

2020

Engineering, procurement, construction, testing, commissioning, trial run and operation & maintenance of various components of "wardha, ghogri, meda and gada multi-village scheme, district betul" in single package on turn-key job basis.



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ITEMS	DESCRIPTION
NIT	45/Proc./MPJNM/2019-20
TITLE	Engineering, procurement, construction, testing, commissioning, trial run and operation & maintenance of various components of "wardha, ghogri, meda and gada multi-village scheme, district betul" in single package on 'turn-key job basis' including trial run and operation & maintenance of the entire scheme for 10 years. Scheme 1 – Wardha – 114.45 Cr. Scheme 2 – Ghogri - 200 Cr. Scheme 3 – Mendha – 290 Cr Scheme 4 – Gada – 69 Cr.
BRIEF SCOPE OF WORK	<ol style="list-style-type: none"> <li>1. The successful bidder has to carry out entire work of Planning, Survey, Soil investigation, Designing, Construction as per the Schedule program, testing, commissioning, trial run of completed scheme and 10 years operation &amp; maintenance of entire water supply scheme after getting a confirmatory survey done with the intention to serve the basic purpose of contract, that is to ensure the supply of drinking water in designated quantity to all villagers &amp; to customers/ institutions/ offices identified for bulk water usage located within the revenue boundary of villages as listed vide Appendix-I.</li> <li>2. The bidder is/ are required to carry out the survey including necessary data collection from concerning division of PHED of old water supply schemes and if the existing components i.e. pipe line, OHT/ GSR, etc.</li> </ol>
TYPE OF CONTRACT	Lump Sum Contract
COST	674 Crores
EMD	50 Lakhs
TIME OF COMPLETION	Scheme 1 – Wardha - 30 Months Scheme 2 – Ghogri - 30 Months Scheme 3 – Mendha - 36 Months Scheme 4 – Gada – 24 Months TOTAL – 1095 DAYS
SUBMISSION OF TENDER	Cover 1 – Prequalification And Emd Cover 2 - Technical Cover 3 – Financial
FINANCIAL CRITERIA	The bidder or JV should have average annual turnover of at least 50% of tpac in last 3 financial years preceding the tender submission date at current price level (2018-19).
TECHNICAL CRITERIA	<p>The Bidder or Lead Partner in case of JV must have experience of executing satisfactorily completely or substantially completed (substantially completed means not less than 90% of agreement value, and for which certificate is issued) integrated water supply scheme comprising of raw water intake well cum pump house, ESR/OHBR, raw / clear water reservoir / GSR, Water Treatment Plant, pipe line work within last seven years from the date of bid notification as follows:</p> <ol style="list-style-type: none"> <li>i. Three works costing not less than the amount equal to 40% of the TPAC. or</li> <li>ii. Two works costing not less than the amount equal to 50% of the TPAC.</li> </ol> <p>or</p>

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	iii. One work costing not less than the amount equal to 80% of the TPAC.
O & M	The Bidder or Lead Partner in case of JV should have executed, commissioned, and post-commissioning, operated and maintained satisfactorily for minimum 36 months at least one similar integrated water supply work of minimum 10% of TPAC comprising of intake well, pumping machinery, water treatment plant, pipeline and elevated storage reservoir.
WORKING CAPTIAL	Should not be less than 15% of the TPAC
NET WORTH	Net Worth of the bidder or JV of last Financial Year should not be less than 10% of the TPAC
SECURITY DEPOSIT	Shall be equal to 10% (ten percent) of the sum of amount of contract in the form of the unconditional and irrevocable bank guarantee executed.
PRE-BID MEETING	Office of The Managing Director, Madhya Pradesh Jal Nigam, D-Wing, 2nd Floor, Vindhyaachal Bhawan, Bhopal (M.P.) PIN – 462004.
IMPORTANT DATES	<b>Bid Submission Date</b> 27-Jul-2020 05:30PM <b>Pre Bid Meeting Date</b> 08-Jul-2020 03:00 PM

### TECHNICAL ASPECTS AND DETAILED PROJECT SCOPE

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## SCHEME 1 - MAIN WORKS FOR WARDHA MULTI-VILLAGE SCHEME

No.	Main Works																		
1.	Construction of intake well cum pump house having minimum 8 m diameter and approx. 50 m (including pump room 6 m high) deep to draw a total of 12.40 million litres of water in 23 hours flow with provision for automation, construction of RCC Foot Bridge (approach bridge) approx. 200 meters, minimum 5 m wide with approach road (excluding space for pipeline, kerbs, cable duct, railing, electric poles, etc.) & all other necessary / ancillary structures required at the bank of Wardha Dam near Bargaon village, Betul District. Raw water shall be taken from the back water of the dam by intake well																		
2.	Raw water pumping main of 400 mm diameter DI-K9 of length 6.18 km including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																		
3.	Water treatment plant to provide 11.15 million litre treated clear water in 23 hours near village Bargaon village, District Betul including automation (SCADA), construction of boundary wall, internal roads, electrification, laboratory, etc., and all other necessary/ ancillary structures required.																		
4.	Providing, laying, jointing, testing and commissioning of clear water pumping main of diameter and approximate length as detailed below of DI-K9 Pipe with in-lining and out- coating as per IS 8329 including flow meter, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Type of Pipe</th> <th style="width: 30%;">Diameter in mm</th> <th style="width: 30%;">Length (km)</th> </tr> </thead> <tbody> <tr> <td rowspan="5" style="text-align: center;">DI-K9</td> <td style="text-align: center;">100</td> <td style="text-align: center;">9.11</td> </tr> <tr> <td style="text-align: center;">150</td> <td style="text-align: center;">13.26</td> </tr> <tr> <td style="text-align: center;">200</td> <td style="text-align: center;">13.66</td> </tr> <tr> <td style="text-align: center;">250</td> <td style="text-align: center;">0.60</td> </tr> <tr> <td style="text-align: center;">300</td> <td style="text-align: center;">9.36</td> </tr> </tbody> </table>	Type of Pipe	Diameter in mm	Length (km)	DI-K9	100	9.11	150	13.26	200	13.66	250	0.60	300	9.36				
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DI-K9	100	9.11																	
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5.	Providing, laying, jointing, testing and commissioning of clear water trunk main DI (K-9) as per IS 8329 including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust block, crossings (rail and road), specials & accessories, etc. complete including road restoration of diameter and corresponding length as detailed below:																		
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6.	a) Construction of Overhead Service Reservoirs (OHSR) at different villages of following capacity and staging of minimum 12 m or as per design to maintain the required minimum residual pressure of 7 m at consumer end including Provision of flow meters at each Reservoir including operator room, compound wall & Approach road.																		

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No.	Main Works					
	S. No.	Village	Capacity (KL)	S. No.	Village	Capacity (KL)
	1	Thawriya	50	28	Temjhira	100
	2	Kolhaya	50	29	Sarra	100
	3	Hirakhapa	50	30	Badegaon	170
	4	kharsali	50	31	Kheteda Kalan	50
	5	Chouthiya	100	32	Heti	100
	6	Gopaltalai	50	33	Sukakhedi	190
	7	Sonoli	50	34	Sonigaon	50
	8	Dahargaon	100	35	Bhilai	100
	9	Chichanda	130	36	Yenas	140
	10	Birolijhilpa	150	37	Divtiya (Abagholi)	100
	11	Gadra	100	38	Divtiya	100
	12	Chilhathi	120	39	Barai	100
	13	Malhara	110	40	Mahatpur	160
	14	Ghatbiroly	240	41	Khadakwar	100
	15	Atnapur (Hatnapur)	100	42	Dahuwa	140
	16	Badiya khapa	100	43	Kheirwani	110
	17	Dob	150	44	Sanwari	100
	18	Siladehi	110	45	Chikhali Kalan	110
	19	Jam	100	46	Kapasya	100
	20	Buyalkhapa	50	47	Chhindi (Hiwara & Sandirya)	100
	21	Bhaisadand	100	48	Chhindi	100
	22	Malegaon	110	49	Khalla	140
	23	Chandora Khurd	180	50	Sondiya	100
	24	Kamath	250	51	Rindhora	130
	25	Paradsinga	120	52	Dunai	240
	26	Parasthani	130	53	Gangai	240
	27	Deori	120	54	Musakhapa	100
<p>b. Construction of clear water sumps with pump houses having following capacity, including all works complete.</p> <ol style="list-style-type: none"> <li>1. Clear Water Sump at WTP Site – 1000 KL</li> <li>2. Kheiwani Village - 300 KL</li> <li>3. Dob Village - 100 KL</li> <li>4. Karsali Village - 150 KL</li> </ol>						
<p>c) Construction of MBR / BPT of following capacity, including all works complete.</p> <ol style="list-style-type: none"> <li>1. Kolhaya Village - 250 KL OHMBR-1</li> <li>2. Chikli Khurd Village - 300 KL OHMBR-2</li> <li>3. Kheiwani Village - 150 KL OHMBR-3</li> </ol>						

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No.	Main Works								
	<p>All MBR/ BPT/ IPS/ WTP shall have boundary wall as defined in bid document but all ESRs/ GSRs shall have G.I. chain link fabric fencing of mesh size 25x25mm made of G.I. wire of 3 mm diameter including strengthening with welding or nuts, bolt &amp; washers etc. complete. It shall have ISA 50x50x5mm angle iron post at a spacing 2.5 m center to center of height 2m above ground level embedded in M20 cement concrete 30x30 cm pillar minimum 75cm below ground level. Every 7th post &amp; corners shall be strutted with similar specification angle iron &amp; grouting. The top &amp; bottom of chain link as well as on angle a 25x3mm flat secured with either weld or rivets or bolts, to make fencing safer, shall be provided. It shall have angle iron gate of size 3.0m x 1.8m having ISA 50x50x5mm angle iron &amp; 16mm diameter plain M.S. bar including AL drop, holdfast etc. and shall be fixed up in 45x45 cm wide R.C.C. pillars. An additional gate of size 0.6mx1.5m shall also be provided within the same gate, to avoid opening of bigger gate all the time &amp; it shall be made of IS 40x40x5mm angle iron with AL drop, etc.</p> <p>The CW sump cum pump houses and GLBR/ MBR/ BPT will have 2m high boundary wall with 'Y' shape angle iron with 2*3 rows of wire bed, wire fencing at top of boundary wall and gate, one room set of area 25sqm size with W.C. &amp; bathroom, automation system and electrification with area lighting, etc. complete.</p> <p>The size of fencing or boundary wall shall be 20x20m including gate for these structures &amp; if it increases or decreases then accordingly variation shall be paid or deducted as per UADD ISOR w.e.f. 1st May 2012 (with up to date amendments).</p> <p>One room set of minimum area 25 sqm size with W.C. &amp; bathroom and housing of automation system and solar/ single phase electrification with area lighting, landscaping, plantation, etc. complete.</p> <p>The approach road for the MBR, OHSR, etc. shall be of approx. 30 m for each location. Any alteration to the total length of approach roads considering all structures shall be paid or deducted as per the MPPWD SOR w.e.f. 29th August 2017 (with up to date amendments). The length of the approach road shall be finalized by the Engineer-in- Charge.</p>								
7.	<p>Distribution network of diameter and approximate length as detailed below comprising of HDPE, PE100 PN6 (minimum) pipelines including valves, specials, sluice valves, air valves, scour valves, valve chambers, thrust block, bulk water meters for all villages, specials &amp; accessories, etc. complete including road restoration and other allied works.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 70%;">a. 90 mm dia. minimum 6 kg/cm<sup>2</sup> pressure -</td> <td style="text-align: right;">364.54 km</td> </tr> <tr> <td>b. 110 mm dia. minimum 6 kg/cm<sup>2</sup> pressure -</td> <td style="text-align: right;">61.68 km</td> </tr> <tr> <td>c. 160 mm dia. minimum 6 kg/cm<sup>2</sup> pressure -</td> <td style="text-align: right;">61.64 km</td> </tr> <tr> <td>d. 200 mm dia. minimum 6 kg/cm<sup>2</sup> pressure -</td> <td style="text-align: right;">6.16 km</td> </tr> </tbody> </table>	a. 90 mm dia. minimum 6 kg/cm <sup>2</sup> pressure -	364.54 km	b. 110 mm dia. minimum 6 kg/cm <sup>2</sup> pressure -	61.68 km	c. 160 mm dia. minimum 6 kg/cm <sup>2</sup> pressure -	61.64 km	d. 200 mm dia. minimum 6 kg/cm <sup>2</sup> pressure -	6.16 km
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8.	<p>(A) Providing and installation of 4 nos. suitable energy efficient deep well vertical turbine pumps for raw water at intake well cum pump house including automation as under:</p> <p style="margin-left: 20px;">(a) 2 No. pumps of 4022 lpm discharge each and approx. 137 m head (b) 2 No. pumps of 2011 lpm discharge each and approx. 137 m head</p> <p>The pumps given above are inclusive of standby pumps</p> <p>(B) Providing and installation of suitable energy efficient centrifugal pumps for clear water at clear water sump cum pump house at WTP, and clear water sump cum pump houses for intermediate pumping stations including automation as under:</p> <p>For clear water sump of 1000 KL capacity at WTP to OHMBR-1 at Kolhaya Village:</p> <p style="margin-left: 20px;">i) 3 (2W+1S) Nos. pumps of 1835 lpm discharge each and approx. 53.00 m head</p>								

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No.	Main Works
	<p>For clear water sump of 1000 KL capacity at WTP to OHMBR-2 at Chikhli Khurd:            i) 3 (2W+1S) Nos. pump of 2060 lpm discharge each and approx. 94.00 m head For clear water sump of 300 KL capacity at Kheiwani to OHMBR-3 at Kheiwani:            i) 3 (2W+1S) Nos. pumps of 1102 lpm discharge each and approx. 51 m head For localized clear water sumps to OHSRs:            (a) 2 (1W+1S) Nos. pumps of 834 lpm discharge each and approx. 63 m head            (b) 2 (1W+1S) Nos. pumps 673 lpm discharge each and approx. 58m head            (c) 2 (1W+1S) Nos. pumps 124 lpm discharge each and approx. 7m head The pumps given above are inclusive of standby pumps</p>
9.	<p>Provision for dedicated power supply lines from nearby substation to WTP, intake well cum pump house inclusive of all allied works complete as detailed below:            (a) 33 KV: 25 km            (b) LT line: 4 km</p> <p>Provision of stretching suitable capacity electric line and taking connection for clear water sump cum pump houses. Any other work necessary to cater the power supply demand of the project (as variation).            The work includes construction of substations and stretching of power lines and internal and external electrification etc. complete at all components.            Supply, installing, testing and commissioning of following sized transformers and other ancillary works required, along with suitable sized transformer yards complete in all respects as per specifications:            i. 2 (1W+1S) Number 400 kVA at Intake/ Raw water Pump House            ii. 2 (1W+1S) Number 160 kVA at Clear Water Pump House/ WTP At different Intermediate Pump Houses (wherever required).            iii. 2 (1W +1S) Number 100 kVA            iv. 6 (3W+3S) Number 63 kVA            v. 2 (1W+1S) Number 25 kVA</p> <p>The locations of installation of transfers are Raw Water Intake Pump House, Clear Water Pump House, WTP, Intermediate Pumping Stations (IPS), etc.            100% standby transformer capacity is to be maintained at each installation site of transformers</p>
10.	Design, Supply, Delivery, Erection, Testing & Commissioning of Automation Components for Monitoring & Maintenance with GPRS Communication with all necessary accessories. (SCADA).
11.	House Service Connection approximately 20622 Nos. (up to end of O&M Period)
12.	<p>Construction of Staff Quarter / Office Building:            Office Building/Admin block - 01 No. in WTP campus - 225 sqm. Store Building - 01 No. – 75 sqm            F-type staff quarter with minimum plinth area 46.5 Sqm each - 01 No. G-type staff quarter with minimum plinth area 93.0 Sqm each - 01 Nos. H-type staff quarter with minimum plinth area 46.5 Sqm each - 02 Nos. I-type staff quarter with minimum plinth area 32.5 Sqm each - 04 Nos. Office Building of 400 sqm at place directed by MPJN</p>
13.	<p>Operation &amp; Maintenance of the whole scheme for first year            The Operation and Maintenance cost for the first year, in terms of percentage of contract Amount is given in Annexure H.</p>

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No.	Main Works
	<p>For every subsequent year, the first-year percentage rates will be increased/ decreased according to the percentage change in consumer price index issued by Labour Bureau, GOI (All Industrial Worker) for that period. The index on the date of completion of trial run period will be treated as base for calculation of percentage point increase/decrease in O&amp;M cost of next year. Payment of O&amp;M will be made quarterly.</p> <p>NOTE:</p> <ul style="list-style-type: none"><li>a) The operation &amp; maintenance period is 10 years from the date of completion of three months of trial run after successful commissioning of the project.</li><li>b) The cost of energy charges (excluding penalties) shall be paid by MPJN on reimbursement basis.</li><li>c) Energy Requirement: The estimation for yearly consumption of energy is 50,51,250 kwh (Unit) for design period.</li><li>d) If due to any reasons, whatsoever it is desired to supply water in some of the villages before final commissioning and trial run, then the pro-rata rates derived from the Annexure H shall be applicable for the part payment on the basis of duration and quantity supplied, but the date of commissioning of whole work shall be applicable from the dates as stipulated in this contract.</li></ul>



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## SCHEME 2 - MAIN WORKS FOR GHOGRI MULTI-VILLAGE SCHEME

No	Main Works			
1	Construction of intake well cum pump house having minimum 8 m diameter and approx. 40 m (including pump room 6 m high) deep to draw a total of 20.75 million litres of water in 23 hours flow with provision for automation, construction of RCC Foot Bridge (approach bridge) approx. 200 m long, minimum 5 m wide with approach road (excluding space for pipeline, kerb, cable duct, railing, electric poles, etc.) & all other necessary/ancillary structures required at the bank Ghoghari Dam near Ghoghari village, Betul District. Raw water shall be taken from the back water of the dam by intake well.			
2	Raw water pumping main of 500 mm diameter DI-K9 of length 7.82 km including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.			
3	Water treatment plant to provide 18.55 million litre treated clear water in 23 hours near Sopai Village, District Betul including automation (SCADA), construction of boundary wall, internal roads, electrification, staff quarters, laboratory, office building, etc. and all other necessary/ancillary structures required.			
4	Providing, laying, jointing, testing and commissioning of clear water pumping main of diameter and approximate length as detailed below of DI-K9 Pipe with in-lining and out-coating as per IS 8329 including flow meter, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.			
	Type of Pipe	Diameter (mm)	Length (km)	
	DI-K9	250 mm	4.20	
		300 mm	3.66	
		500 mm	7.80	
5	Providing, laying, jointing, testing and commissioning of clear water trunk main DI K-9 as per IS 8329 and/ or MS pipe as per IS specified in specification including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust block, crossings (rail and road), specials & accessories, etc. complete including road restoration of diameter and corresponding length as detailed below:			
	Type of Pipe	Diameter in mm	Gravity Main (km)	Pumping Main (km)
	DI K-9 Pipe	100	153.11	8.48
		150	81.17	0.95
		200	17.70	0
		250	21.12	0
		300	11.73	0
		350	8.61	0
		400	13.00	0
		450	22.10	3.66
		500	11.53	0

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No	Main Works				
		700	7.35		0
6	a) Construction of Overhead Service Reservoirs (OHSR) at different villages of following capacity and staging of minimum 12 m or as per design to maintain the required minimum residual pressure of 7 m at consumer end including provision of flow meters at each reservoir including operator room, compound wall & approach road.				
No.	Village	Capacity (KL)	No.	Village	Capacity (KL)
1.	Human Behara	50	48.	Khadki (Khapa)	100
2.	Junapani	50	49.	Gonapur	50
3.	Humanpeth	100	50.	Panjhari	50
4.	Khapa	50	51.	Pipariya	50
5.	Pohar	100	52.	Teliya	50
6.	Moharkheda	100	53.	Kalapkhan	100
7.	Temjhira	230	54.	Dudar Ryt.	100
8.	Semla	100	55.	Sarsi	110
9.	Nainadehi	50	56.	Chikhli Mal	100
10.	Ubhariya	100	57.	Balhora	130
11.	Amadoh	100	58.	Pachdhar	100
12.	Semjhira	100	59.	Bisnoor	140
13.	Hetikhapa	50	60.	Garwha	100
14.	Paregaon	120	61.	Gauna	100
15.	Jambadi	100	62.	Sirdi	180
16.	Khad Amla	100	63.	Vaygaon	170
17.	Karajgaon	50	64.	Chakora	210
18.	Sandiya	100	65.	Balni	180
19.	Andori Kalan Buz	50	66.	Chikhli Ryt.	160
20.	Pisata	100	67.	Etawa	130
21.	Birul Bazar	190	68.	Majari	100
22.	Birul Bazar	180	69.	Kunda Ryt.	100
23.	Sendurjana	100	70.	Dongarpur	230
24.	Sawalmendha	130	71.	Jamgaon	110
25.	Balhegaon	100	72.	Sanwagi	140
26.	Raiamla	210	73.	Sahangaon	100
27.	Ashta	150	74.	Hiwarkhed	200
28.	Baghoda	200	75.	Hidly (Hirdi)	120
29.	Amrawati	210	76.	Eklahara (Eklara)	100
30.	Mangona Khurd	170	77.	Dohlan	100
31.	Prabhat Pattam	250	78.	Bihargaon	100

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No	Main Works					
32.	Prabhat Pattam	250	79.	Andkheda (Sindkh)	110	
33.	Pabal	140	80.	Pouni	100	
34.	Amnath	150	81.	Sonora	100	
35.	Charud	50	82.	Gaula	120	
36.	Gangapur	100	83.	Nimanwada	100	
37.	Khedi Ramosi	100	84.	Yenkhedha	120	
38.	Narkhed	220	85.	Gondi Dhanori	170	
39.	Sirsawadi	130	86.	Rohana	100	
40.	Mangonakalan	100	87.	Kumudara	50	
41.	Sonkhedi	140	88.	Jhun Khari	100	
42.	Dongarpur	130	89.	Pachumri	50	
43.	Kanha Khapa	50	90.	Pachamahu	50	
44.	Raiseda	50	91.	Ghorpend	50	
45.	Jhirikhapa	50	92.	Karaspani	110	
46.	Bothiya	50	93.	Kutkhedi	50	
47.	Ghana	50	94.	Nagarcot	100	
<p>b) Construction of clear water sumps with pump houses having following capacity, including all works complete.</p> <p>i. Clear Water Sump at WTP Site, at Sopai Village – 1650 KL</p> <p>ii. Sonkhedi Village - 250 KL</p> <p>iii. Karajgaon Village - 650 KL</p> <p>iv. Paregoan Village -50 KL</p> <p>v. Dongarpur Village - 60 KL</p> <p>vi. Somlapur Village - 50 KL</p> <p>vii. Narkhed Village - 60KL</p>						
<p>c) Construction of MBR / BPT of following capacity, including all works complete.</p> <p>i. Sonkhedi Village - 700 KL OHMBR-1</p> <p>ii Dongarpur Village - 150 KL OHMBR-2</p> <p>iii. Karajgoan Village - 350 KL OHMBR-3</p> <p>iv. Dabka Village - 50 KL BPT-01</p> <p>v. Temjhira Village - 50 KL BPT-02</p>						
<p>All MBR/ BPT/ IPS/ WTP shall have boundary wall as defined in bid document but all ESRs/ GSRs shall have G.I. chain link fabric fencing of mesh size 25x25mm made of G.I. wire of 3 mm diameter including strengthening with welding or nuts, bolt &amp; washers etc. complete. It shall have ISA 50x50x5mm angle iron post at a spacing 2.5 m center to center of height 2m above ground level embedded in M20 cement concrete 30x30 cm pillar minimum 75cm below ground level. Every 7th post &amp; corners shall be strutted with similar specification angle iron &amp; grouting. The top &amp; bottom of chain link as well as on angle a 25x3mm flat secured with either weld or</p>						

## PHANS4 CONSULTING PVT. LTD.

No	Main Works								
	<p>rivets or bolts, to make fencing safer, shall be provided. It shall have angle iron gate of size 3.0m x 1.8m having ISA 50x50x5mm angle iron &amp; 16mm diameter plain M.S. bar including AL drop, holdfast etc. and shall be fixed up in 45x45 cm wide R.C.C. pillars. An additional gate of size 0.6mx1.5m shall also be provided within the same gate, to avoid opening of bigger gate all the time &amp; it shall be made of IS 40x40x5mm angle iron with AL drop, etc.</p> <p>The CW sump cum pump houses and GLBR/ MBR/ BPT will have 2m high boundary wall with 'Y' shape angle iron with 2*3 rows of wire bed, wire fencing at top of boundary wall and gate, one room set of area 25sqm size with W.C. &amp; bathroom, automation system and electrification with area lighting, etc. complete. The size of fencing or boundary wall shall be 20x20m including gate for these structures &amp; if it increases or decreases then accordingly variation shall be paid or deducted as per UADD ISOR w.e.f. 1st May 2012 (with up to date amendments).</p> <p>One room set of minimum area 25 sqm size with W.C. &amp; bathroom and housing of automation system and solar/ single phase electrification with area lighting, landscaping, plantation, etc. complete.</p> <p>The approach road for the MBR, OHSR, etc. shall be of approx. 30 m for each location. Any alteration to the total length of approach roads considering all structures shall be paid or deducted as per the MPPWD SOR w.e.f. 29th August 2017 (with up to date amendments). The length of the approach road shall be finalized by the Engineer-in-Charge.</p>								
7	<p>Distribution network of diameter and approximate length as detailed below comprising of HDPE, PE100 PN6 (minimum) and DI-K7 pipelines including valves, specials, sluice valves, air valves, scour valves, valve chambers, thrust block, bulk water meters for all villages, specials &amp; accessories, etc. complete including road restoration and other allied works</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 80%;">a. 90 mm dia. minimum 6 kg/cm<sup>2</sup> pressure, DI-K7 -</td> <td style="text-align: right;">512.24 km</td> </tr> <tr> <td>b. 110 mm dia. minimum 6 kg/cm<sup>2</sup> pressure, DI-K7 -</td> <td style="text-align: right;">96.74 km</td> </tr> <tr> <td>c. 160 mm dia. minimum 6 kg/cm<sup>2</sup> pressure, DI-K7 -</td> <td style="text-align: right;">68.36 km</td> </tr> <tr> <td>d. 200 mm dia. minimum 6 kg/cm<sup>2</sup> pressure, DI-K7 -</td> <td style="text-align: right;">7.99 km</td> </tr> </tbody> </table>	a. 90 mm dia. minimum 6 kg/cm <sup>2</sup> pressure, DI-K7 -	512.24 km	b. 110 mm dia. minimum 6 kg/cm <sup>2</sup> pressure, DI-K7 -	96.74 km	c. 160 mm dia. minimum 6 kg/cm <sup>2</sup> pressure, DI-K7 -	68.36 km	d. 200 mm dia. minimum 6 kg/cm <sup>2</sup> pressure, DI-K7 -	7.99 km
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8	<p>a) Providing and installation of 4 nos. suitable energy efficient deep well vertical turbine pumps for raw water at intake well cum pump house including automation as under:</p> <p>(i) 2 Nos. pumps of 6954 lpm discharge each and approx. 115 m head</p> <p>(ii) 2 Nos. pumps of 3297 lpm discharge each and approx. 115 m head The pumps given above are inclusive of standby pumps</p> <p>b) Providing and installation of suitable energy efficient centrifugal pumps for clear water at clear water sump cum pump house at WTP, and clear water sump cum pump houses for intermediate pumping stations including automation as under:</p> <p>I) For CW Sump of 1650 KL to OHMBR-1</p> <p>(i) 2 Nos. pumps of 6268 lpm discharge each and approx. 90 m head</p> <p>(ii) 2 Nos. pumps of 3134 lpm discharge each and approx. 90 m head</p>								

## PHANS4 CONSULTING PVT. LTD.

No	Main Works
	<p>II) For CW Sump of 250 KL to OHMBR-2                      (a) 3 Nos. (2+1 standby) pumps of 870 lpm discharge each and approx. 124 m head</p> <p>III) For CW Sump of 650 KL to OHMBR-3                      3 Nos. (2+1 standby) pumps of 2448 lpm discharge each and approx. 85 m head</p> <p>IV) For CW Sump of 50 KL to OHSR at Paregoan Village                      (a) 2 Nos. (1+1 Standby) pumps of 158 lpm discharge each and approx. 20 m head</p> <p>V) For CW Sump of 60 KL to OHSR at Dongarpur Village                      2 Nos. (1+1 standby) pumps of 316 lpm discharge each and approx. 20 m head</p> <p>VI) For CW Sump of 50 KL to OHSR at Somlapur Village.                      (a) 2 Nos. (1+1 standby) pumps of 89 lpm discharge each and approx. 20 m head</p> <p>VII) For CW Sump of 60 KL to OHSR at Narkhed Village.                      (a) 2 Nos (1+1 standby) pumps of 297 lpm discharge each and approx. 20 m head</p>
9	<p>Provision for dedicated power supply lines from nearby substation to WTP, intake well cum pump house inclusive of all allied works complete as detailed below:</p> <p>(a) 33 KV: 25 km                      (b) LT line: 6 km</p> <p>Provision of stretching suitable capacity electric line and taking connection for clear water sump cum pump houses. Any other work necessary to cater the power supply demand of the project (as variation).</p> <p>The work includes construction of substations and stretching of power lines and internal and external electrification etc. complete at all components.</p> <p>Supply, installing, testing and commissioning of following sized transformers and other ancillary works required, along with suitable sized transformer yards complete in all respects as per specifications:</p> <p>i. 2 (1W+1S) Number 315 kVA at Intake/ Raw water Pump House                      ii. 2 (1W+1S) Number 500 kVA at Clear Water Pump House/ WTP</p> <p>At different Intermediate Pump Houses (wherever required)</p> <p>iii. 1 (1W+1S) Number 63 kVA                      iv. 2 (1W+1S) Number 160 kVA</p> <p>The locations of installation of transfers are Raw Water Intake Pump House, Clear Water Pump House, WTP, Intermediate Pumping Stations (IPS), etc.</p>

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No	Main Works
	100% standby transformer capacity is to be provided at each installation site of transformers.
10	Design, Supply, Delivery, Erection, Testing & Commissioning of Automation Components for Monitoring & Maintenance with GPRS Communication with all necessary accessories. (SCADA)
11	House Service Connection approximately 34,999 Nos. (up to end of O&M Period)
12	Construction of Staff Quarter / Office Building: Office Building/Admin block - 01 No. in WTP campus - 225 sqm. Store Building - 01 No. – 75 sqm F-type staff quarter with minimum plinth area 46.5 Sqm each – 02 Nos. G-type staff quarter with minimum plinth area 93.0 Sqm each - 02 Nos. H-type staff quarter with minimum plinth area 46.5 Sqm each - 02 Nos. I-type staff quarter with minimum plinth area 32.5 Sqm each - 02 Nos. Office Building of 400 sqm at place directed by MPJN
13	Operation & Maintenance of the whole scheme for first year The Operation and Maintenance cost for the first year, in terms of percentage of contract Amount is given in Annexure H. For every subsequent year, the first-year percentage rates will be increased/ decreased according to the percentage change in consumer price index issued by Labour Bureau, GOI (All Industrial Worker) for that period. The index on the date of completion of trial run period will be treated as base for calculation of percentage point increase/decrease in O&M cost of next year. Payment of O&M will be made quarterly. Note: a) The operation & maintenance period is 10 years from the date of completion of three months of trial run after successful commissioning of the project. b) The cost of energy charges (excluding penalties) shall be paid by MPJN on reimbursement basis. c) Energy Requirement: The estimation for yearly consumption of energy is <b>69,59,455</b> kWh (Unit) for design period. For intermediate years, payment will be made on pro rata / calculation basis. d) If due to any reasons, whatsoever it is desired to supply water in some of the villages before final commissioning and trial run, then the pro-rata rates derived from the Annexure H shall be applicable for the part payment on the basis of duration and quantity supplied, but the date of commissioning of whole work shall be applicable from the dates as stipulated in this contract.

# PHANS4 CONSULTING PVT. LTD.

## SCHEME 3 - MAIN WORKS FOR MENDHA MULTI-VILLAGE SCHEME

No.	Main Works																										
1	Construction of intake well cum pump house having minimum 8 m diameter and approx. 37 m (including pump room 6 m high) deep to draw a total of 31.2 million litres of water in 23 hours flow with provision for automation, construction of RCC Foot Bridge (approach bridge) approx. 200 meters long, minimum 5 m wide with approach road (excluding space for pipeline, kerb, cable duct, railing, electric poles, etc) & all other necessary/ ancillary structures required at the bank of Mendha Dam near Mendha village, Betul District. Raw water shall be taken from the back water of the dam by intake well.																										
2	Raw water pumping main of 600 mm diameter DI-K9 of length approximately 1.3 km including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																										
3	Water treatment plant to provide 27.1 million litres treated clear water in 23 hours near village Bargaon village, District Betul including automation (SCADA), construction of boundary wall, internal roads, electrification, laboratory, etc. and all other necessary/ancillary structures required.																										
4	Providing, laying, jointing and commissioning of clear water pumping main of diameter and approximate length as detailed below of DI - K9 Pipe with in-lining and out-coating as per IS 8329 including flow meter, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																										
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">Type of Pipe</th> <th style="width: 35%;">Diameter (mm)</th> <th style="width: 30%;">Length (km)</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center;">DI-K9</td> <td style="text-align: center;">100</td> <td style="text-align: center;">17.86</td> </tr> <tr> <td style="text-align: center;">150</td> <td style="text-align: center;">17.42</td> </tr> <tr> <td style="text-align: center;">300</td> <td style="text-align: center;">11.77</td> </tr> <tr> <td style="text-align: center;">600</td> <td style="text-align: center;">4.40</td> </tr> </tbody> </table>	Type of Pipe	Diameter (mm)	Length (km)	DI-K9	100	17.86	150	17.42	300	11.77	600	4.40														
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5	Providing, laying, jointing and commissioning of clear water trunk main DI K-9 as per IS 8329 including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust block, crossings (rail and road), specials & accessories, etc. complete including road restoration of diameter and corresponding length as detailed below.																										
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6	b) Construction of Overhead Service Reservoirs (OHSR) at different villages of following capacity and staging of minimum 12 m or as per design to maintain the required																										

## PHANS4 CONSULTING PVT. LTD.

No.	Main Works				
	minimum residual pressure of 7 m at consumer end including Provision of flow meters at each Reservoir including operator room, compound wall & Approach road.				
S. No.	Village	Capacity (KL)	S. No.	Village	Capacity (KL)
1.	Mandwa	110	82.	Gohanda	50
2.	Bothisihar	90	83.	Siwanpat	50
3.	Chichthana (Chichdhana)	90	84.	Musakhedi	60
4.	Sehra	180	85.	Borpani	70
5.	Gorakhar	140	86.	Junawani	40
6.	Kolgaon	110	87.	Babarya	100
7.	Churni	80	88.	Kerpani	110
8.	Hathnajhiri	70	89.	Borgaon	140
9.	Salarjun	40	90.	Machhi	130
10.	Borikas (Borikhas)	80	91.	Themgaon	150
11.	Nayakcharsi	110	92.	Chougarh	60
12.	Jasondi	80	93.	Akkalwadi	80
13.	Ghutigarh	40	94.	Kopra	40
14.	Sarandai	70	95.	Lalkhedi	50
15.	Charban	70	96.	Tembhurni	70
16.	Selgaon	110	97.	Jhallar	280
17.	Dhodhara Mohar	30	98.	Bothiya	110
18.	Khadla	160	99.	Tamsar	40
19.	Bharkawadi	120	100.	Vijaygram	170
20.	Bayawadi	70	101.	Balner	60
21.	Lohariya	60	102.	Nipanya	70
22.	Bagholi	110	103.	Kaldongari	80
23.	Goula	180	104.	Sirajgaon	60
24.	Roundha	60	105.	Bokarikhapa	60
25.	Jawra	140	106.	Gudgaon	200
26.	Thawdi	90	107.	Jamnya Viran	140
27.	Redwa	50	108.	Pachbad Viran	290
28.	Barhi	140	109.	Pandol	50
29.	Gudhi	70	110.	Rabdyia	130
30.	Milanpur	60	111.	Barkhed	90
31.	Parsodi Khurd	70	112.	Majare Ghogra	40
32.	Saikhandara	110	113.	Chhindwad Sawasan	40



## PHANS4 CONSULTING PVT. LTD.

No.	Main Works					
33.	Khapa (Nahiya)	30	114.	Gondi Ghogra	70	
34.	Badora	220	115.	Chichpati	30	
35.	Hanotiya (Hanotya)	70	116.	Khairwada	100	
36.	Sommaripeth	40	117.	Charghati	40	
37.	Khedli	130	118.	Bhiwapur	40	
38.	Malkapur	60	119.	Jamapati	50	
39.	Bajpur	60	120.	Wadali	100	
40.	Jatampur (Viran)	20	121.	Khairi	60	
41.	Arul	60	122.	Suki Raiyat	60	
42.	Bundala	60	123.	Ashti	140	
43.	Sohagpur	160	124.	Mendha Chhindwad	150	
44.	Junawani	50	125.	Bhuskum	40	
45.	Jaitapur	40	126.	Dhaodi	150	
46.	Killod	30	127.	Bothi	150	
47.	Kumhartak	190	128.	Natthudhana Ryt	60	
48.	Rathipur	130	129.	Temni	140	
49.	Bodi	90	130.	Dhaypani	40	
50.	Baghwad	120	131.	Matka	60	
51.	Kaji Jamthi	70	132.	Tanki	60	
52.	Barsali	40	133.	Gargud Raiyat	160	
53.	Lakhapur	70	134.	Panbehra	120	
54.	Mordongri	60	135.	Hidli	180	
55.	Thani Mal	40	136.	Satkund Raiyat	90	
56.	Bodna	60	137.	Kabla Raiyat	90	
57.	Nimjhiri	70	138.	Bagwani	80	
58.	Kanhadgaon	60	139.	Garadehi	20	
59.	Kohawani (Viran)	70	140.	Chhindwad	40	
60.	Bhogiteda	70	141.	Morudhana	50	
61.	Rondha	130	142.	Tipnapur	40	
62.	Dhondwada	50	143.	Pat (Bhuikundi)	20	
63.	Dabheri	30	144.	Jhiri (Viran)	40	
64.	Sanwaga	110	145.	Nadha	130	
65.	Nayegaon	80	146.	Kelbehra	60	
66.	Parsoda	90	147.	Hiradehi	50	
67.	Bhadus	200	148.	Belkund	130	

## PHANS4 CONSULTING PVT. LTD.

No.	Main Works																																					
68.	Dahargaon (Dahergaon)	140	149.	Bothiya Raiyat	40																																	
69.	Khedi Sawligarh	190	150.	Bothiya Malgujari	110																																	
70.	Kanara	80	151.	Ankhedi	110																																	
71.	Kosmi	100	152.	Gokhalapur (Gokhalpur)	40																																	
72.	Tikari	140	153.	Arjunwadi	30																																	
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## PHANS4 CONSULTING PVT. LTD.

### Main Works

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The size of fencing or boundary wall shall be 20x20m including gate for these structures & if it increases or decreases then accordingly variation shall be paid or deducted as per UADD ISOR w.e.f. 1st May 2012 (with up to date amendments).

One room set of minimum area 25 sqm size with W.C. & bathroom and housing of automation system and solar/ single phase electrification with area lighting, landscaping, plantation, etc. complete.

The approach road for the MBR, OHSR, etc. shall be of approx. 30 m for each location. Any alteration to the total length of approach roads considering all structures shall be paid or deducted as per the MPPWD SOR w.e.f. 29th August 2017 (with up to date amendments). The length of the approach road shall be finalized by the Engineer-in-Charge.

Distribution network of diameter and approximate length as detailed below comprising of HDPE, PE100 PN6 (minimum) including valves, specials, sluice valves, air valves, scour valves, valve chambers, thrust block, bulk water meters for all villages, specials & accessories, etc. complete including road restoration and other allied works.

a. 90 mm dia. minimum 6 kg/cm<sup>2</sup> pressure, - 626.907 km

b. 110 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 113.899 km

c. 160 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 68.771 km

d. 200 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 5.440 km

(A) Providing and installation of 4 nos. suitable energy efficient deep well vertical turbine pumps for raw water at intake well cum pump house including automation as under:

(a) 2 No. pumps of 9348 lpm discharge each and approx. 132 m head

(b) 2 No. pumps of 4674 lpm discharge each and approx. 132 m head The pumps given above are inclusive of standby pumps)

(B) Providing and installation of suitable energy efficient centrifugal pumps for clear water at clear water sump cum pump house at WTP, and clear water sump cum pump houses for intermediate pumping stations including automation as under:

For CW Sump of 1000 KL capacity to OHMBR-1:

(a) 2 Nos. (W) pumps of 8877 lpm discharge each and approx. 101 m head

(b) 2 Nos. (S) pumps of 4439 lpm discharge each and approx. 101 m head At IPS-1:

(a) 3 Nos. (2W + 1 S) pumps of 1982 lpm discharge each and approx. 93 m head At IPS-2:

(a) 3 Nos. (2W + 1 S) pumps of 214 lpm discharge each and approx. 110 m head At IPS-3:

(a) 3 Nos. (2W + 1 S) pumps of 2450 lpm discharge each and approx. 129 m head

At IPS-4:

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No.	Main Works
	(a) 3 Nos. (2W + 1 S) pumps of 708 lpm discharge each and approx. 85 m head The pumps given above are inclusive of standby pumps.
9	<p>Provision for dedicated power supply lines from nearby substation to WTP, intake well cum pump house inclusive of all allied works complete as detailed below:</p> <p>(a) 33 KV : 70 km (b) LT line : 06 km</p> <p>Provision of stretching suitable capacity electric line and taking connection for clear water sump cum pump houses. Any other work necessary to cater the power supply demand of the project (as variation).</p> <p>The work includes construction of substations and stretching of power lines and internal and external electrification etc. complete at all components.</p> <p>Supply, installing, testing and commissioning of following sized transformers and other ancillary works required, along with suitable sized transformer yards complete in all respects as per specifications:</p> <p>vi. 2 (1W+1S) Number 1000 kVA at Intake/ Raw water Pump House vii. 2 (1W+1S) Number 630 kVA at Clear Water Pump House/ WTP At different Intermediate Pump Houses (wherever required). viii. 4 (2W+2S) Number 160 kVA ix. 2 (1W +1S) Number 200 kVA x. 2 (1W+1S) Number 63 kVA xi. 2 (1W+1S) Number 25 kVA</p> <p>The locations of installation of transfers are Raw Water Intake Pump House, Clear Water Pump House, WTP, Intermediate Pumping Stations (IPS), etc.</p> <p>100% standby transformer capacity is to be maintained at each installation site of transformers</p>
11	Design, Supply, Delivery, Erection, Testing & Commissioning of Automation Components for Monitoring & Maintenance with GPRS Communication with all necessary accessories. (SCADA)
12	House Service Connection approximately 47532 Nos. (up to end of O&M Period)
13	<p>Construction of Staff Quarter / Office Building:</p> <p>Office Building/Admin block - 01 No. in WTP campus - 225 sqm. Store Building - 01 No. – 75 sqm</p> <p>F-type staff quarter with minimum plinth area 46.5 Sqm each - 01 No. G-type staff quarter with minimum plinth area 93.0 Sqm each - 02 Nos. H-type staff quarter with minimum plinth area 46.5 Sqm each - 04 Nos. I-type staff quarter with minimum plinth area 32.5 Sqm each - 04 Nos.</p> <p>Office Building of 400 sqm at place directed by MPJN</p>
14	<p>Operation &amp; Maintenance of the Whole Scheme for first year</p> <p>The Operation and Maintenance cost for the first year, in terms of percentage of contract Amount is given in Annexure H.</p> <p>For every subsequent year, the first-year percentage rates will be increased/ decreased according to the percentage change in consumer price index issued by Labour Bureau, GOI (All Industrial Worker) for that period. The index on the date of completion of trial run period will be treated as base for calculation of percentage point increase/decrease in O&amp;M cost of next year. Payment of O&amp;M will be made quarterly.</p>

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No.	Main Works
	<p>NOTE:</p> <ul style="list-style-type: none"><li>a) The operation &amp; maintenance period is 10 years from the date of completion of three months of trial run after successful commissioning of the project.</li><li>b) The cost of energy charges (excluding penalties) shall be paid by MPJN on reimbursement basis.</li><li>c) Energy Requirement: The estimation for maximum yearly consumption of energy is <b>1,26,56,698 kWh</b> (Unit) for design period. Any units above this shall not be considered for reimbursement by MPJN.</li><li>d) If due to any reasons, whatsoever it is desired to supply water in some of the villages before final commissioning and trial run, then the pro-rata rates derived from the Annexure H shall be applicable for the part payment on the basis of duration and quantity supplied, but the date of commissioning of whole work shall be applicable from the dates as stipulated in this contract.</li></ul>

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## SCHEME 4 - MAIN WORKS FOR GADA MULTI-VILLAGE SCHEME

No.	Main Works																		
1	Construction of intake well cum pump house having minimum 8.0 m diameter and approx. 22m (including pump room 6 m high) deep to draw a total of 7.75 million litres of water in 23 hours flow with provision for automation, construction of RCC Foot Bridge (approach bridge) approx. 200 meters long, minimum 5 m wide with approach road (excluding space for pipeline, kerb, cable duct, railing, electric poles, etc.) & all other necessary/ ancillary structures required at the bank of Gada Dam near Gada village, Betul District. Raw water shall be taken from the back water of the dam by intake well.																		
2	Raw water pumping main of 300 mm diameter DI-K9 of length approximately 2.08 km including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																		
3	Water treatment plant to provide 7.00 million litres treated clear water in 23 hours near Gada village, District Betul including automation (SCADA), construction of boundary wall, internal roads, electrification, laboratory, office building, etc., and all other necessary ancillary structures required.																		
4	Providing, laying, jointing, testing and commissioning of clear water pumping main of diameter and approximate length as detailed below of DI-K9 Pipe with in-lining and out-coating as per IS 8329 including flow meter, valves, sluice valves, air valves, scour valves, valve chambers, thrust blocks, crossings, specials & accessories, etc. complete including road restoration.																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Type of Pipe</th> <th style="width: 33%;">Diameter in MM</th> <th style="width: 33%;">Length (km)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">K9</td> <td style="text-align: center;">300</td> <td style="text-align: center;">6.50</td> </tr> </tbody> </table>	Type of Pipe	Diameter in MM	Length (km)	K9	300	6.50												
Type of Pipe	Diameter in MM	Length (km)																	
K9	300	6.50																	
5	Providing, laying, jointing, testing and commissioning of clear water trunk main, DI (K-9) as per IS 8329 and/ or MS pipe as per IS specified in specification including flow meters, valves, sluice valves, air valves, scour valves, valve chambers, thrust block, crossings (rail and road), specials & accessories, etc. complete including road restoration of diameter and corresponding length as detailed below:																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Type of Pipe</th> <th style="width: 25%;">Diameter in MM</th> <th style="width: 25%;">Length in km</th> </tr> </thead> <tbody> <tr> <td rowspan="7" style="vertical-align: top;">Up to 800 mm DI K-9 Pipe Above 800 mm DI K-9 or MS Pipe</td> <td style="text-align: center;">100</td> <td style="text-align: center;">39.03</td> </tr> <tr> <td style="text-align: center;">150</td> <td style="text-align: center;">45.34</td> </tr> <tr> <td style="text-align: center;">200</td> <td style="text-align: center;">4.40</td> </tr> <tr> <td style="text-align: center;">250</td> <td style="text-align: center;">7.23</td> </tr> <tr> <td style="text-align: center;">300</td> <td style="text-align: center;">3.00</td> </tr> <tr> <td style="text-align: center;">350</td> <td style="text-align: center;">14.81</td> </tr> <tr> <td style="text-align: center;">400</td> <td style="text-align: center;">9.40</td> </tr> </tbody> </table>	Type of Pipe	Diameter in MM	Length in km	Up to 800 mm DI K-9 Pipe Above 800 mm DI K-9 or MS Pipe	100	39.03	150	45.34	200	4.40	250	7.23	300	3.00	350	14.81	400	9.40
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6	a) Construction of Overhead Service Reservoirs (OHSR) at different villages of following capacity and staging of minimum 12 m or as per design to maintain the required minimum residual pressure of 7 m at consumer end including provision of flow meters at each Reservoir including operator room, compound wall & approach road.																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">No.</th> <th style="width: 20%;">Village</th> <th style="width: 20%;">Capacity (KL)</th> <th style="width: 10%;">No.</th> <th style="width: 20%;">Village</th> <th style="width: 10%;">Capacity (KL)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td style="text-align: center;">Kodaroti</td> <td style="text-align: center;">100</td> <td style="text-align: center;">19.</td> <td style="text-align: center;">Khumhali</td> <td style="text-align: center;">100</td> </tr> </tbody> </table>	No.	Village	Capacity (KL)	No.	Village	Capacity (KL)	1.	Kodaroti	100	19.	Khumhali	100						
No.	Village	Capacity (KL)	No.	Village	Capacity (KL)														
1.	Kodaroti	100	19.	Khumhali	100														

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No.	Main Works					
2.	Mandal Buzurg	170	20.	Amla	100	
3.	Kumhariya	100	21.	Bodijunawani	100	
4.	Lapajhiri	100	22.	Aprapan Behera	150	
5.	Dhoul	100	23.	Borgaon	140	
6.	Mathni	50	24.	Itiya Urf Bitiya	50	
7.	Gehunras	50	25.	Jeen	110	
8.	Gajpur	100	26.	Danora	100	
9.	Ratamati Khurd	120	27.	Deothan	100	
10.	Chand Behda	110	28.	Kadhahi	110	
11.	Khokra	50	29.	Jhagdia	100	
12.	Gondara	100	30.	Banspani	100	
13.	Dunda Borgaon	130	31.	Umarwani	100	
14.	Gohachi	100	32.	Jamthi	100	
15.	Badgi Buzurg	100	33.	Uदान	100	
16.	Silot	230	34.	Deogaon	100	
17.	Hiwarkhedi	270	35.	Chauki	100	
18.	Gadha	100	36.	Sakadehi	100	
<p>b) Construction of clear water sumps with pump houses having following capacity, including all works complete.</p> <p>i. Clear Water Sump at WTP Site, Gada Village – 600 KL</p> <p>ii. Jagdiha Village - 50 KL</p> <p>iii. Sakadehi Village - 70 KL</p>						
<p>c) Construction of MBR / BPT of following capacity, including all works complete.</p> <p>i. Amla Village - 300 KL OHMBR</p>						
<p>All MBR/ BPT/ IPS/ WTP shall have boundary wall as defined in bid document but all ESRs/ GSRs shall have G.I. chain link fabric fencing of mesh size 25x25mm made of G.I. wire of 3 mm diameter including strengthening with welding or nuts, bolt &amp; washers etc. complete. It shall have ISA 50x50x5mm angle iron post at a spacing 2.5 m center to center of height 2m above ground level embedded in M20 cement concrete 30x30 cm pillar minimum 75cm below ground level. Every 7th post &amp; corners shall be strutted with similar specification angle iron &amp; grouting. The top &amp; bottom of chain link as well as on angle a 25x3mm flat secured with either weld or rivets or bolts, to make fencing safer, shall be provided. It shall have angle iron gate of size 3.0m x 1.8m having ISA 50x50x5mm angle iron &amp; 16mm diameter plain M.S. bar including AL drop, holdfast etc. and shall be fixed up in 45x45 cm wide R.C.C. pillars. An additional gate of size 0.6mx1.5m shall also be provided within the same gate, to avoid opening of bigger gate all the time &amp; it shall be made of IS 40x40x5mm angle iron with AL drop, etc.</p> <p>The CW sump cum pump houses and GLBR/ MBR/ BPT will have 2m high boundary wall with 'Y' shape angle iron with 2*3 rows of wire bed, wire fencing at top of boundary wall and gate, one room set of area 25sqm size with W.C. &amp; bathroom, automation system and electrification with area lighting, etc. complete.</p> <p>The size of fencing or boundary wall shall be 20x20m including gate for these structures &amp; if it increases or decreases then accordingly variation shall be paid or deducted as per UADD ISOR w.e.f. 1st May 2012 (with up to date amendments).</p>						

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No.	Main Works
	<p>One room set of minimum area 25 sqm size with W.C. &amp; bathroom and housing of automation system and solar/ single phase electrification with area lighting, landscaping, plantation, etc. complete.</p> <p>The approach road for the MBR, OHSR, etc. shall be of approx. 30 m for each location. Any alteration to the total length of approach roads considering all structures shall be paid or deducted as per the MPPWD SOR w.e.f. 29th August 2017 (with up to date amendments). The length of the approach road shall be finalized by the Engineer-in- Charge.</p>
7	<p>Distribution network of diameter and approximate length as detailed below comprising of HDPE, PE100 PN6 (minimum) and DI-K7 pipelines including valves, specials, sluice valves, air valves, scour valves, valve chambers, thrust block, bulk water meters for all villages, specials &amp; accessories, etc. complete including road restoration and other allied works.</p> <p>a. 90 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 179.60 km</p> <p>b. 110 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 30.047 km</p> <p>c. 160 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 16.513 km</p> <p>d. 200 mm dia. minimum 6 kg/cm<sup>2</sup> pressure - 15.29 km</p>
8	<p>(A) Providing and installation of 4 nos. suitable energy efficient deep well vertical turbine pumps for raw water at intake well cum pump house including automation as under:</p> <p style="margin-left: 20px;">a) 2 No. pumps of 2247 lpm discharge each and approx. 33 m head</p> <p style="margin-left: 20px;">b) 2 No. pumps of 1123 lpm discharge and approx. 33 m head</p> <p>The pumps given above are inclusive of standby pumps</p> <p>(B) Providing and installation of suitable energy efficient centrifugal pumps for clear water at clear water sump cum pump house at WTP, and clear water sump cum pump houses for intermediate pumping stations including automation as under:</p> <p>For clear water sump of 600 KL capacity to OHMBR:</p> <p style="margin-left: 20px;">a) 3 Nos. (2W+ 1S) pumps of 2138 lpm discharge each and approx. 83 m head</p> <p>For clear water sump of 50 KL, 70 KL capacity to respective OHSR:</p> <p style="margin-left: 20px;">a) 2 Nos. (1W+1S) pumps of 85 lpm discharge each and approx. 20 m head</p> <p style="margin-left: 20px;">b) 2 Nos. (1W+1S) pumps of 350 lpm discharge each and approx. 30 m head (The pumps given above are inclusive of standby pumps)</p>
9	<p>Provision for dedicated power supply lines from nearby substation to WTP, intake well cum pump house inclusive of all allied works complete as detailed below:</p> <p>(a) 33 KV: 20 km</p> <p>(b) LT line: 3 km</p> <p>Provision of stretching suitable capacity electric line and taking connection for clear water sump cum pump houses. Any other work necessary to cater the power supply demand of the project (as variation).</p> <p>The work includes construction of substations and stretching of power lines and internal and external electrification etc. complete at all components.</p>



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No.	Main Works
	<p>Supply, installing, testing and commissioning of following sized transformers and other ancillary works required, along with suitable sized transformer yards complete in all respects as per specifications:</p> <p style="margin-left: 40px;">xii. 2 (1W+1S) Number 100 kVA at Intake/ Raw water Pump House</p> <p style="margin-left: 40px;">xiii. 2 (1W+1S) Number 160 kVA at Clear Water Pump House/ WTP At different Intermediate Pump Houses (wherever required)</p> <p style="margin-left: 40px;">xiv. 2 (1W+1S) Number 63kVA</p> <p>The locations of installation of transfers are Raw Water Intake Pump House, Clear Water Pump House, WTP, Intermediate Pumping Stations (IPS), etc.</p> <p>100% standby transformer capacity is to be maintained at each installation site of transformers</p>
10	Design, Supply, Delivery, Erection, Testing & Commissioning of Automation Components for Monitoring & Maintenance with GPRS Communication with all necessary accessories. (SCADA).
11	House Service Connection approximately 11291 Nos. (up to end of O&M Period)
12	<p>Construction of Staff Quarter / Office Building:</p> <p>Office Building/Admin block - 01 No. in WTP campus - 225 sqm. Store Building - 01 No. – 75 sqm</p> <p>F-type staff quarter with minimum plinth area 46.5 Sqm each – 03 Nos. G-type staff quarter with minimum plinth area 93.0 Sqm each - 02 Nos. H-type staff quarter with minimum plinth area 46.5 Sqm each - 05 Nos. I-type staff quarter with minimum plinth area 32.5 Sqm each - 05 Nos. Office Building of 400 sqm at place directed by MPJN</p>
13	<p>Operation &amp; Maintenance of the whole scheme for first year</p> <p>The Operation and Maintenance cost for the first year, in terms of percentage of contract Amount is given in Annexure H.</p> <p>For every subsequent year, the first-year percentage rates will be increased/ decreased according to the percentage change in consumer price index issued by Labour Bureau, GOI (All Industrial Worker) for that period. The index on the date of completion of trial run period will be treated as base for calculation of percentage point increase/decrease in O&amp;M cost of next year. Payment of O&amp;M will be made quarterly.</p> <p>NOTE:</p> <p>a) The operation &amp; maintenance period is 10 years from the date of completion of three months of trial run after successful commissioning of the project.</p> <p>b) The cost of energy charges (excluding penalties) shall be paid by MPJN on reimbursement basis.</p> <p>c) Energy Requirement: The estimation for yearly consumption of energy is <b>17,62,095 kWh</b> (Unit) for design period.</p> <p>d) If due to any reasons, whatsoever it is desired to supply water in some of the villages before final commissioning and trial run, then the pro-rata rates derived from the Annexure H shall be applicable for the part payment on the basis of duration and quantity supplied, but the date of commissioning of whole work shall be applicable from the dates as stipulated in this contract.</p>

*END OF THE DOCUMENT*