

No.

Date:

Sub: Addendum No. 01 under Bidding Document for **Improvement of Water Supply System in Bhagalpur Municipal Corporation** under **Contract Package No. BH/WS/02**

Bid Ref No.: BUIDCo/BUDIP-2/NCB/02

The Bidding Document of Contract Package No BH/WS/02 is modified as per the enclosed Addendum No. 01. This modification is as per the Clause 8 of Section 1: Instructions to Bidders. The Bidding Document stands modified as per this Addendum and the Addendum shall be part of Bidding Document.

All prospective bidders are requested to incorporate the clarification and Addendum while submitting the Bids and submit duly signed copy of Addendum along with their technical bid.

Encl: As above

Sd/-

Program Director

BUDIP, BUIDCo

No.

Date:

Copy to:

- Chief General Manager, BUIDCo
- General Manager (Tech/Works/Finance), BUIDCo
- Executive Engineer, PIU, ADB Project, Gaya
- Manager (IT), BUIDCo, for uploading the same on website.
- All Prospective Bidders....

Bid Ref No: BUIDCo/BUDIP-2/NCB/02

Contract Package No: BH/WS/02

Package Name: Improvement of Water Supply System in Bhagalpur Municipal Corporation

Addendum 1

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as
1.	Section 2 ITB 22.1	The dead line for bid submission is Date 18 May 2018 Time 15.00 Hrs	The dead line for bid submission is Date 21 June 2018 Time 15.00 Hrs
2.	Section 2 ITB 25.1	The bid opening of technical Bid shall take place..... Date : On the same day of Bid submission Time: Immediately after the deadline of bid submission	The bid opening of technical Bid shall take place..... Date : 21-06-2018 Time : 15.30 Hrs
3.	Section 3 2.5 Sub-Contractor Page 3-14	2.5 Sub-contractor	2.5 Sub-contractor shall be modified as per Annexure 1.
4.	Vol. I, Section 3: EQC 1.7	Operating and Maintenance Costs The Price Bid Evaluation shall be carried out with sum of Capital cost + Discounted O&M cost +Differential Power Consumption Loading (as applicable as per Guaranteed process power and excluding Provisional sum (PS)).The cost shall be considered for evaluation on net present worth basis. The cost quoted by the contractor will be reduced to net present worth by using following formula: $C = P (1 - (1/(1+r)^n))/r$ Where C = Cost quoted by the contractor P = Net present worth r = Rate of interest @ 10%	The Price Bid Evaluation shall be carried out with sum of Capital cost + Discounted O&M cost +Differential Power Consumption Loading (as applicable as per Guaranteed process power and excluding Provisional sum (PS)).The cost shall be considered for evaluation on net present worth basis. The year-wise O&M cost quoted by the contractor will be reduced to net present worth by using following formula: $P = C * (1/(1+r)^n)$ Where C = Cost quoted by the bidder P = Net present worth r = Rate of interest @ 10%
5.	Section 3 Construction experience in Key	Beyond defect liability period	Including defect liability period

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																		
	Activities 2.4.2(1) 2.4.2(7)and 2.4.2(8) & Section 4 Bidding forms Form EXP - 2: Construction Experience in Key Activities 2.4.2(1),2.4. 2(7) and 2.4.2(8)																				
6.	Section 4 Form Tech 6: Checklist Page 4-34	<p>The Bidder shall submit the following information. He is required to opt for only one out of the five options permitted for the clarifiers and one of the two options of filters and provide information of the same.</p> <table border="1" data-bbox="586 932 1341 1305"> <tr> <td data-bbox="586 932 667 963">1</td> <td data-bbox="667 932 1223 963">Block layout plan provided</td> <td data-bbox="1223 932 1341 963">Yes/No</td> </tr> <tr> <td data-bbox="586 963 667 995">2</td> <td data-bbox="667 963 1223 995">List of units provided</td> <td data-bbox="1223 963 1341 995"></td> </tr> <tr> <td data-bbox="586 995 667 1305">3</td> <td data-bbox="667 995 1223 1305"> Type of Clarifier provided <u>Conventional clariflocculator</u> or <u>Flat bottom static sludge blanket clarifier</u> or <u>Flat bottom pulsating sludge blanket clarifier</u> or <u>Lamella clarifier or Tube settler</u> or <u>Solids recirculation type clarifier</u> </td> <td data-bbox="1223 995 1341 1305"></td> </tr> </table>	1	Block layout plan provided	Yes/No	2	List of units provided		3	Type of Clarifier provided <u>Conventional clariflocculator</u> or <u>Flat bottom static sludge blanket clarifier</u> or <u>Flat bottom pulsating sludge blanket clarifier</u> or <u>Lamella clarifier or Tube settler</u> or <u>Solids recirculation type clarifier</u>		<p>The Bidder shall submit the following information. He is required to opt for only one out of the two options permitted for the clarifiers and one of the two options of filters and provide information of the same.</p> <table border="1" data-bbox="1379 932 2114 1091"> <tr> <td data-bbox="1379 932 1460 963">1</td> <td data-bbox="1460 932 1962 963">Block layout plan provided</td> <td data-bbox="1962 932 2114 963">Yes/No</td> </tr> <tr> <td data-bbox="1379 963 1460 995">2</td> <td data-bbox="1460 963 1962 995">List of units provided</td> <td data-bbox="1962 963 2114 995"></td> </tr> <tr> <td data-bbox="1379 995 1460 1091">3</td> <td data-bbox="1460 995 1962 1091"> Type of Clarifier provided Lamella clarifier (Plate Settlers) </td> <td data-bbox="1962 995 2114 1091"></td> </tr> </table>	1	Block layout plan provided	Yes/No	2	List of units provided		3	Type of Clarifier provided Lamella clarifier (Plate Settlers)	
1	Block layout plan provided	Yes/No																			
2	List of units provided																				
3	Type of Clarifier provided <u>Conventional clariflocculator</u> or <u>Flat bottom static sludge blanket clarifier</u> or <u>Flat bottom pulsating sludge blanket clarifier</u> or <u>Lamella clarifier or Tube settler</u> or <u>Solids recirculation type clarifier</u>																				
1	Block layout plan provided	Yes/No																			
2	List of units provided																				
3	Type of Clarifier provided Lamella clarifier (Plate Settlers)																				
7.	Section -4, Bidding	Full Load Rating - MVA- <u>1.0</u>	Full Load Rating - MVA- 1.25																		

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as
	Forms, Page 4-50, Table No.1.7, 33/0.433KV Transformer(At Raw Water Intake), sl. No.4		
8.	Section -4, Bidding Forms, Page 4-52, Table No.1.8, 33/0.433KV Transformer (At WTP), sl. No.4	Full Load Rating - MVA- <u>1.6</u>	Full Load Rating - MVA- 2.0
9.	Section 4 Clause No. 1.15.1.1 & Clause No. 2.15.1.1 and Clause 4.7.8.3	<u>36 KV</u> VCB Panel- Supply and delivery of 800 A, <u>36 KV</u> indoor type, triple pole folded type construction. The switchgear and control gears complete..... with principal parameters as under: Rated Voltage - <u>36kV</u>	33 KV VCB Panel- Supply and delivery of 800 A, 33 KV indoor type, triple pole folded type construction. The switchgear and control gears complete..... with principal parameters as under: Rated Voltage - 33kV
10.	Section -4, Bidding Forms, Page 4-110, item1.30.1 & Page 4-161, item2.30.1	33kV Single Circuit Lattice Structure	33kV Single Circuit Lattice Structure. The 33kV power will be made available by 33kV double Circuit underground cable from Sabour Grid Sub Staion to Barari by Bhagalpur Electricity Distribution Company Pvt. Ltd.
11.	Section 4 Schedule 8 Item No	Ductile Iron K - 12 specials suitable for push on jointing and Laying in position S&S or flanged <u>C.I. special</u> such as tees, bends, collars, tapers andcaps etc.(including cost of specials)	Ductile Iron K - 12 specials suitable for push on jointing and Laying in position S&S or flanged D.I. Specials such as tees, bends, collars, tapers andcaps etc.(including cost of specials)

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																								
	8.14.1 And 8.14.2	- up to 600 mm dia Ductile Iron K - 12 specials suitable for push on jointing and Laying in position S&S or flanged <u>C.I.special</u> such as tees, bends, collars, tapers and caps etc.(including cost of specials) above to 600 mm dia	- up to 600 mm dia Ductile Iron K - 12 specials suitable for push on jointing and Laying in position S&S or flanged D.I. Specials such as tees, bends, collars, tapers and caps etc.(including cost of specials) above 600 mm dia																								
12.	Section 4 Schedule 7 Item 7.9.11 Page 4-241	Providing m.s. plate welded/spirally welded mild steel pipes and specials. Fabricating the same for the pressure 15 Kg/cm2. mild steel pipes and specials, Tee, bends, reducers, tail pieces, flanges, blank flange etc. as shown in drawings or as directed by the engineer using approved quality 10 mm thick MS plates conforming to I.S. 2062 including marking, cutting, rolling, bending and welding using approved quality of electrodes conforming to IS 6916:1978. Item includes providing at site , testing with radiography, as per technical specification and direction of E.I.C. (density of MS Plate assumed as 7850 kg/cum). (Rate is exclusive of excise duty) 7.9.1.1 a) 1321 mm dia (10mm wall thickness)	Providing m.s. plate welded/spirally welded mild steel pipes and specials. Fabricating the same for the pressure 15 Kg/cm2. mild steel pipes and specials, Tee, bends, reducers, tail pieces, flanges, blank flange etc. as shown in drawings or as directed by the engineer using approved quality 10 mm thick MS plates conforming to I.S. 2062 including marking, cutting, rolling, bending and welding using approved quality of electrodes conforming to IS 6916:1978. Item includes providing at site, testing with radiography, as per technical specification and direction of E.I.C. (density of MS Plate assumed as 7850 kg/cum). (Rate is inclusive of all taxes) 7.9.1.1 a) 1321 mm dia (10mm wall thickness)																								
13.	Section 4 Bill No.7 Item 7.10	Classification of sluice valve Providing and fixing C.I. sluice valves..... 300 mm diameter <u>Class II</u>	Providing and fixing C.I. sluice valves 300 mm diameter PN 1.0 class																								
14.	Section 4 Schedule 4 Item 4.11		<p><i>Add new items below 4.11:</i></p> <table border="1"> <thead> <tr> <th>item</th> <th>Description</th> <th>quantity</th> <th>unit</th> <th>Rate</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>4.11.1</td> <td>River, Nallah and road Crossings for raw water main</td> <td>1</td> <td>Lot</td> <td></td> <td></td> </tr> <tr> <td>4.11.2</td> <td>River, Nallah and road Crossings for clear water main</td> <td>1</td> <td>Lot</td> <td></td> <td></td> </tr> <tr> <td>4.11.3</td> <td>Railway/NH Crossings by Trench less Technology for clear water main and Raw water main</td> <td>300</td> <td>m</td> <td></td> <td></td> </tr> </tbody> </table>	item	Description	quantity	unit	Rate	Amount	4.11.1	River, Nallah and road Crossings for raw water main	1	Lot			4.11.2	River, Nallah and road Crossings for clear water main	1	Lot			4.11.3	Railway/NH Crossings by Trench less Technology for clear water main and Raw water main	300	m		
item	Description	quantity	unit	Rate	Amount																						
4.11.1	River, Nallah and road Crossings for raw water main	1	Lot																								
4.11.2	River, Nallah and road Crossings for clear water main	1	Lot																								
4.11.3	Railway/NH Crossings by Trench less Technology for clear water main and Raw water main	300	m																								

SNo		Clause/Section Reference	Existing Provision	Amended. Now to be read as					
				4.11.4	Coarse sand bedding below pipeline for clear water main	800 0	Cum		
				4.11.5	Constructing Masonry Chamber in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100 mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab M 30 Grade concrete , including necessary excavation, RCC foundation over cement concrete 1:4:8 (1 cement : 4 fine sand : 8 graded stone aggregate 40 mm nominal size) as per drawing and 12 mm inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design With common burnt clay F.P.S. (non modular) bricks of class designation 100A all complete as per drawing, technical specification and direction of Engineer-In-charge 1000x1200x1500 mm size	3	Nos		

SNo		Clause/Section Reference		Existing Provision		Amended. Now to be read as						
							valve chamber suitable for 250-300 mm dia Valves					
						4.11.6	Thrust blocks including shuttering, centring, PCC, M30 concrete and required steel including design of thrust blocks for Raw water main	1	Lot			
						4.11.7	Thrust blocks including shuttering, centring, PCC, M30 concrete and required steel including design of thrust blocks for clear water main	1	Lot			
						4.11.8	Surge protection arrangement in clear water main	1	Lot			
						4.11.9	Rooms with required size with Air conditioning arrangement to accommodate PLCs where ever required	1	Lot			
15.	Section 4 Schedule 7 Item no 7.11 and 7.12					Item 7.11 and 7.12 stands deleted.						
16.	Section 4 Schedule 8 Item 8.7 and 8.8					Item 8.7 and 8.8 stands deleted.						
17.	Section 4 BOQ Schedule 8	8.13.1.1	Providing, lowering, laying, aligning, fixing in position in pipe line, manually operated DI D/F Sluice valves of approved make (IS: 14846 amended up to date) PN 1.0 class of following dia complete (including jointing and jointing			8.13.1.1	Providing, lowering, laying, aligning, fixing in position in pipe line, power actuated and manually operated DI D/F Sluice valves of approved make (IS: 14846 amended up to date) PN 1.0 class of following dia complete (including					

SNo		Clause/Section Reference		Existing Provision				Amended. Now to be read as					
					material) including Dismantling Joints and all material, labor, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer. Isolation & Scour Valve						jointing and jointing material) including Dismantling Joints and all material, labor, testing and commissioning along with pipe line as per Technical Specifications and as per direction of Engineer. Isolation & Scour Valve		
				8.13.1.2	Providing, lowering, laying, aligning, fixing in position D.I D/F manually operated long body butterfly valves (IS: 13095) PN-1.0 class of following dia complete (including jointing and jointing material) including Dismantling Joint and all material, labour, testing along with pipe line and commissioning as per Technical Specifications and as per direction of Engineer. Category "A"			8.13.1.2	Providing, lowering, laying, aligning, fixing in position D.I D/F power actuated and manually operated long body butterfly valves (IS: 13095) PN-1.0 class of following dia complete (including jointing and jointing material) including Dismantling Joint and all material, labour, testing along with pipe line and commissioning as per Technical Specifications and as per direction of Engineer. Category "A"				
18.	Section 4 Schedule 7 Item No 7.9.5 and 7.9.6			7.9.5	Making 12 mm thick inner lining/guniting with Cement mortar (1:3) (1 cement:3 coarse sand) by mechanical means including curting etc. complete as per specification and direction of the Engineer- in -charge	Sq.m	10582.61	7.9.5	External coating shall be provided with pre-fabricated polyolefin Tape to MS pipes and specials or LPE external coated pipe preferably factory made confirming to DIN -30670,1991 and DIN -30678,1992. Protective coating shall consists of Primer, Inner tape, Wrap and outer wrap as per the Technical specification.	Sq.m	10582.61		
				7.9.6	Cement mortar Grouting on the outside face of the pipe in 1:3 CM; 40 mm thick with steel watering, curing etc. complete and as per direction of engineer in charge	Sq.m	10582.61	7.9.6	Deleted				
				7.9.7	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's			7.9.7	Internal Epoxy lining and coatings shall be confirming to IS 3589 and AWWA C-210 and all the buried MS pipes and specials shall have internal Epoxy lining in 3 coats including primer coat				

SNo		Clause/Section Reference		Existing Provision				Amended. Now to be read as					
					specifications including appropriate priming coat, preparation of surface, etc. complete.				with total DRY Film thickness (DFT) of minimum 430 micron as per Technical specification and direction of Engineer.				
								7.9.7.1	a) 1321 mm dia	sqm	10582.61		
								7.9.7.2	b) 900 mm dia	sqm	508.94		
19.	Section 4												
				No	Description	Unit	Qty	No	Description	Unit	Qty		
				7.1 6	Providing Cathodic Protection arrangement in the Raw water main	No	2	7.1 6	Providing Cathodic Protection arrangement in the entire length of Raw water main including Soil resistivity survey, Supply, installation, testing and commission of Transformer Rectifier unit, Anode ground bed, Anode junction Box, and cathode junction box. Supply and laying copper conductor cables of required size and required length . Supply, installation testing commissioning of Flange materials 2 Nos, reference cell 2 Nos and	No	1		

SNo		Clause/Section Reference	Existing Provision	Amended. Now to be read as		
				grounding cells 2 Nos and thermit welding cables of suitable size including supply , installation, testing commissioning of test stations etc complete		
20.	Section 4- Bidding forms Form Tech - 3. Details of sub-contractor. Page 4-		Similar work experience in past ten (10) years (attach work orders and completion certificates from clients)	Similar work experience in past ten (10) years for dredging work alone and similar work experience in past seven (7) years for other works (attach work orders and completion certificates from clients)		
21.	Section 4 Schedule 4 Item 4.6.3.1		River Bank Protection woks at WTP area on the right bank of River Ganga by revetment and piling for a length of about 500 m including surveying construction etc complete	River Bank Protection woks at WTP area on the right bank of River Ganga by revetment and Gabion wall below the toe beam for a length of about 500 m including surveying construction as per the technical specification and as per the drawings approved by the Engineer etc complete		
22.	Section 4 Schedule 4 Item No 4.4		Providing, laying and fabricating and testing of MS pipe/ of required diameter to convey the ultimate requirement of Raw water of 141 MLD from intake well to jack well by gravity, by trenchless method adopting any suitable technology about 13 m below the ground at required depth as per the direction of competent authority including carrying out survey work at the job site for determining underground cable trenches like telephone, power cable, water & sanitary lines and resistivity tests for finding the soil strata using necessary equipment for completion of work, mobilizing of machineries and specialized crew at the job site, etc. complete in all respects, including excavation of drive pit and exit pit (upto required depth), necessary de-watering and providing concrete foundations at the base of the Drive pit, crane for handling of pipes, and any other machinery,	Providing, laying and fabricating and testing of MS pipe/ of required diameter with internal epoxy lining and outer side tape lining as per the technical specification to convey the ultimate requirement of Raw water of 141 MLD from intake well to jack well by gravity, by trenchless method adopting any suitable technology about 13 m below the ground at required depth as per the direction of competent authority including carrying out survey work at the job site for determining underground cable trenches like telephone, power cable, water & sanitary lines and resistivity tests for finding the soil strata using necessary equipment for completion of work, mobilizing of machineries and specialized crew at the job site, etc. complete in all respects, including excavation of drive pit and exit pit (up to required depth), necessary de-watering and providing concrete foundations at the		

SNo	Clause/Section Reference	Existing Provision					Amended. Now to be read as				
		tool & tackles required, construction of temporary works as per requirement and as approved by IWAI authorities complete in all respect with all lead and lifts, as per specification and the direction of the Engineer. In all type of soils and Extra for excavation of driven pit/ exit pit / intermediate pit beyond 3 metre depth, required for pushing/ pulling of MS pipe in trenchless technology, with proper protection at three sides with shoring sheets and ISMB's, maintaining during pushing/ puling of pipe, back filling, necessary de-watering including all machinery, tools, and tackles required, including welding, lining of pipes, etc complete as per specification and the direction of the Engineer					base of the Drive pit, crane for handling of pipes, and any other machinery, tool & tackles required, construction of temporary works as per requirement and as approved by IWAI authorities complete in all respect with all lead and lifts, as per specification and the direction of the Engineer. In all type of soils and Extra for excavation of driven pit/ exit pit / intermediate pit beyond 3 metre depth, required for pushing/ pulling of MS pipe in trenchless technology, with proper protection at three sides with shoring sheets and ISMB's, maintaining during pushing/ puling of pipe, back filling, necessary de-watering including all machinery, tools, and tackles required, including welding, lining of pipes, etc complete as per specification and the direction of the Engineer				
23.	Section 6 Target Milestone	SN o	Components	1 st year Milestone (1-12 months)	2 nd year cumulative Milestone (13 to 24 month)	3 rd year cumulative milestone (25 to 30 months)	SN o	Components	1 st year Milestone (1-12 months)	2 nd year cumulative Milestone (13 to 24 month)	3 rd year cumulative milestone (25 to 30 months)
		1	Design of all the components (0 to 6 th month)	100%			1	Design of all the components (0 to 6 th month)	100%		
		2	Approach Channel (4 th to 7 th month)	<u>100%</u>			2	Approach Channel (24 th to 27 th month)		25%	100%
		3	Intake works (4 th to 12 th month)	<u>100%</u>			3	Intake works (4 th to 15 th month)	75%	100%	
		4	Connecting pipe between intake and Jack well (25 th to 27 th month)			100%	4	Connecting pipe between intake and Jack well (25 th to 27 th month)			100%
		5	Jack well (4 th to 27 th month)	25%	75%	100%	5	Jack well (4 th to 27 th month)	25%	75%	100%
		6	Raw water main (13 th to 16 th month)		100%		6	Raw water main (13 th to 18 th month)		100%	
		7	Clear water main		50%	100%					

SNo	Clause/Section Reference	Existing Provision					Amended. Now to be read as					
			(13 th to 27 th month)									
			8	WTP (4 th to 27 th month)	25%	60%	100%	7	Clear water main (13 th to 27 th month)		50%	100%
			9	Electro Mechanical equipment (13 th to 27 th month)		50%	100%	8	WTP (4 th to 27 th month)	25%	60%	100%
			10	SCADA and Automation (13 th to 27 th month)		25%	100%	9	Electro Mechanical equipment (13 th to 27 th month)		50%	100%
								10	SCADA and Automation (13 th to 27 th month)		25%	100%
24.	Section 6 Clause 147 Page 6-58		<p>The schedule for completion of works, trial run commissioning and Operation and Maintenance:</p> <ul style="list-style-type: none"> • Time limit for completion of works - <u>30</u> months • Trial run - <u>30/30 days</u> after completion of work • Defect liability period - 1 year from date of commissioning • Operation and Maintenance - 10 years from date of commissioning. <p>The 1 year defect Liability period is included in operation & maintenance.</p>					<p>The schedule for completion of works, trial run commissioning and Operation and Maintenance:</p> <ul style="list-style-type: none"> • Total time limit for completion of design-build works - 30 months • Time limit for completion of works - 27 months • Trial run - 3 months after completion of work • Defect liability period - 1 year from date of commissioning • Operation and Maintenance- 10 years from date of commissioning. <p>The 1 year defect Liability period is included in operation & maintenance.</p>				
25.	Section 6 Clause 5.3 Activities of work Page 6-28		<p>Note: <u>The Contractor to maintain</u> existing utility services like electricity, water supply, telephone; oil/gas pipe lines etc. within the project area. <u>Cost of all the shifting of poles, cables etc. if required shall be borne by the contractor.</u></p>					<p>Note: During the contract period, if any of the existing utility services like electricity, water supply, telephone; oil/gas pipe lines etc., within the project area, are damaged by the contractor, it shall be restored to its original condition. The cost of all such restoration work shall be borne by the contractor.</p>				
26.	Section 6 Page 6-48		<p>Raw water pumping main of 1321mm (O.D) MS pipes, <u>12 mm</u> thick plate (Indicative, Contractor to verify) is proposed to be laid from intake to WTP at Barari water works in Bhagalpur.</p>					<p>Raw water pumping main of 1321mm (O.D) MS pipes, 10 mm thick plate (Indicative, Contractor to verify) is proposed to be laid from intake to WTP at Barari water works in Bhagalpur.</p>				
27.	Section 6 Page 6-52 Clause 124		<p>Mechanical works (Intermediate stage requirement)</p> <ul style="list-style-type: none"> - Clear water pumping machineries - EOT crane (15 T capacity) 					<p>Mechanical works (Intermediate stage requirement)</p> <ul style="list-style-type: none"> - Clear water pumping machineries - EOT crane (10 T capacity) 				

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																																				
28.	Section 6 Clause 117 Page 6-48	Raw water pumping main of 1321mm (O.D) MS pipes, <u>12 mm</u> thick plate (Indicative, Contractor to verify) is proposed to be laid from intake to WTP at Barari water works in Bhagalpur	Raw water pumping main of 1321mm (O.D) MS pipes, 10 mm thick plate is proposed to be laid from intake to WTP at Barari water works in Bhagalpur																																				
29.	Section 6: Table 7.1 Target Performance Standards P. 6-73/74	<table border="1"> <thead> <tr> <th colspan="2">Sub-Part No. 4: Operation - Water Production, and Storage</th> </tr> <tr> <th>Description</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Parameter 4.1</td> <td>Efficiency in water production</td> </tr> <tr> <td>Target services level</td> <td>Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs <u>Quantity of water to be produced and conveyed to WTP per day 95 MLD. Allowable quantity 90 MLD</u> Maximum Water losses shall be 6% (Pass or Fail)</td> </tr> <tr> <td>Weightage Measured by</td> <td>50% Contractor: flow meters installed <u>at Jack well and Entry of WTP and inlet of Service Reservoirs</u></td> </tr> <tr> <td>Monitored by</td> <td>Employers Representative</td> </tr> <tr> <td>Applicability</td> <td>The parameter applies to entry of water in the <u>intake well, Jack well and entry point of service reservoirs</u> For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.</td> </tr> <tr> <td>Allowable exclusions</td> <td>The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.</td> </tr> <tr> <td>Parameter 4.2</td> <td>Quality of Water at the entry point of Service Reservoir</td> </tr> <tr> <td>Target service Level</td> <td>Must meet the CPHEEO standards daily in major five characteristics (Turbidity, Residual Chlorine, Bacteriological test, pH, <u>any one</u> other parameters as CPHEEO norms. If not</td> </tr> </tbody> </table>	Sub-Part No. 4: Operation - Water Production, and Storage		Description	Details	Parameter 4.1	Efficiency in water production	Target services level	Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs <u>Quantity of water to be produced and conveyed to WTP per day 95 MLD. Allowable quantity 90 MLD</u> Maximum Water losses shall be 6% (Pass or Fail)	Weightage Measured by	50% Contractor: flow meters installed <u>at Jack well and Entry of WTP and inlet of Service Reservoirs</u>	Monitored by	Employers Representative	Applicability	The parameter applies to entry of water in the <u>intake well, Jack well and entry point of service reservoirs</u> For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.	Allowable exclusions	The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.	Parameter 4.2	Quality of Water at the entry point of Service Reservoir	Target service Level	Must meet the CPHEEO standards daily in major five characteristics (Turbidity, Residual Chlorine, Bacteriological test, pH, <u>any one</u> other parameters as CPHEEO norms. If not	<table border="1"> <thead> <tr> <th colspan="2">Sub-Part No. 4: Operation - Water Production, and Storage</th> </tr> <tr> <th>Description</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>Parameter 4.1</td> <td>Efficiency in water production</td> </tr> <tr> <td>Target services level</td> <td>Efficiency in water production – Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs Minimum Quantity of water to be produced and conveyed to WTP as per earmarked quantity as per table No. 7.1 or the quantity required at the time per day whichever is decided by the employer Maximum Water losses shall be 6% (Pass or Fail)</td> </tr> <tr> <td>Weightage Measured by</td> <td>50% Contractor: flow meters installed at Jack well and Entry of WTP & out let of clear water reservoir at WTP and inlet of Service Reservoirs</td> </tr> <tr> <td>Monitored by</td> <td>Employers Representative</td> </tr> <tr> <td>Applicability</td> <td>The parameter applies to entry of water in the Jack well, WTP, outlet of clear water reservoir and entry point of service reservoirs For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.</td> </tr> <tr> <td>Allowable exclusions</td> <td>The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.</td> </tr> </tbody> </table>	Sub-Part No. 4: Operation - Water Production, and Storage		Description	Details	Parameter 4.1	Efficiency in water production	Target services level	Efficiency in water production – Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs Minimum Quantity of water to be produced and conveyed to WTP as per earmarked quantity as per table No. 7.1 or the quantity required at the time per day whichever is decided by the employer Maximum Water losses shall be 6% (Pass or Fail)	Weightage Measured by	50% Contractor: flow meters installed at Jack well and Entry of WTP & out let of clear water reservoir at WTP and inlet of Service Reservoirs	Monitored by	Employers Representative	Applicability	The parameter applies to entry of water in the Jack well, WTP, outlet of clear water reservoir and entry point of service reservoirs For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.	Allowable exclusions	The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.
Sub-Part No. 4: Operation - Water Production, and Storage																																							
Description	Details																																						
Parameter 4.1	Efficiency in water production																																						
Target services level	Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs <u>Quantity of water to be produced and conveyed to WTP per day 95 MLD. Allowable quantity 90 MLD</u> Maximum Water losses shall be 6% (Pass or Fail)																																						
Weightage Measured by	50% Contractor: flow meters installed <u>at Jack well and Entry of WTP and inlet of Service Reservoirs</u>																																						
Monitored by	Employers Representative																																						
Applicability	The parameter applies to entry of water in the <u>intake well, Jack well and entry point of service reservoirs</u> For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.																																						
Allowable exclusions	The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.																																						
Parameter 4.2	Quality of Water at the entry point of Service Reservoir																																						
Target service Level	Must meet the CPHEEO standards daily in major five characteristics (Turbidity, Residual Chlorine, Bacteriological test, pH, <u>any one</u> other parameters as CPHEEO norms. If not																																						
Sub-Part No. 4: Operation - Water Production, and Storage																																							
Description	Details																																						
Parameter 4.1	Efficiency in water production																																						
Target services level	Efficiency in water production – Measured the quantity produced and convey to WTP site and finally conveyed to Service Reservoirs Minimum Quantity of water to be produced and conveyed to WTP as per earmarked quantity as per table No. 7.1 or the quantity required at the time per day whichever is decided by the employer Maximum Water losses shall be 6% (Pass or Fail)																																						
Weightage Measured by	50% Contractor: flow meters installed at Jack well and Entry of WTP & out let of clear water reservoir at WTP and inlet of Service Reservoirs																																						
Monitored by	Employers Representative																																						
Applicability	The parameter applies to entry of water in the Jack well, WTP, outlet of clear water reservoir and entry point of service reservoirs For calculation of the achieved service level, measured quantity of water at entry point of service reservoirs.																																						
Allowable exclusions	The Day on which Power shutdown by EB authorities shall be allowable and shall be taken as pass.																																						

SNo		Clause/Section Reference		Existing Provision		Amended. Now to be read as																	
				Weightage Measured by Monitored by Allowable exclusions	the meet the requirement more than 3 day in a quarter shall be treated as fail (Pass or Fail) 50 % Water testing Laboratory set by the contractor and random weekly check in other reputed Labs by the client Employer's Representative and the client NO	Parameter 4.2 Target service Level Weightage Measured by Monitored by Allowable exclusions	Quality of Water at the entry point of Service Reservoir Must meet the CPHEEO standards daily in major characteristics (Turbidity, Residual Chlorine, Bacteriological test, pH, Iron, Taste, Colour, Odour . If not the meet the requirement more than 3 day in a quarter shall be treated as fail (Pass or Fail) 50 % Water testing Laboratory set by the contractor and random weekly check in other reputed Labs by the client Employer's Representative and the client NO																
30.	Section 6 Clause 68			68. The overall plant water loss (net) from the system shall be kept to the minimum and not exceeding <u>5%</u> of output (considering recovery and recycle scheme). The pipes, launders and channels in the WTP shall be hydraulically designed for flow including 20% overload. The contractor shall quote rate for the pumping machinery and electrical equipment for Intermediate requirement.		68. The overall plant water loss (net) from the system shall be kept to the minimum and not exceeding 4% of output (considering recovery and recycle scheme). The pipes, launders and channels in the WTP shall be hydraulically designed for flow including 20% overload. The contractor shall quote rate for the pumping machinery and electrical equipment for Intermediate requirement.																	
31.	Section 6 Clause 122			Construction of all components after approval of designs and drawings including supply and erection of electromechanical equipment as following but not limited to: - Settled water pumping system - Aeration (Ultimate stage requirement)		Construction of all components after approval of designs and drawings including supply and erection of electromechanical equipment as following but not limited to: - Settled water pumping system - Aeration (Ultimate stage requirement) (optional and depending on the raw water quality)																	
32.	Section 6 Table 3 Page 6-21			<table border="1"> <thead> <tr> <th colspan="2">Table 3. Quality of treated water Process Guarantees</th> </tr> </thead> <tbody> <tr> <td>Turbidity of the effluent of the Clarifier unit</td> <td>Not more than 10 NTU</td> </tr> <tr> <td>Suspended solids in the effluent of the Clarifier</td> <td>Not more than 2 mg/l</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Table 3. Quality of treated water Process Guarantees		Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU	Suspended solids in the effluent of the Clarifier	Not more than 2 mg/l			<table border="1"> <thead> <tr> <th colspan="2">Table 3. Quality of treated water Process Guarantees</th> </tr> </thead> <tbody> <tr> <td>Turbidity of the effluent of the Clarifier unit</td> <td>Not more than 10 NTU</td> </tr> <tr> <td>Suspended solids in the effluent of the Clarifier</td> <td>Not more than 20 mg/l</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>		Table 3. Quality of treated water Process Guarantees		Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU	Suspended solids in the effluent of the Clarifier	Not more than 20 mg/l		
Table 3. Quality of treated water Process Guarantees																							
Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU																						
Suspended solids in the effluent of the Clarifier	Not more than 2 mg/l																						
Table 3. Quality of treated water Process Guarantees																							
Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU																						
Suspended solids in the effluent of the Clarifier	Not more than 20 mg/l																						

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as												
33.	Section 6		Add at the end Procedure for Cathodic Protection for Raw water main as annexure 2												
34.	Section 8 Particular Conditions of Contract Schedule 5 Contractor's Payments		<p>Add new clause 2.4.8 under Schedule No. 4: Installation and Other Services:-</p> <p>2.4.8 For Electro Mechanical Equipment, Automation, Equipment in WTP and other items which are to be installed, tested and commissioned.</p> <table border="1"> <thead> <tr> <th>S No</th> <th>Description of work</th> <th>Final payment</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>On completion of Installation</td> <td>75%</td> </tr> <tr> <td>2</td> <td>On Completion of Testing</td> <td>15%</td> </tr> <tr> <td>3</td> <td>On completion of commissioning</td> <td>10%</td> </tr> </tbody> </table>	S No	Description of work	Final payment	1	On completion of Installation	75%	2	On Completion of Testing	15%	3	On completion of commissioning	10%
S No	Description of work	Final payment													
1	On completion of Installation	75%													
2	On Completion of Testing	15%													
3	On completion of commissioning	10%													
35.	Section 8 Price adjustment Clause 4.1.5	4.1.5 Price (adjusted for performance) = 50% * quoted price * (Total supplied quantity meeting the potable standards in the month/earmarked quantity in the month for particular year) + 50% * quoted price *100* allowable wastage of water in %/actual wastage of water in%	4.1.5 Price (adjusted for performance) = 50% * quoted price * (Total supplied quantity meeting the potable standards in the month/earmarked quantity in the month for particular year) + 50% * quoted price *100* allowable wastage of water in %/actual wastage of water in%* Actual quantity produced in the particular /Earmarked quantity to be produced in the particular year												
36.	Section 8 Schedule 5 Contractor payment Clause 4.1.6	4.1.6. The energy efficient machinery shall be installed to save energy. If the contractor fails to save energy and exceeds the energy consumption charges as per the Technical schedule given by himor maximum energy consumption charges specified by the employer, then the excess amount of electrical energy consumption charges shall be recovered from him.	4.1.6. The energy efficient machinery shall be installed to save energy. If the contractor fails to save energy and exceeds the energy consumption charges as per the Technical schedule given by himor maximum energy consumption charges specified by the employer, then the excess amount of electrical energy consumption charges shall be recovered from him. The electricity power consumption shall be measured at MMF provided at every panel.												
37.	Vol. I, Section 8: SCC	Annexure – A Initial Environmental Examination and	Following Schedule has been added. Annexure 3 Schedule 7: Safeguard compliance requirement by the contractor												

SNo	Clause/Section Reference	Existing Provision		Amended. Now to be read as																												
		Bidding Document																														
38.	Section 8 PCC Part B Specific Provisions Clause 1.1.66	Clause 1.1.66		Stands deleted.																												
39.	Section 8 PCC Part B Specific Provisions Clause 1.1.78		“TimeExtension of Time for Completion of Design-Build]”.	Stands deleted																												
40.	Technical specification Clause 577	Design criteria	<table border="1"> <tr> <td>Rated Flow Capacity</td> <td>Corresponding to requirement of Intermediate stage</td> </tr> <tr> <td>Minimum number of units to be provided</td> <td></td> </tr> <tr> <td>Intermediate stage</td> <td><u>4</u></td> </tr> <tr> <td>The velocity in inlet shaft in clarifier</td> <td>less than the velocity in outlet of flocculator</td> </tr> <tr> <td>The velocity in launders</td> <td>< 1.0 m/s</td> </tr> <tr> <td>Minimum free fall from outlet weir to clear water channel in filter</td> <td>20 cm</td> </tr> <tr> <td>Velocity in pure water channel</td> <td>1.0 to 1.5 m/s</td> </tr> </table>	Rated Flow Capacity	Corresponding to requirement of Intermediate stage	Minimum number of units to be provided		Intermediate stage	<u>4</u>	The velocity in inlet shaft in clarifier	less than the velocity in outlet of flocculator	The velocity in launders	< 1.0 m/s	Minimum free fall from outlet weir to clear water channel in filter	20 cm	Velocity in pure water channel	1.0 to 1.5 m/s	<table border="1"> <tr> <td>Rated Flow Capacity</td> <td>Corresponding to requirement of Intermediate stage</td> </tr> <tr> <td>Minimum number of units to be provided</td> <td></td> </tr> <tr> <td>Intermediate stage</td> <td>4 Nos of flocculator + 2 Nos of plate settler</td> </tr> <tr> <td>The velocity in inlet shaft in clarifier</td> <td>less than the velocity in outlet of flocculator</td> </tr> <tr> <td>The velocity in launders</td> <td>< 1.0 m/s</td> </tr> <tr> <td>Minimum free fall from outlet weir to clear water channel in filter</td> <td>20 cm</td> </tr> <tr> <td>Velocity in pure water channel</td> <td>1.0 to 1.5 m/s</td> </tr> </table>	Rated Flow Capacity	Corresponding to requirement of Intermediate stage	Minimum number of units to be provided		Intermediate stage	4 Nos of flocculator + 2 Nos of plate settler	The velocity in inlet shaft in clarifier	less than the velocity in outlet of flocculator	The velocity in launders	< 1.0 m/s	Minimum free fall from outlet weir to clear water channel in filter	20 cm	Velocity in pure water channel	1.0 to 1.5 m/s
Rated Flow Capacity	Corresponding to requirement of Intermediate stage																															
Minimum number of units to be provided																																
Intermediate stage	<u>4</u>																															
The velocity in inlet shaft in clarifier	less than the velocity in outlet of flocculator																															
The velocity in launders	< 1.0 m/s																															
Minimum free fall from outlet weir to clear water channel in filter	20 cm																															
Velocity in pure water channel	1.0 to 1.5 m/s																															
Rated Flow Capacity	Corresponding to requirement of Intermediate stage																															
Minimum number of units to be provided																																
Intermediate stage	4 Nos of flocculator + 2 Nos of plate settler																															
The velocity in inlet shaft in clarifier	less than the velocity in outlet of flocculator																															
The velocity in launders	< 1.0 m/s																															
Minimum free fall from outlet weir to clear water channel in filter	20 cm																															
Velocity in pure water channel	1.0 to 1.5 m/s																															
41.	Technical Specification	Garages.	Garages. Covered garages of 150 m2 area each shall be constructed at 2 different locations within the WTP campus.	Stands deleted.																												

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																																								
	Clause 916	Each floor shall be simple PCC flooring 75 mm thick with base concrete of 100 mm provided on soling stone. AC sheet roofing shall be provided and erected on a suitably designed MS framework having purlins and rafters. The garages shall not have doors.																																									
42.	Technical Specification Clause 1040	Clear water pumps configuration	(4w+2s) pumps shall be installed on clear water sump located at WTP premises for intermediate stage water requirement. In the IInd stage (2w+1s) pumps is to be installed																																								
43.	Technical Specification Clause 1024 and 1025	Pumps configuration	Table 74: Pump duty condition and operating Range 1.Discharge (Intermediate stage)-each Pump <u>1120</u> M3/hour Table 75: Pump duty condition and operating Range 1.Discharge (Intermediate stage)-each Pump <u>4120</u> M3/hour																																								
44.	Technical Specifications page 85, Clause 515		Two numbers of power transformer, shall be provided for pumping station and two nos of Auxillary transformers of <u>0.433/0.433kV , 50Hz oil immersed type OCTC</u> . The power transformer shall conform to IS: 2026 and shall be platform for transformer.																																								
45.	Technical specification Clause 1030 Page 187		(4w+2s) pumps shall be installed on clear water sump located at WTP premises for intermediate stage water requirement. In the 2 nd stage (2w+1s) pumps is to be installed.																																								
46.	Technical specification Table No.74 and 75	<p>Table 74: Pump Duty Condition and Operating Range</p> <table border="1"> <tr> <td>1.</td> <td>Discharge of each pump</td> <td><u>1120</u></td> <td>Cu.m per hour</td> </tr> <tr> <td>2.</td> <td>Head</td> <td>29</td> <td>M</td> </tr> <tr> <td>3.</td> <td>Head range (Operating)</td> <td>21 to 32</td> <td>M</td> </tr> <tr> <td>4.</td> <td>Shut off head (more than)</td> <td>35</td> <td>M</td> </tr> <tr> <td>5.</td> <td>RPM of pump</td> <td>985</td> <td>RPM</td> </tr> </table>	1.	Discharge of each pump	<u>1120</u>	Cu.m per hour	2.	Head	29	M	3.	Head range (Operating)	21 to 32	M	4.	Shut off head (more than)	35	M	5.	RPM of pump	985	RPM	<p>Table 74: Pump Duty Condition and Operating Range</p> <table border="1"> <tr> <td>1.</td> <td>Discharge of each pump</td> <td>1027</td> <td>m³/hour</td> </tr> <tr> <td>2.</td> <td>Head</td> <td>29</td> <td>M</td> </tr> <tr> <td>3.</td> <td>Head range (Operating)</td> <td>21 to 32</td> <td>M</td> </tr> <tr> <td>4.</td> <td>Shut off head (more than)</td> <td>35</td> <td>M</td> </tr> <tr> <td>5.</td> <td>RPM of pump</td> <td>985</td> <td>RPM</td> </tr> </table>	1.	Discharge of each pump	1027	m ³ /hour	2.	Head	29	M	3.	Head range (Operating)	21 to 32	M	4.	Shut off head (more than)	35	M	5.	RPM of pump	985	RPM
1.	Discharge of each pump	<u>1120</u>	Cu.m per hour																																								
2.	Head	29	M																																								
3.	Head range (Operating)	21 to 32	M																																								
4.	Shut off head (more than)	35	M																																								
5.	RPM of pump	985	RPM																																								
1.	Discharge of each pump	1027	m ³ /hour																																								
2.	Head	29	M																																								
3.	Head range (Operating)	21 to 32	M																																								
4.	Shut off head (more than)	35	M																																								
5.	RPM of pump	985	RPM																																								

SNo	Clause/Section Reference	Existing Provision				Amended. Now to be read as																																																											
		6.	Number of stages (not more than)	Single stage		6.	Number of stages (not more than)	Single stage																																																									
		7.	Bowl efficiency (more than)	82	%	7.	Bowl efficiency (more than)	82	%																																																								
		8.	Lubrication	Self -water		8.	Lubrication	Self -water																																																									
		9.	Total suspended length (including strainer)	16	M (approx)	9.	Total suspended length (including strainer)	16	M (approx)																																																								
		10.	No. of pumps (2 Nos working in parallel + 1 Nos. standby) (2 Nos. for each section of Jackwell)	(4+2)	Nos.	10.	No. of pumps (2 Nos working in parallel + 1 Nos. standby) (2 Nos. for each section of Jackwell)	(4+2)	Nos.																																																								
		Table 75: Pump Duty Considerations and Operating Range <table border="1"> <tr> <td>1.</td> <td>Discharge (Intermediate stage)-each pump</td> <td>1120</td> <td>m³/hour</td> </tr> <tr> <td>2.</td> <td>Minimum Pump Head</td> <td>7.50</td> <td>M</td> </tr> <tr> <td>3.</td> <td>Maximum Pump Head</td> <td>9.50</td> <td>M</td> </tr> <tr> <td>4.</td> <td>Average Pump Head</td> <td>8.00</td> <td>M</td> </tr> <tr> <td>5.</td> <td>Designed Discharge</td> <td>95</td> <td>MLD</td> </tr> <tr> <td>6.</td> <td>Hours of Pumping</td> <td>23</td> <td>Hours</td> </tr> <tr> <td>7.</td> <td>No. of Pumps</td> <td>(4w+2s)</td> <td>Nos</td> </tr> </table>				1.	Discharge (Intermediate stage)-each pump	1120	m ³ /hour	2.	Minimum Pump Head	7.50	M	3.	Maximum Pump Head	9.50	M	4.	Average Pump Head	8.00	M	5.	Designed Discharge	95	MLD	6.	Hours of Pumping	23	Hours	7.	No. of Pumps	(4w+2s)	Nos	Table 75: Pump Duty Considerations and Operating Range <table border="1"> <tr> <td>1.</td> <td>Discharge (Intermediate stage)-each pump</td> <td>1027</td> <td>m³/hour</td> </tr> <tr> <td>2.</td> <td>Minimum Pump Head</td> <td>7.50</td> <td>M</td> </tr> <tr> <td>3.</td> <td>Maximum Pump Head</td> <td>9.50</td> <td>M</td> </tr> <tr> <td>4.</td> <td>Average Pump Head</td> <td>8.00</td> <td>M</td> </tr> <tr> <td>5.</td> <td>Designed Discharge</td> <td>95</td> <td>MLD</td> </tr> <tr> <td>6.</td> <td>Hours of Pumping</td> <td>23</td> <td>Hours</td> </tr> <tr> <td>7.</td> <td>No. of Pumps</td> <td>(4w+2s)</td> <td>Nos</td> </tr> </table>				1.	Discharge (Intermediate stage)-each pump	1027	m ³ /hour	2.	Minimum Pump Head	7.50	M	3.	Maximum Pump Head	9.50	M	4.	Average Pump Head	8.00	M	5.	Designed Discharge	95	MLD	6.	Hours of Pumping	23	Hours	7.	No. of Pumps	(4w+2s)	Nos
1.	Discharge (Intermediate stage)-each pump	1120	m ³ /hour																																																														
2.	Minimum Pump Head	7.50	M																																																														
3.	Maximum Pump Head	9.50	M																																																														
4.	Average Pump Head	8.00	M																																																														
5.	Designed Discharge	95	MLD																																																														
6.	Hours of Pumping	23	Hours																																																														
7.	No. of Pumps	(4w+2s)	Nos																																																														
1.	Discharge (Intermediate stage)-each pump	1027	m ³ /hour																																																														
2.	Minimum Pump Head	7.50	M																																																														
3.	Maximum Pump Head	9.50	M																																																														
4.	Average Pump Head	8.00	M																																																														
5.	Designed Discharge	95	MLD																																																														
6.	Hours of Pumping	23	Hours																																																														
7.	No. of Pumps	(4w+2s)	Nos																																																														
47.	Technical specification Clause 584 Page 104	The filter building shall be provided with a control room for the plant. This shall be located on the filter floor in such a manner as to provide a clear view over the filter floor. <u>It shall house the central HMI described elsewhere.</u> The filters and associated superstructure shall be of reinforced concrete construction				The filter building shall be provided with a control room for the plant. This shall be located on the filter floor in such a manner as to provide a clear view over the filter floor. The filters and associated superstructure shall be of reinforced concrete construction																																																											
48.	Technical specification	Plinth layer: i. Building plinth shall be a minimum of <u>600 mm</u> above the				Plinth layer: i. Building plinth shall be a minimum of 900 mm above the																																																											

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																																																																																																																																																				
	Clause 997	average finished ground level around the building and shall be not be less than the plinth level of any existing buildings	finished grade level outside of the building and shall be not be less than the plinth level of any existing buildings																																																																																																																																																				
49.	Technical specification Clause 4 Table 1	Bottom width at 18 m MSL <u>10.00 m</u>	Bottom width at 18 m MSL 5.00 m																																																																																																																																																				
50.	Technical specification Clause 581	The filters shall be rapid gravity, constant head, constant rate sand filters. About <u>9 nos</u> of filter units shall be provided.	The filters shall be rapid gravity, constant head, constant rate sand filters. 12 nos of filter units shall be provided.																																																																																																																																																				
51.	Technical specification Clause	<p>744.The Ground Floor (Administration Block) shall have a minimum floor area of <u>350 m²</u>and be divided into rooms as shown in the following schedule:</p> <p style="text-align: center;">Table 51: Room Schedule (Ground Floor–Administrative Block)</p> <table border="1"> <thead> <tr> <th rowspan="2">Room</th> <th rowspan="2">No.</th> <th rowspan="2">Min Area Each (m²)</th> <th colspan="4">Coating System r Type No.¹</th> </tr> <tr> <th>Flooring⁶</th> <th>Walls⁶</th> <th>Doors</th> <th>Windows</th> </tr> </thead> <tbody> <tr> <td>Entrance/ Reception</td> <td>1</td> <td><u>60</u></td> <td>8</td> <td>1 & 4</td> <td>B²</td> <td>None</td> </tr> <tr> <td>Manager's Room²</td> <td>1</td> <td>25</td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>1-A</td> </tr> <tr> <td>Office</td> <td>1</td> <td><u>35</u></td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>3-A</td> </tr> <tr> <td>Staff room</td> <td>1</td> <td>20</td> <td>7</td> <td>1 & 3</td> <td>G</td> <td>1-A</td> </tr> <tr> <td>Duty Room</td> <td>1</td> <td>20</td> <td>8</td> <td>1 & 6</td> <td>F</td> <td>1-A</td> </tr> <tr> <td>Bathroom</td> <td>3</td> <td>22</td> <td>8</td> <td>5</td> <td>F</td> <td>None</td> </tr> <tr> <td>Pantry& Canteen</td> <td>1</td> <td><u>60</u></td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>2-A, 1-C</td> </tr> <tr> <td>Conferenc e Room</td> <td>1</td> <td><u>30</u></td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>3-A</td> </tr> <tr> <td>Stairways</td> <td>1</td> <td>As req uir</td> <td>Kota stone</td> <td>1 & 4</td> <td>None</td> <td>None</td> </tr> </tbody> </table>	Room	No.	Min Area Each (m ²)	Coating System r Type No. ¹				Flooring ⁶	Walls ⁶	Doors	Windows	Entrance/ Reception	1	<u>60</u>	8	1 & 4	B ²	None	Manager's Room ²	1	25	8	1 & 4	H	1-A	Office	1	<u>35</u>	8	1 & 4	H	3-A	Staff room	1	20	7	1 & 3	G	1-A	Duty Room	1	20	8	1 & 6	F	1-A	Bathroom	3	22	8	5	F	None	Pantry& Canteen	1	<u>60</u>	8	1 & 4	H	2-A, 1-C	Conferenc e Room	1	<u>30</u>	8	1 & 4	H	3-A	Stairways	1	As req uir	Kota stone	1 & 4	None	None	<p>744.The Ground Floor (Administration Block) shall have a minimum floor area of 250 m² and be divided into rooms as shown in the following schedule:</p> <p style="text-align: center;">Table 51: Room Schedule (Ground Floor–Administrative Block)</p> <table border="1"> <thead> <tr> <th rowspan="2">Room</th> <th rowspan="2">No.</th> <th rowspan="2">Min Area Each (m²)</th> <th colspan="4">Coating System or Type No.¹</th> </tr> <tr> <th>Flooring⁶</th> <th>Walls⁶</th> <th>Doors</th> <th>Windows</th> </tr> </thead> <tbody> <tr> <td>Entrance/ Reception</td> <td>1</td> <td>50</td> <td>8</td> <td>1 & 4</td> <td>B²</td> <td>None</td> </tr> <tr> <td>Manager's Room²</td> <td>1</td> <td>25</td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>1-A</td> </tr> <tr> <td>Office</td> <td>1</td> <td>30</td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>3-A</td> </tr> <tr> <td>Staff room</td> <td>1</td> <td>20</td> <td>7</td> <td>1 & 3</td> <td>G</td> <td>1-A</td> </tr> <tr> <td>Duty Room</td> <td>1</td> <td>20</td> <td>8</td> <td>1 & 6</td> <td>F</td> <td>1-A</td> </tr> <tr> <td>Bathroom</td> <td>3</td> <td>22</td> <td>8</td> <td>5</td> <td>F</td> <td>None</td> </tr> <tr> <td>Pantry& Canteen</td> <td>1</td> <td>50</td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>2-A, 1-C</td> </tr> <tr> <td>Conferenc e Room</td> <td>1</td> <td>25</td> <td>8</td> <td>1 & 4</td> <td>H</td> <td>3-A</td> </tr> <tr> <td>Stairways</td> <td>1</td> <td>As req uir</td> <td>Kota stone</td> <td>1 & 4</td> <td>None</td> <td>None</td> </tr> </tbody> </table>	Room	No.	Min Area Each (m ²)	Coating System or Type No. ¹				Flooring ⁶	Walls ⁶	Doors	Windows	Entrance/ Reception	1	50	8	1 & 4	B ²	None	Manager's Room ²	1	25	8	1 & 4	H	1-A	Office	1	30	8	1 & 4	H	3-A	Staff room	1	20	7	1 & 3	G	1-A	Duty Room	1	20	8	1 & 6	F	1-A	Bathroom	3	22	8	5	F	None	Pantry& Canteen	1	50	8	1 & 4	H	2-A, 1-C	Conferenc e Room	1	25	8	1 & 4	H	3-A	Stairways	1	As req uir	Kota stone	1 & 4	None	None
Room	No.	Min Area Each (m ²)				Coating System r Type No. ¹																																																																																																																																																	
			Flooring ⁶	Walls ⁶	Doors	Windows																																																																																																																																																	
Entrance/ Reception	1	<u>60</u>	8	1 & 4	B ²	None																																																																																																																																																	
Manager's Room ²	1	25	8	1 & 4	H	1-A																																																																																																																																																	
Office	1	<u>35</u>	8	1 & 4	H	3-A																																																																																																																																																	
Staff room	1	20	7	1 & 3	G	1-A																																																																																																																																																	
Duty Room	1	20	8	1 & 6	F	1-A																																																																																																																																																	
Bathroom	3	22	8	5	F	None																																																																																																																																																	
Pantry& Canteen	1	<u>60</u>	8	1 & 4	H	2-A, 1-C																																																																																																																																																	
Conferenc e Room	1	<u>30</u>	8	1 & 4	H	3-A																																																																																																																																																	
Stairways	1	As req uir	Kota stone	1 & 4	None	None																																																																																																																																																	
Room	No.	Min Area Each (m ²)	Coating System or Type No. ¹																																																																																																																																																				
			Flooring ⁶	Walls ⁶	Doors	Windows																																																																																																																																																	
Entrance/ Reception	1	50	8	1 & 4	B ²	None																																																																																																																																																	
Manager's Room ²	1	25	8	1 & 4	H	1-A																																																																																																																																																	
Office	1	30	8	1 & 4	H	3-A																																																																																																																																																	
Staff room	1	20	7	1 & 3	G	1-A																																																																																																																																																	
Duty Room	1	20	8	1 & 6	F	1-A																																																																																																																																																	
Bathroom	3	22	8	5	F	None																																																																																																																																																	
Pantry& Canteen	1	50	8	1 & 4	H	2-A, 1-C																																																																																																																																																	
Conferenc e Room	1	25	8	1 & 4	H	3-A																																																																																																																																																	
Stairways	1	As req uir	Kota stone	1 & 4	None	None																																																																																																																																																	

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																																																																																																																																																				
		<p style="text-align: center;">ed</p> <p>Notes: For Coating System or type refer clause of Specification Civil, Building and Road works</p> <ol style="list-style-type: none"> Notations such as 1-C denotes No. of Items (1) and type of Item (C) whether a door or window. If no number is given then it shall be taken as 1. To be aluminium framed (anodized finish) architectural type doors with the top half in glass. To be determined by the Contractor. 	<p style="text-align: center;">ed</p> <p>Notes: For Coating System or type refer clause of Specification Civil, Building and Road works</p> <ol style="list-style-type: none"> Notations such as 1-C denotes No. of Items (1) and type of Item (C) whether a door or window. If no number is given then it shall be taken as 1. To be aluminium framed (anodized finish) architectural type doors with the top half in glass. To be determined by the Contractor. 																																																																																																																																																				
		<p>745.The First Floor shall have a floor area of minimum 350 m² and be divided into rooms as shown in the following schedule:</p>	<p>745.The First Floor shall have a floor area of minimum 250 m² and be divided into rooms as shown in the following schedule:</p>																																																																																																																																																				
		<p style="text-align: center;">Table 52: Room Schedule (First Floor)</p> <table border="1" data-bbox="584 699 1352 1385"> <thead> <tr> <th rowspan="2">Room</th> <th rowspan="2">No.</th> <th rowspan="2">Min Area Each (m²)</th> <th colspan="4">Coating System or Type No.¹</th> </tr> <tr> <th>Flooring</th> <th>Walls</th> <th>Doors</th> <th>Windows</th> </tr> </thead> <tbody> <tr> <td>Control Room</td> <td>1</td> <td>55</td> <td>8</td> <td>1 & 4</td> <td>F</td> <td>4-B</td> </tr> <tr> <td>Laboratory Block</td> <td></td> <td>180</td> <td>Terra zzo</td> <td>5</td> <td>3-F</td> <td>6-A, 2-W</td> </tr> <tr> <td>Wet Chemistry</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bacteriology</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instruments</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ovens / Driers</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Miscellaneous</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Storage room</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mechanical & Electrical</td> <td>1</td> <td>20</td> <td>8</td> <td>1 & 4</td> <td>J</td> <td>1-A</td> </tr> </tbody> </table>	Room	No.	Min Area Each (m ²)	Coating System or Type No. ¹				Flooring	Walls	Doors	Windows	Control Room	1	55	8	1 & 4	F	4-B	Laboratory Block		180	Terra zzo	5	3-F	6-A, 2-W	Wet Chemistry							Bacteriology							Instruments							Ovens / Driers							Miscellaneous							Storage room							Mechanical & Electrical	1	20	8	1 & 4	J	1-A	<p style="text-align: center;">Table 52: Room Schedule (First Floor)</p> <table border="1" data-bbox="1384 699 2168 1385"> <thead> <tr> <th rowspan="2">Room</th> <th rowspan="2">No.</th> <th rowspan="2">Min Area Each (m²)</th> <th colspan="4">Coating System or Type No.¹</th> </tr> <tr> <th>Flooring</th> <th>Walls</th> <th>Doors</th> <th>Windows</th> </tr> </thead> <tbody> <tr> <td>Control Room</td> <td>1</td> <td>55</td> <td>8</td> <td>1 & 4</td> <td>F</td> <td>4-B</td> </tr> <tr> <td>Laboratory Block</td> <td></td> <td>140</td> <td>Terra zzo</td> <td>5</td> <td>3-F</td> <td>6-A, 2-W</td> </tr> <tr> <td>Wet Chemistry</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Bacteriology</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instruments</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Ovens / Driers</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Miscellaneous</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Storage room</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Mechanical & Electrical room</td> <td>1</td> <td>20</td> <td>8</td> <td>1 & 4</td> <td>J</td> <td>1-A</td> </tr> </tbody> </table>	Room	No.	Min Area Each (m ²)	Coating System or Type No. ¹				Flooring	Walls	Doors	Windows	Control Room	1	55	8	1 & 4	F	4-B	Laboratory Block		140	Terra zzo	5	3-F	6-A, 2-W	Wet Chemistry							Bacteriology							Instruments							Ovens / Driers							Miscellaneous							Storage room							Mechanical & Electrical room	1	20	8	1 & 4	J	1-A
Room	No.	Min Area Each (m ²)				Coating System or Type No. ¹																																																																																																																																																	
			Flooring	Walls	Doors	Windows																																																																																																																																																	
Control Room	1	55	8	1 & 4	F	4-B																																																																																																																																																	
Laboratory Block		180	Terra zzo	5	3-F	6-A, 2-W																																																																																																																																																	
Wet Chemistry																																																																																																																																																							
Bacteriology																																																																																																																																																							
Instruments																																																																																																																																																							
Ovens / Driers																																																																																																																																																							
Miscellaneous																																																																																																																																																							
Storage room																																																																																																																																																							
Mechanical & Electrical	1	20	8	1 & 4	J	1-A																																																																																																																																																	
Room	No.	Min Area Each (m ²)	Coating System or Type No. ¹																																																																																																																																																				
			Flooring	Walls	Doors	Windows																																																																																																																																																	
Control Room	1	55	8	1 & 4	F	4-B																																																																																																																																																	
Laboratory Block		140	Terra zzo	5	3-F	6-A, 2-W																																																																																																																																																	
Wet Chemistry																																																																																																																																																							
Bacteriology																																																																																																																																																							
Instruments																																																																																																																																																							
Ovens / Driers																																																																																																																																																							
Miscellaneous																																																																																																																																																							
Storage room																																																																																																																																																							
Mechanical & Electrical room	1	20	8	1 & 4	J	1-A																																																																																																																																																	

SNo	Clause/Section Reference	Existing Provision							Amended. Now to be read as						
		room							Bathrooms	2	18	8	5	F	None
		Bathrooms	2	18	8	5	F	None	Stairways		As required	Kota stone	1 & 4	None	None
52.	Technical specification Clause 990 (iv) and clause 990(x)	990 (iv)All design for water retaining structures including roofing shall be based upon limiting the crack width to 0.2 mm as per <u>BS 8007</u> 990.(x)The minimum reinforcement shall be in accordance with <u>BS 8007</u>							990 (iv)All design for water retaining structures including roofing shall be based upon limiting the crack width to 0.2 mm as per IS 3370 990.(x)The minimum reinforcement shall be in accordance with IS 3370						
53.	Technical specification Clause 541	541. The existing pre-settling tank shall be used during high turbidity period. Suitable by pass shall be provided to pass the flow from the existing pre-settling tank to WTP during low turbidity. When settling tank is used, the settled water pumping is required to convey the settled water to inlet of WTP							541. The existing pre-settling tank shall be used during high turbidity period. The average turbidity in the inlet of WTP shall be 600 mg/l. Suitable by pass shall be provided to pass the flow from the existing pre-settling tank to WTP during low turbidity. When settling tank is used, the settled water pumping is required to convey the settled water to inlet of WTP						
54.	Technical specification Clause 764	764. Sludge Handling and Final Disposal: The sludge shall be treated at WTP by thickener and dehydrator							764. Sludge Handling and Final Disposal: The sludge shall be treated at WTP by thickener and dehydrator. TSS value of 300 mg/l shall be considered to design the sludge treatment system.						
55.	Technical specification Clause 581	581. The filters shall be rapid gravity, constant head, constant rate sand filters. About <u>9nos</u> of filter units shall be provided. The filters shall be designed so as to have a minimum runtime of 24 hrs. The filter banks shall be arranged on either side of a central access gallery. The gallery shall house the filter outlet channel, the backwash and air scour pipework mains and outlet, backwash and air scour valve gear. The gallery shall have a minimum width of <u>10.0 metre</u> and shall permit free access of personnel to observe the operation and maintenance of the valve gear and pipe work. The gallery shall be adequately ventilated and lighted.							581. The filters shall be rapid gravity, constant head, constant rate sand filters. 12 nos of filter units shall be provided. The filters shall be designed so as to have a minimum runtime of 24 hrs. The filter banks shall be arranged on either side of a central access gallery. The gallery shall house the filter outlet channel, the backwash and air scour pipework mains and outlet, backwash and air scour valve gear. The gallery shall have a minimum width of 7.00 metre and shall permit free access of personnel to observe the operation and maintenance of the valve gear and pipe work. The gallery shall be adequately ventilated and lighted.						
56.	Technical specification	Table 40: Design Criteria							Table 40: Design Criteria						

SNo	Clause/Section Reference	Existing Provision			Amended. Now to be read as																																																						
		Type of Filter Back-washing	Sequential Air then Water Back wash System	Conjunctive Air and Water Wash System	Type of Filter Back-washing	Sequential Air then Water Back wash System	Conjunctive Air and Water Wash System																																																				
	Table 40	Configuration	Minimum 1+1 for blower	Minimum 1+1 for pumps	Configuration	Minimum 1+1 for blower	Minimum 1+1 for pumps																																																				
		Specific flow rate of free air	36-45 m3/m2/h	45-50 m3/m2/h	Specific flow rate of free air	36-45 m3/m2/h	45-50 m3/m2/h																																																				
		Vol. of water applied	24-36 m3/m2/h	12-15 m3/m2/h	Vol. of water applied	24-36 m3/m2/h	12-15 m3/m2/h																																																				
		Air pressure at under drain	0.35 kg/cm2	0.35 kg/cm2	Air pressure at under drain	0.35 kg/cm2	0.35 kg/cm2																																																				
		Speed of Compressor	< 750 rpm	< 750 rpm	Speed of Compressor	< 1000 rpm	< 1000 rpm																																																				
		Air velocity in pipe and valves	< 20 m/s	< 20 m/s	Air velocity in pipe and valves	< 20 m/s	< 20 m/s																																																				
57.	Technical specification Clause 719 Table 45	<table border="1"> <thead> <tr> <th colspan="6">Table 45: Dosing Plant Capacity</th> </tr> <tr> <th rowspan="2">Medium</th> <th rowspan="2">Average dosing rate</th> <th rowspan="2">Solution</th> <th rowspan="2">Solution tanks</th> <th colspan="2">Storage</th> </tr> <tr> <th>For Intermediate stage</th> <th>Additional For Ultimate stage</th> </tr> </thead> <tbody> <tr> <td>Chlorine (pre-chlorination)</td> <td>2 mg/l Max 3</td> <td></td> <td>-</td> <td>10 tonners for 30 days</td> <td>5 tonners for 30 days</td> </tr> <tr> <td>Chlorine (post-chlorination)</td> <td>1 mg/l Max 3</td> <td></td> <td>-</td> <td>10tonners for 30 days</td> <td>5 tonners for 30 days</td> </tr> </tbody> </table>			Table 45: Dosing Plant Capacity						Medium	Average dosing rate	Solution	Solution tanks	Storage		For Intermediate stage	Additional For Ultimate stage	Chlorine (pre-chlorination)	2 mg/l Max 3		-	10 tonners for 30 days	5 tonners for 30 days	Chlorine (post-chlorination)	1 mg/l Max 3		-	10tonners for 30 days	5 tonners for 30 days	<table border="1"> <thead> <tr> <th colspan="6">Table 45: Dosing Plant Capacity</th> </tr> <tr> <th rowspan="2">Medium</th> <th rowspan="2">Average dosing rate</th> <th rowspan="2">Solution</th> <th rowspan="2">Solution tanks</th> <th colspan="2">Storage</th> </tr> <tr> <th>For Intermediate stage</th> <th>Additional For Ultimate stage</th> </tr> </thead> <tbody> <tr> <td>Chlorine (pre-chlorination)</td> <td>Average : 2 mg/l Maximum: 3 mg/l</td> <td></td> <td>-</td> <td>15 tonners for 30 days</td> <td>5 tonners for 30 days</td> </tr> <tr> <td>Chlorine (post-chlorination)</td> <td>Average: 1 mg/l Maximum: 3 mg/l</td> <td></td> <td>-</td> <td>15tonners for 30 days</td> <td>5 tonners for 30 days</td> </tr> </tbody> </table>			Table 45: Dosing Plant Capacity						Medium	Average dosing rate	Solution	Solution tanks	Storage		For Intermediate stage	Additional For Ultimate stage	Chlorine (pre-chlorination)	Average : 2 mg/l Maximum: 3 mg/l		-	15 tonners for 30 days	5 tonners for 30 days	Chlorine (post-chlorination)	Average: 1 mg/l Maximum: 3 mg/l		-	15tonners for 30 days	5 tonners for 30 days
Table 45: Dosing Plant Capacity																																																											
Medium	Average dosing rate	Solution	Solution tanks	Storage																																																							
				For Intermediate stage	Additional For Ultimate stage																																																						
Chlorine (pre-chlorination)	2 mg/l Max 3		-	10 tonners for 30 days	5 tonners for 30 days																																																						
Chlorine (post-chlorination)	1 mg/l Max 3		-	10tonners for 30 days	5 tonners for 30 days																																																						
Table 45: Dosing Plant Capacity																																																											
Medium	Average dosing rate	Solution	Solution tanks	Storage																																																							
				For Intermediate stage	Additional For Ultimate stage																																																						
Chlorine (pre-chlorination)	Average : 2 mg/l Maximum: 3 mg/l		-	15 tonners for 30 days	5 tonners for 30 days																																																						
Chlorine (post-chlorination)	Average: 1 mg/l Maximum: 3 mg/l		-	15tonners for 30 days	5 tonners for 30 days																																																						
58.	Technical specification Clause 693 Table 43	<table border="1"> <thead> <tr> <th colspan="5">Table 43: Dosing plant capacity</th> </tr> <tr> <th>Medium</th> <th>Maximum dosing rate</th> <th>Solution Concentration</th> <th>Solution Tanks</th> <th>Storage For Intermediate stage</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Table 43: Dosing plant capacity					Medium	Maximum dosing rate	Solution Concentration	Solution Tanks	Storage For Intermediate stage						<table border="1"> <thead> <tr> <th colspan="5">Table 43: Dosing plant capacity</th> </tr> <tr> <th>Medium</th> <th>Maximum dosing rate</th> <th>Solution Concentration</th> <th>Solution Tanks</th> <th>Storage For Intermediate stage</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Table 43: Dosing plant capacity					Medium	Maximum dosing rate	Solution Concentration	Solution Tanks	Storage For Intermediate stage																											
Table 43: Dosing plant capacity																																																											
Medium	Maximum dosing rate	Solution Concentration	Solution Tanks	Storage For Intermediate stage																																																							
Table 43: Dosing plant capacity																																																											
Medium	Maximum dosing rate	Solution Concentration	Solution Tanks	Storage For Intermediate stage																																																							

SNo	Clause/Section Reference	Existing Provision					Amended. Now to be read as				
		Alum	To be specified by the Contractor, about 30 mg/l	10 %	3each for one shift	7 days +2 month	Alum	To be specified by the Contractor, about 30 mg/l	5 %	3each for one shift	7 days +2 month
		Lime	To be specified by the Contractor	5 %	3each for one shift	7 days +1 month	Lime	To be specified by the Contractor	5 %	3each for one shift	7 days +1 month
59.	Technical specification Clause 528		528. However the plant shall be designed to give desired output in each Stage per day working on <u>24-hour</u> basis				528. However the plant shall be designed to give desired output in each Stage per day working on 23-hour basis				
60.	Technical specification Clause 639		639. Air for scouring shall be provided by positive displacement (Roots) blowers. <u>Three</u> blowers shall installed, one duty, <u>two standbys</u> in a filter house. An acoustic enclosure will be fitted over each air blower to reduce noise. A ring main will convey the air to the filter underfloor plenum. Typically, the air scouring rate shall be up to 50 m/h.				639. Air for scrubbing shall be provided by positive displacement (Roots) blowers. Two blowers shall installed, one duty, one standby in a filter house. An acoustic enclosure will be fitted over each air blower to reduce noise. A ring main will convey the air to the filter underfloor plenum. Typically, the air scouring rate shall be up to 50 m/h.				
61.	Technical specification Clause 637		637. The Contractor shall provide <u>vertical turbine pumps</u> (1W+1S) for first phase for operating on 415 V, 50 Hz frequency supply.				637. The Contractor shall provide Horizontal Centrifugal pumps (1W+1S) for first phase for operating on 415 V, 50 Hz frequency supply.				
62.	Technical specification Clause 945		Riverbank protection at Intake. The bank protection work for construction channel of about 15 m length shall be provided similar to the specifications given for river bank protection work at WTP site. Both banks of river constructed channel shall be protected with protection work along with adjoining construction channel. The bank protection work as above shall be provided with provision of ghat between 26 m to 28 m RL. The step of 300 mm (W) and 150 mm (H) shall be provided in ghat section. The bank protection will start at 25 m RL up to 30 m RL near intake. The excavated exposed intake sides shall also be provided.				Riverbank protection at Intake. The bank protection work for construction channel of about 15 m length shall be provided. The constructed approach channel shall be provided with side slopes of 1: 2.5(v to H) and the bank shall be protected with M30 concrete with Fe 415 reinforcement suitable size of concrete toe beam shall be provided at the bottom of the sides based on the characteristic of the soil. The bank protection work as above shall be provided with provision of ghat between 26 m to 28 m RL. The step of 300 mm (W) and 150 mm (H) shall be provided in ghat section. The bank protection will start at 18 m RL up to 30 m RL near intake. The excavated exposed intake sides shall also be protected. The bank shall be protected by providing and installing				

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as																
			SS 304 railing with chains in two layers.																
63.	Technical specification Table 35 Page 90	<table border="1"> <thead> <tr> <th colspan="2">Table 35. Quality of Treated Water</th> </tr> </thead> <tbody> <tr> <td>Turbidity of the effluent of the Clarifier unit</td> <td>Not more than 10 NTU</td> </tr> <tr> <td>Suspended solids in the effluent of the Clarifier</td> <td>Not more than 5 mg/l</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Table 35. Quality of Treated Water		Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU	Suspended solids in the effluent of the Clarifier	Not more than 5 mg/l			<table border="1"> <thead> <tr> <th colspan="2">Table 35. Quality of Treated Water</th> </tr> </thead> <tbody> <tr> <td>Turbidity of the effluent of the Clarifier unit</td> <td>Not more than 10 NTU</td> </tr> <tr> <td>Suspended solids in the effluent of the Clarifier</td> <td>Not more than 20 mg/l</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Table 35. Quality of Treated Water		Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU	Suspended solids in the effluent of the Clarifier	Not more than 20 mg/l		
Table 35. Quality of Treated Water																			
Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU																		
Suspended solids in the effluent of the Clarifier	Not more than 5 mg/l																		
Table 35. Quality of Treated Water																			
Turbidity of the effluent of the Clarifier unit	Not more than 10 NTU																		
Suspended solids in the effluent of the Clarifier	Not more than 20 mg/l																		
64.	Technical Specification Clause 534	viii. Bypass arrangement shall be provided to bypass filter and clariflocculator	viii. Bypass arrangement shall be provided to bypass filter, Plate settler and flocculator																
65.	Annexure A Clause 89 (v)	Sheet pile – Providing and constructing sheet piles below scour depth. The sheet piles shall be driven below the anticipated scour depth plus grip length.	Toe Protection – Providing and constructing toe-beam of concrete to protect the slope of revetment. This toe-beam will rest and will be supported on Gabion wall. Constructed on bank and resting on good foundation at the bottom. Gabion Wall – Providing and constructing Gabion wall from foundation level up to toe-beam level																
66.	Annexure-A IEE, page no 28,	It is proposed to construct a sump attached to the Clear Water Reservoir (CWR) and a Clear Water Pump House will be constructed on its top of 50 m x 15 m to accommodate 6 VT pump sets of 978 m ³ /h at 40 m head (<u>4W+2S</u>) and backwash pumps etc.	It is proposed to construct a sump attached to the Clear Water Reservoir (CWR) and a Clear Water Pump House will be constructed on its top of 50 m x 15 m to accommodate 7 VT pump sets of 978 m ³ /h at 40 m head (4W+3S) and backwash pumps etc.																
67.	Drawings 6.Connectin g pipe / 26 &3	Connecting pipe length <u>40</u> m	Connecting pipe length 50 m																
68.	Drawings SLD for WTP Sub Station	1. <u>One</u> outgoing panel is provided for SWPS (Settled Water Pumping Station). 2. Ratings <u>are marked on the different equipment.</u>	1. Two outgoing panels shall be provided for SWPS (Settled Water Pumping Station). 2. Ratings marked are the minimum values. If the requirement is of higher rating as per design requirement, the same shall be considered.																
69.	Drawings SLD for RWPS Sub Station	1. Ratings <u>are marked on the different equipment.</u>	1. Ratings marked are the minimum values. If the requirement is of higher rating as per design requirement, the same shall be considered.																

SNo	Clause/Section Reference	Existing Provision	Amended. Now to be read as
70.	Drawings	Dirty backwash water from Filter is shown as drain	The drawings shall be corrected with provision of a waste (dirty) backwash water holding tank (WBWH) shall be provided to equalize the WBW water being conveyed via. a pipeline ordedicated RCC channel to river and as per clause 740 of Technical specification.
71.	Drawing	Flash Mixer 2 Nos	Flash mixer 4 Nos
72.	Drawings	Filter bed <u>6</u> Nos	Filter bed 12 Nos
73.	Drawings	Drawings No 14	Drawings bearing S.No 14 shall be deleted. And new Drawings shall be added as per Annexure 4.