

CONSTRUCTION OF 5MLD STP AT KWA SITE AT ELAMKULAM IN KOCHI

**DETAILED PROJECT
REPORT**

**VOLUME III
ESTIMATE**



8/5288-I, Near Kuttiady Irrigation Project Office
Mootoli, Kakkodi P.O., Calicut – 673611
Mob: 9446048233, 0495-4025433

ESTIMATE

ANNEXURE - C		
ESTIMATE FOR 5MLD STP AT ELAMKULAM, KOCHI		
		Amount (Rs.)
A	COLLECTION SYSTEM	
1	Extention of 600m DI Pumping Mains	8930000
	SUB TOTAL	8930000
B	PILING	
1	Pile Foundations for Civil Tanks	38270000
	SUB TOTAL	38270000
B	STP CIVIL WORKS	
1	Site Clearing, Levelling & Shifting of Materials	1632000
2	Receiving Chamber, Screen Channel & Grit Chamber	2386000
3	Equalisation Tank	6780000
4	MBBR - 01	2410000
5	MBBR - 02	2410000
6	Clarifier	5738000
7	Sludge Sump	500000
8	Sludge Thickener	1230000
9	Thickened Sludge Sump	500000
10	Filter Feed Tank	1650000
11	Treated Water Tank	1650000
12	Centrate Sump	336000
13	Treated Water Channel	267000
14	Sludge Storage Yard	811000
15	Transformer Housing, Control Room & Laboratory Building	4300000
16	Centrifuge Building	2130000
17	Filter & Generator Foundations	2713000
18	Pump House (4Nos)	788000
19	Internal Roads, Walkways & Storm Water Drain	5748000
17	Landscaping	767000
	SUB TOTAL	43979000
C	MECHANICAL WORKS	
1	STP Equipments wit plant Piping	22900000
	SUB TOTAL	22900000
D	ELETRICAL WORKS	
1	STP Electricals work	11000000
	SUB TOTAL	11000000
E	FURNITURES & LABORATORY ITEMS	500000
	TOTAL (A+B+C+D+E)	125579000
<p>We hereby certify that the rates provided in this estimate are the rates included in the DSR 2016 or the rate approved by the PWD. The cost index of Kochi is taken as 1.4608 as instructed by the PWD. Market rates for other materials which are not available in the DSR 2016 are directly taken from the local market including all its overhead costs which are lowest and reasonable.</p>		
<p>RAM BIOLOGICALS KWA KOCHI</p>		

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
EXTENSION OF DI PUMPING MAINS									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.10.1.3	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m : a) All kinds of soil Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm.							
		2Nos of 600mm Pipe	2	130			260.00	m	
		Say		260.00	m	@ Rs.	514.20	/m	133692.00
2	2.10.1.3	Extra for excavating trenches for pipes, cables etc. in all kinds of soils for depth exceeding 1.5m, but not exceeding 3m.(Rate is over corresponding basic item for depth upto 1.5 metre).							
		2Nos of 600mm Pipe	2	130			260.00	m	
		Say		260.00	m	@ Rs.	1.86	/m	482.00
3	23.5	Supplying, filling, spreading & leveling coarse gravel of size range 5cm to 20 cm in trenches, in required thickness over gravel layer, for all leads& lifts, all complete as per direction of Engineer -in-charge.							
			1	130.00	2.4	0.9	280.80	m ³	
		Deduction (Pipe volume)	2	130.00			36.74	m ³	
		Total Less Deduction					244.06	m ³	
		say	244.06	m³	@ Rs.	1346.71	/Each	/m³	328681.00
4	18.73.10	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K - 9 conforming to IS: 8329 : 600 mm dia Ductile Iron Double Flanged							
		2Nos of 600mm Pipe	2	10			20.00	m	
		Say		20.00	m	@ Rs.	22155.08	/m	443102.00

5	18.72.24	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 600 mm dia Ductile Iron Double Flanged : 600 mm dia Ductile Iron Class K-9 pipes						
		2Nos of 600mm Pipe	2	130			260.00 m	
		Say		260.00	m	@ Rs.	13895.64/m	
6	18.69.1	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS : 9523 - Upto 600mm dia						
		600mm DI 90°Bend	8	@ 1025kg			8200.00 Kg	
		600mm DI 45°Bend	6	@ 755kg			4530.00 Kg	
		600mm DI Tee	2	@ 1075kg			2150.00 Kg	
		600mm Flanged Tail Piece	2	@ 600kg			1200.00 Kg	
		Total					16080.00 Kg	
		say	160.80	Qn	@ Rs.	23675.84	Qn	
							3807076.00	
7	MR	Supplying, fixing, testing and commissioning of 600mm manually operated Sluice Valve of DI body as per specifications or as directed by Engineer in Charge						
		600mm Valve	2				2.00	
		Total					2.00 Nos	
		say	2.00	Nos	@ Rs.	260333.00	Nos	
							520666.00	
7	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.						
		2Nos of 600mm Pipe	1	130.00	2.40	1.60	499.20 m ³	
		Total					499.20 m ³	
		Say		499.20	m³	@ Rs.	164.19/m³	
							81966.00	
8	LS	Unforeseen Items						1468.00
		Grand Total						8930000.00
		(Rupees Eighty Nine Lakhs Thirty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
PILE FOUNDATIONS									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	20.2	Boring, providing and installation bored cast-in-situ reinforced cement concrete piles of grade M-25 of specified diameter and length below pile cap, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. by Crawler mounted, telescopic boom hydraulic piling Rig all complete, including removal of excavated earth with all its lifts and leads (length of pile for payment shall be measured up to bottom of pile cap).							
	20.2A.1	600mm	49	56			2744.00	m	
		Say		2744.00	m	@ Rs.	5402.26	/m	14823795.00
	20.2A.2	750mm	50	56			2800.00	m	
		Say		2800.00	m	@ Rs.	7770.43	/m	21757214.00
2	20.6	Vertical load testing of piles in accordance with IS 2911 (Part IV) including installation of loading platform by Kentledge/Anchor piles method and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge. Note:- 1 . Initial and Routine Load test shall not be carried out by Dynamic method of testing.. Note:-2. Testing agency shall submit the design of loading platform for the approval of Engineer-in-charge. Single pile above 50 tonne and upto 100 tonne safe capacity							
	20.6.2.1	Initial test (Test load 2.5 times the safe capacity)	8				8.00	Nos	
		Say		8.00	Nos	@ Rs.	68377.78	/Nos	547022.00

	20.6.2.1	Routine test. (Test load 1.5 times the safe capacity)	8				8.00	Nos		
		Say		8.00	Nos	@ Rs.	39024.54	/Nos	312196.00	
3	20.7	Cyclic vertical load testing of pile in accordance with IS Code of practice IS: 2911 (part IV) by Kentledge method including preparation of pile head etc for. Group of two or more piles.								
	20.7.2.1	Upto 400 tonne safe capacity of group	8				8.00	Nos		
		Say		8.00	Nos	@ Rs.	50053.44	/Nos	400427.00	
4	20.8	Lateral load testing of single pile in accordance with IS Code of practice IS : 2911 (Part IV) for determining safe allowable lateral load on pile :								
	20.8.2	Above 50 tonne and upto 100 tonne capacity pile	8				8.00	Nos		
		Say		8.00	Nos	@ Rs.	40042.57	/Nos	320341.00	
5	20.9	Integrity testing of Pile using Low Strain/ Sonic Integrity Test/ Sonic Echo Test method in accordance with IS 14893 including surface preparation of pile top by removing soil, mud, dust & chipping lean concrete lumps etc. and use of computerised equipment and high skill trained personal for conducting the test & submission of results, all complete as per direction of Engineer-in-charge. Note:- The inclusion of the above item in the schedule of work shall be judiciously decided by the technical sanctioning authority, keeping in view the quality control, Type of soil strata and importance of the project.								
	20.8.2	Above 50 tonne and upto 100 tonne capacity pile	99				99.00	Nos		
		Say		99.00	Nos	@ Rs.	1096.99	/Nos	108602.00	
6	LS	Unforeseen Items							403.00	
		Grand Total							38270000.00	
		(Rupees Three Crore Eighty Two Lakhs Seventy Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI										
MISCELLANOUS CIVIL WORKS										
Site Clearing & Levelling										
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount	
1	2.31	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50m outside the periphery of the area cleared.								
		Plant Area	1				9600.00			
		Total					9600.00	m ³		
		Say		9600.00	m³	@ Rs.	9.08	/m³	87146.00	
2	2.33.2	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material. Beyond 60 cm girth up to and including 120 cm girth								
		LS	200				200.00	Nos		
		Total					200.00	Nos		
		say		200.00	Nos	@ Rs.	1420.92	/1Nos	284184.00	
		Demolition of Existing Sludge Storage Yard & Store Room								
3	15.7.3	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In lime mortar								
		Sludge Storage Shed	1	40.00	0.20	5.00	40.00	m ³		
		Store Room	1	26	0.20	4.00	20.80	m ³		
		Total					60.80			
		say		60.80	m³	@ Rs.	508.80	/1m³	30935.00	
4	15.8.2	Removing mortar from bricks and cleaning bricks including stacking within a lead of 50 m (stacks of cleaned bricks shall be measured): From brick work in lime mortar								
		Sludge Storage Shed					2841.00	Nos		

		Store Room				1477.00	Nos	
		Total				4318.00	Nos	
		say	4318.00	Nos	@ Rs.	3256.93	/1000Nos	14063.00
5	15.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.						
		Sludge Storage Shed				10.00	m ³	
		Store Room				6.00	m ³	
		Total				16.00		
		say	16.00	m³	@ Rs.	2124.81	/1m³	33997.00
6	15.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.						
		Sludge Storage Shed				1800.00	Kg	
		Store Room				900.00	Kg	
		Total				2700.00		
		say	2700.00	Kg	@ Rs.	3.51	/1Kg	9466.00
7	1.1.17.8	Carriage of 50tonnes of Steel materials (DI Pipes, CI Piles, Sheet Piles, DI Fittings, CI Fittings etc) from the site to the nearby KWA storage yard by Mechanical Transport including loading, unloading and stacking in proper in designated places etc with all overhead expenses as directed by the Engineer-In Charge Beyond 5 km upto 10 km per km						
		50tonnes of steel materials shall be equivalent to 310m of CI pipe of Dia 400mm @ 162kg/m (as per standard)						
						310.00	m	
		Total				310.00		
		say	309.00	m	@ Rs.	3715.90	/m	1148212.00

8	1.1.18	Disposal of moorum/ building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead upto 10 km for all lifts, complete as per directions of Engineer-in-Charge.								
							76.00	m ³		
		Total					76.00			
		say		76.00	m³	@ Rs.	306.62	/1m³	23303.00	
9	LS	Unforeseen Items							694.00	
		Grand Total								1632000
		(Rupees Sixteen lakhs Thirty Two Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
RECEIVING CHAMBER, SCREEN CHANNEL & GRIT CHAMBER & PARSHALL FLUME									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
Foundations, Columns & Beams									
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
		For Column - C1	5	3.20	1.30	1.50	31.2		
		For Column - C2	6	1.10	1.10	1.50	10.89		
		Total					42.09	m ³	
		say		42.09	m³	@ Rs.	183.99	/1m³	7744.00
2	2.6.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
		For Column - C1	5	3.20	1.30	1.10	22.88		
		For Column - C2	6	1.10	1.10	1.10	7.99		
		Total					30.87	m ³	
		Say		30.87	m³	@ Rs.	259.58	/m³	8013.00
3	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
		For Column - C1	5	3.20	1.30	0.20	4.16		
		For Column - C2	6	1.10	1.10	0.20	1.45		
		Total					5.61	m ³	
		Say		5.61	m³	@ Rs.	6541.68	/m³	36699.00

4	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		Column - C1 Raft	5	3.00	1.10	0.40	6.60		
		Column - C2 Raft	6	1.10	1.10	0.40	2.90		
		Columns - C1	10	0.30	0.30	2.00	1.80		
		Columns - C2	6	0.30	0.30	2.00	1.08		
		Plinth Beams	5	1.90	0.30	0.45	1.28		
			2	11.32	0.30	0.45	3.06		
			2	8.05	0.30	0.45	2.17		
			3	3.55	0.30	0.45	1.44		
			2	6.20	0.30	0.45	1.67		
		Total					22.01		
		Say		22.01	m³	@ Rs.	9807.23	/m³	215839.00

5	5.37.2	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level						
		Columns - C1	2	0.30	0.30	1.20	0.22	
			4	0.30	0.30	0.70	0.25	
		Columns - C2	6	0.30	0.30	0.70	0.38	
		Beams - B1	5	1.90	0.30	0.30	0.86	
			2	3.80	0.30	0.30	0.68	
			2	8.05	0.30	0.30	1.45	
			3	3.55	0.30	0.30	0.96	
			2	6.20	0.30	0.30	1.12	
			Total				5.91	
	Say		5.91 m³	@ Rs.	10981.13 /m³	64882.00		
6	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.						
		quantity as per item no 4		22.01	120	kg/m ³	2640.98	
		quantity as per item no 5		5.91	121	kg/m ³	714.93	
		Total					3355.91	
		say		3355.91 kg	@ Rs.	82.68 /Kg	277471.00	
7	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.						
		Column - C1 Raft	5	8.20		0.40	16.40	
		Column - C2 Raft	6	4.40		0.40	10.56	

		Total					26.96 m ²	
		Say		26.96 m²	@ Rs.	283.32 /m²	7638.00	
8	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for :for beam, lintel etc						
		Plinth Beams - PB 1	10	1.90	0.45	8.55		
			4	11.32	0.45	20.38		
			4	8.05	0.45	14.49		
			6	3.55	0.45	9.59		
			4	6.20	0.45	11.16		
		Beams - B1 Sides	10	1.90	0.30	5.70		
			4	3.80	0.30	4.56		
			4	8.05	0.30	9.66		
			6	3.55	0.30	6.39		
			4	6.20	0.30	7.44		
		Beams - B1 Bottom	5	1.90	0.30	2.85		
			2	3.80	0.30	2.28		
			2	8.05	0.30	4.83		
			3	3.55	0.30	3.20		
			2	6.20	0.30	3.72		
		Total				114.79 m²		
		Say		114.79 m²	@ Rs.	500.91 /m²	57497.00	
9	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns						
		Columns - C1	4	1.20	2.00	9.60		
			2	1.20	3.20	7.68		
			4	1.20	2.70	12.96		
		Columns - C2	6	1.20	2.70	19.44		
		Total				49.68 m ²		
		Say		49.68 m²	@ Rs.	683.44 /m²	33953.00	

10	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)							
		Columns - C1	2	1.20		1.20	2.88		
			4	1.20		0.70	3.36		
		Columns - C2	6	1.20		0.70	5.04		
		Plinth Beams - PB 1	10	1.90		0.45	8.55		
			4	11.32		0.45	20.38		
			4	8.05		0.45	14.49		
			6	3.55		0.45	9.59		
			4	6.20		0.45	11.16		
		Beams - B1 Sides	10	1.90		0.30	5.70		
			4	3.80		0.30	4.56		
			4	8.05		0.30	9.66		
			6	3.55		0.30	6.39		
			4	6.20		0.30	7.44		
		Beams - B1 Bottom	5	1.90	0.30		2.85		
			2	3.80	0.30		2.28		
			2	8.05	0.30		4.83		
			3	3.55	0.30		3.20		
			2	6.20	0.30		3.72		
		Total					126.07		
		Say		126.07	m²	@ Rs.	331.31	/m²	41767.00
11	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work							
		quantity as per item no 12	1	9.05		1.60	14.48		
		Total					14.48		
		say	14.5	m²	@ Rs.	181.87	/1m²	2633.00	

RECEIVING CHAMBER, SCREEN CHANNEL, GRIT CHAMBER, PARSHALL FLUME & DISTRIBUTION							
12	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level					
		Base Slab					
		Grit Chamber	1	5.60	9.50	0.20	10.64
		Screen Channel	1	7.00	2.90	0.20	4.06
		Receiving Chamber	1	4.40	2.90	0.20	2.55
		Parshall Flume with Distribution Chamber	1	5.60	2.26	0.20	2.53
		Wall					
		Distribution Channel - Right	1	9.05	0.20	1.40	2.53
		Grit Chamber - Long	2	8.05	0.25	1.40	5.64
		Grit Chamber - Short	3	3.65	0.25	1.40	3.83
		Distribution Channel - Left	1	9.55	0.20	1.40	2.67
		Screen Channel	4	7.00	0.15	1.00	4.20
		Receiving Chamber - Long	2	4.40	0.20	2.50	4.40
		Receiving Chamber - Short	2	1.50	0.20	2.50	1.50
		Parshall Flume with Distribution Chamber - Long Wall	2	5.60	0.20	1.40	3.14
		Parshall Flume with Distribution Chamber - Short Wall	2	1.86	0.20	1.40	1.04
			1	3.00	0.20	1.40	0.84

		Total					49.58	m ³	
		say		49.58	m ³	@ Rs.	12355.58	/1m ³	612544.00
13	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 12		49.58	120	kg/m ³	5949.16		
		Total					5949.16	Kg	
		say		5949.16	kg	@ Rs.	89.82	/Kg	534354.00
14	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		49.58	340	kg/m ³	16855.94	Kg	
		Total					16855.94	Kg	
						50kg/bag	337.12	bag	
		say		337.12	Bags	@ Rs.	70.05	/bag	23614.00
15	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		Distribution Channel - Left Outside	1	9.05		1.60	14.48		
		Distribution Channel - Left Inside	1	8.65		1.40	12.11		
		Grit Chamber - Long L&R Outside	2	7.65		1.60	24.48		
		Grit Chamber - Long U&D Outside	2	4.15		1.60	13.28		
		Grit Chamber - Inside	8	3.65		1.40	40.88		
		Distribution Channel - Right Outside	1	9.55		1.60	15.28		
		Distribution Channel - Right Inside	1	9.15		1.40	12.81		
		Screen Channel - Outside	2	7.00		1.20	16.80		
		Screen Channel - Inside	6	7.00		1.00	42.00		
		Receiving Chamber - Outside	1	12.60		2.70	34.02		
		Receiving Chamber - Inside	1	11.00		2.50	27.50		
		Parshall Flume with Distribution Chamber - Long Wall Outside	2	5.60		1.40	15.68		
		Parshall Flume with Distribution Chamber - Long Wall Inside	2	5.20		1.40	14.56		
			2	3.00		1.40	8.40		

		Parshall Flume with Distribution Chamber - Short Wall Outside	1	2.26		1.40	3.16		
		Parshall Flume with Distribution Chamber - Short Wall Inside	3	1.86		1.40	7.81		
		Total					303.26	m ²	
		Say		303.26	m ²	@ Rs.	553.06	/m ²	167718.00
16	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab							
		Grit Chamber	1	5.60	9.50		53.20		
		Screen Channel	1	7.00	2.90		20.30		
		Receiving Chamber	1	4.40	2.90		12.76		
		Parshall Flume with Distribution Chamber	1	5.60	2.26		12.66		
		Edge	1	60.96		0.20	12.19		
		Total					111.11	m ²	
		Say		111.11	m ²	@ Rs.	616.90	/m	68542.00
17	22.23.1	<p>Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm</p>							
		Distribution Channel - Left Inside	1	8.65		1.40	12.11		
		Grit Chamber - Inside	8	3.65		1.40	40.88		

		Distribution Channel - Right Inside	1	9.15		1.40	12.81		
		Screen Channel	6	7.00		1.00	42.00		
		Receiving Chamber - Inside	1	11.00		2.50	27.50		
		Parshall Flume with Distribution Chamber - Long Wall Inside	2	5.20		1.40	14.56		
			2	3.00		1.40	8.40		
		Parshall Flume with Distribution Chamber - Short Wall Inside	3	1.86		1.40	7.81		
		Total					135.30	m ²	
		Say		135.30	m²	@ Rs.	683.80	/m²	92518.00
18	22.23.2	<p>Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.</p>							
		Distribution Channel - Left	1	7.65	0.50		3.83		
		Grit Chamber	2	3.65	3.65		26.65		
		Distribution Channel - Right	1	7.65	0.75		5.74		
		Screen Channel	2	7.00	0.45		6.30		
		Screen Channel	1	7.00	0.40		2.80		
		Receiving Chamber	1	4.00	1.50		6.00		
		Parshall Flume with Distribution Chamber - Base Inside	1	5.20	1.86		9.67		

		Total					60.98 m ²	
		Say		60.98 m²	@ Rs.	529.32 /m²	32278.00	
19	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)						
		Wall						
		Distribution Channel - Left Inside	1	8.65		1.40	12.11	
		Grit Chamber - Inside	8	3.65		1.40	40.88	
		Distribution Channel - Right Inside	1	9.15		1.40	12.81	
		Screen Channel	6	7.00		1.00	42.00	
		Receiving Chamber - Inside	1	11.00		2.50	27.50	
		Parshall Flume with Distribution Chamber - Long Wall Inside	2	5.20		1.40	14.56	
			2	3.00		1.40	8.40	
		Parshall Flume with Distribution Chamber - Short Wall Inside	3	1.86		1.40	7.81	
		Base						
		Distribution Channel - Left	1	7.65	0.50		3.83	
		Grit Chamber	2	3.65	3.65		26.65	
		Distribution Channel - Right	1	7.65	0.75		5.74	
		Screen Channel	2	7.00	0.45		6.30	
		Screen Channel	1	7.00	0.40		2.80	
		Receiving Chamber	1	4.00	1.50		6.00	
		Parshall Flume with Distribution Chamber - Base Inside	1	5.20	1.86		9.67	
		Total					227.05	
		Say		227.05 m²	@ Rs.	331.31 /m²	75224.00	
20	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Distribution Channel - Left Outside	1	9.05		1.60	14.48	

		Grit Chamber - Long L&R Outside	2	7.65		1.60	24.48			
		Grit Chamber - Long U&D Outside	2	4.15		1.60	13.28			
		Distribution Channel - Right Outside	1	9.55		1.60	15.28			
		Screen Channel - Outside	2	7.00		1.20	16.80			
		Receiving Chamber - Outside	1	12.60		2.70	34.02			
		Parshall Flume with Distribution Chamber - Long Wall Outside	2	5.60		1.40	15.68			
		Parshall Flume with Distribution Chamber - Short Wall Outside	1	2.26		1.40	3.16			
		Total					137.18			
		say	137.2	m²	@ Rs.	181.87	/1m²		24950.00	
21	LS	Unforeseen Items							122.00	
		Grand Total							2386000	
		(Rupees Twenty Three Lakhs Eighty Six Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
Equalization Tank (14.5m Dia x 4.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			3.14	7.95	7.95	1.5	297.68		
		Total					297.68	m ³	
		say		297.68	m ³	@ Rs.	183.99	/m ³	54769.00
2	2.6.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
			3.14	7.95	7.95	1.6	317.53		
		Total					317.53	m ³	
		Say		317.53	m ³	@ Rs.	259.58	/m ³	82426.00
3	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	7.95	7.95	0.10	19.85		
		Deduction Piles	84.78	0.38	0.38	0.10	1.19		
		Total					18.65	m ³	
		Say		18.65	m ³	@ Rs.	7033.09	/m ³	131191.00

4	OBS DATA BASED ON 5.37.1+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		for bottom slab	3.14	7.85	7.85	1.00	193.49		
		side wall alround	3.14	15.10	0.30	2.00	28.45		
		Total					221.94	m ³	
		say		221.94	m ³	@ Rs.	11202.53	/1m ³	2486272.00
5	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		side wall alround	3.14	15.1	0.30	2.5	35.56		
		Total					35.56	m ³	
		say		35.56	m ³	@ Rs.	12355.58	/1m ³	439371.00

6	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.						
		quantity as per item no 3		221.94	120	kg/m ³	26632.61	Kg
		quantity as per item no 4		35.56	120	kg/m ³	4267.26	Kg
		Total					30899.87	Kg
		say		30899.87	kg	@ Rs.	89.82	/Kg
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.						
		quantity as per item no 3		221.94	340	kg/m ³	75459.06	
		quantity as per item no 4		35.56	340	kg/m ³	12090.57	Kg
		Total					87549.63	Kg
		say		1750.99	Bags	@ Rs.	70.05	/bag
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.						
		Raft Slab	1	3.14	15.7	1	49.3	
		Total					49.3	m ²
		Say		49.3	m²	@ Rs.	283.32	/m²
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall						
		outside alround	1	3.14	15.10	4.50	213.36	
		inside	1	3.14	14.50	4.50	204.89	
		Total					418.25	m ²
		Say		418.25	m²	@ Rs.	553.06	/m²

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	14.50	4.50	204.89		
		Total					204.89	m ²	
		Say		204.89	m²	@ Rs.	683.80	/m²	140100.00
7	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	7.25	7.25	165.05		
		Total					165.05	m ²	
		Say		165.05	m²	@ Rs.	529.32	/m²	87362.00

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)						
		Inside wall	1	3.14	14.50	4.50	204.89	
		Bottom slab top	1	3.14	7.25	7.25	165.05	
		Outside Wall Around	1	3.14	15.10	4.50	213.36	
		Total					583.29	
		Say		583.29	m²	@ Rs.	331.31	/m²
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Outside Wall Around	1	3.14	15.10	2.50	118.54	
		Total					118.54	
		say	118.5	m²	@ Rs.	181.87	/1m²	21558.00
10	LS	Unforeseen Items						341.00
		Grand Total						6780000
		(Rupees Sixty Seven Lakhs Eighty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
MBBR TANK - 01 (9m Dia x 4.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			3.14	5.20	5.20	0.85	72.17		
		Total					72.17	m ³	
		say		72.17	m³	@ Rs.	183.99	/1m³	13278.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	5.20	5.20	0.10	8.49		
		Deduction Piles	43.96	0.30	0.30	0.10	0.40		
		Total					8.09	m ³	
		Say		8.09	m³	@ Rs.	7033.09	/m³	56932.00
3	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	3.14	5.10	5.10	0.75	61.25		
		side wall alround	3.14	4.80	0.30	4.50	20.35		

		Total					81.60	m ³	
		say		81.60	m ³	@ Rs.	12355.58	/m ³	1008181.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		81.60	120	kg/m ³	9791.66		
		Total					9791.66	Kg	
		say		9791.66	kg	@ Rs.	89.82	/Kg	879487.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		81.60	340	kg/m ³	27743.05	Kg	
		Total					27743.05	Kg	
						50kg/bag	554.86	bag	
		say		554.86	Bags	@ Rs.	70.05	/bag	38865.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	10.2	0.75	24.02		
		Total					24.02	m ²	
		Say		24.02	m ²	@ Rs.	283.32	/m ²	6805.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	3.14	9.60	4.50	135.65		
		inside	1	3.14	9.00	4.50	127.17		
		Total					262.82	m ²	
		Say		262.82	m ²	@ Rs.	553.06	/m ²	145354.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	9.00	4.5	127.17		
		Total					127.17	m ²	
		Say		127.17	m²	@ Rs.	683.80	/m²	86959.00
7	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	4.50	4.50	63.59		
		Total					63.59	m ²	
		Say		63.59	m²	@ Rs.	529.32	/m²	33657.00

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3(1 cement: 3 fine sand)						
		Inside wall	1	3.14	9.00	4.5	127.17	
		Bottom slab top	1	3.14	4.50	4.50	63.59	
		Outside Wall Around	1	3.14	9.60	4.50	135.65	
		Total					326.40	
		Say		326.40	m²	@ Rs.	331.31	/m²
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Outside Wall Around	1	3.14	9.60	4.50	135.65	
		Total					135.65	
		say	135.6	m²	@ Rs.	181.87	/1m²	24670.00
10	LS	Unforeseen Items						7672.00
		Grand Total						2410000
		(Rupees Twenty Four Lakhs Ten Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
MBBR TANK - 01 (9m Dia x 4.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			3.14	5.20	5.20	0.85	72.17		
		Total					72.17	m ³	
		say		72.17	m³	@ Rs.	183.99	/1m³	13278.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	5.20	5.20	0.10	8.49		
		Deduction Piles	43.96	0.30	0.30	0.10	0.40		
		Total					8.09	m ³	
		Say		8.09	m³	@ Rs.	7033.09	/m³	56932.00
3	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	3.14	5.10	5.10	0.75	61.25		
		side wall alround	3.14	4.80	0.30	4.50	20.35		

		Total					81.60	m ³	
		say		81.60	m ³	@ Rs.	12355.58	/m ³	1008181.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		81.60	120	kg/m ³	9791.66		
		Total					9791.66	Kg	
		say		9791.66	kg	@ Rs.	89.82	/Kg	879487.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		81.60	340	kg/m ³	27743.05	Kg	
		Total					27743.05	Kg	
						50kg/bag	554.86	bag	
		say		554.86	Bags	@ Rs.	70.05	/bag	38865.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	10.2	0.75	24.02		
		Total					24.02	m ²	
		Say		24.02	m ²	@ Rs.	283.32	/m ²	6805.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	3.14	9.60	4.50	135.65		
		inside	1	3.14	9.00	4.50	127.17		
		Total					262.82	m ²	
		Say		262.82	m ²	@ Rs.	553.06	/m ²	145354.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm											
		inside wall	1	3.14	9.00	4.5	127.17						
		Total					127.17	m ²					
		Say		127.17	m²	@ Rs.	683.80	/m²	86959.00				
7	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.											
		bottom slab top	1	3.14	4.50	4.50	63.59						
		Total					63.59	m ²					
		Say		63.59	m²	@ Rs.	529.32	/m²	33657.00				

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3(1 cement: 3 fine sand)						
		Inside wall	1	3.14	9.00	4.5	127.17	
		Bottom slab top	1	3.14	4.50	4.50	63.59	
		Outside Wall Around	1	3.14	9.60	4.50	135.65	
		Total					326.40	
		Say		326.40	m²	@ Rs.	331.31	/m²
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Outside Wall Around	1	3.14	9.60	4.50	135.65	
		Total					135.65	
		say	135.6	m²	@ Rs.	181.87	/1m²	24670.00
10	LS	Unforeseen Items						7672.00
		Grand Total						2410000
		(Rupees Twenty Four Lakhs Ten Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
CLARIFIER (14m Dia x 4.0m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			3.14	7.70	7.70	1.10	204.79		
		Total					204.79	m ³	
		say		204.79	m³	@ Rs.	183.99	/m³	37679.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	7.70	7.70	0.10	18.62		
		Deduction Piles	72.22	0.38	0.38	0.10	1.02		
		Total					17.60	m ³	
		Say		17.60	m³	@ Rs.	7033.09	/m³	123793.00
3	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	3.14	7.60	7.60	1.00	181.37		

		side wall around	3.14	7.60	0.30	4.00	28.64		
		Total					210.01	m ³	
		say		210.01	m ³	@ Rs.	12355.58	/1m ³	2594756.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		210.01	120	kg/m ³	25200.82		
		Total					25200.82	Kg	
		say		25200.82	kg	@ Rs.	89.82	/Kg	2263538.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		210.01	340	kg/m ³	71402.31	Kg	
		Total					71402.31	Kg	
						50kg/bag	1428.05	bag	
		say		1428.05	Bags	@ Rs.	70.05	/bag	100028.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	15.20	1.00	47.73		
		Total					47.73	m ²	
		Say		47.73	m ²	@ Rs.	283.32	/m ²	13523.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside around	1	3.14	14.60	4.00	183.38		
		inside	1	3.14	14.00	4.00	175.84		
		Total					359.22	m ²	
		Say		359.22	m ²	@ Rs.	553.06	/m ²	198668.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	14.00	4	175.84		
		Total					175.84	m ²	
		Say		175.84	m²	@ Rs.	683.80	/m²	120239.00
7	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	7.00	7.00	153.86		
		Total					153.86	m ²	
		Say		153.86	m²	@ Rs.	529.32	/m²	81441.00

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)						
		Inside wall	1	3.14	14.00	4.00	175.84	
		Bottom slab top	1	3.14	7.00	7.00	153.86	
		Outside Wall Around	1	3.14	14.60	4.00	183.38	
		Total					513.08	
		Say		513.08	m²	@ Rs.	331.31	/m²
								169987.00
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Outside Wall Around	1	3.14	14.60	4.00	183.38	
		Total					183.38	
		say	183.4	m²	@ Rs.	181.87	/1m²	33351.00
10	LS	Unforeseen Items						997.00
		Grand Total						5738000
		(Rupees Fifty Seven Lakhs Thirty Eight Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
Sludge Sump (3.75m Dia x 2.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		For tank	3.14	2.525	2.525	1.50	30.03		
		Total					30.03	m ³	
		Say		30.03	m ³	@ Rs.	243.08	/m ³	7299.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. All Kinds of Soil							
		For tank	3.14	2.525	2.525	1.40	28.03		
		Total					28.03	m ³	
		Say		28.03	m ³	@ Rs.	318.67	/m ³	8932.00
3	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	2.525	2.525	0.10	2.00		
		Total					2.00	m ³	
		Say		2.00	m ³	@ Rs.	7033.09	/m ³	14080.00

4	OBS DATA BASED ON 5.37.1+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		for bottom slab	3.14	2.425	2.425	0.3	5.54	
		side wall alround	3.14	2.125	2.125	2.5	35.45	
		Deduction						
		side wall alround	3.14	1.875	1.875	2.5	27.60	
		Total					13.39	m ³
		say		13.39	m ³	@ Rs.	11202.53	/1m³
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		Cover Slab	3.14	2.425	2.425	0.20	3.69	
							3.69	
		Deduction						
		manhole	1	0.45	0.6	0.15	0.04	
		total					0.04	

		Total less deduction					3.65		
		Say		3.65	m³	@ Rs.	9807.23	/m³	35821.00
6	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 4		13.39	120	kg/m ³	1606.8		
		quantity as per item no 5		3.65	100	kg/m ³	365.25		
		Total					1972.05	Kg	
		say		1972.05	kg	@ Rs.	89.82	/Kg	177130.00
7	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		Quantity as per item no 6		13.39	340	kg/m ³	4552.60	Kg	
		Quantity as per item no 7		3.65	330	kg/m ³	1205.34	Kg	
		Total					5757.94	Kg	
						50kg/bag	115.16	bag	
		say		115.16	Bags	@ Rs.	70.05	/bag	8066.00
8	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	4.85	0.3	4.57		
		Total					4.57	m²	
		Say		4.57	m²	@ Rs.	283.32	/m²	1295.00
9	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	3.14	4.25	2.50	33.36		
		inside	1	3.14	3.75	2.50	29.44		
		Total					62.80	m²	
		Say		62.80	m²	@ Rs.	553.06	/m²	34732.00
10	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab							
		top slab - bottom	1	3.14	1.875	1.875	11.04		

		top slab - side	1	3.14	4.25	0.20	2.67		
		Total					13.71	m ²	
		Say		13.71	m ²	@ Rs.	616.90	/m	8456.00
11	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.							
		quantity as per item no 1 & 2					58.06		
		Deduction							
		pcc					2.00		
		Base slab					5.54		
		tank including wall	3.14	2.125	2.125	2.5	35.45		
		total					42.99		
		Total less deduction					15.07	m ³	
		say		15.07	m ³	@ Rs.	183.70	/m ³	2768.00
12	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	3.75	2.5	29.44		
		Total					29.44	m ²	
		Say		29.44	m ²	@ Rs.	683.80	/m ²	20129.00

13	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	1.875	1.875	11.04		
		Total					11.04	m ²	
		Say		11.04	m ²	@ Rs.	529.32	/m ²	5843.00
14	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3(1 cement: 3 fine sand)							
		inside wall	1	3.14	3.75	2.5	29.44		
		bottom slab top	1	3.14	1.875	1.875	11.04		
		top slab bottom	1	3.14	1.875	1.875	11.04		
							51.52		
		Deduction							
		manhole	1	0.46	0.61		0.28		
		total					0.28		
		Total less deduction					51.24		
		Say		51.24	m ²	@ Rs.	331.31	/m ²	16975.00

15	OBS DATA BASED ON 19.18.3	Supplying and fixing D.I. cover with frame Grade A for manholes : 450x600 mm rectangular DI. cover (heavy duty) the weight of the cover to be not less than 110 kg.							
			1	1.00			1.00 nos		
		say		1.00	nos	@ Rs.	6606.79	/Each	6607.00
16	LS	Unforeseen Items							1865.00
		Grand Total							500000
(Rupees Five Lakhs Only)									

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
Sludge Thickener (6.2m dia x 3.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			3.14	3.75	3.75	0.85	37.53		
		Total					37.53	m ³	
		say		37.53	m ³	@ Rs.	183.99	/m ³	6905.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	3.75	3.75	0.10	4.42		
		Deduction Piles	25.12	0.30	0.30	0.10	0.23		
		Total					4.19	m ³	
		say		4.19	m ³	@ Rs.	7033.09	/m ³	29465.00
3	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	3.14	3.65	3.65	0.75	31.37		

		side wall around	3.14	3.35	0.30	3.5	11.04		
		Total					42.41	m ³	
		say		42.41	m³	@ Rs.	12355.58	/1m³	524061.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		42.41	120	kg/m ³	5089.79		
		Total					5089.79	Kg	
		say		5089.79	kg	@ Rs.	89.82	/Kg	457165.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		42.41	340	kg/m ³	14421.08	Kg	
		Total					14421.08	Kg	
						50kg/bag	288.42	bag	
		say		288.42	Bags	@ Rs.	70.05	/bag	20203.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	7.3	0.3	6.88		
		Total					6.88	m ²	
		Say		6.88	m²	@ Rs.	283.32	/m²	1949.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		Inside	1	3.14	6.20	3.50	68.14		
		Outside Wall Around	1	3.14	6.70	3.50	73.63		
		Total					141.77	m ²	
		Say		141.77	m²	@ Rs.	553.06	/m²	78408.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm						
		inside wall	1	3.14	6.20	3.5	68.14	
		Total					68.14	m ²
		Say		68.14	m²	@ Rs.	683.80	/m²
7	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.						
		bottom slab top	1	3.14	3.10	3.10	30.18	
		Total					30.18	m ²
		Say		30.18	m²	@ Rs.	529.32	/m²

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3(1 cement: 3 fine sand)						
		inside wall	1	3.14	6.20	4.5	87.61	
		bottom slab top	1	3.14	3.10	3.10	30.18	
		Outside Wall Around	1	3.14	6.70	3.50	73.63	
							191.41	
		Say		191.41	m²	@ Rs.	331.31	/m²
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Outside Wall Around	1	3.14	6.70	3.50	73.63	
		Total					73.63	
		say	73.6	m²	@ Rs.	181.87	/1m²	13392.00
10	LS	Unforeseen Items						8840.00
		Grand Total						1230000
		(Rupees Twelve Lakhs Thirty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
Thickened Sludge Sump (3.75m Dia x 2.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		For tank	3.14	2.525	2.525	1.50	30.03		
		Total					30.03	m ³	
		Say		30.03	m ³	@ Rs.	243.08	/m ³	7299.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. All Kinds of Soil							
		For tank	3.14	2.525	2.525	1.40	28.03		
		Total					28.03	m ³	
		Say		28.03	m ³	@ Rs.	318.67	/m ³	8932.00
3	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	2.525	2.525	0.10	2.00		
		Total					2.00	m ³	
		Say		2.00	m ³	@ Rs.	7033.09	/m ³	14080.00

4	OBS DATA BASED ON 5.37.1+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		for bottom slab	3.14	2.425	2.425	0.3	5.54	
		side wall alround	3.14	2.125	2.125	2.5	35.45	
		Deduction						
		side wall alround	3.14	1.875	1.875	2.5	27.60	
		Total					13.39	m ³
		say		13.39	m³	@ Rs.	11202.53	/1m³
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		top slab	3.14	2.425	2.425	0.20	3.69	
							3.69	
		Deduction						
		manhole	1	0.45	0.6	0.15	0.04	
		total					0.04	

		Total less deduction					3.65		
		Say		3.65	m³	@ Rs.	9807.23	/m³	35821.00
6	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 4		13.39	120	kg/m ³	1606.8		
		quantity as per item no 5		3.65	100	kg/m ³	365.25		
		Total					1972.05	Kg	
		say		1972.05	kg	@ Rs.	89.82	/Kg	177130.00
7	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		Quantity as per item no 6		13.39	340	kg/m ³	4552.60	Kg	
		Quantity as per item no 7		3.65	330	kg/m ³	1205.34	Kg	
		Total					5757.94	Kg	
						50kg/bag	115.16	bag	
		say		115.16	Bags	@ Rs.	70.05	/bag	8066.00
8	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	4.85	0.3	4.57		
		Total					4.57	m²	
		Say		4.57	m²	@ Rs.	283.32	/m²	1295.00
9	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	3.14	4.25	2.50	33.36		
		inside	1	3.14	3.75	2.50	29.44		
		Total					62.80	m²	
		Say		62.80	m²	@ Rs.	553.06	/m²	34732.00
10	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab							
		top slab - bottom	1	3.14	1.875	1.875	11.04		

		top slab - side	1	3.14	4.25	0.20	2.67		
		Total					13.71	m ²	
		Say		13.71	m ²	@ Rs.	616.90	/m	8456.00
11	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.							
		quantity as per item no 1 & 2					58.06		
		Deduction							
		pcc					2.00		
		Base slab					5.54		
		tank including wall	3.14	2.125	2.125	2.5	35.45		
		total					42.99		
		Total less deduction					15.07	m ³	
		say		15.07	m ³	@ Rs.	183.70	/m ³	2768.00
12	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	3.75	2.5	29.44		
		Total					29.44	m ²	
		Say		29.44	m ²	@ Rs.	683.80	/m ²	20129.00

13	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	1.875	1.875	11.04		
		Total					11.04	m ²	
		Say		11.04	m ²	@ Rs.	529.32	/m ²	5843.00
14	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3(1 cement: 3 fine sand)							
		inside wall	1	3.14	3.75	2.5	29.44		
		bottom slab top	1	3.14	1.875	1.875	11.04		
		top slab bottom	1	3.14	1.875	1.875	11.04		
							51.52		
		Deduction							
		manhole	1	0.46	0.61		0.28		
		total					0.28		
		Total less deduction					51.24		
		Say		51.24	m ²	@ Rs.	331.31	/m ²	16975.00

15	OBS DATA BASED ON 19.18.3	Supplying and fixing D.I. cover with frame Grade A for manholes : 450x600 mm rectangular DI. cover (heavy duty) the weight of the cover to be not less than 110 kg.							
			1	1.00			1.00 nos		
		say		1.00	nos	@ Rs.	6606.79	/Each	6607.00
16	LS	Unforeseen Items							1865.00
		Grand Total							500000
(Rupees Five Lakhs Only)									

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
FILTER FEED TANK (7mx 5 x 3.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m, as directed by Engineer-in-Charge.							
			1	8.30	6.30	0.85	44.45		
		Total					44.45	m ³	
		say		44.45	m³	@ Rs.	183.99	/1m³	8178.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	1	8.30	6.30	0.1	5.23		
		Deduction Piles	43.96	0.30	0.30	0.10	0.40		
		Total					4.83	m ³	
		Say		4.83	m³	@ Rs.	7033.09	/m³	33993.00
1	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	1	8.10	6.10	0.75	37.06		

		side wall alround (outside)	1	26.00	0.25	3.50	22.75		
		Total					59.81	m ³	
		say		59.81	m³	@ Rs.	12355.58	/m³	738987.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		59.81	120	kg/m ³	7177.2		
		Total					7177.20	Kg	
		say		7177.20	kg	@ Rs.	89.82	/Kg	644656.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		59.81	340	kg/m ³	20335.40	Kg	
		Total					20335.40	Kg	
						50kg/bag	406.71	bag	
		say		406.71	Bags	@ Rs.	70.05	/bag	28488.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	28.4		0.75	21.30		
		Total					21.3	m ²	
		Say		21.3	m²	@ Rs.	283.32	/m²	6035.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	26.00		3.50	91.00		
		inside	1	24.00		3.50	84.00		
		Total					175.00	m ²	
		Say		175.00	m²	@ Rs.	553.06	/m²	96785.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm						
		inside wall	1	24.00	3.50	84.00		
		Total				84.00	m ²	
		Say		84.00	m²	@ Rs.	683.80	/m²
7	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.						
		bottom slab top	1	7.00	5.00	35.00		
		Total				35.00	m ²	
		Say		35.00	m²	@ Rs.	529.32	/m²

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)						
		Inside wall	1	24.00		3.50	84.00	
		Base Slab	1	7.00	5.00		35.00	
		Total					119.00	m ²
		Say		119.00	m ²	@ Rs.	331.31	/m ²
								39426.00
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Tank Wall Above Ground	1	26.00		3.80	98.80	
		Total					98.80	
		say	98.8	m ²	@ Rs.	181.87	/1m ²	17969.00
10	LS	Unforeseen Items						1689.00
		Grand Total						1650000
		(Rupees Sixteen Lakhs Fifty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
TREATED WATER TANK (7mx 5 x 3.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.6.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth, lead up to 50m and lift up to 1.5m,as directed by Engineer-in-Charge.							
			1	8.30	6.30	0.85	44.45		
		Total					44.45	m ³	
		say		44.45	m³	@ Rs.	183.99	/1m³	8178.00
2	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	1	8.30	6.30	0.1	5.23		
		Deduction Piles	43.96	0.30	0.30	0.10	0.40		
		Total					4.83	m ³	
		Say		4.83	m³	@ Rs.	7033.09	/m³	33993.00
1	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level							
		for bottom slab	1	8.10	6.10	0.75	37.06		

		side wall alround (outside)	1	26.00	0.25	3.50	22.75		
		Total					59.81	m ³	
		say		59.81	m³	@ Rs.	12355.58	/m³	738987.00
2	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 1		59.81	120	kg/m ³	7177.2		
		Total					7177.20	Kg	
		say		7177.20	kg	@ Rs.	89.82	/Kg	644656.00
3	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		59.81	340	kg/m ³	20335.40	Kg	
		Total					20335.40	Kg	
						50kg/bag	406.71	bag	
		say		406.71	Bags	@ Rs.	70.05	/bag	28488.00
4	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	28.4		0.75	21.30		
		Total					21.3	m ²	
		Say		21.3	m²	@ Rs.	283.32	/m²	6035.00
5	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	26.00		3.50	91.00		
		inside	1	24.00		3.50	84.00		
		Total					175.00	m ²	
		Say		175.00	m²	@ Rs.	553.06	/m²	96785.00

6	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm						
		inside wall	1	24.00		3.50	84.00	
		Total					84.00	m ²
		Say		84.00	m²	@ Rs.	683.80	/m²
7	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.						
		bottom slab top	1	7.00	5.00		35.00	
		Total					35.00	m ²
		Say		35.00	m²	@ Rs.	529.32	/m²

8	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)						
		Inside wall	1	24.00		3.50	84.00	
		Base Slab	1	7.00	5.00		35.00	
		Total					119.00	m ²
		Say		119.00	m ²	@ Rs.	331.31	/m ²
								39426.00
9	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work						
		Tank Wall Above Ground	1	26.00		3.80	98.80	
		Total					98.80	
		say	98.8	m ²	@ Rs.	181.87	/1m ²	17969.00
10	LS	Unforeseen Items						1689.00
		Grand Total						1650000
		(Rupees Sixteen Lakhs Fifty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
CENTRATE SUMP (1.5m Dia x 2.5m Height)									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		For tank	3.14	1.35	1.35	1.50	8.58		
		Total					8.58	m ³	
		Say		8.58	m ³	@ Rs.	243.08	/m ³	2087.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
		For tank	3.14	1.35	1.35	1.40	8.01		
		Total					8.01	m ³	
		Say		8.01	m ³	@ Rs.	318.67	/m ³	2553.00
3	4.1.6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size).							
		For tank	3.14	1.35	1.35	0.10	0.57		
		Total					0.57	m ³	
		Say		0.57	m ³	@ Rs.	7033.09	/m ³	4025.00

4	OBS DATA BASED ON 5.37.1+5.34. 1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		for bottom slab	3.14	1.25	1.25	0.3	1.47	
		side wall alround	3.14	1.9	1.9	2.5	28.34	
		Deduction						
		side wall alround	3.14	1.5	1.5	2.5	17.66	
		Total					12.15 m ³	
		say		12.15 m³	@ Rs.	11202.53	/1m³	136066.00
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		top slab	3.14	0.95	0.95	0.20	0.57	
							0.57	
		Deduction						
		manhole	1	0.45	0.6	0.15	0.04	

		total					0.04		
		Total less deduction					0.53		
		Say		0.53 m³	@ Rs.	9807.23	/m³	5161.00	
6	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 4		12.15	120	kg/m ³	1457.52		
		quantity as per item no 5		0.53	100	kg/m ³	52.63		
		Total					1510.15	Kg	
		say		1510.15 kg	@ Rs.	89.82	/Kg	135642.00	
7	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 4		12.15	340	kg/m ³	4129.64	Kg	
		quantity as per item no 5		0.53	330	kg/m ³	173.67	Kg	
		Total					4303.31	Kg	
						50kg/bag	86.07	bag	
		say		86.07 Bags	@ Rs.	70.05	/bag	6029.00	
8	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	3.14	2.5	0.3	2.36		
		Total					2.36	m ²	
		Say		2.36 m²	@ Rs.	283.32	/m²	669.00	
9	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	1	3.14	1.90	2.50	14.92		
		inside	1	3.14	1.50	2.50	11.78		
		Total					26.69	m ²	
		Say		26.69 m²	@ Rs.	553.06	/m²	14761.00	
10	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab							

		top slab - bottom	1	3.14	1.50	1.50	7.07		
		top slab - side	1	3.14	1.90	0.20	1.19		
		Total					8.26	m ²	
		Say		8.26	m ²	@ Rs.	616.90	/m	5094.00
11	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.							
		quantity as per item no 1 & 2					16.60		
		Deduction							
		pcc					0.57		
		Base slab					1.47		
		tank including wall	3.14	0.95	0.95	2.5	7.08		
		total					9.13		
		Total less deduction					7.47	m ³	
		say		7.47	m ³	@ Rs.	183.70	/1m ³	1372.00
12	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm							
		inside wall	1	3.14	1.50	2.5	11.78		
		Total					11.78	m ²	
		Say		11.78	m ²	@ Rs.	683.80	/m ²	8052.00

13	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.							
		bottom slab top	1	3.14	0.75	0.75	1.77		
		Total					1.77	m ²	
		Say		1.77	m²	@ Rs.	529.32	/m²	935.00
14	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)							
		inside wall	1	3.14	1.50	2.5	11.78		
		bottom slab top	1	3.14	1.45	1.45	6.60		
		top slab bottom	1	3.14	0.75	0.75	1.77		
							20.14		
		Deduction							
		manhole	1	0.46	0.61		0.28		
		total					0.28		
		Total less deduction					19.86		
				Say		19.86	m²	@ Rs.	331.31

15	OBS DATA BASED ON 19.18.3	Supplying and fixing D.I. cover with frame Grade A for manholes : 450x600 mm rectangular DI. cover (heavy duty) the weight of the cover to be not less than 110 kg.							
			1	1.00			1.00	nos	
		say		1.00	nos	@ Rs.	6606.79	/Each	6607.00
16	LS	Unforeseen Items							366.00
		Grand Total							336000
		(Rupees Three Lakhs Thirty Six Thousand Only)							

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
TREATED WATER CHANNEL									
item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		Channel	1	30.00	0.90	0.30	8.10		
		Total					8.10	m ³	
		Say		8.10	m³	@ Rs.	243.08	/m³	1969.00
2	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
		Channel	1	30.00	0.90	0.10	2.70		
		Total					2.70	m ³	
		Say		2.70	m³	@ Rs.	6541.68	/m³	17663.00
3	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		Base Slab	1	30.00	0.70	0.20	4.20		
		Side Wall	2	30.00	0.10	1.00	6.00		

			2	0.50	0.10	1.00	0.10		
		Total					10.30		
		Say		10.30	m³	@ Rs.	9807.23	/m³	101014.00
4	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.							
		quantity as per item no 3		10.30	80	kg/m ³	824		
		Total					824.00	Kg	
		say		824.00	kg	@ Rs.	89.82	/Kg	74012.00
5	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.							
		quantity as per item no 1		10.30	340	kg/m ³	3502.00	Kg	
		Total					3502.00	Kg	
						50kg/bag	70.04	bag	
		say		70.04	Bags	@ Rs.	70.05	/bag	4906.00
6	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall							
		outside alround	2	30.00		1.20	72.00		
			2	0.70		1.20	1.68		
		inside	2	30.00		1.00	60.00		
			2	0.50		1.00	1.00		
		Total					134.68	m²	
		Say		134.68	m²	@ Rs.	553.06	/m²	74486.00

7	22.23.1	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For vertical surface two coats @0.70 kg per sqm					
		inside	2	30.00		1.00	60.00
			2	0.50		1.00	1.00
		Total					61.00 m ²
		Say		61.00 m²	@ Rs.	683.80 /m²	41712.00
8	22.23.2	Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage & water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fiber brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. For horizontal surface one coat @1.10 kg per sqm.					
		Base	1	30.00	0.50		15.00
		Total					15.00 m ²

		Say		15.00	m²	@ Rs.	529.32	/m²	7940.00
9	13.7.1	12 mm cement plaster finished with a floating coat of neat cement of mix : 1:3 (1 cement: 3 fine sand)							
		inside	2	30.00		1.00	60.00		
			2	0.50		1.00	1.00		
		Base	1	30.00	0.50		15.00		
		outside alround	2	30.00		1.20	72.00		
			2	0.70		1.20	1.68		
		Total					149.68		
		Say		149.68	m²	@ Rs.	331.31	/m²	49590.00
10	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work							
		outside alround	2	30.00		1.20	72.00		
			2	0.70		1.20	1.68		
		Total					73.68		
		say		73.7	m²	@ Rs.	181.87	/1m²	13400.00
11	LS	Unforeseen Items							
		Grand Total							
		(Rupees Two Lakhs Sixty Seven Thousand Only)							

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
SLUDGE STORAGE YARD									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		Column	6	1.20	1.20	1.50	12.96		
		For DR Packing							
		Long Wall	2	5.00	0.40	0.45	1.80		
		Short Wall	2	3.80	0.40	0.45	1.37		
		Total					16.13	m ³	
		Say		16.13	m ³	@ Rs.	243.08	/m ³	3920.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
		Column	6	1.20	1.20	1.10	9.50		
		Total					9.50	m ³	
		Say		9.50	m ³	@ Rs.	318.67	/m ³	3029.00
3	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
		Column	6	1.20	1.20	0.20	1.73		
		For ramp	1	3.60	1.50	0.20	1.08		
		Total					2.81	m ³	
		Say		2.81	m ³	@ Rs.	6541.68	/m ³	18369.00
4	obs	Dry rubble masonry with hard stone including cost of all materials, labour charges etc complete for foundation							

		Long Wall	2	6.00	0.40	0.45	2.16		
		Short Wall	4	2.90	0.40	0.45	2.09		
		Total					4.25	m ³	
		say		4.25	m³	@ Rs.	3941.23	/m³	16742.00
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		Column Raft	6	1.00	1.00	0.40	2.40		
		Column	6	0.20	0.20	2.00	0.48		
		Plinth Beam	3	6.00	0.40	0.45	3.24		
			2	6.40	0.40	0.45	2.30		
		Ramp	0.5	3.50	1.50	0.45	1.18		
		Total					9.61		
		Say		9.61	m³	@ Rs.	9807.23	/m³	94201.00
6	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).							
		Lintel	1	6.00	0.20	0.20	0.24		

			2	6.40	0.20	0.20	0.51		
		Total					0.75	m ³	
		say		0.75	m ³	@ Rs.	10796.48	/1m³	8119.00
7	5.37.2	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level							
		Column	6	0.20	0.20	3.90	0.94		
		Beam	3	6.00	0.20	0.40	1.44		
			2	6.40	0.20	0.40	1.02		
		Total					3.40		
		say		3.40	m ³	@ Rs.	10981.13	/m³	37336.00
8	Obs	Laterate masonry with neatly dressed laterate stone of size 40X20X15cm or nearest size in cement mortar 1:6 for superstructure above plinth level up to floor two level including all cost of materials, labour charges etc							
		Long Wall	1	6.00	0.20	3.90	4.68		
		Short Wall	4	2.90	0.20	3.90	9.05		
		Total					13.73		
		say		13.73	m ³	@ Rs.	7056.15	/m³	96867.00
9	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.							

		quantity as per item no 5		9.61	120	kg/m ³	1152.63		
		quantity as per item no 6		0.75	80	kg/m ³	60.16		
		quantity as per item no 7		3.40	120	kg/m ³	408.00		
		Total					1620.79		
		say		1620.79	kg	@ Rs.	82.68	/Kg	134009.00
10	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	6	4.00		0.4	9.60		
		Total					9.6	m ²	
		Say		9.6	m²	@ Rs.	283.32	/m²	2720.00
11	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for :for beam, lintel etc							
		Plinth Beam Outside	4	6.40		0.45	11.52		
		Plinth Beam Inside	6	6.00		0.45	16.20		
		Lintel Outside	3	6.40		0.20	3.84		
		Lintel Inside side	3	6.20		0.20	3.72		
		Beam Outside	4	6.40		0.40	10.24		
		Beam Inside side	6	6.00		0.40	14.40		
		Beam Bottom	3	6.00	0.20		3.60		
			4	2.90	0.20		2.32		
		Total					65.84	m ²	
		Say		65.84	m²	@ Rs.	500.91	/m²	32980.00
12	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns							
		Column	6	0.8		5.90	28.32		
		Total					28.32	m ²	
		Say		28.32	m²	@ Rs.	683.44	/m²	19355.00

13	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.						
		Inside	2	2.90	6.00	0.45	15.66	
		Total					15.66	
		say		11 m³		@ Rs.	183.71 /m³	2021.00
14	13.1.1	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)						
		Building Outside	1	19.20		4.95	95.04	
		Building Inside	1	18.80		4.50	84.60	
		Beam Inside	1	6.00		1.00	6.00	
		Total					185.64 m ²	
		Say		185.64 m²		@ Rs.	252.65 /m²	46901.00
15	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm						
		Inside	1	6.00	6.20		37.20	
		Skirting - Store Room	1	18.80		0.10	1.88	
		Total					39.08 m ²	
		Say		39.08 m²		@ Rs.	1635.22 /m²	63904.00
16	13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.						
		Building Outside	1	19.20		4.95	95.04	
		Building Inside	1	18.80		4.50	84.60	
		Beam Inside	1	6.00		1.00	6.00	
		Total					185.64 m ²	

		say	185.64	m²	@ Rs.	127.60	/1m²		23688.00
17	13.43.1	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : water thinnable cement primer							
		quantity as per item no 16					185.64		
		Total					185.64	m²	
		say	185.64	m²	@ Rs.	53.98	/1m²		10020.00
18	13.82.2	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour: two coats							
		quantity as per item no 16					185.64		
		Total					185.64	m²	
		say	185.64	m²	@ Rs.	107.95	/1m²		20040.00
		Roof Truss							
19	PWD OBS	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.							
		For Single Truss							
	A	G.I. Pipe - 65mm (L)							
		Tie Beam	1	6.00			6.00	m	
		Total					6.00	m	
		Approx. Wt. of single section @ 5.71kg/m					34.26	kg	
	B	G.I. Pipe - 50mm (L)							
		Principle Rafter	2	3.70			7.40	m	
		Central Tie	1	2.00			2.00		
		Total					9.40	m	
		Approx. Wt. of single section @ 4.08kg/m					38.35	kg	

	C	G.I. Pipe - 40mm (L)								
		Major Strut	2	2.50			5.00	m		
		Minor Struts	2	1.74			3.48	m		
		Total					8.48	m		
		Approx. Wt. of single section @ 3.23kg/m					27.39	kg		
	D	G.I. Pipe - 25mm (L)								
		Minor Struts	2	1.00			2.00	m		
		Total					2.00	m		
		Approx. Wt. of single section @ 1.98kg/m					3.96	kg		
	E	Base Plate (200 x 200 x 10)								
		Base Plate	6				6.00	Nos		
		Total					6.00	Nos		
		Approx. Wt. of single section @ 3.14kg/Nos					18.84	kg		
		Grand Total (A+B+C+D+E)					122.80	kg		
		Total No.of Struss	3				368.41	kg		
		Say	368.41	kg	@ Rs.	133.27	/1kg		49098.00	
20	PWD OBS	Steel work for purlin/single sections with G I pipes including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, including welding and bolted with special shaped washers etc. complete								
	A	G.I. Pipe - 20mm (L)								
		Purin	8	13.20			105.60	m		
		Total					105.60	m		
		Approx. Wt. of single section @ 1.38kg/m					145.73	kg		
	B	G.I. Pipe - 65mm (L)								
		Longitudinal Tie Beam	2	12.00			24.00	m		
		Total					24.00	m		

		Approx. Wt. of single section @ 5.71kg/m					137.04	kg	
		Grand Total (A+B)					282.77	kg	
		Say	282.77	kg	@ Rs.	110.55	/1kg		31260.00
21	12.4.1	Providing ridges or hips of width 60 cm overall width plain G.S. sheet fixed with polymer coated J. or L hooks, bolts and nuts 8 mm dia. G.I. limpet and bitumen washers complete.							
		0.80 mm thick with zinc coating not less than 275gm/m ²		6.60			6.60		
		Total					6.60	m	
		Say		6.60	m	@ Rs.	834.96	/m³	5511.00
22	12.1.3	Providing corrugated G.S. sheet roofing including vertical/curved surface fixed with polymer coated J or L hooks, bolts and nuts 8 mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead, including a coat of approved steel primer and two coats of approved paint on overlapping of sheets complete (up to any pitch in horizontal/ vertical or curved surfaces), excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. 0.63 mm thick with zinc coating not less than 275gm/ m ²							
		Roof	2	6.60	6.60		87.12		
		Total					87.12	m ²	
		say		87.12	m²	@ Rs.	961.50	/m²	83766.00
23	18.38	Painting G.I. pipes and fittings with synthetic enamel white paint with two coats over a ready mixed priming coat, both of approved quality for new work							
	18.38.2	G.I. Pipe - 20mm (L)							
		Purin	8	13.20			105.60	m	
		Total					105.60	m	
		say		106.00	m	@ Rs.	16.20	/m	1717.00
	OBS	G.I. Pipe - 65mm (L)							

		Longitudinal Tie Beam	2	12.00			24.00	m		
		Total					24.00	m		
		say		24.00	m	@ Rs.	43.57	/m	1046.00	
		Truss (3Nos)								
	18.38.3	G.I. Pipe - 25mm (L)								
		Minor Struts	6	1.00			6.00	m		
		Total					6.00	m		
		say		10.00	m	@ Rs.	21.27	/m	213.00	
	C	G.I. Pipe - 40mm (L)								
		Major Strut	6	2.50			15.00	m		
		Minor Struts	6	1.74			10.44	m		
		Total					25.44	m		
		say		42.40	m	@ Rs.	29.85	/m	1266.00	
	B	G.I. Pipe - 50mm (L)								
		Principle Rafter	6	3.70			22.20	m		
		Central Tie	1	2.00			2.00			
		Total					24.20	m		
		say		39.00	m	@ Rs.	35.34	/m	1378.00	
	A	G.I. Pipe - 65mm (L)								
		Tie Beam	3	6.00			18.00	m		
		Total					18.00	m		
		say		30.00	m	@ Rs.	43.57	/m	1307.00	
24	LS	Unforeseen Items							217.00	
		Grand Total							811000.00	
		(Rupees Eight Lakhs Eleven Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
TRANSFORMER HOUSING, CONTROL ROOM & LABORATORY BUILDING									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		Column	9	1.20	1.20	1.50	19.44		
		For DR Packing							
		Long Wall	2	8.00	0.40	0.45	2.88		
		Short Wall	2	8.70	0.40	0.45	3.13		
		Total					25.45	m ³	
		Say		25.45	m ³	@ Rs.	243.08	/m ³	6187.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
		Column	9	1.20	1.20	1.10	14.26		
		Total					14.26	m ³	
		Say		14.26	m ³	@ Rs.	318.67	/m ³	4543.00
3	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
		Column	9	1.20	1.20	0.20	2.59		
		Reception	1	4.00	4.00	0.10	1.60		
		Transformer Room	1	6.00	4.00	0.10	2.40		
		Passage	1	10.00	1.50	0.10	1.50		
		Staircase Room	1	3.00	5.00	0.10	1.50		
		Control Room	1	7.00	5.00	0.10	3.50		

		Total					13.09	m ³	
		Say		13.09	m ³	@ Rs.	6541.68	/m ³	85644.00
4	obs	Dry rubble masonry with hard stone including cost of all materials, labour charges etc complete for foundation							
		Long Wall	2	10.00	0.40	0.45	3.60		
		Short Wall	2	10.70	0.40	0.45	3.85		
		Total					7.45	m ³	
		say		7.45	m ³	@ Rs.	3941.23	/1m ³	29370.00
5	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		Column Raft	9	1.00	1.00	0.40	3.60		
		Column	9	0.20	0.30	2.00	1.08		
		Plinth Beam	4	10.60	0.40	0.45	7.63		
			3	10.90	0.40	0.45	5.89		
		Ramp	0.5	3.00	1.50	0.45	1.01		
		Total					19.21		
		Say		19.21	m ³	@ Rs.	9807.23	/m ³	188402.00

6	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).						
		Ground Floor						
		Lintel	4	10.60	0.20	0.20	1.70	
			3	10.90	0.20	0.20	1.31	
		Stair Case	2	3.50	1.50	0.15	1.58	
		Step	24	1.50	0.30	0.15	1.62	
		Landing Slab	1	1.50	3.00	0.15	0.68	
		Sunshade	1	46.20	0.60	0.075	2.08	
		First Floor						
		Lintel	4	10.60	0.20	0.20	1.70	
			3	10.90	0.20	0.20	1.31	
		Sunshade	1	46.20	0.60	0.075	2.08	
		Total					14.04 m ³	
		say		14.04 m³	@ Rs.	10796.48 /m³	151539.00	

7	5.37.2	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level							
		Ground Floor							
		Column	9	0.20	0.20	3.00	1.08		
		Beam - B1	3	10.60	0.20	0.40	2.54		
		Beam - B2	3	10.90	0.30	0.40	3.92		
		Roof Slab	1	10.90	11.60	0.15	18.97		
		First Floor							
		Column	9	0.20	0.20	3.00	1.08		
		Beam - B1	3	10.60	0.20	0.40	2.54		
		Beam - B2	3	10.90	0.30	0.40	3.92		
		Roof Slab	1	10.90	11.60	0.15	18.97		
		Total					53.03		
		Deduction							
		Staircase Room	1	3.00	4.00	0.15	1.80		
		Total Deduction					1.80		
		Total less deduction					51.23		
		Say		51.23	m³	@ Rs.	10981.13	/m³	562541.00

8	Obs	Laterate masonry with neatly dressed laterate stone of size 40X20X15cm or nearest size in cement mortar 1:6 for superstructure above plinth level up to floor two level including all cost of materials, labour charges etc					
		Ground Floor					
		Long Wall	4	10.00	0.20	3.00	24.00
		Short Wall	3	10.50	0.20	3.00	18.90
		Toilet	1	3.20	0.20	2.40	1.54
		First Floor					
		Long Wall	4	10.00	0.20	3.00	24.00
		Short Wall	3	10.50	0.20	3.00	18.90
		Toilet	1	3.20	0.20	2.40	1.54
		Dosing Room	1	4.00	0.20	3.00	2.40
		Total					91.27
		Deduction					
		Door - D1	1	1.50	0.20	2.40	0.72
		Door- D2	6	1.20	0.20	2.40	3.46
		Door - D3	1	1.00	0.20	2.40	0.48
		Door - D4	2	0.80	0.20	2.40	0.77
		Rolling Shutter	1	3.00	0.20	3.00	1.80
		Window W1	14	1.50	0.20	1.50	6.30
		Ventilator V1	2	0.60	0.20	0.45	0.11
		Stair Room - Side	2	3.00	0.20	3.00	3.60
		Total Deduction					17.23
		Total less deduction					74.04
		say		74.04	m³	@ Rs.	7056.15 /m³
							522437.00
9	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.					
		quantity as per item no 5		19.21	100	kg/m ³	1921.05

		quantity as per item no 6		14.04	80	kg/m ³	1122.88		
		quantity as per item no 7		51.23	100	kg/m ³	5122.80		
		Total					8166.73		
		say		8166.73	kg	@ Rs.	82.68	/Kg	675236.00
10	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	9	4.00		0.4	14.40		
		Total					14.4	m ²	
		Say		14.4	m²	@ Rs.	283.32	/m²	4080.00
11	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for :for beam, lintel etc							
		Plinth Beam -Length Wise	8	10.60		0.45	38.16		
		Plinth Beam - Width Wise	6	10.90		0.45	29.43		
		Ground Floor							
		Beam - Length Wise	6	10.60		0.40	25.44		
		Beam - Width Wise	6	10.90		0.40	26.16		
		Beam Bottom - B1	3	10.60	0.20		6.36		
		Beam Bottom - B2	3	10.90	0.30		9.81		
		Lintel - Length Wise	6	10.60		0.20	12.72		
		Lintel - Width Wise	6	10.90		0.20	13.08		
		First Floor							
		Beam - Length Wise	6	10.60		0.40	25.44		
		Beam - Width Wise	6	10.90		0.40	26.16		
		Beam Bottom - B1	3	10.60	0.20		6.36		
		Beam Bottom - B2	3	10.90	0.30		9.81		
		Lintel - Length Wise	6	10.60		0.20	12.72		
		Lintel - Width Wise	6	10.90		0.20	13.08		
		Total					254.73	m²	

		Say		254.73 m ²		@ Rs.	500.91 /m ²	127596.00
12	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns						
		Column - Ground Floor	9	1.00		5.00	45.00	
		Column - First Floor	9	1.00		3.00	27.00	
		Total					72.00	m ²
		Say		72.00 m ²		@ Rs.	683.44 /m ²	49207.00
13	5.9.7	Centering and shuttering including strutting, propping etc. and removal of form for : Stairs, (excluding landings) except spiral-staircases.						
		Stair Case	2	3.50	1.50		10.50	
		Step Rise	24	1.50		0.15	5.40	
		Step Side	48	0.50	0.30	0.15	1.08	
		Total					16.98	m ²
		Say		16.98 m ²		@ Rs.	612.59 /m ²	10402.00
14	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab						
		Ground Floor						
		Reception	1	4.00	4.00		16.00	
		Toilet	1	1.50	1.50		2.25	
		Transformer Room	1	6.00	4.00		24.00	
		Passage	1	10.00	1.50		15.00	
		Control Room	1	7.00	5.00		35.00	
		First Floor						
		Visitors Room	1	4.00	4.00		16.00	
		Toilet	1	1.50	1.50		2.25	
		Dosing Room	1	3.00	4.00		12.00	
		Store Room	1	2.80	4.00		11.20	
		Passage	1	10.00	1.50		15.00	
		Staircase Room	1	3.00	5.00		15.00	
		Laboratory	1	7.00	5.00		35.00	

		Sunshade	2	46.20	0.675		62.37		
		Slab Edge	2	45.00	0.30		27.00		
		Total					288.07	m ²	
		Say		288.07	m ²	@ Rs.	616.90	/m	177709.00
15	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.							
		Reception	1	4.00	4.00	0.35	5.60		
		Transformer Room	1	6.00	4.00	0.35	8.40		
		Passage	1	10.00	1.50	0.35	5.25		
		Staircase Room	1	3.00	5.00	0.35	5.25		
		Control Room	1	7.00	5.00	0.35	12.25		
		Total					36.75		
		say		36.75	m ³	@ Rs.	183.70	/m ³	6751.00
16	14.12	Providing and fixing 16 mm M.S. Fan clamps of standard shape and size in existing R.C.C. slab including cutting chase, anchoring clamp to reinforcement bar, including cleaning, refilling, making good the chase with matching concrete, plastering and painting the exposed portion of the clamps complete.							
		LS	12				12.00	Nos	
		Total					12.00	Nos	
		say		12.00	Nos	@ Rs.	379.08	/Each	4549.00
17	13.1.1	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)							
		Ground Floor							
		Building Outside	1	43.80		3.95	173.01		
		Reception	1	16.00		3.50	56.00		
		Toilet	1	6.00		2.40	14.40		
		Transformer Room	1	20.00		3.50	70.00		

		Passage	1	23.40		3.50	81.90		
		Meter Reading Room	2	1.50		3.50	10.50		
		Control Room	1	24.00		3.50	84.00		
		Staircase Room	1	16.00		3.50	56.00		
		First Floor							
		Visitors Room	1	16.00		3.50	56.00		
		Toilet	1	6.00		2.40	14.40		
		Dosing Room	1	14.00		3.50	49.00		
		Store Room	1	13.60		3.50	47.60		
		Passage	1	23.40		3.50	81.90		
		Staircase Room	1	16.00		3.50	56.00		
		Laboratory	1	24.00		3.50	84.00		
		Total					761.70	m ²	
		Deduction							
		Door - D1	1	1.50		2.40	3.60		
		Door- D2	6	1.20		2.40	17.28		
		Door - D3	1	1.00		2.40	2.40		
		Door - D4	2	0.80		2.40	3.84		
		Rolling Shutter	1	3.00		3.00	9.00		
		Window W1	14	1.50		1.50	31.50		
		Ventilator V1	2	0.60		0.45	0.54		
		Stair Room - Side	4	3.00		3.00	36.00		
		Total Deduction					104.16		
		Total less deduction					657.54		
		Say		657.54	m²	@ Rs.	252.65	/m²	166124.00
18	13.17	6 mm cement plaster 1:3 (1 cement: 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.							
		Ground Floor - Ceiling							
		Reception	1	4.00	4.00		16.00		

		Toilet	1	1.50	1.50		2.25		
		Transformer Room	1	6.00	4.00		24.00		
		Passage	1	10.00	1.50		15.00		
		Control Room	1	7.00	5.00		35.00		
		Staircase Room	1	3.00	5.00		15.00		
		First Floor - Ceiling							
		Visitors Room	1	4.00	4.00		16.00		
		Toilet	1	1.50	1.50		2.25		
		Dosing Room	1	3.00	4.00		12.00		
		Store Room	1	2.80	4.00		11.20		
		Passage	1	10.00	1.50		15.00		
		Staircase Room	1	3.00	5.00		15.00		
		Laboratory	1	7.00	5.00		35.00		
		Sunshade	2	46.20	0.675		62.37		
		Slab Edge	2	45.00	0.30		27.00		
		Total					303.07 m ²		
		Say		303.07 m²		@ Rs.	281.72 /m²		85379.00
19	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm							
		Ground Floor - Ceiling							
		Reception	1	4.00	4.00		16.00		
		Transformer Room	1	6.00	4.00		24.00		
		Passage	1	10.00	1.50		15.00		
		Control Room	1	7.00	5.00		35.00		
		Staircase Room	1	3.00	5.00		15.00		
		Step - Tread	24	1.50	0.30		10.80		

		Step - Rise	24	1.50		0.15	5.40		
		First Floor - Ceiling							
		Visitors Room	1	4.00	4.00		16.00		
		Dosing Room	1	3.00	4.00		12.00		
		Store Room	1	2.80	4.00		11.20		
		Passage	1	10.00	1.50		15.00		
		Laboratory	1	7.00	5.00		35.00		
		Skirting - GF							
		Reception	1	16.00		0.10	1.60		
		Transformer Room	1	20.00		0.10	2.00		
		Passage	1	23.40		0.10	2.34		
		Meter Reading Room	2	1.50		0.10	0.30		
		Control Room	1	24.00		0.10	2.40		
		Staircase Room	1	16.00		0.10	1.60		
		Skirting - FF							
		Visitors Room	1	16.00		0.10	1.60		
		Dosing Room	1	14.00		0.10	1.40		
		Store Room	1	13.60		0.10	1.36		
		Passage	1	23.40		0.10	2.34		
		Staircase Room	1	16.00		0.10	1.60		
		Laboratory	1	24.00		0.10	2.40		
		Total					231.34	m ²	
		Say		231.34	m ²	@ Rs.	1635.22	/m ²	378292.00
20	11.39	Providing and laying rectified Glazed Ceramic floor tiles 300x300 mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours White, Ivory, Rey, Fume Red Brown, laid on 20mm thick cement mortar 1:4 (1Cement : 4 Coarse sand) including grouting the joints with white cement and matching pigments etc., complete.							
		For Floor - Toilet	2	1.50	1.50		4.50		
		Total					4.50	m ²	

		Say		4.50	m²	@ Rs.	1201.43	/m²	5406.00
21	11.36	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pig							
		Wall Tile	2	6.00		2.40	28.80		
		Total					28.80	m²	
		Say		28.80	m²	@ Rs.	1088.00	/m²	31335.00
22	10.6.1	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 -part 1 and M.S. top cover of required thickness for rolling shutters. 80x1.25mm M.S. laths with 1.25 mm thick top cover.							
		For Transformer Room	1	3.00		3.00	9.00		
		Total					9.00	m²	
		Say		9.00	m²	@ Rs.	3383.36	/m²	30450.00
23	10.3	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size, with top and bottom rail of T-iron 40x40x6mm, with 40mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.							
		For Entrance	1	1.50		3.00	4.50		
		Total					4.50	m²	
		Say		4.50	m²	@ Rs.	7830.84	/m²	35239.00

24	21.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :					
	21.1.1.1	For fixed portion : Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)					
		for window frames-W1	14	1.50	1.50	31.50	
		Ventilator	2	0.60	0.45	0.54	
		Door- D2	6	1.20	2.40	17.28	
		Door - D3	1	1.00	2.40	2.40	
		Total				51.72	m²
		Approx. Wt. of frame @4.5 kg/m ²				232.74	kg
		Total				232.74	kg
		Say	232.74	kg	@ Rs.	518.88	/1kg
							120763.00

25		Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :	
	21.1.2.1	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) :Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	
		for window shutter-W1	42 0.44 1.44 26.61
		Ventilator	2 0.52 0.42 0.44
		Door- D2	6 1.16 2.36 16.43
		Door - D3	1 0.95 2.36 2.24
		Total	45.72 m²
		Approx. Wt. of frame @ 6.5 kg/sqm	297.15 kg
		Total	297.15 kg
		Say	297.15 kg @ Rs. 606.31 /1kg 180164.00

26		Providing and fixing 12mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS:12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.						
	21.2.1	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side.						
		Door- D2	6	1.10		2.29	15.11	
		Door - D3	1	0.90		2.29	2.06	
		Total					17.18	m²
		Say	17.18	m²	@ Rs.	1207.13	/1m²	20732.00
27	21.3.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge.(Cost of aluminium snap beading shall be paid in basic item): With float glass panes of 5.50 mm thickness						
		for window shutter-W1	42	0.44		1.44	26.61	
		Ventilator	2	0.52		0.42	0.44	
		Total					27.05	m²
		say	27.05	m²	@ Rs.	1466.57	/1m²	39668.00
28	9.48.2	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. : Fixed to openings /wooden frames with rawl plugs screws etc						
		for Windows						
		Windows- W1	14	1.50		1.50	31.50	m²
		Ventilator V1	2	0.60		0.45	0.54	
		Total					32.04	m²

		Approx. Wt. of grill @ 17kg/sqm					544.68	kg	
		Total					544.68	kg	
		Say	544.68	kg	@ Rs.	164.27	/1kg		89473.00
29	9.117.1	Providing and fixing factory made uPVC door frame made of uPVC extruded sections having an overall dimension as below (tolerance ± 1 mm), with wall thickness 2.0 mm (± 0.2 mm), corners of the door frame to be Jointed with galvanized brackets and stainless steel screws, joints mitred and Plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19 mm and 1mm (± 0.1 mm) wall thickness and 3 nos. stainless steel hinges fixed to the frame complete as per manufacturer's specification and direction of Engineer-in-charge. Extruded section profile size 48x40 mm							
		for doors	2	5.1			10.20	m	
		Total					10.20	m	
		Say	10.20	m	@ Rs.	316.70	/m		3230.00
30	9.118.3	25 mm thick PVC flush door shutters made out of a one piece Multi chamber extruded PVC section of the size of 762 mm X 25 mm or less as per requirement with an average wall thickness of 1 mm (± 0.3 mm). PVC foam end cap of size 23x10 mm are provided on both vertical edges to ensure the overall thickness of 25 mm. M.S. tube having dimensions 19 mm x 19 mm and 1.0 mm (± 0.1 mm) is inserted along the hinge side of the door. Core of the door shutter should be filled with High Density Polyurethane foam. The Top & Bottom edges of the shutter are covered with an end-cap of the size 25 mm X 11 mm. Door shutter shall be reinforced with special polymeric reinforcements as per manufacturer's specification and direction of Engineer-in-charge to take up necessary hardware and fixtures. Stickers indicating the locations of hardware will be pasted at appropriate places.							
		for doors	2	0.8		2.1	3.36	m ²	
		Total					3.36	m²	
		Say	3.36	m²	@ Rs.	3147.66	/m²		10576.00

31	13.84.2	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required to achieve even shade and colour. Two coats.window&ventilator grills						
		for windows -grills						
		Windows- W1	14	1.50		1.50	31.50	m ²
		Ventilator V1	2	0.60		0.45	0.54	
		Rolling Shutter	2.25	3.00		3.00	20.25	
		Collapsible Gate	2.25	1.50		3.00	10.13	
		Total					62.42	m²
		say	62.42	m²	@ Rs.	109.56	/m²	6839.00
32	13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.						
		Quantity as per item no 15					657.54	
		Quantity as per item no 16	2	6.60		3.00	303.07	
		Total					960.61	m²
		say	960.61	m²	@ Rs.	127.60	/1m²	122575.00
33	13.43.1	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : water thinnable cement primer						
		quantity as per item no 29					960.61	
		Total					960.61	m²
		say	960.61	m²	@ Rs.	53.98	/1m²	51850.00
34	13.82.2	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour: two coats						
		quantity as per item no 29					960.61	
		Total					960.61	m²

		say	960.61	m²	@ Rs.	107.95	/1m²		103701.00
35	17.2.1	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required : W.C. pan with ISI marked white solid plastic seat and lid							
		LS	2				2.00	nos	
		Say		2.00	Nos	@ Rs.	4994.04	/Each	9988.00
36	17.7.2	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require : White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap							
		LS	2				2.00	nos	
		Say		2.00	Nos	@ Rs.	2951.69	/Each	5903.00
37		Providing and fixing CPVC pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. : Concealed work, including cutting chases and making good the walls etc.							
a	18.9.2	20mm Dia							
		LS	1	25.00			25.00	m	
		Say		25	m	@ Rs.	218.10	/m	5452.00
b	18.9.3	25mm Dia							
		LS	1	25.00			25.00	m	
		Say		25	m	@ Rs.	279.96	/m	6999.00
c	18.9.4	32mm Dia							
		LS	1	25.00			25.00	m	

		Say		25 m	@ Rs.	366.00 /m	9150.00
38	Obs	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge.					
a		110mm dia 6Kgf/cm²					
		LS	1	50.00		50.00 m	
		Say		50 m	@ Rs.	432.62 /m	21631.00
b		63mm dia 6Kgf/cm²					
		LS	1	50.00		50.00 m	
		Say		50 m	@ Rs.	224.57 /m	11229.00
39	OBS	Providing and fixing the following moulded fitting for rigid uPVC pipes including with uPVC solvent cement -					
a		63mm dia elbow.				2nos	
		Say		2.00 nos	@ Rs.	180.68 /each	361.00
b		110 mm dia elbow.				2nos	
		Say		2.00 nos	@ Rs.	400.91 /each	802.00
d		63 mm dia bend				2nos	
		Say		2.00 nos	@ Rs.	180.68 /each	361.00
e		110 mm dia bend				2nos	
		Say		2.00 nos	@ Rs.	400.91 /each	802.00
g		63x63x63mm dia Tee				2nos	
		Say		2.00 nos	@ Rs.	223.32 /each	447.00
h		110 X 110 x 110 mm dia Tee				2nos	
		Say		2.00 nos	@ Rs.	522.54 /each	1045.00

40	18.49	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931: 15 mm nominal bore.							
			2				2.00	nos	
		Say		2.00	Nos	@ Rs.	542.98	/Each	1086.00
41	18.19.1.2	Providing and fixing gun metal non- return valve of approved quality (screwed end) : 25mm Nominal Bore Vertical							
			2				2.00	nos	
		Say		2.00	Nos	@ Rs.	633.55	/Each	1267.00
42	18.58.2.1	Providing and fixing PTMT grating of approved quality and colour. Rectangular type with openable circular lid. 150 mm nominal size square 100 mm diameter of the inner hinged round grating.							
			2				2.00	nos	
		Say		2.00	Nos	@ Rs.	219.19	/Each	438.00
43	17.32.4	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing : Rectangular shape 1500x450 mm							
			2				2.00	nos	
		Say		2.00	Nos	@ Rs.	1932.78	/Each	3866.00
44	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. 1000Litre Capacity							
		LS	1	2000.00			2000.00	Ltr	
		Say		2000.00	Ltr	@ Rs.	10.59	Ltr	21182.00

45	MR	Providing and Fixing water transfer pumps (Booster Pumps) of adequate HP, capable of giving a required discharge at suitable head to work on 3 phase 50Hz, 440V with necessary Unions, Flanges with necessary cabling for the above mentioned building						
		LS	2			2.00	nos	
		Say		2 Nos	@ Rs.	35000.00	/Each	70000.00
46	MR	Construction of Cable trenching of sufficient depth including the Chequered plates as cover						
		LS	1			1.00	nos	
		Say		1.00 Nos	@ Rs.	50000.00	/Each	50000.00
47	LS	Unforeseen Items						732.00
		Grand Total						4300000.00
		(Rupees Forty Two Three Lakhs Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
CENTRIFUGE BUILDING									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
		Column	6	1.20	1.20	1.50	12.96		
		Total					12.96	m ³	
		Say		12.96	m ³	@ Rs.	243.08	/m ³	3150.00
2	2.8.1+2.26.1	Extra for every additional lift of 1.5 m or part thereof in excavation /banking excavated or stacked materials. Ordinary Rock							
		Column	6	1.20	1.20	1.10	9.50		
		Total					9.50	m ³	
		Say		9.50	m ³	@ Rs.	318.67	/m ³	3029.00
3	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
		Column	6	1.20	1.20	0.20	1.73		
		For Plinth Beam	2	6.10	0.30	0.10	0.37		
			2	7.90	0.30	0.10	0.47		
		Plinth Inside	1	9.70	6.70	0.10	6.50		
		Total					9.07	m ³	
		Say		9.07	m ³	@ Rs.	6541.68	/m ³	59313.00

4	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							
		Column Raft	6	1.00	1.00	0.40	2.40		
		Column	6	0.30	0.30	2.00	1.08		
		Plinth Beam	3	7.60	0.30	0.45	3.08		
			3	9.70	0.30	0.45	3.93		
		Total					10.49		
		Say			10.49 m ³	@ Rs.	9807.23 /m ³	102843.00	
5	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).							
		Lintel - First Floor	2	7.60	0.20	0.20	0.61		
			2	10.00	0.20	0.20	0.80		
		Sunshade - First Floor	1	38.80	0.60	0.075	1.75		
		Total					3.15	m ³	
		say			3.15 m ³	@ Rs.	10796.48 /1m ³	34052.00	

6	5.37.2	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level							
		Ground Floor							
		Column	6	0.30	0.30	3.50	1.89		
		Beam	3	7.60	0.30	0.20	1.37		
			3	9.70	0.30	0.20	1.75		
		Slab	1	10.60	7.60	0.30	24.17		
		First Floor							
		Column	6	0.30	0.30	3.55	1.92		
		Beam	3	7.60	0.30	0.20	1.37		
			3	9.70	0.30	0.20	1.75		
		Slab	1	10.60	7.60	0.15	12.08		
		Total							
		Say		46.29	m³	@ Rs.	10981.13	/m³	508283.00
7	Obs	Laterate masonry with neatly dressed laterate stone of size 40X20X15cm or nearest size in cement mortar 1:6 for superstructure above plinth level up to floor two level including all cost of materials, labour charges etc							
		First Floor							
		Long Wall	2	9.70	0.20	3.55	13.77		
		Short Wall	2	7.00	0.20	3.55	9.94		

		Total					23.71		
		Deduction - Door	1	1.50	0.20	2.40	0.72		
		Total Less Deduction					22.99		
		say		22.99	m³	@ Rs.	7056.15	/m³	162249.00
8	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.							
		quantity as per item no 4		10.49	120	kg/m ³	1258.38		
		quantity as per item no 5		3.15	80	kg/m ³	252.32		
		quantity as per item no 6		46.29	120	kg/m ³	5554.44		
		Total					7065.14		
		say		7065.14	kg	@ Rs.	82.68	/Kg	584155.00
9	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	6	4.00		0.4	9.60		
		Total					9.6	m ²	
		Say		9.6	m²	@ Rs.	283.32	/m²	2720.00
10	5.9.5	Centering and shuttering including strutting, propping etc. and removal of form for :for beam, lintel etc							
		Plinth Beam Outside	1	36.40		0.45	16.38		
		Plinth Beam Inside	2	10.00		0.45	9.00		
			4	7.00		0.45	12.60		
		Lintel Outside	1	36.40		0.20	7.28		
		Lintel Inside side	1	34.00		0.20	6.80		
		Ground Floor							
		Beam Outside	1	36.40		0.45	16.38		
		Beam Inside side	4	10.00		0.45	18.00		
			4	7.00		0.45	12.60		
		Beam Bottom	3	9.70	0.30		8.73		

			3	7.00	0.30		6.30		
		First Floor							
		Beam Outside	1	36.40		0.45	16.38		
		Beam Inside side	4	10.00		0.45	18.00		
			4	7.00		0.45	12.60		
		Beam Bottom	3	9.70	0.30		8.73		
			3	7.00	0.30		6.30		
		Total					176.08	m ²	
		Say		176.08	m ²	@ Rs.	500.91	/m ²	88200.00
11	5.9.6	Centering and shuttering including strutting, propping etc. and removal of form for : Columns							
		Column	6	1.2		9.05	65.16		
		Total					65.16	m ²	
		Say		65.16	m ²	@ Rs.	683.44	/m ²	44533.00
1	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab							
		Ground Floor - Slab	1	9.70	6.70		64.99		
		First Floor	1	9.70	6.70		64.99		
		Sunshade	1	38.80	0.60		23.28		
		Slab Edge - GF + FF	2	36.40	0.45		32.76		
		Total					121.03	m ²	
		Say		121.03	m ²	@ Rs.	616.90	/m	74663.00
12	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.							
		Inside	1	9.70	6.70	0.35	22.75		
		Total					22.75		
		say		22.75	m ³	@ Rs.	183.70	/m ³	4178.00
13	13.1.1	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)							
		First Floor							

		Building Outside	1	36.40		4.45	161.98			
		Building Inside	1	34.00		4.00	136.00			
		Total					297.98			
		Deduction - Door	1	1.50	0.20	2.40	0.72			
		Total Less Deduction					297.26			
		Say		297.26	m²	@ Rs.	252.65	/m²	75101.00	
14	13.17	6 mm cement plaster 1:3 (1 cement: 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.								
		Ground Floor								
		Column	6	1.20		3.70	26.64			
		Roof Ceiling	1	10.00	7.00		70.00			
		Beam Side	6	7.00		0.20	8.40			
			6	10.00		0.20	12.00			
		First Floor - Ceiling								
		Roof Ceiling	1	10.00	7.00		70.00			
		Beam Side	6	7.00		0.20	8.40			
			6	10.00		0.20	12.00			
		Sunshade	1	38.80	0.675		26.19			
		Total					233.63	m²		
		Say		233.63	m²	@ Rs.	281.72	/m²	65817.00	
14	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm								
		First Floor								
		Inside	1	10.00	7.00		70.00			
		Skirting - Store Room	1	34.00		0.10	3.40			
		Total					73.40	m²		

		Say		73.40 m ²	@ Rs.	1635.22 /m ²	120025.00
15	13.8	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.					
		Ground Floor					
		Column	6	1.20	3.70	26.64	
		Roof Ceiling	1	10.00	7.00	70.00	
		Beam Side	6	7.00	0.20	8.40	
			6	10.00	0.20	12.00	
		First Floor - Ceiling					
		Building Outside	1	36.40	4.45	161.98	
		Building Inside	1	34.00	4.00	136.00	
		Roof Ceiling	1	10.00	7.00	70.00	
		Beam Side	6	7.00	0.20	8.40	
			6	10.00	0.20	12.00	
		Sunshade	1	38.80	0.675	26.19	
		Total				531.61	
		Deduction - Door	1	1.50	0.20	0.72	
		Total Less Deduction				530.89	
		say	530.89 m ²	@ Rs.	127.60 /1m ²		67742.00
16	13.43.1	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : water thinnable cement primer					
		quantity as per item no 15				530.89	
		Total				530.89 m ²	
		say	530.89 m ²	@ Rs.	53.98 /1m ²		28656.00
17	13.82.2	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour: two coats					
		quantity as per item no 15				530.89	

		Total					530.89 m ²	
		say	530.89 m ²		@ Rs.	107.95 /m ²		57311.00
18	10.3	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size, with top and bottom rail of T-iron 40x40x6mm, with 40mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.						
		For Entrance	1	1.50		2.40	3.60	
		Total					3.60 m ²	
		Say		3.60 m ²	@ Rs.	7830.84 /m ²		28191.00
19	LS	Unforeseen Items for Foundations and steel works						
		Grand Total						
		(Rupees Twenty One Lakhs Thirty Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
FOUNDATIONS									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
GENERATOR FOUNDATION									
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
			1	6.20	4.20	0.20	5.21		
		Total					5.21	m ³	
		Say		5.21	m ³	@ Rs.	243.08	/m ³	1266.00
2	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).							
			1	6.20	4.20	0.20	5.21		
		Total					5.21	m ³	
		Say		5.21	m ³	@ Rs.	6541.68	/m ³	34069.00
3	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level							

		Foundation Raft	1	6.00	4.00	0.40	9.60		
		Total					9.60		
		Say		9.60	m³	@ Rs.	9807.23	/m³	94149.00
4	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.							
		quantity as per item no 3		9.60	120	kg/m ³	1152.00		
		Total					1152.00		
		say		1152.00	kg	@ Rs.	82.68	/Kg	95249.00
5	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.							
		Raft Slab	1	20.00		0.4	8.00		
		Total					8.00	m ²	
		Say		8	m²	@ Rs.	283.32	/m²	2267.00
6	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work							
		Outside Wall Around	1	20.00		0.4	8.00		
		Total					8.00		
		say		8.0	m²	@ Rs.	181.87	/1m²	1455.00
FILTER FOUNDATION									
7	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
			1	15.20	10.70	0.75	121.98		
		Total					121.98	m ³	
		Say		121.98	m³	@ Rs.	243.08	/m³	29651.00

8	4.1.8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:4:8 (1 Cement : 4 coarse sand(zone-III) : 8 graded stone aggregate 40 mm nominal size).						
			1	15.20	10.70	0.10	16.26	
		Total					16.26	m ³
		Say		16.26	m ³	@ Rs.	6541.68	/m ³ 106394.00
9	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		Foundation Raft	1	15.00	10.50	0.75	118.13	
		Total					118.13	
		Say		118.13	m ³	@ Rs.	9807.23	/m ³ 1158479.00
10	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to&above plinth level. Thermo-Mechanically Treated bars.						
		quantity as per item no 3		118.13	120	kg/m ³	14175.00	
		Total					14175.00	
		say		14175.00	kg	@ Rs.	82.68	/Kg 1172007.00
11	5.9.1	Centering and shuttering including strutting, propping etc. and removal of form for :mass concrete.						
		Raft Slab	1	51.00		0.75	38.25	

		Total					38.25	m ²		
		Say		38.25	m ²	@ Rs.	283.32	/m ²	10837.00	
12	13.52.2	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface, etc. complete. On concrete work								
		Outside Wall Around	1	51.00		0.75	38.25			
		Total					38.25			
		say	38.3	m ²	@ Rs.	181.87	/1m ²		6957.00	
13	LS	Unforeseen Items							220.00	
		Grand Total							2713000.00	
		(Rupees Twenty Seven Lakhs Thirteen Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
PUMP HOUSE									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.							
			4	3.20	0.60	0.60	4.61		
		Total					4.61	m ³	
		Say		4.61	m ³	@ Rs.	243.08	/m ³	1120.00
2	7.1.1	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) upto plinth level with : a) .Cement mortar 1:6 (1 cement : 6 coarse sand).							
		Foundation	4	3.20	0.60	0.60	4.61		
		Basement	4	3.20	0.40	0.45	2.30		
		Total					6.91	m ³	
		say		6.91	m ³	@ Rs.	5793.31	/1m ³	40043.00
3	5.3	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement, with 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).							
		Roof Slab	1	3.70	3.70	0.15	2.05		
		Total					2.05	m ³	
		say		2.05	m ³	@ Rs.	10796.48	/1m ³	22171.00

4	Obs	Laterate masonry with neatly dressed laterate stone of size 40X20X15cm or nearest size in cement mortar 1:6 for superstructure above plinth level up to floor two level including all cost of materials, labour charges etc						
		Wall	4	3.20	0.20	2.40	6.14	
		Total					6.14	
		Deduction - Door	1	1.00	0.20	2.40	0.48	
		Total Less Deduction					5.66	
		say		5.66 m ³		@ Rs.	7056.15 /m ³	39966.00
5	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to & above plinth level. Thermo-Mechanically Treated bars.						
		quantity as per item no 3		2.05	120	kg/m ³	246.42	
		Total					246.42	
		say		246.42 kg		@ Rs.	82.68 /Kg	20374.00
6	5.9.3	Centering and shuttering including strutting, propping etc. and removal of form for :slab						
		Roof Slab	1	3.00	3.00		9.00	
		Slab Edge	1	14.20		0.3	4.26	
		Total					13.26 m ²	
		Say		13.26 m ²		@ Rs.	616.90 /m	8180.00
7	2.25	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.						
		Inside	1	3.00	3.00	0.45	4.05	
		Total					4.05	
		say		4.05 m ³		@ Rs.	183.71 /m ³	744.00
8	13.1.1	12 mm cement plaster of mix : 1:4 (1 cement: 4 fine sand)						
		Building Outside	1	13.60		2.40	32.64	
		Building Inside	1	12.00		2.40	28.80	

		Total					61.44		
		Deduction - Door	1	1.00		2.40	2.40		
		Total Less Deduction					59.04		
		Say		59.04	m²	@ Rs.	252.65	/m²	14916.00
9	13.17	6 mm cement plaster 1:3 (1 cement: 3 fine sand) finished with a floating coat of neat cement and thick coat of Lime wash on top of walls when dry for bearing of R.C.C. slabs and beams.							
		Roof Ceiling	1	3.00	3.00		9.00		
		Slab Edge	1	14.20		0.3	4.26		
		Total					13.26	m²	
		Say		13.26	m²	@ Rs.	281.72	/m²	3736.00
10	11.41.2	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. Size of Tile 600x600 mm							
		Inside	1	3.00	3.00		9.00		
		Total					9.00	m²	
		Say		9.00	m²	@ Rs.	1635.22	/m²	14717.00
11	13.43.1	Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : water thinnable cement primer							
		Building Outside	1	13.60		2.40	32.64		
		Building Inside	1	12.00		2.40	28.80		
		Roof Ceiling	1	3.00	3.00		9.00		
		Slab Edge	1	14.20		0.3	4.26		
		Total					74.70		
		Deduction - Door	1	1.00		2.40	2.40		
		Total Less Deduction					72.30		
		say	72.30	m²	@ Rs.	53.98	/1m²		3903.00

12	13.82.2	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour: two coats						
		Quantity as per item no 10					72.30	
		Total					72.30	m²
		say	72.30	m²	@ Rs.	107.95	/m²	7805.00
13	10.3	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size, with top and bottom rail of T-iron 40x40x6mm, with 40mm dia steel pulleys, complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.						
		For Entrance	1	1.00		2.40	2.40	
		Total					2.40	m²
		Say		2.40	m²	@ Rs.	7830.84	/m²
14	LS	Unforeseen Items						531.00
		Grand Total						197000.00
		Total 4Nos of Pumphouse						
		Grand Total						788000.00
		(Rupees Seven Lakhs Eighty Eight Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI										
INTERNAL ROADS, WALKWAYS & STORM WATER DRAINS										
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount	
INTERNAL ROADS & WALKWAYS										
1	2.8.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.								
		For 7m Wide Road	1	180.00	7.00		1260.00	m ²		
		For 5m Wide Road	1	80.00	5.00		400.00			
		For 3m Wide Road	1	60.00	3.00		180.00			
		Walkways	1	270.00	1.50		405.00			
		Total					2245.00	m ²		
		Say		2245.00	m ²	@ Rs.	131.62	/m ²	295483.00	
2	PWD OBS 51.2.3	Filling with Quarry Muck Filling up low lying and water logged areas with local material/ quarry muck, spreading in layers, leveling the top at site and consolidation by ramming, etc complete for improving the CBR value of subgrade								
		For 7m Wide Road	1	180.00	7.00	0.25	315.00	m ²		
		For 5m Wide Road	1	80.00	5.00	0.25	100.00			
		For 3m Wide Road	1	60.00	3.00	0.25	45.00			
		Total					460.00	m ²		
		Say		460.00	m ²	@ Rs.	1297.63	/m ²	596909.00	

3	OBS DATA BASED ON 16.91	Providing and laying factory made chamfered edge Cement Concrete paver blocks medium traffic roads/parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 40mm thick compacted bed of sand, and 75mm thick 6mm brocken stones compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.						
		For 7m Wide Road	1	180.00	7.00		1260.00	m ²
		For 5m Wide Road	1	80.00	5.00		400.00	
		For 3m Wide Road	1	60.00	3.00		180.00	
		Total					1840.00	m ²
		Say		1840.00	m ²	@ Rs.	1192.16	/m²
4	16.91.2	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge. 80 mm thick C.C. paver block of M-30 grade with approved color design and pattern.						
		Walkways	1	270.00	1.50		405.00	
		Total					405.00	m ²
		Say		405.00	m ²	@ Rs.	933.38	/m²
5	16.63	Providing, laying and making kerb channel 30 cm wide and 50 mm thick with cement concrete 1:3:6 (1 cement: 3 coarse sand:6 graded stone aggregate 20 mm nominal size) over 75mm bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth etc.complete and as per direction of Engineer-in-charge.						
		Kerb Stone	1	260.00	0.30		78.00	
		Total					78.00	m ²

		say		78.00	m²	@ Rs.	558.10	/m²	43532.00
6	16.69	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarsesand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).							
		Kerb Stone	1	260.00	0.20	0.30	15.60		
		Total					15.60	m ²	
		say		15.60	m²	@ Rs.	7322.48	/m²	114231.00
7	16.59.1	Manufacturing, supplying and fixing retro reflective sign boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bilingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade. Mandatory/ Regulatory sign boards of 900 mm diametre with support length of 3750 mm							
		For Internal Roads & Walkways	5				5.00		
		Total					5.00	Nos	
		say		5.00	Nos	@ Rs.	6991.90	/Nos	34960.00

8	16.59.2	Manufacturing, supplying and fixing retro reflective sign boards made up of 2 mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bilingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size, steel work to be painted with two or more coats of synthetic enamel paint of required shade. Cautionary /warning sign boards of equilateral triangular shape having each side of 900 mm with support length of 3650 mm.						
		For Internal Roads & Walkways	5			5.00		
		Total				5.00	Nos	
		say		5.00	Nos	@ Rs.	5060.37 /Nos	25302.00
STORM WATER DRAIN								
9	2.8.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. All kind of soils.						
		SWD along Roads	1	320.00	0.70	0.60	134.40	
		SWD Along Walkways	1	270.00	0.50	0.40	54.00	
		Total					188.40	m ³
		Say		188.40	m³	@ Rs.	243.08 /m³	45796.00

10	5.37.1	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level						
		SWD along Roads						
		Base Slab	1	320.00	0.70	0.10	22.40	
		Side Wall	2	320.00	0.10	0.50	32.00	
		SWD Along Walkways						
		Base Slab	1	270.00	0.50	0.10	13.50	
		Side Wall	2	270.00	0.10	0.30	16.20	
		Total					84.10	
		Say		84.10	m³	@ Rs.	9807.23	/m³
11	5.22.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete up to plinth level. Thermo-Mechanically Treated bars.						
		quantity as per item no 10		84.10	80	kg/m ³	6728	
		Total					6728.00	Kg
		say		6728.00	kg	@ Rs.	82.68	/Kg
12	4.12	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.						
		quantity as per item no 1		84.10	340	kg/m ³	28594.00	Kg
		Total					28594.00	Kg
						50kg/bag	571.88	bag
		say		571.88	Bags	@ Rs.	70.05	/bag

13	5.9.2	Centering and shuttering including strutting, propping etc. and removal of form for :for wall						
		SWD along Roads						
		Wall Outside	2	320.00		0.60	384.00	
		Wall Inside	2	320.00		0.50	320.00	
		SWD Along Walkways						
		Wall Outside	2	270.00		0.40	216.00	
		Wall Inside	2	270.00		0.30	162.00	
		Total					1082.00 m ²	
		Say		1082.00 m ²		@ Rs.	553.06 /m ²	598410.00
14	LS	Unforeseen Items						659.00
		Grand Total						5748000.00
		(Rupees Fifty Seven Lakhs Forty Eight Thousand Only)						

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
LANDSCAPING & COMPENSATORY AFFORESTATION (DSR for Horticulture)									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	2.1	Trenching in ordinary soil up to a depth of 60 cm including removal and stacking of serviceable materials and then disposing of surplus soil, by spreading and neatly leveling within a lead of 50 m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or / and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).							
		Lawn Area (800sqm Area)	1	750.00		0.60	450.00		
		Total					450.00	m ³	
		Say		450.00	m³	@ Rs.	66.98	/m³	30140.00
2	2.2	Supplying and stacking of good earth at site including royalty and carriage upto 5 km complete (earth measured in stacks will be reduced by 20% for payment).							
		50% of Excavated earth	1	0.50		450.00	225.00		
		Total					225.00	m ³	
		say		225.00	m³	@ Rs.	485.79	/1m³	109303.00
3	2.4.3	Supplying and stacking at site dump manure from approved source, including carriage upto 5 km complete (manure measured in stacks will be reduced by 8% for payment)							
		50% of Excavated earth	1	0.50		450.00	225.00		
		Total					225.00	m ³	
		say		225.00	m³	@ Rs.	305.53	/1m³	68743.00
4	2.9	Mixing earth and sludge or manure in the required proportion specified or directed by the Officer-in-charge							
		Lawn Area	1	750.00		0.60	450.00		
		Total					450.00	m³	
		Say		450.00	m³	@ Rs.	31.19	/m³	14035.00
5	2.8	Spreading of sludge, dump manure and/or good earth in required thickness as per direction of officer-in-charge (cost of sludge, dump manure and/ or good earth to be paid separately).							

		Lawn Area	1	750.00		0.60	450.00		
		Total					450.00	m³	
		Say		450.00	m³	@ Rs.	45.21	/m³	20345.00
6	2.33	Providing and laying Neelgiri/Mexican grass turf with earth 50mm to 60mm thickness of existing ground prepared with proper level and ramming with tools wooden (Dhurmos) and than rolling the surface with light roller make the surface smoothen and light watering with sprinkler and maintenance for 30 days or more till the grass establish properly, as per direction of officer-in-charge.							
		Lawn Area	1	750.00			750.00		
		Total					750.00	m²	
		Say		750.00	m²	@ Rs.	297.86	/m²	223393.00
7	2.14.4	Digging holes in ordinary soil and refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% : 1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish and surplus earth, if any, with all leads and lifts (cost of manure, sludge or extra good earth if needed to be paid for separately) :Holes 45 cm dia, and 45 cm deep							
		LS	600				600	Nos	
		Total					600.00	Nos	
		Say		600.00	Nos	@ Rs.	19.57	/Each	11745.00

8	2.16	Providing and fixing M.S. flat iron tree guard 60 cm dia and 2 m high, above ground consisting 4 nos 25 x 6 mm, 2.25 m long and 8 nos 25 x 3 mm 2 m long verticals M.S. flats, riveted to 3 nos 25 x 6 mm M.S. flat iron rings in two halves, fixing together at site with required six numbers of 8 mm dia and 30 mm long bolts, including painting two coats with synthetic enamel paint of approved brand and manufacture over a coat of primer. One name plate of 1 mm thick M.S. sheet of size 250x100 mm shall be welded to the tree guard near the middle height and lettered CPWD / PWD/ any other approved name. The tree guard shall be suitably fixed to the ground by embedding four legs of tree guard in pits of suitable dia and to a depth of 25 cm, refilling the pits with soil and ramming, complete in all respect as per satisfaction and direction of Officer-in-charge.							
		LS	50				50	Nos	
		Total					50.00	Nos	
		say		50.00	Nos	@ Rs.	4435.21	/Each	221760.00
8	7.5	Supply and stacking of Azadirachta indica (Neem) plant of height 120130cm in big polybag of size 25 cm as per direction of the officer-in-charge.							
		LS	50				50	Nos	
		Total					50.00	Nos	
		Say		50.00	Nos	@ Rs.	87.65	/Each	4382.00
9	7.24	Supply and stacking of Delonix regia (Gulmohar) plant of height 150-165 cm. in big poly bags of size 25 cm as per direction of the officer-in-charge							
		LS	50				50	Nos	
		Total					50.00	Nos	
		Say		50.00	Nos	@ Rs.	87.65	/Each	4382.00
10	7.26	Supply and stacking of Ficus benjamina (green) plant of height 120-135 cm. with 6-8 branches and lush green foliage in g. bags of size 25 cm as per direction of the officer-in-charge.							
		LS	50				50	Nos	
		Total					50.00	Nos	

		Say		50.00	Nos	@ Rs.	146.08	/Each	7304.00
11	7.26	Supply and stacking of Plumeria acutifolia plant of height 150-165 cm. with 3-4 branches in big size HDPE bag as per direction of the officer-in-charge.							
		LS	100				100	Nos	
		Total					100.00	Nos	
		Say		100.00	Nos	@ Rs.	292.16	/Each	29216.00
12	7.50	Supply and stacking of Lagerstroemia flosreginae plant of height 150-165 cm.in big poly bag of size 25 cm as per direction of the officer-in-charge.							
		LS	100				100	Nos	
		Total					100.00	Nos	
		Say		100.00	Nos	@ Rs.	175.30	/Each	17530.00
13	2.57	Plantation of Trees, Shrubs, and Hedge at site i/c watering and removal of unserveiceable material's as per direction of officer in charge (excluding cast of plant & water)							
		LS	600				600	Nos	
		Total					600.00	Nos	
		Say		600.00	Nos	@ Rs.	6.21	/Each	3725.00
14	LS	Unforeseen Items							997.00
		Grand Total							76700
(Rupees Seven Lakhs Sixty Seven Thousand Only)									

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
MECHANICAL ITEMS									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
1	MR	<p>Sewage Transfer Pump Supply at site,erection, testing and commissioning of self priming, non clog centrifugal submersible sewage transfer pump for rated continuous duty and efficiency (from reputed manufacturers complying to IS 1520 and conforming to other relevant standards), CI construction, bronze impeller,complete with 3 phase motor, SS shaft, with automatic pedestal coupling, delivery bend, required wire chain, washers, SS bolts etc including Double Flange DI/CI PN 1 rating sluice valves, Pressure gauges, Double Flange DI/CI PN 1 rating NRVs with DI/I/Pipes connecting common delivery suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects with detachable arrangements, level indicators for automatic switch on & switch off as required by the standard specifications complete with all accessories as per technical specification or as directed by Engineer In Charge.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ</p> <p>Capacity: 312.5 m³/hr. (Average flow of 100LPS & with a peak flow of 140LPS) Head: 10 m. Three phase Motor with IP 68 protection (1W+1S)</p>							
		From Equalization Tank to MBBR Tank	2				2.00	Nos	
		Total					2.00	Nos	
		Say			2 Nos	@ Rs.	575000.00	/Nos	1150000.00

2	MR	<p>Mixing Equipment Supply,erection, testing and commissioning of direct driven floating mixers of approximately 4HP or as required with the rotating arm for rated continuous duty mixing and efficiency, complete set with 3 phase motor, including rotary paddles, gear box, cables, wall mooring and anchoring system with all electro mechanical equipments etc complete for the equalization tank of the proposed 5MLD STP. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ or as directed by the Engineer in Charge Capacity: 400 m³/hr. (120LPS) Motor : 4HP,three phase (1W+1S)</p>							
		Into the Equalisation Tank	2				2.00	Nos	
		Total					2.00	Nos	
		Say			2 Nos	@ Rs.	120000.00	/Nos	240000.00
3	MR	<p>Sludge Thickener Feed Pump Supply at site,erection, testing and commissioning of self priming, non clog centrifugal submersible sewage transfer pump for rated continuous duty and efficiency (from reputed manufacturers complying to IS 1520 and conforming to other relevant standards), CI construction, bronze impeller,complete with 3 phase motor, SS shaft, with automatic pedestal coupling, delivery bend, required wire chain, washers, SS bolts etc including Double Flange DI/CI PN 1 rating sluice valves, Pressure gauges, Double Flange DI/CI PN 1 rating NRVs with DI/I/Pipes connecting common delivery suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects with detachable arrangements, level indicators for automatic switch on & switch off as required by the standard specifications complete with all accessories as per technical specification or as directed by Engineer In Charge.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ Capacity: 10.5 m³/hr. (3LPS) Head: 150 m. Motor : three phase motor with IP 68 Protection</p>							

		From Sludge Sump to Sludge Thickener Sump	2				2.00	Nos	
		Total					2.00	Nos	
		Say		2 Nos	@ Rs.	37500.00	/Nos		75000.00
4	MR	<p>Filter Press Feed Pump Supply at site,erection, testing and commissioning of self priming, non clog centrifugal submersible sewage transfer pump for rated continuous duty and efficiency (from reputed manufacturers complying to IS 1520 and conforming to other relevant standards), CI construction, bronze impeller,complete with 3 phase motor, SS shaft, with automatic pedestal coupling, delivery bend, required wire chain, washers, SS bolts etc including Double Flange DI/CI PN 1 rating sluice valves, Pressure gauges, Double Flange DI/CI PN 1 rating NRVs with DI/I/Pipes connecting common delivery suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects with detachable arrangements, level indicators for automatic switch on & switch off as required by the standard specifications complete with all accessories as per technical specification or as directed by Engineer In Charge.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ</p> <p>Capacity: 4 m³/hr. (1.5LPS) Head: 15 m. Motor : three phase motor with IP 68 Protection</p>							
		From Sludge Thickener to Centrifuge	2						
		Total							
		say		2 Nos	@ Rs.	38500.00	/Nos		77000.00

5	MR	<p>Centrate Pump Supply at site,erection, testing and commissioning of self priming, non clog centrifugal submersible sewage transfer pump for rated continuous duty and efficiency (from reputed manufacturers complying to IS 1520 and conforming to other relevant standards), CI construction, bronze impeller,complete with 3 phase motor, SS shaft, with automatic pedestal coupling, delivery bend, required wire chain, washers, SS bolts etc including Double Flange DI/CI PN 1 rating sluice valves, Pressure gauges, Double Flange DI/CI PN 1 rating NRVs with DI/I/Pipes connecting common delivery suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects with detachable arrangements, level indicators for automatic switch on & switch off as required by the standard specifications complete with all accessories as per technical specification or as directed by Engineer In Charge.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ</p> <p>Capacity: 10 m³/hr. (1.5LPS) Head: 15 m. Motor : three phase motor with IP 68 Protection</p>						
		From Centrate Sump to Equalization Tank	2					
		Total						
		say			2 Nos	@ Rs.	35000.00	/Nos

6	MR	<p>Treated Water Pump Supplying and fixing of mono block centrifugal pump, for rated continuous duty and best efficiency CI construction, CI impeller, complete with 3 phase motor,FRP motor cover, pressure gauge, operation on 415+/-10% volts, 50 HZ, AC power supply etc including sluice valves, Pressure gauges, NRVs with DI/I/Pipes connecting common delivery suitable for complete in all respects as required by the standard specifications and shall suit following capacities complete with all accessories as per technical specification.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ Capacity: 20 m³/hr. (1.5LPS) Head: 15 m. Motor : three phase motor with IP 68 Protection</p>							
		From Treated Water Tank to Reuse Application	2						
		Total							
		say			2 Nos	@ Rs.	35000.00	/Nos	70000.00
7	MR	<p>Filter Feed Pump Supplying and fixing of mono block centrifugal pump, for rated continuous duty and best efficiency CI construction, CI impeller, complete with 3 phase motor,FRP motor cover, pressure gauge, operation on 415+/-10% volts, 50 HZ, AC power supply etc including sluice valves, Pressure gauges, NRVs with DI/I/Pipes connecting common delivery suitable for complete in all respects as required by the standard specifications and shall suit following capacities complete with all accessories as per technical specification.Pumps shall have dry run protection & high/ low level alarm. Electrical Control panel shall be supplied with the pump as per the specifications in the Electrical BOQ Capacity: 250 m³/hr. (70LPS) Head: 30m. Motor : three phase motor with IP 68 Protection</p>							
		From FFT to Filters	2						

		Total						
		say		2 Nos	@ Rs.	750000.00	/Nos	1500000.00
8	MR	Air Blower Supply,erection, testing and commissioning of twin lobe air blower for indoor application complete with acoustic canopy, air filter, motor of 1500 rpm , pulleys, pressure gauges, pressure relief valve, acoustic hood, suction silencer with suitable flanges, common motor and compressor base frame with motor belt tightening arrangement interconnecting line with flanges including all accessories complete as per technical specification or as Directed by Engineer in Charge Capacity: 1800 m³/hr. Pressure: 0.6 kg/sqcm Motor : three phase motor with IP 68 Protection (2W + 1 S)						
		Total				3.00	Nos	
		Say		3 Nos	@ Rs.	495000.00	/Nos	1485000.00
9	MR	Bubble Diffuser for MBBR Tank Supplying at site, erection, testing & commissioning of Fine Bubble Diffuser (retrievable type using rope and pulley arrangement) for the aeration system of the MBBR Tansk (2Nos) with diffusers of sufficient size and length made of EPDM make with SS tee 1" x 1" , SS lifting hook 8 mm, SS foundation bolt 6 mm, SS C clamp suitable for 1" O.D, hose, PP Rope, PP swivel nut, PP sleeve, Silicone Washer, SS hose clamp, RCC block complete at a minimum rating of 95m ³ /hr as per technical specification or as directed by the Engineer in Charge						
		Total				2.00	Nos	
		Say		2 Nos	@ Rs.	180000.00	/Nos	360000.00

10	MR	Bubble Diffuser for Equalisation Tank Supplying at site, erection, testing & commissioning of Coarse Bubble Diffuser (retrievable type using rope and pulley arrangement) for the aeration system of the Equalization Tank with diffusers of sufficient size and length made of EPDM make with SS tee 1" x 1", SS lifting hook 8 mm, SS foundation bolt 6 mm, SS C clamp suitable for 1" O.D, hose, PP Rope, PP swivel nut, PP sleeve, Silicone Washer, SS hose clamp, RCC block complete at a minimum rating of 95m ³ /hr as per technical specification or as directed by the Engineer in Charge							
		Total				2.00	Nos		
		Say		2.00	Nos	@ Rs.	69500.00	/Nos	139000.00
11	MR	Air Grid Pipe Supply and installation of air pipes (HDPE) aly into valves and other accessories as required for the blowers to various tanks as a complete unit							
		Total				1.00	Set		
		Say		1	Set	@ Rs.	150000.00	/Nos	150000.00
12	MR	MBBR Media Supplying and fixing of non- clogging freely moving biomass media of polypropylene construction Sp.Gravity 0.93 for MBBR reactor with surface area not less than 450m ² /m ³ , length 16-20 mm, dia 22 mm complete as per technical specification or as directed by Engineer in Charge							
		Total				270.00	m ³		
		Say		270.00	m³	@ Rs.	9000.00	/1m³	2430000.00
13	MR	Gas Chlorinator system Supply at site, erection, testing and commissioning of electronic chlorine dosing system (gas filled Chlorine) with all wetted parts in PP construction suitable for pumping Chlorine gas including booster pumps, valves, suction and delivery lines using heavy duty PVC tubes, gas line diffusers, emergency repair kit, FRP motor cover etc.complete with all accessories. Capacity : 500gm to 1kg/hr with 2nos of chlorine tonners							
		Total				2.00	Set		

		Say		2	Nos	@ Rs.	400000.00	/Nos	800000.00
14	MR	Electromagnetic flow meter Supply, installation, testing and commissioning of electro magnetic/ Ultra Sonic D/F permanent conduit flow meter with flow recorder, digital flow indicator, flow integrator with sensors, 7digit totaliser, transmittal and digital display arrangements and all accessories including housing arrangements, internal data logger, to save upto 2000 linesof data etc. complete to fix as per the specifications . Flow range of 10 to 600LPS, One display shall be installed at the main control centre							
		Total					2.00	Nos	
		Say		2	Nos	@ Rs.	75000.00	/Nos	150000.00
15	MR	Lifting Mechanism for Air Grid Supply , installation & commissioning of the manually operating chain pulley mechanism to lift the equipments from a height not less than 5m including all equipments , foundation etc							
		For Air Grid					5.00	Nos	
		Say		5	Nos	@ Rs.	10000.00	/Nos	50000.00
16	MR	SS Gates Supplying at site, installation testing and commissioning of all materials, fabricating, fixing and commissioning of spindle operated open channel sluice gates/shutter of DI make with a peak flow of 145LPS and velocity less than 1m/s at the inleta and outlet of the screen channel to suit the channel sizes as per drawings, tender specifications and as directed by Engineer in Charge							
		Total					8.00	Nos	
		Say		8.00	Nos	@ Rs.	15000.00	Set	120000.00

17	MR	Mechanical Coarse Screen Supplying all materials, fabricating, fixing and commissioning of mechanical SS Screen Bar of following or nearest suitable size made of flats having 50mm x 10mm and 20mm clear space across the screen chamber channel (fixed type) at 70° inclination including cost of mechanical screen grab bucket and arrangement for automated scrapping clogged materials suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects as required by the standard specifications complete with all accessories as per technical specification						
		Total					1.00	Set
		Say		1	Set	@ Rs.	60000.00	Set
18	MR	Mechanical Fine Screen Supplying all materials, fabricating, fixing and commissioning of mechanical SS Screen Bar of following or nearest suitable size made of flats having 50mm x 10mm and 6mm clear space across the screen chamber channel (fixed type) at 70° inclination including cost of mechanical screen grab bucket and arrangement for automated scrapping clogged materials suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. complete in all respects as required by the standard specifications complete with all accessories as per technical specification						
		Total					1.00	Set
		Say		1	Set	@ Rs.	100000.00	Set
19	MR	Manual Coarse Screen Supplying all materials, fabricating, fixing and commissioning of Manual SS Screen Bar of following or nearest suitable size made of flats having 50mm x 10mm and 20mm clear space across the screen chamber channel (fixed type) at 45° inclination including cost of screen grab bucket and arrangement for manual scrapping clogged materials as per drawings, tender specifications and as directed by Engineer in Charge						
		Total					1.00	Set
		Say		1	Set	@ Rs.	30000.00	Set

20	MR	Gritting Mechanism Supplying at site all electro-mechanical equipments, fabricating, fixing and commissioning of the gritting mechanism to suit gritting chamber sizes as per drawings, tender specifications or as directed by Engineer in Charge.							
		Total				2.00	Nos		
		Say		2.00	Nos	@ Rs.	470000.00	Set	940000.00
21	MR	Clarifier Mechanism Supplying all materials, fabricating, fixing and commissioning of Bridge mounted central driven type clarifier mechanical rake for the half diameter of the Clarifier Tank as per drawings including all feed well, drive and rake mechanism with removable scrappers with sufficient 3phase motor and gears etc complete as per tender specifications and as directed by Engineer in Charge							
		Total				1.00	Nos		
		Say		1.00	Nos	@ Rs.	700000.00	/Nos	700000.00
22	MR	Sludge Thickener Mechanism Supplying all materials, fabricating, fixing and commissioning of Bridge mounted central driven type sludge thickening mechanism for the full diameter of the Sludge Thickener tank as per drawings including all feed well, drive and rake mechanism with removable scrappers with sufficient 3phase motor and gears etc complete as per tender specifications and as directed by Engineer in Charge							
		Total				1.00	Nos		
		Say		1.00	Nos	@ Rs.	270000.00	/Nos	270000.00
23	MR	Poly Electrolyte dosing system Supplying and fixing of electronic dosing pump with all wetted parts in PP construction suitable for pumping Poly Electrolyte solution including cost of suitable agitators, control gears, valve, suction and delivery lines using heavy duty PVC tubes, HD, FRP motor cover etc. and complete with all accessories to prepare 5% solution of 0.2kg/hr							
		Total				2.00	Nos		
		Say		2.00	Nos	@ Rs.	80000.00	/Nos	160000.00

24	MR	High Pressure Jet Pump Supply and commissioning of portable high pressure water pumps (along with 500litre water tanks to supply water to the pumps) all mounted on a suitable medium vehicle platform for clearing the wells, pumps, and other equipments using high pressure gauges, safety arrangements etc complete as per standards							
		Total				1.00	Nos		
		Say		1	Nos	@ Rs.	30000.00	/Nos	30000.00
25	MR	Portable Hoist - 500kg Supply and commissioning of portable Monkey type Hoist with capacity upto 500kg, with lifting height of 6m, 5HP Motor, 415V 50Hz all mounted on a suitable medium vehicle platform for easy shifting of equipments and materials whenever required with complete set as per standards							
		Total				1.00	Nos		
		Say		1	Nos	@ Rs.	90000.00	/Nos	90000.00
26	MR	Wheel Barrow Supply of three wheel type wheel barrow of capacity 200ltrs							
		Total				1.00	Nos		
		Say		1	Nos	@ Rs.	25000.00	/Nos	25000.00
27	MR	Aluminium Ladder Supply, Installation of aluminium ladders with caging on each elevated structures of required height as per the drawings or as directed by the Engineer in Charges							
		Ladder (4m Height)	4			4.00	Nos		
		Total				4.00	/Nos		
		Say		4	Nos	@ Rs.	6000.00	/Nos	24000.00
28	MR	FRP Ladder Supply, Installation of FRP ladders with caging on each elevated structures of required height as per the drawings or as directed by the Engineer in Charges							
		Ladder (4.5m Height)	6			6.00	Nos		

		Total				6.00	/Nos		
		Say		6	Nos	@ Rs.	30000.00	/Nos	180000.00
29	MR	Monorail Crane Supply, Installation and commissioning in position mechanically operated mono rail crane of load bearing capacity of 2tonnes suitable for operation on 415+/-10% volts, 50 HZ, AC power supply etc. with 6m lift & span upto 20m complete in all respects as required by the standard specifications complete with all accessories as per technical specification							
		Monorail Crane	1			1.00	Nos		
		Total				1.00	/Nos		
		Say		1	Nos	@ Rs.	350000.00	/Nos	350000.00
30	MR	Pressure sand filter Supply at site, erection and commissioning of pressure sand filter vertical type pressure vessel fabricated with MS construction with epoxy coating inside and anti corrosive treatment outside, two coats of paint outside (pain quality as instructed by Engineer) withstand a minimum test pressure of 7.0Kg/cm ² with as operating pressure of 3.5 Kg/cm ² , complete with valves and dual filter media including graded pebble and sand and antracite , frontal piping, butterfly valves, internals, pressure gauges, strainers, supporting structure, back wash arrangement, etc and all other accessories tested twice the working pressure supported over pebble/gravel with inspection manholes etc complete as per specification or as directed by Engineer in Charge. The scope shall include complete piping with MS fabricated pipes and specials including valves Flow rate - 250 m ³ /hr. Diameter - 3.0m. Height - 2.5m							
		Total				3.00	Nos		
		Say		3	Nos	@ Rs.	450000.00	/Nos	1350000.00

31	MR	Activated Carbon filter							
		Supply at site, erection and commissioning of Activated Carbon filter vertical type pressure vessel fabricated with MS construction with epoxy coating inside and anti corrosive treatment outside, two coats of paint outside (pain quality as instructed by Engineer) withstand a minimum test pressure of 7.0Kg/cm ² with as operating pressure of 3.5 Kg/cm ² , complete with valves and filter media including activated carbon of approved grade and quality , frontal piping, butterfly valves, internals, pressure gauges, strainers, supporting structure, back wash arrangement, etc and all other accessories tested twice the working pressure supported over pebble/gravel with inspection manholes etc complete as per specification or as directed by Engineer in Charge. The scope shall include complete piping with MS fabricated pipes and specials including valves Flow rate - 250 m ³ /hr. Diameter - 3.0m. Height - 2.5m							
		Total				3.00	Nos		
		Say		3	Nos	@ Rs.	475000.00	/Nos	1425000.00
32	MR	Centrifuge System							
		Supply at site, installation and commissioning of filter press /centrifuge system. Filter Press shall be automated, recessed type press with SS fabricated structure pipe button surface and SS flat parallel bar, with PP cloth. Filter operations to be mechanical. Outlet cake consistency should not be more than 35% moisture. The capacity of the filter press shall be 1cum/hr . The Filter Press Unit shall be mounted on a platform and all around drain system to be provided to prevent the filtrate water from contaminating the entire surroundings as per the specifications or as directed by the engineer in charge							
		Total				2.00	Nos		
		Say		2	Nos	@ Rs.	300000.00	/Nos	600000.00

33	10.25.1	Structural Steel Work Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete						
		Total				50000.00	kg	
		Say	50000.00	Kg	@ Rs.	96.12	/kg	4806032.00
34	10.26.3	Structural Steel Work Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. G.I. pipes						
		Total				15000.00	kg	
		Say	15000.00	Kg	@ Rs.	146.45	/kg	2196678.00
STP INPLANT PIPING								
35	18.73	Providing and laying Double Flanged (Screwed/ Welded) Centrifugally (Spun) Ductile Iron Pipes of Class K 9 conforming to IS: 8329 :						
	1	100 mm dia Ductile Iron Double Flanged				20.00	m	
		Say	20.00	m	@ Rs.	2012.18	/m	40244.00
	2	150 mm dia Ductile Iron Double Flanged				20.00	m	
		Say	20.00	m	@ Rs.	3019.62	/m	60392.00
	3	200 mm dia Ductile Iron Double Flanged				20.00	m	
		Say	20.00	m	@ Rs.	3806.26	/m	76125.00
	4	250 mm dia Ductile Iron Double Flanged				0.00	m	
		Say	0.00	m	@ Rs.	5403.86	/m	0.00

	5	300 mm dia Ductile Iron Double Flanged					0.00	m	
		Say		0.00	m	@ Rs.	6941.79	/m	0.00
	6	350 mm dia Ductile Iron Double Flanged						m	
		Say		0.00	m	@ Rs.	8745.52	/m	0.00
	7	400 mm dia Ductile Iron Double Flanged						m	
		Say		0.00	m	@ Rs.	11233.48	/m	0.00
	8	450 mm dia Ductile Iron Double Flanged					40.00	m	
		Say		40.00	m	@ Rs.	11824.96	/m	472998.00
	9	500 mm dia Ductile Iron Double Flanged						m	
		Say		0.00	m	@ Rs.	16727.77	/m	0.00
	10	550 mm dia Ductile Iron Double Flanged						m	
		Say		0.00	m	@ Rs.	22155.08	/m	0.00
36	18.69.1	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS : 9523 - Upto 600mm dia							
			0	0.00			0.00	Kg	
			0	0.00			0.00	Kg	
		Total					0.00	Kg	
		say	-	Qn	@ Rs.	23675.84	Qn		0.00
37	OBS	Providing and fixing uPVC pipes including jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge.							
	1	315mm dia 6Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	4238.03	/m	0.00
	2	250mm dia 6Kgf/cm ²					0.00	m	

		Say		0.00	m	@ Rs.	2676.74	/m	0.00
3		200mm dia 6Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	1681.68	/m	0.00
4		160mm dia 6Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	1090.73	/m	0.00
5		110mm dia 6Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	571.87	/m	0.00
6		90mm dia 6Kgf/cm ²						m	
		Say		0.00	m	@ Rs.	420.51	/m	0.00
7		75mm dia 6Kgf/cm ²						m	
		Say		0.00	m	@ Rs.	319.35	/m	0.00
8		63mm dia 6Kgf/cm ²						m	
		Say		0.00	m	@ Rs.	255.93	/m	0.00
9		50mm dia 6Kgf/cm ²						m	
		Say		0.00	m	@ Rs.	197.04	/m	0.00
10		315mm dia 10Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	6631.30	/m	0.00
11		250mm dia 10Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	4186.69	/m	0.00
12		200mm dia 10Kgf/cm ²					0.00	m	
		Say		0.00	m	@ Rs.	2616.34	/m	0.00
13		160mm dia 10Kgf/cm ²					0.00	m	

		Say		0.00	m	@ Rs.	1692.25	/m	0.00	
	14	110mm dia 10Kgf/cm ²					0.00	m		
		Say		0.00	m	@ Rs.	860.27	/m	0.00	
	15	90mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	597.18	/m	0.00	
	16	75mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	449.20	/m	0.00	
	17	63mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	343.50	/m	0.00	
	18	50mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	255.93	/m	0.00	
	19	40mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	194.02	/m	0.00	
	20	32mm dia 10Kgf/cm ²					200.00	m		
		Say		200.00	m	@ Rs.	159.29	/m	31858.00	
	21	25mm dia 10Kgf/cm ²					100.00	m		
		Say		100.00	m	@ Rs.	135.13	/m	13513.00	
	22	20mm dia 10Kgf/cm ²						m		
		Say		0.00	m	@ Rs.	121.54	/m	0.00	
		Unforeseen for launders & other misc items							2160.00	
		Grand Total							22900000.00	
		(Rupees Two Crore Twenty Nine Thousand Only)								

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI									
ELECTRICAL WORKS									
Item no	Item Code	Description	No	L	B	H	Quantity	Unit	Amount
SUB STATION COMPONENTS									
1		10kA Surge (Lightning Arrester) Supply & Installation of Heavy Duty hot dipped galvanized 10kA lightning arrester suitable for the 11kV incoming line complying IS: 3070 (Part - III) & IEC 60099 - 4 (2009) 50Hz, rated voltage of 12kV with a operating load of 10kV with terminals made of MS/Aluminium with Zinc plating full set or as directed by the Engineer in Charge							
		Surge Arrester					2.00	Nos	
		Total					2.00	Nos	
		Say		2.00	Nos	@ Rs.	4000.00	/Each	8000.00
2		11KV Drop Out Fuse Set (DO Fuse Unit) Supply & Installation of distribution fuse cutouts which shall be indoor, open, drop-out expulsion type fuse cutouts suitable for installation in 50 Hz, 11 KV distribution system. The rated voltage shall be 12 KV. The rated current shall be 100 A. The cutouts shall be of single vent type (downward) having a front connected fuse carrier suitable for angle mounting. All ferrous parts shall be hot dip galvanized in accordance with the latest version of IS : 2632. Nuts and bolts shall conform to IS : 1364. Spring washers shall be electro-galvanized. The Fuse Unit shall comply IS: 9385 (part-I to III) in all aspects or as directed by the Engineer in Charge							
		DO Fuse Set					3.00	Nos	
		Total					3.00	Nos	
		Say		3.00	Nos	@ Rs.	2000.00	/Each	6000.00

3	250kVA Indoor Transformer Supplying, installation, testing and commissioning of 250KVA , 11KV/433V, 3 Phase, 50 Hz, Dyn 11, indoor ONAN type, copper wound transformer with OFF load tap changing arrangement on HV side in steps of +/- 2.5% & -7.5%, having cable end boxes on HV side suitable for 3x300sqmm XLPE cable of 11 KV grade and 400Amp. bus trunking arrangement on LV side complete with all accessories i/c first filling of filtered dehydrated oil and confirming to IS 2026 (Part 1 to Part 5) & as per specification attached complete in all respects as required at site or as directed by the Engineer In Charge							
	Transformer						1.00	Nos
	Total						1.00	Nos
	Say		1.00	Nos	@ Rs.	450000.00	/Each	450000.00
4	CT - PT Unit Supplying, installation, testing and commissioning of Indoor type Standard 11KV CT-PT Unit 3Phase Dry type (with Suitable CT Ratio for the 250KVA 11/0433 KV, 3Phase, 50 Hz, Dyn 11, indoor ONAN type, copper wound distribution transformer)confirming to IS 2026 (Part 1 to Part 5) & as per specification attached complete in all respects as required at site or as directed by the Engineer In Charge							
	CT-PT Unit						1.00	Nos
	Total						1.00	Nos
	Say		1.00	Nos	@ Rs.	65000.00	/Each	65000.00

5		KWH Meter with TP Isolator Switch Supplying, installation, testing and commissioning of Indoor type S3phase 415V, 50Hz, wall mounted MS Cubicle type panel board for the Digital Energy Meter as well as 630A TP isolator switch including all inter connections, wiring in all etc using 14 gauge CRCA sheet painted with 2coats of superior quality enamel paint of approved color over a coat of superior quality iron primer of approved quality as per specification complete in all respects as required at site conforming to relevant BIS standards and KSEB standards or as directed by the Engineer In Charge. 1. Digital Energy Meter - Ac three phase static energy meter of rating 10 -60A. 2. 630A TP Isolator switch preferably 4Pole ACB							
		Switch Board Panel					1.00	Nos	
		Total					1.00	Nos	
		Say		1.00	Nos	@ Rs.	200000.00	/Each	200000.00
6	5.6	Earthing Equipments Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.							
		Earth Sets					4.00	Nos	
		Total					4.00	Nos	
		Say		4.00	Nos	@ Rs.	12108.57	/Each	48434.00
7	5.10	Earthing Equipments Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.							
		Earth Sets	4	4.00			16.00	m	
		Total					16.00	m	
		Say		16.00	m	@ Rs.	1273.82	/m	20381.00
		Grand Total							797815.00
		(Rupees Eleven Lakhs Sixty Thousand Only)							

DIESEL GENERATOR									
8	MR	<p>250KVA Diesel Generator Providing, Installing, Testing and Commissioning of ‘Silent Type’ Diesel Generating set alongwith having Prime Power Rating of 250 KVA, 415 volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 Hz, 3 phase system& for 0.85 Load Factor and consisting of the followings: (i)Diesel Engine: Diesel engine 4 stroke water cooled, electric start, of suitable BHP at 1500 RPM suitable for above output of alternator at 40 Degree C, 50% RH & at 1000 Meter MSL and conforming to BS 5514, BS 649, IS 10000, capable of taking 10% over loading for one hour after 12 hours of continuous operation. The engine will be fitted complete with all the required accessories.Engine mounted Instrument Panel fitted with and having digital display for following: (ii)Alternator : Synchronous alternator rated at 250 KVA, 415 volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at 40 Degree C, 50% RH & at 1000 Meter MSL. The alternator shall be having SPDP enclosure, brushless, continuous duty, self-excited and self-regulated through AVR conforming to IS: 4722/BS 2613 suitable for tropical conditions and with class- F/H insulation. (iii)Fuel Tank: Daily service fuel tank of 200 liters capacity fabricated out of 3 mm thick M.S. sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class ‘C’ pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications. (iv)Exhaust System: Dry exhaust manifold with hospital exhaust silencer and catalytic convertor. (v)Starting System:12V/24V DC starting system comprising of starter motors: voltage regulator and arrangement for initial excitation complete with suitable nos. of batteries (25 plates, 180 Amp. Hour capacity lead acid type) as required as per specifications. Accoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere as per specifications.</p>							
		Diesel generator	1	1.00			1.00	Nos	
		Total					1.00	Nos	
		Say			1.00	Nos	@ Rs.	1600000.00	/Each

9	MR	Auto Mains Failure Unit (AMF Panel) Fabricating, Installing, Testing & Commissioning of automatic mains failure control including auto by-pass panel, suitable for 250 KVA silent type DG set complete with relays, timers, set of CTs for metering & protection and energy analyser to indicate currents, phase and line voltages, frequency, power factor, KWH, KVARH & provision for overload, short circuit, restricted earth fault, under frequency, control cabling from AMF panel to diesel engine and elsewhere if required, all complete and inter locking including the following:1 Nos. 400 Amp 4 pole Switch Fuse Disconnecter Unit release for O/C & E/F and shunt trip,Auto/Manual/Test/Off selector switch, 2 Nos. over voltage relay, 2 Nos. reverse power relay and 2 Nos. under voltage relay, 3 Sets of current transformers 15 P 10 accuracy for protection and 15 VA class-I for metering,Energy analyser unit to indicate current voltage frequency power factor and KWH, Indicating lamps for load on mains and load on set,Fuse for instruments, Battery charger, complete with transformer/ rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment, Supply failure timer, Main supply failure monitor, Restoration timer, Control unit with three impulse automatic engine start/stop and failure to start lockout, Impulse counter with locking and reset facility, ON/OFF/Control circuit switch with indicator including all interconnecting cablings, connections & terminations as per the specifications or as directed by the Engineer In Charge						
		AMF Panel	1	1.00			1.00	Nos
		Total					1.00	Nos
		Say		1.00	Nos	@ Rs.	200000.00	/Each
9	5.6	Earthing Equipments Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.						
		Earth Sets					3.00	Nos
		Total					3.00	Nos
		Say		3.00	Nos	@ Rs.	12108.57	/Each

10	5.6	Earthing Equipments Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.							
		Earth Sets				3.00	Nos		
		Total				3.00	Nos		
		Say		3.00	Nos	@ Rs.	12108.57	/Each	36326.00
11	5.10	Earthing Equipments Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.							
		Earth Sets	3	4.00		12.00	m		
		Total				12.00	m		
		Say		12.00	m	@ Rs.	1273.82	/m	15286.00
		Grand Total						1887938.00	
		MAIN CONTROL CENTRE							
12	MR	Control Panel Design, Fabrication, Supply, Installation and commissioning of Electrical Control Panel of cubical construction with fully automated feature (indoor type) preferably floor mounted fabricated of 2mm thick CRCA Sheets compartmentised with hinge lock doors with Dust, vermi proof and powder coated with approved shade. The panel shall have enough size to accomadate the individual control centres of each equipment set with individual MCCB's/MCB of appropriate capacity and also to have provision for Busbars, ACBs & RCCB's as specified below with cable alley, interconnections having all accessories mounting and internal wiring, earth terminals, numbering etc, complete in all respect suitable for operation on 415V, 3 phase 50Hz AC supply with enclosure protection class IP 54 as required. Including supply, installation, termination testing & Commissioning of the all power and control cables as per specifications or as directed by the Engineer In Charge.							

	(i)	Incomer							
		365A TP&N with 400A Air Circuit Breaker(ACB)							
		Voltmeter (0-500V) with Selector Switch							
		Ammeter (0-500A) with Selector Switch and CT's							
		Set of three phase LED indicating Lamp							
		Set of Copper Busbars 630Amps							
		Alarm annunciators, push buttons, selector switches etc exclusively for the MCC							
	(ii)	Outgoing							
	a	Sewage Transfer Pump (25HP)							
		32A TP & N with 63A MCCB with 23 HP control panel for two pumps with fully automated Star Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation							
	b	Air Blower (34HP)							
		91A TP & N with 150A MCCB with 34 HP control panel for two Air Blowers with fully automated star/delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation							
	c	Filter Feed Pump (60HP)							
		42A TP & N with 125A MCCB with 60 HP control panel for two pumps with fully automated Star Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation							
	d	Sludge Thickener Feed Pump (1.25HP)							
		2A TP & N with 6A MCB with 1.25 HP control panel for two pumps with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required							

		for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	e	Centrifuge Feed Pump (1.0HP)				
		1.5A TP & N with 6A MCB with 1.0 HP control panel for two pumps with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	f	Centrate Feed Pump (2.0HP)				
		3A TP & N with 6A MCB with 2.0 HP control panel for two pumps with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	g	Centrifuge (5.0HP)				
		7A TP & N with 16A MCCB with 5.0 HP control panel for the Centrifuge/Filter Press with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	g	Gas Chlorinator (2.0HP)				
		3A TP & N with 6A MCB with 2.0 HP control panel for two Dosing pumps with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	h	Poly Electrolyte Dosing Pump (2.0HP)				
		3A TP & N with 6A MCB with 2.0 HP control panel for two Dosing pumps with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation				
	i	Mechanical Screens (Coarse/Fine) (2.0HP)				
		3A TP & N with 6A MCB with 2.0 HP control panel for two mechanical screens with fully automated DOL starter				

		with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation							
	j	Mixing Equipment (4.0HP)							
		5.5A TP & N with 16A MCCB with 4.0 HP control panel for the two flash mixing equipments with fully automated DOL starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for Automatic operation, selector switch for local/remote, Auto/Manual/Off operation							
	k	63A MCCB for transformer Housing Building							
	l	63A MCCB for Centrifuge Building							
	m	100A MCCB for External Lightning DB							
	n	100A MCCB as spare							
		Total				1.00	Nos		
		Say		1	Nos	@ Rs.	2000000.00	/Nos	2000000.00
		WIRING FOR EACH EQUIPMENT							
13	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.							
	1	3.5 x 400 sq. mm				0.00	m		
		Say		0.00	m	@ Rs.	4071.69	/m	0.00
	2	3.5 x 300 sq. mm				200.00	m		
		Say		200.00	m	@ Rs.	3266.77	/m	653354.00
	3	3.5 x 240 sq. mm				0.00	m		
		Say		0.00	m	@ Rs.	2720.87	/m	0.00

	4	3.5 x 185 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	2221.42	/m	0.00
	5	3.5 x 150 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	1845.10	/m	0.00
	6	3.5 x 120 sq. mm						m	
		Say		0.00	m	@ Rs.	1603.50	/m	0.00
	7	3.5 x 95 sq. mm						m	
		Say		0.00	m	@ Rs.	1344.49	/m	0.00
	8	3.5 x 70 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	1141.23	/m	0.00
	9	4 X 50 sq. mm					300.00	m	
		Say		300.00	m	@ Rs.	985.59	/m	295677.00
	10	4 X 35 sq. mm					50.00	m	
		Say		50.00	m	@ Rs.	834.59	/m	41730.00
	10	4 X 25 sq. mm					250.00	m	
		Say		250.00	m	@ Rs.	721.93	/m	180483.00
	9	4 X 16 sq. mm					100.00	m	
		Say		100.00	m	@ Rs.	619.71	/m	61971.00
	10	4 X 10 sq. mm					150.00	m	
		Say		150.00	m	@ Rs.	582.55	/m	87383.00
	10	4 X 6 sq. mm					300.00	m	
		Say		300.00	m	@ Rs.	524.47	/m	157341.00

	10	4 X 4 sq. mm					300.00	m	
		Say		300.00	m	@ Rs.	495.43	/m	148629.00
14	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.							
	1	3.5 x 300 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	28868.56	/m	0.00
	2	3.5 x 120 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	10702.70	/m	0.00
	3	3.5 x 70 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	5940.55	/m	0.00
	4	4 X 50 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	4463.12	/m	0.00
	5	4 X 35 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	3334.14	/m	0.00
	6	4 X 25 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	2490.89	/m	0.00
	7	4 X 16 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	1713.85	/m	0.00
	8	4 X 10 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	1251.57	/m	0.00

	9	4 X 6 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	894.99	/m	0.00
	10	4 X 4 sq. mm					0.00	m	
		Say		0.00	m	@ Rs.	714.96	/m	0.00
		BRASS GLANDS & ALUMINIUM LUGS							
15	9.1	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed XLPE aluminium conductor cable of 1.1 kV grade as required.							
	9.1.20	3½ X 25 sq. mm (28 mm)					0.00	Nos	
		Say		0.00	Nos	@ Rs.	375.43	/Each	0.00
	9.1.21	3½ X 35 sq. mm (32 mm)					0.00	Nos	
		Say		0.00	Nos	@ Rs.	411.95	/Each	0.00
	9.1.22	3½ X 50 sq. mm (35 mm)					0.00	Nos	
		Say		0.00	Nos	@ Rs.	517.12	/Each	0.00
	9.1.30	3½ X 300 sq. mm (70 mm)					15.00	Nos	
		Say		15.00	Nos	@ Rs.	1615.64	/Each	24235.00
	9.1.32	4 X 10 sq. mm (25 mm)					10.00	Nos	
		Say		10.00	Nos	@ Rs.	296.54	/Each	2965.00
	9.1.33	4 X 16 sq. mm (28 mm)					10.00	Nos	
		Say		10.00	Nos	@ Rs.	372.50	/Each	3725.00
	9.1.34	4 X 25 sq. mm (28 mm)					10.00	Nos	
		Say		10.00	Nos	@ Rs.	376.89	/Each	3769.00
	9.1.35	4 X 35 sq. mm (32 mm)					10.00	Nos	
		Say		10.00	Nos	@ Rs.	413.41	/Each	4134.00
	9.1.36	4 X 50 sq. mm (35 mm)					10.00	Nos	
		Say		10.00	Nos	@ Rs.	522.97	/Each	5230.00
16	2200	Supplying and fixing of Aluminium Lugs							
	2201	Aluminium lugs for 6 sq. mm cable					30.00	Nos	

		Say		30.00	Nos	@ Rs.	2.32	/Each	70.00
	2202	Aluminium lugs for 10 sq. mm cable					30.00	Nos	
		Say		30.00	Nos	@ Rs.	3.01	/Each	90.00
	2203	Aluminium lugs for 16 sq. mm cable					0.00	Nos	
		Say		0.00	Nos	@ Rs.	3.61	/Each	0.00
	2204	Aluminium lugs for 25 sq. mm cable					30.00	Nos	
		Say		30.00	Nos	@ Rs.	4.53	/Each	136.00
	2205	Aluminium lugs for 35 sq. mm cable					0.00	Nos	
		Say		0.00	Nos	@ Rs.	5.99	/Each	0.00
	2206	Aluminium lugs for 50 sq. mm cable					30.00	Nos	
		Say		30.00	Nos	@ Rs.	9.07	/Each	272.00
17	5.6	Earthing Equipments Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required. Individual 2 Earthings for Sewage Transfer Pumps, Filter Feed Pumps & Air Blowers & 3Nos of Common Earthing for the Control Centre Panel							
		Earth Sets					10.00	Nos	
		Total					10.00	Nos	
		Say		10.00	Nos	@ Rs.	12108.57	/Each	121086.00
18	5.10	Earthing Equipments Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.							
		Earth Sets	10	4.00			40.00	m	
		Total					40.00	m	
		Say		40.00	m	@ Rs.	1273.82	/m	50953.00
TRANSFORMER HOUSING, CONTROL & LABORATORY BUILDING & CENTRIFUGE BUILDING									

19	2.5.3	Power Distribution Board (Control Room) Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A, tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.) 12 way (4 + 36), Double door (i) Incoming - 63A MCCB & 63A , 100mA RCCB (ii) Outgoing Feeders - 4Nos of 25A MCCB with 25A, 30mA RCCBs (iii) Outgoing Feeders - 1Nos of 6A MCB (iv) Outgoing Feeders - 2Nos Spares							
		PDB-01	1				1.00	Nos	
		Total					1.00	Nos	
		Say			1	Nos	@ Rs.	10501.69	/Each
20	2.5.3	Power Distribution Board (Centrifuge Building) Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A, tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.) 12 way (4 + 36), Double door (i) Incoming - 63A MCCB & 63A , 100mA RCCB (ii) Outgoing Feeders - 1Nos of 40A MCCB with 40A, 100mA RCCBs (iii) Outgoing Feeders - 3Nos of 20A MCB (iv) Outgoing Feeders - 2Nos Spares							
		PDB-03	1				1.00	Nos	
		Total					1.00	Nos	
		Say			1	Nos	@ Rs.	10501.69	/Each

21	2.2.1	MCCB/MCB/RCCB Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required. 63 A, 16 kA, TPMCCB						
		Total				2.00	Nos	
		Say	2.00	Nos	@ Rs.	4700.85	/Each	9402.00
22	2.10.5	MCCB/MCB/RCCB Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
		Total				11.00	Nos	
		Say	11.00	Nos	@ Rs.	1301.57	/Each	14317.00
23	2.15.1	MCCB/MCB/RCCB Supplying and fixing following rating, four pole, (three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 40 A						
		Total				2.00	Nos	
		Say	2.00	Nos	@ Rs.	3112.96	/Each	6226.00
24	2.15.3	MCCB/MCB/RCCB Supplying and fixing following rating, four pole, (three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 63 A						
		Total				2.00	Nos	
		Say	2.00	Nos	@ Rs.	2968.35	/Each	5937.00
		WIRING & LIGHTING ACCESSORIES						
25	1.24	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.						

	1.24.1	5/6A Switch					72.00	Nos	
		Say		72.00	Nos	@ Rs.	122.71	/Each	8835.00
	1.24.2	2 way 5/6 A switch					0.00	Nos	
		Say		0.00	Nos	@ Rs.	144.62	/Each	0.00
	1.24.3	15/16 A switch					10.00	Nos	
		Say		10.00	Nos	@ Rs.	166.53	/Each	1665.00
	1.24.4	3 pin 5/6 A socket outlet					12.00	Nos	
		Say		12.00	Nos	@ Rs.	118.32	/Each	1420.00
	1.24.5	6 pin 15/16 A socket outlet					10.00	Nos	
		Say		10.00	Nos	@ Rs.	223.50	/Each	2235.00
	1.24.6	Telephone socket outlet					4.00	Nos	
		Say		4.00	Nos	@ Rs.	140.24	/Each	561.00
26	1.22.11	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc. as required. 200 x 150 x 100 Deep							
		GI Box					12.00	Nos	
		Say		12.00	Nos	@ Rs.	337.44	/Each	4049.00
27	1.27.6	Supplying and fixing following size/ modules, GI box alongwith modular base & cover plate for modular switches in recess etc. as required.							
		12 Module (200 mmX150 mm)					12.00	Nos	
		Say		12.00	Nos	@ Rs.	502.52	/Each	6030.00
28	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 A & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.							
							10.00	Nos	
		Say		10.00	Nos	@ Rs.	593.08	/Each	5931.00
29	1.21.2	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.							
		25mm					250.00	m	

		Say		250.00	m	@ Rs.	100.80	/m	25199.00
30	1.14.7	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. For Building wiring. 4 X 2.5 sq. mm + 2 X 2.5 sq. mm earth wire							
		Total					150.00	m	
		Say		150.00	m	@ Rs.	314.07	/m	47111.00
31	1.14.8	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. For Building wiring. 4 X 4 sq. mm + 2 X 4 sq. mm earth wire							
		Total					100.00	m	
		Say		100.00	m	@ Rs.	410.48	/m	41048.00
32	1.14.9	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. For Building wiring. 4 X 6 sq. mm + 2 X 6 sq. mm earth wire							
		Total					50.00	m	
		Say		50.00	m	@ Rs.	577.02	/m	28851.00
33	1.14.10	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. For Building wiring. 4 X 10 sq. mm + 2 X 6 sq. mm earth wire							
		Total					0.00	m	
		Say		0.00	m	@ Rs.	782.99	/m	0.00
34	1.14.11	Wiring for circuit/ submain wiring alongwith earth wire with the following sizes of FRLS PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required. For Building wiring. 4 X 16 sq. mm + 2 X 6 sq. mm earth wire							
		Total					0.00	m	
		Say		0.00	m	@ Rs.	1070.77	/m	0.00

33	MR	Installation, testing and commissioning of pre-wired, fluorescent fitting I compact fluorescent fitting of all types, complete with all accessories and tube etc., including supplying and fixing ball and socket arrangement, 2 Nos. down rods of 20 mm dia X 1.6 mm thick steel conduit etc. as required but excluding the wiring .						
	a	36W LED Tube Set (HAVELLS or equivalent)					16.00	Nos
		Say	20.00	Nos	@ Rs.	620.00	/Each	12400.00
	b	20W LED Tube Set (HAVELLS or equivalent)					12.00	Nos
		Say	16.00	Nos	@ Rs.	400.00	/Each	6400.00
34	MR	Supply, Installation, testing and commissioning of ceiling fan, excluding wiring but including providing and fixing phenolic laminated sheet cover on the fan box etc. as required. 1200mm 3nos of leaf havells or equivalent make						
		Ceiling Fan					12.00	Nos
		Say	13.00	Nos	@ Rs.	2000.00	/Each	26000.00
35	MR	Supply ,Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required. Usha Crisp Air Premia CV (260mm) Exhaust Fan or equivalent make						
		Exhaust Fan					4.00	Nos
		Say	4.00	Nos	@ Rs.	1500.00	/Each	6000.00
36	1.49	Numbering of ceiling fan/ exhaust fan/ fluorescent fittings as required.						
							44.00	Nos
		Say	53.00	Nos	@ Rs.	40.90	/Each	2168.00
37		EARTHING AND SAFETY EQUIPMENTS Earthing with G.I. earth pipe 4.5 meter long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoa l/ coke and salt as required. Earthing for the Building						
		Total					2.00	Nos

		Say		2 Nos	@ Rs.	5364.06 /Set	10728.00	
		EXTERNAL LIGHTING						
38	2.5.3	Power Distribution Board (Control Room) Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A, tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.) 12 way (4 + 36), Double door (i) Incoming - 100A MCCB & 63A , 100mA RCCB ii) Outgoing Feeders - 10Nos of 6A MCB						
		PDB-01	1			1.00 Nos		
		Total				1.00 Nos		
		Say		1 Nos	@ Rs.	10501.69 /Each	10502.00	
39	2.2.1	MCCB/MCB/RCCB Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, etc. as required. 100 A, 16 kA, TPMCCB						
		Total				3.00 Nos		
		Say		3.00 Nos	@ Rs.	4700.85 /Each	14103.00	
40	2.10.5	MCCB/MCB/RCCB Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.						
		Total				10.00 Nos		
		Say		10.00 Nos	@ Rs.	1301.57 /Each	13016.00	

41	2.15.1	MCCB/MCB/RCCB Supplying and fixing following rating, four pole, (three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 63 A						
		Total				3.00	Nos	
		Say	3.00	Nos	@ Rs.	3362.76	/Each	10088.00
42	2.15.3	MCCB/MCB/RCCB Supplying and fixing following rating, four pole, (three phase and neutral), 415 V, residual current circuit breaker (RCCB), having a sensitivity current 30 mA in the existing MCB DB complete with connections, testing and commissioning etc. as required. 63 A						
43	OBS BASED ON DSR (E&M) 7.1	WIRING Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.						
		4 x 4 sq. mm				300.00	m	
		Say	300.00	m	@ Rs.	714.96	/m	214488.00
44	11.3.1	Poles Erection of metallic pole of following length in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required. Above 4.5 metre and upto 6.5 metre						
		Street Light Pole				20.00	Nos	
		Say	20.00	Nos	@ Rs.	4031.81	/Each	80636.00
45	12.34	Supplying and fixing of 32 mm dia X 2.00 meter long G.I. pipe (medium class) bracket for mounting of fluorescent / HPMV / HPSV street light fitting on pole including bending the pipe to the required shape, 2 Nos. 40 mm X 3 mm flat iron clamps with nuts, bolts and washer, painting the flat iron with primer and finish paint etc. as required.						

		Street Light Pole					20.00	Nos	
		Say		20.00	Nos	@ Rs.	1070.77	/Each	21415.00
46	MR	Supplying and Fixing of LUMINAIRE for street light 72W LED light (Bajaj Make Cat.No. 169620 BRTFG 72W LED) or Equivalent							
		Street Light					20.00	Nos	
		Say		20.00	Nos	@ Rs.	6800.00	/Each	136000.00
47	15.4.3	Astronomical Time Switch Supplying, installation, testing and commissioning of Astronomical time switch of following configuration to be mounted in feeder pillars / Lighting DBs for automatic switching On & OFF of street lights at sun set & sun rise or twilight (Auto ON, Auto OFF, Auto modes) with manual override facility with 12/24 hour display format with suitable battery and indication for relay status i/c programming at site complete as required. 3 output (1 output per phase) and suitable for three phase supply							
		Panel					1.00	Nos	
		Say		1.00	Nos	@ Rs.	9135.84	/each	9136.00
48		EARTHING AND SAFETY EQUIPMENTS Earthing with G.I. earth pipe 4.5 meter long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoa l/ coke and salt as required. Earthing for the Building							
		Total					4.00	Nos	
		Say		4.00	Nos	@ Rs.	5364.06	/Set	21456.00
49	MR	FIRE EXTINGUISHERS Providing and fixing carbon dioxide (CO2) type fire extinguishers conforming to IS 2878 : 1976 and cylinders fully charged of following capacity. (a) 4.5 KG at designated places							
		Total					10.00	Nos	
		Say		10.00	Nos	@ Rs.	1800.00	/Set	18000.00

50	MR	FIRE EXTINGUISHERS Supply and fixing of foam fire extinguishers, Portable type 9 lit capacity hanged on wall with bracket complete as required. at designated places							
		Total				10.00	Nos		
		Say		10.00	Nos	@ Rs.	1800.00	/Set	
								18000.00	
51	MR	SAFETY ITEMS Supply and fixing of all sorts of safety items for a substation including fire buckets, danger sign boards, safety instruction charts etc as complete							
		Total				1.00	set		
		Say		1.00	Nos	@ Rs.	50000.00	/Set	
								50000.00	
52	LS	Provisional sum for payment of construction of 600M 11KV line by KSEB for avaling 11KV power connection to STP Site						874904.00	
		Grand Total						11000000.00	
		(Rupees One Crore Ten Lakhs Only)							

OPERATION & MAINTANANCE

**CONSTRUCTION OF 5MLD SEWAGE TREATMENT PLANT AT
ELAMKULAM , KOCHI**

Operation and Maintenance Estimate

Sl. No.	Description			Expenditure (Rs)
1	Power Charges			
1	Power charges @ Rs. 5 for KWh @ 121.5KWH working at 10hrs a day.			182,250
	Total			182,250
* The rate may fluctuate according to the actual usage of plant and variation in KSEB rates				
A	Staffs for Operation			
1	Operators	3	20,000	60,000
2	Assistant Operator	3	15,000	45,000
3	General Duty Fitter	3	20,000	60,000
	Sub Total			165,000
B	Fuel For Generator (Working Half load 29litres @ 60rs/litr approx 10hrs a month)			17,400
C	Cost of miscellaneous materials including chemicals, spare parts & lubricants			
1	Gas Chlorine (300kg @ Rs.20/kg)			6,000
2	Poly Electrolyte Dose (60kg @ Rs.190/kg)			11,400
3	Spares, Lubricants & Replacements			10,000
	Sub Total			27,400
	Grand Total Per Month			392,050
	Annual Operation & Maintenance Charge			4,705,000
	Treatment Cost per day			12,890
	Unit Cost of Treatment per Kilo Liter			2.58

The rates mentioned above are the local market rates prevailing at present and the same shall be vary according to the market fluctuations. This is just an indication of the O&M costing

05 Year Annual O&M Cost considering 10% annual increase each year				
	First Year			4,705,000
	Second Year			5175500
	Third Year			5693050
	Fourth Year			6262355
	Fifth Year			6888591
	Grand Total for 5years O&M			28,720,000

OBSERVED DATA

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI						
OBSERVED DATA - CIVIL						
Item No:	Item Code	Description	Units	Quantity	Rate	Amount
1	OBS DATA BASED ON 5.37.1+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement (SRC) content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works upto plinth level				
		Details of cost for 1 cum				
		MATERIAL:				
	295	Stone Aggregate (Single	cum	0.570	1300.00	741.00
	297	Stone Aggregate (Single	cum	0.280	1300.00	364.00
	2202	Carriage of stone aggregate b	cum	0.850	103.77	88.20
	982	Coarse sand (zone III)	cum	0.425	1200.00	510.00
	2203	Carriage of coarse sand	cum	0.425	103.77	44.10
	MR	Sulphate Resistant Cement (C	T	0.340	11550.00	3927.00
	2209	Carriage of cement	T	0.340	92.24	31.36
	7318	0.50% of cement Production Cost, carriage to site, pumping to respective floors and laying in position	Kg	1.700	38.00	64.60
	004	Production cost of concrete by batch mix plant	cum	1.000	400.00	400.00
	0029	Carriage of concrete by	km/cum	10.000	23.00	230.00
	009	Pumping charges of concrete including Hire charges of pump, piping work &	cum	1.000	200.00	200.00
		LABOUR				
	155	Mason (average)	day	0.170	467.00	79.39
	114	Beldar	day	2.000	368.00	736.00
	101	Bhisti	day	0.900	407.00	366.30
	0012	Vibrator (Needle type 40 mm	day	0.070	350.00	24.50
	9999	Sundries	L.S.	13.000	1.73	22.49
		Total				7828.95
		Add water charges 1%				78.29
		Total				7907.24
		Add CPOH 15%				1186.09

		Total				9093.32
		deduct MR incl CP&OH				4516.05
		Total				4577.27
		Kochi (1.4608)				6686.48
		add MR incl CP&OH				4516.05
		Total				11202.53
		SAY	Rs	11202.53	/m ³	
2	OBS DATA BASED ON 5.37.2+5.34.1	Providing and laying in position ready mixed M-30 grade concrete for reinforced cement concrete work, using Sulphate Resistant Cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. (Note :- Cement content considered in this item is @ 340 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately). All works above plinth level upto floor V level				
		Details of cost for 1 cum				
		MATERIAL:				
	295	Stone Aggregate (Single	cum	0.570	1300.00	741.00
	297	Stone Aggregate (Single	cum	0.280	1300.00	364.00
	2202	Carriage of stone aggregate	cum	0.850	103.77	88.20
	982	Coarse sand (zone III)	cum	0.425	1200.00	510.00
	2203	Carriage of coarse sand	cum	0.425	103.77	44.10
	MR	Sulphate Resistant Cement (C	T	0.340	11550.00	3927.00
	2209	Carriage of cement	T	0.340	92.24	31.36
	7318	Plasticizer/ Super Plasticizer	Kg	1.700	38.00	64.60
	004	Production cost of concrete	cum	1.000	400.00	400.00
	0029	Carriage of concrete by	km/cum	10.000	23.00	230.00
	9	Pumping charges of concrete	cum	1.000	200.00	200.00
		LABOUR				
	155	Mason (average)	day	0.170	467.00	79.39
	114	Beldar	day	2.000	368.00	736.00
	101	Bhisti	day	0.900	407.00	366.30
	115	Coolie	day	1.880	368.00	691.84
	12	Vibrator (Needle type 40 mm	day	0.070	350.00	24.50
	9999	Sundries	L.S.	13.000	1.73	22.49
		Total				8520.79
		Add water charges 1%				85.21
		Total				8606.00
		Add CPOH 15%				1290.90
		Total				9896.90

		deduct MR incl CP&OH				4561.21	
		Total				5335.69	
		Kochi (1.4608)		1.4608		7794.37	
		add MR incl CP&OH				4561.21	
		Total				12355.58	
		SAY	Rs	12355.58	/m ³		
3	based on PWD OD 28	Dry rubble masonry with hard stone in foundation and plinth including cost of all materials, labour etc upto plinth level (modified the item 7.1.1)					
		Details of cost for 1 cum					
		MATERIAL:					
	1157	Stone for masonry work	cum	1.05	865.00	908.25	
	1154	Through and bond stone	100 nos	7.00	1260.00	88.20	
		CARRIAGE					
	2215	Carriage of soling & masonry stone 7.00x24.0x24.0x39 cm=0.16 cum 1.05cum+0.16 cum=1.21 cum	cum	1.21	122.08	147.72	
		LABOUR					
	125	Mason (for plain stone work)	Day	1.07	448.00	479.36	
	114	Beldar	Day	1.07	368.00	393.76	
	115	Coolie	Day	0.71	368.00	261.28	
	101	Bhisti	Day	0.09	407.00	36.63	
	9999	Sundries	Ls	4.42	1.73	7.65	
		Total					
		Add water charges 1%					
		Total					
		Add CPOH 15%					
		Total					
		including cost index			Total	1.4608	3941.21
		say Rs			3941.21	/1m3	
4	OBS DATA BASED ON 5.22.6	Epoxy Coated Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.					
		Details of cost for 1 quintal					
		MATERIAL:					
		Epoxy Coated Deformed twisted steel bar = 1q , Wastage = 5%, Total Steel = 1.05q					
	MR	Epoxy Coated Twisted steel & Deformed Bars	Qtl	1.050	5500.00	5775.00	
	2205	Carriage of Steel	Tonne	0.105	92.94	9.76	
	9999	Cover Block	LS	26.000	1.73	44.98	
		LABOUR					
	102	Blacksmith 1st Class	day	1.000	487.00	487.00	

	114	Beldar	day	1.000	368.00	368.00
	101	Bhisti	day	0.900	407.00	366.30
	9999	Sundries & Binding Wire	L.S.	26.910	1.73	46.55
		Total				7097.59
		Add water charges 1%				70.98
		Total				7168.57
		Add CPOH 15%				1075.29
		Total				8243.85
		deduct MR incl CP&OH				6641.25
		Total				1602.60
		Ernakulam (1.4608)				2341.08
		add MR incl CP&OH				6641.25
		Total				8982.33
		Cost of 1Kg				89.82
			SAY	Rs	89.82	/Kg
5	OBS DATA BASED ON 16.91	Providing and laying factory made chamfered edge Cement Concrete paver blocks medium traffic roads/parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 40mm thick compacted bed of sand, and 75mm thick 6mm broken stones compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.				
		Details of cost for 10 sqm				
		MATERIAL:				
	MR	Coloured inter locking C.C. paver Block (M40) (10cm thick)	sqm	10.000	600.00	6000.00
	983	Fine Sand (Zone IV)	Cum	0.400	760.00	304.00
	298	Stone Aggregate (6mm)	Cum	0.750	1300.00	975.00
	2261	Carriage of Fine sand (1 part badarpur sand : 2 parts jamuna sand)	Cum	0.650	103.77	67.45
	2202	Carriage of stone aggregate below 40mm	Cum	0.800	103.77	83.02
		LABOUR				
	123	Mason (brick layer) 1st class	day	0.750	487.00	365.25
	124	Mason (brick layer) 2nd class	day	0.750	448.00	336.00
	114	Beldar	day	1.200	368.00	441.60
	115	Coolie	day	0.750	368.00	276.00
	9999	Sundries	L.S.	30.000	1.73	51.90
		Total				8900.22
		Add water charges 1%				89.00
		Total				8989.22

		Add CPOH 15%				1348.38
		Total				10337.60
		deduct MR incl CP&OH				6900.00
		Total				3437.60
		Ernakulam (1.4608)				5021.65
		add MR incl CP&OH				6900.00
		Total				11921.65
		Cost of 1Kg				1192.16
		SAY	Rs	1192.16	/sqm	
6	OBS DATA BASED ON 19.18.3	Supplying and fixing D.I. cover with frame for manholes : 450x600 mm rectangular D.I. cover (heavy duty) the weight of the cover to be not less than 108 kg				
		Details of cost for 1 Cover				
		MATERIAL:				
	MR	Heavy Duty DI manhole Cover with Frame (450 x 600)	Nos	1.000	5500.00	5500.00
	9977	Carriage of DI cover	LS	13.470	1.73	23.30
		LABOUR				
	114	Beldar	day	0.120	368.00	44.16
	115	Coolie	day	0.120	368.00	44.16
		Total				5611.62
		Add water charges 1%				56.12
		Total				5667.74
		Add CPOH 15%				850.16
		Total				6517.90
		deduct MR incl CP&OH				6325.00
		Total				192.90
		Ernakulam (1.4608)				281.79
		add MR incl CP&OH				6325.00
		Total				6606.79
		Cost of 1 Manhole				6606.79
		SAY	Rs	6606.79	/sqm	
7	50.6.7.2	Laterate masonry with neatly dressed laterate stone of size 40X20X15cm or nearest size in cement mortar 1:6 for superstructure above plinth level up to floor two level including all cost of materials, labour charges etc				
		Details of Cost for : 1.00 Cum				
		MATERIAL:				
	MR 39	Laterite Stone 40x20x15cm	Nos	78.00	46.00	3588.00
	3.11	Cement mortar 1:6 (1	cum	0.0874	3217.5	281.21
	9999	Sundries		2.73	1.73	4.72
		LABOUR:				
	123	Mason 1st Class	Day	0.53	487.00	258.11
	124	Mason IInd Class	Day	0.53	448.00	237.44
	115	Coolie	Day	1.90	368.00	699.20
	101	Bhishti	Day	0.45	407.00	183.15

	9999	Scaffolding	L.S.	22.36	1.73	38.6828
		Total				5290.52
		MR				3588.00
		Add Water Charges @ 1%				35.88
		TOTAL				3623.88
		Add CPOH @ 15%				543.58
		TOTAL	A			4167.46
		Total excluding (MR)				1702.52
		Add Water Charges @ 1%				17.03
		TOTAL				1719.54
		Add CPOH @ 15%				257.93
		TOTAL	B			1977.47
		Total including cost index	C	1.4608		2888.69
		Total (A+C)				7056.15
		Cost of 1 cum				7056.15
		say Rs	7056.15	/1m3		

We hereby certify that the rates provided in this estimate are the rates included in the DSR 2016 or the rate approved by the PWD. The cost index of Kochi is taken as 1.4608 as instructed by the PWD. Market rates for other materials which are not available in the DSR 2016 are directly taken from the local market including all its overhead costs which are lowest and reasonable.

Engineer	AE/AEE	
RAM BIOLOGICALS	KWA, KOCHI	

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI						
OBSERVED DATA - ELECTRICAL						
Item No:	Item Code	Description	Units	Quantity	Rate	Amount
1	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 400sq.mm cable	m	100.00	3243.00	324300.00
	2945	Common burnt clay F.P.S. (non modular) bricks class designation 7.5 = 874 + 44 (Wastage@ 5%) = 918 Nos	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				335083.22
		MR				324300.00
		Add Water Charges @ 1%				3243.00
		TOTAL				327543.00
		Add CPOH @ 15%				49131.45
		TOTAL	A			376674.45
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling as required	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				407169.22
		Cost of 1m				4071.69
		say Rs	4071.69	/1m		
2	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				

		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 300sq.mm cable	m	100.00	2550.00	255000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				265783.22
		MR				255000.00
		Add Water Charges @ 1%				2550.00
		TOTAL				257550.00
		Add CPOH @ 15%				38632.50
		TOTAL	A			296182.50
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				326677.27
		Cost of 1m				3266.77
		say Rs	3266.77	/1m		
3	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 240sq.mm cable	m	100.00	2080.00	208000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				218783.22
		MR				208000.00
		Add Water Charges @ 1%				2080.00
		TOTAL				210080.00
		Add CPOH @ 15%				31512.00
		TOTAL	A			241592.00
		Total excluding (MR)				10783.22

		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				272086.77
		Cost of 1m				2720.87
		say Rs	2720.87	/1m		
4	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 185sq.mm cable	m	100.00	1650.00	165000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				175783.22
		MR				165000.00
		Add Water Charges @ 1%				1650.00
		TOTAL				166650.00
		Add CPOH @ 15%				24997.50
		TOTAL	A			191647.50
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				222142.27
		Cost of 1m				2221.42
		say Rs	2221.42	/1m		

5	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.					
		Details of Cost for : 100m					
		MATERIAL:					
		MR	3.5 x 150sq.mm cable	m	100.00	1326.00	132600.00
		2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
		2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:					
		1001	Wireman	Day	1.50	447.00	670.50
		1007	Khallasi	Day	4.00	368.00	1472.00
		Total					143383.22
		MR					132600.00
		Add Water Charges @ 1%					1326.00
		TOTAL					133926.00
		Add CPOH @ 15%					20088.90
		TOTAL					154014.90
		Total excluding (MR)					10783.22
		Add Water Charges @ 1%					107.83
		TOTAL					10891.05
		Add CPOH @ 15%					1633.66
		TOTAL					12524.71
		Excavation including refilling					8350.68
		Total					20875.39
		Total including cost index					30494.77
		Total (A+C)					184509.67
		Cost of 1m					1845.10
		say Rs					1845.10 /1m
		6	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.			
Details of Cost for : 100m							
MATERIAL:							
MR	3.5 x 120sq.mm cable			m	100.00	1118.00	111800.00
2945	Common burnt clay F.P,S.			each	918.00	3.00	2754.00
2946	Fine Sand			cum	8.76	672	5886.72
LABOUR:							
1001	Wireman			Day	1.50	447.00	670.50
1007	Khallasi			Day	4.00	368.00	1472.00
Total					122583.22		

		MR				111800.00
		Add Water Charges @ 1%				1118.00
		TOTAL				112918.00
		Add CPOH @ 15%				16937.70
		TOTAL	A			129855.70
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				160350.47
		Cost of 1m				1603.50
		say Rs		1603.50	/1m	
7	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 95sq.mm cable	m	100.00	895.00	89500.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				100283.22
		MR				89500.00
		Add Water Charges @ 1%				895.00
		TOTAL				90395.00
		Add CPOH @ 15%				13559.25
		TOTAL	A			103954.25
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				134449.02
		Cost of 1m				1344.49

		say Rs		1344.49	/1m	
8	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 70sq.mm cable	m	100.00	720.00	72000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				82783.22
		MR				72000.00
		Add Water Charges @ 1%				720.00
		TOTAL				72720.00
		Add CPOH @ 15%				10908.00
		TOTAL	A			83628.00
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				114122.77
		Cost of 1m				1141.23
		say Rs		1141.23	/1m	
9	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 50sq.mm cable	m	100.00	586.00	58600.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00

		Total				69383.22
		MR				58600.00
		Add Water Charges @ 1%				586.00
		TOTAL				59186.00
		Add CPOH @ 15%				8877.90
		TOTAL	A			68063.90
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				98558.67
		Cost of 1m				985.59
		say Rs	985.59	/1m		
10	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 35sq.mm cable	m	100.00	456.00	45600.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				56383.22
		MR				45600.00
		Add Water Charges @ 1%				456.00
		TOTAL				46056.00
		Add CPOH @ 15%				6908.40
		TOTAL	A			52964.40
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				83459.17

		Cost of 1m				834.59
		say Rs	834.59	/1m		
11	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 25sq.mm cable	m	100.00	359.00	35900.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				46683.22
		MR				35900.00
		Add Water Charges @ 1%				359.00
		TOTAL				36259.00
		Add CPOH @ 15%				5438.85
		TOTAL	A			41697.85
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				72192.62
		Cost of 1m				721.93
		say Rs	721.93	/1m		
12	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 16sq.mm cable	m	100.00	271.00	27100.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50

	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				37883.22
		MR				27100.00
		Add Water Charges @ 1%				271.00
		TOTAL				27371.00
		Add CPOH @ 15%				4105.65
		TOTAL	A			31476.65
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				61971.42
		Cost of 1m				619.71
		say Rs	619.71	/1m		
13	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 240sq.mm cable	m	100.00	2080.00	208000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				218783.22
		MR				208000.00
		Add Water Charges @ 1%				2080.00
		TOTAL				210080.00
		Add CPOH @ 15%				31512.00
		TOTAL	A			241592.00
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77

		Total (A+C)				272086.77
		Cost of 1m				2720.87
		say Rs	2720.87	/1m		
14	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 10sq.mm cable	m	100.00	239.00	23900.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				34683.22
		MR				23900.00
		Add Water Charges @ 1%				239.00
		TOTAL				24139.00
		Add CPOH @ 15%				3620.85
		TOTAL	A			27759.85
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				58254.62
		Cost of 1m				582.55
		say Rs	582.55	/1m		
15	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 6sq.mm cable	m	100.00	189.00	18900.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				

	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				29683.22
		MR				18900.00
		Add Water Charges @ 1%				189.00
		TOTAL				19089.00
		Add CPOH @ 15%				2863.35
		TOTAL	A			21952.35
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				52447.12
		Cost of 1m				524.47
		say Rs		524.47	/1m	
16	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Aluminium conductor XLPE power cables as per IS:7098/Part-I/88 with latest ammendments 1.1 kv grad of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 4sq.mm cable	m	100.00	164.00	16400.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				27183.22
		MR				16400.00
		Add Water Charges @ 1%				164.00
		TOTAL				16564.00
		Add CPOH @ 15%				2484.60
		TOTAL	A			19048.60
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39

		Total including cost index		1.4608		30494.77
		Total (A+C)				49543.37
		Cost of 1m				495.43
		say Rs	495.43	/1m		
17	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 4sq.mm cable	m	100.00	353.00	35300.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				46083.22
		MR				35300.00
		Add Water Charges @ 1%				353.00
		TOTAL				35653.00
		Add CPOH @ 15%				5347.95
		TOTAL	A			41000.95
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				71495.72
		Cost of 1m				714.96
		say Rs	714.96	/1m		
18	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 6sq.mm cable	m	100.00	508.00	50800.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72

		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				61583.22
		MR				50800.00
		Add Water Charges @ 1%				508.00
		TOTAL				51308.00
		Add CPOH @ 15%				7696.20
		TOTAL	A			59004.20
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				89498.97
		Cost of 1m				894.99
		say Rs		894.99	/1m	
19	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 10sq.mm cable	m	100.00	815.00	81500.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				92283.22
		MR				81500.00
		Add Water Charges @ 1%				815.00
		TOTAL				82315.00
		Add CPOH @ 15%				12347.25
		TOTAL	A			94662.25
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68

		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				125157.02
		Cost of 1m				1251.57
		say Rs	1251.57	/1m		
20	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 16sq.mm cable	m	100.00	1213.00	121300.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				132083.22
		MR				121300.00
		Add Water Charges @ 1%				1213.00
		TOTAL				122513.00
		Add CPOH @ 15%				18376.95
		TOTAL	A			140889.95
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				171384.72
		Cost of 1m				1713.85
		say Rs	1713.85	/1m		
21	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 25sq.mm cable	m	100.00	1882.00	188200.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00

	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				198983.22
		MR				188200.00
		Add Water Charges @ 1%				1882.00
		TOTAL				190082.00
		Add CPOH @ 15%				28512.30
		TOTAL	A			218594.30
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				249089.07
		Cost of 1m				2490.89
		say Rs		2490.89	/1m	
22	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 35sq.mm cable	m	100.00	2608.00	260800.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				271583.22
		MR				260800.00
		Add Water Charges @ 1%				2608.00
		TOTAL				263408.00
		Add CPOH @ 15%				39511.20
		TOTAL	A			302919.20
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71

		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				333413.97
		Cost of 1m				3334.14
		say Rs	3334.14	/1m		
23	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	4 x 50sq.mm cable	m	100.00	3580.00	358000.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				368783.22
		MR				358000.00
		Add Water Charges @ 1%				3580.00
		TOTAL				361580.00
		Add CPOH @ 15%				54237.00
		TOTAL	A			415817.00
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				446311.77
		Cost of 1m				4463.12
		say Rs	4463.12	/1m		
24	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 70sq.mm cable	m	100.00	4852.00	485200.00

	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				495983.22
		MR				485200.00
		Add Water Charges @ 1%				4852.00
		TOTAL				490052.00
		Add CPOH @ 15%				73507.80
		TOTAL	A			563559.80
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				594054.57
		Cost of 1m				5940.55
		say Rs		5940.55	/1m	
25	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 120sq.mm cable	m	100.00	8952.00	895200.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				905983.22
		MR				895200.00
		Add Water Charges @ 1%				8952.00
		TOTAL				904152.00
		Add CPOH @ 15%				135622.80
		TOTAL	A			1039774.80
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66

		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				1070269.57
		Cost of 1m				10702.70
		say Rs		10702.70	/1m	
26	OBS BASED ON DSR (E&M) 7.1	Supplying and Laying of PVC insulated and PVC sheathed / XLPE power cable of Copper conductor XLPE control cables as per is:7098/Part-I/88 with latest amendments 1.1 kv grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required in the specifications or as directed by the Engineer in Charge.				
		Details of Cost for : 100m				
		MATERIAL:				
	MR	3.5 x 300sq.mm cable	m	100.00	24592.00	2459200.00
	2945	Common burnt clay F.P,S.	each	918.00	3.00	2754.00
	2946	Fine Sand	cum	8.76	672	5886.72
		LABOUR:				
	1001	Wireman	Day	1.50	447.00	670.50
	1007	Khallasi	Day	4.00	368.00	1472.00
		Total				2469983.22
		MR				2459200.00
		Add Water Charges @ 1%				24592.00
		TOTAL				2483792.00
		Add CPOH @ 15%				372568.80
		TOTAL	A			2856360.80
		Total excluding (MR)				10783.22
		Add Water Charges @ 1%				107.83
		TOTAL				10891.05
		Add CPOH @ 15%				1633.66
		TOTAL	B			12524.71
		Excavation including refilling	cum	26.26	318	8350.68
		Total	C			20875.39
		Total including cost index		1.4608		30494.77
		Total (A+C)				2886855.57
		Cost of 1m				28868.56
		say Rs		28868.56	/1m	

We hereby certify that the rates provided in this estimate are the rates included in the DSR 2016 or the rate approved by the PWD. The cost index of Kochi is taken as 1.4608 as instructed by the PWD. Market rates for other materials which are not available in the DSR 2016 are directly taken from the local market including all its overhead costs which are lowest and reasonable.

Engineer	AE/AEE
RAM BIOLOGICALS	KWA, KOCHI

CONSTRUCTION OF 5 MLD SEWAGE TREATMENT PLANT AT ELAMKULAM, KOCHI						
OBSERVED DATA - PIPING						
Item No:	Item Code	Description	Units	Quantity	Rate	Amount
1	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 315mm dia 6Kgf/cm²				
		MATERIALS :				
	MR	uPVC pipe 315mm inner dia (Adding 30% for fittings and wastage)	metre	13	2740.00	35620.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.37	487.00	180.19
	0114	belder	day	0.97	368.00	356.96
		total				36213.89
		MR				35620.00
		Add Water Charges @ 1%				356.20
		TOTAL	A			35976.20
		Total excluding MR				593.89
		Water				5.94
		TOTAL	B			599.83
		Total	A+1.4608B			36852.44
		Add CPOH @ 15%				5527.87
		Cost of 10 M				42380.30
		Cost of 1 M				4238.03
			say Rs	4238.03	/m	
2	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 250mm dia 6Kgf/cm²				
		MATERIALS :				
	MR	uPVC pipe 250mm inner dia (Adding 30% for fittings and wastage)	metre	13	1706.00	22178.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.37	487.00	180.19
	0114	belder	day	0.97	368.00	356.96

		total						22771.89
		MR						22178.00
		Add Water Charges @ 1%						221.78
		TOTAL		A				22399.78
		Total excluding MR						593.89
		Water						5.94
		TOTAL		B				599.83
		Total		A+1.4608B				23276.02
		Add CPOH @ 15%						3491.40
		Cost of 10 M						26767.42
		Cost of 1 M						2676.74
			say	Rs	2676.74	/m		
3	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 200mm dia 6Kgf/cm²						
		MATERIALS :						
	MR	uPVC pipe 200mm inner dia (Adding 30% for fittings and wastage)			metre	13	1047.00	13611.00
	9999	carriage of materials			L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc			L.S.	10.27	1.73	17.77
		Labour						
	0116	fitter			day	0.37	487.00	180.19
	0114	belder			day	0.97	368.00	356.96
		total						14204.89
		MR						13611.00
		Add Water Charges @ 1%						136.11
		TOTAL		A				13747.11
		Total excluding MR						593.89
		Water						5.94
		TOTAL		B				599.83
		Total		A+1.4608B				14623.35
		Add CPOH @ 15%						2193.50
		Cost of 10 M						16816.85
		Cost of 1 M						1681.68
			say	Rs	1681.68	/m		

4	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 160mm dia 6Kgf/cm²					
		MATERIALS :					
	MR	uPVC pipe 160mm inner dia (Adding 30% for fittings and wastage)		metre	13	662.00	8606.00
		Labour					
	0116	fitter		day	0.37	487.00	180.19
	0114	belder		day	0.97	368.00	356.96
		total					9143.15
		MR					8606.00
		Add Water Charges @ 1%					86.06
		TOTAL		A			8692.06
		Total excluding MR					537.15
		Water					5.37
		TOTAL		B			542.52
		Total		A+1.4608B			9484.58
		Add CPOH @ 15%					1422.69
		Cost of 10 M					10907.26
		Cost of 1 M					1090.73
				say Rs	1090.73	/m	
5	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 110mm dia 6Kgf/cm²					
		MATERIALS :					
	MR	uPVC pipe 110mm inner dia (Adding 30% for fittings and wastage)		metre	13	312.00	4056.00
	9999	carriage of materials		L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc		L.S.	10.27	1.73	17.77
		Labour					
	0116	fitter		day	0.37	487.00	180.19
	0114	belder		day	0.97	368.00	356.96
		total					4649.89
		MR					4056.00
		Add Water Charges @ 1%					40.56
		TOTAL		A			4096.56

		Total excluding MR				593.89
		Add Water Charges @ 1%				5.94
		TOTAL	B			599.83
		Total	A+1.4608B			4972.80
		Add CPOH @ 15%				745.92
		Cost of 10 M				5718.72
		Cost of 1 M				571.87
			say Rs	571.87	/m	
6	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 90mm dia 6Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 90mm inner dia (Adding 30% for fittings and wastage)	metre	13	217.00	2821.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				3368.25
		MR				2821.00
		Add Water Charges @ 1%				28.21
		TOTAL	A			2849.21
		Total excluding MR				547.25
		Add Water Charges @ 1%				5.47
		TOTAL	B			552.72
		TotalA+1.4608B				3656.63
		Add CPOH @ 15%				548.49
		Cost of 10 M				4205.12
		Cost of 1 M				420.51
			say Rs	420.51	m	
7	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 75mm dia 6Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 75mm inner dia (Adding 30% for fittings and wastage)	metre	13	150.00	1950.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				

	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				2497.25
		MR				1950.00
			Add Water Charges @ 1%			19.50
		TOTAL	A			1969.50
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
		TOTAL	B			552.72
			TotalA+1.4608B			2776.92
			Add CPOH @ 15%			416.54
			Cost of 10 M			3193.45
			Cost of 1 M			319.35
				say Rs	319.35	m
8	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 63mm dia 6Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 63mm inner dia (Adding 30% for fittings and wastage)	metre	13	108.00	1404.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				1951.25
		MR				1404.00
			Add Water Charges @ 1%			14.04
		TOTAL	A			1418.04
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
		TOTAL	B			552.72
			TotalA+1.4608B			2225.46
			Add CPOH @ 15%			333.82
			Cost of 10 M			2559.27
			Cost of 1 M			255.93
				say Rs	255.93	m
9	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 50mm dia 6Kgf/cm²				

		MATERIALS :				
	MR	uuPVC pipe 50mm inner dia (Adding 30% for fittings and wastage)	metre	13	69.00	897.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				1444.25
		MR				897.00
			Add Water Charges @ 1%			8.97
		TOTAL		A		905.97
		Total excluding MR				547.25
			Add Water Charges @ 1%			5.47
		TOTAL		B		552.72
		TotalA+1.4608B				1713.39
		Add CPOH @ 15%				257.01
		Cost of 10 M				1970.39
		Cost of 1 M				197.04
				say Rs	197.04	m
10	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 315mm dia 10Kgf/cm²				
		MATERIALS :				
	MR	uPVC pipe 315mm inner dia (Adding 30% for fittings and wastage)	metre	13	4325.00	56225.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.37	487.00	180.19
	0114	belder	day	0.97	368.00	356.96
		total				56818.89
		MR				56225.00
		Add Water Charges @ 1%				562.25
		TOTAL		A		56787.25
		Total excluding MR				593.89
		Water				5.94
		TOTAL		B		599.83

		Total		A+1.4608B			57663.49
		Add CPOH @ 15%					8649.52
		Cost of 10 M					66313.01
		Cost of 1 M					6631.30
			say	Rs 6631.30	/m		
11	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 250mm dia 10Kgf/cm²					
		MATERIALS :					
	MR	uPVC pipe 250mm inner dia (Adding 30% for fittings and wastage)		metre	13	2706.00	35178.00
	9999	carriage of materials		L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc		L.S.	10.27	1.73	17.77
		Labour					
	0116	fitter		day	0.37	487.00	180.19
	0114	belder		day	0.97	368.00	356.96
		total					35771.89
		MR					35178.00
		Add Water Charges @ 1%					351.78
		TOTAL		A			35529.78
		Total excluding MR					593.89
		Water					5.94
		TOTAL		B			599.83
		Total		A+1.4608B			36406.02
		Add CPOH @ 15%					5460.90
		Cost of 10 M					41866.92
		Cost of 1 M					4186.69
			say	Rs 4186.69	/m		
12	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 200mm dia 10Kgf/cm²					
		MATERIALS :					
	MR	uPVC pipe 200mm inner dia (Adding 30% for fittings and wastage)		metre	13	1666.00	21658.00
	9999	carriage of materials		L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc		L.S.	10.27	1.73	17.77
		Labour					

	0116	fitter			day	0.37	487.00	180.19
	0114	belder			day	0.97	368.00	356.96
		total						22251.89
		MR						21658.00
		Add Water Charges @ 1%						216.58
		TOTAL		A				21874.58
		Total excluding MR						593.89
		Water						5.94
		TOTAL		B				599.83
		Total		A+1.4608B				22750.82
		Add CPOH @ 15%						3412.62
		Cost of 10 M						26163.44
		Cost of 1 M						2616.34
			say	Rs	2616.34	/m		
13	50.18.9.9.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 160mm dia 10Kgf/cm²						
		MATERIALS :						
	MR	uPVC pipe 160mm inner dia (Adding 30% for fittings and wastage)			metre	13	1054.00	13702.00
	9999	carriage of materials			L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc			L.S.	10.27	1.73	17.77
		Labour						
	0116	fitter			day	0.37	487.00	180.19
	0114	belder			day	0.97	368.00	356.96
		total						14295.89
		MR						13702.00
		Add Water Charges @ 1%						137.02
		TOTAL		A				13839.02
		Total excluding MR						593.89
		Water						5.94
		TOTAL		B				599.83
		Total		A+1.4608B				14715.26
		Add CPOH @ 15%						2207.29
		Cost of 10 M						16922.54
		Cost of 1 M						1692.25
			say	Rs	1692.25	/m		

14	50.18.9.9.1	Providing and fixing uPVC pipes including jointing of pipes with one step uPVC solvent cement, testing of joints complete as per direction of Engineer in Charge. 110mm dia 10Kgf/cm²					
		MATERIALS :					
	MR	uPVC pipe 110mm inner dia (Adding 30% for fittings and wastage)		metre	13	503.00	6539.00
	9999	carriage of materials		L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc		L.S.	10.27	1.73	17.77
		Labour					
	0116	fitter		day	0.37	487.00	180.19
	0114	belder		day	0.97	368.00	356.96
		total					7132.89
		MR					6539.00
		Add Water Charges @ 1%					65.39
		TOTAL	A				6604.39
		Total excluding MR					593.89
		Add Water Charges @ 1%					5.94
		TOTAL	B				599.83
		Total	A+1.4608B				7480.63
		Add CPOH @ 15%					1122.09
		Cost of 10 M					8602.72
		Cost of 1 M					860.27
			say Rs	860.27	/m		
15	50.18.9.18.1	Providing and fixing uPVC pipes including jointing of pipes with one step uPVC solvent cement, testing of joints complete as per direction of Engineer in Charge. 90mm dia 10Kgf/cm²					
		MATERIALS :					
	MR	uuPVC pipe 90mm inner dia (Adding 30% for fittings and wastage)		metre	13	334.00	4342.00
	9999	carriage of materials		L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc		L.S.	10.27	1.73	17.77
		Labour					
	0116	fitter		day	0.32	487.00	155.84
	0114	belder		day	0.62	368.00	228.16
	0100	bandhani		day	0.13	407.00	52.91
	9999	scaffolding etc		LS	30.98	1.73	53.5954
		total					4889.25
		MR					4342.00
		Add Water Charges @ 1%					43.42

			TOTAL		A			4385.42	
			Total excluding MR						547.25
			Add Water Charges @ 1%						5.47
			TOTAL		B			552.72	
			TotalA+1.4608B						5192.84
			Add CPOH @ 15%						778.93
			Cost of 10 M						5971.76
			Cost of 1 M						597.18
					say Rs	597.18	m		
16	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 75mm dia 10Kgf/cm²							
		MATERIALS :							
	MR	uuPVC pipe 75mm inner dia (Adding 30% for fittings and wastage)		metre	13	236.00		3068.00	
	9999	carriage of materials	L.S.	22.53	1.73			38.98	
	9999	Adhesive and sundries etc	L.S.	10.27	1.73			17.77	
		Labour							
	0116	fitter		day	0.32	487.00		155.84	
	0114	belder		day	0.62	368.00		228.16	
	0100	bandhani		day	0.13	407.00		52.91	
	9999	scaffolding etc	LS	30.98	1.73			53.5954	
		total						3615.25	
		MR						3068.00	
			Add Water Charges @ 1%						30.68
			TOTAL		A			3098.68	
			Total excluding MR						547.25
			Add Water Charges @ 1%						5.47
			TOTAL		B			552.72	
			TotalA+1.4608B						3906.10
			Add CPOH @ 15%						585.91
			Cost of 10 M						4492.01
			Cost of 1 M						449.20
					say Rs	449.20	m		
17	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 63mm dia 10Kgf/cm²							
		MATERIALS :							
	MR	uuPVC pipe 63mm inner dia (Adding 30% for fittings and wastage)		metre	13	166.00		2158.00	
	9999	carriage of materials	L.S.	22.53	1.73			38.98	
	9999	Adhesive and sundries etc	L.S.	10.27	1.73			17.77	
		Labour							

	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				2705.25
		MR				2158.00
			Add Water Charges @ 1%			21.58
		TOTAL	A			2179.58
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
		TOTAL	B			552.72
			TotalA+1.4608B			2987.00
			Add CPOH @ 15%			448.05
			Cost of 10 M			3435.05
			Cost of 1 M			343.50
				say Rs	343.50	m
18	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 50mm dia 10Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 50mm inner dia (Adding 30% for fittings and wastage)	metre	13	108.00	1404.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				1951.25
		MR				1404.00
			Add Water Charges @ 1%			14.04
		TOTAL	A			1418.04
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
		TOTAL	B			552.72
			TotalA+1.4608B			2225.46
			Add CPOH @ 15%			333.82
			Cost of 10 M			2559.27
			Cost of 1 M			255.93
				say Rs	255.93	m
19	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 40mm dia 10Kgf/cm²				

		MATERIALS :				
	MR	uuPVC pipe 40mm inner dia (Adding 30% for fittings and wastage)	metre	13	67.00	871.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				1418.25
		MR				871.00
			Add Water Charges @ 1%			8.71
			TOTAL	A		879.71
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
			TOTAL	B		552.72
			TotalA+1.4608B			1687.13
			Add CPOH @ 15%			253.07
			Cost of 10 M			1940.20
			Cost of 1 M			194.02
				say Rs	194.02	m
20	50.18.9.18.1	Providing and fixing uPVC pipes includings jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 32mm dia 10Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 32mm inner dia (Adding 30% for fittings and wastage)	metre	13	44.00	572.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				1119.25
		MR				572.00
			Add Water Charges @ 1%			5.72
			TOTAL	A		577.72
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
			TOTAL	B		552.72
			TotalA+1.4608B			1385.14
			Add CPOH @ 15%			207.77

			Cost of 10 M			1592.91
			Cost of 1 M			159.29
				say Rs	159.29	m
21	50.18.9.18.1	Providing and fixing uPVC pipes including jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 25mm dia 10Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 25mm inner dia (Adding 30% for fittings and wastage)	metre	13	28.00	364.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				911.25
		MR				364.00
			Add Water Charges @ 1%			3.64
			TOTAL	A		367.64
			Total excluding MR			547.25
			Add Water Charges @ 1%			5.47
			TOTAL	B		552.72
			TotalA+1.4608B			1175.06
			Add CPOH @ 15%			176.26
			Cost of 10 M			1351.31
			Cost of 1 M			135.13
				say Rs	135.13	m
22	50.18.9.18.1	Providing and fixing uPVC pipes including jointing of pipes with one step uPVC solvent cement , testing of joints complete as per direction of Engineer in Charge. 20mm dia 10Kgf/cm²				
		MATERIALS :				
	MR	uuPVC pipe 25mm inner dia (Adding 30% for fittings and wastage)	metre	13	19.00	247.00
	9999	carriage of materials	L.S.	22.53	1.73	38.98
	9999	Adhesive and sundries etc	L.S.	10.27	1.73	17.77
		Labour				
	0116	fitter	day	0.32	487.00	155.84
	0114	belder	day	0.62	368.00	228.16
	0100	bandhani	day	0.13	407.00	52.91
	9999	scaffolding etc	LS	30.98	1.73	53.5954
		total				794.25
		MR				247.00

			Add Water Charges @ 1%				2.47	
			TOTAL		A		249.47	
			Total excluding MR					547.25
			Add Water Charges @ 1%					5.47
			TOTAL		B		552.72	
			TotalA+1.4608B					1056.89
			Add CPOH @ 15%					158.53
			Cost of 10 M					1215.42
			Cost of 1 M					121.54
					say Rs	121.54	m	

We hereby certify that the rates provided in this estimate are the rates included in the DSR 2016 or the rate approved by the PWD. The cost index of Kochi is taken as 1.4608 as instructed by the PWD. Market rates for other materials which are not available in the DSR 2016 are directly taken from the local market including all its overhead costs which are lowest and reasonable.

Engineer	AE/AEE	
RAM BIOLOGICALS	Kochi KWA	