

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
2	Reinforcement: Providing and Fixing in position steel bar reinforcement of Anchor block etc.as per detailed design drawing and shedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. completet (including cost of binding wire).							
	Assuming Steel for above item 40 kg per cum							
	Quantity of steel for Thrust block		838.81	0.04		33.55		
			Total			33.55		
					Total	33.55	MT	33.55
3	Providing fusion bonded epoxy coating to reinforcement bars as per IS-13620-993 specification for a thickness of 175mm(+or - 50) microns including extra cost on account of careful handling,extra cost on account of using PVC coated binding wire instead of GI wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation to & fro from steel yard at kalamboli to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxes (Central & Local), etc. complete. as directed by the Engineer in charge						MT	33.55
	<b>H.D.P.E Pipes PE-100 PN 8</b>							
4	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.							
	Diameter in mm							
	110		6723.00			6723.00	Rmt	6723.00
	160		576.00			576.00	Rmt	576.00
	180		0.00			0.00	Rmt	0.00
	200		5367.00			5367.00	Rmt	5367.00
	250		5352.00			5352.00	Rmt	5352.00
	315		3066.00			3066.00	Rmt	3066.00
	355		1085.00			1085.00	Rmt	1085.00
	400		145.00			145.00	Rmt	145.00
	450		0.00			0.00	Rmt	0.00
	500		0.00			0.00	Rmt	0.00
	560		0.00			0.00	Rmt	0.00
	630		0.00			0.00	Rmt	0.00
	710		0.00			0.00	Rmt	0.00

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
5	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.							
	<b>HDPE Pipes outer Diameter in mm</b>							
	110					6723.00	Rmt	6723.00
	160					576.00	Rmt	576.00
	180					0.00	Rmt	0.00
	200					5367.00	Rmt	5367.00
	250					5352.00	Rmt	5352.00
	315					3066.00	Rmt	3066.00
	355					1085.00	Rmt	1085.00
	400					145.00	Rmt	145.00
	450					0.00	Rmt	0.00
	500					0.00	Rmt	0.00
	560					0.00	Rmt	0.00
	630					0.00	Rmt	0.00
	710					0.00	Rmt	0.00
6	<b>Deawtering:</b> Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in - charge (including cost of machinery, labour, fuel), etc complete		<b>L</b>	<b>B</b>	<b>D</b>	<b>Qty</b>		
	110		6723.00		2.16	3361.50		
	160		576.00		2.16	288.00		
	180		0.00		2.16	0.00		
	200		5367.00		2.16	2683.50		
	250		5352.00		2.16	2676.00		
	315		3066.00		2.16	1533.00		
	355		1085.00		2.16	542.50		
	400		145.00		2.16	72.50		
	450		0.00		2.16	0.00		
	500		0.00		2.16	0.00		
	560		0.00		3.16	0.00		
	630		0.00		4.16	0.00		
	710		0.00		5.16	0.00		
						11157.00	<b>BHP/HR</b>	<b>11157.00</b>
7	<b>HDPE fittings</b>							

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
	Providing and supply of Electro Fusion Fittings in accordance with BS EN 12201: Part-3 suitable for drinking water with in black/blue colour manufactured from compounded PE80/PE100 virgin polymer and compatible with PE80/PE100 pipes, in pressure							
	FITTINGS for HDPE Pipes (5%)	Amount Provison at 5% of Item No. 4						
<b>8</b>	<b>PIPE APPURTENANCES SUPPLY</b>							
	Providing Double flange sluice valve confirming for IS 2906/14846/ including worn gear arrangements as per test pressure stainless steel spindle, caps including all taxes transportation etc. complete							
	sluice valve & Scour Valve (PN-1 Without bypass)							
a	80 mm for Scouring purpose	4				4.00	Nos.	4.00
b	100 mm for control purpose	7				7.00	Nos	7.00
c	100 mm for Scouring purpose	1				1.00	Nos.	1.00
d	150 mm for control purpose	1				1.00	Nos	1.00
e	150 mm for Scouring purpose	6				6.00	Nos.	6.00
f	200 mm for control purpose	6				6.00	Nos	6.00
g	200 mm for Scouring purpose	3				3.00	Nos.	3.00
h	250 mm for control purpose	6				6.00	Nos	6.00
i	250 mm for Scouring purpose	1				1.00	Nos.	1.00
j	300 mm for control purpose	4				4.00	Nos	4.00
k	300 mm for Scouring purpose	0				0.00	Nos.	0.00
l	350 mm for Scouring purpose	0				0.00	Nos.	0.00
m	400 mm for Scouring purpose	0				0.00	Nos.	0.00
n	450 mm for Scouring purpose	0				0.00	Nos.	0.00
<b>9</b>	<b>Butterfly valve (Dia in mm)</b>							
f	350	3				3.00	Nos	3.00
g	400	0				0.00	Nos	0.00
h	450	0				0.00	Nos	0.00
i	500	0				0.00	Nos	0.00
<b>10</b>	<b>Air valve (Dia in mm)</b>							
	Flanged/Screwed Type-PN-1( Diameter in mm)							
a	40	7				7.00	Nos	7.00
<b>11</b>	<b>Air valve (Dia in mm)</b>							
	Air Valve Double Ball Flanged-Type-PN-1( Diameter in mm)							
a	50	1				1.00	Nos	1.00
b	65	0				0.00	Nos	0.00
c	80	12				12.00	Nos	12.00
<b>12</b>	<b>Air valve (Dia in mm)</b>							

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
	Providing and supplying Air Valves as per IS-14845-2000 and MJP's standard specifications double orifice type combined with isolating sluice valve, mounted in horizontal position and operated by wheel gearing, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including all taxes (Central and local), insurance, third party inspection charges, loading, unloading, transportation upto departmental storeroom / site, etc. complete.							
a	100	4				4.00	Nos	4.00
b	150	3				3.00	Nos	3.00
c	200	0				0.00	Nos	0.00
	<b>PIPE APPURTENANCES FIXING</b>							
13	Lowering laying and jointing in position D.I. D/F Reflux valves, Butterfly valves and sluice valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. ( Rate for all class of valve)							
	Sluice Valve & Scour Valve(Dia in mm)							
a	80 mm for Scouring purpose	4.00				4.00	Nos.	4.00
b	100 mm for control purpose	7				7.00	NO.	7.00
c	100 mm for Scouring purpose	1.00				1.00	Nos.	1.00
d	150 mm for control purpose	1				1.00	NO.	1.00
e	150 mm for Scouring purpose	6.00				6.00	Nos.	6.00
f	200 mm for control purpose	6				6.00	NO.	6.00
g	200 mm for Scouring purpose	3.00				3.00	Nos.	3.00
h	250 mm for control purpose	6				6.00	NO.	6.00
i	250 mm for Scouring purpose	1.00				1.00	Nos.	1.00
j	300 mm for control purpose	4				4.00	NO.	4.00
k	300 mm for Scouring purpose	0.00				0.00	Nos.	0.00
l	350 mm for Scouring purpose	0.00				0.00	Nos.	0.00
m	400 mm for Scouring purpose	0.00				0.00	Nos.	0.00
n	450 mm for Scouring purpose	0.00				0.00	Nos.	0.00
	<b>14 Butterfly valve (Dia in mm)</b>							
a	350	3				3.00	NO.	3.00
b	400	0				0.00	NO.	0.00
c	450	0				0.00	NO.	0.00
d	500	0				0.00	NO.	0.00
	<b>15 Air Valve (Dia in mm)</b>							
a	40	7				7.00	NO.	7.00
b	50	1				1.00	NO.	1.00
c	65	0				0.00	NO.	0.00
d	80	12				12.00	NO.	12.00
e	100	4				4.00	NO.	4.00
f	150	3				3.00	NO.	3.00
g	200	0				0.00	NO.	0.00
	<b>16 Utility Shifting</b>							

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
17	Supplying, transporting, the S.P. fire hydrants including duck foot bend, S.V. and S.V. road box, painting the hydrant, fixing the saddle piece, supplying, and laying required length of C.I. pipeline and jointing the same spun yarn, molten lead including caulking, fixing the S.V. road box in one brick masonry chamber in 1:5 C.M. with 12 mm thick 1:3 cement plaster both inside and outside on 1:3:6 C.C. 150 mm thick etc. complete as specified and directed. [As per I.S. 900/1965 Revised]	2					Nos	2
18	Drip irrigation	0					km	0
19	Sprinkler irrigation	0					Sqrm	0

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Rate analysis							
R.A. No. 1	Filling in Excavated surface with contractor's murum in 15 to 20 cm layers including watering compaction etc complete						
	Earth filling MJP 16-17, Item No 19, Pg-43		MJP 16-17, Item No 19, Pg-43	=	723.00	Cum	
	Add 5 % for Corporation Area			=	36.15		
	Add lead charges for						
	Murum	1.00	0.00	=	0.00		
					759.15		
				Total	=	759.15	
				Say	=	759.15	Cum
R.A. No. 2	Providing dry trap rubble stone soling in 15 cm to 20cm layers including hand packing and compacting, royalty charges etc complete.						
	Soling Rate as per MJP 16-17, Page No. 43 Item No 20		MJP 16-17, Page No. 43 Item No 20	=	1014.00	Cum	
	Add 5 % for Corporation Area			=	50.7		
	Add lead charges for						
	Hand Broken Metal	1.000	0.00	=	0.00		
	Sand	0.150	1679.50	=	251.92		
					1316.62		
				Total	=	1316.624348	
				Say	=	1316.62	Cum
R.A. No.3	Providing and laying in situ, following grade of C.C. of trap/granite/gneiss metal for foundation and bedding including dewatering,formwork,compacting and curing,finishing,etc.complete.						
	PCC Rate as per MJP 16-17, Item No1, Pg-47		MJP 16-17, Item No1, Pg-47	=	4457.00	Cum	
	Add 5 % for Corporation Area			=	222.85		
	Add lead charges for						
	Sand	0.45	1679.50	=	755.77		
	crushed metal (40 mm)	0.52	0.00	=	0.00		
	crushed metal (20 mm,10 mm)	0.33	0.00	=	0.00		
					5435.62		
				Total	=	5435.623043	
				Say	=	5435.62	Cum
R.A. No.4	Providing and filling in the foundation trenches with sand of approved quality including watering compaction. Etc						
	Sand Bedding Rate as per MJP 16-17 Item No 21, Pg-43		MJP 16-17 Item No 21, Pg-43	=	973.00	Cum	
	Add 5 % for Corporation Area			=	48.65		
	Add lead charges for						
	Sand	1.00	1679.50	=	1679.50		
					2701.15		
				Total	=	2701.145652	
				Say	=	2701.15	Cum
R.A. No.5	Providing and laying insitu Cement concrete of trap/granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including dewatering, formwork, compaction finishing & curing etc, complete (By wigh batching and mix design for M-250 and M-300 only ) Use of L&T, A C.C., Ambuja, Birla Gold, Manikgad, Rajashree etc cement is permitted) (excluding M.S. or Tor reinforcement)						
	RCC work MJP 16-17, Item No 2 c Pg-48		MJP 16-17, Item No 2 c, Pg-48	=	5999.00	Cum	
	Add 5 % for Corporation Area			=	299.95		
	Add lead charges for						
	Sand	0.425	1679.50	=	713.79		
	crushed metal (20 mm)	0.57	0.00	=	0.00		
	crushed metal (10 mm)	0.28	0.00	=	0.00		
					7012.74		
				Total	=	7012.735652	
				Say	=	7012.74	Cum

NAVI MUMBAI MUNICIPAL CORPORATION									
Recycle Water System									
LEAD CHART									
Sr. No.	Material	Source	Lead in Kms	Lead Charges 2016-17	Initial Lead	Initial Lead Charges 16-17	Net Lead Charges 16-17	Unit	
1	Sand	Ambet	160.00	1830.07	5	150.57	1679.50	Cum	
2	Crushed Metal	Local Stone Quarry	5	150.57	5	150.57	0.00	Cum	
3	Soling Stone	Local Stone Quarry	5	184.21	5	184.21	0.00	Cum	
4	Murum / Earth	Local Stone Quarry	5	180.38	5	180.38	0.00	Cum	
5	Brick		5	247.37	5	247.37	0.00	1000 no.	





Navi Mumbai Municipal Corporation						
Recycled Water System						
Measurement Sheet						
Part-1 -Pipeline Trench Works For Distribution System of Koparkhairane MIDC						
Item No.	Description of Item	Measurements			Unit	Qty
		No.	L	B		
<b>PART-I CIVIL WORKS</b>						
1	Excavation for foundation/ pipe trenches in earth soil of all types sand gravel and soft murum including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
	Lift 0 to 1.5 m					
	Dia in mm					
	Excavation for pipe laying					
	110	1.0	6723.00	0.41	0.86	2370.53
	160	1.0	576.00	0.46	0.91	241.11
	180	1.0	0.00	0.48	0.93	0.00
	200	1.0	5367.00	0.50	0.95	2549.33
	250	1.0	5352.00	0.55	1.00	2943.60
	315	1.0	3066.00	0.62	1.07	2008.15
	355	1.0	1085.00	0.66	1.11	785.30
	400	1.0	145.00	0.90	1.15	150.08
	450	1.0	0.00	0.95	1.20	0.00
	500	1.0	0.00	1.00	1.25	0.00
	560	1.0	0.00	1.06	1.31	0.00
	630	1.0	0.00	1.13	1.38	0.00
	710	1.0	0.00	1.21	1.46	0.00
		TOTAL	22314.00			
	Chambers					
	90*45 cm	1.00	1.50	1.05	1.60	2.52
	90*60 cm	45.00	1.50	1.20	1.60	129.60
	90*90 cm	58.00	1.50	1.50	1.60	208.80
					Total	Cum
						15707.62
	Assuming 50 % of Qty for above item	1.00	15707.62		0.50	7853.81
	PCC For Valve Chamber				Thickness	
	90*45 cm	1.00	1.50	1.05	0.15	0.24
	90*60 cm	45.00	1.50	1.20	0.15	12.15
	90*90 cm	58.00	1.50	1.50	0.15	19.58
					Total	Cum
						31.96
2	Excavation for foundation/ pipe trenches by all means in hard murum, including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
	Assuming 40% of qty for above item	1.00	15707.62		0.40	Cum
						6283.05

Item No.	Description of Item	Measurements			Unit	Qty
		No.	L	B		
3	Excavation for foundation/ pipe trenches in hard rock and concrete road by chiselling wedging line drill by mechanical means or by all means other than blasting including trimming and levelling the bed removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
	Assuming 10% of qty for above item	1.00	15707.62		0.10	Cu.m 1570.76
4	<b>Rubble Soling</b> :Providing dry trap granite quartzite qneiss, rubble stone soling in 15 cm to 20 cm thick layer including hand packing and compacting royalty charges etc.complete					
	For Dia. in mm					
	110	1.00	2016.90	0.41	0.25	206.73
	160	1.00	172.80	0.46	0.25	19.87
	180	1.00	0.00	0.48	0.25	0.00
	200	1.00	1610.10	0.50	0.25	201.26
	250	1.00	1605.60	0.55	0.25	220.77
	315	1.00	919.80	0.62	0.25	141.42
	355	1.00	325.50	0.66	0.25	53.30
	400	1.00	43.50	0.90	0.25	9.79
	450	1.00	0.00	0.95	0.25	0.00
	500	1.00	0.00	1.00	0.25	0.00
	560	1.00	0.00	1.06	0.25	0.00
	630	1.00	0.00	1.13	0.25	0.00
	710	1.00	0.00	1.21	0.25	0.00
	Chambers					
	90*45 cm	1.00	1.50	1.05	0.25	0.39
	90*60 cm	45.00	1.50	1.20	0.25	20.25
	90*90 cm	58.00	1.50	1.50	0.25	32.63
	Total quantity					Cum 906.41
5	<b>Bedding</b> Providing and filling sand boxing in pipeline or for foundation with sand of approved quality including watering and compaction intial lead upto 5 km etc. complete					
	Dia. in mm					
	Sand Bedding for pipe laying					
	110	1.00	6723.00	0.41	0.15	413.46
	160	1.00	576.00	0.46	0.15	39.74
	180	1.00	0.00	0.48	0.15	0.00
	200	1.00	5367.00	0.50	0.15	402.53
	250	1.00	5352.00	0.55	0.15	441.54
	315	1.00	3066.00	0.62	0.15	282.84
	355	1.00	1085.00	0.66	0.15	106.60
	400	1.00	145.00	0.90	0.15	19.58
	450	1.00	0.00	0.95	0.15	0.00
	500	1.00	0.00	1.00	0.15	0.00
	560	1.00	0.00	1.06	0.15	0.00
	630	1.00	0.00	1.13	0.15	0.00
	710	1.00	0.00	1.21	0.15	0.00
						1706.29

Item No.	Description of Item	Measurements			Unit	Qty	
		No.	L	B			D
6	<b>PCC for pipe laying</b>						
	110	6723	2016.90	0.00	0.15	0.00	
	160	576	172.80	1.60	0.15	41.47	
	180	0	0.00	1.60	0.15	0.00	
	200	5367	1610.10	1.60	0.15	386.42	
	250	5352	1605.60	1.60	0.15	385.34	
	315	3066	919.80	1.61	0.15	221.44	
	355	1085	325.50	1.61	0.15	78.36	
	400	145	43.50	1.68	0.15	10.96	
	450	0	0.00	1.68	0.15	0.00	
	500	0	0.00	1.74	0.15	0.00	
	560	0	0.00	1.78	0.15	0.00	
	630	0	0.00	1.88	0.15	0.00	
	710	0	0.00	0.00	0.15	0.00	
			<b>Total PCC quantity</b>			Cum	<b>1177.28</b>
7	<b>Disposal of Earth:</b> Disposal of excavated material including loading and unloading, lead upto 10 km etc. Complete						
	volume of pipe						
	110	1.00	6723.00	0.79	0.01	63.86	
	160	1.00	576.00	0.79	0.03	11.58	
	180	1.00	0.00	0.79	0.03	0.00	
	200	1.00	5367.00	0.79	0.04	168.52	
	250	1.00	5352.00	0.79	0.06	262.58	
	315	1.00	3066.00	0.79	0.10	238.82	
	355	1.00	1085.00	0.79	0.13	107.34	
	400	1.00	145.00	0.79	0.16	18.21	
	450	1.00	0.00	0.79	0.20	0.00	
	500	1.00	0.00	0.79	0.25	0.00	
	560	1.00	0.00	0.79	0.31	0.00	
	630	1.00	0.00	0.79	0.40	0.00	
	710	1.00	0.00	0.79	0.50	0.00	
	<b>Road reinstatement</b>						
	110	1.00	6723.00	1.40	0.20	1882.44	
	160	1.00	576.00	1.40	0.20	161.28	
	180	1.00	0.00	1.40	0.20	0.00	
	200	1.00	5367.00	1.40	0.20	1502.76	
	250	1.00	5352.00	1.40	0.20	1498.56	
	315	1.00	3066.00	1.40	0.20	858.48	
	355	1.00	1085.00	1.40	0.20	303.80	
	400	1.00	145.00	1.40	0.20	40.60	
	450	1.00	0.00	1.40	0.20	0.00	
	500	1.00	0.00	1.40	0.20	0.00	
	560	1.00	0.00	1.40	0.20	0.00	
	630	1.00	0.00	1.40	0.20	0.00	
	710	1.00	0.00	1.40	0.20	0.00	
					Cum	<b>7118.83</b>	
8	<b>Deawtering:</b> Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in -charge (including cost of machinery, labour, fuel), etc complete						

Item No.	Description of Item	No.	Measurements			Unit	Qty
			L	B	D		
	Lum sum	1.00				BHP/Hr.	36000.00
9	<b>RCC.Thrust Block:</b> Providing and laying insitu Cement Concrete of trap/granaite/quartzite/gneiss metal for RCC work in foundation like raft,grillage,strip foundation and footing of RCC columns and steel, stanchions including normal dewatering ,plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete( by weigh batching and mix design for M-250 and M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block						
	1 x 0.6 x 0.6 m block	45.00	1.00	0.60	0.60		13.02
						Cum	13.02
10	<b>Reinforcement:</b> Providing and Fixing in position steel bar reinforcement of Anchor block etc.as per detailed design drawing and shedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. completet (including cost of binding wire).						
	Assuming Steel for above item 40 kg per cum						
	Quantity of steel for Thrust block		13.02	0.4			5.21
					Total	MT	5.21
11	<b>CHAMBERS</b>						
	Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast RCC frame and cover, etc complete as directed by Engineer-in-charge						
	Inspection Chambers						
	Valve Chambers with Precast R.C.C covers						
	90*45 cm	1.00				No.	1.00
	90*60 cm	45.00				No.	45.00
	90*90 cm	58.00				No.	58.00
12	<b>Refilling the trenches</b> with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging etc. complete						
	Filling in trenches with approved excavated material						

Item No.	Description of Item	Measurements			Unit	Qty	
		No.	L	B			D
	<b>Total Excavation</b>	1				15707.62	
	<b>Deductions</b>						
	PCC Bedding					1177.28	
	Rubble Soling					906.41	
	Sand bedding					1706.29	
	Pipe Volume						
		110	6723.00			63.86	
		160	576.00			11.58	
		180	0.00			0.00	
		200	5367.00			168.52	
		250	5352.00			262.58	
		315	3066.00			238.82	
		355	1085.00			107.34	
		400	145.00			18.21	
		450	0.00			0.00	
		500	0.00			0.00	
		560	0.00			0.00	
		630	0.00			0.00	
		710	0.00			0.00	
	<b>Total quantity of Pipe volume</b>		<b>Total</b>			Cum	<b>870.91</b>
	<b>Total Quantity to be deducted</b>					<b>4660.88</b>	
	<b>Net quantity of filling</b>					<b>11046.74</b>	
13	Reinstatement of road by excavating the potholes in rectangular shape and filling of potholes by one layers of soling 230 mm thick, one layer of 80 mm trap metal of 200mm thick, one layer of 40 mm trap metal of 200 mm thick including suppling and spreading of stonedust, watering compaction and 75mm thick bituminous bound macadam with cold emulsion and bitumious macadam of 50 mm thick with bitumen of S-65 grade and 25mm thick asfalt concrete with S-35 grade of bitumen including compaction by vibratory roller of all layers and providing and applying tack coat of 50 kg /100 m2 on black top surface and bitumen contained of 250 kg/100 m2 for BBM surface and disposal of surplus clay/soil etc. complete. pipeline trenches of various diameter of pipes etc complete.						
		110	6723.00	1.00		6723.00	
		160	576.00	1.00		576.00	
		180	0.00	1.00		0.00	
		200	5367.00	1.00		5367.00	
		250	5352.00	1.00		5352.00	
		315	3066.00	1.00		3066.00	
		355	1085.00	1.00		1085.00	
		400	145.00	1.00		145.00	
		450	0.00	1.00		0.00	
		500	0.00	1.00		0.00	
		560	0.00	1.00		0.00	
		630	0.00	1.00		0.00	
		710	0.00	1.00		0.00	
					Sq.m.	22314.00	

## Navi Mumbai Municipal Corporation

## Recycled Water System

## ABSTRACT

## Part-I -Pipeline Trench Works For Distribution System of Koparkhairane MIDC

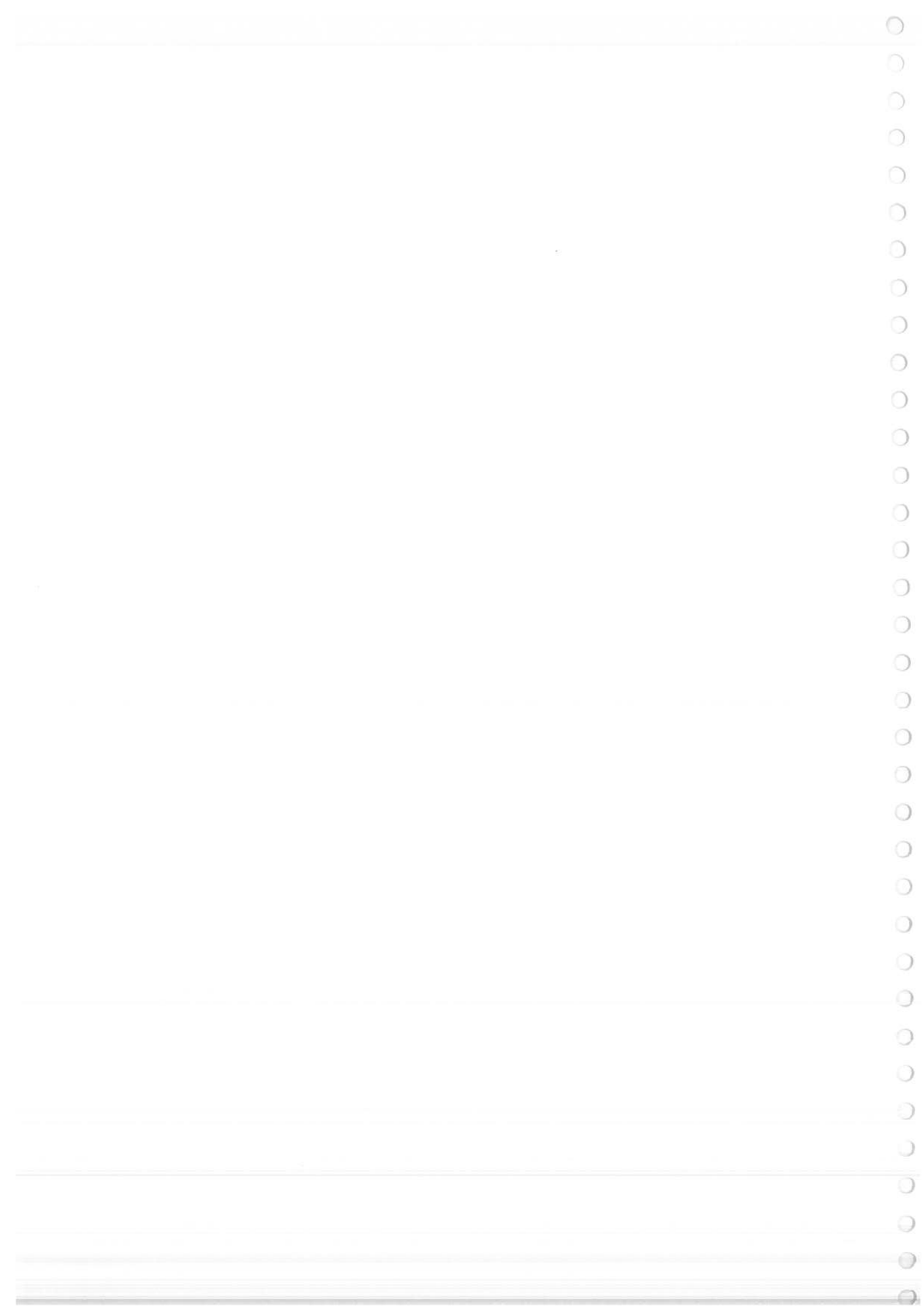
Item No.	Ref	Qty	Description of Item	Unit	Rate (Rs.)	AW 10%	Final rate (Rs.)	Amount (Rs)
			<b>Excavation</b>					
1	MJP 16-17 It. No. 1 Pg. no. 39		Excavation for foundation/ pipe trenches in earth soil of all types sand gravel and soft murum including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
		5497.67	Lift 0 to 1.5 M	Cum	142.00	5%	149.10	819702.38
		2356.14	Lift 1.5 to 3 M	Cum	156.00	5%	163.80	385936.33
2	MJP 16-17 It. No. 2 Pg. no. 39		Excavation for foundation/ pipe trenches by all means in hard murum, including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
		2513.22	Lift 0 to 1.5 M	Cum	166.00	5%	174.30	438054.23
		3769.83	Lift 1.5 to 3 M	Cum	180.00	5%	189.00	712497.84
3	MJP 16-17 It. No. 5 Pg. no. 39		Excavation for foundation/ pipe trenches by all means in soft rock and old cement & lime masonry foundation asphalt road removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.	Cum				
		314.15	Lift 0 to 1.5 M	Cum	473.00	5%	496.65	156023.83
		1256.61	Lift 1.5 to 3 M	Cum	494.00	5%	518.70	651803.58
4	MJP 16-17 It. No. 20 Pg. no. 43	906.41	<b>Rubble Soling :</b> Providing Dry Trap Granite quartzite gneiss, rubble stone soling in 15 cm to 20 cm thick layer including hand packing and compacting royalty charges etc. complete	Cum	1014.00	5%	1064.70	965057.79
5	MJP 16-17 It. No. 21 Pg. no. 43	1706.29	<b>Bedding</b> Providing and filling sand boxing in pipeline or for foundation with sand of approved quality including watering and compaction initial lead upto 5 km etc. complete	Cum	973.00	5%	1021.65	1743229.39
6	MJP 16-17 It. No. 47 Pg. no. 1 b	1177.28	<b>PCC</b> Providing & laying in situ following grades of cement concrete of trap / granite metal for foundation & bedding including dewatering formwork curing compacting finishing etc. complete M-150	Cum	4457.00	5%	5358.18	6308059.68
7	MJP 16-17 Statement VI	7118.83	<b>Disposal of Earth :</b> Disposal of excavated material including loading and unloading, lead upto 10 km etc. Complete	Cum	411.16	5%	431.72	3073325.49
8	MJP 16-17 It. No. 16 Pg. no. 42	36000.00	<b>Dewatering :</b> Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in -charge (including cost of machinery, labour, fuel), etc complete	BHP/ Hr.	62.00	5%	65.10	2343600.00
9	MJP 16-17 It. No. 10 Pg. no. 54	13.02	<b>RCC Thrust Block :</b> Providing and laying insitu Cement Concrete of trap/granite/quartzite/gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete( by weigh batching and mix design for M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block.	Cum	5999.00	5%	6939.59	90358.72
10	MJP 16-17 It. No. 8 Pg. no. 51	5.21	<b>Reinforcement:</b> Providing and Fixing in position steel bar reinforcement of Anchor block etc as per detailed design drawing and schedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. complete( including cost of binding wire)	MT	51749.00	5%	54336.45	283000.53
11	MJP 16-17 Sect I, Item No 1, pg. no. 343		Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast RCC frame and cover, etc complete as directed by Engineer-in-charge					

Item No.	Ref	Qty	Description of Item	Unit	Rate (Rs.)	AW 10%	Final rate (Rs.)	Amount (Rs)
(a)		1	As above of 95*45 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	7,719.00	5%	8104.95	8104.95
(b)		45	As above of 90*60 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	8,400.00	5%	8820.00	396900.00
(c)		58	As above of 90*90 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	10,066.00	5%	10569.30	613019.40
12			<b>FILLING IN TRENCHES</b>					
	MJP 16-17 It. No. 17 Pg. no. 43	11,046.74	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging etc. complete	RMT	64.00	5%	67.20	742340.94
13	RA	22,314.00	Reinstatement of road by excavating the potholes in rectangular shape and filling of potholes by one layers of soling 230 mm thick, one layer of 80 mm trap metal of 200mm thick, one layer of 40 mm trap metal of 200 mm thick including suppling and spreading of stonedust, watering compaction and 75mm thick bituminous bound macadam with cold emulsion and bituminous macadam of 50 mm thick with bitumen of S-65 grade and 25mm thick aspalt concrete with S-35 grade of bitumen including compaction by vibratory roller of all layers and providing and applying tack coat of 50 kg /100 m2 on black top surface and bitumen contained of 250 kg/100 m2 for BBM surface and disposal of surplus clay/soil etc. complete. pipeline trenches of various diameter of pipes etc complete.	Sqm	1959.00			43,713,126.00
		<b>PART-I</b>	<b>Net Cost (in Rs)</b>					<b>63,444,141</b>

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Rate analysis							
R.A. No. 1	Filling in Excavated surface with contractor's murum in 15 to 20 cm layers including watering compaction etc complete						
	Earth filling MJP 16-17, Item No 19, Pg-43		MJP 16-17, Item No 19, Pg-43	=	723.00	Cum	
	Add 5 % for Corporation Area			=	36.15		
	Add lead charges for						
	Murum	1.00	0.00	=	0.00		
					759.15		
				Total	=	759.15	
				Say	=	759.15	Cum
R.A. No. 2	Providing dry trap rubble stone soling in 15 cm to 20cm layers including hand packing and compacting, royalty charges etc complete.						
	Soling Rate as per MJP 16-17, Page No. 43 Item No 20		MJP 16-17, Page No. 43 Item No 20	=	1014.00	Cum	
	Add 5 % for Corporation Area			=	50.7		
	Add lead charges for						
	Hand Broken Metal	1.000	0.00	=	0.00		
	Sand	0.000	1507.40	=	0.00		
					1064.70		
				Total	=	1064.70	
				Say	=	1064.70	Cum
R.A. No.3	Providing and laying in situ, following grade of C.C. of trap/granite/gneiss metal for foundation and bedding including dewatering,formwork,compacting and curing,finishing,etc.complete.						
	PCC Rate as per MJP 16-17, Item No1, Pg-47		MJP 16-17, Item No1, Pg-47	=	4457.00	Cum	
	Add 5 % for Corporation Area			=	222.85		
	Add lead charges for						
	Sand	0.45	1507.40	=	678.33		
	crushed metal (40 mm)	0.52	0.00	=	0.00		
	crushed metal (20 mm,10 mm)	0.33	0.00	=	0.00		
					5358.18		
				Total	=	5358.18	
				Say	=	5358.18	Cum
R.A. No.4	Providing and filling in the foundation trenches with sand of approved quality including watering compaction. Etc						
	Sand Bedding Rate as per MJP 16-17 Item No 21, Pg-43		MJP 16-17 Item No 21, Pg-43	=	973.00	Cum	
	Add 5 % for Corporation Area			=	48.65		
	Add lead charges for						
	Sand	1.00	1507.40	=	1507.40		
					2529.05		
				Total	=	2529.048261	
				Say	=	2529.05	Cum
R.A. No.5	Providing and laying insitu Cement concrete of trap/granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including dewatering, formwork, compaction finishing & curing etc, complete (By wigh batching and mix design for M-250 and M-300 only.) Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree etc cement is permitted) (excluding M.S. or Tor reinforcement)						
	RCC work MJP 16-17, Item No 2 c, Pg-48		MJP 16-17, Item No 2 c, Pg-48	=	5999.00	Cum	
	Add 5 % for Corporation Area			=	299.95		
	Add lead charges for						
	Sand	0.425	1507.40	=	640.64		
	crushed metal (20 mm)	0.57	0.00	=	0.00		
	crushed metal (10 mm)	0.28	0.00	=	0.00		
					6939.59		
				Total	=	6939.594261	
				Say	=	6939.59	Cum



NAVI MUMBAI MUNICIPAL CORPORATION									
Recycle Water System									
LEAD CHART									
Sr. No.	Material	Source	Lead in Kms	Lead Charges 2016-17	Initial Lead	Initial Lead Charges 16-17	Net Lead Charges 16-17	Unit	
1	Sand	Ambet	160.00	1830.07	5	150.57	1679.50	Cum	
2	Crushed Metal	Local Stone Quarry	5	150.57	5	150.57	0.00	Cum	
3	Soling Stone	Local Stone Quarry	5	184.21	5	184.21	0.00	Cum	
4	Murum / Earth	Local Stone Quarry	5	180.38	5	180.38	0.00	Cum	
5	Brick		5	247.37	5	247.37	0.00	1000 no.	



Navi Mumbai Municipal Corporation							
Recycled Water System							
Name of Work :- Distribution System of Vashi MIDC area.							
ABSTRACT							
Item No.	Qty	DSR Ref.	Description of Item	Unit	Basic Rate	Final Rate (Rs.)	Total Amount (Rs)
Add 5% area wightage for corporation area.							
1	1268.15	MJP 16-17, Item No 2, Pg-48+RA	RCC Thrust Block : Providing and laying insitu Cement Concrete of trap/granite/quartzite/gneiss metal for RCC work in foundation like raft,grillage,strip foundation and footing of RCC columns and steel, stanchions including normal dewatering ,plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete (by weigh batching and mix design for M-250 and M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block.	Cum	0.00	7012.74	8893213.80
2	50.73	MJP 16-17, Item No 8, Pg-52	Providing and fixing in position steel bar reinforcement of various daimeters for RCC piles caps ,footing foundations, slabs, beams, colums,canopies,staircases,newls ,chajjas lintels,pardies,copings ,fins arches ,etc. as per detailed designs ,drawings and schedules including cutting bending ,hooking the bars, binding with wires or tack welding and supporting as required etc.complete. (including cost of binding wire) as directed by the Engineer in charge.	MT	51749.00	54336.45	2756274.82
3		MJP16-17, Item No 9) b), Pg-53	Providing fusion bonded epoxy coating to reinforcement bars as per IS-13620-993 specification for a thickness of 175mm(+or - 50) microns including extra cost on account of careful handling,extra cost on account of using PVC coated binding wire instead of GI wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation to & fro from steel yard at kalamboli to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxes (Central & Local), etc. complete. as directed by the Engineer in charge.				
	50.73		1) For 8mm to 20mm dia	MT	15772.00	16560.60	840054.23
4			H.D.P.E Pipes PE-100 PN 8				
		MJP16-17, Item No X 1) b), Pg-176	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick telese couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.				

Item No.	Qty	DSR Ref.	Description of Item	Unit	Basic Rate	Final Rate (Rs.)	Total Amount (Rs)
			<b>HDPE Pipes outer Diameter in mm</b>				
	6410.00		110	RMT	295.00	295.00	1890950.00
	1394.00		160	RMT	666.00	666.00	928404.00
	0.00		180	RMT	840.00	840.00	0.00
	3313.00		200	RMT	988.00	988.00	3273244.00
	5879.00		250	RMT	1565.00	1565.00	9200635.00
	7200.00		315	RMT	2483.00	2483.00	17877600.00
	5318.00		355	RMT	3142.00	3142.00	16709156.00
	774.00		400	RMT	4127.00	4127.00	3194298.00
	564.00		450	RMT	5518.00	5518.00	3112152.00
	27.00		500	RMT	6807.00	6807.00	183789.00
	0.00		560	RMT	8543.00	8543.00	0.00
	0.00		630	RMT	10756.00	10756.00	0.00
	0.00		710	RMT	13629.00	13629.00	0.00
5		MJP16-17, Item No X 2) A), Pg-182	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.				
			<b>HDPE Pipes outer Diameter in mm</b>				
	6410.00		110	RMT	57.00	59.85	383638.50
	1394.00		160	RMT	93.00	97.65	136124.10
	0.00		180	RMT	93.00	97.65	0.00
	3313.00		200	RMT	103.00	108.15	358300.95
	5879.00		250	RMT	137.00	143.85	845694.15
	7200.00		315	RMT	186.00	195.30	1406160.00
	5318.00		355	RMT	203.00	213.15	1133531.70
	774.00		400	RMT	206.00	216.30	167416.20
	564.00		450	RMT	232.00	243.60	137390.40
	27.00		500	RMT	299.00	313.95	8476.65
	0.00		560	RMT	336.00	352.80	0.00
	0.00		630	RMT	377.00	395.85	0.00
	0.00		710	RMT	377.00	395.85	0.00
6	15439.5	MJP16-17, Item No 16, Pg-42	<b>Dewatering</b> the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge ( including cost of machinery,labour, fuel) etc. complete. as directed by the Engineer in charge.	BHP/ Hr.	62.00	65.10	1005111.45
7			<b>HDPE fittings</b>				
			Providing and supply of Electro Fusion Fittings in accordance with BS EN 12201: Part-3 suitable for drinking water with in black/blue colour manufactured from compounded PE80/PE100 virgin polymer and compatible with PE80/PE100 pipes, in pressure rating SDR11 with min PN12.5 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, transite insurance, loading, unloading, stacking etc. complete.				
			FITTINGS for HDPE Pipes (5%)	Lumpsum		2818511.40	2818511.40

Item No.	Qty	DSR Ref.	Description of Item	Unit	Basic Rate	Final Rate (Rs.)	Total Amount (Rs)
8.0			<b>PIPE APPURTANANCES SUPPLYING</b>				
		MJP16-17, Item No-2 XIII , Pg-211	Providing Double flange sluice valve confirming for IS 2906/14846/ including worn gear arrangements as per test pressure stainless steel spindle, caps including all taxes transportation etc. complete				
			sluice valve & Scour Valve (PN-1 Without bypass)				
a	4.00		80 mm for Scouring purpose	No.	4,834.00	4834.00	19336.00
b	7.00		100 mm for control purpose	No.	6438.00	6438.00	45066.00
c	1.00		100 mm for Scouring purpose	No.	6438.00	6438.00	6438.00
d	2.00		150 mm for control purpose	No.	9655.00	9655.00	19310.00
e	5.00		150 mm for Scouring purpose	No.	9655.00	9655.00	48275.00
f	4.00		200 mm for control purpose	No.	17501.00	17501.00	70004.00
g	7.00		200 mm for Scouring purpose	No.	17,501.00	17501.00	122507.00
h	6.00		250 mm for control purpose	No.	27059.00	27059.00	162354.00
i	1.00		250 mm for Scouring purpose	No.	27,059.00	27059.00	27059.00
j	8.00		300 mm for control purpose	No.	34353.00	34353.00	274824.00
k	1.00		300 mm for Scouring purpose	No.	34,353.00	34353.00	34353.00
l	1.00		350 mm for Scouring purpose	No.	50,535.00	50535.00	50535.00
m	0.00		400 mm for Scouring purpose	No.	66,533.00	66533.00	0.00
n	0.00		450 mm for Scouring purpose	No.	71,530.00	71530.00	0.00
9.0		MJP16-17, Item No-3 XIII , Pg-215	Providing, double flanged short body pattern type manually operated Butterfly Valve having body, disc and end cover in graded cast iron to IS-210 Gr.CF 200 generally confirming in to IS- 13095-1991, Synthetic rubber faced ring secured on disc by retaining ring with stainless steel screw stub shaft of stainless steel riding in teflon bearing excluding C.C. foundation /structural steel support.				
			i) Butterfly Valves PN - 1 ( WithBypass) ( Diameter in mm)				
f	9.00		350	No.	44727.00	44727.00	402543.00
g	0.00		400	No.	55490.00	55490.00	0.00
h	0.00		450	No.	64770.00	64770.00	0.00
i	0.00		500	No.	69967.00	69967.00	0.00
10.0		MJP16-17, Sec XIII, Item No-5 a Pg-218	<b>Air Valves</b> Providing and supplying Air Valves as per IS 14845-2000 and MJP's standard specifications of approved make and quality of following diameters including all taxes (central and local), railway freight, inspection charges, unloading from railway wagons, loading into trucks, transportation upto departmental stores / site, unloading and stacking etc. complete.				
			Air Valve Single Ball Flanged/Screwed Type-PN-1( Diameter in mm)				
a	7.00		40	No.	1193.00	1193.00	8351.00

Item No.	Qty	DSR Ref.	Description of Item	Unit	Basic Rate	Final Rate (Rs.)	Total Amount (Rs)
11.0		MJP16-17, Item No-6 a, Sec XIII, Pg-219	<b>Air Valves</b> Providing and supplying Air Valves as per IS-10845 and MJP's standard specifications double orifice type combined with screw down isolating valve, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including all taxes (Central and local), insurance, third party inspection charges, loading, unloading, transporta-toin upto departmental stores / site, etc. complete.				
			Air Valve Double Ball Flanged-Type-PN-1( Diameter in mm)				
a	2.00		50	No.	5510.00	5510.00	11020.00
b	0.00		65	No.	6429.00	6429.00	0.00
c	10.00		80	No.	7344.00	7344.00	73440.00
12.0		MJP16-17, Item No-7 a, Sec XIII, Pg-220	<b>Providing and supplying Air Valves as per IS-14845-2000 and MJP's standard specifications double orifice type combined with isolating sluice valve, mounted in horizontal position and operated by wheel gearing, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including all taxes (Central and local), insurance, third party inspection charges, loading, unloading, transporta-tion upto departmental storer / site, etc. complete.</b>				
			Air Valve Double Ball Flanged-Type-PN-1( Diameter in mm)				
a	8.00		100	No.	9286.00	9286.00	74288.00
b	9.00		150	No.	16924.00	16924.00	152316.00
c	0.00		200	No.	28461.00	28461.00	0.00
			<b>PIPE APPURTANANCES LAYING</b>				
13		MJP16-17, Item No-4, XIII, Pg-217	Lowering laying and jointing in position D.I. D/F Reflux valves, Butterfly velves and sluice valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. ( Rate for all class of valve)				
			<b>Sluice Valve &amp; Scour Valve (Dia in mm)</b>				
a	4.00		80 mm for Scouring purpose	No.	1401.00	1471.05	5884.20
b	7.00		100 mm for control purpose	No.	1831.00	1922.55	13457.85
c	1.00		100 mm for Scouring purpose	No.	1831.00	1922.55	1922.55
d	2.00		150 mm for control purpose	No.	2878.00	3021.90	6043.80
e	5.00		150 mm for Scouring purpose	No.	2878.00	3021.90	15109.50
f	4.00		200 mm for control purpose	No.	2994.00	3143.70	12574.80
g	7.00		200 mm for Scouring purpose	No.	2994.00	3143.70	22005.90
h	6.00		250 mm for control purpose	No.	3901.00	4096.05	24576.30
i	1.00		250 mm for Scouring purpose	No.	3901.00	4096.05	4096.05
j	8.00		300 mm for control purpose	No.	4047.00	4249.35	33994.80
k	1.00		300 mm for Scouring purpose	No.	4047.00	4249.35	4249.35
l	1.00		350 mm for Scouring purpose	No.	4987.00	5236.35	5236.35
m	0.00		400 mm for Scouring purpose	No.	6017.00	6317.85	0.00
n	0.00		450 mm for Scouring purpose	No.	7159.00	7516.95	0.00
14.0			<b>Butterfly Valve(diameter in mm)</b>				
a	9.00		350	No.	4987.00	5236.35	47127.15
b	0.00		400	No.	6017.00	6317.85	0.00

Item No.	Qty	DSR Ref.	Description of Item	Unit	Basic Rate	Final Rate (Rs.)	Total Amount (Rs)
c	0.00		450	No.	7159.00	7516.95	0.00
d	0.00		500	No.	7413.00	7783.65	0.00
15			Lowering, laying and fixing in proper alignment and position all types of C.I. air valves as directed by Engineer-in-charge including cost of conveyance from stores to site of work, cost of all material and giving satisfactory hydraulic testing, etc. complete. (for all class of valves)				
		MJP16-17, Item No-10 a, SecXIII, Pg-223	<b>Air Valves Single ball - PN - 1 ( Diameter in mm)</b>				
a	7.00		40	No.	208.00	218.40	1528.80
		MJP16-17, Item No-10 b, SecXIII, Pg-223	<b>Air Valves Double ball - PN - 1 ( Diameter in mm)</b>				
b	2.00		50	No.	268.00	281.40	562.80
c	0.00		65	No.	309.00	324.45	0.00
d	10.00		80	No.	369.00	387.45	3874.50
e	8.00		100	No.	390.00	409.50	3276.00
f	9.00		150	No.	587.00	616.35	5547.15
g	0.00		200	No.	646.00	678.30	0.00
16		As Per RA	<b>Utility Shifting</b>				5,275,081.98
17.00	2.00	MJP16-17, Item No 16, XVII, Pg-287	Supplying, transporting, the S.P. fire hydrants including duck foot bend, S.V. and S.V. road box, painting the hydrant, fixing the saddle piece, supplying, and laying required length of C.I. pipeline and jointing the same spun yarn, molten lead including caulking, fixing the S.V. road box in one brick masonry chamber in 1:5 C.M. with 12 mm thick 1:3 cement plaster both inside and outside on 1:3:6 C.C. 150 mm thick etc. complete as specified and directed. [As per I.S. 900/1965 Revised]	NO	11461	12034.05	24068.10
18.00	0.00	Quotion	Drip irrigation	km	945417.40	945417.40	0.00
19.00	0.00	Quotion	Sprinkler irrigation	Sqrm	82.57	82.57	0.00
						<b>Net Cost (in Rs)</b>	<b>84372363</b>
						<b>Add 1% cess on Labour welfare (For MJP items)</b>	<b>754791</b>
						<b>Add 1% cess on Labour amenities (For MJP items)</b>	<b>143274</b>
						<b>Total Cost</b>	<b>85270429</b>

NAVI MUMBAI MUNICIPAL CORPORATION								
RECYCLE WATER SYSTEM								
MEASUREMENT SHEET								
Name of Work :- Distribution System of Vashi MIDC area.								
No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
	Pipe Diameter							
	110	1.0	6410					
	160	1.0	1394					
	180	1.0	0					
	200	1.0	3313					
	250	1.0	5879					
	315	1.0	7200					
	355	1.0	5318					
	400	1.0	774					
	450	1.0	564					
	500	1.0	27					
	560	1.0	0					
	630	1.0	0					
	710	1.0	0					
		Total	30879.00					
	<b>RCC.Thrust Block:</b> Providing and laying insitu Cement Concrete of trap/granaite/quartzite/gneiss metal for RCC work in foundation like raft,grillage,strip foundation and footing of RCC columns and steel, stanchions including normal dewatering ,plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete( by weigh batching and mix design for M-250 and M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block							
	1 x 0.6 x 0.6 m block	62.00	1.00	0.60	0.60	22.32		
	<b>R C C for pipe support</b>							
	110	6410		0.32		205.25		
	160	1394		0.32		44.64		
	180	0		0.34		0.00		
	200	3313		0.34		112.64		
	250	5879		0.41		241.04		
	315	7200		0.41		295.20		
	355	5318		0.49		260.58		
	400	774		0.56		43.34		
	450	564		0.73		41.17		
	500	27		0.73		1.97		
	560	0		0.73		0.00		
	630	0		0.73		0.00		
	710	0		0.85		0.00		
						1268.15	cum	1268.15



No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
2	<b>Reinforcement:</b> Providing and Fixing in position steel bar reinforcement of Anchor block etc.as per detailed design drawing and shedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. completet (including cost of binding wire).							
	Assuming Steel for above item 40 kg per cum							
	Quantity of steel for Thrust block		1268.15	0.04		50.73		
			<b>Total</b>			<b>50.73</b>		
					Total	<b>50.73</b>	MT	50.73
3	Providing fusion bonded epoxy coating to reinforcement bars as per IS-13620-993 specification for a thickness of 175mm(+or - 50) microns including extra cost on account of careful handling,extra cost on account of using PVC coated binding wire instead of GI wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation to & fro from steel yard at kalamboli to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxes (Central & Local), etc. complete. as directed by the Engineer in charge						MT	50.73
	<b>H.D.P.E Pipes PE-100 PN 8</b>							
4	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick telese couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.							
	Diameter in mm							
	110		6410.00			6410.00	Rmt	6410.00
	160		1394.00			1394.00	Rmt	1394.00
	180		0.00			0.00	Rmt	0.00
	200		3313.00			3313.00	Rmt	3313.00
	250		5879.00			5879.00	Rmt	5879.00
	315		7200.00			7200.00	Rmt	7200.00
	355		5318.00			5318.00	Rmt	5318.00
	400		774.00			774.00	Rmt	774.00
	450		564.00			564.00	Rmt	564.00
	500		27.00			27.00	Rmt	27.00
	560		0.00			0.00	Rmt	0.00
	630		0.00			0.00	Rmt	0.00
	710		0.00			0.00	Rmt	0.00

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
5	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.							
	<b>HDPE Pipes outer Diameter in mm</b>							
	110					6410.00	Rmt	6410.00
	160					1394.00	Rmt	1394.00
	180					0.00	Rmt	0.00
	200					3313.00	Rmt	3313.00
	250					5879.00	Rmt	5879.00
	315					7200.00	Rmt	7200.00
	355					5318.00	Rmt	5318.00
	400					774.00	Rmt	774.00
	450					564.00	Rmt	564.00
	500					27.00	Rmt	27.00
	560					0.00	Rmt	0.00
	630					0.00	Rmt	0.00
	710					0.00	Rmt	0.00
6	<b>Deawtering:</b> Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in -charge (including cost of machinery, labour, fuel), etc complete		L	B	D	Qty		
	110		6410.00		2.16	3205.00		
	160		1394.00		2.16	697.00		
	180		0.00		2.16	0.00		
	200		3313.00		2.16	1656.50		
	250		5879.00		2.16	2939.50		
	315		7200.00		2.16	3600.00		
	355		5318.00		2.16	2659.00		
	400		774.00		2.16	387.00		
	450		564.00		2.16	282.00		
	500		27.00		2.16	13.50		
	560		0.00		3.16	0.00		
	630		0.00		4.16	0.00		
	710		0.00		5.16	0.00		
						15439.50	BHP/HR	15439.50
7	HDPE fittings							

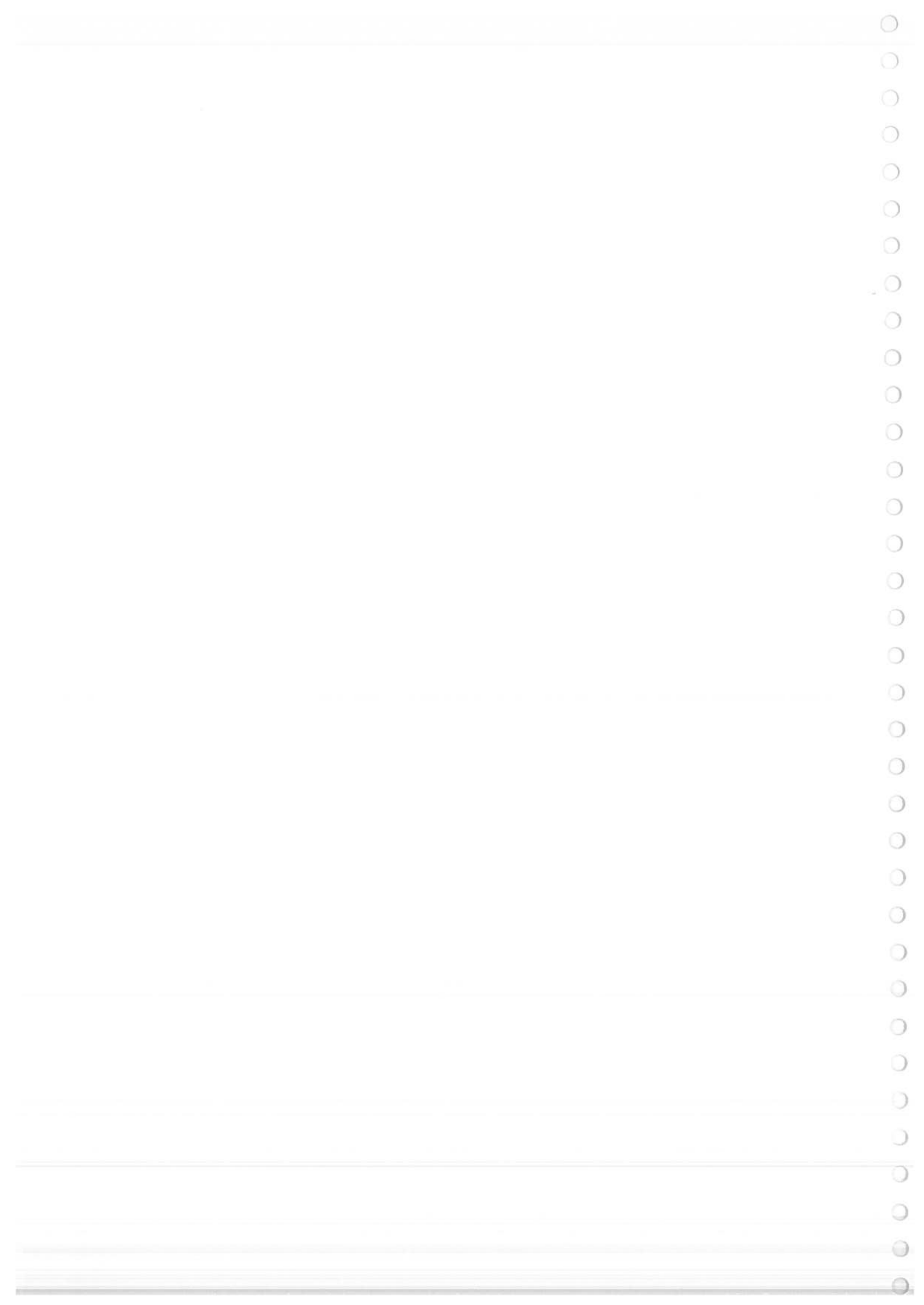
No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
	Providing and supply of Electro Fusion Fittings in accordance with BS EN 12201: Part-3 suitable for drinking water with in black/blue colour manufactured from compounded PE80/PE100 virgin polymer and compatible with PE80/PE100 pipes, in pressure rating SDR11 with min PN12.5 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, transite insurance, loading, unloading, stacking etc. complete.							
	FITTINGS for HDPE Pipes (5%)	Amount Provison at 5% of Item No. 4						
8	PIPE APPURTENANCES SUPPLY							
	Providing Double flange sluice valve confirming for IS 2906/14846/ including worn gear arrangements as per test pressure stainless steel spindle, caps including all taxes transportation etc. complete							
	sluice valve & Scour Valve (PN-1 Without bypass)							
a	80 mm for Scouring purpose	4				4.00	Nos.	4.00
b	100 mm for control purpose	7				7.00	Nos	7.00
c	100 mm for Scouring purpose	1				1.00	Nos.	1.00
d	150 mm for control purpose	2				2.00	Nos	2.00
e	150 mm for Scouring purpose	5				5.00	Nos.	5.00
f	200 mm for control purpose	4				4.00	Nos	4.00
g	200 mm for Scouring purpose	7				7.00	Nos.	7.00
h	250 mm for control purpose	6				6.00	Nos	6.00
i	250 mm for Scouring purpose	1				1.00	Nos.	1.00
j	300 mm for control purpose	8				8.00	Nos	8.00
k	300 mm for Scouring purpose	1				1.00	Nos.	1.00
l	350 mm for Scouring purpose	1				1.00	Nos.	1.00
m	400 mm for Scouring purpose	0				0.00	Nos.	0.00
n	450 mm for Scouring purpose	0				0.00	Nos.	0.00
9	Butterfly valve (Dia in mm)							
f	350	9				9.00	Nos	9.00
g	400	0				0.00	Nos	0.00
h	450	0				0.00	Nos	0.00
i	500	0				0.00	Nos	0.00
10	Air valve (Dia in mm)							
	Air Valve Single Ball Flanged/Screwed Type-PN-1( Diameter in mm)							
a	40	7				7.00	Nos	7.00
11	Air valve (Dia in mm)							
	Air Valve Double Ball Flanged-Type-PN-1( Diameter in mm)							
a	50	2				2.00	Nos	2.00
b	65	0				0.00	Nos	0.00
c	80	10				10.00	Nos	10.00
12	Air valve (Dia in mm)							

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
	Providing and supplying Air Valves as per IS-14845-2000 and MJP's standard specifications double orifice type combined with isolating sluice valve, mounted in horizontal position and operated by wheel gearing, small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, inlet face and drilled, including all taxes (Central and local), insurance, third party inspection charges, loading, unloading, transportation upto departmental storer / site, etc. complete.							
a	100	8				8.00	Nos	8.00
b	150	9				9.00	Nos	9.00
c	200	0				0.00	Nos	0.00
	<b>PIPE APPURTENANCES FIXING</b>							
13	Lowering laying and jointing in position D.I. D/F Reflux valves, Butterfly valves and sluice valves including cost of all labour, jointing material, including nut bolts and giving satisfactory hydraulic testing, etc. complete. (Rate for all class of valve)							
	<b>Sluice Valve &amp; Scour Valve (Dia in mm)</b>							
a	80 mm for Scouring purpose	4				4.00	Nos.	4.00
b	100 mm for control purpose	7				7.00	Nos	7.00
c	100 mm for Scouring purpose	1				1.00	Nos.	1.00
d	150 mm for control purpose	2				2.00	Nos	2.00
e	150 mm for Scouring purpose	5				5.00	Nos.	5.00
f	200 mm for control purpose	4				4.00	Nos	4.00
g	200 mm for Scouring purpose	7				7.00	Nos.	7.00
h	250 mm for control purpose	6				6.00	Nos	6.00
i	250 mm for Scouring purpose	1				1.00	Nos.	1.00
j	300 mm for control purpose	8				8.00	Nos	8.00
k	300 mm for Scouring purpose	1				1.00	Nos.	1.00
l	350 mm for Scouring purpose	1				1.00	Nos.	1.00
m	400 mm for Scouring purpose	0				0.00	Nos.	0.00
n	450 mm for Scouring purpose	0				0.00	Nos.	0.00
	<b>14 Butterfly valve (Dia in mm)</b>							
a	350	9				9.00	NO.	9.00
b	400	0				0.00	NO.	0.00
c	450	0				0.00	NO.	0.00
d	500	0				0.00	NO.	0.00
	<b>15 Air Valve (Dia in mm)</b>							
a	40	7				7.00	NO.	7.00
b	50	2				2.00	NO.	2.00
c	65	0				0.00	NO.	0.00
d	80	10				10.00	NO.	10.00
e	100	8				8.00	NO.	8.00
f	150	9				9.00	NO.	9.00
g	200	0				0.00	NO.	0.00
	<b>16 Utility Shifting</b>							

No.	Description of Item	No.	L	B	D	Qty	Unit	Total Qty
17	Supplying, transporting, the S.P. fire hydrants including duck foot bend, S.V. and S.V. road box, painting the hydrant, fixing the saddle piece, supplying, and laying required length of C.I. pipeline and jointing the same spun yarn, molten lead including caulking, fixing the S.V. road box in one brick masonry chamber in 1:5 C.M. with 12 mm thick 1:3 cement plaster both inside and outside on 1:3:6 C.C. 150 mm thick etc. complete as specified and directed. [As per I.S. 900/1965 Revised]	2					Nos	2
18	Drip irrigation	0					km	0
19	Sprinkler irrigation	0					Sqrm	0

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Rate analysis							
R.A. No.1	Filling in Excavated surface with contractor's murum in 15 to 20 cm layers including watering compaction etc complete						
	Earth filling MJP 16-17, Item No 19, Pg-43			MJP 16-17, Item No 19, Pg-43	=	723.00	Cum
	Add 5 % for Corporation Area				=	36.15	
	Add lead charges for						
		Murum	1.00	0.00	=	0.00	
						759.15	
					Total	=	759.15
					Say	=	759.15
R.A. No.2	Providing dry trap rubble stone soling in 15 cm to 20cm layers including hand packing and compacting, royalty charges etc complete.						
	Soling Rate as per MJP 16-17, Page No. 43 Item No 20			MJP 16-17, Page No. 43 Item No 20	=	1014.00	Cum
	Add 5 % for Corporation Area				=	50.7	
	Add lead charges for						
		Hand Broken Metal	1.000	0.00	=	0.00	
		Sand	0.150	1679.50	=	251.92	
						1316.62	
					Total	=	1316.624348
				Say	=	1316.62	Cum
R.A. No.3	Providing and laying in situ, following grade of C.C. of trap/granite/gneiss metal for foundation and bedding including dewatering,formwork,compacting and curing,finishing,etc.complete.						
	PCC Rate as per MJP 16-17, Item No1, Pg-47			MJP 16-17, Item No1, Pg-47	=	4457.00	Cum
	Add 5 % for Corporation Area				=	222.85	
	Add lead charges for						
		Sand	0.45	1679.50	=	755.77	
		crushed metal (40 mm)	0.52	0.00	=	0.00	
		crushed metal (20 mm, 10 mm)	0.33	0.00	=	0.00	
						5435.62	
				Total	=	5435.623043	
				Say	=	5435.62	Cum
R.A. No.4	Providing and filling in the foundation trenches with sand of approved quality including watering compaction. Etc complete						
	Sand Bedding Rate as per MJP 16-17 Item No 21, Pg-43			MJP 16-17 Item No 21, Pg-43	=	973.00	Cum
	Add 5 % for Corporation Area				=	48.65	
	Add lead charges for						
		Sand	1.00	1679.50	=	1679.50	
						2701.15	
				Total	=	2701.145652	
				Say	=	2701.15	Cum
R.A. No.5	Providing and laying insitu Cement concrete of trap/granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including dewatering, formwork, compaction finishing & curing etc, complete.(By wigh batching and mix design for M-250 and M-300 only.) Use of L&T, A.C.C., Ambuja, Birla Gold, Manikgad, Rajashree etc cement is permitted) (excluding M.S. or Tor reinforcement)						
	RCC work MJP 16-17, Item No 2 c, Pg-48			MJP 16-17, Item No 2 c, Pg-48	=	5999.00	Cum
	Add 5 % for Corporation Area				=	299.95	
	Add lead charges for						
		Sand	0.425	1679.50	=	713.79	
		crushed metal (20 mm)	0.57	0.00	=	0.00	
		crushed metal (10 mm)	0.28	0.00	=	0.00	
						7012.74	
				Total	=	7012.735652	
				Say	=	7012.74	Cum

NAVI MUMBAI MUNICIPAL CORPORATION									
RECYCLE WATER SYSTEM									
LEAD CHART									
Sr. No.	Material	Source	Lead in Kms	Lead Charges 2015-16	Initial Lead	Initial Lead Charges 15-16	Net Lead Charges 15-16	Unit	
1	Sand	Ambet	160.00	1830.07	5	150.57	1679.50	Cum	
2	Crushed Metal	Local Stone Quarry	5	150.57	5	150.57	0.00	Cum	
3	Soling Stone	Local Stone Quarry	5	184.21	5	184.21	0.00	Cum	
4	Murum / Earth	Local Stone Quarry	5	180.38	5	180.38	0.00	Cum	
5	Brick		5	247.37	5	247.37	0.00	1000 no.	





Navi Mumbai Municipal Corporation							
Recycled Water System							
Measurement Sheet							
Part-I -Pipeline Trench Works For Distribution System of Vashi MIDC							
Item No.	Description of Item	Measurements				Unit	Qty
		No.	L	B	D		
<b>PART-I CIVIL WORKS</b>							
1	Excavation for foundation/ pipe trenches in earth soil of all types sand gravel and soft murum including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.						
	Lift 0 to 1.5 m						
	Dia in mm						
	Excavtion for pipe laying						
	110	1.0	6410.00	0.41	0.86		2260.17
	160	1.0	1394.00	0.46	0.91		583.53
	180	1.0	0.00	0.48	0.93		0.00
	200	1.0	3313.00	0.50	0.95		1573.68
	250	1.0	5879.00	0.55	1.00		3233.45
	315	1.0	7200.00	0.62	1.07		4715.82
	355	1.0	5318.00	0.66	1.11		3849.04
	400	1.0	774.00	0.90	1.15		801.09
	450	1.0	564.00	0.95	1.20		642.96
	500	1.0	27.00	1.00	1.25		33.75
	560	1.0	0.00	1.06	1.31		0.00
	630	1.0	0.00	1.13	1.38		0.00
	710	1.0	0.00	1.21	1.46		0.00
		TOTAL	30879.00				
	Chambers						
	90*45 cm	1.00	1.50	1.05	1.60		2.52
	90*60 cm	45.00	1.50	1.20	1.60		129.60
	90*90 cm	58.00	1.50	1.50	1.60		208.80
					Total	Cum	24112.63
	Assuming 50 % of Qty for above item	1.00	24112.63		0.50		12056.32
	PCC For Valve Chamber				Thickness		
	90*45 cm	1.00	1.50	1.05	0.15		0.24
	90*60 cm	45.00	1.50	1.20	0.15		12.15
	90*90 cm	58.00	1.50	1.50	0.15		19.58
					Total	Cum	31.96
2	Excavation for foundation/ pipe trenches by all means in hard murum, including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.						
	Assuming 40% of qty for above item	1.00	24112.63		0.40	Cum	9645.05

Item No.	Description of Item	Measurements			Unit	Qty
		No.	L	B		
3	Excavation for foundation/ pipe trenches in hard rock and concrete road by chiselling wedging line drill by mechanical means or by all means other than blasting including trimming and levelling the bed removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
	Assuming 10% of qty for above item	1.00	24112.63		0.10	Cu.m 2411.26
4	<b>Rubble Soling</b> :Providing dry trap granite quartzite qneiss, rubble stone soling in 15 cm to 20 cm thick layer including hand packing and compacting royalty charges etc.complete					
	For Dia. in mm					
	110	1.00	1923.00	0.41	0.25	197.11
	160	1.00	418.20	0.46	0.25	48.09
	180	1.00	0.00	0.48	0.25	0.00
	200	1.00	993.90	0.50	0.25	124.24
	250	1.00	1763.70	0.55	0.25	242.51
	315	1.00	2160.00	0.62	0.25	332.10
	355	1.00	1595.40	0.66	0.25	261.25
	400	1.00	232.20	0.90	0.25	52.25
	450	1.00	169.20	0.95	0.25	40.19
	500	1.00	8.10	1.00	0.25	2.03
	560	1.00	0.00	1.06	0.25	0.00
	630	1.00	0.00	1.13	0.25	0.00
	710	1.00	0.00	1.21	0.25	0.00
	Chambers					
	90*45 cm	1.00	1.50	1.05	0.25	0.39
	90*60 cm	45.00	1.50	1.20	0.25	20.25
	90*90 cm	58.00	1.50	1.50	0.25	32.63
	Total quantity				Cum	1353.02
5	<b>Bedding</b> Providing and filling sand boxing in pipeline or for foundation with sand of approved quality including watering and compaction intial lead upto 5 km etc. complete					
	Dia. in mm					
	Sand Bedding for pipe laying					
	110	1.00	6410.00	0.41	0.15	394.22
	160	1.00	1394.00	0.46	0.15	96.19
	180	1.00	0.00	0.48	0.15	0.00
	200	1.00	3313.00	0.50	0.15	248.48
	250	1.00	5879.00	0.55	0.15	485.02
	315	1.00	7200.00	0.62	0.15	664.20
	355	1.00	5318.00	0.66	0.15	522.49
	400	1.00	774.00	0.90	0.15	104.49
	450	1.00	564.00	0.95	0.15	80.37
	500	1.00	27.00	1.00	0.15	4.05
	560	1.00	0.00	1.06	0.15	0.00
	630	1.00	0.00	1.13	0.15	0.00
	710	1.00	0.00	1.21	0.15	0.00
						2599.50

Item No.	Description of Item	Measurements			Unit	Qty	
		No.	L	B			D
<b>6</b>	<b>PCC for pipe laying</b>						
	110	6410	1923.00	0.00	0.15	0.00	
	160	1394	418.20	1.60	0.15	100.37	
	180	0	0.00	1.60	0.15	0.00	
	200	3313	993.90	1.60	0.15	238.54	
	250	5879	1763.70	1.60	0.15	423.29	
	315	7200	2160.00	1.61	0.15	520.02	
	355	5318	1595.40	1.61	0.15	384.09	
	400	774	232.20	1.68	0.15	58.51	
	450	564	169.20	1.68	0.15	42.64	
	500	27	8.10	1.74	0.15	2.11	
	560	0	0.00	1.78	0.15	0.00	
	630	0	0.00	1.88	0.15	0.00	
	710	0	0.00	0.00	0.15	0.00	
			<b>Total PCC quantity</b>			Cum	<b>1822.83</b>
<b>7</b>	<b>Disposal of Earth: Disposal of excavated material including loading and unloading, lead upto 10 km etc. Complete</b>						
	volume of pipe						
	110	1.00	6410.00	0.79	0.01	60.89	
	160	1.00	1394.00	0.79	0.03	28.01	
	180	1.00	0.00	0.79	0.03	0.00	
	200	1.00	3313.00	0.79	0.04	104.03	
	250	1.00	5879.00	0.79	0.06	288.44	
	315	1.00	7200.00	0.79	0.10	560.82	
	355	1.00	5318.00	0.79	0.13	526.11	
	400	1.00	774.00	0.79	0.16	97.21	
	450	1.00	564.00	0.79	0.20	89.65	
	500	1.00	27.00	0.79	0.25	5.30	
	560	1.00	0.00	0.79	0.31	0.00	
	630	1.00	0.00	0.79	0.40	0.00	
	710	1.00	0.00	0.79	0.50	0.00	
	Road reinstatement						
	110	1.00	6410.00	1.40	0.20	1794.80	
	160	1.00	1394.00	1.40	0.20	390.32	
	180	1.00	0.00	1.40	0.20	0.00	
	200	1.00	3313.00	1.40	0.20	927.64	
	250	1.00	5879.00	1.40	0.20	1646.12	
	315	1.00	7200.00	1.40	0.20	2016.00	
	355	1.00	5318.00	1.40	0.20	1489.04	
	400	1.00	774.00	1.40	0.20	216.72	
	450	1.00	564.00	1.40	0.20	157.92	
	500	1.00	27.00	1.40	0.20	7.56	
	560	1.00	0.00	1.40	0.20	0.00	
	630	1.00	0.00	1.40	0.20	0.00	
	710	1.00	0.00	1.40	0.20	0.00	
					Cum	<b>10406.58</b>	
<b>8</b>	<b>Deawtering: Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in -charge (including cost of machinery, labour, fuel), etc complete</b>						

Item No.	Description of Item	No.	Measurements			Unit	Qty
			L	B	D		
	Lum sum	1.00				BHP/Hr.	36000.00
9	<b>RCC.Thrust Block:</b> Providing and laying insitu Cement Concrete of trap/granaite/quartzite/gneiss metal for RCC work in foundation like raft,grillage,strip foundation and footing of RCC columns and steel, stanchions including normal dewatering ,plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete( by weigh batching and mix design for M-250 and M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block						
	1 x 0.6 x 0.6 m block	62.00	1.00	0.60	0.60		17.94
						Cum	17.94
10	<b>Reinforcement:</b> Providing and Fixing in position steel bar reinforcement of Anchor block etc.as per detailed design drawing and shedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. completet (including cost of binding wire).						
	Assuming Steel for above item 40 kg per cum						
	Quantity of steel for Thrust block		17.94	0.4			7.18
					Total	MT	7.18
11	<b>CHAMBERS</b>						
	Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast RCC frame and cover, etc complete as directed by Engineer-in-charge						
	Inspection Chambers						
	Valve Chambers with Preccast R.C.C covers						
	90*45 cm	1.00				No.	1.00
	90*60 cm	45.00				No.	45.00
	90*90 cm	58.00				No.	58.00
12	<b>Refilling the trenches</b> with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging etc. complete						
	Filling in trenches with approved excavated material						

Item No.	Description of Item	Measurements			Unit	Qty	
		No.	L	B			D
	<b>Total Excavation</b>	1				24112.63	
	<b>Deductions</b>						
	PCC Bedding					1822.83	
	Rubble Soling					1353.02	
	Sand bedding					2599.50	
	Pipe Volume						
		110	6410.00			60.89	
		160	1394.00			28.01	
		180	0.00			0.00	
		200	3313.00			104.03	
		250	5879.00			288.44	
		315	7200.00			560.82	
		355	5318.00			526.11	
		400	774.00			97.21	
		450	564.00			89.65	
		500	27.00			5.30	
		560	0.00			0.00	
		630	0.00			0.00	
		710	0.00			0.00	
	<b>Total quantity of Pipe volume</b>		<b>Total</b>			Cum	<b>1760.46</b>
	<b>Total Quantity to be deducted</b>					<b>7535.81</b>	
	<b>Net quantity of filling</b>					<b>16576.82</b>	
13	Reinstatement of road by excavating the potholes in rectangular shape and filling of potholes by one layers of soling 230 mm thick, one layer of 80 mm trap metal of 200mm thick, one layer of 40 mm trap metal of 200 mm thick including suppling and spreading of stonedust, watering compaction and 75mm thick bituminous bound macadam with cold emulsion and bitumious macadam of 50 mm thick with bitumen of S-65 grade and 25mm thick asfalt concrete with S-35 grade of bitumen including compaction by vibratory roller of all layers and providing and applying tack coat of 50 kg /100 m2 on black top surface and bitumen contained of 250 kg/100 m2 for BBM surface and disposal of surplus clay/soil etc. complete. pipeline trenches of various diameter of pipes etc complete.						
		110	6410.00	1.00		<b>6410.00</b>	
		160	1394.00	1.00		<b>1394.00</b>	
		180	0.00	1.00		<b>0.00</b>	
		200	3313.00	1.00		<b>3313.00</b>	
		250	5879.00	1.00		<b>5879.00</b>	
		315	7200.00	1.00		<b>7200.00</b>	
		355	5318.00	1.00		<b>5318.00</b>	
		400	774.00	1.00		<b>774.00</b>	
		450	564.00	1.00		<b>564.00</b>	
		500	27.00	1.00		<b>27.00</b>	
		560	0.00	1.00		<b>0.00</b>	
		630	0.00	1.00		<b>0.00</b>	
		710	0.00	1.00		<b>0.00</b>	
					Sq.m.	<b>30879.00</b>	

## Navi Mumbai Municipal Corporation

## Recycled Water System

## ABSTRACT

## Part-1 -Pipeline Trench Works For Distribution System of Vashi MIDC

Item No.	Ref	Qty	Description of Item	Unit	Rate (Rs.)	AW 10%	Final rate (Rs.)	Amount (Rs)
			Excavation					
1	MJP 16-17 It. No. 1 Pg. no. 39		Excavation for foundation/ pipe trenches in earth soil of all types sand gravel and soft murum including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
		8439.42	Lift 0 to 1.5 M	Cum	142.00	5%	149.10	1,258,318
		3616.89	Lift 1.5 to 3 M	Cum	156.00	5%	163.80	592,447
2	MJP 16-17 It. No. 2 Pg. no. 39		Excavation for foundation/ pipe trenches by all means in hard murum, including removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.					
		3858.02	Lift 0 to 1.5 M	Cum	166.00	5%	174.30	672,453
		5787.03	Lift 1.5 to 3 M	Cum	180.00	5%	189.00	1,093,749
3	MJP 16-17 It. No. 5 Pg. no. 39		Excavation for foundation/ pipe trenches by all means in soft rock and old cement & lime masonry foundation asphalt road removing the excavated material upto a distance of 50 meters and lifts as below, stacking and spreading as directed normal dewatering, preparing the bed for foundation and excluding backfilling, etc complete.	Cum				
		482.25	Lift 0 to 1.5 M	Cum	473.00	5%	496.65	239,511
		1929.01	Lift 1.5 to 3 M	Cum	494.00	5%	518.70	1,000,578
4	MJP 16-17 It. No. 20 Pg. no. 43	1353.02	Rubble Soling : Providing Dry Trap Granite quartzite gneiss, rubble stone soling in 15 cm to 20 cm thick layer including hand packing and compacting royalty charges etc.complete	Cum	1014.00	5%	1064.70	1,440,557
5	MJP 16-17 It. No. 21Pg. no. 43	2599.50	Bedding Providing and filling sand boxing in pipeline or for foundation with sand of approved quality including watering and compaction initial lead upto 5 km etc. complete	Cum	973.00	5%	1021.65	2,655,776
6	MJP 16-17 It. No. 47 Pg. no. 1 b	1822.83	PCC Providing & laying in situ following grades of cement concrete of trap / granite metal for foundation & bedding including dewatering formwork curing compacting finishing etc. complete	Cum	4457.00	5%	5435.62	9,908,239
7	MJP 16-17 Statement VI	10406.58	Disposal of Earth : Disposal of excavated material including loading and unloading, lead upto 10 km etc. Complete	Cum	411.16	5%	431.72	4,492,708
8	MJP 16-17 It. No. 16 Pg. no. 42	36000.00	Dewatering : Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in -charge (including cost of machinery, labour, fuel), etc complete	BHP/ Hr.	62.00	5%	65.10	2,343,600
9	MJP 16-17 It. No. 10 Pg. no. 54	17.94	RCC Thrust Block : Providing and laying insitu Cement Concrete of trap/granite/quartzite/gneiss metal for RCC work in foundation like raft,grillage,strip foundation and footing of RCC columns and steel.stanchions including normal dewatering ,plywood form work, bully/ steel prop-ups, compaction, finishing and curing etc. complete( by weigh batching and mix design for M-300 only. use L&T, A.C.C. Ambuja, Birla Gold, ManikGad, Rajashree, etc. cement is permitted (Excluding M.S. of Tor reinforcement) M-250 for Anchor Block.	Cum	5999.00	5%	7012.74	125,806
10	MJP 16-17 It. No. 8 Pg. no. 51	7.18	Reinforcement: Providing and Fixing in position steel bar reinforcement of Anchor block etc.as per detailed design drawing and schedules including cutting bending hooking the bars binding with wires or tack welding and supporting as required etc. completet (including cost of binding wire)	MT	51749.00	5%	54336.45	389,912

Item No.	Ref	Qty	Description of Item	Unit	Rate (Rs.)	AW 10%	Final rate (Rs.)	Amount (Rs)
11	MJP 16-17 Sect 1, Item No 1, pg. no. 343		Providing and constructing B.B. masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, B.B. masonry in C.M. 1:5 Proportion precast RCC frame and cover, etc complete as directed by Engineer-in-charge					
(a)		1	As above of 95*45 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	7,719.00	5%	8104.95	8,105
(b)		45	As above of 90*60 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	8,400.00	5%	8820.00	396,900
(c)		58	As above of 90*90 cm internal size and depth upto 1.2 m with precast R.C.C slab cover	No.	10,066.00	5%	10569.30	613,019
12			<b>FILLING IN TRENCHES</b>					
	MJP 16-17 It. No. 17 Pg. no. 43	16,576.82	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging etc. complete	RMT	64.00	5%	67.20	1,113,963
13	RA	30,879.00	Reinstatement of road by excavating the potholes in rectangular shape and filling of potholes by one layers of soling 230 mm thick, one layer of 80 mm trap metal of 200mm thick, one layer of 40 mm trap metal of 200 mm thick including suppling and spreading of stonedust, watering compaction and 75mm thick bituminous bound macadam with cold emulsion and bituminous macadam of 50 mm thick with bitumen of S-65 grade and 25mm thick asphalt concrete with S-35 grade of bitumen including compaction by vibratory roller of all layers and providing and applying tack coat of 50 kg /100 m2 on black top surface and bitumen contained of 250 kg/100 m2 for BBM surface and disposal of surplus clay/soil etc. complete. pipeline trenches of various diameter of pipes etc complete.	Sqm	1231.70			38,033,664
			Rate analysis					
		PART-I	Net Cost (in Rs)					66,379,307

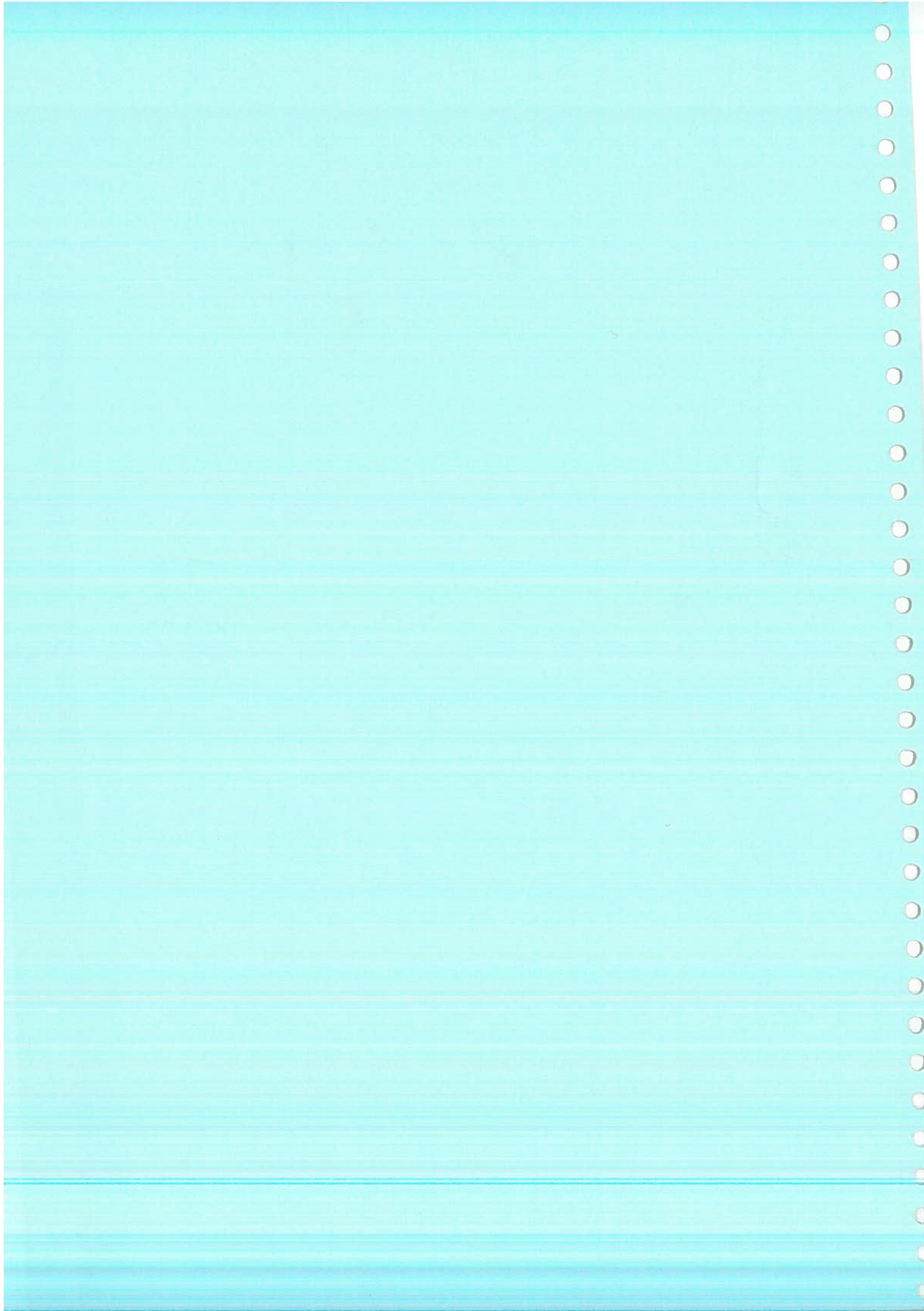
NAVI MUMBAI MUNICIPAL CORPORATION						
RECYCLE WATER SYSTEM						
Rate analysis						
R.A. No. 1	Filling in Excavated surface with contractor's murum in 15 to 20 cm layers including watering compaction etc complete					
	Earth filling MJP 16-17, Item No 19, Pg-43		MJP 16-17, Item No 19, Pg-43	=	723.00	Cum
	Add 5 % for Corporation Area			=	36.15	
	Add lead charges for					
	Murum	1.00	0.00	=	0.00	
					759.15	
				Total	=	759.15
				Say	=	759.15 Cum
R.A. No. 2	Providing dry trap rubble stone soling in 15 cm to 20cm layers including hand packing and compacting, royalty charges etc complete.					
	Soling Rate as per MJP 16-17, Page No. 43 Item No 20		MJP 16-17, Page No. 43 Item No 20	=	1014.00	Cum
	Add 5 % for Corporation Area			=	50.7	
	Add lead charges for					
	Hand Broken Metal	1.000	0.00	=	0.00	
	Sand	0.000	1679.50	=	0.00	
					1064.70	
				Total	=	1064.70
				Say	=	1064.70 Cum
R.A. No.3	Providing and laying in situ, following grade of C.C. of trap/granite/gneiss metal for foundation and bedding including dewatering,formwork,compacting and curing,finishing,etc.complete.					
	PCC Rate as per MJP 16-17, Item No1, Pg-47		MJP 16-17, Item No1, Pg-47	=	4457.00	Cum
	Add 5 % for Corporation Area			=	222.85	
	Add lead charges for					
	Sand	0.45	1679.50	=	755.77	
	crushed metal (40 mm)	0.52	0.00	=	0.00	
	crushed metal (20 mm,10 mm)	0.33	0.00	=	0.00	
					5435.62	
				Total	=	5435.62
				Say	=	5435.62 Cum
R.A. No.4	Providing and filling in the foundation trenches with sand of approved quality including watering compaction. Etc					
	Sand Bedding Rate as per MJP 16-17 Item No 21, Pg-43		MJP 16-17 Item No 21, Pg-43	=	973.00	Cum
	Add 5 % for Corporation Area			=	48.65	
	Add lead charges for					
	Sand	1.00	1679.50	=	1679.50	
					2701.15	
				Total	=	2701.145652
				Say	=	2701.15 Cum
R.A. No.5	Providing and laying insitu Cement concrete of trap/granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including dewatering, formwork, compaction finishing & curing etc, complete (By wigh batching and mix design for M-250 and M-300 only ) Use of L&T, A. C. C., Ambuja, Birla Gold, Manikgad, Rajashree etc cement is permitted) (excluding M.S. or Tor reinforcement)					
	RCC work MJP 16-17, Item No 2 c, Pg-48		MJP 16-17, Item No 2 c, Pg-48	=	5999.00	Cum
	Add 5 % for Corporation Area			=	299.95	
	Add lead charges for					
	Sand	0.425	1679.50	=	713.79	
	crushed metal (20 mm)	0.57	0.00	=	0.00	
	crushed metal (10 mm)	0.28	0.00	=	0.00	
					7012.74	
				Total	=	7012.735652
				Say	=	7012.74 Cum



NAVI MUMBAI MUNICIPAL CORPORATION									
Recycle Water System									
LEAD CHART									
Sr. No.	Material	Source	Lead in Kms	Lead Charges 2016-17	Initial Lead	Initial Lead Charges 16-17	Net Lead Charges 16-17	Unit	
1	Sand	Ambet	160.00	1830.07	5	150.57	1679.50	Cum	
2	Crushed Metal	Local Stone Quarry	5	150.57	5	150.57	0.00	Cum	
3	Soling Stone	Local Stone Quarry	5	184.21	5	184.21	0.00	Cum	
4	Murum / Earth	Local Stone Quarry	5	180.38	5	180.38	0.00	Cum	
5	Brick		5	247.37	5	247.37	0.00	1000 no.	



**COST ESTIMATE OF**  
**SHIFTING UTILITIES**



<b>NAVI MUMBAI MUNICIPAL CORPORATION</b>		
<b>RECYCLE WATER SYSTEM</b>		
<b>SHIFTING UTILITIES</b>		
<b>COST SUMMARY</b>		
<b>Sr.No</b>	<b>Area</b>	<b>Total cost in Rs</b>
1	Airoli MIDC	5,134,303
2	Koperkhairane MIDC	4,600,830
3	Vashi MIDC	5,275,082
<b>Total Cost</b>		<b>15,010,216</b>

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Measurement Sheet of Shifting of Utilities- Airoli MIDC							
Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
	<b>Utility Shifting</b>						
1	G.I. Pipe: Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004						
	<b>MEDIUM</b>						
	25 mm		150.00			150.00	RMT
	40 mm		150.00			150.00	RMT
	50 mm		150.00			150.00	RMT
2	C.I. Pipe: Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	<b>Class LA</b>						
	80 mm		150.00			150.00	RMT
	100 mm		120.00			120.00	RMT
	150 mm		80.00			80.00	RMT
	200 mm		80.00			80.00	RMT
3	C.I. Specials: Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	80 to 300 mm					80.00	Kg
	350 mm and above					80.00	Kg
4	Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge					30.00	cum

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
5	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.						
	3 core 35 sq.mm.		150.00			150.00	RMT
	3 core 50 sq.mm.		150.00			150.00	RMT
	3 core 70 sq.mm.		150.00			150.00	RMT
	3 core 95 sq.mm.		150.00			150.00	RMT
	3 core 120 sq.mm.		150.00			150.00	RMT
	3 core 150 sq.mm.		150.00			150.00	RMT
	3 core 185 sq.mm.		150.00			150.00	RMT
	3 core 240 sq.mm.		150.00			150.00	RMT
6	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	6.00				6.00	No.
	75 - 120 sq.mm.	6.00				6.00	No.
	150 - 185 sq.mm.	6.00				6.00	No.
7	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	5.00				5.00	No.
	70 - 95 sq.mm.	5.00				5.00	No.
	120- 150 sq.mm.	5.00				5.00	No.
	185- 240 sq.mm.	5.00				5.00	No.

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
8	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade conforming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick Al/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warrenty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00				25.00	Nos
<b>Telephone cables</b>							
9	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
10	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
11	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
<b>Optical Fibre</b>							
12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m
13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m



NAVI MUMBAI MUNICIPAL CORPORATION						
RECYCLE WATER SYSTEM						
Shifting of Utilities- Airoli MIDC						
Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
		<b>Utility Shifting</b>				
1	MJP DSR 2016-17 /P-93 / IV- 1 (b )	<b>G.I. Pipe:</b> Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004				
		<b>MEDIUM</b>				
		25 mm	150.00	RMT	147.00	22,050
		40 mm	150.00	RMT	214.20	32,130
		50 mm	150.00	RMT	305.55	45,833
2	MJP DSR 2016-17 /P-69 / I- 1 (a )	<b>C.I. Pipe:</b> Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway fricght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		<b>Class LA</b>				
		80 mm	150.00	RMT	832.65	124,898
		100 mm	120.00	RMT	1042.65	125,118
		150 mm	80.00	RMT	1692.60	135,408
		200 mm	80.00	RMT	2433.90	194,712
3	MJP DSR 2015-16 /P-80 / I- 10(a)	<b>C.I. Specials:</b> Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway fricght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		80 to 300 mm	80.00	Kg	112.13	8,970
		350 mm and above	80.00	Kg	136.16	10,893
4	PWD DSR,2017-18 Bd-W ITEM-46.06 PG-284	Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge	30.00	cum	135.45	4,064

Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
5	MJP E/M DSR 2015-16 /P-68 / I- CB 4	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.				
		3 core 35 sq.mm.	150.00	RMT	266.70	40,005
		3 core 50 sq.mm.	150.00	RMT	363.30	54,495
		3 core 70 sq.mm.	150.00	RMT	491.40	73,710
		3 core 95 sq.mm.	150.00	RMT	617.40	92,610
		3 core 120 sq.mm.	150.00	RMT	761.25	114,188
		3 core 150 sq.mm.	150.00	RMT	900.90	135,135
		3 core 185 sq.mm.	150.00	RMT	1051.05	157,658
		3 core 240 sq.mm.	150.00	RMT	1393.35	209,003
		3 core 300 sq.mm.	150.00	RMT	1630.65	244,598
6	MJP E/M DSR 2015-16 /P-79 / I- CB 27	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	6.00	No.	19157.25	114,944
		75 - 120 sq.mm.	6.00	No.	21172.20	127,033
		150 - 185 sq.mm.	6.00	No.	26303.55	157,821
		240 - 300 sq.mm.	6.00	No.	28554.75	171,329
7	MJP E/M DSR 2015-16 /P-79/ I- CB 30	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	5.00	No.	31986.15	159,931
		70 - 95 sq.mm.	5.00	No.	36970.50	184,853
		120- 150 sq.mm.	5.00	No.	38887.80	194,439
		185- 240 sq.mm.	5.00	No.	48638.10	243,191
		300- 400 sq.mm.	5.00	No.	52774.05	263,870

Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
8	PWD DSR 2017-18/ P-299 / item no -6.47	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade conforming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick A/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warranty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00	Nos	3316.95	82,924
		<b>Telephone cables</b>				
9	PWD E/M DSR 2015-16/ item no -1-10-15	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	170.10	85,050
10	PWD E/M DSR 2015-16/ item no -1-10-16	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	362.25	181,125
11	PWD E/M DSR 2015-16/ item no -1-10-17	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	630.00	315,000
		<b>Optical Fibre</b>				
12	PWD E/M DSR 2015-16/ item no -1-12-12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	1895.25	379,050
13	PWD E/M DSR 2015-16/ item no -1-12-13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	3241.35	648,270
					<b>Total Cost(Rs.)</b>	<b>5,134,303</b>

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Measurement Sheet of Shifting of Utilities- Koperkhairane MIDC							
Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
	<b>Utility Shifting</b>						
1	<b>G.I. Pipe:</b> Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004						
	<b>MEDIUM</b>						
	<b>25 mm</b>		80.00			80.00	RMT
	<b>40 mm</b>		80.00			80.00	RMT
	<b>50 mm</b>		80.00			80.00	RMT
2	<b>C.I. Pipe:</b> Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	<b>Class LA</b>						
	<b>80 mm</b>		150.00			150.00	RMT
	<b>100 mm</b>		120.00			120.00	RMT
	<b>150 mm</b>		80.00			80.00	RMT
	<b>200 mm</b>		75.00			75.00	RMT
3	<b>C.I. Specials:</b> Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	<b>80 to 300 mm</b>					60.00	Kg
	<b>350 mm and above</b>					60.00	Kg
4	Dismantling brick masonary in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge					25.00	cum

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
5	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.						
	3 core 35 sq.mm.		150.00			150.00	RMT
	3 core 50 sq.mm.		150.00			150.00	RMT
	3 core 70 sq.mm.		150.00			150.00	RMT
	3 core 95 sq.mm.		150.00			150.00	RMT
	3 core 120 sq.mm.		150.00			150.00	RMT
	3 core 150 sq.mm.		150.00			150.00	RMT
	3 core 185 sq.mm.		150.00			150.00	RMT
	3 core 240 sq.mm.		150.00			150.00	RMT
6	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	6.00				6.00	No.
	75 - 120 sq.mm.	6.00				6.00	No.
	150 - 185 sq.mm.	6.00				6.00	No.
	240 - 300 sq.mm.	6.00				6.00	No.
7	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	5.00				5.00	No.
	70 - 95 sq.mm.	5.00				5.00	No.
	120- 150 sq.mm.	5.00				5.00	No.
	185- 240 sq.mm.	5.00				5.00	No.
	300- 400 sq.mm.	5.00				5.00	No.

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
8	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade confirming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick Al/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warrenty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00				25.00	Nos
<b>Telephone cables</b>							
9	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
10	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
11	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
<b>Optical Fibre</b>							
12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m
13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m

NAVI MUMBAI MUNICIPAL CORPORATION						
RECYCLE WATER SYSTEM						
Shifting of Utilities- Koperkhairane MIDC						
Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
		<b>Utility Shifting</b>				
1	MJP DSR 2016-17/P-93 / IV- 1 (b )	<b>G.I. Pipe:</b> Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004				
		<b>MEDIUM</b>				
		<b>25 mm</b>	80.00	RMT	147.00	11,760
		<b>40 mm</b>	80.00	RMT	214.20	17,136
		<b>50 mm</b>	80.00	RMT	305.55	24,444
2	MJP DSR 2016-17/P-69 / I- 1 (a )	<b>C.I. Pipe:</b> Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		<b>Class LA</b>				
		<b>80 mm</b>	150.00	RMT	832.65	124,898
		<b>100 mm</b>	120.00	RMT	1042.65	125,118
		<b>150 mm</b>	80.00	RMT	1692.60	135,408
		<b>200 mm</b>	75.00	RMT	2433.90	182,543
3	MJP DSR 2015-16/P-80 / I- 10(a)	<b>C.I. Specials:</b> Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		<b>80 to 300 mm</b>	60.00	Kg	112.13	6,728
		<b>350 mm and above</b>	60.00	Kg	136.16	8,170
4	PWD DSR,2015-16 Bd-W ITEM-9 PG-142	Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge	25.00	cum	135.45	3,386

Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
5	MJP E/M DSR 2015-16 /P-68 / I- CB 4	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.				
		3 core 35 sq.mm.	100.00	RMT	266.70	26,670
		3 core 50 sq.mm.	100.00	RMT	363.30	36,330
		3 core 70 sq.mm.	100.00	RMT	491.40	49,140
		3 core 95 sq.mm.	100.00	RMT	617.40	61,740
		3 core 120 sq.mm.	100.00	RMT	761.25	76,125
		3 core 150 sq.mm.	100.00	RMT	900.90	90,090
		3 core 185 sq.mm.	100.00	RMT	1051.05	105,105
		3 core 240 sq.mm.	100.00	RMT	1393.35	139,335
		3 core 300 sq.mm.	100.00	RMT	1630.65	163,065
6	MJP E/M DSR 2015-16 /P-79 / I- CB 27	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	5.00	No.	19157.25	95,786
		75 - 120 sq.mm.	5.00	No.	21172.20	105,861
		150 - 185 sq.mm.	5.00	No.	26303.55	131,518
		240 - 300 sq.mm.	5.00	No.	28554.75	142,774
7	MJP E/M DSR 2015-16 /P-79/ I- CB 30	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	5.00	No.	31986.15	159,931
		70 - 95 sq.mm.	5.00	No.	36970.50	184,853
		120- 150 sq.mm.	5.00	No.	38887.80	194,439
		185- 240 sq.mm.	5.00	No.	48638.10	243,191
		300- 400 sq.mm.	5.00	No.	52774.05	263,870



Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
8	PWD DSR 2015-16/ P-171 / item no -52	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade conforming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick Al/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warrenty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00	Nos	3316.95	82,924
		<b>Telephone cables</b>				
9	PWD E/M DSR 2015-16/ item no -1-10-15	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	170.10	85,050
10	PWD E/M DSR 2015-16/ item no -1-10-16	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	362.25	181,125
11	PWD E/M DSR 2015-16/ item no -1-10-17	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	630.00	315,000
		<b>Optical Fibre</b>				
12	PWD E/M DSR 2015-16/ item no -1-12-12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	1895.25	379,050
13	PWD E/M DSR 2015-16/ item no -1-12-13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	3241.35	648,270
					<b>Total Cost(Rs.)</b>	<b>4,600,830</b>

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Measurement Sheet of Shifting of Utilities- Vashi MIDC							
Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
	<b>Utility Shifting</b>						
1	<b>G.I. Pipe:</b> Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004						
	<b>MEDIUM</b>						
	25 mm		200.00			200.00	RMT
	40 mm		200.00			200.00	RMT
	50 mm		200.00			200.00	RMT
2	<b>C.I. Pipe:</b> Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	<b>Class LA</b>						
	80 mm		200.00			200.00	RMT
	100 mm		150.00			150.00	RMT
	150 mm		100.00			100.00	RMT
	200 mm		80.00			80.00	RMT
3	<b>C.I. Specials:</b> Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)						
	80 to 300 mm					80.00	Kg
	350 mm and above					80.00	Kg
4	Dismantling brick masonary in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge					35.00	cum

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
5	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.						
	3 core 35 sq.mm.		150.00			150.00	RMT
	3 core 50 sq.mm.		150.00			150.00	RMT
	3 core 70 sq.mm.		150.00			150.00	RMT
	3 core 95 sq.mm.		150.00			150.00	RMT
	3 core 120 sq.mm.		150.00			150.00	RMT
	3 core 150 sq.mm.		150.00			150.00	RMT
	3 core 185 sq.mm.		150.00			150.00	RMT
	3 core 240 sq.mm.		150.00			150.00	RMT
	3 core 300 sq.mm.		150.00			150.00	RMT
6	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	6.00				6.00	No.
	75 - 120 sq.mm.	6.00				6.00	No.
	150 - 185 sq.mm.	6.00				6.00	No.
	240 - 300 sq.mm.	6.00				6.00	No.
7	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.						
	25 - 50 sq.mm.	5.00				5.00	No.
	70 - 95 sq.mm.	5.00				5.00	No.
	120- 150 sq.mm.	5.00				5.00	No.
	185- 240 sq.mm.	5.00				5.00	No.
	300- 400 sq.mm.	5.00				5.00	No.

Item No.	Description of Item	No	Length (m)	Width (m)	Depth (m)	Qty Total	Unit
8	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade conforming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick Al/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warrenty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00				25.00	Nos
	<b>Telephone cables</b>						
9	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
10	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
11	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW		500.00			500.00	m
	<b>Optical Fibre</b>						
12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m
13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC		200.00			200.00	m

NAVI MUMBAI MUNICIPAL CORPORATION						
RECYCLE WATER SYSTEM						
Shifting of Utilities- Vashi MIDC						
Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
1		<b>Utility Shifting</b>				
1	MJP DSR 2015-16/P-93 / IV- 1 (b )	<b>G.I. Pipe:</b> Shifting,Providing & laying of ISI mark G.I. Pipe of following class and Dia.including all local and central taxes,octroi,inspection charges,transportation to stores,etc complete as per IS - 1239/2004				
		<b>MEDIUM</b>				
		25 mm	200.00	RMT	147.00	29,400
		40 mm	200.00	RMT	214.20	42,840
		50 mm	200.00	RMT	305.55	61,110
2	MJP DSR 2015-16/P-69 / I- 1 (a )	<b>C.I. Pipe:</b> Shifting,Providing & laying ISI mark C.I. S/S pipes of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		<b>Class LA</b>				
		80 mm	200.00	RMT	832.65	166,530
		100 mm	150.00	RMT	1042.65	156,398
		150 mm	100.00	RMT	1692.60	169,260
		200 mm	80.00	RMT	2433.90	194,712
3	MJP DSR 2015-16/P-80 / I- 10(a)	<b>C.I. Specials:</b> Shifting,Providing & laying ISI mark C.I./DI S/S specials of following class and diameter including all taxes ( central and Local) insurance,railway frieght,unloading from railway wagon,loading into trucks,transport to departmental stores / site,unloading stacking etc complete.(IS - 1536/2001) ( suitable for tyton / pig lead joints)				
		80 to 300 mm	80.00	Kg	112.13	8,970
		350 mm and above	80.00	Kg	136.16	10,893
4	PWD DSR,2015-16 Bd-W ITEM-9 PG-142	Dismantling brick masonary in lime or cement mortar and stacking the materials as directed with all leads, lifts complete. Spec. No.: As directed by Engineer in charge	35.00	cum	135.45	4,741

Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
5	MJP E/M DSR 2015-16 /P-68 / I- CB 4	Supplying and erecting XLPE/PVC insulated,armoured cable 1100 V grade with ISI mark three core,solid / standard aluminium conductor with 6 mm thick 25 mm width M.S. Spacer with G.I. Earth wire 6 sq.mm. complete erected on wall /on pole with x+C289 mm M.S. clamps or in provided trench in an approved manner.				
		3 core 35 sq.mm.	150.00	RMT	266.70	40,005
		3 core 50 sq.mm.	150.00	RMT	363.30	54,495
		3 core 70 sq.mm.	150.00	RMT	491.40	73,710
		3 core 95 sq.mm.	150.00	RMT	617.40	92,610
		3 core 120 sq.mm.	150.00	RMT	761.25	114,188
		3 core 150 sq.mm.	150.00	RMT	900.90	135,135
		3 core 185 sq.mm.	150.00	RMT	1051.05	157,658
		3 core 240 sq.mm.	150.00	RMT	1393.35	209,003
		3 core 300 sq.mm.	150.00	RMT	1630.65	244,598
6	MJP E/M DSR 2015-16 /P-79 / I- CB 27	Providing cable jointing kit with cable jointing compound for straight through joint for 11 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	6.00	No.	19157.25	114,944
		75 - 120 sq.mm.	6.00	No.	21172.20	127,033
		150 - 185 sq.mm.	6.00	No.	26303.55	157,821
		240 - 300 sq.mm.	6.00	No.	28554.75	171,329
7	MJP E/M DSR 2015-16 /P-79/ I- CB 30	Providing cable jointing kit with cable jointing compound for straight through joint for 22 KV XLPE screened 3 core cable.				
		25 - 50 sq.mm.	5.00	No.	31986.15	159,931
		70 - 95 sq.mm.	5.00	No.	36970.50	184,853
		120- 150 sq.mm.	5.00	No.	38887.80	194,439
		185- 240 sq.mm.	5.00	No.	48638.10	243,191
		300- 400 sq.mm.	5.00	No.	52774.05	263,870

Item No.	Reference	Description of Item	Qty Total	Unit	Rate (Rs.)	Amount (Rs)
8	PWD DSR 2015-16/ P-171 / item no -52	Providing and fixing Retro Reflectorised 600 mm Cautionary warning sign board made out of reflective sheeting of high intensity prismatic grade conforming to IRC_67 :2012 & type IV standards of ASTM D4956-09 specifications fixed over 2 mm thick Al/4 mm thick ACP SHEET back support frame of 25 X 25 X 3 mm M S angle as approved. supported on a M.S. angle iron post of size 75 x 75 x 6 MM, 3.5 M height long duly painted with synthetic enamel paint alternate black and white band of 25 cm of including G.I.fixtures,fixing the board in 1:4:8 concrete block of size 45 x 45 x 60 cm including transportation etc.complete. 7 years Warrenty for Retro Reflective Sheet.mandatory boards of 60 cm Diameter	25.00	Nos	3316.95	82,924
		<b>Telephone cables</b>				
9	PWD E/M DSR 2015-16/ item no -1-10-15	Supplying & Erecting Jelly field armoured telephone cable 20 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	170.10	85,050
10	PWD E/M DSR 2015-16/ item no -1-10-16	Supplying & Erecting Jelly field armoured telephone cable 50 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	362.25	181,125
11	PWD E/M DSR 2015-16/ item no -1-10-17	Supplying & Erecting Jelly field armoured telephone cable 100 pair with 0.5 mm dia laid in provided trench as per specification number WG-TW	500.00	m	630.00	315,000
		<b>Optical Fibre</b>				
12	PWD E/M DSR 2015-16/ item no -1-12-12	Supplying & Erecting LSZH armoured multimode optical fiber cable with 12 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	1895.25	379,050
13	PWD E/M DSR 2015-16/ item no -1-12-13	Supplying & Erecting LSZH armoured multimode optical fiber cable with 24 fibres, with core dia of 50/125 micrometre (OM4) suitable for 1 GBPS with ethernet distance 850 nm of wavelength,on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	200.00	m	3241.35	648,270
					<b>Total Cost(Rs.)</b>	<b>5,275,082</b>





RECYCLE WATER SYSTEM		
NAME OF WORK:- Survey		
COST SUMMARY		
Sr.No	Area	Total cost in Rs
2	Vashi MIDC	1,89,759
3	Koperkhairane MIDC	1,60,294
4	Airoli MIDC	1,86,259
<b>Total Cost</b>		<b>5,36,312</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**  
**RECYCLE WATER SYSTEM**  
**WORKING SURVEY - AIROLI MIDC**

**ABSTRACT**

S.NO	Reference	Unit	Items	Quantity	Basic Rate in Rs.	Area Weightage	Final Rate in Rs.	Amount in Rs.
<b>Add 5 % Area weightage for Corporation Area</b>								
1	Thane PWD DSR-2015- 2016 ,item no-5 ,page no-233	KM	Detailed/final location survey of road alignment with chain and compass, levels, theodolite and other essential instrument including staking of final centre line, locating curves, establishing Bench Marks and taking longitudinal section, cross section, fly levelling etc.complete (in plain area.) Spec. - As directed by Engineer-In-Charge	29.86	2790	5%	2929.50	87475
2	Thane PWD DSR-2017- 2018 ,item no- 1.02 ,page no-1	No	Taking trial pit 1.0 x 1.0 x 1.5 mtr.at 200 metre interval and minimum 3 numbers for small stream in earth soil of all types, sand, gravel, soft murum ,hard murum and boulders etc. complete. Spec. - As directed by Engineer-In-Charge	60	245	5%	257.25	15435
3	MJP DSR 2016-17 sec H Page No. 56 Item No.5 c	RMT	Taking trial bore by callyx machine with TCT/NX bits to gader undisturbed strata samples for investigation in all types of strata soft soil, murum, hard murum with boulders ,soft rock ,hard rock & quartzite etc. The item includes all hire & running cost of callyx Machine conveying all materials to site of work, excluding callyx machine and back sampling all over burden strata in glass jar and core samples serially numbered at site in a wooden core box, samples to be taken at 1.0 M interval and conveying to the place as directed by engineer- in - charge, The diameter of bore in overburden shall also include MS casing pipe of 2.5 mm thick plate in overburden only and shall be 1.0 m above GL with cap over it in weather rock .	30	2646	5%	2778.30	83349
<b>Total</b>								<b>186259</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**  
**RECYCLE WATER SYSTEM**  
**WORKING SURVEY - KK MIDC**

**ABSTRACT**

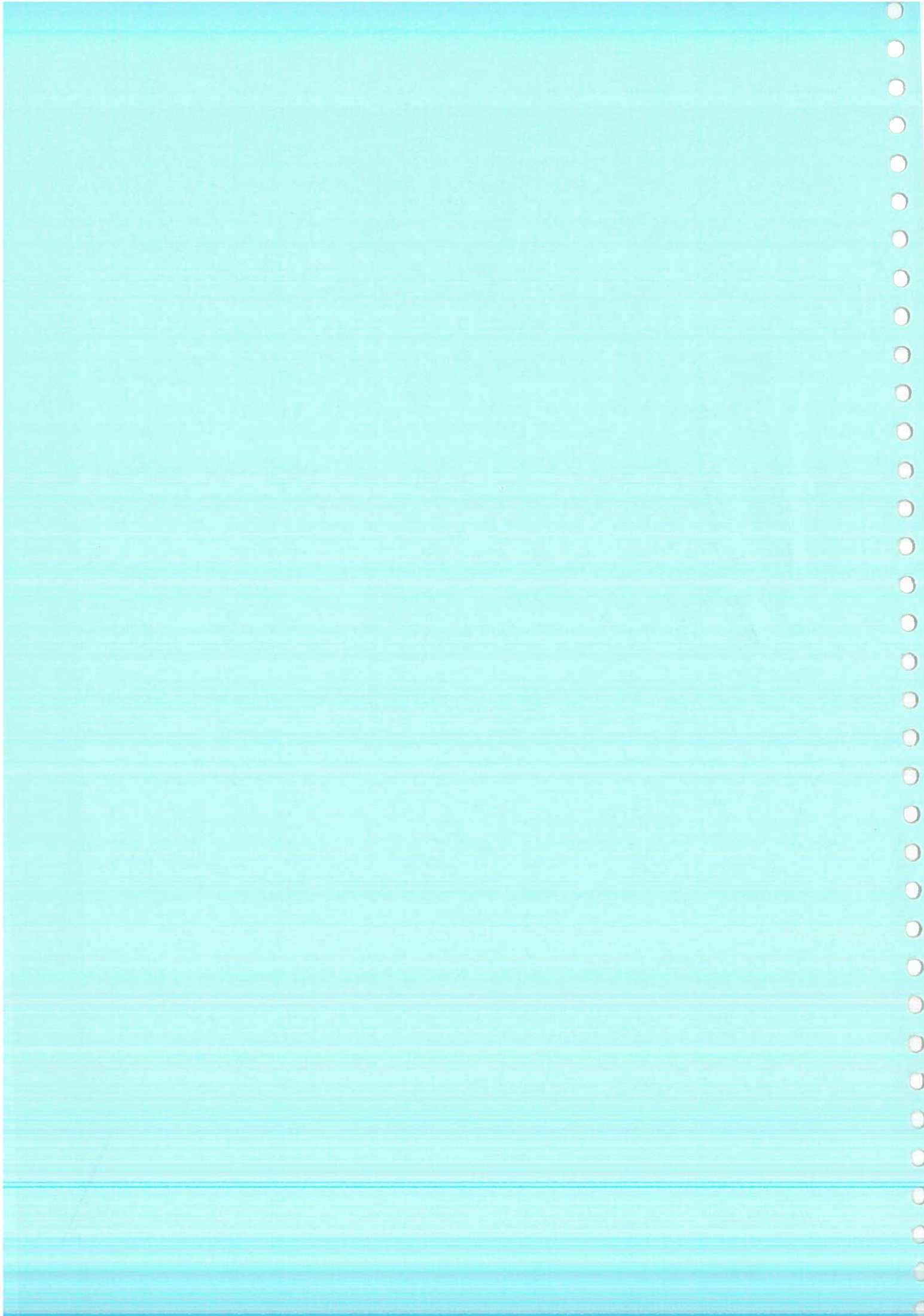
S.NO	Reference	Unit	Items	Quantity	Basic Rate in Rs.	Area Weightage	Final Rate in Rs.	Amount in Rs.
<b>Add 5 % Area weightage for Corporation Area</b>								
1	Thane PWD DSR-2017-2018 ,item no-5,page no-233	KM	Detailed/final location survey of road alignment with chain and compass, levels, theodolite and other essential instrument including staking of final centre line, locating curves, establishing Bench Marks and taking longitudinal section, cross section, fly levelling etc.complete (in plain area.) Spec. - As directed by Engineer-In-Charge	22.314	2790	5%	2929.50	65369
2	Thane PWD DSR-2017-2018 ,item no- 1.02,page no-1	No	Taking trial pit 1.0 x 1.0 x 1.5 mtr.at 200 metre interval and minimum 3 numbers for small stream in earth soil of all types, sand, gravel, soft murum ,hard murum and boulders etc. complete. Spec. - As directed by Engineer-In-Charge	45	245	5%	257.25	11576
3	MJP DSR 2016- 17 sec H Page No. 56 Item No.5 c	RMT	Taking trial bore by callyx machine with TCT/NX bits to gader undisturbed strata samples for investigation in all types of strata soft soil, murum, hard murum with boulders ,soft rock ,hard rock & quartzite etc. The item includes all hire & running cost of callyx Machine conveying all materials to site of work excluding callyx machine and back sampling all over burden strata in glass jar and core samples serially numbered at site in a wooden core box, samples to be taken at 1.0 M interval and conveying to the place as directed by engineer- in - charge, The diameter of bore in overburden shall also include MS casing pipe of 2.5 mm thick plate in overburden only and shall be 1.0 m above GL with cap over it in weather rock .	30	2646	5%	2778.30	83349
<b>Total</b>								<b>160294</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**  
**RECYCLE WATER SYSTEM**  
**WORKING SURVEY - VASHI MIDC**

**ABSTRACT**

S.NO	Reference	Unit	Items	Quantity	Basic Rate in Rs.	Area Weightage	Final Rate in Rs.	Amount in Rs.
<b>Add 5 % Area weightage for Corporation Area</b>								
1	Thane PWD DSR-2017-2018 .item no-5,page no-233	KM	Detailed/final location survey of road alignment with chain and compass, levels, theodolite and other essential instrument including staking of final centre line, locating curves, establishing Bench Marks and taking longitudinal section, cross section, fly levelling etc.complete (in plain area) Spec. - As directed by Engineer-In-Charge	30.879	2790	5%	2929.50	90460
2	Thane PWD DSR-2017-2018 .item no-1.02,page no-1	No	Taking trial pit 1.0 x 1.0 x 1.5 mtr.at 200 metre interval and minimum 3 numbers for small stream in earth soil of all types. sand, gravel, soft murum ,hard murum and boulders etc. complete. Spec. - As directed by Engineer-In-Charge	62	245	5%	257.25	15950
3	MJP DSR 2016-17 sec H Page No. 56 Item No.5 c	RMT	Taking trial bore by callyx machine with TCT/NX bits to gader undisturbed strata samples for investigation in all types of strata soft soil, murum, hard murum with boulders ,soft rock ,hard rock & quartzite etc. The item includes all hire & running cost of callyx Machine conveying all materials to site of work excluding callyx machine and back sampling all over burden strata in glass jar and core samples serially numbered at site in a wooden core box. samples to be taken at 1.0 M interval and conveying to the place as directed by engineer- in - charge. The diameter of bore in overburden shall also include MS casing pipe of 2.5 mm thick plate in overburden only and shall be 1.0 m above GL with cap over it in iweather rock .	30	2646	5%	2778.30	83349
<b>Total</b>								<b>189759</b>

**COST ESTIMATE OF**  
**PROPERTY CONNECTION**



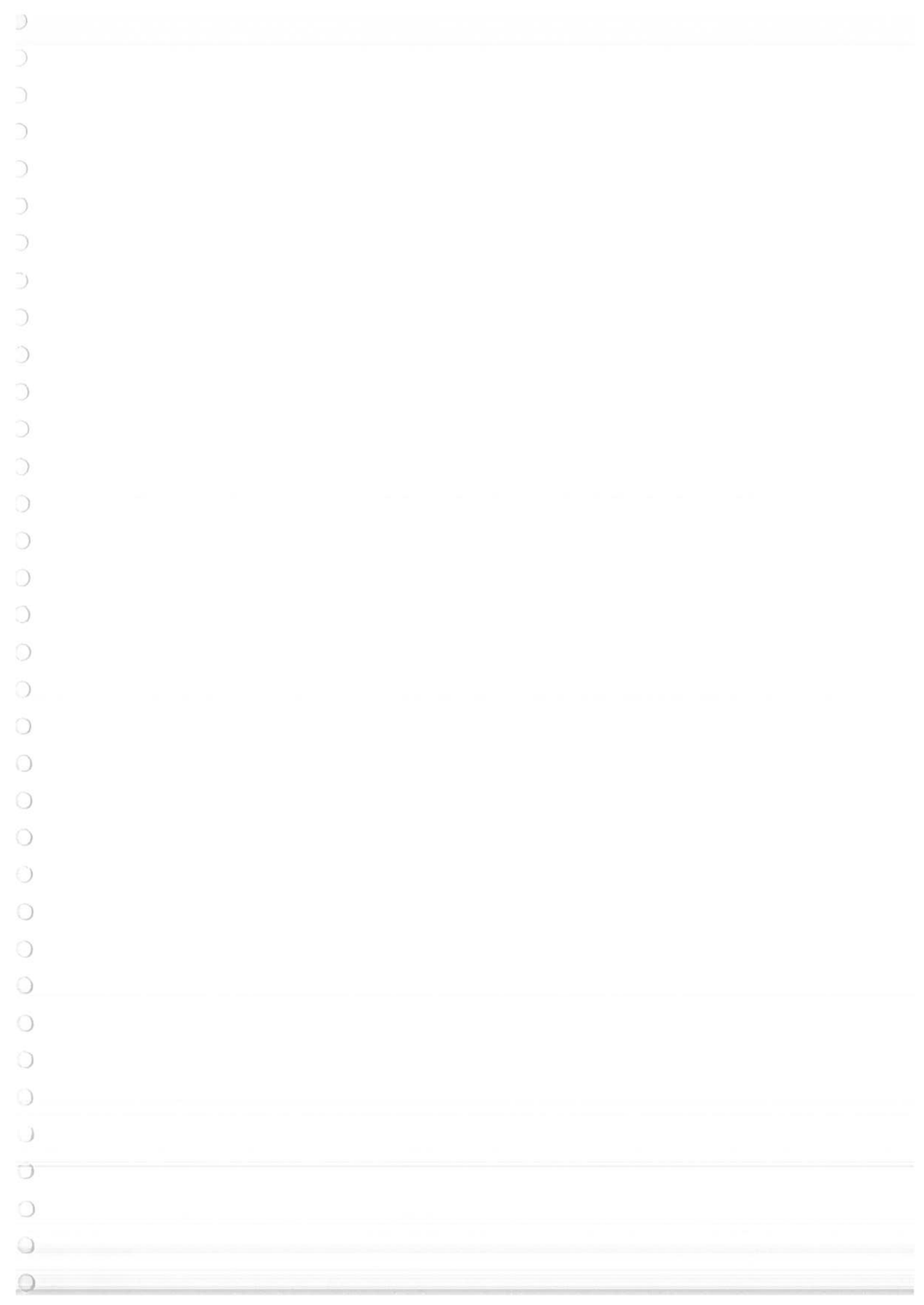
NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Estimate of Cross connection							
Vashi MIDC							
S.No	Reference	Description			Quantity in m	Rate as MJP 2016-2017	Total Cost in Rs
1		Pipe length require for under table top( assuming 15 m road Width and pipe diameter 160 mm and crossing at 500 m interval )					
		HDPE PIPE- 8 kg/cm					
	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (vii)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.	62	15	930	666	619380
	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (xii)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			930	93	86490
2		Length of Secondary Pipe Network for property connection( diameter 110 mm and length as 30 % total network length i.e 30 % of 30879 = 9263.7					
	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (iv)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.			9263.7	295	2732791.5
	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (ix)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			9263.7	57	528030.9
<b>Total Cost</b>							<b>3966692</b>

NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Estimate of Cross connection							
Koperkhairane MIDC							
S.No	Reference	Description			Quantity in m	Rate as MJP 2016-2017	Total Cost in Rs
1		Pipe length require for under table top( assuming 15 m road Width and pipe diameter 160 mm and crossing at 500 m interval )					
		HDPE PIPE- 8 kg/cm					
	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (vii)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.	45	15	675	666	449550
	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (xii)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			675	93	62775
2		Length of Secondary Pipe Network for property connection( diameter 110 mm and length as 30 % total network length i.e 30 % of 22314 = 6694.2					
	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (iv)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.			6694.2	295	1974789
	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (ix)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedures like Elctrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			6694.2	57	381569.4
						<b>Total Cost</b>	<b>2868683</b>



NAVI MUMBAI MUNICIPAL CORPORATION							
RECYCLE WATER SYSTEM							
Estimate of Cross connection							
Airoli MIDC							
S.No	Reference	Description			Quantity in m	Rate as MJP 2016-2017	Total Cost in Rs
1		Pipe length require for under table top( assuming 15 m road Width and pipe diameter 160 mm and crossing at 500 m interval )					
		HDPE PIPE- 8 kg/cm					
	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (vii)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.	60	15	900	666	599400
	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (xii)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedüres like Electrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			900	93	83700
2		Length of Secondary Pipe Network for property connection( diameter 110 mm and length as 30 % total network length i.e 30 % of 29860 = 8958					
1	MJP DSR-2016-2017 ,Page no. 176, Sec X,Item no. 1 b (iv)	Providing and Supplying in standard lengths polyethelene pipes, confirming to IS 4984 / 14151 / 12786 / 13488 with necessary jointing material like mechanical connector i.e. thread / insert joint / quick release couplar joint or flanged joint including all local and central taxes, transportation and frigt charges inspection charges, loading unloading charges, conveyance to departmental stores b/ site & stacking the same in closed shade duly protecting from sunrays & rays etc. complete.			8958	295	2642610
2	MJP DSR-2016-2017 ,Page no. 182, Sec X,Item no. 2 (ix)	Lowering, laying and jointing H.D.P.E / M.D.P.E in proper position including all specials by compression fitting /electrofusion and but fusion jointing procedure including hydraulic testion as per relevent IS Code complete with all materials for jointion procedüres like Electrofusion machine , Electro mirror /heater but fusion welding machine with hydraulic jack, top loading clampetc, pump,and accessories for hydraulic testing and all labours as directed by engineer in charge as per IS-7634 Part-II.			8958	57	510606
						<b>Total Cost</b>	<b>3836316</b>

NAVI MUMBAI MUNICIPAL CORPORATION		
RECYCLE WATER SYSTEM		
Abstract of Cross Connection		
S.no	Zone name	Total cost
8	Airoli -MIDC	3,836,316
9	Kopherkarine-MIDC	2,868,683
10	vashi-MIDC	3,966,692
<b>Total</b>		<b>10,671,692</b>



<b>Navi Mumbai Municipal Corporation</b>			
<b>Recycled Water System</b>			
<b>Property Connection- Measurement 40mm Dia.</b>			
<b>Sr.No.</b>	<b>Description of Item</b>	<b>Quantity</b>	<b>Unit</b>
	No. of Connections-40mm dia		
	Residential	1.00	
	Commercial	0.00	
	Industrial	0.00	
		<b>1.00</b>	<b>No.</b>
<b>1</b>	Ultra Violet stabilised PVC Pipe 40mm	10	m
<b>2</b>	Road Box	1.00	No.
<b>3</b>	Gate Valve 40mm	1.00	
<b>4</b>	AMR Water Meter 40mm	1.00	No.
<b>5</b>	Supplying of Non return valve 40mm	1.00	No.
<b>6</b>	Lowering of Non return valve	1.00	No.
<b>7</b>	Strainers(Filter or dirt box) 40mm	1.00	No.
<b>8</b>	Connections		
	Saddle Connection for DI pipes	0	No.
	Compression Saddle for HDPE pipes	1	No.

Property Connection-40mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
7	Elec/Mech MJP DSR 2016-17 Page No.105 Item No. B.c- 1	Providing and fixing C.I <b>strainers</b> for water meters including cost of all material and labour. Of T (basket) type with flanged ends & with stainless steel or Brass mesh with opening of 2.5mm to 3mm & suitable for operating pressure of 16 kg/cm2 & test pressure of 24 kg/cm2 .				
		50 mm dia	1.00	No.	3856.65	3856.65
8	FMR	<b>Connections</b>				
		Saddle Connection (Saddle belt) for DI pipes	0	No.	1000.00	0.00
		Compression Saddle for HDPE pipes	1.00	No.	300.00	300.00
		<b>Cost</b>				33050
		<b>Add 1% cess on Labour welfare (For MJP items)</b>				278
		<b>Add 1% cess on Labour amenities (For MJP items)</b>				99
		<b>Total Cost</b>				<b>33426</b>

Property Connection-40mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
4	Elec/Mech MJP DSR 2016-17 Page No.102, section 19 - WM-1A Item No. C-4	Providing , installing and giving satisfactory field testing of domestic multijet mechanical AMR water meters horizontal inferencial with magnetic drive and dry dial suitable for ambient 50 C temperature duly sealed against tampering with coupling at both ends conforming to ISO 4064 with GSM/ radio frequency (RF) for communication to server via transreceiver along with hand held device and PC software etc complete with EEC /OIML MID certification for Abroad meter and FCRI for india including 36 months guarantee etc complete;	1.00	No.	16866.15	16866.15
		40 mm				
		<b>Non-Return Valve</b>				
5	MJP DSR 2016-17, P 207 Item no 1)a)i)	Providing and supplying ISI mark CI D/F reflux valves (non-return valves) of following dia including all taxes (Central & local), railway reight,inspection charges,unloading from railway wagon, loading into truck, transportation upto deparmental stores/ site, unloading, stacking etc. complete. 50 mm	1.00	No.	3126.00	3126.00
6	MJP DSR 2016-17, P 217 Item no 4)i)	Lowering, laying and jointing in position following C.I. D/F Reflux valves, Butterfly valves and Sluice valves including cost of all labour jointing material, including nut bolts and giving satisfactory hydraulic testing etc.complete. (Rate for all class of valves.) 50mm	1.00	No.	782.25	782.25

Navi Mumbai Municipal Corporation						
Recycled Water System						
Property Connection-40mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
1	PWD 17-18 Bd-V Page No.252 Item No.- 42.66	<b>Pipe</b>				
		Providing and fixing in position UV stabilized PVC plumbing pipes of required standard thickness conforming to IS 4985, Including necessary fittings confirming to IS 7834, such as PVC bends, tees, reducers,clamps,plugs etc. necessary excavation trench, refilling, necessary drilling holes in walls/slabs and making the good surface etc. complete.(For 10 Kg/ sq.cm pressure)(Including defect liability period and bond for 3 years.)				
		40 mm dia	10.00	m	396.90	3969.00
2	MJP DSR 2016-17, P 346 Item no 5 b	<b>Road Box</b>				
		Providing and fixing C.I. Road box including loading,unloading and carting to site of work including all necessary excavation in all types of strata and fixing in murum packing etc. complete 225mm x 300mm (40 kg)	1.00	No.	3166.80	3166.80
3	Elec/Mech PWD DSR 2016-17 chapter 13 GV -13-7-26	<b>Gate valve</b>				
		Suppy & installing gun metal gate valve of size 50 mm dia as per specification no FF-VL/GV				
		50 mm	1.00	No.	982.80	982.80
		<b>AMR Water Meter</b>				

Navi Mumbai Municipal Corporation			
Recycled Water System			
Property Connection- Measurement 25mm Dia.			
Sr.No.	Description of Item	Quantity	Unit
	No. of Connections-25mm dia		
	Residential	1.00	
	Commercial	0.00	
	Industrial	0.00	
		<b>1.00</b>	No.
1	Ultra Violet stabilised PVC Pipe 25 mm	10	m
2	Road Box	1.00	No.
3	Gate Valve 25 mm	1.00	
4	AMR Water Meter 25 mm	1.00	No.
5	Supplying of Non return valve 25 mm	1.00	No.
6	Lowering of Non return valve	1.00	No.
7	Strainers(Filter or dirt box) 25 mm	1.00	No.
8	Connections		
	Saddle Connection for DI pipes	0	No.
	Compression Saddle for HDPE pipes	1	No.



Property Connection=25mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
7	Elec/Mech MJP DSR 2016-17 Page No.105 Item No. B.c- 1	Providing and fixing C.I strainers for water meters including cost of all material and labour. Of T (basket) type with flanged ends & with stainless steel or Brass mesh with opening of 2.5mm to 3mm & suitable for operating pressure of 16 kg/cm <sup>2</sup> & test pressure of 24 kg/cm <sup>2</sup> . 50 mm dia	1.00	No.	3856.65	3856.65
8	FMR	<b>Connections</b> Saddle Connection (Saddle belt) for DI pipes Compression Saddle for HDPE pipes	0 1.00	No. No.	1000.00 300.00	0.00 300.00
		<b>Cost</b>				33095
		<b>Add 1% cess on Labour welfare (For MJP items)</b>				288
		<b>Add 1% cess on Labour amenities (For MJP items)</b>				103
		<b>Total Cost</b>				<b>33485</b>

Property Connection=25mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
		<b>AMR Water Meter</b>				
4	Elec/Mech MJP DSR 2016-17 Page No.102, section 19 - WM-1A Item No. C-4	Providing , installing and giving satisfactory field testing of domestic multijet mechanical AMR water meters horizontal inferencial with magnetic drive and dry dial suitable for ambient 50 C temperature duly sealed against tampering with coupling at both ends conforming to ISO 4064 with GSM/ radio frequency (RF) for communication to server via transreceiver along with hand held device and PC software etc complete with EEC /OIML MID certification for Abroad meter and FCRI for india including 36 months guarantee etc complete;	1.00	No.	12370.05	12370.05
		25 mm				
		<b>Non-Return Valve</b>				
5	MJP DSR 2016-17, P 207 Item no 1)a)i)	Providing and supplying ISI mark CI D/F reflux valves (non-return valves) of following dia including all taxes (Central & local), railway reight,inspection charges,unloading from railway wagon, loading into truck, transportation upto deparmental stores/ site, unloading, stacking etc. complete. 50 mm	1.00	No.	3126.00	3126.00
6	MJP DSR 2016-17, P 217 Item no 4)i)	Lowering, laying and jointing in position following C.I. D/F Reflux valves, Butterfly valves and Sluice valves including cost of all labour jointing material, including nut bolts and giving satisfactory hydraulic testing etc.complete. (Rate for all class of valves.) 50mm	1.00	No.	7822.50	7822.50

Navi Mumbai Municipal Corporation						
Recycled Water System						
Property Connection=25mm Dia.						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
1	PWD 17-18 Bd-V Page No.252 Item No.- 42.63	<b>Pipe</b>				
		Providing and fixing in position UV stabilized PVC plumbing pipes of required standard thickness conforming to IS 4985, Including necessary fittings confirming to IS 7834, such as PVC bends, tees, reducers, clamps, plugs etc. necessary excavation trench, refilling, necessary drilling holes in walls/slabs and making the good surface etc. complete. (For 10 Kg/ sq.cm pressure) (Including defect liability period and bond for 3 years.)				
		25 mm dia	10.00	m	259.35	2593.50
2	MJP DSR 2016-17, P 346 Item no 5 a	<b>Road Box</b>				
		Providing and fixing C.I. Road box including loading, unloading and carting to site of work including all necessary excavation in all types of strata and fixing in murum packing etc. complete 100mm x 225mm (20 kg)	1.00	No.	1612.80	1612.80
3	Elec/Mech PWD DSR 2016-17 chapter 13 GV -13-7-25	<b>Gate valve</b>				
		Supply & installing gun metal gate valve of size 25 mm dia as per specification no FF-VL/GV				
		25 mm	1.00	No.	1413.30	1413.30

Navi Mumbai Municipal Corporation			
Recycled Water System			
Property Connection- Measurement-50 mm dia			
Sr.No.	Description of Item	Quantity	Unit
	No. of Connections-50mm dia		
	Residential	1.00	
	Commercial	0.00	
	Industrial	0.00	
		<b>1.00</b>	No.
1	Ultra Violet stabilised PVC Pipe 50 mm	10	m
2	Road Box	1.00	No.
3	Gate Valve 50 mm	1.00	No.
4	AMR Water Meter 50 mm	1.00	No.
5	Supplying of Non return valve 50 mm	1.00	No.
6	Lowering of Non return valve	1.00	No.
7	Strainers(Filter or dirt box) 50 mm	1.00	No.
8	Connections		
	Saddle Connection for DI pipes	0	No.
	Compression Saddle for HDPE pipes	1	No.

Property Connection-50 mm dia						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
7	Elec/Mech MJP DSR 2016-17 Page No.105 Item No. B.c- 1	Providing and fixing C.I strainers for water meters including cost of all material and labour. Of T (basket) type with flanged ends & with stainless steel or Brass mesh with opening of 2.5mm to 3mm & suitable for operating pressure of 16 kg/cm2 & test pressure of 24 kg/cm2 . 50 mm dia	1.00	No.	3856.65	3856.65
8	FMR	<b>Connections</b>				
		Saddle Connection (Saddle belt) for DI pipes	0	No.	1000.00	0.00
		Compression Saddle for HDPE pipes	1.00	No.	300.00	300.00
		<b>Cost</b>				44639
		<b>Add 1% cess on Labour welfare (For MJP items)</b>				374
		<b>Add 1% cess on Labour amenities (For MJP items)</b>				137
		<b>Total Cost</b>				<b>45150</b>

Property Connection-50 mm dia						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
		<b>AMR Bulk Meters</b>				
4	Elec/Mech MJP DSR 2016-17 Page No.107, section 19 - WM-2B Item No. B-1	Providing , installing testing and commissioning of the line battery operated ultrasonic bulk type water meters ISO 4064 with built in data logger and GSM/GPRS modern for transfer of data communication to remote central computer as per specifications. the meter shall be suitable for 50 C and provided with IP 68 protection class with complete immersion of water .the meter shall have battery life of min .10 years should be able to detect the reverse flow volume and tampering .The accuracy of the meter shall be +/- 1 % of measured value including 36 months guarantee etccomplete.(with Simcard and its charges valid for 36 months)	1.00	No.	26491.50	26491.50
		50 mm				
		<b>Non-Return Valve</b>				
5	MJP DSR 2016-17, P 207 Item no 1)a)i)	Providing and supplying ISI mark CI D/F reflux valves (non-return valves) of following dia including all taxes (Central & local), railway reight,inspection charges,unloading from railway wagon, loading into truck, transportation upto deparmental stores/ site, unloading, stacking etc. complete. 50 mm	1.00	No.	3126.00	3126.00
6	MJP DSR 2016-17, P 217 Item no 4)i)	Lowering, laying and jointing in position following C.I. D/F Reflux valves, Butterfly valves and Sluice valves including cost of all labour jointing material, including nut bolts and giving satisfactory hydraulic testing etc.complete. (Rate for all class of valves.)	1.00	No.	782.25	782.25

Navi Mumbai Municipal Corporation						
Recycled Water System						
Property Connection-50 mm dia						
It No.	DSR	Description of Item	Qty	Unit	Rate (Rs.)	Amount (Rs.)
1	PWD 17-18 Bd-V Page No-252 Item No.- 42.66	<b>Pipe</b>				
		Providing and fixing in position UV stabilized PVC plumbing pipes of required standard thickness conforming to IS 4985, Including necessary fittings confirming to IS 7834, such as PVC bends, tees, reducers, clamps, plugs etc. necessary excavation trench, refilling, necessary drilling holes in walls/slabs and making the good surface etc. complete. (For 10 Kg/ sq.cm pressure) (Including defect liability period and bond for 3 years.)				
		50 mm dia	10.00	m	593.25	5932.50
2	MJP DSR 2016-17, P 346 Item no 5 b	<b>Road Box</b>				
		Providing and fixing C.I. Road box including loading, unloading and carting to site of work including all necessary excavation in all types of strata and fixing in murum packing etc. complete 225mm x 300mm (40 kg)	1.00	No.	3166.80	3166.80
3	Elec/Mech PWD DSR 2016-17 chapter 13 GV -13-7-26	<b>Gate valve</b>				
		Supply & installing gun metal gate valve of size 50 mm dia as per specification no FF-VL/GV				
		50 mm	1.00	No.	982.80	982.80

Navi Mumbai Municipal Corporation							
Recycled Water System							
Abstract of Property Connection							
S.no	Zone name	No of property connection	Cost of 50 mm property connection	Cost of 40 mm property connection	Cost of 25mm property connection	Gross Connection Pipe Cost	Total Cost of property connection
8	Airoli -MIDC	200	902998	1002789	5022799	3836316	10,764,903.09
9	Kopherkhane-MIDC	200	902998	1002789	5022799	2868683	9,797,270.49
10	vashi-MIDC	200	902998	1002789	5022799	3966692	10,895,279.49
						<b>Total Cost</b>	<b>31,457,453</b>



Navi Mumbai Municipal Corporation							
PAVER BLOCK ROAD RESTORATION WORKS							
MEASUREMENT SHEET							
Sr. No.	Description Of Item	Unit	No.	L	B	H	Qty.
1	Providing, laying, spreading and compacting stone aggregate of specified sizes to water bound macadam specifications, including spreading in uniform thickness, hand packing rolling with 3 wheeled steel/vibratory roller 8-10 tonnes in stages to proper gade and camber, applying and brooming requisite type of screening, blinding materials to fill up the interstics of coarse aggregates, watering and compacting to the required density making necessary earthen bund to protect edges, lighting, guarding, barricading and maintenance of diversion etc. complete. By manual means - Grading 1 90 mm to 45 mm						
	Main Road (Average width of excavation as 3.5m)	Cum		1.00	1.00	0.30	0.30
							0.30
2	Taking our existing CC interlocking paver blocks from footpath / central verge, including removal of rubbish etc. disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-charge.						
	Main Road	Sqm	Area	1.00			1.00
							0.00
3	Laying old cement concrete interlocking paver blocks of any design/shape laid in required line, level, curvature, colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).						
	Main Road	Sqm	Area	0.80			0.80
							0.80
4	Providing and fixing in the carriageway interlocking concrete pavers unishape (monolithic single layer precast concrete blocks) of gray cement and of approved colour as per technical specification, 100mm thick having average crushing strength of 35 N/mm <sup>2</sup> placed on average thickness of 40mm uniformly graded river sand cushioning with properly compacted with mechanical compactor with required level grade and camber etc. complete as directed. (for carraigeway only).						
	Main Road	Sqm	Area	0.2			0.20
							0.20

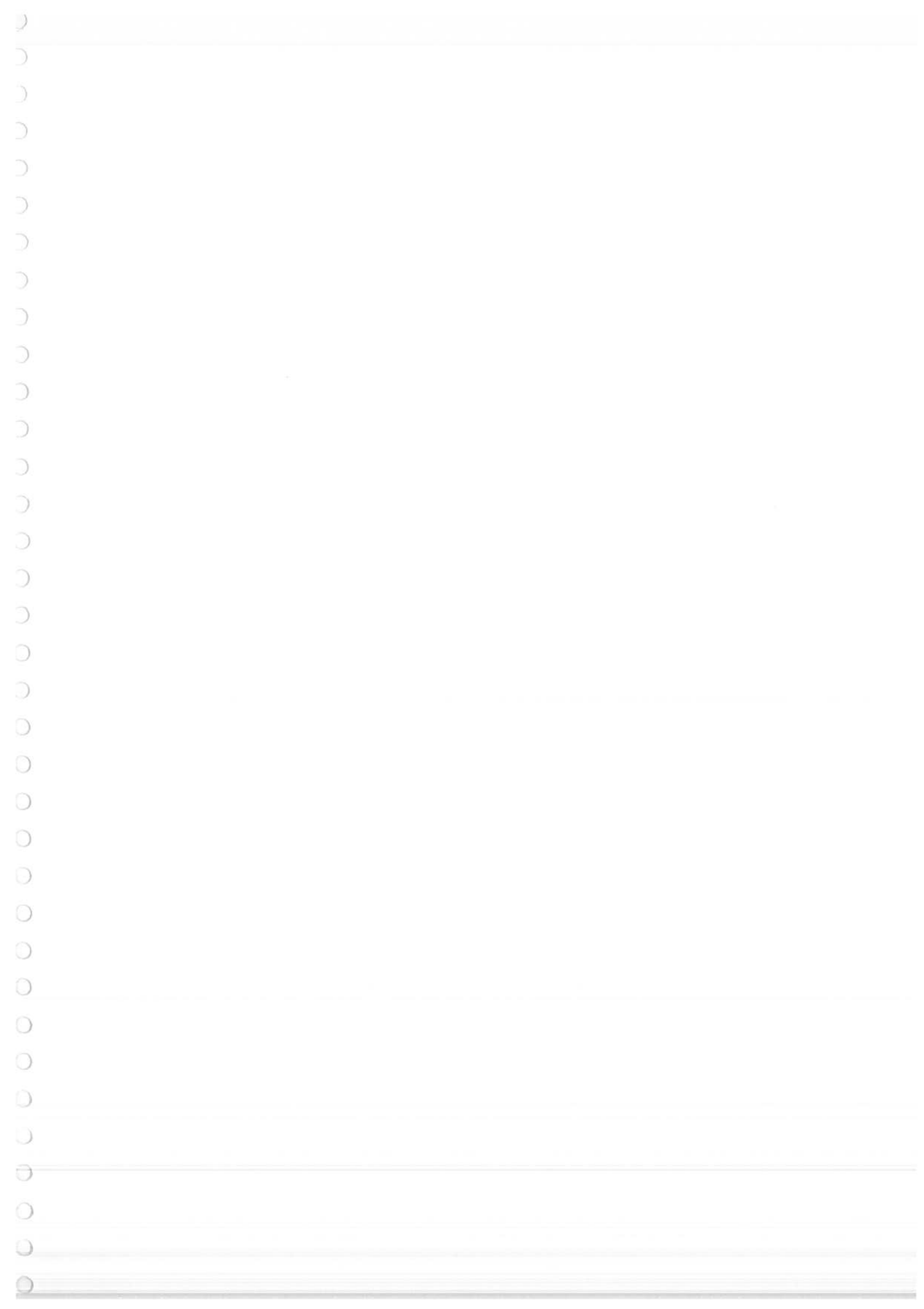
Navi Mumbai Municipal Corporation						
PAVER BLOCK ROAD RESTORATION WORKS						
ABSTRACT SHEET						
Sr. No.	Reference	Description Of Item	Unit	Quantity	Rate (5% Increase) Rs.	Amount (Rs.)
1	PWD DSR 17-18. Page no. 18 - Item no. 3.16	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting with Intelligent Compactor with compaction analyzer and VSat attachment. to the required density. By Manual Means Grading I (Using Screening Type B (11.2 mm) Aggregate)	Cum	0.30	1329.30	399
2	CPWD DSR 2014/Item No. 16.83/pg.269	Taking our existing CC interlocking paver blocks from footpath / central verge, including removal of rubbish etc. disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-charge.	Sqm	0.00	50.72	-
3	CPWD DSR 2014/Item No. 16.84/pg.269	Laying old cement concrete interlocking paver blocks of any design/shape laid in required line, level, curvature, colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	Sqm	0.80	205.49	164
4	Approved Rate	Providing and fixing in the carriageway 100 mm thick interlocking concrete pavers unishape (monolithic single layer precast concrete blocks) of gray cement colored having average crushing strength of 50 N/mm <sup>2</sup> and as per technical specification, placed on average compacted thickness of 25 mm uniformly graded river sand cushioning with properly compacted with mechanical compactor with required level grade and camber etc. complete as directed. MCGM Road department Vol. 1, DSR 2013 P-07, 1-RW-3-19	Sqm	0.20	1137.00	227
<b>TOTAL (Rs.)</b>						<b>791</b>



Navi Mumbai Municipal Corporation										
TYPE ESTIMATE :- B.T ROAD RESTROATION										
Sr. No.	Reference	Item Description	No.	Length	Width	Depth	Quantity	Unit	Rate (5% Increase) Rs.	Amount
1	PWD DSR 17-18, Page no. 18 - Item no. 3.16	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting with Intelligent Compactor with compaction analyzer and VSat attachment. to the required density. By Manual Means Grading I (Using Screening Type B (11.2 mm) Aggregate)	1	1	1	0.3	0.3	Cum	1329.30	398.79
2	PWD DSR 17-18, Page no. 23 - Item no. 3.39	Providing, laying and compacting of builtupspray grout layer 75 mm thick over prepared base consisting of two layers composite construction of compacted crushed coarse aggregates with application of bituminous binder of VG30 Grade @ 1.520 Kg/ Sqm after each layer. ( i.e 1.520x2=3.04 say 3.00 Kg/Sqm) and with key aggregates placed on top of the second layer and compacting with static roller 8 to 10 MT. Excluding cost of tack coat and scarifying etc. Complete.	1	1	1		1	Sq. M	252	252.00
3	PWD DSR 17-18, Page no. 21 - Item no. 3.31	Providing and applying tack coat on the prepared surface heating by fumes in Boiler and spraying bitumen with sprayer on Dry / Hungry B.T. surface 3 kg/10 sqm. VG30 bulk bitumen	1	1	1		1	Sq. M	15.75	15.75
4	PWD DSR 17-18, Page no. 23 - Item no. 3.42	Providing and laying bituminous macadam using crushed aggregate of Grading I, premixed with bituminous binder, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 80/100 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC27 2009 specified conditions and attachments such as electronic load sensor based belt conveyers,automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver,and Vibratory roller excluding prime/Tack coat etc. complete Bitumen VG30 grade 3.30%	1	1	1	0.075	0.075	Cu. M	5323.5	399.26
5	PWD DSR 17-18, Page no. 28 - Item no. 4.09	Open Graded Premix SurfacingProviding and Laying OGC 20 mm thickness composed of 13.2 mm to 5.6 mm aggregates premixed with bituminous binder transported to site with VTS , laid over a previously prepared surface, finished to the required grade, level, alignment, and rolling to achieve the desired compaction VG30 Bitumen, including providing and laying seal coat sealing voids in a bituminous surface laid to the specified level and cross fall using Type A seal coat but excluding prime / Tack coat. For Bitumen VG30 bulk USING 80 TPH Batch mix type hot mix plant with SCADA, Paver and Vibratory roller	1	1	1		1	Sq. M	165.9	165.90
										1231.703

Navi Mumbai Municipal Corporation							
CONCRETE ROAD RESTORATION WORKS							
MEASUREMENT SHEET							
Sr. No.	Description Of Item	Unit	No.	L	B	H	Qty.
1	Providing, laying, spreading and compacting stone aggregate of specified sizes to water bound macadam specifications, including spreading in uniform thickness, hand packing rolling with 3 wheeled steel/vibratory roller 8-10 tonnes in stages to proper gade and camber, applying and brooming requisite type of screening, blinding materials to fill up the interstics of coarse aggregates, watering and compacting to the required density making necessary earthen bund to protect edges, lighting, guarding, barricading and maintenance of diversion etc. complete. By manual means - Grading 1 90 mm to 45 mm						
	Main Road	Cum	Area	1.00		0.10	0.10
							0.10
2	Providing and laying in situ Dry lean cement concrete sub-base of trap metal of specified gradation using ,mixing as per approved design mix, compacting with vibratory roller of minimum 80-100KN static weight to give desired compacted density,providing construction joints,and curing with liquid curing compound and sprikling water, and covering with moist hessain or ponding of water for 7days including all materials,labour,machinery with all leads and lifts,bailing out water manually,and formwork etc complete. Spec-No. MoRT&H-601.						
	Main Road	Cum	Area	1.00		0.10	0.10
							0.10
3	Providing and laying Pavement Quality Concrete of M-40 grade (cast in situ) of trap metal including providing 125 micron thick impermeable plastic sheet membrane over the surface to be covered,coarse and fine aggregates of specified gradation using minimum cement content of 350 kg/cum., approved admixtures, mixing as per the design mix to the specified workability, providing necessary side forms,rails and guidewires,transporting the mix with transit mixers and laying and spreading within fixed form by mechanical auger and compacting with plate vibrator and minimum ten needle vibrators,curing with approved resin based aluminised reflective curing compound and covering with moist hessian or ponding and sprinkling of water for a minimum period of 14 days,fixing dowels,tie-bars,cutting joints,joint-fillers,sealants and all types of joints and finishing to the desired surface texture including all material,labour,machinery with all leads and lifts etc complete.						
	Main Road	Sqm	Area	1.00		0.20	0.20
							0.20

Navi Mumbai Municipal Corporation						
CONCRETE ROAD RESTORATION WORKS						
ABSTRACT SHEET						
Sr. No.	Reference	Description Of Item	Unit	Quantity	Rate (5% Increase) Rs.	Amount (Rs.)
1	PWD DSR 17-18, Page no. 18 - Item no. 3.16	Providing, laying, spreading and compacting stone aggregates of specific sizes to water bound macadam specification including spreading in uniform thickness, hand packing to proper grade and camber, applying and brooming requisite type of screening/ binding Materials to fill up the interstices of coarse aggregate, watering and compacting with Intelligent Compactor with compaction analyzer and VSat attachment. to the required density. By Manual Means Grading I (Using Screening Type B (11.2 mm) Aggregate)	Cum	0.10	1329.30	133.00
2	PWD DSR 17-18, Page no. 34 - Item no. 5.13	Construction of dry lean cement concrete Subbase over a prepared subgrade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineerincharge , compacting with vibratory roller, finishing, curing and including preparation of subgrade surface if required etc.complete	Cum	0.10	3570.00	357.00
3	PWD DSR 17-18, Page no. 32 - Item no. 5.09	Providing and laying insitu M40 Grade unreinforced plain cement concrete pavement with max 20% fly Ash ( Flyash upto 20% by weight of Cement) over a prepared sub base with 43 grade cement , coarse and fine aggregate conforming to IS 383, using fine & coarse aggregates combined gradation as per Table 6003 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver, compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineerincharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any other method approved by Engineerincharge ( initial lead of 5.00 Km for raw materials up to plant site) Spec. No. M.O.R.T.& H 2013. Cl602 P.N.263	Cum	0.20	6405.00	1,281.00
<b>TOTAL (Rs.)</b>						<b>1,771</b>



Navi Mumbai Municipal Corporation						
Recycled Water System						
Road Restoration						
Road Type	Per Sqm.	Vashi MIDC	Koperkhairane MIDC	Airoli MIDC	MIDC	
Concrete Road	1771.0	10937341.8	7903618.8	10576412		
Paver Block Road	790.6	11229638.71	8114840.446	10859063.18		
Bituminous Road	1231.7	50965213.61	36828840.84	49283373.11		
<b>Cost (Rs.)</b>		<b>73132194.12</b>	<b>52847300.09</b>	<b>70718848.29</b>		
<b>Total Cost (Rs.)</b>						<b>196,698,342.49</b>



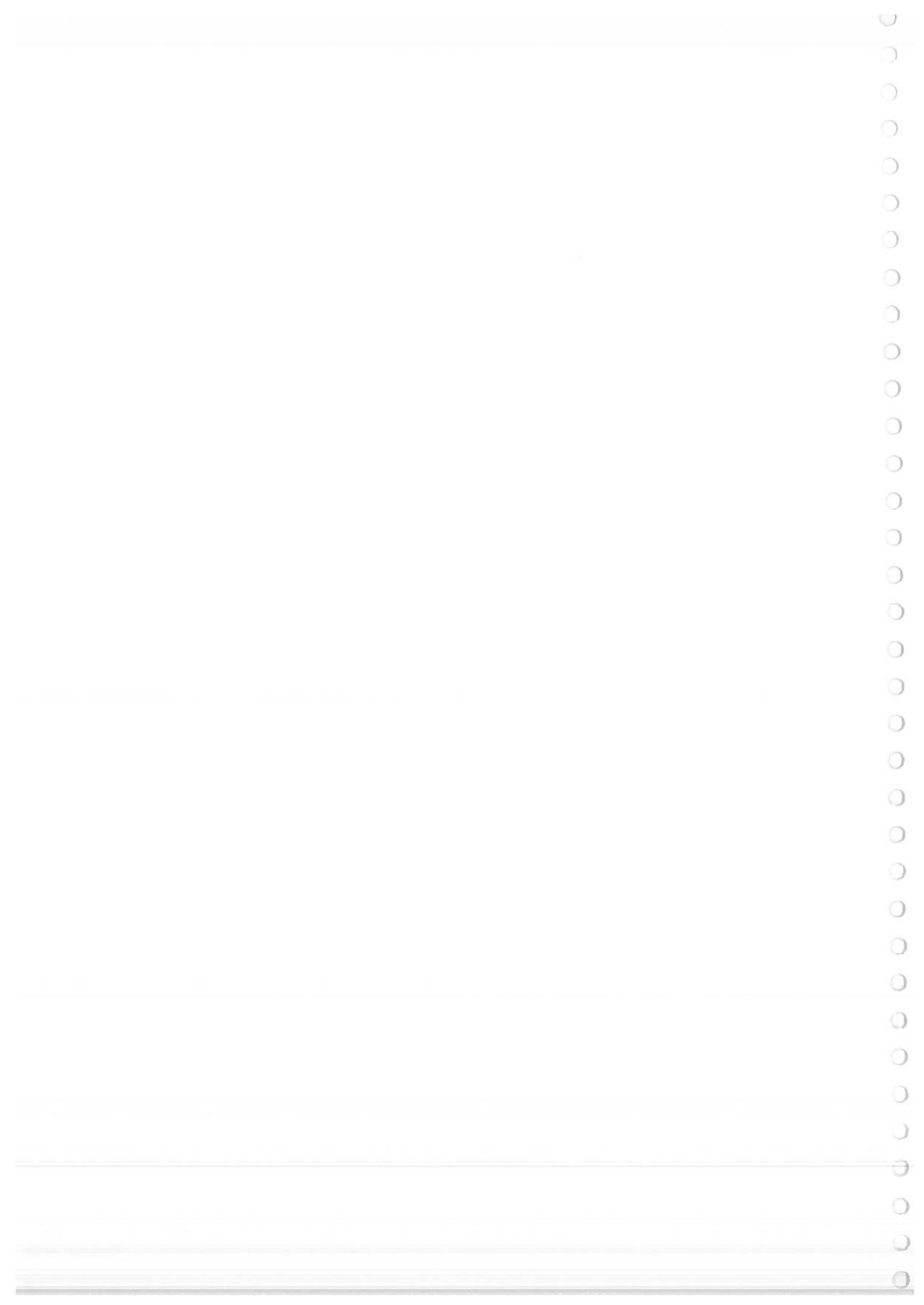
## Navi Mumbai Municipal Corporation

## Recycle Water System

## Cost of implementing Environment management plan

## ABSTRACT

Quantity	Items	Rate in Rs.	Per	Amount in Rs.
1	2	3	4	5
4.00	Environmental Monitoring for air quality location at 4	10000.00	day	40000
8.00	Environmental Monitoring for noise quality location at 8	2000.00	day	16000
200.00	Tree Plantation including in pumping station area & STP area	500.00	no.	100000
10.00	Water Quality analysis	175.00		1750
10.00	Sewage water quality analysis	280.00		2800
10.00	Treated water quality analysis	175.00		1750
10.00	Soil analysis	4000.00		40000
	Environment awareness & Training costs		lumpsum	250000
			m	
	Total			452,300.00



CLIENT : **M/S. TANDON URBAN SOLUTION PVT. LTD. (TUSPL)**

PROJECT : Geotechnical Investigation for Reuse of Recycled water in NMMC Area. Vashi

BORE HOLE NO. : BH-1

SHEET NO. : 1 OF 2

LOCATION : --

DATE : 20/01/2017 TO 23/01/2017

CO-ORDINATES : --

METHOD : ROTARY DRILLING

GROUND R. L. : --

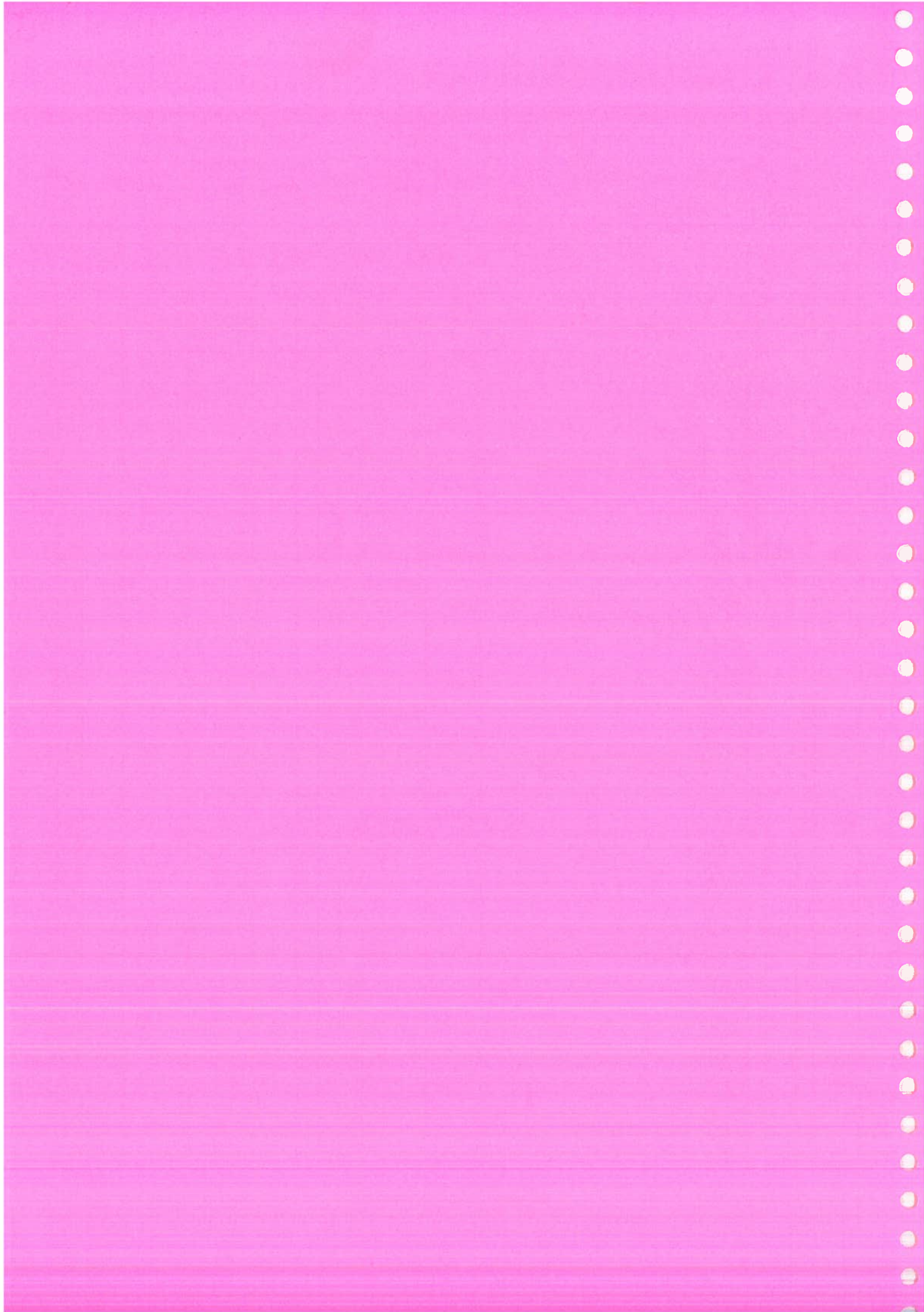
CASING : 100mm 6.00m & NX mm Ø UPTO BGL.

GROUND W. T. : 6m Below GL.

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	15	15	15	15				
0.00			Filling materials	0.00	DS1								
1.00				0.75									
2.00			Soft, grey, marine CLAY	1.50/									
				2.10	SPT1	02	02	02	03	04			
3.00	100 mm			3.00/									
4.00			Stiff, greyish, marine silty CLAY	3.60	SPT2	03	03	04	05	07			
				4.50/									
5.00			Medium dense, greyish, silty SAND with gravels	5.10	SPT3	05	07	08	12	15			
6.00				6.00/		10	--	--	--				
				6.10	SPT4	53	--	--	--	R			
7.00	NX		Highly weathered, greyish, BASALT	7.50							32	12	
8.00											40	40	
9.00			Slightly weathered, greyish, BASALT	9.00							85	68	

SPT N = STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE  
 CR = CORE RECOVERY DS = DISTURBED SOIL SAMPLE

REMARKS : CONTINUED ON NEXT PAGE.



CLIENT : **M/S. TANDON URBAN SOLUTION PVT. LTD. (TUSPL)**

PROJECT : Geotechnical Investigation for Reuse of Recycled water in NMMC Area. Vashi

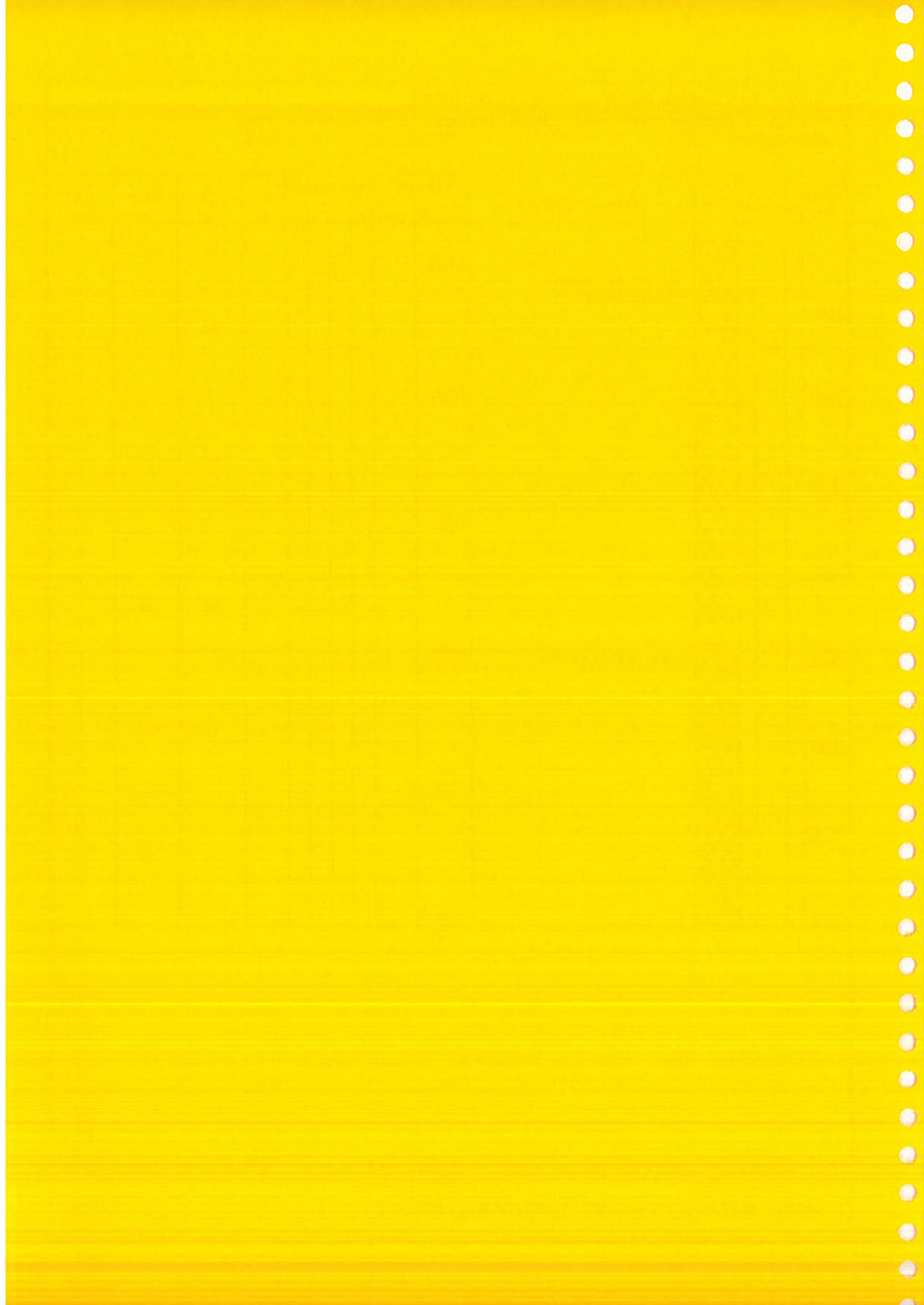
BORE HOLE NO. : BH-1

SHEET NO. : 2 OF 2

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE				BLOWS/15cm	SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	15	15					
11.00	NX	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽	Slightly weathered, greyish, BASALT	10.50						85	67	
12.00				12.00						88	73	
13.00			Fresh, greyish, BASALT							90	80	
14.00				13.50								
15.00				15.00						93	78	
16.00											97	82
17.00												
18.00						16.50					90	90
				18.00								

SPT N =STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE  
 CR = CORE RECOVERY DS = DISTURBED SOIL SAMPLE

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 18.00 m. BELOW G. L.



CLIENT : **M/S. TANDON URBAN SOLUTION PVT. LTD. (TUSPL)**

PROJECT : Geotechnical Investigation for Reuse of Recycled water in NMMC Area. Vashi

BORE HOLE NO. : BH-2

SHEET NO. : 1 OF 2

LOCATION : --

DATE : 24/01/2017 TO 27/01/2017

CO-ORDINATES : --

METHOD : ROTARY DRILLING

GROUND R. L. : --

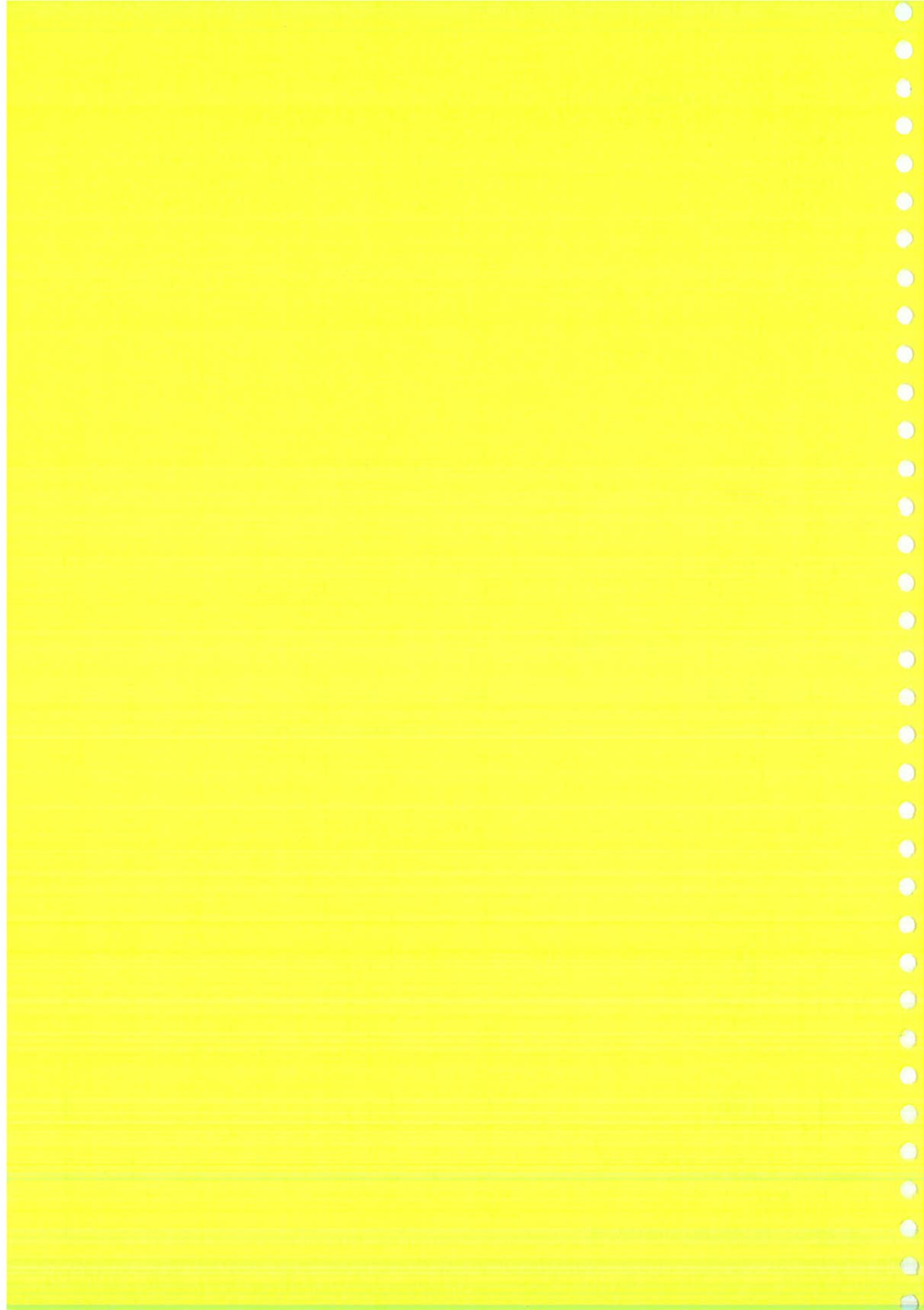
CASING : 100mm 6.00m & NX mm Ø UPTO BGL.

GROUND W. T. : 6m Below GL.

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS
				DEPTH (m)	TYPE	15	15	15	15				
0.00			Filling materials	0.00	DS1								
1.00				1.00									
2.00			Soft, grey, marine CLAY	1.50/									
				2.10	SPT1	02	02	03	03	05			
3.00	100 mm			3.00/									
4.00			Stiff, greyish, marine silty CLAY	3.60	SPT2	03	04	04	06	08			
5.00				4.50/									
			Medium dense, greyish, silty SAND with gravels	5.10	SPT3	06	08	08	14	16			
6.00				6.00/									
				6.05	SPT4	52	--	--	--	R			
7.00	NX		Highly weathered, greyish, BASALT	7.50							28	14	
8.00													
											32	NIL	
9.00			Slightly weathered, greyish, BASALT	9.00									
											76	72	

SPT N =STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE  
 CR = CORE RECOVERY DS = DISTURBED SOIL SAMPLE

REMARKS : CONTINUED ON NEXT PAGE.





CLIENT : **M/S. TANDON URBAN SOLUTION PVT. LTD. (TUSPL)**

PROJECT : Geotechnical Investigation for Reuse of Recycled water in NMMC Area. Vashi

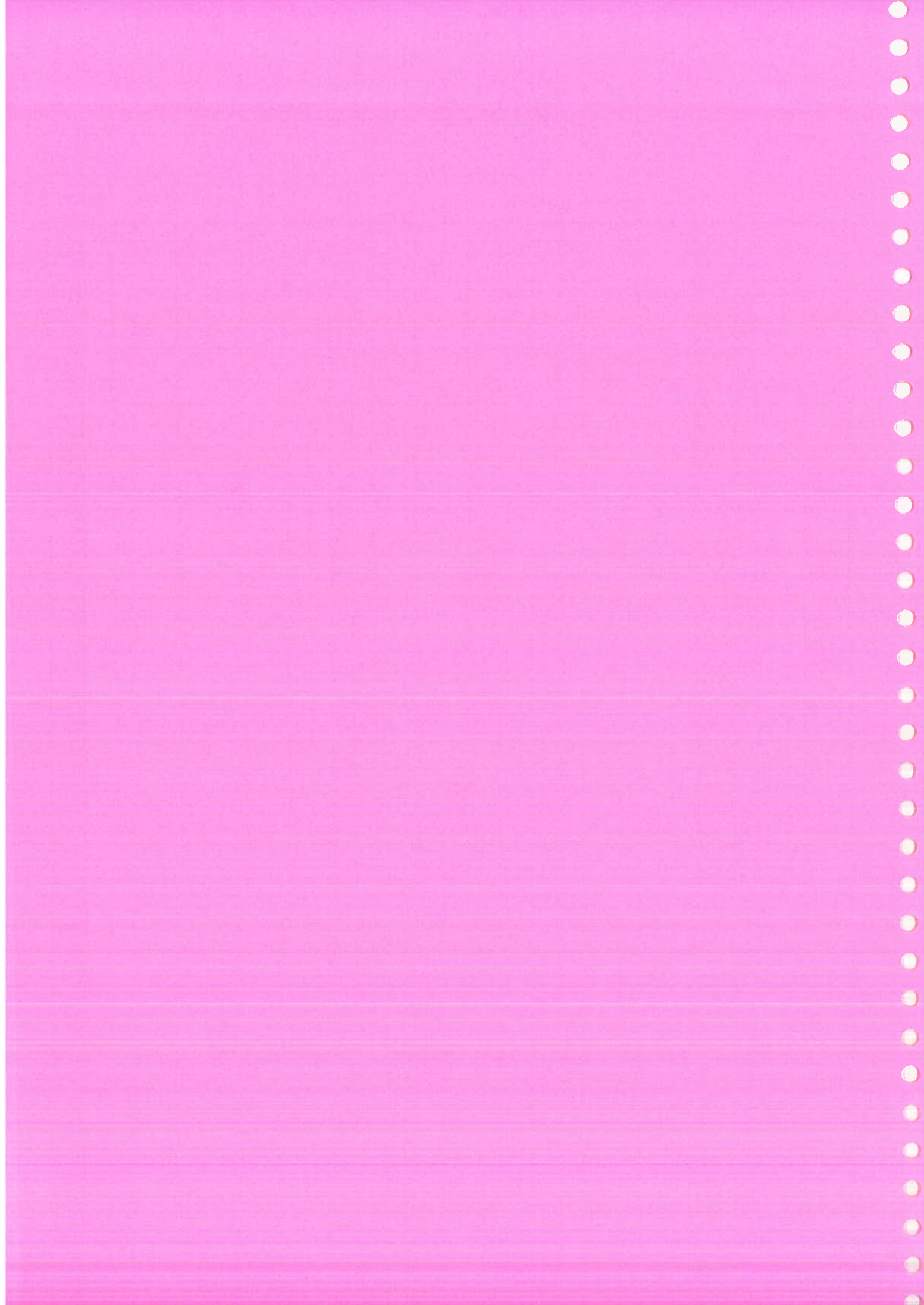
BORE HOLE NO. : BH-2

SHEET NO. : 2 OF 2

DEPTH (m.)	DIA. OF BORE HOLE	LOG.	STRATA DESCRIPTION	SAMPLE		BLOWS/15cm				SPT N	C R %	RQD %	OTHER TESTS	
				DEPTH (m)	TYPE	15	15	15	15					
11.00	NX	▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽ ▽▽▽▽	Slightly weathered, greyish, BASALT	10.50							76	72		
12.00				12.00							78	56		
13.00			Fresh, greyish, BASALT	13.50							80	78		
14.00				15.00							92	80		
15.00					16.50							98	87	
16.00					17.50							95	95	
17.00														
18.00														

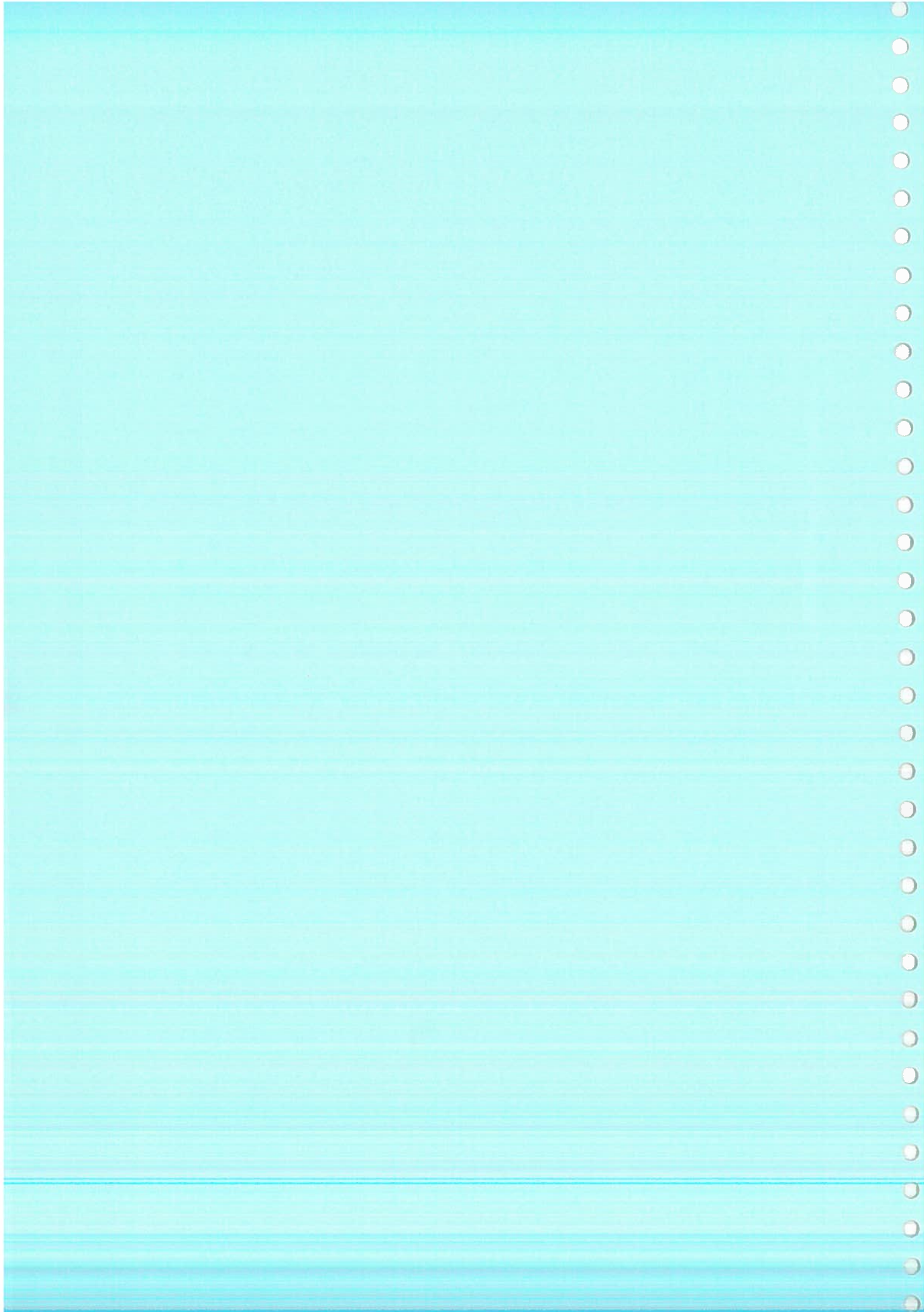
SPT N =STANDARD PENETRATION TEST VALUE RQD = ROCK QUALITY DESIGNATION UDS = UNDISTURBED SOIL SAMPLE  
 CR = CORE RECOVERY DS = DISTURBED SOIL SAMPLE

REMARKS : BORE HOLE IS TERMINATED AT DEPTH 17.50 m. BELOW G. L.



**COST ESTIMATE**

**ELECTRO-MECHANICAL WORK**



**NAVI MUMBAI MUNICIPAL CORPORATION****RECYCLE WATER SYSTEM****Summary sheet for KK MIDC & VASHI MIDC**

<b>Sr No.</b>	<b>Description</b>	<b>Amount</b>
1	Mechanical	1,75,50,506.00
2	Electrical	2,11,27,176.00
3	HT Power	98,53,149.44
4	DG Power	69,12,528.00
	<b>Total</b>	<b>5,54,43,359.44</b>

**NAVI MUMBAI MUNICIPAL CORPORATION  
RECYCLE WATER SYSTEM**

**ANNEXURE I : Bill of Material**

Description	Make	INCOMER Feeder	O/G 1000 KVA ONAN,OCTC Trafo Feeder
Rating		630A	1850A
Qty		1	2
<b>Description</b>			
22kV Indoor cubical 630A,25kA,/1Sec , with AL Bus bar	Symatic	1	1
<b>Vacuum Circuit Breaker</b>			
22kV,630A VCB	Siemens	1	1
<b>Current Transformer-18.4KA/1Sec</b>			
100/5-5A CL-1/15VA,5P10/15VA	Pragati/ECS	3	
50/5-5A CL-1/15VA,5P10/15VA	Pragati/ECS		3
<b>Potential Transformer</b>			
22kV/sqrt3/110V/sqrt3 Core 1: CL.-1/100VA	Pragati/ECS	3	
<b>Meters - Digital</b>			
Analogue Voltmeter+ASS	AE/MECO	1	
Analogue Ammeter+VSS	AE/MECO	1	1
Load Manager with RS 485 Port	Conzerv	1	1
<b>Switches/Indications</b>			
T-N-C Switch	Switron/ Keycee	1	1
LR Switch	Switron/ Kaycee	1	1
EM Trip Push Buttons	Tecknic/L&T	1	1
AC/DC Control Switch	Switron/ Kaycee	1	1
Control MCB /Fuse 1set	SIEMENS /Legrand	1	1
Space heater with Thermostat with toggle switch 1Set	Reputed	1	1
Panel illumination Lamp With Door Limit Switch	Reputed	1	1
Contactors 1Set	SIEMENS	1	1
Indicating Lamp 1 Set	Tecknic/L&T	1	1
Annunciater 6W with Hooter	Alan	1	1
Power Pack with Battery Back-up 230VAC/24 VDC	Alan	1	1
<b>Relays</b>			
IDMT O/C & E/F Relay (50,50N,51,51N)	Siemens	1	1
Master Trip Relay	Alstom	1	1
Trip Ckt-Supervision Relay	Alstom	1	1
Aux. Trafo Fault Relay	Alstom		3
<b>ANNEXURE II : Price Schedule.</b>			
Sr. No.	Description	Qty (In Nos.)	Ex-works Price
A	Supply,22kV, 630A, 25KA/1sec. Switchboard with Alu. Busbar consist of following feeder	1Set	
1	Incomer Feeder & O/G 1000 KVA ONAN,OCTC Trafo Feeder	1 EACH	16,40,410
	<b>TOTAL</b>	<b>2</b>	<b>32,80,820</b>
	<b>ED @ 10.3 %</b>		<b>3,37,924</b>
	<b>VAT @ 12.5 %</b>		<b>4,10,103</b>
	<b>FINAL TOTAL</b>		<b>40,28,847</b>
B	<b>Optional Charges</b>		
			Rs.12,500/- per day per person plus Extra for To
			& fro 3AC Rail
C	Charges towards deputing person for supervision of Erection & commissioing'	Per diem	,Lodging , Boarding & local travel.

16	<p>Level transmitter Design, supply, installing, commissioning &amp; testing of Ultrasonic level transmitter CE marked at each filter bed with following technical parameters interfacing with PLC panel.</p> <p>Medium-water Range- 0-5 mtrs Output-4-20 Ma Power supply-24VDC ext. Display-Large LCD ACCURACY : +/- 0.25% of full scale or better</p>	1	no	50000	50000	MJP E/M 2015-16 PG No-136, Item no- SA-2.4
17	<p>The major prerequisites of efficient online analysers are: Should be capable of operating unattended over prolonged period of time. Should produce analytically valid results with precision and repeatability The instrument/analyser should be robust and rugged, for optimal operation under extreme environmental conditions, while maintaining its calibrated status. The analyser should have inbuilt features for automatic water matrix change adaptation. The instrument / analyser should have onboard library of calibration spectras for different industrial matrices with provision of accumulating further calibration matrices Should have data validation facility with features to transmit raw and validated data to central server. Should have Remote system access from central server provisioning log file access. Should have provision for Multi-server data transmission from each station without intermediate PC or plant server. Should have provision to send system alarm to central server in case any changes made in configuration or calibration. Should have provision to record all operation information in log file. For each parameter there should be provision for independent analysis, validation, calibration &amp; data transmission. Must have provision of a system memory (non-volatile) to record data for at-least one year of continuous operation Should have provision of Plant level data viewing and retrieval with selection of Ethernet, wireless, Mod-Bus &amp; USB. In case of TOC analyser, the empirical relationship between TOC to COD or BOD must be authenticated for all industrial applications and the correlation calculation (for factor) provided.</p>	1	No	768000	768000	MARKET RATE
<b>Total</b>						<b>2104800</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**Sub Part D - Pump Automation**

Sr. No.	Description	Qty	UOM	Rates	Amount	Reference
1	Supply, Installation, Testing, Termination & Interfacing Software Design to PLC and commissioning of SCADA software.	1	No	250000	250000	MJP DSR 2015-16 SA-6-1
2	Programming charges to install the software as per logic defined by the dept.	1	No	150000	150000	MJP DSR 2015-16 SA-6-2
3	Supply, Installation, Testing, Termination & Interfacing Centralised computer station.	1	No	75000	75000	MJP DSR 2015-16 SA-6-3
4	Supply, Installation, Testing, Termination & Interfacing Secondary computer station.	1	No	65000	65000	MJP DSR 2015-16 SA-6-4
5	Supply, Installation, Testing, Integration & Commissioning of 46" LCD monitor at conf. room(online)	1	No	90000	90000	MJP DSR 2015-16 SA-6-5
6	Providing, installing, testing and commissioning of laptop with programming software(web based).	1	No	54000	54000	MJP DSR 2015-16 SA-6-6
7	Energy monitoring system interfacing to PLC panel	1	No	25000	25000	MJP DSR 2015-16 SA-5-7
8	Ultrasonic level transmitter 10-12 mtr	5	No	75000	375000	MJP DSR 2015-16 SA-1-1
9	Pressure transmitter	1	No	35000	35000	MJP DSR 2015-16 SA-1-2
10	Supply, Installation, Testing, Termination & Interfacing 2C x 1sq.mm twisted shielded copper armoured conductor as per IS 694 on wall in GI tray.	100	Mtr	128	12800	MJP DSR 2015-16 SA-2-8-1
11	<b>Power cables:</b> Supply, Installation, Testing, Termination & Interfacing of CAT 6 as per ISO/IEC-11801 std cable for networking on wall in GI tray.	200	Mtr	80	16000	MJP DSR 2015-16 SA-2-8-2
12	<b>Signal cables:</b> Supply, Installation, Testing, Termination & Interfacing 4 core 1.5 sq.mm. copper armoured conductor as per IS 694 on wall in GI tray.	200	Mtr	170	34000	MJP DSR 2015-16 SA-2-9-1
13	Designing, Supplying, Installing, commissioning & Testing of CCTV IR water proof camera suitable for upto 100 ft with IR Dome camera, control key board, DVR, Hard disc, cables, UPT transmitters etc.	1	No	30000	30000	MJP DSR 2015-16 SA-4-4-4
14	Supply, installation, commissioning & testing of Energy monitoring system interfacing to PLC panel & shall be developed in line with the dept & in t5he prescribed format and shall be configured with main SCADA for report generation of various parameters. Supply voltage: 24V dc, Output: 4-20mA.	1	no	25000	25000	MJP E/M 2015-16 PG No-137, Item no- SA-2.6
15	Design ,Supply, installing testing PLC based control monitoring and communication panel as per IEC 61131 at Pure water pump, pressure transmitter, level transmitter, ph transmitter, turbidity transmitter for all pumps installed.	1	no	50000	50000	MJP E/M 2015-16 PG No-137, Item no- SA-2.7



**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (KK STP to KK MIDC ESR) &(KK STP TO VASHI MIDC ESR)**

**PART : Process Analyzer**

SI.No	Item Description	Unit	Qty	Rate(in Rs)	Total Price	Reference
	Analysers will be installed at each STP					
1	PH analyzer Design,supply,installation testing of Ph analyzer as per IUPAC(INTERNATIONAL UNION FOR PURE & APPLIED CHEMISTRY) at A.F. and Interfacing with PLC panel.Range: 0-14, Ph ACCURACY : Better than 0.5% of full scale,Supply voltage : 24V dc, Output: 4-20 mA as PER IEC 61000-6-2 & 61000-6-3	No	3.00	1,55,328.00	4,65,984.00	Market rates
2	TOTAL RESIDUAL CHLORINE ANALYZER Design, supply,installation,testing of Residual chlorine analyzer/meter must have automatic sensor cleaning facility at pure water sump and interfacing with PLC panel. Overall range :0-5 mg/l Measuring range:0.03 to 2 mg/l Accuracy: 2% of full scale supply voltage : 230 V ac Output: 4-20 mA	No	3.00	2,50,000.00	7,50,000.00	MJP E/M 2015-16 PG No-142, Item no- SA-5.5
3	TURBIDITY meter Design,supply,installation testing of turbidity meter as per ISO 7027 scattering light method at A.F. and Interfacing with PLC PANEL.Turbidity meter shall comprise of 3 components i.e. sensors, signals distributor and transmitter with indicator . Transmitter converts the signal to 4-20mA and gives 2 outputs one to SCADA and other to indicator. Over all range: 0-1000 NTU, mEASURING rANGE: 0.02 to 500 NTU, aCCURACY : +/- 2.02 NTU, supply Voltage:230 Vac, Output : 4-20mA	No	1.00	3,70,000.00	3,70,000.00	MJP E/M 2015-16 PG No-135, Item no- SA-2.3
4	Multifunction meter Designing,supplying,installing,commissioning & testing of multifunction meter interfacing to PLC Panel with RS 485 output, as per IEC 62053 and in the prescribed format and shall be configured with main SCADA for report generation for following parameters and as per detailed specification attached. 1) Line/phase Voltage 2) Line/phase Current 3) Power factor 4) Kwh 5) Frequency	No	2.00	33000	66,000.00	MJP E/M 2015-16 PG No-136, Item no- SA-2.5
5	BOD, COD ,TSS, TOC ANALYZER	No	2.00	19,41,600.00	38,83,200.00	Market rates
	<b>Total</b>				<b>55,35,184.00</b>	

NAVI MUMBAI MUNICIPAL CORPORATION

RECYCLE WATER SYSTEM

Item Code No. 5502

**Cost Data supply & laying of 3 Km 22 KV , 3 C, 300 Sqmm XLPE under ground Cable**

Sr.No.	Particulars	Unit	Qty.	RT/U Rs.	Amount
1	XLPE Cable 22 KV, 3 C / 300 sq.mm sq. Ref. MJP DSR 15-16 pg 74 ,CB 12-9	Rmt	1000.00	3171.00	3171000.00
2	R.C.C. Pipe 200 mm 2 M Ref. MJP CIVIL DSR 15-16 pg 138,class P-3 (collar joint)	No	90.00	483.00	43470.00
3	RCC half round pipe (100 mm) Ref. MJP CIVIL DSR 15-16 pg 137,class P-1 collar joint (half of actual rate)	No.	940.00	154.00	144760.00
4	22 kV Heat shrik Straight through joint (Al) kit for XLPE 3 C X 300 sqmm Ref.MJP DSR 15-16 pg 79 ,CB 30-5	No.	4.00	50261.00	201044.00
5	22 kV Heat shrik Outdoor termination joint (Al) kit for XLPE 3 C X 300 sqmm Ref. MJP DSR 15-16 pg 79 ,CB 29-4	No.	2.00	22922.00	45844.00
6	Sand	Cmt	250.00	191.40	47850.00
	<b>Cost of material</b>				<b>3653968.00</b>

1	Erection on material	10.00%	365396.80
2	Transportation on material	5.00%	182698.40
3	Insurance on material	1.00%	36539.68
4	Service Tax @ (10.3% On 1+2+3)	1.65%	60217.39
5	Contingencies on material	3.00%	109619.04
6	T & P on material	1.50%	54809.52
7	Contractor supervision on charges on material	10.00%	365396.80
	<b>Sub-Total -I</b>		<b>4828645.63</b>
8	Contractor profit on Total Project Cost i.e. on Sub-Total-I	5.00%	241432.28
	<b>Sub-Total -II</b>		<b>5070077.91</b>
9	Price Escalation on Material Cost	5.00%	182698.40
	<b>Sub-Total -III</b>		<b>5252776.31</b>
10	H.O.supervision charges @ 1.5% (i.e. 15% of 10% on erection of material)	1.50%	54809.52
	<b>Sub-Total -IV</b>		<b>5307585.83</b>
11	Interest during Construction Period (on total project cost) i.e. on Sub-Total-IV	2.50%	132689.65
	<b>Total Cost of Estimate</b>		<b>5440275.48</b>

NAVI MUMBAI MUNICIPAL CORPORATION  
RECYCLE WATER SYSTEM

Item Code No. 1222 ( MSEDCL COST DATA 2010-2011)  
Cost Data for 22/0.44 DTC new 2 X 1000 KVA, Indoor type DTC with RMU

Sr.No	Particulars	Unit	Qty	Rate	Amount	Reference
1	22 KV Ring main unit with Vaccum /SF6 /Air break switch & two isolators for the same.	No.	1	1166093.00	1166093.00	PWD DSR 15-16 item 5-9-9
2	XLPE Cable 22 KV, 3 C / 185 mm sq.	Rmt	30	2410.00	72300.00	MJP DSR 15-16 pg 74 ,CB 12-7
3	22 kv heat shrinkable Indoor termination joint kit for 3 C X 95 sqmm	No.	4	10452.00	41808.00	MJP DSR 15-16 pg 79 ,CB28-2
4	Earthing with GI pipe 40mm dia.	L.S.	20	1536.00	30720.00	PWD DSR 15-16 item 9-1-4
5	Earthing with GI plate	L.S.	20	5234.00	104680.00	PWD DSR 15-16 item 9-1-3
6	Sundries	L.S.	2	770.00	1540.00	
<b>Cost of Material</b>					<b>1417141.00</b>	

## NAVI MUMBAI MUNICIPAL CORPORATION

## RECYCLE WATER SYSTEM

## TREATED WATER SUPPLY SCHEME (KK STP TO KK MIDC ESR) &amp; (KK STP TO VASHI MIDC)

PWD CSR 15-16- EM

Subject :- Detailed estimate for electrification.

Sr. No.	Description	Qty	Unit	Supply Rate	Labour/Erection charges	erection + 14%	Total of supply & erection	5% on total rate	Net Rate	Amount
1	<b>Point wiring Casing N capping type</b> Point wiring in PVC trucking (Casing N capping) with 1.0 sq.mm FRLS grade copper wire with flush type switch and required accessories as per specification.	15	Nos.	224.00	86.00	12.04	322.04	16.10	338.14	5072.13
	<b>CSR 1-9-17.</b>									
2	<b>Point wiring for plug on board of light or fan as per specification.</b>	6	Nos.	72.00	16.00	2.24	90.24	4.51	94.75	568.51
	<b>CSR 1-9-13.</b>									
3	<b>Supplying erecting &amp; marking miniature circuit breaker confirming to IS: 8828 of 1996) single pole 6 Amp to 32 Amp C series (motor/power) with required wiring connections and lugs etc provided distribution board.</b>	4	Nos.	150.00	23.00	3.22	176.22	8.81	185.03	740.12
	<b>CSR 5-3-2.</b>									
4	<b>Light fitting</b> Supplying & erecting 2 x 40 watt T- 8 white stove enamelled powder coated box type fluorescent tube light box type complete with heavy duty copper wound ballast & lamp holders duly wired ready to use for 230 Volts, 50 Hz. Single phase AC supply to as per quality requirements & erected on varnished wooden blocks with flexible wire twin core 24/0,2mm.Crompton / Bajaj / Philips / Shakti)	15	Nos.	2,240.00	39.00	5.46	2,284.46	114.22	2,398.68	35,980.25
	<b>CSR 2-4-18.</b>									
									<b>Total Rs</b>	<b>42361.00</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (KK STP TO KK MIDC ESR) & (KK STP TO VASHI MIDC)**

PWD DSR 15-16

**Detailed Estimate for Outdoor Electrification**

Sr	Description	Qty	Unit	Supply Rate	Erection charges	erection + 14%	Total of supply & erection	5% on total rate	Net Rate	Amount
1	<b>Point wiring Casing N capping type</b> Point wiring in PVC trucking (Casing N capping) with 1.0 sq.mm FR grade copper wire with flush type switch and required accessories as per specification	12	Nos.	218.00	86.00	12.04	316.04	15.80	331.84	3982.10
	CSR 1-9-16.									
2	Point wiring for plug on board of light or fan as per specification. CSR 1-9-13.	2	Nos.	72.00	16.00	2.24	90.24	4.51	94.75	189.50
3	Supplying erecting & marking miniature circuit breaker confirming to IS: 8828 of 1996) single pole 6 Amp to 32 Amp C series (motor/power) with required wiring connections and lugs etc provided distribution board. CSR 5-3-2.	4	Nos.	150	23	3.22	176.22	8.81	185.03	740.12
4	Supplying & erecting double pole metal/ iron clad switch with fuse and neutral link 250 V 16 A on iron frame/board as per specification. CSR 5-1-2.	1	Nos.	474	51	7.14	532.14	26.61	558.75	558.75
5	<b>Light fitting</b> Supplying & erecting 2 x 28 watt T- 5 energy efficient fluorescent tube light (EETLF) fittings with recess/ surface mounting mirror optic type with electronic balast having pf>0.9 fixed in false ceiling or on wall as per specification no. (similar Crompton / Bajaj / Philips ) CSR 2-4-22.	6	Nos.	2360	39	5.46	2,404.46	120.22	2,524.68	15,148.10
6	Supply & erection LED flood lights / street lights / highbay fitting IP 65 with 120 W PF>0.95 of approved make and duly connection complete as per specification no FG-ODG/IL CSR 2-9-16.	6	Nos.	19366	172	24.08	19,562.08	978.10	20,540.18	1,23,241.10
7	Supplying & erecting PVC armored cable 3 core 4 sq.mm. Copper conductor continues 5.48 sq.mm. 12 SWG GI earth wire complete erected with glands & lugs, on wall/trusses/pole or laid in provided trench/pipe as per specification. CSR 7-2-6.	200	Rmt.	230	12	1.68	243.68	12.18	255.86	51,172.80
8	<b>LIGHTING POLES -9 Mtr - Pathway lighting Poles</b> Providing & erecting 9 m high galvanised CONICAL pole with foundation bolts having bottom dia. from 165 to 200 mm, top dia. from 65 to 75 mm on provided foundation as per specification No. OH-PL/CPL PWD DSR 15-16 Item 8-3-26	4	Rmt.	18435	1678	234.92	20,347.92	1,017.40	21,365.32	85,461.26
9	<b>1000 mm STREET LIGHT BRACKET</b> Providing and erecting Galvanized 1000mm single arm sward type bracket with FRP dome and ball as per specification No. OH-PL/PBKT PWD DSR 15-16 Item 8-3-30	4	Rmt.	1960	185	25.90	2,170.90	108.55	2,279.45	9,117.78
10	Supplying, erecting & marking SPMCB 0.5A to 5A in provided distribution board as per specification No. SW-SWR/MCB PWD DSR 15-16 Item 5-3-1	4	Rmt.	221	23	3.22	247.22	12.36	259.58	1,038.32
									<b>Total Rs</b>	<b>290649.85</b>

NAVI MUMBAI MUNICIPAL CORPORATION				
RECYCLE WATER SYSTEM				
TREATED WATER SUPPLY SCHEME (KK STP TO KK MIDC ESR) & (KK STP TO VASHI MIDC)				
Subject :- Detailed estimate for tools				
Quantity	Unit	Description	Rate	Amount
1	Set	Fix spanner set	630.00	630.00
1	Set	Ring spanner set	1098.00	1098.00
1	Each	Hammer	284.00	284.00
1	Each	Cutting plier	208.00	208.00
1	Each	Adjustable wrench - 250 mm	270.00	270.00
2	Each	Pipe wrench - 450 mm	531.00	1062.00
2	Each	Pipe wrench - 600 mm	953.00	1906.00
1	Each	Screw driver - 6x300	90.00	90.00
1	Each	Screw driver - 8 x200	79.00	79.00
1	Each	Screw driver - 5 x200	56.00	56.00
1	Each	Screw driver - 5 x300	58.00	58.00
2	Each	Line tester	56.00	112.00
2	Each	Hacksaw frame	64.00	128.00
1	Each	Tool box	1012.00	1012.00
1	Each	Chiesel - 19 x14	139.00	139.00
2	Each	Chain pipe wrench - 100 mm	3764.00	7528.00
0	Each	Chain pipe wrench - 150 mm	5525.00	0.00
1	Each	25 mm dia Crow bar	190.00	190.00
1	Each	12 mm wire rope	253.00	253.00
1	Each	50 mm dia g.i. pipe	228.00	228.00
1	Each	Center punch	58.00	58.00
1	Each	Tringular file	317.00	317.00
1	Each	Half round file	317.00	317.00
0	Each	Bearing puller - 200 mm	334.00	0.00
0	Each	Bearing puller - 250 mm	437.00	0.00
1	Each	Bearing puller - 300 mm	531.00	531.00
1	Each	Hydraulic Crimping tool	31365.00	31365.00
0	Each	Hand operated crimping tool	8855.00	0.00
1	Each	Insulation tester	4072.00	4072.00
1	Each	Earth tester	6263.00	6263.00
1	Each	Tong tester	3075.00	3075.00
1	Each	Steel level 300 mm	380.00	380.00
1	Each	Steel rule	253.00	253.00
1	Set	Allen Head wrench	307.00	307.00
1	Set	Tubulor Box spanner set	760.00	760.00
1	Each	Diagonal cutting plier	182.00	182.00
1	Each	Long nose plier	175.00	175.00
1	Each	Water Pump plier.	255.00	255.00
			<b>Total</b>	<b>63641.00</b>

Sr. No	Description of Material	Qty	Unit	supply rate	Labour / erection rate	add 14% on labor rate	Total Rate	add 5% on total rate	Net Rate	Amount
15	<b>Ammeter CT operated</b> Providing and erecting Analog type moving iron Ammeter for AC current CT operated of suitable size in scale between 0-1000A ,500v, accuracy class 1.5, flush type on provided box/panel and connected with necessary PVC wire leads and lugs. (PWD DSR 15-16 Item- 6-3-8 )	12	No.	1624	143	20.02	1,787.02	89.35	1,876.37	22,516.45
16	<b>Selector Switches for Voltmeter &amp; ammeter</b> Providing and erecting selector switches suitable for ammeter/ voltmeter for 3 phase AC supply 500v ,50 Hz on provided box/panel and duly connecting with necessary PVC wire leads and lugs. (PWD DSR 15-16 Item- 6-5-1 )	24	No.	252	34	4.76	290.76	14.54	305.30	7,327.15
17	<b>C.T coil</b> Providing and erecting LT current transformer with bar primary 50/5 to 1000/5 ratio with 15VA burden erected in provided CRCA box duly secured with insulating material connected to meter with test certificates (PWD DSR 15-16 Item- 6-5-2)	36	No	654	34	4.76	692.76	34.64	727.40	26,186.33
18	<b>Pilot Lamp Set LED type</b> Supplying and erecting LED type indicating pilot lamp with LED colours Red/yellow/green 230/250v on provided box with necessary materials,wiring ,connections etc. (PWD DSR 15-16 Item- 6-5-6)	12	Nos	713	34	4.76	751.76	37.59	789.35	9,472.18
19	<b>self locking arrangment</b> Supplying and erecting self locking arrangement with duplicate keys,made of brass duly erected,flush with surface of panel/cupboard (PWD DSR 15-16 Item- 6-1-20 )	12	Nos	167	28	3.92	198.92	9.95	209	2,506.39
20	<b>Internal Wiring of Panel Board</b> (Mech DSR 15-16 Pg- 56 Item- Note 5 )	1970	HP	49	0	0	49.00	2.45	51	1,01,356.50
21	<b>Rubber matting</b>	120	Sq mtr	913	0		913	45.65	958.65	115038
										2297271
									<b>Total</b>	<b>22,97,270.78</b>

Sr. No	Description of Material	Qty	Unit	supply rate	Labour / erection rate	add 14% on labor rate	Total Rate	add 5% on total rate	Net Rate	Amount
7	<b>MCCB 600/630 Amp. For 300 HP Load</b> Providing and erecting 3 pole MCCB of ---A 415v capacity with S.C. rating 36 kA (lcs=100% of lcu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-5)	3	No.	33579	920.4	128.856	34,628.26	1,731.41	36,359.67	1,09,079.01
8	<b>MCCB 200 Amp. For70 HP Load</b> Providing and erecting 3 pole MCCB of ---A 415v capacity with S.C. rating 25 kA (lcs=100% of lcu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-2)	3	No.	18064.8	383.5	53.69	18,501.99	925.10	19,427.09	58,281.27
9	<b>MCCB 600/630 Amp. For 300KW UF Load</b> Providing and erecting 3 pole MCCB of ---A 415v capacity with S.C. rating 36 kA (lcs=100% of lcu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-5)	1	No.	33579	920.4	128.856	34,628.26	1,731.41	36,359.67	36,359.67
10	<b>MCCB 40 Amp. For UV Power</b> Supplying and erecting & marking four pole isolators only switch version of MCBs of ---A in provided distribution board . (PWD DSR 15-16 Item- 5-3-24)	1	No.	677	23	3.22	703.22	35.16	738.38	738.38
11	<b>MCCB 63 Amp. General feeder</b> Supplying and erecting & marking four pole isolators only switch version of MCBs of ---A in provided distribution board . (PWD DSR 15-16 Item- 5-3-25)	3	No.	699	23	3.22	725.22	36.26	761.48	2,284.44
12	<b>ACB 1250 Amp. 4 Pole, APFC feeder 430KVAR</b> Supplying and erecting ACB manually operated drawtype of 800A 500 v 3 pole having S.C. rating 50kA (lcs=lcu=lcw for 1 s)with std. accessories on provided iron frame as per spec. No.SW-SWR/ACB. (PWD DSR 15-16 Item- 5-8-9)	1	No.	218234	4198	587.714	2,23,019.92	11,151.00	2,34,171	2,34,170.92
13	<b>MCB fuse Switch unit 63A for Lighting etc.</b> Supplying and erecting & marking FPMCB ---A in provided distribution board as per spec. No SW-SWR/MCB (PWD DSR 15-16 Item- 5-3-17 )	2	No.	1369	23	3.22	1,395.22	69.76	1,464.98	2,929.96
14	<b>Voltmeter</b> Providing and erecting Analog type moving iron voltmeter for AC voltage 0-500v ,50 Hz accuracy class 1.5, flush type on provided box/panel and connected with necessary PVC wire leads and lugs. (PWD DSR 15-16 Item- 6-3-6 )	12	No.	847	143	20.02	1,010.02	50.50	1,060.52	12,726.25





Sr. No.	Description	Qty	UOM	Rates	Amount	Reference
B	ADDITIONAL REQUIREMENTS FOR POWER SOURCE					
16	Item No. 16 :- MSEDCL CHARGES INSPECTION AND TESTING					Ref: Revision in schedule of charges -MSEDCL- No.CE/Dist-III/SOC/24500 Annx. 2 date: 30-08-2012
	HT SERVICE CONNECTION CHARGES FOR NEW CONNECTION ABOVE 500 KVA (Including rate of 1.30%of the normative charges)	1	Each	253500	253500	
	APPLICATION,REGISTRATION & PROCESSING	1	Each	50000	50000	
	HT TOD METER TESTING	1	Each	5227	5227	
	Power Transformer Inspection	2	Each	10000	20000	
	Current Transformer Inspection ( CT )	3	Each	5000	15000	Ref: Approval of MSEDCL Schedule of charges order Dated: september 8,2006
	Voltage Transformer Inspection (PT)	3	Each	5000	15000	
	RELAY TESTING	6	Each	1000	6000	
	HT SWITCH GEAR	3	Each	5000	15000	
	LT CAPACITOR TESTING	430	KVAR	10	4300	
17	Item No. 17 :- 22 KV HT cable for incoming supply	1	Each	5440275.48	5440275.48	As per RA enclosed, HT cable works
18	Item No. 18 :- 22 KV HT PANEL for Tranformer Protection	1	Each	4028846.96	4028846.96	As per RA enclosed, HT cable works
	Sub Total Part B (Rs)				<b>98,53,149.44</b>	

21	Item No. 21 :- Diesel Generating Set Supplying Errecting diesel generating set 1000 KVA (250x4) capacity with AMF Panel as per Detailed specification with water cooled engine set including inspection charges .	1	Each	69,12,528.00	6912528	PWD DSR 15-16 Item No.11-1-19
	Sub Total Part C (Rs)				<b>69,12,528.00</b>	

	<b>Total Cost (Rs)</b>				<b>3,78,92,854.00</b>	

Sr. No.	Description	Qty	UOM	Rates	Amount	Reference
4	Item No- 4 :- H.T. sub station Providing, supplying and erecting 22 KV/ 0.433 Kv H T Substation as per Detailed specification.	1	Each	1417141 00	14,17,141 00	As per 1 X 400 KVA & SS Ligthing & control cable - RA enclosed
5	Item No. 5 :-Cables					
	3.5 Core 300 Sq. MM Aluminium Armoured Cable(150*8)	1200	Rmt	1883	2259600	MJP E/M DSR 2015-16, Pg. 69 Item CB 5-10
	3 core x 240 sqmm(50*2)	100	Rmt	1327	132700	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-14
	3 core x 120 sqmm(50*4)	200	Rmt	725	145000	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-11
	3 core x 25 sqmm(50*2)	100	Rmt	235	23500	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-6
	3 Core 4 Sq. MM AL Armoured Cable	100	Rmt	118	11800	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-2
	<b>HT CABLE</b>					
	22 kv XLPE cable 3 core x 185 sqmm	200	Rmt	2410	482000	MJP E/M DSR 2015-16, Pg. 74 Item CB 12-7
	Indoor termination kit 22 kv for 185 sq mm	9	Each	12284	110556	MJP E/M DSR 2015-16, Pg. 79 Item CB 28-3
	Out door termination kit 22 kv for 185 sq mm	1	Each	17783	17783	MJP E/M DSR 2015-16, Pg. 79 Item CB 29-3
	Straight Through joint kit 22 kv for 185 sq mm	1	Each	46322	46322	MJP E/M DSR 2015-16, Pg. 79 Item CB 30-4
6	Item No. 6 :- Cable Trench - Making the trench in hard murum/ tar road of suitable width and depth for laying provided L.T. Cable of 10 sq mm complete as per detailed specifications.	200	m	153	30600	PWD DSR 2015-16, Item no- CW-16-1-2,
	Making the trench in hard murum/ tar road of suitable width and depth for laying provided L.T. Cable of 25 sq mm & above covered with half round hume pipe complete as per detailed specifications.	100	m	265	26500	PWD DSR 2015-16, Item no- CW-16-1-3,
7	Item No. 7 :- Cable Tray - Providing, fabricating and fixing G.I. perforated cable tray for cables as per requirement and specifications - 200 x 20 mm	200	Mtr	174	34800	MJP E/M DSR 2015-16, Pg. 80 Item CB 34-2
8	Item No. 8 :- Capacitor supply & erecting 430 kVAR((200x2)+30)440 V three phase 50 cycles thyrester switched Micro APFC passive filter panel consisting ofmutipal steps of APP type capacitor units conforming to IS: 13585 (part -1) with harmonic filter reactors suitable for working load as per specifications.	1	Each	1104327	1104327	PWD DSR 15-16 item 6-7-6, 6-7-11
9	Item no- 9 :-GI Earthing - Supplying & erecting GI earth plate size 60x 60x6 cms complete with all materials, testing & recording results as per specifications . As per IS 3043-1987 & as directed by engineering incharge.	6	each	4018	24108	PWD DSR 15-16 Item No.9-1-1
10	Item no- 10 :-Copper Earthing - Supplying & erecting copper earth plate size 30 x 30 x 0.6 cms complete with all materials, testing & recording results as per specifications . As per IS 3043-1987 & as directed by engineering incharge.	6	Each	7440	44640	PWD DSR 15-16 Item No.9-1-2
11	Item No. 11 :-Earthing Strip Providing erectimng GI earth strip	300	Kg	158	47400	PWD DSR 15-16 Item No.9-2-3
	Providing, erecting CU earth strip	150	Kg	865	129750	PWD DSR 15-16 Item No.9-2-2
12	Item No. 12 :- Pipe type earthing Providing erecting pipe type earthing with double earthing to the all equipments as per Detailed specifications.	6	Each	1536	9216	PWD DSR 15-16 Item No.9-1-4
13	Item No. 13 :- Tools Providing Tools as per Detailed specification enclosed.	1	Lot	63641.00	63641	As per RA enclosed
14	Item No. 14 :- In door lighting (Electrification) The lighting shall comprise fleuorescent - 4 nos Bulkhead fitting - 3 nos D.B - 2 nos Suitable size conductors with fuses,switches including H.G.conduit etc.	1	Job	42361.00	42361	As per RA enclosed
15	Item No. 15 :- Area lighting(Outdoor elctrification) The area lighting shall comprise 120 w LED Fittings with and mounted on Conical pole 9 m high including ballast, condensor,fuse reflector,cable and control switch etc out of the two lams.one shall be in the substation yard and the second lamp shall be erected for area lighting	1	Job	290649.85	290650	As per RA enclosed
16	Item No. 16 :- Pump Automation	1	Each	21,04,800.00	2104800	As per RA enclosed, Pump Automation
17	Item No. 17 :- Process Analyzers	1	Each	55,35,184.00	55,35,184.00	As per RA enclosed, Process Analyzers
	<b>Sub Total Part A (Rs)</b>				<b>2,11,27,176.00</b>	

**NAVI MUMBAI MUNICIPAL CORPORATION  
RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (KK STP TO KK MIDC ESR) & (KK STP TO VASHI MIDC)**

MJP & PWD CSR 15-16 EM

**Electrical Cost**

Sr. No.	Description	Qty	UOM	Rates	Amount	Reference
A	<b>Item No. 1 :- L.T. Control Panel Board</b>					
	Designing, Providing, Erecting, Testing & Commissioning with Satisfactory Test & Trial of Various Panel Boards as per Detailed specifications.					
	<b>A) L.T.Main Control Panel Board</b>					
	Designing, Providing, Erecting, Main L.T. Control Panel Board comprises of MCCB/ACB for Incoming & MCCB for outgoing as per Detailed specification enclosed.	1	each	22,97,270.78	2297271	As per PANEL RA enclosed
1	<b>SOFT STARTER :</b>					
	Supplying, erecting, commissioning electronic soft starter of three wire system to be operate on 380-440 v AC system consisting of-					
	1) main contactor AC 3 duty and 1.5 times full load current rating					
	2) suitable thyristor					
	3) Ammeter with selector switch and CT's					
	4) Motor protection relay with protection CT's for protection against-Single phasing, undervoltage, overvoltage, phase reversal, over-current relay having IDMT Characteristics					
	for 300 HP Pump - (300)HP SOFT STARTER	2	No	4,77,913.00	955826	MJP E/M DSR 2015-16, pg 62 LG-6-21
	<b>ATS STARTERS</b>					
	Providing erecting & giving test and trial to fully automatic, auto transformer starter with Air Break Contactor, assembled locally with contactor of approved makes in 14 SWG sheet steel fabricated, floor mounted type cubical panel suitable for operation on 380-440 volts 3 phase 50 Hz fitted with accessories as below. The incoming and Outgoing cable end boxes shall on either side of main panel. The cable entries from auto transformer shall be totally enclosed in sheet metal. the starter shall have screened louvers on both sides '1. Oil immersed copper wound auto transformer with 50% 65% & 80% tapping including first fill of oil. 2. All air break contactors of AC 3 duty of suitable rating as mentioned. 3. Bimetalic overload relay. 4. Timer On & OFF delay. 5. Ammeter with CTS and Selector switch. 6. No volt release. 7. Master timer, 8. Motor ON OFF and TRIP indication lamp. 9. Motor protection relay with protection CTs 10.					
	for 70 HP Pump 80 HP ATS	2	No	1,43,125.00	286250	MJP E/M DSR 2015-16, pg 61 LG-5-3
	<b>Item No. 2 :- Transformer</b>					
	Supplying & erecting approved make of 1000 kVA 50 c/s oil immersed and naturally cooled indoor /outdoor type, Online tap changer, copper wound transformer with delta conn. on HV side & star conn. on LV side with additional neutral brought out in load side, voltage rating 22 /0.433 V with tapping of +/- 2.5 % -5 %, continuously rated for full load with standard accessories complete with test certificate and as per IS 2026. and approved by engineering incharge.	2	each	1640410	3280820	MJP E/M DSR 2015-16, pg 39 TR 5-2
3	<b>Item No- 3 :- H T Metering Kiosk:</b>					
	Supplying, erecting testing ( By Licencee), commissioning cubical comprising 22 kV HT metering resin cast CTs, PTs, as per licencees requirement DO fuse set, AB Switch 200- 400 A capacity duly interconnected with use of suitable insulators by maintaining adequate clearances as per IS, complete housed in the enclosure made up of MS structure and fibre glass 3 mm thick with gearbox & handle brought out for operating GOD, suitable door openings, locking arrangement as per approved design by Engineering incharge	1	Each	172630	172630	PWD DSR 15-16, 6-4-3

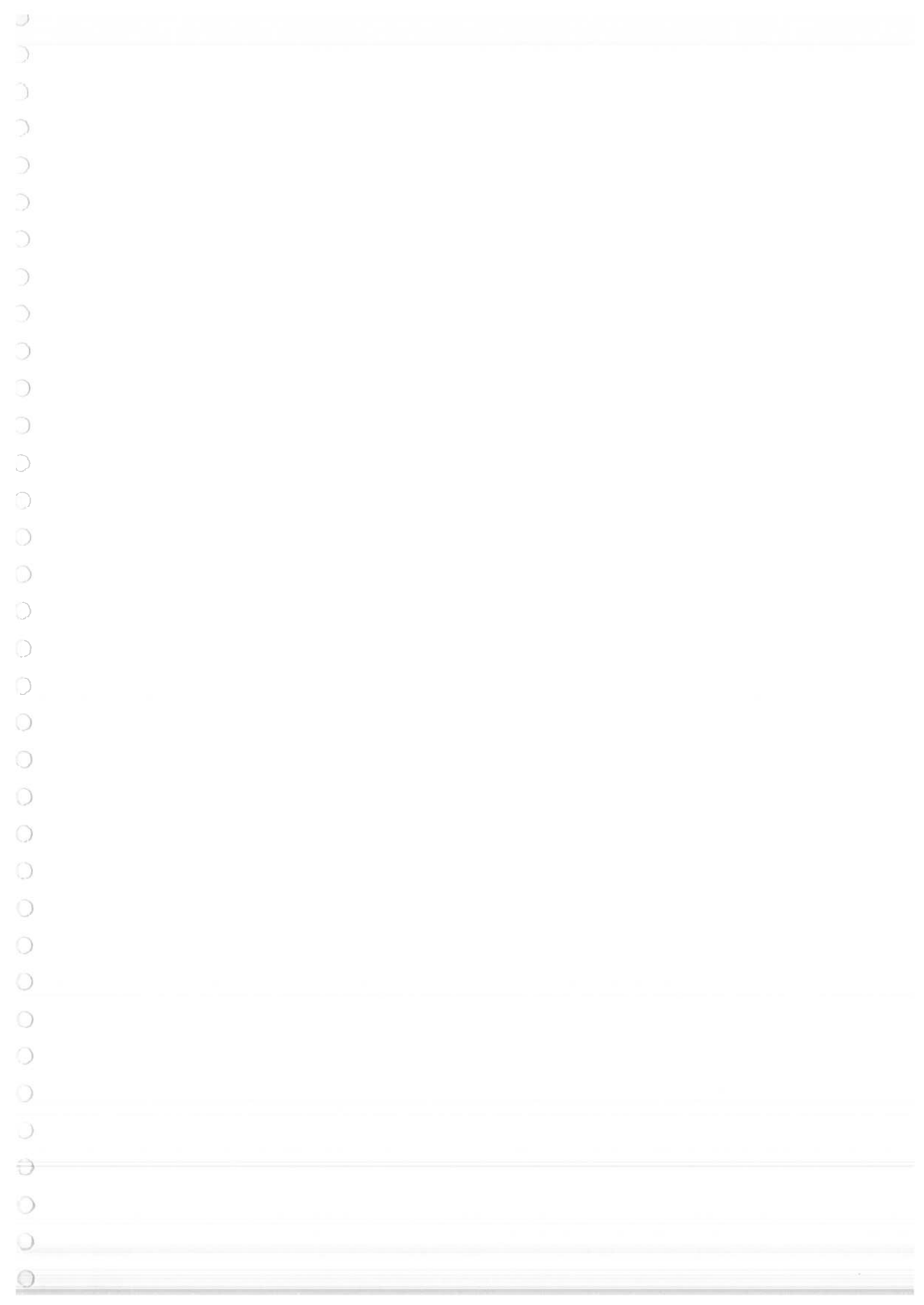
Sr. No	Reference	Description	Qty	Unit	Rate	Amount (Rs.)
	Item no 1-A-XIV	1) 600 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	179755	719020
9	MJP DSR 2015-16, P-217	Lowering,laying & jointing in position following C.I./F Reflex valves,Butterfly valves & Sluice valves including cost of all labour jointing material,including nut bolts & giving satisfactory hydraulic testing etc. complete				
	Item no 4-XIV	1) 600 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	8	No	8487	67896
10	MJP EM DSR 2015-16, P-16	ACTUATOR Electric Valve actuator for non rising spindle type Sluice valve,PN1/PN1.6 rating.				
	Item no VA 1-14	1) 600 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	131636	526544
<b>COMMON EQUIPMENT FOR (KK STP TO KK MIDC ESR) &amp; (KK STP TO VASHI MIDC)</b>						
11	MJP DSR(E/M) 15-16,pg no.118,	Electromagnetic Flow Meter Manufacturing, Supplying, & Commissioning Electromagnetic Flowmeter (EMF) for raw/ Pure water with Accuracy +/- 0.5% of measured value and protection as per given Specifications,including sensor, Transmitter Surge Arrestor cable duct seperate PVC of 25 mm Dia for 25 mtrs. Sensors Transmitter Surge Arrestor, Flowmeter including the pipe Cutting, levelling and Installation of flowmete with Pipeline with Necessary tool tackles , Cranes etc as may be required at site and best on technical Specifications including comprehensive maintenance for two years after the Guarantee period is over.				
	Item WM-3-4	1) 250 mm ESR INLET & OUTLET	2	Nos	188462	376924
	Item WM-3-7	1) 600 mm ESR INLET & OUTLET	2	Nos	488049	976098
12	MJP DSR(E/M) 2015-16, P-121, I-WM-3-B-8	SENSOR/TRANSMITTER CABLE: - 3 x 0.38 mm2 PVC cable with common, braided copper shield of 0.7 mm dia & indivisually sjielded cores with empty pipe detection 9 EPD : 4 x 0.38 mm2 PVC Cable with common, braided copper shield of 0.7 mm dia. & indivisually shielded cores. conductor resistance <math><=420\text{ p2/m}</math> permanent operating temp. 20+/-80°C	150	Mtrs	230	34500
13	MJP DSR(E/M) 2015-16, P-122, I-WM-3-B-9	COIL CABLE: - Providing, Laying and Jointing with test and trial of Coil cable 3 x 0.75 MM PVC cable commen, braided copper shield etc. as per detailed specification.	150	Mtrs	210	31500
14	MJP DSR(E/M) 2015-16, P-122, I-WM-3-B-11	GI DUCT: - Providing .Laying GI duct of 100 MM With all the necessary fittings joints, etc. for Housing the cables between sensor and transmitter. The cable shall be installed in suitable GI Duct to minimize the risk of damage during excavation. all the cable laid at minimum depth of 0.5 M below the ground. GI Duct shall be of 100 mm dia.	150	Mtrs	332	49800
15	MJP E/M 2015-16 PG No-22, Item no. LF 4-1-2	Providing, erecting and commissioning single girder Electrically Operated Rectangular Over head Travelling Crane with 6 m lift complete with wire rope hoist, classII duty, all three motions electrically operated by suitable rating motor IP 54, control panel and down pendant control block. 1) 5 tonne	1	No	807824.00	807824
16	PWD DSR 15-16, 2-13-19	Supplying and erecting Exhaust fan heavy duty 230V A.C. 50cycles 450 mm. 1400 RPM complete erected in position as per specification no. FG-FN/EXF	6	No	5097.00	30582
17	PWD DSR 15-16, 6-1-4	Supply & fixing of GSS sheet of 1.25 MM Thick	30	Sq mtr	1840.5	55215
18	MIDC DSR 2015-16 Pg no.185,Item No.WS/C/9i	Providing and erecting Cast Iron Sluice Gates manufactured & tested as per IS3042-1965.Gates to be provided with brass seats and spindle of MS bright bar of required height to enable to operate the gate from operating slab of intake structure including GM nut bolts SS304 hardware,necessary wedges to be provided to achieve leak tightness,including operational wheel headstock,foundation material,labour etc. complete including taxes & duties ,as per detailed specification & as directrd by Engineer In charge Size :900 X 900 mm	1	No	2,50,902.00	250902.00
19	MJP E/M 2015-16, PG No-105, Item no- WM-C-7	C.I. Strainer "T" (Basket) Type with flanged ends and with stainless steel or brass mesh with openings of 2.5. Mm to 3mm and suitable for operating pressure of 16 Kg /cm2 and testpressure of 24 Kg./cm2	2	No	54,963.00	109926.00
20	MJP Kokan DSR 15-16,pg no.8, item no 24	Fabricating pipes from steel plates supplied free of cost and stacking the same in the fabricators yard. The rate to include cutting the plate, rolling, tack welding, assembling in suitable lengths to form pipes welding on automatic welding machine and forming 'V' edge for both ends of pipe.	2000	KG	42.00	84000.00
21	MJP Kokan DSR 15-16, pg no.356, item no 6a	Providing and applying one coat of Zinc rich epoxy primer to the internal surface of pipeline at site.	90	Sqm.	582.00	52380.00
22	MJP DSR Electrmechanical 15-16,pg no.8,Item No.PM11-4	Providing, installing, testing & commissioning of 150 mm dia bourden type Pressure Gauges complete with siphon U tube,isolating cock,C-class heavy duty 15 mm GI Pipe & brought out on wall for observation at place directed by engineer.Range 0 to 15 kg/Cm <sup>2</sup> as per detailed specifications & as directed by Engineer.	8	No.	1795.00	14360.00
23	MJP Kokan DSR 15-16,pg no.186,item no 9b i	Providing & supplying Kinetic Double Orifice type air valves PN1.6 rating combined with screw down isolating sluice valve etc complete Size :100mm	8	No.	15155.00	121240.00
<b>TOTAL:</b>						<b>1,75,50,506.00</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (KK STP TO KK MIDC ESR) & (KK STP TO VASHI MIDC)**

Sr. No	Reference	Description	Qty	Unit	Rate	Amount (Rs.)
		<b>MECHANICAL FOR(KK STP TO KK MIDC ESR)</b>				
1	Pump Quotation	<p>Providing, Installing, Testing, Commissioning with test and trail of each VT Pump giving discharge 125 mtr cube/Hr. at Total Head 78.73 Meter including foundation base frame bolts etc. complete. Capacity - 3 MLD Total bowl head- 78.73 mtr. Pump HP - 70 Pump model-CNE 22 Number of stages- 2 Pump speed RPM – 1480 Bowl efficiency- 78% Total Suspension length including Bowl &amp; strainer-7.5Mtr Type of Lubrication- Self water Material of constructions: Casting- Cast Steel Impletter- CF8M Neck Ring - CF8M Shaft- SS410 Shaft sleeve - SS410 Intermediate Bearing - Cutless Rubber</p>	2	No	20,78,933.90	4157867.80
2	MJP DSR 2015-16, P-211,	<p>Sluice Valve Providing,double flanged Sluice valve Confirming to IS 2906/14846 Including Worm Gear Arrangements as per Test Pressure Staimless Steel Spindle, Caps Including all Taxes Transportaion etc Complete. Sluice Valve - PN-1 (Without by Pass)</p>				
	Item no 2-A-VIII	1) 250 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	25770	103080
3	MJP DSR 2015-16, P-211,	<p>NRV Providing &amp; supplying ISI mark CI D/F Reflux valve( non return valve) PN 1 rating without bypass arrangement,as per IS 5312 Part I (1984), including all taxes,inspection charges,transportation etc complete. Reflux valves as per IS 5312 part I (1984) Without by pass Arrangement PN-1.</p>				
	Item no 1-A-VIII	1) 250 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	27175	108700
4	MJP DSR 2015-16, P-217	Lowering,laying & jointing in position following C.I.D/F Reflex valves,Butterfly valves & Sluice valves including cost of all labour jointing material,including nut bolts & giving satisfactory hydraulic testing etc. complete				
	Item no 4-VIII	1) 250 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	8	No	8487	67896
5	MJP EM DSR 2015-16, P-16	<p>ACTUATOR Electric Valve actuator for non rising spindle type Sluice valve,PN1/PN1.6 rating.</p>				
	Item no VA 1-14	1) 250 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	131636	526544
		<b>MECHANICAL FOR(KK STP TO VASHI MIDC ESR)</b>				
6	Pump Quotation	<p>Providing, Installing, Testing, Commissioning with test and trail of each VT Pump giving discharge 772.74 mtr cube/Hr. at Total Head 65.18 Meter including foundation base frame bolts etc. complete. Capacity - 17 MLD Total bowl head- 65.18 mtr. Pump HP - 300 Pump model-CNE 22 Number of stages- 2 Pump speed RPM – 1480 Bowl efficiency- 78% Total Suspension length including Bowl &amp; strainer-7.5Mtr Type of Lubrication- Self water Material of constructions: Casting- Cast Steel Impletter- CF8M Neck Ring - CF8M Shaft- SS410 Shaft sleeve - SS410 Intermediate Bearing - Cutless Rubber</p>	2	No	38,47,923.11	7695846.22
7	MJP DSR 2015-16, P-211,	<p>Sluice Valve Providing,double flanged Sluice valve Confirming to IS 2906/14846 Including Worm Gear Arrangements as per Test Pressure Staimless Steel Spindle, Caps Including all Taxes Transportaion etc Complete. Sluice Valve - PN-1 (Without by Pass)</p>				
	Item no 2-A-XIV	1) 600 mm NB(Non availability of size 560mm rate at DSR we cosider 600mm)( Common Header)(Pump discharge)(ESR Outlet)	4	No	145465	581860
8	MJP DSR 2015-16, P-211,	<p>NRV Providing &amp; supplying ISI mark CI D/F Reflux valve( non return valve) PN 1 rating without bypass arrangement,as per IS 5312 Part I (1984), including all taxes,inspection charges,transportation etc. complete. Reflux valves as per IS 5312 part I (1984) Without by pass Arrangement PN-1.</p>				



**NAVI MUMBAI MUNICIPAL CORPORATION****RECYCLE WATER SYSTEM****Summary sheet for KK MIDC & VASHI MIDC**

<b>Sr No.</b>	<b>Description</b>	<b>Amount</b>
1	Mechanical	1,75,50,506.00
2	Electrical	2,11,27,176.00
3	HT Power	98,53,149.44
4	DG Power	69,12,528.00
	<b>Total</b>	<b>5,54,43,359.44</b>



**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**ANNEXURE I : Bill of Material**

Description	Make	INCOMER Feeder 630A	O/G 1000 KVA ONAN,OCTC Trafo Feeder 1850A
Rating		1	2
Qty			
<b>Description</b>			
22kV Indoor cubical 630A,25kA,/1Sec , with AL Bus bar	Symatic	1	1
<b>Vacuum Circuit Breaker</b>			
22kV,630A VCB	Siemens	1	1
<b>Current Transformer-18.4KA/15Sec</b>			
100/5-5A CL-1/15VA,5P10/15VA	Pragati/ECS	3	
50/5-5A CL-1/15VA,5P10/15VA	Pragati/ECS		3
<b>Potential Transformer</b>			
22kV/sqrt3/110V/sqrt3 Core 1: CL.-1/100VA	Pragati/ECS	3	
<b>Meters - Digital</b>			
Analogue Voltmeter+ASS	AE/MECO	1	
Analogue Ammeter+VSS	AE/MECO	1	1
Load Manager with RS 485 Port	Conzerv	1	1
<b>Switches/Indications</b>			
T-N-C Switch	Switron/ Keycee	1	1
LR Switch	Switron/ Kaycee	1	1
EM Trip Push Buttons	Tecknic/L&T	1	1
AC/DC Control Switch	Switron/ Kaycee	1	1
Control MCB /Fuse 1set	SIEMENS /Legrand	1	1
Space heater with Thermostat with toggle switch 1Set	Reputed	1	1
Panel illuminaton Lamp With Door Limit Switch	Reputed	1	1
Contactors 1Set	SIEMENS	1	1
Indicating Lamp 1 Set	Tecknic/L&T	1	1
Annunciator 6W with Hooter	Alan	1	1
Power Pack with Battery Back-up 230VAC/24 VDC	Alan	1	1
<b>Relays</b>			
IDMT O/C & E/F Relay (50,50N,51,51N)	Siemens	1	1
Master Trip Relay	Alstom	1	1
Trip Ckt-Supervision Relay	Alstom	1	1
Aux. Trafo Fault Relay	Alstom		3

**ANNEXURE II : Price Schedule.**

Sr. No.	Description	Qty (In Nos.)	Ex-works Price
A	Supply, 22kV, 630A, 25KA/1sec. Switchboard with Alu. Busbar consist of following feeder	1Set	
1	Incomer Feeder & O/G 1000 KVA ONAN,OCTC Trafo Feeder	1 EACH	16,40,410
	<b>TOTAL</b>	2	32,80,820
	ED @ 10.3 %		3,37,924
	VAT @ 12.5 %		4,10,103
	<b>FINAL TOTAL</b>		40,28,847
B	<b>Optional Charges</b>		
			Rs.12,500/- per day per person plus Extra for To & fro 3AC Rail
C	Charges towards deputing person for supervision of Erection & commissioing'	Per diem	,Lodging , Boarding & local travel.

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC and AIROLI STP MIDC ESR)**

**PART : PROCESS ANALYZER**

Sl.No	Item Description	Unit	Qty	Rate(in Rs)	Total Price	Reference
	Analysers will be installed at each STP					
1	PH analyzer Design,supply,installation testing of Ph analyzer as per IUPAC(INTERNATIONAL UNION FOR PURE & APPLIED CHEMISTRY) at A.F. and Interfacing with PLC panel.Range: 0-14, Ph ACCURACY : Better than 0.5% of full scale,Supply voltage : 24V dc, Output: 4-20 mA as PER IEC 61000-6-2 & 61000-6-3	No	3.00	1,55,328.00	4,65,984.00	Market rates
2	TOTAL RESIDUAL CHLORINE ANALYZER Design, supply,installation,testing of Residual chlorine analyzer/meter must have automatic sensor cleaning facility at pure water sump and interfacing with PLC panel. Overall range :0-5 mg/l Measuring range:0.03 to 2 mg/l Accuracy: 2% of full scale supply voltage : 230 V ac Output: 4-20 mA	No	3.00	2,50,000.00	7,50,000.00	MJP E/M 2015-16 PG No-142, Item no- SA-5.5
3	TURBIDITY meter Design,supply,installation testing of turbidity meter as per ISO 7027 scattering light method at A.F. and Interfacing with PLC PANEL.Turbidity meter shall comprise of 3 components i.e. sensors, signals distributor and transmitter with indicator . Transmitter converts the signal to 4-20mA and gives 2 outputs one to SCADA and other to indicator. Over all range: 0-1000 NTU, mEASURING rANGE: 0.02 to 500 NTU, aCCURACY : +/- 2.02 NTU, supply Voltage:230 Vac, Output : 4-20mA	No	1.00	3,70,000.00	3,70,000.00	MJP E/M 2015-16 PG No-135, Item no- SA-2.3
4	Multifunction meter Designing,supplying,installing,commissioning & testing of multifunction meter interfacing to PLC Panel with RS 485 output, as per IEC 62053 and in the prescribed format and shall be configured with main SCADA for report generation for following parameters and as per detailed specification attached. 1) Line/phase Voltage 2) Line/phase Current 3) Power factor 4) Kwh 5) Frequency	No	2.00	33000	66,000.00	MJP E/M 2015-16 PG No-136, Item no- SA-2.5
5	BOD, COD ,TSS, TOC ANALYZER	No	2.00	19,41,600.00	38,83,200.00	Market rates
	<b>TOTAL</b>				<b>55,35,184.00</b>	

<p>SCADA INTEGRATION WITH CPCB WEBSITE ON READY TIME BASIS</p> <p>The major prerequisites of efficient online analysers are:  Should be capable of operating unattended over prolonged period of time.  Should produce analytically valid results with precision and repeatability  The instrument/analyser should be robust and rugged, for optimal operation under extreme environmental conditions, while maintaining its calibrated status.</p> <p>The analyser should have inbuilt features for automatic water matrix change adaptation.  The instrument / analyser should have onboard library of calibration spectra for different industrial matrices with provision of accumulating further calibration matrices  Should have data validation facility with features to transmit raw and validated data to central server.  Should have Remote system access from central server provisioning log file access.  Should have provision for Multi-server data transmission from each station without intermediate PC or plant server.  Should have provision to send system alarm to central server in case any changes made in configuration or calibration.  Should have provision to record all operation information in log file.  For each parameter there should be provision for independent analysis, validation, calibration &amp; data transmission.  Must have provision of a system memory (non-volatile) to record data for at-least one year of continuous operation  Should have provision of Plant level data viewing and retrieval with selection of Ethernet, wireless, Mod-Bus &amp; USB.  In case of TOC analyser, the empirical relationship between TOC to COD or BOD must be authenticated for all industrial applications and the correlation calculation (for factor) provided.  The software will give alarm, in case of the concentration of parameter exceeds the prescribed norms by 10% continuously.  The correlation/interpretation factor for estimating COD and BOD using UV-Visible Absorption Technique shall be regularly authenticated/ validated and details provided.  Record of calibration and validation should be available on real time basis on central server from each location/parameter.  Record of online diagnostic features including sensor status should be available in database for user friendly maintenance.  Expandable program to calculate parameter load daily, weekly or monthly basis for future evaluation with flow rate signal input.</p>	1	No	768000	768000	MARKET RATE
		Total		21,04,800.00	

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**Sub Part D - Pump Automation**

Sr. No.	Description	Qty	UOM	Rates	Amount	Reference
1	Supply, installation, Testing, Termination & Interfacing Software Design to PLC and commissioning of SCADA software.	1	No	2,50,000.00	250000	MJP DSR 2015-16 SA-6-1
2	Programming charges to install the software as per logic defined by the dept.	1	No	150000	150000	MJP DSR 2015-16 SA-6-2
3	Supply, installation, Testing, Termination & Interfacing Centralised computer station.	1	No	75000	75000	MJP DSR 2015-16 SA-6-3
4	Supply, installation, Testing, Termination & Interfacing Secondary computer station.	1	No	65000	65000	MJP DSR 2015-16 SA-6-4
5	Supply, installation, Testing, Integration & Commissioning of 46" LCD monitor at conf. room(online)	1	No	90000	90000	MJP DSR 2015-16 SA-6-5
6	Providing, installing, testing and commissioning of laptop with programming software(web based).	1	No	54000	54000	MJP DSR 2015-16 SA-6-6
7	Energy monitoring system interfacing to PLC panel	1	No	25000	25000	MJP DSR 2015-16 SA-5-7
8	Ultrasonic level transmitter 10-12 mtr	5	No	75000	375000	MJP DSR 2015-16 SA-1-1
9	Pressure transmitter	1	No	35000	35000	MJP DSR 2015-16 SA-1-2
10	Supply, installation, Testing, Termination & Interfacing 2C x 1sq.mm twisted shielded copper armoured conductor as per IS 694 on wall in GI tray.	100	Mtr	128	12800	MJP DSR 2015-16 SA-2-8-1
11	Power cables: Supply, installation, Testing, Termination & Interfacing of CAT 6 as per ISO/IEC-11801 std cable for networking on wall in GI tray.	200	Mtr	80	16000	MJP DSR 2015-16 SA-2-8-2
12	Signal cables: Supply, installation, Testing, Termination & Interfacing 4 core 1.5 sq.mm. copper armoured conductor as per IS 694 on wall in GI tray.	200	Mtr	170	34000	MJP DSR 2015-16 SA-2-9-1
13	Designing, Supplying, installing, commissioning & Testing of CCTV IR water proof camera suitable for upto 100 ft with IR Dome camera, control key board, DVR, Hard disc, cables, UPT transmitters etc.	1	No	30000	30000	MJP DSR 2015-16 SA-4-4-4
14	Supply, installation, commissioning & testing of Energy monitoring system interfacing to PLC panel & shall be developed in line with the dept & in the prescribed format and shall be configured with main SCADA for report generation of various parameters. Supply voltage: 24V dc, Output: 4-20mA.	1	No	25000	25000	MJP E/M 2015-16 PG No-137, Item no- SA-2.6
15	Design, Supply, installing testing PLC based control monitoring and communication panel as per IEC 61131 at Pure water pump, pressure transmitter, level transmitter, ph transmitter, turbidity transmitter for all pumps installed.	1	No	50000	50000	MJP E/M 2015-16 PG No-137, Item no- SA-2.7
16	Level transmitter Design, supply, installing, commissioning & testing of Ultrasonic level transmitter CE marked at each filter bed with following technical parameters interfacing with PLC panel. Medium-water Range- 0-5 mtrs Output-4-20 Ma Power supply-24VDC ext. Display-Large LCD ACCURACY : +/- 0.25% of full scale or better	1	No	50000	50000	MJP E/M 2015-16 PG No-136, Item no- SA-2.4

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

Item Code No. 5502

Cost Data supply & laying of 3 Km 22 KV , 3 C, 300 Sqmm XLPE under ground Cable

Sr.No.	Particulars	Unit	Qty.	RT/U Rs.	Amount
1	XLPE Cable 22 KV, 3 C / 300 mm sq. Ref. MJP DSR 15-16 pg 73 ,CB 12-9	Rmt	1000.00	3171.00	3171000.00
2	R.C.C. Pipe 200 mm 2 M Ref. MJP CIVIL DSR 15-16 pg 138,class P-3 (collar joint)	No	90.00	483.00	43470.00
3	RCC half round pipe (100 mm) Ref. MJP CIVIL DSR 15-16 pg 137,class P-1 collar joint (half of actual rate)	No.	940.00	154.00	144760.00
4	22 kV Heat shrik Straight through joint (Al) kit for XLPE 3 C X 300 sqmm Ref.MJP DSR 15-16 pg 79 ,CB 30-5	No.	4.00	50261.00	201044.00
5	22 kV Heat shrik Outdoor termination joint (Al) kit for XLPE 3 C X 300 sqmm Ref. MJP DSR 15-16 pg 79 ,CB 29-4	No.	2.00	22922.00	45844.00
6	Sand	Cmt	250.00	191.40	47850.00
	<b>Cost of material</b>				<b>3653968.00</b>

1	Erection on material	10.00%	365396.80
2	Transportation on material	5.00%	182698.40
3	Insurance on material	1.00%	36539.68
4	Service Tax @ (10.3% On 1+2+3)	1.65%	60217.39
5	Contingencies on material	3.00%	109619.04
6	T & P on material	1.50%	54809.52
7	Contractor supervision on charges on material	10.00%	365396.80
	<b>Sub-Total -I</b>		<b>4828645.63</b>
8	Contractor profit on Total Project Cost i.e. on Sub-Total-I	5.00%	241432.28
	<b>Sub-Total -II</b>		<b>5070077.91</b>
9	Price Escalation on Material Cost	5.00%	182698.40
	<b>Sub-Total -III</b>		<b>5252776.31</b>
10	H.O.supervision charges @ 1.5% (i.e. 15% of 10% on erection of material)	1.50%	54809.52
	<b>Sub-Total -IV</b>		<b>5307585.83</b>
11	Interest during Construction Period (on total project cost) i.e. on Sub-Total-IV	2.50%	132689.65
	<b>Total Cost of Estimate</b>		<b>5440275.48</b>

## NAVI MUMBAI MUNICIPAL CORPORATION

## RECYCLE WATER SYSTEM

Item Code No. 1222 ( MSEDCL COST DATA 2010-2011)

Cost Data for 22/0.44 DTC new 2 X 1000 KVA, Indoor type DTC with RMU

r.No	Particulars	Unit	Qty	Rate	Amount	
1	22 KV Ring main unit with Vaccum /SF6 /Air break switch & two isolators for the same.	No.	1	1166093.00	1166093.00	PWD DSR 15-16 item 5-9-9
2	XLPE Cable 22 KV, 3 C / 185 mm sq.	Rmt	30	2410.00	72300.00	MJP DSR 15-16 pg 74 ,CB 12-7
3	22 kV heat shrinkable Indoor termination joint kit for 3 C X 95 sqmm	No.	4	10452.00	41808.00	MJP DSR 15-16 pg 79 ,CB28-2
4	Earthing with GI pipe 40mm dia.	L.S.	20	1536.00	30720.00	PWD DSR 15-16 item 9-1-4
5	Earthing with GI plate	L.S.	20	5234.00	104680.00	PWD DSR 15-16 item 9-1-3
6	Sundries	L.S.	2	770.00	1540.00	
<b>Cost of Material</b>					<b>1417141.00</b>	

**NAVI MUMBAI MUNICIPAL CORPORATION  
RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC ESR)(AIROLI MIDC)**

PWD CSR 15-16- EM

**Subject :- Detailed estimate for electrification.**

Sr. No	Description	Qty	Unit	Supply Rate	Labour/ Erection charges	erection + 14%	Total of supply & erection	5% on total rate	Net Rate	Amount
1	<b>Point wiring Casing N capping type</b>									
	Point wiring in PVC trucking (Casing N capping) with 1.0 sq.mm FRLS grade copper wire with flush type switch and required accessories as per specification.	15	Nos.	224.00	86.00	12.04	322.04	16.10	338.14	5072.13
	<b>CSR 1-9-17.</b>									
2	<b>Point wiring for plug on board of light or fan as per specification.</b>									
	Point wiring for plug on board of light or fan as per specification.	6	Nos.	72.00	16.00	2.24	90.24	4.51	94.75	568.51
	<b>CSR 1-9-13.</b>									
3	<b>Supplying erecting &amp; marking miniature circuit breaker confirming to IS: 8828 of 1996) single pole 6 Amp to 32 Amp C series (motor/power) with required wiring connections and lugs etc provided distribution board.</b>									
	Supplying erecting & marking miniature circuit breaker confirming to IS: 8828 of 1996) single pole 6 Amp to 32 Amp C series (motor/power) with required wiring connections and lugs etc provided distribution board.	4	Nos.	150.00	23.00	3.22	176.22	8.81	185.03	740.12
	<b>CSR 5-3-2.</b>									
4	<b>Light fitting</b>									
	Supplying & erecting 2 x 40 watt T- 8 white stove enamelled powder coated box type fluorescent tube light box type complete with heavy duty copper wound ballast & lamp holders duly wired ready to use for 230 Volts, 50 Hz. Single phase AC supply to as per quality requirements & erected on varnished wooden blocks with flexible wire twin core 24/0,2mm.Crompton / Bajaj / Philips / Shakti)	15	Nos.	2,240.00	39.00	5.46	2,284.46	114.22	2,398.68	35,980.25
	<b>CSR 2-4-18.</b>									
									<b>Total Rs</b>	<b>42361.00</b>

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC ESR)(AIROLI MIDC)**

PWD DSR 15-16

**Detailed Estimate for Outdoor Electrification**

Sr.	Description	Qty	Unit	Supply Rate	Erection charges	erection + 14%	Total of supply & erection	5% on total rate	Net Rate	Amount
1	<b>Point wiring Casing N capping type</b>									
	Point wiring in PVC trucking (Casing N capping) with 1.0 sq.mm FR grade copper wire with flush type switch and required accessories as per specification	12	Nos.	218.00	86.00	12.04	316.04	15.80	331.84	3982.10
	<b>CSR 1-9-16.</b>									
2	Point wiring for plug on board of light or fan as per specification.	2	Nos.	72.00	16.00	2.24	90.24	4.51	94.75	189.50
	<b>CSR 1-9-13.</b>									
3	Supplying erecting & marking miniature circuit breaker confirming to IS: 8828 of 1996) single pole 6 Amp to 32 Amp C series (motor/power) with required wiring connections and lugs etc provided distribution board.									
	<b>CSR 5-3-2.</b>	4	Nos.	150	23	3.22	176.22	8.81	185.03	740.12
4	Supplying & erecting double pole metal/ iron clad switch with fuse and neutral link 250 V 16 A on iron frame/board as per specification.									
	<b>CSR 5-1-2.</b>	1	Nos.	474	51	7.14	532.14	26.61	558.75	558.75
5	<b>Light fitting</b>									
	Supplying & erecting 2 x 28 watt T- 5 energy efficient fluorescent tube light (EETLF) fittings with recess/ surface mounting mirror optic type with electronic balast having pf>0.9 fixed in false ceiling or on wall as per specification no. (similar Cromption / Bajaj / Philips )	6	Nos.	2360	39	5.46	2,404.46	120.22	2,524.68	15,148.10
	<b>CSR 2-4-22.</b>									
6	Supply & erection <b>LED flood lights / street lights / highbay</b> fitting IP 65 with 120 W PF>0.95 of approved make and duly connection complete as per specification no FG-ODG/IL	6	Nos.	19366	172	24.08	19,562.08	978.10	20,540.18	1,23,241.10
	<b>CSR 2-9-16.</b>									
7	Supplying & erecting PVC armored cable 3 core 4 sq.mm. Copper conductor continues 5.48 sq.mm. 12 SWG GI earth wire complete erected with glands & lugs, on wall/trusses/pole or laid in provided trench/pipe as per specification.									
	<b>CSR 7-2-6.</b>	200	Rmt.	230	12	1.68	243.68	12.18	255.86	51,172.80
8	<b>LIGHTING POLES -9 Mtr - Pathway lighting Poles</b>									
	Providing & erecting 9 m high galvanised CONICAL pole with foundation bolts having bottom dia. from 165 to 200 mm, top dia. from 65 to 75 mm on provided foundation as per specification No. OH-PL/CPL									
	<b>PWD DSR 15-16 Item 8-3-26</b>	4	Rmt.	18435	1678	234.92	20,347.92	1,017.40	21,365.32	85,461.26
9	<b>1000 mm STREET LIGHT BRACKET</b>									
	Providing and erecting Galvanized 1000mm single arm sward type bracket with FRP dome and ball as per specification No. OH-PL/PBKT									
	<b>PWD DSR 15-16 Item 8-3-30</b>	4	Rmt.	1960	185	25.90	2,170.90	108.55	2,279.45	9,117.78
10	Supplying, erecting & marking SPMCB 0.5A to 5A in provided distribution board as per specification No. SW-SWR/MCB									
	<b>PWD DSR 15-16 Item 5-3-1</b>	4	Rmt.	221	23	3.22	247.22	12.36	259.58	1,038.32
									<b>Total Rs</b>	<b>290649.85</b>



**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**AIROLI SUMP to KK MIDC and AIROLI STP MIDC**

**Subject :- Detailed estimate for tools**

Quantity	Unit	Description	Rate	Amount
1	Set	Fix spanner set	630.00	630.00
1	Set	Ring spanner set	1098.00	1098.00
1	Each	Hammer	284.00	284.00
1	Each	Cutting plier	208.00	208.00
1	Each	Adjustable wrench - 250 mm	270.00	270.00
2	Each	Pipe wrench - 450 mm	531.00	1062.00
2	Each	Pipe wrench - 600 mm	953.00	1906.00
1	Each	Screw driver - 6x300	90.00	90.00
1	Each	Screw driver - 8 x200	79.00	79.00
1	Each	Screw driver - 5 x200	56.00	56.00
1	Each	Screw driver - 5 x300	58.00	58.00
2	Each	Line tester	56.00	112.00
2	Each	Hacksaw frame	64.00	128.00
1	Each	Tool box	1012.00	1012.00
1	Each	Chiesel - 19 x14	139.00	139.00
2	Each	Chain pipe wrench - 100 mm	3764.00	7528.00
0	Each	Chain pipe wrench - 150 mm	5525.00	0.00
1	Each	25 mm dia Crow bar	190.00	190.00
1	Each	12 mm wire rope	253.00	253.00
1	Each	50 mm dia g.i. pipe	228.00	228.00
1	Each	Center punch	58.00	58.00
1	Each	Tringular file	317.00	317.00
1	Each	Half round file	317.00	317.00
0	Each	Bearing puller - 200 mm	334.00	0.00
0	Each	Bearing puller - 250 mm	437.00	0.00
1	Each	Bearing puller - 300 mm	531.00	531.00
1	Each	Hydraulic Crimping tool	31365.00	31365.00
0	Each	Hand operated crimping tool	8855.00	0.00
1	Each	Insulation tester	4072.00	4072.00
1	Each	Earth tester	6263.00	6263.00
1	Each	Tong tester	3075.00	3075.00
1	Each	Steel level 300 mm	380.00	380.00
1	Each	Steel rule	253.00	253.00
1	Set	Allen Head wrench	307.00	307.00
1	Set	Tubulor Box spanner set	760.00	760.00
1	Each	Diagonal cutting plier	182.00	182.00
1	Each	Long nose plier	175.00	175.00
1	Each	Water Pump plier.	255.00	255.00
			<b>Total</b>	<b>63641.00</b>

Sr. No	Description of Material	Qty	Unit	supply rate	Labour / erection rate	add 14% on labor rate	Total Rate	add 5% on total rate	Net Rate	Amount
15	<b>Ammeter CT operated</b> Providing and erecting Analog type moving iron Ammeter for AC current CT operated of suitable size in scale between 0-1000A ,500v, accuracy class 1.5, flush type on provided box/panel and connected with necessary PVC wire leads and lugs. (PWD DSR 15-16 Item- 6-3-8 )	12	No.	1624	143	20.02	1,787.02	89.35	1,876.37	22,516.45
							-	-	-	-
16	<b>Selector Switches for Voltmeter &amp; ammeter</b> Providing and erecting selector switches suitable for ammeter/ voltmeter for 3 phase AC supply 500v ,50 Hz on provided box/panel and duly connecting with necessary PVC wire leads and lugs. (PWD DSR 15-16 Item- 6-5-1 )	24	No.	252	34	4.76	290.76	14.54	305.30	7,327.15
17	<b>C.T coil</b> Providing and erecting LT current transformer with bar primary 50/5 to 1000/5 ratio with 15VA burden erected in provided CRCA box duly secured with insulating material connected to meter with test certificates. (PWD DSR 15-16 Item- 6-5-2)	36	No.	654	34	4.76	692.76	34.64	727.40	26,186.33
18	<b>Pilot Lamp Set LED type</b> Supplying and erecting LED type indicating pilot lamp with LED colours Red/yellow/green 230/250v on provided box with necessary materials,wiring ,connections etc. (PWD DSR 15-16 Item- 6-5-6)	10	Nos	713	34	4.76	751.76	37.59	789.35	7,893.48
19	<b>self locking arrangement</b> Supplying and erecting self locking arrangement with duplicate keys,made of brass duly erected,flush with surface of panel/cupboard. (PWD DSR 15-16 Item- 6-1-20 )	10	Nos	167	28	3.92	198.92	9.95	209	2,088.66
20	<b>Internal Wiring of Panel Board</b> (Mech DSR 13-14 LT 20 Pg- 54 Item- Note 5 )	2060	HP	49	0	0	49.00	2.45	51	1,05,987.00
21	<b>Rubber matting</b>	120	Sq mtr	913	0		913	45.65	958.65	115038
										2237475
									<b>Total</b>	<b>22,37,474.61</b>

Sr. No	Description of Material	Qty	Unit	supply rate	Labour / erection rate	add 14% on labor rate	Total Rate	add 5% on total rate	Net Rate	Amount
7	<b>MCCB 315/400 Amp. For 260 HP Pumps</b> Providing and erecting 3 pole MCCB of --- -A 415v capacity with S.C. rating 36 kA (Ics=100% of Icu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-4)	3	No.	27365	536.9	75.166	27,977.07	1,398.85	29,375.92	88,127.76
8	<b>MCCB 315/400 Amp. For 140 HP Pumps</b> Providing and erecting 3 pole MCCB of --- -A 415v capacity with S.C. rating 36 kA (Ics=100% of Icu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-4)	3	No.	27365	536.9	75.166	27,977.07	1,398.85	29,375.92	88,127.76
9	<b>MCCB 600/630 Amp. For 300KW UF Load</b> Providing and erecting 3 pole MCCB of --- -A 415v capacity with S.C. rating 36 kA (Ics=100% of Icu) thermal and magnetic setting with provided leads on iron frame as per spec. no. SW-SWR/MCCB. (PWD DSR 15-16 Item- 5-5-5)	1	No.	33579	920.4	128.86	34,628.26	1,731.41	36,359.67	36,359.67
10	<b>MCCB 40 Amp. For UV power</b> Supplying and erecting & marking four pole isolators only switch version of MCBs of ---A in provided distribution board. (PWD DSR 15-16 Item- 5-3-24)	1	No.	677	23	3.22	703.22	35.16	738.38	738.38
11	<b>ACB 800 Amp. 4 Pole, APFC feeder 270KVAR</b> Supplying and erecting ACB manually operated drawtype of 800A 500 v 3 pole having S.C. rating 50kA (Ics=Icu=Icw for 1 s)with std. accessories on provided iron frame as per spec. No.SW-SWR/ACB. (PWD DSR 15-16 Item- 5-8-6)	1	No.	150305	4197.96	587.71	1,55,090.89	7,754.54	1,62,845	1,62,845.44
12	<b>MCCB 63 Amp. General feeder</b> Supplying and erecting & marking four pole isolators only switch version of MCBs of ---A in provided distribution board. (PWD DSR 15-16 Item- 5-3-25)	3	No.	699	23	3.22	725.22	36.26	761.48	2,284.44
13	<b>MCB fuse Switch unit 63A for Lighting etc.</b> Supplying and erecting & marking FPMCB 40A to 63A in provided distribution board as per spec. No.SW-SWR/MCB (PWD DSR 15-16 Item- 5-3-17)	2	No.	1369	23	3.22	1,395.22	69.76	1,464.98	2,929.96
14	<b>Voltmeter</b> Providing and erecting Analog type moving iron voltmeter for AC voltage 0-500v ,50 Hz accuracy class 1.5, flush type on provided box/panel and connected with necessary PVC wire leads and lugs (PWD DSR 15-16 Item- 6-3-6)	12	No.	847	143	20.02	1,010.02	50.50	1,060.52	12,726.25

**NAVI MUMBAI MUNICIPAL CORPORATION**

**RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC and AIROLI STP MIDC ESR)**

**L.T. PANEL- RA**

Sr. No	Description of Material	Qty	Unit	supply rate	Labour / erection rate	add 14% on labor rate	Total Rate	add 5% on total rate	Net Rate	Amount
1	<b>Panel Fabrication</b> G.I. sheet 1.6 mm (16 gauge) to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling welding ,rivetting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.									
	6 x2.5 x 3	6	2.5	3	45					
	6 x 2.5 x5	6	2.5	5	75					
	(PWD DSR 15-16 Item- 6-1-3 )	120	Sq. Mtr	1705	349	48.86	2102.86	105.143	2,208.00	2,64,960.36
2	<b>Iron Work</b> Supplying and erecting iron work consisting of varios sections of MS including plates chequered plates,rods,bars MS pipes ,etc. for panel board and any other purposes complete with bending,cutting,drilling, & welding complete erected at position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match switchgear or as per direction of authority.	100	Kg	96	13	1.82	110.82	5.54	116.36	11,636.10
	(PWD DSR 15-16,Item- 6-1-19 )									
3	<b>Bus Bar 2400 Amp Al bus (800x3 )</b> Supplying and erecting busbar chamber triple pole with neutral with four aluminium bars, 500v --- A complete as per specifications no. CP-BB (PWD DSR 15-16 Item- 6-2-6)	6	Mtr	26238	3762	526.68	30,526.68	1,526.33	32,053.01	1,92,318.08
4	<b>ACB 2000 Amp. Main incoming 4 pole</b> Supplying and erecting ACB manually operated drawout type of ----A 500 v 3 pole having S.C. rating 50kA (lcs=lcu=lcv for 1 s)with std. accessories on provided iron frame as per spec. No.SW-SWR/ACB. (PWD DSR 15-16 Item- 5-8-7)	1	No.	335630	8395.92	1175.4	3,45,201.06	17,260.05	3,62,461.11	3,62,461.11
5	<b>ACB 2000 Amp. Bus coupler 4 pole</b> Supplying and erecting ACB manually operated drawout type of ----A 500 v 3 pole having S.C. rating 50kA (lcs=lcu=lcv for 1 s)with std accessories on provided iron frame as per spec. No.SW-SWR/ACB (PWD DSR 15-16 Item- 5-8-7)	1	No.	335630	8395.92	1175.4	3,45,201.06	17,260.05	3,62,461.11	3,62,461.11
6	<b>ACB 2000 Amp.DG incoming 4 pole</b> Supplying and erecting ACB manually operated drawout type of ----A 500 v 3 pole having S.C. rating 50kA (lcs=lcu=lcv for 1 s)with std accessories on provided iron frame as per spec. No.SW-SWR/ACB (PWD DSR 15-16 Item- 5-8-7)	1	No.	335630	8395.92	1175.4	3,45,201.06	17,260.05	3,62,461.11	3,62,461.11

Sr	Description	Qty	UOM	Rates	Amount	Reference
9	<b>Item no-9 :-GI Earthing -</b> Supplying & erecting GI earth plate size 60x 60x6 cms complete with all materials, testing & recording results as per specifications . As per IS 3043-1987 & as directed by engineering incharge.	6	each	4018	24108.00	PWD DSR 15-16 Item No.9-1-1
10	<b>Item no-10 :-Copper Earthing -</b> Supplying & erecting copper earth plate size 30 x 30 x 0.6 cms complete with all materials, testing & recording results as per specifications . As per IS 3043-1987 & as directed by engineering incharge.	6	Each	7440	44640.00	PWD DSR 15-16 Item No.9-1-2
11	<b>Item No. 11 :-Earthing Strip</b> Providing erectimng GI earth strip	300	Kg	158	47400.00	PWD DSR 15-16 Item No.9-2-3
	Providing, erecting CU earth strip	150	Kg	865	129750.00	PWD DSR 15-16 Item No.9-2-2
12	<b>Item No. 12 :- Pipe type earthing</b> Providing erecting pipe type earthing with double earthing to the all equipments as per Detailed specifications.	4	Each	1536	6144.00	PWD DSR 15-16 Item No.9-1-4
13	<b>Item No. 13 :- Tools</b> Providing Tools as per Detailed specification enclosed.	1	Lot	63641.00	63641.00	As per RA enclosed
14	<b>Item No. 14 :- In door lighting (Electrification)</b> The lighting shall comprise fluourescent - 4 nos Bulkhead fitting - 3 nos D.B. - 2 nos Suitable size conductors with fuses,switches including H.G.conduit etc.	1	Job	42361.00	42361.00	As per RA enclosed
15	<b>Item No. 15 :- Area lighting(Outdoor elctrification)</b> The area lighting shall comprise 120 w LED Fittings with and mounted on Conical pole 9 m high including ballast, condensor,fuse reflector,cable and control switch etc out of the two lams.one shall be in the substation yard and the second lamp shall be erected for area lighting.	1	Job	290649.85	290649.85	As per RA enclosed
16	<b>Item No. 16 :- Pump Automation</b>	1	Each	21,04,800.00	2104800.00	As per RA enclosed, Pump Automation
17	<b>Item No. 17 :- Process Analyzers</b>	1	Each	55,35,184.00	5535184.00	As per RA enclosed, Process Analyzers
	<b>Sub Total Part A (Rs)</b>				<b>21188320.46</b>	
B	<b>ADDITIONAL REQUIREMENTS FOR POWER SOURCE</b>					
16	<b>Item No. 16 :- MSEDCL CHARGES INSPECTION AND TESTING</b> HT SERVICE CONNECTION CHARGES FOR NEW CONNECTION ABOVE 500 KVA (Including rate of 1.30%of the normative charges)	1	Each	253500	253500	Ref: Revision in schedule of charges -MSEDCL-
	APPLICATION,REGISTRATION & PROCESSING	1	Each	50000	50000	
	HT TOD METER TESTING	1	Each	5227	5227	Ref: Approval of MSEDCL Schedule of charges
	Power Transformer Inspection	2	Each	10000	20000	
	Current Transformer Inspection ( CT )	3	Each	5000	15000	
	Voltage Transformer Inspection (PT)	3	Each	5000	15000	
	RELAY TESTING	6	Each	1000	6000	
	HT SWITCH GEAR	3	Each	5000	15000	
	LT CAPACITOR TESTING	440	KVAR	10	4400	
17	<b>Item No. 17 :- 22 KV HT cable for incomming supply</b>	1	Each	5440275.48	5440275.48	As per RA enclosed, HT cable works
18	<b>Item No. 18 :- 22 KV HT PANEL for Tranformer Protection</b>	1	Each	40,28,847	4028846.96	As per RA enclosed, HT cable works
	<b>Sub Total Part B (Rs)</b>				<b>9853249.44</b>	
21	<b>Item No. 21:- Diesel Generating Set</b> Supplying Erecting diesel generating set 1000 KVA (250x4) capacity with AMF Panel as per Detailed specification with water cooled engine set including inspection charges .	1	Each	69,12,528.00	6912528.00	PWD DSR 15-16 Item No.11-1-19
	<b>Sub Total Part C (Rs)</b>				<b>6912528.00</b>	
	<b>Total Cost (Rs)</b>				<b>3,79,54,097.90</b>	

**NAVI MUMBAI MUNICIPAL CORPORATION  
RECYCLE WATER SYSTEM**

**TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC and AIROLI STP MIDC ESR)**

**MJP & PWD CSR 15-16 EM**

Electrical Cost						
Sr	Description	Qty	UOM	Rates	Amount	Reference
	<b>Item No. 1 :- L.T. Control Panel Board</b>					
	Designing, Providing, Erecting, Testing & Commissioning with Satisfactory Test & Trial of Various Panel Boards as per Detailed specifications.					
	<b>A) L.T.Main Control Panel Board</b>					
	Designing, Providing, Erecting, Main L. T. Control Panel Board comprises of MCCB/ACB for Incoming & MCCB for outgoing as per Detailed specification enclosed.	1	each	22,37,474.61	2237474.61	As per PANEL RA enclosed
	<b>SOFT STARTER :</b>					
1	Supplying, erecting, commissioning electronic soft starter of three wire system to be operate on 380-440 v AC system consisting of- 1) main contactor AC 3duty and 1.5 times full load current rating 2) suitable thyristor 3) Ammeter with selector switch and CT's 4) Motor protection relay with protection CT's for protection against- Single phasing, undervoltage, overvoltage, phase reversal, over-current relay having IDMT Characteristics					
	for 260 HP Pump 270 HP (Airol STP to KK MIDC)	2	No	4,09,487.00	818974.00	MJP E/M DSR 2015-16, pg 62 LG-6-20
	for 140 HP Pump 150 HP ( Airol STP-MIDC)	2	No	2,76,053.00	552106.00	MJP E/M DSR 2015-16, pg 62 LG-6-15
	<b>Item No. 2 :- Transformer</b>					
2	Supplying & erecting approved make of 1000 kVA 50 c/s oil immersed and naturally cooled indoor /outdoor type, Online tap changer, copper wound transformer with delta conn. on HV side & star conn. on LV side with additional neutral brought out in load side, voltage rating 22 /0.433 V with tapping of +/- 2.5 % -5 %, continuously rated for full load with standard accessories complete with test certificate and as per IS 2026. and approved by engineering incharge.	2	each	1640410	3280820.00	MJP E/M DSR 2015-16, pg 39 TR 5-2
3	<b>Item No- 3 :- H T Metering Kiosk:</b> Supplying, erecting testing ( By Licencee), commissioning cubical comprising 22 kV HT metering resin cast CTs, PTs, as per licencees requirement. DO fuse set, AB Switch 200- 400 A capacity duly interconnected with use of suitable insulators by maintaining adequate clearances as per IS, complete housed in the enclosure made up of MS structure and fibre glass 3 mm thick with gearbox & handle brought out for operating GOD, suitable door openings, locking arrangement as per approved design by Engineering incharge.	1	Each	172630	172630.00	PWD DSR 15-16, 6-4-3
4	<b>Item No- 4 :- H.T. sub station</b> Providing, supplying and erecting 22 KV/ 0.433 Kv H T Substation as per Detailed specification.	1	Each	1417141.00	1417141.00	As per 1 X 400 KVA & SS Lighting & control cable - RA enclosed
5	<b>Item No. 5 :-Cables</b>					
	3.5 Core 300 Sq. MM Aluminium Armoured Cable(150*8)	1200	Rmt	1883	2259600.00	MJP E/M DSR 2015-16, Pg. 69 Item CB 5-10
	3 core x 185 sqmm(50*2)	100	Rmt	1001	100100.00	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-13
	3 core x 70 sqmm(50*2)	100	Rmt	468	46800.00	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-9
	3 core x 120 sqmm(50*4)	200	Rmt	725	145000.00	MJP E/M DSR 2015-16, Pg. 68 Item CB 4-11
	3 Core 4 Sq. MM AL Armoured Cable	100	Rmt	118	11800.00	MJP E/M DSR 2015-16, Pg. 71 Item CB 4-2
	<b>HT CABLE</b>					
	22 kv XLPE cable 3 core x 185 sqmm	200	Rmt	2410	482000.00	MJP E/M DSR 2015-16, Pg. 74 Item CB 12-7
	Indoor termination kit 22 kv for 185 sq mm	9	Each	12284	110556.00	MJP E/M DSR 2015-16, Pg. 79 Item CB 28-3
	Out door termination kit 22 kv for 185 sq mm	1	Each	17783	17783.00	MJP E/M DSR 2015-16, Pg. 79 Item CB 29-3
	Straight Through joint kit 22 kv for 185 sq mm	1	Each	46322	46322.00	MJP E/M DSR 2015-16, Pg. 79 Item CB 30-4
6	<b>Item No. 6 :- Cable Trench -</b> Making the trench in hard murum/ tar road of suitable width and depth for laying provided L.T. Cable of 10 sq mm complete as per detailed specifications.	200	m	153	30600.00	PWD DSR 2015-16, Item no- CW-16-1-2,
	Making the trench in hard murum/ tar road of suitable width and depth for laying provided L.T. Cable of 25 sq mm & above covered with half round hume pipe complete as per detailed specifications.	100	m	265	26500.00	PWD DSR 2015-16, Item no- CW-16-1-3,
7	<b>Item No. 7 :- Cable Tray -</b> Providing, fabricating and fixing G.I. perforated cable tray for cables as per requirement and specifications - 200 x 20 mm	200	Mtr	174	34800.00	MJP E/M DSR 2015-16, Pg. 80 Item CB 34-2
8	<b>Item No 8 :- Capacitor supply &amp; erecting 440((200*2)+40) kVAR 440 V</b> three phase 50 cycles thyrester switched Micro APFC passive filter panel consisting of mutipal steps of APP type capacitor units confirming to IS. 13585 (part -1) with harmonic filter reactors suitable for working load as per specifications	1	Each	1108636	1108636.00	PWD DSR 15-16 item 6-7-7, 6-7-11

Sl. No	Reference	Description	Qty	Unit	Rate	Amount (Rs.)
<b>COMMON EQUIPMENT FOR (AIROLI TO KK MIDC ESR) &amp; (AIROLI MIDC)</b>						
11	MJP DSR(E/M) 15-16, pg no. 118.	Electromagnetic Flow Meter Manufacturing, Supplying, & Commissioning Electromagnetic Flowmeter (EMF) for raw/ Pure water with Accuracy +/- 0.5% of measured value and protection as per given Specifications, including sensor. Transmitter Surge Arrestor cable duct separate PVC of 25 mm Dia for 25 mtrs. Sensors Transmitter Surge Arrestor. Flowmeter including the pipe Cutting, levelling and Installation of flowmeter with Pipeline with Necessary tool tackles. Cranes etc as may be required at site and best on technical Specifications including comprehensive maintenance for two years after the Guarantee period is over.				
	Item WM-3-8	1) 450 mm ESR INLET & OUTLET	2	Nos	363487	726974
	Item WM-3-7	1) 400 mm ESR INLET & OUTLET	2	Nos	339566	679132
12	MJP DSR(E/M) 2015-16, P-121, I-WM-3-B-8	SENSOR/TRANSMITTER CABLE:- 3 x 0.38 mm <sup>2</sup> PVC cable with common, braided copper shield of 0.7 mm dia & individually shielded cores with empty pipe detection 9 EPD : 4 x 0.38 mm <sup>2</sup> PVC Cable with common, braided copper shield of 0.7 mm dia. & individually shielded cores. conductor resistance <math>\leq 420 \text{ p2/m}</math> permanent operating temp. 20+/-80°C	300	Mtrs	230	69000
3	MJP DSR(E/M) 2015-16, P-122, I-WM-3-B-9	COIL CABLE:- Providing, Laying and Jointing with test and trial of Coil cable 3 x 0.75 MM PVC cable common, braided copper shield etc. as per detailed specification.	300	Mtrs	210	63000
4	MJP DSR(E/M) 2015-16, P-122, I-WM-3-B-11	GI DUCT:- Providing, Laying GI duct of 100 MM With all the necessary fittings joints, etc. for Housing the cables between sensor and transmitter. The cable shall be installed in suitable GI Duct to minimize the risk of damage during excavation. all the cable laid at minimum depth of 0.5 M below the ground. GI Duct shall be of 100 mm dia.	300	Mtrs	332	99600
15	MJP E/M 2015-16 PG No-22, Item no- LF 4-1-2	EOT:- Providing, erecting and commissioning single girder Electrically Operated Rectangular Over head Travelling Crane with 6 m lift complete with wire rope hoist, class II duty, all three motions electrically operated by suitable rating motor IP 54, control panel and down pendant control block. 1) 5 tonne	1	No	807824.00	807824
16	PWD DSR 15-16, 2-13-19	Supplying and erecting Exhaust fan heavy duty 230V A.C. 50cycles 450 mm. 1400 RPM complete erected in position as per specification no. FG-FN/EXF	6	No	5097.00	30582
17	PWD DSR 15-16, 6-1-4	Supply & fixing of GSS sheet of 1.25 MM Thick	30	Sq mtr	1840.5	55215
18	MIDC DSR 2015-16 Pg no. 185, Item No. WS/C/9i	Providing and erecting <b>Cast Iron Sluice Gates</b> manufactured & tested as per IS3042-1965. Gates to be provided with brass seats and spindle of MS bright bar of required height to enable to operate the gate from operating slab of intake structure including GM nut bolts SS304 hardware, necessary wedges to be provided to achieve leak tightness, including operational wheel headstock, foundation material, labour etc. complete including taxes & duties, as per detailed specification & as directed by Engineer In charge. Size : 900 X 900 mm	2	No	2,50,902.00	501804.00
19	MJP E/M 2015-16, PG No-105, Item no- WM-C-7	C.I. Strainer "T" (Basket) Type with flanged ends and with stainless steel or brass mesh with openings of 2.5. Mm to 3mm and suitable for operating pressure of 16 Kg./cm <sup>2</sup> and test pressure of 24 Kg./cm <sup>2</sup>	2	No	54,963.00	109926.00
20	MJP Kokan DSR 15-16, pg no. 8, item no 24	Fabricating pipes from steel plates supplied free of cost and stacking the same in the fabricators yard. The rate to include cutting the plate, rolling, tack welding, assembling in suitable lengths to form pipes welding on automatic welding machine and forming 'V' edge for both ends of pipe.	2000	KG	42 00	84000.00
21	MJP Kokan DSR 15-16, pg no. 356, item no 6a	Providing and applying one coat of Zinc rich epoxy primer to the internal surface of pipeline at site.	90	Sqm.	582.00	52380.00
22	MJP DSR Electromechanical 15-16, pg no. 8, Item No. PM11-4	Providing, installing, testing & commissioning of 150 mm dia bourden type Pressure Gauges complete with siphon U tube, isolating cock, C-class heavy duty 15 mm GI Pipe & brought out on wall for observation at place directed by engineer. Range 0 to 15 kg/Cm <sup>2</sup> . as per detailed specifications & as directed by Engineer.	8	No.	1795.00	14360.00
23	MJP Kokan DSR 15-16, pg no. 186, item no 9b i	Providing & supplying Kinetic Double Orifice type air valves PN1.6 rating combined with screw down isolating sluice valve etc complete Size : 100mm	8	No.	15155.00	121240.00
					<b>TOTAL:</b>	<b>1,64,52,992.00</b>

## NAVI MUMBAI MUNICIPAL CORPORATION

## RECYCLE WATER SYSTEM

## TREATED WATER SUPPLY SCHEME (AIROLI SUMP TO KK MIDC and AIROLI STP MIDC ESR)

Sr. No	Reference	Description	Qty	Unit	Rate	Amount (Rs.)
		<b>MECHANICAL</b>				
1	Pump Quotation	<p><b>Providing, Installainga, Testing, Comissioning with test and trail of each VT Pump giving discharge mtr3/ Hr. at Total Head 78.34 Meter including foundation base frame bolts etc. complete. No. of 500 Stages.</b> Capacity - 12 MLD Total bowl head- 78.34 mtr. Pump HP- 260 Pump model-CNE 22 Number of stages- 2 Pump speed RPM – 1480 Bowl efficiency- 78% including Bowl &amp; strainer-7.5Mtr Type of Lubrication- Self water <b>Material of constructions:</b> Casting- Cast Steel Impletter- CF8M Neck Ring - CF8M Shaft- SS410 Shaft sleeve - SS410 Intermediate Bearing - Cutless Rubber</p>	2	No	36,00,275.06	7200550.12
2	MJP DSR 2015-16, P-211,	<p><b>Sluice Valve</b> Providing double flanged Sluice valve Confirming to IS 2906/14846 Including Worm Gear Arrangements as per Test Pressure Stainless Steel Spindle, Caps Including all Taxes Transportaion etc Complete. <b>Sluice Valve - PN-1 (Without by Pass)</b></p>				
	Item no 2-A-XII	1) 450 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	68124	272496
3	MJP DSR 2015-16, P-211,	<p><b>NRV</b> Providing &amp; supplying ISI mark CI D/F Reflux valve( non return valve) PN 1 rating without bypass arrangement,as per IS 5312 Part I (1984), including all taxes,inspection charges,transportation etc. complete. Reflux valves as per IS 5312 part I (1984) <b>Without by pass Arrangement PN-1.</b></p>				
	Item no 1-A-XII	1) 450 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	99069	396276
4	MJP DSR 2015-16, P-217	Lowering,laying & jointing in position following C.I.D/F Reflex valves,Butterfly valves & Sluice valves including cost of all labour jointing material,including nut bolts & giving satisfactory hydraulic testing etc. complete				
	Item no 4-XII	1) 450 mm NB( Common Header)(Pump discharge)(ESR Outlet)	8	No	7722	61776
5	MJP EM DSR 2015-16, P-16	<b>ACTUATOR</b> Electric Valve actuator for non rising spindle type Sluice valve,PN1/PN1.6 rating.				
	Item no VA 1-12	1) 450 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	107768	431072
		<b>MECHANICAL FOR (AIROLI MIDC ESR)</b>				
6	Pump Quotation	<p><b>Providing, Installainga, Testing, Comissioning with test and trail of VT Pump giving discharge 345217.39 Ltr. Hr. at Total Head 67.67 Meter including foundation base frame bolts etc. complete. No. of Stages.</b> Capacity - 7.94 MLD Total bowl head- 67.67 mtr. Pump model- 13M-3 Number of stages- 3 Bowl efficiency- 82% HP- kw Motor recomended(VHS)- 110 kw Total Suspension length including Bowl &amp; strainer- 7.5Mtr Material of constructions: Suction Bell/Inter Bowl/Discharge Case- Cast Steel Impletter- Bronze Bowl Bearings - Bronze Column pipe- MS Line shaft coupling- SS410 Pump Shaft- SS410 Line Shaft- EN8 Shaft sleeve - SS410 Fasteners - SS304</p>	2	No	1766600.00	3533200.00
7	MJP DSR 2015-16, P-212,	<p><b>Sluice Valve</b> Providing double flanged Sluice valve Confirming to IS 2906/14846 Including Worm Gear Arrangements as per Test Pressure Stainless Steel Spindle, Caps Including all Taxes Transportaion etc Complete. <b>Sluice Valve - PN-1 (Without by Pass)</b></p>				
	Item no 2-b-xi	1) 400 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	63365	253460
8	MJP DSR 2015-16, P-207,	<p><b>NRV</b> Providing &amp; supplying ISI mark CI D/F Reflux valve( non return valve) PN 1 rating without bypass arrangement,as per IS 5312 Part I (1984), including all taxes,inspection charges,transportation etc. complete. Reflux valves as per IS 5312 part I (1984) <b>Without by pass Arrangement PN-1.</b></p>				
	Item no 1-A-XI	1) 400 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	99069	396276
9	MJP DSR 2015-16, P-217,	Lowering,laying & jointing in position following C.I.D/F Reflex valves,Butterfly valves & Sluice valves including cost of all labour jointing material,including nut bolts & giving satisfactory hydraulic testing etc. complete				
	Item no 4-XI	1) 400 mm NB( Common Header)(Pump discharge)(ESR Outlet)	8	No	7722	61776
10	MJP EM DSR 2015-16, P-16	<b>ACTUATOR</b> Electric Valve actuator for non rising spindle type Sluice valve,PN1/PN1.6 rating.				
	Item no VA 1-12	1) 400 mm NB( Common Header)(Pump discharge)(ESR Outlet)	4	No	107768	431072





**NAVI MUMBAI MUNICIPAL CORPORATION****RECYCLE WATER SYSTEM****Cost summary of Airoli MIDC & KK MIDC**

<b>Sr. No.</b>	<b>Description</b>	<b>Amount</b>
1	Mechanical	1,64,52,992.00
2	Electrical	2,11,88,320.46
3	HT Power	98,53,249.44
4	DG Power	69,12,528.00
	<b>Total</b>	<b>5,44,07,089.90</b>

# QUOTATIONS

