

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1.1	Schedule 1.1 ABSTRACT-Cost of Distribution pipe network (Schedule-1) Providing and supplying D. I. K-7 grade pipes including specials of class K-12 for following nominal bore diameter with internal cement mortar lining including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. (IS - 8329 / 2000 and upto dated amendments) For Year 1 150mm dia Pipe	3,634.00	Rmt	-	
1.2	For year 2 150 mm dia pipe	3,634.00	Rmt	-	-
1.3	For year 3 150 mm dia pipe	3,634.00	Rmt	-	-
1.4	For year 1 200 mm dia pipe	1,305.00	Rmt	-	-
1.5	For year 2 200 mm dia pipe	1,305.00	Rmt	-	-
1.6	For year 3 200 mm dia pipe	1,305.00	Rmt	-	-
1.7	For year 1 250 mm dia pipe	1,777.00	Rmt	-	-
1.8	For year 2 250 mm dia pipe	1,777.00	Rmt	-	-
1.9	For year 3 250 mm dia pipe	1,777.00	Rmt	-	-
1.10	For year 1 300 mm dia pipe	1,893.00	Rmt	-	-
1.11	For year 2 300 mm dia pipe	1,893.00	Rmt	-	-
1.12	For year 3 300 mm dia pipe	1,893.00	Rmt	-	-
1.13	For year 1 350 mm dia pipe	1,221.00	Rmt	-	-
1.14	For year 2 350 mm dia pipe	1,221.00	Rmt	-	-
1.15	For year 3 350 mm dia pipe	1,221.00	Rmt	-	-
1.16	For year 1 400 mm dia pipe	1,104.00	Rmt	-	-
1.17	For year 2 400 mm dia pipe	1,104.00	Rmt	-	-
1.18	For year 3 400 mm dia pipe	1,104.00	Rmt	-	-
1.19	For year 1 450 mm dia pipe	287.00	Rmt	-	-
1.20	For year 2 450 mm dia pipe	287.00	Rmt	-	-
1.21	For year 3 450 mm dia pipe	287.00	Rmt	-	-
1.22	For year 1 500 mm dia pipe	485.00	Rmt	-	-
1.23	For year 2 500 mm dia pipe	485.00	Rmt	-	-
1.24	For year 3 500 mm dia pipe	485.00	Rmt	-	-
1.25	For year 1 600 mm dia pipe	379.00	Rmt	-	-
1.26	For year 2 600 mm dia pipe	379.00	Rmt	-	-
1.27	For year 3 600 mm dia pipe	379.00	Rmt	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
2.1	Schedule 1.2 ABSTRACT-Cost of Distribution pipe network (Schedule-1) Lowering, laying and jointing C. I. S & S Spun pipes suitable for Tyton joints / Mortarlined D. I. K-7 Pipes of various classes with CI / DI specials of K-12 of following diameters in proper position, grade and alignment as directed by Engineer-in-charge including hydraulic testing etc. comp. <u>150 mm dia. Pipe</u>	3,634.00	Rmt	-	
2.2	For year 2 150 mm dia. Pipe	3,634.00	Rmt	-	-
2.3	For year 3 150 mm dia. Pipe	3,634.00	Rmt	-	-
2.4	For year 1 200 mm dia. Pipe	1,305.00	Rmt	-	-
2.5	For year 2 200 mm dia. Pipe	1,305.00	Rmt	-	-
2.6	For year 3 200 mm dia. Pipe	1,305.00	Rmt	-	-
2.7	For year 1 250 mm dia. Pipe	1,777.00	Rmt	-	-
2.8	For year 2 250 mm dia. Pipe	1,777.00	Rmt	-	-
2.9	For year 3 250 mm dia. Pipe	1,777.00	Rmt	-	-
2.10	For year 1 300 mm dia. Pipe	1,893.00	Rmt	-	-
2.11	For year 2 300 mm dia. Pipe	1,893.00	Rmt	-	-
2.12	For year 3 300 mm dia. Pipe	1,893.00	Rmt	-	-
2.13	For year 1 350 mm dia. Pipe	1,221.00	Rmt	-	-
2.14	For year 2 350 mm dia. Pipe	1,221.00	Rmt	-	-
2.15	For year 3 350 mm dia. Pipe	1,221.00	Rmt	-	-
2.16	For year 1 400 mm dia. Pipe	1,104.00	Rmt	-	-
2.17	For year 2 400 mm dia. Pipe	1,104.00	Rmt	-	-
2.18	For year 3 400 mm dia. Pipe	1,104.00	Rmt	-	-
2.19	For year 1 450 mm dia. Pipe	287.00	Rmt	-	-
2.20	For year 2 450 mm dia. Pipe	287.00	Rmt	-	-
2.21	For year 3 450 mm dia. Pipe	287.00	Rmt	-	-
2.22	For year 1 500 mm dia. Pipe	485.00	Rmt	-	-
2.23	For year 2 500 mm dia. Pipe	485.00	Rmt	-	-
2.24	For year 3 500 mm dia. Pipe	485.00	Rmt	-	-
2.25	For year 1 600 mm dia. Pipe	379.00	Rmt	-	-
2.26	For year 2 600 mm dia. Pipe	379.00	Rmt	-	-
2.27	For year 3 600 mm dia. Pipe	379.00	Rmt	-	-

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3.1	Schedule 1.3 ABSTRACT-Cost of Distribution pipe network (Schedule-1)				
	Providing and supplying ISI mark DI resilient seated sluice Valves of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. PN-1 With hand wheel/cap operated (PD type short body) For Year 1 150 mm dia	5.00	No	-	-
3.2	For year 2 150 mm dia	5.00	No	-	-
3.3	For year 3 150 mm dia	5.00	No	-	-
3.4	For year 1 200 mm dia	2.00	No	-	-
3.5	For year 2 200 mm dia	2.00	No	-	-
3.6	For year 3 200 mm dia	2.00	No	-	-
3.7	For year 1 250 mm dia	3.00	No	-	-
3.8	For year 2 250 mm dia	3.00	No	-	-
3.9	For year 3 250 mm dia	3.00	No	-	-
3.10	For year 1 300 mm dia	3.00	No	-	-
3.11	For year 2 300 mm dia	3.00	No	-	-
3.12	For year 3 300 mm dia	3.00	No	-	-
3.13	For year 1 350 mm dia	2.00	No	-	-
3.14	For year 2 350 mm dia	2.00	No	-	-
3.15	For year 3 350 mm dia	2.00	No	-	-
4.1	Providing and supplying ISI mark Butterfly Valves of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. PN-1.6 With hand wheel/cap operated (PD type short body) 400 mm Dia butterfly valve For year 1 400 mm dia	1.00	No	-	-
	For year 2 400 mm dia	1.00	No	-	-
4.3	For year 3 400 mm dia	1.00	No	-	-
4.4	For year 1 450 mm dia	1.00	No	-	-
4.5	For year 1 500 mm dia	1.00	No	-	-
4.6	For year 1 600 mm dia	1.00	No	-	-
4.7	For year 2 600 mm dia	2.00	No	-	-

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5.1	Schedule 1.4 ABSTRACT-Cost of Distribution pipe network (Schedule-1) Lowering, laying and jointing in position DI resilient and butterfly valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. DI resilient Valves and butterfly valves For Year 1 150 mm Dia DI resilient Valves	5.00	No	-	-
5.2	For year 2 150 mm Dia DI resilient Valves	5.00	No	-	-
5.3	For year 3 150 mm Dia DI resilient Valves	5.00	No	-	-
5.4	For year 1 200 mm Dia DI resilient Valves	2.00	No	-	-
5.5	For year 2 200 mm Dia DI resilient Valves	2.00	No	-	-
5.6	For year 3 200 mm Dia DI resilient Valves	2.00	No	-	-
5.7	For year 1 250 mm Dia DI resilient Valves	3.00	No	-	-
5.8	For year 2 250 mm Dia DI resilient Valves	3.00	No	-	-
5.9	For year 3 250 mm Dia DI resilient Valves	3.00	No	-	-
5.10	For year 1 300 mm dia DI resilient Valves	3.00	No	-	-
5.11	For year 2 300 mm Dia DI resilient Valves	3.00	No	-	-
5.12	For year 3 300 mm Dia DI resilient Valves	3.00	No	-	-
5.13	For year 1 350 mm Dia DI resilient Valves	2.00	No	-	-
5.14	For year 2 350 mm Dia DI resilient Valves	2.00	No	-	-
5.15	For year 3 350 mm Dia DI resilient Valves	2.00	No	-	-
5.16	For year 1 400 mm Dia Butterfly Valve	1.00	No	-	-
5.17	For year 2 400 mm Dia Butterfly Valve	1.00	No	-	-
5.18	For year 3 400 mm Dia Butterfly Valve	1.00	No	-	-
5.19	450 mm Dia butterfly valve	1.00	No	-	-
5.20	500 mm Dia butterfly valve	1.00	No	-	-
5.21	For year 1 600 mm Dia butterfly valve	1.00	No	-	-
5.22	For year 2 600 mm Dia butterfly valve	2.00	No	-	-
6.1	Interconnection of Proposed Pipe Line with Existing Line wherever necessary including cutting, Dewatering, providing fitting and fixing of specials such as collars, reducers/enlargers, tee etc. all complete as per specification. Labour for cutting following cast iron pipes of any type and class. 100mm dia	30.00	per cut	-	-
6.2	150mm dia	25.00	per cut	-	-
6.3	200mm dia	20.00	per cut	-	-
6.4	300mm dia	17.00	per cut	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
6.5	400mm dia	15.00	per cut	-	-
6.6	500mm dia	8.00	per cut	-	-
6.7	600mm dia	4.00	per cut	-	-

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6.20	Schedule -1.5 ABSTRACT-Cost of Distribution pipe network (Schedule-1) Pumping out water caused by springs, tides or river seepage, broken water mains or drains or well or the like.	-	per KL	-	-
6.30	Providing & Laying Ductile Iron Double Socket branch flange Tee Conforming to IS-9523/2000 having dimension as per table 21 of IS-9523/2000 in the nominal diameter/sizes with external bitumen coating and internal cement mortar lining with finishing as per clause 13 of IS-9523/2000. (laying Conforming to IS 12288 : 1987) (All sizes in mm) 150X200	25.00	Each	-	-
6.31	200X300	20.00	Each	-	-
6.32	250X300	17.00	Each	-	-
6.33	200X400	15.00	Each	-	-
6.34	400X500	8.00	Each	-	-
6.35	300X400	8.00	Each	-	-
6.36	300x500	3.00	Each	-	-
6.37	450x600	3.00	Each	-	-
6.38	200x600	2.00	Each	-	-
6.39	150x600	2.00	Each	-	-
6.40	Labour charges for Laying Ductile Iron Double Socketed Branch Flange Tee Conforming to IS-9523/2000 having dimension as per table 21 of IS-9523/2000 in the nominal diameter/sizes with external bitumen coating and internal cement mortar lining. (laying Conforming to IS 12288 : 1987) (All sizes in mm) 150X200	25.00	Each	-	-
6.41	200X300	20.00	Each	-	-
6.42	250X300	17.00	Each	-	-
6.43	200X400	15.00	Each	-	-
6.44	400X500	8.00	Each	-	-
6.45	300X400	8.00	Each	-	-
6.46	300x500	3.00	Each	-	-
6.47	450x600	3.00	Each	-	-
6.48	200x600	2.00	Each	-	-
6.49	150x600	2.00	Each	-	-
7.1	Providing C.C.M.:100 for encasing pipes using trap metal size 12 mm to 50 mm incl. form work curing consolidation etc. complete for various loaction on pipe line. Thrust Block - PCC Grade M-10 - using trap metal 20 mm nomianl size	3.78	Cum	-	-
7.2	RCC Grade M-25 - Height Upto 6m	39.66	Cum	-	-
7.3	supply, cutting,bending & fixing of steel, Fe-415	0.0012	Tonne	-	-
8.1	For all diameters Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified.For lift upto 1.5m (a) In all sorts of soil and soft murrum 100%	52,137.15	cum	-	-
8.2	(b) In hard murrum 0%	-	cum	-	-
8.3	(c) In Soft Rock 0%	-	cum	-	-
8.4	(b) In hard Rock 0%	-	cum	-	-
8.5	With lift upto 3m (For trial Pit) - (a) In all sorts of soil and soft murrum 100%	283.50	cum	-	-
9	Refilling the pipeline trenches incl. ramming, watering, consolidating desposal of surplus stuff as directed within a radius of 3 km.	42,917.41	cum	-	-
10	Providing Bedding including ramming,watering,consolidating etc.complete. Moorum brought from outside lead upto 2Km	-	cum	-	-
11	Manufacture, supply & delivery of D.I specials plain & Socket or flanged (Lumpsum) @ 5% of Weight of DI pipes as per CPHEEO manual for Distribution Network.	56.00	Tonne	-	-
12.1	Construction of valves chambers in brick or bela stone masonary, locally available in C. M. 1:6.Foundation concrete 150 mm thick in C. C. 1:4:8 of trap metal size 25 mm to 40 mm thick, inside cement plaster in C. M. 1:3 and cement pointing outside in C. M. 1:3 and top cover of precast RCC slab 100 mm thick (with key hole in two parts, each with handles or MS Bar etc. complete as give size) Upto 1 Mt. depth from G. L. to pipe invert level incl. complete civil works including cost of excavation and refilling With cast in situ RCC slab in one single piece with 23 cm. thk. BM wall in C.M. 1:6. Drawing provided by VMC, (As per Rate Analysis) (1.5X1.5X1.7) (For Flow Meters & Valves of 400mm to 600mm dia.)	41.00	Nos.	-	-
12.2	(1.3X1.3X1.5) (For Flow Meter of 250mm dia & Valve)	11.00	Nos.	-	-
13.1	Manufacture, supply & delivery of MS specials plain & Socket or flanged suitable to D.I. pipe for Valve Cap-100mm Dia	50.00	Kg	-	-
13.2	Valve Cap-150mm Dia	210.00	Kg	-	-
13.3	Valve Cap-200mm Dia	160.00	Kg	-	-
13.4	Valve Cap-250mm Dia	550.00	Kg	-	-
14	Road Restoration works Breaking existing Asphalt road	41,680.60	sq.mt.	-	-
15	Road Restoration works	36,244.00	Rm	-	-

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1	<p>Schedule 2.1 House Service Connection</p> <p>Providing, Supplying, lowering and Laying of Blue MDPE pipes conforming to ISO 4427:1996 manufactured from virgin resin PE 80 Food grade compounded Raw Material having Blue Colour only with quality assurance certificate from quality agencies like WRC / CIPET (India) / DVGM / KIWA / SPGN etc. for usage in Drinking Water syatem The cost shall include testing of all materials, all taxes Central, Sate, Municipal, Inspection charges, transportation up to site, transitinsurance, loading, unloading, stacking etc. complete as specified and directed. For House Service Connction</p> <p>15mm MDPE Pipe PN 16 (SDR 9)</p>	260000.00	Rmt	0.00	0.00
2	20mm MDPE Pipe PN 16 (SDR 9)	40000.00	Rmt	0.00	0.00
3	25mm MDPE Pipe PN 16 (SDR 9)	100000.00	Rmt	0.00	0.00

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	Schedule 2.2 House Service Connection				
1	House Service Connections (With Road Crossings) - Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified. in C. C. 1:2:4 or RCC with blasting and chiselling or by chiselling only. MDPE Pipe @ Road section	Cum	6750.00	0.00	0.00
2	House Service Connections (With Road Crossings) - Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified. In hard murrum, boulders incl. macadam road. MDPE Pipe @ Road section	Cum	4050.00	0.00	0.00
3.1	House Service Connections (With Road Crossings) - Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified. In all sorts of soil and soft murrum. Distribution Pipe	Cum	22500.00	0.00	0.00
3.2	MDPE Pipe in property	Cum	18900.00	0.00	0.00
4	House Service Connections (With Road Crossings) - Providing and fixing 25mm gun metal ferrul of ISI quality including all taxes etc complete. 25 mm Gun metal ferrul	No	20000.00	0.00	0.00
5.1	House Service Connections (With Road Crossings) - Providing and supply of compression fittings PN 16 rated in confirmation to ISO 14236-2000 and shall be tested as per ISO 3459 ISO 3501 and ISO 3503 suitable for drinking water and approved by WRAS, UK/KIWA in food grade polypropylene and shall be inclusive of all cost such as testing all taxes related to central ,state and muncipal inspection charges transportation upto site transit insurance lading unloading stacking etc complete. Female Adaptor	No	20000.00	0.00	0.00
5.2	Ball stop valve	No	20000.00	0.00	0.00
5.3	Elbow 90o	No	20000.00	0.00	0.00
6	House Service Connections (With Road Crossings) - Providing and supply of Electro fusion fittings in accordance with BS EN 12201 : Part 3 suitable for drinking water within black / blue colour manufactured from compounded PE 80 / PE 100 virgin polymer and compatible with PE 80 / PE 100 pipes in pressure rating SDR 11 with min PN 12.5 rated for water application and shall be inclusive of all cost such as testing all taxes related to central ,state and muncipal inspection charges transportation upto site transit insurance lading unloading stacking etc complete. Ferrule Tapping Tee 75 / 90 /110 mm	No	20000.00	0.00	0.00

7	House Service Connections (With Road Crossings) - Providing & fixing Meter Box PP Material for Water meter including all cost of labour etc. Complete The installation shall be done as directed by the Engineer in charge.	No	20000.00	0.00	0.00
8	House Service Connections (With Road Crossings) - Metalic Stainer - Y type, Brass / Gun metal body, suitable for proposed Connection	No	20000.00	0.00	0.00
9	House Service Connections (With Road Crossings) - Refilling the pipeline trenches incl. ramming, watering, consolidating disposal of surplus stuff as directed within a radius of 3 km.	Cum	52162.56	0.00	0.00
10	House Service Connections (With Road Crossings) - PVC Saddle for connectioning inside consumers property, male and female (threaded)	No	20000.00	0.00	0.00
11	House Service Connections (With Road Crossings) - Providing C.C.M.:250 for road restoration using trap metal size 12 mm to 50 mm incl. form work curing consolidation etc. complete for house service connection	Cum	2000.00	0.00	0.00
12	House Service Connections (With Road Crossings) - Providing and fixing of Tiles inside compound wall of consumer or domestic user.	Sqm	22500.00	0.00	0.00
13	House Service Connections (Without Road Crossings) - Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified. In hard murrum, boulders incl. macadam road. MDPE Pipe @ Road	Cum	2025.00	0.00	0.00
14.1	House Service Connections (Without Road Crossings) - Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified. In all sorts of soil and	Cum	5625.00	0.00	0.00
14.2	MDPE Pipe in property	Cum	4050.00	0.00	0.00
15	House Service Connections (Without Road Crossings) - Providing and fixing 25mm gun metal ferrul of ISI quality including all taxes etc complete - 25 mm Gun metal ferrul	No	20000.00	0.00	0.00
16	House Service Connections (Without Road Crossings) - Providing and supply of compression fittings PN 16 rated in confirmation to ISO 14236-2000 and shall be tested as per ISO 3459 ISO 3501 and ISO 3503 suitable for drinking water and approved by WRAS, UK/KIWA in food grade polypropylene and shall be inclusive of all cost such as testing all taxes related to central ,state and muncipal inspection charges transportation upto site transit insurance lading unloading stacking etc complete - Female Adaptor	No	20000.00	0.00	0.00
16.1	Ball stop valve	No	20000.00	0.00	0.00
16.2	Elbow 90o	No	20000.00	0.00	0.00

17	House Service Connections (Without Road Crossings) Providing and supply of Electro fusion fittings in accordance with BS EN 12201 : Part 3 suitable for drinking water within black / blue colour manufactured from compounded PE 80 / PE 100 virgin polymer and compatible with PE 80 / PE 100 pipes in pressure rating SDR 11 with min PN 12.5 rated for water application and shall be inclusive of all cost such as testing all taxes related to central ,state and municipal inspection charges transportation upto site transit insurance lading unloading stacking etc complete. - Ferrule Tapping Tee 75 / 90 /110 mm	No	20000.00	0.00	0.00
18	House Service Connections (Without Road Crossings) Providing & fixing Meter Box PP Materail for Water meter including all cost of labour etc. complete	No	20000.00	0.00	0.00
19	House Service Connections (Without Road Crossings) Metalic Stainer - Y type, Brass / Gun metal body, suitable for proposed Connection	No	20000.00	0.00	0.00
20	House Service Connections (Without Road Crossings) Refilling the pipeline trenches incl. ramming, watering, consolidating disposal of surplus stuff as directed within a radius of 3 km. - Total Qty	Cum	11681.28	0.00	0.00
21	House Service Connections (Without Road Crossings) PVC Saddle for connectioning inside consumers property, male and female (threaded)	No	20000.00	0.00	0.00
22	House Service Connections (Without Road Crossings) Providing, fixing of Tiles inside compound wall of consumer or domestic user.	Sqm	22500.00	0.00	0.00
23	House Service Connection from distribution main to property limit, including (1) Providing DI saddle with Female Threaded metal insert outlet of SS 304 - 1 no. (2) Providing brass ferul - 1 no. (3) Providing Metal inserted Compression Female Thread Adaptor (FTA) - 1 no. (4) Providing Compression. Elbow - 2 Nos, (5) Providing PVC Ball valve with one side compression. and another side female threaded - 1 no. including fixing and jointing of MDPE pipe HSC complete (excluding the rates of MDPE pipe) with Compression fittings up to Consumer House for all Sizes. Its also include with existing household connection with GI/PVC pipes with necessary standard fittings. The work shall be done as per detailed specifications & as per drawings complete with all lead & lift and as directed by the Engineer in charge.	Nos	40000.00	0.00	0.00

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1	<p>Schedule -3.1 Designing & Construction of R.C.C ESR's (Schedule-3)</p> <p>Conducting site investigations(site survey & soil investigation), designing (hydraulic, structural and aesthetic) complying provisions of relevant Indian standards, requirements of Tender technical specifications, obtaining approvals of designs and constructing RCC Elevated service Reservoir of the following capacity and height , using data of geotechnical investigation and site condition of proposed site , Seismic zone 3, Wind speed Zone. Including necessary accessories and piping, including necessary hydraulic testing, structural testing; material testing etc.; complete as directed by Engineer-in-charge (turn-key job). Including (1) Container shape any suitable type(or as specified), (2) Staging consisting of column brace trestle (as specified) and (3) Appropriate foundation system. This includes excavation in all types of soil strata(including hard rock), casting 100 mm thick P.C.C. levelling course in M-15 , Refilling the pit with proper soil and disposing of the surplus stuff within all lead and lift. (4) This will also include cement plaster in CM 1:3 with approved water proofing compound to inside face of container. (5) All types of labour & material charges of lowering , laying, erecting / hoisting & joining of pipe assembly of Inlet, Outlet overflow, washout and bye pass arrangement as per hydraulic design are including. (6) Providing and fixing accessories(specified) like MS / GI Ladder CI Manhole frame and covers, water level indicator , lightning conductor, GI Pipe railing around walk way, at roof level, at gallery and around landing of inside shaft, Adequate cowl type ventilators with stainless steel jali. (7) Scope of work includes constructing RCC spiral staircase with adequate tie beams ,staircase footing ,B.B. Masonry chambers for valves. ventilating shaft and ventilators as well as door in shaft. (8) Including providing and applying three coats of cement paint/snowcem (as specified) to the whole structure. (9) It also includes satisfactory water tightness test as per relevant I.S. Code and painting name of scheme & capacity on the tank as per direction of engineer in charge. (Seismic Zone -3)</p> <p>23 lakh litre Capacity, 25 m staging For Akota - B</p>	1.00	Nos	0.00	0.00

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1	<p>Schedule 3.2 Designing & Construction of R.C.C ESR's (Schedule-3)</p> <p>Conducting site investigations(site survey & soil investigation), designing (hydraulic, structural and aesthetic) complying provisions of relevant Indian standards, requirements of Tender technical specifications, obtaining approvals of designs and constructing RCC Elevated service Reservoir of the following capacity and height , using data of geotechnical investigation and site condition of proposed site , Seismic zone 3, Wind speed Zone. Including necessary accessories and piping, including necessary hydraulic testing, structural testing; material testing etc.; complete as directed by Engineer-in-charge (turn-key job). Including (1) Container shape any suitable type(or as specified), (2) Staging consisting of column brace trestle (as specified) and (3) Appropriate foundation system. This includes excavation in all types of soil strata(including hard rock), casting 100 mm thick P.C.C. levelling course in M-15 , Refilling the pit with proper soil and disposing of the surplus stuff within all lead and lift. (4) This will also include cement plaster in CM 1:3 with approved water proofing compound to inside face of container. (5) All types of labour & material charges of lowering , laying, erecting / hoisting & joining of pipe assembly of Inlet, Outlet overflow, washout and bye pass arrangement as per hydraulic design are including. (6) Providing and fixing accessories(specified) like MS / GI Ladder CI Manhole frame and covers, water level indicator , lightening conductor, GI Pipe railing around walk way, at roof level, at gallery and around landing of inside shaft, Adequate cowl type ventilators with stainless steel jali. (7) Scope of work includes constructing RCC spiral staircase with adequate tie beams ,staircase footing ,B.B. Masonry chambers for valves. ventilating shaft and ventilators as well as door in shaft. (8) Including providing and applying three coats of cement paint/snowcem (as specified) to the whole structure. (9) It also includes satisfactory water tightness test as per relevant I.S. Code and painting name of scheme & capacity on the tank as per direction of engineer in charge.</p> <p>(Seismic Zone -3)</p> <p>24 lakh litre Capacity, 25 m staging For Vadiwadi</p>	1.00	Nos	0.00	0.00

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1	<p>Schedule 3.3 Designing & Construction of R.C.C ESR's (Schedule-3)</p> <p>Conducting site investigations(site survey & soil investigation), designing (hydraulic, structural and aesthetic) complying provisions of relevant Indian standards, requirements of Tender technical specifications, obtaining approvals of designs and constructing RCC Elevated service Reservoir of the following capacity and height , using data of geotechnical investigation and site condition of proposed site , Seismic zone 3, Wind speed Zone. Including necessary accessories and piping, including necessary hydraulic testing, structural testing; material testing etc.; complete as directed by Engineer-in-charge (turn-key job). Including (1) Container shape any suitable type(or as specified), (2) Staging consisting of column brace trestle (as specified) and (3) Appropriate foundation system. This includes excavation in all types of soil strata(including hard rock), casting 100 mm thick P.C.C. levelling course in M-15 , Refilling the pit with proper soil and disposing of the surplus stuff within all lead and lift. (4) This will also include cement plaster in CM 1:3 with approved water proofing compound to inside face of container. (5) All types of labour & material charges of lowering , laying, erecting / hoisting & joining of pipe assembly of Inlet, Outlet overflow, washout and bye pass arrangement as per hydraulic design are including. (6) Providing and fixing accessories(specified) like MS / GI Ladder CI Manhole frame and covers, water level indicator , lightening conductor, GI Pipe railing around walk way, at roof level, at gallery and around landing of inside shaft, Adequate cowl type ventilators with stainless steel jali. (7) Scope of work includes constructing RCC spiral staircase with adequate tie beams ,staircase footing ,B.B. Masonry chambers for valves. ventilating shaft and ventilators as well as door in shaft. (8) Including providing and applying three coats of cement paint/snowcem (as specified) to the whole structure. (9) It also includes satisfactory water tightness test as per relevant I.S. Code and painting name of scheme & capacity on the tank as per direction of engineer in charge. (Seismic Zone -3)</p> <p>16 lakh litre Capacity, 25 m staging For Sayaji Bagh</p>	1.00	Nos	0.00	0.00

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 4 GSR at Sayaji Bagh				
1.1	Preparing structural design of RCC Under Ground / Partially under ground / above high ground level Reservoir of required capacity as per relevant I.S.s and constructing the same, including excavation in all types of soil strata (including rock) including shoring strutting if required, for loose soil / to protect from collapse due to near by traffic load, casting 100 mm thick P.C.C. leveling course in M-10, Refilling the pit with proper soil and disposing of the surplus stuff within a lead of 50 meters. Including cement plaster in CM 1:2 with approved water proofing compound to inside water touching surface to container. Including all types of labour and material charges of lowering, laying, erecting / hosting and jointing of pipe assembly to inlet, outlet overflow, washout and bye pass arrangement as per hydraulic design. Providing and fixing accessories like MS / GI Ladder, CI Manhole frame and cover, water level indicator, adequate cowl type ventilators or lantern type ventilator with stainless steel jail. B.B. Masonry chambers for valves. Providing and applying three coats of cement paint / snowcem to the out side face of structure. It also includes satisfactory water tightness test as per relevant I.S. code and painting name of scheme and capacity on the tank as per direction of engineer in charge. 10 lakh litre Capacity GSR For Sayaji Bagh	1.00	No.	0.00	0.00
1.2	27 lakh litre Capacity GSR For Vadivadi	1.00	No.	0.00	0.00
2	C.C. M-30 Control concrete for water retaining structures: Providing and cast in situ C.C. in grade M-30 proportions of ingredients as per mix design by weigh batching using granite, quartzite trap metal of size 12 mm to 20 mm and or 6 mm to 12 mm including scaffolding centering formwork, needle vibrated consolidation, curing and hydraulic testing etc. complete (excluding cost of reinforcement) up to 6 meter height /depth Av. G.L.for all water retaining structures. Flat bottom slab/floor slab/slab with shuttering	619.70	Cum	0.00	0.00
3.1	Designing(aesthetically) and constructing pumproom with positive suction and Negative suction. With Gantry (Min. Height 4.5 M) Upto 6.00 M (Floor to Ceiling level) For Sayaji Baug	97.50	Sq.m	0.00	0.00
3.2	For Vadiwadi	252.00	Sq.m	0.00	0.00
3.3	For Akota	60.00	Sq.m	0.00	0.00

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule-5 Dismantling of Existing R.C.C ESR's, GSRs, Pump House and Office Building (Schedule-5)				
1	Demolition of old E.S.R 25.0 mt height For Vadiwadi - Demolition including Stacking of servicable materials and disposal of unservicable matirials with 'all lead & lift (I) R.C.C. Work	234.44	Cu.mt	-	-
2	E.S.R 25.0 mt height For Vadiwadi - Upset value for dismentalled old reinforcement (Scrap Material)	13,802.93	Kg.	-	-
3	E.S.R 25.0 mt height For Vadiwadi - Removing of inlet, outlet and overflow pipes incl. Removal of specials, valves, jointing material from site of work to the departmental store as directed.	5,417.20	kg.	-	-
4	Estimate for Demolition of old E.S.R 25.0 mt height For Sayaji Baug - Demolition including Stacking of servicable materials and disposal of unservicable matirials with 'all lead & lift (I) R.C.C. Work	209.79	Cu.mt	-	-
5	E.S.R 25.0 mt height For Sayaji Baug - Upset value for dismentalled old reinforcement (Scrap Material)	12,351.10	Kg.	-	-
6	E.S.R 25.0 mt height For Sayaji Baug - Removing of inlet, outlet and overflow pipes incl. Removal of specials, valves, jointing material from site of work to the departmental store as directed.	5,417.20	kg.	-	-
7	Lump Sum amount for Structural audit of Existing RCC ESRs.	1.00	L.S.	-	-
8	Demolition of old G.S.Rs of capacities 2.7ML, 0.91 ML - Estimate for Demolition of old G.S.Rs of capacities 2.7ML, 0.91 ML - Demolition including Stacking of servicable materials and disposal of unservicable matirials with 'all lead & lift (I) R.C.C. Work	2,531.00	Cu.mt	-	-
9	Demolition of old G.S.Rs of capacities 2.7ML, 0.91 ML - Upset value for dismentalled old reinforcement (Scrap Material) (Market rate for old reinforcement)	2,98,026.00	Kg.	-	-
10	Lump Sum amount for Structural audit of Existing RCC ESRs.	1.00	L.S.	-	-
11	Dismantling of Pumping Stations - Demolition including stacking of serviceable material and disposal of unserviceable material with all lead and lift (a) R.C.C. Work	306.48	Cum	-	-
12	Dismantling of Pumping Stations - Demolition of Brick work and stone masonary including stacking of servicable materials and disposal of unservicable material with all lead and lift (i) in lime mortar	180.73	cum	-	-
13	Dismantling of Pumping Stations - Dismantalling doors, windows, ventilators etc(wood or steel) shutters including chowkhats architraves , holdfasts and other attachment etc. complete and stacking them within all lead and lift (ii) exceeding 3sqm in area. Shutter	3.00	Each	-	-
14	window	9.00	Each	-	-
15	Door	3.00	Each	-	-
16	Dismantling of Office Building at Vadiwadi - Demolition of brick work and Brick masonry including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift (ii) In cement mortar	50.00	Cum	-	-
17	Dismantling of Office Building at Vadiwadi - Demolition including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift for RCC Works - Dismantalling steel work including dismentalling a stacking materials with all lead & lift. For shead front side	45.00	sq.mt	-	-
18	Dismantling of Office Building at Vadiwadi - Dismantaling tiled of stone floors laid in mortar including stacking of serviceable materilas and disposal of unserviceable materials with all lead and lift.	135.00	sq.mt	-	-
19	Dismantling of Office Building at Vadiwadi - Dismantalling doors, windows, ventilators, etc. (Wood or steel shutters including chowkhars, Architraves, Holdfasts and other attachment etc. complete and stacking them within all lead and lift. (i) Not exceeding 3 Sq.M. in area	15.00	sq.mt	-	-
20	Dismantling of Office Building at Vadiwadi - Excavation for foundation including sorting out & stacking of useful material & depositing of the excavated stuff up to 50 mt. lead. (a) Loose or soft soil depth up to 1.5 mt.	475.00	Cmt.	-	-
21	(b) -do - for excavation for depth 1.5 to 3.00 mt. depth	70.00	Cmt.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1.1	Schedule 6.0 Misc Works -Connection of GSR to ESR & Removing of Old Cast Iron Pipes (Schedule-6) Removing of Existing Pipe Line incl. Removal of specials, valves, jointing material from site of work to the departmental store as directed excl. Excavation and refilling. CI S&S Spun Pipes suitable for Tyton Joints 75 mm dia CI Pipe	74.00	Rmt	0.00	0.00
1.2	100 mm dia CI Pipe	2225.00	Rmt	0.00	0.00
1.3	150 mm dia CI Pipe	4958.00	Rmt	0.00	0.00
1.4	200 mm dia CI Pipe	201.00	Rmt	0.00	0.00
1.5	225 mm dia CI Pipe	2250.00	Rmt	0.00	0.00
1.6	250 mm dia CI Pipe	1061.00	Rmt	0.00	0.00
1.7	300 mm dia CI Pipe	3488.00	Rmt	0.00	0.00
1.8	350 mm dia CI Pipe	405.00	Rmt	0.00	0.00
1.9	400 mm dia CI Pipe	338.00	Rmt	0.00	0.00
1.10	450 mm dia CI Pipe	163.00	Rmt	0.00	0.00
2.1	Interconnection of Proposed Pipe Line with Existing Line wherever necessary including cutting, Dewatering, providing fitting and fixing of specials such as collars, reducers/enlargers, tee etc. all complete as per specification. Labour for cutting following cast iron pipes of any type and class. 300mm dia	18.00	per cut	0.00	0.00
2.2	400mm dia	18.00	per cut	0.00	0.00
2.3	600mm dia	4.00	per cut	0.00	0.00
3	Pumping out water caused by springs, tides or river seepage, broken water mains or drains or well or the like.	1,000.00	per KL	0.00	0.00
4	Manufacture, supply & delivery of MS specials plain & Socket or flanged suitable to D.I. pipe for Valve Cap	500.00	Kg	0.00	0.00

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1	<p>Schedule 7 Construction of Office Building at Vadiwadi -</p> <p>Work of construction and low rise building cum commercial unit including on site with all infrastructure services at Vadodara city including all types of engineering survey, soil investigation, planning, designing, and approval of all concern authorities and all construction activities like excavation, construction of all types of structures, finishing work like plastering, flooring, painting etc. Doors, windows, grills, all internal and external amenities like electrification, (external + internal meters with MGVCL deposit with all charges) street light with all requirements. Water supply, drainage, storm water drain, RCC roads with trimax method, Rubber mould paver blocks with PCC in all other open areas, water proofing (Brick bat roda) in all bath/WC/Chowkadi areas and water proofing (Brick bat roda) with china mosaic tiles on terrace, anti termite treatment, lift elevators, compound walls, Gates, basic fire fighting systems, landscaping, rain water harvesting, tube wells as per requirements with all labour, material as per min. specifications stated in tender document and design approved by VMC and Consultant including all taxes and royalty charges, etc.</p> <p>Construction of Office building at Vadivadi OHT - 1000 Sq.m (Carpet area)</p>	1000.00	Sq.m	0.00	0.00

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 8 Pumping Main For Connection of GSR to ESR				
1	Excavation for pipe line trenches incl. all safety provisions using site rails and stacking excavated stuff up to a lead of 90 mts. cleaning the site etc. complete for lifts and strata as specified.For lift upto 1.5m. 400mm dia Pipe	1050.00	Cum	-	-
2	Refilling the pipeline trenches incl. ramming, watering, consolidating desposal of surplus stuff as directed within a radius of 3 km. 400mm dia Pipe	106119.87	Cum	-	-
3	Providing Bedding including ramming,watering,consolidating etc.complete. From Selected Excavated Stuff	140.00	Cum	-	-
4	Providing and supplying D. I. K-9 grade pipes including specials of class K-12 for following nominal bore diameter with internal cement mortar lining including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. (IS - 8329 / 2000 and upto dated amendments) 400mm dia Pipe	700.00	Rmt	-	-
5	Lowering, laying and jointing C. I. S & S Spun pipes suitable for Tyton joints / Mortarlined D. I. K-7 Pipes of various classes with CI / DI specials of K-12 of following diameters in proper position, grade and alignment as directed by Engineer-in-charge including hydraulic testing etc. comp. 400mm dia Pipe	700.00	Rmt	-	-
6	Providing and supplying ISI mark DI resilitnt Valves of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. PN-1 With hand wheel/cap operated (PD type short body) 400 mm Dia. PN-1.6	6.00	Nos.	-	-
7	Lowering, laying and jointing in position following D. I. / D/F Reflux Valves and Air valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. 400 mm Dia. PN-1.6	6.00	Nos.	-	-
8	Pumping out water caused by springs, tides or river seepage, broken water mains or drains or well or the like.	500.00	per KL	-	-
9	Providing and supplying ISI mark Reflux Valves of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. PN-1 With hand wheel/cap operated (PD type short body)Reflux valves (PN-1) (IS 5312) with ISI mark - 400mm	3.00	Nos.	-	-
10	Lowering, laying and jointing in position following D. I. / D/F Reflux Valves and Air valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. Reflux valves (PN-1) (IS 5312) with ISI mark - 400mm	3.00	Nos.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 9.0 Mechanical Works for Sayaji Baug Headworks -				
1.0	Supply Installation Testing & Commissioning of Submerged Centrifugal Pumpsets (Water immersed, dry air filled, class f insulated TEWC motor integrally mounted on volute casing pumpsets for water duty) 3 phase,50 Hz +/-3%,415 V +/-10% along with suitable foundation /installation device and 10 Mtr cable of following material of construction Impeller : SS:CF8M; Casing(Volute) : C.I., Shaft: AISI SS410, Wearing Ring : SS:CF8M, Discharge : 241 m³/hr. Head : 34 mtr. Motor Rating : 37 KW Min. Efficiency : 81% (2W + 1S)	3	Set	-	-
2.1	Manufacture supply and delivery, lowering & laying of submerged arc welded M.S pipe out side coated with best quality Bituminous Paint with Epoxy coating to inside pipeline with two parts of Solvent free high build liquid epoxy lining as per AWWA C210-07 suitable for portable water application & shall be approved by CFTRI India/BS 6920-UK/international standard/NSF/ANSI/-61 2004 to be fit for contact with portable water for human consumption with 406 micron thickness, having a beveled ends plate and coil conforming to is 3589-2001 or its latest revision/ammendment for following thickness including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to Departmental stores/ site, stacking, etc. including specials and wastage etc.; complete Tender Specifications: 273.1 mm (OD) 5 mm thick O/S Bithuminous painted M.S pipe (For Discharge Line)	18	mtr.	-	-
2.2	355.6 mm (OD) 5.6 mm thick O/S Bithuminous painted M.S pipe (For Common Header)	6	mtr.	-	-
3.0	Providing and supplying ISI mark G. I. pipes with Couplings of following class and Diameter and including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading conveyance to site, stacking etc. complete. (IS -1239/1990). 100 mm Dia GI Heavy Duty Pipe (For By-Pass line)	12	Mts.	-	-
4.1	M.S. specials plain/ Flanged ended Erection, Installation, Testing & Commissioning of M.S. Specials for Delivery, By Pass & Header Piping with Flanges, eccentric Nozzles, Nut-Bolts, Y -tee connection etc. Complete. Up to 300mm dia	150	Kgs.	-	-
4.2	above 300mm dia	85	Kgs.	-	-
5.1	Sluice Valves a) Providing and supplying ISI mark CI D/F Sluice valves of approved makes & confirming to IS 14846 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 250 mm dia Sluice valve (with gear opreated) PD Type Short Body PN 1.0 (For Discharge Line)	3	No.	-	-
5.2	Sluice Valves - As Above for 100 mm dia Sluice valve (with hand wheel/ cap operator) PD Type Short Body PN 1.0 (For Bypass Line)	1	No.	-	-
5.3	Sluice Valves - As Above for 350 mm dia Sluice valve PN 1.0 (with gear opreated) PD Type Short Body PN (For Common header)	1	No.	-	-
6.1	Dual Plate Check Valve a) Providing and supplying Dual Plate Check Valve of approved make & confirming to API-594/598 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per Tender Specifications and instructions of Engineer in charge. 250 mm dia Dual Plate Check Valve PN 1.0 (For Discharge Line)	3	No.	-	-
6.2	Dual Plate Check Valve - As Above for 350 mm dia Dual Plate Check Valve PN 1.0 (For Common Header)	1	No.	-	-

7.1	SS Expansion Bellows a) Providing and supplying corrugated design stainless steel Expansion bellows with flanges, 15mm axial movement, 300mm overall length with tie rods, nuts etc. of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete Tender Specifications; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 250 mm dia Expansion Bellow PN 1.0 (For Discharge Line)	3	No.	-	-
7.2	SS Expansion Bellows - As Above for 350 mm dia SS Expansion Bellow PN 1.0 (For Common Header)	1	No.	-	-
8.0	a) Providing and supplying C. I. Temper proof Air valves with SS 304 Float gun metal- nozzle of approved make & quality of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. as per detailed tender specification b) Lowering, laying and jointing in position following C.I./ D/F Air valves including cost of all labour, jointing material, including nuts bolts and giving satisfactory hydraulic testing, etc. complete 100 mm dia PN 1.0 (At common header)	1	No.	-	-
9.0	S.I.T.C. of bourdon type glycerine filled 150 mm Ø Pressure Guage complete with syphon tube with isolating cock having range of 0 to 20 kg/cm ² as per IS:8793. (For Discharge + Common Header)	4	Nos.	-	-
10.0	SITC of 350 mm Full Bore Electro-magnetic Flow meter (for Common Header) Providing, supply, installation, teasting and commissioning of Full Bore Electromagnetic flow meter with factory callbrated, IP-68, Battery operated, flanged connection, Flow sensor, Indicator, transmitter and totaliser with all accessories viz. power and Control cables upto starter panel, cabinets, hardwares, etc completed as per following specifications: a) Flow Sensor: neoprence/Polyurethane llining. DC pulsed, ss 316 electrodedds, CS / SS 316 flanges, Fully welded / SS 304 sensor construction & housing	1	No.	-	-
11.0	S.I.T.C. of Single girder type fully electrically operated EOT crane with electrically operated hoist class II duty geared travelling trolly with seven mtr. lift complete with long travel rail track (40 mm sq.bar) moving or cross girder, all three motions electrically operated by suitable rating motor IP 54, control panel & down pendant control block, brake , safety device, cable from motor to starter pannel & other required accessories & tested to 50% overload etc. comp. as per site requirement - 1.0 T capacity	1	No.	-	-
12.0	Drain Pump set- Providing the erecting approved make horizontal moNo submersible pump set having flow rate 10m3/hr & 10 meters head with suitable motor working on three phase 50 Hz , 415 v + 10 %, with DOL starter, cable, GI medium duty delivery pipes, specials, suction strainer etc. complete set.M.O.C. - Impeller - Bronze, casting- C.I., Shaft- carbon steel.	1	No.	-	-
13.0	TOOLS:- Designing, engineering, supplying, construction, Installation,Testing & commissioning of Measuring instruments & Tools as per detailed specifications. (Hand over to Engineering Incharge)	1	No.	-	-
14.0	Supply Installation Testing & Commissioning of Full Vacuum Operated Gaseous Chlorination System (5 kg/hr), Auto Shut off Valve with Chlorine leak Absorption System	1	No.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1.0	Schedule 10.0 Mechanical Works for Vadiwadi Headworks - Supply Installation Testing & Commissioning of Submerged Centrifugal Pumpsets (Water immersed, dry air filled, class f insulated TEWC motor integrally mounted on volute casing pumpsets for water duty) 3 phase,50 Hz +/-3%,415 V +/-10% along with suitable foundation /installation device and 10 Mtr cable of following material of construction Impeller : SS:CF8M; Casing(Volute) : C.I., Shaft: AISI SS410, Wearing Ring : SS:CF8M, Discharge : 354 m³/hr. Head : 34 mtr. Motor Rating : 45 KW Min. Efficiency : 83% (2W + 1S)	3	Set	-	-
2.1	Manufacture supply and delivery, lowering & laying of submerged arc welded M.S pipe out side coated with best quality Bituminous Paint with Epoxy coating to inside pipeline with two parts of Solvent free high build liquid epoxy lining as per AWWA C210-07 suitable for portable water application & shall be approved by CFTRI India/BS 6920-UK/international standard/NSF/ANSI/-61 2004 to be fit for contact with portable water for human consumption with 406 micron thickness, having a beveled ends plate and coil conforming to is 3589-2001 or its latest revision/ammendment for following thickness including all taxes , insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to Departmental stores/ site, stacking, etc. including specials and wastage etc.; complete Tender Specifications: 323.9 mm (OD) 5.6 mm thick O/S Bithuminous painted M.S pipe (For Discharge Line)	18	mtr.	-	-
2.2	406.4 mm (OD) 6.3 mm thick O/S Bithuminous painted M.S pipe (For Common Header)	6	mtr.	-	-
3.0	Providing and supplying ISI mark G. I. pipes with Couplings of following class and Diameter and including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading conveyance to site, stacking etc. complete. (IS -1239/1990). 100 mm Dia GI Heavy Duty Pipe (For By-Pass line)	12	Mts.	-	-
4.1	M.S. specials plain/ Flanged ended Erection, Installation, Testing & Commissioning of M.S. Specials for Delivery, By Pass & Header Piping with Flanges, eccentric Nozzles, Nut-Bolts, Y -tee connection etc. Complete. Up to 300mm dia	150	Kgs.	-	-
4.2	above 300mm dia	83	Kgs.	-	-
5.1	Sluice Valves a) Providing and supplying ISI mark CI D/F Sluice valves of approved makes & confirming to IS 14846 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 300 mm dia Sluice valve (with gear opreated) PD Type Short Body PN 1.0 (For Discharge Line)	3	No.	-	-
5.2	Sluice Valves - As Above for 100 mm dia Sluice valve (with hand wheel/ cap operator) PD Type Short Body PN 1.0 (For Bypass Line)	1	No.	-	-
5.3	Sluice Valves - As Above for 400 mm dia Sluice valve PN 1.0 (with gear opreated) PD Type Short Body PN (For Common header)	1	No.	-	-
6.1	Dual Plate Check Valve a) Providing and supplying Dual Plate Check Valve of approved make & confirming to API-594/598 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per Tender Specifications and instructions of Engineer in charge. 300 mm dia Dual Plate Check Valve PN 1.0 (For Discharge Line)	3	No.	-	-
6.2	Dual Plate Check Valve - As Above for 400 mm dia Dual Plate Check Valve PN 1.0 (For Common Header)	1	No.	-	-
7.1	SS Expansion Bellows a) Providing and supplying corrugated design stainless steel Expansion bellows with flanges, 15mm axial movement, 300mm overall length with tie rods, nuts etc. of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete Tender Specifications; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 300 mm dia Expansion Bellow PN 1.0 (For Discharge Line)	3	No.	-	-

7.2	SS Expansion Bellows - As Above for 400 mm dia SS Expansion Bellow PN 1.0 (For Common Header)	1	No.	-	-
8.1	a) Providing and supplying C. I. Temper proof Air valves with SS 304 Float gun metal- nozzle of approved make & quality of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. as per detailed tender specification b) Lowering, laying and jointing in position following C.I./ D/F Air valves including cost of all labour, jointing material, including nuts bolts and giving satisfactory hydraulic testing, etc. complete 100 mm dia PN 1.0 (At common header)	1	No.	-	-
8.2	S.I.T.C. of bourdon type glycerine filled 150 mm Ø Pressure Guage complete with syphon tube with isolating cock having range of 0 to 20 kg/cm ² as per IS:8793. (For Discharge + Common Header)	4	Nos.	-	-
9.0	SITC of 400 mm Full Bore Electro-magnetic Flow meter (for Common Header) Providing, supply, installation, teasting and commissioning of Full Bore Electromagnetic flow meter with factory callbrated, IP-68, Battery operated, flanged connection, Flow sensor, Indicator, transmitter and totaliser with all accessories viz. power and Control cables upto starter panel, cabinets, hardwares, etc completed as per following specifications: a) Flow Sensor: neoprence/Polyurethane lIning. DC pulsed, ss 316 electrodedds, CS / SS 316 flanges, Fully welded / SS 304 sensor construction & housing b) Flow transmitter / converter: Microprocessor based/Modular design/HART type 2 line back lit LCD for indication of actual flow rate, forward, reverse, sum totallser display, One current(4-20mA)/one scalable pulse / one statkus output, IP 67, Die cast alluminium with PU finish with glass window enclosre, 10 metres length sensor cable	1	No.	-	-
10.0	S.I.T.C. of Single girder type fully electrically operated EOT crane with electricallly operated hoist class II duty geared travelling trolly with seven mtr. lift complete with long travel rail track (40 mm sq.bar) moving or cross girder, all three motions electrically operated by suitable rating motor IP 54, control panel & down pendant control block, brake , safety device, cable from motor to starter pannel & other required accessories & tested to 50% overload etc. comp. as per site requirement - 1.0 T capacity	1	No.	-	-
11.0	Drain Pump set- Providing the erecting approved make horizontal moNo submersible pump set having flow rate 10m3/hr & 10 meters head with suitable motor working on three phase 50 Hz , 415 v + 10 % , with DOL starter, cable, GI medium duty delivery pipes, specials, suction strainer etc. complete set.M.O.C. - Impeller - Bronze, casting- C.I., Shaft- carbon steel.	1	No.	-	-
12.0	TOOLS:- Designing, engineering, supplying, construction, Installation,Testing & commissioning of Measuring instruments & Tools as per detailed specifications. (Hand over to Engineering Incharge)	1	No.	-	-
13.0	Supply Installation Testing & Commissioning of Full Vacuum Operated Gaseous Chlorination System (5 kg/hr), Auto Shut off Valve with Chlorine leak Absorption System	1	No.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 11.0 Mechanical Works for Akota Headworks -				
1.0	Supply Installation Testing & Commissioning of Submerged Centrifugal Pumpsets (Water immersed, dry air filled, class f insulated TEWC motor intergrally mounted on volute casing pumpsets for water duty) 3 phase,50 Hz +/-3%,415 V +/-10% along with suitable foundation /installation device and 10 Mtr cable of following meterial of construction Impeller : SS:CF8M; Casing(Volute) : C.I., Shaft: AISI SS410, Wearing Ring : SS:CF8M, Discharge : 339 m³/hr. Head : 35 mtr. Motor Rating : 45 KW Min. Efficiency : 83% (2W + 1S)	3	Set	-	-
2.1	Manufacture supply and delivery, lowering & laying of submerged arc welded M.S pipe out side coated with best quality Bituminous Paint with Epoxy coating to inside pipeline with two parts of Solvent free high build liquid epoxy lining as per AWWA C210-07 suitable for portable water application & shall be approved by CFTRI India/BS 6920-UK/international standard/NSF/ANSI/-61 2004 to be fit for contact with portable water for human consumption with 406 micron thickness, having a beveled ends plate and coil conforming to is 3589-2001 or its latest revision/ammendment for following thickness including all taxes , insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to Departmental stores/ site, stacking, etc. including specials and wastage etc.; complete Tender Specifications: 323.9 mm (OD) 5.6 mm thick O/S Bithuminous painted M.S pipe (For Discharge Line)	18	mtr.	-	-
2.2	406.4 mm (OD) 6.3 mm thick O/S Bithuminous painted M.S pipe (For Common Header)	6	mtr.	-	-
3.0	Providing and supplying ISI mark G. I. pipes with Couplings of following class and Diameter and including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading conveyance to site, stacking etc. complete. (IS -1239/1990). 100 mm Dia GI Heavy Duty Pipe (For By-Pass line)	12	Mts.	-	-
4.1	M.S. specials plain/ Flanged ended Erection, Installation, Testing & Commissioning of M.S. Specials for Delivery, By Pass & Header Piping with Flanges, eccentric Nozzles, Nut-Bolts, Y -tee connection etc. Complete. Up to 300mm dia	150	Kgs.	-	-
4.2	above 300mm dia	83	Kgs.	-	-
5.1	Sluice Valves a) Providing and supplying ISI mark CI D/F Sluice valves of approved makes & confirming to IS 14846 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 300 mm dia Sluice valve (with gear opreated) PD Type Short Body PN 1.0 (For Discharge Line)	3	No.	-	-
5.2	Sluice Valves - As Above for 100 mm dia Sluice valve (with hand wheel/ cap operator) PD Type Short Body PN 1.0 (For Bypass Line)	1	No.	-	-
5.3	Sluice Valves - As Above for 400 mm dia Sluice valve PN 1.0 (with gear opreated) PD Type Short Body PN (For Common header)	1	No.	-	-
6.1	Dual Plate Check Valve a) Providing and supplying Dual Plate Check Valve of approved make & confirming to API-594/598 and of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per Tender Specifications and instructions of Engineer in charge. 300 mm dia Dual Plate Check Valve PN 1.0 (For Discharge Line)	3	No.	-	-
6.2	Dual Plate Check Valve - As Above for 400 mm dia Dual Plate Check Valve PN 1.0 (For Common Header)	1	No.	-	-
7.1	SS Expansion Bellows a) Providing and supplying corrugated design stainless steel Expansion bellows with flanges, 15mm axial movement, 300mm overall length with tie rods, nuts etc. of following class and diameter; including all taxes, octroi, inspection charges, freight charges, insurance, loading, unloading, conveyance to departmental stores, stacking etc. complete Tender Specifications; and b) Lowering, laying and jointing in position including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete as per instructions of Engineer in charge. 300 mm dia Expansion Bellow PN 1.0 (For Discharge Line)	3	No.	-	-

7.2	SS Expansion Bellows - As Above for 400 mm dia SS Expansion Bellow PN 1.0 (For Common Header)	1	No.	-	-
8.0	a) Providing and supplying C. I. Temper proof Air valves with SS 304 Float gun metal- nozzle of approved make & quality of following class and diameter including all taxes, insurance, transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to departmental stores, stacking etc. complete. as per detailed tender specification b) Lowering, laying and jointing in position following C.I./ D/F Air valves including cost of all labour, jointing material, including nuts bolts and giving satisfactory hydraulic testing, etc. complete 100 mm dia PN 1.0 (At common header)	1	No.	-	-
9.0	S.I.T.C. of bourdon type glycerine filled 150 mm Ø Pressure Guage complete with syphon tube with isolating cock having range of 0 to 20 kg/cm ² as per IS:8793. (For Discharge + Common Header)	4	Nos.	-	-
10.0	SITC of 400 mm Full Bore Electro-magnetic Flow meter (for Common Header) Providing, supply, installation, teasting and commissioning of Full Bore Electromagnetic flow meter with factory callbrated, IP-68, Battery operated, flanged connection, Flow sensor, Indicator, transmitter and totaliser with all accessories viz. power and Control cables upto starter panel, cabinets, hardwares, etc completed as per following specifications: a) Flow Sensor: neoprence/Polyurethane llining. DC pulsed, ss 316 electrodedds, CS / SS 316 flanges, Fully welded / SS 304 sensor construction & housing b) Flow transmitter / converter: Microprocessor based/Modular design/HART type 2 line back lit LCD for indication of actual flow rate, forward, reverse, sum totallser display, One current(4-20mA)/one scalable pulse / one statkus output, IP 67, Die cast alluminium with PU finish with glass window enclousre, 10 metres length sensor cable	1	No.	-	-
11.0	S.I.T.C. of Single girder type fully electrically operated EOT crane with electricallly operated hoist class II duty geared travelling trolly with seven mtr. lift complete with long travel rail track (40 mm sq.bar) moving or cross girder, all three motions electrically operated by suitable rating motor IP 54, control panel & down pendant control block, brake , safety device, cable from motor to starter pannel & other required accessories & tested to 50% overload etc. comp. as per site requirement - 1.0 T capacity	1	No.	-	-
12.0	Drain Pump set- Providing the erecting approved make horizontal moNo submersible pump set having flow rate 10m3/hr & 10 meters head with suitable motor working on three phase 50 Hz , 415 v + 10 % , with DOL starter, cable, GI medium duty delivery pipes, specials, suction strainer etc. complete set.M.O.C. - Impeller - Bronze, casting- C.I., Shaft- carbon steel.	1	No.	-	-
13.0	TOOLS:- Designing, engineering, supplying, construction, Installation,Testing & commissioning of Measuring instruments & Tools as per detailed specifications. (Hand over to Engineering Incharge)	1	No.	-	-
14.0	Supply Installation Testing & Commissioning of Full Vacuum Operated Gaseous Chlorination System (5 kg/hr), Auto Shut off Valve with Chlorine leak Absorption System	1	No.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Total Tender Rate (Upto 2 Decimals)	Amount (In Rs)
1.0	Schedule 12.0 Electrical Works for Sayaji Baug Headworks - 11 KV D.P. STRUCTURE (9 m high) S.I.T.C. of 11 KV two pole 9 mtr high structure made of 6"x 3" "I" -section girder, 4" x 2" channels, Clamps, nuts, bolts, etc. suitable for the erection of the following necessary ACSR conductors as per drawing approved by the Engineer-in-charge complete with following. a) 11 KV 200 Amps. Drop out fuses with S.R.B.P. tubes carries - 3 Nos. b) 11 KV G.O.D. switch complete with insulators, operating handle with galvenised pipe, sq.bar etc.400 A - 1 set. c) 11 KV lighting arrestor with clamp - 3 Nos. d) 11 KV shackle insulators - 6 Nos. e) 25 mm x 3 mm thick double copper / GI earth strips in two parallel runs in required quantity i.e. from LA to earthing chamber including S.I.T.C. of 2 Nos. funnel type earthing having earth plate of following size buried in specially prepared earth pit of required mtr. below ground with 40kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI Pipe with funnel with wire mesh for watering and brick masonry block and CI cover complete as per para 7.3 of IS: 3043 with necessary length of double G.I./ copper earth wire no. 6 swg bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr. long complete connected to the required point of DP with end socket as per direction and duly tested by earth tester conforming to IS as per drawing & specifications complete with 300 x 300 x 3.15 mm CI earth plate complete.	1	set	-	-
2.0	Wire fencing (For DP Structure & Transformer Yard): Providing and fixing 2.0 mtr. high Wire Fencing with 2.8 Mtr. long M.S. angle posts 40mm X 40mm X 6mm and oil painting 3 coats fixed at 2.5 Mtr. C/C with eight Horizontal line & two diagonals of galvanized steel barbed wire weighting 9.38 Kg./ 100 Mtr. strained including fixing the posts in ground with 0.5 Mtr. X 0.5 Mtr. block in cement concrete 1:5:10 etc. including laying of best quality gravel bed of suitable size inside wire fencing in switchyard.	1	Lot	-	-
3.0	M.S. Gate (For DP Structure & Transformer Yard): Providing and fixing M.S. gate made from M.S. angles, channels and flats including all labour and material cost with painting and fixing at site of work including carting, loading, unloading etc. complete with M.S. Gate 1 Mtr. x 2 Mtr. in structural steel.	180	Kg	-	-
4.0	11 KV Grade HV Cable/ ACSR Conductor (As per site Condition): S.I.T.C. of XLPE insulated 11 kV(E) grade, galvanised steel flat strip armoured, stranded compact circular Aluminium conductor screened with extruded semi conducting compound, insulating screening with extruded semi conducting compound in combination with copper tape, PVC tape inner sheathed, cores laid ap, overall PVC sheathed as per IS: 7098 (Part-II)-1985 with its latest amendment etc. complete to be laid suitably as per site requirement. 3C x 240 sq.mm A2XFY (From 11 kV D.P. Structure to Transformers)	100	RM	-	-
5.0	11 kV Outdoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) outdoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	No.	-	-
6.0	11 kV Indoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) Indoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	Nos.	-	-
7.0	160 kVA Distribution Transformer (with off circuit tap changer -10% to +5% in steps of 2.5%): S.I.T.C. of Distribution Transformer with no load voltage ratio 11/0.433 KV, continuously rated for 3 Ph, 50 Hz, Out door / Indoor type, ONAN cooled, copper double wound, core type, vector group Dyn11, HV delta connected and LT star connected, off circuit tap changer -10% to +5% in steps of 2.5%, oil immersed winding with temperature rise in oil/ winding 40/ 45 deg. C above ambient temperature with neutral brought out connected to provide separate earthing including terminal arrangement bushing / cable box on HV side and LT side suitable for Cable box or bus duct, complete with first fill of oil along with the following accessories with required size of cement concrete pedestal as per detail specification. Transformer impedance (with +/- tolerances), losses & routine test @ factory shall be as per IS: 1180 (Part-1)-2014 with its latest amendment, technical data sheet & contract specifications. a) Oil conservator with filling holes with cap and plain oil level gauge. b) Silica gel dehydrating breather charged with silica gel c) Oil drain/ sampling valve d) Oil filter valve e) Lifting eyes/ hooks/ Lugs f) Two earthing terminal g) Diagram and rating plate h) Air release plug i) Explosion vent with diaphragm j) Thermometer pocket k) Four bi-directional plain roller with base channel with hauling holes l) Fixed/ Seperate type radiator banks m) Off circuit externally operated tapping switch (For rating < 1000 kVA) n) 100 mm stem type oil temperature indicator (For rating < 500 kVA) o) Bucholtz relay with shut off valve (For rating ≥ 500 KVA) p) 150 mm dial type oil temperature indicator with Alarm / Trip contact (For rating ≥ 500 kVA) q) 150 mm dial type winding temperature indicator with Alram / Tip contact (For rating ≥ 1000 kVA) r) Marshalling box (For rating ≥ 500 kVA)	1	Nos.	-	-

8.0	415V LVDB Panel/ PCC: Location- Main Electrical Room S.I.T.C. of LVDB Panel/ PCC (Indoor) totally enclosed type as per IS: 2147, Operation on 3-Phase, 415V, 50Hz, Neutral effectively grounded, IP-52, with instrumentation compartments accommodating LED type indicating lamps, power & control contactors as per IS: 13947, CT of accuracy class- I as per IS: 2705, Relays & control fuses, air insulated electrolyte grade Aluminum busbar for three phase & neutral system with microprocessor based air circuit breakers, microprocessor based/ air break fixed type MCCB with trip free mechanism, current limiting type, MCB as per IS/IEC 60898-2:2003, suitable rating outgoing feeders as per design & SLD drawings, digital type metering instruments, momentary contact type push buttons, equipment fittings, bus bars, cable alleys, cable gland, incoming & outgoing cable connection chamber suitable for 1100V grade, Al./ Cu. conductor PVC insulated & PVC sheathed armoured cable, 10% spare terminals, power wiring use of 650/ 1100V grade, FRLS insulated copper conductor wires conforming to IS: 694 & 8130, cable compartments of minimum 300 mm size, Aluminium earth bus bar for entire length as per SLD, detail specifications & data sheet including required testing @ factory as per applicable IS/ IEC standards. LVDB/ PCC Panel shall be comprising of; (a) 2 Nos. Incomer with 1 nos. bus coupler (One for DG) each with approved Make 4 Pole, Microprocessor based rating upto 250A MCCB with (O/C, S/C & E/F release) having breaking capacity Icu of 50kA at 415V, 50 Hz with all internal connections. (b) 3 Nos. of Fully automatic Microprocessor based Soft Starter for 37kW pumps with built in bypass terminal for pump control application with control method: Torque control, Input Voltage: 3 Phase 415 V (+/-10%), Input Frequency: 50 Hz (+/-5%), Confirmative to Standard IEC 947-4-2-III, CSA CF, Inbuilt motor thermal protection.	1	Nos.	-	-
9.0	POWER DISTRIBUTION BOARD: Location- Main Electrical Room Providing and erecting Power Distribution Board made of sheet steel powder coated, surface mounted fitted with busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 comprising one Incomer with MCCB and required outgoing with MCBs as follows; (a) 1 No. incomer with 100A FP MCCB (O/L+S/C+E/F) for lighting & inductive load having 25kA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 3 Nos Outgoing each with 63A FP MCB for Power/welding receptacles & Aux loads (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (c) 3 Nos Outgoing each with 32A FP MCB for indoor lighting & aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003. (d) 6 Nos Outgoing each with 6-32A SP MCB for 230V aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003. (e) Control Transformer of 1000VA, 415/230V AC for I&C Loads.	1	No.	-	-
10.0	APFC PANEL: Location - Main Electrical Room S.I.T.C. of APFC panel consisting capacitor bank for continuous duty to improve P.F. 0.85 to 0.99 with dust proof busbar chamber having 2 mm thick sheet steel & earth terminals with painting, enclosure with capacitor unit having 2 Nos., 10 mm earth terminals & two externals, three phase busbar of Cu. supported on epoxy insulators of adequate rating & strips, minimum 10 steps of APFC relay, meters, indicating lamps as mentioned under. 50-100 KVAR APFCR panel for each item shall include following : (a) Suitable rating MCCB in incomer (b) Analog Ammeter of 96x96 size with selector switch of suitable range (c) Three nos. of 15VA, CL-1 Current transformers (d) Suitable Rating MCCB for each outgoing feeders. (e) Suitable rating contactors with KVAR Banks (APP type) of approved make as per requirement.	1	No.	-	-
11.0	LIGHTING DISTRIBUTION BOARD (Indoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCBs as follows. (a) 1 No. incomer with 63A FP MCB + ELCB for lighting & inductive load (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 6 No. Outgoing each with 6-32A SP MCB suitable to operate on 240 V AC System and short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.	1	No.	-	-
12.0	LIGHTING DISTRIBUTION BOARD (Outdoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCBs as follows. (a) 1 No. incomer with 63A FP MCB + ELCB with built in 24hrs astronomical timer with 4 Pole contactor for lighting & inductive load (C Curve) MCB having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 4 No. Outgoing each with 6-32A FP MCB with short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.	1	No.	-	-
13.0	Power/ Welding Receptacle: (one for Electrical room/Transformer Area, One for Pump House) S.I.T.C. Of Approved make industrial type 63 A TPN (3P+N+E) Wall mounted with isolating switch conforming to IP-67.	2	Nos.	-	-
14.1	1100V Grade LV Cables: S.I.T.C. of XLPE insulated, 1100V grade, Galvanised steel wire / strip armoured, stranded Aluminum/Copper conductor, PVC tape inner sheathed, cores laid up, Extruded PVC type ST2 sheathed cables as per IS 7098 (Part-I) 1985 of following core & size to be laid on wall with necessary clamps / in cable trench / on cable trays / conduit pipe as per site requirement. 3.5 C x 95 Sq. mm A2XFY (From supply point to 415V LVDB/PCC & from DG AMF panel to 415V LVDB/PCC)	125	mtr.	-	-
14.2	3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to PDB/SDB & APFC Panel)	50	mtr.	-	-
14.3	3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	250	mtr.	-	-
14.4	4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	150	mtr.	-	-
14.5	3.5C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	300	mtr.	-	-
14.6	4C x 2.5 Sq. mm 2YWY (For small misc. loads)	200	mtr.	-	-
15.1	Cable Glands/Terminations: S.I.T.C. of heavy duty flange type brass cable glands with rubber rings for suitable size PVC armoured cable complete with outgoing tails, insulating type etc. for following size of cables. 3.5 C x 95 Sq. mm A2XFY (From Incomer to 415V LVDB/PCC)	4	Each	-	-
15.2	3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to Pump Motor Starter Panel, PDB/SDB & APFC Panel)	16	Each	-	-
15.3	3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	12	Each	-	-
15.4	4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	12	Each	-	-
15.5	3.5C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	6	Each	-	-
15.6	4C x 2.5 Sq. mm 2YWY (For small misc. loads)	4	Each	-	-

16.1	Cable Trays & Accessories: Supply, Installation, fabrication, testing & commissioning of G.I ladder type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 450mm wide (channel size 75x15x2 mm & runner size 35x15x2 mm)	250	RM	-	-
16.2	Supply, Installation, fabrication, testing & commissioning of G.I perforated type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 150mm wide x 35mm x 2 mm thick	100	RM	-	-
17	Indoor & Outdoor Lighting & Ventilation System: Design, supply, erection, testing and commissioning of suitable general lighting arrangement for pump house, electrical room, including required lighting fixtures, fittings, point wiring, distribution box, street lighting poles with junction box, exhaust fan etc. with complete job. (a) Point Wiring for light/fan/Bell/Primary point with 2-1.0 sqmm & earthwire of 1.0 Sqm.mm (green) both are of ISI marked for PVC insulated multistrand copper wire, in pipe duly erected, complete with 6A Tinsino Type ISI marked flush type switch/ bell push and accessories erected on polished wooden block/ Metal. PVC box covered with 3 mm thick laminated sheet for concealed wiring as per specification.- 20 Pt. (b) 40W LED Fixtures and associated fittings for Electrical/ Switchgear/ Control/ Office Room & Pump room - 12 Nos. (c) 70W LED lighting fixture with 7.5m Swaged pole with all necessary fittings for outdoor application (For Roads, area Lighting)- 6 Nos. (d) 70W LED lighting fixture with all necessary fittings for outdoor application (For building periphery of Electrical Switchgear Room)- 4 Nos. (e) 15W LED lighting fixture with all necessary fittings for indoor application (For Toilet, building entry point etc.)- 2 Nos. (f) Supplying and fixing of the ceiling fans of approved make for electrical/Control room with 1200mm sweep, white color double ball bearing, 300mm long down rod. Electronic type approved make regulator and accessories	1	Lot	-	-
18.1	Earthing & Lightning Protection System: S.I.T.C. of earth pit of minimum bore dia 150 mm size aproved make Safe Earthing Electrode consisting pipe-in pipe Technology made of corrosion free GI Pipe having outer pipe dia of 50 mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising connection terminal dia. of 12 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications. For Electrical installation covering Transformers, Motors/ Starters, LV MCC Panel, PDB/ SDB & Lightning Protection System, DG Body i.e. independent earthing in normal soil with Length of Pipe 3.00 mtr. & Back filling compound - 2 No. Bag of 25Kg each.	10	Nos.	-	-
18.2	S.I.T.C. of funnel type Earthing having earth plate of following size buried in specially prepared earth pit 3.0 mtr below ground with 40.0 kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI pipe with funnel with wire mesh for watering and brick massonary block and C.I. cover complete as per para 7.3 of IS: 3043 with necessary length of Cu. strip/ flat 25x6mm bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr long complete connected to the nearest switch gear with end socket as per direction and duly tested by earth tester confirming to IS as per drawing with following specifications. complete with 60 x 60 x 0.315 cm Copper earth plate (2 for Transformer neutrals & 2 for DG neutral)	4	Nos.	-	-
18.3	Providing and Erecting required size of GI strip for earthing of electrical equipment i.e. Transformers body, DG Body, Starter/ Motors, LV PMCC Panel, PDB/ LDB, Cable trays etc.	500	Kg	-	-
18.4	Providing and Erecting required size of copper strip for earthing of electrical equipment i.e. Transformer Neutral.	250	Kg	-	-
18.5	Providing & erecting Hot dip Galvanised strip/ iron wire 8 to 16 SWG for Aux. DB, Outdoor Lighting Poles & LPBS etc.	200	Kg	-	-
19	Fire & Safety Equipments: Design, supply, erection, testing and commissioning of safety accessories for all electrical equipment/ system. (a) Supply 6.00 mm thick Rubber Mat for LV of required length and breath.- 25 Sq.Mtr (b) Providing printed Instruction Chart both in English and Gujarati and duly framed with front glasses for treatment of person suffering from electric shock.- 2 no. (c) Supplying standard First Aid Box with all the standard contents- 2 No. (d) Fire Bucket with 9 Litre Capacity- 4 Nos. (e) Fire Bucket Stand- 1 No. (f) Fire Extinguisher (CO2 Type)- 4 Nos. (2 in Electrical Room & 2 in Pump Room) (g) 11kV Rubber Hand Gloves- 1 Pair	1	Lot	-	-
20.0	SITC of 11 kV Single circuit Overhead line on RSJ Pole including Security Deposit,demand charges metering equipment & other charges etc.	1	LS	-	-
21	Generating Sets Supplying and erecting, commissioning and testing diesel generating set having continuous rating, 3 phase, 415 volts, 50 cycles A.C. supply comprising of a totally enclosed air/water cooled diesel engine with multi-cylinders developing suitable BHP not less than following capacity at 1500 RPM with 10% overload for one hour in 24 hours with standard accessories like fly wheel, lubricating oil cooler, "A" class governor, heavy duty fuel wheel and lubricating oil filter, oil bath air filler, lubricating oil pressure gauge, end exhaust manifold, standard set of tools with adjustable spanners, screw drivers, feeder gauge, cylinder head to cover, joint cylinder head to exhaust, element lube oil filter, 12/24 volts electric starting equipment complete with standard battery, dynamo, cut-outs, ammeter, necessary wiring, pressure gauge, starter etc and heavy duty Residential type exhaust silencer and vertical hot air duct both logged with asbestos rope, save oil trays, exhaust piping of required length, standard wall/floor mounted fuel with level indicator and piping and drip proof alternator, self excited, self regulated, screen protected, with excitation system, capable of delivering the rated system output at 415 volts, 3 phase, 0.8 PF, 50 Hz, 4 wire, running at 1500 RPM, conforming to IS-4722- 1968 with voltage regulation +/- 5% of rated voltage from no load to full load. Both the engine and alternator fitted on a common fabricated steel base	1	Nos.	-	-
22	AMF Control Panel Providing & erecting approved make AMF control panel suitable for following size of 3 phase, 415 V., 50 cycles, A.C. diesel generating set complete of scope as detailed below: 1) Power module: A pair of electromechanically interlocked contactors (for mains & generator) Overload relay for generator contactor Neutral contactor for mains and generator Power socket for connections. 2) Control and metering module: Line voltage monitor. Generator voltage monitor Ammeter 3 items attempt start facility. Air circuit breakers/MCB/MCCB of suitable rating for auto/manual operation. Auto/manual switch. Emergency stop push buttons. Manual start push button. frequency meter. Engine hour meter. Two earthing studs. 3) Protection module: The engine shutdown in the unlikely event of Low lube oil pressure High cylinder head temperature. V belt failure. 4) Indicators with alarm Load on generator. 5) Indicators Load on mains Engine fails to start . Emergency stop battery charger. The AMF Panel of following capacity AMF Control Panel for 140KVA 3 phase DG Set	1	Nos.	-	-

23	<p><u>Acoustic enclosure (Canopy)</u> Supplying and erecting Acoustic enclosure (canopy) made out of 18 SWG, CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 The resin bonded Rockwool covered from inside level not more than 75 dB at a distance of 1 mtr, as PVCT norms , on provided foundation suitable for following size of DG Set. The enclosures for following capacity of DG sets.</p> <p>For 75 KVA to 82.5 KVA, 100/125/140 KVA DG Set</p>	1	Nos.	-	-
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Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Total Tender Rate (Upto 2 Decimals)	Amount (In Rs)
	Schedule 13.0 Electrical Works for Vadiwadi Headworks -				
1.0	11 KV D.P. STRUCTURE (9 m high) S.I.T.C. of 11 KV two pole 9 mtr high structure made of 6"x 3" "I" -section girder, 4" x 2" channels, Clamps, nuts, bolts, etc. suitable for the erection of the following necessary ACSR conductors as per drawing approved by the Engineer-in-charge complete with following. a) 11 KV 200 Amps. Drop out fuses with S.R.B.P. tubes carries - 3 Nos. b) 11 KV G.O.D. switch complete with insulators, operating handle with galvenised pipe, sq.bar etc. 400 A - 1 set. c) 11 KV lighting arrestor with clamp - 3 Nos. d) 11 KV shackle insulators - 6 Nos. e) 25 mm x 3 mm thick double copper / GI earth strips in two parallel runs in required quantity i.e. from LA to earthing chamber including S.I.T.C. of 2 Nos. funnel type earthing having earth plate of following size buried in specially prepared earth pit of required mtr. below ground with 40kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI Pipe with funnel with wire mesh for watering and brick masonry block and CI cover complete as per para 7.3 of IS: 3043 with necessary length of double G.I./ copper earth wire no. 6 swg bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr. long complete connected to the required point of DP with end socket as per direction and duly tested by earth tester conforming to IS as per drawing & specifications complete with 300 x 300 x 3.15 mm CI earth plate complete.	1	set	-	-
2.0	Wire fencing (For DP Structure & Transformer Yard): Providing and fixing 2.0 mtr. high Wire Fencing with 2.8 Mtr. long M.S. angle posts 40mm X 40mm X 6mm and oil painting 3 coats fixed at 2.5 Mtr. C/C with eight Horizontal line & two diagonals of galvanized steel barbed wire weighting 9.38 Kg./ 100 Mtr. strained including fixing the posts in ground with 0.5 Mtr. X 0.5 Mtr. X 0.5 Mtr. block in cement concrete 1:5:10 etc. including laying of best quality gravel bed of suitable size inside wire fencing in switchyard.	1	Lot	-	-
3.0	M.S. Gate (For DP Structure & Transformer Yard): Providing and fixing M.S. gate made from M.S. angles, channels and flats including all labour and material cost with painting and fixing at site of work including carting, loading, unloading etc. complete with M.S. Gate 1 Mtr. x 2 Mtr. in structural steel.	180	Kg	-	-
4.0	11 KV Grade HV Cable/ ACSR Conductor (As per site Condition): S.I.T.C. of XLPE insulated 11 kV(E) grade, galvanised steel flat strip armoured, stranded compact circular Aluminium conductor screened with extruded semi conducting compound, insulating screening with extruded semi conducting compound in combination with copper tape, PVC tape inner sheathed, cores laid ap, overall PVC sheathed as per IS: 7098 (Part-II)-1985 with its latest amendment etc. complete to be laid suitably as per site requirement. 3C x 240 sq.mm A2XFY (From 11 kV D.P. Structure to Transformers)	100	RM	-	-
5.0	11 kV Outdoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) outdoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	No.	-	-
6.0	11 kV Indoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) Indoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	Nos.	-	-
7.0	250 kVA Distribution Transformer (with off circuit tap changer -10% to +5% in steps of 2.5%): S.I.T.C. of Distribution Transformer with no load voltage ratio 11/0.433 KV, continuously rated for 3 Ph, 50 Hz, Out door / Indoor type, ONAN cooled, copper double wound, core type, vector group Dyn11, HV delta connected and LT star connected, off circuit tap changer -10% to +5% in steps of 2.5%, oil immersed winding with temperature rise in oil/ winding 40/ 45 deg. C above ambient temperature with neutral brought out connected to provide separate earthing including terminal arrangement bushing / cable box on HV side and LT side suitable for Cable box or bus duct, complete with first fill of oil along with the following accessories with required size of cement concrete pedestal as per detail specification. Transformer impedance (with +/- tolerances), losses & routine test @ factory shall be as per IS: 1180 (Part-1)-2014 with its latest amendment, technical data sheet & contract specifications. a) Oil conservator with filling holes with cap and plain oil level gauge. b) Silica gel dehydrating breather charged with silica gel c) Oil drain/ sampling valve d) Oil filter valve e) Lifting eyes/ hooks/ Lugs f) Two earthing terminal g) Diagram and rating plate h) Air release plug i) Explosion vent with diaphragm j) Thermometer pocket k) Four bi-directional plain roller with base channel with hauling holes l) Fixed/ Seperate type radiator banks m) Off circuit externally operated tapping switch (For rating < 1000 kVA) n) 100 mm stem type oil temperature indicator (For rating < 500 kVA) o) Bucholtz relay with shut off valve (For rating ≥ 500 KVA) p) 150 mm dial type oil temperature indicator with Alarm / Trip contact (For rating ≥ 500 kVA) q) 150 mm dial type winding temperature indicator with Alarm / Trip contact (For rating ≥ 1000 kVA) r) Marshalling box (For rating ≥ 500 kVA)	1	Nos.	-	-

8.0	<p>415V LVDB Panel/ PCC: Location- Main Electrical Room S.I.T.C. of LVDB Panel/ PCC (Indoor) totally enclosed type as per IS: 2147, Operation on 3-Phase, 415V, 50Hz, Neutral effectively grounded, IP-52, with instrumentation compartments accommodating LED type indicating lamps, power & control contactors as per IS: 13947, CT of accuracy class- I as per IS: 2705, Relays & control fuses, air insulated electrolyte grade Aluminum busbar for three phase & neutral system with microprocessor based air circuit breakers, microprocessor based/ air break fixed type MCCB with trip free mechanism, current limiting type, MCB as per IS/IEC 60898-2:2003, suitable rating outgoing feeders as per design & SLD drawings, digital type metering instruments, momentary contact type push buttons, equipment fittings, bus bars, cable alleys, cable gland, incoming & outgoing cable connection chamber suitable for 1100V grade, Al/ Cu. conductor PVC insulated & PVC sheathed armoured cable, 10% spare terminals, power wiring use of 650/ 1100V grade, FRLS insulated copper conductor wires conforming to IS: 694 & 8130, cable compartments of minimum 300 mm size, Aluminium earth bus bar for entire length as per SLD, detail specifications & data sheet including required testing @ factory as per applicable IS/ IEC standards. LVDB/ PCC Panel shall be comprising of;</p> <p>(a) 2 Nos. Incomer with 1 nos. bus coupler (One for DG) each with approved Make 4 Pole, Microprocessor based rating upto 250A MCCB with (O/C, S/C & E/F release) having breaking capacity Icu of 50kA at 415V, 50 Hz with all internal connections.</p> <p>(b) 3 Nos. of Fully automatic Microprocessor based Soft Starter for 45kW pumps with built in bypass terminal for pump control application with control method: Torque control. Input Voltage: 3 Phase 415 V (+/- 10%)</p>	1	Nos.	-	-
9.0	<p>POWER DISTRIBUTION BOARD: Location- Main Electrical Room Providing and erecting Power Distribution Board made of sheet steel powder coated, surface mounted fitted with busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 comprising one Incomer with MCCB and required outgoing with MCBs as follows;</p> <p>(a) 1 No. incomer with 100A FP MCCB (O/L+S/C+E/F) for lighting & inductive load having 25kA breaking capacity & conforming to IS/IEC 60898-2:2003.</p> <p>(b) 3 Nos Outgoing each with 63A FP MCB for Power/welding receptacles & Aux loads (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003.</p> <p>(c) 3 Nos Outgoing each with 32A FP MCB for indoor lighting & aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.</p> <p>(d) 6 Nos Outgoing each with 6-32A SP MCB for 230V aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.</p> <p>(e) Control Transformer of 1000VA, 415/230V AC for I&C Loads.</p>	1	No.	-	-
10.0	<p>APFC PANEL: Location - Main Electrical Room S.I.T.C. of APFC panel consisting capacitor bank for continuous duty to improve P.F. 0.85 to 0.99 with dust proof busbar chamber having 2 mm thick sheet steel & earth terminals with painting, enclosure with capacitor unit having 2 Nos., 10 mm earth terminals & two externals, three phase busbar of Cu. supported on epoxy insulators of adequate rating & strips, minimum 10 steps of APFC relay, meters, indicating lamps as mentioned under.</p> <p>50-100 KVAR APFCR panel for each item shall include following :</p> <p>(a) Suitable rating MCCB in incomer</p> <p>(b) Analog Ammeter of 96x96 size with selector switch of suitable range</p> <p>(c) Three nos. of 15VA, CL-1 Current transformers</p> <p>(d) Suitable Rating MCCB for each outgoing feeders.</p> <p>(e) Suitable rating contactors with KVAR Banks (APP type) of approved make as per requirement.</p>	1	No.	-	-
11.0	<p>LIGHTING DISTRIBUTION BOARD (Indoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCBs as follows.</p> <p>(a) 1 No. incomer with 63A FP MCB + ELCB for lighting & inductive load (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003.</p> <p>(b) 6 No. Outgoing each with 6-32A SP MCB suitable to operate on 240 V AC System and short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.</p>	1	No.	-	-
12.0	<p>LIGHTING DISTRIBUTION BOARD (Outdoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCBs as follows.</p> <p>(a) 1 No. incomer with 63A FP MCB + ELCB with built in 24hrs astronomical timer with 4 Pole contactor for lighting & inductive load (C Curve) MCB having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003.</p> <p>(b) 4 No. Outgoing each with 6-32A FP MCB with short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.</p>	1	No.	-	-
13.0	<p>Power/ Welding Receptacle: (one for Electrical room/Transformer Area, One for Pump House) S.I.T.C. Of Approved make industrial type 63 A TPN (3P+N+E) Wall mounted with isolating switch conforming to IP-67.</p>	2	Nos.	-	-
14.1	<p>1100V Grade LV Cables: S.I.T.C. of XLPE insulated, 1100V grade, Galvanised steel wire / strip armoured, stranded Aluminum/Copper conductor, PVC tape inner sheathed, cores laid up, Extruded PVC type ST2 sheathed cables as per IS 7098 (Part-I) 1985 of following core & size to be laid on wall with necessary clamps / in cable trench / on cable trays / conduit pipe as per site requirement.</p> <p>3.5 C x 95 Sq. mm A2XFY (From supply point to 415V LVDB/PCC & from DG AMF panel to 415V LVDB/PCC)</p>	125	mtr.	-	-
14.2	3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to PDB/SDB & APFC Panel)	50	mtr.	-	-
14.3	3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	250	mtr.	-	-
14.4	4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	150	mtr.	-	-
14.5	3.5C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	300	mtr.	-	-
14.6	4C x 2.5 Sq. mm 2YWY (For small misc. loads)	200	mtr.	-	-
15.1	<p>Cable Glands/Terminations: S.I.T.C. of heavy duty flange type brass cable glands with rubber rings for suitable size PVC armoured cable complete with outgoing tails, insulating type etc. for following size of cables.</p> <p>3.5 C x 95 Sq. mm A2XFY (From Incomer to 415V LVDB/PCC)</p>	4	Each	-	-
15.2	3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to Pump Motor Starter Panel, PDB/SDB & APFC Panel)	16	Each	-	-
15.3	3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	12	Each	-	-
15.4	4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	12	Each	-	-
15.5	3.5C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	6	Each	-	-
15.6	4C x 2.5 Sq. mm 2YWY (For small misc. loads)	4	Each	-	-

16.1	Cable Trays & Accessories: Supply, Installation, fabrication, testing & commissioning of G.I ladder type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 450mm wide (channel size 75x15x2 mm & runner size 35x15x2 mm)	250	RM	-	-
16.2	Supply, Installation, fabrication, testing & commissioning of G.I perforated type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 150mm wide x 35mm x 2 mm thick	100	RM	-	-
17.0	Indoor & Outdoor Lighting & Ventilation System: Design, supply, erection, testing and commissioning of suitable general lighting arrangement for pump house, electrical room, including required lighting fixtures, fittings, point wiring, distribution box, street lighting poles with junction box, exhaust fan etc. with complete job. (a) Point Wiring for light/fan/Bell/Primary point with 2-1.0 sqmm & earthwire of 1.0 Sqm.mm (green) both are of ISI marked for PVC insulated multistrand copper wire, in pipe duly erected, complete with 6A Tisino Type ISI marked flush type switch/ bell push and accessories erected on polished wooden block/ Metal. PVC box covered with 3 mm thick laminated sheet for concealed wiring as per specification.- 20 Pt. (b) 40W LED Fixtures and associated fittings for Electrical/ Switchgear/ Control/ Office Room - 10 Nos. (c) 70W LED lighting fixture with 7.5m Swaged pole with all necessary fittings for outdoor application (For Roads, area Lighting)- 6 Nos. (d) 70W LED lighting fixture with all necessary fittings for outdoor application (For building periphery of Electrical Switchgear Room)- 4 Nos. (e) 15W LED lighting fixture with all necessary fittings for indoor application (For Toilet, building entry point etc.)- 2 Nos. (f) Supplying and fixing of the ceiling fans of approved make for electrical/Control room with 1200mm sweep, white color, double ball bearing, 300mm long down rod, Electronic type approved make regulator and accessories i.e. screws, wall nuts etc.- 2 Nos. (g) Supply, fixing and commissioning of 305mm dia Exhaust fans including bird louvers, frame works and other civil works like chipping and making the surface good etc.- 5 Nos. (h) Supplying and fixing of 150mm x150mm x125mm weather proof outdoor type junction box fabricated out of 14 SWG CRCA sheet of IP 54 category of protection with rubber gasket and having locking arrangement including required connectors & 10A SP MCB- 10 Nos.	1	Lot	-	-
18.0	Earthing & Lightning Protection System: S.I.T.C. of earth pit of minimum bore dia 150 mm size aproved make Safe Earthing Electrode consisting pipe-in pipe Technology made of corrosion free GI Pipe having outer pipe dia of 50 mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising connection terminal dia. of 12 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications. For Electrical installation covering Transformers, Motors/ Starters, LV MCC Panel, PDB/ SDB & Lightning Protection System, DG Body i.e. independent earthing in normal soil with Length of Pipe 3.00 mtr. & Back filling compound - 2 No. Bag of 25Kg each.	10	Nos.	-	-
19.1	S.I.T.C. of funnel type Earthing having earth plate of following size buried in specially prepared earth pit 3.0 mtr below ground with 40.0 kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI pipe with funnel with wire mesh for watering and brick massonary block and C.I. cover complete as per para 7.3 of IS: 3043 with necessary length of Cu. strip/ flat 25x6mm bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr long complete connected to the nearest switch gear with end socket as per direction and duly tested by earth tester confirming to IS as per drawing with following specifications. complete with 60 x 60 x 0.315 cm Copper earth plate (2 for Transformer neutrals & 2 for DG neutral)	4	Nos.	-	-
19.2	Providing and Erecting required size of GI strip for earthing of electrical equipment i.e. Transformers body, DG Body, Starter/ Motors, LV PMCC Panel, PDB/ LDB, Cable trays etc.	500	Kg	-	-
19.3	Providing and Erecting required size of copper strip for earthing of electrical equipment i.e. Transformer Neutral.	250	Kg	-	-
19.4	Providing & erecting Hot dip Galvanised strip/ iron wire 8 to 16 SWG for Aux. DB, Outdoor Lighting Poles & LPBS etc.	200	Kg	-	-
20.0	Fire & Safety Equipments: Design, supply, erection, testing and commissioning of safety accessories for all electrical equipment/ system. (a) Supply 6.00 mm thick Rubber Mat for LV of required length and breath.- 25 Sq.Mtr (b) Providing printed Instruction Chart both in English and Gujarati and duly framed with front glasses for treatment of person suffering from electric shock.- 2 no. (c) Supplying standard First Aid Box with all the standard contents- 2 No. (d) Fire Bucket with 9 Litre Capacity- 4 Nos. (e) Fire Bucket Stand- 1 No. (f) Fire Extinguisher (CO2 Type)- 4 Nos. (2 in Electrical Room & 2 in Pump Room) (g) 11kV Rubber Hand Gloves- 1 Pair	1	Lot	-	-
21.0	SITC of 11 kV Single circuit Overhead line on RSJ Pole including Security Deposit,demand charges metering equipment & other charges etc.	1	LS	-	-

22.0	<p><u>Generating Sets</u></p> <p>Supplying and erecting, commissioning and testing diesel generating set having continuous rating, 3 phase, 415 volts, 50 cycles A.C. supply comprising of a totally enclosed air/water cooled diesel engine with multi-cylinders developing suitable BHP not less than following capacity at 1500 RPM with 10% overload for one hour in 24 hours with standard accessories like fly wheel, lubricating oil cooler, "A" class governor, heavy duty fuel wheel and lubricating oil filter, oil bath air filter, lubricating oil pressure gauge, end exhaust manifold, standard set of tools with adjustable spanners, screw drivers, feeder gauge, cylinder head to cover, joint cylinder head to exhaust, element lube oil filter, 12/24 volts electric starting equipment complete with standard battery, dynamo, cut-outs, ammeter, necessary wiring, pressure gauge, starter etc and heavy duty Residential type exhaust silencer and vertical hot air duct both logged with asbestos rope, save oil trays, exhaust piping of required length, standard wall/floor mounted fuel with level indicator and piping and drip proof alternator, self excited, self regulated, screen protected, with excitation system, capable of delivering the rated system output at 415 volts, 3 phase, 0.8 PF, 50 Hz, 4 wire, running at 1500 RPM, conforming to IS-4722- 1968 with voltage regulation +/- 5% of rated voltage from no load to full load. Both the engine and alternator fitted on a common fabricated steel base plate with antivibration mounting engine and alternator both connected to each other by flexible flange coupling and with floor/wall mounted control panel box comprising of voltmeter ammeter, selector switches, ACB / MCCB / MCB of adequate capacity, indicator lamps duly wired with HRC fuses. The alternator & control panel shall be connected with provided suitable capacity armoured cable and complete with Acoustic enclosure (canopy) made out of 18 SWG CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 The resin bonded rockwool covered from inside the canopy by perforated sheet with 3/4 mm holes, sound level not more than 75 dB at a distance of 1 mtr, as per PVCT norms. Erection, commissioning and satisfactory testing as per requirement with first filling of fuel, oil, etc. with guarantee of complete system for One year. & with obtaining all necessary certificate from Electrical Inspector. The Capacity and Ratings of DG set is</p> <p>Continuous rating of 200 KVA, BHP not less than 254 BHP</p>	1	Nos.	-	-
23.0	<p><u>AMF Control Panel</u></p> <p>Providing & erecting approved make AMF control panel suitable for following size of 3 phase, 415 V., 50 cycles, A.C. diesel generating set complete of scope as detailed below:</p> <p>1) Power module: A pair of electromechanically interlocked contactors (for mains & generator) Overload relay for generator contactor Neutral contactor for mains and generator Power socket for connections.</p> <p>2) Control and metering module: Line voltage monitor. Generator voltage monitor Ammeter 3 items attempt start facility. Air circuit breakers/MCB/MCCB of suitable rating for auto/manual operation. Auto/manual switch. Emergency stop push buttons. Manual start push button. frequency meter. Engine hour meter. Two earthing studs.</p> <p>3) Protection module: The engine shutdown in the unlikely event of Low lube oil pressure High cylinder head temperature. V belt failure.</p> <p>4) Indicators with alarm Load on generator.</p> <p>5) Indicators Load on mains Engine fails to start . Emergency stop battery charger.</p> <p>The AMF Panel of following capacity</p> <p>AMF Control Panel for 200 KVA/250 KVA, 3 phase DG Set</p>	1	Nos.	-	-
24.0	<p><u>Acoustic enclosure (Canopy)</u></p> <p>Supplying and erecting Acoustic enclosure (canopy) made out of 18 SWG, CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 The resin bonded Rockwool covered from inside level not more than 75 dB at a distance of 1 mtr, as PVCT norms , on provided foundation suitable for following size of DG Set. The enclosures for following capacity of DG sets.</p> <p>For 160/180/200/250 KVA DG Set</p>	1	Nos.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Total Tender Rate (Upto 2 Decimals)	Amount (In Rs)
	Schedule 14.0 Electrical Works for Akota Headworks -				
1.0	11 KV D.P. STRUCTURE (9 m high) S.I.T.C. of 11 KV two pole 9 mtr high structure made of 6"x 3" "I" -section girder, 4" x 2" channels, Clamps, nuts, bolts, etc. suitable for the erection of the following necessary ACSR conductors as per drawing approved by the Engineer-in-charge complete with following. a) 11 KV 200 Amps. Drop out fuses with S.R.B.P. tubes carries - 3 Nos. b) 11 KV G.O.D. switch complete with insulators, operating handle with galvanized pipe, sq. bar etc. 400 A - 1 set. c) 11 KV lighting arrestor with clamp - 3 Nos. d) 11 KV shackle insulators - 6 Nos. e) 25 mm x 3 mm thick double copper / GI earth strips in two parallel runs in required quantity i.e. from LA to earthing chamber including S.I.T.C. of 2 Nos. funnel type earthing having earth plate of following size buried in specially prepared earth pit of required mtr. below ground with 40kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI Pipe with funnel with wire mesh for watering and brick masonry block and CI cover complete as per para 7.3 of IS: 3043 with necessary length of double G.I./ copper earth wire no. 6 swg bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr. long complete connected to the required point of DP with end socket as per direction and duly tested by earth tester conforming to IS as per drawing & specifications complete with 300 x 300 x 3.15 mm CI earth plate complete.	1	set	-	-
2	Wire fencing (For DP Structure & Transformer Yard): Providing and fixing 2.0 mtr. high Wire Fencing with 2.8 Mtr. long M.S. angle posts 40mm X 40mm X 6mm and oil painting 3 coats fixed at 2.5 Mtr. C/C with eight Horizontal line & two diagonals of galvanized steel barbed wire weighting 9.38 Kg./ 100 Mtr. strained including fixing the posts in ground with 0.5 Mtr. X 0.5 Mtr. block in cement concrete 1:5:10 etc. including laying of best quality gravel bed of suitable size inside wire fencing in switchyard .	1	Lot	-	-
3	M.S. Gate (For DP Structure & Transformer Yard): Providing and fixing M.S. gate made from M.S. angles, channels and flats including all labour and material cost with painting and fixing at site of work including carting, loading, unloading etc. complete with M.S. Gate 1 Mtr. x 2 Mtr. in structural steel.	180	Kg	-	-
4.1	11 KV Grade HV Cable/ ACSR Conductor (As per site Condition): S.I.T.C. of XLPE insulated 11 kV(E) grade, galvanised steel flat strip armoured, stranded compact circular Aluminium conductor screened with extruded semi conducting compound, insulating screening with extruded semi conducting compound in combination with copper tape, PVC tape inner sheathed, cores laid up, overall PVC sheathed as per IS: 7098 (Part-II)-1985 with its latest amendment etc. complete to be laid suitably as per site requirement. 3C x 240 sq.mm A2XFY (From 11 kV D.P. Structure to Transformers)	100	RM	-	-
4.2	11 kV Outdoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) outdoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	No.	-	-
4.3	11 kV Indoor Cable Terminations: S.I.T.C. of heat shrink type 11 kV(E) Indoor cable termination kit with Aluminium/ Copper lugs & ferrules conforming to relevant IS/IEC standard including required materials suitable for 3C x 240 sq.mm A2XFY	1	Nos.	-	-
5	250 kVA Distribution Transformer (with off circuit tap changer -10% to +5% in steps of 2.5%): S.I.T.C. of Distribution Transformer with no load voltage ratio 11/0.433 KV, continuously rated for 3 Ph, 50 Hz, Out door / Indoor type, ONAN cooled, copper double wound, core type, vector group Dyn11, HV delta connected and LT star connected, off circuit tap changer -10% to +5% in steps of 2.5%, oil immersed winding with temperature rise in oil/ winding 40/ 45 deg. C above ambient temperature with neutral brought out connected to provide separate earthing including terminal arrangement bushing / cable box on HV side and LT side suitable for Cable box or bus duct, complete with first fill of oil along with the following accessories with required size of cement concrete pedestal as per detail specification. Transformer impedance (with +/- tolerances), losses & routine test @ factory shall be as per IS: 1180 (Part-1)-2014 with its latest amendment, technical data sheet & contract specifications. a) Oil conservator with filling holes with cap and plain oil level gauge. b) Silica gel dehydrating breather charged with silica gel c) Oil drain/ sampling valve d) Oil filter valve e) Lifting eyes/ hooks/ Lugs f) Two earthing terminal g) Diagram and rating plate h) Air release plug i) Explosion vent with diaphragm j) Thermometer pocket k) Four bi-directional plain roller with base channel with hauling holes l) Fixed/ Seperate type radiator banks m) Off circuit externally operated tapping switch (For rating < 1000 kVA) n) 100 mm stem type oil temperature indicator (For rating < 500 kVA) o) Bucholtz relay with shut off valve (For rating ≥ 500 KVA) p) 150 mm dial type oil temperature indicator with Alarm / Trip contact (For rating ≥ 500 kVA) q) 150 mm dial type winding temperature indicator with Alarm / Trip contact (For rating ≥ 1000 kVA)	1	Nos.	-	-
6.1	415V LVDB Panel/ PCC: Location- Main Electrical Room S.I.T.C. of LVDB Panel/ PCC (Indoor) totally enclosed type as per IS: 2147, Operation on 3-Phase, 415V, 50Hz, Neutral effectively grounded, IP-52, with instrumentation compartments accomodating LED type indicating lamps, power & control contactors as per IS: 13947, CT of accuracy class-I as per IS: 2705, Relays & control fuses, air insulated electrolyte grade Aluminum busbar for three phase & neutral system with microprocessor based air circuit breakers, microprocessor based/ air break fixed type MCCB with trip free mechanism, current limiting type, MCB as per IS/IEC 60898-2:2003, suitable rating outgoing feeders as per design & SLD drawings, digital type metering instruments, momentary contact type push buttons, equipment fittings, bus bars, cable alleys, cable gland, incoming & outgoing cable connection chamber suitable for 1100V grade, Al/ Cu. conductor PVC insulated & PVC sheathed armoured cable, 10% spare terminals, power wiring use of 650/ 1100V grade, FRLS insulated copper conductor wires conforming to IS: 694 & 8130, cable compartments of minimum 300 mm size, Aluminium earth bus bar for entire length as per SLD, detail specifications & data sheet including required testing @ factory as per applicable IS/ IEC standards. LVDB/ PCC Panel shall be comprising of; (a) 2 Nos. Incomer with 1 nos. bus coupler (One for DG) each with approved Make 4 Pole, Microprocessor based rating upto 250A MCCB with (O/C, S/C & E/F release) having breaking capacity Icu of 50kA at 415V, 50 Hz with all internal connections. (b) 3 Nos. of Fully automatic Microprocessor based Soft Starter for 45kW pumps with built in bypass terminal for pump control application with control method: Torque control, Input Voltage: 3 Phase 415 V (+/-10%), Input Frequency : 50 Hz (+/-5%), Confirmative to Standard: IEC 947-4-2-UL, CSA, CE, Inbuilt motor thermal protection, Starter Protection: Short circuit, U/V, Phase Unbalance, Phase failure, EMC Standards - IEC 61000-4-2 level -3 & IEC 61000-4-3 level-3 and built in communication as per RS 485. (c) 4 Nos. outgoing each with Approved Make TPN, 25-100A thermal magnetic based MCCB having breaking capacity Icu of 50kA at 415V with (O/L+S/C) protection suitable to work on AC supply 50 Hz with all internal connections for APFC panel with one spare, one for PDB & one Spare. (d) 2 Nos. Fixed APP type Capacitor- 5 KVAR of approved make for No-load compensation with Thyristor based switching control accessories with 7% Detuned reactor & 25A MCCB having 50KA rating (e) 6 Nos Outgoing each with 6-32A SP MCB for 230V aux loads having breaking capacity 10 KA & confirming to IS/IEC 60898-2:2003. (f) Control Transformer of 1000VA, 415/230V AC for I&C Loads.	1	Nos.	-	-

	POWER DISTRIBUTION BOARD: Location- Main Electrical Room Providing and erecting Power Distribution Board made of sheet steel powder coated, surface mounted fitted with busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 comprising one Incomer with MCCB and required outgoing with MCCBs as follows; (a) 1 No. Incomer with 100A FP MCCB (O/L+S/C+E/F) for lighting & inductive load having 25KA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 3 Nos Outgoing each with 63A FP MCB for Power/welding receptacles & Aux loads (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (c) 3 Nos Outgoing each with 32A FP MCB for indoor lighting & aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003. (d) 6 Nos Outgoing each with 6-32A SP MCB for 230V aux loads having breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003. (e) Control Transformer of 1000VA, 415/230V AC for I&C Loads.	1	No.	-	-
	APFC PANEL: Location - Main Electrical Room S.I.T.C. of APFC panel consisting capacitor bank for continuous duty to improve P.F. 0.85 to 0.99 with dust proof busbar chamber having 2 mm thick sheet steel & earth terminals with painting, enclosure with capacitor unit having 2 Nos., 10 mm earth terminals & two externals, three phase busbar of Cu. supported on epoxy insulators of adequate rating & strips, minimum 10 steps of APFC relay, meters, indicating lamps as mentioned under. 7 50-100 KVAR APFCR panel for each item shall include following : (a) Suitable rating MCCB in incomer (b) Analog Ammeter of 96x96 size with selector switch of suitable range (c) Three nos. of 15VA, CL-1 Current transformers (d) Suitable Rating MCCB for each outgoing feeders. (e) Suitable rating contactors with KVAR Banks (APP type) of approved make as per requirement.	1	No.	-	-
	LIGHTING DISTRIBUTION BOARD (Indoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCCBs as follows. 8 (a) 1 No. incomer with 63A FP MCB + ELCB for lighting & inductive load (C Curve) having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 6 No. Outgoing each with 6-32A SP MCB suitable to operate on 240 V AC System and short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.	1	No.	-	-
	LIGHTING DISTRIBUTION BOARD (Outdoor): Location- Main Electrical Room Providing and erecting Lighting Distribution Board made of sheet steel powder coated, surface mounted comprising of busbar, neutral link, earth busbar and DIN rail, conforming to IS 13032 and BS 5486/1986 with one Incomer with MCB & required outgoing with MCCBs as follows. 9 (a) 1 No. incomer with 63A FP MCB + ELCB with built in 24hrs astronomical timer with 4 Pole contactor for lighting & inductive load (C Curve) MCB having 10kA breaking capacity & conforming to IS/IEC 60898-2:2003. (b) 4 No. Outgoing each with 6-32A FP MCB with short circuit tripping elements and breaking capacity 10 KA & conforming to IS/IEC 60898-2:2003.	1	No.	-	-
	Power/ Welding Receptacle: (one for Electrical room/Transformer Area, One for Pump House) 10 S.I.T.C. Of Approved make industrial type 63 A TPN (3P+N+E) Wall mounted with isolating switch conforming to IP-67.	2	Nos.	-	-
	1100V Grade LV Cables: S.I.T.C. of XLPE insulated, 1100V grade, Galvanised steel wire / strip armoured, stranded Aluminum/Copper conductor, PVC tape inner sheathed, cores laid up, Extruded PVC type ST2 sheathed cables as per IS 7098 (Part-I) 1985 of following core & size to be laid on wall with necessary clamps / in cable trench / on cable trays / conduit pipe as per site requirement. 11.1 3.5 C x 95 Sq. mm A2XFY (From supply point to 415V LVDB/PCC & from DG AMF panel to 415V LVDB/PCC)	125	mtr.	-	-
	11.2 3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to PDB/SDB & APFC Panel)	50	mtr.	-	-
	11.3 3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	250	mtr.	-	-
	11.4 4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	150	mtr.	-	-
	11.5 3.5 C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	300	mtr.	-	-
	11.6 4C x 2.5 Sq. mm 2YWY (For small misc. loads)	200	mtr.	-	-
	Cable Glands/Terminations: 12.1 S.I.T.C. of heavy duty flange type brass cable glands with rubber rings for suitable size PVC armoured cable complete with outgoing tails, insulating type etc. for following size of cables. 3.5 C x 95 Sq. mm A2XFY (From Incomer to 415V LVDB/PCC)	4	Each	-	-
	12.2 3.5 C x 50 Sq. mm A2XFY (From 415V LVDB/PCC to Pump Motor Starter Panel, PDB/SDB & APFC Panel)	16	Each	-	-
	12.3 3.5 C x 25 Sq. mm A2XFY (From 415V LVDB/PCC to Power/Welding Receptacles at Various Location & Indoor/Outdoor Lighting DBs)	12	Each	-	-
	12.4 4 C x 16 Sq. mm A2XFY (From 415V Outdoor Lighting DB to Street/Area Lighting circuits)	12	Each	-	-
	12.5 3.5 C x 25 Sq. mm 2YWY (From Starter Panel to Motors)	6	Each	-	-
	12.6 4C x 2.5 Sq. mm 2YWY (For small misc. loads)	4	Each	-	-
	Cable Trays & Accessories: 13 Supply, Installation, fabrication, testing & commissioning of G.I ladder type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 450mm wide (channel size 75x15x2 mm & runner size 35x15x2 mm)	250	RM	-	-
	14 Supply, Installation, fabrication, testing & commissioning of G.I perforated type cable tray with G.I coupler plate & nut bolt, tray cover etc. of 150mm wide x 35mm x 2 mm thick	100	RM	-	-
	Indoor & Outdoor Lighting & Ventilation System: Design, supply, erection, testing and commissioning of suitable general lighting arrangement for pump house, electrical room, including required lighting fixtures, fittings, point wiring, distribution box, street lighting poles with junction box, exhaust fan etc. with complete job. (a) Point Wiring for light/fan/Bell/Primary point with 2-1.0 sqmm & earthwire of 1.0 Sqm.mm (green) both are of ISI marked for PVC insulated multistrand copper wire, in pipe duly erected, complete with 6A Tisino Type ISI marked flush type switch/ bell push and accessories erected on polished wooden block/ Metal. PVC box covered with 3 mm thick laminated sheet for concealed wiring as per specification.- 20 Pt. (b) 40W LED Fixtures and associated fittings for Electrical/ Switchgear/ Control/ Office Room - 10 Nos. (c) 70W LED lighting fixture with 7.5m Swaged pole with all necessary fittings for outdoor application (For Roads, area Lighting)- 6 Nos. (d) 70W LED lighting fixture with all necessary fittings for outdoor application (For building periphery of Electrical Switchgear Room)- 4 Nos. (e) 15W LED lighting fixture with all necessary fittings for indoor application (For Toilet, building entry point etc.)- 2 Nos. (f) Supplying and fixing of the ceiling fans of approved make for electrical/Control room with 1200mm sweep, white color, double ball bearing, 300mm long down rod, Electronic type approved make regulator and accessories i.e. screws, wall nuts etc.- 2 Nos. (g) Supply, fixing and commissioning of 305mm dia Exhaust fans including bird louvers, frame works and other civil works like chipping and making the surface good etc.- 5 Nos. (h) Supplying and fixing of 150mm x150mm x125mm weather proof outdoor type junction box fabricated out of 14 SWG CRCA sheet of IP 54 category of protection with rubber gasket and having locking arrangement including required connectors & 10A SP MCB- 10 Nos.	1	Lot	-	-

16	Earthing & Lightning Protection System: S.I.T.C. of earth pit of minimum bore dia 150 mm size aproved make Safe Earthing Electrode consisting pipe-in pipe Technology made of corrosion free GI Pipe having outer pipe dia of 50 mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising connection terminal dia. of 12 mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications. For Electrical installation covering Transformers, Motors/ Starters, LV MCC Panel, PDB/ SDB & Lightning Protection System, DG Body i.e. independent earthing in normal soil with Length of Pipe 3.00 mtr. & Back filling compound - 2 No. Bag of 25Kg each.	10	Nos.	-	-
17	S.I.T.C. of funnel type Earthing having earth plate of following size buried in specially prepared earth pit 3.0 mtr below ground with 40.0 kg charcoal and salt with alternate layers of charcoal and salt 20 mm dia GI pipe with funnel with wire mesh for watering and brick massonary block and C.I. cover complete as per para 7.3 of IS: 3043 with necessary length of Cu. strip/ flat 25x6mm bolted with lug to the paltened covered in 12 mm dia G.I. pipe 2.5 mtr long complete connected to the nearest switch gear with end socket as per direction and duly tested by earth tester confirming to IS as per drawing with following specifications. complete with 60 x 60 x 0.315 cm Copper earth plate (2 for Transformer neutrals & 2 for DG neutral)	4	Nos.	-	-
18.1	Providing and Erecting required size of GI strip for earthing of electrical equipment i.e. Transformers body, DG Body, Starter/ Motors, LV PMCC Panel, PDB/ LDB, Cable trays etc.	500	Kg	-	-
18.2	Providing and Erecting required size of copper strip for earthing of electrical equipment i.e. Transformer Neutral.	250	Kg	-	-
18.3	Providing & erecting Hot dip Galvanised strip/ iron wire 8 to 16 SWG for Aux. DB, Outdoor Lighting Poles & LPBS etc.	200	Kg	-	-
19	Fire & Safety Equipments: Design, supply, erection, testing and commissioning of safety accessories for all electrical equipment/ system. (a) Supply 6.00 mm thick Rubber Mat for LV of required length and breath- 25 Sq.Mtr (b) Providing printed Instruction Chart both in English and Gujarati and duly framed with front glasses for treatment of person suffering from electric shock- 2 no. (c) Supplying standard First Aid Box with all the standard contents- 2 No. (d) Fire Bucket with 9 Litre Capacity- 4 Nos. (e) Fire Bucket Stand- 1 No. (f) Fire Extinguisher (CO2 Type)- 4 Nos. (2 in Electrical Room & 2 in Pump Room) (g) 11kV Rubber Hand Gloves- 1 Pair	1	Lot	-	-
20.0	SITC of 11 kV Single circuit Overhead line on RSJ Pole including Security Deposit,demand charges metering equipment & other charges ,etc.	1	LS	-	-
21	Generating Sets Supplying and erecting, commissioning and testing diesel generating set having continuous rating, 3 phase, 415 volts, 50 cycles A.C. supply comprising of a totally enclosed air/water cooled diesel engine with multi-cylinders developing suitable BHP not less than following capacity at 1500 RPM with 10% overload for one hour in 24 hours with standard accessories like fly wheel, lubricating oil cooler, "A" class governor, heavy duty fuel wheel and lubricating oil filter, oil bath air filler, lubricating oil pressure gauge, end exhaust manifold, standard set of tools with adjustable spanners, screw drivers, feeder gauge, cylinder head to cover, joint cylinder head to exhaust, element lube oil filter, 12/24 volts electric starting equipment complete with standard battery, dynamo, cut-outs, ammeter, necessary wiring, pressure gauge, starter etc and heavy duty Residential type exhaust silencer and vertical hot air duct both logged with asbestos rope, save oil trays, exhaust piping of required length, standard wall/floor mounted fuel with level indicator and piping and drip proof alternator, self excited, self regulated, screen protected, with excitation system, capable of delivering the rated system output at 415 volts, 3 phase, 0.8 PF, 50 Hz, 4 wire, running at 1500 RPM, conforming to IS-4722- 1968 with voltage regulation +/- 5% of rated voltage from no load to full load. Both the engine and alternator fitted on a common fabricated steel base plate with antivibration mounting engine and alternator both connected to each other by flexible flange coupling and with floor/wall mounted control panel box comprising of voltmeter ammeter, selector switches, ACB / MCCB / MCB of adequate capacity, indicator lamps duly wired with HRC fuses. The alternator & control panel shall be connected with provided suitable capacity armoured cable and complete with Acoustic enclosure (canopy) made out of 18 SWG CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 The resin bonded rockwool covered from inside the canopy by perforated sheet with 3/4 mm holes, sound level not more than 75 dB at a distance of 1 mtr, as per PVCT norms. Erection, commissioning and satisfactory testing as per requirement with first filling of fuel, oil, etc. with guarantee of complete system for One year. & with obtaining all necessary certificate from Electrical Inspector. The Capacity and Ratings of DG set is Continuous rating of 200 KVA, BHP not less than 254 BHP	1	Nos.	-	-
22	AMF Control Panel Providing & erecting approved make AMF control panel suitable for following size of 3 phase, 415 V., 50 cycles, A.C. diesel generating set complete of scope as detailed below: 1) Power module: A pair of electromechanically interlocked contactors (for mains & generator) Overload relay for generator contactor Neutral contactor for mains and generator Power socket for connections. 2) Control and metering module: Line voltage monitor. Generator voltage monitor Ammeter 3 items attempt start facility. Air circuit breakers/MCB/MCCB of suitable rating for auto/manual operation. Auto/manual switch. Emergency stop push buttons. Manual start push button. frequency meter. Engine hour meter. Two earthing studs. 3) Protection module: The engine shutdown in the unlikely event of Low lube oil pressure High cylinder head temperature. V belt failure. 4) Indicators with alarm Load on generator. 5) Indicators Load on mains Engine fails to start . Emergency stop battery charger. The AMF Panel of following capacity AMF Control Panel for 200 KVA/250 KVA, 3 phase DG Set	1	Nos.	-	-
23	Acoustic enclosure (Canopy) Supplying and erecting Acoustic enclosure (canopy) made out of 18 SWG, CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 The resin bonded Rockwool covered from inside level not more than 75 dB at a distance of 1 mtr, as PVCT norms , on provided foundation suitable for following size of DG Set. The enclosures for following capacity of DG sets. For 160/180/200/250 KVA DG Set	1	Nos.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1.1	Schedule 15 ULTRASONIC TYPE CONSUMER WATER METER: Supply, Installation, Testing and Commissioning of ultrasonic type Domestic AMR/AMI Water Meter of Class-B type, AMR/AMI meter of domestic type for 15mm size shall be equipped with in built RF unit/Cellular/Low Powered WAN AMR/AMI technology & wireless, Dry dial, OIML/MID approved conforming to ISO:4064-2005 with IP-68 protection specification inclusive of all taxes, testing, loading, unloading, insurance etc. complete. 15 mm (Ultrasonic AMR meter) = 26,000 meters - For year 1	3900	No.	-	-
1.2	15 mm (Ultrasonic AMR meter) = For year 2	7800	No.	-	-
1.3	15 mm (Ultrasonic AMR meter) = For year 3	7800	No.	-	-
1.4	15 mm (Ultrasonic AMR meter) = For year 4	1625	No.	-	-
1.5	15 mm (Ultrasonic AMR meter) = For year 5	1625	No.	-	-
1.6	15 mm (Ultrasonic AMR meter) = For year 6	1625	No.	-	-
1.7	15 mm (Ultrasonic AMR meter) = For year 7	1625	No.	-	-
1.8	20 mm (Ultrasonic AMR meter) = For year 1	600	No.	-	-
1.9	20 mm (Ultrasonic AMR meter) = For year 2	1200	No.	-	-
1.10	20 mm (Ultrasonic AMR meter) = For year 3	1200	No.	-	-
1.11	20 mm (Ultrasonic AMR meter) = For year 4	250	No.	-	-
1.12	20 mm (Ultrasonic AMR meter) = For year 5	250	No.	-	-
1.13	20 mm (Ultrasonic AMR meter) = For year 6	250	No.	-	-
1.14	20 mm (Ultrasonic AMR meter) = For year 7	250	No.	-	-
1.15	25 mm (Ultrasonic AMR meter) = For year 1	1500	No.	-	-
1.16	25 mm (Ultrasonic AMR meter) = For year 2	3000	No.	-	-
1.17	25 mm (Ultrasonic AMR meter) = For year 3	3000	No.	-	-

1.18	25 mm (Ultrasonic AMR meter) = For year 4	625	No.	-	-
1.19	25 mm (Ultrasonic AMR meter) = For year 5	625	No.	-	-
1.20	25 mm (Ultrasonic AMR meter) = For year 6	625	No.	-	-
1.21	25 mm (Ultrasonic AMR meter) = For year 7	625	No.	-	-
2	Infrastructure required to collect the data from water meter installed at the site till the server either by RF/Low Powered Wide area Network/cellular based	1	LUMPSUM	-	-
3	Supply, installation, testing and commissioning of Billing software and server as per specification mentioned	1	No.	-	-
4	Labour for Installation, Fixing of ½" (15 mm) To 2" (50 mm) Dia Water Meters in Meter Box of HDPE material, this is inclusive of - 1. Drilling the required hole with tool in the wall on which existing Connection Installed. 2. Cutting of Existing UPVC Connection near the Tee. 3. Installation, Fixing of the Water Meter with Allied Pipe Fitting. 4. Installation, Fixing of the Water Meter Cover. 5. In case more than one connections which are very nearer to each other, New Connection hole should be drilled with drill machine in the wall.	40000	No.	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 16.1 Engineering SCADA System - For Sayaji Head Works - (Schedule 16)				
1	PRESSURE GAUGE: Supply, installation, testing & commissioning of Bourden type Pressure Gauge with snubber having 150 mm dial necessary fittings/accessories (Manifold valve, nipples, glycerine filled) etc. shall be in SS 316 only) as per specifications & complete in all respects. Range : 0 - 10 kg / sq.cm. (On delivery line of each pump and common discharge header)	4.00	Nos.	-	-
2	PRESSURE TRANSMITTER: Supply, installation, testing and commissioning of Pressure Transmitter along with, manifold valve, required fittings, tubing (all valves, fittings, tubings, etc. shall be in SS 316 only) all accessories, hardware, etc. complete in all respects as per specifications and having following measurement ranges: Range : 0 - 10 Kg/cm2 (On common delivery header, on the DMA, at the outlet of ESR and at the strategic location in the distribution network)	7.00	Nos.	-	-
3	ULTRASONIC LEVEL TRANSMITTER: Supply, installation, testing and commissioning of Ultrasonic type Level Transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for liquid (Water) application: Meas. Range: upto 5 m (Sump and ESR)	2.00	Nos.	-	-
4	CONDUCTIVITY TYPE LEVEL SWITCH (4 point): Supply, installation, testing and commissioning of Conductivity type Level Switch along with all required accessories, hardware, etc. complete in all respects as per specification and having following measurement ranges for liquid (Water) application: at the Sump and ESR	2.00	Nos.	-	-
5	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the outlet of ESR size: 500mm	1.00	Nos.	-	-
6	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the common discharge header of pumps size: 300mm	1.00	Nos.	-	-
7.1	ELECTROMAGNETIC FLOW TRANSMITTER (Battery Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. as per specification and having following measurement ranges for 0-10m/sec at the DMA of suitable line size 250mm	1.00	Nos.	-	-
7.2	300mm	1.00	Nos.	-	-
7.3	350mm	2.00	Nos.	-	-
7.4	500mm	1.00	Nos.	-	-
8	DIGITAL PANEL MOUNTED PRESSURE INDICATOR: Supply, installation, testing and commissioning of digital panel mounted pressure indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
9	DIGITAL PANEL MOUNTED LEVEL INDICATOR: Supply, installation, testing and commissioning of digital panel mounted level indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
10	DIGITAL PANEL MOUNTED FLOW INDICATOR CUM TOTALIZER: Supply, installation, testing and commissioning of digital panel mounted flow indicator cum totalizer along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
11	GSM/GPRS modem including Data logger at the DMA for the transmission of Flow and pressure data	5.00	Nos.	-	-

12	PLC/SCADA BASED CONTROL SYSTEM FOR AUTO OPERATION: Supply, Installation, Testing & Commissioning of Micro PLC Based Instrument control Panel with Local SCADA system comprising of min. 21" PC with A4 size laser jet printer for report / alarm printing, SCADA Runtime License, Reporting Software License .Open protocol connectivity along with required Ethernet switch, GSM/GPRS modem (4G) , SIM card for remote data transmission as per requirement Instrument Control Panel (PLC Enclosure / Panel) with necessary PLC based logic and wiring , Min. 2 Nos.Process indicator (For PT & LT), Min 2 no. flow indicator cum totalizer, Min 3 nos. analog signal multiplier, Min. 3 kVA UPS along with CVT (with 60 min backup alongwith filter for harmonic, suitable rating SMF batteries alongwith battery charger, cabling between UPS and battery and all other accessories as per standard), etc. complete in all respects and as per specifications. PLC having minimum I/O count of 35 DI / 12DO /9 AI /0AO.These are minimum IO Requirement if any other IO's required to complete the work contractor shall be provide the same without any extra cost.	1.00	Nos.	-	-
13	INSTRUMENT CABLE AND ACCESSORIES: 'Supply, Laying, Installation, Connection, Termination, Testing & Commissioning of Instrument Cables, along with cable glands, lugs, cable trays, required junction boxes, fittings and accessores as per specs. The unit rate shall include a. Supply, loading & unloading of the cable at site from store. b. Shifting of cable from site store to place of installation. c. Fixing of cable clamps, brackets, supports, route markers etc. where ever required to fix the cables safely. d. Excavation, back filling and levelling of ground alongwith laying of fine sand, protection bricks and other necessary civil material for laying cables outside the building. e. 'Supply, Installation, laying and connection of G.I. Perorated type cable tray along with required asccessories to sustain the weight of cable with bends, tees and clamps for fixing of cable and all the hardware as required as per site condition. f. Testing and submission of sketches & reports of all the cables laid. Power Cable (3CX2.5 Sq.mm) Control cable (2CX1.5Sq.mm) Signal cable (1PX1.5Sq.mm)	1.00	LumSum	-	-
14	INSTRUMENT CABLE TRAY Perorated type cable tray shall be made out of galvanized mild steel sheets of 2.0 mm thickness with required asccessories . All material shall be Hot dip galvanised (816 g/m2) as per IS 2629 (as mentioned in specification and tray hardware shall be in GI. 100 x 25 mm - Perforated type	50.00	Rmt.	-	-
15	CABLE END TERMINATION AND CONNECTION : 'Supply, fixing, connection, testing and commissioning of double compression brass cable glands and crimping type Bimetalic lugs / sockets with necessary tools and equipments as specified in specifications and IS complete in all respects. The glands and lugs / sockets shall be suitable for cable size and type mentioned above. The job also includes earthing the glands and armour of the cable with common earth bar or flexible copper mesh as applicable. POWER CABLE 3C x 2.5sq.mm CONTROL CABLE 2C x 1.5sq.mm SIGNAL CABLE 1PX1.5Sq.mm	1.00	Lot	-	-
16	EARTHING SITC of standard plate type earthing system conforming to IS:3043 with latest amendment for various electrical equipments and systems as per IS. 'SITC of 600 x 600 x 3.15mm Copper. Plate type Earth Pit etc. complete in all respects.	1.00	Nos.	-	-
17.1	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Dome Indoor/Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP42 minimum, Rugged construction.	2.00	Nos.	-	-
17.2	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Bullet type Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP66 minimum, Rugged construction.	2.00	Nos.	-	-
17.3	CCTV Surveillance System - Supply, testing, installation and commissioning of 8 channel 1080P NVR Recording: 1920X1080P, 15 FPS, 60 days recording, 24 hours/day; Real time monitoring with 25 FPS. Hard disc : 2 SATA interface, Capacity upto 4TB per each HDD, Disk array Min Raid 5, Two no's of RJ -45 10/100/1000 Mbps self adaptive Ethernet interface, RS 232, RS 485, keyboard interfaces, VGA/HDMI compatible, 2nos front USB 2.0 & 1 no at rear USB 2.0 compatible.	1.00	Nos.	-	-
17.4	Surveillance SATA hard disk @4TB	2.00	Nos.	-	-

17.5	CCTV Surveillance System - Client Workstation/PC :Supply, testing, installation and commissioning of Intel(R) Xeon(R) Processor(Quad Core 3.0Ghz, 3.5Ghz Turbo, 8MB) 8GB RAM,500 Gb Hard disc, NVIDIA Quadro graphics, 21.5" Monitor, shall be complete with latest Windows Server and all types of Antivirus software, MS Office packages, reporting software and communication ports: One RS- 232 serial ports, one parallel port, two USB ports, Ethernet ports as required for the system configuration, power supply should be 230VAC	1.00	Nos.	-	-
17.6	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of Network Switch (L2 Unmanaged POE Gigabit Switch) 8-ports 10/100/1000 Base-T POE enabled Smart Switch	1.00	Nos.	-	-
17.7	CCTV Surveillance System - Design, supply, testing, installation and commissioning of wall mounted 16 U network rack, MS CRCA coating, IP42 for NVR, switch, client PC and other accessories.	1.00	Nos.	-	-
17.8	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of CAT6 STP 23AWG Solid copper cable Approx.	1.00	Lumsum	-	-
17.9	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of 3 Core X 1.5 sq.mm. armoured, power cable for Ethernet switches.	1.00	Lumsum	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1	Schedule 16.2 Engineering SCADA System - For Vadivadi Head Works - (Schedule 16) PRESSURE GAUGE: Supply, installation, testing & commissioning of Bourden type Pressure Gauge with snubber having 150 mm dial necessary fittings/accessories (Manifold valve, nipples, glycerine filled) etc. shall be in SS 316 only) as per specifications & complete in all respects. Range : 0 - 10 kg / sq.cm. (On delivery line of each pump and common discharge header)	4.00	Nos.	-	-
2	PRESSURE TRANSMITTER: Supply, installation, testing and commissioning of Pressure Transmitter along with, manifold valve, required fittings, tubing (all valves, fittings, tubings, etc. shall be in SS 316 only) all accessories, hardware, etc. complete in all respects as per specifications and having following measurement ranges: Range : 0 - 10 Kg/cm ² (On common delivery header, on the DMA, at the outlet of ESR and at the strategic location in the distribution network)	8.00	Nos.	-	-
3	ULTRASONIC LEVEL TRANSMITTER: Supply, installation, testing and commissioning of Ultrasonic type Level Transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for liquid (Water) application: Meas. Range: upto 5 m (Sump and ESR)	2.00	Nos.	-	-
4	CONDUCTIVITY TYPE LEVEL SWITCH (4 point): Supply, installation, testing and commissioning of Conductivity type Level Switch along with all required accessories, hardware, etc. complete in all respects as per specification and having following measurement ranges for liquid (Water) application: at the Sump and ESR	2.00	Nos.	-	-
5	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the outlet of ESR size: 500mm	1.00	Nos.	-	-
6	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the common discharge header of pumps size: 450mm	1.00	Nos.	-	-
7.1	ELECTROMAGNETIC FLOW TRANSMITTER (Battery Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. as per specification and having following measurement ranges for 0-10m/sec at the DMA of suitable line size 300 mm	1.00	Nos.	-	-
7.2	350mm	1.00	Nos.	-	-
7.3	400mm	2.00	Nos.	-	-
7.4	450mm	2.00	Nos.	-	-
8	DIGITAL PANEL MOUNTED PRESSURE INDICATOR: Supply, installation, testing and commissioning of digital panel mounted pressure indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
9	DIGITAL PANEL MOUNTED LEVEL INDICATOR: Supply, installation, testing and commissioning of digital panel mounted level indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
10	DIGITAL PANEL MOUNTED FLOW INDICATOR CUM TOTALIZER: Supply, installation, testing and commissioning of digital panel mounted flow indicator cum totalizer along with all required accessories, hardware, etc. complete in all respects as per specification .	2.00	Nos.	-	-
11	GSM/GPRS modem including Data logger at the DMA for the transmission of Flow and pressure data	6.00	Nos.	-	-
12	PLC/SCADA BASED CONTROL SYSTEM FOR AUTO OPERATION: Supply, Installation, Testing & Commissioning of Micro PLC Based Instrument control Panel with Local SCADA system comprising of min. 21" PC with A4 size laser jet printer for report / alarm printing, SCADA Runtime License, Reporting Software License .Open protocol connectivity along with required Ethernet switch, GSM/GPRS modem (4G) , SIM card for remote data transmission as per requirement Instrument Control Panel (PLC Enclosure / Panel) with necessary PLC based logic and wiring , Min. 2 Nos.Process indicator (For PT & LT), Min 2 no. flow indicator cum totalizer, Min 3 nos. analog signal multiplier, Min. 3 kVA UPS along with CVT (with 60 min backup alongwith filter for harmonic, suitable rating SMF batteries alongwith battery charger, cabling between UPS and battery and all other accessories as per standard), etc. complete in all respects and as per specifications. PLC having minimum I/O count of 35 DI / 12DO /9 AI /0AO.These are minimum IO Requirement if any other IO's required to complete the work contractor shall be provide the same without any extra cost.	1.00	Nos.	-	-

13	INSTRUMENT CABLE AND ACCESSORIES: 'Supply, Laying, Installation, Connection, Termination, Testing & Commissioning of Instrument Cables, along with cable glands, lugs, cable trays, required junction boxes, fittings and accessories as per specs. The unit rate shall include a. Supply, loading & unloading of the cable at site from store. b. Shifting of cable from site store to place of installation. c. Fixing of cable clamps, brackets, supports, route markers etc. where ever required to fix the cables safely. d. Excavation, back filling and levelling of ground alongwith laying of fine sand, protection bricks and other necessary civil material for laying cables outside the building. e. 'Supply, Installation, laying and connection of G.I. Perorated type cable tray along with required accessories to sustain the weight of cable with bends, tees and clamps for fixing of cable and all the hardware as required as per site condition. f. Testing and submission of sketches & reports of all the cables laid. Power Cable (3CX2.5 Sq.mm) Control cable (2CX1.5Sq.mm) Signal cable (1PX1.5Sq.mm)	1.00	LumSum	-	-
14	INSTRUMENT CABLE TRAY Perorated type cable tray shall be made out of galvanized mild steel sheets of 2.0 mm thickness with required accessories . All material shall be Hot dip galvanised (816 g/m2) as per IS 2629 (as mentioned in specification and tray hardware shall be in GI. 100 x 25 mm - Perforated type	50.00	Rmt.	-	-
15	CABLE END TERMINATION AND CONNECTION : 'Supply, fixing, connection, testing and commissioning of double compression brass cable glands and crimping type Bimetalic lugs / sockets with necessary tools and equipments as specified in specifications and IS complete in all respects. The glands and lugs / sockets shall be suitable for cable size and type mentioned above. The job also includes earthing the glands and armour of the cable with common earth bar or flexible copper mesh as applicable. POWER CABLE 3C x 2.5sq.mm CONTROL CABLE 2C x 1.5sq.mm SIGNAL CABLE 1PX1.5Sq.mm	1.00	Lot	-	-
16	EARTHING SITC of standard plate type earthing system conforming to IS:3043 with latest amendment for various electrical equipments and systems as per IS. 'SITC of 600 x 600 x 3.15mm Copper. Plate type Earth Pit etc. complete in all respects.	1.00	Nos.	-	-
17.1	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Dome Indoor/Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP42 minimum, Rugged construction.	2.00	Nos.	-	-
17.2	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Bullet type Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP66 minimum, Rugged construction.	2.00	Nos.	-	-
17.3	CCTV Surveillance System - Supply, testing, installation and commissioning of 8 channel 1080P NVR Recording: 1920X1080P, 15 FPS, 60 days recording, 24 hours/day; Real time monitoring with 25 FPS. Hard disc : 2 SATA interface, Capacity upto 4TB per each HDD, Disk array Min Raid 5, Two no's of RJ-45 10/100/1000 Mbps self adaptive Ethernet interface, RS 232, RS 485, keyboard interfaces, VGA/HDMI compatible, 2nos front USB 2.0 & 1 no at rear USB 2.0 compatible.	1.00	Nos.	-	-
17.4	Surveillance SATA hard disk @4TB	2.00	Nos.	-	-
17.5	CCTV Surveillance System - Client Workstation/PC :Supply, testing, installation and commissioning of Intel(R) Xeon(R) Processor(Quad Core 3.0Ghz, 3.5Ghz Turbo, 8MB) 8GB RAM,500 Gb Hard disc, NVIDIA Quadro graphics, 21.5" Monitor, shall be complete with latest Windows Server and all types of Antivirus software, MS Office packages, reporting software and communication ports: One RS- 232 serial ports, one parallel port, two USB ports, Ethernet ports as required for the system configuration, power supply should be 230VAC	1.00	Nos.	-	-
17.6	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of Network Switch (L2 Unmanaged POE Gigabit Switch) 8-ports 10/100/1000 Base-T POE enabled Smart Switch	1.00	Nos.	-	-
17.7	CCTV Surveillance System - Design, supply, testing, installation and commissioning of wall mounted 16 U network rack, MS CRCA coating, IP42 for NVR, switch, client PC and other accessories.	1.00	Nos.	-	-
17.8	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of CAT6 STP 23AWG Solid copper cable Approx.	1.00	LUMSUM	-	-
17.9	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of 3 Core X 1.5 sq.mm. armoured, power cable for Ethernet switches.	1.00	LumSum	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
	Schedule 16.3 Engineering SCADA System - For Akota A Head Works (Schedule 16)				
1	PRESSURE GAUGE: Supply, installation, testing & commissioning of Bourden type Pressure Gauge with snubber having 150 mm dial necessary fittings/accessories (Manifold valve, nipples, glycerine filled) etc. shall be in SS 316 only) as per specifications & complete in all respects. Range : 0 - 10 kg / sq.cm. (On delivery line of each pump and common discharge header)	8.00	Nos.	-	-
2	PRESSURE TRANSMITTER: Supply, installation, testing and commissioning of Pressure Transmitter along with, manifold valve, required fittings, tubing (all valves, fittings, tubings, etc. shall be in SS 316 only) all accessories, hardware, etc. complete in all respects as per specifications and having following measurement ranges: Range : 0 - 10 Kg/cm2 (On common delivery header, on the DMA, at the outlet of ESR and at the strategic location in the distribution network)	8.00	Nos.	-	-
3	ULTRASONIC LEVEL TRANSMITTER: Supply, installation, testing and commissioning of Ultrasonic type Level Transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for liquid (Water) application: Meas. Range: upto 5 m (Sump and ESR)	3.00	Nos.	-	-
4	CONDUCTIVITY TYPE LEVEL SWITCH (4 point): Supply, installation, testing and commissioning of Conductivity type Level Switch along with all required accessories, hardware, etc. complete in all respects as per specification and having following measurement ranges for liquid (Water) application: at the Sump and ESR	3.00	Nos.	-	-
5	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the outlet of ESR at Akota A and outlet of ESR at Akota B size: 600mm	2.00	Nos.	-	-
6	ELECTROMAGNETIC FLOW TRANSMITTER (Mains Power Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. complete in all respects with local and remote display, as per specification and having following measurement ranges for 0-10m/sec at the common discharge header of pumps size: 600mm	1.00	Nos.	-	-
7.1	ELECTROMAGNETIC FLOW TRANSMITTER (Battery Operated): Supply, installation, testing and commissioning of Electromagnetic flow transmitter along with all required accessories, hardware, etc. as per specification and having following measurement ranges for 0-10m/sec at the DMA of suitable line size 250 mm	1.00	Nos.	-	-
7.2	450mm	1.00	Nos.	-	-
7.3	500mm	2.00	Nos.	-	-
8	DIGITAL PANEL MOUNTED PRESSURE INDICATOR: Supply, installation, testing and commissioning of digital panel mounted pressure indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	3.00	Nos.	-	-
9	DIGITAL PANEL MOUNTED LEVEL INDICATOR: Supply, installation, testing and commissioning of digital panel mounted level indicator along with all required accessories, hardware, etc. complete in all respects as per specification .	3.00	Nos.	-	-
10	DIGITAL PANEL MOUNTED FLOW INDICATOR CUM TOTALIZER: Supply, installation, testing and commissioning of digital panel mounted flow indicator cum totalizer along with all required accessories, hardware, etc. complete in all respects as per specification .	3.00	Nos.	-	-
11	GSM/GPRS modem including Data logger at the DMA for the transmission of Flow and pressure data	4.00	Nos.	-	-
12	PLC/SCADA BASED CONTROL SYSTEM FOR AUTO OPERATION: Supply, Installation, Testing & Commissioning of Micro PLC Based Instrument control Panel with Local SCADA system comprising of min. 21" PC with A4 size laser jet printer for report / alarm printing, SCADA Runtime License, Reporting Software License .Open protocol connectivity along with required Ethernet switch, GSM/GPRS modem (4G) , SIM card for remote data transmission as per requirement Instrument Control Panel (PLC Enclosure / Panel) with necessary PLC based logic and wiring , Min. 2 Nos.Process indicator (For PT & LT), Min 2 no. flow indicator cum totalizer, Min 3 nos. analog signal multiplier, Min. 3 kVA UPS along with CVT (with 60 min backup alongwith filter for harmonic, suitable rating SMF batteries alongwith battery charger, cabling between UPS and battery and all other accessories as per standard), etc. complete in all respects and as per specifications. PLC having minimum I/O count of 35 DI / 12DO /9 AI /0AO.These are minimum IO Requirement if any other IO's required to complete the work contractor shall be provide the same without any extra cost.	1.00	Nos.	-	-

13	INSTRUMENT CABLE AND ACCESSORIES: 'Supply, Laying, Installation, Connection, Termination, Testing & Commissioning of Instrument Cables, along with cable glands, lugs, cable trays, required junction boxes, fittings and accessories as per specs. The unit rate shall include a. Supply, loading & unloading of the cable at site from store. b. Shifting of cable from site store to place of installation. c. Fixing of cable clamps, brackets, supports, route markers etc. where ever required to fix the cables safely. d. Excavation, back filling and levelling of ground alongwith laying of fine sand, protection bricks and other necessary civil material for laying cables outside the building. e. 'Supply, Installation, laying and connection of G.I. Perorated type cable tray along with required asccessories to sustain the weight of cable with bends, tees and clamps for fixing of cable and all the hardware as required as per site condition. f. Testing and submission of sketches & reports of all the cables laid. Power Cable (3CX2.5 Sq.mm) Control cable (2CX1.5Sq.mm) Signal cable (1PX1.5Sq.mm)	1.00	LumSum	-	-
14	INSTRUMENT CABLE TRAY Perorated type cable tray shall be made out of galvanized mild steel sheets of 2.0 mm thickness with required asccessories . All material shall be Hot dip galvanised (816 g/m2) as per IS 2629 (as mentioned in specification and tray hardware shall be in GI. 100 x 25 mm - Perforated type	150.00	Rmt.	-	-
15	CABLE END TERMINATION AND CONNECTION : 'Supply, fixing, connection, testing and commissioning of double compression brass cable glands and crimping type Bimetalic lugs / sockets with necessary tools and equipments as specified in specifications and IS complete in all respects. The glands and lugs / sockets shall be suitable for cable size and type mentioned above. The job also includes earthing the glands and armour of the cable with common earth bar or flexible copper mesh as applicable. POWER CABLE 3C x 2.5sq.mm CONTROL CABLE 2C x 1.5sq.mm SIGNAL CABLE 1PX1.5Sq.mm	1.00	Lot	-	-
16	EARTHING SITC of standard plate type earthing system conforming to IS:3043 with latest amendment for various electrical equipments and systems as per IS. 'SITC of 600 x 600 x 3.15mm Copper. Plate type Earth Pit etc. complete in all respects.	1.00	Nos.	-	-
17.1	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Dome Indoor/Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP42 minimum, Rugged construction.	4.00	Nos.	-	-
17.2	CCTV Surveillance System - Supply, testing, installation and commissioning of Fixed Bullet type Outdoor, Day/Night IP High Definition camera with mounting accessories, 1/2.8" Progressive Scan CCD/CMOS, FHD 1920x1080, Vari-focal lens 2.8 - 12 mm, WDR > 80 dB, Video compression H.264 Housing should be IP66 minimum, Rugged construction.	4.00	Nos.	-	-
17.3	CCTV Surveillance System - Supply, testing, installation and commissioning of 8 channel 1080P NVR Recording: 1920X1080P, 15 FPS, 60 days recording, 24 hours/day; Real time monitoring with 25 FPS. Hard disc : 2 SATA interface, Capacity upto 4TB per each HDD, Disk array Min Raid 5, Two no's of RJ -45 10/100/1000 Mbps self adaptive Ethernet interface, RS 232, RS 485, keyboard interfaces, VGA/HDMI compatible, 2nos front USB 2.0 & 1 no at rear USB 2.0 compatible.	1.00	Nos.	-	-
17.4	Surveillance SATA hard disk @4TB	2.00	Nos.	-	-
17.5	CCTV Surveillance System - Client Workstation/PC :Supply, testing, installation and commissioning of Intel(R) Xeon(R) Processor(Quad Core 3.0Ghz, 3.5Ghz Turbo, 8MB) 8GB RAM,500 Gb Hard disc, NVIDIA Quadro graphics, 21.5" Monitor, shall be complete with latest Windows Server and all types of Antivirus software, MS Office packages, reporting software and communication ports: One RS- 232 serial ports, one parallel port, two USB ports, Ethernet ports as required for the system configuration, power supply should be 230VAC	1.00	Nos.	-	-
17.6	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of Network Switch (L2 Unmanaged POE Gigabit Switch) 16-ports 10/100/1000 Base-T POE enabled Smart Switch	1.00	Nos.	-	-
17.7	CCTV Surveillance System - Design, supply, testing, installation and commissioning of wall mounted 16 U network rack, MS CRCA coating, IP42 for NVR, switch, client PC and other accessories.	1.00	Nos.	-	-
17.8	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of CAT6 STP 23AWG Solid copper cable Approx.	1.00	LUMSUM	-	-
17.9	CCTV Surveillance System - Design, Supply, testing, installation and commissioning of 3 Core X 1.5 sq.mm. armoured, power cable for Ethernet switches.	1.00	LUMSUM	-	-

Item Number (upto 200 characters)	Item Description	Quantity (only figures)	UNIT (upto 50 characters)	Tender Rate (Upto 2 Decimals)	Amount (Upto 2 Decimals)
1.1	<p>Schedule 17 OPERATION & MAINTENANCE OF ALL TYPES OF ELECTRICAL, MECHANICAL, EQUIPMENT, MACHINENARY, INSTRUMENTS FOR WATER SUPPLY DISTRIBUTION STATION, ELEVATED SERVICE RESERVOIR, CHLORINATION BUILDING, ELECTRICAL SUB-STATION, ALL M.S. & D.I. NETWORK INCLUDING OPERATION OF VALVES ETC. UNDER 24 x 7 WATER SUPPLY SCHEME. -</p> <p>The work of O&M will consist of operation and maintenance of Electro-Mechanical, Electrical, Mechanical, Electronics equipment / item, Instruments, SCADA System, Record keeping, measuring devices. Civil work's maintenance of WDS, ESR and recharge bore. The firm has to operate the pumps as per VSCL's requirements. The firms has to repair or replace pumps, motors, valves, pipes, screen, gate, gantry, electrical work including day to day maintenance as well as preventive maintenance as required. The work also includes operation and maintenance of MS / DI / CI transmission pipeline, rising main and distribution network. The firm has to repair or replace pipes / specials and all type of valves including repairing of leakages and solving of contamination problems, ensure water quality as per standered norms and repair to breakage of pipes repairs of road and valve chambers. Work also includes day to day maintenancance as well as periodical preventive maintenancance of all kind of valves. Item included gardening and plantation and the maintence of the same at all WDS and ESR plots - O & M Cost Rate for year 0 (Operational Works in Construction period)</p>	24	Month	-	-
1.2	For year 1	12	Month	-	-
1.3	For year 2	12	Month	-	-
1.4	For year 3	12	Month	-	-
1.5	For year 4	12	Month	-	-
1.6	For year 5	12	Month	-	-
1.7	For year 6	12	Month	-	-
1.8	For year 7	12	Month	-	-
1.9	Manpower Cost - Operators at headworks (18 Nos)	1944	Month	-	-
1.10	Lineman (12 Nos)	1296	Month	-	-
1.11	Hydraulic Engineer (1 No)	108	Month	-	-
2.1	Repalcement of Pipes - Replacement of pipes including providing, lowering and laying, excavation and refilling with necessary dewatering with interconnection and valve replacement with all other charges. 150 mm dia pipe	109	Rmt	-	-
2.2	200 mm dia pipe	39	Rmt	-	-
2.3	250 mm dia pipe	53	Rmt	-	-
2.4	300 mm dia pipe	57	Rmt	-	-
2.5	350 mm dia pipe	37	Rmt	-	-
2.6	400 mm dia pipe	33	Rmt	-	-
2.7	450 mm dia pipe	9	Rmt	-	-
2.8	500 mm dia pipe	15	Rmt	-	-
2.9	600 mm dia pipe	11	Rmt	-	-
3.1	<p>OPERATION & MAINTENANACE OF WATER METER CONNECTION - The work of O&M will consist of operation and maintenance of water meter connection. The firms have to repair or replace pipes / specials, valves, water meter, breakages of pipes, repairs of road and valve chambers including day to day maintenancance as well as periodical preventive maintenancance of the assembly of water meter connection as required. Rate for year 0 (Operational Works in Construction period)</p>	24	Month	-	-
3.2	For year 1	12	Month	-	-
3.3	For year 2	12	Month	-	-
3.4	For year 3	12	Month	-	-
3.5	For year 4	12	Month	-	-
3.6	For year 5	12	Month	-	-
3.7	For year 6	12	Month	-	-
3.8	For year 7	12	Month	-	-
4.1	BILLING OF WATER METER CONNECTION - Water meter reading rate per month/per meter based on AMR/AMI Infrastructure - For year 1	6000	No.	-	-
4.2	For year 2	18000	No.	-	-
4.3	For year 3	30000	No.	-	-
4.4	For year 4	32500	No.	-	-
4.5	For year 5	35000	No.	-	-
4.6	For year 6	37500	No.	-	-
4.7	For year 7	40000	No.	-	-
4.8	For year 8	40000	No.	-	-
4.9	For year 9	40000	No.	-	-
4.10	For year 10	40000	No.	-	-