

ANDREW YULE & COMPANY LIMITED
(A Government of India Enterprise)
Engineering Division, Kalyani Works
Plot -16 A & B, Block-D,
Kalyani, Nadia, PIN-741235, WB

TENDER DOCUMENTS FOR CIVIL CONSTRUCTION, SUPPLY ,ERECTION & COMMISSIONING & 6 MONTHS MAINTENANCE AFTER COMPLETION OF 500 KLD WATER TREATMENT & RECYCLING PLANT FOR COACHING DEPOT AT JHEEL SIDING –E RLY HOWRAH.

ANDREW YULE & CO. LTD. invites e-Tender under two part bid system from bona fide and reputed Company/OEM for above mentioned Job having following credential.The Item details are available in this tender document.

Tender document may be downloaded from MSTC website:

www.mstcecommerce.com/eprochome/aycl. Corrigenda or clarifications, if any, shall be hosted on the above mentioned websites only.AYCL reserves the right to accept or reject any tender.

Brief Description:- as per attached enclosure.

Credential:-

Part-A (Technical):-

- i) Average annual turn-over during the last three years, ending 31st march of the previous financial year, should be Rs. 30Lacs.
- ii) Experience of having successfully completed similar work during last 7 (seven) years ending last day of month previous to the one in which applications are invited should have either of the following ,
 - a. Three similar completed works costing not less than the amount equal to 40 Lakhs.
 - or
 - b. Two similar completed works costing not less than the amount equal to 50 Lakhs.
 - or
 - c. One similar completed work costing not less than the amount equal to 80 Lakhs.

Part –B:-

In case of consortium, the experience of the concerned member should be commensurate with the responsibility matrix provided in the consortium agreement.

- Consortium partners will be jointly & severally responsible for execution of the contract.
- Parties are requested to quote in totality as per scope of work attached at the end of the Tender document. However, AYCL reserves the right to issue either single/multiple orders to vendor/s as may be required for the smooth execution of the job.

Definition of Similar work:

Bidder should have successfully executed civil construction, supply, erection & commissioning &/or maintenance of at least two of similar kind WTPs. Bidders having experience of operation & maintenance of WTP may also be considered as eligible to bid for the tender.

Bidder having experience of working with Eastern Railway may be preferred.

Schedule of Tender

1.	TENDER NO.	AYCL/ENGG/MSD/WTP-E.RLY 17015W/17-18/44 Dated: 15/12/2017
2.	MODE OF TENDER	e-Procurement System Online submission of Techno-Commercial Bid and Price Bid through www.mstcecommerce.com/eprochome/aycl The intending bidders are required to submit their offer electronically through this e-tendering portal. No physical tender is acceptable by AYCL/MSTC
3.	E-Tender No. / Event No.	AYCL/ENGINEERING DIVISION/57/17- 18/ET/254
4.	Date of publication of e-Tender through publication MSTC/AYCL websites and Central Public Procurement Portal	09.01.18
5.	Date of availability of NIT to the Vendors for downloading	09.01.18
6.	Earnest Money Deposit	“Earnest Money Deposit”-Rs. 50,000/- (Fifty Thousand only) to be paid by D.D. favoring Andrew Yule &Co Ltd , payable at Kolkata . Also refer Annexure –IV for EMD waiver clause. Parties quoting for part scope of supply should submit EMD @ 1% of their quoted price for the particular scope.
7.	Tender Fee	Tender Fee – Rs. 1000/- (One Thousand only) to be paid by D.D. favoring Andrew Yule &Co Ltd , payable at Kolkata .
8.	Date of Starting of e-Tender for submission of Online Techno-Commercial Bid and Price Bid at www.mstcecommerce.com/eprochome/aycl	09.01.18 – 5:00 PM
9.	Date of closing of Online e-tender for submission of Techno-Commercial Bid & Price Bid at www.mstcecommerce.com/eprochome/aycl	30.01.18– 02:00 PM
10.	Date & time of opening of Part I - Techno- Commercial Price Bid	30.01.18 – 03:00 PM
11.	Date & time of opening of Part II - Price Bid	Price for techno-commercially acceptable vendors may be opened on a later intimated date.

List of Annexure

Important Instructions for E-procurement -

Annexure-I

General Information-

Annexure-II

Techno commercial terms

Annexure-III

General Terms& Conditions

Annexure-IV

ABG &PBG Formats

Annexure – V

Details of Scope of Work

**In pdf format at the
end of this document**

Important Instructions for E-procurement

This is an e-procurement event of ANDREW YULE & COMPANY LTD Ltd.

You are requested to read the Terms & Conditions (Annexure- III, and IV) of this tender before submitting your online tender. Tenderers who do not comply with the Conditions with documentary proof (wherever required) will not qualify in the Tender.

1. Process of E-tender:

A) **Registration:** The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type Digital Signature Certificate. Vendors are to make their own arrangement for bidding from a PC connected with Internet. MSTC is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature).

SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT www.mstcecommerce.com/eprochome/aycl

- 1) Vendors are required to register themselves online with www.mstcecommerce.com → e-Procurement → PSU / Govt. depts. → Register as Vendor under AYCL- Filling up details and creating own user id and password → Submit.
- 2) Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form.

In case of any clarification, please contact MSTC/AYCL (before the scheduled time of the e-Tender).

Contact person (ANDREW YULE & COMPANY LTD):

1. Mr. Sourav Sengupta
Sr. Manager (Project)
sourav.sengupta@andrewyule.com
Cell : +91 9830853319
Phone : +91(33) 2582 5734; +91(33) 2582 8279
Fax : +91(33) 2582 8581
2. Mr. Subhankar Saha
Engineer – Materials
Subhankar.saha@andrewyule.com
Cell- 90386-45830
Phone : +91(33) 2582 5734; Fax: +91(33) 2582 8279

Contact person (E-Commerce, MSTC Ltd):

- | | |
|--|---|
| 1. Mr. ArindamBhattacharjee
Deputy Manager (E-commerce)
MobileNo: 09330102643
Email: arindam@mstcindia.co.in
Landline: (033) 22901004 | 2) Mr. Sabyasachi Mukherjee
Assistant Manager (E-commerce)
Mobile- 07278030407
Email:smukherjee@mstcindia.co.in |
| 3. Ms. SumonaMaity
Management Trainee (E-Commerce)
Mobile-09831155225
Email: smaity@mstcindia.co.in | |

System Requirement:

- i) Windows XP-SP3 or above / Windows 7 Operating System
- ii) IE-7 or above Internet browser.
- iii) Signing & Encryption type digital signature
- iv) JRE 7 updates79 software to be downloaded and installed in the system. Security level should be medium
- v) To enable ALL active X controls and disable ‘use pop up blocker’ under Tools → Internet Options → custom level (Please run IE settings from the page www.mstcecommerce.com once)

2. Part-I: Submission of EMD, Tender Fee & Filled up General Information Form (Annexure

– II), Eligibility Criteria fulfillment docs.,- in sealed envelope to DGM (Materials),

KW, AYCL:

Bidder may request for exemption from submitting EMD (Refer details given in

Sl No 1 of Annexure-IV, General terms & condition).

Tender Fee – Rs. 500/- (Five Hundred only- Non refundable) to be paid by D.D. favouring Andrew Yule &Co Ltd, payable at Kolkata.

Earnest Money as per amount mentioned in Annexure-IV to be paid by DD favouring Andrew Yule & Co. Ltd. Payable at Kolkata

General information, under Annexure-II complete in all respect along with desired document.

In case of failure to submit the EMD within the stipulated time, the Tender may be rejected.

Part-II: Online Bid Submission: After proper submission of EMD and Tender Fee at Andrew Yule & Co, the prospective bidder to submit online Techno commercial and price bid through MSTC portal.

Following documents are to be uploaded at the E-Tender Portal as a credential of the prospective bidder:

3. Present Customer List.
4. Copies of purchase Orders & Performance Certificate from at least three reputed Organizations for having supplied same materials and provided same service during last 4 years. Offers received without copies of performance certificate will/may be rejected.
5. Balance sheets and P&L Account. (2014-2015, 2015-16 & 2016-17).

Bidding in e-Tender:

- a. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by ANDREW YULE & COMPANY LTD. EMD to be paid along with the Document within the last date as mentioned in SOT.
- b. The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid.
- c. The bidder(s) who have submitted the EMD & Tender Fee to Andrew Yule can submit their Techno Commercial Bids and Price Bid through internet in MSTC website www.mstcecommerce.com → e-procurement → PSU / Govt depts. → Login under AYCL → My Menu → Auction Floor Manager → live event → Selection of the live event.
- d. The bidder should allow to run an application namely enApple by accepting the risk and clicking on run. This exercise has to be done twice immediately after opening of Bid floor. Then they have to fill up Common terms / Commercial specification and save the same. After that clicking on the Techno-Commercial bid, if this application is not run then the bidder will not be able to save / submit his Techno-Commercial bid.
- e. After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to be filled up and then bidder should click on "**Save**" to record their Price Bid. Then once both the Techno-Commercial bid & Price Bid has been saved, the bidder can click on the "**Submit**" button to register their bid.
- f. Vendors are instructed to use link in **My Menu** to **Upload Documents** in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB.

- g. Once documents are uploaded in the library, vendors can attach documents through *Attach Document* link against the particular tender. For further assistance please follow instructions of vendor guide.
- h. In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid.
- i. During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.
- j. The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.
- k. Techno-Commercial bid will be opened electronically on specified date and time as given in the NIT. Bidder(s) can download Technical Comparative statement.
- i. Price bid will be opened electronically on specified date and time given in the NIT. Bidder(s) can download Price Comparative statement.
- m. All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.
- n. All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter **SUPPLIER**.
- o. It is mandatory that all the bids are submitted with Digital Signature Certificate otherwise the same will not be accepted by the system.
- p. Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.
- q. No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the tender.
- r. Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.

E-tender cannot be accessed after the due date and time mentioned in NIT.

All notices / corrigendum and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by ANDREW YULE & COMPANY LTD/MSTC LTD. Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with MSTC. Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).

Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein.

No deviation to the technical and commercial terms & conditions are allowed.

ANDREW YULE & COMPANY LTD has the right to cancel this e-Tender without assigning any reason thereof.

The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website www.mstcecommerce.com/eprochome/aycl of MSTC Ltd.

The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.

The bid will be evaluated based on the filled-in technical & commercial formats.

Bidders are requested to read the vendor guide and see the video in the page www.mstcecommerce.com/eprochome/mstc of MSTC Ltd. to familiarize them with the system before bidding.

ANDREW YULE & COMPANY LIMITED
Kalyani Works, Engineering Division
General Information

Tender ref.: AYCL/ENGINEERING DIVISION/24/17-18/153
(This document should be dully filled up and attached along with EMD)

The applicants are required to furnish full information to the queries included in this form. In giving the particulars, the supporting documents/certificates as called for per queries at places, must be tagged with the application for evidencing the information furnished in the application.

1. Name of the firm in full :
2. Address, Telephone No.,
Fax No. & E-mail :
 - a) Address :
 - b) Telephone No. :
 - c) Fax No. :
 - d) E-mail ID :
 - e) Name of contact person :
3. Status of the company (Limited / Pvt. Ltd /
Proprietary /partnership/ Reg. /Non-Reg.
and date of inception:
4. Trade License No.
**(Please attach a photo
Copy of the license) :**
5. Service Tax Registration No.
(Please enclose photocopy of Reg.)
6. Banker's name
 - (a) Name of the Bank :
 - (b) Name& address of the Branch :

(c) Account No. :

Note: A copy of Banker's Certificate to be attached.

7. Sales tax Registration No.

(a) Central :

(b) State / VAT :

8. I. T. Permanent Account No.&
assessed up to (latest clearance
Certificate to be attached):

9. Turnover in last three financial
years (Audited Balance Sheet and
P & L Account to be submitted):

10. Name of present customers
(Photocopy of few contracts may
be enclosed):

11. Details of EMD (DD Details) submitted:

12. Details of Tender Fee (DD Details) submitted:

I/we hereby certify that the particulars furnished by me/us above are true to the best of my / our knowledge and belief and mis-representations of facts will render me/us liable to my/our action as may be deemed fit by Andrew Yule & Co. Ltd. (Engineering Division) & have the sole discretion to reject or accept my/our candidature.

(Signature of the Applicant)
Office Stamp/Seal.

Place :

Date ;

List of Enclosures:

Annexure-III**TECHNO-COMMERCIAL TERMS
(To be filled online in MSTC portal).**

SL NO	TERMS & CONDITIONS
1	Delivery period/Lead time: Within 7 (Seven) months from the date of order placement as applicable.If required, vendor may visit site to collect necessary data related to the job.
2	GST/VAT/CST/ED/ST: Pls. mention with registration No., if any.
3	Negotiated L1 price may be offered to other bidders whose price bid was opened. Andrew Yule reserves the right to order the entire Tender quantity on the L1 bidder.
4	Risk purchase clause: The company reserve the right to impose risk purchase clause as " For delay in execution / supply we shall have every right to do the same through some other agency/s which shall deemed fit and the additional cost of the same (Incidental/Consequential) shall be to your account which with respect to our intimation or observation whatsoever. Please confirm acceptance.
5	P&F - INCLUSIVE
6	Liquidated damage - If the delivery is delayed beyond the date of scheduled date of execution in the order, penalty will be levied @ 1/2% per week subject to a maximum of 5%. Please confirm acceptance.
7	Legal condition(Arbitration): Any contract entered against this tender will be as per the following legal condition: It is recorded that this purchase order / contract / agreement is executed and concluded by and between the parties hereto at premises Engineering Division, Kalyani Works Plot -16 A & B, Block-D, Kalyani, Nadia, PIN-741235, West Bengal. In the event of any dispute arises out of this agreement between the parties only the appropriate Civil Court in the City of Kolkata shall have the exclusive jurisdiction to entertain, try and determine the said proceedings in exclusion of all other courts. Please confirm acceptance”-.
8	Validity of offer: Your price should be valid for acceptance till completion of complete supply/service, No price escalation will be entertained during that period
9	Price Basis, P&F: The price quoted should be FOR at Eastern Railway site-Howrah.and will remain valid, firm & fixedtill completion of supply, installation and commissioning of the items.No price variation will be allowed at any circumstances. Price to be quoted as per following:- 1) Civil construction 2) Supply (both Mechanical & Electrical.) 3) Erection & Commissioning. 4) Maintenance.

10	<p>PAYMENT TERMS: -</p> <ol style="list-style-type: none"> 1) 90% payment will be cleared against monthly RA bills on Pro rata basis to be certified by AYCL/Railways. 2) Balance 10% will be cleared after successful erection/commissioning against submission of PBG to remain valid till warranty period.
11	<p>Guarantee /Warrantee Clause: The workmanship/smooth operation of the plant with respect to supply, civil, erection, commissioning is to be guaranteed for a period of 18 months from the date of handover of the Plant to ER, HWH. The bidder should stand guarantee for on time delivery of the project with 100% satisfaction of AYCL/ER, HWH. A guarantee/warranty certificate to that extent will have to be issued by the successful bidder during execution. In case of any fitment, interchangeability& usability issue at site, the vendor has to set right the problem within reasonable time frame to the entire satisfaction of the customer without which the material/s shall stand rejected as may be advised by the end customer of AYCL.</p>
12	<p>Inspection: Inspection will be done by us/client at your works. Final inspection may be done, if required by us/client at site after receipt of the materials/installation of the item by you. Vendor to submit QAP for approval.</p>
13	<p>Codes and Standards: All equipment and materials to be furnished under this specification shall be designed, manufactured and tested in accordance with the latest revisions of the relevant Indian Standard(IS) as applicable. The work shall be done in compliance with the IS Specification.</p>
14	<p>Force Majeure Clause:</p> <ol style="list-style-type: none"> 1. Force Majeure <ol style="list-style-type: none"> 1.1 Neither vendor nor AYCL shall be liable to the other for any delay or non-performance of its obligations under this Contract arising from any cause beyond its reasonable control including in relation to either Party any act of God, governmental act, act of any regulatory authority, supervening illegality, war, fire, flood, explosion, power blackout, break-down of machinery, loss of utility, civil commotion, industrial dispute, manpower unrest acts or omissions of telecommunications or data communications operators or carriers , in relation to vendor (to the extent not directly attributable to vendor's negligence), (a "Force Majeure Event"). The affected Party shall promptly notify the other Party in writing, of the cause and the Force Majeure Event and its likely duration within no later than two (2) days after the affected Party knew of the occurrence of the Force Majeure Event. Performance by the affected Party of its obligations under this Contract shall be suspended for the duration of the Force Majeure Event. If performance is not resumed within 15 (fifteen) days after the Force Majeure Event, either Party may terminate this Contract by giving to the other Party seven (7) days' notice in advance. 1.2 On the occurrence of any Force Majeure Event, the affected Party shall use all reasonable efforts (including emergency fixes and workarounds) to perform its obligations under this Contract during the period of suspension. Further the affected Party shall perform such part of its obligations pursuant to this Contract as are not affected by the Force Majeure Event. 1.3 The affected Party shall use its reasonable efforts to mitigate the effect of any event of Force Majeure as soon as practicable.

Annexure-IV

GENERAL TERMS AND CONDITIONS

- 1) EMD: As per Annexure-IV, by way of Demand Draft drawn in favor of M/S ANDREW YULE & CO.LTD Payable at Kolkata to be submitted.

For bidders already enlisted with AYCL- Kalyani Works, having outstanding amount more than the EMD amount or who have already submitted the EMD against our earlier tenders or those who have security deposit with Andrew Yule may apply for adjustment of the same.

Bidders who are MSME units may apply for exemption from furnishing EMD by making a specific request in writing and enclosing the necessary document in support of the same.

Bidders whose turnover is more than Rs: 50 crores may apply for exemption from furnishing EMD by making a specific request in writing and enclosing the necessary document in support of the same.

If reason for non-submission of EMD or adjustment against the outstanding balance for EMD is not mentioned in Techno-commercial bid of tender, the tender will be rejected. New vendors are required to submit all credentials for enlistment /competency.

2. Bidder should submit copies of purchase orders/Performance Certificate from at least two reputed Organizations for execution of similar works/service during last 7 years. Offers received without copies of performance certificate may be rejected.

3. Bidders should enclose copy of last 3 years Balance sheets and P&L Account. (2014-2015, 2015-2016, 2016-17).

4. Bidders should enclose a DD for Rs: 1000/- in favor of ANDREW YULE & CO.LTD, Payable at Kolkata towards cost of tender document.

5. THE RIGHTS OF THE COMPANY

The company reserves the right to reject any tenderer based on their past performance.

6. The breakup of your quoted rate with respect to supply (including P&F), Freight, Transit Insurance to be submitted along with Price bid.

Annexure – V

1) ABG FORMAT

From:
Issuing Bank

To:
Andrew Yule & Co. Ltd.
Engineering Division
8, Dr. Rajendra Prasad Sarani
Kolkata, West Bengal
India
PIN: 700001

SUB: BANK GUARANTEE FOR ADVANCE PAYMENT

1	Whereas on the _____ day of _____ M/s _____ a firm having its office at _____ (hereinafter referred to as “The Supplier”) entered into an agreement Purchase Order No. K-xx-xx-xxxxx dated xx.xx.20xx (hereinafter referred to as “The Contract”) with M/s Andrew Yule & Co. Ltd., A Govt. of India Enterprise, having its registered office at Yule House, 8, Dr. Rajendra Prasad Sarani, Kolkata-700001 (herein after referred to as “The Purchaser”)
2	And whereas under the terms and conditions of the contract an amount of Rs. _____ representing _____% advance payment out of contract value of Rs. _____ is to be paid by the purchaser to the supplier.

3	Now we Bank of _____, _____ in consideration of the purchase having agreed to pay to the supplier an advance payment of Rs._____ do hereby agree and undertake to indemnify the purchaser and keep the purchaser indemnified to the extent of a sum not exceeding the said sum of Rs._____ against any damage or loss that may be suffered by the purchaser by reason of non fulfillment of any of the terms and conditions of the contract by the supplier.
4	We Bank of _____ do hereby undertake to pay the amount due and payable under this guarantee without any demur merely on a demand from on behalf of Andrew Yule & Co. Ltd., stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the purchaser by reason of breach by the said supplier of any of the terms and conditions contained in the said P.O. or by reason of the supplier's failure to perform the said P.O. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs -----
5	We, undertake to pay to the purchaser any money so demanded notwithstanding any dispute or disputes raised by the supplier in any suit or proceeding pending before any court of Tribunal relating thereto our liability under this present being absolute of our liability of payment there under and the supplier shall have no claim against us for making such payment.
6	And we Bank of _____ hereby further agree that the decision of the said Andrew Yule & Co. Ltd. As to whether the supplier has committed breach of any such terms and conditions of the contract or not an as to the amount of damage or loss assessed by the said Andrew Yule & Co. Ltd. As damage or loss suffered by the purchaser on account of such breach would be final and binding on us.
7	And we Bank of _____ further agree with the purchaser that the purchase shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said P.O. or to extend time of performance by the said contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the purchaser against the said supplier and to forbear or enforce any of the terms and conditions relating the said P.O. and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said supplier or for any forbearance act or omission on the part of the purchaser or any indulgence by the purchaser to the said supplier or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision have effected of relieving us.
8	This guarantee will not be discharged due to the change in the constituting of the bank or the supplier.
9	Our guarantee shall remain in force until _____ and unless a claim under the guarantee is lodged with us within that date all rights of the purchaser shall be

	forfeited and we shall be relieved discharged from all liabilities there under.
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Notwithstanding anything contained herein:

- I) Our liability under this Bank Guarantee shall not exceed Rs. (Rupees_____)
- II) This Bank Guarantee shall be valid for 6 months from the date of issue.
- III) We are liable to pay the Guaranteed amount or part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before_____
- IV) We shall be released and discharged from all liabilities hereunder unless a written claim for payment under this guarantee is lodged on us on or before..... irrespective of whether or not the original guarantee is returned to us.

Witness:

Signature

Designation-with Bank Stamp

2) PBG FORMAT

BANK GUARANTEE NO. _____
AMOUNT _____
VALID UPTO _____

TO
M/S. ANDREW YULE & COMPANY LIMITED,
8, DR. RAJENDRA PRASAD SARANI,
KOLKATA – 700 001

IN CONSIDERATION OF ANDREW YULE & CO. LTD. ENGINEERING DIVISION, A COMPANY INCORPORATED UNDER THE COMPANIES ACT, 1956 AND HAVING ITS REGISTERED OFFICE AT 'YULE HOUSE' 8, DR. RAJENDRA PRASAD SARANI, KOLKATA – 700 001 "THE COMPANY" WHICH EXPRESSION SHALL UNLESS REPUGNANT TO THE CONTEXT OR CONTRARY TO THE MEANING THEREOF INCLUDES ITS SUCCESSORS AND ASSIGNS HAVING AGREED TO EXEMPT M/S XXXX, Address XXXX WHICH EXPRESSION SHALL UNLESS REPUGNANT TO THE CONTEXT OR CONTRARY TO THE MEANING THEREOF INCLUDES ITS SUCCESSORS AND ASSIGNS FROM THE DEMAND, UNDER THE TERMS AND CONDITIONS OF THE PURCHASE ORDER NO. XXXX, PLACED BY THE COMPANY ON THE CONTRACTOR FOR SUPPLY OF XXXX, ON PRODUCTION OF A BANK GUARANTEE FOR RS. XX.00 (RUPEES XXX ONLY), WE XXXX, HAVING ITS REGISTERED OFFICE AT XXX AND AMONG OTHERS HAVING A BRANCH OFFICE AT XXX, XXX, HEREINAFTER CALLED "THE SAID BANK" WHICH EXPRESSION SHALL UNLESS REPUGNANT TO THE CONTEXT OR CONTRARY TO THE MEANING THEREOF INCLUDES ITS SUCCESSIONS, ADMINISTRATORS, EXECUTORS AND ASSIGNS, AT THE REQUEST OF THE CONTRACTOR, DO HEREBY UNDERTAKE TO PAY TO THE COMPANY AN AMOUNT NOT EXCEEDING RS. XXX AGAINST ANY LOSS OR DAMAGE CAUSED TO OR SUFFERED OR WOULD BE CAUSED TO OR SUFFERED BY THE COMPANY BY REASON OF ANY BREACH BY THE SAID CONTRACTOR OF ANY OF THE TERMS AND CONDITIONS CONTAINED IN THE SAID ORDER.

WE XXX BANK, DO HEREBY UNCONDITIONALLY AND IRREVOCABLY UNDERTAKE TO PAY THE AMOUNT DUE AND PAYABLE UNDER THIS GUARANTEE, WITHOUT

ANY OBJECTION OR DEMUR, MERELY ON A DEMAND FROM THE COMPANY, STATING THAT THE AMOUNT CLAIMED IS DUE BY WAY OF LOSS OR DAMAGE CAUSED TO OR SUFFERED BY THE COMPANY BY REASON OF BREACH BY THE SAID CONTRACTOR OF ANY OF THE TERMS AND CONDITIONS CONTAINED IN THE SAID ORDER OR BY REASON OF THE CONTRACTOR'S FAILURE TO PERFORM THE SAID ORDER, ANY SUCH DEMAND, MADE ON THE BANK, SHALL BE CONCLUSIVE AS REGARDS THE AMOUNT DUE AND PAYABLE BY THE BANK UNDER THIS GUARANTEE, BUT NOT EXCEEDING RS.XX.00 (RUPEES XXXXX ONLY)

WE XXXX, FURTHER AGREE THAT THE GUARANTEE HEREIN CONTAINED SHALL REMAIN IN FULL FORCE AND EFFECT DURING THE PERIOD THAT WOULD BE TAKEN FOR THE PERFORMANCE OF THE SAID ORDER AND THAT IT SHALL CONTINUE TO BE ENFORCEABLE TILL ALL THE DUES OF THE COMPANY UNDER OR BY VIRTUE OF THE SAID ORDER, HAVE BEEN FULLY PAID AND ITS CLAIM SATISFIED OR DISCHARGED OR TILL THE COMPANY CERTIFIES THAT THE TERMS AND CONDITIONS OF THE SAID ORDER HAVE BEEN FULLY AND PROPERLY CARRIED OUT BY THE SAID CONTRACTOR AND ACCORDINGLY, DISCHARGES THIS GUARANTEE.

WE THE SAID BANK, FURTHER AGREE WITH THE COMPANY THAT THE COMPANY SHALL HAVE THE FULLEST LIBERTY, WITHOUT OUR CONSENT AND WITHOUT AFFECTING IN ANY MANNER, OUR OBLIGATIONS HEREUNDER TO VARY ANY OF THE TERMS AND CONDITIONS OF THE SAID ORDER OR TO EXTEND TIME OR PERFORMANCE BY THE SAID CONTRACTOR FROM TIME TO TIME.

WE THE SAID BANK, FURTHER AGREES THAT IT SHALL NOT BE NECESSARY FOR THE COMPANY TO PROCEED AGAINST THE CONTRACTOR BEFORE PROCEEDING AGAINST THE BANK AND THE GUARANTEE HEREIN CONTAINED SHALL BE ENFORCEABLE AGAINST THE BANK.

THIS GUARANTEE WILL NOT BE DISCHARGED DUE TO THE CHANGE IN THE CONSTITUTION OF THE BANK OR CONTRACTOR.

WE, THE SAID BANK, LASTLY UNDERTAKE NOT TO REVOKE THIS GUARANTEE DURING ITS CURRENCY WITHOUT THE PREVIOUS CONTENTS OF THE COMPANY IN WRITING.

THE BANK ALSO AGREES THAT THE COMPANY AT ITS OPTION SHALL BE ENTITLED TO ENFORCE THIS GUARANTEE AGAINST THE BANK AS A PRICIPAL DEBTOR, IN THE FIRST INSTANCE WITHOUT PROCEEDING AGAINST THE CONTRACTOR/SUPPLIER AND NOTWITHSTANDING ANY SECURITY OR OTHER GUARANTEE THAT THE COMPANY MAY HAVE IN RELATION TO THE CONTRACTOR'S/SUPPLIER'S LIABILITIES.

FOR THE PURPOSE OF ENFORCING LEGAL RIGHT/REMEDIES IN RESPECT OF THIS GUARANTEE, WE AGREE WITH YOU THAT KOLKATA HIGH COURT IN THE STATE OF WEST BENGAL SHALL HAVE THE EXCLUSIVE JURISDICTION.

NOTWITHSTANDING ANY THING CONTAINED HEREINBEFORE, OUR LIABILITY UNDER THIS GUARANTEE IS RESTRICTED TO RS. XXX. THIS GUARANTEE WILL EXPIRE XXXX AND UNLESS ANY CLAIM UNDER THIS GUARANTEE IS RECEIVED BY US BY XXX I.E. WITHIN 3 (THREE) MONTHS FROM THE DATE OF EXPIRY OF THE GUARANTEE AT XXXX ALL YOUR RIGHTS UNDER THIS GUARANTEE SHALL BE FORFEITED AND WE SHALL BE RELEASED AND DISCHARGED FROM ALL LIABILITIES THEREUNDER.

DATED XXX, THIS xx.xx.20xx

(STAMP AND SIGNATURE OF ISSUING INSTITUTION)

NAME:

DESIGNATION

BRNACH CODE

Name of Work		Water treatment and Recycling plant for Coaching Depot at Jheel Siding	Civil	
Sl. No.	Schedule No./Item no.	Item Description	Item Qty	Unit
1	A/1	Earth work in excavation for foundation of clarifoculator, filter bed,RCC underground, pump house, valve chamber of flax mixture etc. in all classes of soil including earth mixed with kanker, rubbish, garbage and boulder etc. The rate includes dressing levelling and plumbing trenches as necessary by men or by machine at site to neat dimensions, back filling the trenches in layers of 30cm thick after completion of concrete work including watering, ramming, consolidation with all lead, lift, ascent, descent and all other incidental charges. Cost includes removal of extra excavated earth/spoil/ garbage etc from foundation trenches to outside Rly. land by Contractor's own transport. Work to be completed in all respect as per instruction of Site-Engineer. Rate also includes cost of shoring, strut, labour, tools & plants, machinaries etc. to facilitate safe working.	500	m3
2	A/2	RCC M25 grade as per IS:456-2000 Rlys approved drawing & specification in foundation, wall, floor etc of valve chamber of flush mixer, clarifoculator, filter bed, pump house, underground and overhead reservoir, coloumn, bracing, vertical wall & slab etc. The rate includes design of concrete mix, manufacture of concrete by batching plant, cost of form work (Formwork should be approved by the Rly authority) including erection and de-shuttering, placement of concrete, compaction, including cutting, bending & binding and placing of reinforcement binding with G.I. wire at every intersection, curing the concrete upto specified period complete in all respect, including lead, lift, crossing road/track etc. The rate also includes cost of all ingredients of RCC including cement, sand, stone chips, potable water, admixture of approved brand Superplasticizer/returder etc, labour, tools & plants and machinaries etc. Supply of Steel reinforcement will be paid separately. Cement used to be of OPC 53 grade.	175	m3
3	A/3	Supplying steel reinforcement of RCC work make of TATA/SAIL/VIZAG brand conforming to is IS-1787 in all kind of structures including distribution bars stirrups, binders etc including supply of reinforcement at site with making levelling the road way for transporting with all lead, lift , cutting required length. Payment should be made as per actual consumption after completion of respective grade of RCC item works.	24	MT
4	A/8	Driving SH Rail 90 R/ 52 KG or any section below ground level up to the required depth as per direction of engineer at site. The rate includes chiseling at one end with contractor's own arrangement with derrick/ rope /pulley cap /monkey, cuttings of rails , trolleying/ leading of rail , crossing track etc to the site complete in all respect . The rail will be supplied by the Railway free of cost.	100	m
5	A/9	Dewatering by pump of minimum 5 HP capacity including labours, tools, plants & equipment, fuel, operator & running expenses, making outlet drain, plugging in flow of water effectively complete in all respect to make the working place dry as required.	500	HP-HR
6	A/10	Supplying, Laying, Fitting, Fixing, Jointing of different nominal diametres of DUCTILE IRON pipe of classification K-9 Titon joint (Flanged pipes in minor stretches as per site requirement) centrifugally lined with cement mortar inside the pipe & outside zinc coated with a finishing layer of Bitumen conforming to IS 8329- 2000 (latest Version) as per requirements & as per instruction of Site Engineers including all taxes & duties, ,inspection, insurance, freight, loading/unloading etc., lowering, laying and Jointing with SBR/EPDM Rubber Gasket in proper position, Grade & Alignment as directed by Engineer incharge including ascend, descend, lead, lift, crossing tracks, if necessary, local handling, dismantling & re-fixing the same, removing ballast, cutting platform surfaces ,Roads and repairing the same upto satisfaction of Engineer-in-charge and refilling the trenches after laying pipes with soil, raming in layers, disposal of extra Soil, Labour charges, Hydraulic Testing, inspection Charges.		
		The pipes to be laid on approx. 1 metre below ground level, sometimes on properly laid bricks with cement mortar chairs on low lying areas including earth work in excavation in all kinds of soil, shoring where necessary, dewatering from all sources including temporary restoration of road for movement of traffic till Permanent restoration is done as per drawing, specifications and direction of Engineer-in-charge including cost of pipes, Rubber Gaskets, lead Spun Yarn, labour, tools and plants, pump, fuel, pump operator, machinery etc. required to complete the work in all respect. (LAR: OAH/2/121/13-14/DEN(Project)/HWH dated 28.03.14.		
		i) 150mm Dia. DI Pipe	200	m
		ii) 200 mm Dia. DI Pipe	100	m
		iii) 100 mm Dia. DI Pipe	300	m

7	A/11	Supplying, Fitting Fixing in Position RCC Spun Pipe & Collar NP-3 300 mm Dia conforming to IS 458 with cement and Sand mortar (1:3) for jointing collar and to be laid on cement concrete bed with proper grade and alignment with all lead , lift, crossing track etc. complete in all respect and as per direction of Engg. Incharge.	70	m
8	A/12	Dismantling CC /RCC of any grade by Compressure M/C or by any means with all Contractor's tools, tackles and released materials beyond Rly. Land with all lead , lift, ascend, descend, crossing lines, loading, unloading, clearing the site etc. complete in all respect.	50	m3
9	A/15	Finishing inside of RCC tank walls and floors with 25mm th smooth cement plaster (1:2) after making the surface rough for necessary bonding and treating the surface with three coats of sodium silicale wash before putting the plaster. Cement will be paid separately under relevant items.	500	m2
10	C/1	Earth work in excavation as per approved drawings and dumping at embankment site or spoil heap, within railway land, including 50m lead and 1.5m lift, the lead to be measured from the centre of gravity of excavation to centre of gravity of spoil heap: the lift to be measured from natural ground level and paid for in layers of 1.5m each, including incidental work, as per specifications-in All kinds of soils	50	m3
11	C/1	Extra for every additional lift of 1.5m or part thereof, after the initial 1.5m, for earth work in all soils	30	m3
12	C/2	Close Timbering in trenches for foundations and shafts, wells, cesspits, manholes, underground tanks & the like, including strutting and shoring complete : Depth upto 1.5m	200	m2
13	C/3	Close Timbering in trenches for foundations and shafts, wells, cesspits, manholes, underground tanks & the like, including strutting and shoring complete : Depth exceeding 1.5m but not exceeding 3m	200	m2
14	C/4	Close Timbering in trenches for foundations and shafts, wells, cesspits, manholes, underground tanks & the like, including strutting and shoring complete : Depth exceeding 3m	200	m2
15	C/5	Extra over item 011010 for excavation in foundations for buildings and bridges to cover dressing to neat dimension and plumbing sides etc. Note : Dressing under this item is payable for the total quantity of excavation in foundation and not partly	20	m3
16	C/6	Extra for watering and ramming earth in foundation and floors in 15cm layers. Note : This item is payable where ramming is not included in the original rate for earthwork in filling.	20	m3
17	C/7	Supplying and filling sand in plinth and under floors including watering, ramming, consolidating and dressing complete	200	m3
18	C/8	Dressing Surface (average excavation or filling upto 15 cm) including removing vegetation in all kind of soil. Payment against this item is to be made only if it is not included in earth work item	100	10 m2
19	C/9	Loading/Unloading ballast, kankar, brickbats, stone-chips, shingle, stone boulders, block kankar, pitching stones , rubble stones, laterite, coal, surkhi, dry mortar, sand , moorum, earth, manure or sludge, ashes, lime etc., including lead up to 50m and stacking into/from trucks, trailers or wagons	100	m3
20	C/10	Leading ballast, kankar, surkhi, lime, sand, ashes, stone-chips, pitching, stone, boulders, soling, stone, rubble stone, brickbats, shingle, dry mortar, laterite or similar materials including picking up and stacking, lead upto 50m	100	m3
21	C/11	Additional lead for every subsequent 50m or part thereof, over 50m and upto 500m over item no. 021080	50	m3
22	C/12	Leading ballast, kankar, brickbats, stone-chips, shingle, stone boulders, block kankar, pitching stones, rubble stones, laterite, coal, surkhi, dry mortar, sand, moorum, earth, manure or sludge, ashes, lime, debris, muck, malba, etc. for lead upto 25 km. Note : Lead under this item is payable when the same exceeds 500m.	50	m3
23	C/13	Providing and laying cement concrete, up to plinth in retaining walls, walls (any thickness) including attached plasters, columns, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc, excluding the cost of cement and of shuttering, centering. 1:2:4 (1 cement : 2 sand : 4 graded stone aggregate 20mm nominal size)	30	m3
24	C/14	Providing and laying in position cement concrete of M 20 grade, excluding the cost of cement and of centering and shuttering, as per direction of the Engineer in charge : All works upto Plinth level	2	m3
25	C/15	Providing and laying in position cement concrete of M 20 grade, excluding the cost of cement and of centering and shuttering, as per direction of the Engineer in charge : All works above plinth level in retaining walls, walls (of any thickness) including attached pilasters, columns, pillars, posts, struts, buttresses, anchor blocks, parapets, copings, bed blocks, string or lacing courses, window sills, fillets, kerbs, steps etc.	2	m3

26	C/16	Providing and laying cement concrete 1:2:4 in damp-proof course (1 cement : 2 sand : 4 graded stone aggregate 12.5mm nominal size - excluding the cost of cement and including providing, fixing and removal of forms. 40mm thick	5	m2
27	C/17	Supply and using cement at worksite : PPC	44.04	MT
28	C/18	Providing and laying in position M 20 Grade concrete for reinforced concrete structural elements but excluding cost of centering, shuttering, reinforcement and Admixtures in recommended proportion (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer in charge All work upto plinth level, including raft foundation of washable aprons, HS tank, pile cap, footings of FOB, and Platform shelter etc.	15	m3
29	C/19	Providing and laying in position M 20 Grade concrete for reinforced concrete structural elements but excluding cost of centering, shuttering, reinforcement and Admixtures in recommended proportion (as per IS:9103) to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer in charge All work in buildings above plinth level upto floor two level.	35	m3
30	C/20	Centering and shuttering including strutting, propping etc. and removal of form for : Walls (any thickness) including attached plasters, buttresses, plinth and string courses etc.	150	m2
31	C/21	Centering and shuttering including strutting, propping etc. and removal of form for : Suspended floors, roofs, landings, balconies, FOB slabs, walkway slabs and access platform	50	m2
32	C/22	Centering and shuttering including strutting, propping etc. and removal of form for : Lintels, beams, plinth beams, bed blocks, girders, bressumers and cantilevers	20	m2
33	C/23	Brick work with non-modular (FPS) bricks of class designation 7.5 in foundation and plinth in : Cement mortar 1:6 (1 cement : 6 coarse sand)	175	m3
34	C/24	Extra over item 051010 & 051020 for brick work in superstructure beyond plinth level upto floor two level :	150	m3
35	C/25	Half brick masonry with bricks of class designation 7.5 in foundations and plinth in : Cement mortar 1:4 (1 Cement : 4 coarse sand)	50	m2
36	C/26	Extra for half Brick masonry in superstructure above plinth level upto floor two level	70	m2
37	C/27	Providing wood work in frames of doors, windows, clerestory windows and other frames and trusses, wrought, framed and fixed in position : Sal wood	1000	dm3
38	C/28	Providing and fixing to IS: 2202 Part-1 marked flush door shutter decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3ply veneering with vertical grains or cross bands and face veneers on both faces of shutters 35mm thick including ISI marked stainless steel butt hinges with necessary screws	5	m2
39	C/29	Providing and fixing M.S. sliding door bolts generally conforming to IS: 281, bright satin finish or black stone enamelled with nuts and screws etc. complete of size 250x16 mm	4	each
40	C/30	Providing and fixing M.S. tower bolts generally conforming to IS:204 (Part I) with necessary screws etc. complete of size. 250x10 mm	4	each
41	C/31	Providing and fixing M.S. door handles with necessary screws etc. complete. 100mm	4	each
42	C/32	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. all complete Fixed to steel windows by welding	1500	Kg
43	C/33	Providing and fixing IS: 3564 marked aluminium die cast body tubular type universal hydraulic door closer, hardwyn make (Classic Queen) or equivalent with necessary accessories and screws etc. complete	1	each
44	C/34	Providing and fixing panelled/glazed or panelled and glazed shutters for doors, windows and clerestory windows including ISI marked black enamelled M.S. butt hinges with necessary screws excluding, panelling/glazing which will be paid for separately Kail, venteak, pillamarudhu or locally available comparable species of good country wood (to be listed by respective railway). 35mm thick	5	m2
45	C/35	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rail of T-iron 40x40x6mm with 40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles and hold fasts including applying a priming coat of approved steel primer	8	m2

46	C/36	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868 (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing/panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately) For fixed portion	200	Kg
47	C/37	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868 (Minimum anodic coating of grade AC 15), fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing/panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately) For openable/sliding portions and fixing hinges / pivots, PVC/ neoprene gasket required and making provision for fixing of fittings. (Fittings shall be paid for separately)	200	Kg
48	C/38	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ 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) With float/frosted glass panes of 5.5mm thickness (weight not less than 13.75 kg/sqm)	3	m2
49	C/39	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS:6315 including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. Sheet outer box with slide plate etc. complete as per the direction of Engineer-incharge With Stainless Steel cover plate	1	each
50	C/40	Providing and fixing acrylic sheet for glazing in aluminium door, window, ventilator shutter, partition, reservation counter etc. with Aluminium round / square bars / flats or grill in frame of windows and cleastory windows etc. with PVC/neoprene gasket etc. complete (cost of aluminium frame/grill shall be paid separately in relevant item) 3 mm thick	10	m2
51	C/41	Cement concrete flooring 1:2:4 (1cement: 2coarse sand: 4graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding the cost of nosing of steps etc. complete 40mm thick with 20mm nominal size stone aggregate	10	m2
52	C/42	Providing and fixing 1st quality ceramic tiles conforming to Group B-III (Ceramic Wall Tiles) of IS:15622 of manufacturers approved by railway in all colours, shades, and design as approved by the Engineer-in- Charge in skirting, risers of steps and dado over 12mm thick bed of cement mortar 1:3 (1cement: 3coarse sand) including pointing in white cement mixed with pigment of matching shade complete 200x300 mm	50	m2
53	C/43	Providing hand packed dry flat brick flooring, class designation 7.5 (FPS Bricks), excluding pointing with joints filled with sand over a bed of dry sand (ordinary)of average thickness 25 mm including ramming sub grade : Brick on edge	300	m2
54	C/44	Kota stone slab flooring of size up to 60x60cm over 20mm (average) thick base of 1:4 cement mortar (1cement: 4coarse sand) and jointed with grey cement	20	m2
55	C/45	Supply & installation of precoated galvanized iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50mm +/- 5% total coated thickness (TCT) thick Zinc coating 120gsm as per IS:277 in 240mpa steel grade, 5-7microns 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 while 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 (5.5 x 55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead 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	50	m2

56	C/46	Providing and fixing precoated galvanised steel sheet roofing accessories 0.50mm +/- 5% total coated thickness (TCT) thick Zinc coating 120 gsm as per IS:277 in 240mpa 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 or with polymer coated J or L hooks, bolts and nuts and or G.I. seam bolts and nuts, G.I. plain and bitumen washers complete : Ridges plain (500-600mm)	20	m
57	C/47	Providing and fixing on wall face unplasticised - Rigid PVC single socketed rain water pipes conforming to IS: 13592 Type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion. 110mm dia.	20	m
58	C/48	Providing and fixing on wall face unplasticised - PVC moulded bend and shoe for unplasticised-Rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10mm gap for thermal expansion Bend 87.5o, 110mm dia bend	4	each
59	C/49	Providing and fixing on wall face unplasticised - PVC moulded bend and shoe for unplasticised-Rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring conforming to IS:5382 leaving 10mm gap for thermal expansion Shoe (Plain), 110mm dia shoe	4	each
60	C/50	Providing and fixing unplasticised-PVC pipe clips of approved design to unplasticised-PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with M.S. screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete 110mm	4	each
61	C/51	12 mm cement plaster of mix - 1:4 (1cement: 4coarse sand)	50	m2
62	C/52	12 mm cement plaster of mix - 1:6 (1cement: 6coarse sand)	400	m2
63	C/53	12 mm cement plaster 1:3 (1cement: 3coarse sand) finished with a floating coat of neat cement	200	m2
64	C/54	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade New work (two or more coats of distemper) over and including priming coat with distemper primer	80	m2
65	C/55	Finishing walls with water proofing cement paint of required shade two or more coats on new work applied @ 3.84 Kg/10 sqm	300	m2
66	C/56	Finishing walls with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications with two or more coats applied @ 1.25ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr/10sqm	300	m2
67	C/57	Cement washing single coat.(Ordinary Portland cement)	500	m2
68	C/58	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade Two or more coats on new work	50	m2
69	C/59	Providing and fixing medium grade G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the wall etc. Concealed pipe including painting with anti corrosive bitumestic paint, cutting chase and making good the wall 15 mm dia. nominal bore	20	m
70	C/60	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 15 mm dia. nominal bore	20	m
71	C/61	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 20 mm dia. nominal bore	20	m
72	C/62	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 25 mm dia. nominal bore	20	m
73	C/63	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 40 mm dia. nominal bore	20	m
74	C/64	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 50 mm dia. nominal bore	20	m
75	C/65	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 80 mm dia. nominal bore	20	m
76	C/66	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. External Work 100 mm dia. nominal bore	30	m
77	C/67	Providing and fixing C.P. brass bib cock, 15mm nominal bore, of approved quality conforming to IS:8931	2	each
78	C/68	Providing and fixing C.P. brass stop cock, 15 mm nominal bore, (concealed) of standard design and of approved make conforming to IS:8931	2	each
79	C/69	Providing and laying S&S C.I. standard specials such as tees, bends, collars, tapers, caps etc. (Heavy class) Upto 300mm dia.	15	Quintal
80	C/70	Providing and laying S&S centrifugally cast (spun) iron pipes (Class A) conforming to IS - 1536: 150 mm dia. pipe	100	m
81	C/71	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. 100 mm dia (the tail pieces if required will be paid separately) Class II	8	each
82	C/72	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. 150 mm dia (the tail pieces if required will be paid separately) Class II	10	each

83	C/73	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. 200 mm dia (the tail pieces if required will be paid separately). Class II	4	each
84	C/74	Making connection of medium grade G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete 25 to 40 mm nominal bore	3	each
85	C/75	Making connection of medium grade G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete 100 mm to 150 mm dia.	3	each
86	C/76	Providing and fixing PP-R Brass Ball Valve fusion welded, having thermal stability for hot & cold water supply and testing of joints complete as per direction of engineer in charge 25mm Ball Valve	2	each
87	C/77	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 15mm nominal bore	4	each
88	C/78	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 20mm nominal boreking.....	4	each
89	C/79	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 25mm nominal bore	4	each
90	C/80	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 40mm nominal bore	4	each
91	C/81	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 50mm nominal bore	4	each
92	C/82	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (new work) 80 mm nominal bore	4	each
93	C/83	Providing and placing on terrace/staging (at all heights) polyethylene water storage tank ISI : 12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank	2000	Ltr
94	C/84	Supplying, fitting & fixing in position reinforced cement polymer concrete (R.C.P.C.) manhole cover and frame to match with IS : 12592 with cement conc. 1:2:4 for embedding the manhole cover frame a) 3 MT load bearing capacity manhole cover provided with 2 nos. lifter lock fitted with matching frame (Size of cover : 440 mm dia. x 50 mm thick and size of frame : 530 mm dia. x 100 mm thick)	2	each
95	C/85	Supplying, fitting & fixing in position reinforced cement polymer concrete (R.C.P.C.) manhole cover and frame to match with IS : 12592 with cement conc. 1:2:4 for embedding the manhole cover frame b) 12 MT load bearing capacity manhole cover provided with 2 nos. lifter lock fitted with matching frame (Size of cover : 590 mm dia. x 75 mm thick and size of frame : 750 mm dia. x 150 mm thick)	5	each
96	C/86	Supplying, fitting & fixing in position reinforced cement polymer concrete (R.C.P.C.) manhole cover and frame to match with IS : 12592 with cement conc. 1:2:4 for embedding the manhole cover frame c) 25 MT load bearing capacity manhole cover provided with 2 nos. lifter lock fitted with matching frame (Size of cover : 630 mm dia. x 100 mm thick and size of frame : 790 mm dia. x 185 mm thick)	2	each
97	C/87	Supplying, fitting & fixing in position Polyelastomer Grating & R.C.P.C. Frame with hinge arrangement with cement conc. 1:2:4 a) 12 MT load bearing capacity Polyelastomer rectangular grating with R.C.P.C. frame (Size of grating : 450 mm x 380 mm x 50 mm thick, size of frame : 600 mm x 550 mm x 160 mm)	4	each
98	C/88	Supplying, fitting & fixing in position Polyelastomer Grating & R.C.P.C. Frame with hinge arrangement with cement conc. 1:2:4 b) 3 MT load bearing capacity Polyelastomer rectangular grating with R.C.P.C. frame (Size of grating : 380 mm x 290 mm x 25 mm thick size of frame : 480 mm x 410 mm x 90 mm)	4	each
99	C/89	Providing and fixing white, vitreous china water closet squatting pan (Indian type) Orissa pattern W.C. pan of size 580x440mm	1	each
100	C/90	Providing and fixing P.V.C. low level flushing cistern with manually controlled device (handle lever) conforming to IS: 7231, with all fittings and fixtures complete 10 litre capacity- whiteair	1	each
101	C/91	Providing and fixing white, vitreous china wash basin, including making all connections but excluding the cost of fittings Flat back wash basin of size 550x400mm	1	each
102	C/92	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete Semi rigid pipe 32mm dia.	1	each
103	C/93	Providing and fixing 600x450mm bevelled edge mirror , 5.5 mm thick of float glass (of approved quality) complete with 6mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete	1	each

104	C/94	Providing and fixing C P brass grating with openable lid : Grating 100 mm nominal dia. and 12 mm. high domed shape having wt. not less than 25 gms	3	each
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Name of Work	Water treatment and Recycling plant for Coaching Depot at Jheel Siding	Elec Supply
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Sl. No.	Schedule No./Item no.	Item Description	Item Qty	Unit
1	B/11	Earthing equipments as per specification and all other equipments required to comply with I.E. Act	1	
2	B/12	Supplying & laying 1.1KV grade PVC insulated and armoured aluminium cables to different units as required make and specification to complete the work:		
		i) 2x3½ core 300 mm2 cable	25	m
		ii) 3½ core 75 mm2 cable	25	m
		iii) 3 core 185 mm2 cable	75	m
		iv) 3x3½ core 35 mm2 cable	75	m
		v) 3 Core 4 mm2 Al cable	300	m
		vi) 3 Core 95 mm2 Al cable	50	m
		vii) 5 Core 1.5 mm2 Cu cable	300	m
3	B/10	Submission of GA & schematic dwg. with BOM, datasheet drawings for motor control centre LT SW Board. Supplying & supervision of fitting, fixing, installation, commissioning, testing pump, motor control centre LT SW Board complete as per specification no. and instruction with automatic control system of pumps complete in all respect as per specification, power factor improvement capacitor with all fixture complete in all respect for the following requirements:- i) 2 pumps & motors 25m3/hr. + 1 pump & motor 25m3/hr. stand by non-clog sludge pump ii) 1 pump & motors 10m3/hr. + 1 pump & motor 10m3/hr. stand by sewage pump iii) 1 pump & motors 10m3/hr. + 1 pump & motor 10m3/hr. stand by sludge Recirculation pump iv) 1 pumps & motor 17.3 LPS - 6 LPS stand by Filter water pump v) 1 pumps & motor 35.5 LPS - 14 LPS + 1 pumps & motor 35.5 LPS - 14 LPS stand by Backwash pump vi) 1 pumps & motor 16.2 LPS - 7.1 LPS + 1 pumps & motor 16.2 LPS - 7.1 LPS stand by Booster pump vii) Electrical works including different points, pump house etc.	1	No.
4	B/13	Submission of datasheet for Pressure Gauges. Supplying, fitting and fixing pressure gauge as per specification complete with all fittings & fixtures for individual pump and common delivery manifold etc.	15	No.
5	B/14	Submission of datasheet for Level Gauges. Supplying, fitting and fixing water level gauge with automatic start and stop arrangement alongwith signal to be filled in wet sump complete with all fittings and fixtures as per specification complete in all respect	1	No.

Name of Work		Water treatment and Recycling plant for Coaching Depot at Jheel Siding	Elec Erect	
Sl. No.	Schedule No./Item no.	Item Description	Item Qty	Unit
1	B/11	Erection & commissioning of Earthing equipments as pr specification and all other equipments required to comply with I.E. Act	1	No.
2	B/12	Erection & commissioning of 1.1KV grade PVC insulated and armoured aluminium cables to different units as required make and specification to complete the work:		
		i) 2x3½ core 300 mm2 cable	25	m
		ii) 3½ core 75 mm2 cable	25	m
		iii) 3 core 185 mm2 cable	75	m
		iv) 3x3½ core 35 mm2 cable	75	m
		v) 3 Core 4 mm2 Al cable	300	m
		vi) 3 Core 95 mm2 Al cable	50	m
		vii) 5 Core 1.5 mm2 Cu cable	300	m
3	B/13	Fitting and fixing pressure gauge as per specification complete with all fittings & fixtures for individual pump and common delivery manifold etc.	15	Nos.
4	B/14	Fitting and fixing water level gauge with automatic start and stop arrangement alongwith signal to be filled in wet sump complete with all fittings and fixtures as per specification complete in all respect	1	No.

Name of Work		Water treatment and Recycling plant for Coaching Depot at Jheel Siding	Mech Supply.	
Sl. No.	Schedule No./Item no.	Item Description	Item Qty	Unit
1	B/1	Preparation and submission of design, drawing including Mechanical GA & civil foundation drg. of 5.5 m dia X 2.5 m SWD circular clariflocuator with central shaft, Inlet arrangement and outlet arrangement with "V" - notch weir and pherifiral launder including RCC connecting channel from clariflocuator to inlet channel, sludge collecting and removal pipeline, pit etc complete. Supplying & supervision of erection & commissioning of clarifier mechanism with central drive unit with 1 no. 3HP 1500 rpm approved motor with reduction gear to enable rotation in low speed for paddle rotation mounted on fixed bridge extending from the side tank to it centre and 0.5 mts. beyond having rotating rake totally enclosed arms filled with rubber squeezes for de-slugging alongwith v-notch to weirs for collecting launder, central bearing resembling should have adequate lubrication and greasing points mounted at a convenient point on the walk way. The rate also including with epoxy painting after necessary sand blasting. The clarifier will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site.	1	No.
2	B/2	For Biological treatment works with activated sludge plant in Aeration Tank: Submission of Mechanical GA & Civil foundation drawings for Surface Aerator with gearbox. Supplying & supervision of erection & commissioning of standard Greaves Esempro or similar make surface aerator work reduction gear unit of latest service, parallel shaft, vertical helical, having hardened and ground gears having nominal reduction ratio with required output power and speed at import speed of 1500 rpm or as required complete with input of 10 HP electric motor etc. with all necessary fittings etc. complete in all respect. The rate also includes with supplying aerator core and drive tube M5 epoxy painted after sand blasting with the 10 HP capacity aerator motor unit. Aerator core and drive tube will be dynamically balanced with all necessary fitting to complete the work. The surface aerator will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site. The work will be completed as per the direction of Engineer-in-charge.	2	No.
3	B/3	Submission of Mechanical GA & Civil outline drawings for 2 nos. MS Pressure clarifier of size 2.65 m dia X 3 m Ht. Supplying, & supervision of erection & commissioning of 2.4 m dia X 1.5 m Ht. pressure filter unit having capacity 20m ³ /hr with Two MS clarifier unit and one MS pressure filter unit. The MS pressure clarifier should be made with IS-2062 MS plate having venture vessel of size 2400mm dia and 2000mm height having 8mm thick shell plate, 10mm thick dished end, 8mm thick hopper fitted with angle 50mmx20mmx8mm at the junction of cylindrical plate and hopper to achieve proper coagulation and flocculation in transit to handle 20m ³ /hr flow of water. The MS pressure filter should be made with IS-2062 of 2300mm dia and 1500mm straight height having 8mm thick shell plate, 10mm dished and 10mm bed plate alongwith filter media of standard quality and required quality with 80mm/100mm dia frontal pipe line, polypropylene strainer with epoxy painting and valves in all complete and the work will be completed as per direction of Engineer-in-charge at site in all respect. The pressure filter unit will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site.	1	Lot
4	B/4	Submission of operating philosophy & catalogue, datasheet for Raw water flow indicator. Submission of Mechanical GA & Civil outline drawings for Supplying & supervision of erection & commissioning of Raw water flow indicator suitable for measuring flow through partials flues complete with capacitance type transducers with ±20 MA Transmitter from remote indicator complete with remote digital display, flow totalizer complete the work in all respect and the work will be completed as per direction of Engineer-in-charge. The Raw water flow indicator will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site.	1	No.
5	B/5	drawings for pump. Supplying & supervision of erection, fitting, fixing, testing & commissioning, Testing of submersible type non clog sewage pump motor of M&M, Kishore or similar make, each capable of running with specified capacity with C1 pump. Casing & motor body, SS-impeller, SS-shaft, SS-fasteners with the following specification:- i) Speed - 1450 RPM ii) Head - 16m - 17m (shut of Head at 19m) iii) Voltage - 140 volts, ± 6-10% iv) 3- phase, 50 Hz, AC supply v) Soft solid handling size 80mm vi) Motor Rating HP/KW - 7.5/5.5 etc. with stainless steel guide pipe with chain of about 6m tengtu etc. a) Discharge capacity 25m ³ /hr. The rate also includes with supply, installation, fitting, fixing of suitable C1 D/F bend, coupling etc. With all necessary fittings complete. The rate also includes with 16 SWG sheet steel enclosure wall mounting 7.5 HP star delta control panel consisting of special feature such as moisture sensor, thermostat, reserve rotation protection, auto/manual control system with water level guard, single phase preventer etc. suitable for the above pump motor set and the work will be completed as per the instruction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site.	2	No.
6	B/6	Submission of Mechanical GA, motor datasheet, motor base mounting details & Civil foundation detail drawings for pump. Supplying, & supervision of installation, fitting, fixing, testing, commissioning, Testing at CWF or similar make S.DHP/ 3.7 KW of latest services hand metal slurry & sludge pump capable to discharge 10m ³ /hr at 10mtr. Head suitable for belt driven with a speed of 1450 rpm horizontal end suction back pullout centrifugal pump of size 100x80, direct drive 6 value semi open Impeller type etc. The rate also includes MS base plate, love joy coupling set, foundation bolts, coupling ground etc. with SHP, 1500 RPM Indus, 3 squirrel cage, TEFC, Horizontal foot mounted motor suitable for 145 ± 10%, frequency 50Hz, ± 5% etc. with all other accessories required to complete the work in all respect and the work will be completed as per direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer/supplier & it should successfully run for 12 months from the date of commissioning at site.	2	No.
7	B/7	Submission of Mechanical GA, motor datasheet, motor base mounting details & Civil foundation detail drawings for pump. Supplying & supervision of installation, fitting, fixing, testing, commissioning Kirloskar or similar make filter water pump with the following specification:- i) Power rating KW/HP: 3.7/5.0 ii) Suction x Delivery (in mm) (80x80) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 10-17 v) D.O.L starting vi) Solid Handling size in mm: 15.5 vii) Speed in RPM-1450 viii) SS/GM Impeller, size in mm: 224 The pump set should be consists of SS/GM Impeller, corborated C1 delivery casing, C1 motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with 16SWG sheet steel wall mounting D.O.L or star delta control panel of L&T or similar make with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier & it should successfully run for 12 months from the date of commissioning at site.	2	No.
8	B/8	Submission of Mechanical GA, motor datasheet, motor base mounting details & Civil foundation detail drawings for pump. Supplying & supervision of installation, fitting and fixing, testing, commissioning Kirloskar or similar make Backwash, pump with the following specification:- i) Power Rating KW/HP: 7.5/10.0 ii) Suction x Delivery (in mm) (100x100) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 35.5-14 v) Total Head in Mtrs:- 10- 23 vi) Method of starting: Star Delta vii) Solid Handling size in mm: 18-15 v) Speed in RPM-1450 viii) SS/GM Impeller, size in mm: 292 The pump set should be consists of SS/GM Impeller, corborated C1 delivery casing, C1 motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with 16SWG sheet steel wall mounting star delta control panel of L&T or similar make with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier & it should successfully run for 12 months from the date of commissioning at site.	2	No.
9	B/9	Submission of Mechanical GA, motor datasheet, motor base mounting details & Civil foundation detail drawings for pump. Supplying & supervision of installation, fitting and fixing, testing, commissioning Kirloskar or similar make Booster, pump with the following specification:- i) Power Rating KW/HP: 5.5/7.5 ii) Suction x Delivery (in mm) (80x80) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 16.2-7.1 v) Total Head in Mtrs:- 20-32 vi) Method of starting: Star Delta vii) Solid Handling size in mm: 14.5 vii) Speed in RPM-2900 viii) SS/GM Impeller, size in mm: 174 The pump set should be consists of SS/GM Impeller, corborated C1 delivery casing, C1 motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with 16SWG sheet steel wall mounting star delta control panel of L&T or similar make with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier & it should successfully run for 12 months from the date of commissioning at site.	2	No.
10	B/15	Submission of datasheet for Chain Pulley Block. Supplying, fitting and fixing 2.5MT capacity chain pulley with saddle hangers from roof beam as per specification and direction of Engineer-in-charge at site	1	No.
11	B/16	Submission of datasheet for Gas pressure fire extinguisher. Supplying, fitting and fixing the following components as per specification:- i) CTC gas pressure type fire extinguishers with brackets as per additional instructions 5kg capacity ii) 1 no sand bucket with brackets iii) 2 nos. Shock treatment charts in 3 languages (Bengali, Hindi, English) iv) First Aid Box with necessary arrangement complete with instruments v) Danger Board etc.	1	No.
12	B/17	Submission of P&ID, catalogue, connection details. Supplying & Installation, testing, commissioning automatic Bacteriological treatment plant in incorporated with micro processor based programmable logic controller water flow susor and proportional dosing controller with suitable and standard make with all fixtures to complete the unit in all respect.	2	Nos.
13	B/18	Submission of dwg./datasheet for Sluice Gate. Supplying, fitting & fixing cast iron single face Raising type sluice gate of any size as per requirement at site (as per IS) with body with gate guide, head stock, hand wheel, wall guide, brackets of cast iron/ steel, MS/ composite materials spindle of adequate height with gun metal bush and required size of foundation and guide channel, bolts & nuts etc. complete in all respect. The above rate also includes supply of all necessary tools and plants, gantry, wire, rope, erectors, operators, mechanics as necessary to complete the work	3	Nos.
14	B19	Supplying, fitting & fixing C1 Foot-rest of standard make and design. The rate includes all labour, materials, complete in all respect	20	Nos.

Name of Work		Water treatment and Recycling plant for Coaching Depot at Jheel Siding	Mech erection	
Sl. No.	Schedule No./Item no.	Item Description	Item Qty	Unit
1	B/1	Erection & Commissioning of 5.5 m dia X 2.5 m SWD circular clariflocutator with central shaft, inlet arrangement and outlet arrangement with 'V' - notch weir and ppherifiral launder including RCC connecting channel from clariflocuoator to inlet channel, sludge collecting and removal pipeline, pit etc complete. Erection & commissioning of clarifier mechanism with central drive unit with 1 no. 3HP 1500 rpm approved motor with reduction gear to enable rotation in low speed for paddle rotation mounted on fixed bridge extending from the side tank to it centre and 0.5 mts. beyond having rotating rake totally enclosed arms filled with rubber squeezes for de-slugging alongwith v-notch to weirs for collecting launder, central bearing resembling should have adequate lubrication and greasing points mounted at a convenient point on the walk way. The rate also including with touch up epoxy painting (if required after erection). The clarifier will be installed & commissioned under the supervision of manufacturer/supplier.	1	No.
2	B/2	For Biological treatment works with activated sludge plant in Aeration Tank: Erection & Commissioning Surface Aerator with gearbox. Erection & commissioning of standard surface aerator work reduction gear unit of latest service, parallel shaft, vertical helical, having hardened and ground gears having nominal reduction ratio with required output power and speed at input speed of 1500 rpm or as required complete with input of 10 HP electric motor etc. with all necessary fittings etc. Aerator core and drive tube in MS epoxy painted with the 10 HP capacity aerator motor unit. Aerator core and drive tube will be dynamically balanced with all necessary fitting to complete the work. The surface aerator will be installed & commissioned under the supervision of manufacturer/supplier. The work will be completed as per the direction of Engineer-in-charge.	2	No.
3	B/3	Erection & commisioning of 2 nos. 2.65 m dia X 3 m Ht. MS Pressure clarifier and pressure filter unit of 2.4 m dia X 1.5 m Ht. having capacity 20m3/hr with two MS clarifier unit and one MS pressure filter unit. The MS pressure clarifier will be made of IS-2062 MS plate having venture vessel of size 2400mm dia and 2000mm height having 8mm thick shell plate, 10mm thick dished end, 8mm thick hopper fitted with angle 50mmx50mmx8mm at the junction of cylindrical plate and hopper to achieve prope co-agulation and flocculation in transit to handle 20m3/hr flow of water. The MS pressure filter should be made with IS-2062 of 2300mm dia and 1500mm straight height having 8mm thick shell plate, 10mm dished and 10mm bed plate alongwith filter media of standard quality and required quality with 80mm/ 100mm dia frontal pipe line, polypropetype strainer with epoxy painting and valves in all complete and the work will be completed as per direction of Engineer-in-charge at site in all respect. The pressure filter unit will be installed & commissioned under the supervision of manufacturer/supplier.	1	Lot
4	B/4	Erection & Commissioning of Raw water flow indicator suitable for measuring flow through partials flues complete with capacitance type transducers with 4-20 MA Transmitter from remote indicator complete with remote digital display, flow totalizer complete the work in all respect and the work will be completed as per direction of Engineer-in-charge. The Raw water flow indicator will be installed & commissioned under the supervision of manufacturer/supplier.	1	No.
5	B/5	Erection of pump along with fitting, fixing, testing & commissioning. Testing of submersible type non clog sewage pump motor, each capable of running with specified capacity with CI pump. Casing & motor body, SS-Impeller, SS-shaft, SS-fasteners with the following specification: i) Speed - 1450 RPM ii) Head - 16m - 17m (shut of Head at 19m) iii) Voltage - 140 volts, \pm 6-10% iv) 3- phase, 50 HZ, AC supply v) Soft solid handling size 80mm vi) Motor Rating HP/KW - 7.5/5.5 etc. with stainless steel guide pipe with chain of about 6m tengtu etc. a) Discharge capacity 25m3/Hr. The rate also includes with installation, fitting, fixing of suitable CI D/F bend, coupling etc. with all necessary fittings complete. The rate also includes with installation & commissioning of 16 SWG sheet steel enclosure wall mounting 7.5 HP star delta control panel consisting of special feature such as moisture sensor, thermostat, reserve rotation protection, auto/ manual control system with water level guard, single phase preventer etc. suitable for the above pump motor set and the work will be completed as per the instruction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer/supplier.	2	No.

6	B/6	Installation, fitting, fixing, testing, commissioning, Testing of 5.0HP/ 3.7 KW of latest services hand metal slurry & sludge pump capable to discharge 10m ³ /hr at 10mtr. Head suitable for belt driven with a speed of 1450 rpm horizontal end suction back pullout centrifugal pump of size 100x80, direct drive 6 value semi open impeller type etc. The rate also includes installation of MS base plate, love joy coupling set, foundation bolts, coupling ground etc. with 5HP, 1500 RPM Indus, 3 squirrel cage, TEFC, Horizontal foot mounted motor suitable for 145 ± 10%, frequency 50HZ, ± 5% etc. with all other accessories required to complete the work in all respect and the work will be completed as per direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer/supplier.	2	No.
7	B/7	Installation, fitting, fixing, testing, commissioning of filter water pump with the following specification:- i) Power rating KW/HP: 3.7/5.0 ii) Suction x Delivery (in mm) (80x80) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 10-17 v) D.O.L starting vi) Solid Handling size in mm: 15.5 vii) Speed in RPM-1450 viii) SS/GM Impeller, size in mm: 224 The pump set should be consists of SS/GM Impeller, corroborated CI delivery casing, CI motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with installing of 16SWG sheet steel wall mounting D.O.L or star delta control panel with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier.	2	No.
8	B/8	Installation, fitting and fixing, testing, commissioning of Backwash, pump with the following specification:- i) Power Rating KW/HP: 7.5/10.0 ii) Suction x Delivery (in mm) (100x100) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 35.5-14 v) Total Head in Mtrs:- 10- 23 vi) Method of starting: Star Delta vii) Solid Handling size in mm: 18.5 viii) Speed in RPM-1450 ix) SS/GM Impeller, size in mm: 292 The pump set should be consists of SS/GM Impeller, corroborated CI delivery casing, CI motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with 16SWG sheet steel wall mounting star delta control panel with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier.	2	No.
9	B/9	Installation, fitting and fixing, testing, commissioning of Booster, pump with the following specification:- i) Power Rating KW/HP: 5.5/7.5 ii) Suction x Delivery (in mm) (80x80) iii) Rated voltage: 415V, Three phase, 50Hz iv) Discharge in LPS - 16.2-7.1 v) Total Head in Mtrs:- 20-32 vi) Method of starting: Star Delta vii) Solid Handling size in mm: 14.5 viii) Speed in RPM-2900 ix) SS/GM Impeller, size in mm: 174 The pump set should be consists of SS/GM Impeller, corroborated CI delivery casing, CI motor body, SS pump shaft, Broze pump shaft sleeve etc. The rate also includes with 16SWG sheet steel wall mounting star delta control panel with over bad relay and all other necessary accessories o complete the work in all respect and the work will be done as per the direction of Engineer-in-charge at site. The pump will be installed & commissioned under the supervision of manufacturer / supplier.	2	No.
11	B/15	Fitting and fixing 2.5MT capacity chain pulley with saddle hangers from roof beam as per specification and direction of Engineer-in-charge at site	1	No.
12	B/16	Fitting and fixing the following components as per specification:- i) CTC gas pressure type fire extinguishers with brackets as per additional instructions 5kg capacity ii) 1 no sand bucket with brackets iii) 2 nos. Shock treatment charts in 3 languages (Bengali, Hindi, English) iv) First Aid Box with necessary arrangement complete with instruments v) Danger Board etc.	1	No.
13	B/17	Installation, testing, commissioning of automatic Bacteriological treatment plant in corporated with micro processor based programmable logic controller water flow slusor and proportional dozing controller with suitable and standard make with all fixtures to complete the unit in all respect.	2	Nos.
14	B/18	Fitting & fixing cast iron single face Raising type sluice gate of any size as per requirement at site (as per IS) with body with gate guide, head stock, hand wheel, wall guide, brackets of cast iron/ steel, MS/ composite materials spindle of adequate height with gun metal bush and required size of foundation and guide channel, bolts & nuts etc. complete in all respect. The above rate also includes supply of all necessary tools and plants, gantry, wire, rope, erectors, operators, mechanics as necessary to complete the work.	3	Nos.
15	B19	Fitting & fixing CI Foot-rest of standard make and design. The rate includes all labour, materilas, complete in all respect	20	Nos.