CORRIGNEDUM TO GENERAL CONDITIONS OF CONTRACT (CPWD FORM 7/8)

S. No.	For	Read As
1	Chief Engineer/ DG works/ Chief Engineer (Zone)	CMD, HPL for & on behalf of Department of tourism, Govt. of Kerala
2	Superintending Engineer	DGM (C)
3	Engineer –in –charge	Project In charge
4	Department	Hindustan Prefab Limited
5	Administrative Head	C.M.D., HPL
6.	Owner	**Secretary, District Panchayat,Wayanad**
7.	C.P.W.D.	H.P.L.

SCHEDULE 'B' TO 'F'

SCHEDULE – B :

Schedule of materials to be issued to the contractor.

S.No.	Description of Item	Quantity	Rates in figures & words at which the material will be charged to the contractor	Place of Issue
1	2	3	4	5
NOT APPLICABLE				

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.No.	Description	Hire charged per day	Place of Issue
1	2	3	4
NOT APPLICABLE			

SCHEDULE 'D'

Extra schedule for specific requirements/ document for the work, if any.

Not applicable.

SCHEDULE 'E'

Reference to General Conditions of contract.

Name of work : Turn key work for Design& Built, Detailed Engineering, Procurement, Erection/Construction, Testing, Commissioning, Operation & Maintenance (One year) of Sewage Treatment Plant (Anaerobic cum Extended Aeration Process) of capacity 300 KLD and connecting the sewerage conveyance from the existing buildings in the campus at District Hospital, Mananthavady, Wayanad, Kerala.

NIT NO : HPL/DGM(C)/TC/SZ/2017-18/10 Dated 02.05.2017

Estimated cost of work :	Rs **112.50 lacs**
i) Earnest money :	Rs. **2.25 lacs**
ii) Performance Guarantee :	5% of tendered value.
iii) Security Deposit :	**5.0% of awarded contract amount.**

SCHEDULE 'F'

GENERAL RULES : Officer inviting tender: Deputy General Manager, (C), HPL
& DIRECTION

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3 See below

Definitions:

2(v) Engineer-in-Charge	Project Incharge, HPL
2(viii) Accepting Authority	Chairman of Tender Approval Committee.
2(x) Percentage on cost of material and labour to cover all over needs and profits	15%
2(xi) Standard Schedule of Rates	DSR 2016
2(xii) Department	Hindustan Prefab Limited
9(ii) Standard CPWD contract Form	CPWD form 7/8 edition 2014 with up to date corrections and amendments.& CVC guidelines.

Clause 1 i) Time allowed for submission of Performance Guarantee from the date of issue of letter of acceptance, in days	At the time or before signing of contract agreement but max within 15 days of award of work
ii) Maximum allowable extension beyond period provided in i) above in days	:please refer (i) above
Clause 2 Authority for fixing compensation Under clause 2.	: C.M.D, HPL
Clause 2A Whether Clause 2A shall be applicable	: Not applicable.
Clause 5 Number of days from the date of issue of letter of acceptance or from the first date of handing over of site (whichever is later) for reckoning date of start Clause 6,6A Clause applicable – (6 or 6A)	: 01 days 6 A

Mile Stone(s) as per table given below:

Sl. No	Financial Progress	Time Allowed (from date of start)	Amount to be with- held in case of non- achievement of milestone
1	1/8th (of whole work)	¼ th (of whole work)	In the event of not achieving the necessary progress as assessed from the running payments, 5% of the tendered value of work will be withheld for failure of each milestone.
2	3/8th (of whole work)	½ (of whole work)	
3	3/4th (of whole work)	¾ th (of whole work)	
4	Full	Full	

Time allowed for execution of work	6 Months
Authority to give fair and reasonable Extension of time for completion of work	C.M.D., HPL
Clause 7 Gross work to be done together with net payment / adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	Rs.50 lacs except in last two bills for which amount can be reduced.
Clause 10A List of testing equipment to be provided by the contractor At site lab but not limited to the followings. 1. Theodolite, Dumpy level , Steel level. 2. Plumb bobs, Sprit level, Hammers. 3. Weighing machine (Electronic) 4. Thermometers, stoves. 5. Hydraulic test machine (compressive testing machine) 6. Smoke test machine. 7. Wire gauge, micro meter & toung tester and others as required at site. 8. Sieves Set 9. All other lab equipments as required to conduct field lab tests	
Clause 10B Whether Clauses 10 B (ii) shall be applicable	Yes

Modified Provision	
Clause 10CA Materials covered under this clause 1. Cement 2. Reinforcement Bars 3. Structural Steel.	Not Applicable.

Note :- All India Wholesale Price Index issued by Govt. of India and Base Price for the materials covered under Clause 10CA & their corresponding period as issued under the Authority of DG(works) CPWD as valid on last stipulated date of receipt of tender i/c extensions If any shall be applicable.
Base Price of all the materials covered under Clause 10CA is to be mentioned at the time of approval of NIT

Clause 36(i) Requirement of Technical Representative (s) and recovery rate.

SI. No.	Minimum qualification of technical Representative	Discipline	Designation (principal Technical/technical Representative)	Minimum Experience	m be r	Rate at which recovery shall be made from the contractorin the event of not fulfilling provision of clause 36(i)	
						Figures	Words
1.	Graduate Engineer	Civil	Principal Technical Representative	05 year	01	25,000/- Per month	Twenty Five thousands Per month
2.	Graduate Engineer Or Diploma Engineer (Civil)	Civil	Technical Representative -Do-	NIL 05 year	01	15,000/- Per month For each -Do-	Fifteen thousands Per month For each -Do-
3.	Graduate Engineer Or Diploma Electrical Engineer	Electrical	-Do- -Do-	Nil 05 year	01	15,000/- Per month For each -Do-	fifteen thousands Per month For each -Do-

Assistant Engineer's retired from Government service that are holding Diploma will be treated at per with Graduate Engineers.

Clause 42 i) (a) Schedule /statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates	2016 printed by CPWD
ii) Variations permissible on theoretical quantities. (a) Cement	2% Plus/ Minus
(b) Bitumen	2.5% Plus only and Nil on minus side
(c) Steel reinforcement and structural steel section for each diameter, section and category	2% Plus/ Minus
(d) All other Materials	Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond the permissible variation
1.	Cement	Nil	Rs. 600 per bag of 50 kg

HINDUSTAN PREFAB LIMITED
JANGPURA, NEW DELHI - 110 014

SPECIAL CONDITIONS OF CONTRACT

These special conditions shall supersede/ supplement the relevant conditions given in CPWD Form 7/8(Edition 2014 with up to date corrections and amendments) in the tender document.

1 The EMD of all unsuccessful tenderers will be returned within thirty (30) days of the declaration of successful tenderer (L-1). The EMD of L-2 party shall be returned after award of work to L-1 agency. No interest will be payable by the HPL on the said amount covered under EMD/Any other Security Deposit.

2. Contractor shall submit the complete program of construction along with CPM/PERT Chart proposed to be followed for construction within 7 days of award of work.

3. VALIDITY OF TENDER

The tender shall remain valid for acceptance for a period of **3 months** from the date of opening of price bid of the tenderers. If any tenderer withdraws his tender before the said period or makes any modifications in terms and conditions of the tender, then the HPL has the liberty to forfeit the Earnest Money Deposit of such tenderer.

4. RAW MATERIAL : All materials and labour required for the execution of work shall be arranged by the contractor including cement & reinforcement steel.

(i) The contractor shall procure 43 grade (conforming to IS:8112) ordinary Portland cement, as required in the work, of approved makes as approved by Engineer In- charge Supply of cement shall be taken in 50 kg. bags bearing manufacturer's name and ISI marking, Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS codes. In case test results indicate that the cement arranged by contractor does not conform to the relevant BIS codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

ii) The cement go-down of the capacity to store a minimum of 500 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made. Double lock provision shall be made to the door of the cement go-down. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the key of the other lock shall remain with the contractor. The Contractor shall be responsible for the watch and ward and safety of the cement go-down. The contractor shall facilitate the inspection of the cement go-down by the Engineer-in-charge at any time.

iii) The cement shall be got tested by Engineer-in-charge and shall be used on work, only after test results have been received. The contractor shall supply free of charge the cement required for testing. The cost of tests shall be borne by the contractor.

iv) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 and 10A of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein.

v) Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

i) Damaged cement shall be removed from site immediately by the contractor on receipt of a notice in writing from the Engineer-in-charge. If he does not do so within three days of the receipt of such notice, the Engineer-in-charge shall get it removed at the risk & cost of the contractor.

5. i) The contractor shall procure TMT steel reinforcement bars of Fe500 grade conforming to relevant BIS codes of the approved makes / as approved by Engineer In- charge. The contractor shall have to obtain, and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work. Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to BIS codes, the same shall stand rejected and shall be removed from the site of work by the contractor at his cost within a week time from written orders from the Engineer-in-charge to do so.

ii) The steel reinforcement shall be stored by the contractor at site of work in such a way as to prevent distortion and corrosion and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

iii) For checking nominal mass, tensile strength, bend test, re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than that specified below :-

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes.
Under 10mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10mm to 16mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

iv) The contractor shall supply free of charge the steel required for testing. The cost of tests shall be borne by the contractor.

v) The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 and 10 A of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein.

vi) Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

6. (a) All material used in the work shall be confirming to IS Specification and as per approved make/brands list and shall be ISI marked unless otherwise specified. In the event for items for which either the brands not specified and ISI marked items not available, the sample of the item before use shall be got approved from Engineer –in-charge. However in either cases the samples of materials / fixtures shall be got approved from Engineer –in-charge before use in the work.

(b) Contractor shall be required to produce samples of all materials and fittings sufficiently in advance for approval. The Contractor when called upon shall provide "make" of samples as

per approved list for approval before execution free of cost and also will make arrangements for transportation of samples to the designated test house as per the direction of Engineer-in-charge of the work at his own cost. Cost of testing will also be borne by the contractor.

7. Any notice to be given under this contract shall be sent by registered post, Speed post at the last known registered or head office address of the contractor and shall be deemed to have been effected at the time at which the letter would be delivered in the ordinary course of post.

8. The contractor shall have to provide 5 (five) years guarantee bond in the form of Indemnity
Bond for water proofing works from the date of completion of work.

9. The contractor shall be supplied drawings required for execution of work like architectural, structural ,all service plans and other detailed drawings in a phased manner. If any particular drawing is required for execution of work, contractor shall inform the Engineer-in-Charge in writing at least 15 days in advance.

10. The contractor shall be responsible for obtaining necessary clearances for start of work and on completion of work executed by him from various local bodies, Chief Electrical inspector & Chief Fire Officer for occupation of the building. Necessary laisoning with other working agencies & local bodies shall be his responsibility. Any statutory fees to be paid on account of said clearances shall be reimbursed to contractor by HPL/ Client.

11. The payment to the contractor shall be made from the registered office of HPL at Jangpura, New Delhi through RTGS. If the contractor desires the payment through Banker Cheque/ Demand Draft, charges on account of this shall be debited to the contractor. The contractor shall not claim anything extra on this account.

12. The Contractor should be registered under VAT for works in the State of work. and submit a copy of registration along with tender. The said VAT shall be deducted as per laws at source as applicable. The contractor shall submit the bills as required under VAT as applicable.

13. The contractor should have valid PF Code , PAN, TIN and ESI No., Service Tax Registration. & should provide a copy of PF, ESI and Service Tax Registration. The contractor shall provide the copies of challans as a proof of remittance of PF & ESI amount. The contractor should also maintain the PF records, labour records i.e copies of wage sheets, attendance sheets, monthly returns, annual returns and any other record in this regard for inspection and should provide as and when required by the Engineer-in-charge.

14.0 DEFECTS LIABILITY PERIOD

Any defects developed within the defect liability period of 12 months have to be rectified by the contractor / tenderer at their own cost and risk and if the defects are not rectified by the contractor / tenderer, HPL shall get the work done at the risk and cost of the tenderer. The operation and maintenance period of STP will be 12months and beyond one year the operation and maintenance is renewable for a further period as convenient to client and contractor on mutually argued rate, terms and conditions by the contractor and the client separately. In addition, the tenderer has to indemnity bond on non judicial stamp paper of Rs.100/- for the

performance of the plant for 2 years to be counted from the date of completion including defect liability period of 12 months and the 12 months operation & maintenance period.

15. The contractor will be responsible for obtaining "Contractor All Risk Policy" towards entire cost of the work and will obtain "Workmen compensation policy" at his own cost. The policy should cover entire tenure of contract inclusive of extended period, if any.

16. The contractor has to control noise and air pollution at site as per norms of Pollution Control Board/Local Authorities.

17. The contractor will be responsible to get register himself under labour cess in "Building and other construction workers" welfare board.

18. No extra payment shall be made to the contractor for laying of concrete by ready mixed concrete (R.M.C) plant.

20. No advance shall be paid to the contractor against any Tools & Plants, equipment & machinery etc. brought at site by the contractor.

21. The contractor shall build and complete a mock up room, within the limits of area of the building under construction before progressing for further finishing/ works.

22. The work may be inspected by Central Vigilance Commission and any deductions/compensation proposed by CVC or HPL or ESIC in regard to defective work or work not confirming to specification, loss of time, amount shall be deducted from his dues.

23.FURNISHED OFFICE ACCOMODATION & MOBILITY AND COMMUNICATION TO BE PROVIDED BY CONTRACTOR TO HPL.

a) The successful tenderer has to provide the following facilities at site for smooth execution of the project at no extra cost to HPL /Clients. All the facilities including consumables are to be kept intact till completion and handing over of the project/works. Successful tenderer shall provide a suitable furnished office accommodation for approximate 200 Sqft. area as per approved drawing by HPL at site, with toilets facility, and drinking water. One desktop/laptop computer with advanced software including printer, Scanner, Telephone and Internet connection. The contractor shall provide transportation facilities limited to **Rs.15,000/-** per month for the approved contract period or up to the completion of the project whichever is earlier and the amount will be deducted from the bills of the contractor.

b) The tenderer shall make sufficient arrangement for photography/ videography preferably by maintaining the camera/video camera at site so that photographs/ video films can be taken of any specific activity at any point of time.
The contractor shall provide consumable as required and maintain the aforesaid facilities intact / operational during the tenancy of the contract including extended contract period, if any.
The contractor shall also make sufficient arrangement for photography / videography so that photographs video can be taken of any specific activity at any point of time.

24. The contractor shall make all arrangements for ground breaking Ceremony / inaugural function etc. for the projects as required and the cost towards it is deemed to be included in his rates/offer. Any expenditure already incurred /to be incurred by HPL shall be recovered from the Contractor.

25 HPL shall not supply or procure any material for use on works and the contractor has to make his own arrangements for supplying, procuring transportation and storage of all such materials required for the work, at his own cost.

26 **DELAYS IN COMMENCEMENT**

The tenderer shall not be entitled to any compensation for any loss suffered by him on account of delays in commencing or executing the works, whatever the cause for such delays may be, including delays in procuring Govt. controlled or other materials.

27 **PERIOD OF CONSTRUCTION**

Time is deemed to be the essence of this contract. The total time for design, execution and commissioning of STP shall be **6 months**. Commencement of the work shall be considered from the 10th day of letter of Award/Intent. The contractor shall draw a detailed schedule of programme on whole work, within one week of award of work and submit to the HPL for their approval.

26. Settlement of Disputes and Arbitration:

Any or all Disputes, differences, or questions which may at any time arise between the parties hereto or any person claiming under them, touching or arising out of or in respect of this agreement or subject matter thereof shall first be endeavored to be amicably resolved at the top management level of the parties. However, in event of such dispute, difference or question etc. remaining unsolved, the same shall be referred to the arbitration by Sole Arbitrator to be nominated by The Chairman And Managing Director of Hindustan Prefab Limited, and provisions of the Arbitration and conciliation Act, 1996 shall be applicable. The place of such arbitration shall be at New Delhi.

27 It is clearly agreed and understood by the tenderers/ contractors that notwithstanding any thing to the contrary that may be stated in the agreement between HPL & the contractor, the contractor shall become entitled to payment only after H.P.L. received the corresponding payment(s) from the client / owner. Any delay in the release of payment by the client / owner to HPL leading to a delay in the release of the corresponding payment by HPL to the contractor, shall not entitle the contractor any compensation / interest from HPL.

28. The contractor will have to submit a no claim / final claim certificate, duly notarized on a stamp paper of appropriate value, as per the prescribed format of HPL, while release of security deposit.

29. Secured advance payment shall be released to the contractor as per relevant clause 10 B (i) of CPWD G.C.C. against submission of bank guarantee of equivalent amount by the contractor for the period till such advance remains outstanding. However, if such material

is not incorporated in the work within 03 months, outstanding secured advance shall be recovered at the end of such specified period.

30 MEASUREMENT AND BILLING

The contract is an indivisible design and execution of contract with a ceiling lumpsum amount for the turnkey job. This lumpsum cost will be regulated by a break up schedule with rates given in the bid by the tenderer and included in the agreement. The short fall in size, quantity or other quantities in the components and quality of works will be evaluated by the HPL and suitable deductions will be made from the ceiling lumpsum. The decision of the HPL will be final and binding on the tenderer.

31 PAYMENT TERMS

In the event of award of the contract, the contractor, before starting the work shall furnish breakup prices of all units of work like various concrete/ masonry tanks, buildings, machinery items, piping, electrical works, instrumentation works etc.
Payment shall be released as follows:

Civil works:- Upto 75% of the cost of the civil works on completion of the respective units.
Electro mechanical items:- Upto 65% of the cost of the units on erection at the appropriate unit and after testing and inspection.

85% of the total contract value will be paid /settled on completion, testing and commissioning of the plant satisfactorily.

15% of the contract value will be released after completion of the operation & maintenance period of twelve months.

5% of the contract value which was deducted as retention money as per clause 2.02 of the special condition of the contract will be released after completion of 12 months defect liability period (DLP) counted after the Operation and Maintenance period of 6 months.

The decision of the HPL on the stage of the work will be final. The Tenderer shall raise bills once in a month. The bill after verification by the Engineer-in-charge will be paid within a period of 30 days. Period of final measurement shall be three months from the time of completion of the project.

TAXES AND DUTIES

32 The bidder should quote the rates inclusive of all taxes as applicable in the State like, sales tax, Work Contract Tax, value Added Tax (VAT) on work contract, Forest Royalty, Labour cess etc. and all other taxes, as applicable excluding Service tax, which shall be reimbursed to the contractor on production of proof of deposit of service tax. In the event of non payment / default in payment of any octroi, royalty, cess, turnover tax, sales tax, including the purchase tax, consignment tax or any labour dues and E.P.F. etc, by contractor, the HPL reserves the right to withhold the dues / payments of contractor and make payment to local / state / Central Government authorities or to labours as may be applicable

33 The contractor shall be responsible for obtaining Completion Certificate and Occupancy Certificate from the local body / bodies. The project shall be deemed to have been completed in relation to contractor only when these certificates are obtained from the local body/ bodies and handed over to the Owner. The contractor shall send completion report alongwith above certificates as well as "As Built" drawings and maintenance schedules to the office of the HPL / Owner within 15 days from completion of work.

34 The contractor shall not stake any claim in case the HPL / Owner decides for foreclosure of the work at any of the stages subsequent to start of work in respect of the services based on the agreement.

35 The EMD of successful bidder will be treated as a part of security deposit on award of work.

36 Security deposit @5% shall be deducted from the bills of the Contractor in cash. EMD deposited by the contractor shall be adjusted against the security deposit amount. Security deposit shall be refunded to the contractor after satisfactory completion of defects liability period and obtaining of labour clearance certificate from the labour department office.

37 The contractor shall obtain the labour license, within one month of award of work.

38 The specialized items of work are to be got executed by the contractor engaging the agencies who are experienced in carrying out those specialized items of work duly approved by Engineer-In-charge.

39 For deviation in quantities beyond the limit specified in Schedule 'F', the rates of the deviated quantities payable to the contractor shall be lowest of the rates of contract items, market rate of the item worked out based on market rate analysis and the DSR'2016 rate updated with applicable cost index in case of scheduled items. For Non-schedule items, it shall be lower of the contract item rate and market rate as analysed.

40 For extra items, the rates payable to the contractor shall be lower of the market rate of item as per analysis of rates based on market rate and DSR'2016 item rate updated with applicable cost index (in case of scheduled items). For Non-schedule items, it shall be based on the market rate analysis as worked out.

41 Performance Guarantee @ 5% (Five percent) of awarded contract value shall be submitted by the contractor within the time schedule as specified in the tender document in the shape of Performance Bank Guarantee issued by any Nationalised Bank or ICICI, IDBI, HDFC & Axis Bank of India. Performance Guarantee in any other shape shall not be accepted.

42 The estimate is based on DSR-2016 rates and market rates for the some of the Non-schedule items.

43 For schedule items, items no's, description or nomenclature of the items or unit of the items given in financial bids are based on DSR'2016. If there is any error or discrepancy in the above w.r.t as given in DSR'2016, the same shall be regulated as given in DSR'2016.

44 During the various stages of execution, the Contractor shall submit monthly progress report along with six or more different photographs of the project/work. The photographs must be of good quality and its size should not be less than 4" X 6".

45 The contractor shall be solely responsible for execution of work with proper workmanship and as per the specifications..

46 On completion of the work, the work shall be handed over to the client including all services and facilities constructed in accordance with the approved plans, specification fulfilling all techno functional requirement along with inventory, "As Built drawings", maintenance manual/standard operating procedure(SOP) for equipments and plants and all clearance/certificates from statuary authorities, local bodies complete in all respects.

47 Any amount/Penalty imposed/deducted by client for whatsoever reason will be automatically liable to be deducted/ recovered from the contractor dues.

48. SCOPE OF WORK:

TECHNICAL SPECIFICATIONS

DESIGN BASIS

1.0 Design Basis:

1.1 Plant Capacity:

The Treatment plant has been designed to treat 300 m^3/day of Wastewater generated from the campus. The duration of treatment considered is 20 operating hours a day, thus arriving at a flow rate of 15 m^3/hr.

Sewage Generation

The total foot falls at District Hospital, Mananthavady is as follows,

a.	Raw Water Quantity	:	2,50,000 Ltrs
b.	Laundry Water	:	3,000 Ltrs
c.	Kitchen Uses	:	500 Ltrs
d.	Food Preparation	:	1,500 Ltrs

Total water Usage is 2,55,000 Ltrs per day, However considering the future expansion and foot fall the plant has to be designed to treat 3,00,000 Ltrs per Day.

1.2 Design Feed water Analysis:

S. No.	Parameters	Units	Values
1.0	pH	-	6.5 – 7.5
2.0	Flow	m^3/day	300
3.0	TSS	mg/lit	100
4.0	BOD_3 at 27°C	mg/lit	350
5.0	COD	mg/lit	700
6.0	Oil & Grease	mg/lit	<20

1.3 Treated water Quality:

The treated water quality at the outlet of the plant will be as follows:

S. No.	Parameters	Units	Values
1.0	pH	-	6.0 - 7.0
2.0	TSS	ppm	10.0
3.0	BOD_3 at 27°C	ppm	<20.0
4.0	COD	ppm	< 100.0
5.0	Oil & Grease	ppm	5.0

1.4 PROCESS FLOW CHART

1.5 PROCESS DESCRIPTION

Raw sewage from the campus shall be conveyed to Screen chamber. Screen shall be provided at the inlet for arresting the floating suspended solids if any. Screened raw sewage from the collection well pumped to equalization tank then it shall be pumped biological treatment plant. The Biological treatment is based on a coupled anaerobic and Moving bed bio reactor (MBBR) unit. The anaerobic unit removes around 50% of the load on the MBBR, reducing total power consumption. The MBBR is followed by a flocculator - Clarifier for secondary settling. The overflow from the clarifier shall be received at chlorine contact / filter feed tank and disinfection process generally by diluted sodium hypo chloride solution.

The treated water from the chlorine contact chamber shall be pumped to Pressure Sand Filter and Activated Carbon Filter consists of activated carbon and sand media for arresting the fine suspended solids and trace organics. The treated water from the tertiary treatment unit shall be taken for gardening purpose.

Sludge from Clarifier shall be sent to Sludge Sump then it shall be pumped to the Filter Press for dewatering and dried sludge can be used as manure. The filtrate from the FP flows by gravity to the Collection sump.

1.6 PROCESS DESIGN DETAILS

Design Basis:

Design Flow average rate	:	$300m^3$/day
Hours of Operation	:	20hrs

Raw Sewage Characteristics:

S. No.	Parameters	Units	Values
1.	pH	-	6.5 -7.5
2.	Biochemical Oxygen Demand (BOD_3)	mg/l	350
3.	Chemical Oxygen Demand	mg/l	700
4.	Total Suspended Solids	mg/l	100
5.	Oil & Grease	mg/l	<20

Treated Sewage Characteristics:

S. No.	Parameters	Units	Values
1.	pH	-	6.0 -7.0
2.	Biochemical Oxygen Demand (BOD_3)	mg/l	<20.0
3.	Total Suspended Solids	mg/l	10.0
4.	Oil & Grease	mg/l	5.0

1.7 COMPONENTS

S. No.	Description	Size	MOC	Qty
a.	List of Civil Works			
1.	Screen Chamber	2.2m x 1.0m x 0.5m LD + Req.FB	RCC	01 No.
2.	Equalization Tank	7.8 m dia x 2.5m LD + Req.FB	RCC	01 No.
3.	Anaerobic reactor	4.2m x 4.2m x 4.5m	RCC	01 No.
4.	MBBR tank (split into two)	3.8 m x 2.0 m x 4.0 m LD + 0.5 m FB	RCC with tile lining	01 Nos
5.	Flocculation tank	1.6m x 1.6m x 1.50. + 0.3 FB		
6.	Clarifier	4.20m Dia x 3.30m Ht	RCC	01 No
7.	Chlorine Contact Tank	2.5 m x 2.5 m x 2.8 m + 0.2 m FB	RCC	01 No
8.	Treated Water Storage Tank	4.0 m x 4.0 m x 3.0 m + 0.3 m FB	RCC	01 No
9.	Sludge Digester	3.50m Dia x 3.00m Ht	RCC	01 No
10.	Foundation for STP & Filters	As required	RCC	01 Lot
b.	**List of Fabricated Units:**			
11.	Pressure Sand Filter	1.3 m dia x 1.8 m Ht	MS	01 No
12.	Activated Carbon Filter	1.3 m dia x 1.8 m Ht	MS	01 No
13.	Motorized Clarifier rake mechanism	4.00m Dia	MS	01 No
14.	Flocculator Stirrer	Suitable size	MS	01 No
15.	Aeration Grid	For aeration and equalization tanks	SS	01 No
c.	**List of Mechanical Units:**			
16.	Coarse Screen made of SS 304		SS	1 No.
17.	Raw sewage transfer pumps of 15 m3/hr @ 10 m Head.Kirloskar/Eq. Make		CI/SS	2 Nos. (1W+1S)
18.	Anaerobic fixed bed media .MM Aqua/ Eq. make		PVC	1 lot
19.	Twin lobe air blower of capacity 80 m3/hr @ 0.4 kg/cm2 pressure for Equalization Tank. Kay/Everest/Eq. make		CI	2 Nos. (1W+1S)
20.	Twin lobe air blower of capacity 210 m3/hr @ 0.5 kg/cm2 pressure for MBBR Reactor. Kay/Everest/Eq. make		CI	2 Nos. (1W+1S)
21.	Media for MBBR reactor, Anox/Eq make.		PE	1 Lot
22.	Hypo Dosing Tank & Pump: 100 lts Tank		HDPE	1 No.

23.	Chemical dosing pumps and tank	HDPE	2 Nos.
24.	Filter Feed pumps of15 m3/hr @ 35 m Head.Kirloskar/Eq. Make	CI/SS	2 Nos. (1W+1S)
25.	Sludge transfer pump 3.0 – 4.0 m3/hr @ 10 m Head	-	2 nos (1W + 1S)
26.	Inter connecting piping & valves	-	1 Lot
27.	Control panel	-	1 No.
d.	**List of Instruments:**		
24.	Pressure Gauges	-	1 Lot
25.	Electro Magnetic Flow Meter	-	1 No
26.	Level Switches	-	1 Lot

1.8 LIST OF EXCLUSIONS

1. Incoming power and control cabling to the panel.
2. Plant lighting
3. All piping, cabling etc. beyond the termination points as mentioned.
4. Any other item not specifically mentioned in our scope.
5. Sludge Disposal from site.

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Annexure - X

Notice for appointment of Arbitrator

To

CMD

Dear Sir,

In terms of clause --- of Special Condition of Contract (SCC), I/we hereby give notice to you to appoint an arbitrator for settlement of disputes mentioned below:

1. Name of applicant
2. Whether applicant is Individual/Prop. Firm/Partnership Firm/Ltd. Co.
3. Full address of the applicant
4. Name of the work and contract number in which arbitration sought
5. Contract amount in the work
6. Date of contract
7. Stipulated date of initiation of work
8. Stipulated date of completion of work
9. Actual date of completion of work (if completed)
10. Total number of claims made
11. Total amount claimed
12. Date of submission of final bill (if work is completed)
13. Date of payment of final bill (if work is completed)
14. Amount of final bill (if work is completed)
15. Date of request made to DGM for decision
16. Date of receipt of DGM decision
17. Date of appeal to you
18. Date of receipt of your decision.

Specimen signatures of the applicant (only the person/authority who signed the contract should sign)

I/We certify that the information given above is true to the best of my/our knowledge. I/We enclose following documents.

1. Statement of claims with amount of claims.
2.
3.
4.

Yours faithfully,

(Signatures)

Copy in duplicate to:

1. The Engineer-in-charges

PROFORMA FOR BANK GUARANTEE IN LIEU OF EARNEST MONEY

(On Non-Judicial Stamp Paper to be stamped in accordance with stamp act, the stamp paper to be in the name of Executing Bank)

Ref. : Date :

Bank Guarantee No. …….

To,

Hindustan Prefab Limited,
Jangpura,
New Delhi : 110 014.

Dear Sirs,

In consideration of Hindustan Prefab Limited having its Head Office at Jangpura, New Delhi : 110 014 (hereinafter called the "Employer" which expression shall unless repugnant to the subject or context include its successors and assigns) having issued Notice Inviting Tender No…….
M/s ……..
having its Registered /Head Office at
…….
(hereinafter called the "Tenderer" who wishes to participate in the said tender for
……. and you, have agreed to accept an irrevocable and unconditional Bank Bid Guarantee for and amount of Rs……. valid up to
…… on behalf of the tenderer in lieu of cash Deposit required to be made by the tenderer, as a condition precedent for participation in said tender.

We, the …… Bank incorporated under
…… law and having one of our branches at …….. and having our Registered office/ Head office at
…… do hereby unconditionally and irrevocable guarantee and undertake to pay to the "Employer" immediately on demand without any demur reservation,

protest, contest, and recourse to be extent of the said sum of Rs…… (Rs……only).

Any such claim/ demand made by the said "Employer" on us shall be conclusive and binding on us irrespective of any dispute or difference raised by the tenderer. This guarantee shall be irrevocable
and shall remain valid up to …….. If any further extension of this guarantee is required, the same shall be granted to such required period on receiving instructions from M/s …… on whose behalf this guarantee is issued.

We the said Bank undertake not to revoke this guarantee during its currency except with the previous consent of the employer in writing and agree that any change in the constitution of the said tenderer or the said Bank shall not discharge our liability hereunder. In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this …… day of
……. 2006 at……..

WITNESS :

1. (SIGNATURE) (SIGNATURE)

(NAME)…….. (NAME)……

(Designation with Bank Stamp)……..

(OFFICIAL ADDRESS) ATTORNEY AS PER
POWER OF ATTORNEY NO……

…… DATE ……..

2. (SIGNATURE)

(NAME)

(OFFICIAL ADDRESS)

…….

…….

NOTE :

1. The stamp papers of appropriate value shall be purchased in the name of "Issuing Bank". The Guarantee shall be valid up to 90 days from the date of opening of Financial Bid..

G.C.C. 2014 (CPWD)

Form 7/8 (Edition 2014 with up to date corrections and amendments)