paints/Berger etc complete all as specified and directed by Engineer in charge.	Kgs	950.00

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15	Supplying and fixing 0.5mm thick (TCT), Pre- painted Galvalume aluminum zinc coating GI based corrugated steel sheet for roof/wall cladding of first quality, approved colour, conforming to relevant IS, Manufactured by M/s TATA/JINDAL with necessary over laps as per manufactures recommendation with material yield strength 550 MPa profiled steel passivated and clear resin coated (Aluminium zinc alloy coating) sheets and The sheets should be fixed using self-drilling/self-tapping fastener, acrylic sealants profiled loom, neoprene fillers, etc., including cost of all materials, labour, wastages, tools, tackles, equipment, transportation etc., complete all as specified and directed by Engineer in charge .	Sqm	100.00
16	Repair and Servicing of MS window shutters of any description n.exc 2sqm, resecuring or easing and adjusting without taking down etc complete all as specified and directed by Engineer in charge.	Each	6.00
17	Hacking out old broken glasses & Providing & fixing 5.5 mm thick sheet glass of good quality n.exc. 0.5 Sq Mtr in each pane, secured firmly by using existing beading or glazing with oil putty for windows / ventilators etc., complete.	Sqm	3.00
18	Supplying and fixing the 62.5mm diameter CPVC pipeline of first quality, manufactured by M/supreme/ Astral/Ashirwad make conforming to relevant IS including concealing the pipes by cutting chases/grooves in the walls and making good the wall surfaces. The quoted rate shall be deemed to be inclusive of all fittings / fixtures, such as bends, elbows, tees, connectors, caps, plugs, sockets, MTA/FTA, adaptar, unions, teflon tape, PVC solvent, all lead, lift, tools, labour etc., complete all as specified and directed by the Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	100.00
19	Supplying and fixing the 110mm diameter 6 kg/cm2 pressure PVC sanitary pipes (single/double socketed) of first quality, conforming to relevant IS, manufactured by M/s Supreme / Finolex including all bends, collars, tees, reducers, unions, shoe, fixed to floors/walls with U-clamps, solvent etc., complete all as specified and directed by Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	15.00

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20	Supplying and fixing the 50mm diameter UPVC pipeline of first quality, manufactured by M/s.Finolex/ Astral/Ashirvad make conforming to relevant IS including concealing the pipes by cutting chases/grooves in the walls and making good the wall surfaces. The quoted rate shall be deemed to be inclusive of all fittings / fixtures, such as bends, elbows, tees, connectors, caps, plugs, sockets, MTA/FTA, adaptar, unions, Teflon tape, UPVC solvent, all lead, lift, tools, labour etc., complete all as specified and directed by the Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	100.00
21	Preparing the old painted surfaces of Ceiling by scrapping, sand papering, cleaning dust, dirt etc, including necessary repairs to scratches etc., and applying 2 coats of first quality, acrylic washable distemper manufactured by M/s. Asian / Berger over a coat of putty and primer etc., complete all as specified and directed by Engineer in charge. **Note:** The rate quoted is deemed to include for **a)** providing and removal of scaffolding wherever necessary **b)** covering doors windows, floors, fittings etc., to protect from splashes. **c)** Washing floors, cleaning glass, joinery, electric fittings etc., and leaving the premise clean and tidy.	Sqm	40.00
22	Preparing the old painted surfaces of internal walls by scrapping, sand papering, cleaning dust, dirt etc, including necessary repairs to scratches, etc., and applying two coats of Premium Plastic Emulsion paint of approved colour, manufactured by M/s Asian/Berger Paints, over a coat of primer etc., complete all as specified & directed by Engineer in charge. Note: The rate quoted is deemed to include for a) providing and removal of scaffolding wherever necessary b) covering doors windows, floors, fittings etc., to protect from splashes. c) Washing floors, cleaning glass, joinery, electric fittings etc., and leaving the premise clean and tidy.	Sqm	115.00

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23	Preparing the existing old painted surfaces of external walls, chajjas, roof projections etc, by water washing, scrapping, cleaning dust & dirt, etc., and providing and applying two coats of exterior acrylic emulsion paint of first quality, approved colour, manufactured by M/s. Asian paints - Apex/Berger-Weather coat over a coat of exterior primer with a minimum of required gap in each coat etc complete all as specified and directed by Engineer in charge. Note: Rate quoted is deemed to include for a) Providing and removal of scaffolding wherever necessary b) Washing floors, cleaning glass, joineries, electrical fittings etc and leaving the premise clean and tidy c) Contractor to ensure that all safety precautions are taken during execution of work at height.	Sqm	425.00
24	Preparing the existing old painted surfaces of steel by scrapping, cleaning dust & dirt, etc., and providing and applying two coats of Synthetic enamel paint of first quality, approved colour, manufactured by M/s. Asian paints/Berger etc complete all as specified and directed by Engineer in charge. Note: Rate quoted is deemed to include for a) Providing and removal of scaffolding wherever necessary b) Covering doors, windows, floors, fittings etc to protect from paint splashes c) Washing floors, cleaning glass, joineries, electrical fittings etc and leaving the premise clean and tidy d) Contractor to ensure that all safety precautions are taken during execution of work at height.	Sqm	40.00
25	Preparing the new surfaces and applying two coats of exterior acrylic emulsion paint of first quality, approved colour, manufactured by M/s. Asian paints - Apex/Berger-Weather coat over a coat of exterior primer with a minimum of required gap in each coat etc complete all as specified and directed by Engineer in charge. Note: Rate quoted is deemed to include for a) Providing and removal of scaffolding wherever necessary b) Washing floors, cleaning glass, joineries, electrical fittings etc and leaving the premise clean and tidy c) Contractor to ensure that all safety precautions are taken during execution of work at height.	Sqm	40.00

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26	Supply, installation, testing and commissioning of Vertical Pressure Activated Carbon Filter of capacity 100 KLD complete with epoxy painted MS vessel (minimum 1200 mm dia × 1800 mm straight height), FRP internal lining, loaded with coconut shell activated carbon media (minimum 900 kg), under-bed gravel support, face piping, butterfly valves, pressure gauge, air vent, drain arrangement and all necessary accessories. The filter shall be designed for a filtration rate of 8–10 m^3/hr with a working pressure of 3.5 kg/cm^2 and hydrostatic test pressure of 5 kg/cm^2. Make: Ion Exchange / Thermax / Aqua Filsep	No.	1.00
27	Supply, installation, testing and commissioning of Vertical Pressure Sand Filter of capacity 100 KLD complete with epoxy painted MS vessel (minimum 1200 mm dia × 1800 mm straight height), FRP internal lining, graded quartz silica sand media (approximately 1200 kg) with pebble support layer, face piping, butterfly valves, pressure gauges, backwash arrangement and all accessories. The unit shall be designed for 8–10 m^3/hr filtration rate with maximum operating pressure of 3.5 kg/cm^2 and hydrostatic test pressure of 5 kg/cm^2.Make: Ion Exchange / Jacobi Carbon / Thermax	No.	1.00
28	Supply, installation, testing and commissioning of Fine Bubble Diffuser System EPDM membrane fine bubble tube diffuser of size 63mm dia x 1000mm long, complete with PP/SS saddles, UPVC/SS header and lateral piping, air control valves, NRVs, supports and fittings. Each diffuser shall have an air handling capacity of 2–8 Nm^3/hr with oxygen transfer efficiency not less than 25%, suitable for SBR aeration system of 100 KLD sewage treatment plant. Make: SSI Aeration / Xylem Sanitaire / Aqua Air/ Proflex	No	100.00
29	Supplying and fixing Chlorine Dosing Pump of capacity 0-10 LPH suitable for hypochlorite dosing, corrosion-resistant wetted parts. Make: E-Dose / Milton Roy / SEKO	No.	2.00
30	Supplying and fixing 40mm Electro Magnetic Flow Meter & 50 mm inline electromagnetic flow meter suitable for conductive liquids, with MS/SS body and PTFE lining. Includes sensor, transmitter, display unit, and compatible with continuous industrial operation. Make: Yokogawa / Kranti / Endress+Hauser	No.	2.00

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31	Supplying and fixing 50mm Butterfly Valve in PSF&ACF Wafer-type butterfly valve with resilient seat, suitable for water and wastewater service. Lever or gear operated, corrosion resistant body with proper pressure rating suitable. Make: Kartar / Kranti / Kirloskar	No.	24.00
32	Supplying and fixing 50 Ltr capacity HDPE/LLDPE syntax tank suitable for chlorine solution storage, UV-stabilized and corrosion resistant complete with cover and dosing pump connection provision. Make: Supreme / Sintex / Astral	No.	1.00
33	Replacement of existing sand and gravel layers with proper size gradation required in Sludge Drying bed. Make: IS Graded Media / Aqua Treat / Thermax. Sand Layer:• Clean, hard, well-graded coarse river sand, free from clay, silt, organic matter, and impurities. •Effective size: 0.5 – 1.0 mm •Uniformity coefficient: ≤ 4 •Layer thickness: 200 – 300mm Gravel Layer •Clean, washed angular gravel free from dust and organic matter. •Size gradation: •* Bottom gravel layer: 150 mm (6”) * Middle gravel layer: 100 mm (4”) * Top gravel layer: 100 mm (4”) * Sand layer: 250–300 mm (10–12”) Tank size - 10.5ft*8.5ft*4.5ft Total media depth ≈ 2.0–2.2 ft, not full 4.5 ft	No.	4.00
34	Supplying, installing, testing and commissioning of online digital TDS Meter to measure the Total Dissolved Solids (TDS) in influent, treated water, and effluent to assess treatment efficiency and compliance. Make: Hanna / Eutech / Thermo Fisher, • Portable or online digital TDS meter •Measurement range: 0 –10,000 ppm (minimum) •Accuracy: ±2% •Automatic temperature compensation (ATC) •Suitable for wastewater and treated water applications •Complete with calibration solution and probe	No.	1.00

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35	Supplying, installing, testing and commissioning of portable pH Meter to measure the pH of influent, treated water, and process streams for effective process control and chemical dosing optimization. Make: Hanna / Kusam Meco / Eutech, •Portable digital pH meter •Measurement range: 0 – 14 pH •Accuracy: ±0.1 pH or better •Automatic temperature compensation (ATC) •Suitable for wastewater and treated water applications •Complete with electrode, calibration buffers, and accessories	No.	1.00
36	Supplying, installing, testing and commissioning of 5 HP capacity Raw water pump of first quality, conforming to relevant IS. Make: Kirloskar / Grundfos / CRI	No.	2.00
37	Supplying, installing, testing and commissioning of 7.5 HP capacity Blower motor of first quality, conforming to relevant IS, Make: KAY Blowers/ Usha / Everest	No.	2.00
38	Supplying, installing, testing and commissioning of 7.5 HP capacity Filter feed pump of first quality, conforming to relevant IS, Make: Kirloskar / Grundfos / Lubi	No.	2.00
39	Supplying, installing, testing and commissioning of 3 HP capacity Re-circulation pump of first quality, conforming to relevant IS, Make: Kirloskar / Grundfos / Lubi	No.	1.00
40	Supplying, installing, testing and commissioning of 5 HP capacity water transfer pump of first quality, conforming to relevant IS, Make: Kirloskar / Grundfos / Lubi	No.	1.00
41	Supplying, installing, testing and commissioning of 5 HP capacity decant water pump (Slurry pump),3 phase, 15M head of first quality, conforming to relevant IS, Make: Kirloskar / Grundfos / Lubi	No.	4.00
42	Supplying, installing, testing and commissioning of 2 HP capacity sludge transfer pump (slurry pump), 3 phase, 15 M head of first quality, conforming to relevant IS, Make: Kirloskar / Grundfos / Lubi	No.	4.00
43	Supplying, installing, testing and commissioning of 250 cum air blowers and 7.5 HP capacity motor of first quality, conforming to relevant IS, Make: KAY Blowers/ Usha / Everest	No.	2.00

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44	Supplying & fixing 100mm dia MS pipeline of first quality including clamps, welding in joints etc, manufactured by M/s. Tata / Jindal / Surya make conforming to relevant IS including concealing the pipes by cutting chases/grooves in the walls and making good the wall surfaces. The quoted rate shall be deemed to be inclusive of all fittings / fixtures, such as bends, elbows, tees, connectors, caps, reducer collar, Flange, plugs, sockets, MTA/FTA, adaptar,unions, all lead, lift, tools, labour etc., complete all as specified and directed by the Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	35.00
45	Supplying & fixing Main Air Header GI Pipe 80 NB heavy class of first quality including clamps, welding in jonts etc, manufactured by M/s.Tata / Jindal / Surya make conforming to relevant IS including concealing the pipes by cutting chases/grooves in the walls and making good the wall surfaces. The quoted rate shall be deemed to be inclusive of all fittings / fixtures, such as Header end cap (2 Nos approx.), diffuser saddle/BSP coupling(3/4") (40 Nos approx.), 3/4" SS nipple for diffuser connection (40 Nos approx.), PTFE thread seal tape (5 Nos approx.), pipe support legs (25 Nos approx.), base plates for supports (25 Nos approx.), cross bracing pipe-25/32 NB (10m approx.), Anchor bolts with nuts and washer-M12*100mm (50 Nos approx.),80*32 NB reducing tee (5 Nos approx.), bends, elbows, tees, connectors, caps, reducer collar, Flange, plugs, sockets, MTA/FTA, adaptar,unions, all lead, lift, tools, labour and applying two coat of coal tar epoxy/epoxy top coat over a coat of zinc rich epoxy primer etc., complete all as specified and directed by the Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	20.00

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46	Supplying & fixing Air lateral GI pipe 32 NB heavy class of first quality including clamps, welding in jonts etc, manufactured by M/s.Tata / Jindal / Surya make conforming to relevant IS including concealing the pipes by cutting chases/grooves in the walls and making good the wall surfaces. The quoted rate shall be deemed to be inclusive of all fittings / fixtures, such as Lateral end cap (10 Nos approx.), ball valve (10 Nos approx.), union (10 Nos approx.), diffuser saddle/BSP coupling(3/4") (40 Nos approx.), 3/4" SS nipple for diffuser connection (40 Nos approx.), PTFE thread seal tape (5 Nos approx.), pipe support legs (25 Nos approx.), base plates for supports (25 Nos approx.), cross bracing pipe-25/32 NB (10m approx.), Anchor bolts with nuts and washer-M12*100mm (50 Nos approx.),80*32 NB reducing tee (5 Nos approx.), bends, elbows, tees, connectors, caps, reducer collar, Flange, plugs, sockets, MTA/FTA, adaptar,unions, all lead, lift, tools, labour and applying two coat of coal tar epoxy/epoxy top coat over a coat of zinc rich epoxy primer etc., complete all as specified and directed by the Engineer-in-charge. Note: The rate quoted for the item deemed to include for wastages.	Rmt	124.00
47	Supplying and fixing the 2 1/2" diameter CPVC gate valve of first quality, manufactured by M/supreme/ Astral/Ashirwad make conforming to relevant IS etc., complete all as specified and directed by the Engineer-in-charge.	Nos	3.00

Note:

The following jobs shall be deemed to be included has a part of total contract without any additional cost:

i) Obtaining required permission/consent from KSPCB for upgradation/expansion before and after completion of the work.

ii) Alternative arrangements should be made during the breakdown period of plants.

iii) On completion of the work the contractor shall submit the documentary proof towards water quality meeting the requirement of KSPCB norms for a period of one month. The weekly water test quality report shall be submitted by a NABL certified laboratory.

iv) The Contractor/s are requested to visit the site before quoting of tender & get acquainted regarding scope & nature of work.

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ACCEPTABLE BRANDS OF MATERIALS

Sl.No.	Item	Brand/Make
1	Cement	M/s ACC/Ultratech/Birla/Zurari/Ramco
2	Ready Mix Concrete	M/s Ultratech/ RMC India /M PRO RMC/Nuvoco Vista/ L&T/Coromandel
3	Paints	M/s Asian Paints/Berger/Nerolac
4	Reinforcement steel	M/s Sail/Tisco/Tata/JSW
5	CPVC Pipes	M/s Finolex/Supreme/Astral/Ashrivadh
6	GI pipes	M/s Tata/Zenith
7	PVC	M/s Finolex/Supreme/Prince
8	White cement	M/s Birla/JK
9	Gully trap/Nahani trap	M/s Supreme/Finolex
10	Waterproofing compound	M/s. Fosroc/Roff/BASF
11	Mirror/Toughened/beveled glass	M/s Saintgobain/Modiguard
12	Ceramic/Vitrified tiles	M/s.Johnson/ Kajaria/ Nitco/RAK/Somany/Naveen
13	Gypsum Board	M/s India Gypsum/Armstrong/Saintgobain
14	Ply wood/Block Board	M/s Archid/Greenply/Century/Kitply.
15	Laminate/Veneer	M/s Archid/Greenply/Century/Kitply.
16	Door closure	M/s Everite/Dorma/Ozone
17	Locks, mortice locks	M/s. Godrej/Europa
18	Plumbing fittings (Brass Chromium Plated Plumbing fittings)	M/s Parryware/Hindware/ESS ESS/Cera/Jaquar
19	Sanitary Fittings (EWC/IWC/Washbasin)	M/s Jaquar/Hindware/Parryware/Cera
20	Galvalume sheet	M/s Tata bluescope/JSW/LLYOD (India)
21	Polycarbonate sheet	M/s Danpalon, Alcox, Polygal, V.A Corporation, Alfa, GE, Lexon, Tuftile
22	CCTV Camera	M/s Hikvision/Sony/Panasonic/Samsung
23	PVC Tank	M/s Sintex/Ganga/Kaveri
24	FR PVC Copper wires	M/s Finolex/Anchor/Roma/Havells/Polycab
25	MCB's/MCCB's /ELMCB's/Industrial Switches/Electrical panels	M/s L&T/ABB/Legrand/Schneider/Merlin Gerin
26	XLPE power cable	M/s Anchor Roma /Finolex /Havells/Crabtree/ABB/Schneider/Polycab
27	Modular Switches/Sockets	M/s Anchor/Roma/Havells/Crabtree/ABB
28	Grid false ceiling	M/s Armstrong
29	LED Light Fittings	M/s Crompton Greaves/Philips/Wipro
30	Electrical panel/Control switch	M/s L&T/ABB/Legrand/Schneider/Merlin Gerin

Signature of the Contractor(s) with seal