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

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….

Program Director
BUDIP, BUIDCo

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-wiseO&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

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td>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)</td><td></td><td></td><td></td></tr>
<tr><td>6.</td><td>Section 4
Form Tech 6:
Checklist
Page 4-34</td><td></td><td>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.<table><tr><td>1</td><td>Block layout plan provided</td><td>Yes/No</td></tr><tr><td>2</td><td>List of units provided</td><td></td></tr><tr><td>3</td><td>Type of Clarifier provided
<u>Conventional clariflocculator</u>
<u>or</u>
<u>Flat bottom static sludge blanket clarifier</u>
<u>or</u>
<u>Flat bottom pulsating sludge blanket clarifier</u>
<u>or</u>
<u>Lamella clarifier or Tube settler</u>
<u>or</u>
<u>Solids recirculation type clarifier</u></td><td></td></tr></table></td><td>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.<table><tr><td>1</td><td>Block layout plan provided</td><td>Yes/No</td></tr><tr><td>2</td><td>List of units provided</td><td></td></tr><tr><td>3</td><td>Type of Clarifier provided
Lamella clarifier (Plate Settlers)</td><td></td></tr></table></td></tr>
<tr><td>7.</td><td>Section -4, Bidding</td><td></td><td>Full Load Rating - MVA- <u>1.0</u></td><td>Full Load Rating - MVA- 1.25</td></tr>
</table>

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- 1.6	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		36 KV VCB Panel- Supply and delivery of 800 A, 36 KV indoor type, triple pole ..... folded type construction. The switchgear and control gears complete..... with principal parameters as under: Rated Voltage - 36kV	**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 C.I. special 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)

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td>8.14.1
And 8.14.2</td><td></td><td>- up to 600 mm dia
Ductile Iron K - 12 specials suitable for push on jointing and Laying in position S&S or flanged C.I.special such as tees, bends, collars, tapers and caps etc.(including cost of specials) above to 600 mm dia</td><td>- 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</td></tr>
<tr><td>12.</td><td>Section 4
Schedule 7
Item 7.9.11
Page 4-241</td><td></td><td>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, blanck 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)</td><td>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)</td></tr>
<tr><td>13.</td><td>Section 4
Bill No.7
Item 7.10</td><td>Classification of sluice valve</td><td>Providing and fixing C.I. sluice valves..... 300 mm diameter Class II</td><td>Providing and fixing C.I. sluice valves ..... 300 mm diameter PN 1.0 class</td></tr>
<tr><td>14.</td><td>Section 4
Schedule 4
Item 4.11</td><td></td><td></td><td>Add new items below 4.11:
<table>
<tr><th>item</th><th>Description</th><th>quantity</th><th>unit</th><th>Rate</th><th>Amount</th></tr>
<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>
</table></td></tr>
</table>

SNo	Clause/Section Reference		Existing Provision	Amended. Now to be read as					
				4.11.4	Coarse sand bedding below pipeline for clear water main	8000	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		

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>valve chamber suitable for 250-300 mm dia Valves</td><td></td><td></td><td></td><td></td></tr>
<tr><td>4.11.6</td><td>Thrust blocks including shuttering, centring, PCC, M30 concrete and required steel including design of thrust blocks for Raw water main</td><td>1</td><td>Lot</td><td></td><td></td></tr>
<tr><td>4.11.7</td><td>Thrust blocks including shuttering, centring, PCC, M30 concrete and required steel including design of thrust blocks for clear water main</td><td>1</td><td>Lot</td><td></td><td></td></tr>
<tr><td>4.11.8</td><td>Surge protection arrangement in clear water main</td><td>1</td><td>Lot</td><td></td><td></td></tr>
<tr><td>4.11.9</td><td>Rooms with required size with Air conditioning arrangement to accommodate PLCs where ever required</td><td>1</td><td>Lot</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>15.</td><td>Section 4
Schedule 7
Item no 7.11 and 7.12</td><td></td><td></td><td>Item 7.11 and 7.12 stands deleted.</td></tr>
<tr><td>16.</td><td>Section 4
Schedule 8
Item 8.7 and 8.8</td><td></td><td></td><td>Item 8.7 and 8.8 stands deleted.</td></tr>
<tr><td>17.</td><td>Section 4
BOQ
Schedule 8</td><td></td><td>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</td><td>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</td></tr>
</table>

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>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</td></tr>
<tr><td>8.13.1.2</td><td>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"</td></tr>
</table>
</td><td>
<table>
<tr><td></td><td>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</td></tr>
<tr><td>8.13.1.2</td><td>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"</td></tr>
</table>
</td></tr>
<tr><td>18.</td><td>Section 4
Schedule 7
Item No
7.9.5 and
7.9.6</td><td></td><td>
<table>
<tr><td>7.9.5</td><td>Making 12 mm thick inner lining/guniting with Cement mortar (1:3) (1 cement:3 coarse sand) by mechanical meance including curting etc. complete as per specification and direction of the Engineer- in -charge</td><td>Sq.m</td><td>10582.61</td></tr>
<tr><td>7.9.6</td><td>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</td><td>Sq.m</td><td>10582.61</td></tr>
<tr><td>7.9.7</td><td>Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacture's</td><td></td><td></td></tr>
</table>
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<table>
<tr><td>7.9.5</td><td>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.</td><td>Sq.m</td><td>10582.61</td></tr>
<tr><td>7.9.6</td><td>Deleted</td><td></td><td></td></tr>
<tr><td>7.9.7</td><td>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</td><td></td><td></td></tr>
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<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>specifications including appropriate priming coat, preparation of surface, etc. complete.</td><td></td><td></td></tr>
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<tr><td></td><td>with total DRY Film thickness (DFT) of minimum 430 micron as per Technical specification and direction of Engineer.</td><td></td><td></td></tr>
<tr><td>7.9.7.1</td><td>a) 1321 mm dia</td><td>sqm</td><td>10582.61</td></tr>
<tr><td>7.9.7.2</td><td>b) 900 mm dia</td><td>sqm</td><td>508.94</td></tr>
</table>
</td></tr>
<tr><td>19.</td><td>Section 4</td><td></td><td>
<table>
<tr><th>No</th><th>Description</th><th>Unit</th><th>Qty</th></tr>
<tr><td>7.16</td><td>Providing Cathodic Protection arrangement in the Raw water main</td><td>No</td><td>2</td></tr>
</table>
</td><td>
<table>
<tr><th>No</th><th>Description</th><th>Unit</th><th>Qty</th></tr>
<tr><td>7.16</td><td>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</td><td>No</td><td>1</td></tr>
</table>
</td></tr>
</table>

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

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>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</td><td>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</td></tr>
<tr><td>23.</td><td>Section 6 Target Milestone</td><td></td><td>
<table>
<tr><th>SNo</th><th>Components</th><th>1st year Milestone (1-12 months)</th><th>2nd year cumulative Milestone (13 to 24 month)</th><th>3rd year cumulative milestone (25 to 30 months)</th></tr>
<tr><td>1</td><td>Design of all the components (0 to 6th month)</td><td>100%</td><td></td><td></td></tr>
<tr><td>2</td><td>Approach Channel (4th to 7th month)</td><td>100%</td><td></td><td></td></tr>
<tr><td>3</td><td>Intake works (4th to 12th month)</td><td>100%</td><td></td><td></td></tr>
<tr><td>4</td><td>Connecting pipe between intake and Jack well (25th to 27th month)</td><td></td><td></td><td>100%</td></tr>
<tr><td>5</td><td>Jack well (4th to 27th month)</td><td>25%</td><td>75%</td><td>100%</td></tr>
<tr><td>6</td><td>Raw water main (13th to 16th month)</td><td></td><td>100%</td><td></td></tr>
<tr><td>7</td><td>Clear water main</td><td></td><td>50%</td><td>100%</td></tr>
</table>
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<table>
<tr><th>SNo</th><th>Components</th><th>1st year Milestone (1-12 months)</th><th>2nd year cumulative Milestone (13 to 24 month)</th><th>3rd year cumulative milestone (25 to 30 months)</th></tr>
<tr><td>1</td><td>Design of all the components (0 to 6th month)</td><td>100%</td><td></td><td></td></tr>
<tr><td>2</td><td>Approach Channel (24th to 27th month)</td><td></td><td>25%</td><td>100%</td></tr>
<tr><td>3</td><td>Intake works (4th to 15thmonth)</td><td>75%</td><td>100%</td><td></td></tr>
<tr><td>4</td><td>Connecting pipe between intake and Jack well (25th to 27th month)</td><td></td><td></td><td>100%</td></tr>
<tr><td>5</td><td>Jack well (4th to 27th month)</td><td>25%</td><td>75%</td><td>100%</td></tr>
<tr><td>6</td><td>Raw water main (13th to 18th month)</td><td></td><td>100%</td><td></td></tr>
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<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
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<tr><td></td><td>(13th to 27th month)</td><td></td><td></td><td></td></tr>
<tr><td>8</td><td>WTP (4th to 27th month)</td><td>25%</td><td>60%</td><td>100%</td></tr>
<tr><td>9</td><td>Electro Mechanical equipment (13th to 27th month)</td><td></td><td>50%</td><td>100%</td></tr>
<tr><td>10</td><td>SCADA and Automation (13th to 27th month)</td><td></td><td>25%</td><td>100%</td></tr>
</table>
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<table>
<tr><td>7</td><td>Clear water main (13th to 27th month)</td><td></td><td>50%</td><td>100%</td></tr>
<tr><td>8</td><td>WTP (4th to 27thmonth)</td><td>25%</td><td>60%</td><td>100%</td></tr>
<tr><td>9</td><td>Electro Mechanical equipment (13th to 27th month)</td><td></td><td>50%</td><td>100%</td></tr>
<tr><td>10</td><td>SCADA and Automation (13th to 27th month)</td><td></td><td>25%</td><td>100%</td></tr>
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</td></tr>
<tr><td>24.</td><td>Section 6
Clause147
Page 6-58</td><td></td><td>The schedule for completion of works, trial run commissioning and Operation and Maintenance:
• Time limit for completion of works - 30 months
• Trial run - 30/30 days after completion of work
• Defect liability period - 1 year from date of commissioning
• Operation and Maintenance - 10 years from date of commissioning.
The 1 year defect Liability period is included in operation & maintenance.</td><td>The schedule for completion of works, trial run commissioning and Operation and Maintenance:
• 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.
The 1 year defect Liability period is included in operation & maintenance.</td></tr>
<tr><td>25.</td><td>Section 6
Clause
5.3 Activities of work
Page 6-28</td><td></td><td>Note: The Contractor to maintain existing utility services like electricity, water supply, telephone; oil/gas pipe lines etc. within the project area. Cost of all the shifting of poles, cables etc. if required shall be borne by the contractor.</td><td>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.</td></tr>
<tr><td>26.</td><td>Section 6
Page 6-48</td><td></td><td>Raw water pumping main of 1321mm (O.D) MS pipes, 12 mm thick plate (Indicative, Contractor to verify) is proposed to be laid from intake to WTP at Barari water works in Bhagalpur.</td><td>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.</td></tr>
<tr><td>27.</td><td>Section 6
Page 6-52
Clause 124</td><td></td><td>Mechanical works (Intermediate stage requirement)
- Clear water pumping machineries
- EOT crane (15 T capacity)</td><td>Mechanical works (Intermediate stage requirement)
- Clear water pumping machineries
- EOT crane (10 T capacity)</td></tr>
</table>

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td>28.</td><td>Section 6
Clause 117
Page 6-48</td><td>Raw water pumping main of 1321mm (O.D) MS pipes, 12 mm thick plate (Indicative, Contractor to verify) is proposed to be laid from intake to WTP at Barari water works in Bhagalpur</td><td>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</td></tr>
<tr><td>29.</td><td>Section 6:
Table 7.1Target Performance Standards
P. 6-73/74</td><td>
<table>
<tr><th colspan="2">Sub-Part No. 4: Operation - Water Production, and Storage</th></tr>
<tr><td>Description</td><td>Details</td></tr>
<tr><td>Parameter4.1</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
Quantity of water to be produced and conveyed to WTP per day 95 MLD. Allowable quantity 90 MLD
Maximum Water losses shall be 6% (Pass or Fail)</td></tr>
<tr><td>Weightage
Measured by

Monitored by</td><td>50%
Contractor: flow meters installed at Jack well and Entry of WTP and inlet of Service Reservoirs
Employers Representative</td></tr>
<tr><td>Applicability</td><td>The parameter applies to entry of water in the intake well, Jack well 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>
<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, any one other parameters as CPHEEO norms. If not</td></tr>
</table>
</td><td>
<table>
<tr><th colspan="2">Sub-Part No. 4: Operation - Water Production, and Storage</th></tr>
<tr><td>Description</td><td>Details</td></tr>
<tr><td>Parameter4.1</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

Monitored 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
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 servicereservoirs
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>
</table>
</td></tr>
</table>

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td></td><td>the meet the requirement more than 3 day in a quarter shall be treated as fail (Pass or Fail)</td></tr>
<tr><td>Weightage</td><td>50 %</td></tr>
<tr><td>Measured by</td><td>Water testing Laboratory set by the contractor and random weekly check in other reputed Labs by the client</td></tr>
<tr><td>Monitored by</td><td>Employer’s Representative and the client</td></tr>
<tr><td>Allowable exclusions</td><td>N0</td></tr>
</table>
</td><td>
<table>
<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 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)</td></tr>
<tr><td>Weightage</td><td>50 %</td></tr>
<tr><td>Measured by</td><td>Water testing Laboratory set by the contractor and random weekly check in other reputed Labs by the client</td></tr>
<tr><td>Monitored by</td><td>Employer’s Representative and the client</td></tr>
<tr><td>Allowable exclusions</td><td>N0</td></tr>
</table>
</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>30.</td><td>Section 6
Clause 68</td><td></td><td>68. The overall plant water loss (net) from the system shall be kept to the minimum and not exceeding 5% 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.</td><td>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.</td></tr>
<tr><td>31.</td><td>Section 6
Clause 122</td><td></td><td>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)</td><td>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)</td></tr>
<tr><td>32.</td><td>Section 6
Table 3
Page 6-21</td><td></td><td>
<table>
<tr><td colspan="2">Table 3. Quality of treated water Process Guarantees</td></tr>
<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>
</table>
</td><td>
<table>
<tr><td colspan="2">Table 3. Quality of treated water Process Guarantees</td></tr>
<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>
</table>
</td></tr>
</table>

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			*Add new clause 2.4.8 under Schedule No. 4: Installation and Other Services:-* 2.4.8 For Electro Mechanical Equipment, Automation, Equipment in WTP and other items which are to be installed, tested and commissioned. 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**

<table>
<tr><th>SNo</th><th colspan="2">Clause/Section Reference</th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td>Bidding Document</td><td></td><td></td></tr>
<tr><td>38.</td><td>Section 8
PCC
Part B
Specific Provisions
Clause 1.1.66</td><td>Clause 1.1.66</td><td></td><td>Stands deleted.</td></tr>
<tr><td>39.</td><td>Section 8
PCC
Part B
Specific Provisions
Clause 1.1.78</td><td></td><td>“Time ……Extension of Time for Completion of Design-Build]”.</td><td>Stands deleted</td></tr>
<tr><td>40.</td><td>Technical specification
Clause 577</td><td>Design criteria</td><td><table><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</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></td><td><table><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></td></tr>
<tr><td>41.</td><td>Technical Specification</td><td>Garages.</td><td>Garages. Covered garages of 150 m2 area each shall be constructed at 2 different locations within the WTP campus.</td><td>Stands deleted.</td></tr>
</table>

<table>
<tr><th>SNo</th><th colspan="2">Clause/Section Reference</th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td colspan="2">,
Clause 916</td><td>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.</td><td></td></tr>
<tr><td>42.</td><td>Technical Specification
,
Clause 1040</td><td>Clear water pumps configuration</td><td>(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</td><td>(4w+3s) 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</td></tr>
<tr><td>43.</td><td>Technical Specification
,
Clause 1024 and 1025</td><td>Pumps configuration</td><td>Table 74: Pump duty condition and operating Range
1.Discharge (Intermediate stage)-each Pump 1120 M3/hour

Table 75: Pump duty condition and operating Range
1.Discharge (Intermediate stage)-each Pump ~~1120~~ M3/hour</td><td>Table 74: Pump duty condition and operating Range
1.Discharge (Intermediate stage)-each Pump 1027 M^3/hour

Table 75: Pump duty condition and operating Range
1.Discharge (Intermediate stage)-each Pump 1027 M^3/hour</td></tr>
<tr><td>44.</td><td>Technical Specifications page 85, Clause 515</td><td></td><td>Two numbers of power transformer ....., shall be provided for pumping station and two nos of Auxillary transformers of 0.433/0.433kV , 50Hz oil immersed type OCTC. The power transformer shall conform to IS: 2026 and shall be ..... platform for transformer.</td><td>Two numbers of power transformer ....., shall be provided for pumping station. The power transformer shall conform to IS: 2026 and shall be ..... platform for transformer.</td></tr>
<tr><td>45.</td><td>Technical specification Clause 1030 Page 187</td><td></td><td>(4w+2s) pumps shall be installed on clear water sump located at WTP premises for intermediate stage water requirement. In the 2nd stage (2w+1s) pumps is to be installed.</td><td>(4w+3s) pumps shall be installed on clear water sump located at WTP premises for intermediate stage water requirement. In the 2nd stage (2w+1s) pumps is to be installed.</td></tr>
<tr><td>46.</td><td>Technical specification Table No.74 and 75</td><td></td><td>Table 74: Pump Duty Condition and Operating Range<table><tr><td>1.</td><td>Discharge of each pump</td><td>1120</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></td><td>Table 74: Pump Duty Condition and Operating Range<table><tr><td>1.</td><td>Discharge of each pump</td><td>1027</td><td>m^3/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></td></tr>
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<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>6.</td><td>Number of stages (not more than)</td><td>Single stage</td><td></td></tr>
<tr><td>7.</td><td>Bowl efficiency (more than)</td><td>82</td><td>%</td></tr>
<tr><td>8.</td><td>Lubrication</td><td>Self -water</td><td></td></tr>
<tr><td>9.</td><td>Total suspended length (including strainer)</td><td>16</td><td>M (approx)</td></tr>
<tr><td>10.</td><td>No. of pumps (2 Nos working in parallel + 1 Nos. standby)
(2 Nos. for each section of Jackwell)</td><td>(4+2)</td><td>Nos.</td></tr>
</table>
Table 75: Pump Duty Considerations and Operating Range
<table>
<tr><td>1.</td><td>Discharge (Intermediate stage)-each pump</td><td><u>1120</u></td><td>m^3/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>
</td><td>
<table>
<tr><td>6.</td><td>Number of stages (not more than)</td><td>Single stage</td><td></td></tr>
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<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>
</td></tr>
<tr><td>47.</td><td>Technical specification Clause 584 Page 104</td><td></td><td>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</td><td>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</td></tr>
<tr><td>48.</td><td>Technical specification</td><td></td><td>Plinth layer:
i. Building plinth shall be a minimum of <u>600 mm</u> above the</td><td>Plinth layer:
i. Building plinth shall be a minimum of 900 mm above the</td></tr>
</table>

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td>Clause 997</td><td></td><td>average finished ground level around the building and shall be not be less than the plinth level of any existing buildings</td><td>finished grade level outside of the building and shall be not be less than the plinth level of any existing buildings</td></tr>
<tr><td>49.</td><td>Technical specification Clause 4 Table 1</td><td></td><td>Bottom width at 18 m MSL 10.00 m</td><td>Bottom width at 18 m MSL 5.00 m</td></tr>
<tr><td>50.</td><td>Technical specification Clause 581</td><td></td><td>The filters shall be rapid gravity, constant head, constant rate sand filters. About 9 nos of filter units shall be provided.</td><td>The filters shall be rapid gravity, constant head, constant rate sand filters. 12 nos of filter units shall be provided.</td></tr>
<tr><td>51.</td><td>Technical specification Clause</td><td></td><td>744.The Ground Floor (Administration Block) shall have a minimum floor area of 350 $m^2$and be divided into rooms as shown in the following schedule:
Table 51: Room Schedule (Ground Floor–Administrative Block)
<table>
<tr><th rowspan="2">Room</th><th rowspan="2">No.</th><th rowspan="2">Min Area Each (m^2)</th><th colspan="4">Coating System r Type No.[1]</th></tr>
<tr><th>Flooring[6]</th><th>Walls[6]</th><th>Doors</th><th>Windows</th></tr>
<tr><td>Entrance/ Reception</td><td>1</td><td>60</td><td>8</td><td>1 & 4</td><td>B[2]</td><td>None</td></tr>
<tr><td>Manager’s Room[2]</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>35</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>60</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>30</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 requir</td><td>Kota stone</td><td>1 & 4</td><td>None</td><td>None</td></tr>
</table></td><td>744.The Ground Floor (Administration Block) shall have a minimum floor area of 250 m^2 and be divided into rooms as shown in the following schedule:
Table 51: Room Schedule (Ground Floor–Administrative Block)
<table>
<tr><th rowspan="2">Room</th><th rowspan="2">No.</th><th rowspan="2">Min Area Each (m^2)</th><th colspan="4">Coating System or Type No.[1]</th></tr>
<tr><th>Flooring[6]</th><th>Walls[6]</th><th>Doors</th><th>Windows</th></tr>
<tr><td>Entrance/ Reception</td><td>1</td><td>50</td><td>8</td><td>1 & 4</td><td>B[2]</td><td>None</td></tr>
<tr><td>Manager’s Room[2]</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>
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<tr><td>Stairways</td><td>1</td><td>As requir</td><td>Kota stone</td><td>1 & 4</td><td>None</td><td>None</td></tr>
</table></td></tr>
</table>

SNo	Clause/Section Reference		Existing Provision	Amended. Now to be read as

		ed				

Notes: For Coating System or type refer clause of Specification Civil, Building and Road works

1. 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.
2. To be aluminium framed (anodized finish) architectural type doors with the top half in glass.
3. To be determined by the Contractor.

745.The First Floor shall have a floor area of minimum 350 m^2 and be divided into rooms as shown in the following schedule:

Table 52: Room Schedule (First Floor)

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	Terrazzo	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

		ed				

Notes: For Coating System or type refer clause of Specification Civil, Building and Road works

1. 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.
2. To be aluminium framed (anodized finish) architectural type doors with the top half in glass.
3. To be determined by the Contractor.

745.The First Floor shall have a floor area of minimum **250 m^2** and be divided into rooms as shown in the following schedule:

Table 52: Room Schedule (First Floor)

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**	Terrazzo	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

<table>
<tr><th>SNo</th><th>Clause/Section Reference</th><th></th><th>Existing Provision</th><th>Amended. Now to be read as</th></tr>
<tr><td></td><td></td><td></td><td>
<table>
<tr><td>room</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Bathrooms</td><td>2</td><td>18</td><td>8</td><td>5</td><td>F</td><td>None</td></tr>
<tr><td>Stairways</td><td></td><td>As required</td><td>Kota stone</td><td>1 & 4</td><td>None</td><td>None</td></tr>
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</table>
</td></tr>
<tr><td>52.</td><td>Technical specification
Clause 990 (iv) and clause 990(x)</td><td></td><td>990 (iv)All design for water retaining structures including roofing shall be based upon limiting the crack width to 0.2 mm as per BS 8007

990.(x)The minimum reinforcement shall be in accordance with BS 8007</td><td>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</td></tr>
<tr><td>53.</td><td>Technical specification
Clause 541</td><td></td><td>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</td><td>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</td></tr>
<tr><td>54.</td><td>Technical specification
Clause 764</td><td></td><td>764. Sludge Handling and Final Disposal: The sludge shall be treated at WTP by thickener and dehydrator</td><td>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.</td></tr>
<tr><td>55.</td><td>Technical specification
Clause 581</td><td></td><td>581. The filters shall be rapid gravity, constant head, constant rate sand filters. About 9nos 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 10.0 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.</td><td>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.</td></tr>
<tr><td>56.</td><td>Technical specification</td><td></td><td>Table 40: Design Criteria</td><td>Table 40: Design Criteria</td></tr>
</table>

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

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 Lime | To be specified by the Contractor | 5 % | 3each for one shift | 7 days +1 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
59.	Technical specification Clause 528		528. However the plant shall be designed to give desired output in each Stage per day working on 24-hour 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. Three blowers shall installed, one duty, two standbys 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 befitted 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 vertical turbine pumps (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 protectionwill 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 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 m³/h at 40 m head (4W+2S) 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 m³/h at 40 m head (**4W+3S**) and backwash pumps etc.
67.	Drawings 6.Connecting pipe / 26 &3		Connecting pipe length 40 m	Connecting pipe length **50** m
68.	Drawings SLD for WTP Sub Station		1. One outgoing panel is provided for SWPS (Settled Water Pumping Station). 2. Ratings are marked on the different equipment.	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 are marked on the different equipment.	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 6 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.