

Contract Package Number & Name: RUSDP/JJN/01: Jhunjhunu Water and Wastewater Project comprising of Design and Construction of Work of Water Supply Distribution Network Improvement with House Service Connections for Non-Revenue Water Reduction and Continuous Water Supply, Construction of Reservoirs and Pumping Stations, Water Transmission and all other allied works and Construction of Sewer Network with House Connections, Design and Construction of Sewage Pumping Stations, Sewage Treatment Plant, Effluent Reuse & Allied Works and Operation & Maintenance Services of the Entire System for 10 Years at Jhunjhunu.

Addendum 2

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to
1.	IFB: 5 b (II)	Date & time for start of online submission of Bids: from 09:30 hours on 11th April, 2016	Date & time for start of online submission of Bids: from 09:30 hours on 25th April, 2016
2.	Section 2: ITB 11	Documents submitted in envelope 'A' of eproc website must be submitted in original in office of the Project Director, Rajasthan Urban Infrastructure Development Project, AVS Building, 1 st Floor, Jawahar Circle, JLN Marg, Malviya Nagar, Jaipur - 302 017 (Rajasthan) Tel: 0141-2721966 by the deadline indicated in IFB (upto 15:00 hours on 25th April, 2016)	Documents submitted in envelope 'A' of eproc website must be submitted in original in office of the Project Director, Rajasthan Urban Infrastructure Development Project, AVS Building, 1 st Floor, Jawahar Circle, JLN Marg, Malviya Nagar, Jaipur - 302 017 (Rajasthan) Tel: 0141-2721966 by the deadline indicated in IFB (upto 15:00 hours on 6th May, 2016)
3.	Section 2: ITB 22.1	Replace ITB 22.1 with the following: Bids shall be submitted electronically on e-Procurement site http://www.eproc.rajasthan.gov.in , not later than 18:00 hours on 22nd April, 2016	Replace ITB 22.1 with the following: Bids shall be submitted electronically on e-Procurement site http://www.eproc.rajasthan.gov.in , not later than 18:00 hours on 3rd May, 2016
4.	Section 2:ITB 25	1.The Employer shall open the technical bids online in public in the presence of Bidders or designated representative of the Bidders, who chose to attend at:- Date : 25th April, 2016 Time:15:30 hours	1.The Employer shall open the technical bids online in public in the presence of Bidders or designated representative of the Bidders, who chose to attend at:- Date : 6th May, 2016 Time:15:30 hours
5.	Section 3: Evaluation and Qualification	(i) Experience in construction and commissioning of urban water distribution network improvement on District Metering Area (DMA)/Zone basis and making house service connections in a project area or town or township* serving a minimum of 10,000 house service connections under single contract or serving atleast 7,000 house service connections under each of two	(i) Experience in construction and commissioning of urban water distribution network improvement on District Metering Area (DMA)/Zone basis and making house service connections in a project area or town or township* serving a minimum of 7,000 house service connections under single contract or serving atleast 5,000 house

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	Criteria 2.4.2: Construction Experience in Key Activities	<p>separate contracts.</p> <p>*For the purpose of computing experience of house connections, the bidder will be granted benefit up to 50% of such work executed in an integrated township (including private, subject to providing certificate of corresponding/ competent Government/ PSU entity)</p>	<p>service connections under each of two separate contracts.</p> <p>*For the purpose of computing experience of house connections, the bidder will be granted benefit up to 50% of such work executed in an integrated township (including private, subject to providing certificate of corresponding/ competent Government/ PSU entity)</p>
6.		<p>(vi) Experience in operation and maintenance/ management of DMA/Zone based urban water distribution system in a project area or town or township* serving a minimum of 10,000 house service connections under single contract or serving atleast 7,000 house service connections under each of two separate contracts, with O&M experience of completed/ongoing contract for a minimum period of one year as on 31 Dec, 2015 (excluding defect liability period) (Could be met by sub contractor. A Memorandum of Agreement (MOA) with sub contractor is required to be submitted with the bid).</p> <p>* For the purpose of computing experience of house connections, the bidder will be granted benefit up to 50% of such work executed in an integrated township (including private, subject to providing certificate of corresponding/ competent Government/ PSU entity).</p>	<p>vi) Experience in operation and maintenance/ management of DMA/Zone based urban water distribution system in a project area or town or township* serving a minimum of 7,000 house service connections under single contract or serving atleast 5,000 house service connections under each of two separate contracts, with O&M experience of completed/ongoing contract for a minimum period of one year as on 31 Dec, 2015 (excluding defect liability period) (Could be met by sub contractor. A Memorandum of Agreement (MOA) with sub contractor is required to be submitted with the bid).</p> <p>* For the purpose of computing experience of house connections, the bidder will be granted benefit up to 50% of such work executed in an integrated township (including private, subject to providing certificate of corresponding/ competent Government/ PSU entity).</p>
7.	Volume 1, Section 4, Bidding Forms, Form Tech - 1	Guaranteed Power consumption-Form Tech 1	Revised Form for Guaranteed Power consumption-Form Tech 1 is attached as Annexure 1 to Addendum 2
8.	Part 1 Volume 1 Section 6, Cl. 6.7.4, page 14 of 255	Responsibility to treat the effluent of the treatment plant further and ensure the quality of the effluent after tertiary treatment and supplying the output for reuse of the treated effluent for agricultural forest development and/or industrial use.	Delete this bulleted sentence from Clause No.6 7.4 on page 14 of 255

Sl. No.	Reference Section and clause No	Existing Provisions		Modified to	
9.	Part 1 Volume 1 Section 6, Cl. 6.7.4, page 15 of 255	The contractor shall procure a colour satellite image of 0.5 m resolution (using provisional sum amount) and digitize all the footprints, roads, water bodies, electricity poles, water supply, sewerage, storm water, and other infrastructure components as visible in the image.		The employer shall provide colour satellite image. The contractor will digitize all the footprints, roads, water bodies, electricity poles, water supply, sewerage, storm water, and other infrastructure components as visible in the image. This data shall form the basis for an overall development of Geographic Information System in desire of water supply and sewerage facilities and all consumer connections.	
10.	Part 1 Volume 1 Section 6, Cl. 6.7.4, page 15 of 255	Only Energy & Chemical charges for running of the systems, during O&M period will be borne by the Employer.		Employer will borne only energy cost and in case of power failure, O&M costs including diesel & lubricants cost for operation of DG set during commissioning, trial run, and Operation & Maintenance period. Cost of chemicals for treatment will be borne by the contractor/operator.	
11.	Part 1, Volume 1, Section 6, Cl. No. 6.8, 28/255	30	Trenchless crossing of National Highway, Railway Line for 600mm	Approx. =520m	30 Trenchless crossing of National Highway, Railway Line for 600mm Approx. =560m
12.	Part 1, Volume 1, Section 6, Cl. No. 6.8, 28/255	2.	Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP2, NP3 & NP4class (with s/s ends) as per IS: 458 - 2003 (amended up to date) at all depths with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 - 1985with latest amendments till date. (including cost of Rubber gaskets, lubricants)		2. Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP2, NP3 & NP4class (with s/s ends) as per IS: 458 - 2003 (amended up to date) at all depths with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 -1985with latest ammendments till date. (including cost of Rubber gaskets, lubricants)
			NP2	Approx.=6147 m	NP2 Approx.=6263 m

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13.	Part 1, Volume 1, Section 6, Cl. No. 6.8, 28/255	17	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.0m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.0m bottom dia, 0.72m total height (0.431m cone height)to invert with pre-cast conical piece. For construction of extra depth using precast circular rings of height 300/225/150	2852nos. For depth beyond 0.72 m deep to invert=1884m	17 Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.0m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.0m bottom dia, 0.72m total height (0.431m cone height)to invert with pre-cast conical piece. For construction of extra depth using precast circular rings of height 300/225/150	1800 nos.
		18	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.20m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.2m bottom dia, 0.92m total height (0.631m cone height) to invert with pre-cast conical piece For construction of extra depth using precast circular rings of height 300/225/150	1610nos. For depth beyond 0.92 m deep to invert = 1717m	18 Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.20m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.2m bottom dia, 0.92m total height (0.631m cone height) to invert with pre-cast conical piece For construction of extra depth using precast circular rings of height 300/225/150	1000 nos.
		19	Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.50m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.5m bottom dia, 1.22m total height (0.931m cone height) to invert with pre-cast conical piece For construction of extra depth using precast circular rings of height 300/225/150	1392 nos. For depth beyond 1.22 m deep to invert = 3807m	19 Providing, fixing and constructing of pre-cast RCC M-40 grade circular manholes with internal dia 1.50m and up to specified depth having pre-cast RCC M-40 grade conical piece 0.69m top dia, 1.5m bottom dia, 1.22m total height (0.931m cone height) to invert with pre-cast conical piece For construction of extra depth using precast circular rings of height 300/225/150	1200 nos.

Sl. No.	Reference Section and clause No	Existing Provisions		Modified to			
		20	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-A" with internal dia 0.90m and depth upto 1.65m having 230mm thick sewer brick masonry wall of Manhole "Type-A" of depth 0.90 m	724 nos. For extra depth=349m for extra depth beyond 0.90m to 1.65m	20	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-A" with internal dia 0.90m and depth upto 1.65m having 230mm thick sewer brick masonry wall of Manhole "Type-A" of depth 0.90 m	510 nos.
		21	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-B" with internal dia 1.20m and depth upto 2.50m having sewer brick masonry wall 230mm thick upto 1.5m, 345mm thick from 1.50m to 2.50m of Manhole "Type-B" of depth 1.70 m	266 nos. For extra depth beyond 1.70 m and upto 2.50 m =76m	21	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-B" with internal dia 1.20m and depth upto 2.50m having sewer brick masonry wall 230mm thick upto 1.5m, 345mm thick from 1.50m to 2.50m of Manhole "Type-B" of depth 1.70 m	150 nos.
		22	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-C" with internal dia 1.50m and depth upto 5.0m having sewer brick masonry wall 230mm thick upto 1.5m, 345mm thick from 1.50m to 2.50m and 460mm from 2.50 to 5.0m of Manhole "Type-C" of depth 2.50 m	203 nos. For extra depth beyond 2.50 m and upto 5.0 m =227m	22	Providing and constructing of SEWER-BRICK masonry circular manholes of "Type-C" with internal dia 1.50m and depth upto 5.0m having sewer brick masonry wall 230mm thick upto 1.5m, 345mm thick from 1.50m to 2.50m and 460mm from 2.50 to 5.0m of Manhole "Type-C" of depth 2.50 m	130 nos.
		25	Providing, jointing, laying, testing and commissioning of HDPE PE-100/PN-6 (suitable for pulling method for jointing) pipes for sewer line as per IS-14743:1996 by trenchless method for 200 mm dia HDPE pipe	120	25	Providing, jointing, laying, testing and commissioning of HDPE PE-100/PN-6 (suitable for pulling method for jointing) pipes for sewer line as per IS-14333:1996 by trenchless method for 200 mm dia HDPE pipe	90 m
					26	Providing PVC-U pipes as per IS 15328 drop connection externally	410

Sl. No.	Reference Section and clause No	Existing Provisions		Modified to		
		26	<p>Providing PVC-U pipes as per IS 15328 drop connection externally from branch sewer line to main sewer manhole including inspection and cleaning eye, PVC-U drop pipe and bend encased around with cement concrete M15 with all form work, cutting holes in walls and making good with brick/ stone masonry work in cement sand mortar 1:4 plastered with cement sand mortar 1:3 with stiff cement mortar 1:1 around PVC-U pipe in masonry wall, making required channels complete.</p>	<p>from 0.60 m and upto 1.0 m depth 110mm dia to 315mm dia.- 80Nos. Extra for additional drop depth of PVC-U pipes as per IS 15328 drop connection beyond 1.0 m complete-110mm dia. to 315mm - 80m</p>	<p>from branch sewer line to main sewer manhole including inspection and cleaning eye, PVC-U drop pipe and bend encased around with cement concrete M15 with all form work, cutting holes in walls and making good with brick/ stone masonry work in cement sand mortar 1:4 plastered with cement sand mortar 1:3 with stiff cement mortar 1:1 around PVC-U pipe in masonry wall, making required channels complete.</p>	Nos.
		28	<p>Providing, fixing and constructing of pre-cast RCC M-40 grade circular Road Side Inspection Chamber (using sulphate resistant cement) with internal dia.0.45m</p>	<p>up to 0.60m depth- 8850nos. up to 0.90m depth- 8850nos.</p>	SI No. 28 To be deleted	
14.	Part 1 Volume 1 Section 6, Cl. 6.8, page			<p>Insert Note below the table: Note: All consumer connections shall be linked with the</p>		

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to						
	31 of 255		system to be developed and a new data base shall be built.						
15.	Part 1 Volume 1 Section 6, Cl. 6.10.1, page 33 of 255	Costs of power and chemical will be borne by the Employer.	Employer will borne only energy cost and in case of power failure, O&M costs including diesel & lubricants cost for operation of DG set during trial run, commissioning and Operation & Maintenance period. Cost of chemicals for treatment will be borne by the contractor/operator.						
16.	Part 1, Volume 1, Section 6, Cl. No. 6.10.2.2, 39/255	Useful life of house service connection meters (domestic meter) is considered 10 years from the date of commissioning of meter. If any meter requires replacement before 10 years period, it will be replaced at costs of the Contractor and will not be paid.	Useful life of house service connection meters (domestic meter) is considered as 7 years from the date of commissioning of meter. If any meter requires replacement before 7 years period, it will be replaced at costs of the Contractor and will not be paid. In case any meter going out of order, only one-time replacement shall be allowed. Any more replacement shall be on account of the contractor.						
17.	Part 1 Volume 1 Section 6, Cl. 6.21.1, page 68 of 255	<input type="checkbox"/> Contractor shall consider and provide all necessary facilities for manual bypass of sewage in the flow path before SPS. It shall be fully functional in all respects, and shall include any and all components necessary to safely and efficiently accomplish the intended bypass.	The bullet point mentioned under this clause stands deleted						
18.	Part 1 Volume 1 Section 6, Cl. 6.21.1, page 68 of 255	Motorised valve in CI with isolation and bypass arrangement shall be provided in the sludge line,	The sentence mentioned under this clause stands deleted						
19.	Part 1, Volume 1, Section 6, Cl. No. 6.22.1, Page 77 of 255		<p>Add as last row in the table for influent wastewater characteristics.</p> <table border="1" data-bbox="1352 1321 2116 1452"> <thead> <tr> <th data-bbox="1352 1321 1751 1385">Raw Sewage Parameters</th> <th data-bbox="1751 1321 1944 1385">Unit</th> <th data-bbox="1944 1321 2116 1385">Value</th> </tr> </thead> <tbody> <tr> <td data-bbox="1352 1385 1751 1452">TP(as PO4)</td> <td data-bbox="1751 1385 1944 1452">mg/l</td> <td data-bbox="1944 1385 2116 1452">10</td> </tr> </tbody> </table>	Raw Sewage Parameters	Unit	Value	TP(as PO4)	mg/l	10
Raw Sewage Parameters	Unit	Value							
TP(as PO4)	mg/l	10							

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to								
20.	Part 1, Volume 1, Section 6, Cl. No. 6.22.1, Page 77 of 255	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">TP (as PO4)</td> <td style="width: 10%;">mg/l</td> <td style="width: 10%;">1</td> </tr> </table>	TP (as PO4)	mg/l	1	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">TP (as PO4)</td> <td style="width: 10%;">mg/l</td> <td style="width: 10%;">2</td> </tr> </table> <p>Note: Shall meet the guidelines of latest CPHEEO MANUAL ON SEWERAGE AND SEWAGE TREATMENT</p>	TP (as PO4)	mg/l	2		
TP (as PO4)	mg/l	1									
TP (as PO4)	mg/l	2									
21.	Part 1 Volume 1 Section 6, Cl. 6.22.1, page 78 of 255	<table border="1" style="width: 100%;"> <tr> <td style="width: 5%;">D</td> <td style="width: 30%;">Effluent Disposal and Reuse of Effluent</td> <td style="width: 10%; text-align: center;">15.5 ML D</td> <td style="width: 55%;">This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT</td> </tr> </table>	D	Effluent Disposal and Reuse of Effluent	15.5 ML D	This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT	<table border="1" style="width: 100%;"> <tr> <td style="width: 5%;">D</td> <td style="width: 30%;">Effluent Disposal and Reuse of Effluent</td> <td style="width: 10%; text-align: center;">7 MLD</td> <td style="width: 55%;">This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT</td> </tr> </table>	D	Effluent Disposal and Reuse of Effluent	7 MLD	This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT
D	Effluent Disposal and Reuse of Effluent	15.5 ML D	This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT								
D	Effluent Disposal and Reuse of Effluent	7 MLD	This work includes 1000 KL capacity of treated effluent Reservoir with pumping station & 1000 KL capacity of OHT								
22.	Part 1, Volume 1, Section 6, Cl. No. 6.26, Page 90 of 255	Table 10 Details of Proposed Pumps for Water and Waste Water	<i>“Table 10 Details of Proposed Pumps for Water attached as Annexure 2 to Addendum 2”</i>								
23.	Part 1 Volume 1 Section 6, Cl. 6.30.1, page 98 of 255	<p><input type="checkbox"/> Contractor shall provide at the STP all necessary facilities for manual bypass of the process liquid at various locations in the flow path as indicated below. These facilities are included in this contract and shall be provided regardless of whether or not they are shown in any drawings included in the contract document, shall be fully functional in all respects, and shall include any and all components necessary to safely and efficiently accomplish the intended bypass. Each bypass facility shall include, but not be limited to downward opening overflow weir gates installed in the appropriate channel or structure.</p> <p>Bypass facilities as described above shall be provided at the following locations:</p> <p><input type="checkbox"/> Inlet chamber</p>	<i>The bullet point mentioned under this clause stands deleted</i>								

Sl. No.	Reference Section and clause No	Existing Provisions			Modified to		
		<input type="checkbox"/> After Screen Channel <input type="checkbox"/> After Grit separation unit <input type="checkbox"/> Before Aeration Basin					
24.	Part 1 Volume 1 Section 6, Cl. 6.30.5.1, page 102,103 of 255	Vii	Allied Works	The inlet channel shall be provided with 1.2 m wide RCC Maintenance platform all along the length of the channel and also for operating gates. Peripheral railing of 1.2m height in 32mm NB, SS 316 pipes of thickness 3.2mm as per specification shall be provided. By-pass arrangement from inlet chamber with necessary by-pass gate shall be provided. The By-pass line shall be RCC NP3 class pipe connected to Plant Drain out line. The contractor shall provide necessary anchor blocks, pipe supports and supporting arrangements for the inlet pipes. The inlet Chamber shall also be provided with access Staircase / Ladder.	Vii	Allied Works	The inlet channel shall be provided with 1.2 m wide RCC Maintenance platform all along the length of the channel and also for operating gates. Peripheral railing of 1.2m height in 32mm NB, SS 316 pipes of thickness 3.2mm as per specification shall be provided. The contractor shall provide necessary anchor blocks, pipe supports and supporting arrangements for the inlet pipes. The inlet Chamber shall also be provided with access Staircase / Ladder.
25.	Part 1, Volume 1, Section 6, Cl. No. 6.30.9.1, Page 112 of 255	j)	Maximum Sewage Temperature	32°C	j)	Maximum Sewage Temperature	As per CPHEEO provisions and approval during SIP.
		f)	Oxygen Demand Safety Factor	10%	f)	Oxygen Demand Safety Factor	As per CPHEEO provisions and approval during SIP.
		q)	Specific air flow rate of Diffuser(L=1.0m)	6.0 Nm ³ /h/unit	q)	Specific air flow rate of Diffuser(L=1.0m)	Shall be as per manufacturers design and approval during SIP.
		s)	Standard Oxygen transfer efficiency (SOTE) of Diffuser per meter depth of submergence - %/meter	5%/meter depth of submergence			

Sl. No.	Reference Section and clause No	Existing Provisions		Modified to							
		w)	Discharge Pressure	0.70 Kg/cm ² (minimum)	<table border="1"> <tr> <td data-bbox="1350 217 1413 440">s)</td> <td data-bbox="1413 217 1783 440">Standard Oxygen transfer efficiency (SOTE) of Diffuser per meter depth of submergence - %/meter</td> <td data-bbox="1783 217 2136 440">Shall be as per manufacturers design and approval during SIP.</td> </tr> <tr> <td data-bbox="1350 440 1413 611">w)</td> <td data-bbox="1413 440 1783 611">Discharge Pressure</td> <td data-bbox="1783 440 2136 611">Shall be as per manufacturers design and approval during SIP.</td> </tr> </table>	s)	Standard Oxygen transfer efficiency (SOTE) of Diffuser per meter depth of submergence - %/meter	Shall be as per manufacturers design and approval during SIP.	w)	Discharge Pressure	Shall be as per manufacturers design and approval during SIP.
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26.	Part 1, Volume 1, Section 6, Cl. No. 6.30.9.4, 116/255	iii.	Quantity	3 Nos (2W+1S)	<table border="1"> <tr> <td data-bbox="1350 611 1413 679">iii.</td> <td data-bbox="1413 611 1771 679">Quantity</td> <td data-bbox="1771 611 2136 679">2 Nos (1W+1S)</td> </tr> </table>	iii.	Quantity	2 Nos (1W+1S)			
iii.	Quantity	2 Nos (1W+1S)									
27.	Part 1, Volume 1, Section 6, Cl. No. 6.30.9.4, 116/255	xii.	Hydraulic Retention Time	30 minute at Design Flow	<table border="1"> <tr> <td data-bbox="1350 810 1413 1066">xii.</td> <td data-bbox="1413 810 1771 1066"> <ul style="list-style-type: none"> Hydraulic Retention Time Residual chlorine concentration to be maintained at the consumer end. </td> <td data-bbox="1771 810 2136 1066"> <ul style="list-style-type: none"> 30 minute at Design Flow Not less than 0.2 mg/l and not more than 0.5 mg/l </td> </tr> </table>	xii.	<ul style="list-style-type: none"> Hydraulic Retention Time Residual chlorine concentration to be maintained at the consumer end. 	<ul style="list-style-type: none"> 30 minute at Design Flow Not less than 0.2 mg/l and not more than 0.5 mg/l 			
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28.	Part 1 Volume 1 Section 6, Cl. 6.30.9.5, page 117 of 255	<table border="1"> <tr> <td data-bbox="499 1137 1339 1273">It is proposed to construct 1000 KLD OHT and 1000 KLD including provision of Pumping Station, 1.1 km DI K-7 rising with 2.5 km DI pipe for distribution system.</td> </tr> </table>		It is proposed to construct 1000 KLD OHT and 1000 KLD including provision of Pumping Station, 1.1 km DI K-7 rising with 2.5 km DI pipe for distribution system.	<table border="1"> <tr> <td data-bbox="1350 1137 2136 1337">It is proposed to construct 1000 KL OHT and 1000 KL CWR including provision of Pumping Station, 1.1 km DI K-7 rising main with 1000m of 200 mm diameter and 500 m of 250 mm diameter of U-PVC pipe line for Effluent reuse distribution</td> </tr> </table>		It is proposed to construct 1000 KL OHT and 1000 KL CWR including provision of Pumping Station, 1.1 km DI K-7 rising main with 1000m of 200 mm diameter and 500 m of 250 mm diameter of U-PVC pipe line for Effluent reuse distribution				
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29.	Part 1 Volume 1 Section 6, Cl. 6.30.22,	The instrumentation and control of sewerage treatment plant is semiautomatic and with programmable Logic		"The Instrumentation and control of Sewage treatment plant shall be fully automatic using Programmable Logic Controller (PLC) based PC system, However, in the event							

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to
	page 141 of 255	controller (PLC) based PC system.	<i>of failure of the automatic controls or by operator choice, it shall be possible to revert to either semi-automatic or manual operation.”</i>
30.	Part 1 Volume 1 Section 6, Cl. 6.30.22, page 141 of 255	The details of instrumentation, control and automation to be provided in the STP and proposed controlling shall be displayed through one PLC (common PLC for SBR & other unit).	<i>Two PLC systems shall be considered for operation of proposed STP; one each for SBR unit and for other units of proposed STP ; however both the PLC systems shall be interfaced to the Plant SCADA system for monitoring and control.</i>
31.	Part 1 Volume 1 Section 6, Cl. 6.31.4, page 161 of 255	e. The minimum clear cover to all reinforcement including stirrups and links shall be 40 mm for all water retaining structures including the bottom of roof. For other structures the minimum clear cover shall be as specified in IS: 456.	e. The minimum clear cover to all reinforcement including stirrups and links shall be 45 mm for all water retaining structures including the bottom of roof. For other structures the minimum clear cover shall be as specified in IS: 456.
32.	Part 1 Volume 1 Section 6, Cl. 6.31.5, page 166 of 255	<i>Technical Specification for Rain Water Harvesting Structure is not included</i>	Add dd) under Clause 6.31.5 Requirements for Building Works, in Section 6, Employers Requirements as following. dd) Rain water harvesting structure to be provided as per guidelines of State government/GWD/CPWD, after approval of same under SIP.
33.	Part 1, Volume 1, Section 6, Cl. No. 6.31.12.5, 178/255	Chlorine store shall be designed to store minimum 4 chlorine tonners in two rows of two tonners each.	Chlorine store shall be designed to store minimum 3 chlorine tonners.
34.	Part 1 Volume 1 Section 6, Cl. 6.41.7, page 229 of 255	The Contractor shall undertake installation of new consumer connections using Electrofusion welded connection with threaded metal insert to receive GM ferrule, a compression joint to receive HDPE pipe from ferrule to the end of street followed by a compression elbow and then MDPE pipe till ball valve followed by installation of a Consumer meter, accessories and meter box (as required) at the nearest point	The Contractor shall undertake installation of new consumer connections using Electrofusion welded connection with threaded metal insert to receive Brass ferrule, a compression joint to receive HDPE pipe from ferrule to the end of street followed by a compression elbow and then MDPE pipe till ball valve followed by installation of a Consumer meter, accessories and meter

Sl. No.	Reference Section and clause No	Existing Provisions				Modified to																																	
		inside the Consumer property boundary nearest to the boundary.				box (as required) at the nearest point inside the Consumer property boundary nearest to the property boundary.																																	
35.	Part 1, Volume 1, Section 6, Cl. No. 6.41.14, 231/255	The Contractor shall design, develop and set up consumer relation management centres (CRMC) 4 no. each of not less than 90 m2 and one Central Control Centre (CCC) of about 120m2 to facilitate receiving and resolving consumer requests in the areas of new connections, service deficiencies, resolution of billing disputes, payment of bills etc.				The Contractor shall design, develop and set up Consumer Relation Management Centers (CRMC) 4no. , each of not less than 90 sq.m and one Central Control Centre (CCC) of about 90 sq.m to facilitate receiving and resolving consumer requests in the areas of new connections, service deficiencies, resolution of billing disputes, payment of bills complaint pertaining to leakages and water meters etc.																																	
36.	Part 2, Volume 2, 8.7	I)	Backup Period	One Hour Backup time at 100 % load		I)	Backup Period	Two Hour Backup time at 100 % load																															
37.	Part 1, Volume 1, Schedule to Section 8, PCC, Cl No. 3.2.1, 8-26	<table border="1" data-bbox="499 778 1223 1450"> <thead> <tr> <th data-bbox="499 778 577 932">S.N</th> <th data-bbox="577 778 880 932">Parameter reference &</th> <th data-bbox="880 778 1223 932">% of eligible monthly Operation Service payment</th> </tr> </thead> <tbody> <tr> <td data-bbox="499 932 577 1066">1</td> <td data-bbox="577 932 880 1066">B-I-(i) Continuous pressured water supply</td> <td data-bbox="880 932 1223 1066">6%</td> </tr> <tr> <td data-bbox="499 1066 577 1200">2</td> <td data-bbox="577 1066 880 1200">B-I-(ii) Ensure the level of NRW in specified range</td> <td data-bbox="880 1066 1223 1200">6%</td> </tr> <tr> <td data-bbox="499 1200 577 1385">3</td> <td data-bbox="577 1200 880 1385">B-I-(iii) Meter reading, billing and distribution efficiency</td> <td data-bbox="880 1200 1223 1385">6%</td> </tr> <tr> <td data-bbox="499 1385 577 1450">4</td> <td data-bbox="577 1385 880 1450">B-I-(vi) Adhering to</td> <td data-bbox="880 1385 1223 1450">6%</td> </tr> </tbody> </table>				S.N	Parameter reference &	% of eligible monthly Operation Service payment	1	B-I-(i) Continuous pressured water supply	6%	2	B-I-(ii) Ensure the level of NRW in specified range	6%	3	B-I-(iii) Meter reading, billing and distribution efficiency	6%	4	B-I-(vi) Adhering to	6%	<table border="1" data-bbox="1350 778 2074 1450"> <thead> <tr> <th data-bbox="1350 778 1429 932">S.N</th> <th data-bbox="1429 778 1731 932">Parameter reference &</th> <th data-bbox="1731 778 2074 932">% of eligible monthly Operation Service payment</th> </tr> </thead> <tbody> <tr> <td data-bbox="1350 932 1429 1066">1</td> <td data-bbox="1429 932 1731 1066">B-I-(i) Continuous pressured water supply</td> <td data-bbox="1731 932 2074 1066">5%</td> </tr> <tr> <td data-bbox="1350 1066 1429 1200">2</td> <td data-bbox="1429 1066 1731 1200">B-I-(ii) Ensure the level of NRW in specified range</td> <td data-bbox="1731 1066 2074 1200">5%</td> </tr> <tr> <td data-bbox="1350 1200 1429 1385">3</td> <td data-bbox="1429 1200 1731 1385">B-I-(iii) Meter reading, billing and distribution efficiency</td> <td data-bbox="1731 1200 2074 1385">5%</td> </tr> <tr> <td data-bbox="1350 1385 1429 1450">4</td> <td data-bbox="1429 1385 1731 1450">B-I-(vi) Adhering to</td> <td data-bbox="1731 1385 2074 1450">5%</td> </tr> </tbody> </table>				S.N	Parameter reference &	% of eligible monthly Operation Service payment	1	B-I-(i) Continuous pressured water supply	5%	2	B-I-(ii) Ensure the level of NRW in specified range	5%	3	B-I-(iii) Meter reading, billing and distribution efficiency	5%	4	B-I-(vi) Adhering to	5%
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Sl. No.	Reference Section and clause No	Existing Provisions		Modified to			
			HSC connection and disconnection request in time			HSC connection and disconnection request in time	
		5	B-I-(v) CRM centres established, staffed and consumer query satisfaction time adhered	6%	5	B-I-(v) CRM centres established, staffed and consumer query satisfaction time adhered	5%
		TOTAL		30%	6	Water Quality	5%
				TOTAL	30%		
38.	Part 1, Volume 1, Section-8: Particular Condition of Contract, 1.6, Page 8-7			Add following at the end of sub clause: All JV partners will be jointly and severally liable to the EA for performance of the contract.			
39.	Part 1, Volume 1, Section-8: Particular Condition of Contract, 9.14, Page 8-12	Add a new sub-clause 9.14 as follows: The Contractor shall be eligible for an incentive/bonus for early completion of work for each day (less any days of which the Contractor is paid for acceleration) that the completion is earlier than the original completion date of the Contract, Sectional Milestone and Key Time periods as detailed below:		Add a new sub-clause 9.14 as follows: The Contractor shall be eligible for an bonus for early completion of work for each day (less any days of which the Contractor is paid for acceleration) that the completion is earlier than the original stipulated completion date of the contract Sectional Milestone and Key Time periods as detailed below:			

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to																								
40.	Volume 1, Section 8, Schedule 5: Contractor Payment, 3. Payment on Operation Services	<p>Year wise maximum eligible payment Terms:</p> <table border="1" data-bbox="499 284 1305 1161"> <thead> <tr> <th>Year</th> <th>Maximum Eligible Total Payment for Operations & Maintenance services for the year (% of quoted Total O&M cost)</th> </tr> </thead> <tbody> <tr><td>01</td><td>8%</td></tr> <tr><td>02</td><td>8%</td></tr> <tr><td>03</td><td>8%</td></tr> <tr><td>04</td><td>9%</td></tr> <tr><td>05</td><td>9%</td></tr> <tr><td>06</td><td>10%</td></tr> <tr><td>07</td><td>11%</td></tr> <tr><td>08</td><td>12%</td></tr> <tr><td>09</td><td>12.50%</td></tr> <tr><td>10</td><td>12.50%</td></tr> <tr><td>Total</td><td>100%</td></tr> </tbody> </table>	Year	Maximum Eligible Total Payment for Operations & Maintenance services for the year (% of quoted Total O&M cost)	01	8%	02	8%	03	8%	04	9%	05	9%	06	10%	07	11%	08	12%	09	12.50%	10	12.50%	Total	100%	<p><i>The sentence “Year wise maximum eligible payment Terms and the subsequent table “Maximum Eligible Total Payment for Operations & Maintenance services for the year (% of quoted Total O&M cost)” is deleted.</i></p>
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09	12.50%																										
10	12.50%																										
Total	100%																										
41.	Part 1, Volume 2, Section-6: GTS, Cl. No. 5.7, Page 42	<p>1. Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the Rate (Rs.) of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with primer & cleaned with Hydraulic broom as per Technical Specification Clause 503.</p>	<p>1. Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.20 to 0.25 kg per sqm on bituminous surfaces & cleaned with Hydraulic broom as per Technical Specification Clause 502.</p> <p>2. Providing and applying tack coat with Bitumen emulsion (RS-1) using emulsion distributor at the rate of 0.25 to 0.30 kg per sqm on the prepared granular surfaces treated with</p>																								

Sl. No.	Reference Section and clause No	Existing Provisions	Modified to
42.	2, Volume General Technical Specification, Page 135	Specification for duct cooling system for pump house is not included	primer & cleaned with Hydraulic broom as per Technical Specification Clause 503.
43.	2, Volume General Technical Specifications, 135	Technical Specification for Fire Hydrant is not included	Add "Specification for duct cooling system for pump house: Forced Fresh Air Circulation System" as clause No. 6.47 in Part 1, Volume 2, General Technical Specifications, and attached as Annexure 3 to Addendum 2
44.	Part 1, Volume 2, General Technical Specification, Cl. No. 18.28 PE METER BOX, page 343	PE METER BOX Suitable for accommodation water meter and gate valve as per approved drawing Should have proper locking arrangement. Capable to bear a live load of 150 kg. Indicative size should be 500 mm X 250mm X 250mm Capable to tolerate temperature variation from 5 to 50 degree celsius in exposed conditions.	Add "Fire Hydrant Specifications" as clause No. 6.48 in Part 1, Volume 2, General Technical Specifications, and attached as Annexure 4 to Addendum 2
45.	2, Volume General Technical Specification, page 451		Add "GRP/PE meter box for consumer water meter" as clause No. 18.28 in Part 1, Volume 2, General Technical Specifications, and attached as Annexure 5 to Addendum 2
46.	3, Volume Drawings	Drawings	Add "Specifications for O&M for sewerage Network" as Clause No. 36 in Part 1, Volume 2, General Technical Specifications, and attached as Annexure 6 to Addendum 2
47.	Part 2, Price bid	Bill of Quantities	List of drawing are attached as Annexure 7 to Addendum 2
			BOQ is modified. Original BoQ is replaced with modified BoQ.

[Signature]
Project Director,
RUIDP

Form Tech-1

Water Supply: Draft format on Guaranteed Power consumption

S. no	Electric Power Consumption Unit	Year 1			Year 2			Year 3			Year 4			Year 5			Year 6			Year 7			Year 8			Year 9			Year 10			
		2019			2020			2021			2022			2023			2024			2025			2026			2027			2028			
		Capacity in cum/Hr	kW H/D ay	kW H/Year	Capacity in cum/Hr	kW H/D ay	kW H/Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	Capacity in cum/Hr	kW H/D ay	kWH /Year	
1	2	3	4	5=(4*365)	6	7	8=(7*365)	9	10	11=(10*365)	12	13	14=(13*365)	15	16	17=(16*365)	18	19	20=(19*365)	21	22	23=(22*365)	24	25	26=(25*365)	27	28	29=(28*365)	30	31	32=(31*365)	
1	City Pumping Station	716			750			785			797			809			821			833			845			857			869			
2	Colony Pumping station	430			438			446			454			462			470			478			486			494			502			
3	Bewani WDPS	245			257			269			273			277			281			285			289			293			297			
4	City Campus WDPS	505			530			554			563			571			580			588			597			605			614			
5	Colny WDPS	238			250			261			265			269			273			277			281			285			289			
6	IslamNagar WDPS	280			294			307			312			317			321			326			331			335			340			
7	Housing Board WDPS	215			225			236			239			243			247			250			254			257			261			
8	Khetri Mahal WDPS	139			145			152			154			157			159			161			164			166			168			
	Total power Consumption(kWH)																															
Total power consumption for Ten year(kWH)																																

Note:

- i. For intermediate flows, guaranteed maximum power consumption will be interpolated.
- ii. We confirm that the power consumption stated in the above table is the guaranteed maximum consumption. In case of more consumption to the guaranteed power, Employer will recover the costs of excess monthly power consumed with two times the prevailing power rate.
- iii. Power consumption for yard lighting, MOV etc shall be included in above table.

Signature of the bidder

Seal of the Company

Form Tech-1

Waste Water: Draft format on Guaranteed Power consumption and Guaranteed Power Generation

Guaranteed Gross Power requirement for Sewage Treatment Plant (STP), Sewage Pumping Station (SPS) & Treated Effluent Pumping Station (TEPS)

A. STP 7.0 MLD:

Raw Sewage Inflow (MLD)	Guaranteed Consumption KWH per Day	Maximum Power
2.00		
4.00		
6.00		
7.00		

B. SPS 1.0 MLD:

Raw Sewage Inflow (MLD)	Guaranteed Consumption KWH per Day	Maximum Power
1.00		

C. SPS 3.50 MLD:

Raw Sewage Inflow (MLD)	Guaranteed Consumption KWH per Day	Maximum Power
1.00		
2.00		
3.50		

D. TEPS: Treated Effluent Pumping Station:

Treated Effluent Flow Pumped (MLD)	Guaranteed Consumption KWH per Day	Maximum Power
2.00		
4.00		
6.00		
7.00		

E. Power Generation Unit:

Raw Sewage Flow at STP (MLD)	Guaranteed Generation KWH per Day	Minimum Power
2.00		
4.00		
6.00		
7.00		

Note:

- i. For intermediate raw/ treated sewage flows, guaranteed maximum power consumption and Minimum power generation will be interpolated.
- ii. We confirm that the power consumption stated in the above table is the guaranteed maximum consumption and guaranteed minimum power generation. In case of more consumption and less generation to the guaranteed power, Employer will recover the costs of excess monthly power consumed and less power generation with two times the prevailing power rate.
- iii. Power consumption for yard lighting etc shall be included in above table.

- iv. Differential power loading will be worked out from the difference in guaranteed power consumption and power generation on 7 MLD flow for STP and SPS for 1 MLD and 3.5 MLD quoted by the bidders.

Signature of the bidder

Seal of the Company

Table 10: Details of Proposed Pumps for Water

S. No	Pumping Station	Function of PS	Total Demand LPS 2031	Total Demand LPS 2046	Discharge of each pump (LPS)		Head (m)		2031		2046		Motor Rating (kW)		Motor Starters			
					2031	2046	2031	2046	Working	Stand By	Working	Stand By	2031	2046	2031		2046	
															VF D	DOL/FA SD/Soft Starter etc.	VF D	DOL/FA SD/Soft Starter etc.
Water Distribution Pumping Station																		
1)	Islam Nagar	Water Supply direct to consumers	98	140	49	70	24	27	2	2	2	2	22	30	2	2	2	2
2)	Bewani Pumping Station	Water Supply direct to consumers	86	98	43	49	24	27	2	2	2	2	18.5	22	2	2	2	2
3)	Colony Pumping Station	Water Supply direct to consumers	82	110	41	55	24	27	2	2	2	2	18.5	30	2	2	2	2
4)	City Campus Pumping Station	Water Supply direct to consumers	177	201	59	67	24	27	3	3	3	3	30	30	2	4	2	4
5)	Housing Board-02	Water Supply direct to consumers	76	98	38	49	24	27	2	2	2	2	15	22	2	2	2	2
6)	Khetri Mahal	Water Supply direct to consumers	48	50	24	25	22	24	2	2	2	2	11	11	2	2	2	2
Clear Water Pumping Station of Water Transmission System																		
7)	City Campus Main Pump House	Water transmission to service reservoirs in Bewani	38	42	19.0	21.0	28	33	2	2	2	2	11	11	2	2	2	2
8)	City Campus Main Pump House	Water transmission to service reservoirs in City campus OHSR, Islam Nagar & Colony CWR	210	266	105.0	133.0	32	32	2	2	2	2	55	75	2	2	2	2
9)	Colony Pumping Station	Water transmission High head to set-A	90	110	45.0	55.0	50	52	2	2	2	2	37	45	2	2	2	2
10)	Colony Pumping Station	Water transmission Low head to set-B	56	64	28.0	32.0	29	29	2	2	2	2	15	15	2	2	2	2

NOTE:

Set-A : Khetri Mahal CWR, Kamaruddiyan OHSR, Lal Pahadi GR & Housing Board-02 CWR

Set-B : RIICO, Panchayat, BKD hospital, H.S. school, Bapu Basti OHSRs

All Clear Water/ Raw Water Pump efficiency should **not be less than** 78%.

Parameters mentioned above are indicative and for bidding purpose only. Contractor shall furnish the required calculations for approval prior to procurement.

Specification for duct cooling system for pump house: Forced Fresh Air Circulation System.

Fresh air circulation system is to be provided for the Pump house for circulation of fresh air to limit increase in temperature and also avoid stale air presence. The complete system along with all associated required air supply fans, exhaust fans, ducts, grills, galvanized bird screens, hoods and all necessary accessories shall be provided. Suitable arrangements to prevent ingress of rain water into building shall also be provided. The system shall be designed with required air changes and the contractor shall provide detailed calculations to determine the air capacity, static pressure etc. and relevant technical details for the approval of Engineer.

All duct work shall be of high quality approved galvanized sheet steel guaranteed not to crack or peel on bending of fabrication of ducts.

The ducts shall be fabricated from galvanized plain steel sheets conforming to IS: 277-2003. All duct work, sheet metal thickness and fabrication, unless otherwise directed, shall strictly meet requirements as described in IS: 655.

All joints shall be tight and shall be made in the direction of air flow. The ducts shall be reinforced where necessary and must be secured in place so as to avoid vibrations of the duct and its supports.

Volume control dampers shall be of an approved type, lever operated and complete with locking devices which will permit the dampers to be adjusted and locked in any position.

Exhaust fans of appropriate rating shall be provided for pumping stations. The contractor shall submit the fan selection details for approval.

For axial flow fans / propeller fans, speed limitation shall be as follows:

For impeller diameter of up-to 450 mm – maximum speed shall be 1500 rpm.

For impeller diameter above 450 mm – maximum speed shall be 1000 rpm.

Suitable designed guards shall be fitted to the inlet and the outlet sides to prevent accidental contacts. No inflammable material shall be used in the construction of fans.

Drive motors shall be rated at least 15% higher than the power requirement at duty point or 10% higher than the maximum power requirements at the selected speed, whichever is higher. Motor shall be conforming to TEFC, IP 54 protection.

Specification for Fire Hydrant

The hydrant shall conform to IS 908 and shall consist of the following components:

(a) Body (b) Bonnet (c) Spindle (d) Gland (e) Spindle Cap (f) Spindle Nut (g) Valve (h) Screwed Outlet (i) Outlet and Chain

Stand post column, flange riser, 90° duck foot bend, 80 mm sluice valves (2 nos.) and a tail piece of suitable size. Stand post shall be of cast iron, cast in one piece conforming to Grade 20 of IS: 210-1970 and its amendments. All parts shall have good finish, clear from burrs, blow holes and sharp edges. Casting shall be clean and sound excluding plugging, welding or repairs of any defects.

Each hydrant shall be hydro tested to prove perfect water tight under hydrostatic pressure of 200 m head of water. All other requirements shall be in confirming with IS 908 and its latest amendments.

Specification for PE/PP/GRP Meter Box**PROVIDING AND FIXING WATER METER BOX****The item includes**

- 1.0] Excavation in all types of soils including dewatering required.
- 2.0] Providing & fixing of water meter box of suitable size in concrete.
 - a. PE/PP Water meter protection box - with UV resistant material and positive locking arrangement with only one metallic part for locking (SS 304 Spring) ensuring weather-proof feature.
 - b. Components for constraining the box to the pipe and avoiding the entry of Mud/Sludge/Reptile shall be of Poly Ethylene/Poly Propylene/GRP .
 - c. Water meter protection box should withstand a dead load of 250Kg for 1 hour and should not show any signs of deflection, deformation or cracking.
 - d. Suitable for accommodating a water meter and gate ball/valve as per approved drawing
 - e. Should have proper locking arrangement.
 - f. Capable to bear a live load of 250 kg.
 - g. Indicative size should be 500 mm X 250mm X 250mm
 - h. Capable to tolerate temperature variation from 5 to 50 degree Celsius in exposed conditions.

Sl No.	Description	MOC
1	Water Meter Box cover	PE/PP/GRP
2	Water Meter Box Body	PE/PP/GRP
3	Pipe Holder	PE
4	Locking Plate	PE/PP/GRP
5	Locking Screw	Delrin
6	Locking Pin	Delrin
7	Spring	SS
8	Key for Lock	PE/PP/GRP

For GRP meter box specification shall prevail as per relevant BIS (latest up to date)

O&M FOR SEWERAGE NETWORK

The Contractor shall ensure the Operation and Maintenance of the Sewerage Network; and other allied works in compliance to the guidelines contained in the Manual on —Sewerage & Sewage Treatment, latest edition as published by the Central Public Health Environmental Engineering Organization (CPHEEO), Ministry of Urban Development, Government of India, New Delhi and the prescription laid down hereunder. Operate the Sewerage System, for a period of 10 years from the date of commissioning as specified below:

1. The Contractor shall operate and maintain the Sewer networks under the Contract complete including the road works (liability of restored portions of roads is limited to 3 years only), including all utility and ancillary structures and appurtenances consisting of following but not limited to Manholes, vent shaft, CCTV machineries and equipments, jetting machines, House property chambers, PVC-U pipe for connection between house property chamber and manhole, etc., for the period of Ten (10) years from the date of successful completion of "Tests after Completion of the Works".

2. The Contractor shall make his own arrangements at his own cost for staff required for operation and maintenance of networks and other assets, lubricants, diesel, spares, tools and tackles, sewer cleaning vehicles, CCTV machine and other equipment maintenance of all types such as routine, breakdown, periodic and repair maintenance, replacement of damaged/unserviceable sewers, maintenance of house service connections including pipeline from House sewer connection upto the manhole, after building lanes, and any other activity required for the operation and maintenance of the constructed Works in full compliance with all applicable rules, regulations, laws, codes, effluent quality requirements and any other limitations. The Contractor will also maintain a Customer grievance redressal centre and ensure that O&M services meet the standards of services/service levels maintained as follows:

3. The work of sewer maintenance would also include the following:

- i. Checking of manhole condition for deposition of silt, flow, new connections done, damaged walls or steps, manhole covers, clogged vertical pipes in drop manholes etc. While the cleaning of the manhole, pipes etc., will be undertaken by the gang, repairs etc. may be reported to be handled by a separate construction gang of mason and helpers. It is preferable that the repair gang comes out on the work when the sewer cleaning or maintenance gang is working, so that brick bats, debris mortar etc., which fall in the manhole are removed there and then. This will cause a major blockage if the same is allowed to flow into the sewer line, which usually occurs when repairs are done separately. In such cases, a couple of sewer men should be deputed to clean the manhole of the debris immediately after repair work is completed.
- ii. Checking of the sewer line between two successive manholes for silting and flow conditions and remove the deposited silt and
- iii. Checking for any harmful and extraneous matter entering into the sewer lines so that further investigation for the cause and location can be determined.
- iv. Check air release valves in rising or force mains, sluice gates or stoppage in the sewer lines, overflow arrangement etc.
- v. Operation of vehicles monitored suction/ jetting machine
- vi. Carrying out CCTV inspection

Charter of Services

Sewer network & Sewer Connections

Sl.No	Nature of complaints	Resolution time
1)	Blockage and overflows	12 hours
2)	Stolen / Broken manhole covers	12 hours
3)	Sewer spills from main sewer, branch and house service connections (between property chamber and public sewers)	72 hours

4. The Contractor ensures that there is a steady and uninterrupted flow of waste water/sewage to SPS.

5. Identify and inform the Employer/Employer Representative about the illegal connections on the Sewerage Network within seven days of its being detected.

6. The Contractor shall submit a weekly report to the Employer detailing the Operation and Maintenance indicating the labour hours expended, Electrical Power Consumed and other Consumables consumed and also problems faced and rectified.

7. The Contractor shall submit detailed schedule/manual of all O& M activities with references of equipment manufacturers' maintenance schedules/manuals to the Employer for review and approval.

8. The Contractor shall submit Guidelines and Instructions manual for the maintenance staff of all levels for all the tools, plants and equipment and Operating Sewerage Network to maintain the service levels within the standards prescribed within the contract;

9. The Contractor shall carry out all O&M activities as per the approved Operation and Maintenance Manuals.

10. If any consumer connection needs extension of sewer line during O&M period, from an existing line, the same will be designed and estimated by the Contractor using prevailing schedule of rates and market rates. Such costs will also include 15% towards supervision charges. The Employer/Employers Representative will collect the same and pays to the Contractor for executing the same after the connection is formally approved. However, Employer/Employers Representative will retain connection fee/ charges.

12. The Contractor's responsibility shall also include the safety and security of the Works during the course of Operation and Maintenance.

13. During Operation and Maintenance period, the Contractor shall appoint suitable number of cleaners, fitters, electricians, helpers, security guards, labourers as required for the operation and maintenance of complete proposed sewerage system for three shifts and adequate other staff/supporting personnel during general Shift. Security of man-power, built structures, equipment and other system components. Undertaking capacity building measures:

Conduct a training and handholding assistance programme for six months in aspects of Operation and Maintenance of the Project Facilities for minimum fifteen employees of the JMC.

Staff:

1) The minimum personnel required for O & M is as given below. However, the Contractor shall mention the personnel required for O&M in his bid.

The work shall be carried out on a 24 hr. basis, without intermission and the staff deployed by the Contractor shall be in accordance with this contract. Minimum staff required for sewerage network shall be as given below:

SI No.	Minimum staff required	Quantity
1)	Supervisor	1
2)	Sewer maintenance crew	18
3)	Sewer Jetting Machine Operator	2
4)	Fitter/Mason	2
5)	Safety Engineer	1

STP& SPS Minimum staff requirement

SI No.	Minimum staff required	Quantity	Qualification
1)	Manager	1	Degree in Environmental/Civil Engineering/Post Graduate in Water Supply & Sewerage Engineering/Mechanical Engineering with minimum 10 years' experience in Operating & Maintaining a Sewerage Treatment Plant and Sewage Pumping Station
2)	Plant Operator	4	
3)	Electrician	1	
4)	Mechanic	1	
5)	Chemist	2	
6)	Helpers	4	
7)	Security staff		As required for round the clock security

List of Drawings

Sl. No.	Drawing No.	Drawing Description
Water		
1.	11	Schematic of Battery Limit For Water Supply Scheme at Jhunjhunu Town-A-2
2.	41	GA Drawing of Proposed Water Distribution Station at City Campus PH
3.	42	Section of Proposed Water Distribution Station at City Campus PH
4.	56	Plot Plan of Lal Pahadi Water Distribution Station
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Waste Water		
6.	18	Single Line Diagram Jhunjhunu sewer (Typical)
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