

**SECTION-III**

**Special terms and conditions of contract**

**1. GENERAL:**

Detailed hereinafter is an outline of the works expected from the contractor. It is not the intention to specify all the minute details of the services/works expected. All the items of works required for the complete work of **“Construction of 100 KLD ETP waste water recycling plant on turnkey basis for reuse of discharge water of Mechanized Laundry, DBRG with operation and maintenance for 2 years at Dibrugarh Coaching Depot of Tinsukia Division”** are deemed to have been included in the scope and details of work of Tender document whether explicitly stated or not. The contractor is expected, to render all necessary and complete services and execute all works required in every respect to ensure smooth and timely planning and execution of the contract work.

**2. A) DEFINITIONS:**

Throughout this tender document the following definitions shall apply: -

- (i) “Railway” shall mean the President of the Republic of India or the Administrative Officers of the Railway or Successor Railway authorized to deal with any matters, which these presents are concerned on his behalf.
- (ii) “General Manager” shall mean the Officer-in-Charge of the general superintendence and control of the Zonal Railway/Production Units and shall also include Addl. General Manager, the General Manager (Construction) and shall mean and include their successors, of the Successor Railway.
- (iii) “Chief Engineer” shall mean the Officer in charge of the Engineering Department of Railway and shall also include the Chief Engineer (Construction), Chief Electrical Engineer, Chief Electrical Engineer (Construction), Chief Signal & Telecom Engineer, Chief Signal & Telecom Engineer (Construction), Chief Mechanical Engineer and shall mean and include their successors of the Successor Railway.
- (iv) “Divisional Railway Manager” shall mean the Officer in charge of a Division of the Zonal Railway and shall mean and include the Divisional Railway Manager of the Successor Railway.
- (v) “Engineer” shall mean the Divisional Engineer or the Executive Engineer, Divisional Signal & Telecom Engineer, Divisional Electrical Engineer, Divisional Mechanical Engineer in executive charge of the works and shall include the superior officers of Open Line and Construction organizations on the Railway of the Engineering, Signal & Telecom, Mechanical and Electrical Departments, i.e. the Senior Divisional Engineer/Deputy Chief Engineer/Chief Engineer, Senior Divisional Signal & Telecom Engineer / Dy. Chief Signal & Telecom Engineer, Senior Divisional Electrical Engineer / Deputy Chief Electrical Engineer, Senior Divisional Mechanical Engineer and shall mean & include the Engineers of the Successors Railway.
- (vi) "Engineer's Representative" shall mean the Assistant Engineer, Assistant Signal & Telecommunication Engineer and Assistant Electrical Engineer, Assistant Mechanical Engineer in direct charge of the works and shall include any Sr. Section/Junior Engineer of Civil Engineering/ Signal and Telecommunication Engineering/Mechanical Engineering/Electrical Engineering Departments appointed by the Railway and shall mean and include the Engineer's Representative of the Successor Railway.
- (vii) "Contractor" shall mean the Person/Firm/Co-operative Society or Company whether incorporated or not who enters into the contract with the Railway and shall include their executors, administrators, successors and permitted assigns.
- (viii) "Contract" shall mean and include the Agreement of Work Order, the accepted Schedule of Rates or the Schedule or Rates of Railway modified by the tender percentage for items of works quantified, or not quantified, the Standard General Conditions of Contract, the Special Conditions of Contracts, if any; the Drawing, the Specifications, the Special Specifications, if any and Tender Forms, if any.
- (ix) "Works" shall mean the works to be executed in accordance with the contract.

- (x) "Specifications" shall mean the Standard Specifications for Materials & Works of Railway as specified by Railway under the authority of the Chief Engineer or as amplified, added to or superseded by Special Specifications, if any.
- (xi) "Schedule of Rates of the Railway" shall mean the Schedule of Rates issued under the authority of the Chief Engineer from time to time.
- (xii) "Drawing" shall mean the maps, drawings, plans and tracings or prints there of annexed to the contract and shall include any modifications of such drawings and further drawings as may be issued by the Engineer from time to time.
- (xiii) "Constructional Plant" shall mean all appliances or things of whatsoever nature required for the execution, completion or maintenance of the works or temporary works (as hereinafter defined) but do not include materials or other things intended to form or forming part of the permanent work.
- (xiv) "Temporary Works" shall mean all temporary works of every kind required for the execution completion and/or maintenance of the works.
- (xv) "Site" shall mean the lands and other places on, under, in or through which the works are to be carried out and any other lands or places provided by the Railway for the purpose of the contract.
- (xvi) "Period of Maintenance" shall mean the specified period of maintenance from the date of completion of the works, as certified by the Engineer.
- (xvii) 'Contractor's authorized Engineer' shall mean a graduate Engineer having more than 3 years experience in the relevant field of construction work involved in the contract, duly approved by Engineer.
- (xviii) "GCC" shall mean Indian Railways Standard General Conditions of Contract, April 2022 and all its latter amendments.

**3. LEGAL JURISDICTION:**

The court of the place where the agreement, i.e. Tinsukia, is signed shall alone have the jurisdiction to decide all legal disputes arising out of the contract.

**4. Fraudulent practices:**

If the tenderer deliberately gives wrong information in his tender or creates circumstances for the acceptance of his tender or documents submitted by tenderer are found to be tempered before award of the tender, earnest money deposit will be forfeited and such tender will be rejected. In case such irregularity is detected after award of work, full amount of security deposit will be forfeited & performance guarantee will be encashed. These actions are without prejudice to any other rights or remedies available with the Railways in such cases.

**5. Dispute:**

Any dispute arising out of interpretation of Drawings, specifications or any terms and conditions including special condition of the contract or arising during the execution of the work/contract, shall be settled by Railway and Railway's decision shall be final and binding on the contractor/tenderer(s).

**6. Applicability of GCC:**

These Special conditions of contract (SCC) (along with Specifications of work and other conditions as contained in this Tender Document) shall be read together with the Indian Railway Standard General Conditions of Contract (GCC). Should there be any conflict between the provisions of the SCC (along with Specifications of work and other conditions as contained in this tender document) hereof and that of the GCC, the import of the former shall prevail over the latter.

**7. Security Deposit shall be applicable as per clause 16(1) of GCC (Works)-April-2022.**

**8. Performance Guarantee:**

The procedure for obtaining Performance Guarantee is outlined below:

- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty one) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21 (Twenty one) days, i.e. from 22<sup>nd</sup> day

after the date of issue of LOA. Further, if the 60<sup>th</sup> day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day.

In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Bid Security and other dues payable to the contractor against that particular contract, subject to maximum of PG amount. In case a tenderer has not submitted Bid Security on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect.

The failed Contractor shall be debarred from participating in re-tender for that work.

- (b) The successful bidder shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 5% of the original contract value and additional Performance Guarantee as per clause 8 (h):-
- (i) A deposit of Cash;
  - (ii) Irrevocable Bank Guarantee;
  - (iii) Insurance Surety Bond as per **Appendix-12** of SECTION-II: TENDER FORMS (Second Sheet).

**Note:**

In case of extension of Date of Completion, selected bidder needs to submit extended Insurance Surety Bond/Fresh Insurance Surety Bond/Fresh Performance Security, in any form as given above, before expiry of existing Insurance Surety Bond.

- (iv) Government Securities including State Loan Bonds at 5% below the market value;
  - (v) Pay Orders and Demand Draft tendered by any Scheduled Commercial Bank of India;
  - (vi) Guarantee Bonds executed or Deposits Receipts tendered by any Scheduled Commercial Bank of India;
  - (vii) Deposit in the Post Office Saving Bank;
  - (viii) Deposit in the National Savings Certificates;
  - (ix) Twelve years National Defence Certificates;
  - (x) Ten years Defence Deposits;
  - (xi) National Defence Bonds and
  - (xii) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of FA&CAO (free from any encumbrance) may be accepted.
- (c) The Performance Guarantee shall be submitted by the successful bidder after the Letter of Acceptance (LOA) has been issued but before signing of the contract agreement. This P.G. shall be initially valid upto the stipulated date of completion plus 60 days beyond that. In case, the time for completion of work gets extended the Contractor shall get the validity of P.G. extended to cover such extended time for completion of work plus 60 days.
- (d) The value of PG to be submitted by the Contractor is based on original contract value and shall not change due to subsequent variation(s) in the original contract value.
- (e) The Performance Guarantee (PG) shall be released after physical completion of the work based on 'Completion Certificate' issued by the competent authority stating that the Contractor has completed the work in all respects satisfactorily.
- (f) Whenever the contract is rescinded, the Performance Guarantee already submitted for the contract shall be encashed.
- (g) The Engineer shall not make a claim under the Performance Guarantee except for amounts to which the President of India is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

- (i) Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer may claim the full amount of the Performance Guarantee.
  - (ii) Failure by the Contractor to pay President of India any amount due, either as agreed by the Contractor or determined under any of the Clauses/Conditions of the Agreement, within 30 days of the service of notice to this effect by Engineer.
  - (iii) The Contract being determined or rescinded under clause 62 of these conditions.
- (h) If a tender is accepted on the quoted rates of bidder which is below the advertised tender value, an additional performance security shall be submitted by the bidder as below:

Bid quoted in % of advertised cost	Additional Performance Guarantee (%)
Below 0-5% (inclusive)	Nil
Below 5%	5%

9. **Price Variation Clause (PVC):** Price Variation shall be applicable to this work as per GCC (Works)-April 2022 with latest guidelines/correction issued from Railway Board.
10. Variation in quantities specified in contracts shall be applicable as per GCC (Works)-April 2022 and MSOP with latest guidelines/correction issued from Railway Board.
11. All the materials, tools and other required gadgets/items for the work including power supply, specified or not specified elsewhere in this document will be under the scope of the contractor.
12. The contractor shall commence the work within 15 days of issue of LOA.
13. The contractor should use proper tools and the staff deployed for the work should be skilled enough to implement the instructions in totality.
14. Transportation of men and materials to the work spot is the responsibility of the contractor.
15. Space will be given for stocking the materials and other machineries, which are required for the work. But safety and security of machines and materials shall be the responsibility of the contractor.
16. **Completion Period:**  
The entire work shall be completed and handed over to Sr.DME/TSK or his nominated representative within **30 (Thirty) months** from the date of issue of LOA.
  - i. Supply, erection, testing, commissioning of 100 KLD Water Recycling Plant capacity – to be completed **within 6 months** from the date of issue of LOA.
  - ii. Operation and maintenance of the Water Recycling Plant – **24 months** from the date of Commissioning of the plant.
17. **Water:** No surplus water is available with the Railway. The Contractor shall arrange water required for the work at his own cost. However, if surplus water becomes available, it may be supplied by the Railway at the prevailing applicable rates.
18. **Electricity:** Since the consumption of Electric power for erection and commissioning seems to be high, Electricity energy will not be supplied at free of cost. The contractor should take necessary arrangement to use electrical energy from Sr.DEE/TSK duly following the procedure. The cost of electrical energy should be paid by the contractor as per rules. The contractor shall use their own Electric supply cable. In case of absence of power supply the contractor should make standby arrangement by providing DG set. However, during the operation and maintenance for 2 years after commissioning of the Water Recycling Plant, Railways shall provide the electric energy free of cost.
19. **Safety Regulations:**
  - i. In respect of all labour, directly or indirectly employed in work for the performance of contractor's part of this agreement, contractor shall be fully responsible and ensure compliance of all safety provisions as per safety codes, as applicable.
  - ii. Railway shall not be in any way held responsible for any accident or damages incurred and claims arising there-from during the period of erection, testing & commissioning putting the plant into operation.

- iii. No workmen shall be engaged on the work without proper safety induction and without using required Personal Protective Equipment (PPE).
  - iv. Railway reserves the right to issue directions regarding safety and such directions shall immediately be implemented by the contractor. Any violation of safety regulations, including non-provision of safety appliances or non-compliance of safety procedures, shall attract recovery of a minimum amount of ₹2000/- per occurrence, which shall be deducted from the contractor's bills.
  - v. Contractor's supervisor must be present at the work spot as long as the work is being continued. The worker shall never be left at site without being supervised by the contractor.
- 20. Insurance Policy:** The contractor has to indemnify the Railway against all claims for damages, suits and demands preferred against the Railway by third parties in respect of injuries to or death of third persons and in respect of loss of or damage to property caused by the contractor, contractor's labourers. Contractor shall submit copy of the insurance policy indemnifying the Railways of any financial implications arising due to payout of claims on account of damages, accidents, untoward incidents etc. during the execution of works.
- 21.** The Contractor should ensure all Fire Prevention measures and any Damage if occurred due to Contractor will be recovered as per norms.
- 22. STORAGE OF INFLAMMABLE ARTICLES:** No inflammable materials, such as petroleum oil etc. within the meaning of the Indian Petroleum Act and Indian Explosives Act shall be stored at site or adjacent land until the approval of the Railway and necessary license under the Act has been obtained by the Contractor. All due precautions as required under the Act shall be taken by the contractor.
- 23. FIRST-AID:** The contractor shall maintain in a readily accessible place first-aid appliance including adequate supply of sterilized dressing and sterilized cotton wool. The appliances shall be placed under the charge of responsible person who shall be readily available during working hours.
- 24.** The contractor shall take utmost care to ensure that no damage to the railway property takes place due to any act of his workmen, while carrying out the work under this contract. For any damages, contractor shall be responsible and cost of damage will be recovered from contractor's bill. Railway's decision in this regard shall be final and binding on the contractor.
- 25. Work Diary and Registers to be maintained:-**
- (i) The contractor shall maintain a work diary for the above contract in which the contractor will indicate the details of the works carried out daily, contract staff engaged for the work and it should be jointly certified by both the railway supervisor and contractor's supervisor daily.
  - (j) **Register for Receipt and issue of store-** Contractor shall maintain a register maintaining receipt and issue of materials.
  - (k) A Register will be kept to record instructions issued by engineer and his supervisor. Contractor shall record compliance of the instructions issued to him from time to time.
  - (l) Additional records/registers if any required should also be maintained and the details recorded as per instruction of Sr. DME or his representative.
  - (m) **Register for deployment of manpower-** Contractor shall maintain a register detailing date wise and shift wise deployment of manpower for execution of the work.
- 26.** The Contractor shall furnish complete details of the personnel to be deployed with supervisor(s) giving the working timings. The name/list of all the employees and supervisor along with their police verification reports should be submitted to representative of Sr. DME/TSK before starting the work. Prior approval shall be obtained from Sr. DME/TSK for making any new deployment and details as above of new entrant shall be submitted within 7 days of such deployment.
- 27.** Contractor has to provide Photo Identity cards duly signed by an officer nominated by Sr.DME/TSK to his staff including supervisor(s).
- 28. Inspection:**  
Nominated Engineer by Sr.DME/TSK, North East Frontier Railway, Tinsukia division will look after the inspection.
- 29. Penalty Clause/Liquidated Damage:-**

- (i) The Water Recycling Plant is to be commissioned on turnkey basis within a period of Six months from the date of issue of Letter of Acceptance (LOA). Liquidated Damages for delay in completion of the work shall be levied and recovered in accordance with the provisions of Clause 17(B) of the SGCC (Works)- April-2022 with latest correction issued from Railway Board.
- (ii) Water Recycling Plant may be inspected by officials with or without notice to contractor during the contract period. If any irregularity is noticed during inspection then penalty of Rs. 1000/- (One Thousand only) shall be imposed in each case.
- (iii) Testing of treated water sample from Assam Pollution Control Board (APCB) Lab or any approved Lab of APCB / CPCB or NABL-accredited laboratory on quarterly basis is to be done by the contractor. Failure to conduct such testing in any quarter shall be imposed a penalty of Rs 5,000 (Five Thousand only) for each quarter of default.
- (iv) Apart from mandatory sample tests @ one per quarter from Govt. approved labs, Railway on its discretion can collect sample any time during execution of contract & get it tested from Railway/Govt labs. For any such sample failing during test, a penalty upto Rs. 10,000 (Ten Thousand only) per case shall be imposed.
- (v) If any sample fails in testing, tenderer will be given a period of 7 days for reclaiming desired standard and successful testing certificate is to be submitted to Railways within 7 days. Failing which Rs 2000/- (Two Thousand only) per day will be imposed on contractor till the contractor reinstate the desired parameter with successful test certificate.
- (vi) If the contractor fails to provide manpower for operation and maintenance during the contract period in any day a penalty of Rs 1000.00 (One Thousand only) per day will be imposed on the contractor.
- (vii) If the plant remains under breakdown for more than 48 Hrs a penalty upto Rs 5,000.00 (Five Thousand only) per day will be imposed on contractor.
- (viii) For non-availability/Short supply of chemicals as per (Annexure-A) a penalty up to 1,000.00 (One Thousand only) per day will be imposed on contractor.
- (ix) For not-attending to the faulty workmanship or defective material if any within 7 days of intimation call during the warranty period, penalty of Rs. 1,000/- per day (or part thereof) of delay beyond stipulated time shall be imposed.
- (x) Contractor's staff should not use any alcoholic drinks or any other narcotics during working hours and if found indulging in such activity than a penalty of Rs. 1,000/- per workmen per incident shall be imposed and the firm shall be bound to accept such a penalty.
- (xi) For misbehavior with Railway officials or indulging in any unlawful activity, a penalty of Rs. 20,000/- per instance shall be imposed with debarring of the concerned staff immediately.

**30. Accepted Rates:**

The accepted rates shall be inclusive of the following:

- a. Cost of Manpower, Cost of spares, Consumables, tools and any other items.
- b. Cost of all auxiliary equipment, consumable for completing the job.
- c. Any other cost direct or hidden, not mentioned above.
- d. All taxes and levies and GST.

**31. GST:** This contract is covered under the GST Act. The accepted rates shall be inclusive of GST.

Bills shall be prepared as per Railway Board letter no. 2016/CE-I/CT/12/GST/Pt.I; dtd. 29.06.2017 (Annexure-B of this section).

**32. Payment to Contractor staff:**

Each contractor staff should get their salary from the contractor through bank and copy of receipt should be submitted to the office of Sr. DME/TSK along with the bill.

Similarly, proper PF, ESI should be deposited for the contractor staff and record should be submitted to the office of Sr. DME/TSK along with the bill.

Without these records payment shall not be released.

**33. Payment terms:**

The standard payment terms subject to recoveries of any amount under the liquidated damages clause of contract will be as under:

- (i) The 1<sup>st</sup> payment of 90% of total accepted value of Schedule-A will be paid on completion of commissioning of Water Recycling Plant.  
The 2<sup>nd</sup> payment of 10% of total accepted value of Schedule-A will be paid on completion of 2 (Two) years of operation and maintenance of the Water Recycling Plant after its commissioning and obtaining satisfactory completion certificate from Railway Representative.
- (ii) Payment of Schedule B- Civil Work and Schedule C- Electrical Work shall be done after completion of respective portion and certified by Railway Representative.
- (iii) Payment will be made for each and every fully completed segment after certification of the competent authority.
- (iv) The bill shall be submitted in Railway bill form in triplicate to the Depot officials, who will certify and submit the bill to the office of Sr. DME/TSK, North East Frontier Railway, Tinsukia Division for arranging payment through Senior Divisional Finance Manager, North East Frontier Railway, Tinsukia Division.
- (v) Payment as above shall be subject to any deductions of any amount for which the contractor is liable under the contract against this tender including penalty as specified penalty clause or any other contract in respect of which the President of India is the contracting authority.
- (vi) **Letter of Credit (LC):**
  - i) For all the tenders having advertised cost of Rs 10 lakh or above, the contractor shall have the option to take payment from Railways through a letter of credit (LC) arrangement.
  - ii) This option of taking payment through LC arrangement has to be exercised in IREPS (Indian Railway Electronic Procurement System - the e-application on which tenders are called by Railways) by the tenderer at the time of bidding itself, and the tenderer shall affirm having read over and agreed to the terms and conditions of the LC option.
  - iii) The option so exercised, shall be an integral part of the bidder's offer.
  - iv) The above option of taking payment through LC arrangement, once exercised by tenderer at the time of bidding, shall be final and no change shall be permitted, thereafter, during execution of contract.
  - v) In case tenderer opts for payment through LC, following shall be the procedure to deal release of payment through LC:
    - (a) The LC shall be a sight LC.
    - (b) The contractor shall select his Advising/Negotiating bank for LC. The incidental cost towards issue of LC and its operation thereof shall be borne by the contractor.
    - (c) SBI, New Delhi, Main Branch will be the nodal branch for issue of LCs based on online requests received from Railway Accounts Units for tenders opened in financial year 2018-19. SBI branches where the respective Railway Accounts Office has its Account (local SBI branch) will be the issuance/reimbursing branch for LC issued under this arrangement. The Bank shall remain same for this tender till completion of contract. The incidental cost @0.15% per annum of LC value, towards issue of LC and operation thereof shall be borne by the contractor and shall be recovered from his bills.
    - (d) The LC shall be opened initially for duration of 180 to 365 days in consultation with contractor. The LC shall be extended time to time as per the progress of the contract, on the request of the contractor. The value of LC to be opened initially as well as extended thereafter shall be finalized by the engineer in consultation with the contractor on the basis of expected progress of work.
    - (e) The LC terms and conditions shall inter-alia indemnify and save harmless the Railway from and against all losses, claims and demands of every nature and description brought or recovered against the Railways by reason of any act or omission of the contractor, his agents or employees, in relation to the Letter of Credit (LC). All sums payable/borne by Railways on this account shall be considered as reasonable compensation and paid by contractor.

- (f) The LC terms and conditions shall inter-alia provide that Railways will issue a Document of Authorization after passing the bill for completed work, to enable contractor to claim the authorized amount from their bank.
  - (g) The acceptable, agreed upon document for payments to be released under the LC shall be the Document of Authorisation.
  - (h) The Document of Authorisation shall be issued by Railway Accounts Office against each bill passed by Railways.
  - (i) On issuance of Document of Authorisation, a copy of Document of Authorisation shall be posted on IREPS for download by the contractor. A digitally signed copy of Document of Authorisation shall also be sent by Railway Accounts Office to Railway's bank (Local SBI Branch).
  - (j) The contractor shall take print out of the Document of Authorisation available on IREPS and present his claim to his bank (advising Bank) for necessary payments as per LC terms and conditions. The claim shall comprise of copy of Document of Authorization, Bill of Exchange and Bill.
  - (k) The payment against LC shall be subject to verification from Railway's Bank (Local SBI Branch).
  - (l) The contractor's bank (advising bank) shall submit the documents to the Railway's Bank (Local SBI Branch).
  - (m) The railway's bank (issuing bank) shall, after verifying the claim so received w.r.t. the digitally signed Document of Authorisation received from Railway Accounts Office, release the payment to contractor's bank (advising bank) for crediting the same to contractor's account.
  - (n) Any number of bills can be dealt within one I.C, provided the sum total of payments to contractor is within the amount for which LC has been opened.
  - (o) The LC shall be closed after the release of final payment including PVC amount, if any, to the contractor.
  - (p) The release of performance guarantee or security deposit shall be dealt directly by railway with the contractor i.e., not through LC.
- 34.** Contractor must comply with the provision of the Contract Labour (R&A) Act, 1970 and Minimum Wages Act, 1948 strictly and arrange minimum wages to the contract labours and in the event of failure to comply minimum wage, the offer will be rejected. Payment to the contract labours should be made through Bank/Cheque.
- 35.** Contractor is required to upload details of their LOAs, engaged workman, wage payment details, PF/ESI details, bonus details etc., on monthly basis in the portal 'www.shramikkalyan.indianrailways.gov.in'. The details so uploaded shall be available in public domain.



## SCOPE OF WORK AND SPECIFICATIONS

### 1. SCOPE OF WORK:

**Description of work:** “Construction of 100 KLD ETP waste water recycling plant on turnkey basis for reuse of discharge water of Mechanized Laundry, DBRG with operation and maintenance for 2 years at Dibrugarh Coaching Depot of Tinsukia Division”

**Scope of work:** The scope of work includes Supply, erection, testing, commissioning of Water Recycling Plant of suitable capacity 100 KLD at mechanized Laundry DBRG and adding on multiple waste water treatment systems for ultra-filtrations for color, odor removal from Laundry waste water making it effective to reuse in Laundry and other operations. Work to be completed in all aspects on turnkey basis with end usage test certificate to be provided from Assam Pollution Control Board (APCB) Lab or any approved Lab of APCB / CPCB or NABL-accredited laboratory. The treated water discharged from ETP will be stored in storage tank of minimum capacity of 20,000 litres and will be primarily utilized for feeding to Laundry Machineries of Mechanized Laundry and surplus treated water, after meeting the laundry requirements will be used for external washing of coaches at Washing Pitline of DBRG Coaching Depot. Any excess treated water remaining thereafter shall be discharged into the drainage system in an environmentally safe manner, complying with applicable statutory discharge norms.

### 2. Survey of Effluent Treatment Plant (ETP) Site at DBRG:

The tenderer or his representative should visit the nominated site at DBRG before submitting their offer against the tender and study the site of the proposed ETP, nature of effluent and drainage system, laying out electrical cable for taping electricity from main feeder, construction of ETP shed, room etc. for a proper assessment of the work. Tenderers may contact the office of the Sr. DME/TSK and CDO/DBRG to acquaint itself with the site conditions.

The tenderer may collect the effluent of mechanized laundry and test its parameter at their own cost for better assessment of effluent nature for working out an effective treatment of water so that the treated water can be reused for operations of Mechanized Laundry and Washing Pitline of DBRG Coaching Depot.

### 3. Special Conditions of work:

The contract is a turnkey project in which the entire liability from survey to commissioning of the plant including provision of skilled manpower, material, consumables and clearances from statutory bodies will be of contractor's responsibility. The work shall include all activities related to supply, erection, installation, commissioning of ETP and adding on multiple wastewater treatment system as given in the specification and operation and maintenance of the plant for two years(within warranty period) after commissioning. The contractor is required to carry out the work of ETP (Effluent Treatment Plant) as a turnkey project and all Civil, Electrical, Mechanical, Laying of Piping system and any other such works along with the provision of required machinery and plant including supply of instruments and gauges required to check, record, print, transfer data related to all the parameters related to ETP system/untreated/treated water including site earth preparation works if any & removing of cement concrete floor work if any as required to be done by the contractor.

- i. Testing of treated water sample from Assam Pollution Control Board (APCB) Lab or any approved Lab of APCB / CPCB or NABL-accredited laboratory on quarterly basis is included in the scope of work of the contractor. The charges for testing of samples will have to be borne by the tenderer.

### 4. Detailed Scope of work:

- i. The detailed engineering plan including design, equipment's detailed specification, process flow chart layout and dimensional and constructional details (including complete layout) shall have to be submitted along with the offer mentioning all salient features of design. Such plan must include the proposed list of equipment's to be installed and their makes. Equipments should be from reputed makes/brands and conforming to relevant Indian & International standards. **If any of these documents is not submitted along with offer, the offer shall be summarily rejected.**

It may be noted that Railways shall approve the design and plan submitted by the tenderer, before execution of the work however such approval shall be limited to the extent that submitted plan/ drawings are not infringing on the activities at Reception yard.

- ii. **The bidder/Tenderer must conduct site inspection report prior to the submission of the bid and must submit duly signed site inspection certificate along with tender document, otherwise the bid shall be summarily rejected.**
  - iii. **The offered Water Recycling Plant shall comply with the requirements of ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018. Documentary evidence of compliance shall be provided with the bid. Any offer that does not comply with these standards shall be summarily rejected.**
  - iv. The successful tenderer shall have to submit the detailed layout plan of the 100 KLD Water Recycling Plant, foundation drawings, process flow chart, power supply arrangement and other relevant details etc before commencement of work for approval by Railway.
  - v. Construction of all related civil works at site will be done by contractor. After completion of construction, the site is to be cleared of all construction material, excavated material and any other un-wanted things and dispose the same outside railway premises or at a nominated place within railway premises as decided by Sr. DME/TSK or his authorized representative.
  - vi. The earthing for electric equipments/panels etc. shall have to be provided as per IS 3043 and/or other relevant specifications.
  - vii. Sensors can be installed at various stages/process to monitor the parameters and perform the task automatically to control the process by addition/regulating the chemical dosing.
  - viii. Pipe lines, fittings, valves etc. should be made of corrosion free material.
  - ix. All pipeline connection from Water Recycling Plant to Laundry Machineries, Washing pit line, to drainage system and other related pipeline connections at DBRG for proper functioning of the Water Recycling Plant to be provided by the contractor as per requirement of the Railway. No additional payment shall be made for the supply, installation or any associated works related to these pipelines.
  - x. Initial quality & quantity check and certification of raw effluent will be on Contractor's account.
  - xi. The tenderer shall contain complete details about the ETP offered by the tenderer along with reference to Railways requirements and this specification. The tenderer shall give complete details and elaborated procedure in the form of manual which should be exhaustive for the running, operation and maintenance of the ETP offered by them in detail and in elaborate manner, along with all details about the consumables & chemicals required in the plant. Tenderer shall submit detailed drawing of the Plant offered by them (in respect of the site proposed by the railways for the ETP), showing clearly the system of treatment, layout of the equipments area covered and details of all engineering works that would be done.
  - xii. Any details provided are given for general guidance showing requirement for ETP at DBRG. The firm may suitably decide the technology and detailed design of the plant, keeping in view the requirements. The plant in design shall be simple and economical to operate and shall have integrated control facility such that deputing only one person for one shift for plant is sufficient to operate the ETP. The requirement of consumable & chemicals should be optimum for satisfactory working of the plant and its details shall be provided in the offer to meet statutory requirements.
- 5. Transportation and storage:** The scope of work of tenderer shall include transportation to site, unloading and storage at the site of all equipments/materials/consumables etc. in the scope. Tenderer shall build his own stores (covered, uncovered or otherwise) for proper storage of equipment, maintain the stores, and be responsible for proper and safe storage. Railways shall in no way be responsible for damage or theft during transportation, handling, storage and erection at the Site.
- 6. Erection:** Tenderer shall take the equipment to site and erect on civil foundation to be constructed by tenderer themselves. Tenderer shall do corrections to civil work as may be necessary and also do all grouting work. Tenderer shall use his own resources i.e. manpower, mobile cranes, forklift, trailers, construction tools and tackles, instruments, compressors, welding equipment, jigs and fixtures, ladders, scaffolding materials, platforms, supports etc. (as required) for handling, erection, testing and

commission of their equipments. Tenderer shall provide necessary packing plates, wedge, shims, levelling screws etc. required for erection of equipment and structures. All the consumables like oxygen, acetylene gases, welding rods, oils, grease, cloth etc. shall be provided by the tenderer. Tenderer shall align level and securely fix all equipment; steel structures etc. do the grouting and check afterwards for correctness of erection and alignment. Installation of all piping and fittings for the ETP shall be in the scope of tenderer. Flushing and filling of oil and lubricants shall be carried out by tenderer. Tenderer shall carry out final painting of the all equipment and structures at site.

**7. Testing, Commissioning and Performance Guarantee:**

- i. After completion of erection, all the equipment shall be tested by the successful tenderer individually and in integrated way for proper performance and rated capacities. Thereafter, successful tenderer shall commission the complete Plant. Tenderer shall use his own equipment and personnel for testing. Railways personnel shall be associated during successful commissioning. After successful commissioning, the tenderer would undertake demonstration and establishment of performance guarantee parameters.
- ii. The ETP shall be deemed to have achieved the Performance Guarantee only when treated effluent samples tested by an APCB/CPCB approved or NABL-accredited laboratory conform to the outlet water quality parameters specified in the tender. The cost of sampling and testing shall be borne by the Contractor.

FINAL OUTLET PARAMETER			
SL NO.	PARAMETER	VALUE	UNIT
1.	TDS	175	PPM
2.	PH	6.5-7	SU
3.	HARDNESS	< 50	PPM
4.	TSS	<10	PPM
5.	COD	<10	PPM
6.	BOD	<3	PPM
7.	FREE CHLORINE	NIL	PPM
8.	TURBIDITY	<1	NTU
9.	SDI	<3	NA

- iii. Obtaining Consent to Operate (CTO) from the Pollution Control Board, Assam shall be within the scope of work of the Contractor. All fees, charges, documentation, testing and other expenses required for obtaining the CTO shall be borne by the Contractor.
- iv. The plant shall be considered successfully commissioned only after:
  - (a) Satisfactory completion of testing and performance trials;
  - (b) Submission of treated effluent test reports meeting the specified parameters; and
  - (c) Receipt of Consent to Operate (CTO) from the Pollution Control Board, Assam.
- v. Any modifications or rectifications required to achieve the guaranteed performance parameters to reuse treated water for operations of Mechanized Laundry and Washing Pitline of DBRG Coaching Depot and obtain the CTO shall be carried out by the Contractor at no extra cost to the Railway.

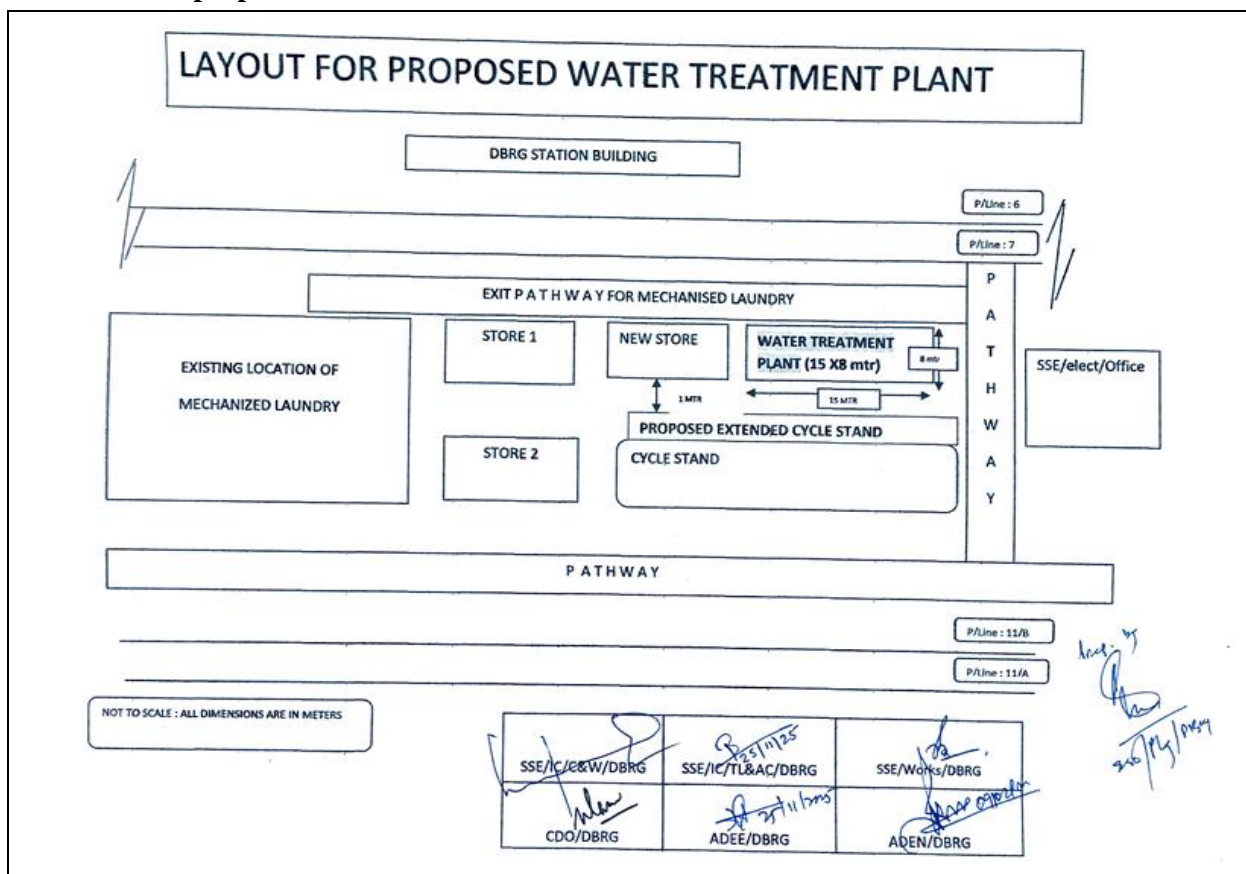
**8. Workmanship and performance:**

- i. The material used shall be new and best of its kind available and shall conform to the relevant Indian and International standards.
- ii. The supplier shall guarantee satisfactory performance of equipments/system as per tender documents.
- iii. The guarantee shall also cover faulty design/materials/workmanship. All rectification or replacement under the guarantee shall be done by the supplier free of cost.
- iv. The conditions regarding guarantee of equipment shall also be governed by the relevant clauses of tender documents.

- v. The supplier/tenderer shall guarantee the fulfillment of duty conditions as indicated in the specifications.
  - vi. The tenderer should study the specification and satisfy himself regarding the workability of the proposed system and shall take full responsibility for the design of the equipment wherever applicable, quality of the material, workmanship and smooth performance etc. of the equipment. These technical specifications are only for guidance of the tenderer. All the items necessary for guaranteed performance of the equipment shall be included in the offer though these might not have been specifically mentioned in the technical specifications.
  - vii. The approval of drawings wherever applicable and/or inspection by Sr.DME/TSK or his authorized representative does not absolve or relieve the tenderer from any of his obligations under this contract and the tenderer shall be wholly and solely responsible for the satisfactory operation and guarantee performance of his supply and accountable for any defects and subsequent delays in supply due to re-inspection.
  - viii. Any equipment/part/facility not specifically mentioned in the specification, but necessary for the satisfactory and smooth operation of the system supplied and/or from safety point of view shall also be included in the scope of supply of the tenderer.
  - ix. Makes/Model no. of all bought out items/equipments shall be strictly of reputed makes only.
9. **Warranty:** The tenderer shall give warranty for the complete plant including the bought out equipments for a period of two years from the date of commissioning. The contractor will be responsible to maintain the plant in good working condition **for a period of two years from the date of commissioning or the warranty period prescribed by the OEM's for individual machines/equipment whichever is later** and will have to replace/repair any defective items free of cost & service during the period. The warranty period shall stand be extended for a period, for which the plant remains under break-down due to such defects. The responsibility of arranging warranty from the OEM's during the warranty period shall be of the tenderer.
  10. **Training:** The tenderer shall arrange training to railway personnel to be nominated by Sr.DME/TSK or his authorized representative, in operations, maintenance of equipment and conducting chemical analysis of treated water, free of cost, to ensure that the trained staff can handle and maintain the system & chemical analysis independently. No additional cost shall be payable by Railways for the said training.
  11. **Supply of technical literature:** The tenderer shall supply three sets of technical literature, which shall comprise of all the drawings, user and maintenance manuals supplied by OEM's of different equipment used in the plant and a separate user and maintenance manual for the complete plant prepared by the contractor. The tenderer shall provide a comprehensive list of consumables & chemicals, their consumption rate, at least three sources of supply for each item and their approximate rates with their offers.
  12. **Setting Out:** The contractor(s) shall set out the works and shall be responsible for the true and perfect setting out of the same and for the correctness of the erection and installation of the plant. If at any time, any error in this respect shall appear, during progress of the work, the tenderer at his own expenses should rectify such error if so required to the satisfaction of the Railways.
  13. **Capacity of ETP required and quality of effluent:** The Effluent Treatment Plant (ETP) shall be designed for a treatment capacity of 100 KLD (kilolitres discharge capacity). The system shall include adequate treated water storage capacity to ensure uninterrupted reuse and compliance with the guaranteed performance parameters. Initial quality check of effluents will be done by the contractor. The tenderer must do survey and study of the DBRG Coaching Depot for correct estimation of the type and the sources of effluents. The Contractor will have to check the quality of raw effluent and get it certified from an authorized laboratory and accordingly design the ETP plant to bring the effluent quality conforming to the latest norms as laid down by the Assam Pollution Control board (APCB) as well as the parameters specified in Schedule VI of Environment Protection rules 1986.
  14. **Setting up of a required effluent treatment system:** The ETP should be capable for continuous day and night working, depending on effluent discharge. Sludge system of the plant should operate without clogging. Tenderer shall submit detailed drawing of the ETP offered by them (in respect to the site proposed by the railways for the ETP), showing clearly the system of treatment, layout of the equipments area covered and details of all Civil /Electrical/Mechanical/Fabrication or any other works that would be done.

15. **Characteristics of Raw & Treated Effluent At inlet/Outlets:** The Characteristics of the raw Effluent should be assessed beforehand and desired Characteristics of the effluent, after treatment shall be used for operation of Mechanized Laundry and for Washing Pitline of DBRG Coaching Depot (other than drinking purpose).
16. **Description of Treatment Process:** The ETP should be so designed that it should be robust, easy to operate, economical and best suited for Railway and be able to treat up to the designed capacity. The ETP may have to be operated in three shifts or less as per requirement.
17. **Sludge Treatment/Disposal:** All types of sludge removal / handing / transportation up to the nearby designated area are included in the scope of work of the tenderer. Sludge disposal will be as per APCB norms & regulations. Disposal of all types of hazardous, non-hazardous materials and sludge as per APCB norms during currency of contract will be on Contractor's account.
18. **Mechanical Work:** Supply, Installation, Erection, Commissioning, Operation and Maintenance of the plant for a period of two years after commissioning of 100 KLD ETP will be in the scope of Contractor as per the details of Schedule-A in clause 28 of this section.
19. **Civil Work:** All the civil work required for the installation of the plant will be in the scope of Contractor as per the details of Schedule-B in clause 28 of this section.
20. **Electrical Work:** All the electrical work required for the provision of Power Supply for installation of the plant and other related work will be in the scope of Contractor as per the details of Schedule-C in clause 28 of this section.
21. **Operation and Maintenance of Water Recycling Plant after commissioning of the plant:**
  - i. The scope of work also includes daily operation and maintenance of ETP for a period of two years from the date of successful commissioning of the plant. The contractual men engaged by the contractor will be fully responsible for day to day operation and maintenance of the plant. All men, material, spares and consumables will be provided by the Contractor during the period without any additional cost, however electricity for running the plant will be provided by Railways free of cost. The contractor shall also provide all consumables (except electricity & water) free of cost during this period. The contractor will be responsible for replacement of all defective/worn out parts/machines equipments etc. free of cost during maintenance period. In this direction the contractor must maintain requisite inventory of spares. The uninterrupted and safe operation of the plants will have to be ensured by the contractor during maintenance & operation period without any additional cost.
  - ii. The contractor will maintain a proper register for the operation and maintenance of Water Recycling Plant after commissioning of the Plant.
  - iii. The machine consumables (which are part of the machine) required for preventive maintenance are included in the scope of work and no additional payment shall be made by Railways for the same.
  - iv. The chemicals required for operation is to be provided as per Annexure-A of this section after it is approved by Sr.DME/TSK or his authorized representatives. One month chemicals should always be available at the plant for use.
  - v. All works carried out during maintenance/breakdown schedule to be jointly recorded with Railway supervisor and all released materials during preventive/breakdown maintenance are to be deposited to Railways.
  - vi. Any repair or replacement of any component of the plant will be in scope of work of contractor without any additional cost.
  - vii. Sludge removal and disposal during the contract period will be arranged by the tenderer.
  - viii. Supply and display of a board (in Hindi, Assamese & English) at a convenient location showing complete details of sequence of operation, consumables with their frequency of adding and their quantity, cycle time of each tank and other important instructions required for smooth operation of the plant by the operator. Process diagram on flex board of suitable size be displayed.
22. The specification covers survey, study, design, manufacture supply and commissioning of the Effluent Treatment Plant. The supply shall include all concomitant accessories and any other equipment, which the Manufacturer consider essential to make the plant fully operational when installed and connected to power source.

23. The machine & plant shall be robust, rigid and of sturdy construction. It shall be designed to meet heavy-duty demands of laundry operations of the plant under normal depot environment. Change in ambient temperature shall not affect the performance of the machine. The plant shall incorporate safety device to provide protection to the operator of the plant against all possible operational and system failures. Fault or damage in the control circuit or interruption and re establishment in whatever manner in the power supply to the plant must not lead to dangerous situations. The machine shall be fitted with emergency stop device(s) to enable actual or impending danger to be averted. The plant shall have automatic control for the complete cycle of Effluent Treatment such as transfer of solution/ pollutants from one tank to other, agitation time, collection of waste etc. However manual control in case of failure of automatic system should also be available.
24. All facilities required for the execution of the work i.e. tools and plant, oxy-cutting plant, cylinders etc. shall be arranged by the tenderer.
25. All wetted structures, pumps, spares, valves and pipe line should be of SS-304 grade.
26. The tenderer should make necessary preventive arrangement in the ETP so that the plant should not be damaged in abnormal conditions i.e. heavy rain / flood/storm etc.
  - i. In any uncontrolled circumstances (heavy rains etc.) system should be able to bypass the rainy water to outside/main drain.
  - ii. Presence of high iron content in water at location of the ETP should be factored well in the Design itself.
  - iii. The contractor should ensure that discharge quality of water from ETP plant to be utilized for laundry operation should not adversely affect on the boiler longevity and have the potential to resist scale & sludge formation in boilers.
27. **Site Plan for proposed Water Treatment Plant:**



**Note: The plant should cover area of minimum 15 metre X 8 metre, which should be constructed in the nominated area decided by Sr.DME/TSK. However, Sr.DME/TSK has right to modify the site plan for suitable construction of the plant as per feasibility and requirement.**

**28. DETAILS BREAKUP OF THE WORK**

The scope of work includes design, supply, erection, testing, commissioning, and successful operation and maintenance of 01 No. 100 KLD Effluent Treatment Plant (ETP) with Wastewater Recycling System comprising DMF, IRF, UF, and RO units for treatment and reuse of wastewater generated from the Mechanized Laundry. The scope also includes all associated civil, electrical, piping, structural, and ancillary works, including construction of shed, required for making the plant fully operational, along with operation and maintenance of the plant for a period of 02 (two) years from the date of commissioning.

SN.	SR Item	Description of Item	Unit	Quantity
<b>Schedule A: Cost of Supply, Installation, Erection, Commissioning, Operation and Maintenance of the plant for a period of two years after commissioning of 100 KLD ETP.</b>				
1		Basic supply price for 100 KLD treated effluent Recycling Plant as per Scope Of Supply	Job	1
2		Charges for full Erection & Commissioning For ETP and Water Treatment Plant	Job	1
3		Civil foundation work without building & shed Appx.	Job	1
<b>Schedule B: Civil Work</b>				
1	2.6	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m as directed by Engineer-in-Charge		
	2.6.1	All kinds of soil	Cum	350
2	16.64	Providing and laying 75 mm thick compacted bed of dry brick aggregate of 40 mm thick nominal size including spreading, well ramming, consolidating and grouting with Local sand, including finishing smooth etc. complete as per direction of Engineer-in-charge.	Sqm	180
3	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :		
	4.1.2	1:1.5:3 (1 Cement: 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum	12
	4.1.3	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	Cum	30

4	5.33	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 1.10 times of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.		
	5.33.1	All works upto plinth level		
	5.33.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	Cum	150
	5.33.2	All works above plinth level upto floor V level		
	5.33.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	Cum	15
5	5.22	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.		
	5.22.6	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	15000
6	5.9	Centering and shuttering including strutting, propping etc. and removal of form for :		
	5.9.1	Foundations, footings, bases of columns, etc. for mass concrete	Sqm	50
	5.9.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc.	Sqm	300
	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers	Sqm	80
	5.9.6	Columns, Pillars, Piers, Abutments, Posts and Struts	Sqm	80
7	6.13	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.		
	6.13.2	Cement mortar 1:4 (1 cement :4 coarse sand)	Sqm	110
8	10.16	Steel work in built up tubular (round, square or rectangular hollow tubes etc.) trusses etc., including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete.		
	10.16.1	Hot finished welded type tubes	Kg	3000



9	12.50	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm (+ 0.05 %) total coated thickness with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	Sqm	110
10	12.51	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm (+0.05 %) total coated thickness, Zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws complete :		
	12.51.1	Ridges plain (500 - 600mm)	Metre	13
11	13.1	12 mm cement plaster of mix :		
	13.1.1	1:4 (1 cement: 4 fine sand)	Sqm	220
12	13.7	12 mm cement plaster finished with a floating coat of neat cement of mix :		
	13.7.2	1:4 (1 cement: 4 fine sand)	Sqm	110
13	10.5	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:		
	10.5.1	Using M.S. angels 40x40x6 mm for diagonal braces	Sqm	4
14	13.47	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:		
	13.47.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm)	Sqm	300
15	13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	Sqm	300

16	12.45	Providing and fixing false ceiling at all height including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :		
	12.45.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	Sqm	110
17	18.9	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge.-External work		
	18.9.5	40 mm nominal dia Pipes	Metre	100

18	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :		
	21.1.1	For fixed portion		
	21.1.1.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	100
19	21.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)		
	21.1.2.2	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	100
20	21.3	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):		
	21.3.1	With float glass panes of 4.0 mm thickness (weight not less than 10kg/sqm)	Sqm	20

### Schedule C: Electrical Work

#### Part A: Provision of Power Supply

1		Supply, installation, testing and Commissioning of Distribution Transformer , 100 KVA, 11/0.433KV, 50C/s BIS-LEVEL-I, Aluminium Wound, ONAN, Vector group-Dyn-11 with first filling of Transformer oil as per IS 335 and all Standard accessories .	Nos	1
2		Supply erection of GI tubular pole 11 Mtrs long similar to Nezone Cat No SP-55	Nos	1
3		Supply, Fitting, fixing of GI channel 100x50x6 mm 2500 mm long with necessary clamps size 50x6 mm for Tubular pole , drilling of holes and all accessories for Transformer DP Structure.	Nos	6
4		Supply, fitting, fixing of 11 KV GODO 400 Amps switch complete.	Nos	1

5		Supply, fitting, fixing of 11 KV LA set 9 KV (RMS) , discharge capacity 10 KA .	Set	1
6		Earthing by 50 mm dia, 3.6 mm thickness 3 Mtrs long GI pipe and 6 SWG GI wire as per Drawing No PCEE/ELG/DRG/2024/1 Dtd 30.09.2024	Nos	8
7		Supply, installation, testing and commissioning of LT outdoor type panel board With the following: Incoming (i) MCCB, 125 Amps, 4 Pole 25 KA BC= 1 Nos (ii) Bus bar 250 Amps AL Outgoing: (iii) MCCB, 100 Amps, 4 Pole 25 KA BC= 2 Nos (iv) MCCB, 63 Amps, 4 Pole 25 KA BC= 3 Nos	Nos	1
8		Supply, laying, testing and commissioning of LT XLPE armoured Aluminium cable 4 core 120 SQ mm including cable laying by excavation of earth , making of cable trench and refilling as required.	Mtrs	50

**Part B: Electrification of ETP Shed**

1		Supply, laying, testing and commissioning of LT XLPE armoured Aluminium cable 4 core 70 SQ mm including cable laying by excavation of earth , making of cable trench and refilling as required.	Mtrs	100
2		Supply, laying, testing and commissioning of LT XLPE armoured Aluminium cable 4 core 25 SQ mm including cable laying by excavation of earth , making of cable trench and refilling as required.	Mtrs	100
3		Supply . Fitting. Fixing of Horizontal TPN MCB DB with the following (i) MCCB TPN 100 Amps=1 No (ii) MCB DP 63 Amps= 2 Nos, (iii) MCB DP 32 Amps=4 Nos (	Sets	1
4		Supply , fitting fixing of SPN MCB DB DD 8 Way with MCB DP 16 Amps =4 Nos	Sets	2
5		Supply and fitting , fixing of LED street Light 45 Watt toughened glass cover IP 65 , IK07 with GI clamp for fixing on wall	Nos	10
6		Supply, fitting, fixing of exhaust fan 300 mm sweep metallic type	Nos	6
7		Supply, Fitting, fixing of concealed type light point wiring by 1.5 sq. mm copper cable through PVC pipe.	Nos	16
8		Supply, Fitting, fixing of concealed type fan point/ Exhaust wiring by 1.5 sq. mm copper cable through PVC pipe with 1 mm sq. Green colour cable for earth continuity wire.	Nos	12
9		Supply, Fitting, fixing of concealed type 5A Socket point wiring by 1.5 sq. mm copper cable through PVC pipe.	Nos	7
10		Supply, Fitting, fixing of concealed 15A Socket point wiring by 4 sq. mm copper cable through PVC pipe .	Nos	8
11		Supply, laying of 6.0 Sq mm FRLHS single core copper cable	Mtrs	270
12		Supply, laying of 4.0 Sq mm FRLHS single core copper cable	Mtrs	360
13		Supply, laying of 2.5 Sq mm FRLHS single core copper cable	Mtrs	540

**List of chemicals for Daily operation of the plant:-**

SN	Chemical with purpose	Dose (PPM)	per day consumption in KG (approx.)
<b>100 KLD ETP</b>			
1	Settling chemical of brand:MAXFLOC-A-107 or similar ( packing 30 kg bag)	20	0.4
2	NAOH( packing 50 kg bag)	5	0.1
3	ALUM ( packing 50 kg bag)	30	0.6
4	SALT ( packing 25 kg bag)	NA	60
5	PH booster chemical of brand MAXTREAT-3006 or similar (Packing 35kg carbury)	15	0.3
<b>RO/UF</b>			
6	Antiscalent RO of brand MAXTREAT-9001 or similar (packing 30 kg carbury)	6	0.12
7	SMBS of brand : MAXTREAT-9735 or similar( Packing 30Kg carbuoy)	10	0.2
8	Choline donating compound of brand MAXTREAT 617G(Granules) or similar, (packing: 50 kg carbuoy)	2	0.04
9	Alkaline organic clender of brand :MAXTREAT 9772 UF or similar, packing 30 kg carbury	NA	0.6
10	ACIDIC INORGANIC CLENDER of brand MAXTREAT 9771 Uf or similar, packing: 30kg carbuoy	NA	0.6
11	PH booster of brand MAXTREAT:3006 or similar ,(packing 35 kg carbuoy)	5	0.1
12	NAOH( packing 50 kg bag)	NA	2
13	HCL 33%(packing 50kg bag)	NA	4
14	RO cleaner of brand MAXTREAT 9202 or similar	NA	2
15	RO cleaner of brand MAXTREAT 9206 or similar,(packing 30 kg Carbuoy)	NA	2

**Note:** The above list is indicative only. The contractor has to provide all required chemical and consumables for daily operation of the plant during the contract period for which no extra payment will be paid by Railways.



भारत सरकार Government Of India

रेल मंत्रालय Ministry Of Railways

(रेलवे बोर्ड) (Railway Board)

GST Circular No- 26

RBA No - 83

No. 2016/CE-I/CT/12/GST/Pt.I

Dated: 29.06.2017

As per list attached

**Sub: Implementation of GST Act, 2017- Procedure for payment of Contractual bill.**

On Indian Railways presently 'work executed by contractor' is recorded in measurement books by railway, duly accepted by contractor. Railway prepares 'on account / final contract certificate' for the payable amount based on the work executed and the rates quoted by the contractor duly deducting various statutory taxes like - work contract tax/ service tax/royalties/income tax etc. as per applicable rates. Further, railways deposit the statutory deductions themselves to the concerned authorities.

2. With GST act in force, it will be the responsibility of service providers (i.e. contractors) to submit the invoice (bill) duly segregating the GST component from the Gross amount of work executed.

3. Railways are therefore advised to follow the procedure as mentioned below while dealing with contractor's payment, once GST is applicable:

(A) (i) All works contracts are to be provided with goods/service code based on the type of contract. In case contract consists of both goods & service, then interpretation regarding nature of contract shall be done as per clause 8, Chapter III of CGST Act, 2017. The goods/service code is notified by Ministry of Finance and can be downloaded from the website [www.cbec.gov.in](http://www.cbec.gov.in).

(ii) The 'on account / final contract certificate' shall be prepared by the Railway on the basis of quantity of work executed and agreemental rates, duly segregating the GST component as detailed in para (iii) below.

(iii) Since the agreemental rates of contracts are inclusive of all taxes as per clause 37 of GCC-2014, the calculation of 'Gross amount of work executed', 'Amount of work executed excluding GST amount' and 'GST amount' in the 'on account / final contract certificate' shall be done as under:

Let Z = Gross amount of work executed on the basis of quantum of work executed and agreemental rates.

X = Amount of work executed excluding GST amount.

Y = GST amount as per applicable GST rate for that goods/service code.

R = Percentage rate of GST for that goods/service code

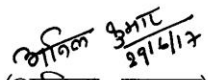
**Then,  $Z = X+Y$ ,  $Y = X \cdot R/100$**

- (iv) Percentage rate of GST for various types of goods/services as finalised by GST council can be downloaded from the website [www.cbec.gov.in](http://www.cbec.gov.in).
- (B) (i) Once the 'on account / final contract certificate' is prepared by railway and communicated to contractor, the contractor shall submit invoice (bill) on his Letter head duly segregating the 'Amount of work executed excluding GST amount' and 'GST amount' (i.e. "X" & "Y" as mentioned in para 3(A)(iii) above) along with Invoice No. (bill No.) and all other details required under GST act. The sample GST compliant invoice is annexed herewith.
- (ii) In case contractor is liable to be registered under GST Act, Railway shall pay to the Contractor 'Gross amount of work executed' (i.e. "Z" as mentioned in para 3A(iii) above) duly deducting all other leviable taxes like I/Tax, labour cess, royalty etc. as applicable. Contractor shall be liable to pay 'GST amount' to respective authority himself. Whereas, railway shall deposit all other taxes deducted to concerned authority as is being done presently.
- (iii) In case contractor is not liable to be registered under GST Act, contractor shall be paid "Amount of work executed excluding GST amount" (i.e. "X" as mentioned in para 3A(iii) above) duly deducting all other leviable taxes like I/Tax, labour cess, royalty etc. as applicable. Railway shall deposit 'GST amount' as well as all other taxes deducted to concerned authority.
- (iv) In case any need arises to modify the Invoice (Bill) due to any reason, contractor shall submit amended fresh invoice for processing the payment.

This is issued with the concurrence of Accounts directorate and approval of Board (ME).

Please acknowledge receipt.

Enclosure- as Above

  
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